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Nov 21 '55

the magazine of building

NOVEMBER 1955

Architecture in America: Part III—the manufacturer's role (p. 116) . . . . Chicago's new apartments—an appraisal by architect, builder, and realtor (p. 140) . . . . Zeckendorf's Mile High Center in Denver (below & p. 128)



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Dage	115	Mon	of the	e month
page	110	TATELL	UL LIB	

- 116 Architecture in America
  The manufacturer's role—Part III of a series
- 125 Vivid color

  Architecture's new dimension—a color portfolio
- 128 Denver's Mile High Center
  High style comes to the speculative office building
- 138 Building abroad
  In Milan, a 25-story office tower without columns

#### 140 Eight Chicago apartments

Conversational criticism by architect, builder and realtor

- 143 Lake Meadows by Skidmore, Owings & Merrill
- 144 Commonwealth Promenade, 800 Esplanade and IIT housing by Ludwig Mies van der Rohe
- 146 One thousand Lake Shore Dr. by Sidney H. Morris
- 147 The Evanstonian by Ralph Harris
- 148 "X" Building by Bertrand Goldberg
- 149 Three-twenty Oakdale by Milton M. Schwartz

#### 150 Excerpts

Opinion from the rostrum and the press

#### 152 A downtown store for today

Rich's builds the advantages of a suburban shopping center into the heart of Knoxville

#### 158 Kansas City's framework for the future

Defined by a circle of highways, the downtown area is renewed with parking garages, apartment buildings and an office project built on a three-dimensional module

#### 166 The flattened-out hospital

It makes sense medically and financially

#### 170 A new way to span space

Big, cheap and column-free, the warped plane called "hyperbolic paraboloid" makes a graceful roof

#### 178 For all concerned

An editorial on builders and delinquents

9 News

29 People

32 Trends

54 Dates

58 Parentheses

74 Letters

200 Books

202 Products

Cover: Mile High Center

Architect: I. M. Pei Photo: © Ezra Stoller

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

280 Advertising index

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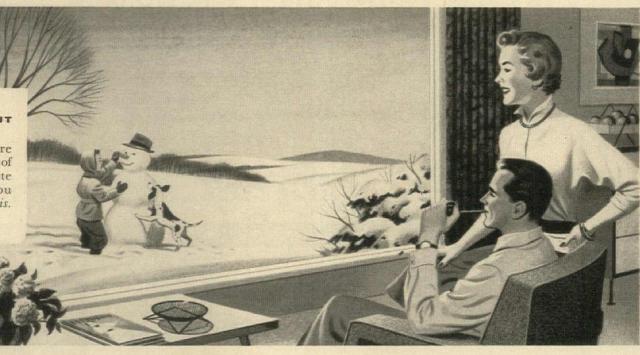


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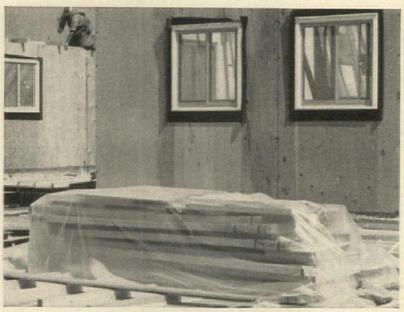
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maximum efficiency—and 6 large capacity vaults to preserve irreplaceable records. In heating, lighting, acoustical treatment and other equipment, including provision for air conditioning, the building is deserving of ultramodern rating. Throughout the courthouse are evidences of a striving for the "plus" that assures superior service to the public and best facilities for employees. Here, as in thousands of other fine buildings, are SLOAN Flush VALVES, famous everywhere for efficiency, durability, economy.

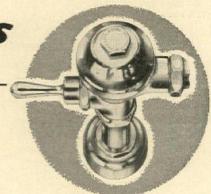


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## NAHRO convention: unrest grows over renewal program procedural snarls

Frustration over Washington administration of all aspects of the federal public housing and urban renewal and rehabilitation program was the predominant feeling at last month's convention of the National Association of Housing and Redevelopment Officials in Cleveland.

In contrast to the let's-wait-and-see attitude of last year's convention toward the urban renewal program, the conviction was growing among local public housing and renewal officials that complicated rules and procedures of three federal agencies—FHA, HHFA, URA—and increasing domination by a fourth—PHA—were keeping the government's highly publicized renewal campaign from getting off dead center.

Most NAHRO leaders did not doubt the administration's intentions, but were simply convinced there was too much red tape. The feeling of frustration was reflected in panel discussions on renewal and was formalized in some resolutions.

Three of the resolutions amounted to a NAHRO definition of trouble spots in the program. They called for:

A more realistic attitude toward private builders' profits in urban redevelopment and rehabilitation. The housing act of 1954 allows a maximum of 10% profit. NAHRO felt the profit should not be held down by administrative ruling, and registered its objection to allowing a smaller profit percentage on big projects than on small ones. Intent of the resolution was to make government-sponsored renewal projects competitive with private building ventures for investors' money.

Reversal of an "accelerating trend" toward federal domination of local public housing programs. NAHRO members have become increasingly rankled by use of a new, stiffer annual contributions contract. This, said NAHRO, ties a local office to PHA regulations; then the local office finds that PHA rewrites its rule book. Toughening of the contracts to increase federal authority, said NAHRO, "contravenes the spirit and intent" of the Taft-Ellender-Wagner Act that set up PHA. Local officials who are also handling renewal and redevelopment projects feared that if PHA wins the battle for domination of local programs, HHFA's division of slum clearance and URA will get tougher and tougher to deal with.

▶ Yearly construction of public housing units amounting to 10% of the number of private dwelling units constructed. If starts this year total 1.3 million, NAHRO would like to see Congress ask for 130,000 public housing units in 1956. Net effect is just about the same as NAHRO's yearly plea for 135,000 units.

Overreaching PHA. Walter B. Mills, Jr., retiring president, addressing the organization's business meeting, had harsh words for PHA: "the federal agency . . . usurps

the local responsibility by issuing directives, manual releases and requirements that take away all local initiative and responsibility of action . . . the legislation (T-E-W) says that the federal government's role shall be limited to financial assistance and advice—but not domination . . . the federal agency is more concerned about writing regulations than about serving the people."

Washington run-around. Confusion over top level urban renewal procedures was evident as local officials badgered federal experts and each other with questions at renewal panel discussions. Again and again local agency members commented on the difficulty of trying to work up projects to conform with the federal rules, and the frustration in trying to get plans adjusted and approved by HHFA, FHA and URA. At one peculiarly Orwellian session several hundred local officials clustered before a raised platform on which sat half a dozen

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top federal experts, clad in dark gray suits. The federal men coolly dispensed their rules and procedures. They talked of top-level cooperation among URA, FHA and HHFA, of passing municipal applications and plans back and forth, until one local official with.

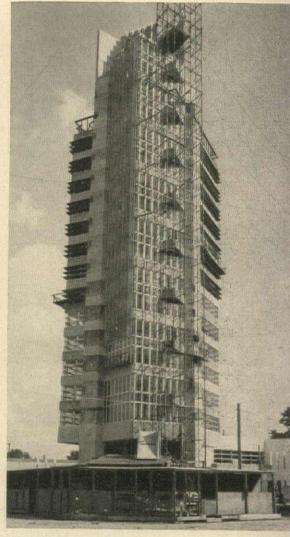
perhaps, a redevelopment project or two being passed around, jumped up and said: "We don't care what FHA tells HHFA, or HHFA tells URA. Please, fellas, just tell us, and tell us once."

Next day a voice from the top offered soothing, if somewhat contradictory advice. Urban Renewal Commissioner James W. Follin told the conventioneers: "Get going as soon as possible on each of your program phases. Don't wait for all the answers. You can develop answers as you go."

North Harlem deal set-up. Some of the answers were indeed being worked out. North Harlem, the first big Title I project of eight in New York City to receive an FHA Sec. 220 commitment, was dissected for the local officials, and the anatomy of the deal looked very much like mortgaging out.

Big New York redevelopers have been holding their breath for three years, waiting for a favorable deal. With the first one made—and the others said to be due soon—the local renewal officials at the NAHRO convention began to see how they might entice reluctant sponsors.

The North Harlem sponsor, it was said, was able to borrow his supposed "equity" from the mortgagee on non-negotiable notes, payable out of early earnings of the big middle-income rental project. Builder's fee: 7%. Density was adjusted from 357



#### Wright's prairie "skyscraper" for Price nears completion

Almost two years abuilding, delayed partly by strikes that held up steel, the celebrated Price Tower in Bartlesville, Okla., designed by Frank Lloyd Wright, was almost finished last month. The exterior of the tall, dramatic, beige and bluish-green copper building, with gold-tinted windows (AF, May '53) was already a scenic landmark of the Southwest. In the "Wall Street Journal" the H. C. Price Co. was advertising a limited amount of space available Jan. 1 in the prestige office-apartment structure. But it would not disclose rentals except to prospective tenants, nor identify those already leasing. The Price firm will use about one-third of the main building; Public Service of Oklahoma will occupy a low twostory northeast wing.

persons per acre to 417—because FHA agreed with the sponsor that the land cost (including tenant relocation and slum demolition) had been too high.

"Frankly," one of the Washington experts told the NAHRO delegates, "The problem was to work out a setup acceptable to the sponsor, so he would go ahead."

Cole defends renewal. The convention gave moderate applause to HHFAdministrator Albert Cole who talked of the promise of urban renewal. He criticized communities

continued on p. 12



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that looked upon public housing as "something apart and separate from urban renewal—apparently without realizing that the new public housing operation of today is tomorrow's slum or blighted neighborhood unless the entire area is systematically decontaminated."

Later Cole told Forum he viewed public housing mainly as relocation housing for families displaced by slum clearance. "But Sec. 220, 221 and rehabilitation will take care of most of those displaced," he said. A year ago, he told the press at the NAHRO convention that the then new Congressional requirement that further public housing could be approved only if intended for persons displaced by government action was "too limited." Then he thought this might cause "unnecessary restrictions" in helping people in slums that are not being cleared, but who deserve help in obtaining better housing.

Cole denied the administration has delayed the urban renewal program unnecessarily. "Anyone who would examine the evidence honestly would find urban renewal is working," he said. "Rehabilitation and renewal will in two or three years far exceed what low-income housing could do."

New president (1955-56) is Robert D. Sipprell, executive director of the Buffalo municipal housing authority. Slight, quiet Sipprell, 43, has been with the Buffalo authority (4,500 housing units in operation, 2,300 more scheduled) for 17 years.



#### Hilton headquarters designed for Italian villa atmosphere

This three-story \$400,000 world headquarters for Hilton Hotels Corp. about to be erected in Beverly Hills, Calif. from Pereira & Luckman plans is intended "to express the warmth and character of an Italian villa set in a sunken garden," according to Hotelman Conrad N. Hilton. Just inside its 10' black garden wall will be two fountain pools containing Italian sculpture pieces. The lobby floor will be white terrazzo with a set of black marble fins at the end. The third floor will have a large reception lobby, offices for top corporation officers, a board room and Hilton's private office. The last two will have outdoor patios covered with top and side grillage (front left). The two upper floors, encased in a series of broad concrete fins, will be cantilevered on all four sides.

## Rains committee begins probing urban renewal, 'delays' on Sec. 220 loans

HHFA's urban renewal program and FHA's apartment insurance mortgage activities were early starters last month as issues in the 1956 national elections. To construction industry observers the political undertones were clear and strong when the housing subcommittee of the House banking and currency committee, starting out on a national probing tour, held a three-day hearing in New York.

Subcommittee chairman was Rep. Albert Rains (D, Ala.). At a prehearing press conference he explained that all federal housing legislation expires next year. The committee intends to study "the whole field of housing," so it can complete a comprehensive report early next year covering all phases of federal housing action that ought to be expanded, eliminated or revised when the laws come up for re-enactment.

Typical of most congressional hearings, little that went into the record gave anyone or any program approbation. There was little doubt the committee's final report would furnish considerable material for Democratic platform writers and campaigners next year to support a theme: the housing agencies goofed on almost everything during the past four years; our party should be put in charge again to straighten out everything.

Critical of credit curbs. At NAHB's National Housing Center dedication just before committee hearings began, Rains said the recent FHA and VA mortgage tightening might trigger an economic slump, and the administration had "failed to consider the chain reaction" these curbs might set off in reducing employment.

At his New York press conference Rains said his hearings would try to discover why FHA's Sec. 213 cooperative and Sec. 220

urban renewal mortgage programs were "sad and bitter disappointments." He said he felt quite sure the first Sec. 220 commitment ever issued (13 months after the program became law) was approved by the New York FHA office only because the hous-



RAINS

ing committee was about to start its probe. But the committee could not afford to visit every city just to spur local FHA officials to action, he added. Until questioned, he made no reference to the liberalization adopted by Congress only last August, which now allows Sec. 220 mortgages at 90% of "replacement" cost instead of "valuation"—a factor that made builders rather than the FHA the laggards in expediting any commitment application until two months ago.

Bad for US, good for N.Y.? Democraticappointed New York State Housing Commissioner Joseph P. McMurray catalogued ten builder complaints against FHA processing procedures on Sec. 220 apartment applications. One of them: "FHA allowances for overhead, profit and architectural fees are inadequate and unrealistic. Until recently the builder was allowed 5% for overhead and profit, 2% for architectural fees. . . . Recently this was revised to 71/2 for overhead and profit, but architects fees reduced to 11/2 %." But a little later, describing a new state and city loan, and local tax abatement, program being developed in New York state under McMurray's supervision, he reported this would probably be set up with "a reasonable limitation of 51/2 to 71/2 % for builder's profit."

In its own reply to the committee answering McMurray, the New York FHA office called his builders' profit remarks "incorrect." Fees and overhead are calculated on size of project, it said, and range from 5 to 10% for profit, 1 to 3% for overhead, and 1 to 3% for architect fees. The builder's profit allowance on the first \$6.4 million Sec. 220 commitment issued on the so-called North Harlem project (see details on builder's financing setup for this project in NAHRO convention story, p. 9) reportedly was 7%.

#### FHA now "realistic" on 608 sales; losses, \$4.6 million

Cautious Washington FHA officials gave a broad definition last month of their stepped-up program for getting rid of the distressed Sec. 608 apartment buildings they have acquired—at latest count 156 developments.

Their policy is now "realistic liquidation without heedless dumping." This means sales as expeditiously as possible in which FHA will take its losses if necessary. But it will not unload at prices out of line with current local values, if there is a reasonable prospect of obtaining a better price without undue waiting, or if there is any prospect of a local price decline or market change that might only require FHA to take the property back a second time from its new owner before long.

Under this policy FHA has now disposed of 66 properties, has sales contracts awaiting closing on ten more. Last year it bailed out from 43 projects, since Jan. 1 another 18. Total losses on liquidated projects have risen from \$2.3 million last Jan. 31 to \$4.6 million. Offsetting this, however, reserves on all other Title VI rental and war emergency sale housing totaled \$183 million on June 30.

Of the 80 projects still on its hands, four were offered for sale in recent months but drew no bids. These were in Shreveport, La.; Junction City, Kan.; Jackson, Miss., and Springdale, Ark. Five others are now being advertised with bid closing dates this month or next.

#### AGC survey predicts higher prices, but bids unchanged

Competition may be rough, labor and material prices rising, but members of the Associated General Contractors of America have no fears about an adequate volume of building to keep them engaged during the next six months. In a national telegraphic survey of officers and chapters for the mid-year board meeting in Minneapolis a month ago, 85% reported they expected as much or more building through February as during the past six months. The breakdown on building volume expectations: an increase, 52%; no change, 33%; decrease, 15%.

On material, 70% expected a "good" supply picture, except possibly for delays or scarcities on structural steel and cement; 74% anticipated higher material prices.

On construction bid prices, 20% said they anticipated increases, 54% "no change," and 26% predicted decreases (combined number expecting "no change" or decreases, 74%). In this connection Vice President Frank J. Rooney, of Miami, and building division Chairman James W. Cawdrey, of Seattle, both reported declining profit margins among builders. "In this record year," said Rooney, "the competition is the worst ever, and the bidding is brutal." Said Cawdrey: "The profit margin is as low as I have seen in 20 years."

Rooney was nominated for AGC president for 1956, and Lester C. Rogers of Chicago for vice president. Rooney's building firm has erected many hotels, stores, office buildings and commercial structures in Miami and southern Florida. He is a former building division chairman. Rogers heads Bates & Rogers Construction Corp.



LOEB STUDENT CENTER FOR N.Y.U.

## Colleges rush to apply for 2 3/4% loans under greatly liberalized HHFA program

Smart colleges soon discovered the attraction for them in the housing act amendment signed by the President Aug. 11: Cutrate HHFA loans for as long as 50 years not only for student and faculty housing, but also dining halls, cafeterias, student unions and other related facilities.

Previously colleges could borrow from HHFA for up to 40 years at 3¼%, provided they could not obtain private financing for housing for 3½% or less. The amendments eliminated the requirement to accept private financing at any rate at all, and set the maximum HHFA rate at no more than 2¾% or ¼% more than the Treasury would charge HHFA for funds for the program, whichever is higher.

Somewhat embarrassed to be seriously undercutting normal money market rates, HHFA accepted 46 applications for loans in the July to September quarter, most of them filed after the new law became effective. These ranged from \$84,000 sought by Carbon College in Price, Utah, to \$5.9 million requested by Syracuse University. In addition, HHFA last month renegotiated 72 loans totaling \$49 million for 2%%, in place of rates ranging from 3.01 to 3.5%, covering the full amount of all loans not fully disbursed before the new rules became effective.

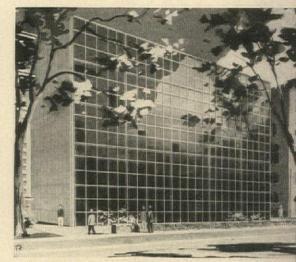
Needs set at \$3 billion. The vastly liberalized law also upped the total authorization for this program from \$300 million to \$500 million, which John C. Hazeltine, director of the program as head of HHFA's bureau of community facilities, estimated would last two years. Under the old and new programs, 190 applications totaling \$139 million were approved from 1950 through Sept. 30; reservations were outstanding on 76 more totaling \$66 million. Hazeltine figures the nation's colleges need housing in the neighborhood of \$3 billion in the next few years. Other observers note that Congress, having authorized up

to one-sixth of this amount on subsidized interest rates, would find it difficult to cut off the program at only \$500 million or insist on sharply stiffer terms for later borrowers.

The marked advantage given colleges by the new law is indicated by the fact that 30-year public works construction loans by the same HHFA bureau to cities and other public bodies cost 3¾% if secured by general obligation bonds, 4¼% if secured by revenue bonds or other types of obligations.

Opposed by administration. Relieving it of some of its embarrassment, the administration did not approve the liberalization amendments. When signing the law President Eisenhower agreed that college housing was desirable, but commented that the interest rate reduction would "curtail, if not completely eliminate, the availability of private investment" in this field. Author of the change was Senate banking and currency committee Chairman J. W. Fulbright (D, Ark.). HHFA is trying to divert at least part of this financing to the private investment field; it will allow borrowers to offer as a "package" the first 15 years of serial bonds for these loans (at the full 234 % interest rate), rather than the first 20 years, as previously.

Wide range of design. In describing the program last spring, Hazeltine suggested to college executives that they try to match the achievements of Utah Agricultural College, which borrowed for facilities that averaged \$1,250 a bed, the University of Maryland, \$1,750, and Cornell University, \$2,400. But the program puts no ceilings on unit costs; approved applications have ranged from \$5,000 a bed, for a \$1.5 million Yeshiva University dormitory in New York, to \$10,000 each for quarters for 40 married students and 40 faculty members in ten apartment buildings to be erected in Kingston by Rhode Island University.



ELECTRICAL LABORATORY FOR YALE

#### Yale Engineering School, NYU announce modern buildings

An all-glass wall five stories high and 100' wide is planned for an addition to Yale's Dunham Electrical Laboratory. Architects: former AIA President Douglas W. Orr, of New Haven, and Paul Schweikher, chairman of the university's department of architecture. A national committee of 1,000 Yale alumni started a campaign last month to raise \$2 million for the engineering school, including \$1.5 million for the Dunham lab addition. Last month the university also dedicated a new Orr-Schweikher designed physics-biology laboratory. This likewise is five stories high, has two special "cold rooms" and 20 "constant temperature" rooms for research projects, as well as flexible, modular floor layouts to provide up to 200 separate rooms or offices.

At New York University, Chancellor Henry T. Heald announced a gift of \$1 million from the Adeline and Carl M. Loeb Foundation toward a \$3 million student center, which will be started next spring, fronting on Washington Square (see cut). To be designed by Harrison & Abramovitz and called the Loeb Student Center, it will have a 1,000-seat auditorium, restaurant, lounges, recreation facilities, activity rooms, offices and multipurpose space for student events.

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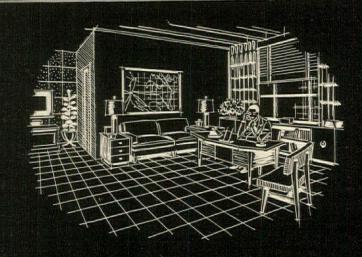
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FUNCTIONAL, yet strikingly good looking, Chicago's New Municipal Parking Garage Number One was designed by Shaw-Metz-Dolio, Chicago architects. The concrete floors and roof are reinforced with American Welded Wire Fabric, which meets ASTM Specifications A 185-53T, adds strength, durability, and crack resistance.



PAN AND SLAB construction was used for the roof of the garage. Three inches of reinforced concrete were poured over 10-inch-deep pans. American Welded Wire Fabric—style 6 x 12 - 5/5—helps the slab withstand shrinkage and temperature stresses.



100 FEET BELOW, on the ground floor, more American Welded Wire Fabric is used. Style 6 x 6 - 4/4 in an eight-inch slab gives the floor strength to last and to stay attractive under heavy daily automobile traffic. Specify American Welded Wire Fabric Reinforcement for your concrete.

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"Is it Reinforced"

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UNITED STATES STEEL



Marion Johnson

NORTHERN EXPRESSWAY is used by more than 50,000 autos daily. Two-mile connector into heart of downtown will be finished in 1958.



\$2.5 million State Highway Building. Total state buildings program here: \$10 million.

DOWTOWN PROGRESS in rejuvenation is symbolized by \$7.5 million Fulton National Bank building. Architect: Wyatt C. Hedrick Co.,

GRADY MEMORIAL HOSPITAL, on eastern edge of downtown area, will cost \$22 million, be one of the South's biggest medical centers. Architects-Engineers: Robert & Co. Assocs.



#### RENEWING OUR CITIES:

Thirty years ago a Harvard business school dean said: "Atlanta is likely to become the center of the first metropolitan region in the South."

Atlanta has, and no one knows it better than its own citizens. The city and its suburbs have followed—in a more spectacular way than most American cities—the pattern of urban explosion that has characterized postwar America.

Some figures and facts about Atlanta:

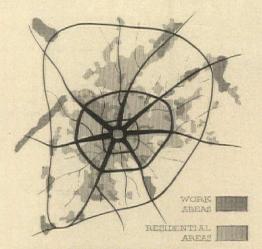
- Population of the federally designated three-county "metropolitan area" last April was 813,632, according to an updating of the 1950 US census by the Atlanta Metropolitan Planning Commission. This was 21% more than the 671,797 population of 1950. Growth is accelerating; the gain in the past five years equaled that from 1940 to 1950. If the present rate continues—and few Atlantians think it will slow down—the million-person mark may be reached by 1960, certainly by 1965.
- According to the planning commission, 47,495 housing units have been built in the past five years to handle the area's great gain in residents.
- Since World War II, metropolitan Atlanta has doubled its industrial output, wholesale and retail sales, bank clearings, postal receipts, telephones, automobiles, commercial air traffic, gas and electric meters, property values, manufacturing plants and number of employed persons—nearly all of the measures of urban pace.
- Atlanta has 857 more industrial plants than it had in 1946, adding 30,698 new jobs paying a total of \$88 million annually. More than 14 million sq. ft. of manufacturing space were added since 1946.
- Within the city itself building permits have been soaring year after year. In 1953 the totaled \$80.9 million. Last year they

Charles Pugh



#### Atlanta faces up to tasks

City and county officials work together on metropolitan area problems; transit system passenger loss trend is reversed



RING-AND-RADIAL TRAFFIC SCHEME

set a new record: \$87.5 million. A month ago the 1955 tally already was \$66 million.

Most metropolitan Atlanta growth has been suburban, but the city has expanded too. In 1952 annexation of 82 square miles became effective, just about doubling the city's area, and adding about 100,000 persons to its 1952 population of 331,314.

No fear of problems. Growth has its problems, as most cities have discovered. Far from being overwhelmed by its troublesmainly traffic congestion and the spreading of slums-Atlanta has decided to meet them squarely and to welcome new ones. There is a feeling among Atlanta leaders that the city is on the verge of greatness, that its difficulties have been caught at midpoint in their development, while there is still some time to do something about them.

In the biggest civic effort since the city was rebuilt after General William Tecumsah Sherman destroyed it by fire during the Civil War, Atlanta has planned and launched a number of major programs to keep the city growing strong and vigorously.

For whom the horn blows. Atlanta's street pattern, until a recent flutter of expressway construction, was about as unsuited to modern traffic as that of any American city. Streets followed ridges haphazardly, radiating from downtown like the twisted spokes of a dilapidated wheel. In 1945, a survey showed, an average of 101,463 motor vehicles entered the downtown section daily; this year the average was 189,355. Traffic was jammed in 1945; today it is almost stopped, approaching New York City standards. The Metropolitan Planning Commission estimates that congestion costs Atlanta \$65 million a year.

Relief is on the way, however. Thirteen miles of a north-south expressway have been completed, and five more miles are under contract, financed by city, county, state and federal funds. Maximum efficiency from the freeway will be reached in about three years, when a downtown connector section-an expensive 2-mi. link with traffic interchanges-is completed. East-west expressways are being planned.

City parking postponed. Traffic's companion problem, parking, is far from solved in Atlanta. Private parking operators have staved off municipal action, and have built more than 5,279 off-street spaces since World War II. They have five new projects for more than 2,000 cars either under construction or in planning. But the need appears insatiable. On-street parking is being reduced, and eventually will be eliminated, to ease traffic congestion; off-street parking simply has not kept pace.

Transit in transition. The Atlanta Transit System was caught in the squeeze of declining business and increased automobile use, an old story in most American cities. A state senate study committee recommended service improvements and fast nonstop buses to whisk commuters to and from downtown and suburban parking lots. The



Marion Johnson MAYOR HARTSFIELD

transit system adopted the plan, and last month the system's downward curve in passenger traffic turned upward for the first

time since the war.

Attack on blight. In 1947, partly as a result of campaigning by the Atlanta Constitution, Alderman John A. White, a veteran slum fighter, was able to push through a slum clearance ordinance. Actually this was little more than a program based on enforcement of building, sanitation and nuisance laws. However, White says the program caused rehabilitation, to minimum standards, of 18,000 slum dwellings and the demolition of another 2,000.

The Atlanta Housing Authority estimates that another 2,000 slum units were demolished to make way for expressways and new buildings since World War II. During the same period 2,000 low-rent public housing units-in which racial segregation has been maintained-have been built. Five hundred more are under construction. Total cost: \$20 million. Added to 5,000 units built earlier, this will give the city a total of 7,500 public housing units.

But in spite of these rehabilitation and public housing programs, the planning commission has designated about 22% of Atlanta's housing as substandard, most of it ringing the downtown business area.

Slow in Title I. Atlanta has not previously used federal aid for Title I slum clearance and redevelopment because of an adverse Georgia Supreme Court decision in 1953 which declared the state's redevelopment law unconstitutional. Last year the constitution was amended to meet the court's objections, and this year enabling laws were passed by the legislature. Now, needled by the Constitution, the board of Aldermen is considering three Title I projects.

Mayor William B. Hartfield, at first doubtful of the political popularity of urcontinued on p. 20

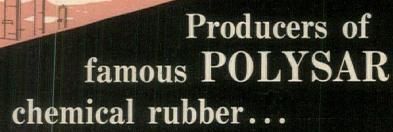






GEORGIA TECH has started construction of this circular Alexander Memorial Field House designed by Aeck & Associates, architects.





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adaptable...economical

At Polymer Corporation Limited, Sarnia, Canada, standard metlwal movable partitions meet the completely different floor-plan needs of three major departments. Such tailored efficiency, for each quiet, tasteful office, was possible at low cost, because of metlwal's flexibility. Metlwal movable partitions are designed for quick, permanent installation, yet permit overnight floor-plan changes. Their attractive, lifetime finishes—in wood-grain or decorator cofors—won't grack or graze. Whether used in new or modernized buildings, metlwals reflect quality in every detail!

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Quickly provides fully private or semiprivate offices. Also a distinctive space divider. Easily installed—and changed. Write for brochure.

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Complete test results on sound transmission loss—made by an independent research organization—are available to you. They prove the advantages of methwal's exclusive double-wall, double-insulated construction. Write for your copy.





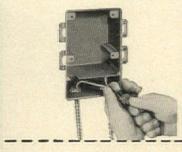
#### MARTIN-PARRY CORPORATION

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easy to install as an ordinary wallswitch...



Attach wallbox to studs...feed input and output load BX through knockouts.

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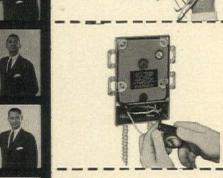
revolutionary new autotransformer-type

light control!

NEW

#### LUXTROL

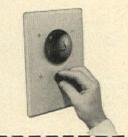
LIGHT CONTROL



Connect circuit leads to color-identified control leads.

Screw control assembly to wallbox.





Screw on face plate, attach dial, insert fuse . . . and new LUXTROL is ready for operation!

Here's the new light control that's making the wallswitch obsolete—not only in homes but in non-residential applications, too!

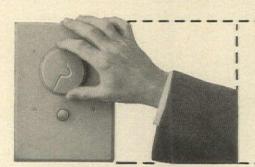
LUXTROL Light Control is an entirely new idea in modern interior lighting. It's an autotransformer-type light control. It produces at the turn of a dial any level of light from dark to full-bright . . . the perject level of light for every occasion, every purpose.

LUXTROL is a soundly engineered, compact unit with brush and winding in constant contact. It has both

fuse and thermal overload protection. It controls not only incandescent lighting but fluorescent and cold-cathode as well. It operates smoothly, silently, safely . . . is approved by Underwriters' Laboratories.

And most important to you, LUXTROL requires no complex wiring. It replaces ordinary wallswitches, is just as easy to install!

See new LUXTROL for yourself. Mail the coupon. We'll send you full descriptive literature and give you the name of the nearest distributor.



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Please send me full technical data on new LUXTROL Light Control.

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CITY

ONE ST

ban redevelopment, now favors moving ahead in the first three areas.

Other actions to meet urban growth:

water. Since World War II, the city's water department has spent \$1 million a year on capital improvements, another \$1.5 million to extend mains to serve an average of 10,000 more persons a year.

▶ Schools. The city and its component counties have spent heavily trying to keep up with the increasing school enrollments. For example, the city alone spent \$26 million on school construction last year.

b Hospitals. In the past decade two big new hospitals have been built, additions have been made to two others, and a third new one is under construction. Biggest of the new hospitals is the \$22 million Grady Memorial. The US public Health Service plans a big communicable disease center.

Airport. About \$5 million has been spent since the war on runways, taxiways, high-intensity lighting and navigational aids at the busy (242 scheduled flights daily) municipal airport. Another \$8 million has been proposed for a new passenger terminal and more parking and loading space.

> The planners. Supplementing and advising local planning and zoning boards is the Metropolitan Planning Commission, set up in 1947 and supported by the governments of Atlanta's component counties, Fulton and DeKalb. The hard-headed, well-staffed commission has kept well within the bounds of realistic planning in its "Nowfor Tomorrow" program, Because the plan is an orderly projection of the realities of the growth that already has occurred in the metropolitan area, most Atlanta observers give it a good chance of being followed closely as a guide to future development of subdivisions, schools, factories, parks, trucking terminals and streets.

## Planners hold largest convention, probe metropolitan government, traffic ills

Growing pains of big and little cities everywhere, and more and more complex metropolitan areas everywhere, caused a record migration to Montreal for the combined convention of the American Society of Planning Officials and the Community Planning Assn. of Canada.

This late September meeting turned out to be the biggest community planning conference ever held in North America. Instead of the 1,000 delegates who were anticipated, 1,300 earnest city planners, architects, engineers, traffic specialists, clergymen, harbor experts and government officials registered, some coming from as far as Israel and Japan.

Metropolitan government? Daily the realization becomes more widespread that many problems today transcend town or city boundaries, and are area or regional problems. Observed a Kansas City Star editorial last month: "Breaking down or crossing arbitrary city and county barriers presents one of the great civic challenges of the second half of this century."

At the ASPO convention there was a panel discussion of the question "Can Metropolitan Government Work?" Two Canadians said emphatically, yes. Fred G. Gardiner, chairman of the two-year-old Council of the Municipality of Metropolitan Toronto declared: "The Toronto experiment (AF, Dec. '53) has proved it is a practical and feasible form of government. Not only will a metropolitan form of government work but it is probably the only answer to the problem of supplying metropolitan cities with the metropolitan services they require."

Dr. Keith Callard, McGill University

political scientist, declared: "The sanctity of municipal boundaries must go" if burgeoning cities are to provide adequate services. "Otherwise the rich municipalities will get richer and the poor get poorer." Because rich municipalities cannot be expected to surrender their favored positions voluntarily, he added, provincial or state governments will have to step in to make the necessary structural changes. "It's no good saying democracy begins at the local level if democracy does not produce there. The province, or the state, with a wider sphere of responsibility, must take a hand."

[A week later at a Regional Plan Assn. conference in New York the governors of New York, New Jersey and Connecticut agreed on the need for tristate metropolitan area planning, but differed on the steps that should be taken to make it a reality. While favoring planning, New York Governor Harriman rejected the idea for the organization of a single supergovernment for the area.]

More income, more traffic. During a discussion of the traffic snarl Gordon B. Sharpe, US Commerce Dept. highway transport research engineer, spotlighted the problem by pointing out that the US now has 9 million more cars than families and is in a growing trend to "two-car families."

F. Stuart Chapin Jr., of North Carolina University, proposed improved methods of gauging the future traffic flow to and from downtown employment centers.

F. Houston Wynn, New Haven consulting engineer, reported on studies that show urban residents prefer to use their own autos instead of public transportation if

#### Decorative aluminum front screens Richmond department store's old, odd façades

As part of a \$2.5 million expansion and modernization program particularly intended to demonstrate its faith in central downtown shopping areas, Thalhimers department store, in Richmond, has donned a sleek aluminum coat so its block full of odd-size, odd-height, odd-age buildings now looks like one large, impressive modern structure. Said store President William B. Thalhimer Jr. last month at ceremonies marking completion of the modernization project: "Contrary to the current trends toward expansion through suburban stores,

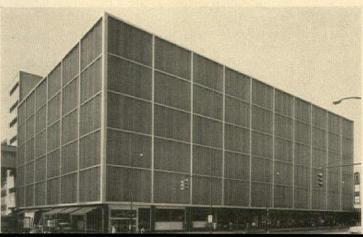
we feel that the urban population is still the life blood of the city, and the downtown area provides the most complete shopping center, since it caters to both urban and suburban customers."

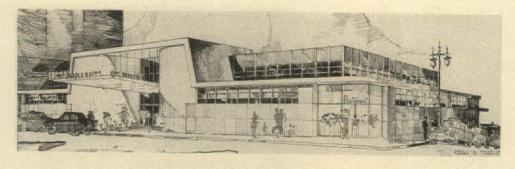
Thalhimers and the Reynolds Metals Co. developed the idea for the store's new aluminum jacket; the design was handled by Copeland, Novak & Associates, New York architects. Each 24'-wide rectangular unit of the lightweight cover consists of a broad sawtooth arrangement of interlocking, fluted gray aluminum panels 3' wide

and about 16' high. These panels and the thin, satin finish horizontal mullions are extruded aluminum. The vertical mullions are of formed aluminum sheets. Installed cost was about \$3.50 psf.

As part of the modernization program, the smaller buildings on the corner (see cut) were torn down and replaced with an 80,000 sq. ft. addition that raised the store's total floor area to 430,000 sq. ft. Extensive interior remodeling included installation of a new restaurant and a large expansion of the quality department.







#### San Francisco finally will get central airlines terminal

In 1946, San Francisco's City Planning Commission recommended a central airlines bus terminal for the downtown area. Up to 1953 nothing happened, so that year, to force the airlines to action, the city barred airport buses from Union Square, where most lines maintained separate ticket and check-in offices. This summer principal lines finally agreed on plans for a central terminal at the southeast corner of O'Farrell and Taylor Sts., opposite

parking facilities are adequate. Wynn noted that in most cities low income and high density go hand in hand, with density decreasing and income increasing with greater distance from the central business district. Car ownership also increases with income and distance. His point: there is increasing evidence of auto ownership "saturation" on the fringes of cities, and the approach of this saturation closer and closer to the business districts.

Renewal and politics. At another session, Executive Director Martin A. Meyerson of the American Council to Improve Our Neighborhoods (ACTION), said many cities hesitate to push urban renewal programs because they are loaded with political dynamite. One trouble, he said, is that it "is hard for an honest mayor or other elected officials to have to trade a loss of votes and a loss of campaign funds for successful enforcement of a housing code." Another headache: "People just don't like to be displaced, and they show their resentment at the polls."

Award for Clarence Stein. Architect Clarence S. Stein, planner for Radburn, N.J., Baldwin Hills Village, near Los Angeles, several Greenbelt towns and more recently Kitimat, British Columbia, was given the 1955 ASPO award. His citation in part:

"Pioneering toward new towns for America, Clarence Stein profoundly influenced community living. His ideas and experiments in the planning of urban environment, and in planning and housing economics, have rendered an inestimable service not only to his contemporaries but to future generations.

"The new forms in community building that he demonstrated in the twenties and thirties were based on principles of esthetics, spaciousness, safety, neighborliness and convenience that have since become accepted elements in urban design.

"ASPO gratefully acknowledged a debt to a man whose creativeness established precedents not only for the planning world, but for a new plan for living." the NBC building, where they have been operating a temporary central terminal. The new single-story and basement \$750,000 structure was designed by San Francisco Architect F. W. Trabucco and Lewis H. Hurlbut. It will have about 40,000 sq. ft. of floor area, 248' of counters, lounge, restaurant and a covered concourse in the rear to handle seven busses at a time. Exterior facing will be ceramic tile veneer, with steel and aluminum trim.

#### Lab director predicts glass to rival structural steel

Within ten years glass should be available with twice its present tensile strength, and within a generation its strength should rival that of structural steel, according to Oscar G. Burch, vice president for engineering and research for Owens-Illinois Glass Co.

In the last ten years O-I spent \$60 million on engineering and research for new uses for glass. Last month 500 members of its research staff were settling down in their new 200,000 sq. ft. technical center in Toledo (see cut), which cost \$5.5 million including equipment. During the dedication program, Burch observed that glass is only about one-third as heavy as steel, and as made today has a tensile strength of about 10,000 psi. But laboratory scientists have prepared glass fibers with a tensile strength of 900,000 psi, twice that of the strongest steel wire, he reported.

The secret to producing high tensile strength glass commercially lies in two things, said Burch: the bulk structure or disposition of its interior atoms, and its surface discontinuities or irregularities. O-I and other large companies, he disclosed, are already intensively studying these factors, using X-ray and neutron diffraction, infrared transmission and nuclear radiation. "We have learned that we can influence structure by thermal history and

environment. When we learn to harness and control it, glass will really come into its own as a structural material."

In the insulation field, Burch announced a new O-I hydrous silicate pipe covering for the oil refining, chemical and power industries that can withstand heat to 1,800° F, compared with present material good to 1,200°. It will be produced in thicknesses and diameters for pipe sizes from ½ to 39", he said, and also could be adapted as a substitute for concrete insulation over structural steel.

#### **SIDELIGHTS**

#### Russians veer to Wright

The delegation of Russian housing administrators triumphantly touring the US under NAHB auspices stopped at Taliesin to consult briefly with Frank Lloyd Wright last month. When they reached Madison, Wis., Delegate A. V. Vlasov, head of the Soviet Academy of Architecture, said of Wright, through an interpreter: "He has developed a special type of architecture. For that he has the wonder and respect of all Russian architects. He is known because of his strong individualism." Later, Wright said Vlasov had arranged for translation of three of Wright's books into Russian, and had invited him to send an exhibit of his work to Russia. Commented Wright: "I deplore their politics. But, then, I deplore most of our own."

#### Designers redesign name

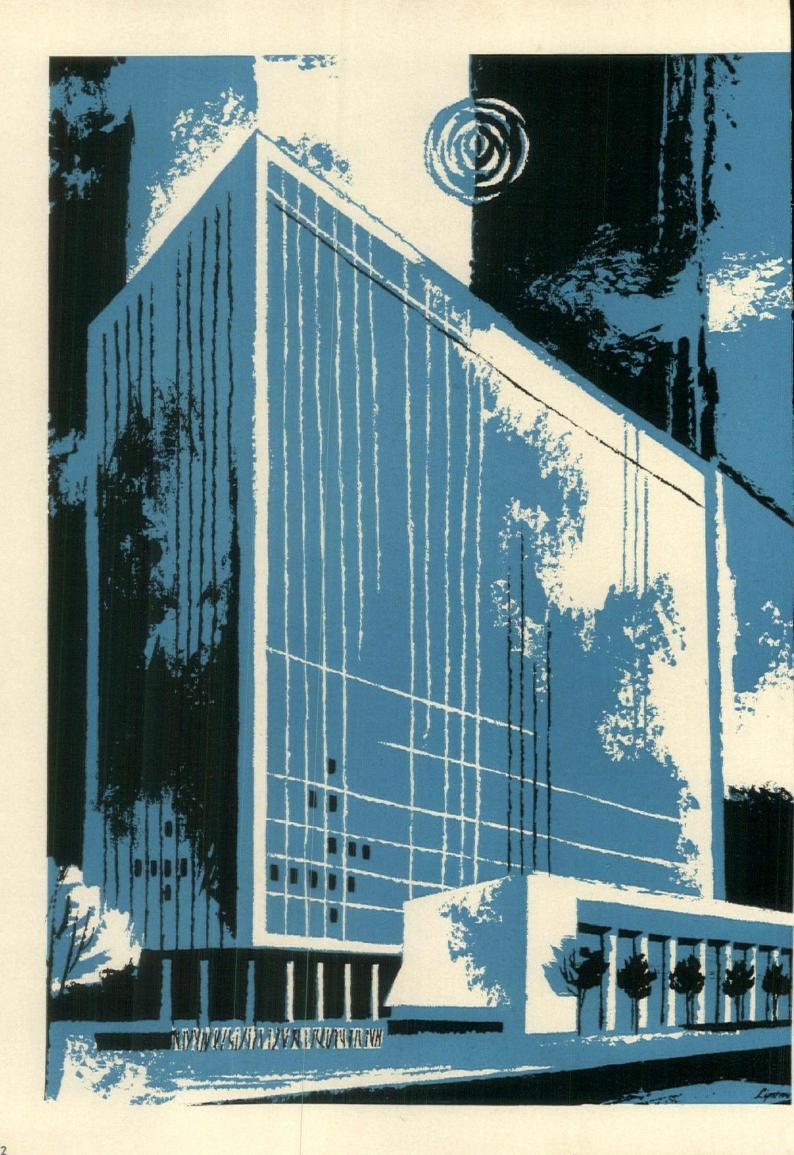
As the Society of Industrial Designers began its annual meeting and design conference in Washington last month, President Peter Muller-Munk announced the society had voted to change its name to American Society of Industrial Designers. New president elected during the conference: Arthur N. Becvar, 43, manager of industrial design for GE's major appliance division in Louisville, Ky.

#### Prefab churches, motels

At the dedication of its large Tyler, Tex., plant last month, President James R. Price disclosed the creation by National Homes Corp. of a new nonresidential and special projects division to study production of prefab churches, motels and even shopping centers. Architect Charles M. Goodman, continued on p. 25



NEW TECHNICAL CENTER FOR OWENS-ILLINOIS DESIGNED BY HOLABIRD & ROOT & BURGEE



#### Universal Corporation Engineers, Fabricates, and Erects Colored Alcoa Aluminum Facade for

#### PENNSYLVANIA STATE OFFICE BUILDING

The new Pennsylvania State Office Building adds an outstanding example of Alcoa Architectural Colors to the Pittsburgh redevelopment scene. Universal Corporation, subcontractor for the aluminum and glass facade, is well qualified for this exacting task.

One of the oldest completely integrated fabricators and erectors of aluminum curtain walls, Universal has used Alcoa® Aluminum in many multistoried buildings. Sealuxe products used in

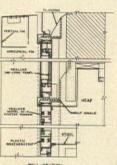
the State Office Building are mullions, Model 92-A reversible windows, interior mullion covers, horizontal fins, soffits and coping.

For complete information on aluminum curtain walls, Alcoa Architectural Colors, and qualified architectural metals fabricators, contact your local Alcoa sales office. Or write: Aluminum Company of America, 1887-L Alcoa Building, Pittsburgh 19, Pennsylvania.

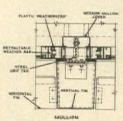


PENNSYLVANIA STATE OFFICE BUILDING, Pittsburgh, Pa. ARCHITECTS: Altenhof & Bown, A.I.A., Pittsburgh, Pa. ALUMINUM CONTRACTOR: Universal Corporation, Dallas, Texas.



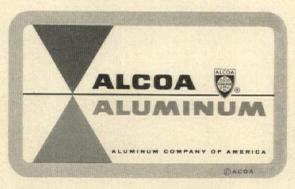


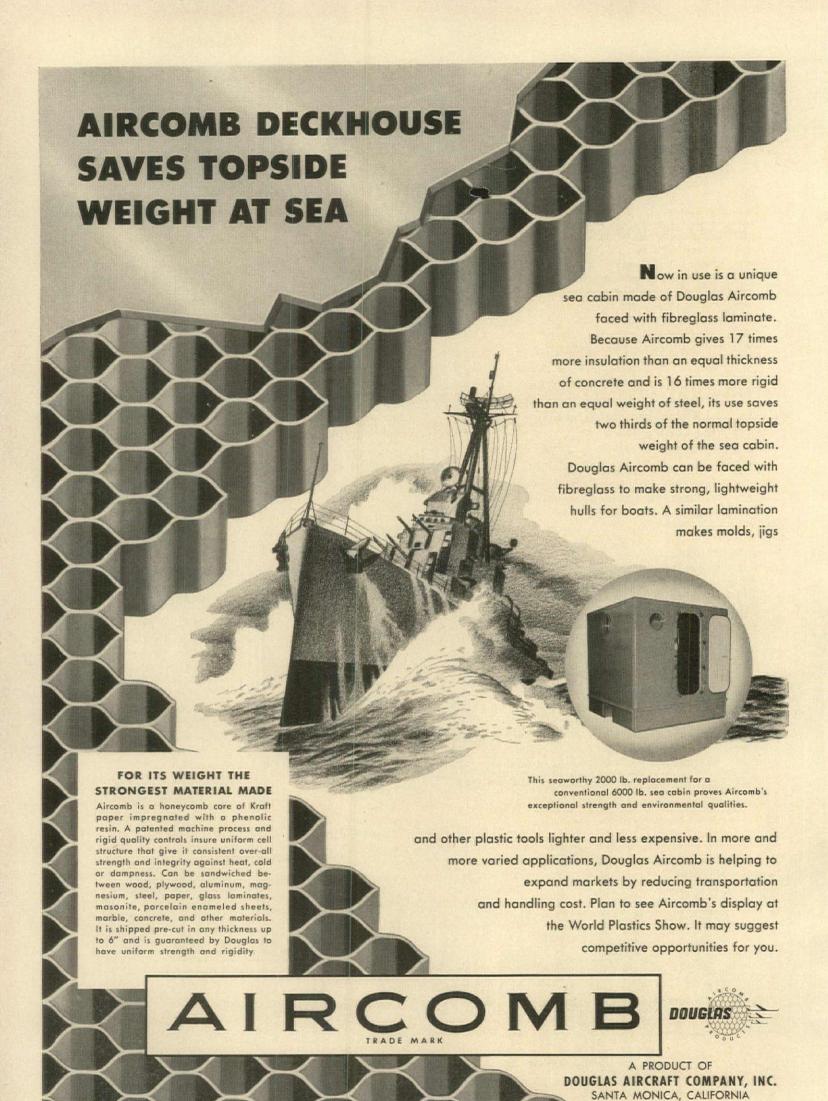
WALL SECTION: Lightweight window wall is a lift-in facade section. Combines window and spandrel panel of Alcoa Aluminum in a floor-to-floor unit. Panels are finished in Alcoa Architectural Blue No. 3020, No. 1 Coarse Bark pattern.



MULLIONS: Alcoa satin-finished extruded aluminum. Other Sealuxe products used in building are Model 92-A reversible windows, interior mullion covers, horizontal fins, soffits and coping.

#### Your Guide to Aluminum Value





who designed National Homes' new prefab schools, will be in charge of planning. Builder Wallace Johnson has taken the National Homes distributorship in Memphis, and was reported interested in adapting its prefab houses for use in his expanding Holiday Inn motel chain. Each motel would use about 50 prefab house units.

#### Lease-purchase deal ceilings

Lease-purchase financing adaptations scored a new high. In Chicago, Luminous Ceilings, Inc. announced it had insituted a plan for modernizing older buildings by the installation of complete acoustic-luminous ceilings on lease-purchase deals that would allow owners to charge off the entire cost over a five-year period as maintenance expenses

before income taxes. To qualify for this advantage, the building owner would make a five-year "rental" and maintenance agreement with the lighting firm. If purchased outright, the same modernization would have to be treated as a capital improvement and be paid for with earnings after taxes, and probably subject to a much longer amortization period.

#### Promotion outlays tallied

After a survey of 64 manufacturers of building materials, the Producers Council found there was apparently no relation and "little consistency" among them in preparing advertising and sales promotion budgets. Average spending was 2.8% of sales, but ranged all the way from 0.5% to 7.5% of sales.

## Architect advertising: panel approves 'group' action; not sure on publicity

At the California Council of Architects' convention in Santa Barbara last month, the session that drew the largest audience was a lively 2½-hour discussion by a panel of leading architects, advertising and public relations experts—"Should Architects Advertise?" Council Secretary and Panel Moderator Cornelius Deasy of Los Angeles said the subject would have been taboo 20 years ago, but was programmed now "because of an increasing amount of controversy and confusion about advertising and public relations in the profession."

Two subparts of the question arose repeatedly without being resolved. One was whether the AIA ethics code should be revised to permit members to advertise, in view of the fact some competitors not subject to such restriction advertise freely? The second was whether individual public relations programs are a form of paid advertising (or very different in principle from it) and should also be banned by the ethics code?

Consensus of the panel seemed to be that advertising by individuals would tend to lower the profession toward the level of the most blatant used-car hawkers, but chapter or "group advertising" could enhance the profession's reputation and boost its collective business. Specific comments by panelists:

Charles Luckman, of Pereira & Luckman— "The problem involves public relations, not advertising. The public assumes architects can design, make working drawings, write specifications, supervise con-

struction. But no one assumes an architect can stay within a prescribed budget! Most bad publicity comes from our failures in this regard. Architects do not have a legal responsibility, but we do have a moral responsibility. . . . If we continue in failing to exercise our moral responsibility [in this regard] before long we will be involved in legal responsibilities. . . . The FTC controls and restrains advertisers to the use of basic truths. The product must be as good as a claim. Architects must be in the same position, with reference to costs and budgets. Group advertising by AIA chapters could establish a platform for individual architects by telling what they do and how they do it. Even if they wanted to, architects are not yet ready for individual advertising."

William Wurster, dean of the University of California School of Architecture—Architecture is a social art, a personal service where there can be no guarantee of results. Advertising would bring architecture close to "Gargantua"—the immense problem of industrialization, socialization, social loneliness. It would open a Pandora's box that would speed the process of bigger things growing bigger and smaller things disappearing. The savor of individual practice would be lost. Architecture must be one profession that remains individual.

John Lyon Reid, San Francisco architect
—The services of the architect are not
intelligently understood by the public for
whom he works. A public relations effort

to create an atmosphere of understanding, and sustain an appreciation for the things good architecture can contribute to our life, would be desirable. A program based on personalities, or aimed at glorifying the individual, would be of questionable taste, of doubtful value to the profession, and should be shunned.

Walter Mergronigle, AIA public relations counsel—Individual advertising is not the way to sell architectural services. It would not benefit the individual, and it would be very unfair. The AIA ethics code allows group advertising in the professional and public interest.

Herman C. Light, Los Angeles architect
—The question is really whether the profession should continue to advertise, and
how? Almost all architects advertise now,
some by dress or appearance, others by
hiring public relations counsel to produce
"news releases." A "controlled" form of
professional advertising should be permitted to combat competitors who are free to
advertise. But group advertising probably
would help only architects who are already
well known.

J. P. Cohn, San Francisco advertising executive—"If I were offered the best architectual firm in the country as a client, I wouldn't touch it with tongs. . . . The question should be 'Can Architects Advertise?" There doesn't seem to be any way to find out whom they would hope to reach, who the prospects are. Until this is determined, it is not certain that architects could advertise."

William Latta, Los Angeles public relations executive-"Paid advertising is as important to the professional future of the ethical architect as it is to the manufacturer and distributor of other essentials. . . . Lack of public understanding of the important role of the architect can only result in gradual lessening of appreciation of his service [and less use of his services]. . . . There is sound reasoning to bar the doctor or lawyer from advertising. The doctor, playing upon natural fears, might create a demand for his services where no actual need exists. The lawyer, by glib persuasion, might conceivably lure a client into filing an unnecessary action. How is the architects' case against advertising expressed in similar terms of public interest? There is no similarity. Prohibition of advertising by architects serves no useful purpose-it protects no one-it denies all except the most popular an opportunity to justify the importance of a profession and to explain the public need it satisfies."

for news about PEOPLE-p. 29

PANEL ON ARCHITECTS' ADVERTISING (L TO R): MERGRONIGLE, WURSTER, LATTA, LUCKMAN, DEASY, COHN, REID, LIGHT

Vincent J. Mandese

## NIBROC

cabinets and towels bring efficiency, convenience, fine appearance to new bank building





Why did the Republic National Bank of Dallas choose Nibroc Recessed Combination Dispensers and Waste Receptacles—and Nibroc Towels—for the washrooms of its magnificent new building? To provide employees and customers alike the best in washroom service, to make towels convenient for users, to provide easily accessible receptacles, to save floor space, and to enhance washroom appearance.

First wet strength towel—and still the finest—Nibroc Towels are super-absorbent, strong, sanitary, soft textured. They speed washroom traffic . . . stop waste because one towel dries both hands.

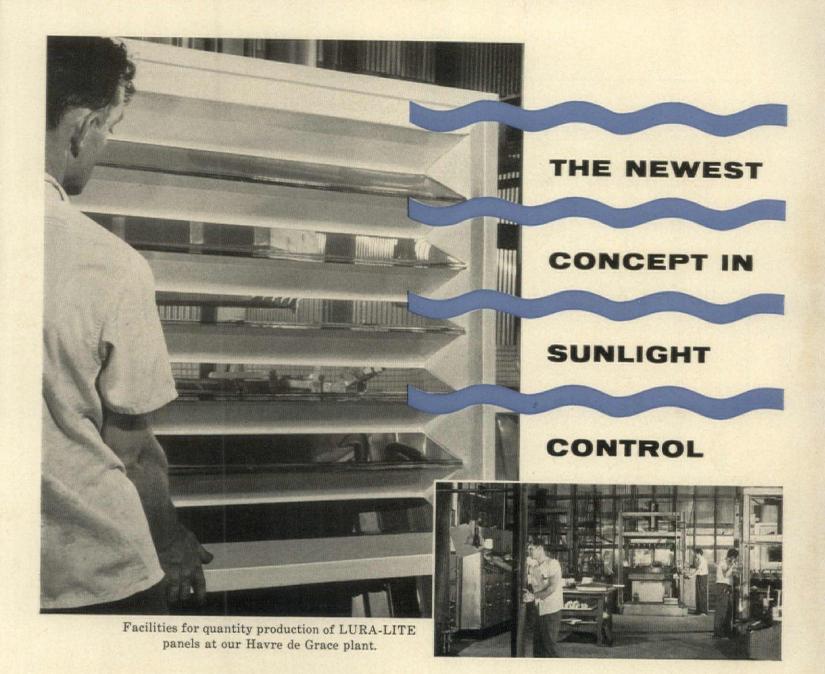
Architects specify Nibroc Multifold Cabinets widely—they hold 50% more, require less servicing, cut maintenance costs. Available in 3 models—wall, floor, and recessed. Wall cabinets in durable white enamel (with or without mirror) and easy-to-clean chromium plate or stainless steel.

For utmost, trouble-free service, the new, improved recessed dispenser with waste receptacle loads faster, holds far more towels for heavy traffic. 22-gauge stainless steel in stunning design. Dispenser and waste receptacle come separately if desired for staggered installation.

Choose the best—Nibroc Towels and Cabinets! See "Nibroc" in your classified directory for name of your distributor, or write Dept. NU-11, our Boston office.



COMPANY - Berlin, N. H.
General Sales Office: 150 Causeway St., Boston 14, Mass.



#### LURA-LITE\* LOUVERED PANELS

LURA-LITE panels are formed sheets of Plexiglas<sup>†</sup> combining opaque and light transmitting louvers in one continuous surface. Each panel is flanged for easy weather tight installation.

LURA-LITE panels ...

 Distribute sunlight evenly to all parts of any large room or production area improving work or study conditions.

- Reduce solar heat gain by reflecting a high portion of the direct sunlight striking the window area.
- Are available in standard sizes or can be custom-made to fit any type and size window.
- · Last a lifetime, always stay attractive.

WRITE FOR BULLETIN GIVING STANDARD SIZES, TECHNICAL DETAILS, AND OTHER INFORMATION.

\*Trade mark of Luria-Cournand, Inc.

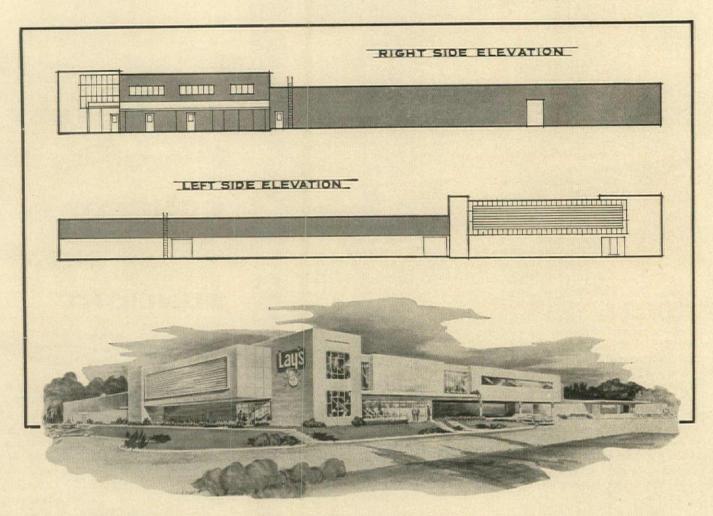
†Trade mark of Rohm & Haas Co., Phila., Pa.



#### Luria-Cournand, inc.

HAVRE DE GRACE, MARYLAND

Specialists in the Design, Engineering, and Fabrication of Plastics and Bonded Materials.



Project: Lay Potato Chip Co. plant, Chamblee, Ga. Architect: Locatell, Inc., Atlanta. General Contractor and Owner: J. A. Jones Construction Company, Atlanta. Processor: Overly Manufacturing Company, Greensburg, Pa. Process Engineering: Douglas McBean, Inc., Rochester, N.Y. Siding Subcontractor: American Steel Band Co., Building Products Div., Pittsburgh, Pa.

## Aluminum, Alodized with Architectural Alodine, needs no painting, retains its finish for life

This modern food processing plant in Chamblee, Ga., has decorative aluminum panels of deep green. Their Alodized finish will retain its new look for life. That's because this revolutionary new chemical process converts aluminum surfaces to an amorphous phosphate. And because it produces a finish that adds years to the already long life of aluminum. Colors range from gray green to a deep green resembling the patina of copper.

Alodizing with Architectural Alodine offers two other advantages, too. It reduces the reflectivity of untreated aluminum by 30% or more. It is much less expensive to use than the more complex anodizing process—takes less time, requires smaller, simpler and less costly equipment.

Since the use of Alodized Architectural Aluminum is spreading rapidly—in the construction of industrial plants, commercial buildings and dwellings—you will want complete information about its possibilities. Write for data—of course without obligation. Or see our literature in Sweet's Architectural File.

Specify Alodized Architectural Aluminum for greatest protection and least maintenance

#### AMERICAN CHEMICAL PAINT COMPANY, Ambler 23, Pa.

DETROIT, MICHIGAN

NILES, CALIFORNIA

WINDSOR, ONTARIO



#### PEOPLE

#### Bertoia mural returned to new Dallas library after dispute; John Riley joins Ibec Corp.; Hans Knoll killed in auto crash

NAMED: New York City's much-in-demand municipal construction expert and development director for the NYC Hous-



RILEY

ing Authority, John P. Riley, as vice president and chief engineer of the Rockefeller interests' Ibec Housing Corp. Riley previously was the housing authority's chief engineer, and on a two-year leave of absence, 1951-'53, effectively reorganized the city's

school construction program (AF, Apr. '55); simultaneously was engineer member of an advisory committee on reorganization of the Air Force construction program. He will take his new post Jan. 1. Paul Lester Wiener, Jose Luis Sert and Paul Schultz, partners of Town Planning Associates, of New York, as chief consultants to a new Cuban National Planning Commission and the Minister of Public Works, with responsibility for drafting regional and master plans for Havana and other cities; John W. James, research vice president of McDonnell & Miller, Inc., of Chicago, nominated as president of ASH & A-CE.

Yale University reorganized its arts division, changing the name of its School of

Fine Arts to the School of Architecture and Design, which will cover architecture, city planning, painting, sculpture and the graphic arts, coordinated with undergraduate instruction in these fields in Yale College and the School of Engineering. Fine Arts dean, Charles H. Sawyer, will be dean of the new architecture and design school, with Professors Paul Schweikher and Josef Albers holding chairmanships in architecture and design.

In its September article on the Berlin conference hall to be donated to Germany by the US, FORUM inadvertently called it a



DULLES

special project of Mrs.

Allen D. Dulles. But
this was a case of
mistaken identity. The
credit belonged to Mrs.
Dulles' sister-in-law,
Eleanor Lansing Dulles,
sister of the OSS director and the Secretary of State. Miss
Dulles is now special
assistant to the State

Dept.'s director of German affairs. In a long government career in both the US and abroad, she was finance division chief of the Social Security Board, 1936 to '42; a US delegate to the Bretton Woods talks, and financial attache in Vienna, 1945 to '49.

While in Cuba on a business trip, Designer Hans G. Knoil, 41, pioneer in the creation and production of contemporary furniture and textiles, was killed by a wild truck hitting his parked car on Oct. 8. Born in Stuttgart, Knoll came to the US in 1937,



KNOLL

established a furniture company in New York in 1938, and formed Knoll Associates in 1946. This soon grew into a world-wide organization with three factories, eight offices and showrooms in the largest US cities, other offices and factories

in Belgium, Canada, Cuba, France, Germany, Switzerland, Sweden. It will now be directed by (Mrs.) Florence S. Knoll, who was planning director for the organization.

Knoll received admiration as a design statesman and affection as a friend from the many top designers whose individual authorship of furniture and textiles was acknowledged in promotion. Among them: Mies van der Rohe, Eero Saarinen, Isamu Noguchi, Harry Bertoia, Le Corbusier in France, Finland's Ilamari Taapiovara, Italy's Franco Albini. He was also behind the scenes the leading spirit in catalyzing such creative events as the US State Dept.'s modern foreign building program.

Comments on his untimely passing:

"He made a lasting cultural contribution to America . . . achieved world-wide influence bringing the best of modern design into institutional, commercial, public buildings."—Eero and Aline Saarinen.

"It was Knoll's taste, standards, choice of designers, energy and ability, that gave the leadership necessary for the success of the entire modern movement in American furniture."—Philip Johnson.

"A leader in new designs, new techniques of manufacture and in designed service to architects for their new created spaces."—Louis I. Kahn.

"He pioneered new forms with fresh, brilliant colors, with airy spaces. All modern architects will miss him."—William Lescaze.

OTHER OBITUARIES: Rear Admiral John Richard Perry, 56, chief of the Bureau of Yards and Docks since 1953 and organizer of the Navy's Seabees (Construction Battalions) in World War II, Sept. 25 in Washington; Major General Philip B. Fleming, 67, former head of the Federal Works Agency and supervisor of the White House renovations for President Truman, Oct. 6 in Washington; Ernest Payson Goodrich, 81, former president of the American Institute of Consulting Engineers, former director of the American Institute of Planning, Oct. 7 in Brooklyn, N.Y.

Dallas Morning News



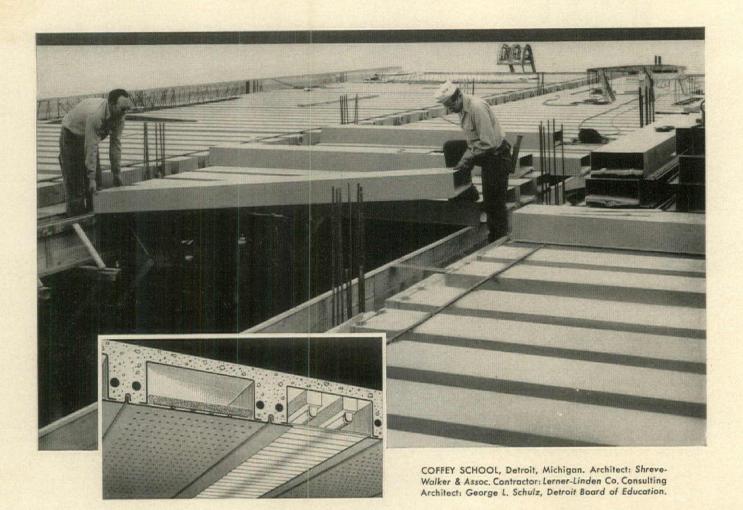
BERTOIA AND DALLAS LIBRARY METAL MURAL

On a prededication inspection of Dallas' new \$2.5 million library last June, Mayor R. L. Thornton and his councilmen reacted violently when the came upon a 10' x 24' metal screen mural by Sculptor Harry Bertoia. It was similar to ones Bertoia had made for the Manufacturers Trust all-glass bank in New York (AF, Dec. '54), for General Motors' new Technical Center in Detroit and for the new MIT Chapel in Cambridge. Unimpressed by its \$8,700 price, Thornton scornfully commented: "It looks to me just like a bunch of junk painted up. It looks like a cheap welding job."

In the ensuing controversy, as council members objected to "paying taxpayers'

money for such a thing," Library Architect George Leighton Dahl, designer of such other major Texas structures as the Neiman-Marcus and Titche-Goettinger stores in Dallas, and 20-odd University of Texas buildings, paid for the mural himself and transferred it to his home. More militant art lovers were not satisfied with this compromise, however. Seventy-nine raised a fund to repurchase the mural from Dahl and donate it to the library, the city council having agreed to accept it provided no public funds were spent, and the library board having approved the original sketch.

Last month the dangling mural was put up again in the new library for all Dallasans to see, but not before the local AIA chapter, in an executive committee statement issued by President Roscoe DeWitt, had registered its opposition to the way the issue was compromised. "If the object is not a worthy creative work it should not be placed in the library at all," said the statement. "If it is acceptable as an ornament to the building, if it is permitted to occupy the place for which it was designed, it should be paid for by the city, and neither the architect, nor one, nor a group of private citizens should be called upon, or even permitted, to pay the cost.



#### **NEW WAY TO BUILD SCHOOLS...FASTER!**

Fenestra TROFFER-ACOUSTICAL Panels combine concrete joist forms, built-in acoustical ceilings and recessed lighting troffers

Now you can have better-looking, better-lighted classrooms with fire-proof construction and save both time and money. The NEW Fenestra\* Troffer-Acoustical Panels—TAC Panels, for short—are designed to wrap up 3 expensive building materials in one economical, quickly erected building unit. They permit you to have acoustical treatment and recessed lighting—features that usually require extra time and labor—built right in the structure itself!

Here's how it works. As you can see in the photo above, the TAC Panels—either for troffer lighting or metal pan acoustical ceilings—are long-span units. Placed in position on the formwork for the main beams, they provide the forms for the concrete joists and floor slabs. Temporary supports at mid-span while pouring concrete are all the additional shoring required. After the concrete is cured, the panels stay in place and function as the finished ceiling—complete with built-in acoustical treatment—and as lighting troffers. Only painting and lighting fixture installation are needed to complete the room.

And TAC Panel ceilings are easier

to maintain year after year. They can be washed or repainted as often as needed, without affecting the acoustical treatment. There is no hanging ceiling or "stuck on" acoustical material to be damaged or replaced.

Even if your plans are now on the drawing board, they can easily be adapted to use Fenestra TAC Panels. Ask your architect to investigate this new building method, now, or write for a copy of Fenestra TAC Panel System that gives you complete details. Detroit Steel Products Co., Dept. AF-11, 2296 E. Grand Blvd., Detroit 11, Michigan.

Fenestra



#### TROFFER-ACOUSTICAL BUILDING PANELS

Patents applied for

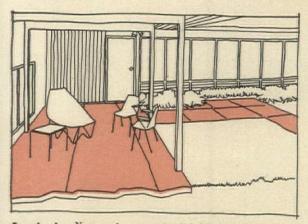
Architectural, Residential and Industrial Windows 

Metal Building Panels
Electrifloor†

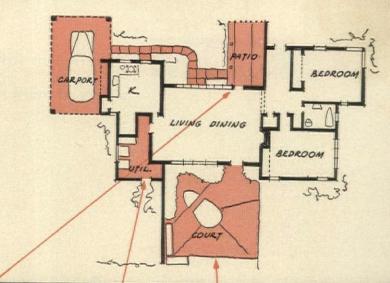
Roof Deck

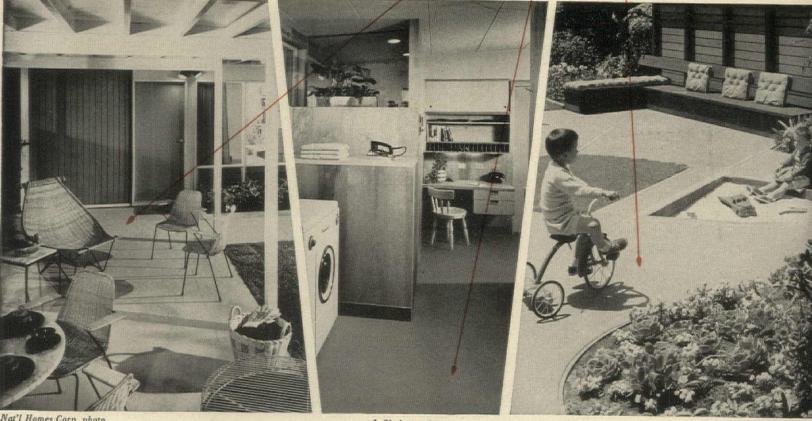
Hollow Metal Swing and Slide Doors

†®



Fused color. Not a paint or coating! Colorundum is troweled into the concrete topping and becomes an integral part of the surface, producing beauty and durability.





Nat'l Homes Corp. photo

J. Shulman photo

E. Braun photo

#### **Beautify concrete floors**

#### Colorundum floors give luxury appearance and extra wear resistance at low cost

A. C. Horn Co., Inc. Dept. H11-1116, Long Island City 1, N. Y. Please send me complete information on Colorundum. Title Zone\_\_State\_

Here's a simple and economical solution to the problem of exposed or uncarpeted areas of drab, colorless concrete. It's called Colorundum. And the fused-color concrete floor it provides lends a dramatic and practical accent to patios, walkways, and service floors. Colorundum cuts air conditioning costs, too, because its color properties keep sunlit areas substantially cooler than ordinary concrete. Yet its cost is just a fraction of that of tile floors.

Colorundum is far more resistant to traffic than ordinary concrete floors. It is a balanced formulation of nonslip aggregate (next to the diamond in hardness), water-repellent compounds, and durable colors . . . contains no silica, quartz, or sand. It is easy to keep clean, and since it contains no metal, it will not rust or stain.

Colorundum is available in eleven decorator colors.

DIVISIONS OF SUN CHEMICAL CORPORATION

HORN • HUDSON • WILLEY (paint, maintenance and construction materials, industrial coatings) • WARWICK (textile and industrial chemicals, waxes) • RUTHERFORD (lithographic equipment)
SUN SUPPLY (lithographic supplies) • GENERAL PRINTING INK (Sigmund Ullman • Fuchs & Lang • Eagle • American • Kelly • Chemical Color & Supply Inks) • MORRILL (news inks) • and
ELECTRO-TECHNICAL PRODUCTS (coatings and plastics)

#### **TRENDS**

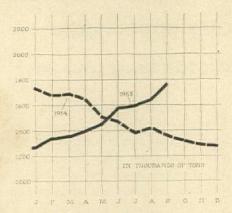
### Government study says big construction volume sent material prices up more than average, 21.5% vs. 12.9%, since 1950

Wholesale prices advanced more sharply for building materials than for most other commodities during the five and a half years from Jan. '50 to June '55, according to a study in the Commerce and Labor Dept.'s Construction Review for September. While average prices for all commodities (including building supplies) rose 12.9% in this period, the average for all building materials advanced 21.5%.

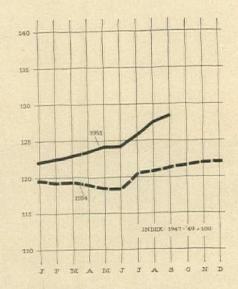
This study attributes the greater increase in building materials costs to "sustained demand" created by the huge postwar construction boom. Discounting minor effects from recent FHA and VA regulations temporarily tightening residential mortgage credit, it forecasts continued heavy demand for new construction of all types, and therefore "continuing pressure" on materials prices.

Changes in price indexes for selected materials included in the study:

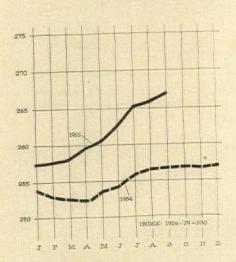
HILLOCALISTIC AND				
	(1947-49 equals 100)			
	Jan.	June		
	'50	'55	Increas	
All building materials	102.1	124.1	21.5%	
All lumber, wood prod-				
ucts	100.8	123.6	22.6	
Douglas fir	95.0	131.9	38.8	
Millwork	108.1	128.3	18.7	
Softwood plywood .	102.1	110.5	8.2	
All heating equipment	101.8	113.5	11.5	
Boilers, radiators	106.3	132.0	24.2	
Water heaters	105.2	107.4	2.1	
Metal sash	102.8	133.2	29.6	
Building wire	77.5	118.6	53.0	
Steel structural shapes	120.4	146.2	21.4	
Cement	106.6	131.6	23.5	
Concrete block	101.4	112.0	10.5	
Asphalt roofing	101.7	106.7	4.9	
Brick	106.6	124.2	16.5	
Window glass	103.9	138.8	33.6	
A CHARLES AND A				



STRUCTURAL STEEL unfilled orders on Sept. 1 rose to 1,775,000 tons, highest since Dec. '53, when they were 1,800,000 tons. New orders in August totaled 311,453 tons, the fourth consecutive month they exceeded 300,000 tons, reported the American Institute of Steel Construction. Total orders for this year's first eight months were 2,333,000 tons, 37% higher than the same period in 1954.

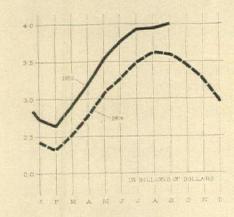


BUILDING MATERIALS PRICES advanced another 0.7% from August to September, when they reached 128.4 on the BLS average wholesale price index. (This was 3.4% above the June index of 124.1 used in the five-year prices study reported in the adjoining column.) The September increase was caused mainly by advances of 0.5 index points for lumber, 0.4 points for plywood, 1.7 points for heating equipment, and 0.7 points for concrete and for structural clay products.



BUILDING COSTS for nonresidential structures continued their uptrend from August to September, when they reached 266.7, compared with 265.8 a month earlier, on the national index of E. H. Boeckh & Associates. For six months, March to September, the Boeckh index rose 3.3%. This was in line with a 3% average increase in the same period in 122 cities recorded by the Dow Service. Locally, however, Dow reported cost declines of 4% in Miami, 2% in Houston, 1% in Los Angeles and Tulsa, and increases as high as 15% in El Paso, 8% in Boise, 6% in Memphis.

#### Record September building outlays pass \$4 billion mark



the \$4 billion mark in September for the first time in history. Among new monthly records in separate categories, outlays for commercial construction went over \$300 million for the first time, private industrial and church building hit peaks of \$210 million and \$70 million, respectively. Within the commercial category, September spending for stores, restaurants and garages totaled \$207 million, for the first nine months of this year was 48% ahead of the same period last year. Declining seasonally, nonfarm housing starts dropped to 113,000 in September, a seasonally adjusted rate of 1,230 000 annually.

First nine n	nonths
(millions of dollars) Sept. '55 1955 1954	%±
PRIVATE BUILDING	
Residential (nonfarm) 1,467 11,973 9,624	+24
Nonresidential* 717 5,507 4,580	+20
Industrial 210 1,724 1,498	+15
Commercial 308 2,175 1,615	+35
Offices lofts; ware-	
houses 101 805 692	+16
Stores; restaurants	
garages 207 1,370 923	+48
Religious 70 539 418	+29
Educational 44 366 387	-5
Hospital; institutions 31 265 250	+6
Public utilities 425 3 326 3,203	+4
*PRIVATE TOTAL. 2,758 22,046 18,727	+18
PUBLIC BUILDING  Posidential 21 196 269	-27
Residential	-6
Nonresidential	-46
Industrial	
Educational	
Hospital, institutions 25	
Military	18 19 19
Highways	
Sewer, water	
*PUBLIC TOTAL 1,243 9,013 8,926	T1
*GRAND TOTAL. 4,001 31,059 27,653	+12

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



#### A new high in HIGH VELOCITY



The photograph above shows main banking floor of the First National Bank in Dallas. Note how straight line All-Air High Velocity units blend perfectly into the architectural design. See next page for detail.

The All-Air High Velocity system also provides draftless comfort throughout the bank as well as in the second floor executive offices (shown at left).

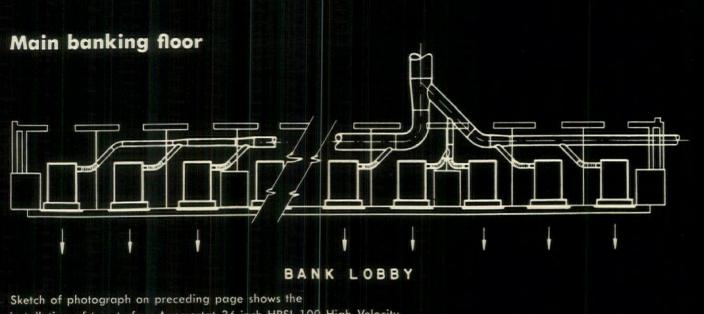
See next page for detail.

Architect: George L. Dahl

Consulting Engineer: Landauer, Guerrero & Shafer

Contractor:

C. Wallace Plumbing Co.



Sketch of photograph on preceding page shows the installation of twenty-four Anemostat 36-inch HPSL-100 High Velocity units, each supplying 200 cfm. A total of 4800 cfm is delivered to the main banking floor.

These pages illustrate the use of the Anemostat All-Air High Velocity distribution system in a modern air-conditioned bank. Anemostat High Velocity units are also being used throughout the country in many other applications such as hospitals, schools, department stores, office buildings and plants. • Here are some of the important architectural and engineering advan-

tages of the Anemostat All-Air High Velocity distribution system. It can be used with smaller than conventional ducts. It can be installed faster and at less cost. It requires no coils, thus eliminates leakage, clogging and odors. Anemostat round, square and straight line diffusers with high velocity units are adaptable to a wide variety of architectural designs.

For latest data on Anemostat
All-Air High Velocity units, write on
your business letterhead for new
Selection Manual 50.



#### **ANEMOSTAT®**

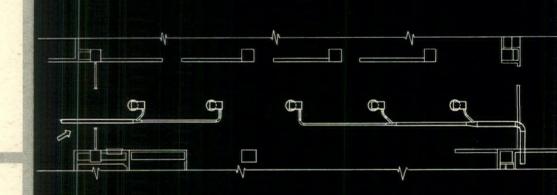
DRAFTLESS Aspirating AIR DIFFUSERS

ANEMOSTAT CORPORATION OF AMERICA

10 East 39th Street, New York 16, N. Y.
REPRESENTATIVES IN PRINCIPAL CITIES

"No Air Conditioning System
Is Better Than Its Air Distribution"

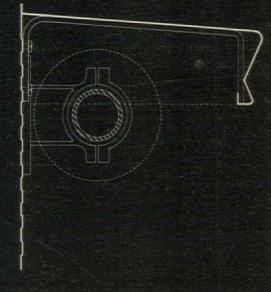
#### Second floor executive offices



Diagrammatic ceiling view of offices on preceding page. This shows the installation of five Anemostat HPCM-1-100 High Velocity units, each supplying 125 cfm.



This new hood gives complete protection to the awning and awning fixtures. The outer face, modern and unusual in design, creates a smart and pleasing accent at the head of the opening. It is beautifully finished like all Pittco mouldings. For complete details, see your Pittco Store Front Metal Representative.



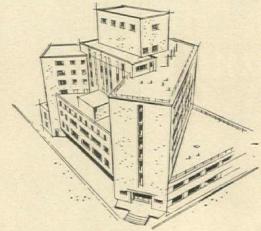


PAINTS . GLASS . CHEMICALS . BRUSHES . PLASTICS . FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

#### V-shaped for maximum light, sound conditioned for comfort



HOSPITAL FOR SPECIAL SURGERY. New York City, N. Y.

Architects: Rogers & Butler

General Contractor:

Vermilya-Brown Co., Inc.

**Acoustical Contractor:** 

William J. Scully Acoustics Corp.

Architect Rogers designed the new Hospital for Special Surgery for a site with only one open exposure—toward New York's East River. Existing buildings blocked light from all other directions. To expose as many rooms as possible to natural light, and the river view, the building was designed in the shape of a broad "V". As a result, patients in both wings

benefit from a bright, cheerful atmosphere.

Another aid to patients' comfort is the extensive use of Armstrong acoustical ceilings. To help provide quiet, beauty, and extra fire safety throughout the hospital's twenty floors, the architect selected ceilings of

Armstrong Travertone\* and Arrestone.

Travertone's combination of noise-absorbing efficiency, handsome appearance, and incombustibility made it a logical choice for corridors, nurses' stations, offices, clinic, cafeteria, and patients' lounges. Its high acoustical efficiency soaks up as much as 80% of the noise that strikes its surface. Travertone's handsomely fissured, white-painted surface also adds beauty to the décor, and its mineral wool composition meets the most rigid fire-safety codes.

Devoted exclusively to orthopedics, this hospital puts its hydrotherapy department to great use. Due to high moisture conditions in the pool room, the architect selected an acoustical ceiling of Armstrong aluminum Arrestone—a rustproof metal-pan type material. In addition to providing moisture restance, Arrestone is unusually high in acoustical efficiency,

absorbing 85% of distracting noise that strikes it.

See your Armstrong Acoustical Contractor for full details on Travertone, Arrestone, and Armstrong's other sound-conditioning materials. For your free copy of the booklet, "Armstrong Acoustical Materials," write Armstrong Cork Company, 4211 Rooney Street, Lancaster, Penna.



Moisture can't damage the Armstrong Arrestone ceiling in this therapeutic pool room. The bare mill finish of the aluminum pan is rustproof, and moisture has no harmful effect on the mineral wool pad backing. Arrestone is also easy to clean. It's incombustible, too.



Concentration is aided during conference room discussions by this Travertone ceiling. It soaks up distracting sounds before they become noise. The attractive appearance of Travertone contributes to the pleasant atmosphere of the carefully styled room. And the ceiling will stay smart looking and clean for years with an occasional washing.



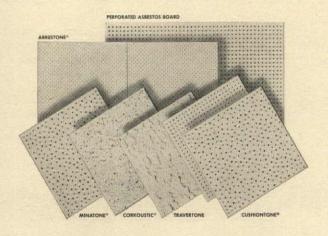
Noise from busy nurses' stations won't spread to patients' rooms. The ringing of telephones, rattling of carts and bottles are absorbed by the Travertone ceiling before they can build into disturbing racket. Easy to clean, Travertone can be washed or repainted without noticeably affecting its efficiency.



Plenty of light, as well as quiet, is found in the patients' lounge. In addition to absorbing noise, Travertone's two-coat white paint finish provides high light reflection, without annoying glare.



Made of fireproof mineral wool, Travertone is rated incombustible and acts as an effective fire-stop. It can be quickly installed by cementing or conventional suspension systems. Easy to handle, Travertone can be scored and cut to fit around ceiling fixtures.



Armstrong ACOUSTICAL MATERIALS



These "commercials" are rugged Ro-Way overhead type doors. And they especially prove their inherent mettle on multiple installations.

Many doors usually mean heavy traffic. Repeated daily wear and tear. But Ro-Way doors stand up. They're precision-made from selected west coast lumber and heavy-gauge, Parkerized steel hardware. Have mortise and tenon joints, water-proof glued and steel-pinned. That's why Ro-Ways give year after year of smooth, quiet, dependable service.

Design-wise, too . . . Ro-Ways bear repetition. Side by side they satisfy your creative urge with clean, uncluttered lines. Yet you can freely express your ideas within the practical limitations of even modest budgets.

Logical conclusion: You can repeat "Ro-Way" in your specifications . . . and satisfy all your clients every time.

**ALSO**—a complete line of Ro-Way overhead type doors for 1- and 2-car residential garages. All available with standard or individualized decorative panels. Write for free literature.

FREE ARCHITECT'S MANUAL. Complete details, specifications, drawings, etc., on Ro-Way's entire line. Especially helpful in selecting just the right door. Your letterhead request brings you Manual 55 promptly. No obligation, of course.



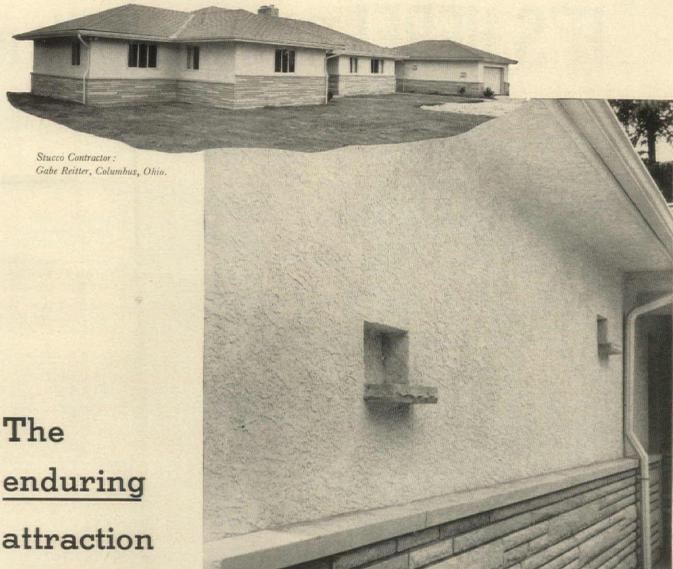
ROWE MANUFACTURING CO., 956 Holton St., Galesburg, Illinois



Nationwide sales and installation service. See your classified telephone directory for nearest Ro-Way distributor.







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Specify stucco...for crisp, clean appearance that lasts for years...for a bright, modern look that increases sales appeal . . . for design freedom, low upkeep and long-lasting customer satisfaction. And for better stucco, specify Atlas White Cement.

Unaffected by either sun or snow, stucco made with Atlas White Cement stays fresh and new-looking year after year. Atlas White's true and uniform white adds brilliance to white stucco . . . provides a fine white base for delicate tints and hues.

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

AF-S-82

For beauty and utility . For terrazzo, paint, slabs, stucco UNITED STATES STEEL HOUR-Televised alternate Wednesdays

# IT'S HERE! This remarkable new

Makes classrooms light and cheerful,



The Mobile Samsonite Open Front Desk gives maximum storage space! Forms related unit with matching Pivot-Back chair.

New Samsonite Pivot-Back Chair has silent, rubbercushioned glides, kick-proof "spats". Pivot-back swivels silently, adjusts to individual body contours.

#### NEW CATALOGUE

New Samsonite Classroom Furniture Catalogue. Complete specifications on new Samsonite Classroom Furniture. Fully illustrated in color. Write Shwayder Bros., Dept. Q-12. Classroom Furniture Division, Detroit 29, Mich. for a copy and for the name of your nearest distributor.

#### Makers of the famous Samsonite

# Samsonite

# Classroom Furniture by Samsonite

#### students attentive and bright!

Samsonite has created an entirely new concept in Classroom furniture... as exciting as it is practical.

4 Paint-Box Colors make classrooms bright and fun to work in! Tested on school officials in 30 states, the colors mix or match harmoniously, blend with every wall color! Shaped for Tomorrow! The gracefully curved contours are posture-designed to build healthy bodies, make attention less tiring, learning more fun!

Miracle of Mobility! Mix these units, move them room to room, with never a conflict in color or confour. Mischief-Proof! Aluminum "spats" on legs defy kick and mop marks! Desk-lid hinges and countersunk "bumpers" can't be loosened, even with a screwdriver!

It's Not Expensive! Samsonite actually costs *less* than old-fashioned furniture... because it's strongest, lasts longest!



A new note in schoolroom furniture, Samsonite's Round Table lends an informal, non-institutional look to the classroom!

brilliance of color, keynote Samsonite's *Teacher's Desk*. Maximum work and storage

space! (Available in either single or double pedestal styles.)



290 square inches of writing surface! New Samsonite Tablet Desk Chair plays multiple roles in classroom, meeting rooms, lunchroom.



Samsonite's colorful Lift-Lid Desk is noiseless, slam-proof, tamper-proof. Fingers can't be caught between lid and book box.



Tablet-Arm
Chair with
generous writing
surface positioned
for natural
writing posture.
Sturdy tubular
steel supports.
Easy slide-in,
slide-out is provided
by lines and
curve of
tablet arm.
Right or left hand.



Plenty of leg room and storage space! The Samsonite Shelf Desk brings modern color, graceful lines to the classroom.



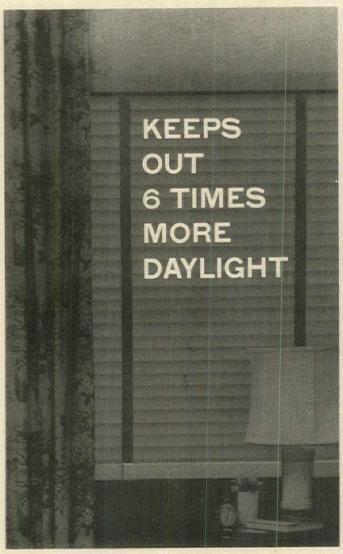
folding tables and chairs for every institutional use!

... the Classroom Furniture that's strongest... LASTS LONGEST!

\*Design and structural patents pending

SHWAYDER BROS., INC., CLASSROOM FURNITURE DIVISION, Dept. Q-12, Detroit 29, Mich. Also makers of famous Samsonite Luggage and Card Tables and Chairs for the Hame.

# New Hexalum TWI-NIGHTER blind





#### GIVES COMPLETE LIGHT CONTROL, PRIVACY AND VENTILATION AT NO EXTRA COST!

The new Flexalum Twi-Nighter blind shuts so tight, it keeps out six times more daylight than a fullyclosed conventional blind, according to independent laboratory tests.\* Makes rooms not just dim, but dark. In apartment houses and homes, it lets residents sleep later in the morning, helps along baby's afternoon nap, assures privacy from any angle. In hospital rooms, it is more conducive to daytime resting. Yet amazingly enough, the Flexalum Twi-Nighter costs the same as any other established leading custom-built venetian blind. Also features wipe-clean plastic tapes, snap-back aluminum slats, nylon cords, non-slip tilt control and other famous Flexalum features that mean longer life, lower maintenance costs and smoother operation.



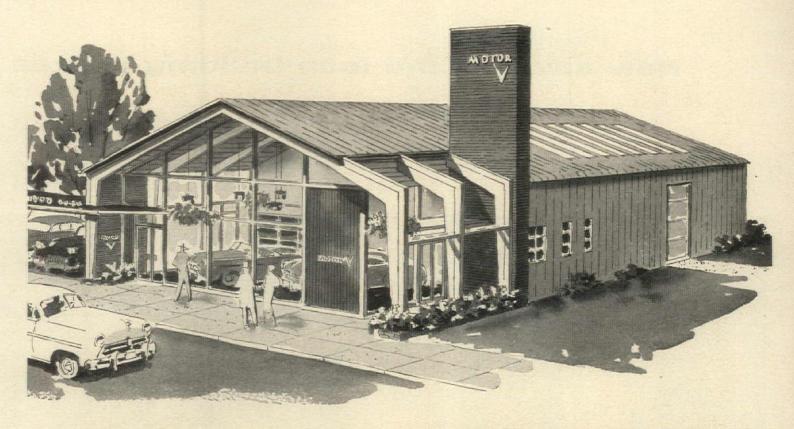
The new look for your windows . . . with aluminum louvers that rotate. Flexalum brings you the new vertical treatment with light and air control, and exclusive longer-life lower-maintenance-cost features. Ideal as a room divider too.

Room into auditorium, instantly! Field tests just completed by a leading independent testing laboratory show that the new Flexalum Audio-Visual Blind keeps out 30 times more lower-maintenance-cost features. Ideal as a room divider too.



\*Complete 20-page report of tests conducted by U. S. Testing Company sent on request. Write to: Hunter Douglas Corp., Dept. 85, 150 Broadway, New York 38, N. Y. (In Canada: Hunter Douglas Ltd., Dept.85C, 9500 St. Lawrence Blvd., Montreal, Que.)





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Manufacturers of Oil Equipment • Steel Buildings • Farm Equipment

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A modified Butler steel building is not basically different from the United Nations building, or any other example of practical, modern architecture. The structure of the building is steel. Imagination and architectural inventiveness have transformed the cold, skeletal steel framework into a structure of grace and beauty-and permanence.

This is an age of steel-an age when buildings are rightfully expected to have more stability, greater adaptability, longer life than they did in an era of wood, brick and mortar. This is an age of get-your-money's-worth. It is an age for which lowcost, quickly-erected, easily-modified, readily-expanded Butler steel buildings are made to order.

If you would like more information about Butler steel buildings, write to the Butler office nearest you. Ask for the Butler Architect's Brochure - A.I.A. file number 14i. For prompt reply, address office nearest you.

#### BUTLER MANUFACTURING COMPANY

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Spacious clear-span interior of Butler steel building, handsomely and economically modified, provides post-free space for greatest usability, convenient arrangement of office equipment.

#### New savings and loan building utilizes

... to heighten

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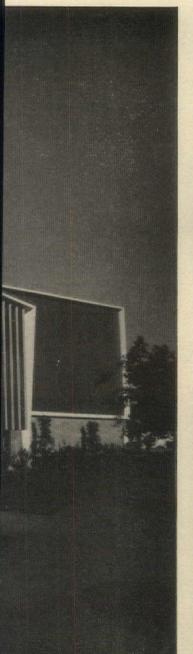


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#### **PITTSBURGH** materials

its architectural appeal

... bring it practical advantages





Pittsburgh's Pittcomatic<sup>®</sup> . . . "the nation's finest automatic door opener" . . . operates the Herculite<sup>®</sup> Doors at the entrance to the building, as well as on the side entrances. With the Pittcomatic Hinge, doors open automatically—at the lightest touch and with complete safety.

Here is a view of the employees' cafeteria, located on the second floor of the building, facing the harbor. This entire west wall is glazed with Solex, which makes it possible to take full advantage of the natural beauty of the outdoors while keeping room interiors cooler and glare at a minimum.



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



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Sets both 1/4" and 3/8" studs in steel or concrete-in seconds!

Light-, medium- or heavy-duty fastening, the new Model 455 Remington Stud Driver speeds the job. It sets two different size studs... up to 6 studs per minute, either size . . . and offers new possibilities in anchoring conduit clips, steel frames, wood forms and many other fixtures.

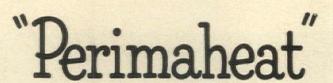
Powerful 22 and 32 caliber cartridges drive 1/4" and 3/8" studs solidly into steel or concrete. For special medium-duty work, the smaller cartridge is used with the larger stud. Result: the greatest flexibility ever in a cartridge-powered tool! Just clip coupon for details.

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Please send me your free booklet which shows where and how to use the cost-saving Remington Stud Driver fastening method.



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## easy to stock... easy to install –



Just 2 Convenient Sizes To Stock —

Six and eight foot sections. Perimoheat packages are clearly labeled on the ends for easy identification, and require a minimum of stacking space. Flat lightweight packages. Wood blacks with round cutouts retain tube at ends of packages, and hold element and cabinet in positive position during all stages of handling.



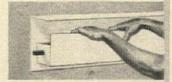
Sturdy, lightweight packages are easy to inventory.

One-piece back and top make for easy installation . . . eliminate air leakage and streaking. Simply pierce back at stud locations and nail.



Place back to wall and nail to studs.

Install hanger wires and slip in heating element. Make pipe connection, snap-on front cover, joint covers, end caps. Damper or splitter (optional) snap-in place at any time.



Snap-on front cover, joint covers, corners and end caps.

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## Keep your clients' employees



## free from "Jungle Jangle!"



# Step up the efficiency of offices you plan with metal, movable VMP MOBILWALLS

Don't let noise, confusion and unchanneled traffic take their toll in the productivity of offices you plan. Eliminate "Jungle Gym" distractions right from the start by including VMP MOBILWALLS in your blueprints.

Smartly styled, easily installed vmp MOBILWALLS partition offices into livable working areas, give your clients' employees productive privacy—increase work output as much as 30%, according to recent ratio-delay studies.\* You can simplify many of

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\*Ratio-delay studies accurately rate office efficiency before and after installation of VMP MOBILWALLS. Typical studies are available on request.



PRODUCTIVE PRIVACY is provided by VMP MOBILWALLS in any office or plant. They can be moved easily anywhere, any time, to suit floor plan changes. Surfaces never chip, warp, or crack—wash clean with soap and water. Colors are scientifically selected to produce a pleasant working atmosphere.

SPEEDY INSTALLATION by skilled crews, working out of nearby warehouses, saves your time and your clients' money. VMP sales representatives and factory engineers work with you, help you design more productivity and livability into offices, and industrial plants.

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#### 14,000 Sq. Ft. of Coolite Glass filter unwanted factors out of "Raw Sunlight" in New Acushnet Process Company Rubber Products Plant

Rigid quality controls for every operation help the Acushnet Process Company, rubber products plant, maintain high standards and uniformity in the rubber parts and products it produces for a widely diversified market. Good daylighting is essential to provide the working conditions that promote efficiency and morale; so Coolite, Heat Absorbing and Glare Reducing glass, was installed to flood this new building with copious quantities of softly-tinted, glareless daylight.

Workers see better, feel better, work better under Coolite . . . and Coolite keeps interiors comfortably cool, for it absorbs up to 50% of unwanted solar heat rays. Coolite "quality controls" daylight for better illumination without undue heat.

Specify Coolite for your new construction and modernization projects. Its attractive blue-green color enhances any structure... minimizes necessity for unsightly blinds, painted windows or make-shift screens. See your Mississippi Distributor.

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

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



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

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

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

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

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

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

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

The Modern Style is CERAMIC

CERAMIC

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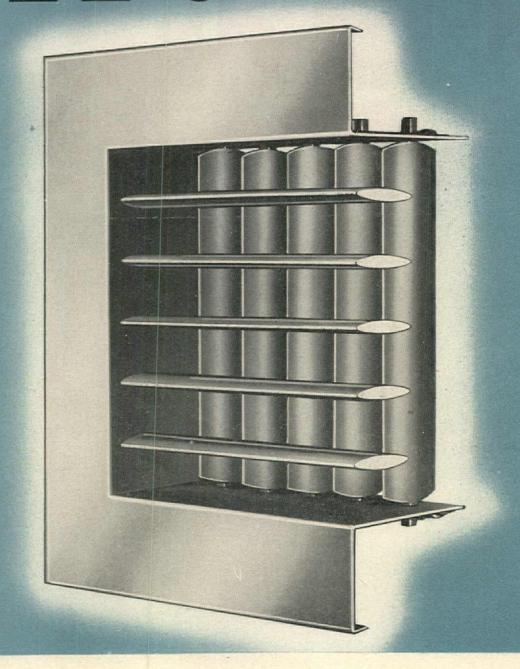
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ROOM AIR DISTRIBUTION...

# SELIMINATES INSTALLING



# IS NOT COMPLICATED

# 50% OF GRILLE ENGINEERING & ADJUSTMENT PROBLEMS

#### NEW MORE AIR CONTROL BUILT-IN

By engineering MORE AIR CONTROL per square inch into each diffuser and grille . . . right at the factory . . Titus simplifies all phases of grille specification, selection, installation and adjustment. Eliminates any necessity for special factory schooling or instruction at the contracting, engineering or tradesman level. Any workman can install a Titus grille without unbalancing the whole expensive system.

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Install grille in 2 easy steps. (1) Fasten grille in place with screws. (2) Adjust louvers for correct air patterns. Titus makes it easy, makes it simple to obtain correct air patterns...patterns that give maximum room comfort...from any air conditioning system.

### NEW MORE FLEXIBILITY OF ADJUSTMENT

Most important . . . any miscalculations that have crept in during the installation period may be simply and easily corrected by quick adjustment of streamlined Airfoil louvers. ADJUSTING IS DONE WITHOUT REMOVING GRILLES FROM WALLS. COSTLY TIME-CONSUMING "CALL BACKS" ARE ELIMINATED.

#### NEW FOOL PROOF DESIGN

All Titus grilles and diffusers are built under the most rigid, precision-controlled standards. They give finest air diffusing performance. Air control cannot be lost at the installation level. Titus grilles are so carefully constructed it is almost impossible to have anything but correct diffusion of air . . . no matter who installs or adjusts them.

#### SETS PERFORMANCE STANDARD FOR ENTIRE AIR CONDITIONING SYSTEM

Directs air where it is needed. Keeps uniform temperatures throughout room. Eliminates old-fashioned drafts...low level stratification. Truly controls comfort...at the room level...THE ONLY AREA WHERE THE UNIT'S ENTIRE HEATING OR COOLING PERFORMANCE IS JUDGED.

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Get information on the complete line of Titus grilles now.

Order actual samples.
Look at them. Hold them
in your hands. Test
them. See for yourself
why Titus can save you
money. Can give you
better air diffusion performance . . . in every
type of building where
air conditioning is used.

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Photograph courtesy Mastic Tile Corporation of America, Joliet, Ill., Long Beach, Calif., Newburgh, N. Y.

#### Points to Remember

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**STYLING:** There is an unusually wide selection of colors and patterns to satisfy client's wishes.

**BEAUTY:** From pastels to deep tones, colors are bright and *stay* bright... because of luster-enhancing transparent resins and exceptional cleanability.

**LOW MAINTENANCE:** Oils, grease, foods, and other soiling agents can accumulate only *on* the surface. That's because of the impervious

nature of flooring made of BAKELITE Brand Vinyl Resins. Naturally, therefore, cleaning is very easy.

**PERMANENCE:** Because of the toughness of the resins, the flooring resists scuffs, scars, and wear for years longer.

**REMEMBER:** you can assure greater beauty with longer-lasting economy by specifying flooring "Made of BAKELITE Vinyl Resins."



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#### DATES

National Electrical Contractors' Assn., annual convention and first National Electrical Exposition, Oct. 31-Nov. 2, Waldorf Astoria Hotel, New York City.

National Paint, Varnish and Lacquer Assn., annual convention, Oct. 30-Nov. 2, Shoreham and Sheraton-Park Hotels, Washington.

Mortgage Bankers Assn. of America, annual convention, Oct. 31-Nov. 3, Statler and Biltmore Hotels, Los Angeles.

Structural Clay Products Institute, annual convention, Oct. 31-Nov. 2, Greenbrier Hotel, White Sulphur Springs, W. Va.

AIA, regional convention, Texas Society of Architects, Nov. 2-4, Shamrock Hotel, Houston.

National Assn. of Real Estate Boards, annual convention, Nov. 6-19, Hotel Commodore, New York City.

National Lumber Manufacturers Assn., annual board meeting, Nov. 14-16, Shoreham Hotel, Washington.

Florida Assn. of Architects, AlA, annual convention, Nov. 16-20, Princess Issena Hotel, Daytona Beach.

Conference on survival of US industry in atomic warfare, sponsored by Armour Research Foundation, Nov. 17, Illinois Institute of Technology, Chicago.

American Municipal Assn., annual conference, Nov. 27-30, McAllister Hotel, Miami.

American Institute of Steel Construction, annual convention, Nov. 20-Dec. 1, Boca Raton Club and Hotel, Boca Raton, Fla.

Air Conditioning and Refrigeration Institute, industrial equipment exposition, Nov. 28-Dec. 1, Municipal Auditorium, Atlantic City.

American Society of Refrigerating Engineers, annual meeting, Dec. 1-3, Hotel Traymore, Atlantic City.

Porcelain Enamel Design competition closes Dec. 12.

Nuclear Engineering and Science Congress, coordinated for ASME, ASCE and other sponsoring groups by the Engineers Joint Council, Dec. 12-16, Public Auditorium, Cleveland. Program will include papers on reactor design and construction, effects of radiation on structural materials, concurrent Atomic Exposition, Dec. 10-16, sponsored by American Institute of Chemical Engineers.

American Society of Heating and Air-Conditioning Engineers, annual meeting, Jan. 23-25, Sheraton-Gibson Hotel, Cincinnati.

Plant Maintenance and Engineering Show, Jan. 23-26. Convention Hall, Philadelphia.

"Modular Measure was praised at a Washington Conference sponsored by AIA, Producers' Council, General Contractors of America and others... speakers reported that this standardized method of dimensioning makes estimating easier and more exact, speeds operations, saves materials and cuts labor costs."



#### modular measure steel doors and frames

fit each other fit modern building materials fit finest surroundings

Precision engineered and manufactured to high accuracy standards unmatched in the industry.

FEATURED IN Personalized Coronados BY UNITED STATES STEEL HOMES INC.

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Where water must be heated or cooled ... and circulated quietly, specify



#### Hydro-Flo products



Rotary International Building, Evanston, Illinois, employs B&G Universal Pumps and Heat Exchangers in the combination heating and cooling system.

Architects: Maher & McGrew, Evanston, III.... Construction Engineers: Neiler, Rich & Bladen, Chicago... Heating & Air Conditioning: C. W. Johnson, Inc., Chicago... Plumbing: O'Callaghan Bros., Chicago.

The trend to water as both the heating and cooling medium in modern buildings establishes a positive requirement which must be met by the circulating equipment. Quiet operation of the pumps is all essential!

The B&G Universal Pump is specifically designed and built to meet this prime requirement of liquid heating and cooling systems. It is not an ordinary commercial centrifugal pump! No special vibration eliminators or flexible connections to the piping are needed...noise and vibra-

tion have been engineered out! You have to touch a B&G Universal to tell if it is running!

In the building illustrated above, B&G Universal Pumps are used to circulate all water, including that in the chiller and cooling tower circuits. The same piping system is used to circulate hot water in winter and cooled water in summer. Convectors with adjustable speed fans act as room distributing units. Water for the heating system is heated with steam in a B&G Type "SU" Heat Exchanger.



#### BELL & GOSSETT OMPANY

Dept. EC-62, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, W. Toronto, Canada

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#### **B&G** Evaporators

Unique design prevents oil trapping in the head passes. Easy to install and insulate. Built to ASME Code.



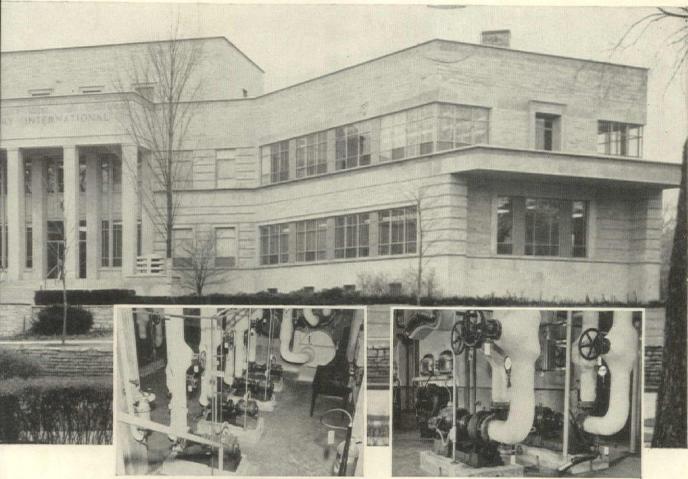
#### **B&G Condensers**

Time-tested design and rugged construction assure top performance over a long service life. ASME Code constructed—certified by Hartford.



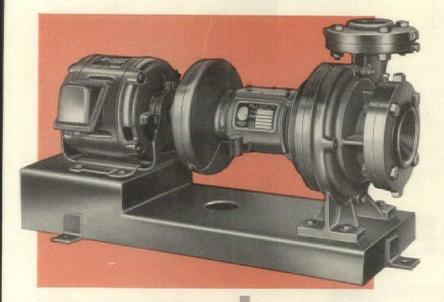
#### B&G Type "WU" Heaf Exchangers

Boiler water is pumped through the "WU", greatly increasing capacity and permitting close control of service water temperature. Reduces ice water temperature. Reduces material and labor—no tank needed.



Battery of B&G Universal Pumps for circulating hot and cooled water through system.

Circulation from chiller to cooling tower is handled by B&G Universal Pumps.



#### For quiet operation... the B&G Universal Pump

In every detail, the B&G Universal Pump is designed for silent, vibrationless operation. The motor is specially constructed, tested and hand-picked for quietness. Sleeve bearings in both pump and motor . . . suspension in ring-type rubber mountings and flexible spring couplers, all contribute to quiet operation. Other features include the leakproof "Remite" Seal, oil lubrication and hydraulically balanced impeller. The removable bearing frame permits servicing without breaking pipe connections—all the advantages of split case design!

Send the coupon for complete data.



#### **B&G Type "SU" Heat Exchanger**

For steam to water heat transfer. Generous heat transfer surface heats water instantly as required. Wide capacity range meets all water heating requirements.

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#### floor lowers overhead

In the retail grocery business-or in any business where pennies count—one way to cut maintenance expense is to specify Terrazzo. Traffic can't hurt it, dirt can't get a foothold in its smooth, jointless surface. Upkeep is minimized; sales are stimulated by its inviting surface and traffic-directing patterns. Specify low-annualcost Terrazzo for floors, wainscots, walls and stair-



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(RELIGIOUS ART)



It was inevitable that someone would accuse Le Corbusier of an irreligious attitude in the new chapel of Notre-Dame-du-Haut he designed for the French Dominicans (above and AF, Sept. '55). Another accusation we have heard is that Corbu was guilty of structural exhibitionism. Well, perhaps, but if so, he has good religious precedent for it, in the lovely bonnets worn by the French



Sisters of Charity. These graceful cantilevers in cloth, called cornettes, were worn commonly in the 14th Century in Europe, by both men and women. Cornette's architectural definition: "a roof poured full circle into tension like a horn."



#### (ALL FOR ALL)

E. C. Lecker, Ellwood Irish and Sun Chien Hsiao of the Unistrut Corp. recently inspected a school in Michigan which, like a few others throughout the country, has replaced conventional partitions between classrooms with low visual barriers, "space dividers," which do not reach all the way

#### **PARENTHESES**

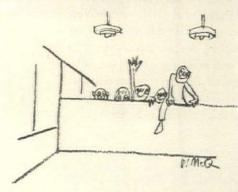
to the ceiling. They liked it, and the children liked it; the teachers were not so sure. Part of the inspectors' report:

"... [we] observed the classrooms and talked with the second- and third-grade teachers. Their most severe criticism was the lack of sound control. The level of the noise in the classroom was quite high. The teachers felt this imposed too much of a limitation on the teaching program. However, they agreed the sound problem did not seem to affect the children in any way. The second-grade teacher offered that the results of achievements tests at the end of the year were better than she had expected



even though she had
many times felt she'd
been talking and had
not been heard. One
of her pupils one day
remarked that she

knew how to spell all the words the adjacent third-grade pupils had been learning. The second-grade teacher also felt when she received the present first-grade class for



instruction next year the change would be less noticed by the pupils than in the individual classroom scheme . . ."

#### (NATURE)

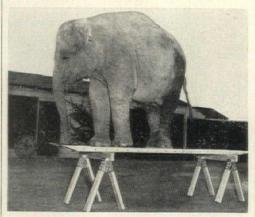
Sooner or later, if you manufacture something strong, you have an elephant stand on it to demonstrate this. There are professional elephants who do nothing else. To wit, three recent press releases:



"New York, N. Y. . . . If you want to prove the structural strength of a product,

place a 3,300-lb. elephant atop of it. That's what Climate Control, Inc., of Sarasota, Fla., did with the 'Monostructure' panel which they use for both roofs and walls in their prefabricated houses.

"What made this stunt unique is the fact that this plywood-faced panel has a paper honeycomb core. Union Bag & Paper Corp., who makes the honeycomb, reports that the concentrated load of the elephant caused only a very small deflection, with full recovery.



"Hollywood, Calif. . . . Sawhorses assembled in a matter of seconds using the new Chesney "Speed Clamps" are so sturdy they can support tremendous loads of dead weight. In a recent demonstration two such sawhorses easily supported the tonnage of a full-grown elephant.



"St. Louis, Mo. . . . HOLD IT! Hundreds of pounds of prancing elephant, yet ¾" plywood does hold it. That's because plywood is many wood panels, with grain of alternating sheets criss-crossed for added strength! Panels are bonded permanently together with Monsanto adhesives. Douglas fir plywood offers all of wood's warmth and beauty, is twice as strong as lumber but no heavier. Easy to saw, finish, paint."

After a hard day before the cameras, Mr. Barrymore relaxes.



(\$\$\$)

Like opera singers, baseball players, meatpackers, and dance teams, some architects and engineers have consultant business managers, whose purpose is to see that they play their cards right, not paying



everything out in taxes—instead piling up something for a rainy decade. One method that many of these experts favor is some kind of incorporation.

Speaking before the Wisconsin Architects Assn. early this year, Edward T. Bardwell, an Equitable Life Assurance agent, indicated a way of gleaning the benefits of incorporation even in those states which, strictly speaking, prohibit it.

"... It is quite a simple matter to accept the job as an individual architect; allow the corporation to do all the drawings and technical work; and have the corporation bill you for all services rendered and thereby circumvent a possible adverse situation.... Perhaps the greatest opponent you will have is your own personal stigma based on the time-worn theory that the professions should not be incorporated. This theory, I fear, has long since outlived its usefulness.

"Perhaps the best way to understand the effect of taxation and its application to the partnership versus the corporation is to set up a typical situation. Let us assume that we have a partnership with two partners, each having a 50% interest; the partnership employs ten other people. It has a net earned income, including the partnership drawing accounts, of \$70,000 per year. The effect on the two partners would be . . .:

"PARTNERS A & B

PARINERS A & B		
Annual income		\$35,000
Federal tax 10	,760	
State tax 1	,937	
Soc. sec. tax	84	
Self-emp. tax	60	(average)
Total tax		12,841
Net income		22,159

continued on p. 66

# aluminum

# CURTAIN WALLS by GENERAL BRONZE

selected for Houston's first all-aluminum building

The SECOND NATIONAL BANK BUILDING, now being completed at Houston, Texas is another of America's outstanding buildings with aluminum curtain walls and aluminum windows by General Bronze. This new, 24-story building will not only be

Houston's largest and most modern building but will also be its first all-aluminum building.

As the pioneer in aluminum curtain wall construction and the foremost fabricator of fine aluminum windows, General Bronze has a world of practical experience to offer architects. This experience, gained from such well-known jobs as the Alcoa Building in Pittsburgh, the U.N. Building, Lever House, 99 and 460 Park Avenue Buildings in New York City, The Equitable Life Assurance Society Building in Milwaukee, the Texaco Building in New Orleans and others is at your service. Why not call in the General Bronze representative as you plan new buildings. He can be of real assistance to you. Our catalogs are filed in Sweet's.

#### SECOND NATIONAL BANK BLDG.,

Houston, Texas Architect: Kenneth Franzheim Contractor: W. S. Bellows Constr. Co.







GENERAL BRONZE CORPORATION . GARDEN CITY, N. Y.

PERMATITE DIVISION—Custom-built Windows, Architectural Metal Wark and Revolving Doors. ALWINTITE DIVISION—Stock-size Aluminum Windows BRACH MFG. CO. DIVISION—Multel, T. V., Radio and Electronic Equipment. STEEL WELDMENTS, INC. DIVISION—Custom fabrication in steel and iron.



# Look into timely Loveliness...

During the last decade, ceramic tile has played an increasingly important role in American architecture.

Each year, more and more residential and commercial designers have found in tile the drama, color, flexibility, and service shared by no other building material.

And, as architects have turned to tile, so they have turned to Stylon Ceramic Tile.

Why? Because Stylon offers eighteen lovely wall colors, and matching or contrasting floor tiles in literally thousands of imaginative combinations.

Because Stylon, with its ingenious, "Sure-Space" device, assures impeccably straight lines and uniform joints.

Because Stylon, made in three of the world's most modern plants, has set new standards in quality control, color beauty and timeless durability.

Join the thousands of architects who have looked into loveliness — with Stylon Tile.

SENION
CERAMIC TILE
Beautiful · Enduring · Economical

See our insert "Harmonies in Color" in Sweets.

Please send me complete details.

STYLON	CORPO	DRATI	ON
Milford, Mass.		Florence	, Ala

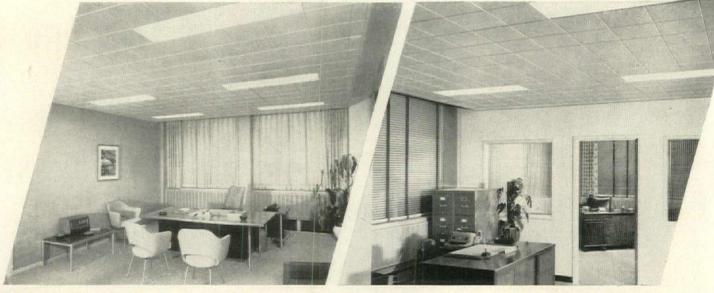
Gentlemen: I am interested in the Stylon Ceramic Tile Story.

## 30 miles of Acoustimetal Ceilings hide utilities at Mile High Center

23-STORY MILE HIGH CENTER BUILDING IN DENVER, COLORADO

Gold Bond Acoustical Contractor; Reeves-Ryan & Co., Denver, Colorado; Co-Developers: George A. Fuller Co., New York; Webb & Knapp, Inc., New York; Designers: Webb & Knapp, Architectural Division; Architects: Kahn & Jacobs, New York;

Associate Architect: G. Meredith Musick, Denver, Colorado.



Modern acoustical treatment gives this executive office a ceiling that always keeps its smart, clean appearance.

The Acoustimetal panels that form the ceiling of this modern reception room instantly snap out for fast servicing of utilities.

Wherever Gold Bond Acoustimetal is specified, you're adding these seven important benefits to your building designs:

1. ACCESSIBILITY—Lightweight Acoustimetal panels snap in and out easily and quickly for simple servicing of ducts, wiring, piping and other overhead utilities.

2. FIRE SAFETY—Each perforated metal panel is fireproof, adding extra safety to any building you design.

3. EASY MAINTENANCE—Washing is simple...panels are wiped clean with a damp sponge or cloth.

4. GOOD LOOKS—Acoustimetal's handsome white baked enamel finish lends a quiet, dignified appearance wherever you install it.

5. REDECORATE - Acoustimetal may be repainted for

variation of color schemes, without affecting sound absorption efficiency.

6. FAST INSTALLATION — Often, it takes only a single day to put up a complete Gold Bond Acoustimetal ceiling.

7. EXCELLENT ACOUSTICS—Acoustimetal, when backed with fireproof Acoustipads, assures a noise reduction coefficient in the .80 to .90 range.

On a big job like Mile High, or on any other job, Gold Bond keeps you on schedule from delivery of materials to finished ceiling. Include a good looking Acoustimetal ceiling in your designs. For full details on Gold Bond Acoustimetal and other Gold Bond Acoustical products, refer to your Sweet's Catalog, or write to Acoustical Division, Dept. AF-115.

NATIONAL GYPSUM COMPANY . BUFFALO 2, NEW YORK

















AND LIME

GYPSUM BOARD PRODUCTS

PLANKS AND TILES

ROCK WOOL

PAINTS AND

ACQUSTICAL TILES

ASBESTOS ROOFING

. ACOUSTICAL PRODUCTS

BRIGHTEN
DARK
CORNERS
AND
NEAR-WALL
AREAS
WITH

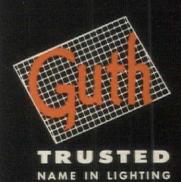




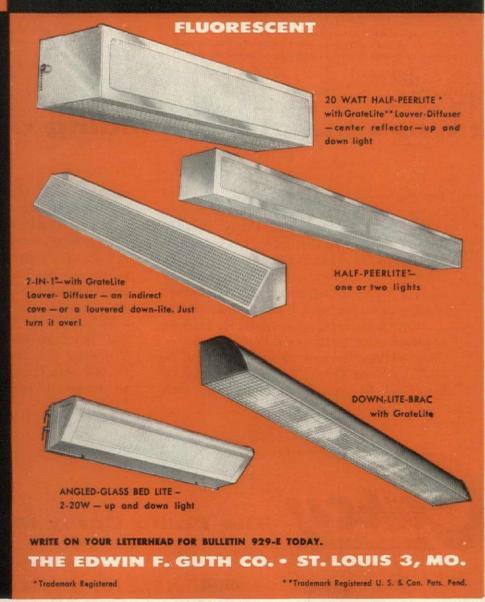
GUTH BRACKETS
(YOU NAME IT ... WE MAKE IT!)

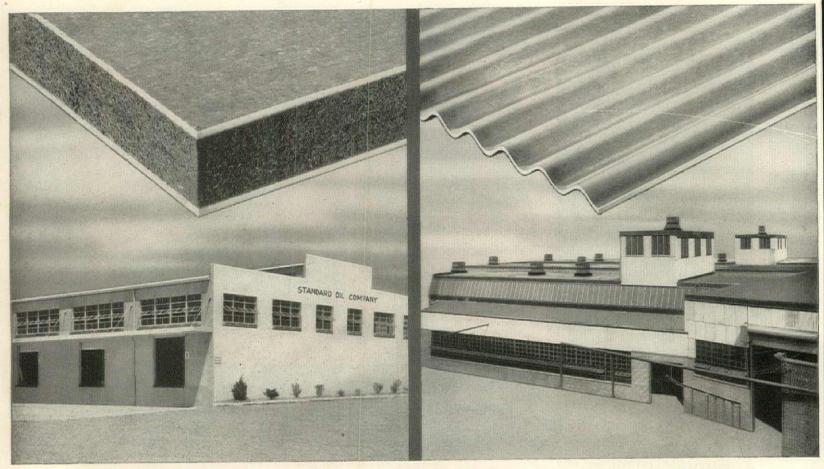
#### APPLICATIONS GALORE!

fitting rooms; over hospital beds, chalk boards, mirrors; for desks near walls; along ceiling beams . . . and many other spots that are difficult to light efficiently with conventional fixtures.



**SINCE 1902** 





One material — Carey Thermo-Bord structural insulation panels —does work of three at this Standard Oil Co. (Ky.) warehouse. Combines roof deck, insulation and interior ceiling finish.

Ease and speed of erecting exterior sidewalls of Careystone Corrugated helped Superior Foundry Company, Cleveland, Ohio build new 60,000 sq. ft. plant in six weeks — economically!

#### 2 ways out of the building cost squeeze

You can help solve your clients' cost problems in new construction and modernization with Careystone Corrugated and Carey Thermo-Bord. Careystone Corrugated has numerous advantages for exterior sidewalls and roofing. It is economical in cost; easy to apply over wood or steel framing; strong and rigid. Made of asbestos and cement, it is maintenance-free ... won't burn, rust, rot, corrode. No painting or preservative treatment is ever needed.

Great savings in material and labor can be made by using Carey Thermo-Bord 4' x 12' Structural Insulating Panels for roof deck construction. Thermo-Bord combines structural deck, insulation and interior ceiling finish in one rigid unit. And its light weight means lighter-weight structural members can be used to gain *more* dollar savings. Made by bonding tough asbestos-cement board to a specially processed insulation core, Thermo-Bord is also recommended for low-cost insulated outside walls and partitions.

Get the facts on these Carey cost-savers. Write for free descriptive literature today. Or, ask your Carey Industrial Sales Engineer to pay you a visit. Address Dep't. AF-11.



#### The Philip Carey Mfg. Company

Lockland, Cincinnati 15, Ohio In Canada: The Philip Carey Co., Ltd. Montreal 3, P.Q.

Serving Industry, Farm & Home since 1873 . . .

Flat Asbestos-Cement Sheets • Built-up Roofing • Bonded Roofs • Super-Light 85% Magnesia Insulation • Careyduct • Asphalt Plank • Asphalt Paints and Coatings • Fiberflex Glass Roof System

# ARCHITECTS: YOU CAN PLAN BETTER LIGHTING WITHIN PRICE LIMITS OF LOW-COST SYSTEMS

# WHEN YOU CHOOSE THE

#### 10 MODELS IN ORTHO-77 LINE

The Gibson Ortho-77 fixture is ideal for office, stores and school lighting. Superbly constructed, durably finished. Beautifully designed. Highly efficient. ETL approved components. UL approved. Union made. Gibson quality throughout.

WITH THE EXCLUSIVE UNI-RACE\*

ortho-77

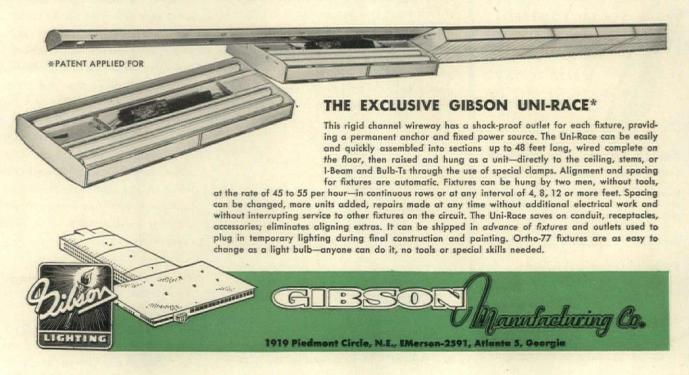
Rule-of-thumb shows that fixtures represent about 50% of the total cost of a lighting system. The other 50% goes for installation and materials. That is why Gibson designed its Ortho fixtures and exclusive Uni-Race.

Because the UNI-RACE is so simple and quickly assembled on the floor... and because Gibson Ortho fixtures

can be installed so fast...actual savings in labor and materials on installation are as high as 50%.

This means that better lighting is possible within the limits of low-cost installations and restricted budgets.

Get full details and specifications on the ORTHO-77 and UNI-RACE from your Gibson representative, or write direct.



# Make masonry wall CONTROL JOINTS with





BLOK-JOINT is a "cross-shaped" rubber extrusion which greatly simplifies the construction of masonry wall control joints. It can be used with any standard metal sash block! Made of "100 year life" rubber, it forms a secure interlock and adds stability to the wall.

BLOK-JOINT is easily adapted to various types of wall construction—block walls, brick with block back-up, cavity walls and others.

For simplicity, versatility and maximum effectiveness in control joints, specify Carter-Waters BLOK-JOINT.



#### Carter-Waters Corporation 2440 Pennway Kansas City 8, Missouri

Please send me a FREE sample and specifications on the new Carter-Waters BLOK-JOINT.

Name	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100
Address		

CARTER-WATERS

2440 Pennway

Phone GRand 2570

State

#### PARENTHESES

continued from p. 59

"(We have assumed each is filing joint return with two children.)

"The same situation on a corporation basis with same net profit, but having a qualified pension plan to syphon off \$15,000 a year of the profit of which two thirds is going to the two stockholders:

#### PARTNERS A & B

Annual income	\$27,500
Federal tax 6,300	
State tax 1,445	
Soc. sec. tax 42	
Total tax	7,787
Net income	\$19,713
Pension contribution	5,000
Total tax-free value	
Received from	

corporation ......

24,713"

But subsequent suggestions in Congress may permit professionals and other unincorporated businessmen to plow a portion of their profits into a pension fund. And for more immediate tax relief, Representative Thomas B. Curtis (R) of Missouri, a member of the House Ways and Means committee, introduced a motion in the closing days of this year's session which should elate anyone whose income fluctuates widely from year to year, as some architects' reputedly do. Representative Curtis' idea is to permit the taxpayer who, in one year makes 150% of what he has made the previous five years, to spread the bonanza over the whole six-year tax period. It is expected that the Bureau of Internal Revenue will take a dim, penurious view of this, but Congressman Curtis, as a member of the powerful Ways and Means Committee, should be able to get his proposal good consideration, if well supported. He should



have a battery of T-squares behind him.

continued on p. 70



COMMUNICATIONS PROBLEMS?



GET THE HELP OF AN EXPERT!

Whether you need a functional school communications system . . . a fine high fidelity music system for a luxurious motel . . . a modern intercom system for a new office building . . . or a rugged speaker network for an arena, your local Stromber Carlson sound specialist will give you dependable advice with no cost or obligation.

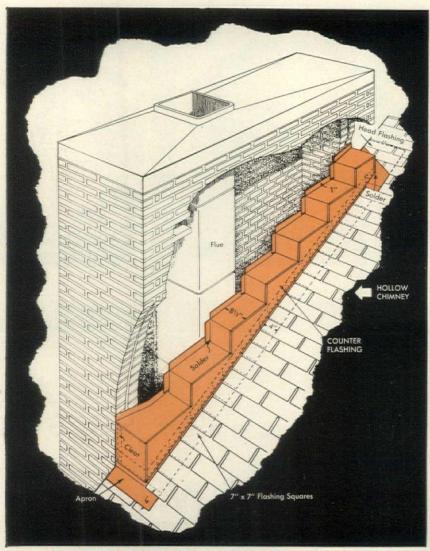
He can help you plan a custom-engineered system that fits your needs exactly, selecting sound communications equipment built by America's oldest and most experienced manufacturer in the field. He'll also explain how your client can lease a Stromberg-Carlson system without a penny of capital investment.

Take advantage of his service—find his name in our section of "Sweet's Architectural File." Or write us.

#### STROMBERG-CARLSON® CO.

A DIVISION OF GENERAL DYNAMICS CORPORATION
Sound Equipment Division

1237 Clifford Ave., Rochester 21, N. Y.



**CHIMNEY OF ARCHITECTURAL DESIGN**—Through-to-flue counter flashing, turned up 1" at flue, installed over base flashing at 7" x 7" squares.

#### Stop leaks before they start with Anaconda through-to-flue copper flashing

Faulty chimney flashing probably causes more trouble and repair expense than any other detail in roof construction. Leaks often appear soon after completion, and tempers flare. The owner and contractors wrangle over who is to blame.

Protect your clients and your reputation by making sure of two things: first, use the right flashing design and second, specify the right metal.

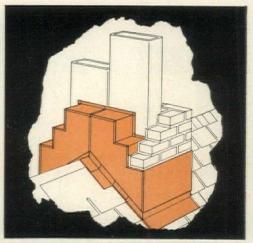
The through-to-flue flashing de-

signs indicated in drawings on this page will prevent all water, including that which has been absorbed by the masonry, from seeping downward into the interior of the building.

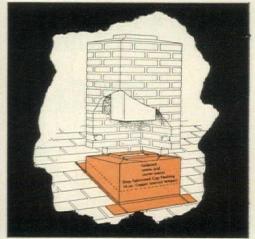
Copper by Anaconda combines advantages offered by no other commonly used flashing material. It is, of course, rust-proof. It is not affected by mortar. It is easily soldered, assuring you that the flashing you design will have permanently tight joints.



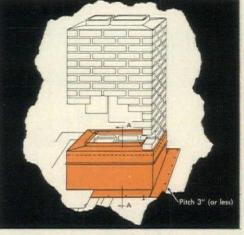
FREE FILE OF DETAIL DRAWINGS—Designs developed by Anaconda building specialists to provide maximum protection of building against weather, with most economical use of sheet copper. Entire series of drawings printed on individual 8½" x 11" sheets for quick-reference filing. For FREE portfolios, address: The American Brass Company, Waterbury 20, Connecticut.



**CHIMNEY AT RIDGE**—Flashing consists of apron at lower edge of chimney, soldered returns at corners, flashing squares leafed between shingles. Cap flashing set to form counter flashing.



CHIMNEY IN SLOPE—Single flue 8½" x 13". Base flashing formed as flange with 4" apron overlapping shingles; 12"-wide head flashing; 4"-wide flashing flange at sides of chimney.

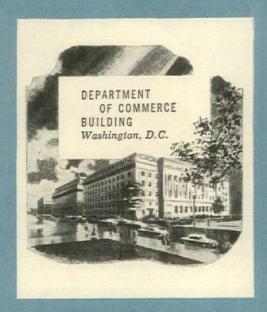


**CHIMNEY IN FLAT ROOF**—Base flashing must be water-tight, soldered at all joints. Counter flashing carried through masonry, turned up 1" at outer surface of flue.

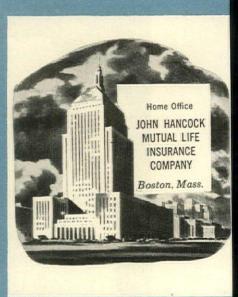
for better sheet metal work use

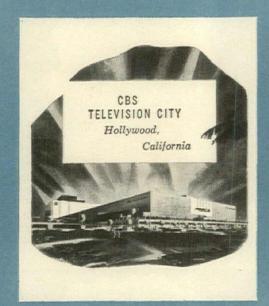


SHEET COPPER









## FROM COAST TO COAST

#### RAYMOND

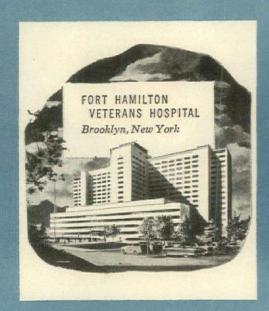
THE SCOPE
OF RAYMOND'S
ACTIVITIES

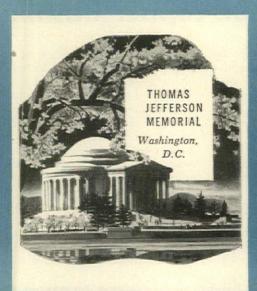
#### IN THIS COUNTRY

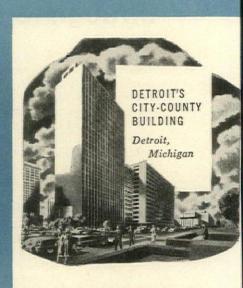
Foundations . . . Marine Structures . . . Heavy Construction . . . Soil Investigations.

#### OUTSIDE THE UNITED STATES

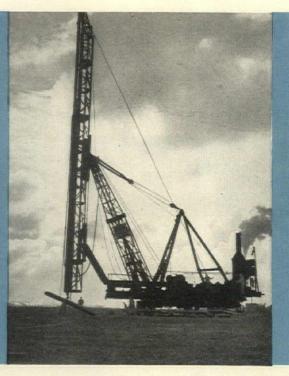
Complete service for all types of construction.







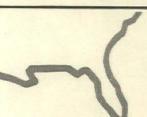
Here are a few of the structures that rest on Raymond foundations. These buildings represent an impressive testimony to the over half a century of confidence placed in us by the architects, engineers, contractors and business executives of this country.



If you're contemplating any type of construction—large or small, we'll be happy to discuss your foundation problems with you.

### THE FINEST STRUCTURES REST ON

# FOUNDATIONS

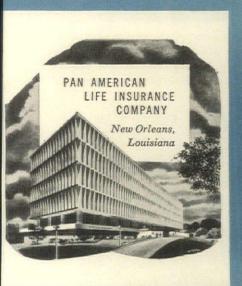




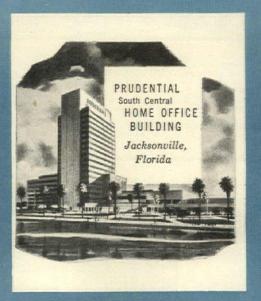
CONCRETE PILE CO.

140 Cedar Street, New York 6, N. Y.

BRANCH OFFICES in Principal Cities of the United States, Canada, Central and South America







for buildings

Designed to do business

Specify STANLEY magic door controls

Automatic door openings make it easy and pleasant to do business with this laundry . . . give it an edge over competition!

The clients for whom you design stores, banks, restaurants, hotels, and other commercial buildings, will appreciate this automatic, functional feature that makes buildings more profitable for owner and tenant.

Improve property values and increase utility of buildings by providing for Stanley Magic Door Controls in construction plans and specifications.

Without obligation, call in the Stanley Representative nearest you to make recommendations for your next business building. Mail coupon for informational literature on the Magic Carpet\* Control and the Magic Eye\*\* Control (photoelectric).



\*PATENTED U.S.A. AND CANADA \*\*U.S. PAT. NO. 2173455

ARCHITECT:

Bruce Boswell, Grassold-Johnson & Associates, Milwaukee, Wisconsin

INSTALLATION CONTRACTOR:

Jed Products, Royal Oak, Michigan

Albert B. Adelman, president of the Adelman Laundry (above), Milwaukee, Wisconsin, says of his establishment's Stanley Magic Carpet Controls ... the comments from our customers have been most pleasing. The convenience ... as well as the safety are other important factors."

STANLEY Door

REPRESENTATIVES
IN PRINCIPAL CITIES
CONTROLS

THE STANLEY WORKS, MAGIC DOOR DIVISION 09N-M Lake Street, New Britain, Conn.

Gentlemen: Please send me complete information about Stanley Magic Door Controls.

Position\_\_\_\_

Firm\_\_\_\_\_Address

City\_\_\_\_\_State\_\_\_\_\_

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

#### **PARENTHESES**

continued from p. 66

(TIME)



When Sculptor Lorado Taft executed the "Fountain of Time" to stand at the end of the midway in Washington Park, Chicago, 32 years ago, his inspiration for the group of melancholy figures was drawn from lines by the English poet, Austin Dobson:

"Time goes, you say—ah no: Alas. Time stays, we go."

According to the Chicago Daily News, Taft wanted his enormous 120'-long creation to weather quickly, attaining "a rich soft tone which stone acquires only after generations of exposure." So instead of marble he used a new process, casting the sculpture in a softer concrete composition made in part from Potomac River pebbles.

Here is a detail of one of the figures in 1922, perhaps about to say "Time goes, you say? My God!"



His worn, worried expression was authentic. Below is a recent closeup of the same figure, only 32 years old, but like the rest of the statuary, sadly pitted and crumbled.



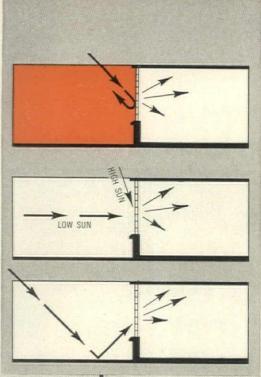
Alas. Time stayed, he weathered.

-W. McQ.

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

Uniform light transmission—Prismatic design is selective and controls the amount of light transmitted from various sun positions, thereby providing uniform light transmission all day long.

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



# OWENS-ILLINOIS' NEW SOLARSELECTING GLASS BLOCK

No. 80-F COOLER IN HOT WEATHER



Solar heat input is greatly reduced. In a test during hot weather—when the outside temperature was  $90^{\circ}$ —the room side surface temperature was 14 degrees less than that of a conventional type light-directing glass block.

Owens-Illinois' new solarselecting Glass Block No. 80-F is superior to earlier light-directing glass block because:

- 1. It has a surface brightness less than half that of earlier types.
- It transmits less solar heat and has a lower inside surface temperature during hot weather.
- 3. It is an efficient transmitter of ground-reflected light.

Illumination surveys show that maximum illumination on vertical surfaces occurs when the sun is at an altitude near 45°. It is this sun altitude position which produces maximum solar heat and brightness conditions on vertical windows or panels. Prisms within the 80-F block are designed to reflect a major portion of this maximum illumination.

For non-sun exposure, a companion block, the No. 80, is recommended. This

block is identical to the 80-F, except that it does not have a fiber glass screen. Therefore, it transmits a higher percentage of light.

Complete information available. Send for the free, technical bulletin that gives the details. Just write "No. 480F" on your letterhead and mail to Kimble Glass Company, subsidiary of Owens-Illinois, Department AF-11, Box 1035, Toledo 1, Ohio.

OWENS-ILLINOIS GLASS BLOCK
AN (1) PRODUCT

### OWENS-ILLINOIS

GENERAL OFFICES . TOLEDO 1, OHIO

# High

Seaman's Bank for Savings . . .
First entire building in New York City to use double duct mixing plenum high pressure system features complete flexibility of heating/cooling zone control.

Architects: Halsey, McCormack & Helmer Consulting Engineer: Edward E. Ashley General Contractor: William L. Crow Construction Co. Air Conditioning Contractor: Alvord & Swift



Photograph taken during construction of Seaman's Bank for Savings showing installation of Tuttle & Bailey Type MPW Double Duct Mixing Plenum Wall Units.

Typical view of a general office area in Seaman's Bank for Savings showing how Tuttle & Bailey Type MPW Units blend with modern architectural design and decorative scheme.

ENGINEERED PRODUCTS FOR AIR CONDITIONING,

# & BAILEY Pressure Units

give SEAMAN'S BANK for SAVINGS

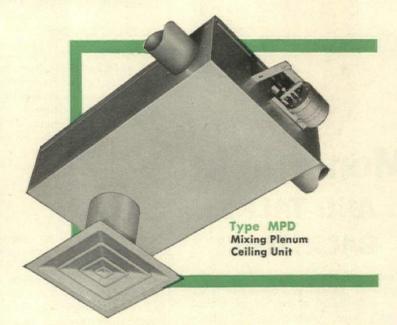
indoor weather that satisfies everybody!

In this modern twelve-story addition to Manhattan's financial district, Tuttle & Bailey High Pressure Units will provide efficient, economical year-around heating and cooling comfort... Type MPW Wall Units are located under all windows throughout the building, in banking areas and private offices... Type MPD Ceiling Units are installed in the dining areas.

Operating on an all-air system, these double duct units mix and discharge varying proportions of heated and cooled air to provide a constant volume at the exact temperature desired in individual areas. This flexibility means one area can be heated while another is cooled regardless of time of day or season.



VENTILATING AND HEATING



Savings in overall building and installation costs were effected by the use of conduit risers and branches which reduced floor-to-floor dimensions ... a single primary equipment room resulted in more useable space . . . and the need for supplementary equipment required for the operation of other types of systems was eliminated. In addition, utilization of 100% outside air for cooling when temperature permits will save the cost of operating compressors, pumps, and cooling tower during such periods.

For complete information on the advantages of a high pressure air distribution system in new construction — or for remodeling — get in touch with your nearest Tuttle & Bailey Representative or write for Catalog No. 109 and Bulletin No. 110.

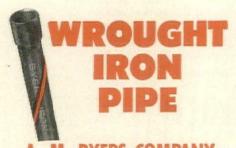




# Money Talks ...AND TALKS BACK, TOO!

When budgets are figured close, the pipe that "talks" less money initially is usually heard above the pipe that quietly says, "durability." Unfortunately, the pipe with the low-first-cost talk has a habit of talking back, too. You know this story too well if you've watched a pipe repair job where low-first-cost pipe has failed prematurely. The initial "savings" can be wiped out many times in labor costs.

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#### **LETTERS**

Moosbrugger-LIFE



#### CORBU'S CHURCH

Forum

Regarding Notre-Dame-du-Haut (AF, Sept. '55), architecture may be sculpture if it functions as architecture first. Corbu showed us this admirably at Marseille.

But now he has contradicted himself. The chapel cannot be explained away as further development; it is a very personal hunk of sculpture. It functions as architecture afterward.

R. P. HARLOW Cambridge, Mass.

Forum:

At first glance, your layout on "Corbu Builds a Church" carries the viewer back to Holland and its wooden shoes. The depth of LeCorbusier's perception is immense, I suppose, and he can see beauty in his type of church design that eludes the common man. For atmosphere in worship, give me the old Gothic, as awkward as it is to many. Perhaps the newest chapel of Notre-Damedu-Haut "is as remarkable as its lofty site," as your well-done story says, but it seems that a windmill might be more apropos in such surroundings than a church. Your story does not convince me that here is a chapel conducive to reverent worship by pilgrims.

LESLIE G. ELMES,managing editor Episcopal Churchnews Richmond, Va.

#### WINDOW WALLS

Forum

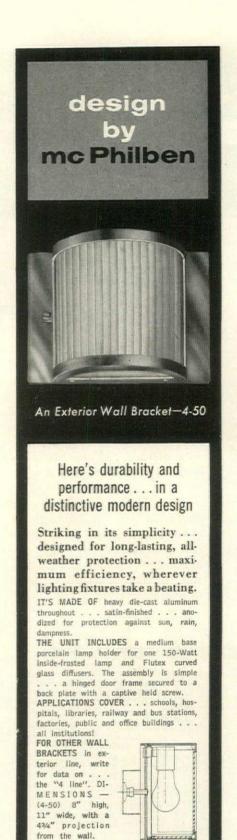
Your analysis of air conditioning and the impact of fenestration (AF, July '55) is an excellent and thoughtful study clearly showing that arbitrary and doctrinaire solutions are not proper, that many factors will, if thoughtfully applied, produce varied solutions.

MAX ABRAMOVITZ Harrison & Abramovitz, architects New York, N.Y.

Forum:

One of the most interesting articles I have read in FORUM is "What's Next in Window Walls?" This gives considerable

continued on p. 78



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Representatives in major cities

# GOLD COAST CHERRY



in warm, light, modern color. Glamorous rotary-cut Gold Coast Cherry is the new beauty star in flush doors.

More good news! Gold Coast Cherry cuts finishing costs: its beautiful color makes stain unnecessary - its smooth, close texture requires no filler.

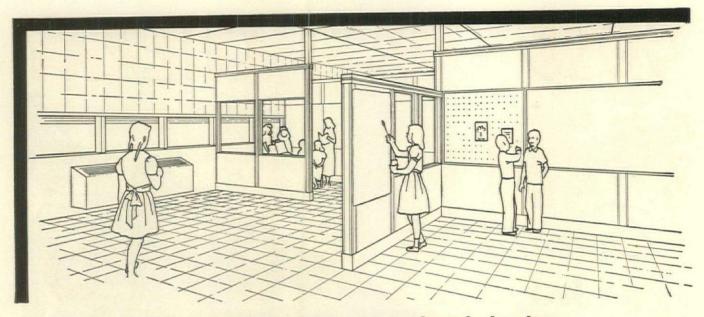
Price? Actually lower than many domestic hardwoods!

That's Mengel rotary-cut Gold Coast Cherry - eyeappeal, buy-appeal - any way you look at it.

See for yourself: order an inspection lot from your distributor. Why not phone or write him . . . this very profitable minute?

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To architects, school board members, teachers and maintenance personnel, Movable HAUSERMAN Steel Interiors provide economical, efficient and easily-maintained school interiors for the life of the building. These outstanding features of HAUSERMAN Interiors assure completely functional, yet clean, fresh, modern school rooms year after year.



complete flexibility—Provides the means of keeping pace with changing space requirements as the crest of student population moves from primary levels through secondary and into advanced levels. Available in various widths, Hauserman panels can be fitted to most modular plans permitting interiors to be rearranged without changing heating, lighting and ventilating systems. Hauserman design also makes wiring easily accessible for adding or relocating outlets.

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**SOUND-CONDITIONED SPACE DIVISION**—A standard Movable HAUSERMAN Wall (2<sup>3</sup>/<sub>4</sub>" thick) will stop more sound than a 5½" thick tile-and-plaster wall. And special HAUSERMAN acoustical ceilings may be specified for particularly noisy areas.

VERTICAL TEACHING SURFACES—Movable HAUSERMAN Interiors, fitted with special hooks, hangers and magnetic thumbtacks present boundless possibilities for display areas. HAUSERMAN accessories also include chalk boards, peg boards, bookcases, shelves and closets to provide "working walls."

FIRE SAFETY-Only steel- and mineral-wool insulation-both totally incombustible materials-are used in the fabrication of HAUSERMAN Interiors.

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INTEGRATED ENGINEERING SERVICE—HAUSERMAN engineers work closely with the architectural team to provide detailed working drawings. Further, with Movable HAUSERMAN Interiors, field supervision is cut to a minimum because there is just one source of supply eliminating the need to coordinate the activities of several trades.

#### FLEXIBILITY IN THE COORDINATED CLASSROOM

An objective, comprehensive report prepared by Darell Boyd Harmon and Associates for The E. F. Hauserman Company is available for you. The subject of school interior flexibility and its impact on psychological and physical environment of children is discussed and the solution to achieve permanent flexibility through application of Movable HAUSERMAN Interiors is covered. Send for your free copy today.

See the HAUSERMAN display in the Producers Council Caravan scheduled to visit these cities in November:

Washington, 3-5 Philadelphia, 8-11 New York, 14-18

Boston, 20-23 Newark, 27-29 Buffalo, 30-Dec. 3



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VALVES and PIPE FITTINGS

by

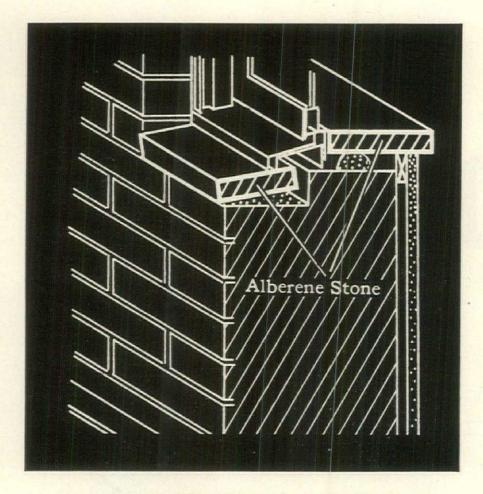
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Alberene Stone is supplied in two grades: Regular grade is medium hard, durable and economical. It has high chemical, weather resistance. And a pleasing bluish gray color. Serpentine grade is very hard with even higher resistance and durability. It takes a high hone finish that is bluish black; also a polished finish that is jet black. Since there is a substantial difference between the two grades, it is important that the proper grade be clearly stated in the specifications.

That's why Alberene Stone window stools have recently been shipped to many of the finest new hospitals in the country including: Providence Hospital, Washington, D. C.; Baptist Memorial Hospital, Memphis, Tenn.; Coney Island Hospital, New York; and the Grady Hospital, Atlanta, Ga.

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

# ALBERENE STONE

provides LOW ABSORBENCY protection

#### **LETTERS**

Continued from p. 74

factual data on a problem which has not had sufficient study and which is causing some concern in new building design in northern California.

JOHN S. WALSH, director Commercial Sales Pacific Gas & Electric Co. San Francisco, Calif.

Forum:

Your article, "What Next for the Window Wall?" by Henry Wright, is a very careful piece of analysis, particularly valuable because he does not hesitate to go into many of the questions that have troubled those who are interested in this new form of construction. Beyond answering many of the questions, the article is also a provocative one, pointing the way toward new and better designs in this effort of enclosure of buildings.

While we have all been inspired by the accounts of the new buildings, it is a great comfort to see a touch of reason once more creeping in.

WALTER H. KILHAM JR. O'Connor & Kilham, architects New York, N.Y.

Forum:

Starting from the ideal wall which has no windows and proceeding to the Lever House which is all glass seems to be still a problem of the individual architect's design.

Your article is especially well composed and covers the subject completely. It is this type of information which helps all of us in the profession to render the client better service.

PAUL SCHELL Schell, Deeter & Stott, architects Pittsburgh, Pa.

#### MANHATTAN'S PIMPLE

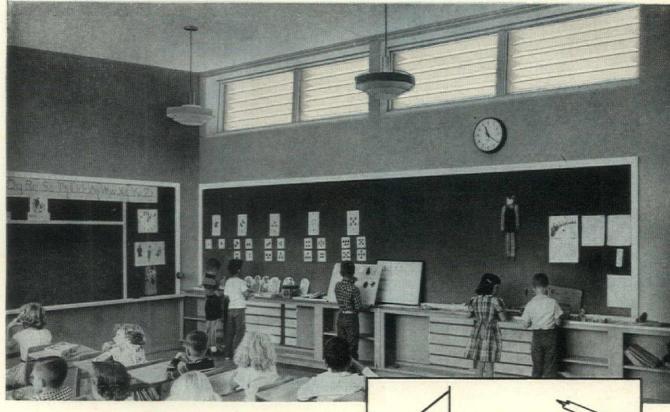
Forum:

I read with great interest your article in the August issue, "Could This Be Times Square Tomorrow?" and I was surprised to see the problem approached from a purely academic point of view. While both solutions were concerned with the existing ills prevailing on Times Square, such as congestion, lack of pedestrian space, nonexistence of "square" in its true sense, they failed to recognize the problem as one of large-scale city planning.

Times Square is just a pimple on the face of New York City, caused by malnutrition and bad blood. The solution is not an overpass—obsolete before it is even finished—nor is it an elevated level separating the pedestrians from the ground, which is the source of most of the activity and interest, but it is the solution of New York City traffic, of the parking problems and major circulation. One simply cannot take one area of the city, isolate it from the rest and find a solution. Such "cure" would be purely academic and must necessarily fail.

GEORGE A. HARTMAN Forest Hills, N.Y.

continued on p. 82

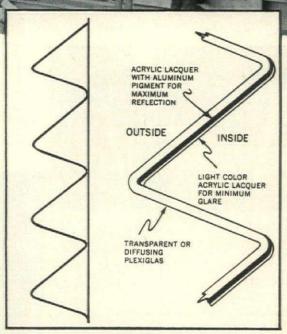


New way to control Sun Glare—
use daylight louver panels of PLEXIGLAS

Daylight Louver Panels, formed from Plexiclas acrylic plastic, provide nearly optimum visual environment in daylighting systems. As shown in the cross-section drawing at the right, they combine opaque louver slats, light transmission and weather closure in one continuous surface. The design results in—

- Effective shielding from sun and sky glare.
- Improved distribution of daylight—an "indirect daylighting" system for evenly distributed diffused daylight.
- Reduction of solar heat gain inside buildings through reflection of a high proportion of direct sunlight striking the window area.

The daylight louver panel system is based on the formability, strength and weather-resistance of Plexiglas, and was developed at the Daylighting Laboratory of Rohm & Haas Company. The names of suppliers of stock and custom-formed panels, and our new brochure—"Daylight Control with Plexiglas"—containing data and recommendations on the use of daylight louver panels, are available on request.



Cross-section of a daylight louver panel, and close-up of one louver.



Chemicals for Industry

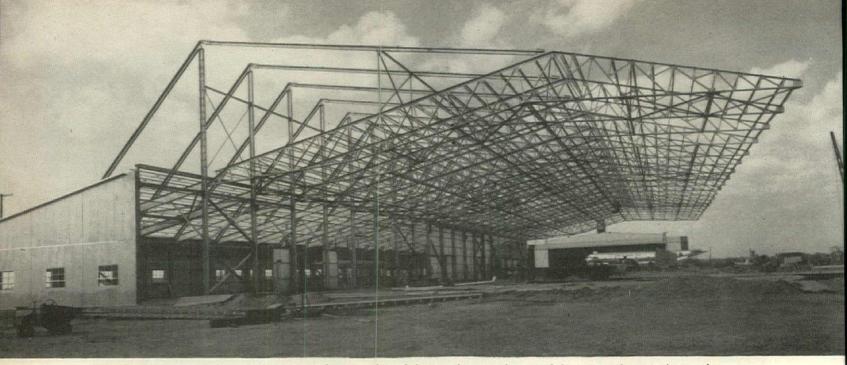
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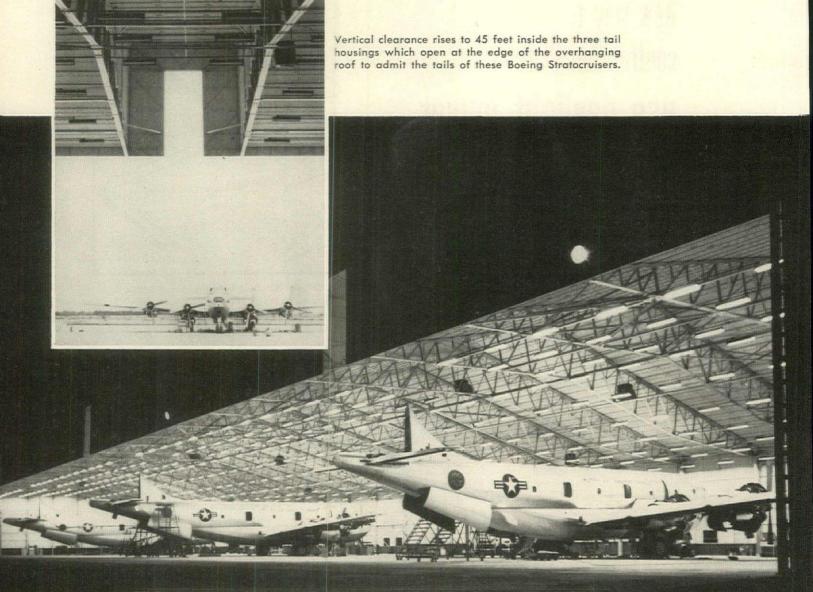
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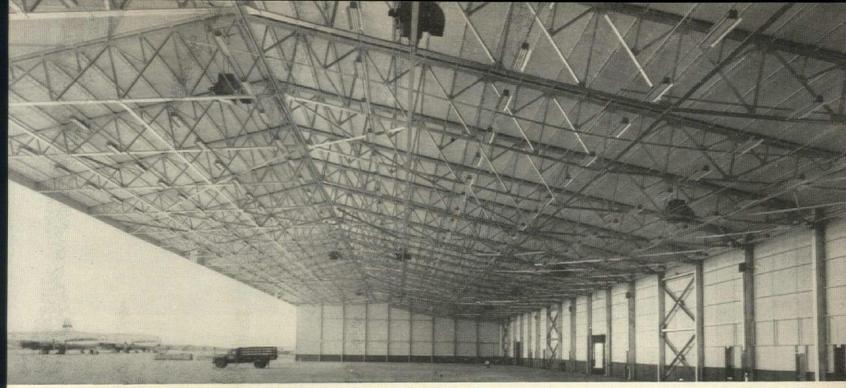


The 76-foot-long member which connects the top ridge of the cantilever to the top of the inner column is designed to act either in tension or compression—supports weight of roof loading, and withstands 30 psf uplift from wind under roof.

# Ingenious hangar



The unique hangar was designed and constructed by the Erwin-Newman Co., of Houston, Texas, under their design patent No. 2,687,102.



The hangar is designed for 25 psf roof load and 15 psf horizontal wind force. Rear columns are bolted to deep concrete piers since they must withstand a pull of 14 tons per column from the weight of the cantilevered roof structure, which amounts to only 11.8 psf.

# has no columns...

# cantilever construction spans 120 ft. at cost of only \$2.40 per sq. ft.

• The hangar area of this efficiently-designed building of Temco Aircraft Corporation at Greenville, Texas, is completely unobstructed by supporting columns. The clear area measures 120 ft. deep x 432 ft. long x 30 ft. high.

The roof is carried on 120 ft. steel truss cantilevers, connected by means of rocker joints to 56 ft. tall inner columns, which in turn are joined to 19 ft. outer columns placed 40 feet farther back. The space between the two rows of columns is conveniently used for workshops, parts storage, and offices.

The prefabricated Structural Steel

framework for this hangar was bolted together in only six working days. The framing cost \$2.40 per sq. ft. Framing and roofing cost \$3.26, and the complete building including services, foundations, and 32,400 sq. ft. of concrete apron totaled \$5.06 per sq. ft. Approximately 1,000 tons of Structural Steel were used in the building framework. Speedy construction was an important factor in holding down costs.

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#### **LETTERS**

Continued from p. 78

#### WHAT PRICE DEMOUNTABILITY



Forum:

The work done on the Unistrut structural system (AF, July '55) is extremely interesting. I am particularly struck with the idea of the standard space gusset plate.

However, I am not quite sure about the usefulness of the system. The whole problem of standardization is a very vexed one.

The advantages of standardization are, of course, the reduced cost due to mass production, and the availability of components. The disadvantage is the very greatly increased weight of construction, which has to deal with much larger spans than are required in every single case and to allow for the worst possible ground which only occurs in a few instances.

Complete demountability is, of course, possible, but is it really wanted? Here in England we have had a rather interesting development in schools during the last few years which, although on a much more modest scale, seems to indicate that flexibility is not now considered so important as it was a few years ago. Immediately after the war it was an almost universal ruling that internal cross walls should be avoided in classroom blocks, so that the size and number of classrooms could be changed at will. Today this stipulation is almost completely given up, certainly for primary and secondary schools, and a number of schools are now being erected with cross wall construction, which is much cheaper.

The development suggested by Unistrut is almost exactly opposite, and very much more ambitious than any of the early schemes have been. A doubt may therefore be expressed as to whether its cost might not outweigh the advantages.

FELIX J. SAMUELY, consulting engineer London, England

#### S. 1644

Forum:

FORUM carried in its Aug. '55 issue (pp. 21-25) a report of the Federal Construction Contract Act (S. 1644)—a measure that has been supported by the National Electrical Contractors Assn.

It is the first thoroughly objective account that we have seen in the general business press. Your correspondent and your editors did a creditable job.

GEORGE B. ROSCOE, director of public relations National Electrical Contractors Assn.

Washington, D.C.

continued on p. 86



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Illustrated: 3/4" Forestone Deseret Inn, Salt Lake City

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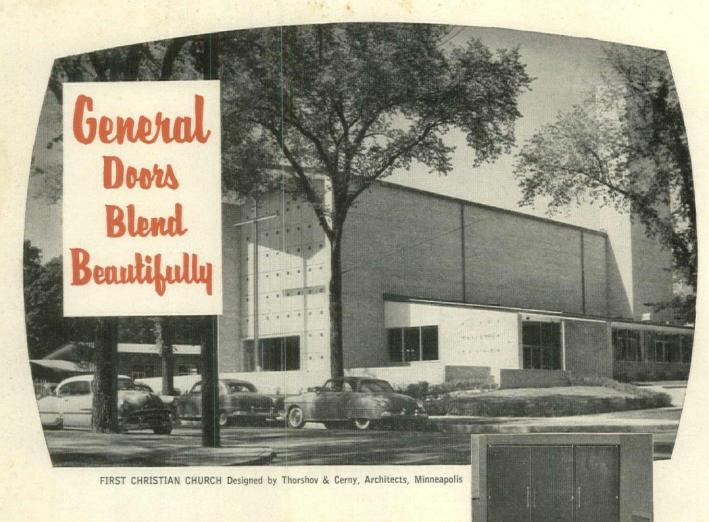


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In many churches across the nation employing modern ecclesiastical design—General doors have provided the versatility demanded by the architects' specifications. The doors used in this installation are General's African Ribbon Striped Mahogany solid core doors. Besides their ability to blend beautifully into this striking modern design, they are constructed to take the hard usage which doors in any public building must absorb. The heart of the General solid core door is its edge glued staggered stave lumber core construction which guarantees the greatest rigidity and stability possible.

For beauty, versatility, and service, specify General Doors on your next job!



#### MATCHING EDGE BANDS

Three quarter inch matching hardwood edge bands on both vertical edges provide ample trim area.

#### EDGE-GLUED CORE BLOCKS

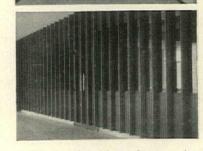
Three dimensional stability is obtained through the use of core blocks of varying length, edgeglued to each other in a staggered pattern, and to the frame, under extreme heat and pressure.

#### SEVEN-PLY CONSTRUCTION

Absolute flatness of surface is insured through the use of heavy 3-ply panels bonded to rigid edge-grain blocks that have been selected for uniformity, and dried evenly.

#### GREATER BEAUTY

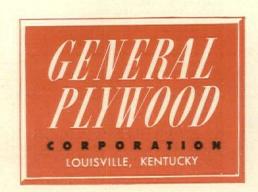
The smooth, hard cabinet-maker's finish is produced by an extra sanding operation on huge belt sanders. Faster and finer finishing on the job.

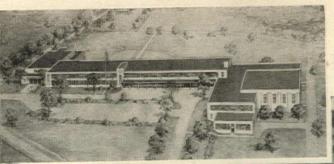


A. The three doors shown above open into the church's gymnasium. Beauty and structural strength were the requirements here.

B. It's hard to find the General door in this fluted partition. Adaptability to design was the problem in this instance.

OVER 50 YEARS IN HARDWOOD PLYWOOD





Richland Junior-Senior High School, Richland Township, Allegheny County, Pa. Architects: Joseph Hoover, and Franklin, Douden & Associates.

General Contractor: Rea Construction Company



"On this large school

# New-Design Steel Joists saved us time and money

AND WE GOT STRONGER, SAFER, MORE MODERN BUILDINGS, TOO!"

AmBridge Standard and Long Span Steel Joists are prefabricated and delivered to the job ready for immediate use.

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Their light weight means less deadload—permits economy in structural supports.

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Easily erected in any kind of

 The new Richland Junior-Senior High School plant in Richland Township, Allegheny County, Pa., is as handsome and modern as you'll find anywhere.

Built solidly on and around a strong frame of structural steel, fabricated and erected by American Bridge, it bids fair to become a model for similar light occupancy structures.

Contributing to the strength and safety of the buildings are AmBridge steel joists, which are used throughout for all roof and floor supports.

105 tons of new-design AmBridge standard steel joists, and accessories, and 60 tons of AmBridge long span steel joists and accessories were used for the roof supports of the 72' x 154' auditorium; for the floor and roof supports of the 61' x 325' classroom area; and for the roof supports of the 120' x 124' gymnasium.

In the words of the contractor: "On this large school, these new-design Am-Bridge steel joists saved us time and money, and we got stronger, safer, more modern buildings, too."

For further information about the time-and-labor saving advantages of new-design AmBridge steel joists, contact the nearest sales office, or write.

FREE BOOKLET FOR YOU: If you design or build light occupancy structures, this free booklet points the way to faster, simpler, better, more profitable construction. It is the only complete steel joists catalog with design information for spans up to 120' which you can use to improve your construction methods . . . and make more profit out of future jobs. WRITE FOR YOUR FREE COPY!

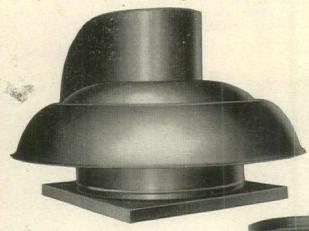
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For normal industrial air. The Power-Flow Roof Ventilator is a ruggedly built unit in an aero-dynamically correct, weatherproof housing. Most popular of all on modern factories.

3 New catalogs

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ADDRESS

#### LETTERS

Continued from p. 82

#### INDUSTRY EDUCATION

Your editorial in the August issue expresses what needs to be said to architects all over the country.

Too many engaged in building regard the building as an end in itself rather than a tool for the use and service of those occupying the building when completed.

I regret to note that the conference on industry-wide education called by the AIA did not invite the National Association of Building Owners & Managers. I believe they could offer information on many matters which would be of value in the design and construction of commercial buildings.

JOSEPH R. BEHAN, manager **Building Department** Central National Bank Cleveland, Ohio

Forum:

With great interest I have read your article on unified education for the total process of building. This is water for my mill. You will remember my "Appraisal of the Architect as a Master Builder" (AF, May '52). Such a general educational plan, as you suggest, could bring the urgently necessary integration of the building field. In your list of services to be integrated, I missed skilled labor. The problem of educating the workmen properly for building does belong, in my opinion, to the whole scheme though certainly the main teaching will be in the field. I have found that also the architect should at least get a whiff of the manual process of building and have that made part of his education. In Harvard I made it a requirement that every student, before he got a degree, had to give evidence that for at least three or four months in the summer he had been with a contractor, acting as the assistant to the clerk of the works or to the supervisor.

> WALTER GROPIUS, architect The Architects Collaborative Cambridge, Mass.

#### GLASS PRICES

Forum:

In the April FORUM an article and chart using 1947-'49 as a base left an impression that glass prices have increased substantially since 1947 as compared with prices of other building materials. Your article and chart do not tell the whole story, and for this reason may be misleading.

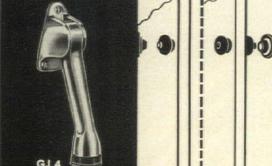
An index of prices using 1935 as a base shows that building materials increased 55%, window glass 20% and plate glass 15% during the period from 1935 to 1946 (before price controls were removed). From 1935 to 1954, building material prices increased 166%, window glass 112% and plate glass 84%.

Another index using 1946 as the base continued on p. 90



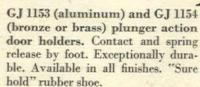
## solve your interior door control problems with GLYNN JOHNSON quality-proven hardware

...designed and built for the hard, continuous usage of public buildings



#### suggestion no. 1:

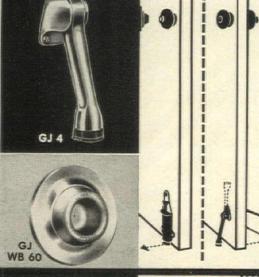
Foot operated door holders with TAMPER PROOF concave knob bumper



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GJ WB 60 concave knob bumper. Cannot be removed by unauthorized persons. Truly TAMPER PROOF. For wood screw, machine screw or expansion shield mounting. Quality bronze, brass or aluminum.





#### suggestion no. 2:

Combination bumper and automatic door holder

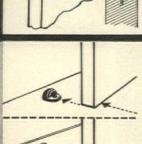
GJF 40 (floor installed) or GJW 40 (wall installed). Holders and bumpers with push-pull hold and release. Fool proof. Engage on contact, release by firm pull. Contour prevents any "standing" on holder. Quality bronze, brass or aluminum.



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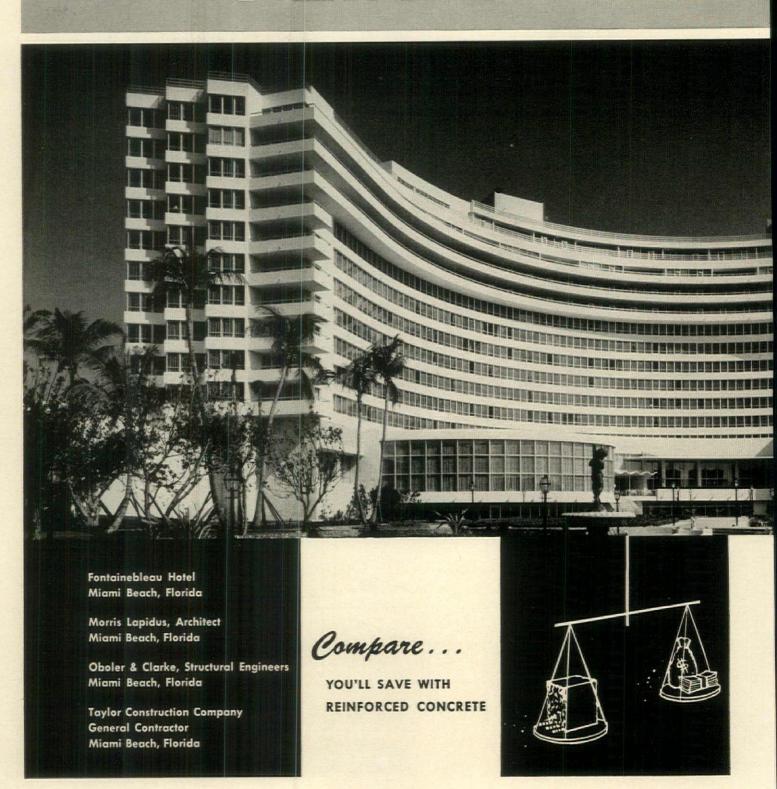
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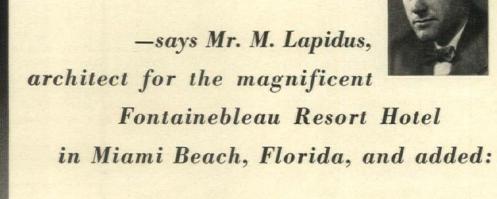
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#### **LETTERS**

Continued from p. 86

shows that window glass prices increased approximately the same as other building materials with plate glass prices increasing at a substantially lower rate.

The index charted by FORUM, using 1947-'49 as the base, tends to show plate and window glass prices at a disadvantage for the reason that other building materials had advanced more rapidly during the year 1946 and also during the first part of the base period.

Thus you can see that depending upon the base period selected, entirely different results appear. It is our feeling that the index using 1935 as a base presents a fairer picture because it compares prices over a longer period of time.

In discussing glass price increases your article stated: "Manufacturers cited no special causes such as an exceptional rise in labor costs or the price of their raw materials." However, using the base period 1947-'49 labor costs have increased 63%, soda ash (one of the basic raw materials of glass) has increased 43%, while plate and window glass prices have increased some 32-33%.

P. A. KETCHUM, assistant to the president Pittsburgh Plate Glass Co. Pittsburgh, Pa.

 FORUM's chart was based on data from the Bureau of Labor Statistics, which uses 1947-'49 as the basis for all its statistical series.—ED.

#### FIRE!

Forum:

Your organization should be commended for your excellent presentation of fire protection (AF, Aug. '55). However, I believe that roof venting has been overemphasized.

The means of controlling the spread of fire should be listed in order of their importance. Complete automatic sprinkler protection is the primary means. This is a time-proven method which is not hindered by heat or smoke density. Adequate first-aid firefighting equipment should of course be provided along with the sprinklers.

Next in importance is area subdivision to prevent the spread of fire in case of sprinkler impairment or depletion of the water supply. The only proven method for this subdivision is by story-height fire walls. In spite of the needs of production lines, when the potential fire hazard and loss in production are recognized by management, arrangements can frequently be made for full-height walls with properly protected openings. When not possible, draft curtains and roof venting are the only alternative. We know of no research or tests which have conclusively shown that the combination of draft curtains and roof vents, although recognized as effective to a degree, is the equivalent of a fire barrier or have established proper venting ratios to reasonably assure a minimum of fire spread. The recent tests by the Factory Mutual Laboratory on draft curtains and roof vents showed they had merit but the tests were not of suf-

continued on p. 94

### "The Client saved \$150,000," says Architect Everett...

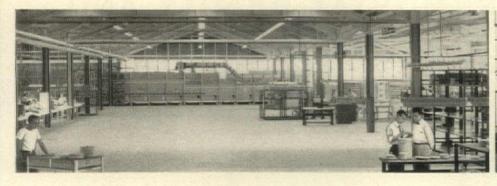


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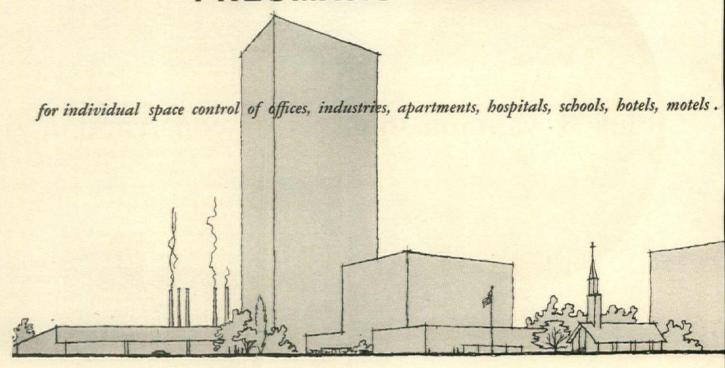
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# THE NEW HONEYWELL PNEUMATIC ROUND



### NEW THERMOSTAT BEAUTY AND EFFICIENCY-EASIER INSTALLATION

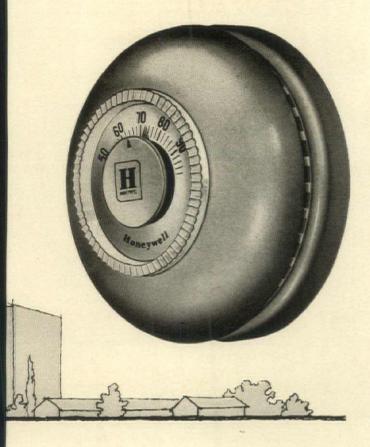
Here's the first completely new pneumatic thermostat since 1939. And one that blends beautifully into the contemporary interiors of modern commercial architecture. Henry Dreyfuss, world-famous industrial designer, was design consultant.

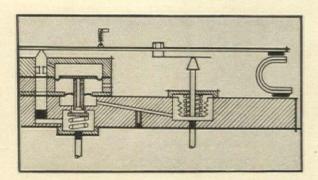
The Honeywell Pneumatic Round is as easy to use as it is pleasing to look at. But its most revolutionary features are not on the outside—but inside the removable metal case. New concepts and materials provide extraordinary sensitivity, precise modulation and instant response. So you get ideal comfort no matter what the building conditions or outside tem-

perature might be. Eight major engineering improvements facilitate installation and maintenance. Yet the Pneumatic Round is rugged enough to withstand shock and tampering.

It's easy and it's inexpensive to replace old-fashioned thermostats with the Pneumatic Round when you modernize or decorate.

For present and proposed commercial buildings, for individual apartment or office temperature control, Honeywell's new Pneumatic Round offers the utmost in comfort, convenience and beauty—at the same price as ordinary pneumatic thermostats.



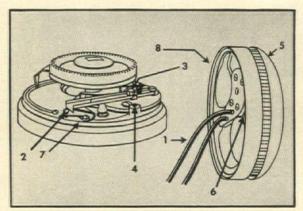


#### So precise and sensitive

The Pneumatic Round borrows the force-balance principle from precision industrial instruments to provide an automatic self-check on every change in the signal. It introduces a tiny new low-mass bimetal element so sensitive that it responds almost instantly to temperature changes. The result is the most precise modulation, the fastest response of any pneumatic thermostat on the market. And this means efficient working and living temperatures.

#### So beautiful, so easy to decorate

The simplicity and beauty of the new Pneumatic Round complement all modern interiors. The bronze-colored metal cover may be lifted off and painted to blend with the color of walls or furnishings. Setting and reading are simplified by one easy-to-read scale which serves both the thermometer and the setting indicator. Adjustable stops inside allow your client to limit the temperature range or lock the desired setting in place if he wishes.



#### So mechanically superior in detail

- New flexible plug-in tubes will not crimp or collapse.
- Quick calibration by simply turning screw with screwdriver.
- 3. Easily adjusted throttling range.
- Simple plug-in gauge easily tests branch line air pressure.
- Bronze-colored cover may be lifted off and painted to blend with walls.
- 6. Tight filter keeps air clean.
- 7. Simpler construction with fewer parts.
- Flush or surface mounting. For modernization, a special adaptor plate covers hole left by old thermostat.

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#### **LETTERS**

Continued from p. 90

ficient scope to develop standards for their use.

The third factor is the reduction of combustibles.

J. A. WILSON, engineer Factory Mutual Engineering Division Norwood, Mass.

#### Forum

.. We are pleased to see it.
E. W. FOWLER, director of codes and standards
National Board of Fire Underwriters
New York, N.Y.

#### Forum:

The article is well prepared and should be helpful in pointing the way to better fire protection for warehouses and industrial plants.

It is unfortunate that "... water damage of building contents, a major factor in fire losses ..." has been linked with automatic sprinkler protection The fact remains that automatic sprinklers, in relation to their effectiveness in controlling fires, cause less water damage than hose streams. And it must be realized also that without some water damage the fire damage is usually total.

The blow torch test, such as that shown in the article, can be deceptive. Relatively few of the so-called fire retardant paints offer protection comparable with their cost. Those giving a thick vesicular coat when subjected to heat are doubtless the more effective ones.

In mentioning fibrous insulating and acoustic boards you have not differentiated between the noncombustible and combustible varieties. The latter can contribute to rapid spread of fire and the "flameproofed" varieties should certainly be considered with due caution "where the fire hazard is critical."

NOLAN D. MITCHELL, consultant Washington, D.C.

continued on p. 99



• In its fire prevention article Forum pointed to a picture of a 700,000 sq. ft. precast deck (above) as an example of poor planning for fire control—not because the deck was made of concrete, which is widely known as a fireproofing material, but because the huge roof was apparently unvented. Forum is as red-faced to learn that its example was ill-chosen as it is happy to learn that this record-breaking expanse of precast concrete roof is vented as an aid to fire protection. The continuous vent appears as a broad line at the left of the picture.—ED.



Quiet dining assured. In the Hillcrest Country Club, Oklahoma City, Architects: Hudgins-Thompson-Ball & Associates. General Contractor: E. V. Cox

Construction Co. Acoustical Contractor: Acoustical Products Co. All are Oktahoma City firms.

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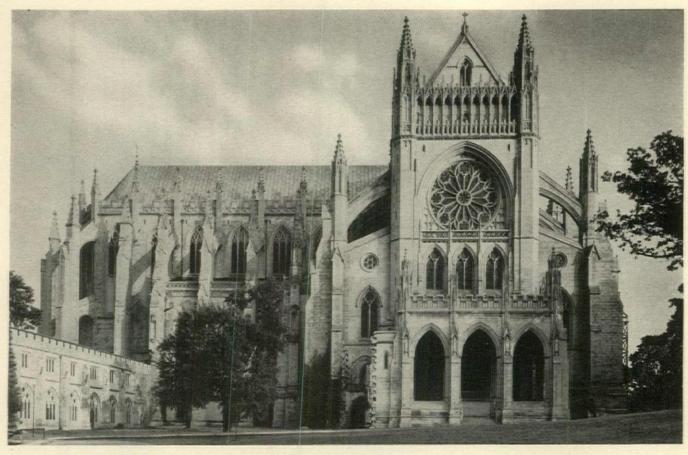
Easily spray-painted. Sprayed "Limpet" Asbestos forms an evenly textured, seamless blanket that's a perfect base for decorative painting.

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the world's sixth largest cathedral. Architect: Philip Hubert Frohman. General contractor: George A. Fuller Company. Monel roofing contractor: J. Edward Linck Sheet Metal Works, Washington.

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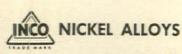
And send for our illustrated booklet, "One Metal Roof." It contains full information on various roofing problems, and indicates the metal properties needed to solve them. Also includes data and service records on Monel Roofing Sheet, and many building photographs. Write for a copy today.

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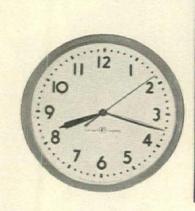


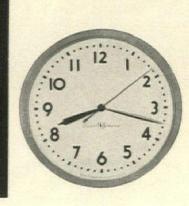
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ask:

"are
master
clocks
necessary?"





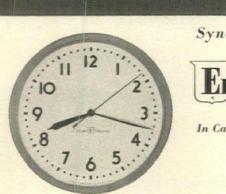
If clocks tend to coast, get out of step with each other, you need a constant source of correction. You need a master clock.

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If power fails, the Telechron motor stops instantly — the light weight rotor can't coast. When power returns all clocks start simultaneously. And here's an important advantage... the Edwards Synchromatic control will automatically correct all clocks immediately — no matter how long the power was off. No waiting for the next hour — and sometimes several hours. You have *constant* accuracy with an Edwards Synchromatic System.

A flick of the switch on the central control is all that's necessary to adjust for changes in time.

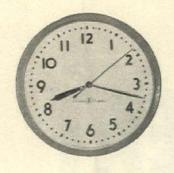
These are only a few of the advantages available — for more information about Edwards Clock & Program Systems write Dept. MH-11.



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#### **LETTERS**

Continued from p. 94

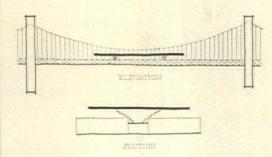
#### BROOKLYN BRIDGE

Forum:

Thank you for your article "What Happened to the Brooklyn Bridge" in the April FORUM (also AF, Aug. '55). We humans are too often foolish in allowing our lovely views to be obliterated. Usually it is by undergrowth along our highways. On Brooklyn Bridge by thoughtless renovations—and the view used to be grand. Let's get it back; here is how:

Erect, on the present structure, a new hollow, square sightseeing platform. This platform to be accessible by steps from the present footwalk. To be located above the present electric wires and lights, over the traffic lanes, but below the Roebling structural cables—near enough to the extreme bridge sides so as to have a good sightline of the panorama (see sketches below). Cost? Insignificant!

GREGORY COOPER, architect and engineer Wayland, Mass.



 But, the bridge does not look like that—Roebling's cables come down to the bottom chord of the floor truss. Hence Reader Cooper's platform would project above the bridge structure and seriously detract from its beauty.—ED.

#### PHILADELPHIA'S REDEVELOPMENT

Forum

Your article on Philadelphia's Redevelopment (AF, July '55) is a magnificent report, not only in its content but in its presentation.

I would like to get 50 copies of this report in order to bring it to the attention of the leaders of our community herein Richmond in the hope that some, if not all, of the farsightedness in what Philadelphia is doing might stir them.

Congratulations on the consistent high level of your campaign on urban redevelopment.

> WILLIAM WISE BOXLEY, president Everett Waddey Co. Richmond, Va.

FORUM:

Congratulations for having captured in your exciting article the real meaning of Philadelphia's renaissance.

ROBERT T. McCracken, president
ROBERT T. McCracken, chairman
Executive Committee
Greater Philadelphia Movement
Philadelphia, Pa.

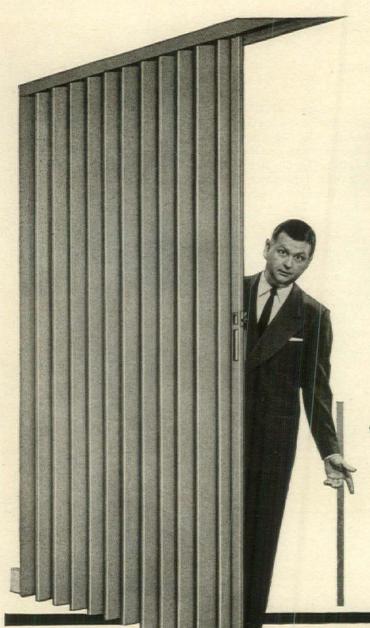


A system of multi-purpose movable steel wardrobe racks with either a chalkboard (blackboard) or a corkboard (bulletin board for pictures, maps, etc.) back. These sturdy, welded furniture steel units provide: (1) Means for holding coats, hats, overshoes and lunch boxes in an efficient and orderly manner; (2) Chalkboards or corkboards to aid class instruction; (3) Efficient, large capacity, space-saving wardrobe units, that go wherever needed, fit any space, and permit complete flexibility in room arrangement.



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First in the moderate-cost field with:Truss-embossed hinges top and bottom; rigid "Multi-V" construction assures pantograph action throughout. Cornice, nylon trolley wheels, metal hardware, textured vinyl fabric. Specify for homes, institutions, hotels, apartments, schools, industrial or commercial projects. Eleven sizes: five widths, 2'-0" to 4'-0"; three heights, 6'6", 6'8\/2" and 8'0". See distributor or write.

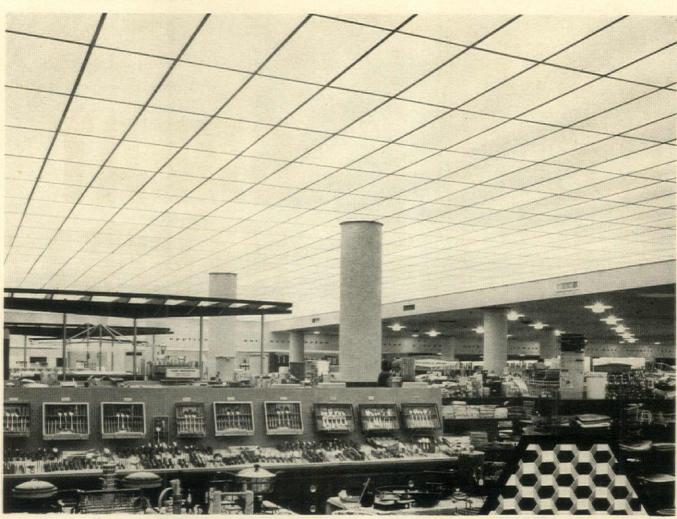


Quality leader in the economy field. Approved and favored by leading home builders. Three widths, 2'8", 3'0", 4'0", and two heights, 6'6", 6'81/2". Vinyl fabric in three decorator colors. See your FOLDOOR-FOL-BAK distributor.

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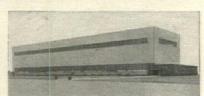
Among the 1955 winners of FACTORY MANAGEMENT AND MAINTENANCE'S Significant Plant Awards is Sunstrand Machine Tool Co. of Belvidere, Ill. This modern plant received a special award going to "plants that are outstanding in some one respect, or in which there is an unusual feature of broad significance."

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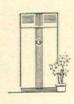
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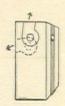
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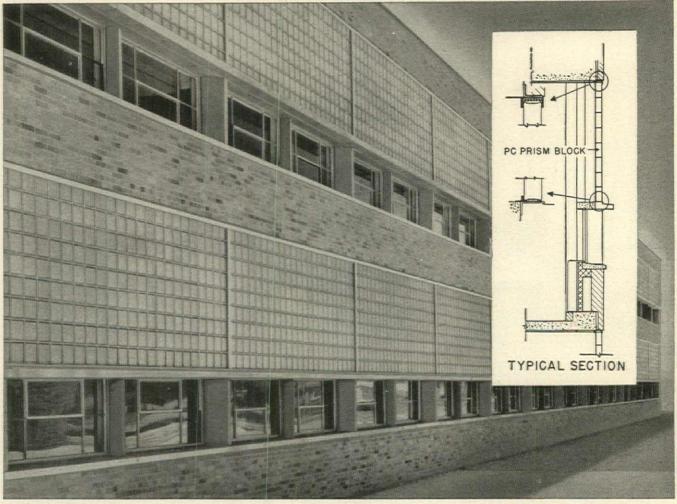
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Architect: Giffels & Vallet, Inc., L. Rossetti, Associated Engineers and Architects, Detroit.

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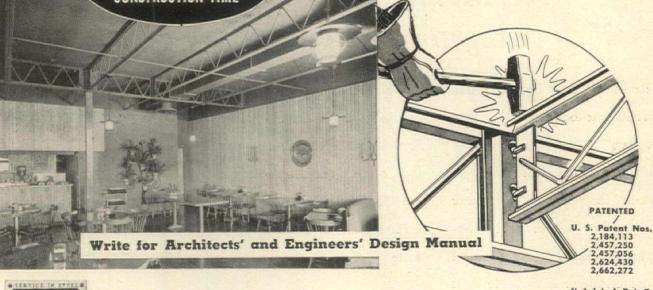
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FINISHES: Walls, light green. Ceiling, matt white

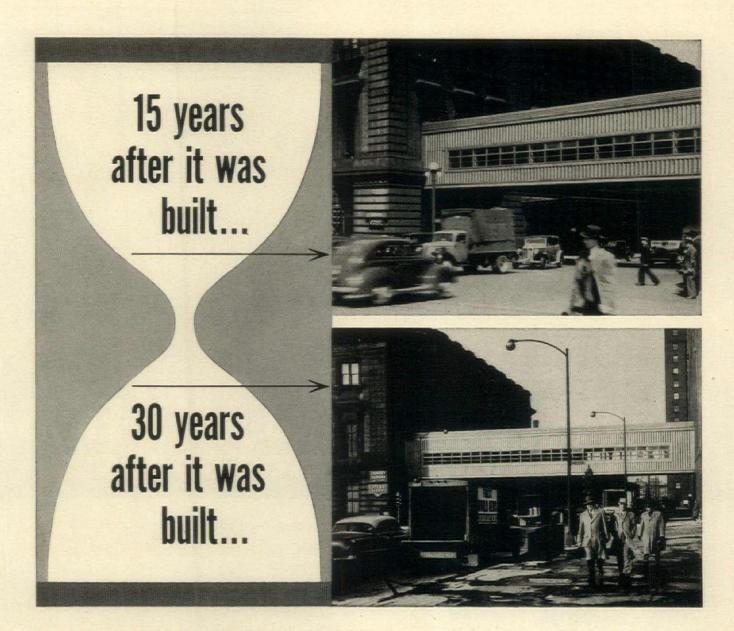
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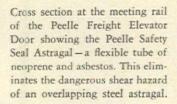
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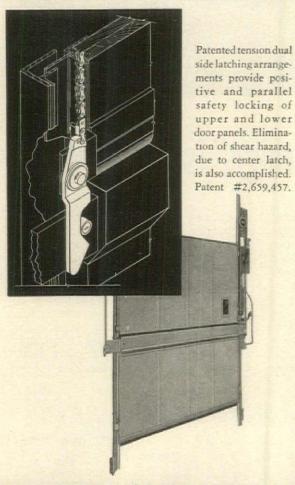
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Upper Manhattan Medical Group, Health Insurance Plan Clinic New York, N. Y. Associated Architects: George Nemeny, Abraham W. Geller, Basil Yurchenco General Contractor: Adson Builders, Inc. Flooring Contractor: Sidney Fenster, Inc.



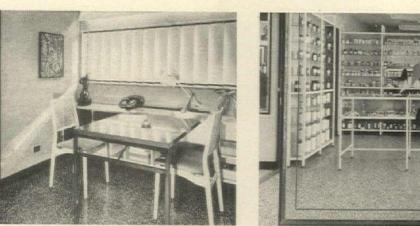
Widely acclaimed, New York's Upper Manhattan Medical Group Clinic integrates the highest standards of architecture, function and decor in an ideal union . . . in which MATICO Confetti tile is an essential specified element.

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In these light and lifting circulation areas the Confetti floor of white with black mottle contributes to the air of buoyancy and lightness. Even under heavy traffic conditions Confetti's bright colors last and last.



In consultation rooms for doctors and patients Confetti was specified also – this time in black with white mottle. (In addition, Confetti is also available in nine other color combinations).



Architects planned the pharmacy as a "display piece" near the Clinic's entrance, where it can be seen through a wall of glass. Here, too, Confetti in white with black mottle was specified.



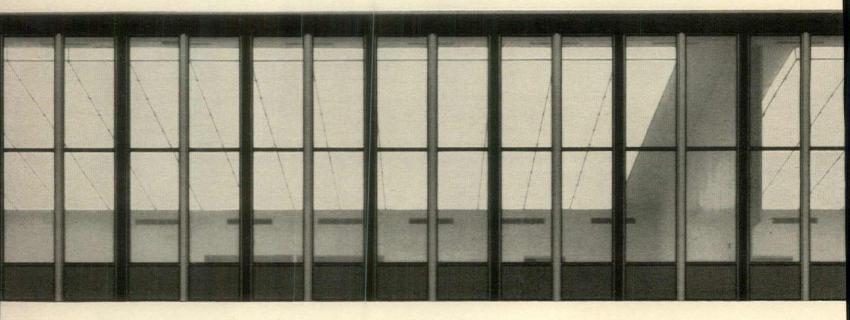
In this intimate waiting room, the decor is one of colorful furnishings, restful lighting and more of MATICO'S airy, bright Confetti flooring.

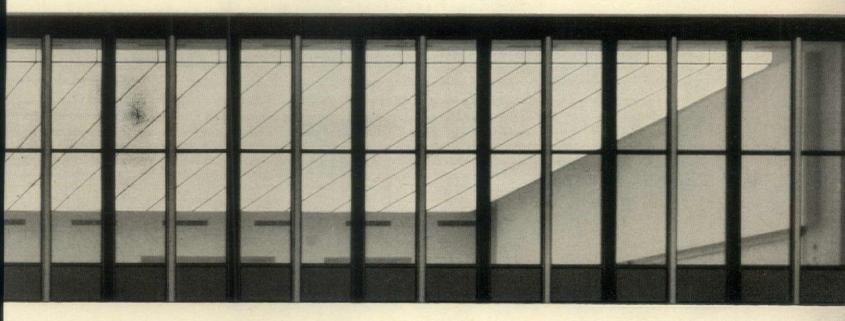
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# architectural FORUM

the magazine of building

Men behind the blueprints in this month's FORUM







ARCHITECT: I. M. Pei has dedicated himself to raising the design standards of speculative building. For this purpose he could not have allied himself with a more receptive, more productive client: he works exclusively for Realty Tycoon William Zeckendorf, one of the industry's biggest thinkers and one of architecture's most active patrons. The latest product of their imaginative teamwork is the striking cluster of commercial buildings in Denver known as Mile High Center (p. 128).

CLIENT: Frank H. Neely (top left) and Richard H. Rich both joined up in 1924 with an Atlanta institution, Rich's, Inc., the great department store of Richard's Uncle Walter. Smart people said that the company's then-new store was in the wrong place, too far from Atlanta's newer uptown shopping section. But standing pat where they were, the vigorous new heads of Rich's attracted Atlanta to them, plus the shopping of a large surrounding area. When they decided to build a branch store in Knoxville, Tenn. they picked another out-of-the-way site and formed a team of architects and consultants to devise a building that would draw the crowds (p. 152). By now, respect is given the unorthodox planning of these two men whose indefatigable work in civic affairs and whose habit of guiding educational, eleemosynary, and hospital organizations puts them close to people.

LIGHTING CONSULTANT: Abe Feder is best known for his stage lighting successes on Broadway (his biggest: Sonja Henie's Ice Review; his latest: "Inherit the Wind"), but he has also had an important part in lighting many buildings. His biggest: the UN headquarters in New York; his latest, Rich's Department Store in Knoxville. At Rich's he used theatrical techniques to focus the city's attention on the store's off-beat location and to spotlight its colorful walls of glazed brick and porcelain enamel steel. To maintain a lively interest in the architect's use of new materials, Feder put tinted filters in his spots by which he can change the building's colors at the flick of a switch.



#### ARCHITECTURE IN AMERICA-PART III

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

# THE MANUFACTURER'S ROLE

Chemistry has changed his materials, technology has revolutionized his production, but his complicated distribution system is still based on hydra-headed customers hard to reach, hard to align

Prepared by FORUM's editors with the aid of Jerry Tallmer

ing and other industries—especially our typical mass

First, this is because the building enterprise is so big

and complex that no single manufacturer produces large

buildings complete. Not even the "package builders" who take an order for a complete chemical plant dom-

inate their suppliers of parts the way General Motors

first dominated and finally absorbed makers of batteries,

magnetos, motors, wheels, transmissions. At a time

when buildings themselves are ever more complex and have to be closely integrated, the manufacturer is still

part of a federation, not a combine; he fits in his piece

with pieces by other independent producers, each of

whom makes what pleases him and in his own good time. Second, each building enterprise is separate and indi-

production consumer industries-stand forth.

Granite helped build the great halls of Fgypt; brick shaped the ziggurat cities of the Euphrates; colored glazed tile flashed back the sun from the later Persian masonry domes; marble cast shadows from the Hellenic sun of the Parthenon; concrete held together the vaults of Roman baths; and French sandstone accepted the intricate carving of figures of saints fronting the cathedrals. It is impossible to think of an architecture without its characteristic materials, whose manufacturer is in the most intimate way a participant in design.

In many ways the building industry manufacturer resembles other manufacturers, but there are important differences as to his basic materials. A building producer is habitually most conservative in choosing them. Yet even he is no longer content with the simple and the natural, and increasingly he "designs" his basic materials to specifications, producing synthetic ones. When a British scientist asks "what single molecular structure would best serve all the purposes of a wall," he puts the modern attitude in its radical form. That is the way chemical technology works, no matter what industry it works for. We shall see that this transformation, coming belatedly in the building field, is not without major friction (p. 119).

When it comes to the actual fabrication (i.e., preassembly) of building parts, differences between buildvidual. One might say simply that this is a "capital goods" industry; but it is not so reducible to mass production principles as some of these have been. For example, in Diesel locomotives, General Motors was able some years ago to effect a radical simplication—and cost reduction—by insisting that every railroad buy the identical model, no modifications allowed. At one stroke this put traditional steam locomotives out of business and the railroads on their feet. GM could do this because the

locomotive, intricate in its make-up, was nonetheless simple in purpose. Buildings are complicated in both. Third, the building project is complicated still further

by esthetics and emotion. In other objects that they use, most people are content to choose within a limited range of up-to-date styles and models; but the places they live and work in are deeply personal, and architecture is an art

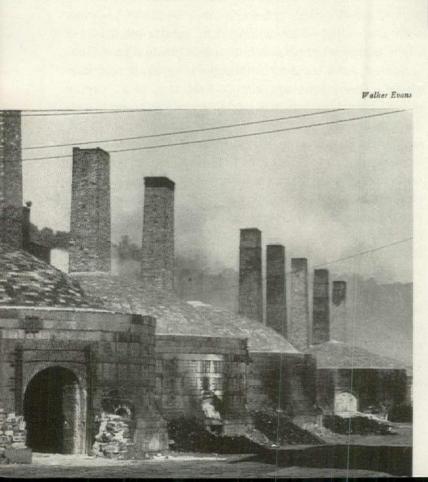
Fourth, and equally obvious, the final assembly line

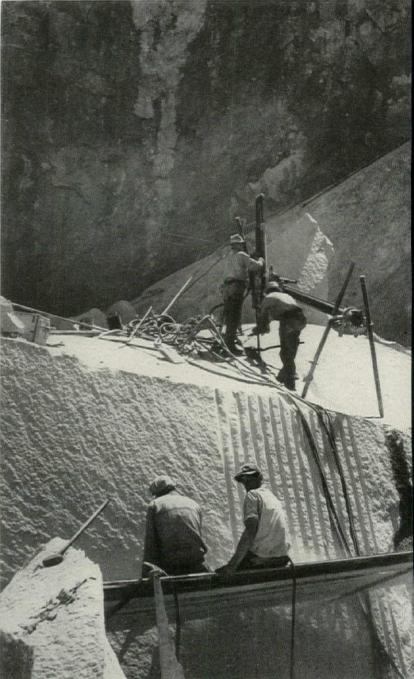
**Strip mill,** at US Steel's new Fairless plant, illustrates the newer type of "synthetic" material represented by metals and plastics. But building uses only 16% of steel output.

Photo opp.: Andreas Feininger-Life



Natori-Black Star





Marble being quarried at Danby, Vt. Traditional materials producers have tended to go along with traditional architecture; but marble has begun to adapt itself to the future too.

Clay kilns in Midvale, Ohio turn out sewer pipe. In their basic processes these industries go back into time immemorial. They have a close responsible knowledge of architectural problems.

for the building product is not in the shop but under the sky, scattered among thousands of different sites. Not only is the final assembly out of the manufacturer's control, but it is beset by whole armies of local barons. Each citadel he seeks to conquer has its own client, architect, engineer and lender, who at least join in wanting a building; but on top of that each site has also its own code authorities, labor bosses and building inspectors who hold pistols to his head, throw sand in his gears, and make him load his product with useless baggage.

#### The basic materials war

Among suppliers of building's basic materials, a definite evolution is on the way, as we have said, from simple, natural, traditional materials toward complex synthetic materials man-designed and man-made. At the moment this divides producers into two parties, "traditional" and "modern," with a hot rivalry between the two. The traditional ones are mainly the quarrymen and kiln masters whose materials our story started off with. One strong characteristic is that these producers belong to the building industry all alone and by itself. (Nobody uses a brick for anything but building.) Their intimate contact with building goes back in some cases literally millions of years. A safe working knowledge of good construction is in their bones, along with some historical inkling of what architecture is all about. They care about building, it is their whole job.

The current battle over materials to be used in the Air Academy has brought to light other important characteristics of these producers. The reason masonry interests were able to make so strong a political maneuver was partly that they and their trade unions—numerous in membership and votes—work hand in glove. Fascinatingly enough, they were not content with arguments based on costs: they stood forth boldly for the idea of traditional architectural style. (In such a style the use of their materials would be assured.)

In this contest many were surprised that the rivals of traditional masonry, the suppliers of the modern synthetic materials of steel and glass, remained so silent; but reasons are not hard to find. One is that bulk producers using complicated processes of heat and chemistry have to be, by nature, "Mr. Big"—and Mr. Big must always proceed politically with great care. The other reason reaches deeper: these producers do not belong to the building industry alone. Building takes only 16% of the output of steel.\* As recently as 1939 giant Alcoa sent to building only 8% of its aluminum—signfi-

An anecdote illustrates the difference in psychology involved. Glass-loving Architect Mies van der Rohe tells how he had long been hounding plate glass manufacturers for a product more closely tailored to certain building requirements. Finally this year a big maker talked with Mies about a metal-infused gray colored plate that would retard heat (and sky glare, too) far more than any plate made today. But, said the maker, "Where do we go from here? Your 38-story building will take just two days' production." The architect cracked back, "Must I solve your marketing problems, too?" Nonetheless, this manufacturer's problem is real for, believe it or not, even though this is the "glass architecture" age, the proportion of current plate glass output that goes into building is not more than 10%. Some 70% goes into mass-produced cars. Consequently for building to command the same interest, the same research, the same participation from such a multiindustry supplier as mass industries receive, the powers of a Mies would have to be multiplied many, many times. There is no sign that the architectural profession, the only group whose design interest goes all across the board, has yet dreamed of organizing itself to exercise such influence.

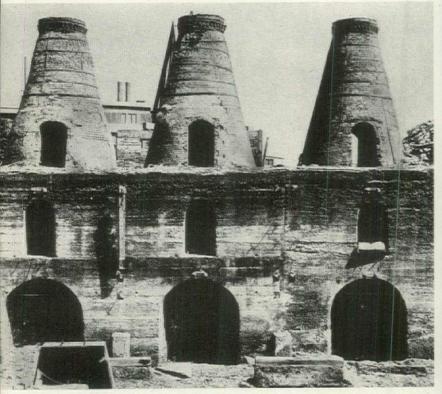
The fact that the new synthetic materials are not so organically tied in with building helps to account also for one of the characteristics of modern architecture most often criticized: its tendency to get prematurely shabby. Where modern materials are used in modern design there is lacking that traditional wisdom about a structure which must stand against heat and cold, sun, storm, sleet and snow. Relying on theory and calculation, and with frequent change, the architect and his materials producer must somehow put *more* care, more planning, into the result—and, one must add, more heart.

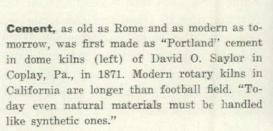
Returning to the traditional basic materials of building, chiefly masonry, even there the conservative attitude now controls only one wing; for another wing has decided to move with, not against, the age. They want to serve modern architecture and not only traditional. So the marble producers have begun to promote their own "thin curtain wall" and the Structural Clay Products Institute has its new research under Robert Taylor devising new, lighter structural products more quickly assembled and with less labor. Even cut stone may well come to be put together, in the shop, in major panels like prefabricated concrete. The point is not that nature's own built-in furnaces may prove to be pretty good and cheap after all (stone is naturally

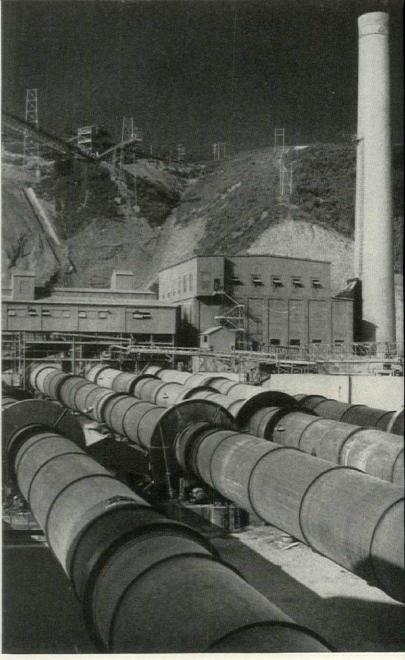
cantly the proportion had risen close to 25% by 1955. Plastics serve every conceivable industry beside building (acknowledgedly building's share is growing fast).

<sup>\* 15.7%</sup> to be exact, according to Standard & Poor's.

Photos: (below) courtesy Portland Cement Assn.; (right) J. R. Eyerman-Life







fused by heat and pressure as the structural bones of the earth itself) but that *every* basic material of building must increasingly be shaped and constituted to meet *performance* specifications, thought out in advance. Even "natural" materials must be handled like synthetic ones.

#### The situation of the makers of parts

So much for the building industry's basic supplies. What now about manufacturers who make building parts out of these, parts like wall and floor coverings, or doors and windows, or air conditioners, or lighting systems?

In three important ways these manufacturers are in a situation that goes against prevailing trends among those US mass industries that are pointed exclusively to consumers. First, although the building industry is very big—it produces roughly \$25 billion annually in manufactured elements—the individual corporate units

are not among the nation's largest. Second, against the trend toward elimination and consolidation of corporate units elsewhere building manufacturers are rapidly on the increase. And third, their profit margin is not growing, but slowly decreasing.

Despite the magnitude of building as a whole, the size of individual building manufacturers shows up as medium on such lists as Fortune's "The 500 Largest US Corporations." As one might expect, only the big suppliers of basic materials and those whose equipment, like refrigerators or bathtubs, goes largely into the consumer market, come in the front rank, among the first 100: US Steel, GE, DuPont, Westinghouse, Union Carbide, Alcoa, Pittsburgh Plate Glass. As we have said, they supply materials in abundance to the American builder but they supply other industries, too. Of the two connected in the first instance with the business of building, Owens-Illinois Glass is No. 89, American Radiator Standard & Sanitary is exactly No. 100. (The criteria: 1954 dollar volume of sales.)

This is all comprehensible; for, counting out makers of materials or equipment for the consumer market—paints, floor and wall coverings, plumbing goods, kitchen equipment and the like—a building parts manufacturer is a specialist and his manufacturing runs are often short.

The multiplication in producers reflects the obvious fact that building is getting more complex, has more different kinds of things to make, more different kinds of users to please, more special demands to meet. William Gillett, president of Detroit Steel Products,\* once counted up all the metal windows listed in manufacturers' catalogues. Gillett's count: 651 varieties—or something in the neighborhood of 1,500 if one allows for deviations in size and detail.

The third fact about the manufacture of building materials and parts will perhaps come as something of a surprise. During this, the greatest boom in its history, its profit margins have gone almost steadily down. Again the source is Mr. Gillett, who has assembled the relevant figures of 50 typical firms for the years 1950 to '54 inclusive. Their collective profit margins declined without a break from 8.48% in 1950 to 5.48% in 1953, then rallied just a trifle to reach 6.05% in 1954. A reasonable assumption is that the mounting wages of the period, the greater complexity of carrying on under mounting numbers of rules and regulations, put a premium on production in big quantity and long runs, under simplified methods of selling and moving goods, whereas it has put a penalty on the opposite. And these advantages the manufacturer in the building field simply did not have.

#### The complex distribution pattern

High among his troubles is a distribution-and-sales pattern of almost medieval complexity; but the blame for this cannot be placed solely on the manufacturer. He usually has to sell to eight different kinds of people in a row, only one of whom actually lays down the cash. The eight kinds: clients, code officials, architects, engineers and other technicians (lighting, acoustics), contractors, subcontractors, dealers—and even labor organizers. Within each bracket there are further subdivisions. Thus "client" may include all of the members of a school or hospital board, and a few of the friends and relatives of same, not to mention miscellaneous politicos in the middle distance. Architects may include specifications writers, engineers and consultants. Subcontractors may include anything from soup to nuts.

The result is the kind of highly organized chaos that may best perhaps be defined by example. Here, in brief, are a few specific samples of individual distribution sys-

\* And current President of Producers' Council.

tems, some revered, some detested, by those who live by them:

Company A (roofings and sidings): 14 sales districts in US, some 400 salesmen all in all. Each man has from 50 to 500 accounts; that means company probably has over 100,000 total outlets. These are jobbers, applicators, dealers—but dealers are for most part merely small lumber yards and the like. Sometimes a dealer will order big lots in endeavor to jump to jobber status and get lower wholesale price. This usually starts price war. Home office has new architectural department to work directly with builders and architects.

Company B (structural steel): Normal distribution is direct to contractor, at least on larger jobs. But in Texas, Los Angeles, and throughout the South it is handled through distributors and dealers. "In fact—" long pause—"it's all mixed up." And what if whole thing could be wiped out overnight, for a fresh start? "That would be . . . ideal. But it would only get back to the same mess all over again."

Company C (plate glass): "In our business we are the manufacturer, the contact man, the middle man, the retail man, though we do also have three or four big jobbers who sell to glass and glazing contractors. We police what they do very closely, and won't book an order which gives a hint of coming misuse."

Company D (plastic ceilings): Deals exclusively through electrical wholesalers. Huge muddle. What about wiping it all out, etc.? "Wait a minute, let me think." Very long pause. Finally: "No, I wouldn't. The system is fundamentally sound. The function of the distributor in the electrical line is to stock the product. But he can't do that with plastic ceilings, so instead he helps to install it—and in outlying territories, to sell it. In the outlying territories we couldn't live without him. We've built our New York branch, however, around the concept of selling to architects. In Chicago, on the other hand, we sell more to the consumers."

Company E (air conditioning): Has five major distribution departments—one for equipment less than 100 tons, one for 100 tons and up, one for special products ("they're searching to see what they can get into"), a marine division, and a division just to handle a few huge national accounts. The small stuff all goes through dealers, the rest is sold in any of three different ways.

- 1. F.O.B. to building contractor, who installs equipment for himself.
- 2. "Installed-equipment basis" company furnishes equipment, installs it on request.
- 3. "Installed complete"—company acts as subcontractor to contractor on whole deal. Is doing less and less of this as contractors become educated to newer equipment.

For the people at the design end of things-skipping



all those in between-materials distribution is an impenetrable jungle waiting for a bulldozer that will probably never come. If you do not believe it is that much of a jungle, ask any ten manufacturers just how much they know about where their product is actually going, at the far end, and how it is being used. Eight out of ten will grin and tell you they frankly do not know; and the other two will say: "Of course we know-I mean on the large orders."

Before going on to the next problem of the manufacturer, the problem of his research, it may be well to pause and mention that the "chaos" of the industry is not without compensations, for those seeking excellence in design. A fine disorderly freedom has at least prevented what critics have called "premature standardization." It means that an owner or architect dissatisfied with the product of his habitual supplier can shop around, specify something else: he is not bound, like the automobile maker, to his own subsidiaries. Disliking household hardware a designer can find ready and waiting for him something in a hospital line; air conditioning has been transferred to buildings from ships; stock millwork can be supplanted with custom details.

#### The problem of research

The condition is not so happy in research, where a splintered industry faces a comprehensive problem that is unusually complex.

Because building and architecture are so intensely human in aim, smart manufacturing always has a dual

research assignment. On top of the usual research on materials and methods that any industry gets into, the building manufacturer must find out important things about people-about their eyes and ears and skin pores, for example, not to mention anything more. And the plain fact is that the financial burden of such research falls in the end on manufacturers. So GE for example carries on its great research establishment at Nela Park, where Matthew Luckiesh presided for years as one of the authorities on human seeing. On questions of hearing, luckily building shares the interests of the telephone industry and the results of its Bell Laboratories. Where heating and cooling and ventilating has been studied by the Pierce Foundation, support has come heavily from manufacturers like American Radiator.

Unhappily this leaves unmatched by any single manufacturer's interest some of the most searching and basic problems in the field. Biggest example: the greatest "luxury" of architecture, as Henry Luce has said, is spaceand indeed space is architecture's basic commodity; yet nobody is trying to subsidize that Einstein of psychology who will tell us how it is that we apprehend space. For lack of sound knowledge on this apparently so simple matter architecture is floundering, and thousands of architects fall back on the eloquence of a 1914 writer, Geoffrey Scott, whose Architecture of Humanism was based on hypotheses of Wundt and other turn-of-the-century scientists. Today these hypotheses are largely untenable. Before such fundamental questions can be truly researched the building industry as a whole must get together; to get together it must have a leader; the only



Fairless plant belongs to one of the building industry's most important suppliers, US Steel. Yet interestingly enough the architectural ideal in the US has not penetrated far enough for independent architects to be employed in connection with the planning of such colossi on the landscape. Architects have always been employed on the latest in England, Germany.

possible leader is a revitalized architectural profession, because it alone has an interest in the whole field.

For a manufacturer to grasp the importance to himself of mere space, of sheer "emptiness," will of course require some sophistication; but with a little time and effort the architects should be able to make clear that space awareness means as much to building as combustion means to producers of motor fuels. After that, the building industry may look for allies among other industries similarly interested, as it has found allies among the communication industries in the field of sound and illumination.

Another whole field of research applies to working standards. Some 120 organizations have developed these; 278 commercial laboratories and 86 universities or colleges issue reports on materials and products under various kinds of testing, and manufacturers are tightly dependent on the outcome. In this field the procedures are of course set up by the American Society for Testing Materials and manufacturers have recourse to the US Bureau of Standards in addition to the private testing labs such as Armour Institute's acoustical labs at Riverside, Illinois. In a brief summary the one most useful criticism that can be made of a great deal of such research is that despite the good conscience that goes into the work, the assumptions that underlie it are sheer balderdash. This is because so much relates to mere performance under codes—codes that in themselves are the result of political compromise. In the case of fire codes, for example, such patently arbitrary tests as "two-hour" or "four-hour" ratings would not command the respect of any scientist of standing; and the result of routine adherence to them is simply to penalize the manufacturers of lighter, more efficient, more economical new materials. (See "Codes vs. Progress," AF, Dec. '50.) In case anyone thinks this is entirely a problem of rivalries within the building industry, we must recall the fundamental fact that competition today is not carried on within industries only but between different industries, and that any industry which is costly and inefficient as a whole loses public favor and position.

Then there is yet another major field of research, research in building correlation and new invention.

It is in this field that today's quarrels between manufacturers and architects should be replaced—and often are—by closer cooperation. With some justice, today's manufacturer sees the architects as ambitious impractical fellows. "They want us to rip apart our production lines, cool our vats, stop working, every time one of them gets a brainstorm for a new product, a new shape, a new size, a new gimmick. Or to put color into something we don't know how to put color into . . . And what are we to do with the architect's new wider panel once we get it out for the one building for which he wants it? -Or says he wants it? A lot of risk he is taking!" To which the architect replies, "Industrialists! Why, there aren't a dozen of them who have ever taken a chance with anything in their lives! Imagination, change, progress cost money, and that is the one thing these guys won't let loose of. Let me tell you a secret: in this field it is I and my clients who have to do the experimenting. If I find a shortcut and the client is willing to take the risk of

paying for it and testing it in his building, the manufacturer will pick it up fast enough—provided it has been successful. And I get no royalty even if he copies it straight off my drawings, and puts it on the market."

To such bickering there have been some resplendent individual replies in the field of action, where for example Kawneer, making store fronts, enormously advanced its design and styling through a long association with several leading architects as design consultants. There have been some significant—though not resplendent—joint efforts, like the long joint enterprise of the AIA and the industry on modular coordination. And there has, above all, been one brilliant generic answer: the work, now 30 years old, of Walter Gropius in Germany at the Bauhaus.

The Bauhaus is worth reminding ourselves of, because Gropius there made a statement of radical importance to architecture and building. He sharpened the statement with which this story begins, that "the manufacturer is in the most intimate way a participant in design," by pointing out that the design of our building parts must be made in the factory. Architecture in an industrial age is no longer an art built on handicraft. It deals with an assembly of ready-made manufactured products. How the individual product has been designed determines the character of the assembly. The connection between architect and manufacturer must therefore be more intimate than ever, since architectural design must move back into the factory. And this in turn means that the profession must take a radically different attitude toward those of its members who work directly for and with manufacturers, sometimes as employees. These are stepchildren today, in professional societies such as the AIA, which promotes first of all the interests of the "independent, professional practitioner." Yet, if an individual, with architectural training, were looking for a fulcrum point, a place where he could most decisively influence tomorrow's architecture, he might well attach himself to an enlightened manufacturer. And in due time his own profession must honor those who do so.

In brief, more and more of the design of architecture, the architect's traditional province, has moved back from the drawing board into the factory, and back from the drawing board into the test tube. A radical disencumberment of architecture from meaningless codes and local impositions awaits a common push by architects and manufacturers. The richness of the field gives architecture a chance to stay individualized and escape the sheeplike uniformity that pervades consumer fields in mass manufacture. Yet the basic research badly needed for the field as a whole will not be done until a new kind of architectural leadership organizes and demands it—through the industry. And design will not much improve until that architect is honored who works in the manufacturing end of the industry. To paraphrase Le Corbusier, the manufacturing end of building can be the very seat of imagination.

Next month: THE CORPORATE CLIENT.

Architecture's new dimension:

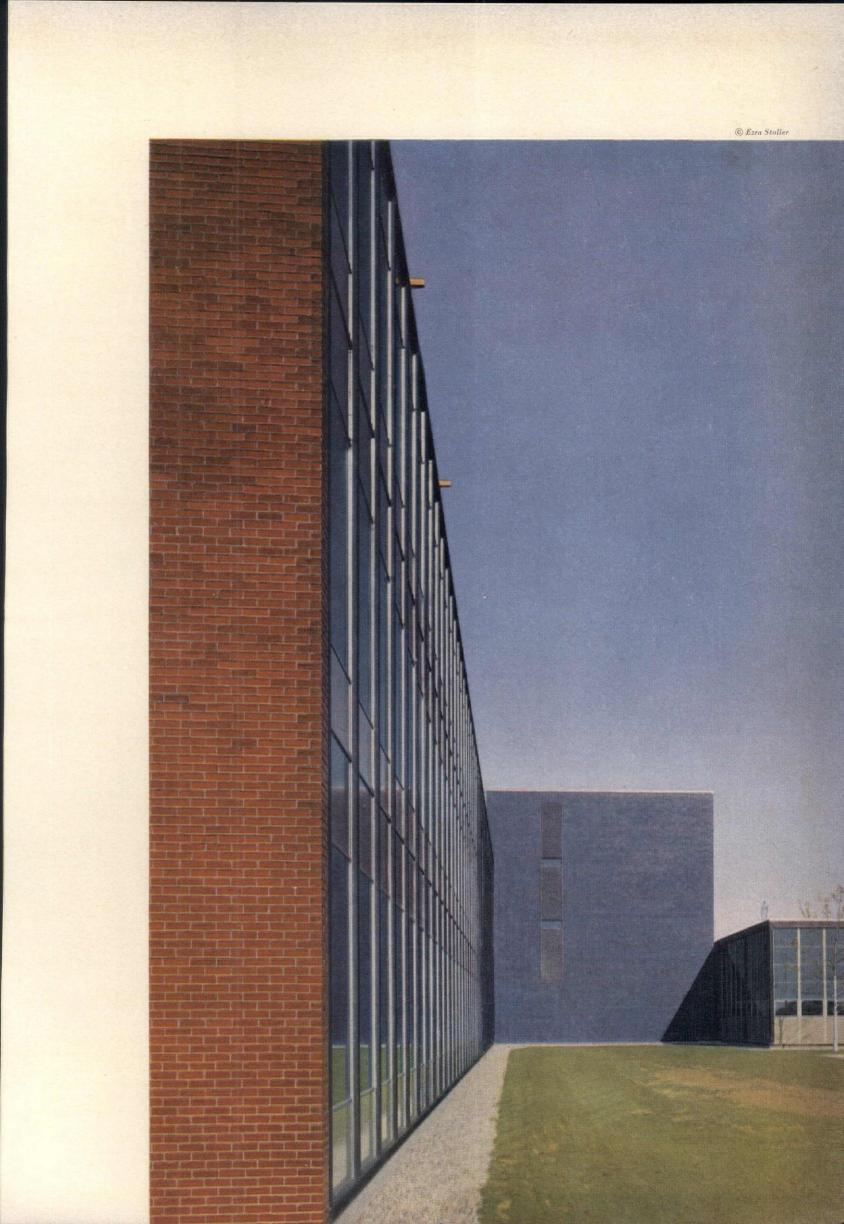
### **VIVID COLOR**

Not since the Persians put polychrome pottery all over their palaces have the outsides of new buildings blazed with such brilliant colors. Old materials like brick are hiding their traditionally dull browns behind shiny red and blue glazes (right). Stones of many colors are reassembled in huge mosaics to cover entire building walls (p. 126). The use of colored glass in religious buildings is being revived—but on a grander scale than ever before-p. 127. With the aid of the anodizing and enameling processes, relatively new materials like aluminum and steel are colored glass in religious buildings now wearing color (p. 128).

Thanks to advances in postwar chemistry, the architect's palette is no longer limited to the dull monochromes found in natural facing materials. Today he can render his actual buildings in almost any color he can put on paper. And in a physical sense the prospect for a brighter world of tomorrow is brighter than ever.

COLORED BRICK at General Motors Technical Center is nowhere seen in its usual earthy hues. Instead, ten glowing colors\* brighten the end walls of the 20-odd buildings, add a lively variety to the 3,000' sweep of the huge project. Colorfast and highly glossy, the glaze is added to common brick which is then fired for a second time. (Side walls are of porcelain enameled steel—mostly grays and tans—and green-blue heat-absorbing glass.) Architects: Saarinen, Saarinen & Associates and Smith, Hinchman & Grylls, Inc.

<sup>\*</sup> Red, dark red, tangerine, orange, yellow, light blue, dark blue, gray and black.





COLORED STONE, some 71/2 million small pieces arranged in a huge mosaic, forms a veneer for the four windowless walls of the library stack at the new University of Mexico. The stone chips are of roughly 2" face and are of ten colors ranging from obsidian black to marble white. (Blue, not found in stone, is supplied by pieces of glass cullet.) The colors are soft but seem to become brighter as the building ages; and their intensity steps up considerably, of course, when wetted by rain. The mosaic treatment is repeated on three other surfaces: 1) in the upper part of the big reading room window which consists of squares of translucent Tehali marble, 2) in the terrace retaining wall which is volcanic rock carved with Indian themes, and 3) in the concrete sidewalks which are enlivened with colorful stone patterns. The mural's artist is also the building's architect: Juan O'Gorman. As a result of his daring use of the stone mosaic, Mexico City today is ablaze with colorful imitations.



MILTON STEINBERG HOUSE, New York City
ARCHITECTS: Kelly & Gruzen and S. Robert Greenstein, associate
ARTIST: Adolph Gottlieb
CONTRACTOR: H. R. H. Construction Co.



Photos: (left & above) Ben Schnall; (below l. & r.) Rondal Partridge

COLORED GLASS has been part of religious architecture for centuries. But whereas it was once used only for windows, it is now used for entire walls. The four upper floors of the synagogue annex above are faced with 1,300 sq. ft. of glass divided into 91 panels. One-third of the area is devoted to abstract stained glass "paintings" portraying Jewish holidays and traditions. The balance is made up of tinted diamond-shaped panes. To create the effect of an all-glass wall, spandrels and visible floor construction are reduced to the 21/2" thickness of the aluminum mullions. A somewhat similar effect is obtained in the church below with large pieces of flat-hued glass. The detail at the right shows the inside of the narthex wall.

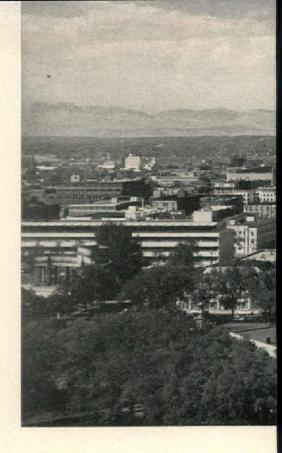
CORPUS CHRISTI CATHOLIC CHURCH, San Francisco, Calif.

ARCHITECT: Mario J. Ciampi SCULPTOR: Elio Benvenuto CONTRACTOR: Jacks & Irvine

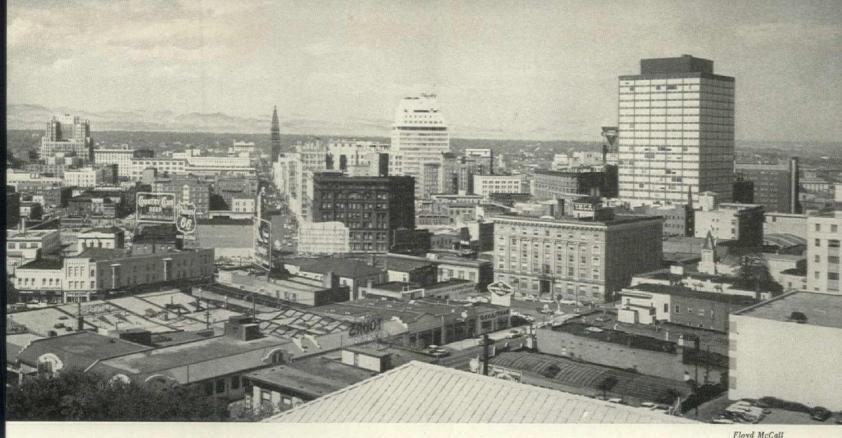




cast aluminum and buff porcelain enameled steel—create the interlacing pattern woven across the face of the Mile High Center's office tower. The buff-colored steel covers (and expresses) the underwindow air-conditioning units and their risers; the gray aluminum sheaths (and expresses) the building frame. To the right of the tower is the plaza and the curved roof of the transportation building; beyond them, the Center's remodeled bank building.







A new kind of office building challenges accepted standards. Its thesis: that high style and public plazas are a good longterm investment, and that businessmen will pay for them

#### DENVER'S MILE HIGH CENTER

The big gray and tan ribbed structure dominating Denver's growing skyline is something new in downtown architecture: a speculative office building, built at low cost and rented for profit, that looks as if it had been built for a first-class institution.

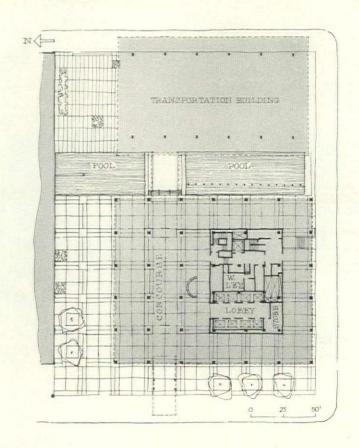
In their Mile High Center, Realtor William Zeckendorf, Architect Ieoh Ming Pei and Builders George A. Fuller & Co. have pooled talents to attack the inertia of codes, costs and conservatism that holds back much urban design. Their building has no ugly wedding-cake setbacks copied from New York, no naked party wall, no dark back side with airshaft office space. Pulled back from the street and adjacent buildings on a corner lot, it rises free and four-sided for its full 23 stories, in its own pleasant setting of fountain-pools and plazas. Around its base the owners (Zeckendorf's Webb & Knapp and the Fuller Co. each hold 421/2%, other interests 15%) have given up stores, protecting their office tenants from the pasted-window disorder of average shopfronts. Instead, they have placed shops and restaurants in the basement concourse of their low adjoining building, where they still thrive. Office tenants gain prestige, and pedestrians gain the leisurely space of open arcades at street level (p. 130).

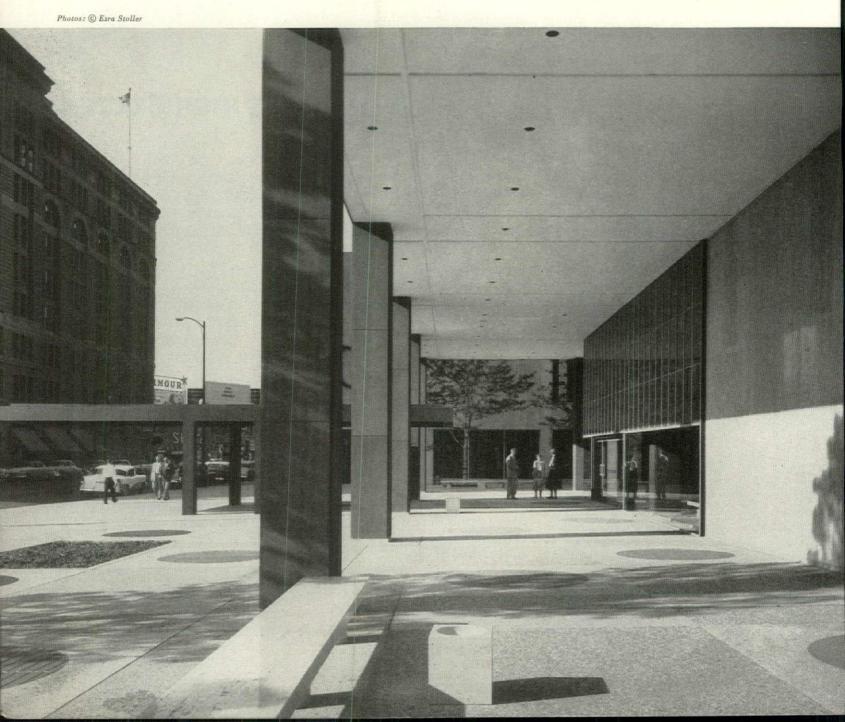
Denverites call Mile High the "New York building," built by New Yorkers charging New York rents-\$6 to \$6.50 against Denver's average of just over \$3-and introducing year-round air conditioning to a high, dry town that "didn't need it." The building opened offically this summer; to date its 369,540 net sq. ft. are 58% occupied, largely by big companies setting up new or expanded headquarters in the Rocky Mountain Empire.

Neither Zeckendorf nor Arthur Rydstrom, Webb & Knapp's local vice president, are concurned about lack of tenants. Sixty per cent occupancy covers operating expenses, taxes and amortization, largely because the building was completed nearly \$1 million under budget (Construction costs, including air conditioning, were \$7.8 million: \$17 per gross sq. ft. or \$1.32 per gross cu. ft.).

Moreover, Denver is fast becoming the capital of a vast area rich in oil and uranium with the big added attractions of brisk, sunny climate, sports and scenery. (Even before

Eisenhower started going there it was called "the second Washington," can now boast some 30 federal agencies including the AEC and the new Air Force Academy.) Mile High, cream of the city's office space, should attract its share of the new business, especially as firms find themselves competing for personnel. Teamed with Zeckendorf's still bigger hotel, department store and transportation center planned for nearby Courthouse Square, it might even shift the whole downtown center of gravity.





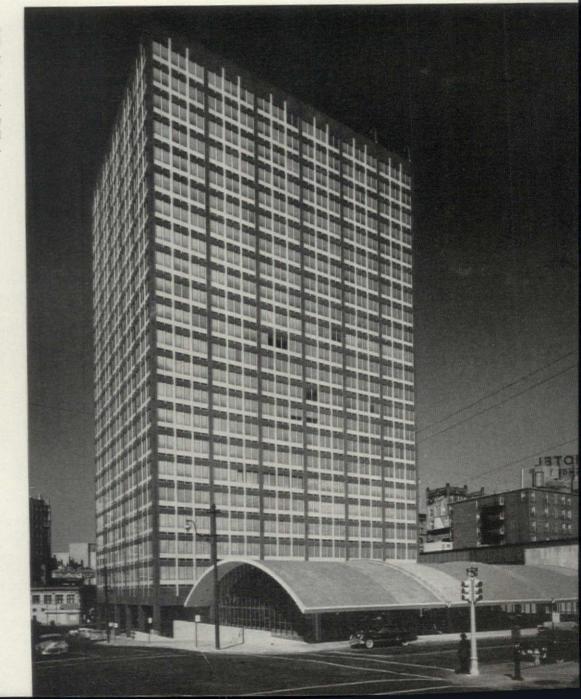


Entrance canopy is a free-standing structure of black-painted steel, roofed with 30 glass-block toplights each 3'-2½" x 6'-2". Fixtures under cross members bathe entrance in a pool of light at night. Seen through arcade at left is remodeled building which forms one side of lower plaza.

ARCHITECTS: I. M. Pei & Associates;
Kahn & Jacobs and G. Meredith Musick
CONSULTING ENGINEERS: Jaros, Baum & Bolles;
Severud-Elstad-Krueger
CONTRACTORS: Geo. A. Fuller Co., general
Kerbey Saunders, Inc., mechanical
Fishback & Moore, electrical

FINANCING: Equitable Life Assurance Society

Woven pattern clearly expresses "gray for structure, tan for cooling"—first full articulation of both on building façade. Unlike some curtain walls, this accurately silhouettes against office lights, allows building to "read" same at night. Windows are washed from inexpensive "spider" staging seen on roof at right.

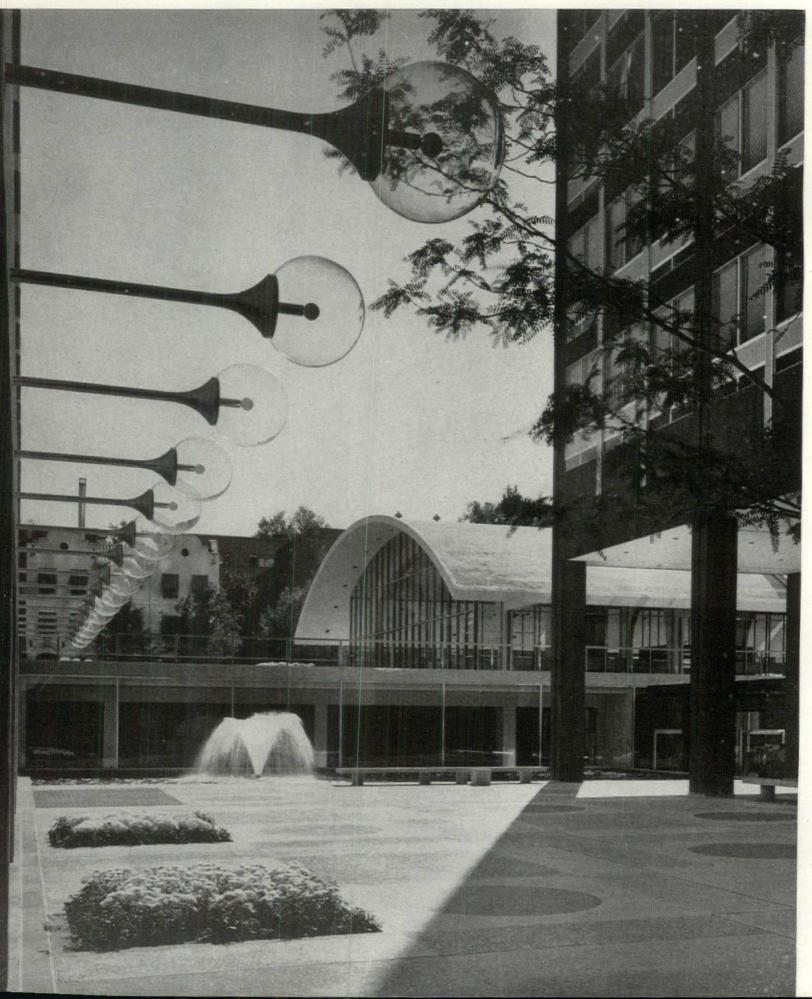


Entrance arcade, across
Broadway from Denver's
Brown Palace Hotel, is set well
back from street behind spots
of planting. Lobby is still farther back, giving wide covered
place for strolling or sitting.
Soft gray finish of anodized
aluminum columns is set off by
white of plaster ceiling, luster

of travertine wall.

Mile High's plazas: the lure of sun and sparkling water

Photos: © Ezra Stoller

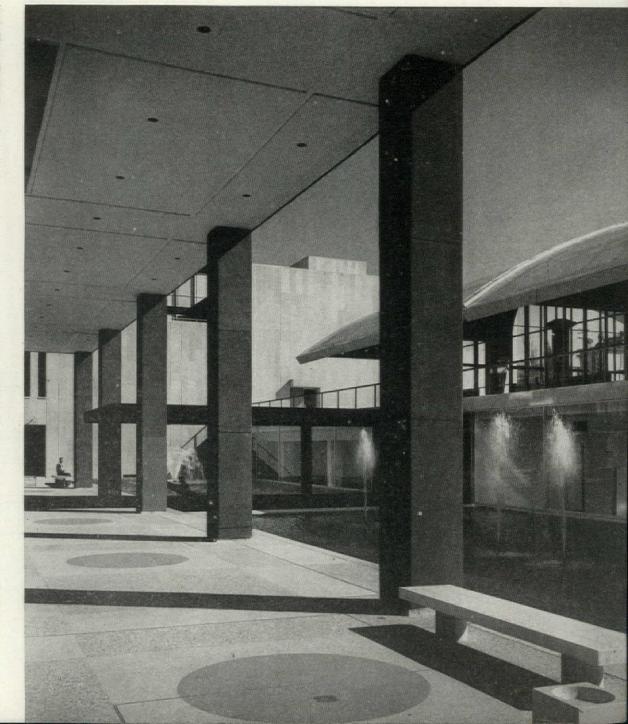


Upper plaza leads in from sidewalk between remodeled bank building and new exposition hall shown at left. Latter's curved concrete roof on bents acts as foil in both shape and materials for tall rectilinear office tower. Designed as downtown airlines terminal, it will be rented instead to business exhibitors. Terminal facilities will go in another project.

Colonnade behind main lobby is linked to restaurant opposite by covered passage depressed between two fountain pools. Seated diners can look out level with water and spray jets which are lighted from beneath at night. Paving is dense aggregate etched out with acid to give nonskid, nonreflective surface with pebbled outdoor character. Panels in two shades of buff surround red circles.

Lower plaza leads back to glassy basement housing shops entered from central passage inside; second basement has more shops, services and cafeteria. Mile High's open spaces, intended to be more than spatial setting for proud new building, are as much used as those of its bigger predecessor, Rockefeller Center. Music and fountains are kept playing until midnight for evening strollers. General atmosphere, plus some big ash receivers by benches, keeps fountains free of butts and candy wrappers.

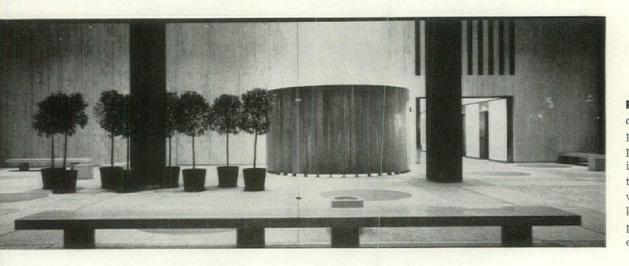






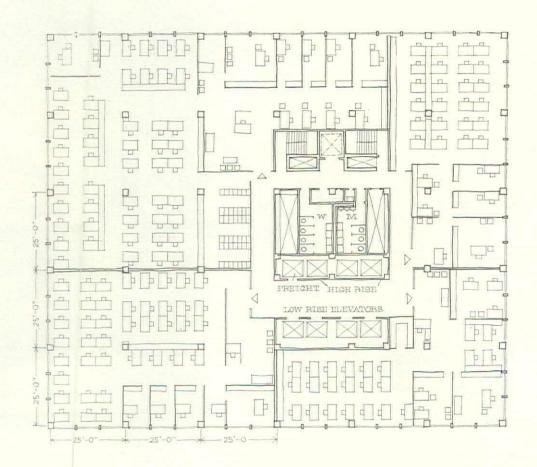


Lobby, seen from main entrance, has office directory in sculptural, freestanding structure that catches visitor's eye immediately on entering. Arcade and lower plaza may be glimpsed through glass at far left. Upper part of lobby is enclosed with panels of bluegreen, cellular glass.



Formal composition of semicircular directory, benches and potted shrubs, as seen from plaza outside. Patterned paving is carried through from exterior. At right is elevator hall with luminous ceiling (note knockout slab in typical floor plan below for a future freight elevator between stairwells).

MILE HIGH CENTER





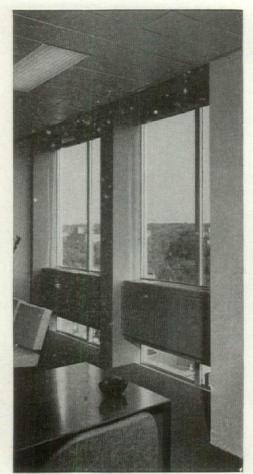
Photos: © Ezra Stoller

#### Floating radiators, and windows for the mice

Mile High's office floors get a lot of use out of the total square footage enclosed. Since the building is freestanding and covers less than 25% of its lot, offices can have almost equal light and air on four sides from ground to top floor, with no second-grade space and less than the usual disparity between lower and tower floors. An economically squarish plan (127' x 152', see left) reduced construction and maintenance of outside wall area. The core is off center so full-floor tenants can have bulk clerical space 75' deep on one side, private executive offices and corridor along the other. On lower floors, 17,630 sq. ft. or 91% of the 19,304 sq. ft. is rentable; where one bank of elevators drops out on upper floors, net space increases to 18,050 sq. ft., or a high 93%.

All glass in Mile High is fixed for yearround air conditioning. The 12" strip windows at floor level, double-glazed against floor drafts, give outside offices an unusual sense of space (photo above). Some tenants grumbled about "paying rent for space under the radiators"; Webb & Knapp showed them two typical small offices, one with the floor windows blanked out by a piece of cardboard, and sold the idea. (The windows do present a slight washing problem, and cleaning women have stuck vacuum cleaners through a few.)

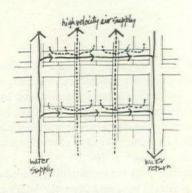
Working with air-conditioning engineers, the architects squeezed down the bulky casing around standard induction units, lifted them up off the floor and kept them flat against the windows. (Said one: "If we could have gotten them down to the size of a slim guard rail we would have been even happier.") Space more than 16' in from the windows, and all return air, is handled from ducts in the core. In Denver's high climate, one side of the building often has to be cooled while the other is heated; the induction units have proved responsive to quick changes. Another wrinkle: a solar thermostat on the roof which anticipates the movement of the sun, turning on the cooling system on each side before the sun hits it.



Photos: © Ezra Stoller

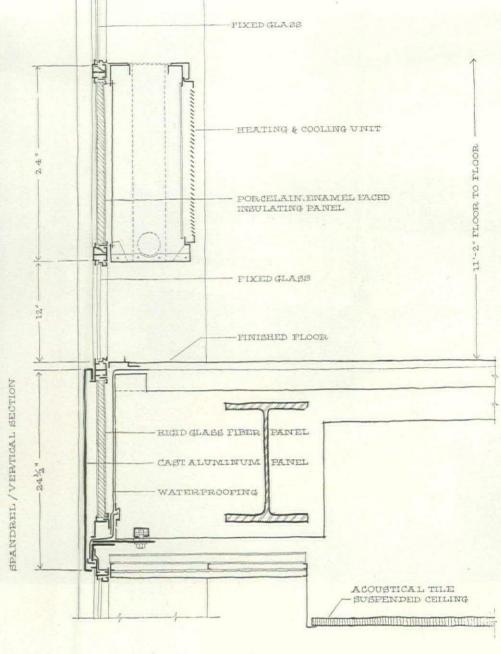
#### Wall details

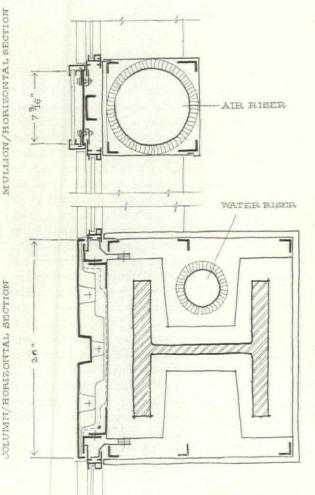
Mile High's compact window units (photo and detail, top) take high velocity air from small circular ducts in the window mullions, hot or chilled water from pipes cased in the structural columns. Cooled or warmed air is blown from slots in the front and top of the units to condition the building's exterior zone (interior zone is



handled by ceiling diffusers). Units are faced on the exterior with 1½"-thick sandwich panels: porcelain steel outer face, plain steel inner face to equalize expansion. Mullions are faced with similar but thinner panels.

To avoid the wavy surface of many sheet metal skins, the architects went to aluminum castings for the first time in a major building, had a castings manufacturer fabricate ¼"-thick dark anodized panels with stiffening inner ribs for their column and spandrel facing. Splotches due to uneven cooling have largely weathered out in place and the castings are now turning uniform gray.





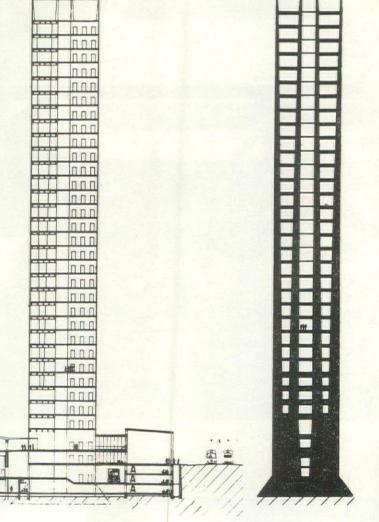
Passers-by on three sides crane to see if they can spot mountain trout darting through the long, shallow pools (which are chilled to mountain-trout temperatures, aerated by the fountains). In the background is one of Denver's bigger hotels; at far left, one of two other big rental office buildings recently built in Denver.



#### FREE-FLOOR CONCRETE TOWER

Office building in Milan features columnless space inside, a superblock redevelopment outside

Bearing walls become thinner and split into columns as building goes upward. Walls around utility rooms at ends of floors are also structural.



This tall slab of concrete, glass, aluminum and ceramics may amaze a good many modern Americans just as it has amazed the people of Milan. The most surprising fact about the Pirelli building is that it will be a wall-bearing structure of reinforced concrete. Six and a half feet thick at the bottom, the transverse concrete partition walls taper to become light columns less than 1' wide on the upper floors. Architect Gio Ponti says that this is "an expression of lightness, an actual condition of the construction; not an expression of force, which is a condition of ancient construction." The tower will be built for the Pirelli Co., Italy's largest maker of tires and other rubber products.

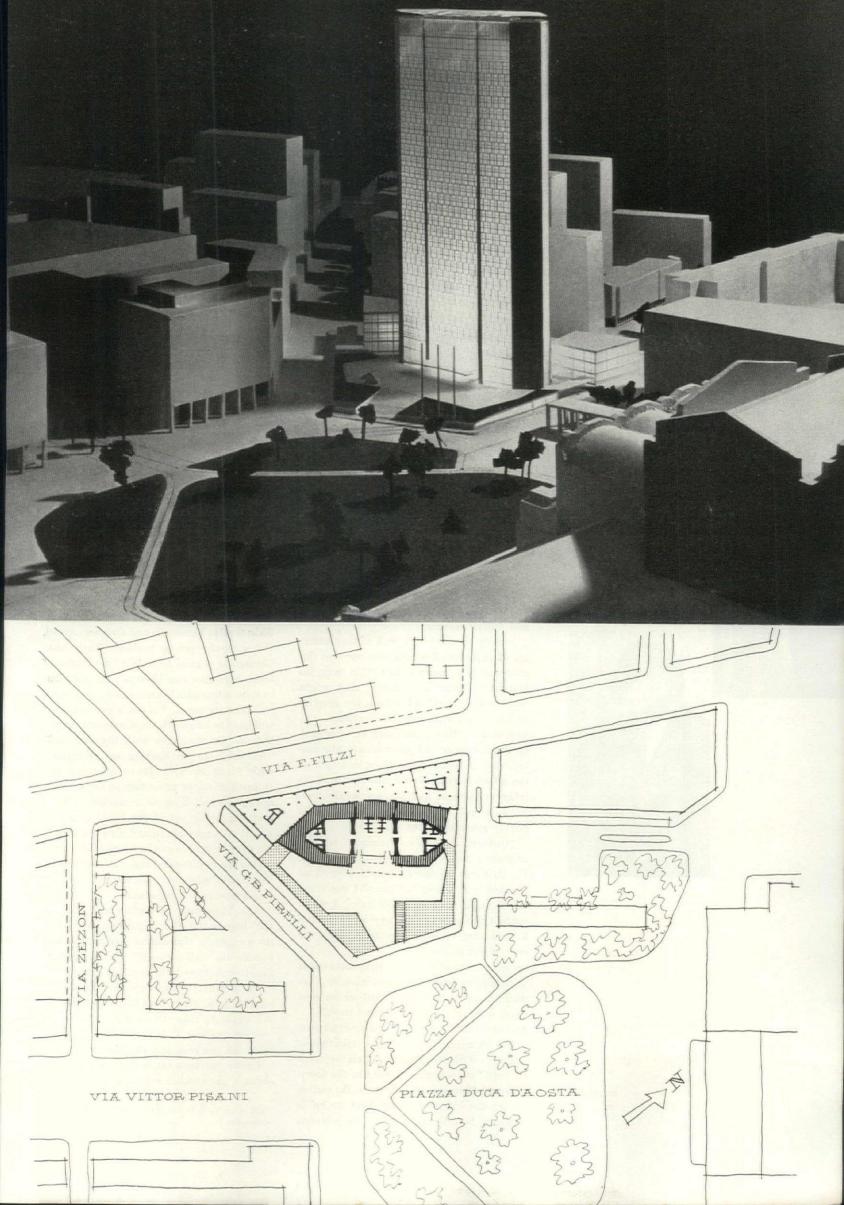
Ponti points out that it is not just high land values that have caused Pirelli to build high and have inspired a whole complex of tall buildings in Milan. The theory of building upward has been advanced a notch since the development in America of the skyscraper district. "No longer must one set tall buildings in a row, as has been done in New York, thus adding to traffic density. One must space them out to create room for parking."

The tower covers only about 1/7th of its site; the balance is left for a private cross street and an elevated parking plaza. Under the lower building there will be parking space for cars and motor scooters.

The Pirelli building is the heart of a big urban renewal project involving 250 acres of central Milan. It is to become the "Rockefeller Center" of Europe-but it will stand against a strikingly different background. The second largest city in Italy, Milan has always worn a heavy mantle of tradition. Until recently, for instance, an unwritten law kept any building from going higher than the Madonnina, the gilded statue of the Virgin which stands atop a dome 356' above the floor of the Milan Cathedral. But Milan's postwar industrial and business ferment has been too strong to stay mantled; Milan is the richest, busiest city in all of resurgent Italy, eager to express its material power, and already one skyscraper has been built 374' high. The Pirelli will be 407'.

Milan's center, heavily bombed in war, is proposed site for redevelopment.





## **EIGHT CHICAGO APARTMENT**

A conversational criticism by three building industry experts



ARCHITECT: Minoru Yamasaki Yamasaki, Leinweber & Assoc., Detroit



BUILDER: A. L. Spencer S. N. Nielsen Co., Chicago

REALTOR: Graham Aldis Aldis & Co., Chicago



The three men at the left met in Chicago last month at FORUM's request to discuss the eight Chicago apartment projects—five built, two building, one proposed—presented on the following pages.

Although Yamasaki represented the architect's point of view, Aldis the realtor's, and Spencer the builder's, all three talked informally about all facets of the buildings under consideration, proving once again that architectural design, construction and economics are an indissoluble trio. The conclusion that emerged from the conversation was this: Apartment house design is in a rather uncertain stage at present but it has vitality. It is receptive to experimentation, and more experimentation should be welcomed. Meanwhile, the time has come to start seriously solving problems that experimentation has already raised.

Plainly, no apartment house is an island. Again and again, stimulated by some point in the individual building under review, the talk veered to the apartment house as a genus or, say, the glass wall as a species.

Character proved to be one side of all apartment problems: the wall problem, the site problem, the values problem, and what might be called the Mies problem. (The huge success of Architect Mies van der Rohe's 860 Lakeshore Dr.—AF, Nov. '52—has induced an incredible rash of imitations and vulgarizations.)

Nobody thought very well of the character of imitation-Mies. Spencer does not like authentic Mies much either. "Too boxy, too institutional; no domesticity; they might be office buildings." Aldis feels the severity of line of the Mies school is overdone.

YAMASAKI: "Mies's buildings have integrity, ground space and great beauty. His contribution is tremendous. Questions such as the all-glass apartment house wall, with its inherent thermal and privacy weaknesses, must be judged in relation to the great beauty attained by the glass wall.

"Unfortunately Mies is copied without understanding him or the details that make his buildings so successful. If I were an apartment architect in Chicago I would not try to outdo Mies at Mies's game. I would concentrate instead on improving livability. I would try to make my apartments the very nicest to live in."

ALDIS: "A lot of the new apartments look to me like veterans' hospitals. Also, so often walls seem to be either blank or have so many windows you can't control them."

YAMASAKI: "We are facing an adjustment to the industrial age. I agree apartments should look like apartments. If all the north side of Chicago begins to look like the downtown of Chicago, that is poor. Variation among the kinds of things that go on in buildings is what makes our cities interest-

ing. And there is a need for richness, a psychological need for ornament which has been ignored too much. We are too prone to do things because they are 'functional.'

"We have much more freedom today in how we can build than anybody in times gone by. We must use it."

Skin walls, Yamasaki and Spencer agreed, are a sorely vexing problem. They leak. Chicago is a good test. Wind and rain off Lake Michigan can blow not in gusts but in vicious ten-minute crescendos; then walls leak like the devil. This is a problem that will have to be solved, the discussers agreed, because we must live with the skin wall. "We can't go on backing up everything with 8" of block."\* There are only two theories of water protection so far as walls are concerned, Spencer remarked: Either keep the water out of the joints or recognize that it may get in and give it a way to get out; designers and builders of skins are trying the first method and it does not work. One reason why not: skin walls do not provide properly for expansion.

Said Yamasaki: "We often try for a skin 150' long without an expansion joint. And so we get a cumulative expansion that knocks the calking out." (Some Chicago apartments have to be recalked after every three storms!) "Masonry provides an expansion joint every time there is a window. We ought to take the expansion up in the vertical mullion. It is easy when you think of it. All you need is a slipjoint."

Inside kitchens and bathrooms, oddly enough, are another reason why walls leak,

<sup>\*</sup> But masonry is beginning to produce its own skin walls—Ed.

# **PROJECTS**

said Spencer. The exhaust ventilation from these rooms is commonly not balanced by intake ventilation, and the negative pressure inside the buildings literally sucks the water in through the wall. "Sometimes you can stop the leaking by going over and opening a window in the opposite wall." The water finds its way around cement asbestos or porcelain enamel sheets, the same as around fixed glass or movable sash; the problem remains the same whatever the panel material.

It was agreed there should be more testing, possibly in wind tunnels, of total wall assemblies, not just of wall parts or materials. The idea of buildings worth millions of dollars going up without such tests is fundamentally ridiculous, Aldis pointed out.

Spencer: "God puts the water in; man must help get it out."

The plan feature most criticized was inside kitchens, not only because they aggravate the negative pressure problem, but because their ventilation ducts, unless very carefully treated, make runways of sound from one apartment to another. And unlike inside bathrooms, they are occupied for long periods of time; whether the shut-in is maid or wife, a windowless room is no place for her.

The inside kitchen was cited as an example of "cliché economy." Savings made in the perimeter wall are probably canceled out by what *proper* ventilation (including balance of negative pressure) and duct treatment add in cost.

Economy and skimping were agreed to be separate matters, and skimping was condemned as the source of endless troubles. An example cited was paring the steel, not enough to jeopardize strength but so there is just not quite enough to distribute the stresses, so the plaster cracks. Said Spencer: "Of course the builder is blamed. He is given a minimum design and then the architect and owner want perfection where it is impossible. I have to hatch the egg, but I don't put the embryo in the egg. I'll hatch it but I can't be responsible for it being a pink, blue or yellow chicken. If the architect's designs were followed, the buildings would behave very well in most respects. But the owner wants to squeeze out a last nickel from the \$1.25 cubic cost. That nickel makes the trouble. He squeezes it out where people won't see it, instead of making the bathroom less showy-and that is bad."

Public ignorance of values is at the root of this trouble and many others, the three agreed. For 15 years, through depression and war, housing construction was almost at a standstill, Aldis remarked, and many people are just not aware of what a good apartment—or house—is. They have been educated mostly from advertising, which stresses gadgets. Enough space, the chief necessity, and ample space, the chief luxury, get sacrified in favor of gimmicks.

Livability values may count in the success of projects in the long run, but now they are less important than location. "You could rent an outhouse if it was on Michigan Ave."

Parking brought up the question of first floor and site use. Whether to put parking within the first floor perimeter may be resolved by comparing probable income from parking and probable income from shops, Aldis pointed out. But is it good living to use the unbuilt grounds for parking cars? It was agreed that rooftop terraces are no substitute for an honest-to-goodness piece of land to look down on and that the best place for parking is out of sight-say in the basement or underground. Yamasaki, especially, felt strongly that apartment dwellers who want to come down on the ground and sit for an hour should be able to do so. "It should be a moral responsibility of the developer. Public housing has this; shouldn't the most expensive private housing have it?"

### Their comment on individual projects

LAKE MEADOWS (Skidmore, Owings & Merrill, architects):

These buildings have trouble reconciling end and side walls, a common problem. "Perforations seem to be the only way to fenestrate end walls of slabs, in spite of the poor relation to the glass walls, interior or exterior." The plan (p. 143) looks well solved although the hall must be gloomy and most apartments have no cross ventilation. Balconies are really usable. Yamasaki: "They have made the same mistake we made on our St. Louis apartments by using slab buildings opposite each other. I find in our

St. Louis public housing that though we have 180' to 200' between our slab buildings, from the lower half of the building the view is almost 100% brick and glass—no sky. This is what happens with this type of grouping although it looks so nice in site planning. Seeing sky is so important it cannot be emphasized too often, I believe."

Photos: Hedrich-Blessins



COMMONWEALTH PROMENADE and 900 Esplanade (Ludwig Mies van der Rohe, architect): Less verticality of design than Mies's existing 860 Lakeshore Dr., and perhaps not quite so pleasing because of this. Relationship between buildings at 860 Lakeshore is perhaps also more satisfying than the new group of four. Excellent use of ground space, with parking properly put underground. That feature is a fine thing for others to copy. Use of such large preassembled wall panel units (21' x 9') is most interesting. If these work out and if the gray tinted glass works well for sun. heat and glare control, these features will be influential on apartment building. One of the commentators felt that two Mies buildings together, or even three widely spaced as in the IIT housing, are satisfactory but that four is too concentrated a dose of such disciplined design.



IIT HOUSING (Ludwig Mies van der Rohe, architect):

Well sited, with plenty of air and space around the buildings, and excellent plans. Fine proportions, more clarity of structure on the exterior and the chance for more interesting interiors than those of the much earlier building in the group by other architects. But the Mies change in size of columns on the exterior, interesting as an expression of structure, can leave a poor horizontal exposure of concrete at the setbacks, said Spencer.



1000 LAKESHORE DR. (Sidney H. Morris & Associates, architects):

Like Lake Meadows, the difference in treatment between end and side walls shows an indecision as to whether to go to a masonry or a glass building, and the building loses integrity. There is a laudable attempt here to provide some fun in the design, but it is not very well carried through. The balconies are too small for balconies and their almost solid end walls interrupt and frustrate the view of the lake from the building's window walls. This brings up a defect in orientation too; the narrow, more closed end of the slab is oriented toward the lake. "If you believe in balconies, you should build them so they can be used. There is something wrong about considering balconies primarily as ornamentation." The first floor decoration, for instance the wall that is primarily a big lighting fixture, probably fills a need. It is not really well done, but let's have a few stunts.





THE EVANSTONIAN (Ralph Harris, architect):

Most of the windows look or will eventually look across a very narrow space at the wall of adjoining apartment buildings. Either the building is too large for the site, or the site is too small for the building. This makes the cross ventilation, very well achieved in the plan, of small purpose. "Frames are better around fine paintings than around apartment windows and walls."



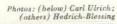
PROPOSED "X" BUILDING (Bertrand Goldberg Associates, architects):

Alternating apartment floors with office floors, and renting apartment and office as a duplex is a cute idea. But it has disadvantages. The cross shape, so good for an office, is poor for apartments because tenants can look too easily into one another's windows. Optimum ceiling heights differ;



8'-6" is good for apartment ceilings; offices ought to be 11' high. Tying the size of office to the size of apartment does not necessarily fit actual needs; it makes things so inflexible for the tenant who may need to expand his office space or may need one of the larger apartments but little office room. In short, there is an artificial relationship assumed between the two spaces. Apartment houses should not look like office buildings and vice versa. This one is bothor in character, neither. The idea of never really getting away from the office when you go home is rather appalling, although it might be desirable for people whose home life is very much mixed up with business entertaining.

Nevertheless, building one such building would be a legitimate experiment. In a city of 3½ million, surely there are at least 50 people who want just such an arrangement. It should be tried. If it did not pan out, offices could easily be converted to apartments. The cost of \$1.30 per cu. ft. is probably going to be the chief obstacle even though cost is justified by low maintenance.





320 OAKDALE (Milton M. Schwartz, architect):

Esthetically, the ledges create a strange and awkward relationship between strong horizontals and verticality. They make no sense as sun protection except on the south face. They might make some sense as glare protection. However, they make very good sense as water protection. Rain must be blown almost horizontally to pile up a head against this building side. "Rain and wind cannot abuse this wall." The lobby is nicely and simply done. "A lobby is a most baffling thing, too. When you come down to what it is, it is one man's dream. The more experimenting with lobbies, the better," said Aldis.



### 1. MIDDLE-INCOME REDEVELOPMENT

The five 12-story buildings in this group, with 595 apartments, represent the first stage of New York Life's huge South Chicago redevelopment investment. (Also completed is a neighborhood shopping center; under construction or contemplated are an additional 1,280 housing units.)

The 10.3-acre group completed (photo above) and the 55 acres of housing to come will have a density of only 119 persons per acre, a land coverage of only 9%. The site, once one of the city's worst decayed slums, was bought and cleared by the Chicago Land Commission at about \$3 per sq. ft., sold at 50¢ per sq. ft. Buildings are not tax exempt. The land sale price (based on use value, not cost) together with taxability of improvements encouraged the admirable density figures.

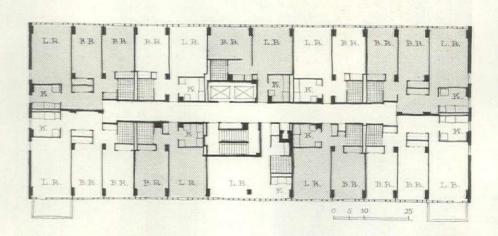
Apartments (2 to 4½ rooms) rent for an average of \$28.50 per room. The balconies on the south face have proved so popular and are so much used by tenants that two 21-story buildings now under construction on another part of the site will include balconies on both north and south faces.

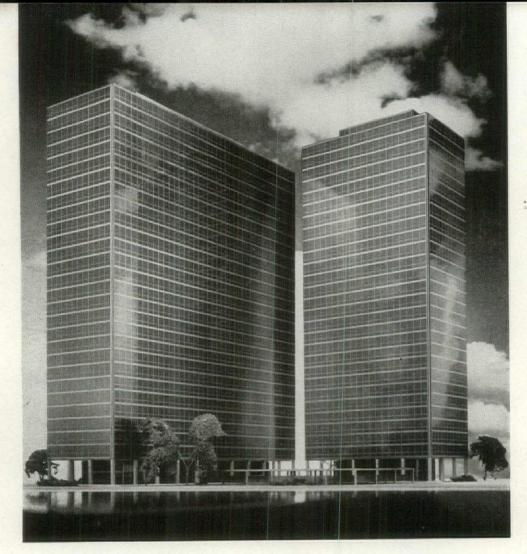
The reinforced concrete structure is flat slab, permitted by the lightweight skin wall which is formed of story-high, no-maintenance, galvanized and bonderized steel frames with asbestos cement board spandrel panels. Costs will not be released until remaining residential work is complete. New York Life plans on a 4% annual return from its complete project investment.

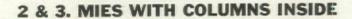
LAKE MEADOWS, Chicago OWNER: New York Life Insurance Co. ARCHITECTS AND ENGINEERS:

Skidmore, Owings & Merrill GENERAL CONTRACTOR:

Turner Construction Co. (four buildings) S. N. Nielson Co. (one building)







On the two largest apartment sites remaining to Chicago's "Gold Coast," the foundations are started for what will surely become two of the twentieth century's most famous apartment groups. Aside from splendidly exemplifying Mies's refinement and discipline, these towers contain startling innovations. Prefabricated aluminum skin frames are a story high, a bay wide (9' x 21'); Developer Greenwald says they will prove the fastest and cheapest skin technique yet developed. The crystal walls will be daringly tinted gray (reputed to be the best heat retardant yet). With 28 and 29 stories, these will be the tallest flat-slab construction in the US, possibly the world.

Commonwealth Promenade (below), with 750 apartments and parking for 770 cars, mostly underground on the 137,000 sq. ft. site, will have natural anodized aluminum frames. The 900 Esplanade group (above) with 533 apartments and basement parking for 400 cars, will have black aluminum. These two towers will adjoin the black steel and glass towers at 860 Lakeshore (AF Nov. '52). Unlike 860 Lakeshore, these new projects will not be cooperatives. Rentals will average \$55 to \$60 per room. Apartments will be air conditioned, corridors pressurized. Cost estimates (Greenwald acts as his own general contractor) are not yet available but will be low.

900 ESPLANADE and

COMMONWEALTH PROMENADE, Chicago

DEVELOPERS: Herbert S. Greenwald and

Samuel N. Katzin

ARCHITECTS: Ludwig Mies van der Rohe

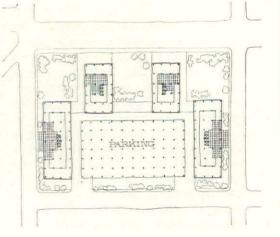
Friedman, Alschuler & Sincere

BR

TOP

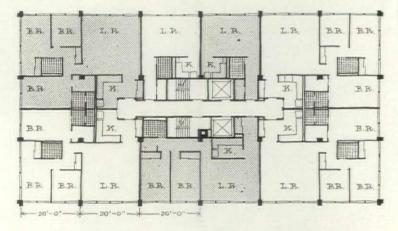








### 4. MIES WITH COLUMNS OUTSIDE



ILLINOIS INSTITUTE OF TECHNOLOGY CAMPUS APARTMENTS, Chicago ARCHITECTS: Ludwig Mies van der Rohe

Pace Associates

STRUCTURAL ENGINEER: Frank J. Kornacker

GENERAL CONTRACTORS: Erik A. Borg Co. (one building)

George Sollitt Construction Co. (two buildings)

With their satisfying proportions, their pleasant arrangement on the site, their rectangular (rather than thin slab) shape, their glass lobbies set behind stilts, these apartments for faculty and married college students show direct kinship to Mies's upper-bracket Lake Shore apartments (opposite). Here all these hallmarks are handled in as masterly fashion with brick masonry and exposed concrete as with the glass and metal of the Lake Shore work.

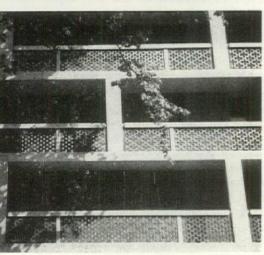
The first building of Mies's IIT housing group (left foreground) was completed two years ago, the other two (background) were finished this year. (Building at far right is 1949 apartment house by Skidmore, Owings & Merrill.)

Rentals range from \$75 and \$80 for one room to \$165 and \$180 for five rooms.

Construction is flat slab with cavity block spandrels, faced with brick inside and out. Sash is aluminum. Construction cost, including fees, averaged \$13.02 per sq. ft. for the three buildings. Financing was under the HHFA college housing program.

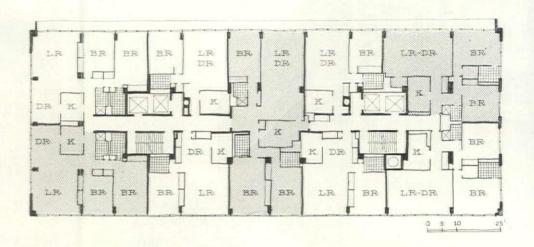
Complaint: rectangular grid of sidewalks, which gives nice pattern from above, is aggravatingly roundabout to walk on.





Balcony patterns in England: Three apartment blocks on a 17-acre housing estate at Paddington show variety of decorative uses of balconies that are pre-eminently useful. Theory of these façades ("a filter between inhabitants and observers") is antithesis of glass tower. Designed by Tecton.

### 5. THIS LAKE SHORE FACADE TAKES A TRY AT



Photos: (below & opp. p.) Hedrich-Blessing (left) courtesy The Architectural Review



### A BALCONY PATTERN

To get an unmistakable apartment house character, and incorporate decorative treatment in a façade, there is nothing like the balcony. But here, as in so much else, function and form must be wedded for success. Dinky balconies make timid decoration. Contrast, for example, the generous and forthright English examples of decorative balconies (left) with the relatively halfhearted Chicago example (opp. p., right). And now that the inevitable rash of window air-conditioning units has broken out (not shown in photo), the Chicago balcony pattern appears still weaker. This might be chalked up as a good intention that did not go far enough.

The plan of this slab building is interesting for its division into two separate foyers with the center apartment extending through the building.

The first 11 of the 23 stories use a composite column design of both structural and reinforcing steel to minimize column size; thereafter columns are reinforced concrete. Spandrels on the north-south walls are green tinted structural glass set in an aluminum frame and backed with insulation and block and then plastered. "Eyebrows" are cantilevered portions of floor slabs. Slabs incorporate copper radiant heating coils.

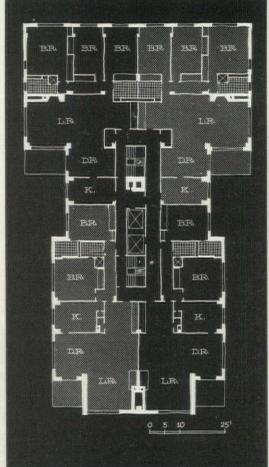
The building has 187 apartments, in one-, two- and three-bedroom units and garage space for 135 cars. Rentals average \$65 per room. Cost was \$3,500,000 including fees, or \$13 per sq. ft., financed on a long term mortgage shared by an insurance company, realty company and mortgage company.

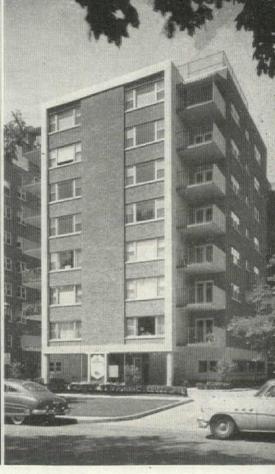
1000 LAKESHORE DRIVE, Chicago SPONSOR: Harold L. Perlman

ARCHITECT: Sidney H. Morris & Associates
CONSULTING ARCHITECTS: Shaw, Metz &
Dolio

LANDSCAPE ARCHITECT: Arthur Fitzgerald STRUCTURAL ENGINEER: Frank J. Kornacker MECHANICAL AND ELECTRICAL ENGINEERS:

William Goodman
GENERAL CONTRACTOR: Loftus Contracting





### 6. COOPERATIVE FOR A CONSERVATIVE SUBURB

The developers' instructions to the architect of this 32-unit cooperative were to make fullest use of the 99' x 200' site. The building does literally just that. Ironically, this suburban building is crowded closer to its neighbors than most new apartments going up in Chicago proper.

Architect Ralph Harris has some informative words about completing a cooperative: "The last phase is extremely painful. As apartments are sold, it is necessary for someone to arrange with each purchaser for his decorating, floor finish, minor changes, special lighting, optional equipment, etc. The architect cannot possibly charge an over-all fee large enough even to include his expenses for this service, let alone make a profit. However, he must furnish it as a moral obligation to the promoter, his client. So we arrange, at the time we are commissioned, to charge each purchaser a fee based on percentage of changes and additions. We then become the architect for the purchaser and handle him exactly as any

other client. Thus we represent a lot of clients in addition to our original one. After the routine is established, the service is not difficult until 30 or 40 families all want to move in at once, and then, having moved in, all find the minor defects and want them corrected immediately. This is not the most pleasant thing, but if an architect wants to do cooperatives he must resign himself to it."

Cost of this concrete frame, brick cavity wall building was \$995,744 including fees; \$15.60 per sq. ft. Sales price of three-bedroom (six-room) units: \$33,600 to \$47,000; 60% down; monthly carrying charges \$186 to \$260 for the same units.

THE EVANSTONIAN, Evanston, Ill.

DEVELOPERS: Harold V. Snyder and James

A. Henderson

ARCHITECT: Ralph C. Harris

STRUCTURAL ENGINEER: Henry Miller

MECHANICAL AND ELECTRICAL ENGINEER:

Norman E. Beuter

GENERAL CONTRACTOR: Carl E. Erickson

### 7. OFFICE-APARTMENT "SANDWICH" BUILDING

This proposed combination office building-apartment house, for which Promotor Arthur Rubloff expects to break ground next spring, goes back to the tradition of "living over the store." It contains 12 floors of 48 duplexes, each consisting of an apartment with an office below, connected by interior stair. The idea came out of an observation that many old residences in Chicago's Near North Side are being converted for joint work-living. (For another office-apartment building, the Price Tower by Frank Lloyd Wright, see News.)

The ground floor will have office and apartment services (stationery and photostat, laundry, valet, barber, restaurant, etc.); second floor, which covers the entire 15,000 sq. ft. site, will have parking for 65 cars; 15th floor will have separate offices. There is no basement.

Office floors of the duplexes will rent at \$2.31 and \$2.80 per sq. ft., apartments at \$85 and \$97.50 per month. These low rentals are possible, the architect reports, because 87% of the building is rentable space (against the usual 75 to 80%); tenants will provide their own gas heat, cooling, and hot water from individual units; only three instead of the usual ten employees will be needed. Annual expenses, including 5% management allowance, are estimated at \$75,600 per year. Rubloff calls it a "vertical taxpayer."

Construction will be slip-form reinforced concrete, eliminating conventional columns and beams (AF, Nov. '52). The shallow 15½' bays will give the building about 1 sq. ft. of glass to each 3 sq. ft. of floor. The exterior will be exposed concrete with aluminum sash. Floors above the second are 9' high, a compromise between apartment and office heights.

Cost is estimated at \$1,353,000 excluding fees; \$11 per sq. ft. Financing is now in negotiation for a first mortgage of \$1,135,-000 to be amortized at 7½% constant.

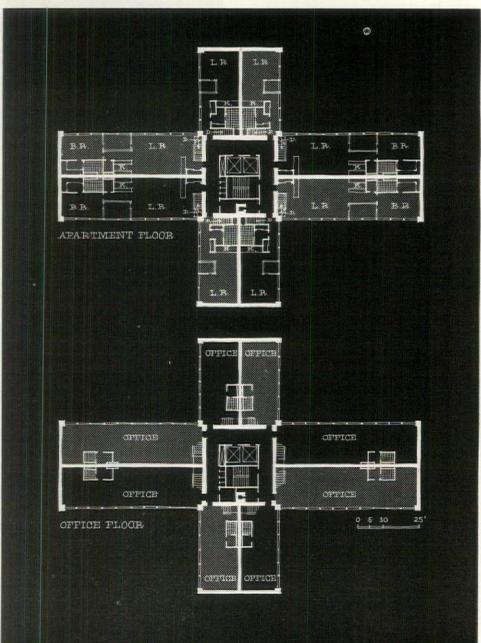
THE "X" BUILDING, Chicago SPONSOR: Frank Katzin PROMOTOR: Arthur Rubloff

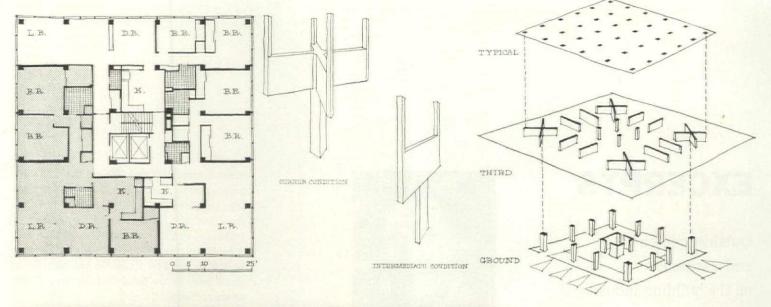
ARCHITECT AND ENGINEER: Bertrand Gold-

berg Associates

CONSULTING ARCHITECTS: Pace Associates SLIP-FORM CONTRACTOR: B. M. Heede Co.







### 8. NINETEEN GLASS TIERS SITTING ON A CANTILEVER

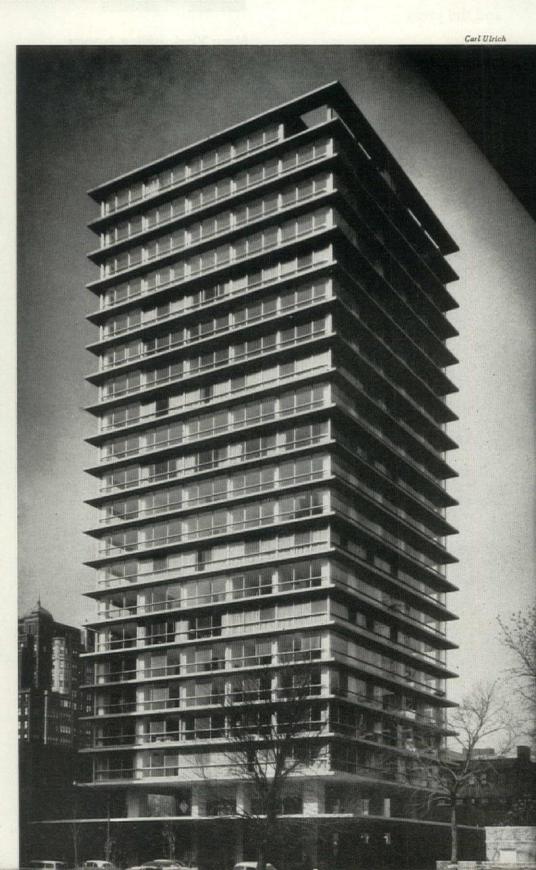
Each floor of this cooperative apartment is surrounded by a 3'-4" cantilevered ledge. Moreover, the entire ledged tower, from the third floor up, is cantilevered out over the lobby stilts (as shown in the diagram above). This rather outlandish underpinning pulls in the lower floor sufficiently so that covered peripheral parking can be provided at ground level. The scheme makes a much better impression at close range than from a distance and is at its best from the inside looking out—either at ground level or above.

To reduce weight, lightweight concrete block fillers were used between the 8½"-deep concrete floor joists; ceilings are plaster applied directly to the bottom of joists and filler. Windows are sliding aluminum sash above fixed panes and 6" spandrel. To counteract wind stresses the horizontal mullion has an aluminum stiffener. The effect from the apartments is a satisfying combination of openness and security. The building is air conditioned; hot or chilled water is circulated to individual apartment or room units.

A surprise to the developers was the big demand for three-bedroom units (about half the total of 57 apartments), and the small demand for two bedrooms (about a quarter, no more than the demand for one bedroom).

Cost was \$1,450,000 including fees; \$10.46 per sq. ft.; financed with a 20-year mortgage for \$800,000 at 5%. Two-bedroom (5½-room) apartments sold for \$32,500 to \$34,200; three-bedroom (6½-room) apartments for \$36,850 to \$38,550; 60% downpayment. Monthly assessments are in the neighborhood of \$200, will drop \$30 in five

320 OAKDALE COOPERATIVE, Chicago
OWNER: Northcenter Realty Co.
ARCHITECT: Milton M. Schwartz
STRUCTURAL ENGINEER: Henry Miller
MECHANICAL ENGINEERING ASSOCIATE: A. H.
Schwartz



# **EXCERPTS**

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



### **New York office boom**

Excerpts from a statement by Clinton W. Blume, president of the New York Real Estate Board

The prosperous condition of our economy is making itself felt in Manhattan office buildings with 8,652,500 sq. ft.; 18 are nonment of the national economy. Since the end of World War II 50 new structures have been completed containing 11,643,500 sq. ft. of rentable space: 32 are competitive buildings with 8,652,500 sq. ft.; 18 are noncompetitive with 2,991,000 sq. ft.

In addition 13,993,200 sq. ft. more are projected. Of this, about 5,066,000 sq. ft., or 14 buildings, are actually under construction. Plans have been filed for 14 buildings with 5,001,900 sq. ft. more, and an additional 3,925,000 sq. ft. have been announced in the newspapers in ten new buildings.

The annual Competitive Office Building Occupancy Survey of May 1, '55, which included the 32 new competitive buildings, showed all except 55,135 sq. ft.—0.6%—had been rented. The greater part of the vacant space, 887,560 sq. ft., was among the 346 prewar buildings. The current vacancy rate in these old buildings is 1.39.

These statements are based on statistics yielded by a survey made under the supervision of Dr. Gordon D. MacDonald, director of the Real Estate Board's Research Dept. Included this year were 378 competitive office buildings containing 75,079,099 sq. ft. of rentable area that showed on May 1st a vacancy of 942,695 sq. ft., or 1.3%. Last year 363 buildings, with 71,542,767 sq. ft., reported a vacancy of 1,215,247 sq. ft., or 1.7%. Of the total vacant space reported for this year, 836,589 sq. ft. was in the above-grade area. In 1954 the comparable area was 1,127,693 sq. ft.

The above-grade vacant space of 836,589 sq. ft. was found in 155 buildings, or 41%, of the 378 buildings surveyed. The vacant space ranged from 100 to 40,000 sq. ft. or more. Forty-eight buildings, or 31%, of the 155 office buildings had vacancies which

ranged from 100 to 1,500 sq. ft.; 57 buildings, or 37%, from 1,500 to 5,000; 26 buildings or 17% from 5,000 to 10,000; 18 buildings, or 12%, from 10,000 to 20,000; 4 buildings, or 2%, from 20,000 to 40,000; and 2 buildings, or 1%, with vacancy of over 40,000 sq. ft. The space vacant may be in small units or the total rentable area of one or more floors.

While representing only 32.5% of the total number of office buildings, the 378 buildings surveyed are nevertheless assessed at \$1,437,489,000, or close to 77.2% of the total assessed valuation of all office buildings in Manhattan. (Manhattan has 1,164 office buildings assessed at \$1,862,722,500.)

The 32 competitive buildings completed 1947-1955 represent approximately 11.5% of the space surveyed.

### Air Academy chapel

Excerpts from an editorial by Ian C.

MacCallum in the Report of the
Baltimore AIA Chapter

The Air Academy is to be a "factory for birdmen." Of course it is. Where in the language of Webster or of the poets could a more exact definition be found? Yet these three words, said sneeringly, did more to damn an idea than volumes of prose could ever do. The tragedy of those words lies, now that the controversy has lessened, not in any serious harm to the architect's central idea for the academy itself but in the dubious future of his chapel. Here, in the chapel, the central idea could really come clear, if not to the public then certainly to a few in the profession. But its omission, for the moment we hope, is the price of compromising a controversy.

Here was a design done in the truest heritage of the American fighting man. The chapel was a campaign tent set up on the field of battle for communion, with helmet off and rifle in readiness. None of your stained cathedral glass, swinging censers and Gregorian chants but a chapel to the God of Moses on the March, to the God of Washington kneeling in the snows of Valley Forge. One could almost see the light of a candle through canvas. No airman cadet could enter it without sensing his dedication to the fighting for which he was being prepared. The stripped starkness of the moments before a hundred beaches of Normandy and of the Pacific were expressed there for him to feel.

Opinions expressed in these excerpts are not necessarily those of the Forum's editors



### Modern engineering practice

Excerpts from a paper presented at the annual convention of the American Society of Civil Engineers by Raymond A. Hill, chairman of the ASCE committee on professional practice and a member of the Los Angeles firm of Leeds, Hill & Jewett

The competition for new engineering contracts has been much more intense during the past ten years than ever before in the history of our profession. Many of my friends have created Frankensteins in the form of very large staffs; they must feed these Frankensteins new business every month or be themselves destroyed. Payrolls of \$50,000 or \$100,000 or \$200,000 per month cannot be met without constantly obtaining new contracts for engineering services. Not many firms can obtain the requisite amount of new work month after month purely on the basis of the professional qualifications of the principals and the key men of the organi-

The premium necessarily placed on quantity production of plans and specifications during the war is still having its effect, although the necessity no longer exists. For example, most of the engineering firms in this country have been asked from time to time by federal and other governmental agencies to submit their qualifications by filling out elaborate questionnaires. Almost invariably these questionnaires are directed to the size of the organization. The questions asked are: How many civil engineers, mechanical engineers, electrical engineers and other specialists are on the payroll? What is the area of the office space that the firm has or could immediately obtain? What is the financial standing of the firm? What was the construction cost of work for which plans and specifications were prepared by the firm in the last five years? Ad infinitum, ad nauseam. Rarely is interest evidenced in the particular qualifications of the partners or other principals of the engineering firm. The general statement can almost be made that the professional qualifications of the owners of an engineering firm are not considered except where an individual is needed as an expert witness or for the solution of some specialized problem. Impersonal consideration of the qualifications of engineering firms is also characteristic of public utilities and large industrial corporations. Even if

the selection of an engineering firm were not delegated, the effect would be much the same. Most modern corporation executives do not see much difference between the employment of a construction contractor and his organization of skilled personnel and the employment of an engineer and his organization of skilled personnel. The feeling is: If one should be selected on the basis of competitive bids, why should not the other?

This feeling stems from the fact that great changes have also taken place in the construction industry. Thirty years ago most contractors had started out as mechanics or foremen. At that time there were few professional engineers employed directly by construction firms and these were generally engaged on layout work and estimating. Today the situation is very different; the construction industry has become much more professional in nature; engineers head some contracting firms and many engineers now direct actual construction operations.

These men, many of whom are members of the American Society of Civil Engineers, accept the principle of competitive bidding for the services of their organizations; in fact the construction industry demands that competitive bids be taken on all public work and it exerts great influence to have competitive bids taken by private industry.

The complications of modern business also have a direct bearing on the operation of engineering organizations. The heads of any large firm must be administrators; they must also, from the very nature of their business, be the sales force. Little time is left for any of them to render professional service as such service was rendered by consulting engineers 30 years ago. In common with all large industry, the business of selling the services of a large engineering organization has become fully as important as the production of the finished product, which in this case consists of plans and specifications for the construction of engineering

In our modern economic system, sales of any commodity are sensitive to the price placed on that commodity. The buyer of engineering services may recognize that the value of the service of one firm is greater than the value of the service of another but he has the right to demand that the sale price of such services reflect these differences.

### One-way business streets

Excerpts from the answers to seven out of 15 questions analyzed in a 16-page booklet of the same title by the Chamber of Commerce of the US (25¢ per copy)

HOW MUCH DO ONE-WAY STREETS INCREASE STREET CAPACITY?

The following table shows capacity of oneway and two-way streets of varying characteristics. These data are based on the Highway Capacity Manual of the Highway Research Board and apply to downtown business street where 5 to 15% of the total traffic is commercial vehicles, 20% of traffic turns right and left at intersections, there are far-side bus stops, and the signal system provides a "go" indication 60% of the time.

It is evident that traffic volume capacity on such one-way streets is about 10 to 20% greater than on two-way streets where curb parking is allowed, and about 20 to 40% greater where one-way movement is instituted on streets with prohibited curb parking.

HOW DO BUSINESSMEN
REGARD ONE-WAY STREETS?

Businessmen generally oppose the conversion to one-way movement in front of their places of business. However, such opposition usually disappears after the one-way rule has been adopted and given a trial period

These conclusions are based on a special continued on p. 188

WORKING CAPACITIES OF TWO-WAY AND ONE-WAY DOWNTOWN STREET

	PRACTICAL PEAK HOUR CAPACITIES—VEHICLES PER HOUR						
STREET WIDTHS CURB TO CURB	CURB PARKING PERMITTED			CURB P	CURB PARKING PROHIBITED		
	TWO- WAY	ONE- WAY	% GAIN	TWO-	ONE-	% GAIN	
30 ft.	450	550	22	900	1,250	39	
40 ft.	750	900	20	1,400	1,750	25	
50 ft.	1,000	1,150	15	1,800	2,200	22	
60 ft.	1,250	1,350	8	2,200	2,600	18	



While other stores chase the customers to the suburbs, Rich's attracts them downtown with a gaily colored building, a verdant plaza, an attached garage and, to help compete with the discount houses, a built-in warehouse

## A DOWNTOWN STORE FOR TODAY

The new Rich's, in Knoxville, is as vivid and verdant and easy to shop as a breezy suburban store—yet it is not built in a suburb. Rich's managers have put it squarely downtown—not on the "100%" merchandizing corner but four blocks away, where they can make the better corner for tomorrow. Here they show how the city center can offer the same lure as the suburbs—and draw a tremendous sidewalk trade besides.

Land was enough cheaper off the main shopping focus to allow some relaxation in its use (such as the pools and planting strips shown on these pages). The land slopes, but smart planning has turned this into an advantage to complement another advantage: an adjoining major traffic artery in and out of town. At the low end of their lot Rich's built a parking building to accommodate customers motoring to the department store, with an under-

ground passage and elevators to the main building. But they did not forget that 60 or 65% of their customers would be city pedestrians. Their garage parks 450 cars; this provides 2700 customers per day at a maximum estimate: the number of customers they need is more like 25,000. To get this crucial trade in from the city sidewalks they put the major entrance to their store on the corner pointed at the heart of the city. Rich's "impulse" selling area, the sharpest arrow in any department store's quiver, is also pointed toward pedestrians, on the level of the main entrance, right there where people will walk into it and be tempted to buy that pretty extra something. (Bill Snaith, Loewy designer in charge, says, however, that the usual shopper only looks at impulse merchandise on the way in to get something else; he does not buy the impulse item until he's on the way out of the store.)

Gardens and pools are Rich's contribution to neighborhood uplifting in downtown Knoxville. Façade is faced with green glazed tile with glass panels. Ends of building are red glazed brick.



Photos: Gottscho-Schleisner

### Sloping site helps integrate store, garage and warehouse

The hillside site permitted an advantage in planning; the usual basement shop of the department store here has the respectability of a street-level entrance on the downhill side. There is an advantage in the plan in warehousing too (see section). Under both garage and store proper is the storage area—served by trucks at the garage end, and by automatic conveyors throughout. To take advantage of this, the planners put the housewares department on the basement level, a location which permits salesmen to give buyers such items as toasters to carry home with them rather than ordering by number for deliverv from a distant warehouse (at a profiteating cost to management). The floor samples are for sale here on the take-with basis because they can be replaced from stocks a few feet away.

This detail is a small one, but it is illustrative of the way Rich's and other bright new department stores are being girded to fight the discount houses. Al-

though most big, old department stores have been succeeding with suburban offspring, many of the midtown bases still have been worrying the experts, who have been pointing out that the downtown stores may be holding their own, but they have not been getting their share of the increasing spendable income of the nation's customers. It is so expensive for many of the big boys to operate that they simply cannot compete profitably with smaller stores offering fewer services. Snaith points out that the enormous volume of department stores has never been their real merchandising edge anyway. What has marked the big, successful stores in the past, he says, is the reliance of their customers on them as "editors" or selectors of merchandise, and as guarantors of its quality. But today, more and more buyers are looking past the retailer. Customers are being guided by national advertising, and goods are also being guaranteed by the manufacturer, not the storekeeper. In

this selling situation it is hard to make a canny shopper pay the larger profit necessary for the department store's carpeted overhead; he buys at a dirty-floor discount house.

Department stores can still prosper, Snaith argues, but only by becoming much more efficient merchandisers, as well as redramatizing their position as arbiters of taste, to compete with the national magazines and TV. Rich's is a store which has realized this.

Rich's moves its stock about four times a year, devotes about 20% of its space to backup, so the renewing of floor stocks is a continual process; a conveyor system moves stock in fairly easily, and coddles the automobile shopper by carrying his packages back out to the garage for him, to be picked up as he drives out.

The store asserts itself in the community at night with towers bearing new-type floodlights which pour on about 50,000 w. of tinted illumination as dark comes on.

Façade of brick is framed in glass and accented by long, corrugated canopy of concrete



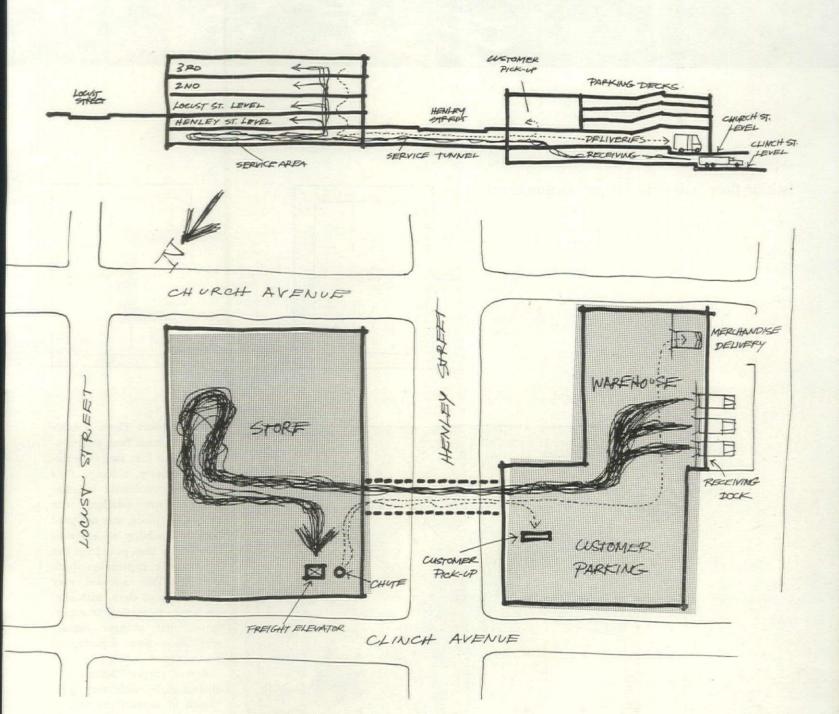
RICH'S DEPARTMENT STORE: Knoxville, Tenn.

ARCHITECTS: Stevens & Wilkinson DESIGNERS: Raymond Loewy Corp.

LANDSCAPE ARCHITECTS: Eckbo, Royston & Williams

MECHANICAL ENGINEER: Edward E. Ashley

EXTERIOR LIGHTING: Abe Feder GENERAL CONTRACTOR: Batson-Cook



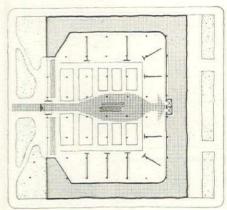
Garage entrance is directly across street from store's rear, "basement" shop entrance (left). Shoppers park their cars, descend to tunnel level in elevators, walk under street to store block, and ascend again in elevators to shop. Conveyor system carries their packages back over to garage, to be picked up upon leaving. Garage

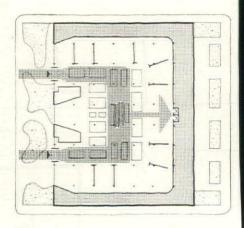
serves also as receiving depot for incoming shipments of merchandise and as dispatching post for deliveries by truck. These two functions are performed at lower end of depot, but, again, are on separate levels. In effect, warehouse stretches under both garage and store—a long set of conveyors to keep shelves full.

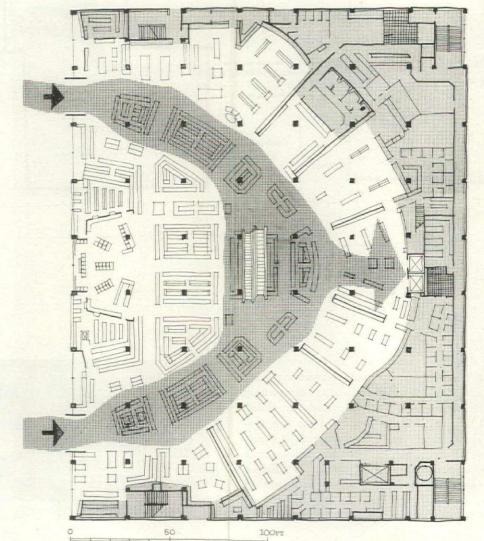




Selling floor is designed to pull customers in







Selling floor: Three possible layouts of main floor were considered, but first two were discarded quickly, although they have been successful in other stores. First solution, with central entrance, was not good because visibility of entrance would have been poor from two main traffic approaches (side streets). This afforded easy penetration of store, with simple access to vertical transportation, but shopper contact with main floor departments was not good.

Second proposal featured Ushaped aisle, with very good "depth of contact" to various departments, but designers felt it lacked feeling of high fashion; it was graceless.

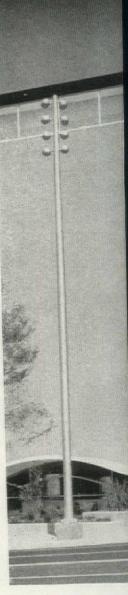
Final solution kept advantages of both discarded schemes. U-aisle was bent into horseshoe, keeping maximum interior display but pulling entrances to ends of building. Say the designers, "You start walking before you start shopping. It's more gracious."



Selling spaces are kept open, with departments divided by floating display boards rather than partitions. Ceiling access is simple: panels simply push up in their frames. From left to right: foyer of beauty shop, men's wear department, snack bar (there is also a larger restaurant), main floor aisle, fur department, upper floor aisle.

Abe Feder, of Broadway fame (see p. 115), is done with banks of self-contained reflector lamps on slender, graceful posts. Reflector lamps are new type, 500 watts each, with projection beam of 120'. About 100 of them are used on this job. Their color can be adjusted easily to fit seasonal moods.





An alert metropolis circles its downtown problems with a ring highway, then tackles them with a three-pronged rebuilding program: parking garages, office buildings and apartments

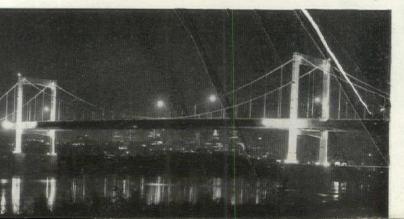


# IN KANSAS CITY... A FRAMEWORK FOR THE FUTURE

The problem facing Kansas City is the problem that sooner or later faces towns everywhere: middle-aged spread and a weakening heart. But where some towns have reached a crisis, Kansas City is at work on a bold solution to avoid it: a whole new set of arteries before the old ones harden, plus some vital surgery to keep its core alive. Other cities will want to watch closely as Kansas City builds its unique ring road (this page), completes a big underground garage and a parking project right through "skid row" (p. 160), and uses new laws to replace its semislums with apartments and with office buildings designed on a new and highly interesting three-way expansion grid (p. 163.)

As it swelled from a trading post on the banks of the Missouri into a hustling metropolis at the very center of the US, Kansas City was forced by natural and political boundaries to build south. Some of these sub-

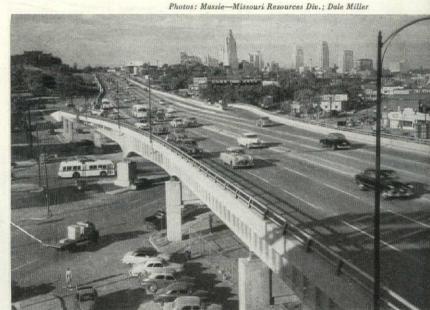
New Paseo Bridge is third linking Kansas City with growing northern suburbs. Fourth is under way.



urbs, spurred by Newspaperman William Rockhill Nelson and Developer J. C. Nichols, are now famous examples of early planning: parks, boulevards and shopping centers graced with trees, fountains and sculpture.

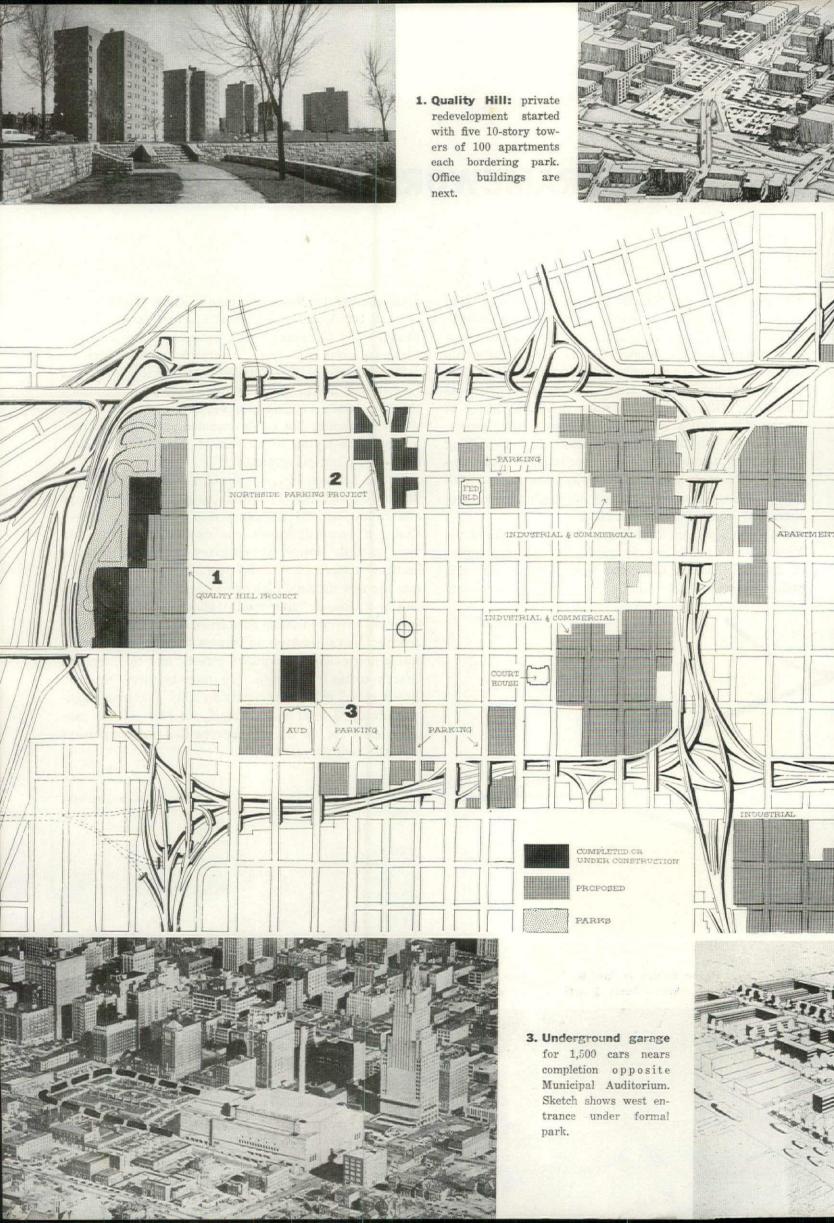
Today some of this foresight and civic energy has turned back north. A sprawling 20 sq. mi. area across the river finally has been annexed as Kansas City North, partly balancing the city's lopsided growth, and now planners are trying to stabilize it, too, with neighborhood parks and playgrounds.

But in between lies an even bigger job: bolstering a central district that is losing business to the suburbs and fading around its edges into a typical collar of slums. Kansas City's answer is one that other cities will want to study closely. It is a giant web of expressways knitting center and suburbs together and spidering out into the new national highway system. Girding the core will be a close-in "ring road" (photo opposite), a huge coronary artery to pump customers and commuters into new peripheral parking, to by-pass the 40% of throughtraffic now clotting downtown streets, and to frame the heart's dying outer cells for piece-by-piece renewal. Based on an exhaustive study by City Planning Engineer Philip Geissal and his staff, the \$150 million program calls for 35 mi. of metropolitan superhighways over the next 20 years.



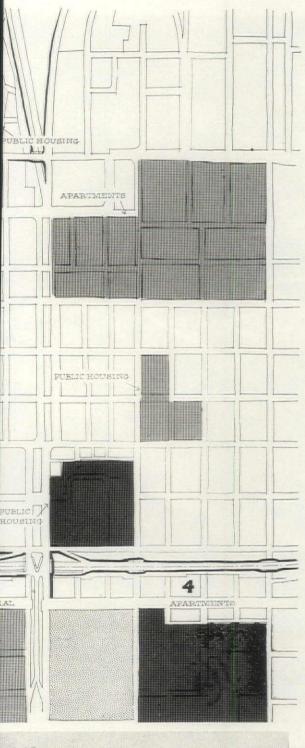
New West Freeway, first leg in metropolitan highway program, brings traffic in from expanding southwest.

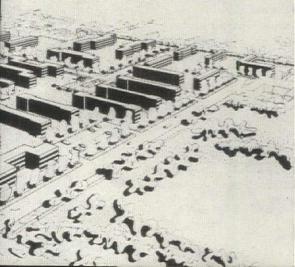
159



### 2. Northside Parking:

V-shaped area cut out of city's "skid row" is being rebuilt as 1,850car project connecting with new Intercity Expressway.





4. Housing project: slums will be cleared under Title I, land sold for private redevelopment as garden apartments for 725 middleincome families.

# Within Kansas City's ring of roads,

a ring of redevelopment

As the parkway ring is pieced together, it will work hand-in-glove with other new improvements just inside its boundaries.

On the west, it will run between the stockyards and the base of Quality Hill, site of new apartment towers and office buildings (see following pages).

On the north, the typical downtown "skid row" of flophouses, saloons and dingy stores, which was once the center of town, has been carved away for the 1,850-car Northside Parking Project that connects with the ring's northern link. (Part of this area classifiable as mainly residential was prepared under Title I for resale to the Downtown Redevelopment Corp., a group of 98 businessmen under the leadership of Banker James Kemper. The remainder was acquired directly by the corporation under state and city redevelopment laws providing condemnation powers and 25-year tax relief.)

On the south, opposite Municipal Auditorium, the city is finishing a three-level, 1,500-car garage under a park, much like San Francisco's Union Square; proceeds from private operation will retire \$4 million in revenue bonds used for construction. The ring road is planned close enough in so that still more parking may be developed along the south within a two- or three-block walk of the center of town.

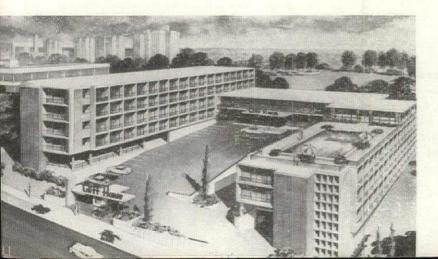
On the east, slums almost in the shadow of City Hall will be acquired under Title I for resale and controlled private development of light industry, commercial and parking areas. Outside the ring, land is being publicly cleared for private redevelopment as apartments (sketch left) and four other areas are being studied. Under public housing, three projects totaling 1,148 units are built, three more of 388 units underway.



1. Apartment houses are planned for areas marked (1) in photo below. Exteriors are porcelain enameled steel. Architects: Kivett & Meyers.







View from northwest shows (l. to r.): existing River Club, apartment towers, Hereford headquarters, with new project areas behind. Big auditorium garage is in center background.

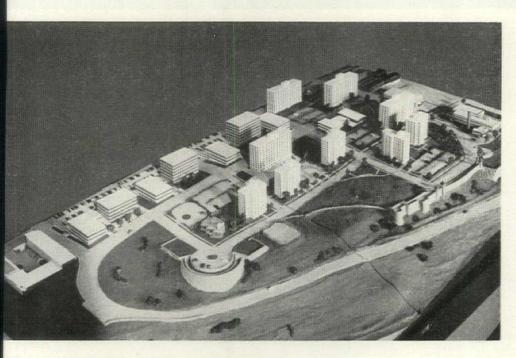
3. Motor hotel, by Memphis interests, has convention hall, restaurant, pool, shops. Architects: Windrom, Haglund & Venable.

<del>\\\\\</del>

New Baptist Church will incorporate existing building, center, new lift-slab classrooms, right. Architects: Kivett & Meyers.

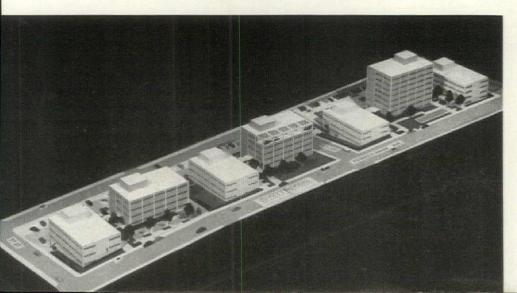
Quality Hill: Kansas City's biggest project moves ahead

under private capital, public help



Completed project, as it should look in 1966, from same viewpoint as aerial photo at left. Area is four- or five-block walk from heart of downtown Kansas City.

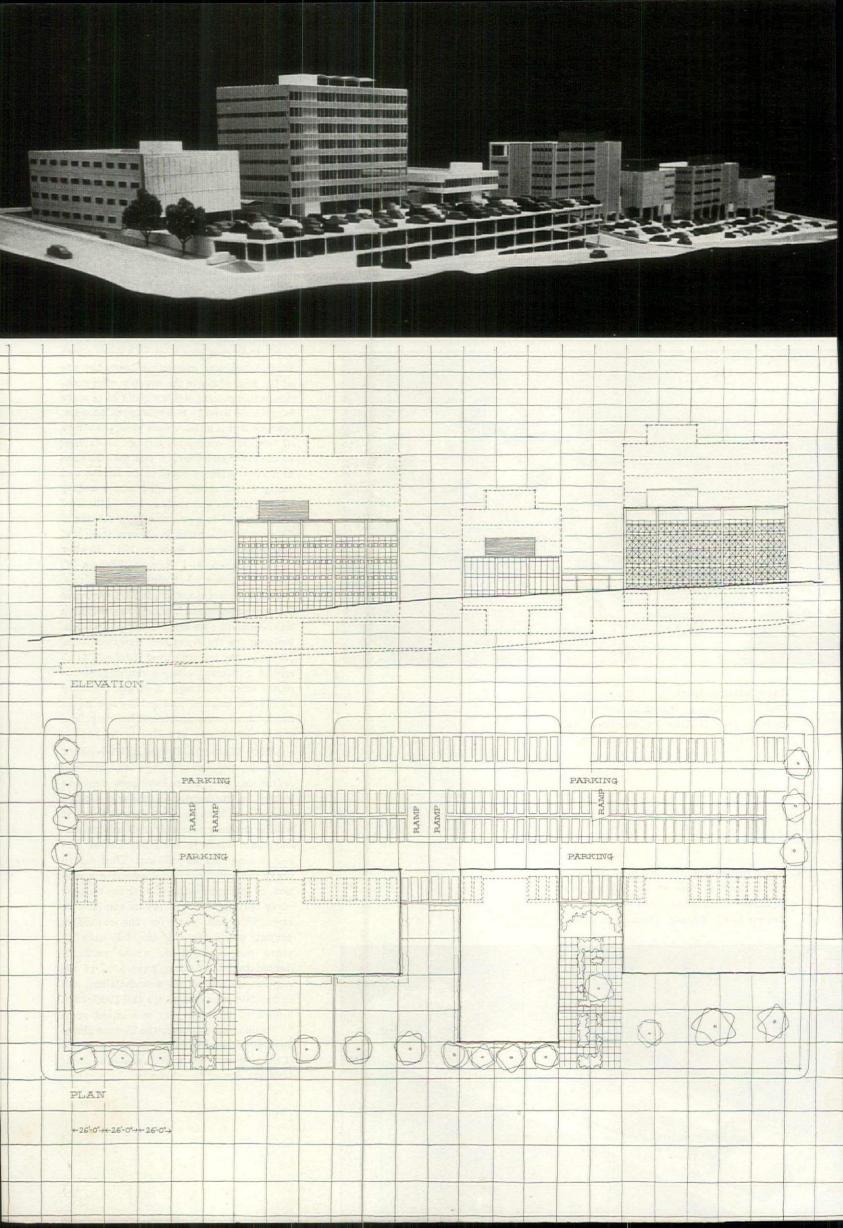
4. Office buildings of 31,000 to 64,000 sq. ft. will be built at rate of one a year under separate corporations and operated by Realtor Lewis Kitchen. (Details on p. 164.)



A blighted area just west of Kansas City's central business district is becoming one of the first places in the country where condemnation powers and tax relief have made large-scale private redevelopment possible. Quality Hill is a short walk from the center of town and commands a magnificent view of the river and the city. But the mansions first built there by early cattle barons and bankers had slowly turned into boarding houses, shacks and parking lots as the land values moved to new suburbs in the south. Then, with the passage of new state and city redevelopment laws in 1947, Realtor Lewis Kitchen and Banker William T. Kemper Jr. saw what could be done.

Their project started in 1950 with five ten-story apartment buildings, an exclusive businessmen's club and a new headquarters building for the American Hereford Assn. Now the city has approved Kitchen's \$11.5 million expansion plan: seven single-occupancy office buildings, a larger ten-story apartment building and a 173-room motor hotel. Three more apartment buildings and a new church may be added in the future.

Under Missouri's Urban Redevelopment Corp. Act and Kansas City's implementing ordinance, private redevelopers may be helped by condemnation power (Kitchen did not need it on the first phase, expects it will be necessary on only 10% of the second phase where he must buy 50-odd parcels costing over \$1 million). Then for 10 years the private redevelopment corporation, or corporations, set up for the purpose carry only the original tax on the land (a mere \$694 last year for the expansion project area). During the following 15 years the corporation, whose profit is limited to 8% of costs, pays 50% of the regular tax rate on the new buildings, and in the 26th year goes to the full 100% rate. Estimates show the city will collect some \$1.3 million in taxes over the 25-year abatement period—compared with some \$160,000 if the land were not redeveloped—and about \$160,000 a year thereafter.



# Quality Hill office and parking project can expand

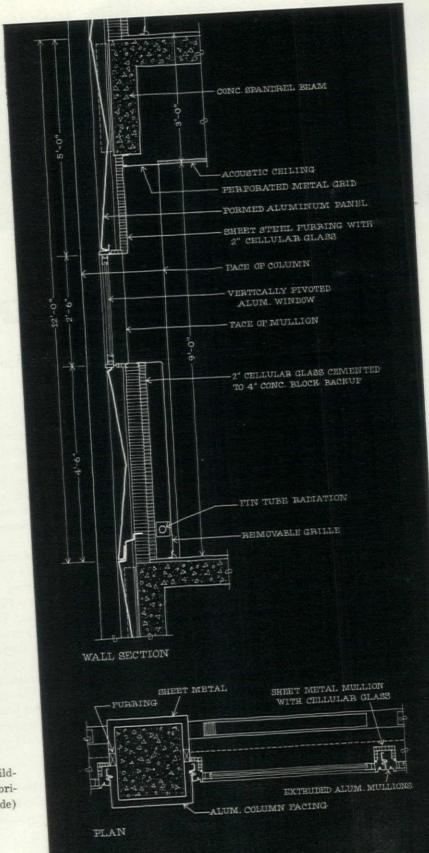
# on a "jungle-gym" grid

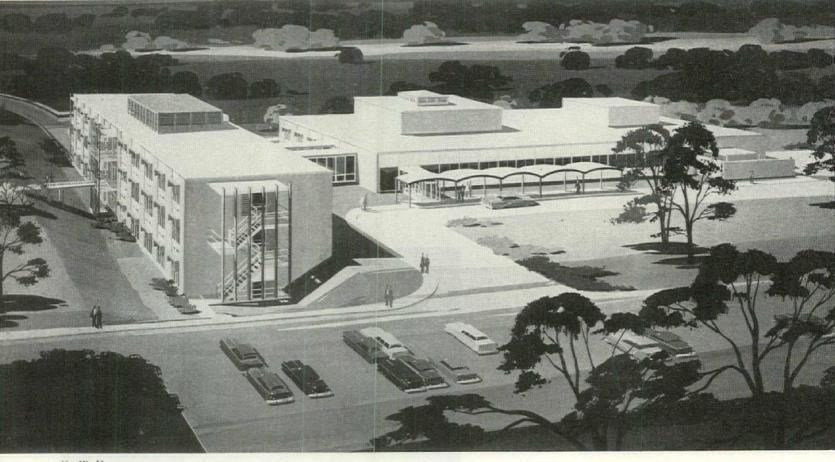
In the seven office buildings planned for the downtown edge of Quality Hill, Architects Kivett & Myers and Associate Angus McCallum have designed a uniquely flexible package with which Promoter-Operator Kitchen can meet the varying demands of different corporate tenants. Intended for single occupancy, each building will have its own parking and recessed entrance on the downhill side, toward the business district. Self-service elevators, stairs and washrooms are grouped in front and to one side to leave floor areas open and flexible. In addition, parking and garden areas outside the buildings are on the same horizontal and vertical module as the floors themselves, with floor heights lining up from building to building. This means that space can not only be added on top of buildings but bridged across from building to building to throw two of them together for a single large tenant. The slope below is neatly used to yield added multiple-deck parking when and if desired.

On the uphill side, the office buildings will present landscaped open areas to neighboring apartment houses of the same maximum height, hiding their own busy fronts and parking lots from residential view.

Large ribbon windows used in earlier studies have been reduced to small pivoting aluminum sash to cut glare and airconditioning loads in Kansas City's summer sun, to reduce maintenance and leave enough height for filing cabinets below the sills. Exterior siding above and below the windows will be formed aluminum panels; the modular "jungle-gym" structure will be partly expressed in exposed verticals (and completely revealed for a glimpse, as in the roof terrace of the center building).

Wall section proposed for new office buildings: formed aluminum panels, small horizontal windows (2'-6" high by 4'-9" wide) with vertical-pivoting aluminum sash.





Mac Mixuki

# THE FLATTENED-OUT HOSPITAL

It puts 86 beds and the complete medical core on one floor

This hospital is notable because its medical core has been completely released from the strait-jacket of the nursing wing and the tyranny of elevator circulation. By separating the core completely from nursing and by keeping it all on one story, the architects gained unusual freedom to plan rationally.

Some of the results: A central sterile supply that is truly central; clearly defined main hospital corridor and main visitors' corridor, both well related to the nursing wing; a self-contained maternity-obstetrics unit which is also immediately adjacent to all core facilities (this is eating your cake and having it too, in hospital planning); swift and easy consultation among personnel of different departments; great savings from elimination of repetitious multistory circulation. Only the pharmacy, in the basement of the nursing wing, has strayed off the reservation; this would be inadvisable if the hospital offered outpatient services.

With this scheme, too, the architects were freed from the limitation of a 40- or

50-bed nursing floor. The big nursing unit is usually denied medium-sized hospitals simply because it is too long to house the medium-sized lower-floor core facilities rationally. They get too strung out. In this scheme, the architects also made a very pleasant feature of the connection between the two separated units.

In its first stage of construction, the hospital will have 86 beds, all on one floor; later a second 66-bed nursing floor will bring the total to 154 beds. The conventional 150-bed hospital would have three stories of 40-odd beds, a maternity-obstetrics floor, one (more likely two) floors of surgical, medical, cafeteria, and administrative facilities, plus a basement, for a total of six or seven levels. Circulation and elevator savings of this flat scheme are obvious. Also obvious is the requirement of sufficient land; this hospital's  $10\frac{1}{2}$ -acre site was a gift.

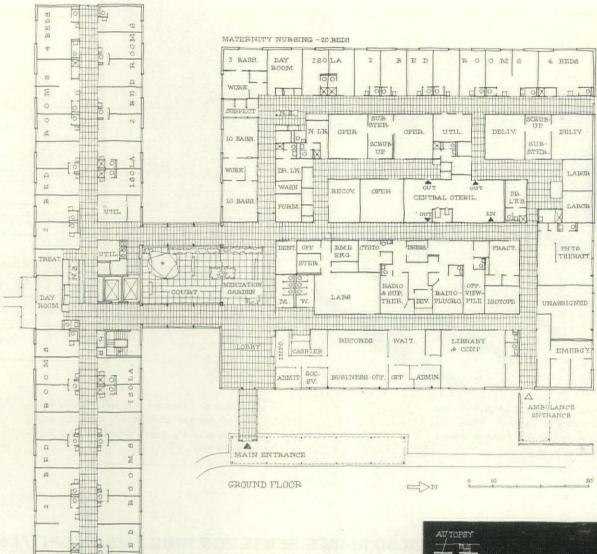
Too much economy? The Belleville plan, in accordance with the general trend, attempts to squeeze out every waste inch.

While this aim produces such pioneering advances as the improved and tightened core shown here, maybe the process is going too far. This 66-bed nursing floor, for instance, may prove to be too economical. Patients' rooms, each with its own toilet, are sufficiently large, but dayroom and service facilities are minimum.

The Rosenfields say that the 12' x 22' dayroom is large enough because they have observed, in visiting many hospitals, that patients and visitors seldom use the dayrooms provided. This would seem to indicate that hospital people need to restudy the whole question of why they want dayrooms and what a dayroom should do and be if it is desirable at all.

Utility rooms, say the Rosenfields, usually provide too much storage, some of which, in time, is appropriated for personal effects. (Nurses do not like lockers distant from their working stations.)

Substations or auxiliary supply points toward the ends of the unit are omitted here not to save space but for another type of economy. They imply team nursing.



Team nursing, it was feared, would reduce flexibility in shifting staff because nurses become fond of their posts, and also at some future time it may occur to nurses manning substations to claim supervisory duties and put in for more pay.

BEDS

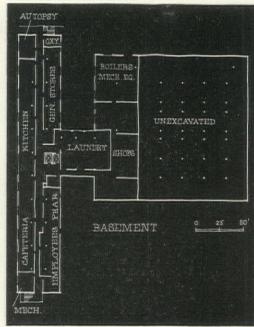
The nurses' and female employees' lounges, in this wing, are small interior basement rooms. The reasoning: nurses seldom use the lounge because, like the lockers with which it is associated, it is distant from the work area. Where then do nurses go to let down for a minute or grab a smoke? Into the utility room. But now utility rooms have no place for a person to stand without being in the way.

Belleville is no more skimpy in these respects than many other new hospitals, and that is why criticism of these points is important. A rationale of employee comfort and convenience that is accepted in department stores, factories and typist pools (whose employees work no harder than nurses) has not penetrated the hospital and now even the makeshifts by which nurses circumvent the plan are lost.

Structure: Steel columns set in brick panels in most cases; floor and roof framed with bar joists. Skin panels, porcelain enamel over metal studs, insulated with lightweight concrete sprayed on inside face, finished with metal lath and plaster. Air conditioning includes patients' rooms which have individual underwindow fan units using circulating hot water in winter, chilled water in summer.

Costs: Architects' estimate of total construction, including Group I equipment and fees: \$1,800,000; \$26.30 per sq. ft.

Estimate on the building's ventilating-heating-cooling system (included in total): \$375,000.



MEMORIAL HOSPITAL, Belleville, Ill.

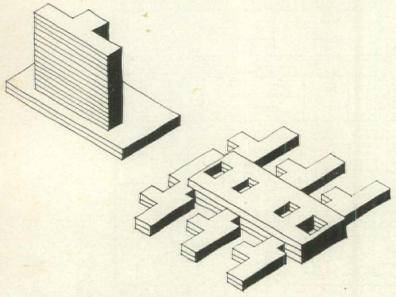
ARCHITECTS: Isadore and Zachary Rosenfield,

Hellmuth, Obata & Kassabaum; Charles E. King, associate

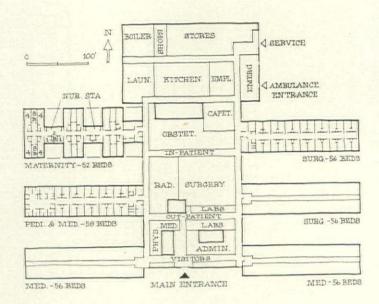
STRUCTURAL ENGINEER: John P. Nix

MECHANICAL AND ELECTRICAL ENGINEER: John D. Falvey

UTILITY ENGINEERS: Horner & Shiffrin KITCHEN CONSULTANT: Frank T. Hilliker



 Diagrammatic comparison of 18-level and four-level 1,000-bed hospital. Study for Palo Alto by Isadore and Zachary Rosenfield, consulting architects.



Schematic plan for proposed 334-bed hospital in San Jose, Calif. by Architects Isadore and Zachary Rosenfield and Rex W. Allen.

## THE FLATTENED OUT PLAN ALSO MAKES SENSE FOR KING-SIZE HOSPITALS

For years it has been assumed a really big general hospital must be a tower built around vertical supply and travel.

Engaged to make a hospital study for the city of Palo Alto and Stanford University (diagram 1), Consultants Isadore and Zachary Rosenfield\* decided to question this assumption. A compact flat form had worked beautifully for the core of 154-bed Belleville (p. 166); a still more thorough-going flat scheme appeared feasible for a proposed 334-bed institution (scheme 2). Could the principle be applied to a giant 1,000-bed hospital like that contemplated for Palo Alto?

The Rosenfields' conclusion—revolutionary to hospital dogma—is that the flat plan gives the giant hospital proportionately gigantic dividends in efficiency, clinical convenience and construction savings. They figure it can save the 1,000-bed hospital \$14 million in elevators and elevator space alone.

Comparing a putative Palo Alto 18-story tower (basement, two-story base, 14 70-bed nursing floors, one obstetrical floor—the conventional scheme) with a putative Palo Alto pancake (partial basement,

two full stories, partial third story for obstetrics), the Rosenfields made this analysis:

The tower would require at least ten elevators. (It should have more but the hospital tower with adequate elevators has yet to be built because of cost.) The pancake would need four elevators (giving much more adequate service than ten in the tower, say the Rosenfields). Difference in cost of elevators and their machinery: \$865,000.

In addition, a hospital elevator shaft represents about 100 sq. ft. per floor. The tower would lose 18,000 sq. ft. to elevators against 1,600 sq. ft. for the pancake. This difference represents about \$300,000 in construction cost, not including the difference in repetitious elevator, lobby, stair and circulation space.

Circulation savings contribute to low square-foot-per-bed figures: for Palo Alto, 474 sq. ft. at the first 432-bed stage, 402 sq. ft. at the 1,000-bed stage; for similar Pima County (scheme 3) 498 sq. ft. at 500 beds, 422 sq. ft. at 1,000.

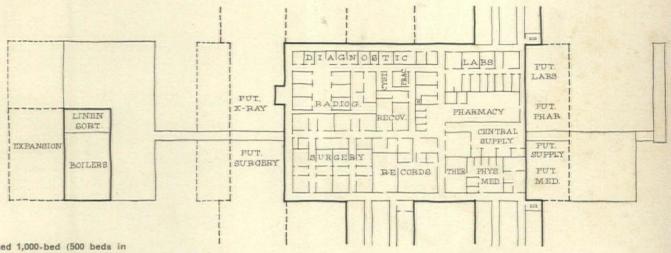
Even if a pancake and a tower cost the same, the Rosenfields think the pancake would be preferable because of time savings in horizontal transportation as against vertical, because of horizontal relationship of half the nursing beds to all clinical services and, most important, because of greater ease of interdepartmental face-to-face consultation (e.g. among surgeon, radiologist, pathologist).

As for travel distances, two factors are involved: time and steps. (Note that travel within the nursing unit is not affected by this scheme.) Vertical travel commonly takes three or four times as long as equivalent horizontal traffic because of time spent waiting for and riding in notoriously slow hospital elevators. And for most people, time spent standing is more tiring than time spent walking. These truths have begun to dawn on a number of hospital consultants and architects other than the Rosenfields. In the wind now are several schemes for automatic horizontal transportation of supplies and food. This is bound to be one of the big future developments in hospital equipment and plan.

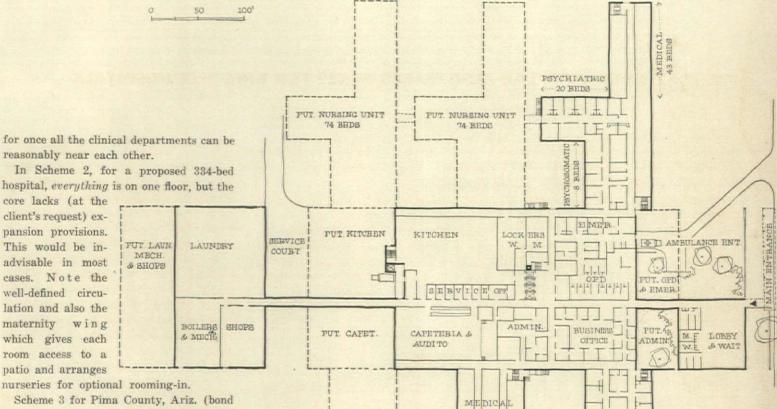
### The pancake plan

Planning the pancake hospital is just as tricky as planning the tower, maybe more so. But it is more gratifying because

<sup>\*</sup> Architect will be Edward D. Stone.



3. Plans for proposed 1,000-bed (500 beds in Stage I) hospital for Pima County, Ariz. Architects, Isadore and Zachary Rosenfield, and Scholer, Sakellar & Fuller.



FUT. NURSING UNIT

74 BEDS

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PLAY

<- PEDIATRICS

PLAY

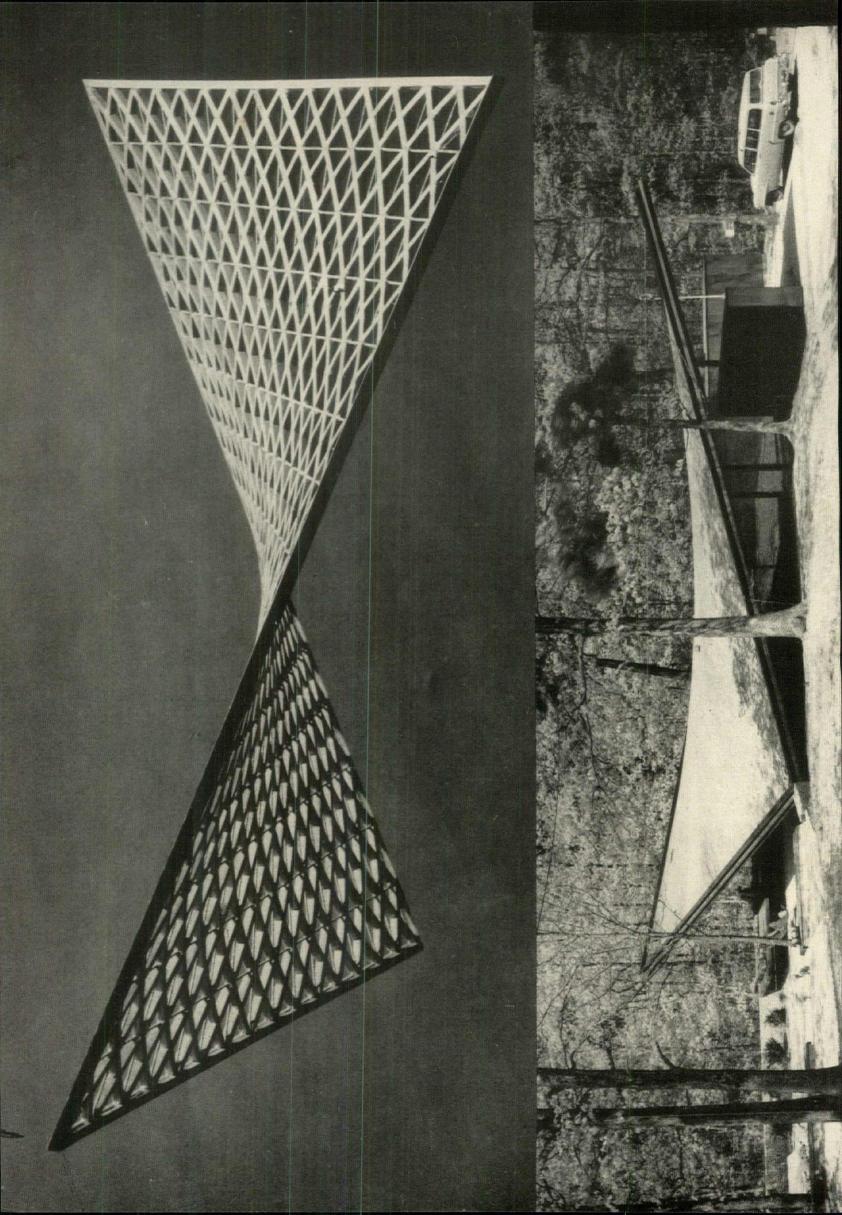
YARD

TIT

scheme 3 for Pima County, Ariz. (bond issue soon to come up for vote) is similar to the study made for Palo Alto. It has admirable expansion provision, department by department. Ancillary services and administration are on the ground floor; the entire medical and surgical core is on the second; maternity and obstetrics are self-contained in a roof-top unit. Surgical and acute medical patients will go to the second floor of the two-story nursing wings. These wings adapt the double-corridor to a large nursing unit.

TYPICAL UNIT

74 BEDS



Big, cheap, and column-free the warped plane called "hyperbolic paraboloid" is a graceful solution to the problem of roofing almost any kind of one-story building from a gas station to a railroad station.

# straight line the roof, which a year ago, a wide fame wit icians and wit be composed e bers. This is significant to the composed of the compo

NEW WAY TO SPAN SPAC

The form sketched here and the sweeping roof on the opposite page are alike in one interesting respect — although both are doubly curved surfaces, both contain

straight line elements. This means that the roof, which was built in North Carolina a year ago, and has already achieved a wide fame with both avant-garde estheticians and with building technicians, can be composed entirely with straight members.

This is significant on a thoroughly practical basis, although it also has the intrinsic delight of a simple solution to a trick mathematical problem.

By now most US building-designersboth architects and engineers-are thoroughly familiar with the paper-hat structures of folded or arched concrete which can be built, and are being built in other countries. Like eggs, their strength is in their shape, not their bulk. Foreign designers, using large forces of poorly paid workmen to build intricate forms and place reinforcing precisely, have achieved marvelous shapes with an economy of materials which remains only theoretical in the high-payroll US. Many US designers have yearned to cast their structures in these exciting structural forms, but as yet only a few can do it (and then almost always in special structures like vast, vaulted airplane hangars, where the formwork can be moved and reused). The barrier: The US, in mastering a building technology, has been mastered by its geometry. With our huge steel mills, we have enclosed billions of cubic feet of space with straightline, two-dimensional structural elements, not because our concepts are rigid but because standard steel sections are rolled that way.

But if the designer of this curved roof had wanted to, he could have framed it in steel sections instead of making it a foil of bent timber planking, which is what it is. But in steel, the result would have been different. Instead of behaving as a continuous structure, spanning 90' with a constant foil thickness of 24", it would have been only a heavy rigid form with a thickness of 3'—more a decorative shape than a real structural form. The most logical material for this form is reinforced concrete.

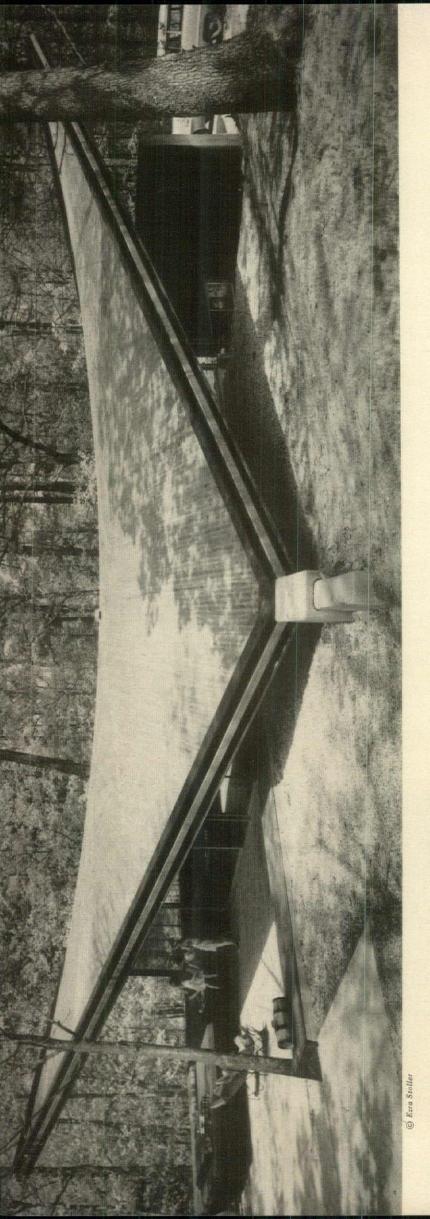
There is nothing new about this warped shape, except its structural scale. Engineers have been building little models of the hyperbolic paraboloid since before World War I. Eduardo Catalano, who teaches at the School of Design at North Carolina State College, built this one (with the advisory assistance of Structural Engineer Atilio Gallo) as a life-sized demonstration of the US practicality of his theories, a real argument that this is the most practical and efficient thin-shell spanning structure for US designers to adapt.

The graceful roof is appropriate, he points out, for railroad stations, filling stations, gymnasiums, shopping centers, churches, theaters, factories, libraries, and other buildings with sizable singlestory spans. He says it is the most efficient spanning structure because all stresses on it are equal (it has no bending moment), because it is doubly curved and thus very rigid, because it produces probably the thinnest concrete shell, and because it is very economical. Based on Catalano's estimates, an area of about 15,000 sq. ft. covered by this structure and supported by four exterior columns (one midway in each side) could be framed in concrete, including slab, foundation and shell, for \$4.00 per sq. ft. There is a further fact about this hyperbolic paraboloid which engineers will find significant: the designer holds that the stresses in this form are calculable.

Catalano himself is making good use of his demonstration roof; he lives under it. For more details about the particular shell over his house, see below and p. 172; for information on the evolution, characteristics, and calculations behind the shape, see p. 174; for a look at the future of the hyperbolic paraboloid, see p. 176.

Catalano's warped-plane roof in Raleigh

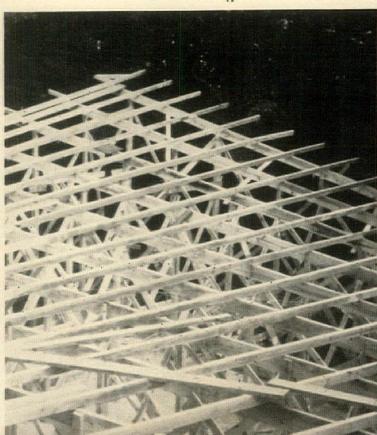
Photo (left): © Exca Stoller



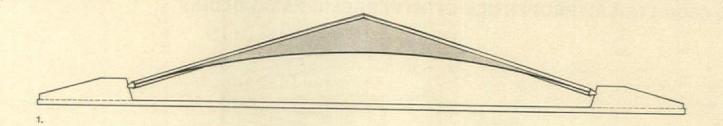
covers an area of about 4,000 sq. ft., with a diagonal span of almost 90'. No interior vertical supports were necessary to carry the load—it flows into a pair of buttresses at the down corners of the big handker-chieflike shelter. (The two struts near the other corners are anchors to prevent wind action from upsetting the shell.)

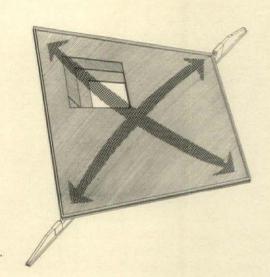
The roof was built in three layers of 34" x 3" T&G planking, which was simply bent into place over a formwork of straight 2 x 4's as shown in the photograph below. To hold the shape of the shell after it was released from the formwork, the direction of adjoining layers of the planking was reversed. The bottom and top layers follow the direction of the compression stresses; the middle layer follows the direction of the tensile stresses. The layers are simply nailed together. Tangential stresses are taken care of by a steel frame bolted through the shell and welded at the low vertices to 2" plate hinges, and the horizontal stress tending to deform the warp of the roof is met by three 1" diameter cables located inside a post-tensioned underground horizontal beam. (Stresses applied to the cables in the post-tensioning operation were about two-thirds of the total anticipated tensile stress.)

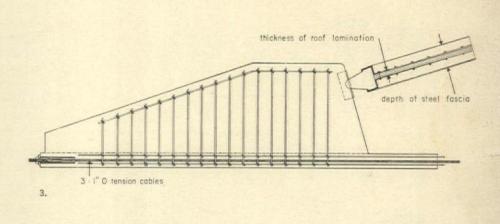
Weight of the roof: 9 lb. per sq. ft.; calculated ultimate loading: 30 lb. per sq. ft.; cost including foundations: \$2.50 per sq. ft. Reception: sensational.



7

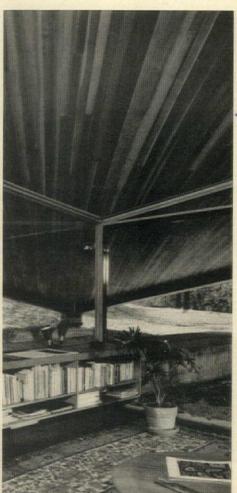






### WARPED WOOD PLANE

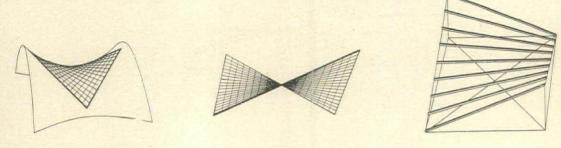
- 1. Diagonal section of the roof, showing parabolic arch and concrete buttresses connected underground by tension ties.
- 2. Top view of shell showing the direction of the three laminations of the shell.
- 3. Detail of buttress showing ends of stressed cables and hinge.
- 4. Low vertex of shell at buttress point. Note that glass partitions meet the curved shell at straight lines.
- 5. Detail of hinge connecting steel frame of shell to buttress.
- 6. Ends of the three stressed cables.
- 7. Formwork over which planks were bent to shape warped plane; note that all timbers themselves in this frame are straight.



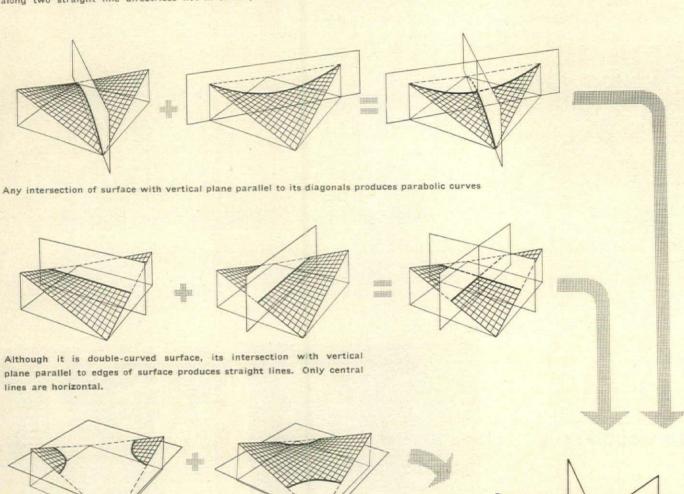




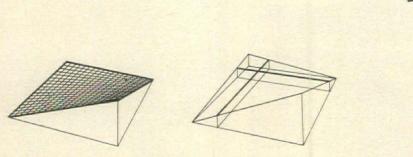
# BASIC GEOMETRICAL PROPERTIES OF HYPERBOLIC PARABOLOIDS



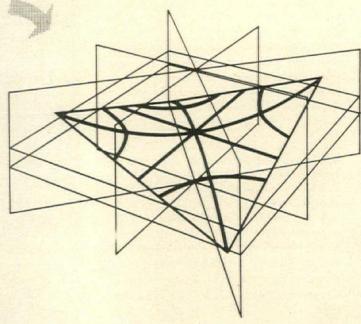
Hyperbolic paraboloid is warped double-curved surface, saddle shaped, generated by straight line that slides along two straight line directrices not in same plane and remains parallel to plane director.



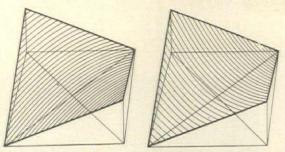
It is called hyperbolic paraboloid because any intersection of surface



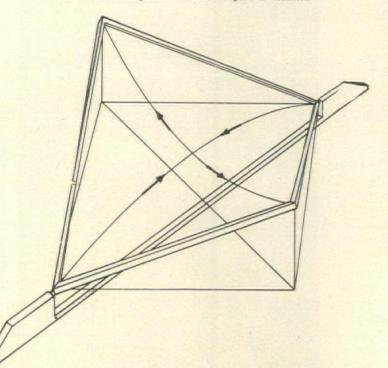
If hyperbolic paraboloid is tilted, horizontal lines displace edgeward

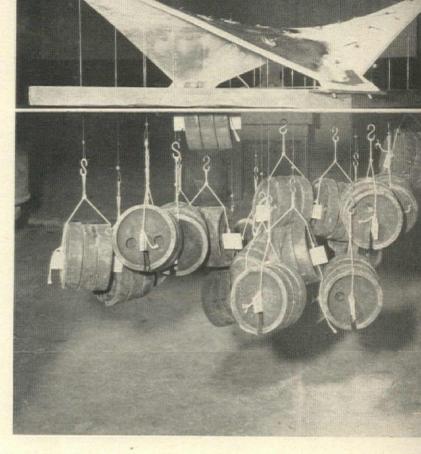


Synthesis of sections between surface and horizontal and vertical planes.



Parabolas in direction of low corners are subject to compression; and in direction of high corners are subject to tension.





A rough idea of the actual strength of the warped plane can be grasped at a glance in the photo, above, of a test underway. A model made of Balsa wood resisted a uniformly distributed load of 50 times its weight. It did not fail or bend out of design.

Engineers will like to know that the formulas which Catalano uses for designing hyperbolic paraboloids were developed by the French engineer, Aimond, after he had analyzed the structural behavior of the warped planes. In the first steps of his analysis he observed:

That the hyperbolic paraboloid is a surface with equal structural behavior for uniform loads parallel to its Z axis.

That on every point of the surface the internal stresses (R1, tension stresses; R2, compression stresses are equal and constant; and that every section parallel to AC is a parabola subject to simple compression, and that every section parallel to BD is a parabola subject to tension.

That stresses of tension and compression are composed as tangential stresses along the edges; that the nature of the tangential stresses depends on the position of the supports; that compressed edges result from supports at the low vertices, and tensile stresses result from supports at the high. That the thrust to the void on the straight edges is null.

### FORMULAS:

To calculate tension, compression, or shear at any point of the surface:

$$R_1 \equiv R_2 \equiv \frac{\text{w.a.b.}}{2.\text{f.}} \equiv t$$
  
w = dead and live load

a,b = half of length of edges l

f = fleche, or height of central point

tangential stresses developed at the edges E = t.1

compound stress from pair of meeting edges at the low vertices

T = E. 1.4142

cancellation of stress T

vertical T, = T cos alpha to be resisted

horizontal Th = T sin alpha to be equilibrated by tension ties

thickness of the shell

$$S = x.12'' = \frac{t}{M/C} \cdot x = \frac{t}{12''.M/C}$$

$$S = area (x.12'') section of shell per$$

lineal foot

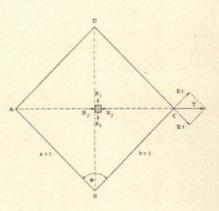
x = thickness of shell

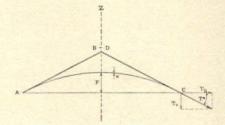
t = stress at every point

M = resistance of material affected by C

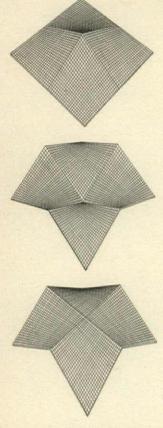
C = coefficient of safety applied to material used

(To calculate the edge, use formulas for tensioned or compressed members.)

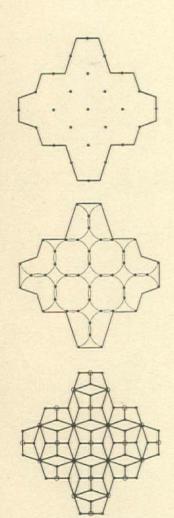




### WARPED SURFACES IN COMBINATION



COMBINATIONS of four hyperbolic paraboloids.

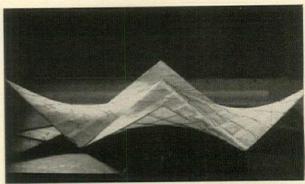


VERTICAL SUPPORTS can be shifted easily in plan, as shown above, creating two different sequences of spaces.

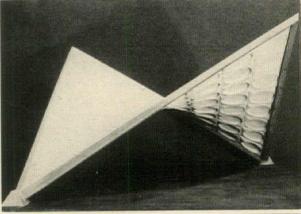
At their most efficient, these warped shells do not grow bigger, but multiply, repeating like molecules on a schoolboy's science chart of the elements. One reason for this can be seen readily by comparing a connected quartet of the shells with Catalano's single-shell house roof. Unlike the house the quartet would need no auxiliary anchoring against wind stress; its base automatically has four supports. In the top photo (right) is shown a simple way in which a square area of any given dimension can be roofed by a combination of four units. Below it is a roof of three units. In concrete construction this might also allow a repetitive use of formwork, and in some cases-according to Catalano-might improve the condition of the edges. The pair of meeting surfaces forms a V-shaped beam, with an increased moment of inertia: this condition, however, does not always occur at the required place. Prefabrication is also a possibility using precast concrete units see model photo, right).

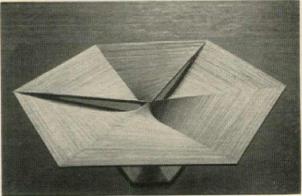
Three hyperbolic paraboloids is the minimum number which can be combined to form an efficient structure, providing three legs as wind insurance: one such combination is shown middle right. The quality of the spaces created by the grouping of units changes according to the position of the supports, leaving a great deal to the designer. Limitless combinations and variations are possible in building these shells over an extended area.

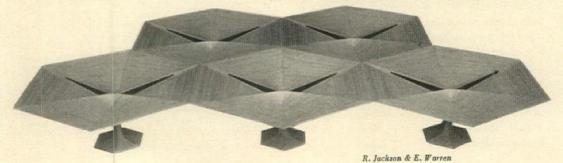
The other diagrams illustrate a few of these variations, made by varying the relationship between the length of edges, angles between the two sets of generatrices, curvature, etc. To open a clerestory between roofs, it is possible sometimes merely to turn one of the hyperbolic paraboloids upside-down, without disturbing the structural rhythm. Below is a unit of six cantilevered surfaces from a central support, with two of the warped surfaces overturned to form clerestories. The hexagonal plan of this plantlike structural form allows for easy, endless extension. In this structure, according to Catalano, a span of 60' between units could be built with an average thickness of 3" of reinforced concrete. Needed: good soil, good engineering.



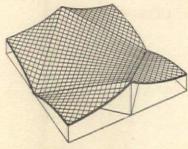






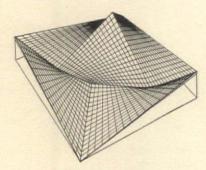




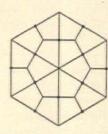


Square plan roofed with one warped plane plus four segments



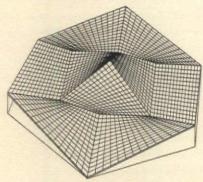


Square plan roofed with five complete units



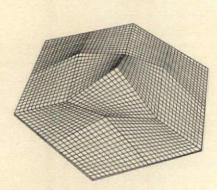
Elevation of 18 complete hyperbolic paraboloids indicates enormous possibilities and great grace of form (Plan is at right)





Hexagonal plan roofed with nine complete units



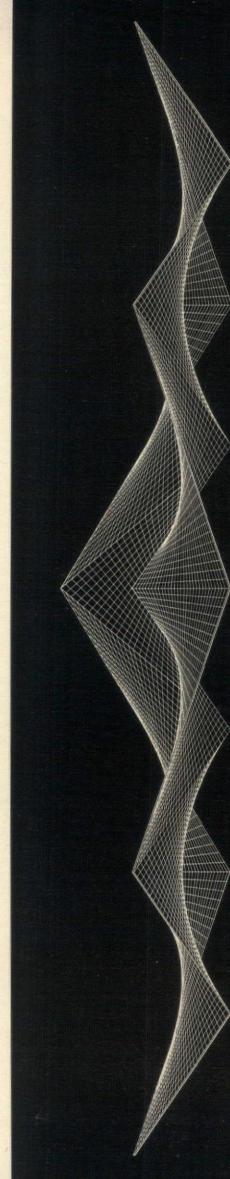


Hexagonal plan roofed with 12 complete units





Hexagonal plan roofed with 12 complete units, pitched differently



### for all concerned

#### DELINQUENTS INTO BUILDERS?

You would scarcely expect juvenile delinquency to be cured by building but perhaps building can help. The more one thinks about it the more certain one becomes that some kinds of building could really help. The kind most worth talking about is least in the public print—building done by youths themselves.

"Impossible" is the quick answer but supposing one switched for a moment to the question of what it is, anyway, that makes a teen-ager delinquent. The experts disagree on many things but on one they agree heartily: delinquents are most frequently found where adolescents are least busy and feel least needed. Busy newsboys, who were once the sociologist's chief concern, have for example proved to be one of the least delinquent classes of adolescents, running to less than 1%. Needy they may be, but they are doing useful work. It is work like the work of adults. They therefore feel needed.

Most adolescents, by contrast, belong today to a completely separate nation, a nation in some ways more isolated from us adults than Indo China is. They choose their own heroes and set their own standards and have their own customs and language. This isolation is strictly a recent thing in human history. It occurs because we simply do not allow adolescents, who are still set to one side and "preparing to live," to engage with adults in useful work or needed activity. The most primitive of peoples, the Hottentots or the Comanche Indians, were far better pals to their youngsters than we can be. As soon as one of their youths achieved

puberty he underwent an elaborate initiation which put childhood behind him and joined him to the adult group—though as a junior member; for example he did the more simple jobs of hunting. Half a century ago a majority of our youngsters were still fully needed on the farm, again as junior members of the responsible adult group. Today they are not even needed to wash the dishes.

So they join groups that appreciate their gifts and make them feel needed with excited importance. If we were smarter we could find constructive outlets through an education less wholly "academic."

#### BUILDING SCHOOL

Yet in our high schools as they are now built and operated, the one thing no adolescent is allowed to do is to add anything important to the environment he finds ready for him. Even his attempts to carve or paint his initials in out-of-the-way places are cleverly thwarted, by adults who hog the chance to do everything, and forbid all others. Only children going to summer camps have the chance to do useful things for their own community including some youthful building.

This is not to suggest that the youngsters themselves should build the walls and roof of a high school! The required standards of accuracy and finish would be far beyond them, and the setup would be a false one. And yet in a school with anything like adequate grounds there should clearly be outdoor places where the pupils could help do grading for play areas, and build simple retaining walls and amphitheaters and

shelters. An acquaintance who went at age 11 to a simple little German school still tells with pride how he helped build a bridge across a drainage ditch; every boy was allowed one stone carved and painted with his own initials. At the age of 55 that man is still profoundly grateful because the initials still showed when he came back 30 years later.

To allow such natural and useful participation by adolescents, school plants would have to be planned with some features, especially out of doors, left incomplete for further building and landscaping by the adolescent community.

Since the school itself could hardly give scope for such additions by generation after generation of adolescents, the principle must spread to other places besides, such as recreation centers. Recreation facilities, like schools, should have provision somewhere in them for junior builders.

#### BUILDING COMMUNITY

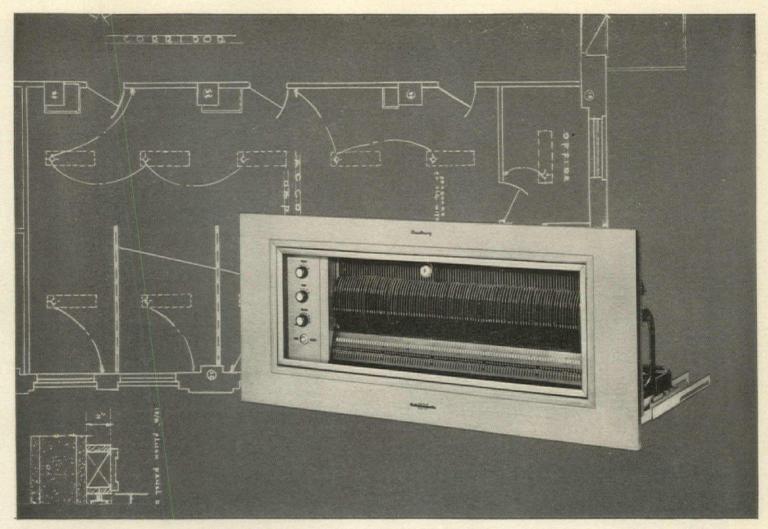
If even this proves inadequate in scope, perhaps the community can remember other needed jobs that nobody is doing. For example, there is the needed job of community cleanup and painting. This is to be sure not in itself appetizing to youth, except maybe the painting. But has the adult community forgotten what it does in its own behalf where jobs are unappetizing? It supplies an incentive. Money is the best known, but the most ardent jobs are done by adults not for money but for recognition. Sometimes the two are coupled in the form of prizes. At a time when radio and TV chains are outvying one another to give prizes for thoroughly useless performances, they might

try for a change crowning the most conspicuous neighborhood cleanup by competing groups of adolescents, with views on the screen "before" and "after."

These innovations might seem too disgustingly healthy at first, at a time when no vast prize is considered well given unless the performance that wins it is thoroughly meaningless. But with time we might cure ourselves of our love of a shameful thing, of seeing vast sums given away for nothing at all, and we might even revert to our earlier simple customs. This might incidentally help make our parks safer for an adult to frequent after dark. And American cities might well get rid of the well-earned reputation of being the most filthy in the Western world, while cleanup committees wring their hands in helplessness because adults will not take the job of policing them.

Leaders for the proposed corps of youthful builders will at first be indeed hard to find. since the delinquent adolescent community has its elders thoroughly scared of it. Policemen who find half a hundred youths ready for a fight with broken bottles herd them to court, from which they are promptly released for lack of space in reform institutions, instead of holding them at the vacant lot against arrival of a truck into which they can throw the bottles, clearing the lot as a playground, getting up a good sweat in the process. Later on, these youths might be appointed auxiliary policemen who will turn in, for a fine in court, the next adult who throws on another bottle to make a big dump out of his

Douglas Haskell



The Seeburg Custom Unit mounted on sliding metal tracks for simple, compact, built-in installations.

### There's a place in your plans for Seeburg Music



Seeburg Background Music Library. Specifically developed for work and background music use. Pressed for Seeburg by RCA Victor Custom Record Department.

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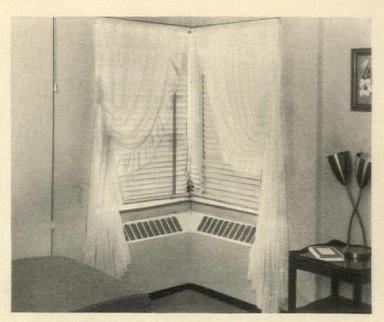
Quality Hill Towers, West Terrace Park, Kansas City, Missouri. "Downtown Homes with a Viewpoint." Shown here are two of the five 10-story, modern, fireproof, apartment buildings—conveniently located on Kansas City's scenic point overlooking the Missouri River. Architect: J. F. Lauck and Associates, Kansas City, Missouri. Consulting Engineer: Walter Gillham, Kansas City, Missouri.

### "at Quality Hill towers

we know you can depend on Dunham Vari-Vac"



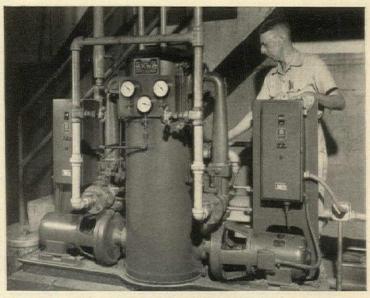
Spacious Quality Hill Towers living rooms—each with an outside view—each heated comfortably and economically by a sturdy, attractive Dunham Convector, specially designed for METRO piping.



Ample Bedroom Space for Quality Hill homeowners. Note Dunham Convectors, specially designed for METRO piping, used in bedrooms to counteract heat loss of corner windows.



Dunham VARI-VAC Controls in Quality Hill Towers provide centralized, one-man operating station for all adjustments, settings and remote control readings for 100 apartments.



Dunham Vacuum Heating Pump—the heart of the fuel-saving Dunham VARI-VAC system. Keeps subatmospheric steam circulating under vacuum and produces pressure differential between supply and return METRO piping to assure quick, complete steam circulation to all radiation.

"We know that Dunham VARI-VAC® Heating works 'as advertised,'" says Lewis Kitchen, President of Lewis Kitchen Realty Company, Kansas City, Mo., "because it has heated all five Quality Hill Towers most satisfactorily for the past four years.

"By satisfactorily I mean that tenant complaints have been far and few between, that maintenance costs are minimum, and that operating costs are low enough to be a big help to us."

Like many others, Mr. Kitchen has found that VARI-VAC—Dunham's fully automatic precision temperature control system combined with METRO® method of piping—keeps heat supply and demand in perfect balance, cuts original costs and effects substantial fuel savings.

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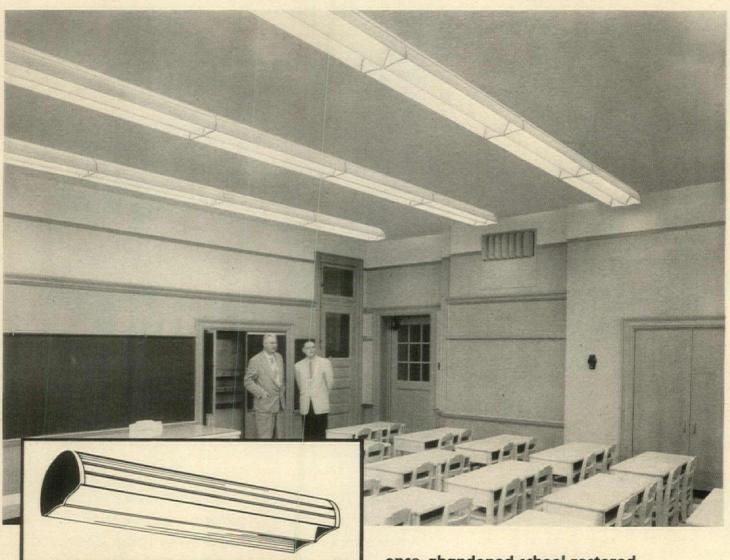
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### MITCHELL lighting modernizes 60 year old school LIGHTING LEVEL UP 600%...



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Electrical Contractor: Glenn Yoder, Hollsopple, Pa.

Distributor: Ward Electrical Supply Co., Washington, Pa.



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Approximately 200 MITCHELL
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Footcandles after modernization with

MITCHELL "Low Brightness" Luminaires: 60. Increase in lighting level: 600%.

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A remarkable difference...the renovation program of this 60 year old school cost less with MITCHELL "Low Brightness" fluorescents which have increased the overall lighting level by 600%. More than any other factor, the new lighting imparts the effect of pleasing modernity.

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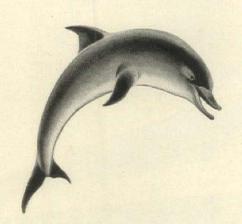
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# How Kewanee creates "safe weather" for fish...



Water temperature is like weather to fish and sudden variations of only a few degrees can be fatal. The problem at Marineland. world's largest oceanarium, Los Angeles County, California, is to meticulously maintain temperatures so its priceless deep sea specimens are not endangered. That's where Kewanee Boilers came in. Cold water from the sea is brought in at the rate of 2,000 gallons per minute. It is vital that boilers offer unfailing service so the inside water temperatures remain constant despite the ceaseless flow of water from the outside. Architects Pereira & Luckman specified Kewanee Reserve Plus Rated Boilers with 50% extra power built-in to take care of fluctuating demands. Only with reserve power could Marineland be sure its rare collection would be protected. And only boilers rated on nominal capacity with built-in reserve could meet the changing demands. So, if your problem is one of maintaining heat against as sharply a defined need as a few degrees change in temperature, or the broad problem of assuring sufficient power when expansion comes, choose Kewanee. You can be sure of unfaltering service.



Marineland Oceanarium, Los Angeles County, California, where rare fish are protected by Kewanee Boilers which assure uniform water temperature. Architects & Engineers: Pereira & Luckman/Heating Contractor: Mehring & Hanson Company

Two oil-fired Kewanee Boilers, housed with a 260 gallon hot water storage tank.

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### "HUMAN" BENEFITS SPELL SUCCESS OF Thermopane

#### DATA ON PARKER PEN PLANT

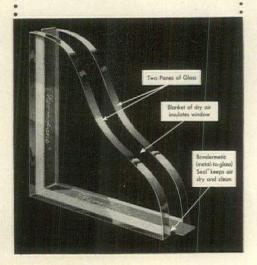
Architects:

John J. Flad & Associates, Madison, Wisc.

212,500 sq. ft. plant is completely air conditioned and sound conditioned.



Thermopane insulating glass:
4680 sq. ft. on west elevation
3024 sq. ft. on east elevation
336 sq. ft. on north and on south
elevations.



Recognized as an outstanding industrial building, The Parker Pen Co. at Janesville, Wisconsin, is an excellent example of designing for the corabined benefits of operating efficiency and well being of building occupants.

For instance: Thermopane insulating glass was used to aid heating and cooling. To further reduce air-conditioning load, the outer panes of the Thermopane units are Heat Absorbing Plate Glass. Beauty and diffusion of incoming daylight were considered, too—for the inner panes are Blue Ridge Louvrex glass.

Results? After two years of occupancy, both management and employes are pleased. Workers close to the windows are more comfortable in winter due to *Thermopane's* insulation. Less summer sun heat is admitted by *Thermopane* made with heat absorbing glass. The excellent working conditions have reduced absenteeism, and the insulated windows are considered a factor in that record. Management specified quiet interiors so the entire plant is acoustically treated. And because *Thermopane* deadens outside noise, it helps keep interiors quieter. Even buses operating alongside the windows can hardly be heard.

Heat savings and air conditioning efficiency add economic dividends to the "human" benefits of *Thermopane*.

If you wish data on the insulating qualities of *Thermopane*, the heat reduction qualities of Heat Absorbing Plate Glass, or any other information on glass, call your L·O·F Distributor or Dealer listed under "Glass" in the phone book's yellow pages. Great demand has created a temporary shortage of *Thermopane*. See that your contractor places your order with your L·O·F Glass Distributor or Dealer as soon as your building plans are set. It may avoid construction delay. Libbey Owens Ford Glass Company, 608 Madison Ave., Toledo 3, Ohio.



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#### passengers take over 100%

How successful are completely automatic without attendant AUTOTRONIC elevators for busy buildings? Here's the record: The first AUTOTRONIC without attendant elevators were installed by Otis in the Atlantic Refining Company Building in Dallas, Texas in 1950. At the end of July, 1955, Otis had sold 711 new without attendant elevators for installation in 178 buildings and had contracted to convert 495 elevators in 109 existing buildings to completely automatic operation. This includes a second order from the Atlantic Refining Company for its Philadelphia building. Today, almost all new buildings are being planned on the basis of passenger operated elevators!

#### race track owners play "comfort to win"

Horse racing fans walk an average of three miles a day at the track. They're constantly on the move to and from the saddling paddock, the mutuel windows, the track rail and the points of refreshment during an eight race program. With patron comfort in mind, many of the leading tracks have installed Otis Escalators to eliminate all stair climbing. Fans will find Otis Escalators adding to their enjoyment at Arlington and Washington Parks in Illinois, Hialeah and Gulfstream Parks in Florida, Laurel Park in Maryland, and Monmouth and Garden State Parks in New Jersey.

### FREE BOOKLET! hydraulic freight elevators

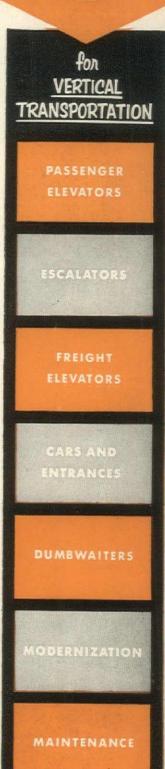
You'll find a complete description of the NEW Otis Plunger Electric Freight Elevators in Booklet A-414. It lists typical sizes from a light duty type with 2,500 lbs. capacity and manually operated car gates up to 20,000 lbs. power truck elevators with time saving, power operated doors. It details the new Otis compact, self-contained power unit that makes possible smooth starts and stops and automatic leveling within ¼" of floor level. It shows how the Otis Plunger Electric Freight Elevators, which require no penthouse, keep all direct heavy vertical loads off the building structure and simplify the hoistway construction. There's no real limit to the size, capacity or use of the Plunger Electric elevators described in Booklet A-414.

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"The most important word in the mind of anyone responsible for the operation of an elevator system is SAFETY," says Harry E. Wells. "It's important here at the Union Commerce Building in Cleveland where we have a fixed population of 5,500 people and 43,000 elevator riders daily. We handle traffic with 29 Otis elevators (19 are AUTOTRONIC without-attendant operation) which are kept at peak performance with 'Engineered Maintenance' by Otis. We're interested in the guarantee of Otis' high standards of safety. Especially, the checking and replacing of all wearing parts to assure uninterrupted peak safety performance."

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### **EXCERPTS**

Continued from p. 151

survey made by the Chamber of Commerce of the US and covering 134 communities where business district streets had been converted to one-way operation.

In 90 cities businessmen were against the idea, but such opposition disappeared in 62 of these cities after a trial period. In three cases there was no opposition until after the one-way was installed. In 41 cases no opposition existed either before or after the one-way was installed. In 41 cases no opposition existed either before or after.

All but nine of the one-way plans were retained. In these nine cases, all or part of the system was changed back to two-way operation due to opposition of affected businessmen.

How do one-way streets affect retail sales and property values?

There has been little research as to the effects, if any, on retail sales and property values when one-way movement is instituted. However, all findings point toward the conclusion that over-all business activity is enhanced and there is general agreement by businessmen on this point.

A study in the city of Sacramento (pop. 158,747) by the California Division of Highways before and after 16th St. was made one-way proved that retail business on this street increased 26.7%, a 5% greater increase than the average throughout the area.

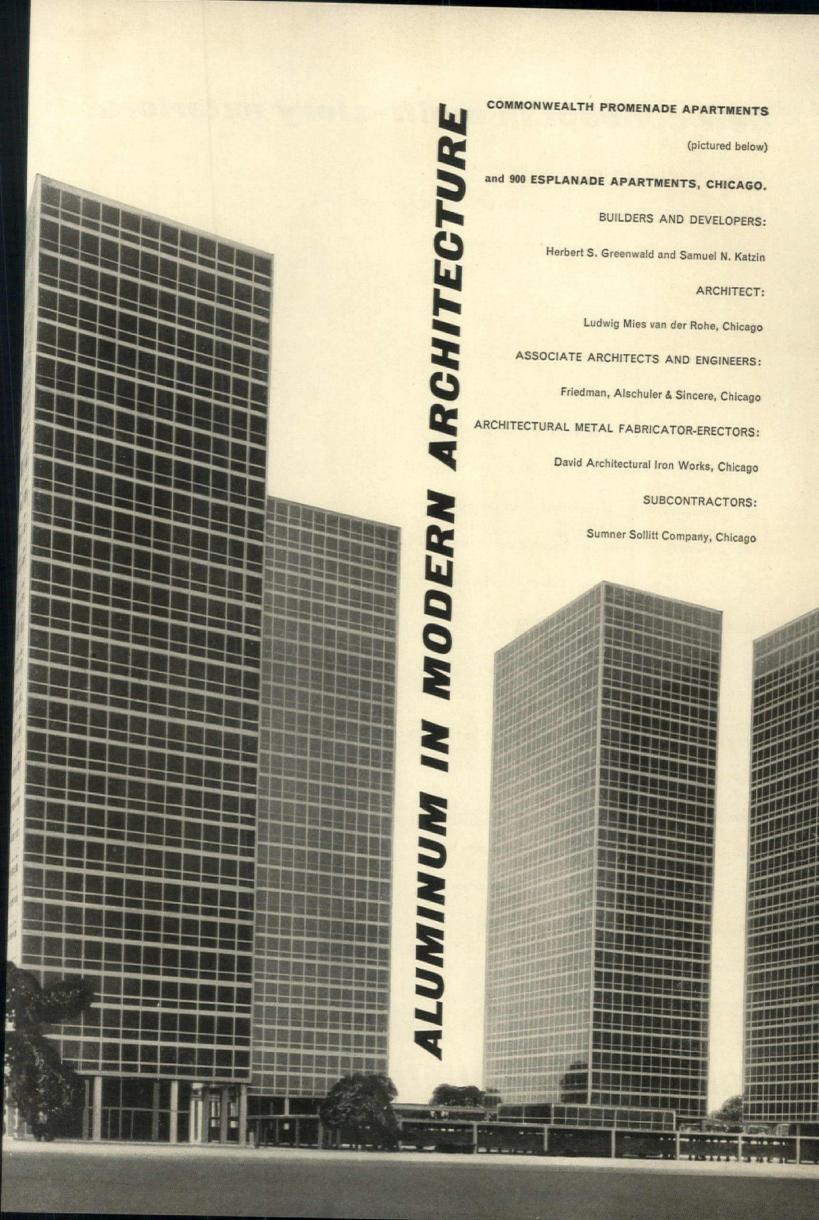
Do one-way streets ever hurt business?

In some cases individual businesses may suffer because traffic flow from one direction past their location is cut off. Usually such effect is temporary. These occurrences involve principally those industries that cater to traffic from a particular direction and include parking lots or garages, food stores, service stations and drive-in establishments. In some cases, too, public transit companies have reported ill effects from one-way operation. Only seven (5%) of the 134 cities in the US Chamber survey reported any real hardships to business houses and these involved only a few cases in each city.

How do one-way streets affect motor vehicle traffic?

When two-way streets are converted to one-way operations, almost invariably the daily volumes increase, average speed is greater, delays are fewer and accident frequency drops. As pointed out elsewhere, the effect on local transit has not been good in some cities. Yet the opposite has

continued on p. 194



### New concept in multi-story exteriors

Chicago's newest lake front developments, the

Commonwealth Promenade Apartments and the 900 Esplanade Apartments,
present a unique advance in modern glass-and-aluminum exteriors

for multi-story buildings. On the four 28-story

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facilities—largest in the industry. A typical grid unit is indicated

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In Levittown, the tile on every bathroom wall will be put up with an easy-to-use adhesive, unlike anything most builders have ever seen before. For new CTA-11 can be spread right out of the can. No premixing is necessary and a trowel is the only tool needed. Almost any plumb surface will do—plaster, plywood, metal, cement block, "dry wall". The operator spreads the adhesive, sets up the tiles and finishes the job by grouting in the usual manner. Rooms can be occupied inside of 24 hours.

With CTA-11, the job is easier, faster and more economical. Savings in total installation costs run steadily around 20%. Superiorities in finished job quality are also claimed: 1) Tiles do not crack with settling . . . the adhesive "gives" enough to adjust to settling. 2) The adhesive has a shear strength of over a ton per tile. 3) Installation is moisture-proof.



For further details on CTA-11, interested architects, builders and tile contractors are advised to consult a building supply dealer or write to 3M, Department 1811, 417 Piquette, Detroit 2, Mich.



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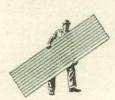


Complete test reports on the fire hazard classification of Fire-Snuf by Underwriters' Laboratories Inc., are available from the manufacturer on request.

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### **EXCERPTS**

Continued from p. 188

been reported in other cases. However, all other motor vehicle traffic benefits greatly.

What are major advantages of one-way streets?

Traffic carrying capacity under one-way operation is higher than with two-way operation largely because of less conflict and delay from turning movements at intersections. Another cause is the way in which the entire street width is used more efficiently in cases where there is an odd number of lanes for moving traffic and where overtaking and passing is simplified in case streetcar, bus or heavy truck operations are involved.

Due to increased capacity, traffic is attracted from nearby two-way streets which generally is an advantage to businesses along the one-way streets.

Average speed is higher on a one-way street because of the reduced number of possible conflicts in traffic movement and the greater ease in overtaking and passing slow vehicles. Also assisting in this regard, traffic signals can be timed easily for one-way progressive movement without interruptions in a platoon's smooth progression down the street whereas with two-way operation this is much more difficult, often impossible, to achieve.

The conversion to one-way movement may postpone the removal of curb parking. Where it is necessary to expand the capacity of a street and where the supply of parking is very small in relation to demand, the increase in capacity may be achieved through the one-way treatment instead of parking restriction.

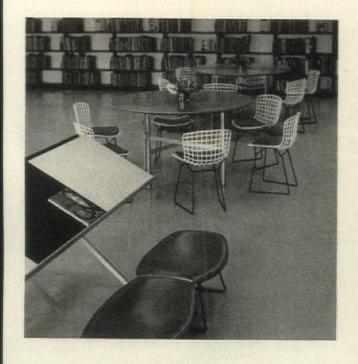
Conversion from two-way to one-way operation will usually reduce vehicle and pedestrian accidents and injuries.

One-way street operation is one of the simplest and cheapest methods of obtaining additional speed, capacity and safety in existing streets.

Pedestrian travel is benefited since conflicts between turning vehicles and pedestrians in intersection crosswalks are decreased. One crosswalk parallel to the oneway street is always free from such conflicts. Pedestrians have fewer turning movements to watch for.

Is curb parking prohibition preferable to the one-way rule?

From the standpoint of street traffic congestion relief alone, prohibition of curb parking is much to be preferred. Institution of one-way movement increases capacity about 10 to 20% (see above table) while prohibition of curb parking boosts capacity by 75 to 100%.





Midland Public Library, Midland, Mich., Alden Dow, architect.

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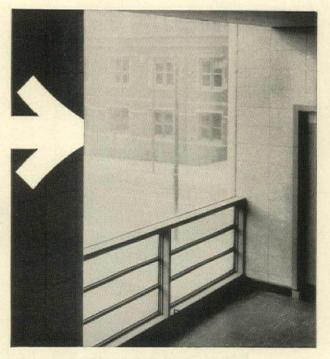
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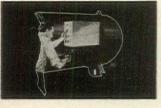
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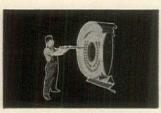
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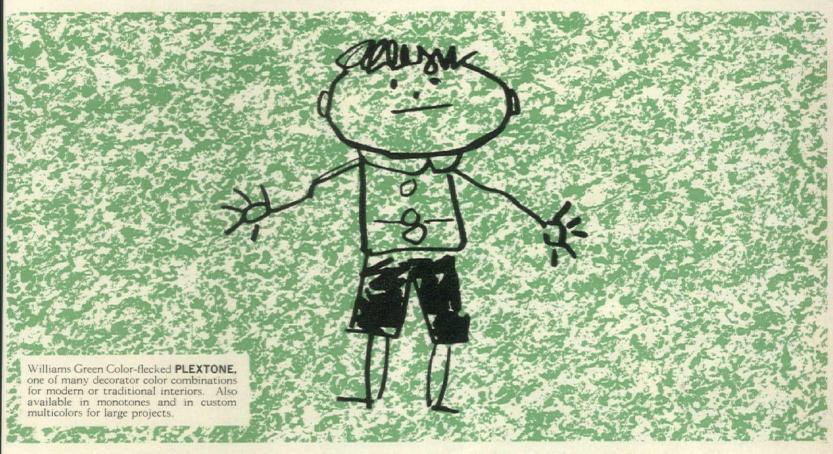
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IN SCHOOLS, THEY CALL IT

### "CHILDPROOF" PLEXTONE

and no wonder! This new multicolored paint is stain-mar-grease-scratch-chip resistant!



Never before a paint for school interiors like amazing, rugged Color-flecked PLEXTONE. It's revolutionary . . . two or three different colors (sprayed at ONE time from ONE gun WITH-OUT SPRAY DUST) which form a multicolored, textured pattern. SCHOOL AUTHORITIES find this new multicolored decorator finish easy on the budget. It resists wear, soil . . and rambunctious youngsters. SCHOOL ARCHITECTS find that PLEXTONE's uniform coverage on different types of low-cost surface materials gives them new styling resources . . . and new design possibilities because of its high light reflectivity and durability. PAINTING CONTRACTORS say PLEXTONE goes on easier, WITHOUT SPRAY DUST, makes possible neater, cleaner jobs. And MAINTENANCE MEN find it unmatched for ease and low cost of upkeep.

**\$0 RUGGED!** Color-flecked PLEXTONE resists staining by crayon, ink, candy, grease, and other forms of soil. Its harder, thicker paint film cannot easily be scraped or scratched. It can be washed, scrubbed, scoured — *even sandpapered* — without marring. And touch-ups, if ever needed, defy detection!

**SO PRACTICAL!** Imagine! This amazing new paint gives you a color-flecked surface consisting of two or three different colors, sprayed from *one* gun at *one* time in *one* coat *without spray dust!* And PLEXTONE's textured surface has unmatched hiding power . . . cleans quickly and easily!

**SO BEAUTIFUL!** You've never seen a more unusual, more dramatic, more beautiful effect. PLEXTONE's multicolor finish matches the most skilled spatter-dash painting . . . in subtle tones-on-tone or a brilliant circus of colors.

Write today for FREE color chips and Color-flecked PLEXTONE application data.

### PLEXTONE COLOR-FLECKED TEXTURED ENAMEL

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chips and application	aara.			
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Title (or occupation)		Miles Andreas	Alle Samuel	

### BOOKS

BUILDING, PLANNING AND DESIGN STANDARDS. By Harold R. Sleeper. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N.Y. 331 pp. 91/2" x 133/4".

Architectural Graphic Standards, the most thumbed book on drafting room shelves, has a new sister—half as big but twice as attractive, and a lot more interesting than its long title indicates. It is by the same Author-Architect: Harold R. Sleeper.

The new book is a graphic analysis of 23 building types ranging in size from small homes to air terminals, from motels to football stadia.\* For each type there is a separate chapter on program data, spatial relationships, area requirements, typical plans, basic data on furniture, fixtures and equipment concluded by a handy bibliography on the building type. For example, the 15 pp.

on office buildings, one of the smaller chapters, is subdivided under these headings: "functional relationships, site considerations, financial considerations, floor heights and bay spacing, office area requirements, general office clearances, movable partitions, desk-office units, office furniture." (It also contains a special five-page section on architects' offices.)

The purpose of Design Standards is to provide in one handy package the basic information necessary to make a design program and preliminary drawings for any one of the 23 building types. This it does well. Dean Pietro Belluschi, of MIT's School of Architecture and Planning, speaks for the architectural profession and its clients when, in the book's foreword, he says: "It will be of extreme usefulness to architectural and engineering offices, to schools and to all businesses related to the building industry. The need for such a body of technical information has long been felt."

This book got its start when Forum asked Harold Sleeper to prepare a series of plates called "Forum Design Standards and Data." Their publication began in the Oct. '53 issue of Forum and was concluded with the series on trucking in the March '55 issue. The new book reprints the 52 Forum plates and adds some 250 new ones.

More attractively presented and more easily read than the hand-lettered *Graphic Standards*, *Design Standards* is printed from varitype, and its index is positioned for quick and frequent use: inside both the front and back covers.

\*The complete list: Small Homes; Metels; Hotels; Bars, Restaurants and Kitchens; Schools; Gymnasiums; Theaters and Auditoriums; Stadiums and Grandstands; Shops and Stores; Office Buildings; Banks; Agricultural Buildings; Air Terminals; Bus Terminals; Parking Garages; Service Stations; Railroad and Trucking Data; Fire Stations; Ropitals; Doctors' Offices; Dentists' Offices; Churches and Temples; Mechanical Equipment.

NEW FURNITURE. Edited by John Peter. Published by George Wittenborn Inc., 38 E. 57th St., New York 22, N.Y. 173 pp. 834" x 12", Illus. \$8.50

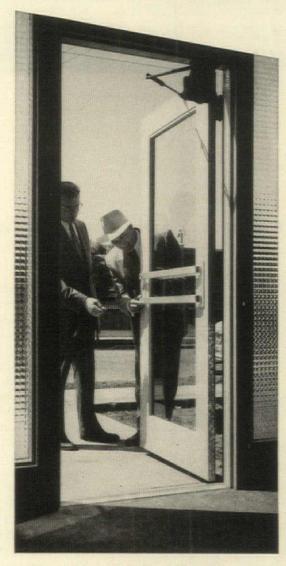
This is the third annual graphic presentation of the design work in 15 countries—an exhibition of the best new furniture produced last year throughout the world.

IDEA 55. Edited by John Peter. Published by George Wittenborn Inc., 38 E. 57th St., New York 22, N.Y. 157 pp. 8¾" x 12". Illus. \$8.50

Idea is the international yearbook of industrial design in the fields of appliances and consumers' goods. Over 410 examples have been selected by international experts for this third annual edition.



# \$ 100 SAV GS 1 = Reproper



Your Fenestra representative will be glad to demonstrate this "packaged door"-show you specifically how it can save you big sums of money. Ideal for schools, hospitals, offices and commercial buildings of all types.

Four big reasons why these Fenestra Hollow Metal Door units can give you this tremendous saving on every single door opening in your next building!

- Fenestra\* Hollow Metal Doors cost you less at the very start, because you get production-line economy-not custom job costs. They are mass produced on special jigs that avoid expensive time and labor.
- You save time-these doors come to your job complete with pre-fitted door, frame and hardware specifically made for each other. There's no expensive lost time in planning, ordering and assembling special elements.
- You save on installation costs because these complete units need no cutting, no fitting, no mortising or tapping. One carpenter with one screwdriver can install the door in minutes!
- 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.

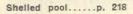
There's a door for every purpose in the Fenestra line: Entrance Doors, Flush or Regular Interior Doors with glass or metal panels, Doors with the Underwriters' B Label. For photos and details, write the Detroit Steel Products Company, Dept. AF-11, 2296 East Grand Boulevard, Detroit 11, Michigan.

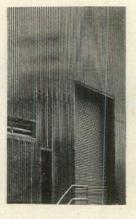
Fenestra | HOLLOW METAL DOOR • FRAME • HARDWARE UNITS

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

### **PRODUCTS**





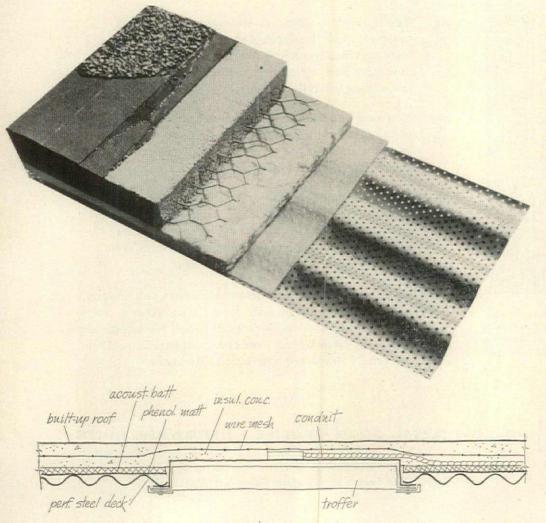


Sandwich wall...p. 224



Models to scale to order.....p. 260

### Perforated structural roof deck doubles as acoustical ceiling face

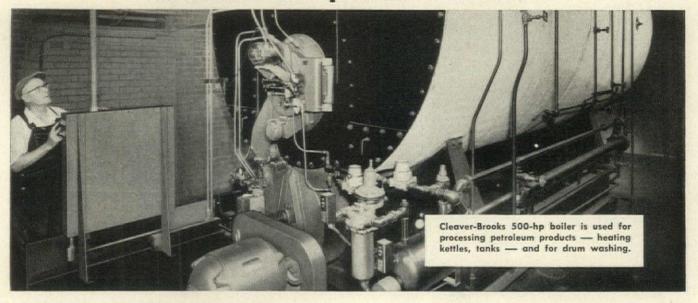


In its 5" depth, from rooftop to ceiling underside, Structur Acoustic integrates a low-cost, fire-resistant roof with effective acoustic and thermal insulation. The corrugated panel of high tensile steel underlying the system serves both as a supporting deck, spanning up to 8', and a presentable hard face for the sound-absorbent batts above. It is fabricated in 21/2'-wide sheets of galvanized, tempered steel and punched with 5/32" holes. These perforations, big enough to let noise travel through efficiently, are spaced 1/2" apart so as not to subtract materially from the strength of the panel. Having a noise reduction coefficient of .65 and a U factor of .14 with a 21/2" slab, Structur-Acoustic system consists, from bottom up, of the corrugated deck laid over junior steel beams, concrete or timber beams. Over this is placed a phenolic membrane and a 1"-thick semirigid board of glass-fiber board. (The membrane prevents any fine glass particles from filtering down through the holes in the panel.) A slab of lightweight insulating concrete reinforced with wire mesh and fireresistant concrete topping is poured over the acoustic board and a built-up tar and gravel roof laid down. The entire ceiling roof weighs under 8 lb. per sq. ft. yet can carry 130 lb. per sq. ft. on a 61/2' span. continued on p. 206



### "We heard Cleaver-Brooks Boilers were OK"

... and what an understatement that proved to be for a Milwaukee petroleum marketer\*



### Look at the record:

### 350 gallons of fuel oil saved per day!

On an annual basis — that's more than 90,000 gallons of oil saved.

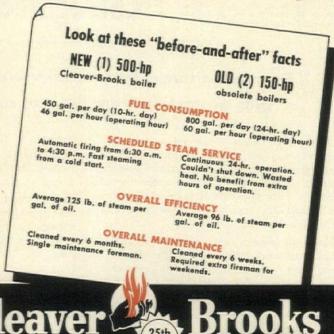
Complete shutdown flexibility with the assurance of fast steaming from a cold start is the key to these remarkable savings for a petroleum processor and marketer in Milwaukee, Wisconsin. Now, a Cleaver-Brooks 500-hp boiler operates 10 hours a day, 5 days a week, where formerly two 150-hp units operated continuously 24 hours a day, 7 days a week. Fewer boiler working hours also saves up to \$11,000 yearly in maintenance.

By replacing outmoded equipment, this petroleum processor also enjoys the benefits of guaranteed 80% operating efficiency, four-pass design, forced draft, 5 sq. ft. of heating surface per boiler-hp and fully-automatic firing. Cleaver-Brooks Company, Dept. M, 337 E. Keefe Ave., Milwaukee 12, Wisconsin — Cable Address: CLEBRO — Milwaukee — all codes.

\*Name supplied upon request.

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You save money on construction and maintenance when you build with Johns-Manville Corrugated Transite®. Corrugated Transite comes in large sheets that require a minimum of framing . . . permits fast economical construction of industrial, commercial, institutional and agricultural buildings.

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Transite is also used increasingly for interiors. The streamlined corrugations and attractive shadow lines offer interesting design possibilities.

Investigate Johns-Manville Corrugated Asbestos Transite and learn how you can build quickly and easily . . . have an attractive, longlasting, trouble-free structure regardless of size or purpose. For complete details write Johns-Manville, Box 158, Dept. AF, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.



- · Large sheets go up
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20 Johns-Manville

NOW G-E CEILING-MOUNTED PACKAGED AIR CONDITIONERS HELP YOU

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Now your scope of design can include the finest on a shelf. And these trim units enhance any modair conditioning without using a foot of vital floor space. Because new G-E Packaged Air Conditioners are fastened to the ceiling - or can be mounted

ern scheme. They're compact, self-contained with no exterior parts. Motor, compressor and condenser are all sealed inside.

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Where water restrictions present a serious problem, specify G-E ceiling-mounted units in aircooled models available in 3 and 5 ton capacities. These models use no water-require only air and electricity. Water-cooled models also available in 3, 5 and 71/2 ton capacities. For year-round comfort, all new G-E ceiling-mounted units may be equipped with coils for winter heating.

And, remember! G-E is the only complete packaged air conditioning line on the market. You can specify both floor- and ceiling-mounted models from a single manufacturer. For free booklet, "What Every Businessman Should Know About Weather Reflex", write General Electric Company, Commercial and Industrial Air Conditioning Department, Bloomfield, New Jersey.

### Packaged AIR CONDITIONERS

Progress Is Our Most Important Product



### **PRODUCTS**

Continued from p. 202

Particularly aimed at school and shoppingcenter construction, and other one-story buildings where fire resistance and price are important factors, the *Structur-Acous*tic system installs complete for about \$1 to \$1.10 per sq. ft. An additional, less obvious economy the 5" roof makes possible is the saving of 13" to 19" of wall height that would be taken up by hanging a separate acoustical ceiling. Standard light



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PROTEKTINSUL, new thermal insulation pipe and duct covering finish, is a .012" thick, prefabricated, poly-vinyl chloride outer finish that effectively protects insulation against weather, abrasion, chemicals, and mildew. Prefabricated to exact size, PROTEKTINSUL zips on and locks in place, requiring no cutting, fitting, sewing or painting in the field.

Never before a pipe and duct covering finish to give this combination of protection and beauty so important to institutions, hospitals, schools, where cleanliness is such an essential factor. Available in standard colors, or color combinations, for identification.

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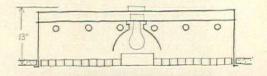
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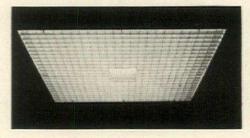
troffers can be nested with the Structur-Acoustic panels.

Manufacturer: Granco Steel Products Co., Subsidiary of Granite City Steel Co., Granite City, Ill.

#### EGG-CRATE FIXTURE mixes fluorescent and incandescent light

Easy on air-conditioning loads and electricity, fluorescent lamps well deserve their popularity for general lighting. Store designers and owners who know how crucial light is to sales and customer comfort often use flourescents for soft diffused illumination, but supplement them with separate accent lights to play up merchandise. Century's 4' square white-louvered egg-crate fixture combines both kinds of light in a





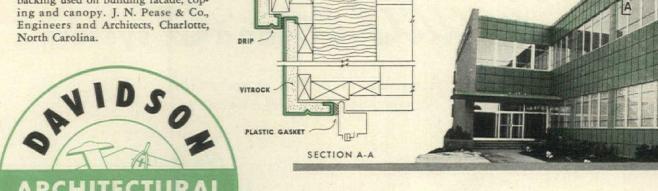
single recessed unit. While it is not designed to substitute for the drama of spots and floods, it does, however, make up for the color shortcomings of fluorescents and offset their flat light with its own 200-w. or 300-w. incandescent bulb. Its six 40-w. warm white fluorescents provide 65 to 75% of the fixture's illumination. A square clear-backed prismatic reflector behind the incandescent bulb directs most of its light down but lets a portion through to mix with the general light. From eye level it is hard to detect any borderline between the two sources. Ballasts, sockets and transformers are all U. L. approved. Price is about \$165 a fixture.

Manufacturer: Century Lighting Inc., 521 W. 43 St., New York 36, N.Y.

### HONEYCOMB SANDWICHES made in matching door and wall panels

In manufacturing both its door and wall panels, Panelfab Products, Inc. pressure-heat-bonds a resin-impregnated fibrous honeycomb between sheets of aluminum. Made in modular sizes, the fixed panels and doors can provide a complete low-cost curtain wall suitable for schools and one-story office buildings. In addition to marketing the lightweight sandwich panels in single continued on p. 212

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



ORCELA

for appeal for ecomomy

for durability

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

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



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

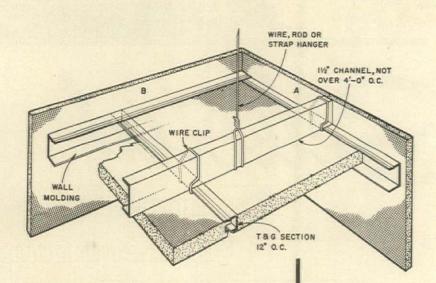
Scale model showing Bel-Park Medical Building as it will

NOTICE TO ALL FERRO PORCELAIN DESIGN COMPETITION PARTICIPANTS -Write to Davidson for latest literature, including details showing the application of porcelain enamel for curtain-wall construction.

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

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Your clients get no rust from these modern Sanimaster gas water heaters. Their tanks are solid MONEL®.

But they do get plenty of sparkling clean hot water . . . at the two temperatures they most need. And unrestricted flow of 180° sanitizing hot water for dish-and-clothes washers. 140° regular hot water at sinks, showers, faucets and lavatories. Both temperatures from the same tank, at the same time.

Strong, wear-resistant MONEL...the solid, high-nickel, long-life metal tank...is highly corrosion-resistant and rust-proof at all temperatures.

The Sanimaster is an automatic self-contained gas water heater, without coils. It carries the A.G.A. seal of approval for operation at 180°. An A.S.M.E. relief valve is standard equipment. No electric controls.

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Ruud-Monel and Crane-Monel two-temp Sanimaster 80-80 provides low maintenance through minimum controls. Operates on all gases. Widely used in apartments, restaurants, institutions, clubs, dormitories, motels, schools, industrial plants, etc. Sold only by Ruud Manufacturing Company and Crane Co.

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Underwriter's Laboratories, Inc. approves the use of

General Electric, Walker, and Nepco systems with Celluflor

When you specify Milcor Celluflor, you are no longer limited to any one type of electrification system. Now, you choose your electrification from three major manufacturers — General Electric, Walker Brothers, and National Electric Products Corporation.

All three have been approved for use with

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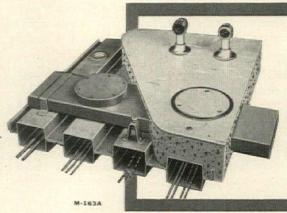
Catalog 270 explains these tests in detail and gives useful data on Milcor Celluflor. A copy will be sent to you upon request.

### MILCOR® CELLUFLOR

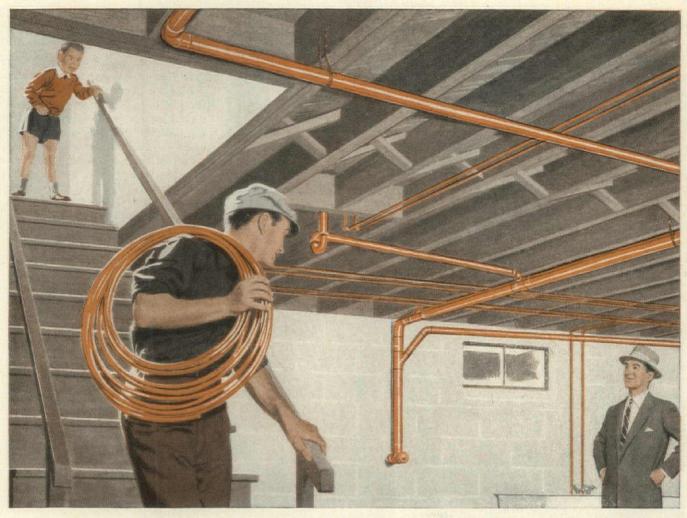
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### The best cellars feature Chase Copper Tube

You add extra-value to the whole home with hot and cold water lines of Chase copper tube. More years of trouble-free service, more efficient water flow with little or no increase in cost!

That's because Chase copper tube *resists* corrosion—can't clog with rust! Diameter for diameter, this copper tube passes *higher water volume* than lines of rustable metal! Its smoother inside surface cuts friction to a minimum, assuring fast and efficient discharge of fixtures.

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Specify Chase copper water tube for hot and cold water lines. Add extra quality at little or no extra cost!



Chase copper drainage lines, too, give superior service over the years...add extra-value to any home!



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(†sales office only)

### **PRODUCTS**

Continued from p. 206

units, Panelfab assembles them in small prefabricated structures. The 6'-long, 3½'-wide utility shelter pictured (right) sells for \$600 complete with jalousie windows. It could serve as a factory guard station or as a portable field house for a contractor. Electrical outlets and fixtures are installed to specification. The panel's hardy construction resists extreme climate conditions as well as fire, rodents and vermin; and its

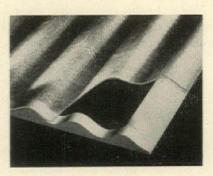


rigid honeycomb core prevents any surface deflection or waviness in the metal facings. Selling for about \$1.50 to \$3.00 per sq. ft., the panels and doors may be ordered with smooth or embossed aluminum facings in an anodized finish, or prepared for paint coat. Wall panels also are obtainable with porcelain enameled skins. Doors are available in sliding, pivot and fold-up styles. Insulation value of a 3" thick Panelfab



wall, weighing only 1½ lb. per sq. ft., is reported to equal that of an 8" brick or 12" concrete wall.

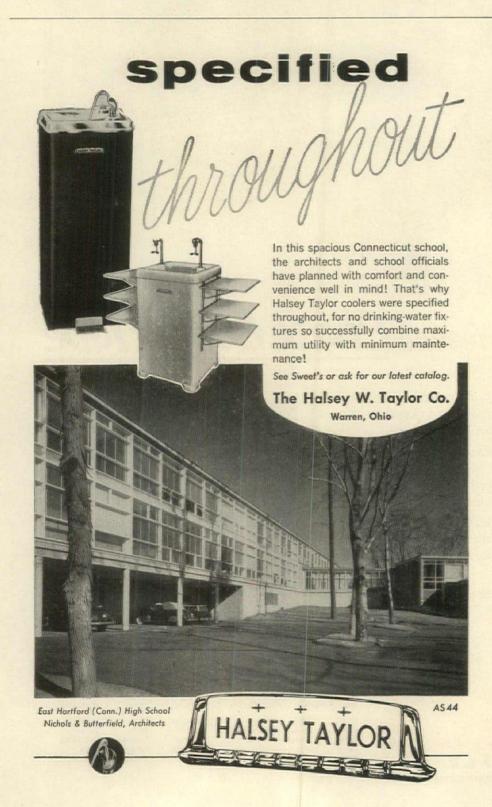
Manufacturer: Panelfab Products, Inc., 2000 N. W. 146th St., North Miami, Fla.

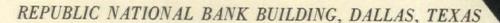


### VINYL CLOSURE STRIPS come in color

Formed to fit the 2½" x ½" undulations of corrugated acrylic and reinforced plastics, flexible *H-P Closure Strips* also correspond in color with the popular translucent sheeting. The closures are available in 34½" horizontal end strips at \$1.10 and 36" side pieces at \$1.96. *H-P*'s are fastened in place with nails, bolts or screws. Molded of resilient vinyl they hug the paneling, making a watertight airtight seal, and are said to take up expansions and contractions of the plastic sheeting.

Manufacturer: Hanszen Plastics Co., 835 S. Good Latimer Expressway, Dallas, Tex. continued on p. 218





the tallest building in the southwest

the largest selling perlite aggregate in the world

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PERMALITE perlite aggregate plaster, used to fireproof structural members, provides 4-hour fire rating.

PERMALITE lightweight insulating concrete, applied 4" thick on an exterior curtain wall, provides 1650 psi minimum compressive strength, achieved by carefully designed mix ratio and pressure application by E-Z-On spray gun.

PERMALITE used in modern lightweight construction increases the ratio of pay-load to dead-load and makes possible substantial savings in structural steel.

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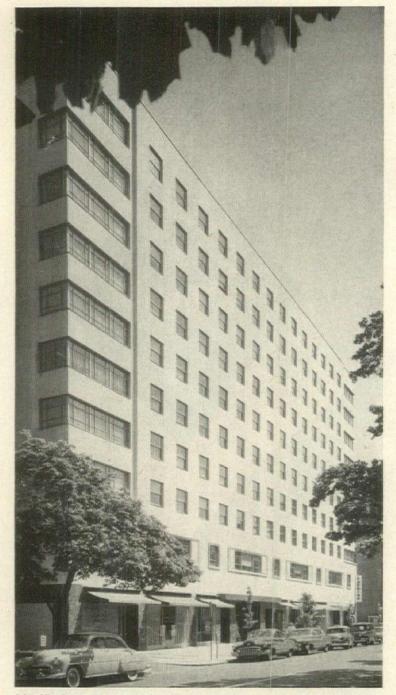
GENERAL CONTRACTOR: j. w. bateson co., inc., dallas

PLASTERING CONTRACTOR AND CURTAIN WALL APPLICATOR: storbeck and gregory, dallas

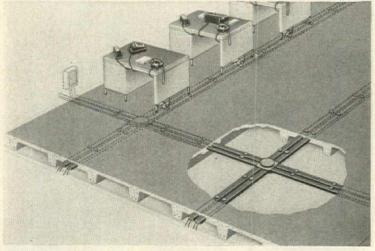
PERMALITE PROCESSED AND SUPPLIED BY: texas lightweight products company, irving, texas

for information about PERMALITE plaster and

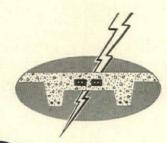
concrete, write to: Perlite division, great lakes carbon corp., 612 south flower street, los angeles 17, california



Cafritz Office Building, Washington, D.C., where electrical flexibility is provided by R/C Duct Floors formed with Caco-Meyer Steelforms. LeRoy L. Werner, Architect / Beall & LeMay, Structural Engineers / Cafritz Construction Company, Builders



Standard electrical distribution ducts are buried in the monolithic structural concrete, No additional fill or expensive topping is needed. Electrical connections are provided as close as every 2 feet along the ducts.



# concrete joist floors cost 19% less than cellular steel...

provide outlets every 2 feet along ducts...in rigid structural concrete

The end objective of any construction project can be posed by this simple question: "How can building be done at less cost?" There is a way, for business buildings-and that's with R/C Duct Floors provided by Ceco-Meyer Reinforced Concrete Joist Construction. Extensive use of automatic office machines makes conveniently placed electrical outlets a necessity today. The best way to achieve electrical flexibility is with R/C Duct Floors. They provide a network of underfloor electrical ducts buried in rigid structural concrete. Capped outlets every two feet along the ducts are easy to open without drilling into the floor. They afford ample connections for all business machines, telephones and intercom . . . eliminate tangled extension cords. And this is done at a saving, too, because studies prove R/C Duct Floors cost approximately 19% less than cellular steel floors. An example of this improved, less costly way of building is the Cafritz Office Building, Washington, D.C. Before building, consult Ceco Engineers in the pre-planning stage. They can show you how to save with rigid reinforced electrified concrete floors.

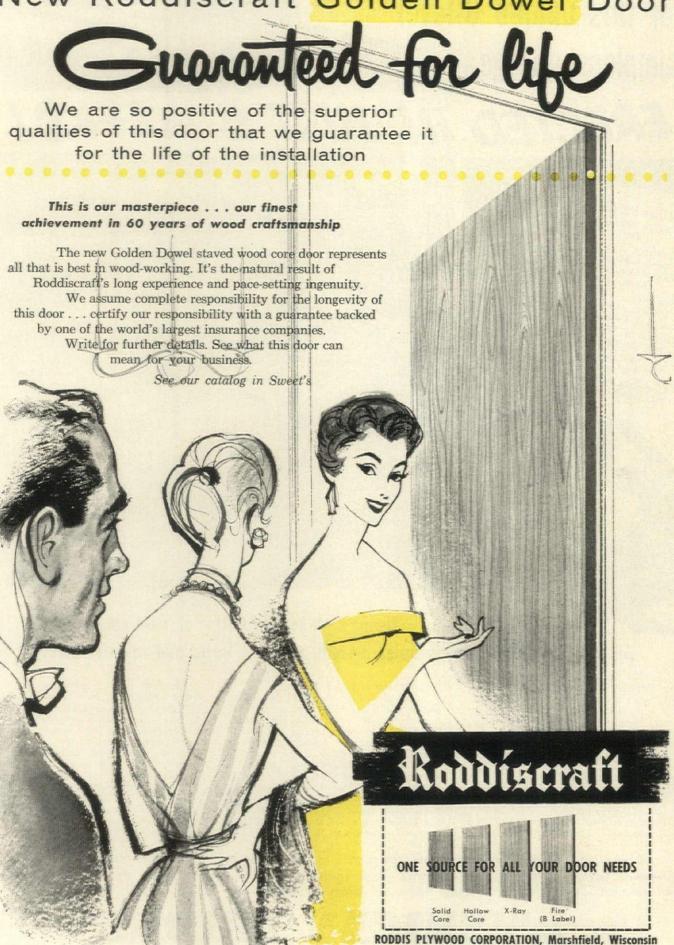
#### CECO STEEL PRODUCTS CORPORATION

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

In construction products Ceco Engineering makes the big difference

	cts Corporation - 5601 W. 26th St., Chicago 50, II mative book entitled, "Electrical Outlets Whereve
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Warehouses in principal cities

700 Tons of Steelwork for this unique 6-level rampless garage . . . .



# ERECTED IN JUST 5 WEEKS!





# Using high tensile bolts for field connections, AMERICAN BRIDGE makes quiet, speedy work of large mid-town structure

The Parking Authority of the City of Pittsburgh is answering the demand for new and better parking facilities by building one of the most unusual structures of its type to be found anywhere.

And by using steel-frame construction

And by using steel-frame construction field connected with high strength bolts, the job is being handled so speedily and so quietly that folks on the street and in neighboring buildings are scarcely aware that a big new building is being constructed in their midst.

Erection started February 4, 1955 and was completed March 11, 1955 – an

elapsed time of just 5 weeks!

Located on the corner of the broad Boulevard of the Allies and busy Smithfield Street in the heart of the Golden Triangle, the new garage is 120' wide x 220' long with six levels for drive-in parking. The slightly tilted floors do away entirely with ordinary ramps. It is designed with a center section 120' x 125' on slope and two level end sections 120' x 47'6". All connections were made with high tensile bolts. The 700 tons of structural steel framework was fabricated and erected by American Bridge.

The fast, uninterrupted and unusually quiet erection of this modern parking garage provides another strong argument in favor of steel-frame construction and bolted field connections for buildings of any type and size. For American Bridge crewmen can make tight connections with high-strength bolts as efficiently and speedily as less skilled personnel can handle the more common methods.

can handle the more common methods.

For detailed information regarding your requirements, please contact the office nearest you. Our engineers welcome an opportunity to confer with you.

AMERICAN BRIDGE DIVISION, UNITED STATES STEEL CORPORATION, GENERAL OFFICES: 525 WILLIAM PENN PLACE, PITTSBURGH, PA.

Contracting Offices in: AMBRIDGE - ATLANTA - BALTIMORE - BIRMINGHAM - BOSTON - CHICAGO - CINCINNATI - CLEVELAND - DALLAS - DENVER - DETROIT - ELMIRA - GARY MEMPHIS - MINNEAPOLIS - NEW YORK - PHILADELPHIA - PITTSBURGH - PORTLAND, ORE. - ROANOKE - ST. LOUIS - SAN FRANCISCO - TRENTON UNITED STATES STEEL EXPORT COMPANY, NEW YORK

## AMERICAN BRIDGE



UNITED STATES STEEL

# marble is economical

## proof ... positive proof \*

Proof means facts and figures, and this is the kind of proof we mean when we say that Marble is economical. Dozens of architects and building maintenance engineers have attested to the fact that Marble costs less than any comparable material. Not only is its initial cost comparatively small in relationship to the value it gives, but its real cost — including the all-important cost of maintenance — is unquestionably lower than many so-called economical materials.



Sorey, Hill & Sorey, Architects

The facts and figures are available to you in two important publications: "Proof That Marble Costs Less . . ." and "Further Proof That Marble Costs Less . . .", which are yours for the asking if you write to:



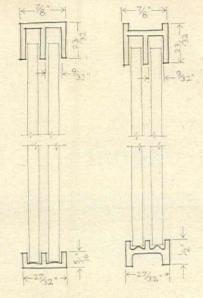
NEW LITERATURE: "Marble Forecast 1955-1956", "Marble In The Home", "Marble For The Modern Bank".

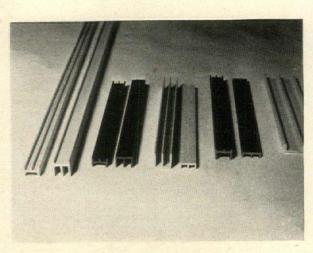
#### **PRODUCTS**

Continued from p. 212

#### EXTRUDED PLASTIC CHANNELS are low cost tracks for sliding doors

Anchor Plastics, extruder of thousands of plastic moldings and shapes, has developed stock, inexpensive, easily installed runners of polystyrene for cabinet and closet sliding doors of glass, hardboard, and plywood. Currently produced in black and offwhite, the *Ancorene* plastic extrusions are





SUN LIFE INSURANCE COMPANY

OF AMERICA

Baltimore, Md.

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36 36

**ARCHITECTS** 

Buckler, Fenhagen, Meyer & Ayers

7 Balanced Doors in the entrances to Sun Life Building.

Ellison



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

durable, nonwarping, nonchipping channels with high impact resistance. The lower tracks have rounded bearing surfaces to minimize resistance and friction; there are no rollers to jam or require lubrication. Averaging 5¢ to 15¢ per lin. ft., Ancorene tracks are furnished cut to exact lengths specified, and can be installed with adhesive or small nailing strips. Custom colors and shapes can be supplied on order. Manufacturer: Anchor Plastics, Inc., 36-36 36th St., Long Island City 6, N.Y.

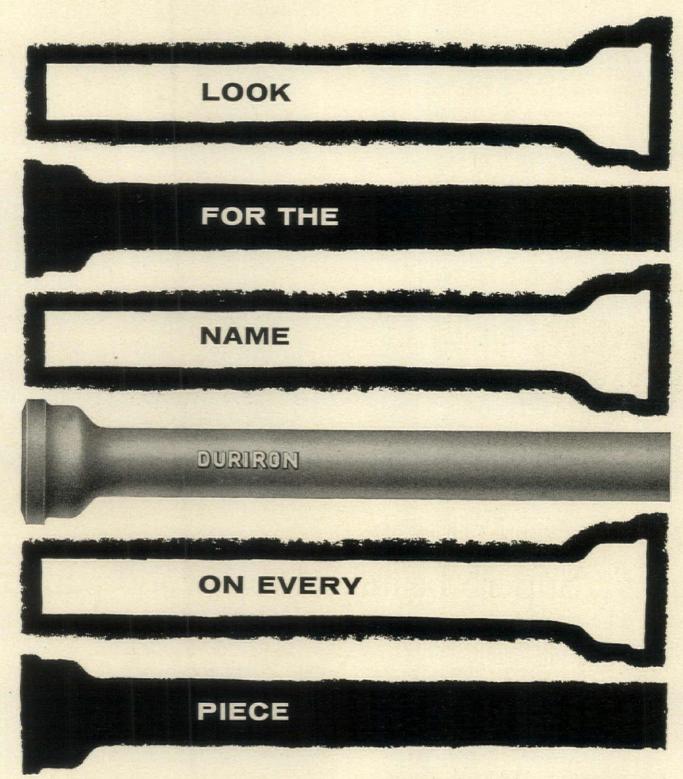


#### SWIMMING POOL molded in quarters of plastic and glass fiber

Probably the biggest item currently massproduced of reinforced plastics is Paddock's 30' x 15' Cinderella swimming pool. Taking full advantage of the simple molding procedures possible with polyester resins, and of the high impact and flexural strengths of the glass-fiber plastic lamin-



ate, the Californian swimming pool manufacturer is making the 10,000 gal. pool in four matched shell sections. Designed for either oven curing or cold layup fabrication with self-curing resins, and weighing under 900 lb., the four pool sections can continued on p. 224



**DURIRON ACID PROOF DRAIN PIPE** 

DURIRON is the *one* quality high silicon iron pipe specified for more than 30 years by architects and engineers for corrosive waste disposal systems. Specify DURIRON. Insist on DURIRON for resistance to practically all commercial acids and other corrosive solutions. It generally outlasts the building. A complete line of DURIRON pipe and fittings is stocked by leading wholesalers throughout the country. Free Bulletin PF/4.

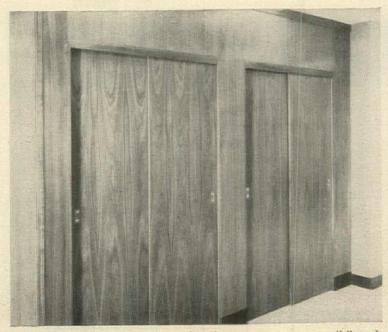
THE DURIRON COMPANY, INC., DAYTON, OHIO





Only Weldwood Movable Partitions offer

# Superb beauty of real wood paneling



STORAGE CLOSETS use matching sliding doors to carry out over-all "wood-paneled look." These Weldwood walnut sliding doors have Novoply® cores.



PRIVATE OFFICE at General Dynamics Corporation shows how beautiful walnut Weldwood Partitions accent the atmosphere of quiet elegance and good taste.





PARTITIONS ARE INSTALLED without costly interruption of regular office routine. Workman is shown installing section of Weldwood Movable Partition; completed corridor is shown at left.

BEAUTIFULLY GRAINED WALNUT Weldwood Movable Partitions and matching Weldwood Doors with Weldrok cores are used for the executive offices of General Dynamics Corporation, New York City. Interior planning: Ethel Pilson Warren and Joseph W. Rogers, Jr. Distributor: Nuroco Woodwork, Inc.

# plus overnight movability

Here's proof that offices needn't be dull and institutionallooking simply because they must be planned for frequent rearrangement.

The Weldwood Movable Partitions you see here have all the warm, natural beauty of wood paneling, yet can actually be rearranged completely in a few hours!

With Weldwood exclusive metal key construction, panels are locked together like a solid wall; yet they can be easily dismantled and set up in a new location at any time.

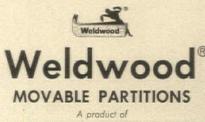
Save up to 50% in installation costs because Weldwood Movable Partitions are easy to install. Because they have so few parts, they can be installed by relatively unskilled maintenance crews (complete installation service is also available).

Only Weldwood has the Weldrok® core that's both fireresistant and acts as a sound barrier; it's twice as efficient in cutting down office noises as a 2 x 4 stud partition with metal lath and plaster on both sides.

Select from magnificent veneers: walnut, birch and Korina® are regular stock items; mahogany, elm, maple, oak and many other woods are always available on special order.

Timeless decorating background. Beautiful wood subtly complements both traditional and contemporary architecture and furnishings. And occasional waxing is the only maintenance needed!

Send coupon for specifications and installation data or visit any of the 87 United States Plywood showrooms in principal cities.



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World's Largest Plywood Organization

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I'd like to know mo of Weldwood Move	ore about the advantages, specifications and data on installation able Partitions ( ) and Weldwood Mineral Core Doors ( )
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# Air conditioning existing buildings may be easier than you think...



It's as simple as this, with mordine

led be air conditioned. Hot water from your present boiler is piped to each unit for heating. Cold water from a central chiller is supplied through the same piping for summer cooling. A small motor (1/30 to 1/12 hp) operates two quiet fans in each AIRditioner to provide refreshingly cooled or heated air circulation. There are no expensive ducts to install. Here is low-cost, year-round comfort for new or existing office and apartment buildings, hotels or motels, hospitals or homes.

2. Operating flexibility cuts costs. With Modine AIR-ditioners, room occupants control their own temperatures. Units are operated only when and where they are needed. No need to air condition an entire building to provide comfort only in occupied rooms.

3. Types and sizes for every application. AIRditioners are offered in console (illustrated), concealed, built-in overhead and exposed ceiling models... in sizes to meet your remodeling or new construction requirements. All units are furnished with quiet, slow-speed

motors (1050 rpm top speed) having built-in thermal

overload protection as a standard safety feature.

#### Want to know more?

Consult the classified section of the phone book for your Modine representative. Contact him or mail the handy coupon for illustrated booklet.



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#### A WIDE VARIETY OF West Coast Hemlock Products



#### A LIVING ROOM PANELED

### WITH West Coast Hemlock SIDING

Because Hemlock is so beautiful, the architect designing this modern home selected Hemlock siding for the interior. Its light, warm color mellows with age. Its straight grain and fine, even texture are pleasing to the eye. These characteristics, plus light weight, stiffness, and high nail-holding power, make Weyerhaeuser 4-Square West Coast Hemlock ideal for a wide range of uses. Freedom from pitch, loose knots, and splinters adds to its workability. Natural finishes or paints go on beautifully, and hold very well.

That's why this species often is called the "Ability Wood." For framing and sheathing, siding, molding, flooring, paneling, and scores of other uses, West Coast Hemlock has few equals.

More and more architects are specifying this versatile Weyerhaeuser 4-Square West Coast Hemlock. Write for descriptive literature.



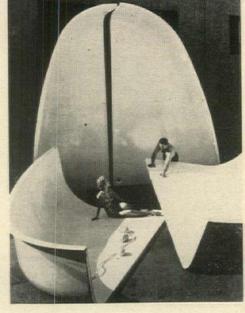
Weyerhaeuser Sales Company

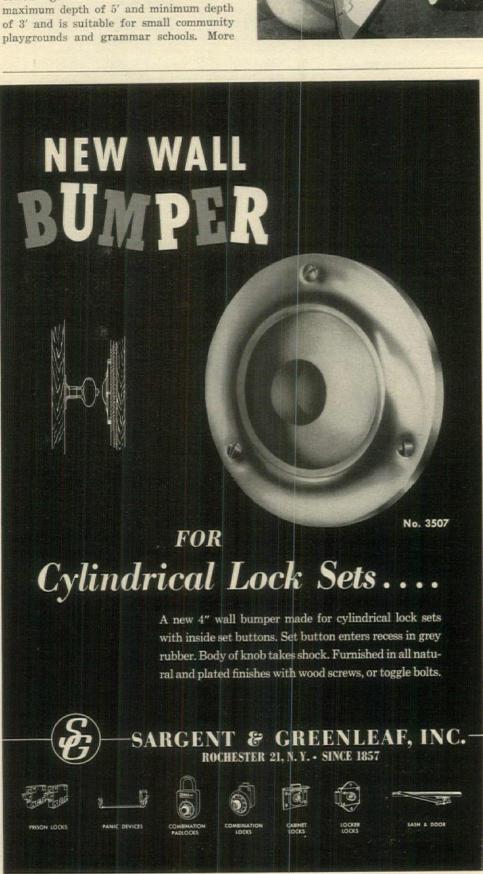
ST. PAUL 1, MINNESOTA

#### **PRODUCTS**

Continued from p. 218

be shipped anywhere in the country and installed complete with filter plant, trim and coping for about \$2,000—about one-third less than a gunite or concrete pool of comparable size. On the site, the four sections are fitted with neoprene gaskets and bolted together. The current model has a maximum depth of 5' and minimum depth of 3' and is suitable for small community player rounds, and grammar schools. More





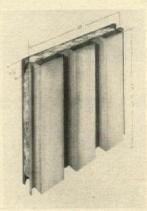


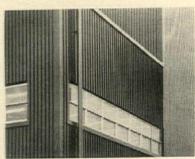
significant architecturally than the pool itself, perhaps, is the size in which the plastic laminate is being handled. Not so long ago, a polyester car body and a bathtub were news. Now, a swimming pool. Next?

Manufacturer: Paddock of California, Los Angeles, Calif.

#### FIREPROOF SANDWICH WALL comes shop assembled or knockdown

Pan-L-Wall offers two answers to the problem of providing trim, easily maintained, insulated walls for warehouse and manufacturing plants at moderate price. One, Panel A series, is a packaged sandwich which comes ready to hang on the framing. The second, D series, is delivered with facings and insulation knockdown for field assembly. Ranging in span from 6'-0" to 11'-6", and in length from 12'-0" to 25'-0", both field and shop fabricated panels comprise two layers of sheet metal fastened





around a core of 1½"-thick glass fiber. The interior sheets are flat 18- to 24-ga. galvanized steel and the exterior are steel or mill-finished aluminum corrugated in a wide variety of patterns. End walls, parapets and corners are easily assembled and continued on p. 230

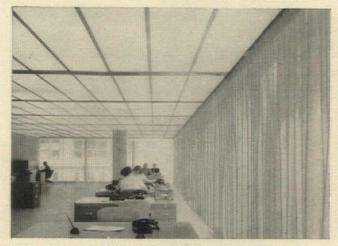


# uni-flo

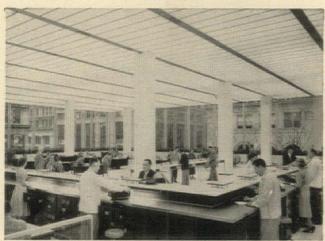
#### Engineered Air Distribution

High velocity air distribution one of advanced features in Manhattan "glass-box" bank

Photos by Ezra Stoller



Uni-Flo Rectangular Diffusers are so inconspicuous they are practically invisible in this third-floor office. Mounted in aluminum strip, diffusers lead directly from air valves installed above luminous ceiling panels. Individually adjustable diffusers simplify system balancing.

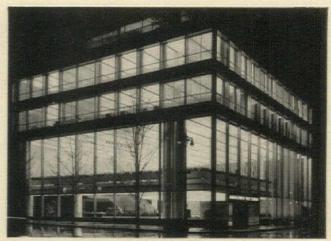


No fixed teller positions is a new idea in commercial banking. During busy hours, tellers roll mobile currency buses along the line to make room for extra help. Uni-Flo Rectangular Ceiling Diffusers blend with modern luminous ceiling construction providing inconspicuous air distribution.

and performance data
from the pioneer in
high velocity systems!

"A showcase for banking" is a vivid picture phrase describing this unusual new Fifth Avenue Office of Manufacturers Trust Company in New York City. Skilled professional craftsmanship has created a structure unlike any other financial institution in the world. In its creation, the designers have employed most recent developments in structural and operational techniques. Among them is the space-saving high velocity air distribution system, using the Uni-Flo High Velocity Air Valves to supply conditioned air quietly, effectively for comfort of patrons and employees.

Architects: SKIDMORE, OWINGS & MERRILL. Mechanical Engineers: SYSKA & HENNESSY. Air Conditioning Contractor: BAKER SMITH, INC. Interior Design Consultant: ELEANOR LEMAIRE.



**Like a modern showcase,** the interior of Manufacturers Trust Company's office gleams with light on a rainy night. Huge 10x22 foot panes of plate glass face the second floor mezzanine. Unusual air conditioning problems posed by the glass walls were solved satisfactorily.



One Uni-Flo High Velocity Valve can serve several diffusers when installed at a low velocity branch duct take-off from a high velocity trunk duct. Or a "package" is available, consisting of an air valve, sound control-chamber, and single diffuser.

#### Phone nearby Field Office

or write us for your copy of Uni-Flo High Velocity Catalog No. 6598. Fully illustrated manual on high velocity applications and techniques.

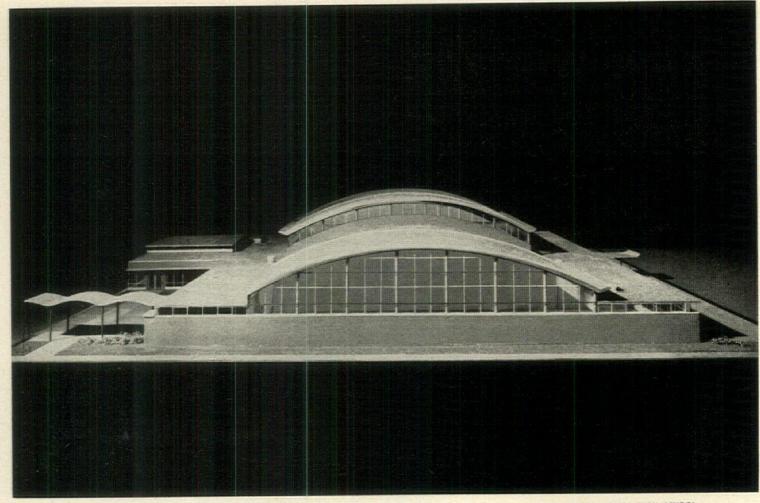


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EDSEL FORD SENIOR HIGH SCHOOL Architects and Engineers: Eberle M. Smith Associates Project Manager: Stewart S. Kissinger General Contractors: O. W. Burke Co.

# Hollow Metal at its best

- \* Hollow Metal Doors & Frames
  Elevator Entrances
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  Metal Wainscoting & Wall Linings
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This too is "HOLLOW METAL."

Once again, SUPERIOR FIREPROOF DOOR & SASH COMPANY, INC., has been chosen to furnish the "HOLLOW METAL" for an outstanding project. This time, THE EDSEL FORD SENIOR HIGH SCHOOL.

Doors and frames constitute only a portion of "HOLLOW METAL." Arched openings as shown in the above view, 104 feet long, and multi-unit interior and exterior borrowed lite units are the mark of a true Hollow Metal Man.

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

It is not an afterthought of manufacturing a few more items. Rather it is the experience of having made these specific related products over a long period of time.

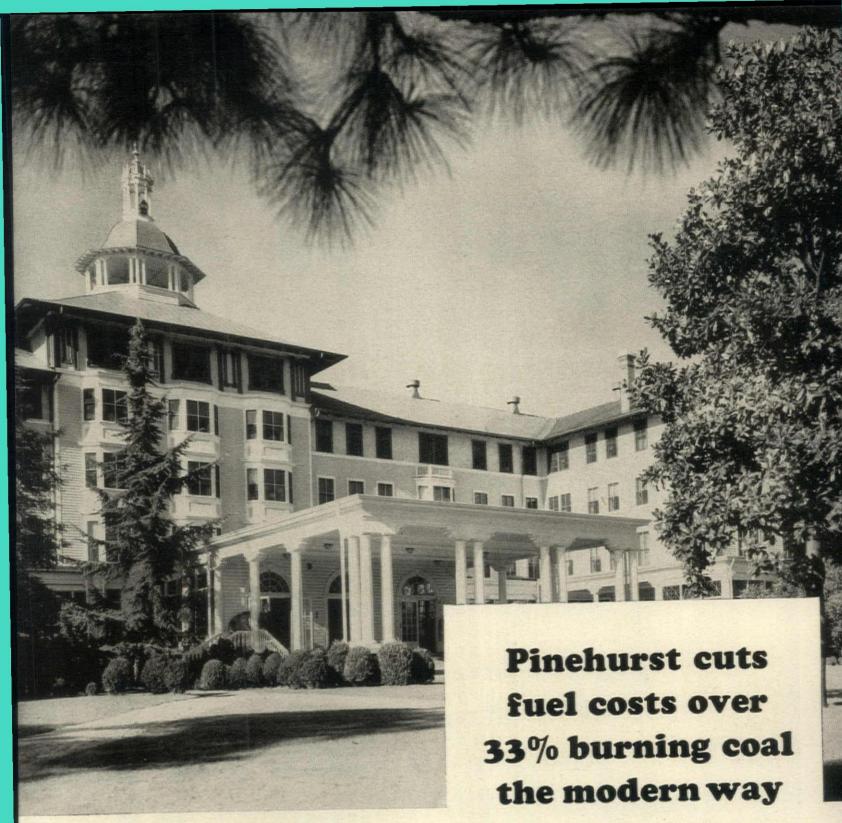
Thirty-five years of experience in manufacturing "HOLLOW METAL" has given us the ability to combine planning and production with economy into a service for the construction industry.

As Hollow Metal Men, we are proud to have provided the products starred (\*) for the Edsel Ford Senior High School.

# Superior fireproof door & SASH CO., INC.

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PLANTS: NEW YORK AND SCRANTON, PA.



#### Consult an engineering firm

Designing and building hundreds of heating and power installations a year, qualified engineering firms can bring you the latest knowledge of fuel costs and equipment. If you are planning the construction of new heating or power facilities—or the remodeling of an existing installation—one of these concerns will work closely with your own engineering department to effect substantial savings not only in efficiency but in fuel economy over the years.

#### facts you should know about coal

In most industrial areas, bituminous coal is the lowest-cost fuel available. • Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar. • Automatic coal and ash handling systems can cut your labor cost to a minimum. Coal is the safest fuel to store and use. • No smoke or dust problems when coal is burned with modern equipment. • Between America's vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and its price remaining stable.

The central power plant at the famous golfing resort of Pinehurst, N.C., has to furnish a reliable supply of steam to three hotels and seven other buildings. When Pinehurst recently decided to modernize power facilities, the consulting firm of Wiley and Wilson, Richmond, Va., was called in to study the situation. Since coal cost approximately 40% less than the next cheapest fuel, the final decision called for burning coal the modern way. Today two new automatic stoker-fired boilers (only one of which is operated at a time) replace four 150-hp hand-fired boilers. Combustion control is automatic; coal and ash handling is greatly simplified. And now, according to management, "the cost of generating steam is 33.4% less than with the old plant." For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

> NATIONAL COAL ASSOCIATION Southern Building, Washington 5, D. C.



# Stainless Steel skin largest metal-clad building in the world!



The next time you hit New York City, take special note of the bright new Socony Mobil Building at 42nd and Lexington, because this building is going to make history.

It's the 6th largest office structure in the world; and is completely clad with low maintenance Type 302 Stainless Steel. Directly across the street is the Chrysler Building, the first building to make major use of Stainless Steel for an exterior. Although it was erected in 1928, the Stainless on the Chrysler Building is still free from corrosion.

Stainless Steel sections can be thin, because it is so very strong, and no allowance for corrosion is necessary. Stainless Steel has such a high melting point that it will meet fire test requirements from inside and outside the building.

The Stainless Steel skin requires no maintenance. But if it is desirable to clean it simply for appearance' sake, it's an easy job. Best of all, Stainless Steel exteriors give fine service for the entire projected life of the building.

As the producer of USS Stainless Steel, we have worked closely with the fabricators of Stainless Steel panels for curtain-wall construction. We'll be glad to send you further information and put you in touch with these fabricators. Write to United States Steel, Room 4601, 525 William Penn Place, Pittsburgh 30, Pa.

UNITED STATES STEEL CORPORATION, PITTSBURGH - AMERICAN STEEL & WIRE DIVISION, CLEVELAND

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO - NATIONAL TUBE DIVISION, PITTSBURGH

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## USS STAINLESS STEEL

SHEETS . STRIP . PLATES . BARS . BILLETS



PIPE - TUBES - WIRE - SPECIAL SECTIONS

5-2219

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

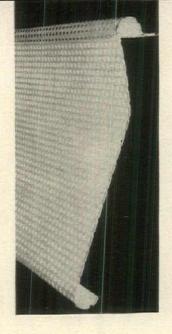
UNITED STATES STEEL

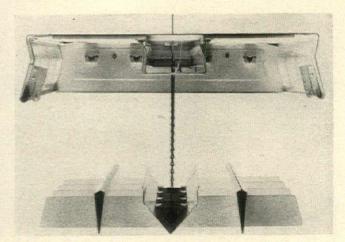
#### **PRODUCTS**

Continued from p. 224

offer no weatherproofing difficulties. With sill flashing, the panels may be used with stock steel or aluminum framed window units. Prices run \$2 to \$2.50 per sq. ft. for A series panels. Bi-yearly painting is the only maintenance required for either type of Pan-L-Wall.

Manufacturer: American Steel Band Co., Pittsburgh 30, Pa.



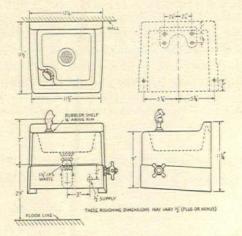




#### FOR PERFECT ADAPTATION

to current architectural trends... and constructed of durable acidresisting enameled cast iron to withstand the severest abuses of the school yard, this new HAWS drinking fountain assures lasting trouble-free service.

HAWS Model No. 7X drinking fountain contains HAWS complete sanitation features... with raised, shielded, angle-stream fountain head of chromium plated brass. Water pressure and volume is automatically controlled...it's antisquirt!



Industrial Designer

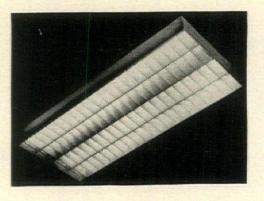
WRITE TODAY for full details of HAWS Model No. 7X...a complement to new construction...a vast improvement for modernization! It's designed to meet ALL city, county and state material and operational sanitation requirements. Specify HAWS with confidence!



#### BROAD, FLAT TROFFERS with translucent sides cut brightness contrasts

Engineered for effective general illumination Lightolier's broad yet shallow Louvron fixtures are easily assimilated into a contemporary office interior, school, library or store. Side panels of the new troffers are fabricated of pin-holed steel coated with clear plastic so that each perforation becomes a tiny lens, directing soft light out through the sides of the fixtures to modify brightness contrasts against a dark ceiling. Flat surfaced top and bottom, the 4' and 8' Louvron units are easily mounted directly against the ceiling or on stems. Lower edges of the end plates are as thin as the louvers so that when the fixtures are hung in rows the impression is that of one, unbroken grid pattern.

The housing is die-formed of heavygauge steel in channel sections. Seen from

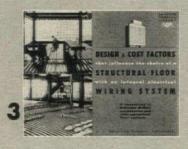


beneath, the nipped-in shape gives the fixtures a lean delicate line that belies their sturdiness. Accessory top reflectors and unperforated steel side panels are available where more downlight is required. For fuller light diffusion, side panels may be ordered of ribbed white polystyrene. In installation, a slide clamp hanger can be moved anywhere along the length of the fixture. Hook-on stems swivel up to 25° to compensate for uneven ceilings. Adjustments can be made after hanging simply by turning the stem.

Available for rapid start or slimline 40w. fluorescents, Louvrons come in 13"wide two lamp and 21"-wide four lamp models priced from about \$25 to \$90. Both are 4-5/16" deep. For servicing or relamping, the louvers snap out under fingertip continued on p. 236

















# for these free books

## from Robertson's technical library

- 1. Acoustical Data on Q-Deck: It has long been known that the fluted underside of steel deck provides some acoustical value, yet demand for more has led to this new low-cost method. Application details and test data are included.
- 2. An Analysis of Industrial Roof Construction: This valuable booklet compares all the better-known roof types (flat, monitor, bow-string, high-low bay, saw tooth) on the basis of structural steel, volume, roofing, sash area, flashing, ventilation and daylighting.
- 3. Design and Cost Factors of Structural Floor Wiring: This study compares Q-Floor with other conventional floor systems using underfloor duct. Based upon a typical multi-story building, the book is replete with charts and cost analyses of all structural components.
- 4. Daylighting Cost Analysis: This new and unusual study contains a questionnaire, which when properly filled out will reveal how quickly scientifically planned natural daylighting will pay for itself in a structure through savings in electricity. All data are substantiated.

- 5. New Composite Q-Floor Catalog: This newly revised catalog contains many examples of the latest Q-Floor buildings and a full exposition of Q-Floor advantages. Structural details and specifications are more complete than ever before.
- 6. New M-Type Q-Panel Catalog: Recent newcomer to the Robertson product family is the M-Type Q-Panel which possesses unique advantages over other types of modern curtain wall construction. The book contains 3 pages of structural details plus complete specifications.
- 7. New Long-Span Q-Deck Catalog: Another new Robertson product is this sturdy, yet exceptionally long-span deck. Easy to handle and erect despite its length up to 32 feet, it is especially designed for schools and supermarkets and other structures in which unbroken spans and a saving of structural steel is beneficial.
- 8. Ventilation Engineering Booklet: More than a ventilator catalog, this booklet not only describes products, but contains detailed tables of exhaust capacities, based upon average wind velocities, temperature differences and height above intake. Use the coupon below.

# Robertson Products

#### for modern buildings

#### H. H. Robertson Company

2403 Farmers Bank Building, Pittsburgh 22, Pa. In England: Robertson Thain Ltd., Ellesmere Port, Cheshire In Canada: Robertson-Irwin Ltd., Hamilton, Ontario

Offices in Principal Cities



Please send the free data book(s) I have circled below.

5

FIRM



#### But where will you connect Miss Foster?

Whether you're planning or building offices for your own use or for rental to others, you'll need electrical circuit connections throughout the floor area—to efficiently utilize every square foot of space. You can't crowd all desks around wall outlets and it's dangerous and unsightly to run exposed raceways across floors. How then can you obtain maximum electrical adequacy plus space flexibility? The answer is General Electric Q-Floor wiring, the system that provides complete electrical availability for typewriters, dictating machines, calculators, telephones, intercoms, lighting, postal machines, and other electrically operated equipment.

The General Electric Q-Floor wiring system is designed

for installation in cellular steel subflooring, and makes every square foot of floor space available for outlets. Every cell is a raceway for present and future circuit requirements. No costly alterations, no litter, no tie-up of space, no matter how often or how much your electrical requirements change. And it is doing a job in office buildings like famed Lever House in New York City, and in industrial buildings and institutions across the country.

For more information on General Electric Q-Floor wiring, call your G-E Construction Materials district office, or write to Section [49-114 Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

Progress Is Our Most Important Product



# Large city HOSPITAL or community MEDICAL CENTER



It doesn't make any difference whether you're building a large 320 bed hospital like the beautiful new Lankenan Hospital shown above or a small, community medical center, you help save important maintenance dollars when you insist on "Quality-Approved" aluminum windows.

Experience has clearly demonstrated that aluminum windows are the only practical, reasonablypriced 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.

"Quality-Approved" aluminum windows are available through many manufacturers in sizes and styles (awning, casement, double-hung, projected and sliding) to fit any design treatment. Only those that carry the "Quality-Approved" Seal have been tested by the independent Pittsburgh Testing Laboratory and approved for quality of materials, construction, strength of sections, and minimum air infiltration

For our latest Window Specifications Book consult any manufacturer listed below, see Sweet's (16a/ALU) or address Dept. AF-511.

Aluminum Window Manufacturers Association 75 West Street, New York 6, N. Y.

MEMBERS: Alcasco Products, Inc., Detroit, Mich. . The Wm. Bayley Co., Springfield, Ohio . Bourne Products, Inc., El Cojon, Calif. . Ceco Steel Products Corp. (Sterling Aluminum Window Division), Chicago, III. . Cupples Products Corp., St Louis, Mo. . Duralite Window Corp., Knoxville, Tenn. . Fentron Industries, Inc., Seattle, Wash . Michael Flynn Mfg. Co., Philadelphia, Pa. . General Bronze Corp., Garden City, N. Y. . Metal Arts Mfg. Co., Inc., Atlanta, Ga. . Reynolds Metals Co. (Parts Division), Louisville, Ky . The F C. Russell Co. (Aluminum Division), Bristol, Pa. . J. S. Thorn Co., Philadelphia, Pa. . Universal Window Co., Berkeley, Calif . Ware Laboratories, Inc., Miami, Fla . Windalume Corp., Kenvil, N. J.



#### ... concrete block made with DURAPLASTIC\*

Over ninety-eight thousand concrete blocks went into the building of Waco's Heart O' Texas Coliseum. The job was a big one, calling for good looks on a large scale. That's why concrete block made with Atlas Duraplastic air-entraining portland cement were used.

A good choice, too. Because Duraplastic makes a more compact, more cleanly formed block with greater resistance to the passage of water. For outstanding durability and good appearance, use Duraplastic-made block on your next project.

Use Atlas Duraplastic cement in your regular concrete

work, too. Aids proper placement and increases durability. Requires no unusual changes in procedure. Sells for the same price as regular cement. Complies with ASTM and Federal Specifications. Write for free descriptive booklet.

#### UNIVERSAL ATLAS CEMENT COMPANY

UNITED STATES STEEL CORPORATION SUBSIDIARY
100 PARK AVENUE, NEW YORK 17, N. Y.

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

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

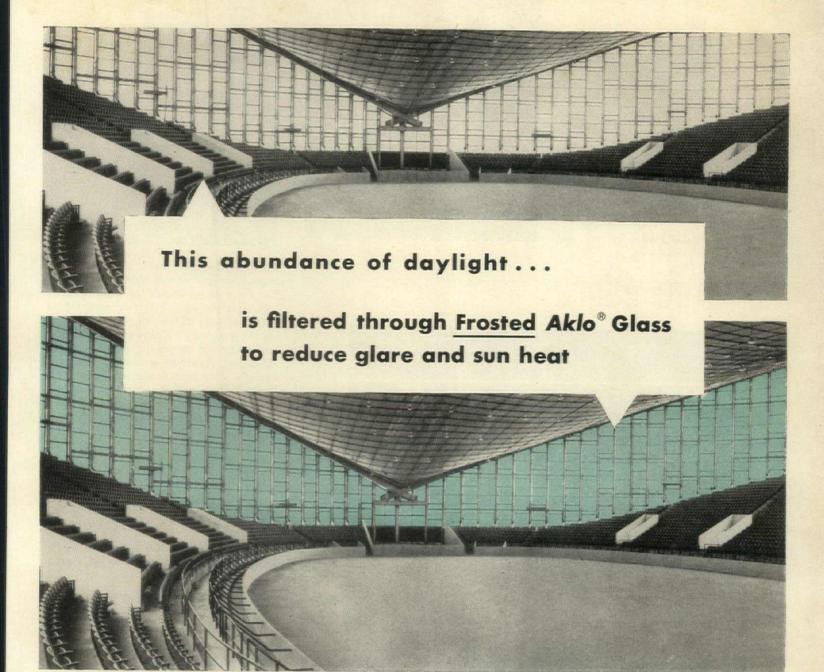
AF-D-177

AIR-ENTRAINING PORTLAND



MAKES BETTER CONCRETE AT NO EXTRA COST

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



Wm. Henley Deitrick, architect; Matthew Nowicki, consultant; Severud-Elstad-Krueger, consulting engineer.

This is one of America's outstanding buildings . . . the prize-winning North Carolina State Fair Arena. In it, the architects and engineers employed two design features that produce eye-comfort daylighting:

- A large expanse of glass that eliminates the glaring effect of contrasting opaque walls and "hole-inwall" windows.
- 2. A filter of blue-green Frosted Aklo Glass.

Frosted Aklo Glass softens and diffuses direct sunlight, sky brightness and dazzling reflections. It cuts down sun heat. Used in ¼" thickness, it shuts out as much as 44% of the sun's radiant energy. And it's a restful color... a "cool" color.

Aklo is widely used in factories, offices and many other buildings. Better selling, greater comfort for occupants . . . better workmanship . . . better employe relations are all worth-while benefits.



#### PHONE FOR THIS TEST.

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

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

#### AKLO GLASS

#### FILTERS DAYLIGHT



made by Blue Ridge Glass Corp.

sold by Libbey-Owens-Ford Glass Distributors

#### **PRODUCTS**

Continued from p. 230

pressure and are suspended on safety chains or may be completely removed.

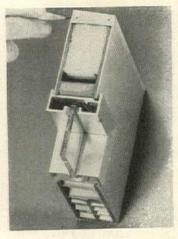
Manufacturer: Lightolier, Inc., Jersey City 5, N.J.

#### FLUSH DOOR clad in colored vinyl

By laminating colored, textured vinyl to an aluminum sheet and backing this combination with hardboard, Kawneer has produced







an attractive yet tough facing for its rugged honeycomb-core flush door. Locked into the mitered frame, the skins will not peel, and the entire door is designed to withstand most of the dampness, dirt, heat, liquids, pressures or abrasions that store, school or office use would impose on them. (However, Kawneer points out that the facing is vulnerable to sharp instruments.) Decorative as well as durable, the door comes in seven colors, some with an interesting fabric finish and one in a leather-like saddle-tan. Two types are suitable for exterior use. Standard heights are 6'-8" and 7" and widths run from 2'-6" up to 3'-4". Prices range from \$150 to \$175 installed.

Manufacturer: The Kawneer Co., Niles, Mich.

#### LEVER LATCH opens door at finger flick

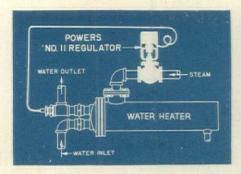
Soss, the hardware company renowned for its invisible hinge, is now making a knobless latch for interior doors. A simple beveled box, the *Lev-R-Latch* is 3¼" high, 4" long and extends out from the door ½". Delivered in three parts, the assembly is quickly installed by boring a hole for the bolt and one for the latch, positioning the bolt and screw-fastening the two outside plates. In operation, a finger inserted un-



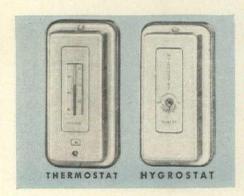
der the back part of the latch releases the bolt to let the door swing open. The Lev-R-Latch retails for \$3.05; with a locking mechanism, \$3.40. Its zinc alloy face plates are plated in various finishes.

Manufacturer: Soss Mfg. Co., 21777 Hoover Rd., Detroit 13, Mich.

continued on p. 242



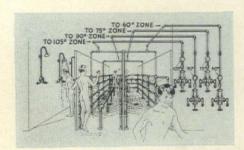
Comfortable Water Temperature in Swimming Pools is obtained with Powers thermostatic Regulators for water heaters. Fuel Economy also results from eliminating OVER-heated water.



Comfortable Air Temperature in Pool Area and Locker Room is assured with Powers control of temperature, humidity and proper ventilation.



Greater Comfort and SAFER Showers with Powers double protection against scalding. Temperature remains constant wherever the bather wants it regardless of *pressure* or *temperature* changes in water supply lines.



Zone Showers with straddle rail, often used in connection with swimming pools require the dependable temperature control supplied by the four Powers thermostatic controllers above. (c-46)



in Swimming Pools, Locker Rooms
and Showers
Specify and Install POWERS
THERMOSTATIC CONTROL

In the world's largest indoor swimming pool at Great Lakes Naval Training Station and in thousands of other famous pools from coast to coast, Powers control provides water and atmospheric comfort.

Quality Controls and Nationwide Service plus more than 60 years of know how in the proper application of a complete line of products... are important advantages offered by Powers.

Only a few of our many controls are shown here. Others are available for whirlpool arm and leg baths and many other types of hydrotherapy.

Consult Powers on Thermostatic Control for swimming pools, locker rooms and showers. An experienced engineer in Powers nearest office will gladly help you select the right type of control for your requirements.



#### THE POWERS REGULATOR COMPANY

SKOKIE, ILLINOIS | Offices in chief cities in U.S.A., Canada and Mexico

Over 60 years of Automatic Temperature and Humidity Control



Nicholson Type AC Toilet Compartment. Ceiling hung. Ultra-modern. Sanitary.

#### Nicholson Metal Partitions

better built . . . for lasting service

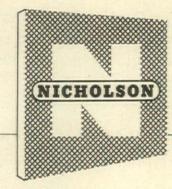
Only time will tell... whether or not the average toilet compartment will deliver long life and real service-ability. But Nicholson compartments give you "full" assurance right from the start—full gauge metals... full width partitions... full final finish. Nicholsons' are built to stand up and still stand out... even after years of steady service.

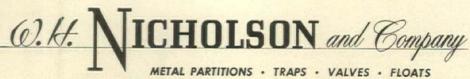
- heavier gauge steel: panels—full 20 gauge pilasters—full 16 gauge headrail and tubing—full 16 gauge stainless steel plinth—full 20 gauge
- thicker partitions: doors and panels—full 1" thick pilasters—full 1¼" thick
- extra protective coats: galvanized, bonderized coatings zinc chromate primer
   2 coats of synthetic baked enamel

Specify for lasting service. Specify Nicholson.

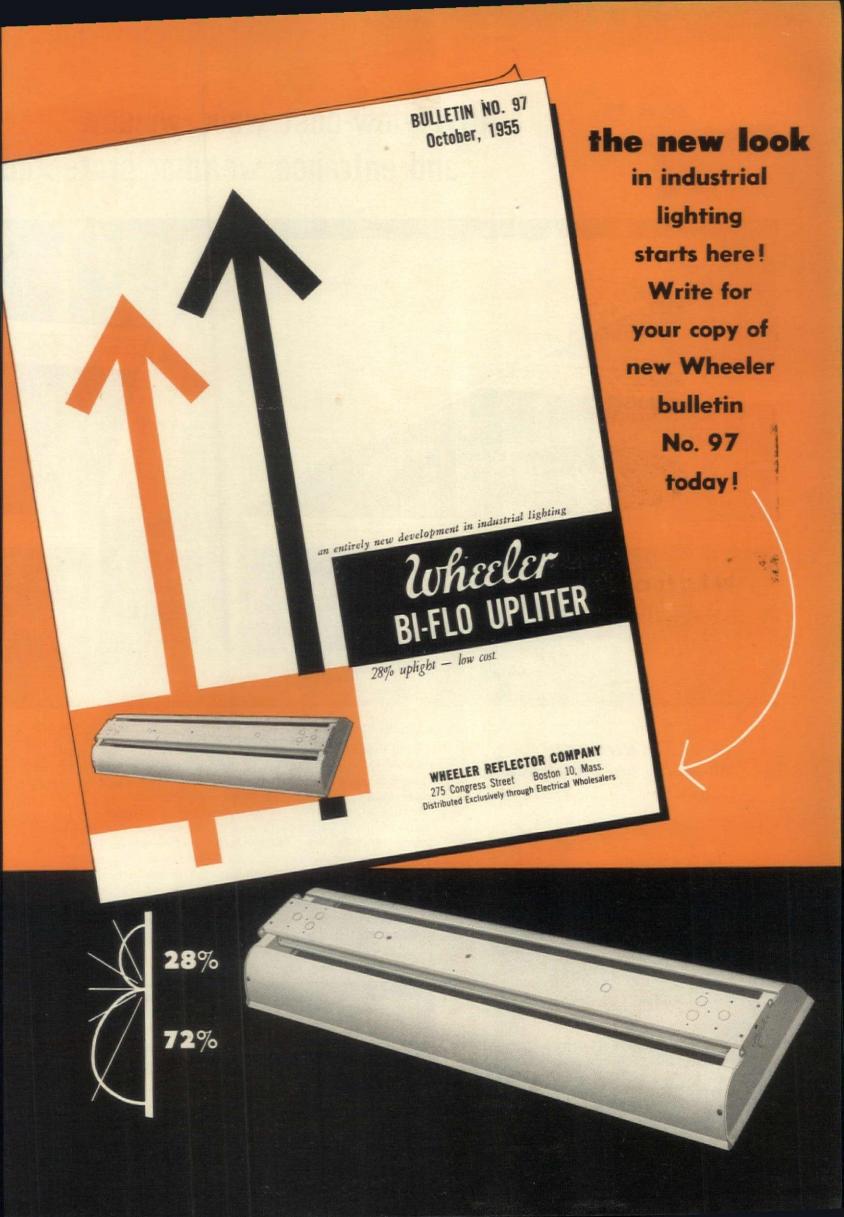
Available in the following types—and wide selection of colors:

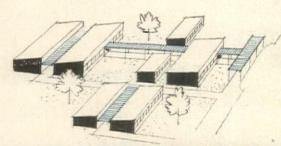
Type A—floor braced
Type AR—overhead braced
Type ARP—panel type
Type B—flush type
Type BP—panel type



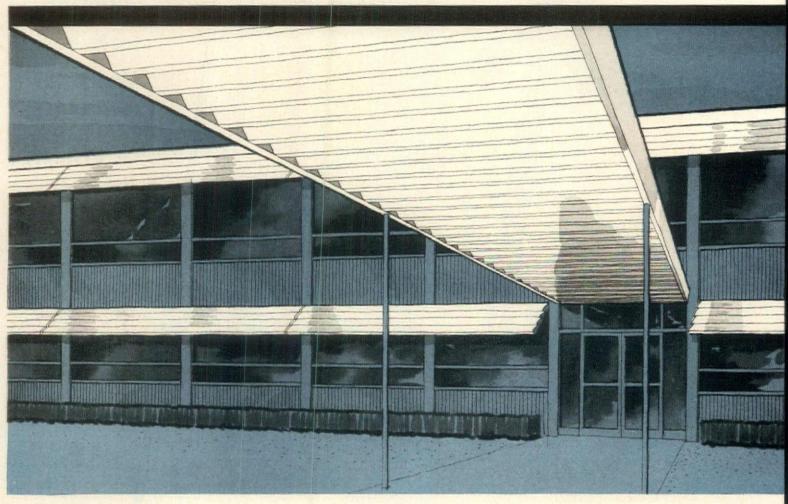


14 DREGON STREET, WILKES-BARRE, PA. . SALES AND ENGINEERING DEFICES IN 58 PRINCIPAL CITIES





# NOW – low-cost walk, window and entrance weather protection



#### KAWNEER all-aluminum prefabricated



entrance protection



walk protection

#### K-I OUVER



vindow protection



overhang addition

School design can be simplified with Kawneer's Sun-Control and weather protection products. You have great flexibility with the prefabricated sections enabling you to cover almost every glass opening and passageway to design specifications. The advantages far exceed the relatively low cost. Both products are made of heavy-gauge alumilited aluminum which means long, maintenance-free life. The reflective surface assures cool areas. The unique shapes such as the "W" of the canopy sections provide and encourage ventilation, yet protect from rain and snow. The quick and easy erection means a faster completion date and fewer labor hours. Fill out the coupon below to learn more about Kawneer Sun-Control and Weather Protection products, and how they can be adapted to your school plans.



Gentleme	Company, N	nes, Mici	nigan		
	n: ease send me	further	information	on the	Canony and
K-	Louver.	rarener	mormation	on the	Canopy and
На	ve your repr	esentativ	e contact me		
Name		Ratific			
School or	Firm				TALL
Street		-			
City			Zone	Sta	

Economically applied on heating and cooling ducts,

# L·O·F Super·Fine reduces heat transfer, increases cooling efficiency



Architect Louis A. Redstone, and Allan G. Agree, associate architect, specified 1/2 -pound, 1-inch L·O·F Super· Fine to insulate concealed combination heating and cooling ducts at the new Northwood Shopping Center, Royal Oak, Michigan. Low thermal conductivity, and speed and ease of application were important considerations.

You get high insulating efficiency when you specify L.O.F Super Fine. Its fine glass fibers form millions of dead air cells, which effectively reduce heat loss or gain. And Super Fine keeps its insulating efficiency indefinitely. Inorganic glass fibers will not support combustion, absorb moisture, rot or decay.

You get lower application costs with L.O.F Super-Fine. The lightweight blankets are pleasant to handle, cut easily with an ordinary knife. Application is fast, with no precision measuring or fitting required. Super-Fine's strong resilient blankets readily fill irregular and

hard-to-reach places.



L.O.F GLASS FIBERS COMPANY TOLEDO 1, OHIO

Makers of glass fibers by the exclusive "Electronic-Extrusion" process

Applying L.O.F Super Fine at the Northwood Shopping Center. The high tensile strength of the glass fiber blankets permits them to be pulled between the duct and wall without tearing.

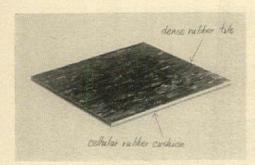


A large section of heating and cooling ducts insulated with L·O·F Super Fine. Ducts were coated with adhesive, then wrapped around with Super Fine and secured with light-gauge

SEND FOR FREE FOLDER giving performance data and specifications on L-O-F Super-Fine duct wrap and liner. Write: L-O-F Glass Fibers Company, Department 60-115, 1810 Madison Avenue, Toledo 1, Ohio.

#### **PRODUCTS**

Continued from p. 236



#### BUOYANT RUBBER TILE cushioned for comfort and quiet

A resilient shock-and-sound-absorbing rubber tile, B. F. Goodrich's *Airpath* was developed for commercial and institutional applications where a floor's sound absorbency is as essential as its wearing life. Backed with cellular rubber, 3/16"-thick *Airpath* is most effective acoustically in ab-

sorbing impact noises at 600 to 1,200 cycles (the sound levels that interfer with speech) and so is especially suited for use in hospitals, churches, studios and other hush areas. The tile also retards vibration transmission, making it useful where there are problems of sounds conducted through the structure rumbling from one floor to another. Airpath's dense, nonporous surface resists scuffing and marring from

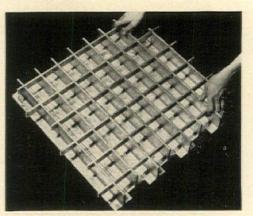


dropped cigarettes or matches, and is easily maintained with a periodic washing and waxing. The tile comes in 9" squares and border lengths up to 3' in 10 marble-ized colors. Installed costs run between 85¢ and \$1 per sq. ft.

Manufacturer: B. F. Goodrich Co., Flooring Div., Watertown, Mass.

#### FLOOR ARMOR doubles as form for concrete fill

Fabricated for use with concrete or asphaltic filler, Blaw-Knox's *T-Bar* grating is a sensible solution to the problem of heavy bearing loads on factory floors. Pressure-interlocked, the *T-Bar* grating, is made in sectional depths of 1" to 6" and in panels 3' wide and up to 20' long. It provides



both reinforcing and form in one unit, eliminating the construction of usual wood form. The underside of the grating forms a retaining surface; the upper surface serves as rugged floor armor. Conduit may be run in the channels formed by the grating. The grating alone weighs from 20 to 78 lb. per square foot, depending on depth. *Manufacturer:* Blaw-Knox Co., Farmers Bank Bldg., Pittsburgh, Pa.

continued on p. 248

#### SO MANY APPLICATIONS FOR

Decorative



... the very best in high pressure

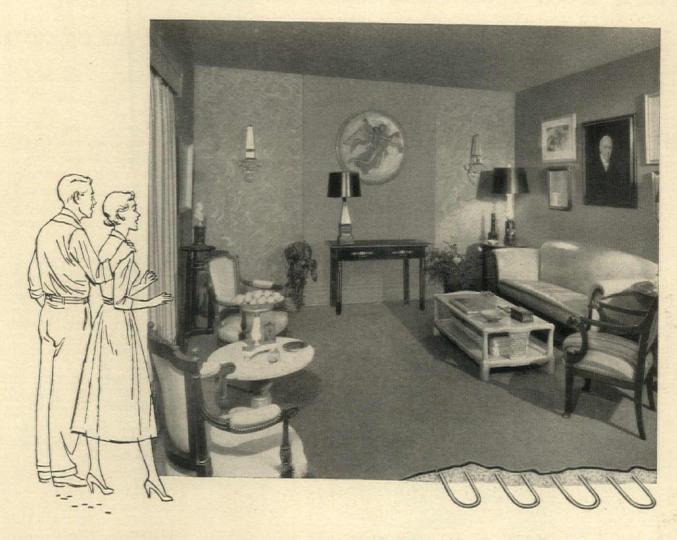
## PLASTIC LAMINATES

It's good planning ... a sound investment ... to take advantage of Farlite's many superior functional features for fabricating table tops . . . counter, desk, sink, bar, and soda fountain tops . . . partitions and paneling . . . decorative interior treatments . . . a host of other applications. Its glass-smooth, non-porous surface is sanitary, easy to clean, permanently beautiful . . . resists heat and burning cigarettes . . . is not affected by alcohol, grease, fruit acids, mild cleaning solutions . . . will not chip or fade. Available in a wide range of more than 50 Farlite colors and patterns, including beautiful wood grains, in 1/16" thick sheets as well as complete warp-resistant tops and panels 13/16" and 1-1/4" thick . . . can also be made to your specifications. Write for descriptive folder and name of nearest distributor . .

PLASTICS DIVISION
FARLEY & LOETSCHER MFG. CO.
DUBUQUE, IOWA



## Every inch of Floor and Wall Space is usable ...





A typical radiant heated suburban development home.



Typical installation of steel pipe radiant heating coils on slab.

# with "invisible" radiant panel heating

As the song says, "little things mean a lot" . . . to a woman. She chooses an automobile by its color, selects a television set for its cabinet . . . and may insist on a radiant panel heating system solely because it gives her complete freedom of decoration in her home. The only heating system that does, because every inch of floor and wall space remains usable. Why should a mere man object to her whims as long as there's horsepower under the hood, a clear picture from the T.V. set, and the heating system gives clean, healthful, draftfree comfort!

It is a fact that women have helped make radiant panel heating increasingly popular for individual homes, multiple dwellings and housing developments . . . up significantly last year among wet heat installations.

And, as in other wet heat systems, the *men* who design, specify and install, know that reliable steel pipe is first choice for heat transmission. Time tested through more than 60 years of hot water and steam applications, it also has the qualities of economy, durability, weldability and formability required for successful "invisible" radiant panel heating. In fact it's the most widely used pipe in the world!

Write for the free 48 page color booklet "Radiant Panel Heating with Steel Pipe" and 32 page companion booklet "Steel Pipe Snow Melting and Ice Removal Systems."



Committee on STEEL PIPE RESEARCH

AMERICAN IRON AND STEEL INSTITUTE 350 FIFTH AVENUE, NEW YORK 1, N.Y.

# PAINTING ANALYSIS

## Learn how new Glidden painting service can help you cut costs!



New Formula NEV-A-RUST dries to a sparkling, high gloss; has greater resistance to rust, acid, gases, fumes. Ideal for structural steel, iron fences, grillwork, smokestacks, metal roofs and all metal surfaces.

Now Glidden offers a no-cost, no-obligation analysis of any commercial and institutional painting problem. This new service can be as comprehensive as you wish—anything from stain for a paneled office to special paint formulations to end corrosion on a water tower. A Glidden Painting Analysis can help you train personnel, work out safety markings, make color efficiency tests or work out complete office and plant redecoration!

Pictures at left show a few of the ways a Glidden Painting Analysis can help you. For more information or for specific helps, fill in coupon below.



Four-Year Exposure Test of bricks above shows superior durability of SPRED GLIDE-ON—new exterior masonry finish for stucco, brick and asbestos shingles. Brick at left painted with SPRED GLIDE-ON did not peel, chip or flake in four years.



New catalog includes complete specifications and product guide, selector charts, color chips, information on special finishes of all types — this book is a must for reference; training of personnel; purchasing guide.

# Glidden

Professional Finishes



ı

The Glidden Company Maintenance Finishes Division Cleveland 2, Ohio



-000:
ill in and mail to The Glidden Co., Dept. AF-1155 1001 Madison Ave., Cleveland 2, Ohio
I am interested in complete details of Glidden Painting Analysis.
I am particularly interested in:
NEV-A-RUST; other anti-corrosion finishes.
Product demonstrations for training purposes.
Color Studio Service
SPRED GLIDE-ON
New Glidden complete-line catalog
Name
Title
Company
Address
7 Ci-to



There's extra bustle, these days, in busy midtown Manhattan. It's caused by the construction of a new 42-story, 45-million dollar Socony-Vacuum Building . . . New York's largest in 25 years.

Most distinctive architectural feature of this robust giant will be its *stainless steel* skin. An armor of .037" thick 18-8 chromium-nickel stainless, type 302, was chosen for very *practical* reasons. Not only will stainless walls mean lasting beauty, but they'll save many tons of excess weight. For the stainless skin will weigh only 1½ lbs. per sq. ft., as compared to 48 lbs. per sq. ft.,

for a 4" brick exterior wall.

Crucible is one of several leading producers who are supplying the stainless steel for this skyscraper. When completed it will be the largest metal-sheathed office building in the world. In planning your next project consider the advantages of stainless. For helpful suggestions, write for your copy of "A Guide to Future Uses of Stainless Steel in Architecture and Building." Crucible Steel Company of America, Henry W. Oliver Building, Pittsburgh 30, Pa.

CRUCIBLE

first name in special purpose steels

Crucible Steel Company of America



Here's the world's first commercially successful SPEEDWALK in operation at an eastern railroad terminal. In less than two years it has handled almost 2 million passengers. By eliminating a fatiguing uphill climb the moving sidewalk has increased commuter travel 4½%, countering a downward trend in revenue.

Carrying visitors to and from an elevated display at a midwestern exposition, two SPEEDWALK units eliminated the hazardous and fatiguing effort of climbing stairs. Fifty-two feet long, the passenger conveyors operated on a 14½ degree slope. Total attendance at the exposition ran over 3 million people.

# It's Here Now! Speedwalk\*

#### MINIMIZES TRAFFIC CONGESTION AND PEDESTRIAN

SPEEDWALK passenger conveyors are operating now! . . . and have been since 1952! Backed by intensive research and testing, these passenger-proven Stephens-Adamson systems are making pedestrian travel easier, quicker and safer.

Wherever large crowds must be moved, whether inside or out, the SPEEDWALK has an important contribution to make . . . at a cost well within the budget limitations of most projects. Since the weight of SPEEDWALK systems on a per square foot basis is relatively low, they can be incorporated easily into existing structures.

The Stephens-Adamson SPEEDWALK is backed by over fifty years in the field of engineered conveyor systems. It is this experience, coupled with intensive physiological and psychological research on people, which has already made the SPEEDWALK an acceptable mode of travel to thousands of passengers now using it daily.

Stephens-Adamson engineers welcome the opportunity to discuss your transportation problems with you. Your inquiry will receive prompt attention.

## WHERE YOU CAN USE THE SPEEDWALK:

- Railroad Terminals
   Airports
   Industrial Plants
- Department Stores Parking Lots Shopping
   Centers Bus Terminals Stadiums Congested
   Metropolitan Areas
  - WHEREVER LARGE CROWDS CONGREGATE

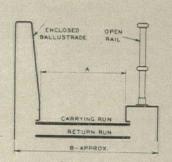


At this Ohio industrial plant, employees are carried up an incline to the plant gates in an effortless and orderly flow. By regulating the pedestrian traffic pattern, this SPEEDWALK eliminates jostling and crowding. Other SPEEDWALK installations in industry are underway to boost employee morale and promote safer working conditions.

A Chicago museum is the site for this SPEEDWALK installation. It began operation in November of 1952 and has carried thousands of adults and children past a colorful industrial display. Visitors pass through the area at a measured speed which enables them to devote complete attention to the exhibit.

#### he passenger-proven moving sidewalk system

#### FATIGUE...WITH INCREASED SPEED AND SAFETY



LANES	A	B (APPROX.)	BELT WIDTH
1	21"	38	24"
2	39"	56	42"
3	63"	80	66"
4	78*	95	81"
5	105"	122	108"



\*A Registered Trade Name

## STEPHENS-ADAMSON

AURORA, ILLINOIS LOS ANGELES, CALIF.
BELLEVILLE, ONTARIO, CANADA

#### Get all the facts

write for detailed information concerning S-A SPEEDWALK passenger conveyor systems. A colorful illustrated brochure is available for the asking.



Stephens-Adamson Mfg. Co. 27 Ridgeway Ave., Aurora, Illinois

Gentlemen

Kindly send me detailed data on S-A SPEEDWALK systems

ıme.....

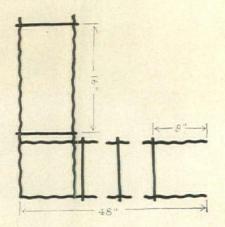
City.....Zone...State.....

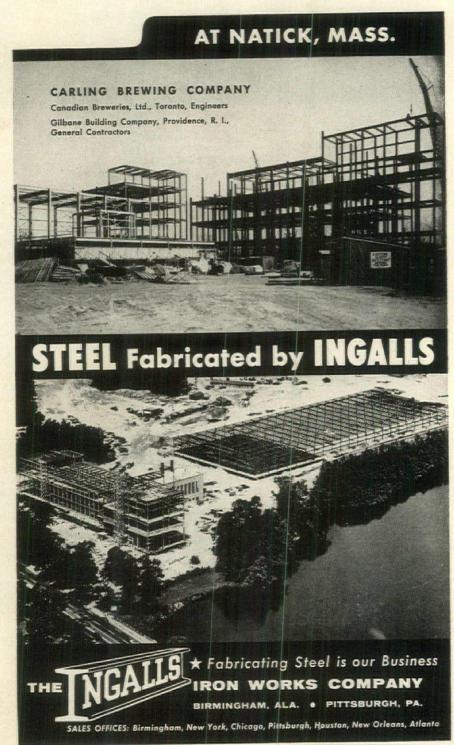
#### **PRODUCTS**

Continued from p. 242

#### MORTAR JOINT REINFORCING doubles stress resistance of masonry wall

Corner and stretcher sections of heavy duty mortar joint reinforcement for 4" to 12" brick and concrete block walls are now being produced by Adrian Peerless in addition to the firm's standard weight Wal-Lok reinforcing. The new Superstandard grade, with knurled and serrated 3/16" stretcher

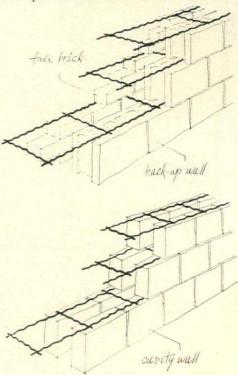




Ad No. 5

bars of 100,000-lb. tensile-strength steel and cross bars of 9-ga. steel, offsets wall strains brought on by changes in masonry moisture content, and differences in inside and outside temperatures. It is also reported to give the masonry wall twice the resistance to stresses caused by foundation failures and water or wind pressures. For efficient mortar anchorage, the welded cross bars are designed to project but are galvanized to prevent any corrosion should they be exposed. (If the stretcher bars were galvanized they would slip, so they are not treated.)

In tests conducted by the University of Toledo's Research Foundation, two 3'-4" x 9'-4" panels were made up of 8"-high cin-



der block, one with Superstandard, the other without. After a week of setting time, the reinforced panel was found to withstand 2½ times the load the unreinforced could take with one third the deflection. In shrinkage-cracking tests on three panels, the first, unreinforced, developed a large crack. The second, reinforced every third course, had one long and two short cracks; and the third, reinforced every course, had several tiny cracks.

Factory formed 48" x 48" corner sections not only save time on the job, but eliminate any jurisdictional difficulty where bricklayers are reluctant to do the metal cutting necessary to form corners from straight rods. Wal-Lok Superstandard reinforcing comes in 12' lengths, 300' to the bundle. An extra heavy grade, %" in diameter, is also available. Prices for the different types range from \$40 to \$60 per 1000 lin. ft.

Manufacturer: Adrian Peerless Inc., 1401 E. Michigan St., Adrian, Mich.

continued on p. 254



## Handles All Inside Calls

... and does it handsomely

#### ARCHITECTS:

Dealer Consultation-Kellogg franchised representatives, located in all principal cities in the U.S. and Canada, are trained and experienced in intercommunications. They're qualified to give you valuable assistance in all stages of planning for internal communication.

Automatic SELECT-O-PHONE goes direct—requires no operator—gives you instant "priority service" between two, three or more parties. Conversations are always private. All stations call each other at the quick flick of a dial. New SELECT-O-PHONE INSTRUMENT is handsome evidence of continued progress and leadership by Kellogg Intercommunication Systems! Completely new-features instant-action dial and ringing buttoncomplimentary brown finish enhances any desk.

SYSTEM REGISTRATION - Under Kellogg's exclusive Registration Warranty, your client's system is always assured of proper maintenance and service.



FAST!... AUTOMATIC!... GUARANTEED!
KELLOGG INTERCOMMUNICATION SYSTEMS FOR ANY BUSINESS, ANY BUDGET.

KELLOGG SELECT-O-PHONE (illustrated above) —
Recommended for systems of up through 55 stations. KELLOGG RELAYMATIC for systems requiring more than 55 stations. Provides for any future expansion!

SELECT-O-PHONE EXECUTIVE STATION, especially designed for Executive use, puts key men at your fingertips!
No buttons to hold—leaves both hands free.



The Inside Voice of Business

KELLOGG SWITCHBOARD AND SUPPLY CO. A Division of International Telephone and Telegraph Corporation

Send for FREE INTER-COMMUNICATIONS	Kellogg Switchboard and Supply Company Commercial Products Dept. 76K 79 West Monroe Street, Chicago 3, Illinois Send me your free INTERCOMMUNICATIONS ARCHITECTURAL PLANING KIT.  Name
ARCHITECTURAL	Company
PLANNING	Address
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veneer development in years, guarantees rich wood paneling with UNI-FORM beauty! In addition, plywood panels made of "FINELINE", save the architect time and bother; they save the client money!

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#### PANELS

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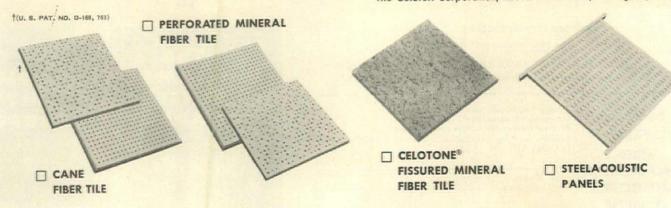
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- Incombustible—In accordance with requirements of Federal Specification SS-A-118b, Class A Incombustible, as tested and reported by the Acoustical Materials Association.
- High Sound Absorption—.70 noise reduction coefficient for less noise, better hearing. Linear openings in the face of each panel permit sound to pass through to a sound-absorbing element laminated to the back.
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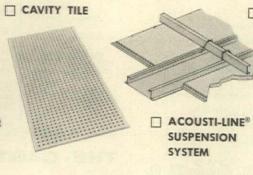
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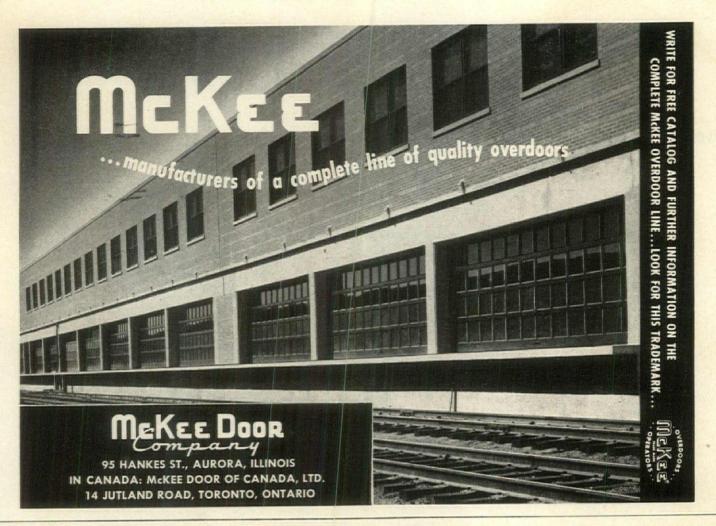
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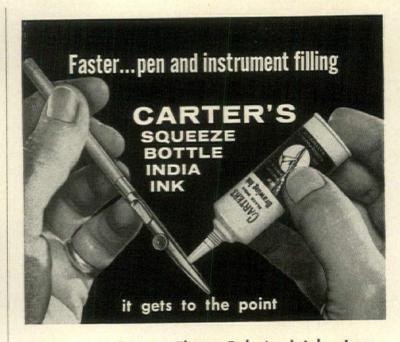
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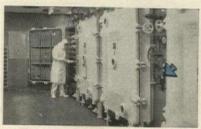
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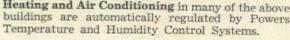


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# **PRODUCTS**

Continued from p. 248

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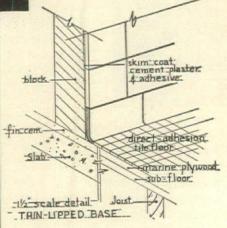
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T-3601

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extend up to 100'. A two cylinder gas engine coupled to a simple hydraulic unit raises or lowers the platform loaded with 1000 lbs. at the rate of 100' per minute. The hoist has a positive safety catch, and an automatic governor prevents overloading. An alternate standby system permits the operator to work the hoist manually from platform or ground level. Cost of the basic unit is about \$3,000 west of the Mississippi; \$100 more, east. The manufacturer points out that in less than a year of normal use the Tusky Hoist can save 900 man hours, and so in effect pay for itself.

Manufacturer: Tubular Structures Corp. of America, 2960 Marsh St., Los Angeles 39, Calif.

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the ramp as much as 15" from dock level to follow the truck bed. To prevent any sudden drop of the ramp when the truck pulls away, an automatic safety switch locks the ramp instantly in place. When not used for loading, the Trans-O-Matic may be set at dock level for cross-over traffic or for use as a storage platform. Five cast steel hinges, welded to the mounting plate, provide continuous support at the dock edge.

Installation involves no excavation or ground ductwork; and power is supplied by wiring to any 110-v. A-C line. The ramp is shipped semi-assembled, complete with dock hinge and pushbutton controls. The 6' x 8'-4" platform has a nonskid surface of 3' checkered steel deck plate. The Trans-O-Matic sells for about \$910.

Manufacturer: Globe Hoist Co., E. Mermaid Lane at Queen St., Philadelphia 18,

continued on p. 260

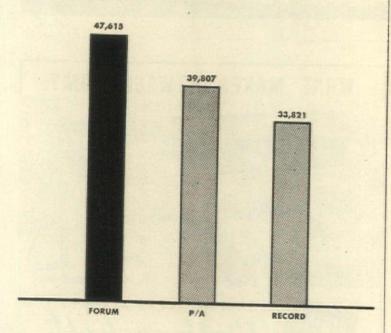
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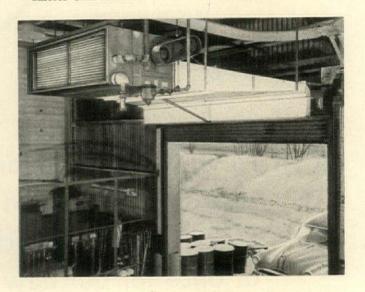


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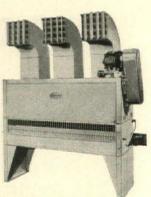
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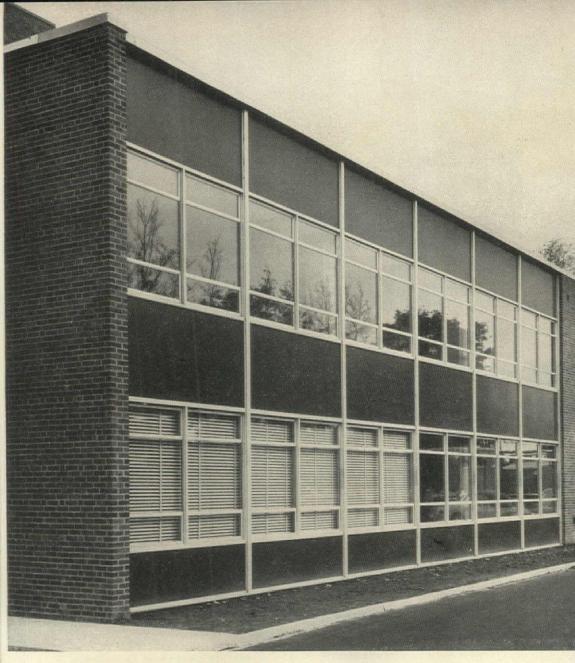


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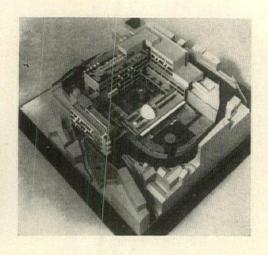
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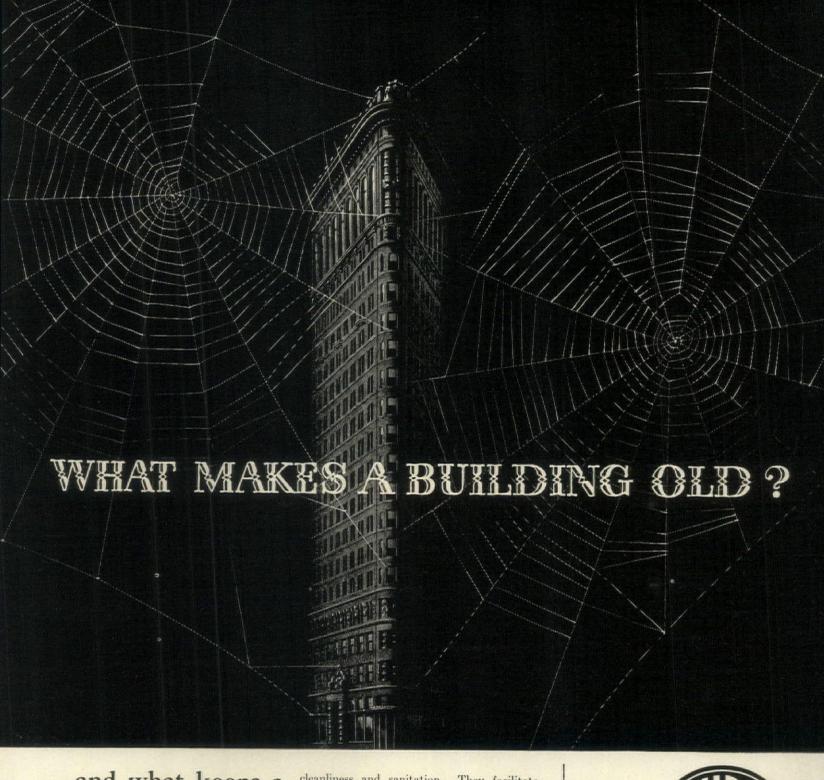
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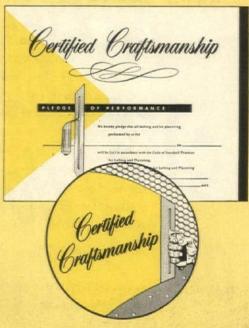
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Continued from p. 260

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Olafio Unit Conditioners, American Blower Corp., Detroit 32, Mich, 4 pp.

Multizone Air Conditioning Units Bui. 805 Bush Manufacturing Co., West Hartford. Conn. 12 pp. Principles of Warm Air Floor Panel Heating. National Concrete Masonry Assn., 38 S. Dearborn St., Chicago 3, III. 22 pp.

Recent Development in Perimeter Heating Fibre Duct Div., International Oil Burner Co., Spring & Park Aves., St. Louis 10, Mo.

Series 13 Lexington Oil Fired Bollers for Hot Water Water Heating Systems. Bul. 655. Dunkirk Radiator Corp., Dunkirk, N.Y. 4 pp. Two-Stage Pumps. 52B6105C, Allis-Chaimers Mfg. Co., 1183 S. 70th St., Milwaukee Wis. 6 pp.

Ventura Fans. Bul. No. 7214. American Blower Corp., Detroit 32, Mich. 4 pp.

Webster Propeller Fan Unit Heaters for Both Steam and Hot Water. Warren Webster & Co., Camden 5, N.J. 24 pp.

### ICE SKATING RINKS

ICE Skating Rinks—Their Construction And Maintenance. A. M. Byers Co., Pittsburgh 22. Pa. 32 pp.

### INSULATION

Tentative Specifications for Corkboard Thermal Insulation. American Society for Testing Materials. 1916 Race St., Philadelphia 3, Pa pp.

### LIGHTING

Fluor-O-Piex Edge Lighted Signs, Metallic Arts of New England Inc., 150 Broadway. Cambridge 42, Mass. 4 pp.

Lighting Fixture Guide. General Electric Co., Nela Park, Cleveland 12, Ohio, 40 pp. 50a

Modern Department Store Lighting. Sylvania Electric Products Inc., 1740 Broadway, New York 19, N.Y. 20 pp.

### MAINTENANCE

Alcoa Architectural Aluminum: Care During Construction and Cleaning and Maintenance. Two booklets. Aluminum Co. of America, 765 Alcoa Building, Pittsburgh 19, Pa.

Operation and Maintenance Handbooks for Industrial Plants. Factory Handbook Section, Kenneth A. Young Associates, 233 Harvard St., Brookline, Mass.

### PARTITIONS

Flexibility in the Co-ordinated Classroom. E. F. Hauserman Co., 7507 Grant Ave., Cleveland 5, Ohio.

### PIPES

Transite Pressure Pipe and the Ring-Tite Coupling. Johns-Manville, 22 E. 40th St., New York 16, N.Y. 8 pp.

### PLUMBING FIXTURES

The Handling and Care of Enameled Cast Iron Plumbing Fixtures. Plumbing Fixtures Mfrs. Assn., Washington 6, D.C. 16 pp.

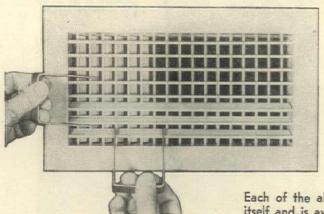
Vitreous China Enameled Cast Iron Plumbing Fixtures. Richmond Radiator Co., 16 Pearl St., Metuchen, N.J. 32 pp.





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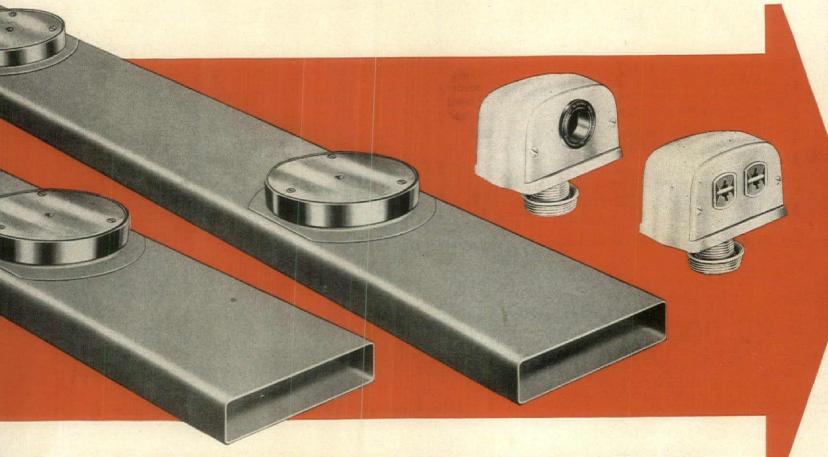
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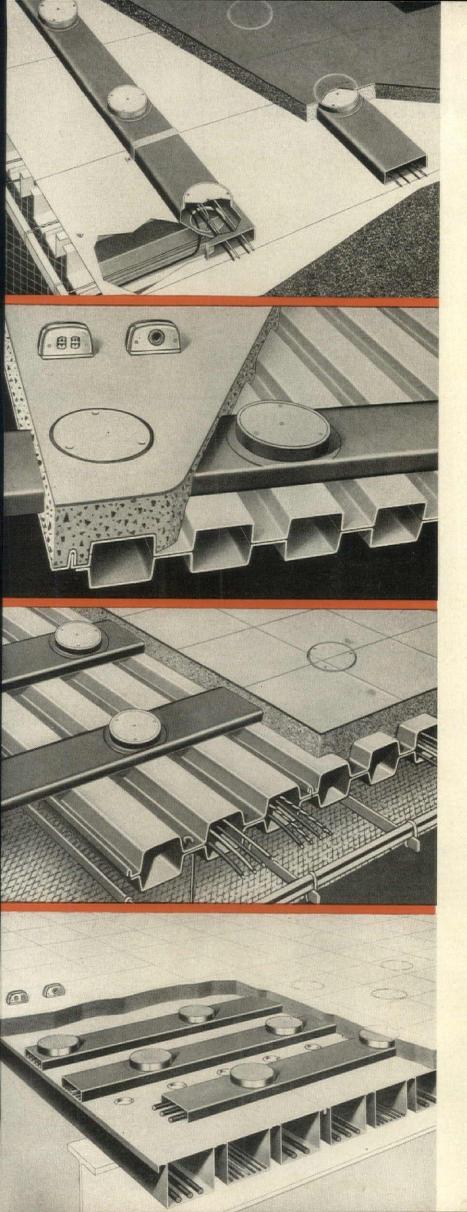
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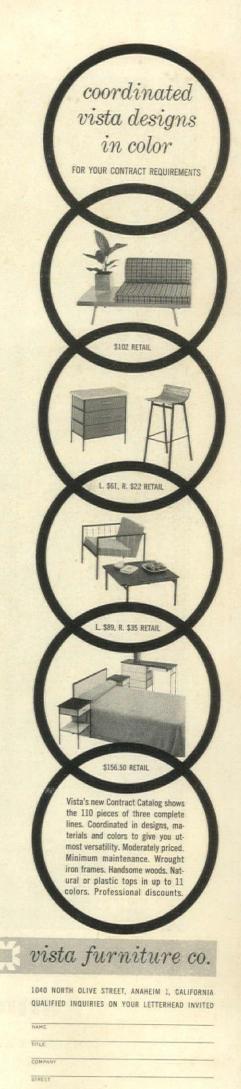
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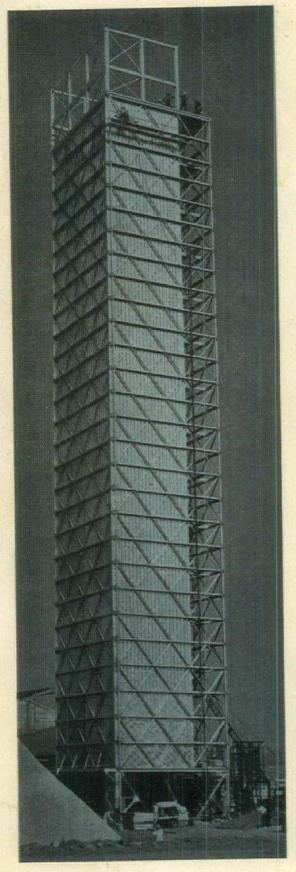
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Associated Mfrs. of Lathing & Plastering Materials	
Materials	
B akelite Company (Div. Union Carbide & Carbon Corp.) 52	
D (Div. Union Carbide & Carbon Corp.) 52  Agency—J. M. Mathes, Inc.  Barbor-Colman Company	
drawer blowned by Manh or desperator lase	
Bell & Gossett Company	
Agency—Phillips-Reick-Fardon Advertising	
Agency-Fuller & Smith & Ross, Inc. Blumenthal & Co., Inc., Sidney	
(The Shelton Looms) 90	
Bridgeport Brass Company	
Bridgeport Brass Company 276  Agency—Hazard Advertising Company Brown Company 26  Agency—J. M. Mathes, Inc. Butler Manufacturing Co. 41  Agency—Aubrey, Finlay, Marley & Hodgson	
Bridgeport Brass Company 276  Agency—Hazard Advertising Company Brown Company 26  Agency—I. M. Mathes, Inc. Butler Manufacturing Co. 41  Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. 74  Agency—Ketchum, MacLeod & Grove, Inc.	
Bridgeport Brass Company 276 Agency—Hazard Advertising Company Brown Company 26 Agency—I. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. 74 Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip 64 Agency—Farson, Huff & Northlich	
Bridgeport Brass Company 276 Agency—Hazard Advertising Company 26 Brown Company 26 Agency—J. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. 74 Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip 64 Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—N. W. Aver & Son, Inc.	
Bridgeport Brass Company 276 Agency—Hazard Advertising Company Brown Company 26 Agency—J. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. 74 Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip 64 Carrier Corp. 104, 105, 253 Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—N. W. Ayer & Son, Inc. Carter's Ink Company, The 252	
Bridgeport Brass Company 276 Agency—Hazard Advertising Company Brown Company 26 Agency—J. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. 74 Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip 64 Carrier Corp. 104, 105, 253 Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—N. W. Ayer & Son, Inc. Carter's Ink Company, The 252	
Bridgeport Brass Company 276 Agency—Hazard Advertising Company 26 Agency—J. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. 74 Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip 64 Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—N. W. Ayer & Son, Inc. Carter's Ink Company, The 252 Agency—Hoag & Provandie, Inc. Carter-Waters Corporation 66 Agency—R. J. Potts, Calkins & Holden, Inc. Ceco Steel Products Corp. 214 Agency—Charles O. Puffer Co.	
Bridgeport Brass Company 276 Agency—Hazard Advertising Company 26 Agency—I. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. 74 Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip 64 Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—N. W. Ayer & Son, Inc. Carter's Ink Company, The 252 Agency—Hoag & Provandie, Inc. Carter's Ink Company, The 252 Agency—Hosg & Provandie, Inc. Carter-Waters Corporation 66 Agency—R. J. Potts, Calkins & Holden, Inc. Ceco Steel Products Corp. 214 Agency—Charles O. Puffer Co. Colotex Corp., The 250, 251 Agency—Mac Fayland, Aveyard & Co.	
Bridgeport Brass Company 276 Agency—Hazard Advertising Company 26 Agency—I. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. 74 Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip 64 Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—N. W. Ayer & Son, Inc. Carter's Ink Company, The 252 Agency—Hoag & Provandie, Inc. Carter's Ink Company, The 252 Agency—Hosg & Provandie, Inc. Carter-Waters Corporation 66 Agency—R. J. Potts, Calkins & Holden, Inc. Ceco Steel Products Corp. 214 Agency—Charles O. Puffer Co. Colotex Corp., The 250, 251 Agency—Mac Fayland, Aveyard & Co.	
Bridgeport Brass Company 276 Agency—Hazard Advertising Company Brown Company 26 Agency—J. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. 74 Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip. 64 Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—N. W. Ayer & Son, Inc. Carter's Ink Company, The 252 Agency—Hoag & Provandie, Inc. Carter-Waters Corporation 66 Agency—R. J. Potts, Calkins & Holden, Inc. Ceco Steel Products Corp. 214 Agency—Charles O. Puffer Co. Celotex Corp. The 250, 251 Agency—Mac Farland, Aveyard & Co. Chase Brass & Copper Co. 211 Agency—Mac Farland, Aveyard & Co. Chase Brass & Copper Co. 211 Agency—Mac Farland, Aveyard & Co.	
Bridgeport Brass Company 276 Agency—Hazard Advertising Company Brown Company 26 Agency—J. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. 74 Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip. 64 Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—N. W. Ayer & Son, Inc. Carter's Ink Company, The 252 Agency—Hoag & Provandie, Inc. Carter-Waters Corporation 66 Agency—R. J. Potts, Calkins & Holden, Inc. Ceco Steel Products Corp. 214 Agency—Charles O. Puffer Co. 250, 251 Agency—Mac Farland, Aveyard & Co. 211 Agency—Cunningham & Walsh, Inc. Cleaver-Brooks Co. 203 Agency—Cunningham & Walsh, Inc. Cleaver-Brooks Co. 203 Agency—Cunningham & Walsh, Inc. Cleaver-Brooks Co. 271 Agency—Cunningham & Walsh, Inc. Columbus Show Case Co. The Co. 271 Agency—Harey M. Miller, Inc. Columbus Show Case Co. The Co. 271 Agency—Harey M. Miller, Inc. Columbus Show Case Co. The Co. 271 Agency—Harey M. Miller, Inc. 271 Agency—Harey M. Miller, Inc. 271 Agency—Harey M. Miller, Inc. 271	
Bridgeport Brass Company 276 Agency—Hazard Advertising Company Brown Company 26 Agency—J. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. 74 Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip. 64 Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—N. W. Ayer & Son, Inc. Carter's Ink Company, The 252 Agency—Hoag & Provandie, Inc. Carter-Waters Corporation 66 Agency—R. J. Potts, Calkins & Holden, Inc. Ceco Steel Products Corp. 214 Agency—Charles O. Puffer Co. 250, 251 Agency—Mac Farland, Aveyard & Co. 211 Agency—Cunningham & Walsh, Inc. Cleaver-Brooks Co. 203 Agency—Cunningham & Walsh, Inc. Cleaver-Brooks Co. 203 Agency—Cunningham & Walsh, Inc. Cleaver-Brooks Co. 271 Agency—Cunningham & Walsh, Inc. Columbus Show Case Co. The Co. 271 Agency—Harey M. Miller, Inc. Columbus Show Case Co. The Co. 271 Agency—Harey M. Miller, Inc. Columbus Show Case Co. The Co. 271 Agency—Harey M. Miller, Inc. 271 Agency—Harey M. Miller, Inc. 271 Agency—Harey M. Miller, Inc. 271	
Bridgeport Brass Company Agency—Hazard Advertising Company Brown Company Brown Company Agency—I. M. Mathes, Inc. Butler Manufacturing Co	
Bridgeport Brass Company Agency—Hazard Advertising Company Brown Company Brown Company Brown Company Brown Company Brown Company Agency—I. M. Mathes, Inc. Butler Manufacturing Co. Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—Hoag & Provandie, Inc. Carter's Ink Company, The 252 Agency—Hoag & Provandie, Inc. Carter-Waters Corporation Agency—R. J. Potts, Calkins & Holden, Inc. Ceco Steel Products Corp. 214 Agency—Charles O. Puffer Co. Colotex Corp., The Agency—Mark Farland, Aveyard & Co. Chase Brass & Copper Co. 211 Agency—Cunningham & Walsh, Inc. Ceover-Brooks Co. Agency—Klau-Van Pietersom-Dunlap, Inc. Columbus Show Case Co., The Agency—Harry M. Miller, Inc. Committee on Steel Pipe Research Agency—Harry M. Miller, Inc. Conmittee on Steel Pipe Research Agency—Harry M. Miller, Inc. Concrete Reinforcing Steel Institute 38, 89 Agency—The Fensholt Advertising Agency	
Bridgeport Brass Company Agency—Hazard Advertising Company Brown Company Brown Company Brown Company Brown Company Agency—I. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip. 64 Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—N. W. Ayer & Son, Inc. Carter's lak Company, The 252 Agency—Hoag & Provandie, Inc. Carter-Waters Corporation 66 Agency—R. J. Potts, Calkins & Holden, Inc. Ceco Steel Products Corp. 214 Agency—Charles O. Puffer Co. Celotex Corp., The 250, 251 Agency—Mac Farland, Aveyard & Co. Chase Brass & Copper Co. 211 Agency—Cunningham & Walsh, Inc. Cleaver-Brooks Co. 203 Agency—Klau-Van Pietersom-Dunlap, Inc. Columbus Show Case Co., The 271 Agency—Harry M. Miller, Inc. Committee on Steel Pipe Research 243 Agency—Harry M. Miller, Inc. Concrete Reinforcing Steel Institute 83, 39 Agency—The Fensholt Advertising Agency Crucible Steel Co. 245 Agency—G. M. Basford Co. Cunples Products Corporation 261	
Bridgeport Brass Company Agency—Hazard Advertising Company Brown Company Brown Company Brown Company Brown Company Agency—I. M. Mathes, Inc. Butler Manufacturing Co. Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip.  Carey Mfg. Co., The Philip.  Carey Mfg. Co., The Philip.  Carrier Corp. Agency—Farson, Huff & Northlich Carrier Corp. Agency—Hoag & Provandie, Inc. Carter's Ink Company, The	
Bridgeport Brass Company Agency—Hazard Advertising Company Brown Company Brown Company Agency—I. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. 74 Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip. 64 Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—N. W. Ayer & Son, Inc. Carter's lak Company, The 252 Agency—Hoag & Provandie, Inc. Carter-Waters Corporation 66 Agency—R. J. Potts, Calkins & Holden, Inc. Ceco Steel Products Corp. 214 Agency—Mac Farland, Aveyard & Co. Chase Brass & Copper Co. 211 Agency—Klaw-Van Pietersom-Dunlap, Inc. Cleaver-Brooks Co. 203 Agency—Klaw-Van Pietersom-Dunlap, Inc. Columbus Show Case Co., The 271 Agency—Klaw-Van Pietersom-Dunlap, Inc. Committee on Steel Pipe Research 243 Agency—Harry M. Miller, Inc. Concrete Reinforcing Steel Institute 88, 89 Agency—The Fensholt Advertising Agency Cucible Steel Co. Agency—G. M. Basford Co. Cupples Products Corporation 261 Agency—Ridgway Advertising Co.	
Bridgeport Brass Company Agency—Hazard Advertising Company Brown Company Brown Company Brown Company Brown Company Agency—J. M. Mathes, Inc. Butler Manufacturing Co. 41 Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip. 64 Agency—Farson, Huff & Northlich Carrier Corp. 104, 105, 253 Agency—N. W. Ayer & Son, Inc. Carter's lak Company, The 252 Agency—Hoag & Provandie, Inc. Carter's lak Company, The 252 Carter-Waters Corporation 66 Agency—R. J. Potts, Calkins & Holden, Inc. Ceco Steel Products Corp. 214 Agency—Charles O. Puffer Co. Celotex Corp., The 250, 251 Agency—Mac Farland, Aveyard & Co. Chase Brass & Copper Co. 211 Agency—Cunningham & Walsh, Inc. Cleaver-Brooks Co. 203 Agency—Klau-Van Pietersom-Dunlap, Inc. Columbus Show Case Co., The 271 Agency—Harry M. Miller, Inc. Committee on Steel Pipe Research 243 Agency—Harry M. Miller, Inc. Concrete Reinforcing Steel Institute 88, 89 Agency—The Fensholt Advertising Agency Crucible Steel Co. 245 Agency—G. M. Basford Co. Caples Products Corporation 261 Agency—Ridgway Advertising Co. Cyclotherm Division (National-U. S. Radiator Corp.) 198	
Bridgeport Brass Company Agency—Hazard Advertising Company Brown Company Brown Company Agency—J. M. Mathes, Inc. Butler Manufacturing Co	
Bridgeport Brass Company Agency—Hazard Advertising Company Brown Company Brown Company Agency—J. M. Mathes, Inc. Butler Manufacturing Co	
Bridgeport Brass Company Agency—Hazard Advertising Company Brown Company Brown Company Agency—J. M. Mathes, Inc. Butler Manufacturing Co	
Bridgeport Brass Company Agency—Hazard Advertising Company Brown Company Brown Company Agency—J. M. Mathes, Inc. Butler Manufacturing Co	
Bridgeport Brass Company Agency—Hazard Advertising Company Brown Company Brown Company Agency—J. M. Mathes, Inc. Butler Manufacturing Co	
Bridgeport Brass Company Agency—Hazard Advertising Company Brown Company Brown Company Brown Company Brown Company Agency—J. M. Mathes, Inc. Butler Manufacturing Co. Agency—Aubrey, Finlay, Marley & Hodgson Byers Company, A. M. Agency—Ketchum, MacLeod & Grove, Inc.  Carey Mfg. Co., The Philip.  Carey Mfg. Co., The Philip.  Carey Mfg. Co., The Philip.  Carrier Corp. Agency—Farson, Huff & Northlich Carrier Corp. Agency—Hoag & Provandie, Inc. Carter's Ink Company, The	

Inc.  Eljer Co
Ellison Bronze Co
Furley & Loetscher Mfg. Co
Farley & Loetscher Mfg. Co
Agency—Fuller of Smith of Ross, Inc. 259  Flynn Mg. Co., Michael
Agency—virian Jenkins Adversing, Inc.  267 Agency—Perry-Brown, Inc.
Agenty—I thy Distant, that
C arden City Plating & Mfg. Co 91
General Bronze Corp
Agency-Wildrick & Miller, Inc. General Electric Co
Garden City Plating & Mfg. Co. 91 Agency—Cruttenden & Eger Associates General Bronze Corp. 60 Agency—Wildrick & Miller, Inc. 205, 232 Agency—Ruthrauff & Ryan, Inc. General Plywood Corporation 84 Agency—Farson, Huff & Northlich Gibson Manufacturing Co. 65 Agency—Lowe & Stevens Gilford Leather Co. 270 Agency—Höfmann-Manning, Inc. Glidden Company, The 244
Gibson Manufacturing Co
Gilford Leather Co
Clidden Company, The 244 Agency—Meldrum & Fewsmith, Inc. Clynn-Johnson Corp. 87 Agency—Edwin E. Geiger
Condrich Plooring Div. D. F
Great Lakes Carbon Corp.
(Perlite Division)
Guth Company, The Edwin F
Haertel & Co., W. J
Harvey Aluminum
Agency—Hisson & Jorgensen, Inc. Hauserman Company, E. F
Haws Drinking Faucet Co
Haertel & Co., W. J. 208 Agency—Campbell-Sanford Advertising Harvey Aluminum 82 Agency—Hisson & Jorgensen, Inc. Hauserman Company, E. F. 76 Agency—Meldrum & Fewsmith, Inc. Haws Drinking Faucet Co. 230 Agency—Pacific Advertising Staff Hexeel Products Co. 101 Agency—Charles P. Johnson Company, Advertising
Holcomb & Hoke Mfg, Co., Inc 100
Agency—Keeling & Co., Inc. Horn Company, Inc., A. C
Agency—G. M. Basford Co.  Hunter Douglas Corp
Agency—Doyle Dane Bernouch, Inc.
Ingalls Iron Works. 248
Ingalls Iron Works. 248 Agency—Liller, Neal & Battle Advertising Inland Steel Products Co. 6, 210 Agency—Hoffman & York, Inc. 6, 200
Agency—Hoffman & York, Inc. International Nickel Company
The state of the s
Agency-Marschalk & Pratt Co., Inc., Div. of McCann-Erickson, Inc.
Agency—Hoffman & York, Inc. International Nickel Company
Agency—Rener-Cresten Co.
Johns-Manville Corporation
Johns-Manville Corporation
Tohns-Manyille Corneration
Johns-Manville Corporation
Johns-Manville Corporation 204  Agency—J. Walter Thompson Company Johnson Service Co. Cover IV  Agency—K. E. Shepard, Inc.  Kawneer Co., The 240  Agency—Fuller & Smith & Ross, Inc.  Keasbey and Mattison Company 95
Johns-Manville Corporation
Johns-Manville Corporation 204 Agency—J. Walter Thompson Company Johnson Service Co. Cover IV Agency—K. E. Shepard, Inc.  Kawneer Co., The 240 Agency—Fuller & Smith & Ross, Inc. Keasbey and Mattison Company 95 Agency—Geare-Marston Kellogg Switchboard and Supply Co. 249 Agency—Glenn, Jordan, Stoetzel, Inc. Kennatrack Corp. 274 Agency—Ash Advertising
Johns-Manville Corporation 204 Agency—J. Walter Thompson Company Johnson Service Co. Cover IV Agency—K. E. Shepard, Inc.  Kawneer Co., The 240 Agency—Fuller & Smith & Ross, Inc. Keasbey and Mattison Company 95 Agency—Geare-Marston Kellogg Switchboard and Supply Co. 249 Agency—Glenn, Jordan, Stoetzel, Inc. Kennatrack Corp. 274 Agency—Ash Advertising
Johns-Manville Corporation 204 Agency—I. Walter Thompson Company Johnson Service Co. Cover IV Agency—K. E. Shepard, Inc.  Kawneer Co., The 240 Agency—Fuller & Smith & Ross, Inc. Keasbey and Mattison Company 95 Agency—Geare-Marston Kellogs Switchboard and Supply Co. 249 Agency—Glenn, Jordan, Stoetzel, Inc. Kennatrack Corp. 274 Agency—Ash Advertising Kentile, Inc. 103 Agency—Ruthrauff & Ryan, Inc. Kewanee-Ross Corp. 185
Johns-Manville Corporation 204  Agency—J. Walter Thompson Company Johnson Service Co. Cover IV  Agency—K. E. Shepard, Inc.  Kawneer Co., The 240  Agency—Fuller & Smith & Ross, Inc.  Keasbey and Mattison Company 95  Agency—Geare-Marston  Kellogs Switchboard and Supply Co. 249  Agency—Glenn, Jordan, Stoetzel, Inc.  Kennatrack Corp. 274  Agency—Ash Advertising  Kentile, Inc. 103  Agency—Ruthrauff & Ryan, Inc.  Kewanee-Ross Corp. 185  Agency—Charles O. Puffer Company  Kimble Glass Co. (Subsidiary of Owens-Illinois Class Co.) 71  Subsidiary of Owens-Illinois Class Co.) 71
Johns-Manville Corporation 204  Agency—J. Walter Thompson Company Johnson Service Co. Cover IV  Agency—K. E. Shepard, Inc.  Kawneer Co., The 240  Agency—Fuller & Smith & Ross, Inc.  Keasbey and Mattison Company 95  Agency—Geare-Marston  Kellogs Switchboard and Supply Co. 249  Agency—Glenn, Jordan, Stoetzel, Inc.  Kennatrack Corp. 274  Agency—Ash Advertising  Kentile, Inc. 103  Agency—Ruthrauff & Ryan, Inc.  Kewanee-Ross Corp. 185  Agency—Charles O. Puffer Company  Kimble Glass Co. (Subsidiary of Owens-Illinois Class Co.) 71  Subsidiary of Owens-Illinois Class Co.) 71
Johns-Manville Corporation 204 Agency—I. Walter Thompson Company Johnson Service Co. Cover IV Agency—K. E. Shepard, Inc.  Kawneer Co., The 240 Agency—Fuller & Smith & Ross, Inc. Keasbey and Mattison Company 95 Agency—Geare-Marston Kellogs Switchboard and Supply Co. 249 Agency—Glenn, Jordan, Stoetzel, Inc. Kennatrack Corp. 274 Agency—Ash Advertising Kentile, Inc. 103 Agency—Ruthrauff & Ryan, Inc. Kewanee-Ross Corp. 185
Johns-Manville Corporation 204 Agency—J. Walter Thompson Company Johnson Service Co. Cover IV Agency—K. E. Shepard, Inc.  Kawneer Co., The. 240 Agency—Fuller & Smith & Ross, Inc. Keasbey and Mattison Company 95 Agency—Geare-Marston Kellogg Switchboard and Supply Co. 249 Agency—Glenn, Jordan, Stoetzel, Inc. Kennatrack Corp. 274 Agency—Ash Advertising 103 Kennatrack Corp. 185 Agency—Ruthrauff & Ryan, Inc. Kewance-Ross Corp. 185 Agency—Charles O. Puffer Company Kimble Glass Co. (Subsidiary of Owens-Illinois Glass Co.) 71 Agency—J. Walter Thompson Co. Knoll Associates, Inc. 195 Agency—The Zlowe Company
Johns-Manville Corporation 204 Agency—J. Walter Thompson Company Johnson Service Co. Cover IV Agency—K. E. Shepard, Inc.  Kawneer Co., The. 240 Agency—Fuller & Smith & Ross, Inc. Keasbey and Mattison Company 95 Agency—Geare-Marston Kellogg Switchboard and Supply Co. 249 Agency—Glenn, Jordan, Stoetzel, Inc. Kennatrack Corp. 274 Agency—Ash Advertising Kentile, Inc. 103 Agency—Ruthrauff & Ryan, Inc. Kewance-Ross Corp. 185 Agency—Charles O. Puffer Company Kimble Glass Co. (Subsidiary of Owens-Illinois Glass Co.) 71 Agency—J. Walter Thompson Co. Knoll Associates, Inc. 195 Agency—The Zlowe Company  Libbey-Owens-Ford Glass Co. 4, 5, 186 Agency—Fuller & Smith & Ross, Inc. 241
Johns-Manville Corporation 204  Agency—J. Walter Thompson Company  Johnson Service Co. Cover IV  Agency—K. E. Shepard, Inc.  Kawneer Co., The. 240  Agency—Fuller & Smith & Ross, Inc.  Keasbey and Mattison Company 95  Agency—Geare-Marston  Kellogg Switchboard and Supply Co. 249  Agency—Glenn, Jordan, Stoetzel, Inc.  Kennatrack Corp. 274  Agency—Ash Advertising  Kentile, Inc. 103  Agency—Ruthrauff & Ryan, Inc.  Kewanee-Ross Corp. 185  Agency—Charles O. Puffer Company  Kimble Glass Co. 91  Agency—J. Walter Thompson Co.  Knoll Associates, Inc. 195  Agency—The Zlowe Company  Libbey-Owens-Ford Glass Co. 4, 5, 186  Agency—Fuller & Smith & Ross, Inc.  L. O. F. Glass Fibers Company
Johns-Manville Corporation 204 Agency—J. Walter Thompson Company Johnson Service Co. Cover IV Agency—K. E. Shepard, Inc.  Kawneer Co., The. 240 Agency—Fuller & Smith & Ross, Inc. Keasbey and Mattison Company 95 Agency—Geare-Marston Kellogg Switchboard and Supply Co. 249 Agency—Glenn, Jordan, Stoetzel, Inc. Kennatrack Corp. 274 Agency—Ash Advertising Kentile, Inc. 103 Agency—Ruthrauff & Ryan, Inc. Kewance-Ross Corp. 185 Agency—Charles O. Puffer Company Kimble Glass Co. (Subsidiary of Owens-Illinois Glass Co.) 71 Agency—J. Walter Thompson Co. Knoll Associates, Inc. 195 Agency—The Zlowe Company  Libbey-Owens-Ford Glass Co. 4, 5, 186 Agency—Fuller & Smith & Ross, Inc. L. O. F. Glass Fibers Company 241 Agency—Brooke, Smith, French & Dorrance, Inc.

M aas & Waldstein Co
Agency—George Homer Martin Associates
Macomber, Inc
Mahon Company, The R. C
Marble Institute of America, Inc
Marmet Corp
Martin-Parry Corp
Musiic The Corporation of America 111
Mastic Tile Corporation of Association
Agency—S. R. Leon Company, Inc.
Agency—Connor Associates, Inc. 252
Agency—Royal & deGusman Inc
Mengel Co., The
Agency—Foote, Cone & Belding
Minnesota Mining & Mfg. Co
Miraele Adhesives Corporation
Mississippi Glass Co
Agency—George Brodsky
Modine Mfg. Co
24301.
National Coal Association
National Electric Products Corp
Agency—Batten, Barton, Durstine & Osborn, Inc.
National Torrages & Massis Assessed
Nicholson & Co., W. H 238
Agency-The dithin Vanatt Co
Agency—Henry J. Kaufman & Associates Nicholson & Co., W. H. 238 Agency—The Aitkin-Kynett Co.
Agency—The Aitkin-Kynett Co.
Otis Elevator Company
Otis Elevator Company Agency—G. M. Basford Company Overly Mfg. Co. Agency—Walker & Downing, General Agency Owens-Illinois Glass Co. (Kimble Glass Co., Subsidiary) Agency—J. Walter Thompson Co.  Panelfab Products, Inc. Agency—Bishopric, Green & Associates Peele Company, The Agency—Bears Advertising, Inc. Perlite Division (Great Lakes Carbon Corp.) 213 Agency—Darwin H. Clark Co. Pittsburgh Corning Corporation Agency—Ketchum, MacLeod & Grove, Inc. Pittsburgh Plate Glass Co. 33, 42, 43 Agency—Batten, Barton, Durstine & Osborn, Inc. Powers Regulator Co. 237, 253 Agency—Symonds, Mackenzie & Co.  Radio Corporation of America (Engineering Products Division) Agency—Al Paul Lefton Co., Inc. Raymond Concrete Pile Co. Agency—Needham & Grohmann, Inc. Register & Grille Mfg. Co., Inc. Agency—J. I. Auerbach Co. Republic Steel Corp. 196, 197 Agency—Meldrum & Fewsmith, Inc.
Otis Elevator Company
Otis Elevator Company Agency—G. M. Basford Company Overly Mfg. Co. Agency—Walker & Downing, General Agency Owens-Illinois Glass Co. (Kimble Glass Co., Subsidiary) Agency—J. Walter Thompson Co.  Panelfab Products, Inc. Agency—Bishopric, Green & Associates Peele Company, The Agency—Beshopric, Green & Associates Peelle Company, The Agency—Mears Advertising, Inc.  Perlite Division (Great Lakes Carbon Corp.) Agency—Darwin H. Clark Co. Pittsburgh Corning Corporation Agency—Cetchium, MacLeod & Grove, Inc. Pittsburgh Corning Corporation Agency—Ketchium, MacLeod & Grove, Inc. Pittsburgh Corning Corporation Agency—Batten, Barton, Durstine & Osborn, Inc. Powers Regulator Co. 237, 253 Agency—Symonds, Mackenzie & Co.  Radio Corporation of America (Engineering Products Division) Agency—Symonds, Mackenzie & Co.  Raymond Concrete Pile Co. Agency—Needham & Grohmann, Inc. Reflectal Corp. Agency—Robertson, Buckley & Gotsch, Inc. Register & Grille Mfg. Co., Inc. Agency—I. I. Auerbach Co. Remington Arms Co., Inc. Agency—I. I. Auerbach Co. Remington Arms Co., Inc. Agency—Batten, Barton, Durstine & Osborn, Inc. Republic Steel Corp. Agency—Meldrum & Fewsmith, Inc. Republic Steel Corp. Agency—Dan W. Frye Advertising Rovere Copper & Brass, Inc. Agency—St. Georges & Keves, Inc.
Otis Elevator Company Agency—G. M. Basford Company Overly Mfg. Co. Agency—Walker & Downing, General Agency Owens-Illinois Glass Co. (Kimble Glass Co., Subsidiary) Agency—I. Walter Thompson Co.  Panelfab Products, Inc. Agency—Bishopric, Green & Associates Peele Company, The Agency—Mears Advertising, Inc. Perlite Division (Great Lakes Carbon Corp.) 213 Agency—Darwin H. Clark Co. Pittsburgh Corning Corporation Agency—Ketchum, MacLeod & Grove, Inc. Pittsburgh Plate Glass Co. 33, 42, 43 Agency—Batten, Barton, Durstine & Osborn, Inc. Powers Regulator Co. 237, 253 Agency—Symonds, Mackenzie & Co.  Radio Corporation of America (Engineering Products Division) Agency—Needham & Grohmann, Inc. Register & Grille Mfg. Co., Inc. Agency—J. I. Auerbach Co. Regulitor Arms Co., Inc. Register & Grille Mfg. Co., Inc. Agency—J. I. Auerbach Co. Republic Steel Corp. Agency—Meldrum & Fewsmith, Inc. Resolite Corp. Agency—Dan W. Frye Advertising Rovere Copper & Brass, Inc. 3 Agency—St. Georges & Keyes, Inc. Reynolds Metals Co. 189, 190, 191, 192
Otis Elevator Company Agency—G. M. Basford Company Overly Mfg. Co. Agency—Walker & Downing, General Agency Owens-Illinois Glass Co. (Kimble Glass Co., Subsidiary) Agency—J. Walter Thompson Co.  Panelfab Products, Inc. Agency—Bishopric, Green & Associates Peele Company, The Agency—Beshopric, Green & Associates Peele Company, The Agency—Mears Advertising, Inc.  Perlite Division (Great Lakes Carbon Corp.) Agency—Darwin H. Clark Co. Pittsburgh Corning Corporation Agency—Cetchum, MacLeod & Grove, Inc. Pittsburgh Corning Corporation Agency—Ketchum, MacLeod & Grove, Inc. Pittsburgh Plate Glass Co. 33, 42, 43 Agency—Batten, Barton, Durstine & Osborn, Inc. Powers Regulator Co. 237, 253 Agency—Symonds, Mackenzie & Co.  Raymond Concrete Pile Co. Agency—Needham & Grohmann, Inc. Reflectal Corp. Agency—Robertson, Buckley & Gotsch, Inc. Register & Grille Mfg. Co., Inc. Agency—I. I. Auerbach Co. Remington Arms Co., Inc. Republic Steel Corp. Agency—Batten, Barton, Durstine & Osborn Inc. Republic Steel Corp. Agency—Buchanan & Fewsmith, Inc. Resolite Corp. Agency—Dan W. Frye Advertising Revere Copper & Brass, Inc. Agency—Buchanan & Company, Inc. Richmond Radiator Co. Agency—Buchanan & Company, Inc. Richmond Radiator Co. Agency—Buchanan & Company, Inc.
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Otis Elevator Company
Otis Elevator Company Agency—G. M. Basford Company Overly Mfg. Co. Agency—Walker & Downing, General Agency Owens-Illinois Glass Co. (Kimble Glass Co., Subsidiary) Agency—I. Walter Thompson Co.  Panelfab Products, Inc. Agency—Bishopric, Green & Associates Peele Company, The Agency—Mears Advertising, Inc. Perlite Division (Great Lakes Carbon Corp.) 213 Agency—Darwin H. Clark Co. Pittsburgh Corning Corporation Agency—Ketchum, MacLeod & Grove, Inc. Pittsburgh Plate Glass Co. 33, 42, 43 Agency—Batten, Barton, Durstine & Osborn, Inc. Powers Regulator Co. 237, 253 Agency—Symonds, Mackenzie & Co.  Radio Corporation of America (Engineering Products Division) Agency—Needham & Grohmann, Inc. Register & Grille Mfg. Co., Inc. Agency—J. J. Auerbach Co. Remington Arms Co., Inc. Agency—J. J. Auerbach Co. Republic Steel Corp. Agency—Meldrum & Fewsmith, Inc. Resolite Corp. Agency—Dan W. Frye Advertising Rovere Copper & Brass, Inc. Agency—Buchanan & Company, Inc. Reichmond Radiator Co. 189, 190, 191, 192 Agency—Buchanan & Company, Inc. Risson Company, Oscar C. 183 Agency—Edwin E. Geiger

Rohm & Haas Co
Agency—John Falkner Arndt & Co.  Rowe Mfg. Co
Agency—Rogers & Smith
St. Regis Paper Company
Sargent & Greenland
Agency—Hav Nash & Associates
Schundler & Company, Inc., F. E
Seeburg Corp., J. P
Shaw-Walker Co., The
(Sidney Blumenthal & Co., Inc.) 90 Agency—Harry Serwer, Inc.
Shwayder Brothers, Inc
Simpson Logging Company
Sloan Valve Company
Agency—Hugh H. Graham & Associates Inc
Stark Ceramies, Inc. 236 Agency—Wildrick & Miller, Inc. 236 Steelease, Inc. 236
Agency—Wesley Aves & Associates
Stephens-Adamson Mfg. Co
Stromberg-Carlson Agency—Charles L. Rumrill & Co., Inc. 66
Agency—Copley Advertising Agency, Inc. 61
Superior Electric Company
Superior Fireproof Sash & Door Co
Taylor Co., The Halsey W
Cohen
Agency-Fuller & Smith & Ross, Inc.
Agency-Weston-Barnett, Inc
Tuttle & Bailey, Inc
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Agency—Roeding & Arnold, Inc. United States Plywood Corp
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(American Bridge Div.)
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United Steel Fabricators, Inc
Universal Atlas Cement Co
Upco Company, The
Virginia Metal Products Corp
Visking Corp
Vista Furniture Co
Vogel-Peterson Co
Wakefield Company, The
Walworth Company, The
Walworth Company, The
Agency—The Alfred Colle Company Wheeler Reflector Company Agency—Ingalls-Miniter Company
Agency—Ingalis-Miniter Company Williamson Veneer Company, The
Wright Mfg. Co.
(Div. of Mastic Tile Corporation of America) 14 Agency—S. R. Leon Company, Inc.
Young Radiator Co
Z urn Manufacturing Company, J. A 263 Agency—Ketchum, MacLeod & Grove, Inc.
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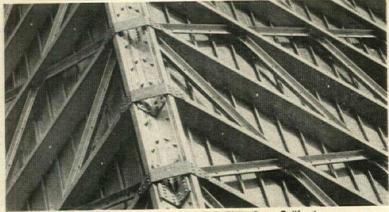
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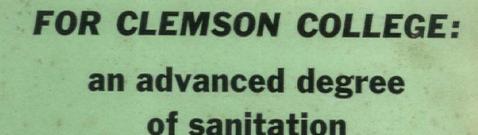
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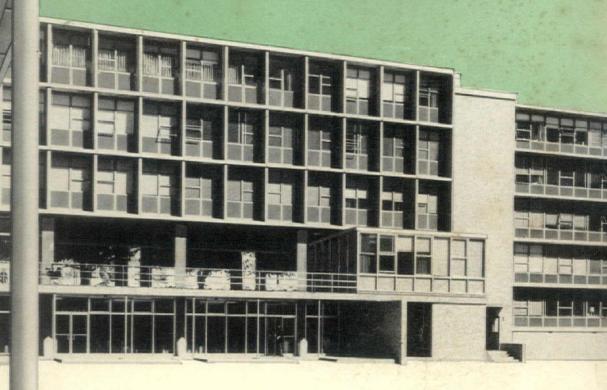
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