



# ARCHITECTURAL RECORD

**10** OCTOBER 1963 • TWO DOLLARS PER COPY

BUILDING TYPES STUDY: SCHOOLS

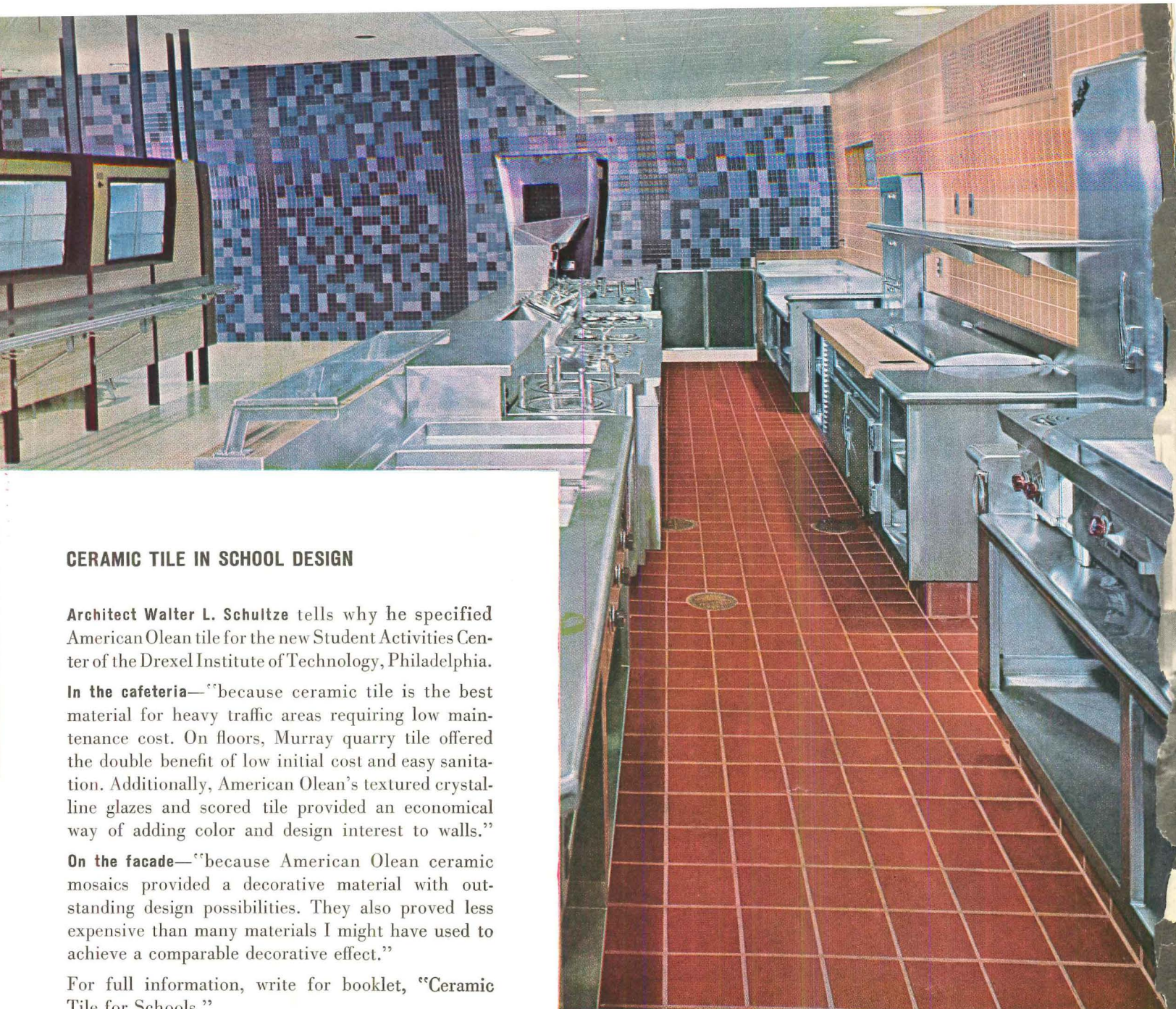
ARCHITECTURAL DETAILS: BEGINNING A NEW SERIES

MEMPHIS AIRPORT TERMINAL

F. W. DODGE CONSTRUCTION OUTLOOK FOR 1964

FULL CONTENTS ON PAGES 4 & 5





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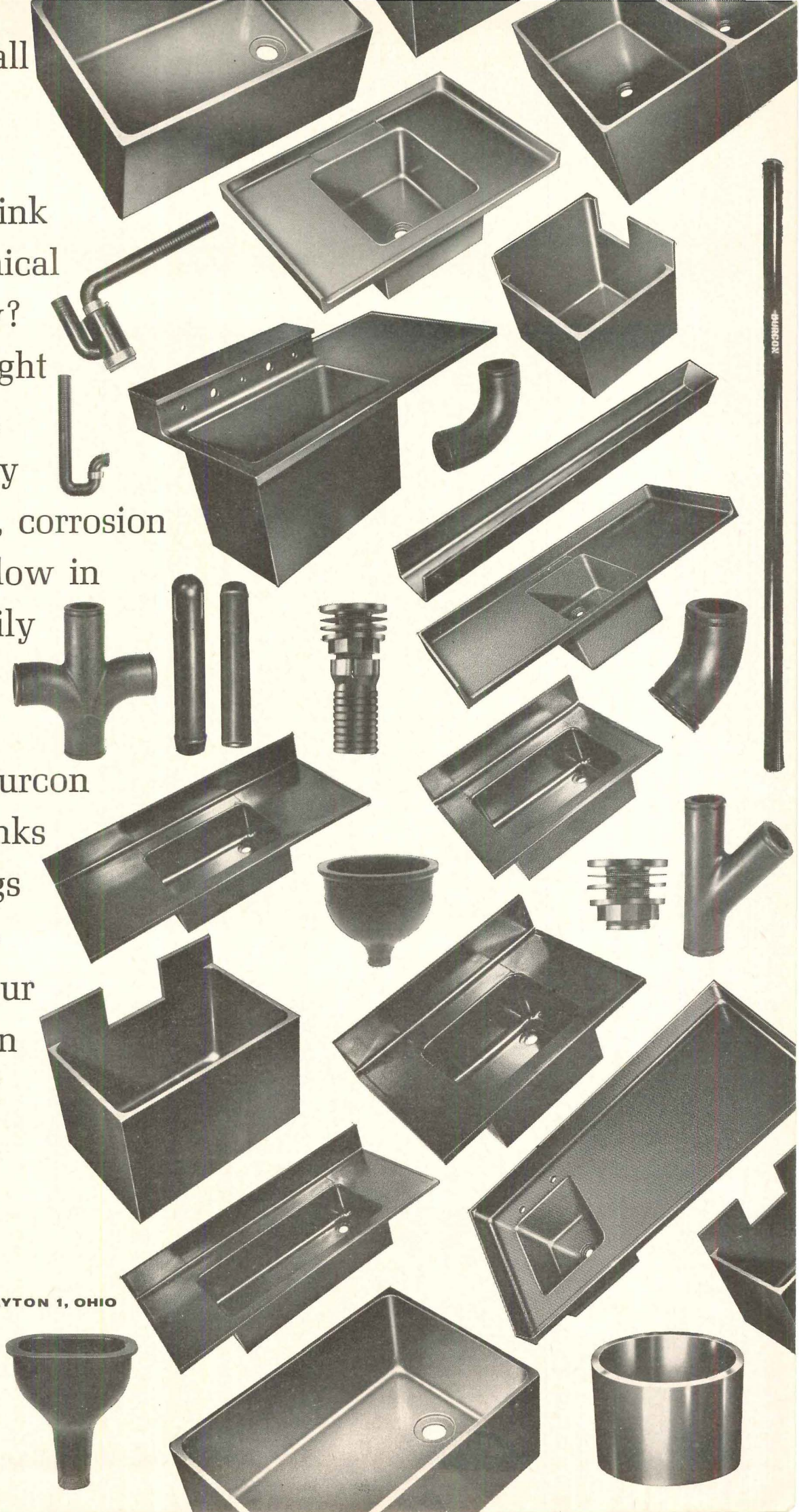


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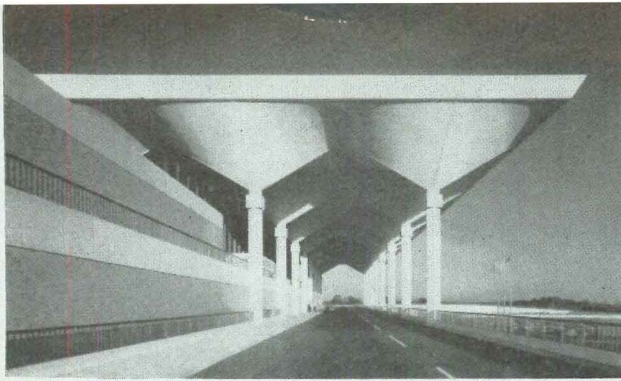
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**Advertising Index: 368**

ARCHITECTURAL RECORD, October, 1963. Vol. 134, No. 4. Published monthly, except May, 1963, when semi-monthly, by F. W. Dodge Corporation, a McGraw-Hill Company. This issue is published in national and separate editions. Additional pages of separate edition numbered or allowed for as follows: Western Section, (including *Western Architect and Engineer*), 32-1 through 32-36.

Executive, editorial, circulation and advertising offices: McGraw-Hill Building, 330 West 42nd Street, New York 36, N. Y. Western Editorial Office: 2877 Shasta Road, Berkeley 8, Calif. Office of Publication, Concord, N. H.; second-class postage paid at Concord, N. H.

Subscription rate for individuals in the field served \$5.50 per year in U. S., U. S. Possessions and Canada; single copies \$2.00. Further details on page 6. Postmaster: Please send form 3579 to Fulfillment Manager, ARCHITECTURAL RECORD, P.O. Box 430, Hightstown, N. J.

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## HOUSE DESIGN EXPLORING NEW ARCHITECTURAL DIRECTIONS

*Everybody knows that significant new architectural trends are often to be seen first in the design of houses, and a special presentation of new house designs by Ulrich Franzen will provide still another case in point. The seven houses to be shown share a strong concern for relationship to site and forceful expression of a highly disciplined ordering of function.*

## "COMMUNITY CARE" AND MENTAL HOSPITAL DESIGN

*Next month's Building Types Study on Mental Hospitals analyzes some of the early projects designed to provide mental health facilities which are effective instruments for the concept of community care. Implications of the new efforts for both private and state institutions are considered in a study in which the RECORD has once again had the cooperation of the U. S. Public Health Service.*

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Architectural Record is managed by the Publications Division of McGraw-Hill Publishing Company, Inc. Officers of the Publications Division: Shelton Fisher, president; vice presidents: Robert F. Marshall, operations; John R. Callahan, editorial; Ervin E. DeGraff, circulation; Donald C. McGraw, Jr., advertising sales; Angelo R. Venezian, marketing.

Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage.

**SUBSCRIPTIONS:** Available only by paid subscription. Publisher reserves the right to refuse non-qualified subscriptions. Subscriptions solicited only from architects and engineers. Position, firm connection, and type of firm must be indicated on subscription orders forwarded to Fulfillment Manager, Architectural Record, P.O. Box 430, Hightstown, N. J. Subscription prices: U. S., U. S. Possessions and Canada: \$5.50 per year; other Western Hemisphere countries, to those who by title are architects and engineers, \$9.00 per year. Single copy price, \$2.00. Beyond Western Hemisphere, to those who by title are architects and engineers, \$9.00 per year for 12 monthly issues not including Mid-May 1963 issue. Subscriptions from all others outside U. S., U. S. Possessions and Canada for 12 monthly issues, not including Mid-May issue, \$24 per year.

**CHANGE OF ADDRESS:** Subscribers are requested to furnish promptly both old and new address, including new postal zone number, if any. If possible, send stencil impression from magazine wrapper. Allow one month for change.

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**POSTMASTER:** Please send Form 3579 to Fulfillment Manager, Architectural Record, P.O. Box 430, Hightstown, N. J.

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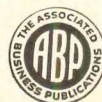
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*The  
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of a  
French  
Quarter  
secret*

Exterior of Solari Building typifies traditional Vieux Carré architecture required by local law and custom. On first floor is famed Solari Delicatessen. Above are 7 parking levels. Owner: A. M. & J. SOLARI, LTD. Architect: DIBOLL, KESSELS & ASSOCIATES. General Contractor: GRANITE CONSTRUCTION CO., Houston, Tex. Prestressed Concrete Sub-Contractor: BELDEN CONCRETE PRODUCTS, INC. Project Consulting Engineer: R. P. LINFIELD. Consulting Engineer on Precast Structure: W. J. MOUTON, JR. Lone Star Ready Mixed Concrete: JAHNCKE SERVICE, INC. (All of New Orleans, except where indicated).

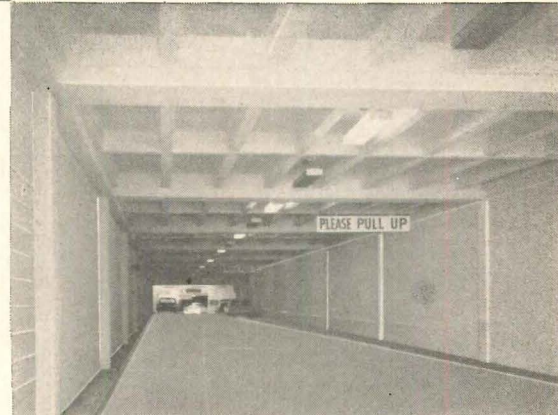
To the passerby, New Orleans' new Solari Building in the city's French Quarter seems simply another example of the neighborhood's traditional Vieux Carré architecture.

The interior, however, presents quite another story...a functional prestressed concrete parking garage, in ultimate-strength design—the first multi-story prestressed building in the area.

An intriguing contrast, certainly, and with a construction history that bristled with problems. No working or storage space at the site. A tight schedule. And weather hazards that defied prediction.

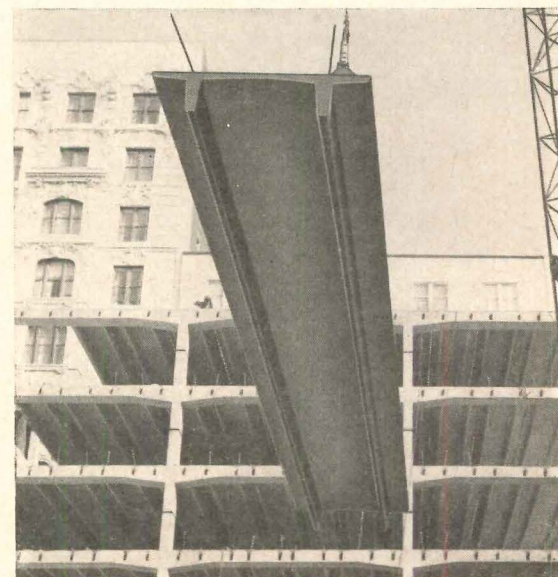
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## A Bad Bad World?

Philip Johnson, who comes as close as anybody I know to the classic image of the architect, told the graduating students of Pratt Institute that, for the artist, it's a bad, bad world.

"What will be hardest for your generation—as it was hardest for mine—is the world of values that will face you. You have been nurtured in the belief that art is important, that the world of beauty is, or should be, of transcendent importance. At the very least you feel that even if General Motors does hire you for the wrong reasons . . . you can improve standards, make good designs and be paid for it in the coin of the realm.

"But alas . . . you will find that no one (underline, no one) cares about design, art, beauty, or any of that. It does not fit our scheme of values . . . Does it make money? Not, is it beautiful?

"In 1906 a court building was built on Madison Square. One third of its considerable budget was put aside for artistic embellishment—that is, on ancillary arts that could make the building a source of pride to New Yorkers. This year, less than a half century later, I am building a public building, the New York State Theater at Lincoln Center. Can you have any idea how much I am allowed to spend in artistic embellishment? Not 33 per cent, not even 1/33 of that amount—I can spend 1/333 of what they spent 50 years ago. . . .

"Yes, it is a bad, bad world. . . ."

Yes, for maybe 600 years science and education and economic welfare have absorbed increasing shares of people's attention, and artists have watched with dismay.

But when I read Philip's paper, I reached into the drawer for my Pollyanna badge. It is not that I disagree with Philip's challenge to the graduates to go out and do battle for beauty, even for embellishment. But I don't think that the indifference is as bad as he made it.

In the first place, shall I point out that Philip was using the words "beauty" and "embellishment"? Pretty hopeful, isn't it, if you are

thinking in terms of public acceptance? One third for embellishment is something different from "less is more." Yes, Philip, I know you were citing an example—you don't really want one third for embellishment. What a dreadful thought if everybody—no, no, not that! But if the artist is really courting public support, a general warming up might be tactful.

In any case, I think the American public has maintained a fairly kindly attitude toward artists and architects. It has put great sums into modern paintings and sculpture. It has put great sums into modern architectural achievements; it has gone along with architectural innovations much more readily than have Europeans. It has listened to the doctrine that "less is more," as can be seen in the streets of New York, with its rows of banal, slick and cheap office buildings.

There is more than a slight suggestion here that artists have not been their own best salesmen (pardon the expression). But this is not the thirteenth century. The word bourgeoisie is out of date. And the artist who campaigns for more beauty and order—as he must—might remember that he too plies his craft in a world of democracy.

The public has learned some other things from the "modern" movement. It has learned that old standards are gone. Traditions are for the museums. This is a do-it-yourself world, and Sunday painters all over the land are slinging the stuff around, with no thought of draftsmanship or composition. In architecture, every masonry contractor can think up his own gadgets and innovations.

The American public is certainly conscious of "art" and "design." It is overwhelmed and victimized by "design." Cars, cosmetics, cookie boxes, whatever.

If you young fellows from Pratt have any beauty and order (and a modicum of embellishment) to offer them, they will probably grab at it.

—Emerson Goble



# MEXICO CITY SCENE OF U.I.A. MEETING AND PACIFIC RIM ARCHITECTURAL CONFERENCE

While the American Institute of Architects decided several months ago not to participate in the Havana meeting of the International Union of Architects scheduled for the first week of October, the same is not the case for the Mexico City meeting, October 8-12.

A.I.A. observers to the Mexico meeting are J. Roy Carroll Jr., F.A.I.A., Philadelphia, A.I.A. president; A. G. Odell Jr., F.A.I.A., Charlotte, N.C., A.I.A. first vice president; Morris Ketchum Jr., F.A.I.A., New York, A.I.A. director; and William H. Scheick, A.I.A., executive director of the Institute.

Official delegates to the meeting are Edwin Carroll, F.A.I.A., El Paso, Tex.; Samuel I. Cooper, F.A.I.A., Beaumont, Tex., A.I.A. director; John S. Bolles, F.A.I.A., San Francisco; and James Lawrence Jr., F.A.I.A., Boston, A.I.A. director. These five will take part in the business meetings of the conference.

There are four United States architects on the U.I.A. working com-

missions (committees): Daniel Schwartzman, F.A.I.A., New York City—commission on professional practice; Carl Feiss, F.A.I.A., Washington, D.C.—commission on town planning; Neil Connor, A.I.A., director of architectural standards for the Federal Housing Administration, Washington, D.C.—commission on housing; and Mario Celli, A.I.A., McKeesport, Pa.—commission on schools.

Other working commissions are architectural training, research, health, sports and industrial buildings. President of the symposium is Hector Velazquez Moreno, president of the board of directors of the Sociedad de Arquitectos Mexicanos and the Colegio Nacional de Arquitectos. Another important architectural meeting is scheduled for Mexico City October 12-18. The Second Pacific Rim Architectural Conference includes the 18th annual convention of the California Council of the A.I.A.; the fifth California regional A.I.A. meeting and the 13th annual

meeting of the Women's Architectural League of California.

Invitations to the meeting have gone to architects in Mexico, Central and South America, Canada, Panama, the Philippines, Australia, New Zealand and Japan. The impact of architects' work on the political, economic, cultural and social facets of civilization will be considered within the framework of the conference theme: Consequences of Design. This theme is intended to follow logically that of the 1959 First Pacific Rim Conference: Wellsprings of Design.

Lee B. Kline, A.I.A., Los Angeles, is chairman of the Pacific Rim Conference committee. Other members are George T. Rockrise, F.A.I.A., San Francisco; George Vernon Russell, F.A.I.A., Los Angeles; George P. Simonds, A.I.A., Oakland; Arq. Carlos Conteras, Hon. F.A.I.A., Mexico City; Arq. Ramon Corona Martin, Hon. F.A.I.A., vice president, Union International de Arquitectos; and Mr. Velaquez.

## A.I.A. AIDS INFORMATION RETRIEVAL QUEST

An exploratory meeting on "Information Retrieval for Building Industry and Design Professions" held with the cooperation of the American Institute of Architects has resulted in A.I.A. undertaking to "monitor and distribute" information received as a result of the meeting, at which participants suggested reporting the interest of their organizations later.

The meeting was held at the General Electric Information Processing Center, Bethesda, Md., and the program was coordinated by Maurice W. Perreault, head of the A.I.A. Department of Education, with the hosts, R. C. Lemmons, manager of the Information Processing Center; N. J. Suszynski, manager of analysis and programming and J. G. Howard, sales engineer, General Electric.

The program included a descrip-

tion of the principles of automated information retrieval systems, a demonstration of the related equipment and a discussion of various applications "including the many alternate paths which may be pursued towards the most appropriate manner of accommodating, through automation, a given set of requirements."

Interim goals of an automated retrieval system, as described in the minutes of the meeting, would be "to provide more comprehensive and accurate specifications, specifications abstracted by comparative analysis, a publication of this information, updated inserts and revisions, special reports, analyses, product services, applications, stockpiling, statistical data and research information. The basic system should be designed to be expanded, to contain special use stor-

age of produce information, building type use information and, progressively, other information which is yet to be determined."

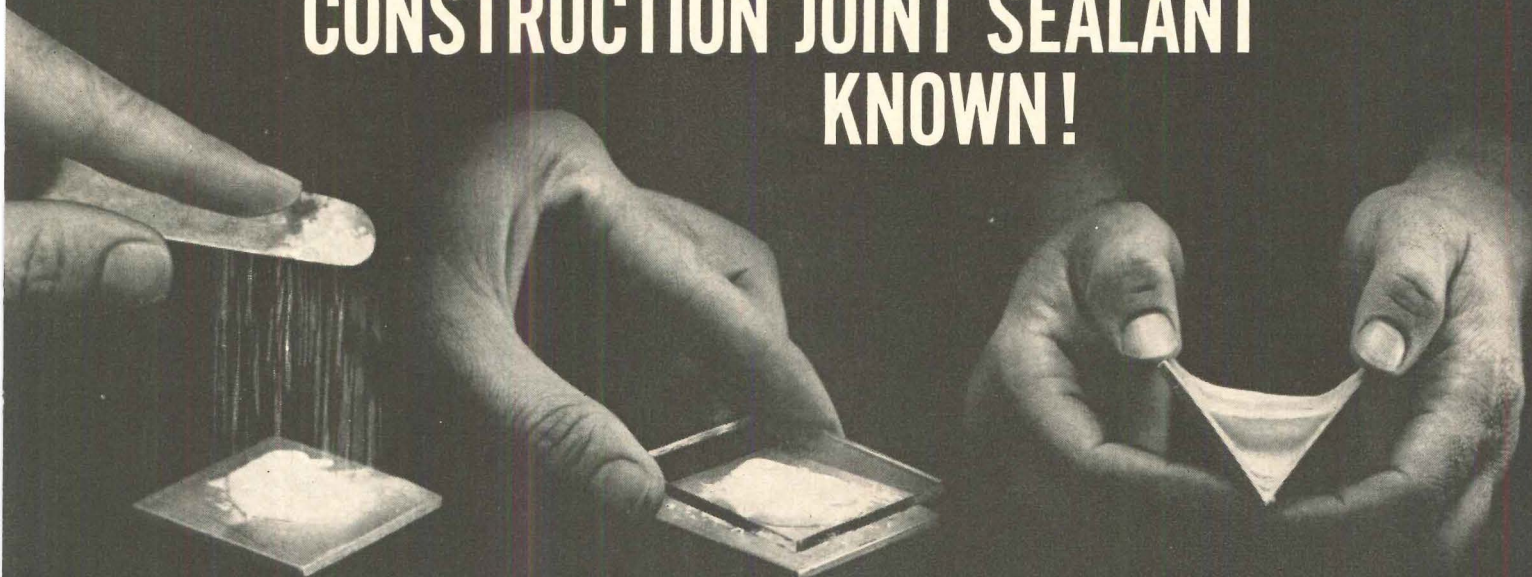
Henry L. Wright of Los Angeles, immediate past president, and Robert F. Hastings of Detroit, treasurer, represented the A.I.A. at the meeting, which was also attended by Elliott Carroll, Theodore Dominick and Robert J. Cowling of the A.I.A. staff; Dean Kenneth Sargent of the Syracuse University School of Architecture; James J. Souder of Bolt, Beranek & Newman, Los Angeles; and representatives of the Building Research Advisory Board, the Producers Council, the General Services Administration, Bethlehem Steel Co., Pittsburgh Plate Glass Co., Carrier Co. and Libbey-Owens-Ford Glass Co.



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**1** Mono-Lasto-Meric placed on a metal plate, allowed to set a few minutes to skin over, then sprinkled lightly with "construction dust" to form a typical deterrent to good construction joint sealing.

**2** Glass plate gently placed on top of dusted Mono-Lasto-Meric, which quickly and visibly "bites" its way through to glass.

**3** After a few minutes, when metal and glass are pulled apart, there is no loss of adhesion to either surface.

Never in the construction industry has there been an adhesive sealant with the PROVED and long-lived adhesion powers now offered by Mono-Lasto-Meric. Proved by over 4 years of actual use in hundreds of buildings of every type, Mono-Lasto-Meric is the dependable answer to the new sealing requirements of modern construction techniques and materials.



This test proves that the extreme adhesion of Mono-Lasto-Meric can eliminate many causes of sealant failure and provide a greater factor of safety on every construction job. All other types of sealants fail in this critical test.

under ultra-violet rays. The adhesion is inherent and permanent. All other sealants tested required commonly-used adhesive additives. These migrate, oxidize, react and lose their effectiveness causing eventual sealant failure.

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■ In developing Mono-Lasto-Meric, The Tremco Research Center considered all available standard raw materials such as polysulphides, butyls, polyurethanes, epoxies, and silicones. But none was capable of producing the exceptional adhesion of sealants required in modern architecture. Therefore, Tremco created a specific new acrylic terpolymer. It assures Mono-Lasto-Meric the exceptional adhesive quality demonstrated above, and in addition superior flexibility, and resistance to oxygen, moisture and hardening



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Have Tremco Field Advisor call

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

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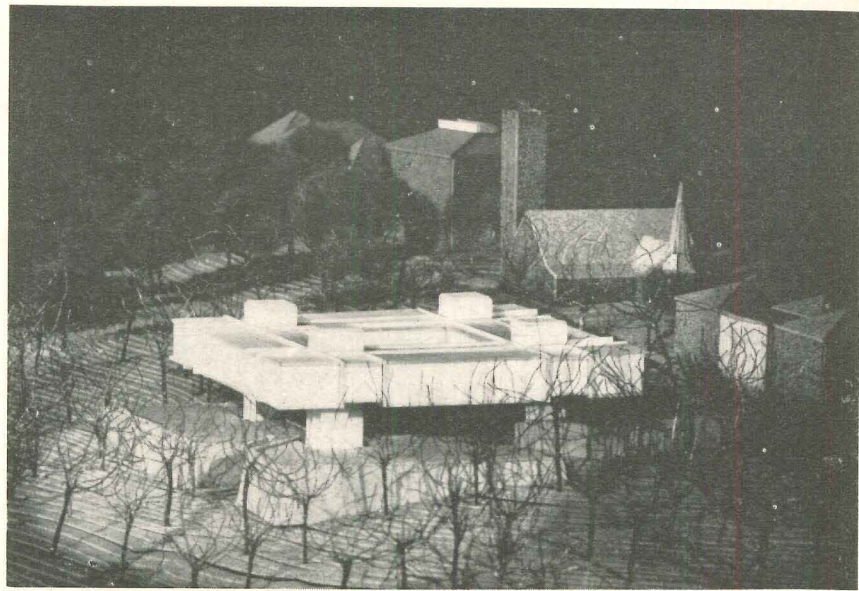
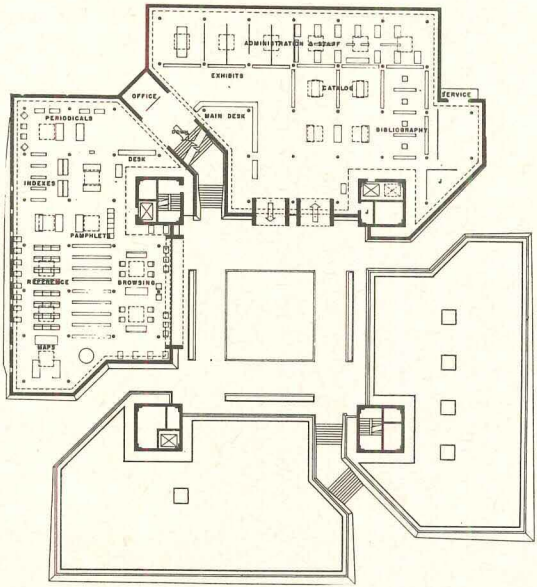
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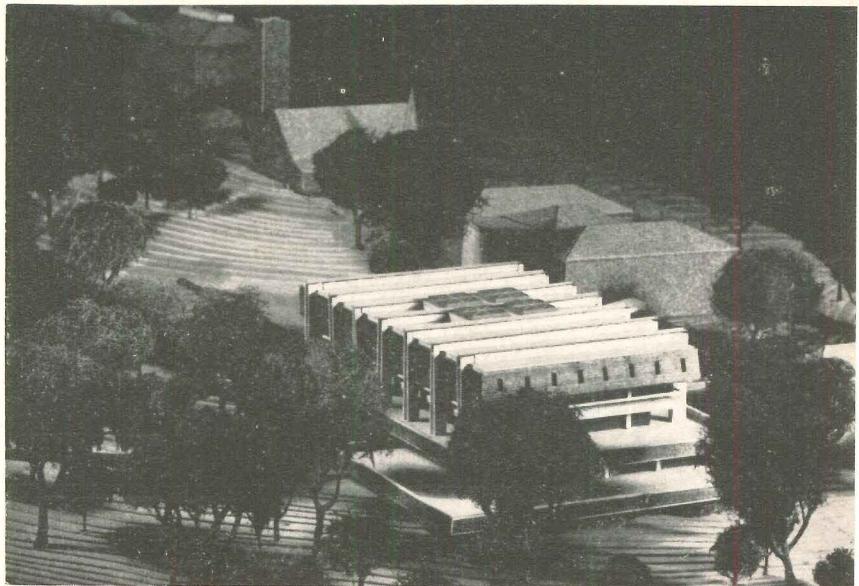
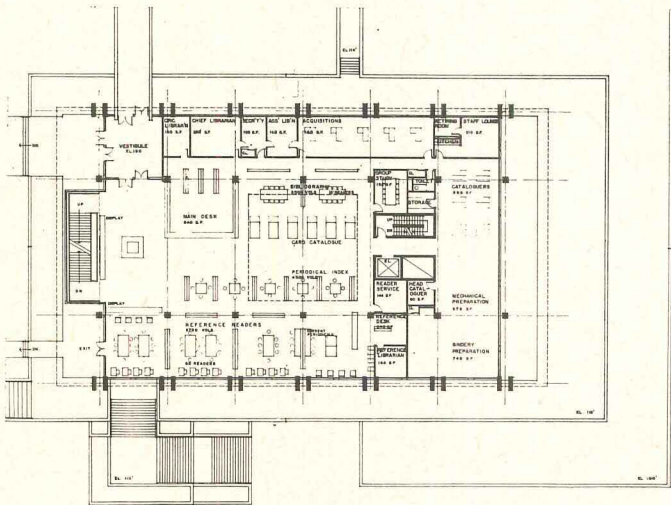




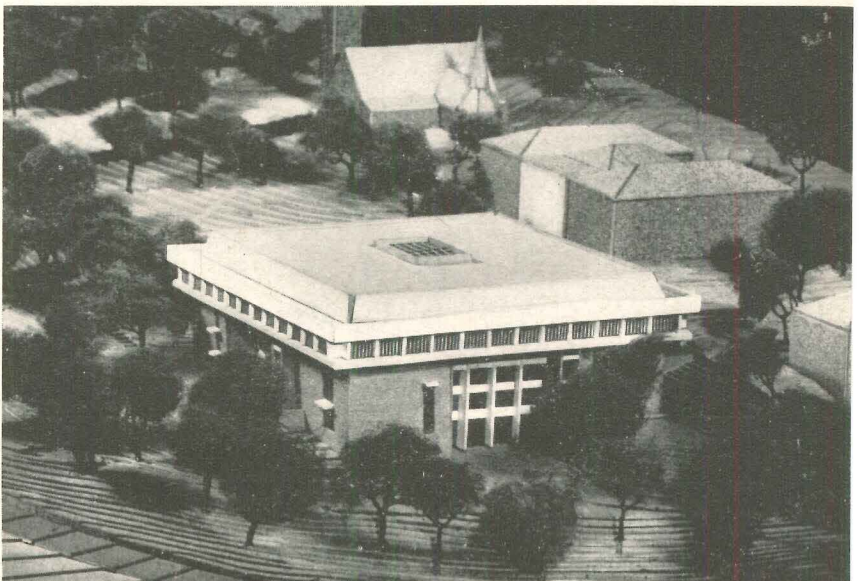
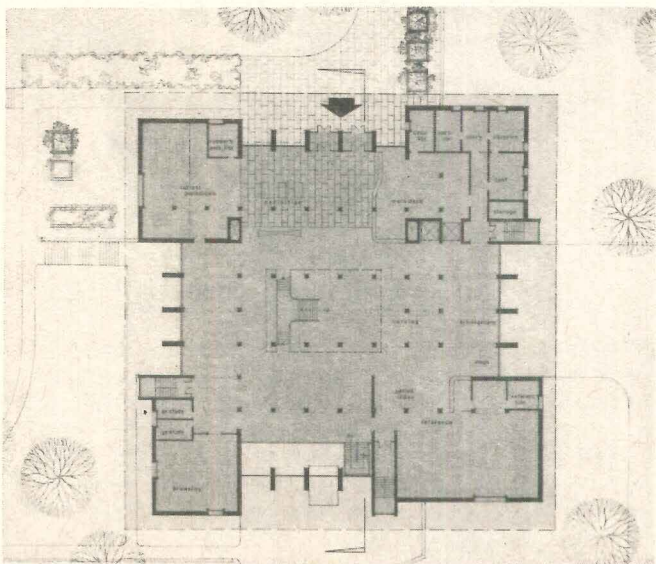




Entry by Shepley, Bulfinch, Richardson and Abbott



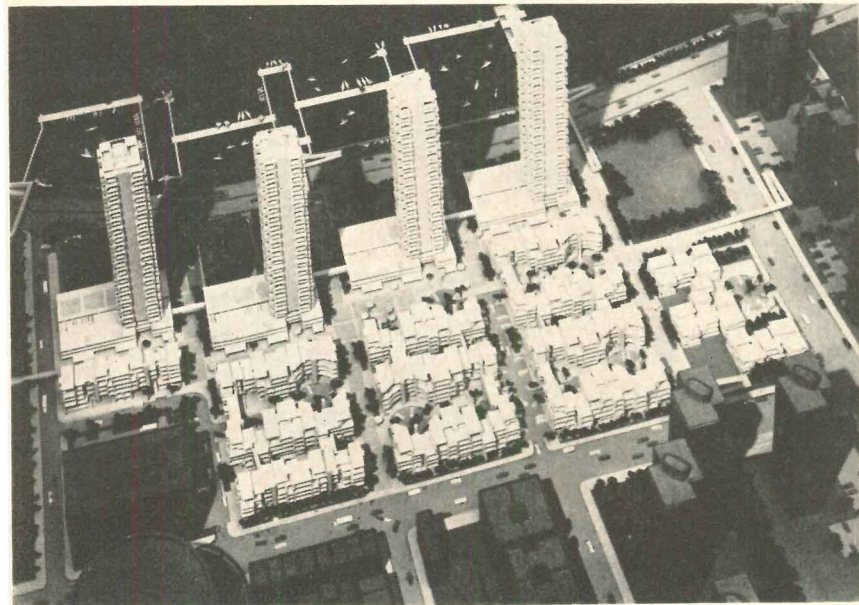
Entry by Perry, Shaw, Hepburn and Dean



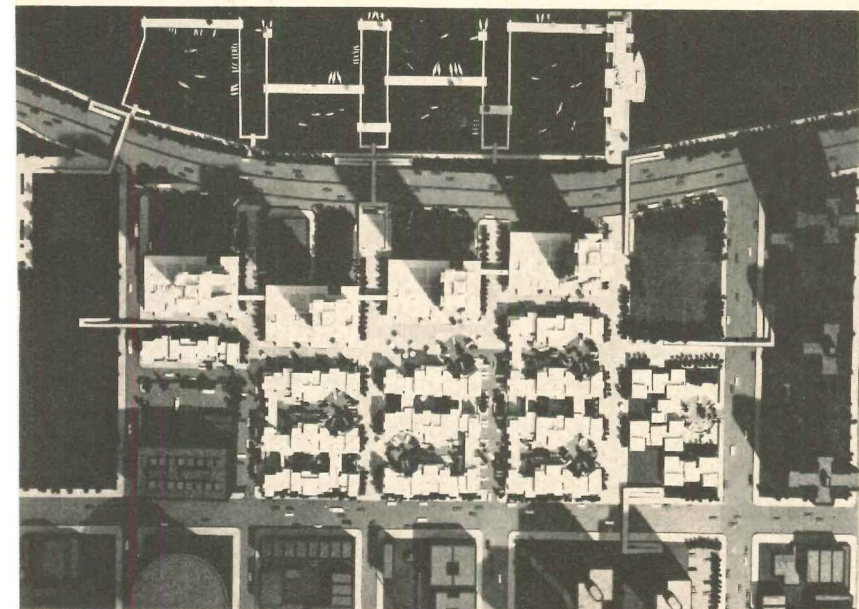
Entry by The Architects Collaborative



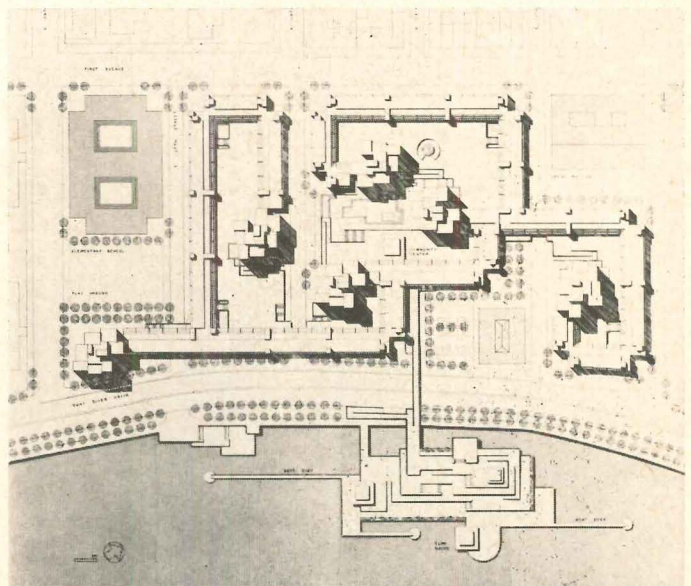
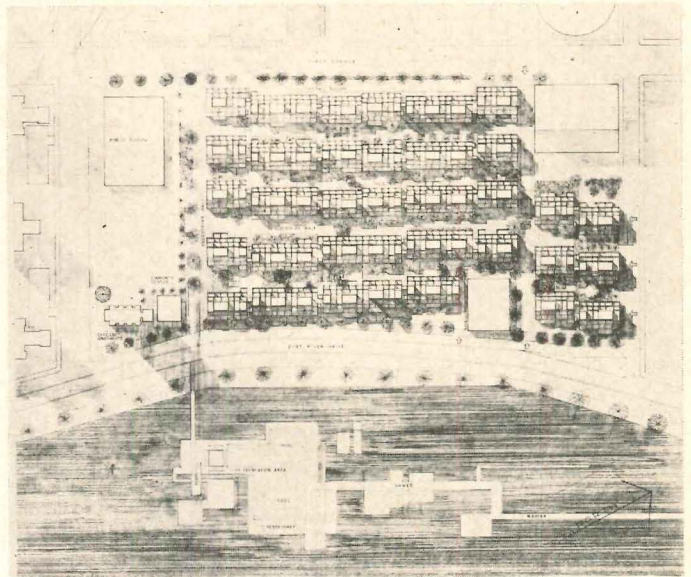
## Buildings in the News



**\$10,000 First National Prize:** Thomas H. Hodne, A.I.A., Kermit Crouch, Tokiaki Toyama, Vern Svedberg, James Solverson, James McBurney and Robert Einsweiler (Hodne Associates, Minneapolis). "... bulk of the area is covered with five- and six-story buildings which correspond in height and somewhat in feeling to the neighborhood from which they have grown. . . . There is no through traffic since the streets end up in cul-de-sacs; secondly, the streets have certain indentations for recreation and relaxation. This basic pattern is coupled with a lively treatment of the facades on the low height streets and culminates toward the river in four towers which give the district a kind of image that is one of pride without alienating the development from the texture of East Harlem itself. In recognizing one of the defects of tall buildings, the entry has created a common social area on every third floor for recreation and sunning of small children. The river development becomes a worthwhile resource for the entire community and not just this single development"



**\$5,000 Second National Prize:** Edvin Karl Stromstron and Ricardo Scofidio (Richard G. Stein, New York City) and Felix John Martorano (Shreve, Lamb & Harmon, New York City). "... a fresh and most radical approach . . . a departure from past New York City urban renewal programs. It accents private living, has a wide variety of dwelling units and a street life without automobiles. Parking is integrated into the structure, covered and yet not buried . . . the least like public housing, least formalistic and most susceptible to being multiplied as part of the ordinary street pattern and brain of the city"



**\$2,500 Third National Prize:** Hanford Yang and Amiel Vassilovski (Pederson & Tilney, Boston). "The long ramparts of low-rise housing tie together the pattern of high rise which is . . . successfully integrated into the pattern. The perimeter is lined with buildings which are about the same height as the adjoining streets and contain commercial elements beneath the dwelling units which is in the New York pattern. There is a good deal of interior open space for the community, parking is hidden and a large-scale job has been done on the river development"



# RUBEROID COMPETITION GIVES NEW YORK IDEAS FOR URBAN RENEWAL

The winning design in Ruberoid's fifth annual design competition may be used in the construction of the East River Urban Renewal Project on Manhattan's Upper East Side. The Housing and Redevelopment Board of the City of New York, which cooperated with Ruberoid in the formulation of the competition's program, has agreed to exert every effort to make the winning concept a reality.

The program for the competition called for middle-income housing to help give economic balance to the East Harlem area. The 16-acre site is bounded by East 106th Street, Franklin Delano Roosevelt Drive, East 111th Street and First Avenue. Suggested use for the waterfront was also part of the program. The competition drew 250 entries.

The seven-man jury was headed by Albert Mayer, F.A.I.A., New York, and included Milton Mollen, chairman of the Housing and Redevelopment Board of the city of New York; David A. Crane, director of land planning and design, Boston Redevelopment Authority; Dr. Herbert J. Gans, research associate professor of city planning, University of Pennsylvania; Lewis E. Kitchen, president of the Lewis Kitchen Realty Company, Kansas City; Sir Leslie Martin, professor of architecture, Cambridge University, London; Harry Weese, F.A.I.A., Chicago. B. Sumner Gruzen, F.A.I.A., New York, served as professional advisor.

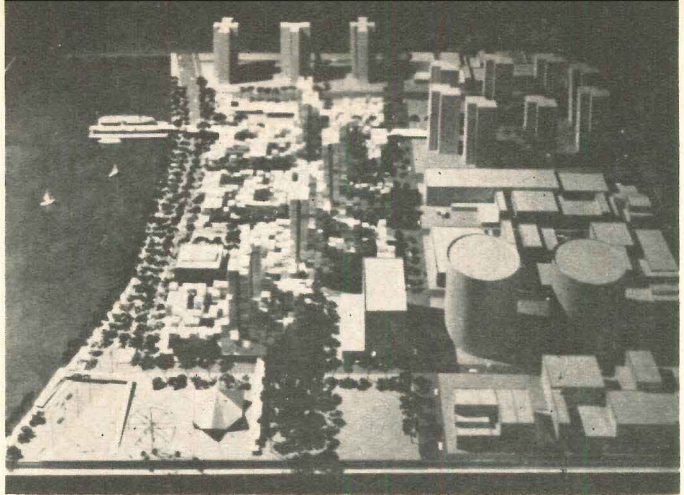
In discussing the results, Mr. Mollen said: "The prize-winning concepts all had a great deal of merit. I am hopeful we can . . . have [the first prize design] constructed. Aside from the top entry, there are other ideas in this competition which I hope we in New York will be able to experiment with . . . in other urban renewal projects."

Chairman Mayer commented, ". . . while we must always consider architectural form, this must be an outgrowth of people's needs, people's desires, . . . not only the people who live within the development but the people in the surrounding area."

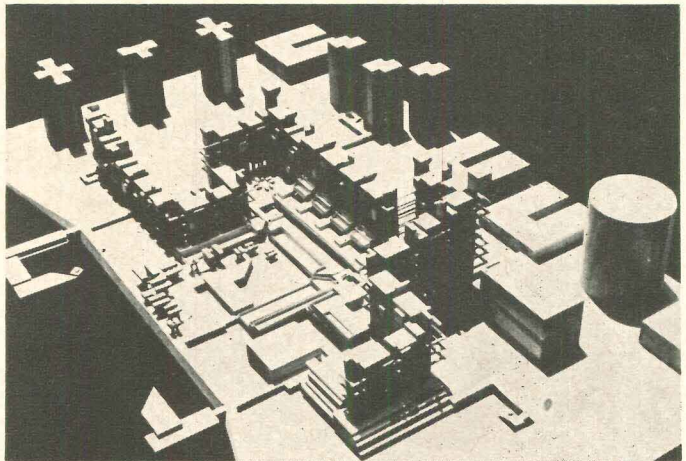
Winners of the six \$500 national merit awards are: Ena Marie Dubnoff, Richard Kenneth Fleming, Eugene Paul Flores, Ellis David Gelman and Lewis Anthony Greenberg of Dubnoff, Fleming, Flores, Gelman & Greenberg, Los Angeles; Paul R. Drag of William L. Pereira & Assoc., Los Angeles, and Robert E. Alexander, F.A.I.A. and Christopher R. Wojciechowski, both of Robert E. Alexander & Assoc., Los Angeles.

Also, Tai Soo Kim of Philip Johnson & Assoc., New York City, and John Dollard of Huntington, Arbee & Dollard, Hartford, Conn.; Robert W. Brantingham, Thomas J. Eyerman, Thomas O. Schnell and Robert N. Wandel of Ohio State University School of Architecture; Joseph J. Schiffer of Concord, Mass.; Thomas E. Selck, Miami University, and George C. Winterwood, associate professor of architecture, Miami University.

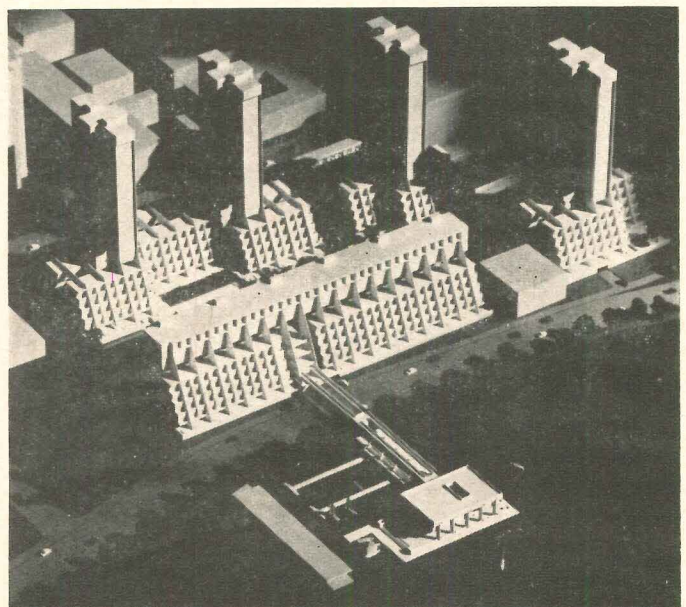
Winners of the four \$250 student merit awards are J. Stroud Watson Jr., University of Illinois; Peter R. Bromer, Rensselaer Polytechnic Institute; John David Duell and David S. Traub Jr., both of the University of Illinois; Iwao Onuma, University of Southern California.



**\$2,000 First Student Award:** Robert P. Holmes and Robert L. Wright (University of Illinois). "The important thing about this scheme is the proposed method of construction. After standardizing certain plan types of dwellings, prefabricated frame systems are produced to house these units, building into each frame as many units as desired"



**\$1,000 Second Student Prize:** Michael Wurmfeld (Princeton University). "One of the most carefully wrought . . . schemes. It treats with the entire perimeter of the area, welling it off, so to speak, allowing some penetration, making much more ambitious crossing of Franklin D. Roosevelt Drive, and effectively tying in the jetties or piers"



**\$500 Third Student Prize:** Philip Augustus Shive, Woodrow Wilson Jones Jr. and Gerrard Edmond Raymond (North Carolina State College). "An extremely daring concept with attempts to relate the project both to the scale of the surrounding city and to the drama of the drive on the waterfront. The presentation is crisp, complete and professional"

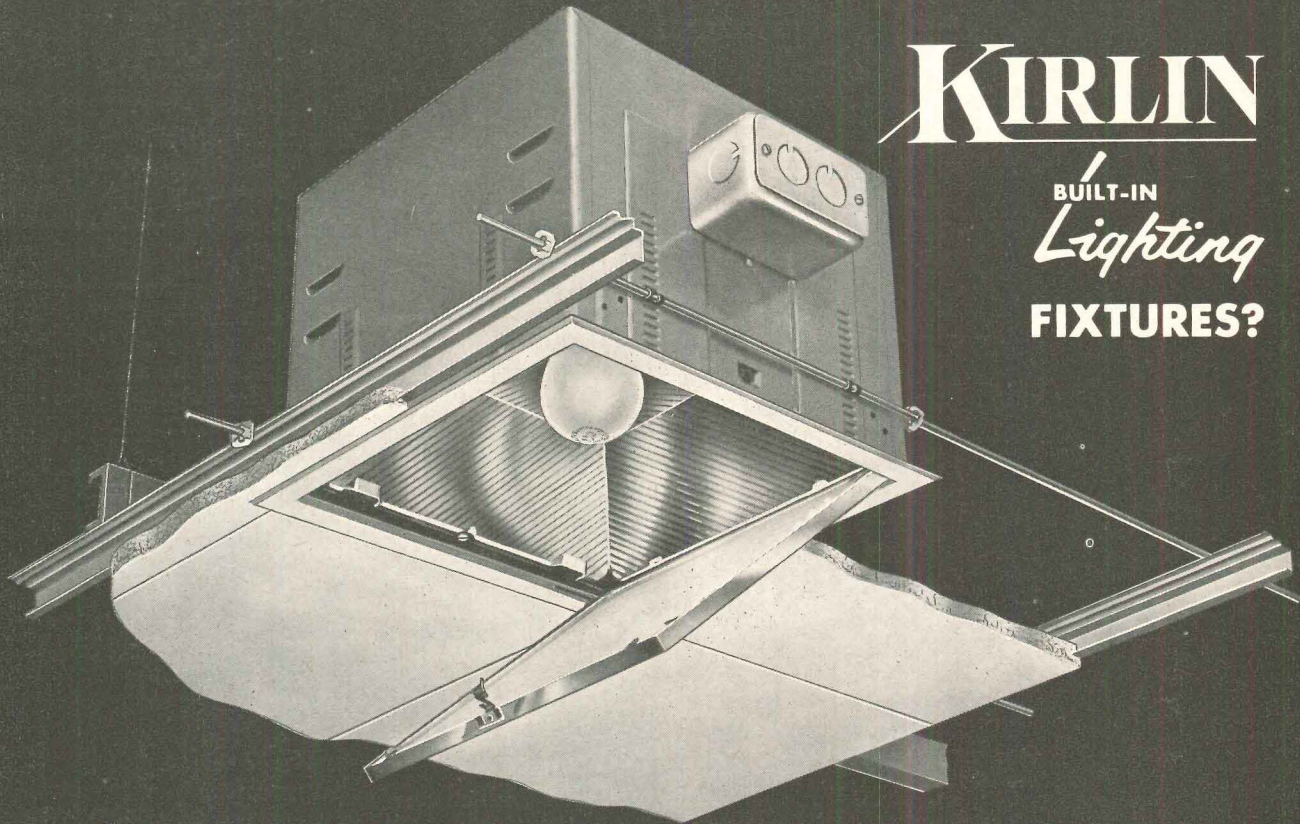


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*Lighting*

**FIXTURES?**



(This photo shows the new 1611VY-T incorporating all features described)

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- \* Think of the installation labor saved
- \* Study the maintenance savings over the years
- \* Judge the effect, in all areas, of the vertical lighting as well as horizontal lighting

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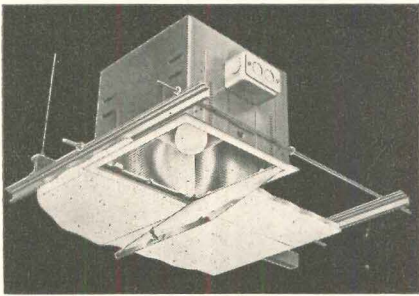
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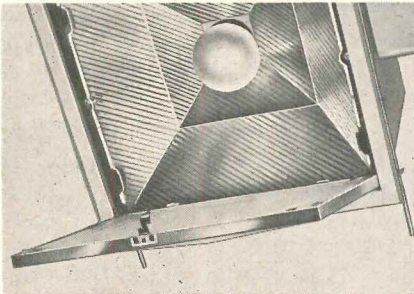
IS THERE "OR EQUAL" FOR

**KIRLIN** FIXTURES?

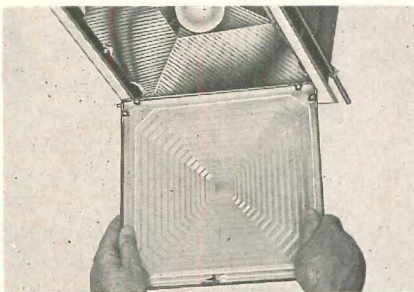
INSTALLATION COSTS ARE LESS!

Journeyman fixture hangers and Kirlin engineers have always worked together to make KIRLINS the easiest recessed fixture to install. (It was the original, you know). Improvements have been constant, and the latest is the new mounting system using push nuts instead of tape to hold the housing in place on the mounting rods pending plastering or installation of mechanical ceiling. These nuts hold the housing firmly, yet positioning on the mounting rods is made easier . . . Other recent changes to reduce installation costs: GlasSurfaced reflector now snaps securely in place and comes out readily, too; insulated outlet box cover is spring operated; etc., etc.

MAINTENANCE COSTS ARE LOWER!



This new touch latch works every time. Holds door permanently aligned, yet only a touch and the door swings down for easier cleaning and relamping. When closing, the latch locks without maneuvering. This makes No. 1611VY-T especially adapted to pole relamping. Touch latch also available on No. 1211 and No. 1511 series.



New removable door design permits entire door with lens to be removed easily for cleaning; but it can not accidentally fall out of fixture. This latter is very important with pole relamping, as is the accessibility of the vertically mounted lamp in No. 1611VY-T. (Removable door is standard on most models).

You also may want to specify  
**KIRLIN** Exits when all  
features are considered



## TRAVELING SHOWS: SMITHSONIAN OFFERS TWO MORE

The Smithsonian Institution has announced two additions to its list of available circulating exhibitions: "Historic Annapolis" and "Twelve Churches."

The first shows existing buildings in Annapolis—houses, government buildings and churches—in photographs by Marion Warren. The historical and architectural development of Annapolis is also traced in old newspaper clippings, maps and prints. The exhibition was organized by Historical Annapolis, and is scheduled to be seen October 17-November 10 in Washington, D.C., at the American Institute of Architects Headquarters; January 4-26, 1964, in Atlanta, Ga.; and April 18-May 10, 1964, in Hanover, N.H.

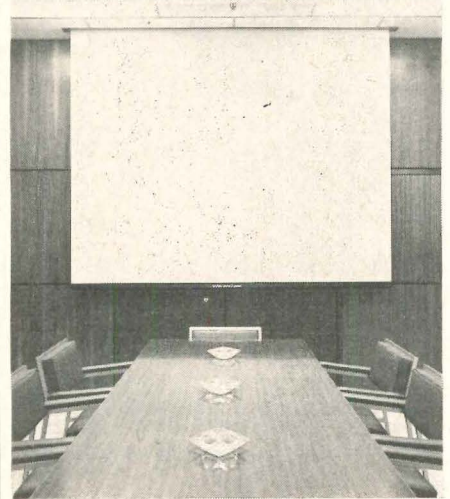
The exhibition "Twelve Churches" includes photographs of contemporary church architecture by such architects as Pietro Belluschi and Charles Warren Callister. Sponsored and prepared by the California Redwood Association, all of the churches are built at least partly of wood. The show will be seen at the University of Manitoba, Winnipeg, November 6-27.

Further information on these and other of the Smithsonian's circulating exhibitions is available from Mrs. John A. Pope, Chief, Traveling Exhibition Service, Smithsonian Institution, Washington 25, D.C.

The Museum of Modern Art announces that its traveling exhibition, "Stairs," will be shown at the Museum in New York. The opening is October 8. This interruption in the exhibition's travels does not indicate its retirement; it will continue to circulate at the end of its New York engagement.

Other circulating exhibition available from the Museum in the area of architecture and city planning include "Antoni Gaudi," "Roads," "The Twentieth-Century House," "Visionary Architecture," and "What is Modern Architecture?" Inquiries can be addressed to Department of Circulating Exhibitions, The Museum of Modern Art, 11 West 53rd Street, New York 19, N.Y.

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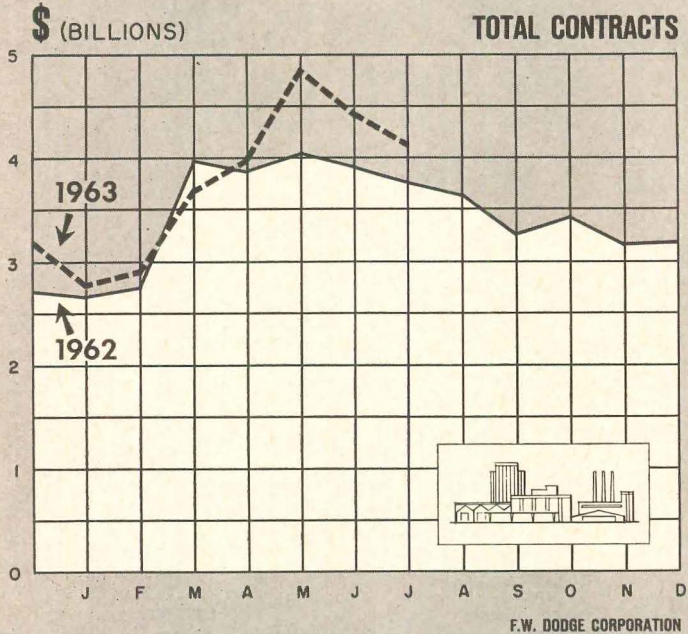
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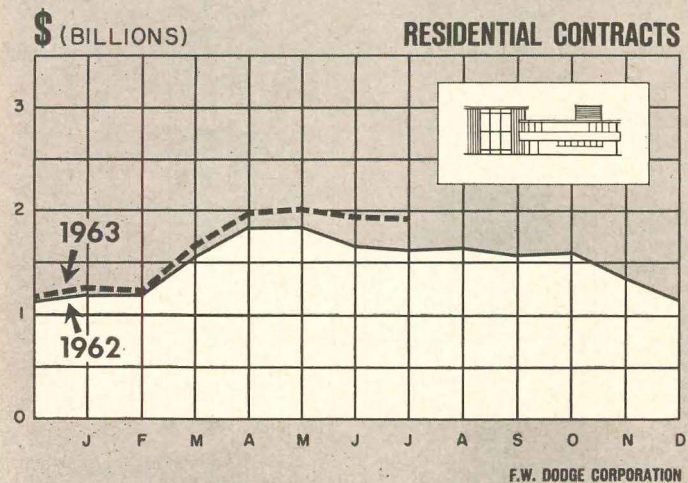
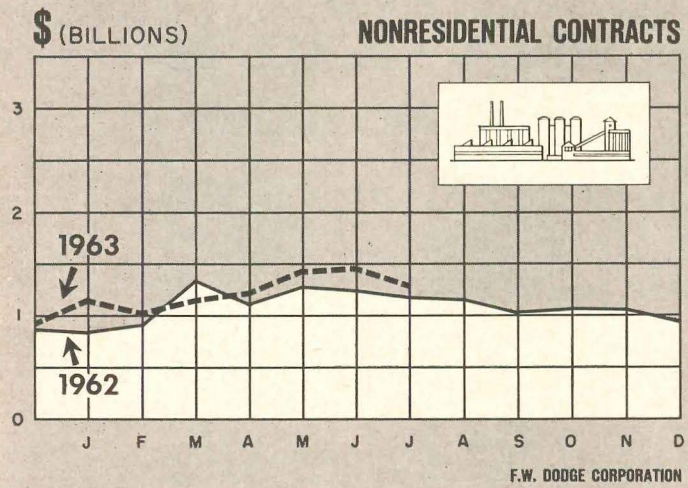
For more data, circle 7 on Inquiry Card



## TEAM TEACHING AND SCHOOL CONSTRUCTION



Total contracts include residential, nonresidential and non-building contracts



The concept of the self-contained classroom has been around a long while. Although challenged in the past, it has remained so dominant that most school buildings before World War II amounted to piling up rows of classrooms separated by a hall—each room accommodating, say, 30 pupils. Since the war, we have built many schools on one floor; but the self-contained classroom was still inviolate—we simply stopped piling them up.

In recent years, the traditional way of designing schools has been facing what appears to be a growing challenge. Team teaching, a new teaching method which requires substantial changes in the way schools are built, is causing a lot of excitement in educational circles and many school systems are experimenting with this new method. More important to school construction, the number of team teaching schools is growing. The National Education Association reported that five per cent of all the secondary schools in the U.S. were using some type of team teaching during the 1955-56 school year. By 1960-61, this figure had more than doubled to 12 per cent. According to the survey responses, over 30 per cent of the schools indicated that they would use team teaching by 1965-66.

Before concluding that this rapid growth shows that this new method of instruction is sweeping the country, the data must be tempered. What schools call "team teaching" runs the gamut from buildings completely designed for this technique and faculties organized as teams, to conventional schools that put up one folding partition and among whose faculty a couple of teachers cooperate in teaching a class. Because team teaching is fashionable, and school administrators feel that adopting it gives status, there are undoubtedly some schools at the "one folding partition" end of the gamut that are really conventional schools. But, even though the percentages cited above may be exaggerated somewhat (how much it is impossible to say), there's little question that the number of team teaching schools is growing.

Adaptability is the key word when building a team teaching school. The school's space must be able to accommodate student groups ranging from one to two to over 100; and, because group sizes change constantly and quickly, nothing in the plan can hinder movement.

It would be expected that the design changes needed to meet these requirements (movable partitions, some motor-driven, for example) would force up construction costs. The evidence, sketchy and tricky as it is, indicates otherwise. In "High Schools 1962," Educational Facilities Laboratories, Inc., computed the average cost per square foot for 11 team teaching high schools built within recent years and located all over the U.S. The results: under \$14 per square foot—less than the over-all average for all schools built during those years.

Another measure is construction costs per pupil. A study found that it cost an average of more than \$2,700 per pupil to build schools from 1958-61 in Massachusetts. Wayland Senior High School, which is a team teaching school in an affluent Boston suburb, cost less than \$1,900 per pupil. Admittedly this is only one case, but it is corroborated by similar studies in other parts of the U.S. And, surely, the evidence indicates that it doesn't cost more to build a team teaching school. The reason why is that the team teaching concept practically forces architects to design schools that utilize space far more efficiently.

Henry C. F. Arnold, Economist  
F. W. Dodge Corporation  
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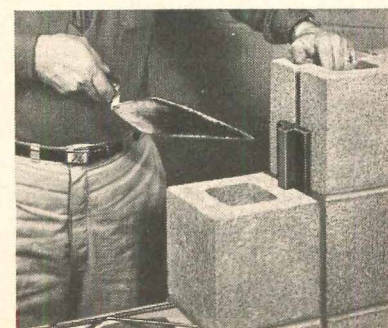
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For more data, circle 8 on Inquiry Card





# Building Construction Costs

By Myron L. Matthews

Manager-Editor, Dow Building Cost Calculator,  
an F. W. Dodge service

The information presented here permits quick approximations of building construction costs in 21 leading cities and their suburban areas (within a 25-mile radius). The tables and charts can be used independently, or in combination as a system of complementary cost indicators. Information is included on past and present costs, and future cost can be projected by analysis of cost trends.

A. CURRENT BUILDING COST INDEXES—SEPTEMBER 1963—TABLE 1  
1941 Average for each city = 100.0

Metropolitan Area	Cost Differentials	Current Dow Index		Per Cent Change Year Ago Res. & Nonres.
		Residential	Nonresidential	
<b>U.S. AVERAGE—21 Cities</b>	8.5	258.5	275.4	+1.61
Atlanta	7.1	290.3	308.0	+1.97
Baltimore	8.0	262.0	278.7	+0.44
Birmingham	7.4	238.4	256.3	+1.16
Boston	8.4	231.8	245.4	+0.74
Chicago	8.8	287.0	301.9	+1.95
Cincinnati	8.8	249.5	265.2	+0.96
Cleveland	9.3	261.4	277.8	+1.97
Dallas	7.8	247.4	255.5	+2.55
Denver	8.3	263.0	279.6	+0.21
Detroit	8.9	259.0	271.9	+1.01
Kansas City	8.3	233.5	247.1	+1.37
Los Angeles	8.4	262.5	287.2	+1.59
Miami	8.4	258.1	271.0	+2.80
Minneapolis	8.9	259.9	276.3	+1.56
New Orleans	7.9	236.7	250.8	+0.85
New York	10.0	268.4	288.7	+2.32
Philadelphia	8.7	256.8	269.6	+0.45
Pittsburgh	9.1	244.6	260.0	+2.02
St. Louis	8.9	251.9	266.9	+3.01
San Francisco	8.5	328.5	359.4	+2.47
Seattle	8.5	237.7	265.6	+2.21

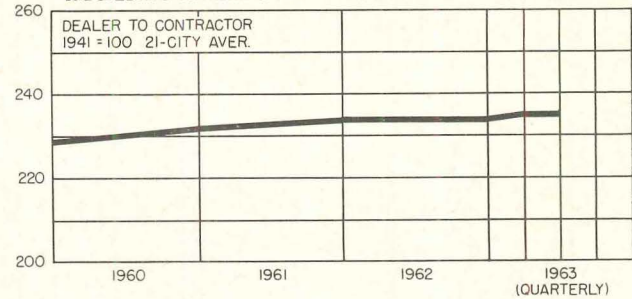
B. HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL BUILDING TYPES, 21 CITIES  
1941 average for each city = 100.0

Metropolitan Area	1947	1952	1957	1958	1959	1960	1961	1962 (Quarterly)				1963 (Quarterly)			
								1st	2nd	3rd	4th	1st	2nd	3rd	4th
								<b>U.S. AVERAGE 21 Cities</b>	185.9	213.5	244.1	248.9	255.0	259.2	264.6
Atlanta	190.0	223.5	269.6	277.7	283.3	289.0	294.7	296.5	297.6	298.2	300.6	302.0	303.0		
Baltimore	181.0	213.3	249.4	251.9	264.5	272.6	269.9	270.5	272.6	272.4	271.9	272.3	272.9		
Birmingham	175.0	208.1	228.6	233.2	233.2	240.2	249.9	249.9	249.9	250.6	250.6	251.3	252.0		
Boston	187.0	199.0	224.0	230.5	230.5	232.8	237.5	238.5	239.9	240.4	240.4	240.4	241.2		
Chicago	182.0	231.2	267.8	273.2	278.6	284.2	289.9	289.9	289.9	292.6	295.8	296.4	296.4		
Cincinnati	178.0	207.7	245.1	250.0	250.0	255.0	257.6	257.6	257.6	260.0	260.0	260.0	260.7		
Cleveland	173.0	220.7	258.0	257.9	260.5	263.1	265.7	265.7	268.4	268.4	271.7	272.3	272.8		
Dallas	202.0	221.9	228.4	230.5	237.5	239.9	244.7	244.7	244.7	247.7	250.8	251.5	252.2		
Denver	187.0	211.8	245.6	252.8	257.9	257.9	270.9	273.1	276.3	275.3	274.8	275.0	275.4		
Detroit	168.0	197.8	237.4	239.8	249.4	259.5	264.7	264.7	264.7	267.1	267.1	267.1	267.9		
Kansas City	172.0	213.3	230.5	235.0	239.6	237.1	237.1	238.5	239.5	240.8	241.8	242.3	242.9		
Los Angeles	180.0	210.3	248.4	253.4	263.5	263.6	274.3	274.3	274.3	278.0	278.6	279.1	279.7		
Miami	193.0	199.4	234.6	239.3	249.0	256.5	259.1	259.1	259.1	260.8	262.4	262.4	266.7		
Minneapolis	176.0	213.5	235.6	249.9	254.9	260.0	267.9	267.9	267.9	269.5	270.8	271.4	272.1		
New Orleans	180.0	207.1	232.8	235.1	237.5	242.3	244.7	244.7	244.7	245.5	245.5	246.5	246.5		
New York	181.0	207.4	240.4	247.6	260.2	265.4	270.8	273.5	278.5	276.7	280.4	280.9	280.9		
Philadelphia	209.0	222.3	255.0	257.6	262.8	262.8	265.4	265.4	265.4	265.0	265.0	265.6	265.6		
Pittsburgh	191.0	204.0	234.1	236.4	241.1	243.5	250.9	250.9	250.9	252.1	253.5	255.0	256.1		
St. Louis	191.0	213.1	237.4	239.7	246.9	251.9	256.9	254.0	254.3	256.2	257.3	260.1	262.4		
San Francisco	243.0	266.4	302.5	308.6	321.1	327.5	337.4	339.1	340.8	344.5	348.7	350.1	350.1		
Seattle	175.0	191.8	221.4	225.8	232.7	237.4	247.0	249.0	251.9	253.7	255.3	256.5	257.8		

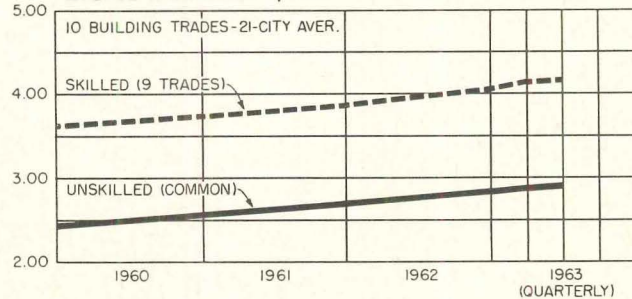
HOW TO USE TABLES AND CHARTS: Building costs may be directly compared to costs in the 1941 base year in tables A and B: an index of 256.3 for a given city for a certain period means that costs in that city for that period are 2.563 times 1941 costs, an increase of 156.3% over 1941 costs.

TABLE A. Differences in costs between two cities may be compared by dividing the cost differential figure of one city by that of a second; if the cost differential of one city (10.0) divided by that of a second (8.0) equals 125%, then costs in first city are 25% higher than costs in second. Also, costs in second city are 80% of those in first (8.0 ÷ 10.0 = 80%) or 20% lower in the second city

1. BUILDING MATERIAL PRICE INDEXES



2. BASE WAGE RATES \$/HR.



3. MONEY RATE & BOND YIELDS %

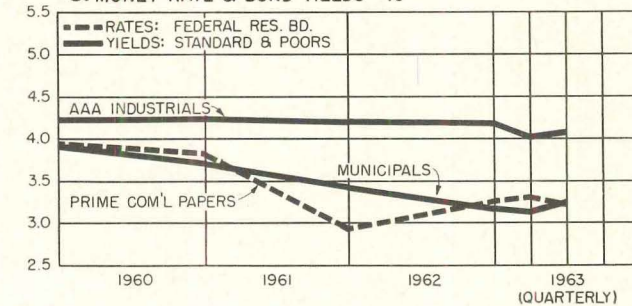
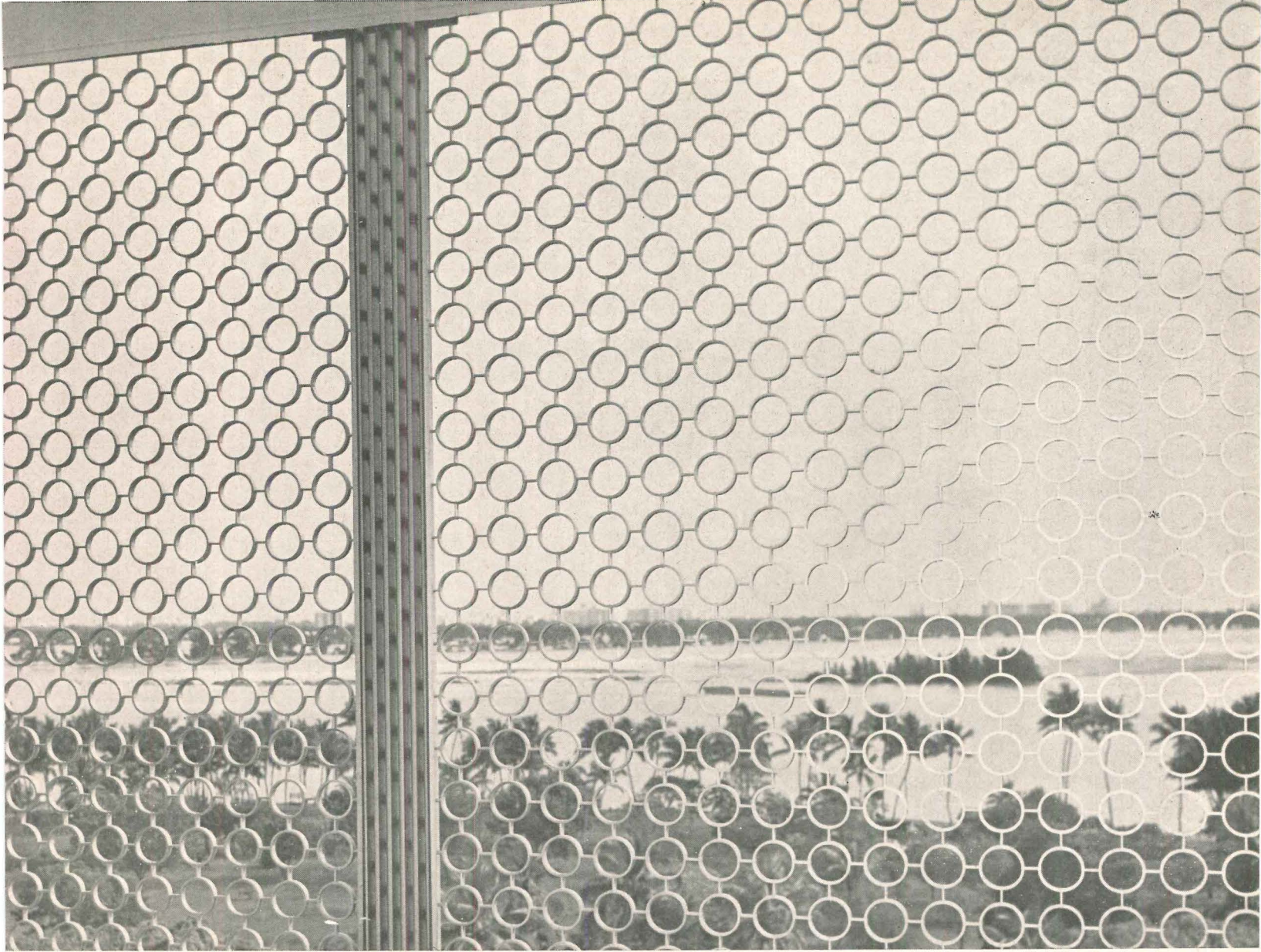


TABLE B. Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other: if index for a city for one period (200.0) divided by index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than those of the other. Also, second period costs are 75% of those of the other date (150.0 ÷ 200.0 = 75%) or 25% lower in the second period. CHART 1. Building materials indexes reflect prices paid by builders for quantity purchases delivered at construction sites. CHART 2. The \$1.20 per hour gap between skilled and unskilled labor has remained fairly constant. CHART 3. Barometric business indicators that reflect variations in the state of the money market





Architect: Rader and Associates

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You are looking through Borden's Deca-Ring style Decor Panels out over Biscayne Bay, Miami, Florida. This is one of the views you would have if you parked your car in the multi-level parking facility in downtown Miami, where Borden Deca-Ring provides safety, ventilation and a touch of luxury with efficient use of materials.

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Sturdy lightweight Decor Panels in their many types and variations are finding widespread use as facades for buildings, grilles, dividers and like applications. These practical aluminum panels provide safety, access for light and air, and enjoy a long maintenance-free life.

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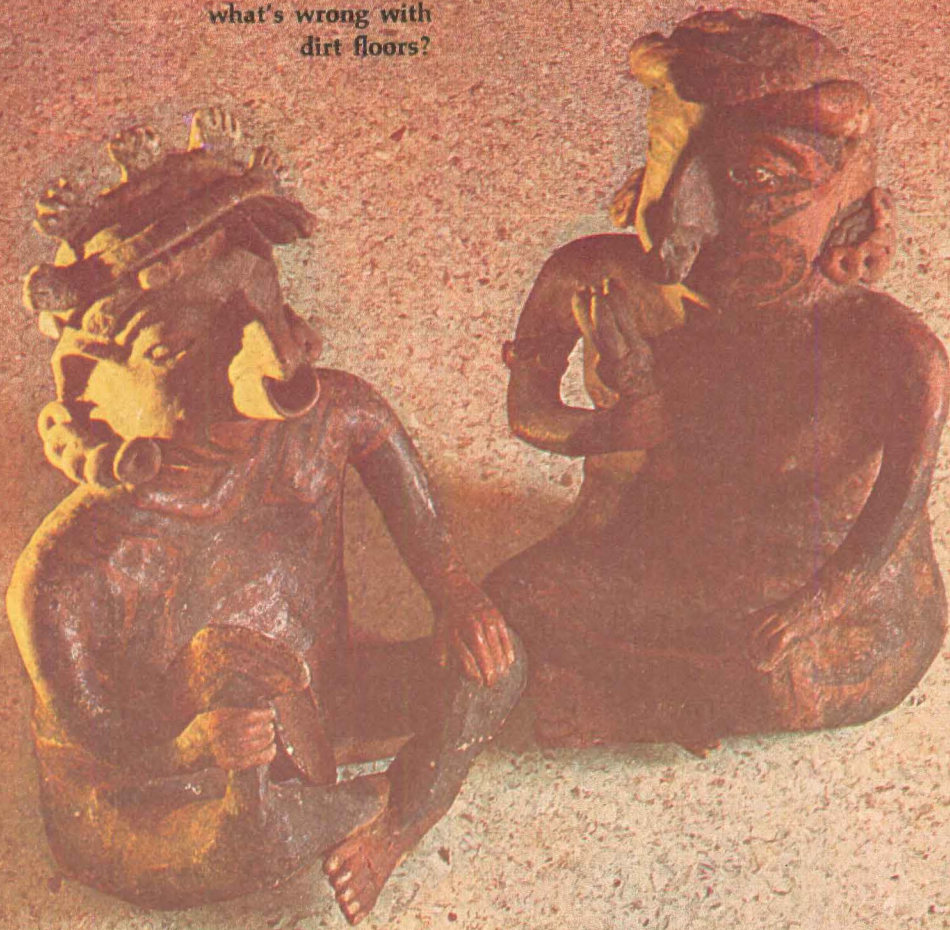
hmm . . . I guess texture  
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and scratch marks.

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man said you can put it down  
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—Drawn for the RECORD by Alan Dunn

"I never heard you rave about it *before* you heard it was going to be modernized!"

## A.I.A. ANNOUNCES THEME OF 1964 CONVENTION: "THE CITY—VISIBLE AND INVISIBLE"

The professional program of the 1964 national convention of the American Institute of Architects will revolve around the theme "The City—Visible and Invisible." The selection of the theme was announced recently by J. Roy Carroll Jr., F.A.I.A., president of the Institute.

The theme will be covered in three major sessions of the convention. The first will concern itself with "The Invisible City," including urban psychology, sociology, law, history, culture, family and "spiritual elements." The second session, "The City and the Body Politic" will discuss the areas in which government, at all levels, impinges on the life of the city: planning, zoning, renewal, pollution control, transportation, taxation and economics. The final session, "The Visible City," will concern itself with "the visual fulfillment of the physical and natural assets of the community; the realm of the architect."

In making his announcement, Mr. Carroll said, "At this time in our country's history, when the public is showing an increased awareness of

its urban surroundings and an increased desire to improve them, it is essential that the architectural profession understand the forces that are shaping our communities. The professional program will be directed toward this aim."

The convention will be held at the Chase-Park Plaza Hotel in St. Louis June 14-18, 1964. Chairman of the host chapter committee is Joseph D. Murphy, F.A.I.A.

This will be the third A.I.A. convention to be held in St. Louis; earlier ones were held there in 1895 and 1928. It will also be the first major convention to be held in St. Louis during her bicentennial celebration.

One of the highpoints of the convention will be the dedication of the Jefferson Memorial Arch, designed by the late Eero Saarinen. The dedication has been scheduled despite the expectation that the arch will not be completed.

### DuMoulin Appointed

The Institute has appointed Rockwell K. DuMoulin program director for the Pan American Congress

of Architects of 1965. The Congress will be the first to be held in this country, and will meet simultaneously with the A.I.A. at its national convention in Washington, D.C.

Mr. DuMoulin's background, besides practice and teaching, includes representing the United States at the Pan American Congresses of 1950 and 1952. He has also served as chief architect for a building program sponsored by the Bolivian and U.S. governments, as a housing expert and city planner for the United Nations Relief and Rehabilitation Administration, and with the State Department's Foreign Buildings Operation and the Foreign Operations Administration.

Mrs. Cloethiel Woodward Smith, F.A.I.A., is chairman of the A.I.A. host chapter committee for the 1965 convention.

### Future Conventions

The Institute has scheduled national conventions through 1970 in these cities: 1966—Denver; 1967—New York City; 1968—Portland, Ore.; 1969—Chicago; and 1970—Detroit.



## FALLINGWATER SAVED BEFORE IT IS IMPERILED: KAUFMANN MAKES GIFT OF HOUSE AT BEAR RUN

Thanks to Edgar Kaufmann Jr., we shall not hear the sad slogan, "Save Fallingwater." The house has been given to the Western Pennsylvania Conservancy, a non-profit organization dedicated to the preservation of natural beauty and of historic landmarks.

Built near Bear Run, Pennsylvania, in 1936 for Mr. Kaufmann's parents, the house is one of Frank Lloyd Wright's best known and most admired works. It shared first place (with the Robie house) among houses in the RECORD's Significant Building Series (February 1957), a

list compiled by 50 architects and scholars.

The *sine qua non* of the house is its superb site on the lip of a waterfall. (The name Fallingwater was given to it by the architect.) In order that the sympathetic relation of house to site will not be lost, Mr. Kaufmann has also given the Conservancy 500 acres of land and gardens surrounding the building.

The Edgar J. Kaufmann Charitable Fund has given an endowment fund of \$500,000 for the maintenance of the house, and intends to grant \$30,000 a year for a period of five years.

For its part, the Conservancy has agreed to use the property only for charitable, scientific, literary and educational purposes. It is to keep the house as a "recreational and cultural center to stimulate and encourage man in his search for the beautiful and the lovely in nature, and in architecture, music, painting and the arts."

Although the house is now closed, it will eventually be open to the public. The property will be called "The Kaufmann Conservation on Bear Run, a Memorial to Edgar J. and Liliane S. Kaufmann."

## N.S.F. NAMES HOROWITZ AS STAFF ARCHITECT

The National Science Foundation has appointed Harold Horowitz, A.I.A., Supervisory Architect of its new Architectural Staff.

The Foundation has established the staff essentially for the evaluation of proposals coming to it for grants for building scientific facilities. In fiscal 1963, the Foundation's Office of Institutional Programs

made 142 grants to colleges and universities for the construction and renovation of science facilities. The grants totalled \$29 million.

The staff will also advise colleges and universities asking for information about the design of science facilities.

Mr. Horowitz comes to the Foundation from the Building Research

Institute, where he served as Technical Director. He has also served as Research Architect with the Southwest Research Institute; as Assistant to Director of Research with Outcalt, Guenther and Associates, Architects and Engineers; and as Research Associate with the Albert Farwell Bemis Foundation at Massachusetts Institute of Technology.

## URA AND FHA ANNOUNCE CHANGE IN PROCEDURE FOR DETERMINING LAND DISPOSITION PRICES

At least two pitfalls facing the private urban redeveloper—inadvertently bidding beyond the price which the Federal Housing Administration will guarantee for mortgage purposes, or below the price which the Housing and Home Finance Agency sets as a minimum—have been eliminated. The Urban Renewal Administration and FHA have jointly devised a new procedure which in effect gives both the local redevelopment agency and redeveloper an earlier disposition price than they have been

able to obtain up until this time.

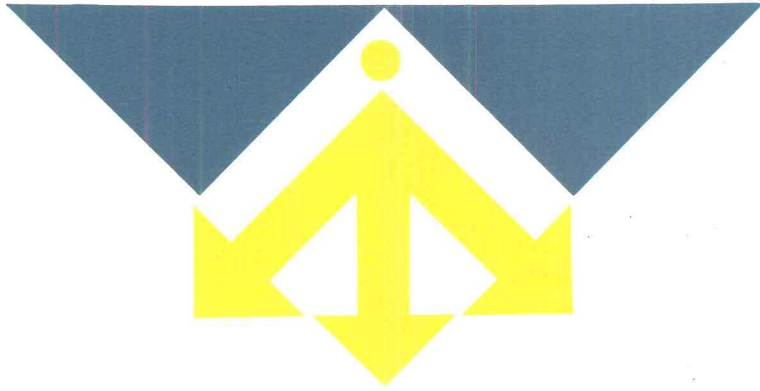
Under the new procedure, the local public agency will get two independent appraisals of land value before offering residential land. After checking with the FHA Insuring Office on questions of mortgage insurance, the local agency will determine the land price and request concurrence from the HHFA Regional Office. HHFA will then review the disposition price with FHA, and the local agency will be furnished with a price representing the minimum

acceptable to HHFA and the maximum acceptable to FHA for mortgage insurance purposes.

This figure will in turn be furnished to prospective redevelopers as the minimum price to be considered by the local agency. Redevelopers may of course submit a higher bid, and the local agency may accept it. But the redeveloper is in this event aware before he bids that he must provide equity for the difference between his bid and the mortgage which FHA will insure.



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ARMSTRONG LUMINAIRE CEILING SYSTEM

## ***Room-wide illumination, cleanly integrated with a modern, 'tented' design***

***This system gives 10% more light,  
avoids gloom and glare, simplifies  
specification and installation.***

This is a completely new lighting-ceiling system designed and developed by Armstrong. It integrates lighting with air distribution and sound control in a single, modern ceiling assembly. Instead of different components competing for limited space in the ceiling, this unified system coordinates their functions, eliminating much of the complexity and clutter of the ceiling. With this coordination, their performance improves: lighting is more uniform; air distribution is more efficient; the sound-absorbing area increases.

### **Better lighting**

The system provides excellent illumination: uniform, comfortable, complete. Each module can take one, two or three tubes, giving lighting levels from fifty to a hundred and seventy foot-candles in a typical room. The angled ceiling panels and vertical end panels give each lighting fixture 22 sq. ft. of reflective surface—more than twice that of a typical recessed troffer. This configuration also directs all light downward. The Armstrong Luminaire Ceiling System delivers at least 10% more light to the work plane than most commercial fixtures.

### **Uniform, shadow-free**

This illumination is also more uniform than lighting from a conventional system. Every module contains a lamp, so light from adjacent modules overlaps, producing room-wide, shadow-free illumination. And because the lamp is located high inside the unit, the triangular end panels and angled side panels shield it from the normal line of sight. The room is full of light, yet there is no direct glare.

Illumination by the Armstrong System meets the new lighting levels recommended by the Illuminating Engineering Society for offices, schools, factories, stores and similar buildings. The system considerably simplifies both specification and installation. One source supplies all materials; one grid supports the ceiling and the lights.



Renderings by Gordon Cullen.



# **Armstrong Luminaire Ceiling System**

How it provides for

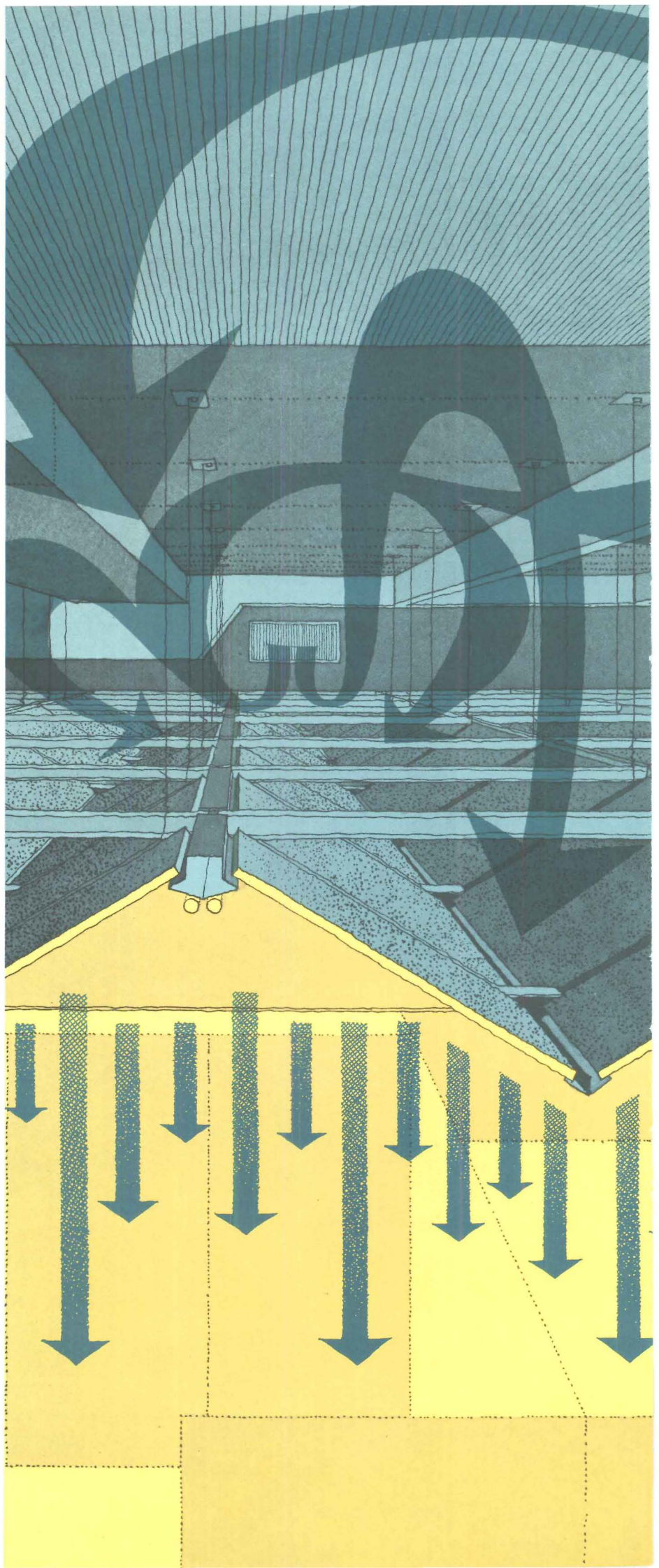
- 1. Air distribution**
- 2. Sound absorption**
- 3. Less maintenance**
- 4. Decorative finish**
- 5. Movable partitions**

**1. Room-wide air distribution totally integrated with lighting.** The Armstrong Luminaire Ceiling System combines smoothly with the Ventilating Ceiling System. There is no loss of efficiency: lighting and air distribution complement each other. In fact, because the Luminaire Ceiling delivers more light than a conventional system, it can provide the same lighting level with fewer lamps, thereby reducing the heat load.

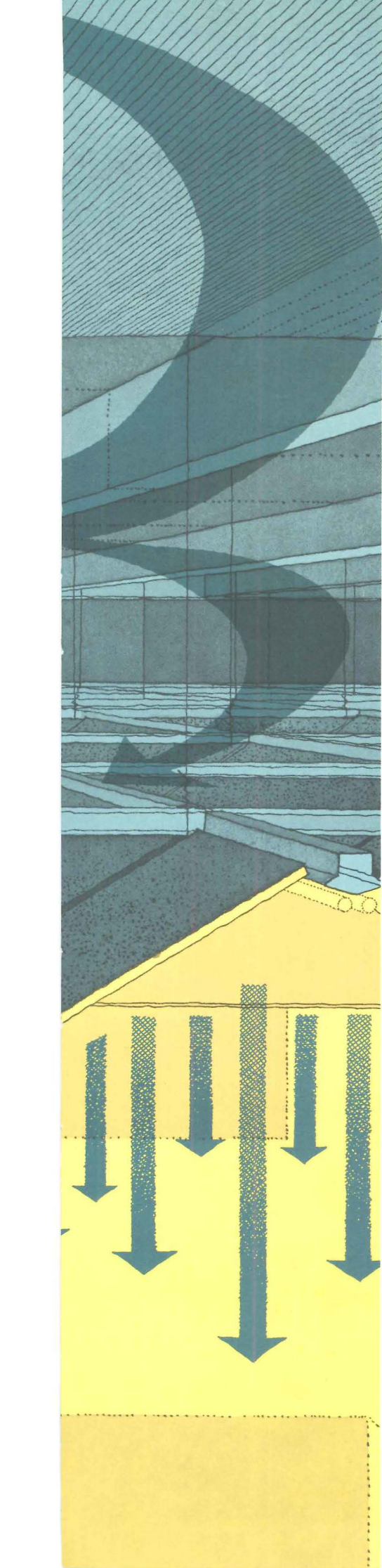
The Ventilating Ceiling works in its usual way: a stub duct fills the sealed plenum with conditioned air; this air is forced, under low pressure, down through thousands of openings in the ceiling panels, ventilating and heating or cooling every inch of space below.

Armstrong's exclusive Plenum Engineering Procedures, expanded to cover the Luminaire System, insure that air distribution is uniform and complete. And because the ceiling itself distributes air, all diffusers and most supply ducts are eliminated. This commonly saves 30¢ per sq. ft.

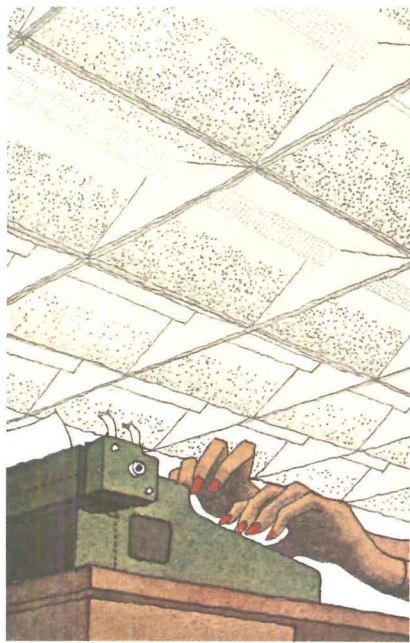
The open design prevents heat build-up: all fluorescent tubes are constantly exposed to the conditioned air in the room. This keeps their temperature close to the optimum, at which they emit most light, hold the correct color and last longest.





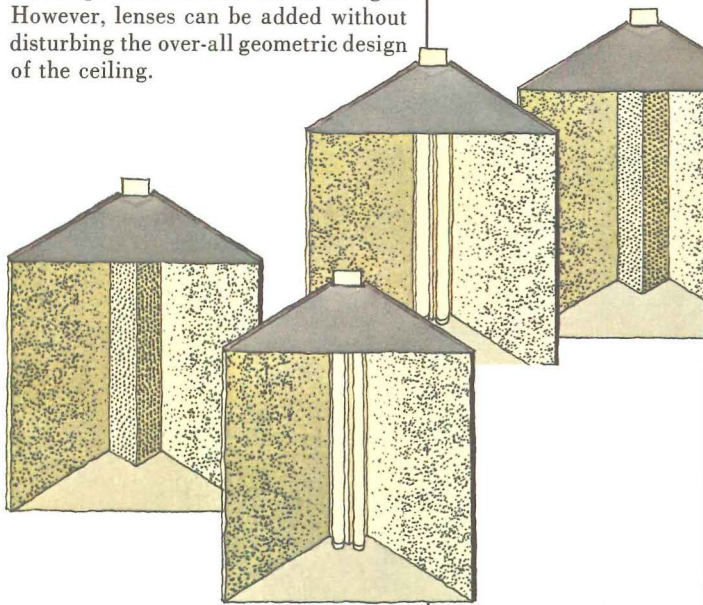


**2. Sound-absorbing area increased.** With its folded-plate design, the Luminaire Ceiling System has considerably more surface area than a flat ceiling. The design acts as a room-wide baffle to sound waves; in addition, the ceiling panels are highly sound absorbent. All this makes the space below quieter and more comfortable.

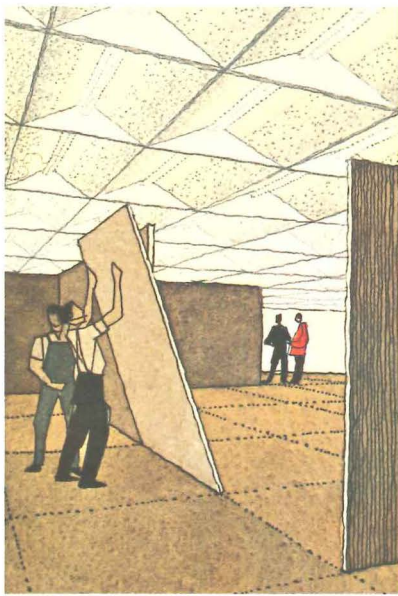


**3. Less maintenance.** Because the lamps are not enclosed, maintenance is simple: fluorescent tubes are changed and the ballast and wiring inspected from below. The lamp fixture is smooth and easy to clean. Each Luminaire panel lifts out, giving instant access to the plenum. The constant delivery of conditioned air through the Luminaire panels keeps dust away from the lamps; this helps maintain their average output of light at a high level. Its good maintenance factor may often mean that the Armstrong Luminaire Ceiling System can supply the desired level of illumination with fewer lamps than a conventional system.

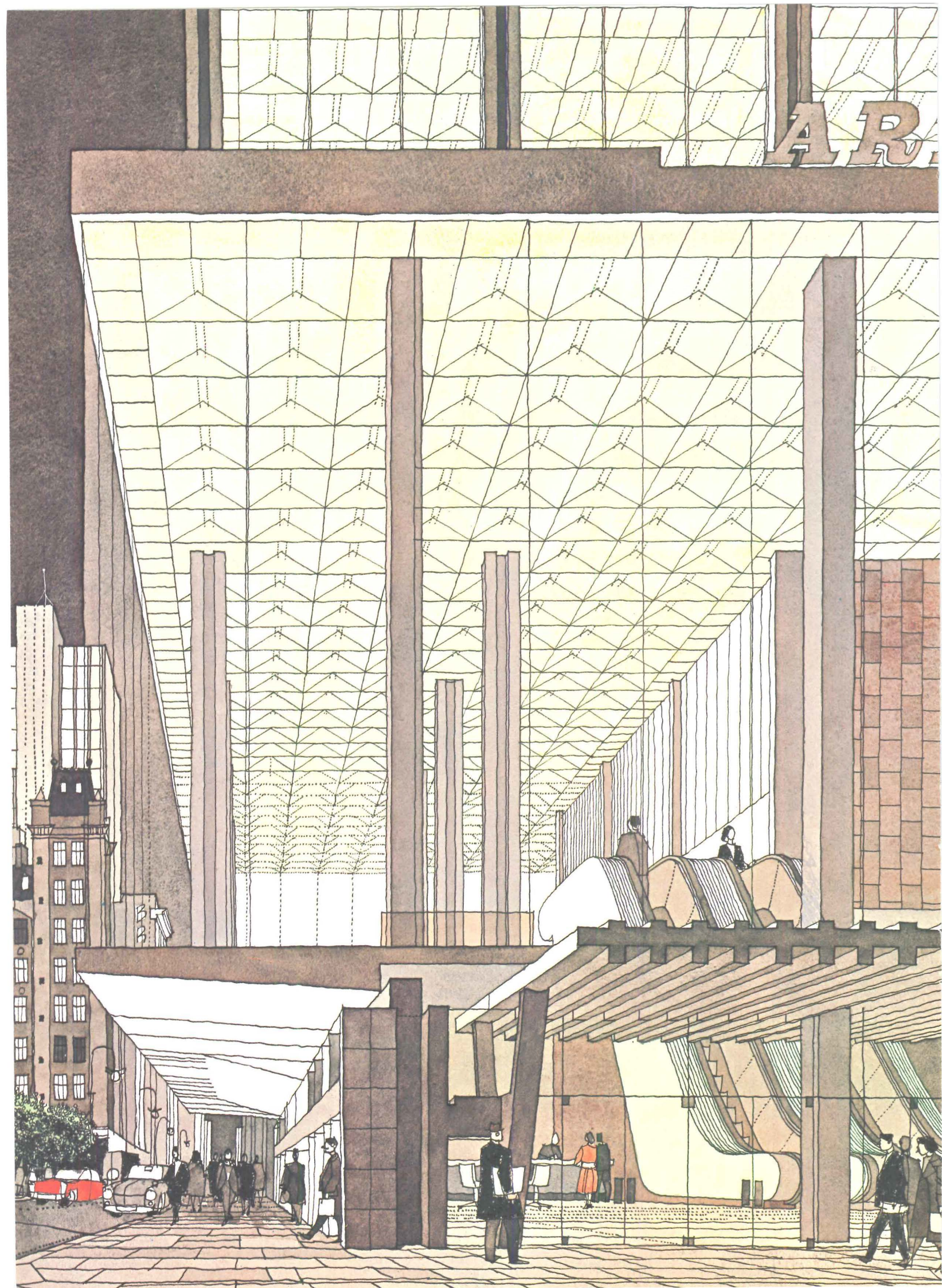
**4. Design effect can incorporate lenses.** Scattered perforations give the surface of the Luminaire panels an attractive non-directional pattern. The Luminaire Ceiling gives complete visual comfort without lenses, grilles or shields below the lamps. The cut-off angle of each module effectively shields the lamps from the normal line of sight. However, lenses can be added without disturbing the over-all geometric design of the ceiling.



**5. Partitions follow any grid; lighting, air conditioning unchanged.** The square, modular framework of the Luminaire Ceiling Systems means that ceiling-high partitions can follow any grid line. (A special adaptor channel fits the V-shaped grid.) Layout is flexible within this modular pattern: no matter where the partitions run, each unit of the Luminaire Ceiling supplies light and conditioned air to the space below. Lighting and air-distribution systems can even be installed and working before the final room layout is decided.





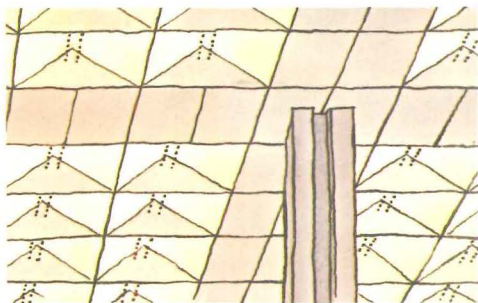
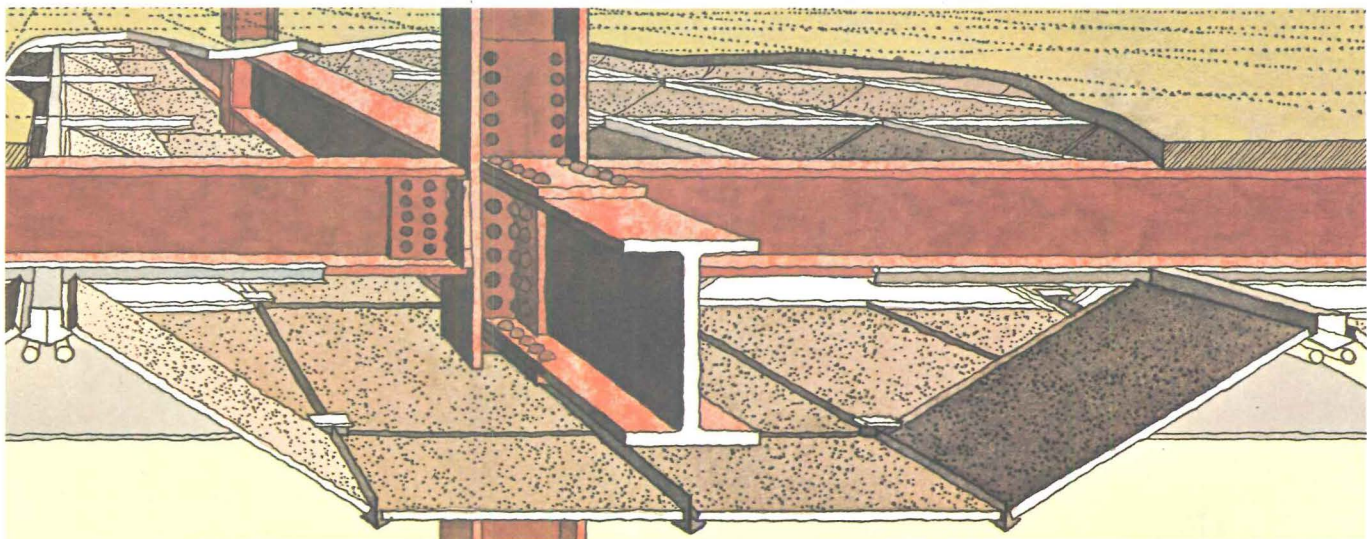




# Armstrong Luminaire Ceiling System

***The beauty of a luminous ceiling; the efficiency of an integrated system.***

With the whole ceiling used to illuminate, there is a soft, even "wash" of light throughout the space below. This high level of illumination contrasts with the low brightness of the ceiling itself: there is no direct glare. Because a Ventilating Ceiling is completely integrated with the Luminaire System, there are no diffusers or registers to intrude. (So the advantages of room-wide diffusion apply equally to lighting and to air distribution.) The angled design provides an interesting, three-dimensional surface. This system holds considerable design possibilities for office areas, banks, schools, stores, restaurants and institutional buildings.



**Modifications to fit under beams and around columns.** Whether the main structural members are parallel with the fluorescent tubes or perpendicular to them, the modification is the same: a row of flat ceiling panels replaces a row of regular Luminaire modules. This creates a space wide and deep enough to accommodate the beam. The flat panels rest on the Luminaire Ceiling grid.

Air for the Ventilating Ceiling panels

circulates easily between the base of the beam and the top of the ceiling. When a column pierces the ceiling, flat panels fill the space between the column and the surrounding modules.

The small rendering (left) shows how this beam-and-column modification looks from below. All ceiling panels—both flat and angled—are the same material and pattern, and there is no break in the basic modular layout.



## **The Armstrong Luminaire Ceiling System**

**Numerous installations  
in progress; to see one,  
call your Armstrong  
architectural specialist**

In many buildings throughout the country, the Armstrong Luminaire Ceiling System has been specified and is installed or under installation. If you would like to see the system in operation, call your Armstrong architectural specialist or District Office (listed below). A visit will be arranged so that you can see and judge the lighting, air distribution, acoustical and decorative merits of this remarkable new system. Or you can see a working model of the system in your office by calling your Armstrong representative.

### **More information**

For complete data, specifications, and drawings of the Armstrong Luminaire Ceiling System, please call your Armstrong architectural specialist or Armstrong District Office, or your Armstrong Ceiling Systems Contractor; or write Armstrong, 4211 Watson St., Lancaster, Pa. Or, for more data, circle no. 1 on Inquiry Card.



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## B.R.I. NAMES DARLINGTON TECHNICAL HEAD

Robert P. Darlington, A.I.A., has been named new technical director of the Building Research Institute, effective August 1, as announced by Milton C. Coon Jr., B.R.I. executive vice president. Harold Horowitz, former technical director, is now with the National Science Foundation.

Mr. Darlington has architectural degrees from Cornell University and the University of Illinois. He taught at Washington State University from 1953 to 1961, with a one-year leave of absence spent at the University of Illinois. He was head of the Architectural Research Section, Division of Industrial Research, at Washington State Institute of Technology from 1957 to 1961.

He practiced architecture in the states of Washington, Idaho and Illinois from 1951 to 1961.

Moving to Washington, D.C., in 1961, Mr. Darlington served as assistant director for program planning of the Building Research Advi-

sory Board, National Academy of Sciences—National Research Council. He has also been consultant with the Department of Institute Relations of the American Institute of Architects.

Mr. Darlington is author of many publications and was chief editor of *Modular Practice* (1960-61) for the Modular Building Standards Association. He was awarded the Charles Goodwin Sands Senior Medal in architecture from Cornell University and the Andrew White Graduate Award in architecture from the University of Illinois. In 1956 he was a prize winner in the Alcoa-NAAMM Curtain Wall Competition.

## AWARDS

Five college students have been named winners of a nation-wide architectural scholarship awards program sponsored by the Portland Cement Association. Each received an expense-paid trip to this year's summer session at the Fontainebleau School of Fine Arts outside of Paris.

Winners and their runners-up are: *Eastern region*—Nathan S. Le-

blang, Carnegie Institute of Technology; runner-up—Kenneth Kaiser, Massachusetts Institute of Technology. *Midwestern region*—Stanley L. Anderson, University of Illinois; runner-up—T. S. Cuppage, Kent State University. *Southeastern region*—Howard R. Garriss, North Carolina State College. *West Central region*—Joe W. Johnson, University of Nebraska; runner-up—Brent Mandry, University of Kansas. *Rocky Mountain and South Central region*—Larry J. Hoskins, University of Oklahoma; runner-up—James Lee Thomas, Louisiana State University.

Twenty-three accredited architectural schools took part in the competition, which was open to all fourth year students. Entries had to use concrete as the principle building material and had to meet residential area needs; i.e., single-family homes, garden apartments, row housing or small offices and commercial buildings.

Jury members were Craig Ellwood of Craig Ellwood Associates, Los Angeles; Richard M. Bennett of Loeb, Schlossman and Bennett, Chicago; and Peter Blake of Architectural Forum magazine, New York.



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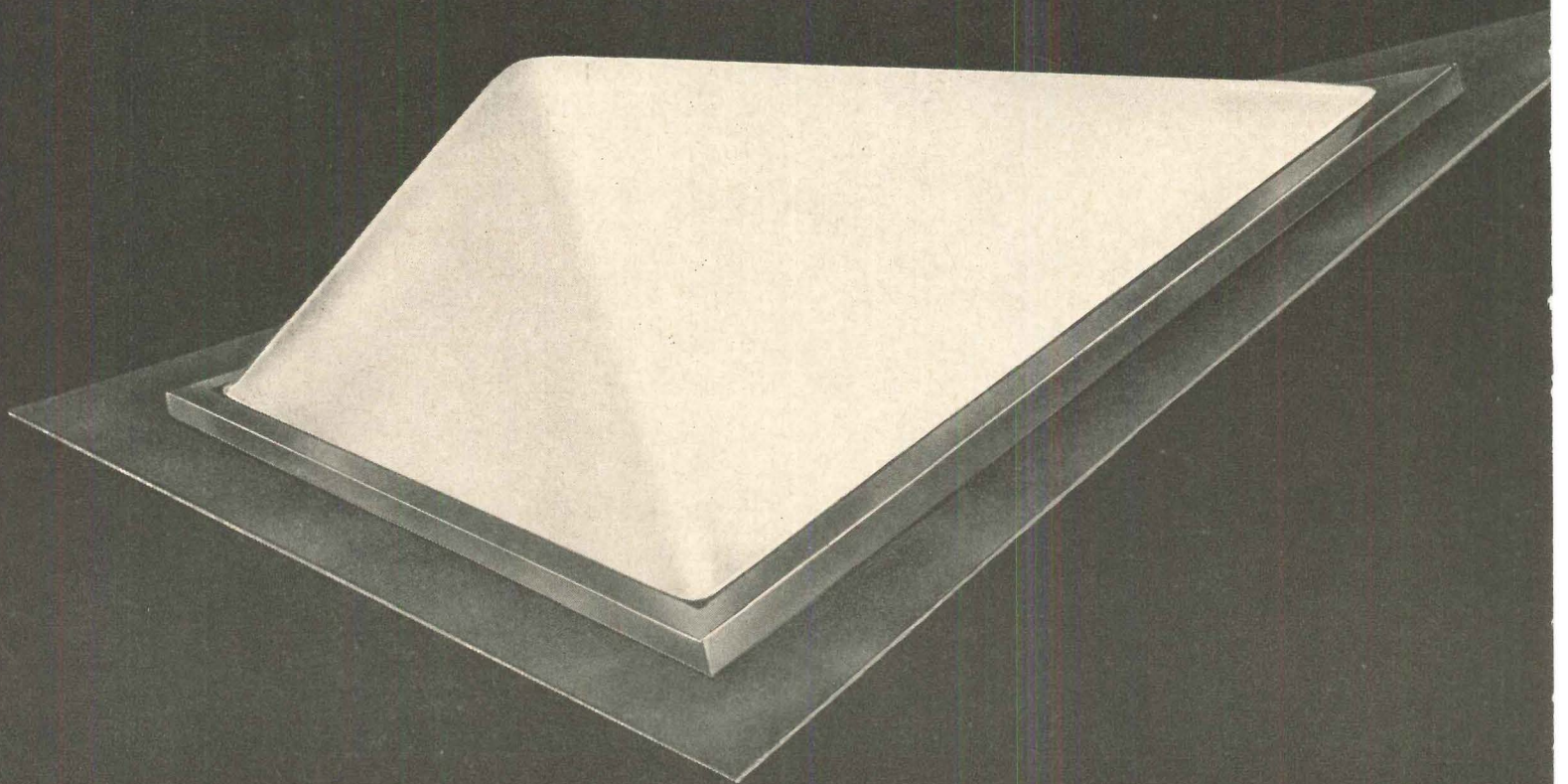
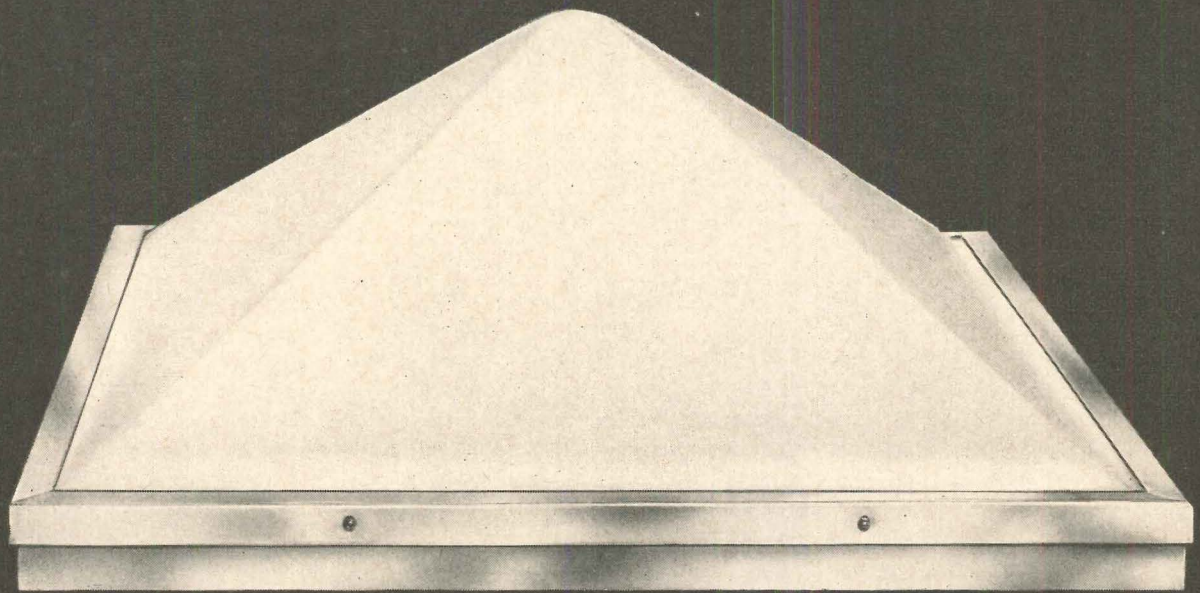
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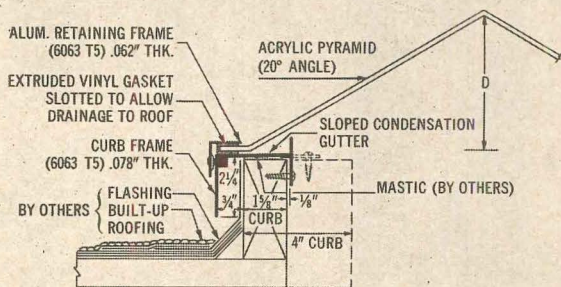




# DAYLIGHTING!

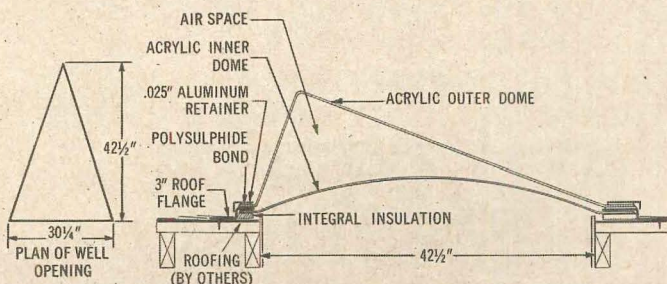
## NEW PYRAMID DOME

Add a bright new design element with this Skydome pyramid unit. This skylight was originally produced as a custom unit. However, as a result of a survey among architects, it has been modified to include additional advanced design features and is now available as a standard item in the Skydome line. Installs on 1 7/8" or 4" curb. 9 sizes. Available in clear, white, or dense white acrylic in durable aluminum frame.



## NEW SELF-FLASHING DORMER DOME

This new Skydome unit provides an attractive, efficient method of bringing daylight through both flat and sharply pitched roofs. Double dome design. Features permanent watertight bonding at all critical points and a 3" aluminum nailing flange for fast, easy installation. The dead air space between the domes provides thermal insulation and eliminates condensation. 30 1/4 x 42 1/2 size. Both inner dome and outer dome available clear or white.

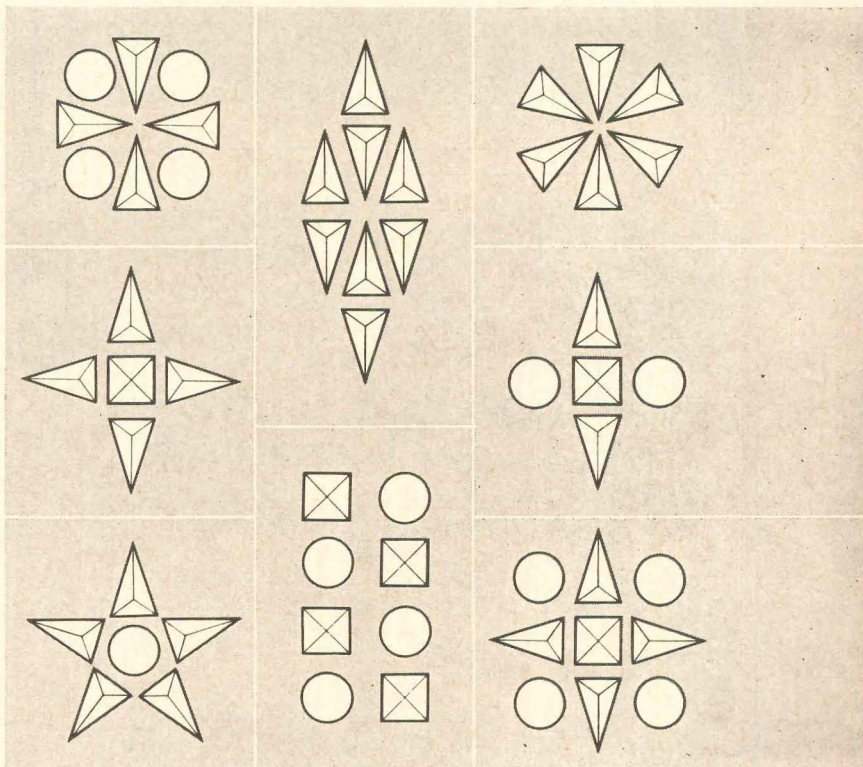


## NOW . . . UNLIMITED DESIGN IDEAS WITH STANDARD SKYDOME® SKYLIGHTS

Cyanamid offers a versatility in daylighting never before available with standard skylights. Now, you can create a star of daylight over a lobby, a ring of sunshine over a cafeteria, a brilliant diamond over an auditorium.

You can custom design distinctive new motifs in daylighting by combining these new units with standard square, rectangular or circular Skydome skylights. And you can achieve dramatic, yet efficient interior lighting effects at a cost much less than that of specially designed skylights. Like all Skydome units, these new models provide brighter work areas, permit fuller use of floor and wall space and trim electric lighting costs.

Design combinations of standard Skydome units are limitless. Ceilings become more exciting, roofs can do more than just keep rooms warm and dry. Whatever the situation, daylighting can be an integral, contributing design element in any building. Here are a few ideas:



For complete specifications, see Sweet's Architectural File 20a/Am or Industrial Construction File 15c/Am, or write Cyanamid for data sheets.



**WASCO**

**SKYDOME®**

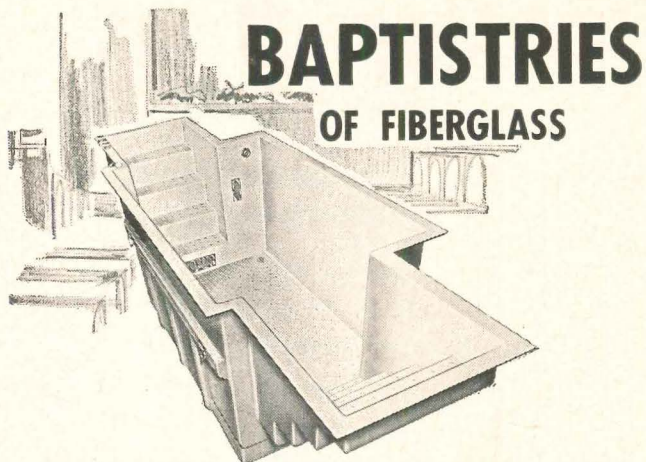
**ACRYLIC SKYLIGHTS**

BUILDING PRODUCTS DIVISION • AMERICAN CYANAMID COMPANY

**CYANAMID** 5 Bay State Rd., Cambridge 38, Mass.

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Originator of Fiberglass Baptistries

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See SWEET'S Catalog, Architectural File, 35c  
Write for free information kit. Wi

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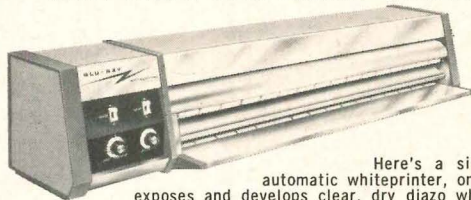
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NEW **BLU-RAY** model **842**

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model  
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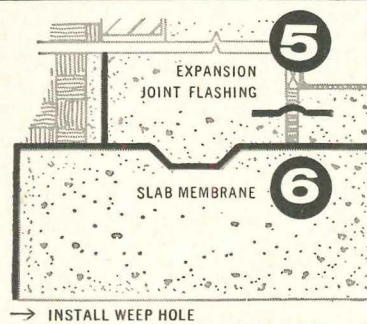
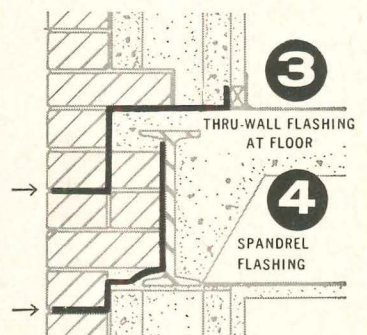
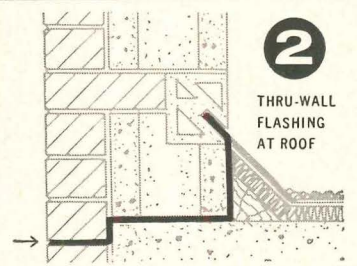
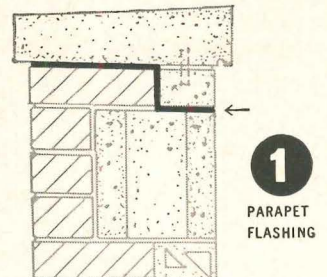
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33 Westbrook Road, Essex, Connecticut  
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■ In masonry wall construction, these six areas are particularly vulnerable to water damage — yet surprisingly often, protection of these critical points is not called for in specifications. Although flashing is often taken for granted, the fact remains that your best insurance against water damage is *complete* flashing. ■ The danger of seepage in *every* type of building can be eliminated permanently with the right kind of flashing properly installed in all the vulnerable places. ■ Wasco® brand flashing, the nation's leading line, provides this permanent protection, frequently for less than 1/20 of 1% of total construction cost. *On a \$1 million building, that's just \$500.* ■ Wasco brand flashing is the only complete line of thru-wall and spandrel flashing . . . for protection from parapet to foundation. You can select from 16 different types of Wasco flashings, including copper-fabric, copper-asphalt, copper-lead, fabric, plastic, and aluminum. ■ For exceptional flashing problems, consult the Cyanamid Engineering Staff. Full product details in Sweet's Architectural File 8g/Am and Sweet's Industrial File 8c/Am.

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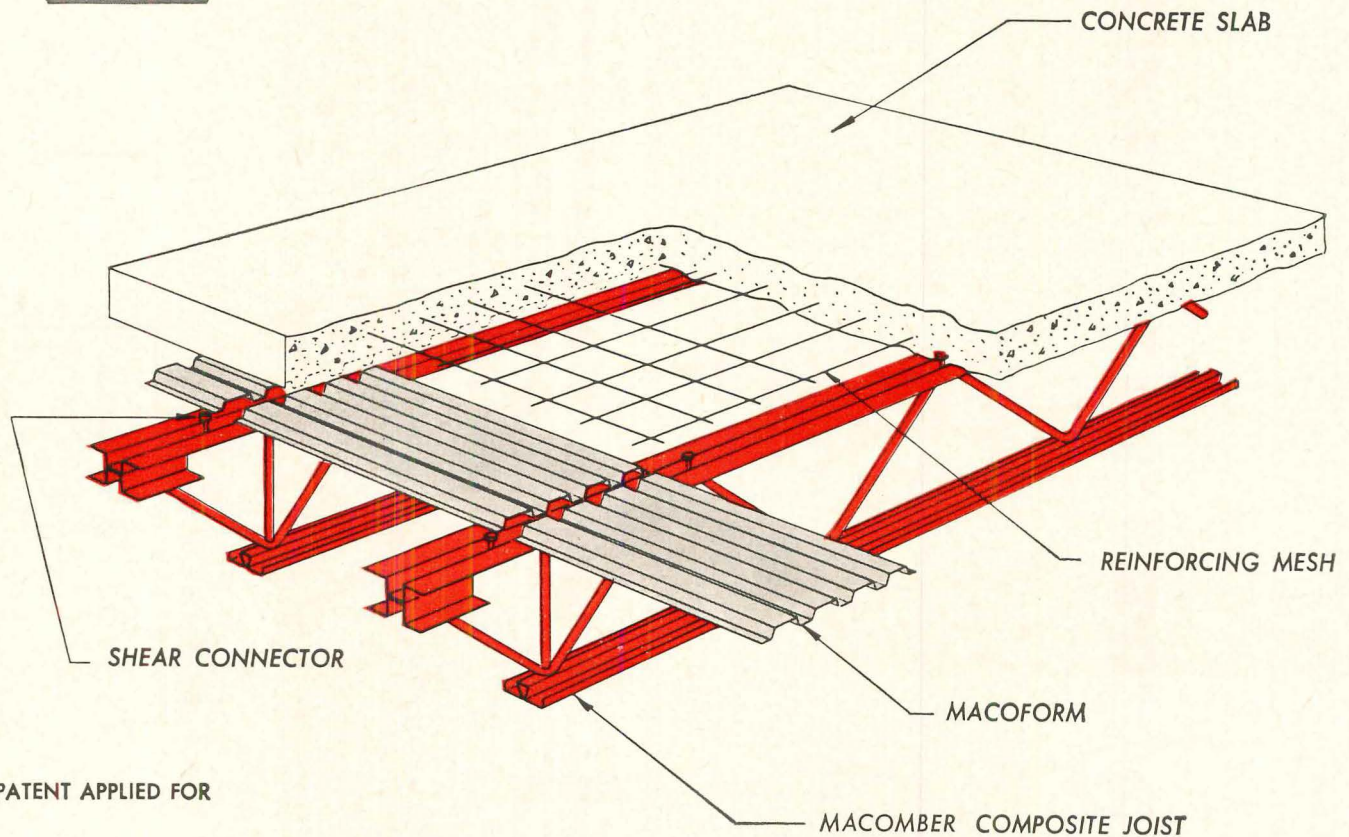
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**NEW**



## A way to improve multiple story construction (and reduce its costs)

Build a tall building, or a single-story, with less wasted space, more economically. It can be done with an exciting new system developed, tested and proved by one of America's best known structural steel fabricators — Macomber Incorporated, a Subsidiary of Sharon Steel Corporation.

It's called the Macomber Composite System, because it combines steel and concrete into a structural member which functions integrally, utilizing the strength of open-web joists with the capacity of a concrete slab. The inter-action of the joists and slab provides a more

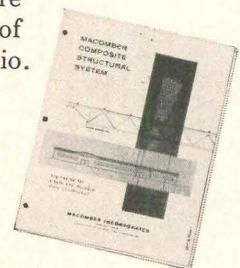
rigid unit than steel and concrete acting independently. Developed around a special open-web joist, the system permits longer spans with shallower depths, reducing height per floor. More efficient use of materials with a reduction in total dead weight and labor costs, result in decreased building costs.

The Macomber Composite System is another new custom steel product from the expanding world of Sharon Steel. For technical brochure write Macomber Inc., Subsidiary of Sharon Steel Corp., Canton 1, Ohio.

**MACOMBER INCORPORATED**

CANTON 1, OHIO

SUBSIDIARY OF SHARON STEEL CORPORATION



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"Roundel"; clear, green, amber and yellow. 1/8" thick, 49"x79".

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EUROGLASS  
BY SAINT-GOBAIN  
FOR PRIVACY,  
LIGHT AND TEXTURE—**

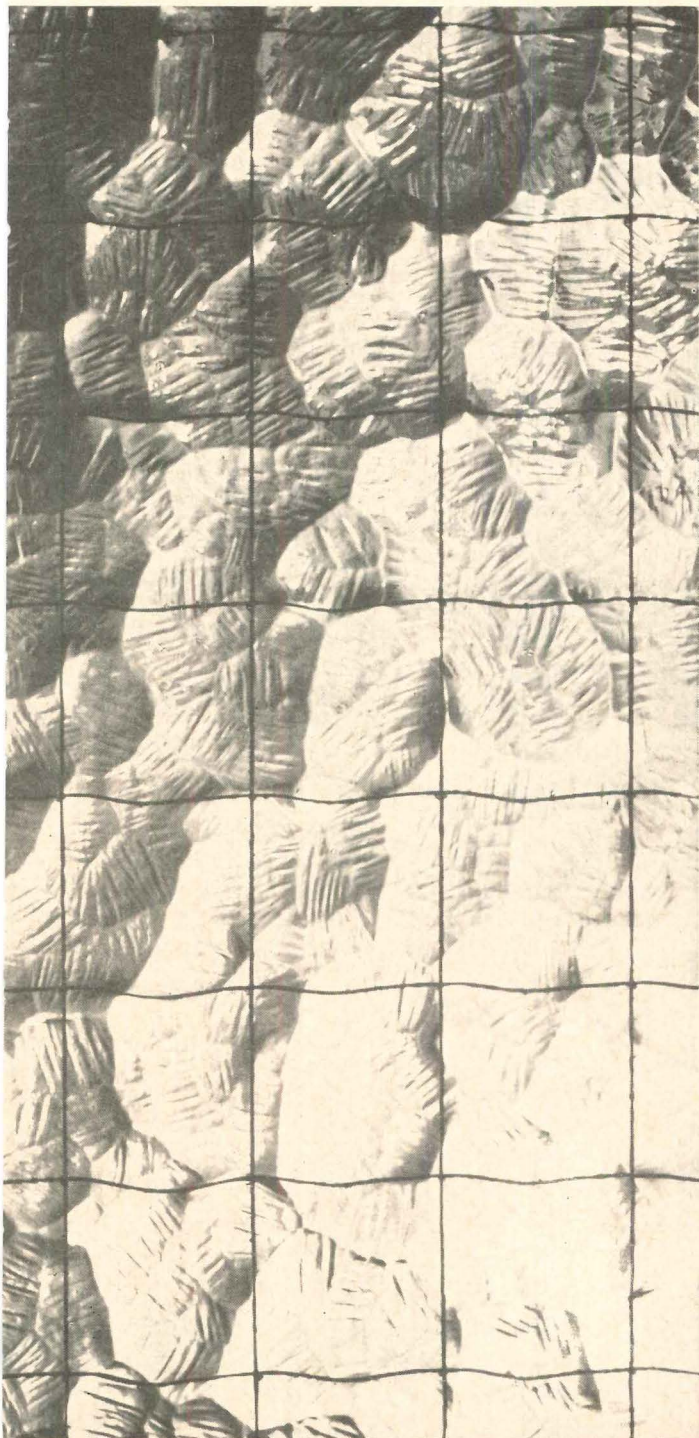
**ANYWHERE!**

Wherever the requirements of daily living call for light without glare, privacy without isolation, and the interest of texture, Euroglass offers a wide variety of treatments with luxurious imported Saint-Gobain patterned glass—at no premium in cost.

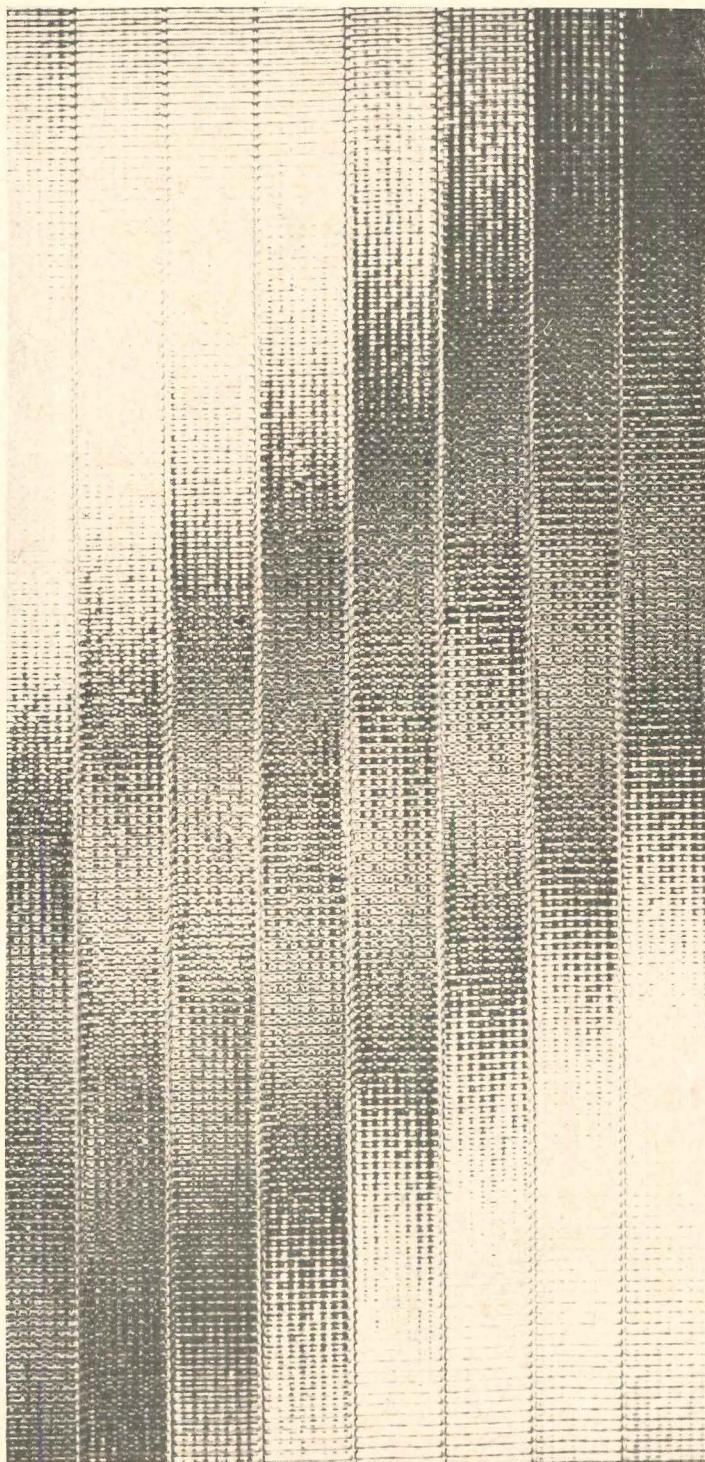
A feeling of airy spaciousness not possible with any other building material can be created with Euroglass by Saint-Gobain. Over 30 patterns in contemporary and traditional designs offer many architectural solutions for partitions, doors, windows and shower enclosures in residential, office, commercial, factory and school buildings—wherever space must be organized attractively and economically, with no maintenance.

Saint-Gobain has been serving European builders and architects for more than three centuries. Today, its contemporary achievements in glass craftsmanship, from 26 Western European factories, are available in the U. S. A. exclusively through the Euroglass Corporation. Write for handsomely illustrated catalogue and for the name of your nearest Euroglass jobber.





"Ice Cubes" Wired Glass No. 73; 1/4" thick, 49" x 120".



"Screenweave" No. S. G. 60; 7/32"-9/32" to 5/16"-3/8" thick, 97" x 177".

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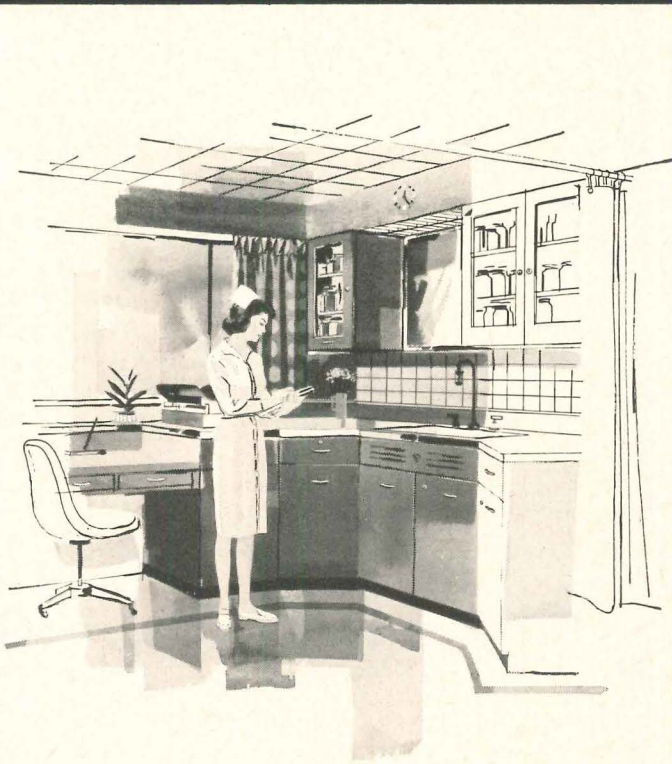
CORPORATION

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# Why they call **Geneva** "the architects' cabinetry"



## **Hospital**

Geneva cabinetry easily withstands long, rugged use in hospitals and medical laboratories. It offers the security of solid steel locking doors and drawers for equipment, medicines, narcotics.



## **School**

Geneva installations can take years of abuse with little or no maintenance. They're ideal for home-making kitchens, laboratories, arts and crafts rooms, school offices, and other school applications.



WHEN YOU DESIGN WITH CABINETRY BY GENEVA . . . you know your clients have the finest in casework — smart, modern, long-lasting. And you have complete freedom of architectural expression. In design, go conventional, contemporary or modern: Geneva offers the industry's widest variety of sizes, shapes, types. In color, an almost unlimited choice — 21 decorator tones — baked on to

stay. Now available for the first time—broad selection of rich-grained wood fronts on Geneva steel cabinets. Choose Cabinetry by Geneva for that important building you're designing—hospital, school, plant, commercial building or apartment! For more information see Sweet's Catalog (24b/Ge, 35a/Gen, 36a/Ge) . . . or call the Geneva distributor nearest you.

Plain Steel or  
New Exclusive

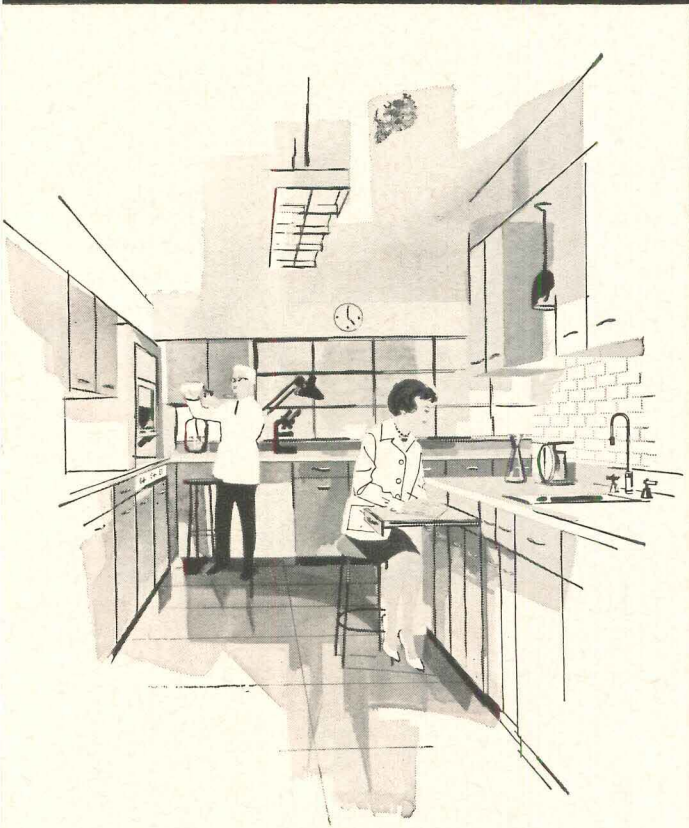
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Picture steel etched with the texture of fine leather . . . in a choice of decorator colors. That's IMPASTO! Warm. Rich. Beautiful. An almost indestructible finish that won't chip, dent, craze, rust, or burn.

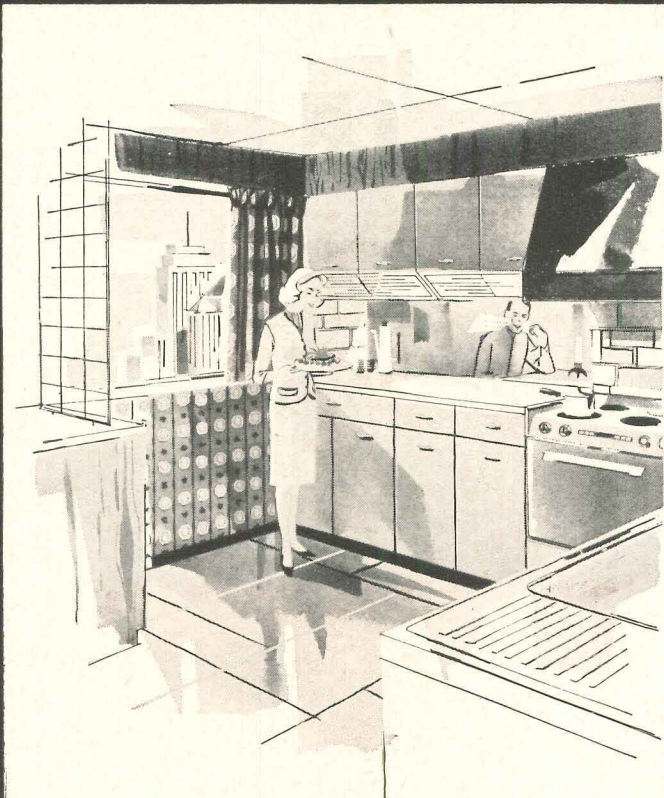
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GENEVA INDUSTRIES, INC., GENEVA, ILLINOIS — Steel Cabinetry For Schools • Churches  
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### Laboratory... Test Kitchen

Geneva steel cabinets complement appliances and food equipment, provide working and storage space for accessories. Food companies, publishers, ad agencies rely on Geneva equipment in test kitchens.

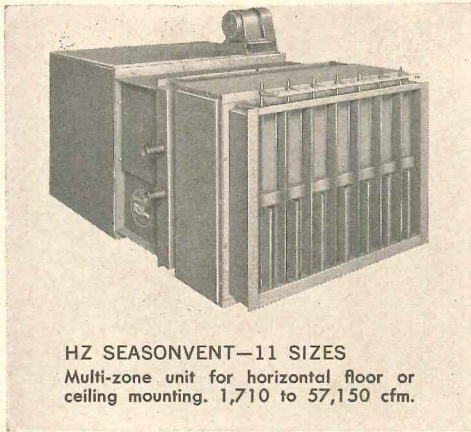


### Apartment and Home

Geneva kitchen cabinets add fresh, functional utility to new apartment buildings; revitalize old ones! There are colors, styles and sizes to fit any kitchen layout. Geneva kitchens last for years with little or no care.

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**HZ SEASONVENT—11 SIZES**  
Multi-zone unit for horizontal floor or ceiling mounting. 1,710 to 57,150 cfm.



**HD SEASONVENT—16 SIZES**  
Draw-through unit for floor, wall, or ceiling mounting in horizontal, vertical, or inverted positions. 720 to 57,150 cfm.

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# McQuay SEASONVENT®

single and multi-zone heating and ventilating units



**HA SEASONVENT—11 SIZES**  
Auditorium unit for floor, wall, or ceiling mounting in horizontal or vertical positions. 720 to 24,570 cfm.

**HB SEASONVENT—11 SIZES**  
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**HF SEASONVENT—16 SIZES**  
Fan sections units are available for mounting in an unlimited number of air intake and discharge arrangements. 720 to 57,150 cfm.

More models and more sizes mean more versatility—and greater selection, installation, and operating economy—in the all-new Seasonvent line from McQuay. Flexibly designed to meet your single and multi-zone heating and ventilating requirements exactly, Seasonvent is available in five basic models and 16 sizes from 720 to 57,150 cfm. In addition, Seasonvent features sectional construction for maximum choice of unit arrangement and greatest capacity in the smallest space, with famous Hi-F rippled fin coils—now available in a new, wider choice of styles and sizes—providing the top performance you expect, and get, from McQuay. There's a full line of Seasonvent accessories, too. Your McQuay representative can tell you more about the versatility that adds up to greater economy with Seasonvent, or write McQuay, Inc., 1605 Broadway N.E., Minneapolis 13, Minnesota, for complete information.



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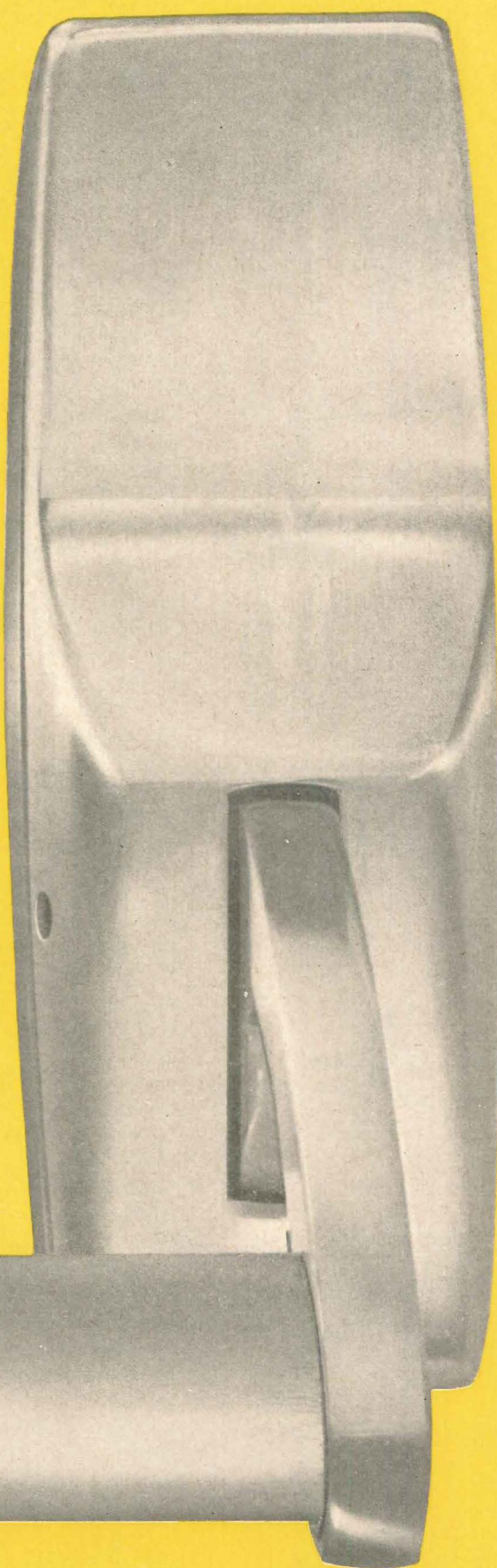
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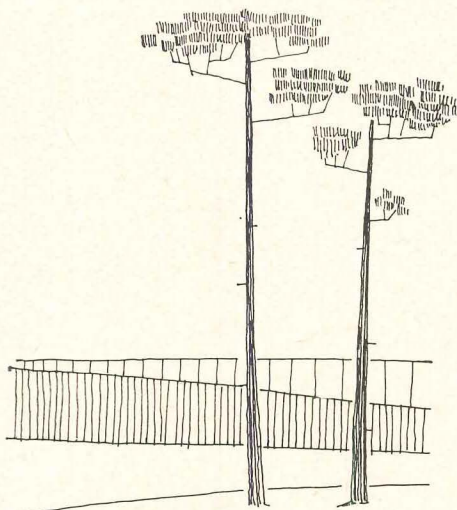
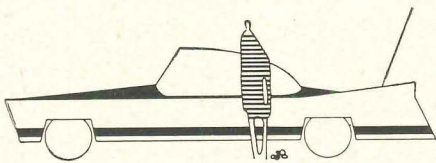
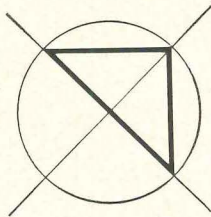
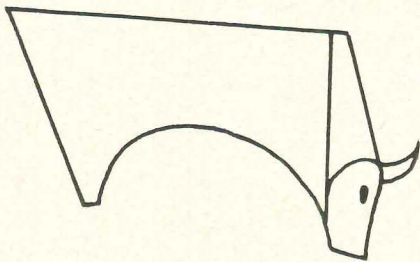


**RUSWIN**  
**R**



## Required Reading

—from "Graphic Effects  
for Architectural Drawings"



### The City

BABYLON IS EVERYWHERE. *The City as Man's Fate.* By Wolf Schneider. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36, 400 pp., illus. \$7.95.

Mr. Schneider's history of the city occasionally leaves the reader wondering why man insists on them—crowded, filthy, disease-ridden, pits of vice and corruption, irresistible temptations for the soldier and the pillager. But for 7,000 years, by Mr. Schneider's reckoning, the city has flourished. Men have come to it and refused to budge from it even in the face of disadvantage and disaster.

The continuum of urban history as traced by Mr. Schneider stretches from Ur to Los Angeles. He describes the beginnings of the city as archeologists have been able to see them only relatively recently. He discusses the great cities of antiquity, the Middle Ages, the Renaissance, and the Industrial Revolution, and a world which now seems to be a single city. Along this continuum he observes two major factors which altered urban development: at the beginning, the discovery that a wall might give shelter from enemies and from nature; in the 18th century, the discovery that walls impeded progress. Happily or otherwise, ordered city planning went out when the walls came down. The walled city sacrificed comfort to the exigencies of military and religious purposes, while citizens crammed themselves within the walls for reasons of urban snobbery as well as for protection. Whether this was better or worse than Los Angeles sprawl, the logical outcome of the wall's disappearance, Mr. Schneider does not decide. He does suggest, nevertheless, that man need not resign himself to either condition.

Still, "Man's Fate" is not altogether grim. Babylon had splendor as well as sin. If the city is a threat, it is also "the mother of culture, the birthplace of freedom and justice, the glittering playground of life, man's world of stone without which he, for better or worse, in lowliness and exaltation, would never have become what he now is." A properly

ambiguous note on which to end a history of the city!

The book has been awarded the Econ Prize in the International Non-fiction Award, and is published simultaneously here and abroad.

### Graphics

GRAPHIC EFFECTS IN ARCHITECTURAL DRAWINGS. *Interbuch, Berlin; dist. in U.S.A. by Renouf Publishing Company Limited, 2182 St. Catherine St. West, Montreal 25, Canada. No folio, illus. \$12.*

The editors of this book have collected hundreds of drawings of trees, people, animals, cars, and arrows indicating north, which they claim to have selected from drawings made for recent international architectural competitions. Actually the book appears to be the work of several anonymous draftsmen who, from their own artistic resources, have come up with dozens of ways to draw the lively adornments of an architectural presentation. For the architect who wants to improve his rendering of people and trees, and at the same time learn to do cows, camels, horses, monkeys, giraffes and sportscars, the book should stimulate invention, while it also furnishes some handy things to copy.

—Mildred F. Schmertz

### Japan

AN ARCHITECTURAL JOURNEY IN JAPAN. By J. M. Richards. *The Architectural Press, 9-13 Queen Anne's Gate, London S.W. 1, England. 185 pp., illus. 42s.*

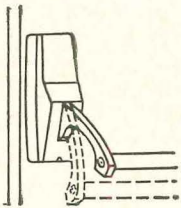
The greatest part of this very readable book appeared as a special section of *The Architectural Review*, of which Mr. Richards is the editor. The book combines the "characteristics of an anthology of buildings with those of a travel diary." It is a simple, illustrated narrative of an 18-day architectural tour through Japan: in 1962, Mr. Richards was

*continued on page 66*



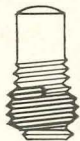
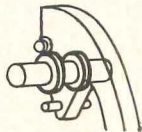
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Here is safety at its elegant best! In the Exiter by Russwin, you get sure touch-and-go action and the built-in dependability of Russwin engineering combined with a distinctive new styling concept. This creative achievement satisfies both the modern taste for smart design . . . and the need for sound design . . . in fire exit bolts. You get new versatility, too: the Exiter is completely reversible in all but the two-cylinder types. And, you get these safety-designed Russwin features . . .



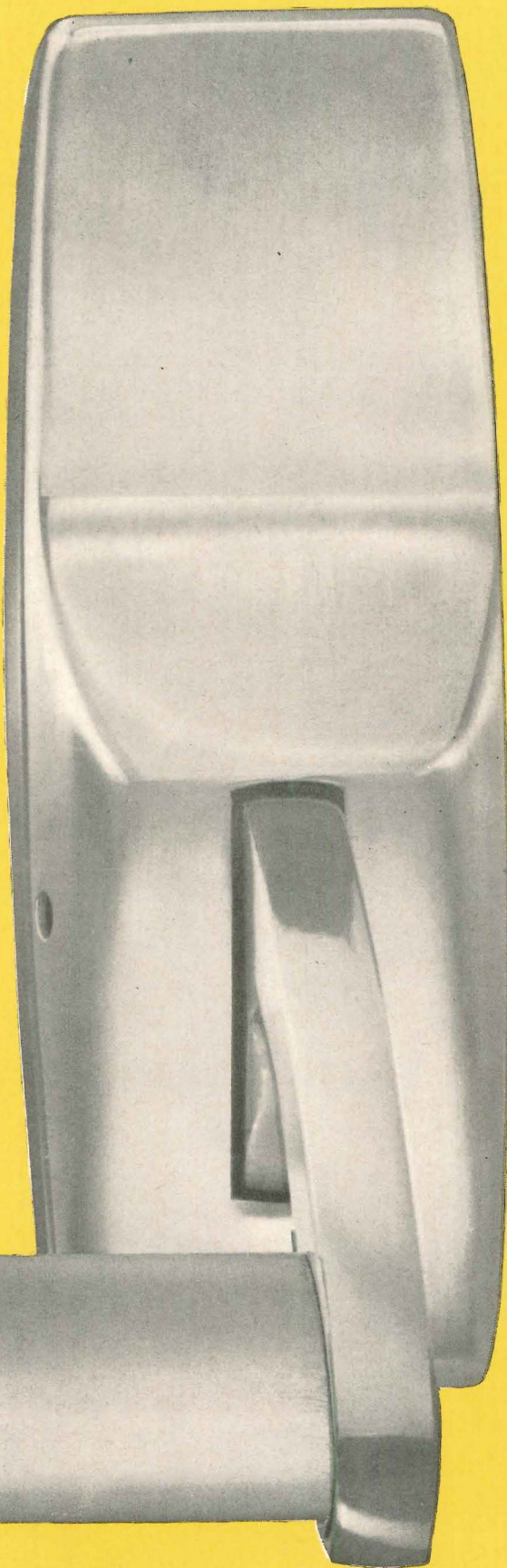
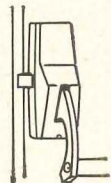
**Safety-designed lever-crossbar assembly**—Unique oval shape and special fastening lock the crossbar securely in place. Latch mechanism is responsive to the slightest push.

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360





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sound esthetically...

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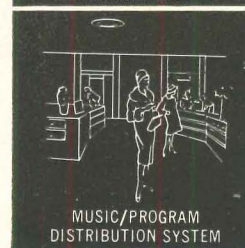
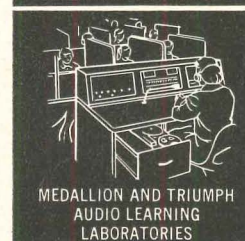
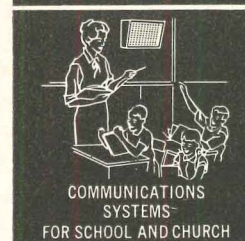
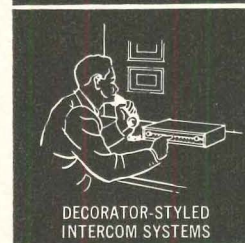
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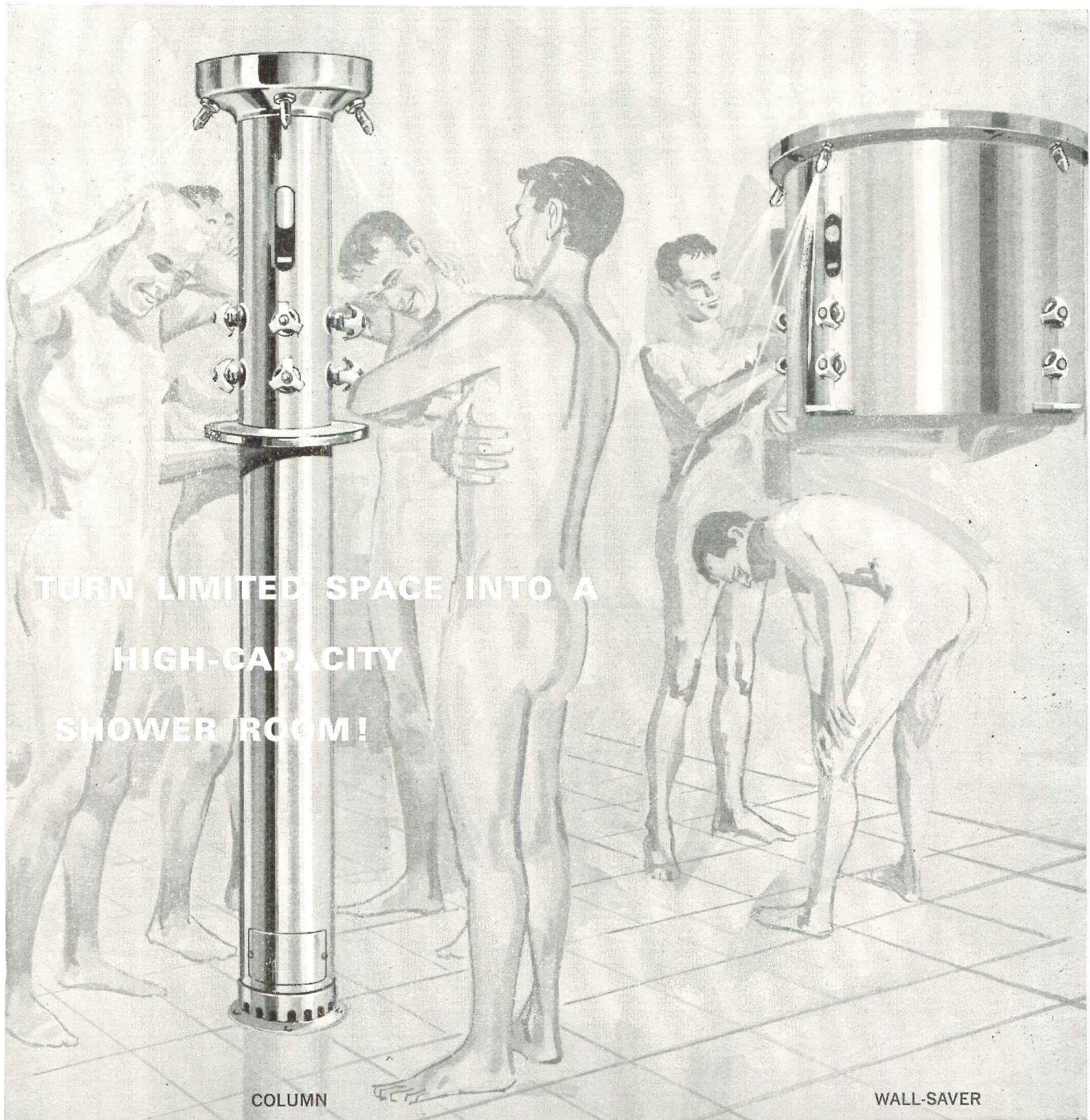


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DESIGN Uses  
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LUMBER ■**





# For FRATERNAL BUILDINGS

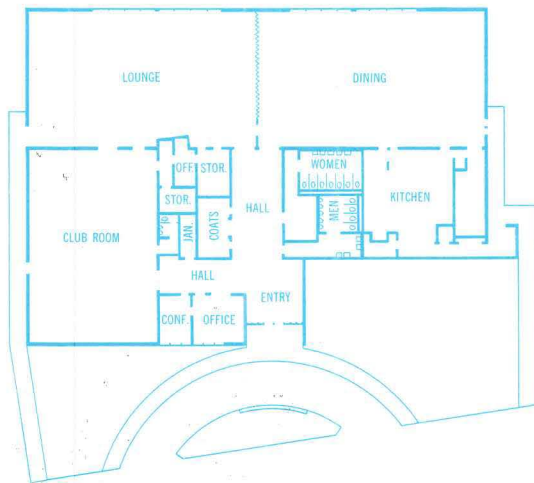
Standard, readily available sizes and grades of West Coast Lumber met financial and design requirements for the Milwaukie, Oregon B.P.O.E. lodge in an attractive suburban headquarters building. Designed for maximum use of its 14,000 sq. ft. of floor area, the highly functional structure offers members extremely low operating and maintenance costs.

Interior space is arranged for efficient operation. Although the club room is set apart from the lounge, bar facilities are convenient to both areas. A central hall leads to the lounge and dining room, permitting their use by other community groups without disturbing the privacy of the membership.

The graceful curve of glued laminated beams establishes a focal point at the entrance which blends naturally with the balance of the building. Western Red Cedar siding is applied to the curved beams to provide a smooth, attractive, easily-finished surface.

Selection of West Coast Lumber played an important part in the basic design, which recognizes the probable need for future expansion. A long history of stable, standard grades and sizes assures design compatibility and availability of material for future additions.

This building is another example of the important role of coast region West Coast Lumber in the design and construction of functional, economical modern buildings. It's an easy step from drawing board to completed structure when the basic building material is West Coast Lumber . . . available everywhere lumber is sold.



Architects: Hayslip & Tuft

WEST COAST  
DOUGLAS FIR  
WEST COAST  
HEMLOCK  
WESTERN  
RED CEDAR  
SITKA SPRUCE  
WHITE FIR

The standard grades and sizes of West Coast Lumber used in this fraternal building were:



West Coast Douglas Fir joists 2" x 12" spaced 24" support the roof; 2" x 8" for the ceiling spaced 16". Wall framing is 2" x 6" spaced 16" o.c. for exterior walls and 2" x 4" for some interior partitions.



West Coast Douglas Fir preservatively treated 2" x 6" and 2" x 4" for sills and plates. Interior partitions, 2" x 4".



Western Red Cedar tongue and groove 1" x 5" siding.



West Coast Douglas Fir vertical grain for all millwork and interior and exterior trim.

West Coast Douglas Fir glued laminated beams 5 1/4" x 19 3/8" x 80' and 5 1/4" x 19 3/8" x 20'.

**FREE!** "THE BRIGHT NEW WORLD OF WEST COAST HEMLOCK," 8-pages of full color design ideas. For your personal copy write:

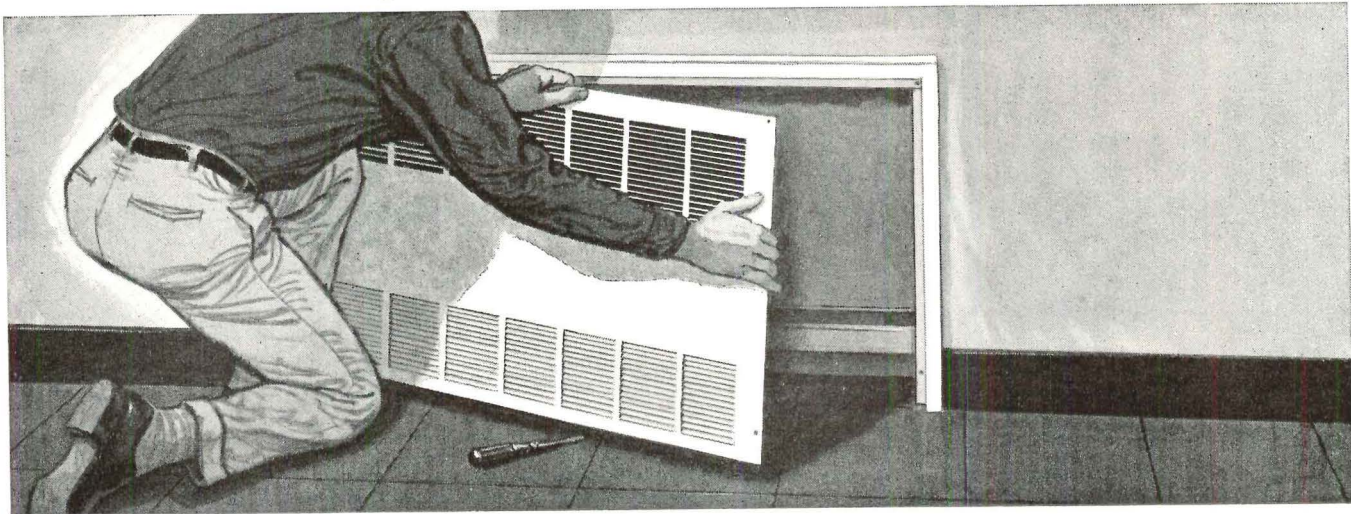
**WEST COAST LUMBERMEN'S ASSOCIATION**

1410 S. W. MORRISON STREET

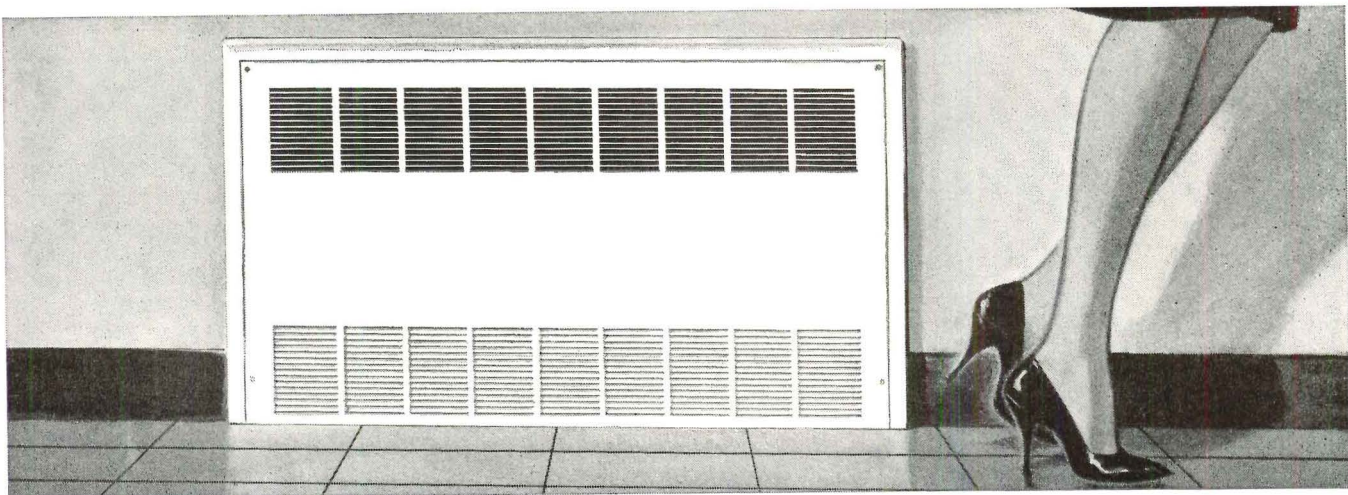
PORTLAND 5, OREGON



# Neat job...



## stays neat



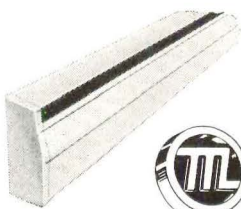
# ...it's PERMA-LAP®

Modine convectors can be recessed fast and clean with PERMA-LAP framing...whether walls are smooth or rough. Modine PERMA-LAP neatly and permanently frames the unit in the recess . . . snugs up to finished walls or can be plastered in. No chance for air leakage and resulting wall streaking.

Servicing? Easy. And without disturbing the wall seal. No chipped paint, cracked

plaster or peeled wallpaper. Machine screws permit rapid removal of the front panel.

PERMA-LAP is available for fully recessed installations and in 2 $\frac{3}{8}$ " , 4 $\frac{3}{8}$ " and 6 $\frac{3}{8}$ " projections for partial recessing in walls of varying thicknesses. PERMA-LAP recessed models are part of Modine's broad convector line . . . 30 types and 8000 sizes. See your Modine representative. Or write direct for Bulletin 259.



**ALSO AVAILABLE FROM MODINE**  
**BASEBOARD HEATING**  
 For steam and hot water.  
 Perimeter heating at its best.  
 Two sizes—9 $\frac{1}{2}$ " and 11 $\frac{3}{4}$ " high.



**Modine**

1510 DeKoven Avenue, Racine, Wis., In Canada: Sarco Canada, Ltd., Toronto 8, Ontario

**MANUFACTURING COMPANY**

**FINNED TUBE RADIATION**  
 For steam and hot water.  
 Simplified design speeds installation, cuts cost.  
 Two enclosure styles.



R-1496

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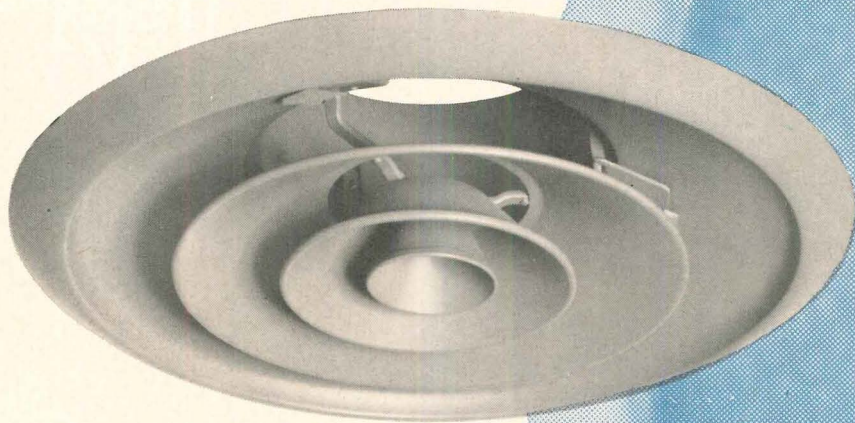
# NEW

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## ANEMOSTAT®

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A  
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TRUE  
FOUR-  
CONE  
ADJUSTABLE  
DIFFUSER  
FOR  
CONTROLLING  
AIR  
PATTERN

### "C-7"

Anemostat Corporation's new true four-cone adjustable diffuser provides adjustable air patterns from draftless horizontal to downward projection. The "C-7" maintains the high Anemostat Corporation quality and performance characteristics. Adaptable to various architectural designs, the "C-7" is especially efficient in installations calling for an adjustable air diffuser at minimum equipment costs. Standard Anemostat® accessories... Combo Damper, Equalizing Deflector, Anti-Smudge Ring ...are available for the "C-7". For specific performance, installation, dimension data write for the new "C-7" Bulletin #C-963.

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A Subsidiary of  
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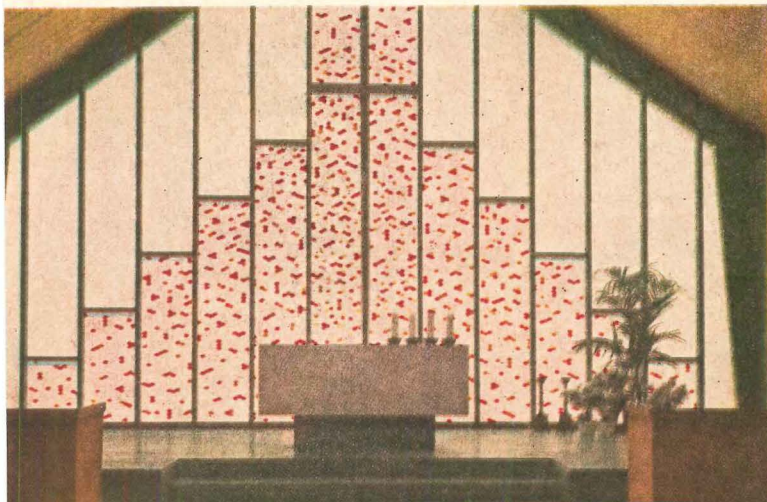
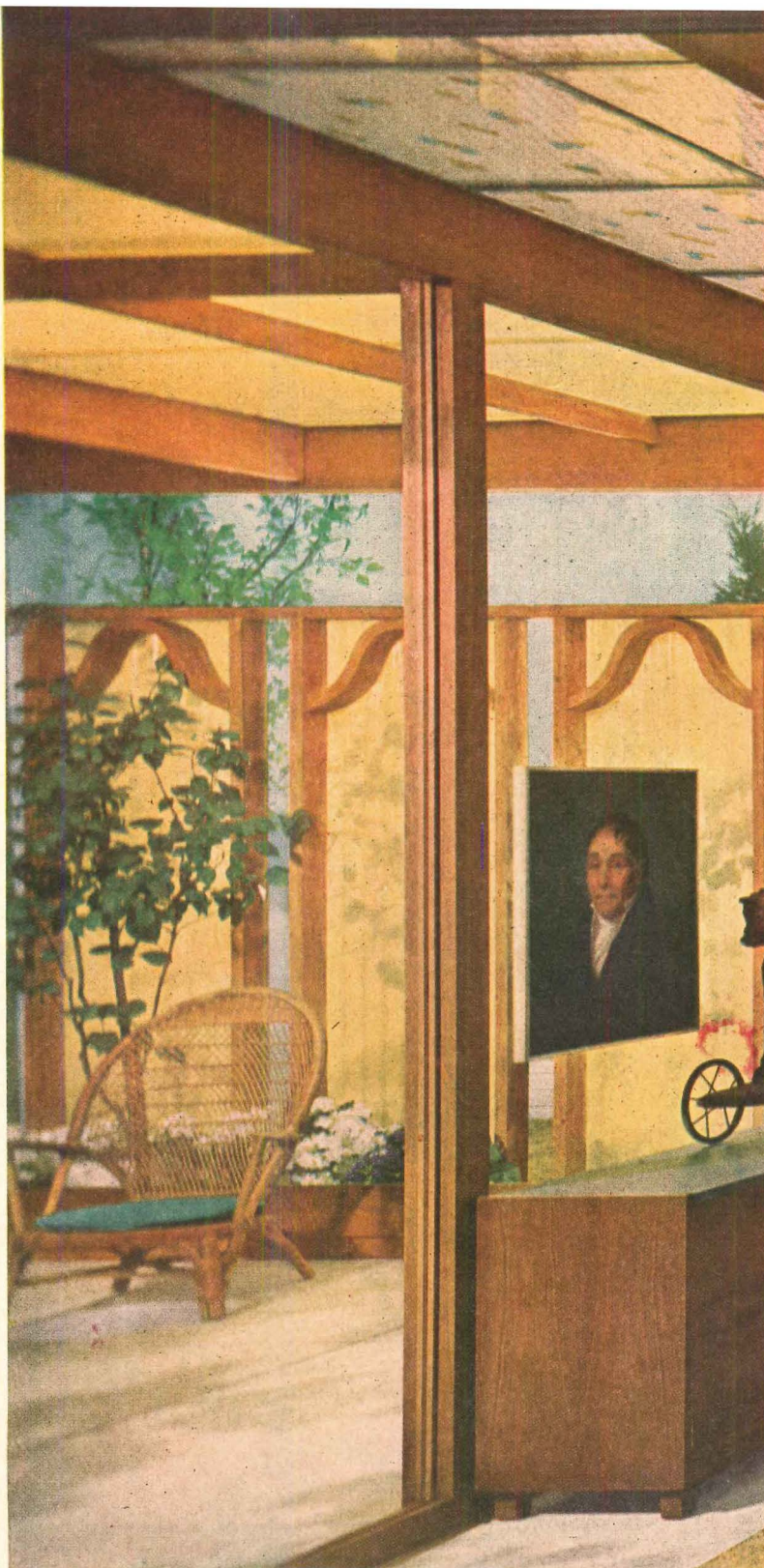
MEMBER OF AIR DIFFUSION COUNCIL

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JOHNS-MANVILLE  
**Corrulux**<sup>®</sup>  
 PRODUCTS

a broad line of decorative panels  
 for INDOORS OR OUTDOORS  
 for INTIMATE DESIGNS  
 for MONUMENTAL EFFECTS



ALTAR IS JOHNS-MANVILLE MEERSCHAUM COLORLITH<sup>®</sup> AND FLOOR IS SPRUCE GREEN COLORLITH

The expanding line of J-M Corrulux Products offers the widest range of quality plastic panels in the building industry today. Wherever there is a need for a plastic panel—for walls, for roofs, for partitions, for ceilings, for translucent windows—one of the Corrulux products is the answer. The illustrations shown here indicate some of the unlimited opportunities that exist with the variety of products in the Corrulux group.

- **Corrulux HONEY-CORR** (fiber-glass-reinforced Lucite<sup>†</sup> acrylic sirup) in cool colors is used for the sliding wall panels of the dining room above and the same Honey-Corr pattern is repeated as ceiling paneling around the perimeter of the room. In the church window, Honey-Corr in warm tones is used to create a stained glass effect.

Honey-Corr consists of a core (in honeycomb, ringlet or rosette pattern) faced on both sides with flat, translucent sheets which can be clear, or tinted for still more color variation. Colors used within the core cells can be warm or cool, plain or "jeweled." These elements can be varied in many ways to meet your decorative requirements.

- **Corrulux TRANSLUCENT FIBER GLASS PANELS** (fiber-glass-reinforced acrylic modified polyesters) in a corrugated configuration and a yellow color are used for the patio overhang outside the dining room and flat panes in clear Maxlite color are used in the church window. In addition to flat and corrugated, you can choose from 13 other configurations . . . 30 "locked-in" colors . . . smooth or Granitized finish.





FLOOR AND PATIO PAVING ARE JOHNS-MANVILLE CARNIVAL COLORCHIP\*

- **Corrulux PVC PANELS** (polyvinyl chloride) are used for the outdoor patio windscreen, with the same design and material carried indoors as part of the room partition. PVC Panels are rigid . . . and are available in 3 types: transparent, translucent and opaque. Translucent panels in yellow were selected for this residential design.

- **Corrulux LIGHT SHELLS** (cast acrylic) are slightly vaulted to give the room ceiling a 3-dimensional effect. These off-white lay-in Light Shells efficiently diffuse soft light throughout the room. Still other types of translucent ceiling panels are available from Johns-Manville.

For use indoors or outdoors, J-M Corrulux Products are an exceptionally practical combination of color stability, strength, durability and weather resistance. They have

proved their suitability in the residential and ecclesiastical situations shown here . . . they are equally suitable for stores, offices, schools or hospitals. They also have wide use as shatterproof factory windows or entire industrial walls. Furthermore, soon to join the growing group of Corrulux Products are some interesting new pressed patterns and decorative laminates. For more information and detailed specifications, send for your free copy of CXI-10A, "Johns-Manville Corrulux Products." Write to Johns-Manville, Dept. A-6, Box 158, New York 16, N. Y. In Canada: Port Credit, Ont. Cable: Johnmanvil.

\*TRADEMARK †TRADEMARK OF E. I. DUPONT DE NEMOURS CO., INC.

**JOHNS-MANVILLE** 

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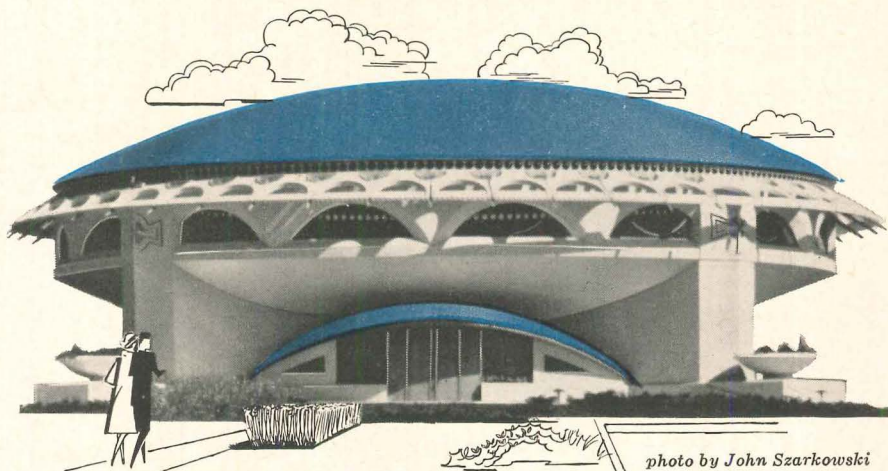
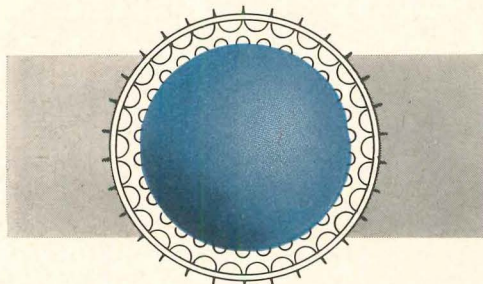


photo by John Szarkowski

## Four Upco Products Used In Unique Ceramic Tile Installation

The late Frank Lloyd Wright's Greek Orthodox Church in Wauwatosa, Wisconsin, is capped with a sweeping dome of reinforced concrete, 106 feet in diameter, the dome required ten thousand square feet of blue ceramic tile as an exterior covering. Ceramic tile was chosen for durability; Upco products were specified for permanence of installation. Three trouble free years have proven this to be sound judgement.



ARCHITECT:  
Frank Lloyd Wright  
GENERAL CONTRACTOR:  
Woerfel Corporation  
TILE CONTRACTOR:  
Glendale Tiles

Glendale Tiles of Milwaukee first applied **Tile-Mate Sealer** to the dome to provide a waterproof substructure. The tiles were set in an underbed of **Sanded Tile-Mate** and grouted with **Hydroment Ceramic Tile Grout**. The entire dome was then treated with **Polyclear**, Upco's transparent polymer sealing solution.

**Tile Mate Dry-Set Thin-Bed Mortar** has been performance-proved in hundreds of exterior installations; it cuts tile wall weight up to 60% and has a permanent higher bonding strength.

Fine textured **Hydroment Ceramic Tile Grout** provides dense, tight non-shrinking joints of great weather resistance and durability.

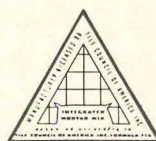
No matter how complex your ceramic tile installation — there's an Upco product to meet every requirement. Write for a complete descriptive brochure on all Upco products for the ceramic tile industry.

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4805 Lexington Avenue • Cleveland 3, Ohio

In the West: **HYDROMENT, INC.**, 829 N. Coffman Drive, Montebello, Calif.



13d/Up

## Required Reading

continued from page 66

to the bath, the bedroom, the dining room and the whole house.

Not the least of the book's enjoyment lies in the felicity of Mr. Lynes's style and the wit of his choice of illustration. Readers of the RECORD will remember both of these qualities from his article "The American at Home," in Record Houses of 1957, here revised as a chapter.

## Africa

NEW ARCHITECTURE IN AFRICA. *By Udo Kultermann. Universe Books, Inc., 381 Park Ave. South, New York 16. 204 pp., illus. \$12.95*

"New Architecture in Africa" reports, mainly by illustrations, on the recent contemporary buildings in 36 countries, with the major stress on Morocco, Nigeria, Ghana and Algeria. The author's intent was to give proof of his contention that an indigenous African architecture is already in being.

Morocco was particularly stressed because of its key position, both culturally and politically, between Africa and Europe. Although Algeria is making advances in construction, it still lags because of the political tensions during the last 10 years. American influence can be noted in Egypt while French stylistic influence still predominates in the newly independent West African states, as can be readily seen in the 243 photos and drawings.

## Received

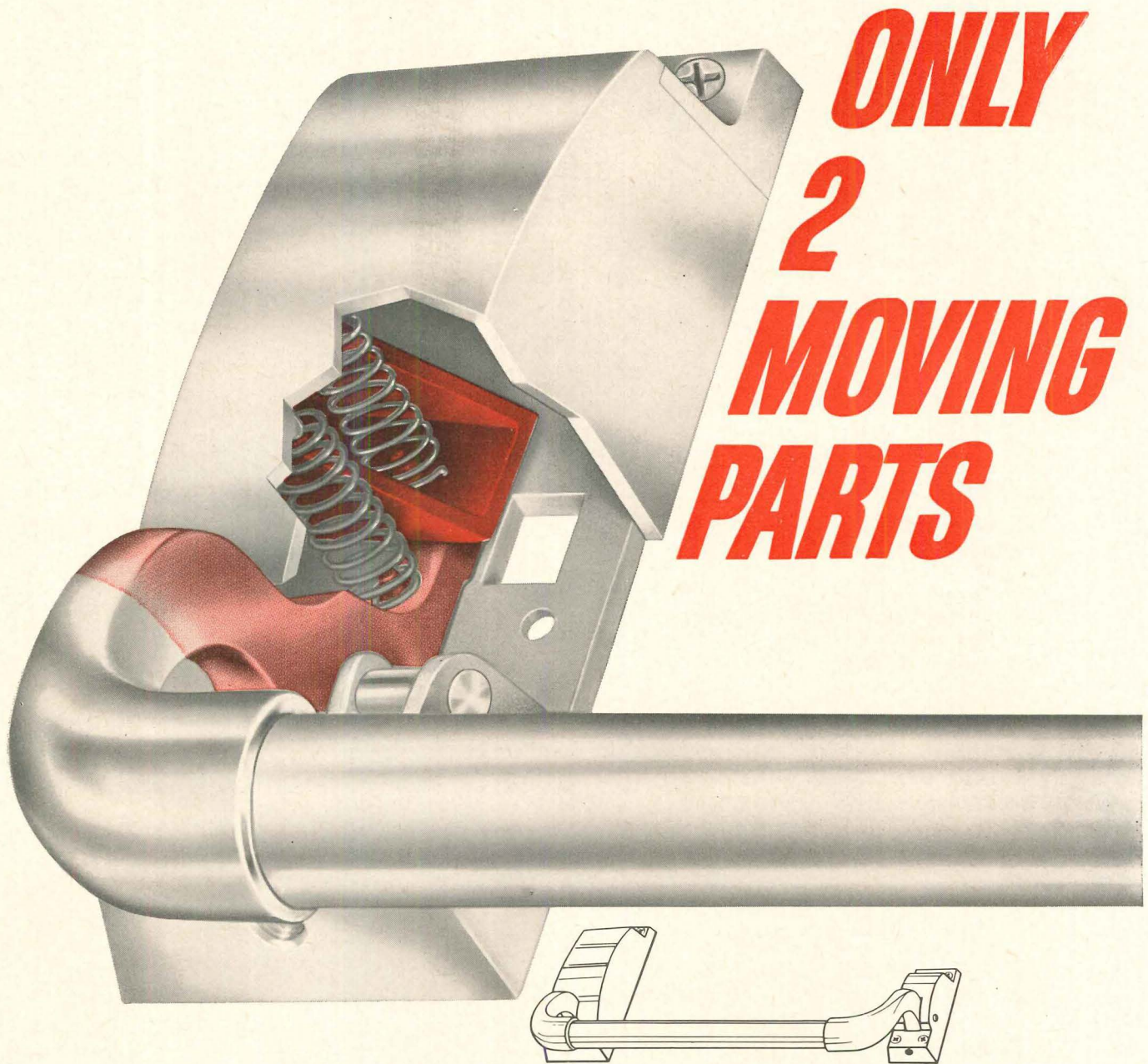
SPECIAL LIBRARIES: *How to Plan and Equip Them. Edited by Chester M. Lewis. Special Libraries Association, 31 E. 10th St., New York 3. 117 pp., illus. \$5.55 (paperbound).*

ARCHITECTURE IN THE SOVIET UNION *A Report for the Use of Specialists in the Field of Architecture Planning to Visit the Soviet Union. By Paul Wilten. Institute of International Education, 800 Second Ave., New York 17. 14 pp. No charge.*

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**WHY S&G EXIT DEVICES LAST LONGER...**



Less moving parts means less wear. S&G builds those two parts strong, hard... to endure and endure. Result? Our 5300, 5410 and 5560 Series (Rim, Vertical and Mortise devices) make building owners and operators completely satisfied... longer!

Other significant features of S&G Exit Devices include: UNI-TRIM® which offers precise location of trim because screws bolt through device case directly into trim lugs; identical outside appearance regardless of whether it's a Rim, Vertical or Mortise device.

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ROCHESTER 21, NEW YORK

IN CANADA: Sargent & Greenleaf of Canada, Ltd., New Hamburg, Ontario

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## What's wrong with this new washroom? Scott found 4 big design mistakes.

At first glance it looks great. Neat, clean, up-to-date. But there's more to a washroom than handsome fixtures. Scott's trained consultants found four planning errors in this layout:

- Mirrors are best located away from washbasins. That way people don't brush loose hair into sinks, and clog them. And successive users aren't kept waiting.
- The Scott towel dispenser should be located between the sink and the exit for a more efficient traffic pattern.
- The waste receptacle should be located between the towel dispenser and the exit, so people aren't kept waiting while each user dries his hands.

- Uncovered wall-hung waste receptacles increase maintenance efficiency, discourage litter, speed traffic flow.

For the washrooms in your buildings, remember: 1) Scott fixtures give your clients years of value, dispensing the nation's finest paper products; 2) Scott's unique Washroom Advisory Service is always available to you, free of charge. Write for our 16-page washroom planning booklet, or call your local Scott office. Scott Paper Company, Philadelphia 13, Pennsylvania.

SCOTT  MAKES IT BETTER FOR YOU





Design by Carson, Lundin & Shaw

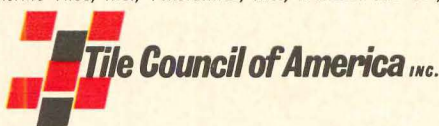
## New idea in ceramic tile: classroom-in-the-round

Unusual? In design, perhaps. In function, ease of maintenance and economy, very down to earth. In beauty, superb. School boards will readily appreciate the astute use of ceramic tile by Carson, Lundin & Shaw in this striking classroom-in-the-round for schools where traffic is heavy and little feet careless. For when today's children have grandchildren,

the ceramic tile will be intact and sparkling in its original color—scratchproof, stainproof, fadeproof, and, of course, fireproof. It will never need waxing or polishing, will always be easy to clean. For beauty, durability, and long-range maintenance economy, specify ceramic tile.

■ TILE COUNCIL OF AMERICA, INC. ■  
800 Second Avenue, New York 17, N.Y.

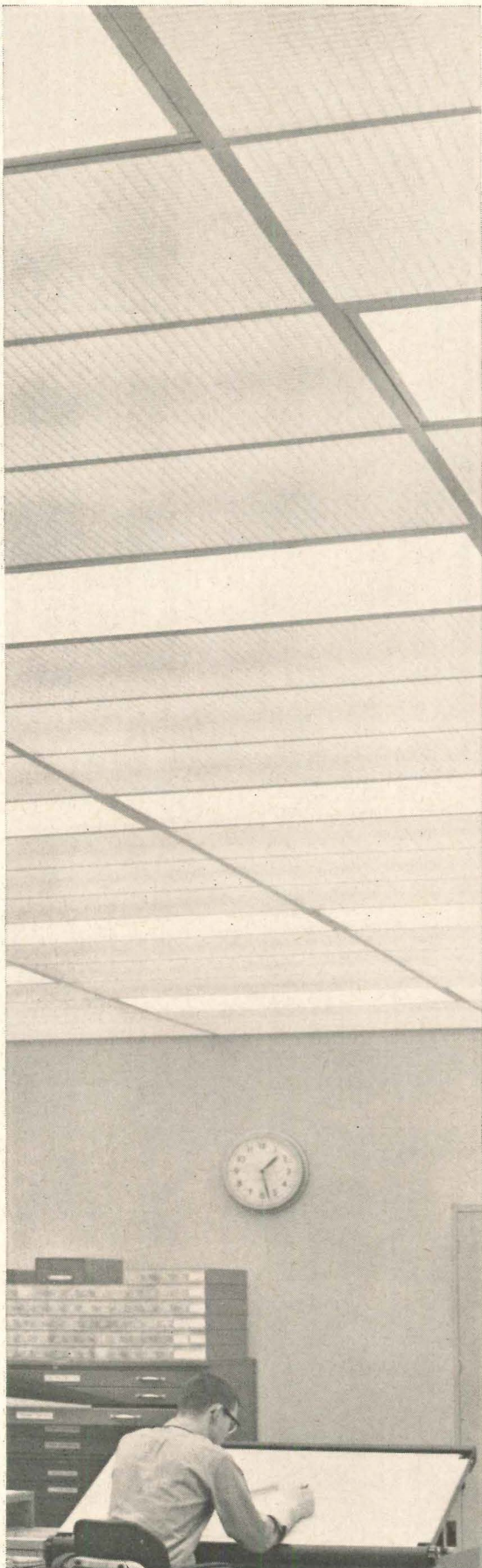
Participating members: American Olean Tile Co.; Atlantic Tile Manufacturing Co.; Cambridge Tile Manufacturing Co.; Carlyle Tile Co.; Continental Ceramic Corporation; General Tile Company; International Pipe and Ceramics Corporation; Jackson Tile Manufacturing Co.; Jordon Tile Manufacturing Co.; Lone Star Ceramics Co.; Ludowici-Celadon Co.; Monarch Tile Manufacturing, Inc.; Mosaic Tile Co.; Murray Tile Co., Inc.; National Tile & Manufacturing Co.; Oxford Tile Co.; Pomona Tile Mfg. Co.; Ridgeway Tile Co.; Summitville Tiles, Inc.; Texeramics, Inc.; Wenzel Tile Co.; Winburn Tile Mfg. Co.



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Unusual but highly effective is this installation of Sylvania's Sylva-Flo (air-handling) Troffers in a Sylva-Cell (illuminated) ceiling. This application provides the combined comfort of high-footcandle lighting and outstanding air conditioning performance.

## DESIGNING WITH LIGHT

In the hands of an expert, light is a true design tool used to create atmosphere . . . to accentuate, minimize or blend shapes and colors . . . to produce subtle overtones of warmth or coolness in an area.

And, primarily, of course, to provide the proper quantity and quality of illumination for the visual tasks being performed. But even an expert's talents are limited if the tools are inadequate.

That's why Sylvania quality-built Lighting Fixtures and Ceiling Systems are considered 'excellent' by lighting designers throughout the country. Sylvania indoor and new outdoor fixtures combine attractiveness with long-lasting lighting effectiveness.

For descriptive and specification information on the broad line of Sylvania fixtures and ceiling systems, see the complete 16-page catalog in Sweet's Architectural File or write direct.

SYLVANIA LIGHTING PRODUCTS  
A Division of SYLVANIA ELECTRIC PRODUCTS INC.  
One 48th Street, Wheeling, West Virginia



**LIGHTING FIXTURES BY**

# SYLVANIA

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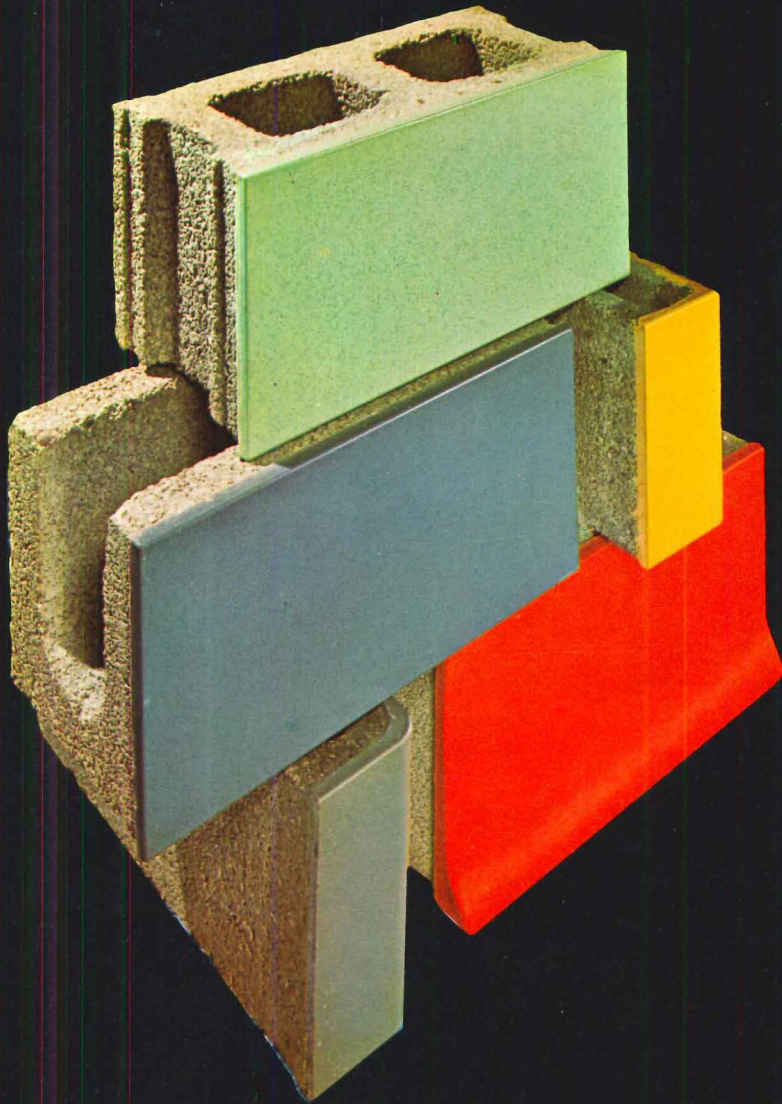


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## GLAZED STRUCTURAL MASONRY UNITS

For inherent economies of block combined with the performance of glaze, specify SPECTRA-GLAZE to meet requirements for fire safety (ASTM E-84); resistance to crazing (ASTM G-426); dimensional tolerances ( $\pm \frac{1}{8}$ " ) and chemical resistance (ASTM C-126, Grade G). Manufactured in 31 licensed plants and distributed locally.

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### SUGGESTS THE CHECK LIST PURCHASE

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Two things matter when you select an electric plant for stand-by or sole source power. One: does the plant deliver the power needed for the job; two: is it completely reliable and dependable. Getting the things that matter is usually easier with a Kohler Electric Plant.

Kohler specializes in unitized design—a perfect match of engine and generator completely assembled and fully tested at the factory. In portable, stationary or marine models unitized design insures proper alignment of a close coupled unit on a properly engineered mounting.

From 500 to 175,000 Watts, Kohler Electric Plants offer a combination of engineering experience, quality and features that makes it possible to urge you to buy by the "check list" method. For complete information, see your Kohler Distributor or write Dept. EP3-509 Kohler Co., Kohler, Wis.

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✓	Engine and generator from a single source
✓	Nationwide sales and service
✓	Unitized design—generator and engine engineered into a unit
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✓	Gas—Diesel and Gasoline fuel options
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✓	Customized for load and job

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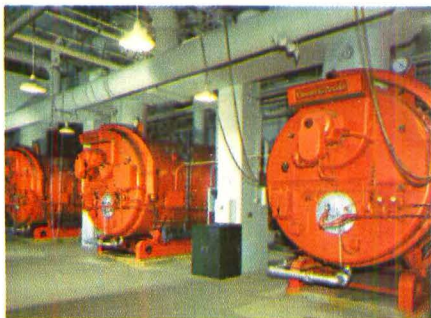
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**There's a world of difference...  
in the way Cleaver-Brooks services boilers!**



Trio of 600-hp packaged CB boilers installed in new 41-story United of America Building, Chicago. Architects: Shaw, Metz & Assoc., Chicago. Consulting Heating Engineers: John Dolio & Assoc., Chicago.

Cleaver-Brooks service starts with a factory-trained specialist right on-site the day a new system gets up its first head of steam . . . and continues throughout the lifespan of the installation, with parts and service always nearby. *There's a world of difference* with this Cleaver-Brooks start-to-finish service — dollars-and-cents reliability that pays off again and again for CB boiler users. They get the finest boiler built plus all the help they need for top boiler room performance. Write for your free copy of our booklet *How to Select a Boiler*. 3707 N. Richards St., Milwaukee 12, Wis.

**Cleaver  Brooks®**  
ORIGINATOR AND LARGEST PRODUCER  
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ARCHITECTURAL

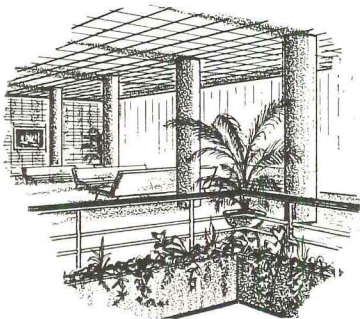
# IDEAS

by **SONOCO**

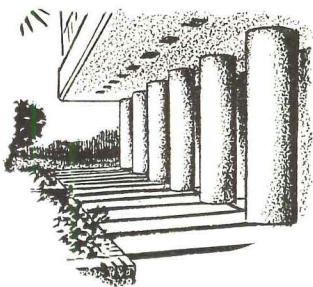
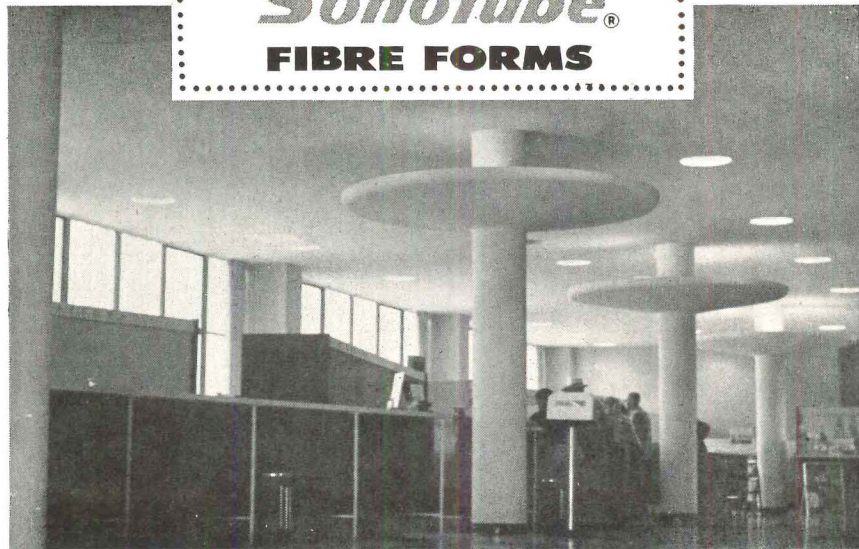
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**FIBRE FORMS**



Used in, or adjacent to glass walls, round columns offer minimum obstruction to light and occupy minimum space for a brighter interior.



In any structure where round concrete columns are planned, SONOTUBE Fibre Forms will usually cut costs. In your next design, specify SONOTUBE Fibre Forms — fastest, most economical method of forming all types of round concrete columns.

The graceful beauty of round concrete columns enhances overall building design for columns contribute to the design while performing an important support function.

For economical forming, specify SONOTUBE Fibre Forms. This low-cost, lightweight form is easy to place, brace, pour, strip, and finish . . . thus saving contractors time, labor, and money.

Available in standard 18' lengths or as required, in sizes 6" to 48" I. D. Can be sawed.

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For full information and prices, write

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ASCE Show  
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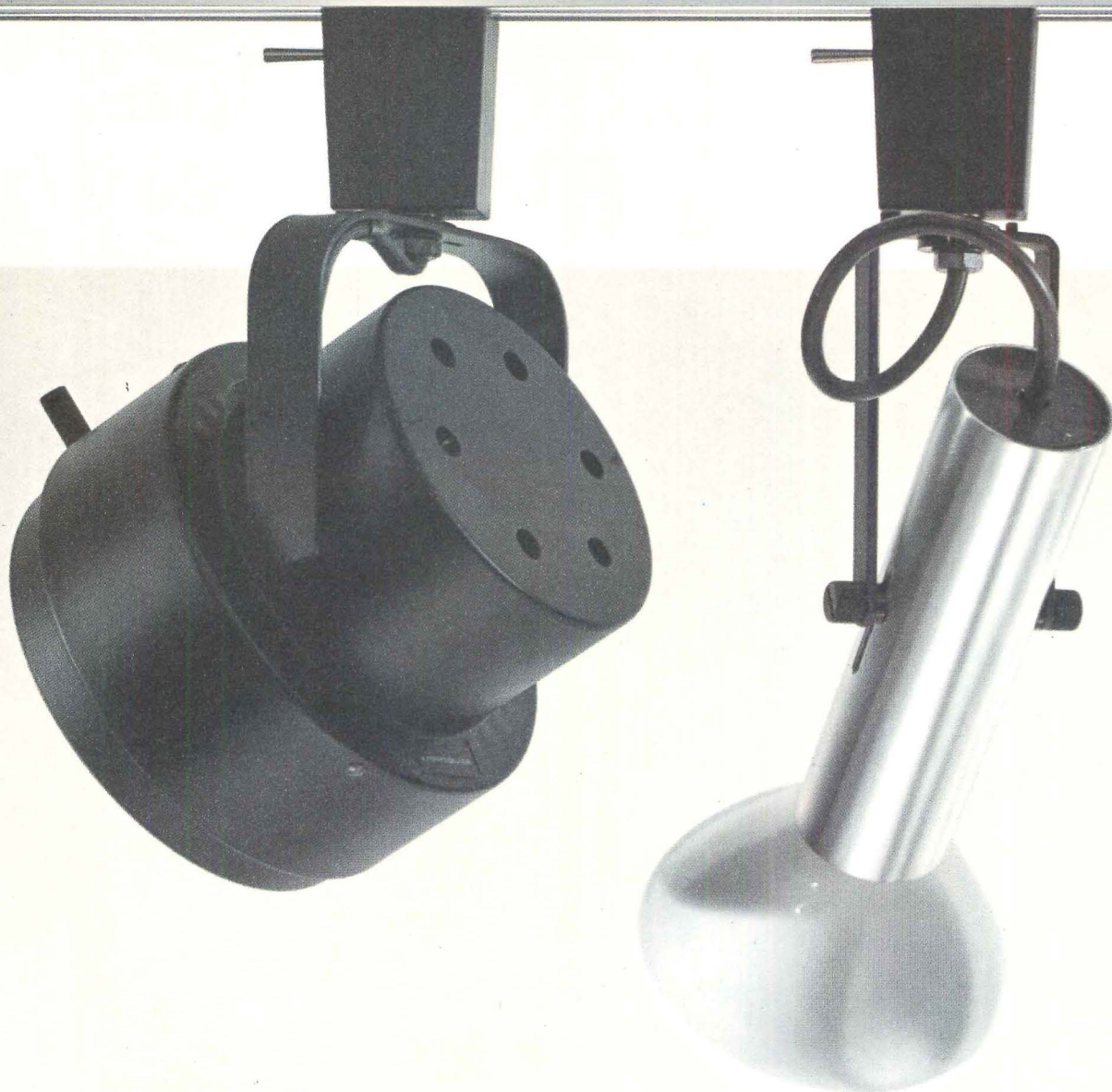


**Want flexible spotlighting you don't have to hide? You're on the right track. Follow it.**





**It's Lightolier's patented Lytespan®. Mounts clean—on surface, on stems, even recessed.**



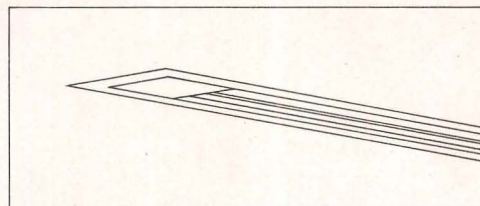
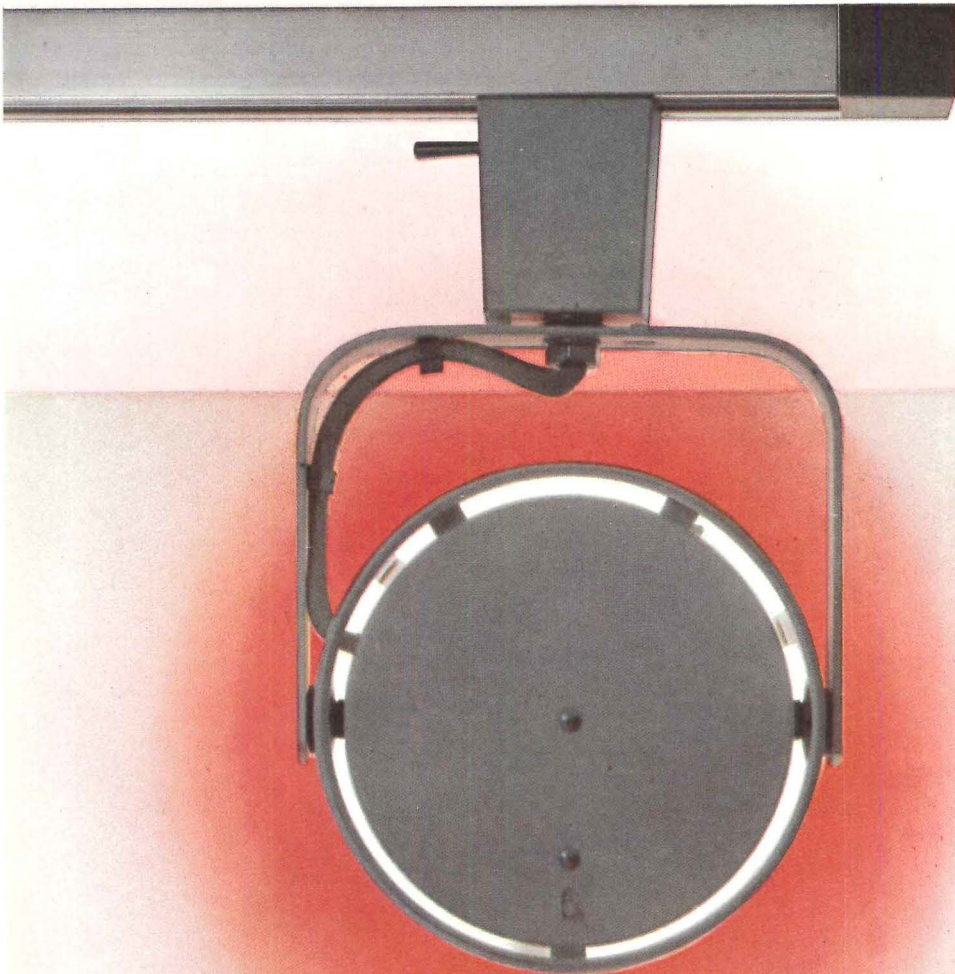


**Joins clean—no bulge or wiggle. Connects clean—to cleanly-shaped spots. Turns corners.**

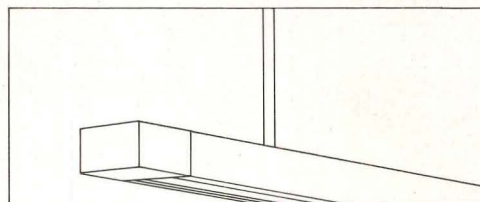




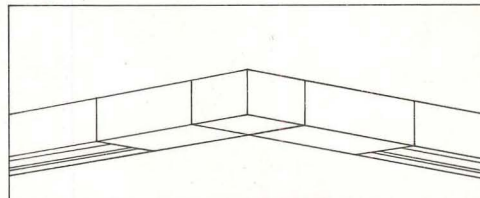
**Comes in 4' & 8' modules. Goes miles if you like. Stops.**



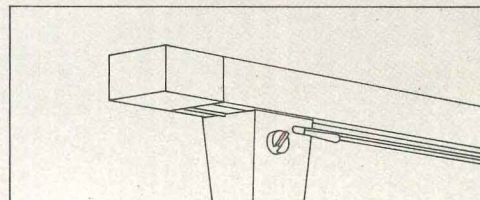
**Lytespan recessed.** It's the first lighting-distribution track which can be recessed. A special housing holds track neatly in both dry and plaster ceilings. You can also recess it (or surface-mount it) vertically or horizontally on walls. The first made of extruded anodized aluminum. The track with the smallest cross-section—1" x 1½".



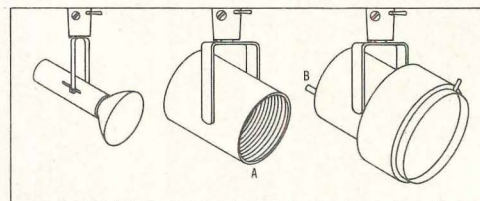
**Lytespan suspended.** Out in the open—on stems or surface-mounted—Lytespan still looks fine. It was not adapted from an industrial power track. It's the first track designed from scratch as part of an integrated, architectural lighting system.



**Lytespan cornered.** A 90° connector—for surface or stem mounting—eliminates heavy junction boxes. Makes Lytespan the first track to turn corners with no change in cross-section.



**Lytespot engaged.** Clip Lytespot to track anywhere. Thumbscrew engages it mechanically; lever electrically. Turn lever to disconnect light for on-track storage. Loosen thumbscrew to slide light along track to a new position.



**Lights! Action! Color!** These 3 Lytespots and their 20 variants bring theatre-effects to display lighting. All swivel fully. Most take interchangeable, heat-resistant color filters. Wattage ranges from a low voltage 30-watt, long-range pencil spot to 300 watt floods. Multi-groove baffle with deeply regressed lamp (A) minimizes source brightness. Lytespot with built-in dimmer (B) provides continuous control from 0 to 32,000 candlepower.

See Yellow Pages for nearest Lightolier distributor.

**LIGHTOLIER®**

General offices: Jersey City 5. Showrooms: 11 E. 36 St., N.Y. 16; 1267 Merchandise Mart, Chicago 54; 2515 So. Broadway, Los Angeles 7; 1718 Hi-Line Drive, Dallas 7





# Now a vinyl floor wall-to-wall with seams welded water-tight, dirt-tight, spill-tight!

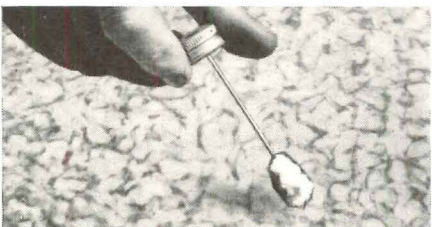
Now, thanks to Sandura research, LURAN® Vinyl can be welded! That's right. Now you can have a clear, unbroken expanse of vinyl wall-to-wall, even room-to-room. That means no more water-collecting, dirt-collecting, open seams down the middle of your floor. There's no place for water to seep, no place for dirt to creep! And new Luran's luxurious colors and patterns are sealed deep under a new formula vinyl that's as stain-free, as scrub-free, as care-free as a floor can be—makes this the fastest-cleaning vinyl floor you can own! Another surprise! New Luran costs less than many other luxury vinyl floors!

## NEW LURAN VINYL

by Sandura, Benson-East, Jenkintown, Pa.—Fine Floors for Forty Years.

### Seal it!

With the amazing new LURAN VINYLWELD PROCESS your Sandura retailer can smooth-weld 6-foot widths of any Luran permanently-installed vinyl floor wall-to-wall, room-to-room, with no open seams!



### Heel it!

Go ahead! The beautiful new embossing of Luran Imperial and Luran Regency masks most accidental indentation—gives a new deep dimensional look to vinyl! Your foot never touches the patterns!



### Feel it!

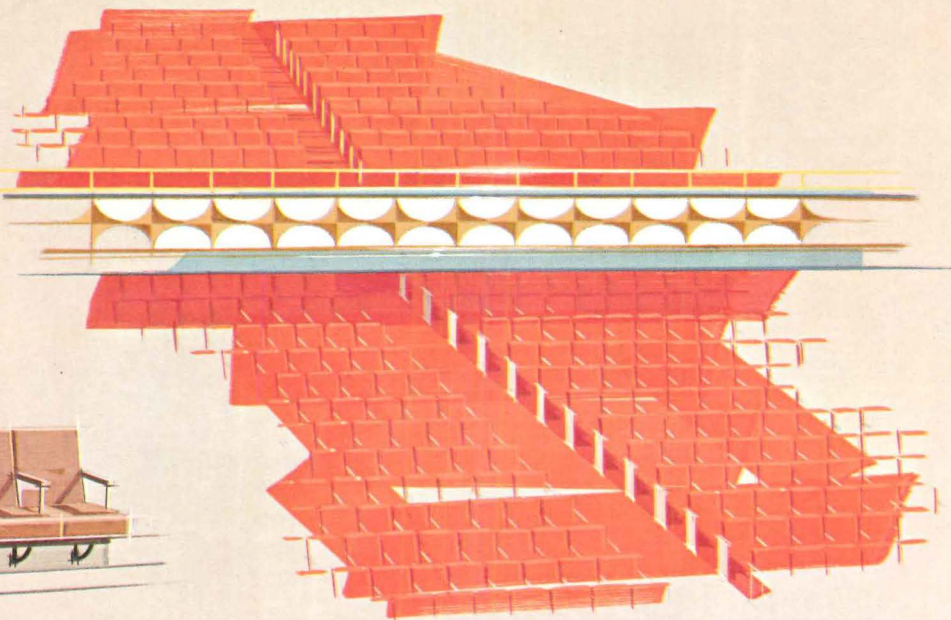
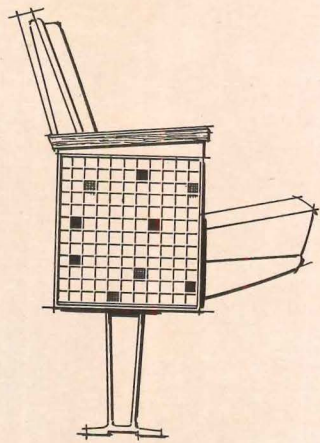
You won't believe a luxury vinyl could have a "hand" like this one. Luran Imperial and Regency feel like fine leather. And so warm underfoot! For every room in the house, even basements!



← For more data, circle 64 on Inquiry Card

For more data, circle 65 on Inquiry Card



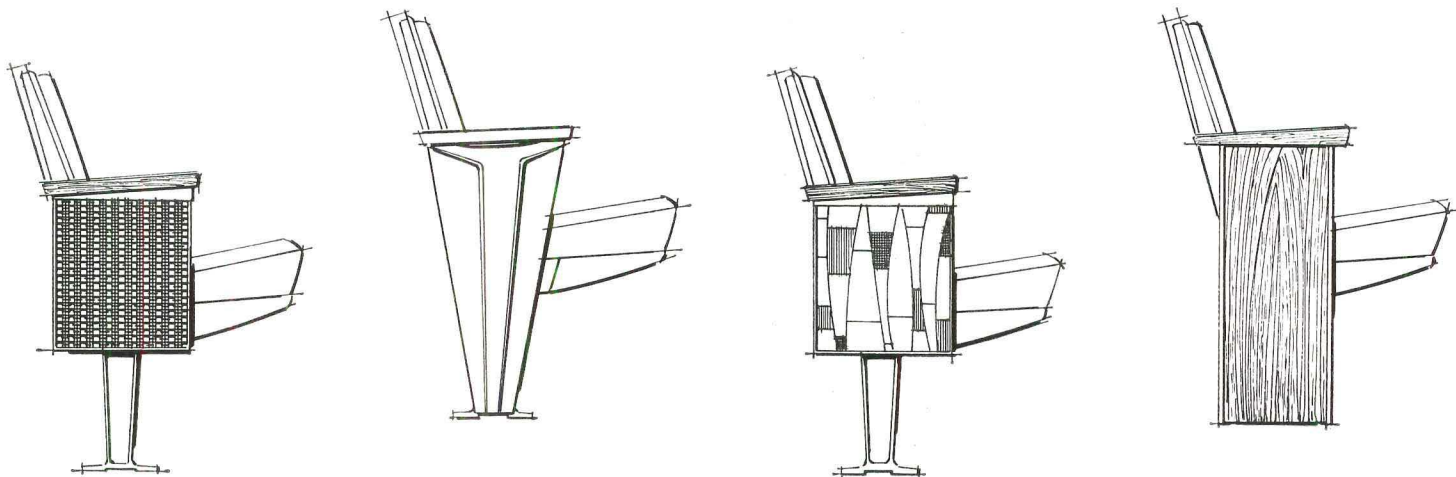


Chairs can be mounted on standards, pedestals, swivel bases, or risers.

THE *Stellar* SERIES  
by American Seating



# DESIGNER'S CHOICE



## THE NEW STELLAR SERIES

*You work with it instead of around it. You have a free hand with fabrics, a wide choice of aisle standards. You can pick your style, your width, your mounting.*

Seating is part of the theatre. Shouldn't it also be part of the design? Ideally, yes.

But how many budgets permit custom seating? That, until now, has been the problem. Stereotyped seating of standard design, or custom seating at custom cost. These have been the only choices open to you.

Now, the new Stellar Series by American Seating changes the picture completely. It gives you design freedom at a practical cost.

You can choose your fabric. You can choose your aisle standard. You can choose your seat and back, width and mounting.

The possible combinations are all but unlimited. You can have, in effect, chairs made for your design alone. Floor plans, grades, ventilation, lighting—all the functions of your design can be considered in your choice.

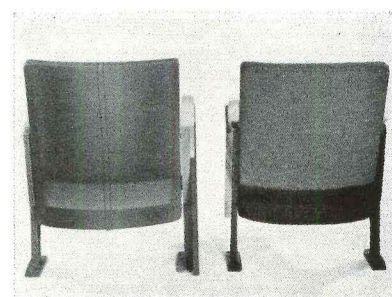
The Stellar Series by American Seating is the first and only seating in its price range to offer you this flexibility, this freedom. We can only begin to suggest the possibilities here. May we send you the details? Write Department AR-2 for our brochure on the new Stellar Series.



The standard by which all public seating is measured  
GRAND RAPIDS 2, MICHIGAN

Manufacturers of school, church, and hospital furniture; auditorium, stadium, theatre, and transportation seating; folding chairs and tables

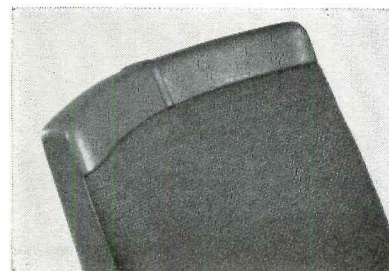
For more data, circle 66 on Inquiry Card



The new Stellar chair has a very long back to protect the seat from feet. There are three variations of the Amerflex® plastic back (left), and two of the upholstered back (right).

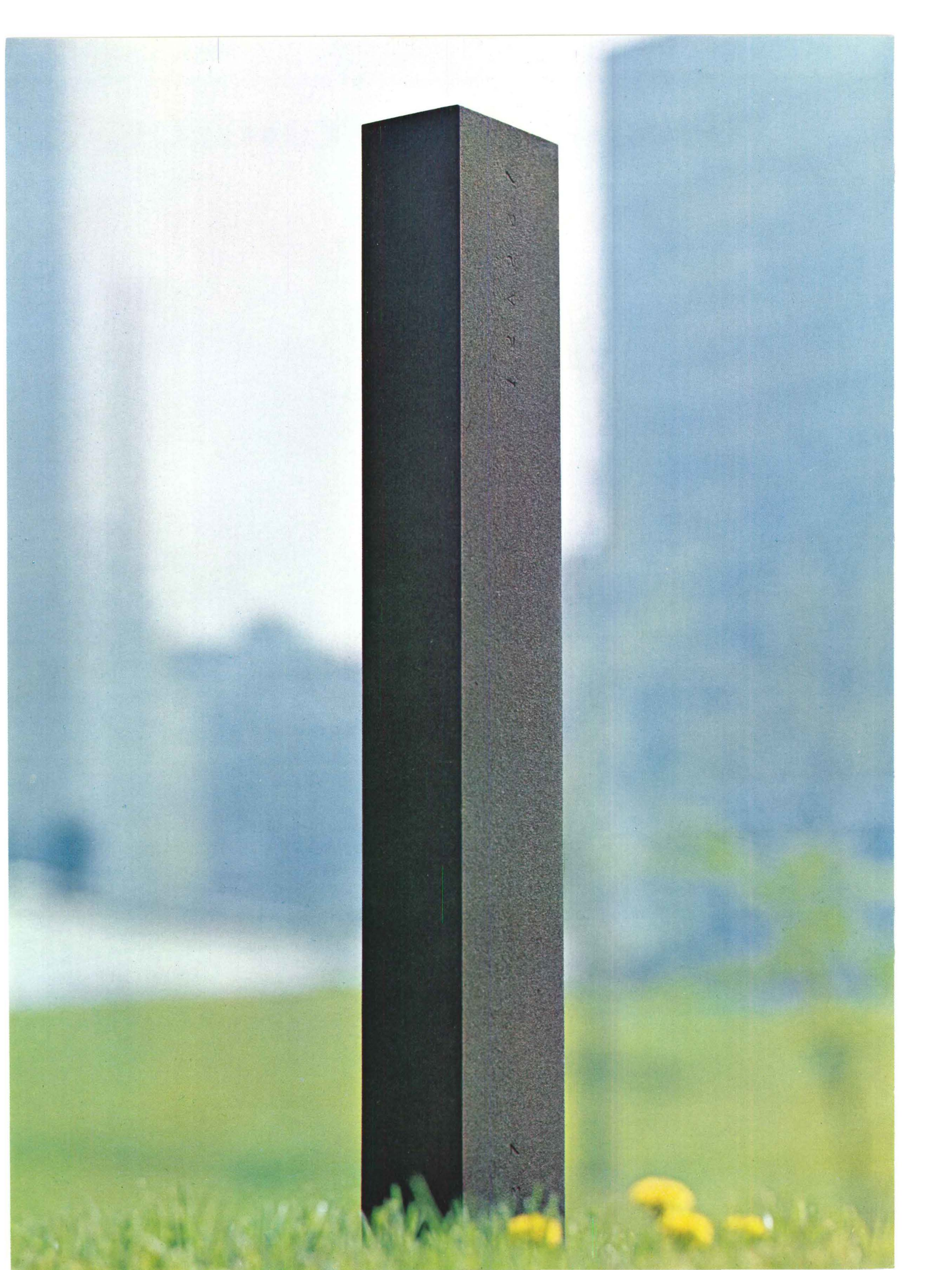


Single or double armrests are available. You may choose either.



Exclusive Soil-Guard (optional) protects upholstery at top of chair back.







## ***THIS STEEL PAINTS ITSELF***

When used bare on building exteriors, it weathers to a rich, earthy color of natural beauty, and if it is scratched, it heals itself. USS COR-TEN Steel is the name of this versatile material.

The oxide coating that forms on bare COR-TEN Steel is extremely dense and adherent, inhibits further corrosive attack and preserves the structural integrity of the member. Its brown-red-blue color gradually darkens with exposure to the elements and develops a fine-grained texture—a character only nature can give, as with stone or timber.

USS COR-TEN Steel is a high-strength low-alloy steel. It is up to 40% stronger than structural carbon steel, so it can be used in thinner sections to cut weight. It

is readily weldable. And, when a color scheme *requires* painting of steel members, the paint will last twice as long because the oxide film is nonflaking. COR-TEN Steel is available in all rolled steel products—plates, structurals (including wide-flange), bars, sheets, strip and tubular products. For more information, write for our new folder, "COR-TEN Steel for Architectural Applications." United States Steel, Room 6774, 525 William Penn Place, Pittsburgh 30, Pa. USS and COR-TEN are registered trademarks.

United States Steel Corporation • American Steel and Wire Division • Columbia-Geneva Steel Division • National Tube Division • Tennessee Coal and Iron Division • United States Steel Supply Division • United States Steel Export Company



... the architectural metal

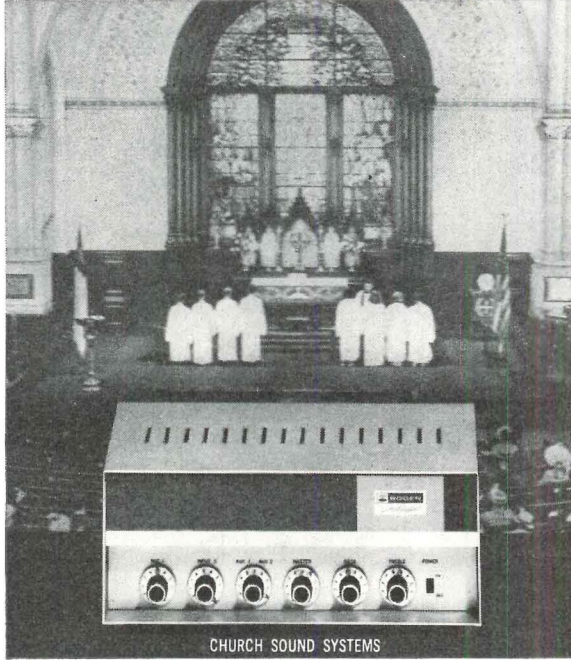
**United States Steel**







HOME COMMUND-PHONE



CHURCH SOUND SYSTEMS



INTERCOM SYSTEMS



STEREO HI-FI COMPONENTS



SCHOOL SOUND SYSTEMS



PAGING and BACKGROUND MUSIC SYSTEMS

## You'll probably hear from us today.

You could hear from us anywhere. In schools, churches, homes ... wherever sound is needed. Consider the problems of sound in school. Then consider this solution: BOGEN's Series 330 School Console reaches 200 classrooms. It distributes sound to any or all locations using different sound sources over one, two or more channels. Inside the console you'll find an FM/AM high fidelity tuner; program and intercom amplifiers; 200 selector switches with an all-station master switch; and a four-speed record changer. Other BOGEN console systems, in-

cluding desk models, range from single to multiple channel systems serving 10 to 250 rooms.

For sound in Church, BOGEN offers P.A. amplifiers from 10 to 100 watts. Dependable power to reach from pulpit to last row clearly and cleanly. BOGEN combines excellence of style, design, and engineering.

Mail the coupon for detailed information. Don't make a sound without hearing from BOGEN ... first in sound for over 30 years.

## If not, let us hear from you.

LEAR SIEGLER, INC.  BOGEN COMMUNICATIONS DIVISION  
PARAMUS, NEW JERSEY

I'd like to receive, free, complete information on the following sound products: Stereo High Fidelity ; Intercom Systems ; Public Address Systems ; Transcription Phonographs ; Paging Systems ; School Consoles

Name ..... Title .....  
Company .....  
Address .....  
City..... Zone..... State.....

AR-10

# BOGEN

SOUND PRODUCTS FOR COMMUNICATIONS AND ENTERTAINMENT FOR OVER 30 YEARS

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For more data, circle 68 on Inquiry Card ➔





laminated plastic

**FREE!**

Write for Color Chart . . .

New Citation Series of 44 Solid Colors

For the exclusive use of the skilled professional interior designer, these bold solid colors are styled up to your needs for dramatic interiors — not compromised to make them foolproof in the hands of amateurs. A new finish assures stain and abrasion resistance never before offered in a solid color of Formica® laminated plastic. May we send a complete color chart?

Formica Corporation • Department NC-28 • Cincinnati 32, Ohio • subsidiary of

**CYANAMID**





**laminated plastic**

New Formica  
**CITATION SERIES**  
features  
**SPECIAL DESIGNS**

Forget the decorating limitations of laminated plastic... Formica has raised your horizon a country mile as of right now.

In a brand new Professionals' Idea Book we present special designs of Formica® laminated plastic, the likes of which you have never seen. Roulette as shown at left is typical. These Special Designs are yours to use as you will. You can use the book... but only as a starting place for your own imagination.

We can and will produce Formica® laminated plastic in your own original and exclusive designs.

May we send you a free  
copy of Professionals  
Idea Book?

Formica Corporation,  
Department DA-63,  
Cincinnati 32, Ohio

subsidiary of

**CYANAMID**





"THE BEST FAVOR OUR ARCHITECTS ever did us was to recommend total electric design," say owners Harry Kuhn (left) and Kermit Paxton on balcony overlooking their new motel.

## "TOTAL ELECTRIC DESIGN MEANS EFFICIENCY AND SAVINGS IN MODERN MOTEL CONSTRUCTION"

**Harry Kuhn and Kermit Paxton, owners of the Lincoln Motor Lodge, Gettysburg, Pennsylvania, report on the advantages of using flameless electricity as a single source of energy for all heating, cooling, water heating, and lighting.**

"When I talk about the benefits of total electric construction," says Harry Kuhn, "I'm speaking as a man who used to own a motel that *wasn't* total electric. So I can really appreciate the difference!

"Take our heating and cooling set-up, for example. In each room here we have individual electric baseboard units and through-the-wall electric air conditioners. This is the ideal—and economical!—combination for year-round comfort, and it also eliminates the possibility of a central system failure that could cause a total shutdown.

"Another thing I like is our 7-unit electric water heating system. By locating electric water heaters at the main points of use, we were able to do away with a central boiler room and inefficient long pipe runs. With this arrangement, we literally have a never-ending supply of hot water."

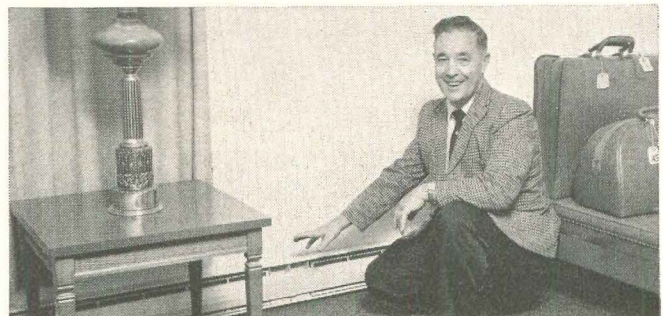
"Something else that's important," adds partner Kermit Paxton, "is the large savings on maintenance and installation that we realized by going total electric. Why, on heating equipment alone, co-ordinated planning by our architects, project designer, and electric utility company saved us more than \$5000 and when you figure that kind of money over a few years at, say 5%, it really adds up. All in all,

I'd say that Harry and I are pretty grateful to the people who suggested we look into the advantages of a total electric design."

For architects and consulting engineers, total electric construction offers the modern method of combining heating, cooling, water heating, and lighting into one efficient operation using a single source of energy. If you are interested in how it can help you in the design of commercial and industrial buildings, contact your local electric utility company. They will welcome the opportunity to work with you.

### **BUILD BETTER ELECTRICALLY**

Edison Electric Institute, 750 Third Avenue, New York 17



**COMPACT ELECTRIC BASEBOARD UNITS** like this provide clean, even heat, materially reduce housekeeping costs.

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**SLAB SHORE SYSTEM**  
 NEW METHOD OF FLAT SLAB  
 FORMING FOR MULTI-STORY  
 HIGH-RISE CONSTRUCTION



Symons Slab Shore System uses Symons standard Steel-Ply Forms, normally used for vertical wall forming, for all decking requirements. Material adaptability, ease of assembly, speed of erection and stripping are among its advantages over conventional flat slab forming.

Almost any slab forming requirement up to 15' in height is made possible by combining tubular steel shores and extensions. Under normal loading conditions, each shore can support up to 60 sq ft of formed deck with a minimum of lateral bracing.

Forms are set on sliding ledger angles; securely held without clamping or connecting hardware. Forms strip easily, without disturbing stringers or shores. System eliminates reshoring; allows more reuse of forming equipment.

*Symons Slab Shore System, including all component parts, is available for rental with purchase option.*

Free field service and engineering layouts are available for all jobs. Using this service increases the benefits of the System . . . means a better job, at a lower cost.



**MORE SAVINGS FROM SYMONS**

For more data, circle 70 on Inquiry Card

## EDUCATION NEWS

The Illinois Institute of Technology has established a Metropolitan Studies Center with **Dr. Edward M. Levine**, I.I.T. associate professor of political science, as acting director. Graduate and undergraduate students in the program will take courses in architecture, civil engineering, city planning and social sciences, such as economics, history, political science and sociology.

**Dean-Emeritus Emil Lorch**, known as "father" of architectural education at the University of Michigan, died this summer at the age of 92. In 1906 he organized the department of architecture in the University's engineering college. He became dean of a separate College of Architecture in 1931, staying in that position until 1936. He continued as professor of architecture until his retirement in 1940. Dean Lorch drew up the first plans for the University of Michigan campus in 1907 and designed the present College of Architecture and Design building in 1925.

**James M. Beshers**, a mathematical sociologist and author of the 1962 book "Urban Social Structure," has been appointed associate professor in the department of city and regional planning at the Massachusetts Institute of Technology.

**Stanford O. Anderson**, architect, has been appointed assistant professor in department of architecture at the Massachusetts Institute of Technology. Since 1961, Professor Anderson has been in Germany under a Fulbright Grant studying the influence of Peter Behrens on modern architecture.

English architect and urban planner **David Neville Lewis** has been appointed Andrew Mellon Professor in Architecture and Urban Design at Carnegie Institute of Technology.

New assistant to the dean of the school of architecture and the arts at Auburn University is **William G. McMinn**, formerly professor of architecture at Clemson College. One responsibility will be as coordinator of the school's educational television program. Professor McMinn will also teach a class in architectural design.



- one part
- silicone rubber
- ready to use
- no mixing

### AVAILABLE FROM:

- Atlanta, Georgia**  
Dow Corning Corporation
- Billings, Montana**  
Madden Construction Supply Company, Inc.
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Dow Corning Corporation
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### CERAMIC TILE APPLICATIONS:

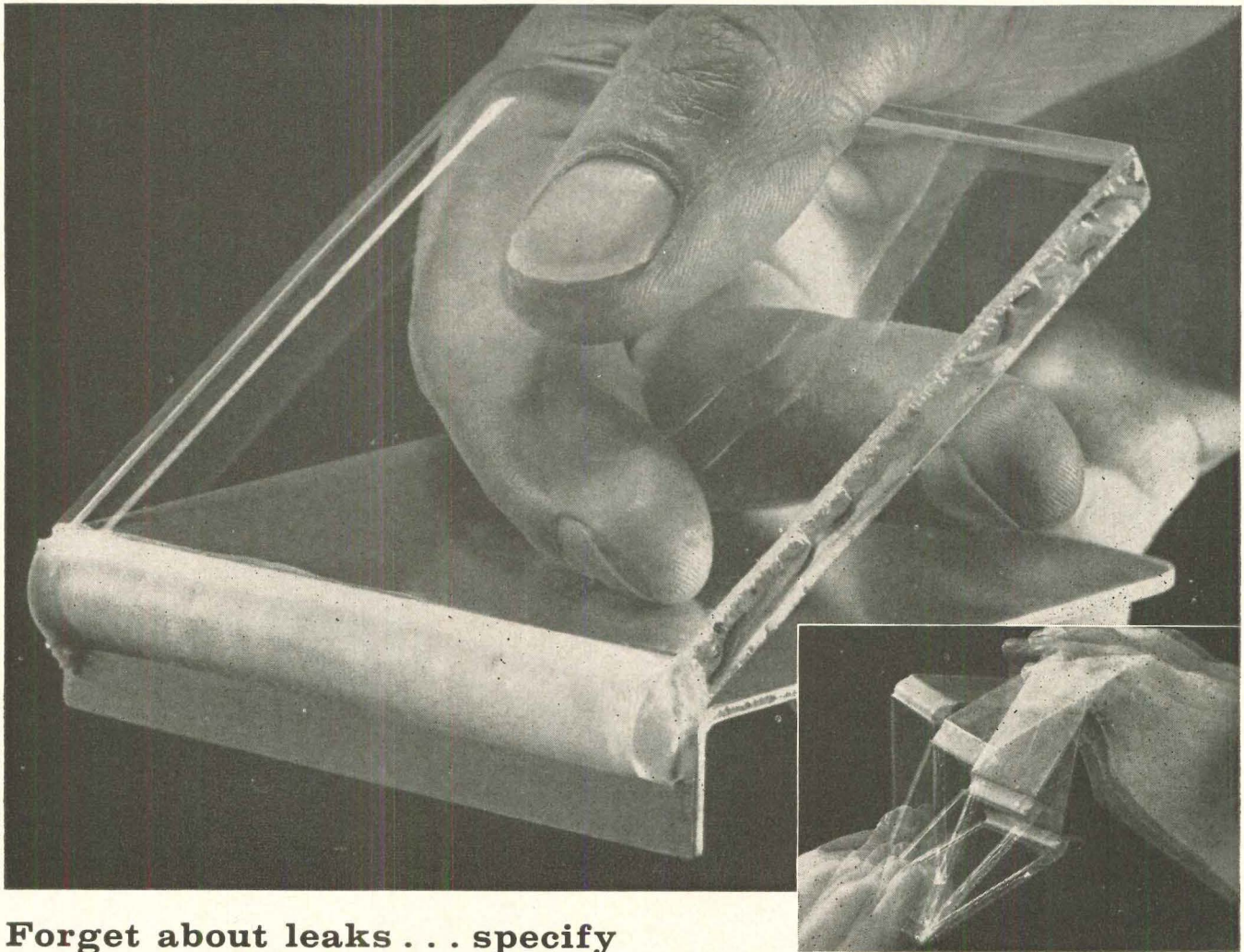
- American Olean Tile Co.
- Lansdale, Pennsylvania
- and regional warehouses

**Dow Corning**

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# How's this for a bond?



## **Forget about leaks . . . specify DOW CORNING 780 Building Sealant**

Have you ever seen such flexibility and adhesion in a sealant? If you haven't, evaluate Dow Corning 780 Building Sealant. You can really depend on this premium performance *silicone rubber* for sealing joints where *expansion* and *contraction* (even as much as 50 percent) are anticipated. It bonds permanently with any combination of structural materials when properly applied in a well designed joint.

Easily applied by conventional methods, this one-part silicone rubber sealant forms a water-tight/weather-proof seal that remains permanently flexible. You do the job only once . . . the first time!

Dow Corning 780 sealant outlasts other sealing and caulking compounds many times over, *yet it's now competitively priced* with other "premium" sealants! Its superior performance has been demonstrated on hundreds of construction sites over a period of five years.

More information and a convincing demonstration of this Dow Corning sealant's unique sealing power can be yours by returning the coupon below.

DOW CORNING CORPORATION  
Dept. C434, Chemical Products Division  
Midland, Michigan

**I'd like to make this torture test myself!**

Send me the aluminum-to-glass "hinge" shown above and full particulars on Dow Corning 780 Building Sealant.

Name \_\_\_\_\_

Title \_\_\_\_\_

Firm \_\_\_\_\_

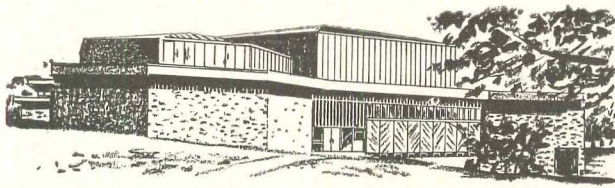
Street \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

## **Dow Corning**

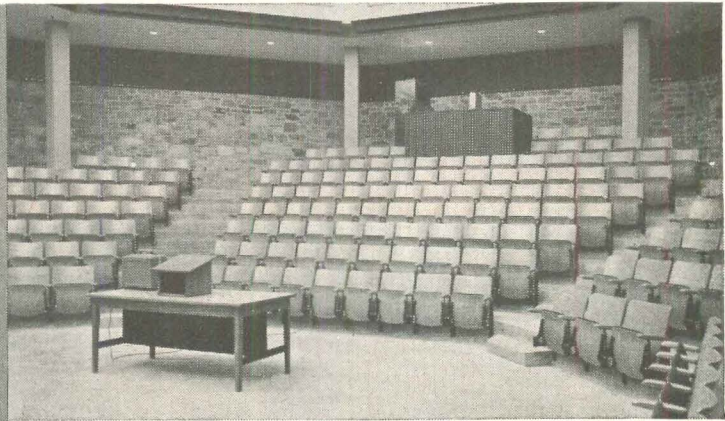
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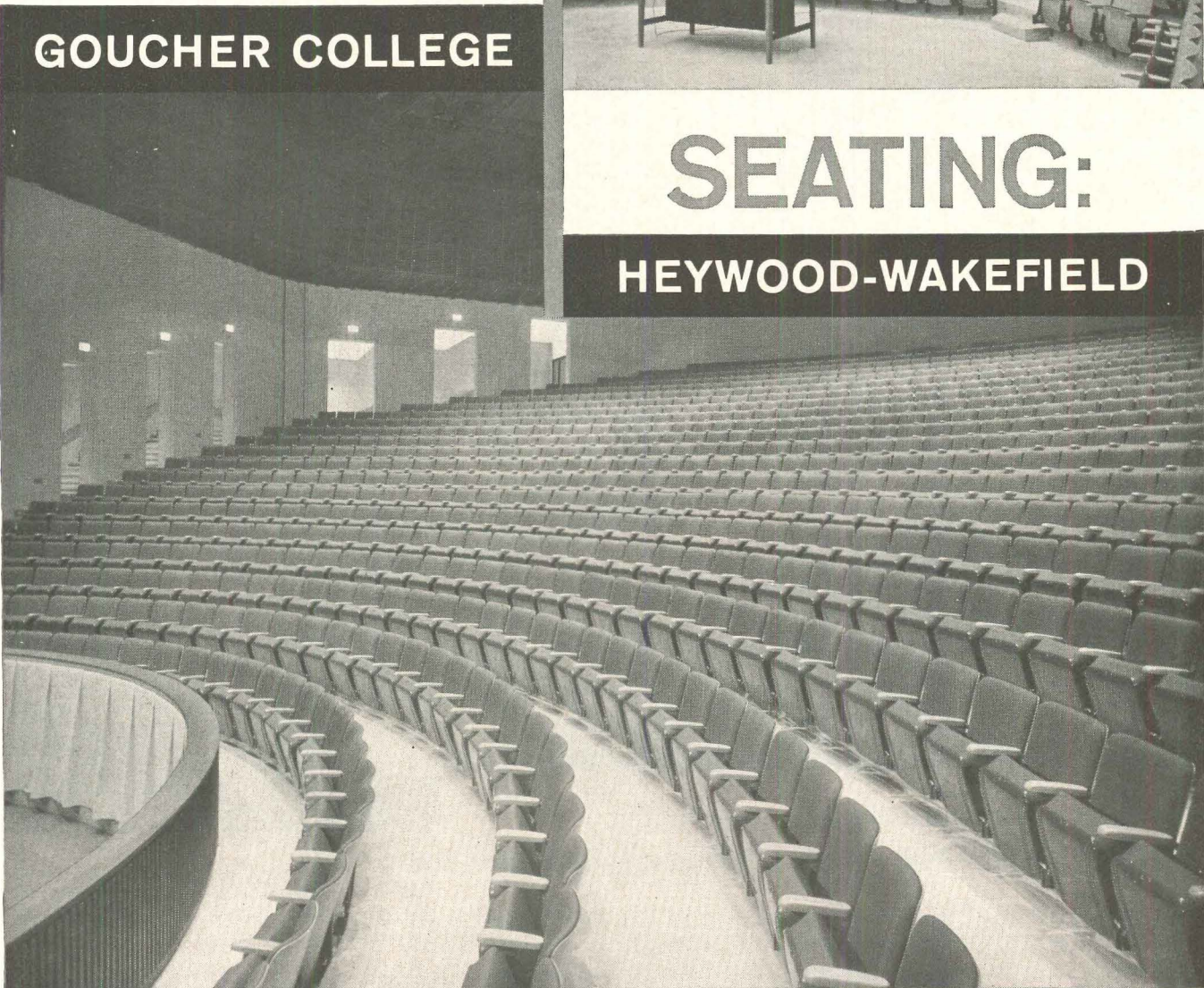
# SETTING:

**GOUCHER COLLEGE**



# SEATING:

**HEYWOOD-WAKEFIELD**



■ Goucher College Center in suburban Baltimore, designed for the creative and performing arts as well as the practical use of a college center, features seating by Heywood-Wakefield.

In the auditorium or concert hall patrons find luxurious comfort in 995 new TC-425 Heywood chairs. These chairs feature an open frame construction, generously padded backs, sixteen individual coil spring cushions and self-rising seats. They are available both riser and floor mounted.

For the lecture room at Goucher College (*photo upper right*), 239 new Heywood-Wakefield TC-465 Special were selected. This chair also features the open frame construction with self-rising padded seat and a veneer back. This installation combines chairs that are both riser and floor mounted.

This is another of the many new and important buildings using Heywood-Wakefield seating. A portfolio of the complete line is yours on request, or see Section 36d/He in Sweet's file.

*Architects:*

**Dr. Pietro Belluschi**  
in association with  
**Rogers, Taliaferro,  
Kostritsky & Lamb**



Menominee, Michigan

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Building: O'Hare International Airport Terminal, Chicago      Fixtures: Curtis-Electro Lighting, Inc. and Benjamin Division, Thomas Industries Inc., Chicago  
 Architect: C. F. Murphy & Associates, Chicago

## CEILING 20 FEET . . . VISIBILITY EXCELLENT

Put lights 20 feet up . . . like these at O'Hare International . . . shield them with ALBA-LITE® panels . . . and your result is warm, diffused lighting blending into the architectural design of the building.

ALBA-LITE softens bright light by diffusing it through the panel's opal

glass thickness. This diffusion produces excellent visibility, 20 feet below.

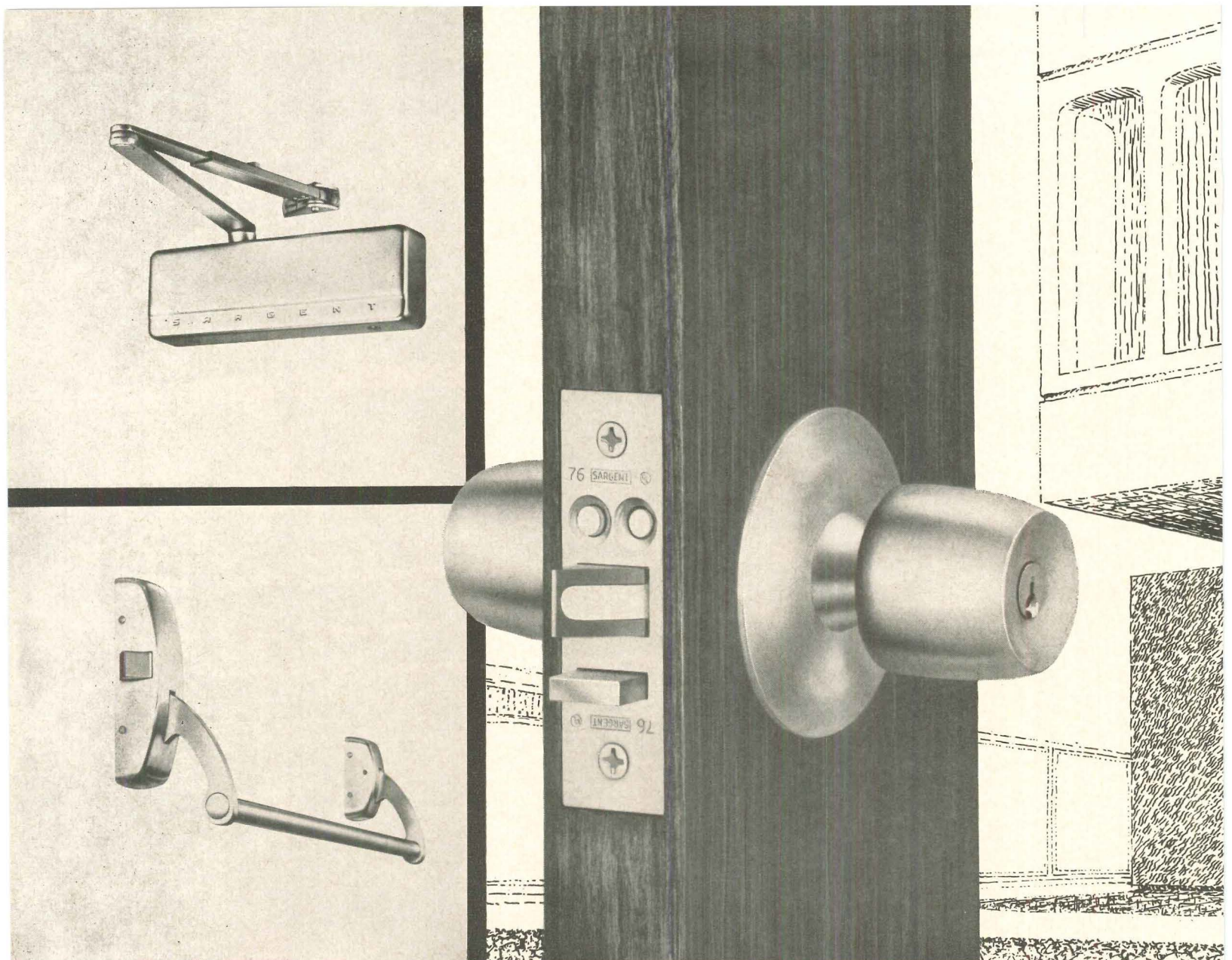
Because glass can't warp, sag, crack, or discolor, maintenance problems are just about eliminated. This freedom insures that the lighting effect you want will last . . . it also insures the continued good looks of the ceiling.

Blend the quality, permanence, and economy of glass in all your buildings. Remember ALBA-LITE if you have a high-ceiling problem. Write for particulars to Building Products Department, Corning Glass Works, 8510 Crystal St., Corning, N. Y.

**CORNING**  
 CORNING GLASS WORKS

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## Sargent . . . your single source of responsibility for all architectural hardware

**Sargent stands for sleek simplicity, superb styling and solid quality in all builders hardware.** In Locksets: MagnaLock—the T-Zone, torque-resistant bored lock. IntegraLock—combining the best features of both unit and mortise locks. And modern, sophisticated, highly styled Mortise Locks with screwless trim. In Door Closers: Powerglide—the hydraulic workhorse. Simplest, strongest action possible for complete door control. In Exit Devices: Sargent's 90 Series with exclusive chassis-mounted unit construction. All UL Listed for Panic, plus Labelled Fire Exit Hardware.

And that's just the beginning. Sargent's catalog begins where others end—a single source of responsibility for all your architectural hardware requirements. See your Sargent hardware supplier, or write Sargent & Company, New Haven 9, Connecticut. In Canada, Sargent Hardware of Canada Ltd., Peterborough, Ontario.

 **SARGENT**

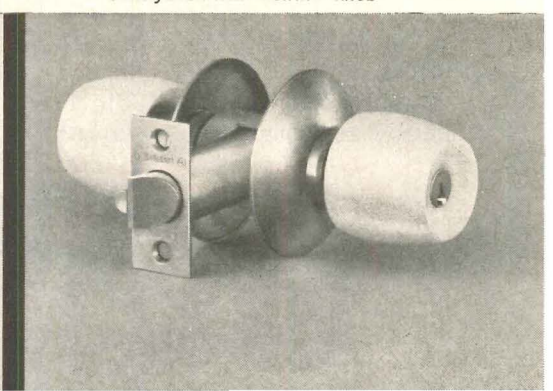
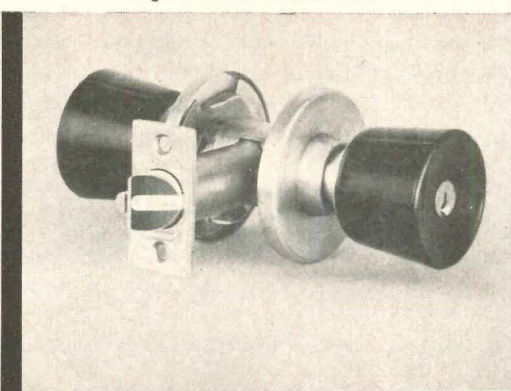
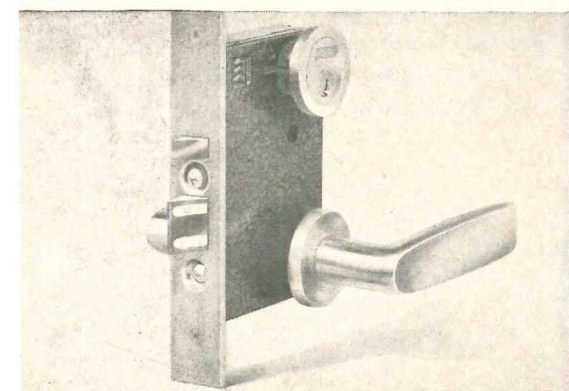
The newest fashion in a complete line of architectural hardware

For more data, circle 74 on Inquiry Card

*Mortise Lock with Lever Action*

*MagnaLock with Delrin® knob*

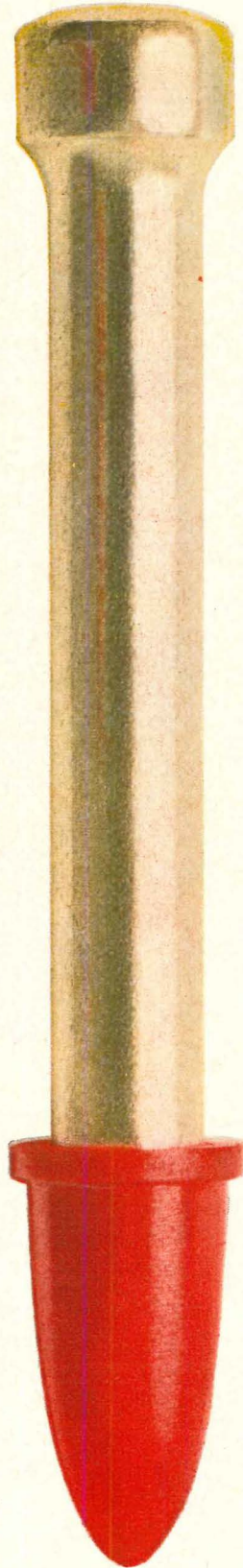
*SentryLock with Delrin® knob*





# A GOLDEN OPPORTUNITY?

(Or a 14-carat fake?)



Both.

Your golden opportunity — we'll get to the fake in a moment — lies in the fact that our new Ramset fastener is made with a new, austempered steel called Ramaloy.<sup>TM</sup>

Ramaloy gives our new fastener 60,000 psi more tensile strength than our old fastener (up to now the strongest fastener on the market) and also gives it surer penetration.

If you don't think you need our new fastener's extra hardness and ductility, you've

nothing to lose by using it anyway — it doesn't cost any more than our old fastener.

Now, about that gold-colored coating: it's chromate, a corrosion-resistant finishing touch we added to the corrosion-resistant zinc plate. We did it to reflect the glow we get from topping ourselves.

(See if that glow doesn't rub off on you the first time you use our shining example of a fastener.)

**Ramset**<sup>®</sup> WINCHESTER-WESTERN DIVISION **Olin**  
J.289 Winchester Avenue, New Haven 4, Conn.

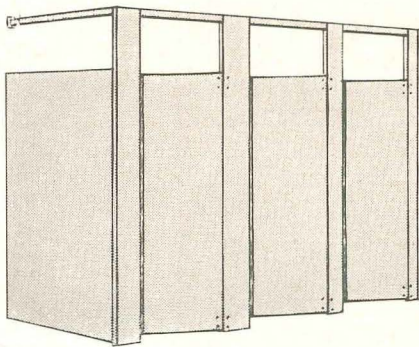
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# NEW WALL HUNG COMPARTMENT

(Pat. Pending)



Wall Hung Hi-Style  
features overhead bracing.

## The wall supports the compartment

Bond the dividing partitions to the wall under pressure—  
an exciting new concept in toilet compartment design. No  
ceiling suspension . . . No floor support—simply use the  
wall to anchor and support the compartment installation.  
No rust can start at the floor. Ease in maintenance and  
cleaning. Simplicity of design line creates a strikingly hand-  
some installation. Write for complete information.

***Weis belongs where toilet  
compartments really take a beating***



HENRY WEIS MFG. CO., ELKHART, INDIANA

*Prefabricated,  
Prefinished  
Products for the  
Building Industry*

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United States National Bank Building, San Diego, Calif., is glazed with Fawn *Vitrolux* between gold-anodized mullions. Architect: Raymond Harry Erwin, Denver, Colo. Associate Architects: Ralph Frank and Grant King, San Diego.

## All-glass facade... for **U.S. National Bank** in San Diego

The vertical planes of this building read as continuous walls of glass. There's a oneness between windows and facing—a oneness of luster, sheen and reflectivity over the whole facade. Because the spandrels are *Vitrolux*® Glass.

There's a oneness, too, in enduring qualities. Because *Vitrolux* is glass, heat-strengthened ¼"-thick *polished* plate glass with vitreous color fused to the back. It will not craze, oxidize or fade...cannot swell, oilcan or warp. It's as resistant to atmosphere and temperature changes as the glass in the windows. And as easy to clean.

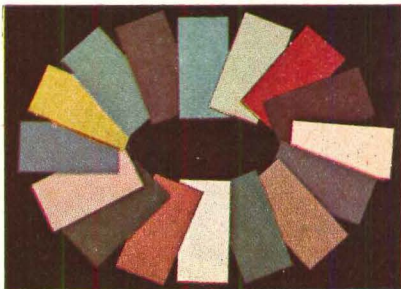
*Vitrolux* is available in a variety of colors (see below) and sizes for design freedom. Cost? Less than most spandrel materials, installed.

For descriptive folder and specifications, write L·O·F, 2103 Libbey·Owens·Ford Building, Toledo, O., 43624.

# VITROLUX

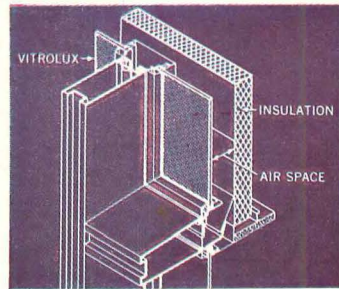
## GLASS FACING

### Libbey·Owens·Ford



16+ COLORS—In 16 standard colors, plus black and white. Also, nonstandard colors subject to manufacturing limitations.

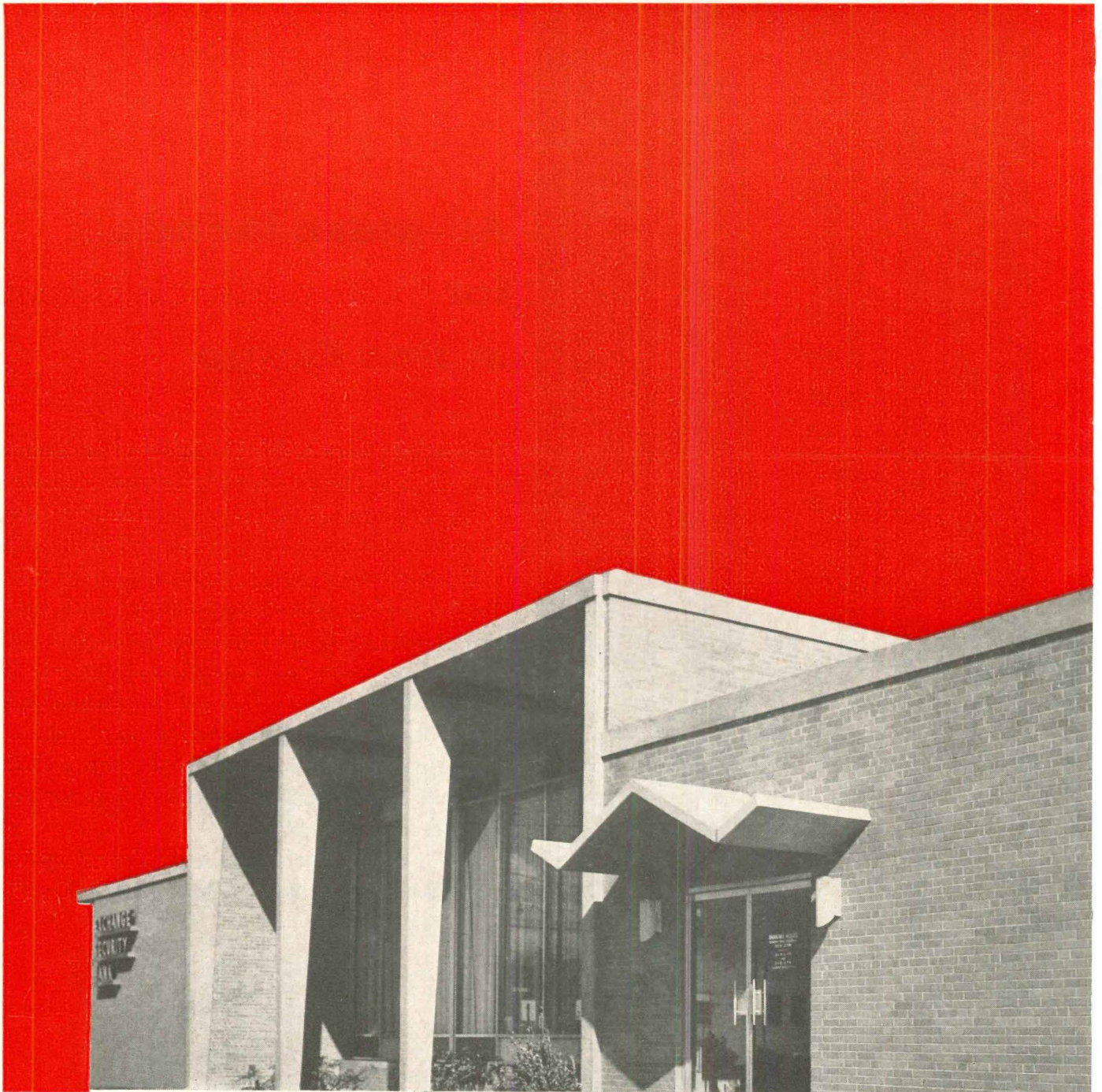
TYPICAL DETAIL—To protect insulation efficiency, a minimum of ½"-thick air space is recommended between *Vitrolux* and any back-up material. This space should be vented to the outside and weep holes provided to drain off any condensation. See A.I.A. File 17-A.



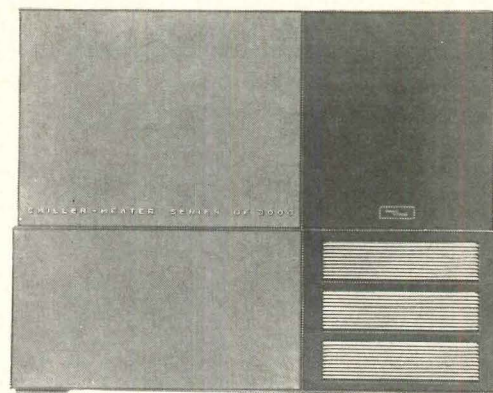
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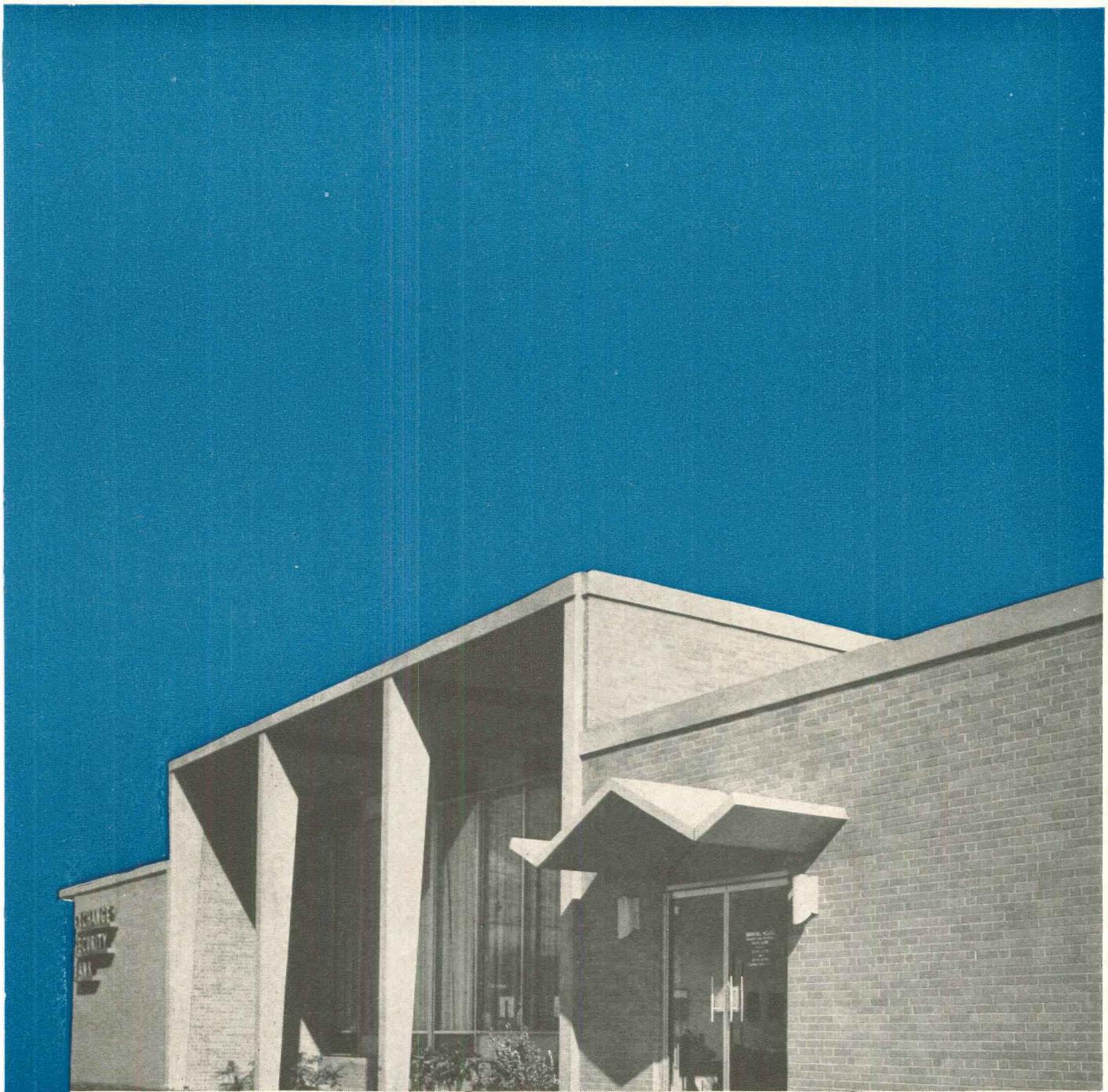
Architect: William P. Shaw, AIA • Mechanical Engineer: William E. Cone, Hazzard, McRoy & Cone • Mechanical Contractor: Mason & Dulion Company • Manager of the Air Conditioning Dept. of Alabama Gas Corp.: Robert C. Humphrey • All of Birmingham, Alabama



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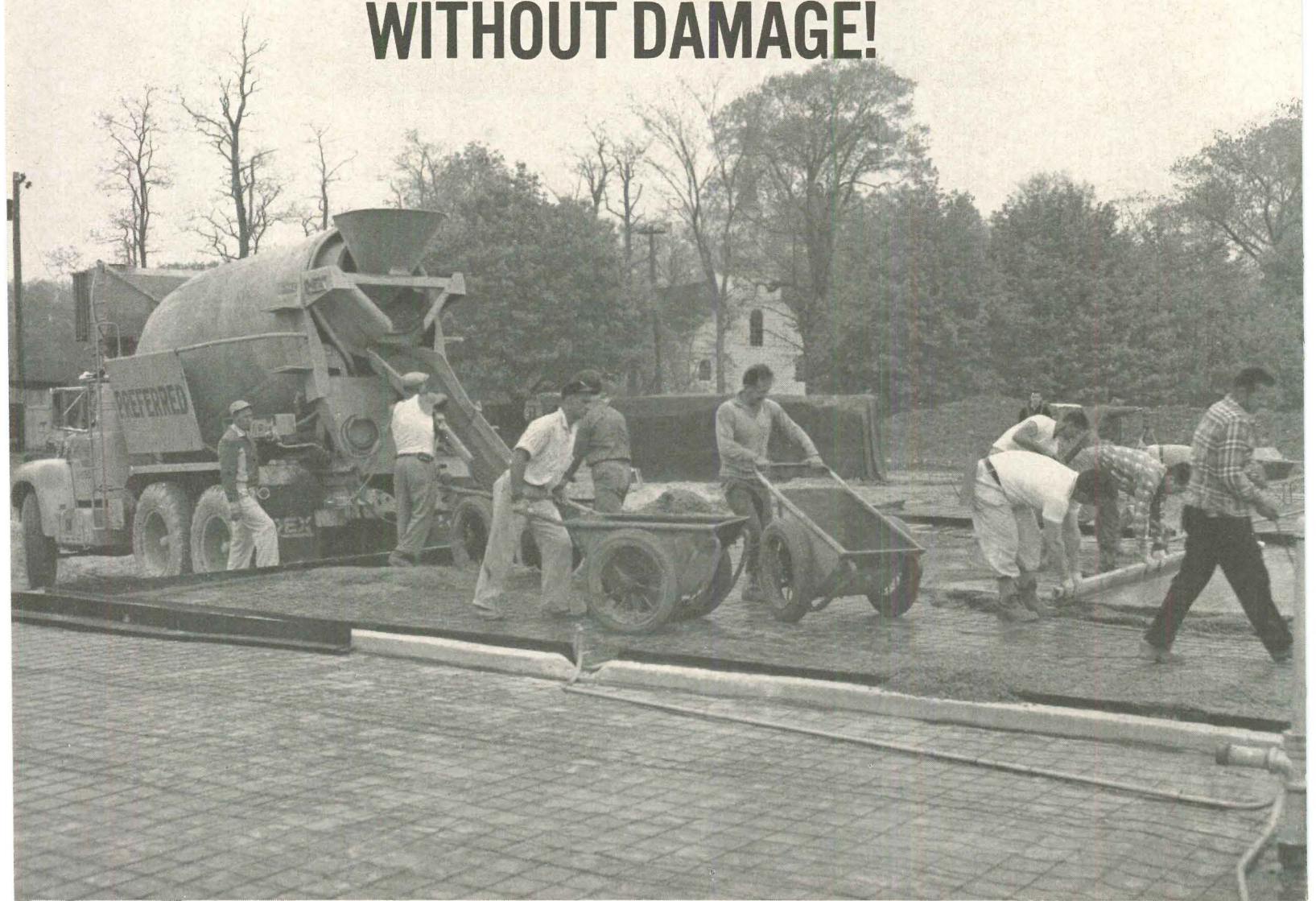
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Typical Corridor Installation

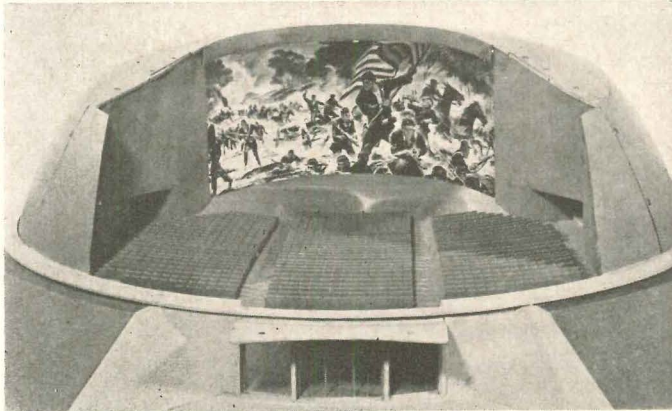


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Exterior of geodesic dome movie theater using precast concrete panels with ridged pattern



Cutaway drawing showing interior of the 1,000-seat theater. Prototype building is under construction in Hollywood

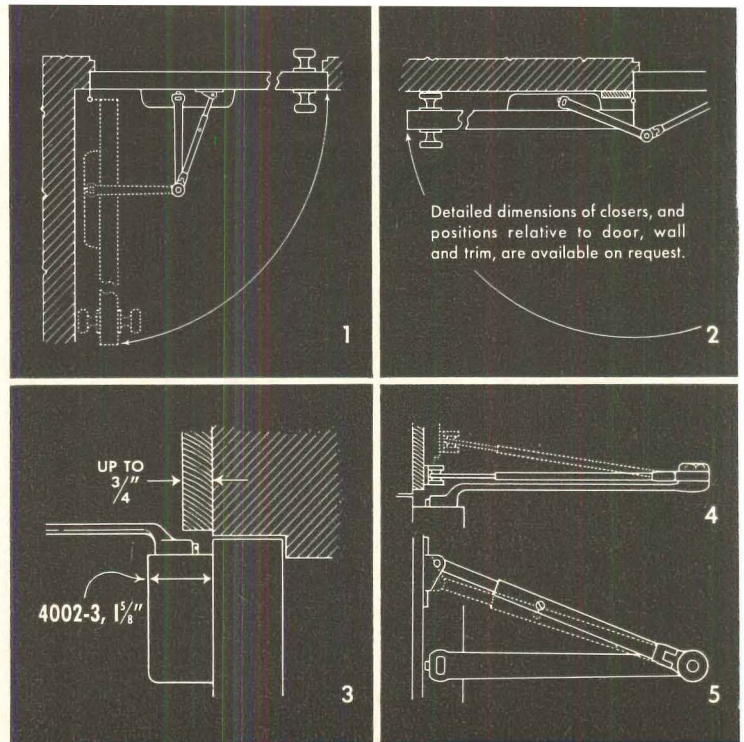
## GEODESIC THEATER USES CONCRETE PANELS

Using R. Buckminster Fuller's geodesic dome, Geometrics Inc., Architects, Engineers of Cambridge, Mass., have designed a Cinerama motion picture theater that uses precast concrete panels. Consulting engineers are Schupak and Zollman of Stamford, Conn. Richard Prebble, architect, designed the interior. The first of the theaters is under construction in Hollywood; eventually Cinerama, Inc. hopes to have 300 such theaters in the United States and 300 more abroad. The Hollywood building was adapted for construction by Welton Becket and Associates, Architects-Engineers.

The Hollywood prototype dome is made of 327 pentagonal and hexagonal panels, averaging 80 square feet in area and weighing about 3,200 pounds. Panels are bolted together flange-to-flange, with resilient anchor plates used for mounting the dome onto the foundation. A ridged pattern is molded on the exterior of the panels, and it is proposed that the pattern will be outlined with blacklight fluorescent paint. The design of the dome meets the Uniform Building Code, 1961 edition.

Cinerama officials say that the theater will cost about \$250,000, about one-half as much as a conventional theater, and that it will be constructed in about half the time. The Hollywood building is scheduled for completion next month.

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for No. 4003 SMOOTHIE® door closer  
shown on opposite page  
(See diagrams above)

- 1 In corners a "Smoothie" takes less space than most doorknobs between door and wall
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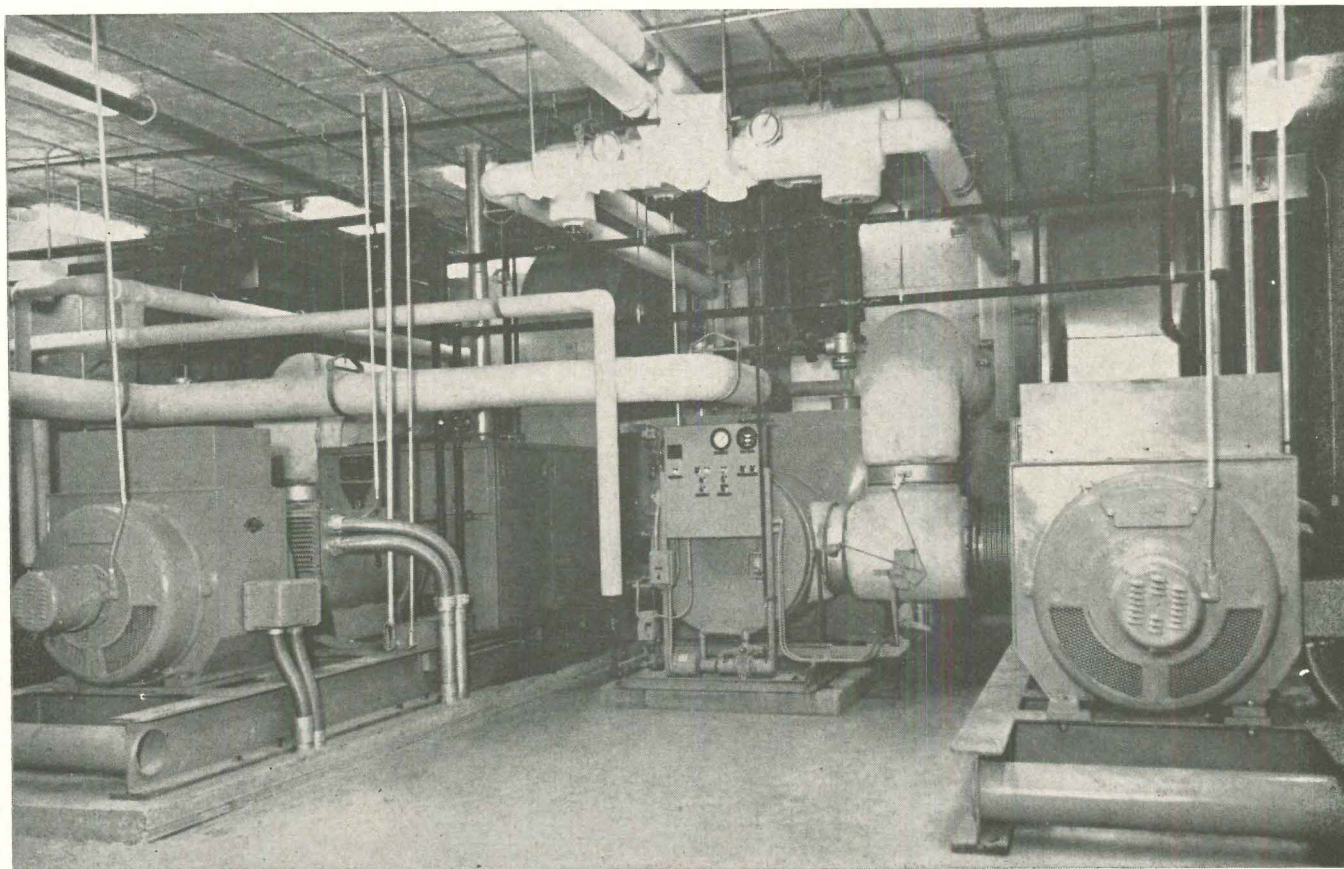
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Vincent G. Kling, FAIA, Architect

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Application Details on Opposite Page





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Two 1100 hp Solar *Saturn*<sup>®</sup> gas turbines are now operational driving Solar EFL Energy Systems at McAllen High School, McAllen, Texas. The system supplies all the heat, electricity, light and air conditioning required in the operation of the new 2400 pupil high school. Solar EFL Energy Systems utilize a maximum of both the shaft horsepower and exhaust heat of efficient Solar gas turbines to achieve system thermal efficiencies of 70% and above. In properly designed installations with high utilization, savings over purchased power can be realized virtually anywhere in the United States.

The McAllen High School EFL Energy System began operation on schedule on time for the 1963-64 school year. Using a tandem drive, a *Saturn* gas turbine drives a 563 kva 60 cycle generator for



conventional power needs and a 362 kva 840 cycle generator for the school's high frequency fluorescent lighting system. The engine's exhaust heat is ducted to an exhaust heat boiler. Steam is produced which may be used either to heat the school or to cool it by means of an absorption air conditioner.

Exhaust heat from the turbine will produce up to 6700 lbs. of steam per hour at 15 psig. This is sufficient steam to heat or air condition the 184,615 sq. ft. school. One *Saturn* turbine can

handle the entire load. The other is used for complete standby service. This allows each engine package to accumulate equal running time and simplifies maintenance schedules.

If you would like more information about Solar EFL Energy Systems, write Solar, Dept. L-170, San Diego 12, California.

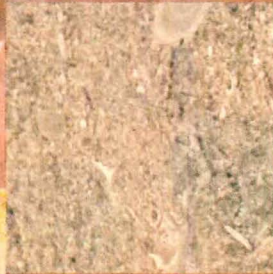
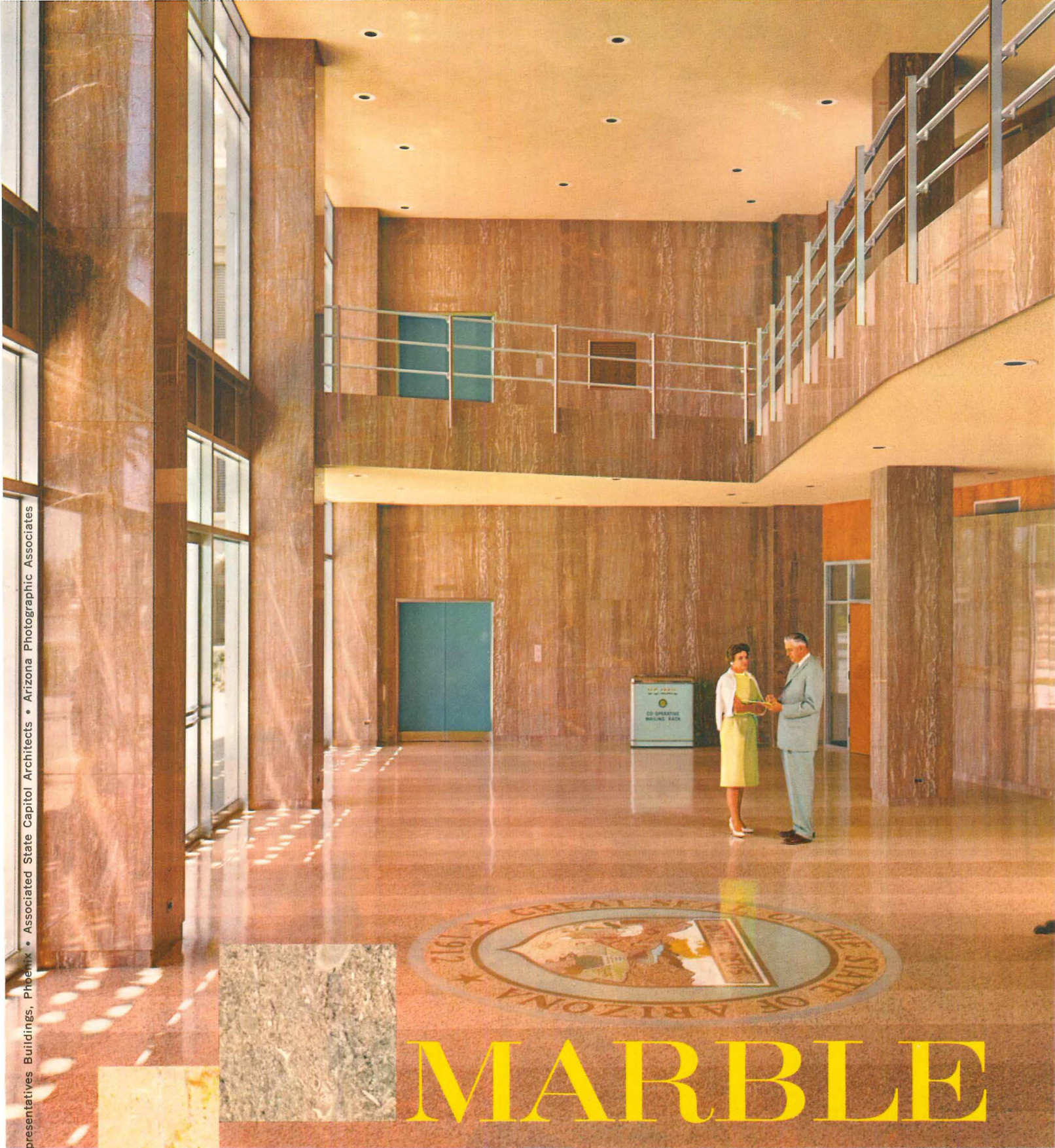


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Arizona State Senate and House of Representatives Buildings, Phoenix • Associated State Capitol Architects • Arizona Photographic Associates



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Engineer: William E. Standeven, Buffalo  
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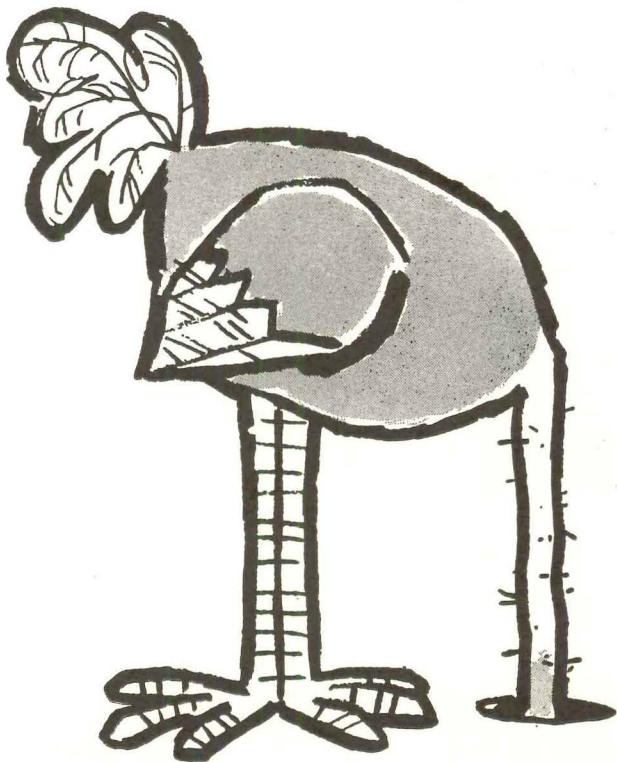
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EP-36C





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Smart people interested in ideas, products and discussions concerning the home building industry are already making plans to attend the 20th annual convention and exposition of the National Association of Home Builders.

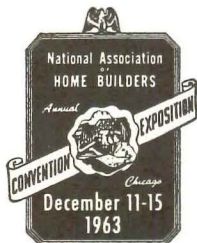
This year you will be able to see more new products, hear more panel discussions concerning construction, finance and merchandising, plus talks by top administrators from Washington.

Look ahead! Plan ahead! Be sure to attend. For advance registration and hotel reservation, contact your local Home Builder's Association, or write:

**NATIONAL ASSOCIATION  
OF HOME BUILDERS**

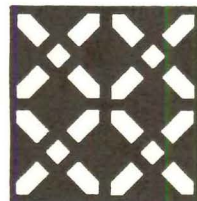
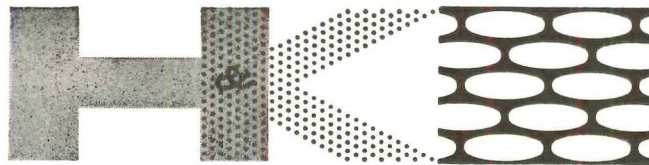


140 South Dearborn Street  
Chicago 3, Illinois



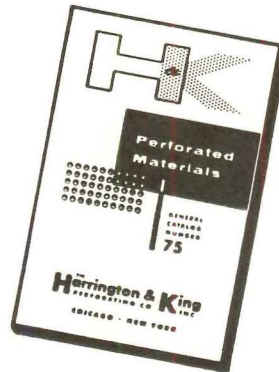
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Midtown Plaza, Rochester, N.Y. Architecture, Planning and Engineering: Victor Gruen Associates. Tile Contractor: Port Morris Tile & Terrazzo Corporation.

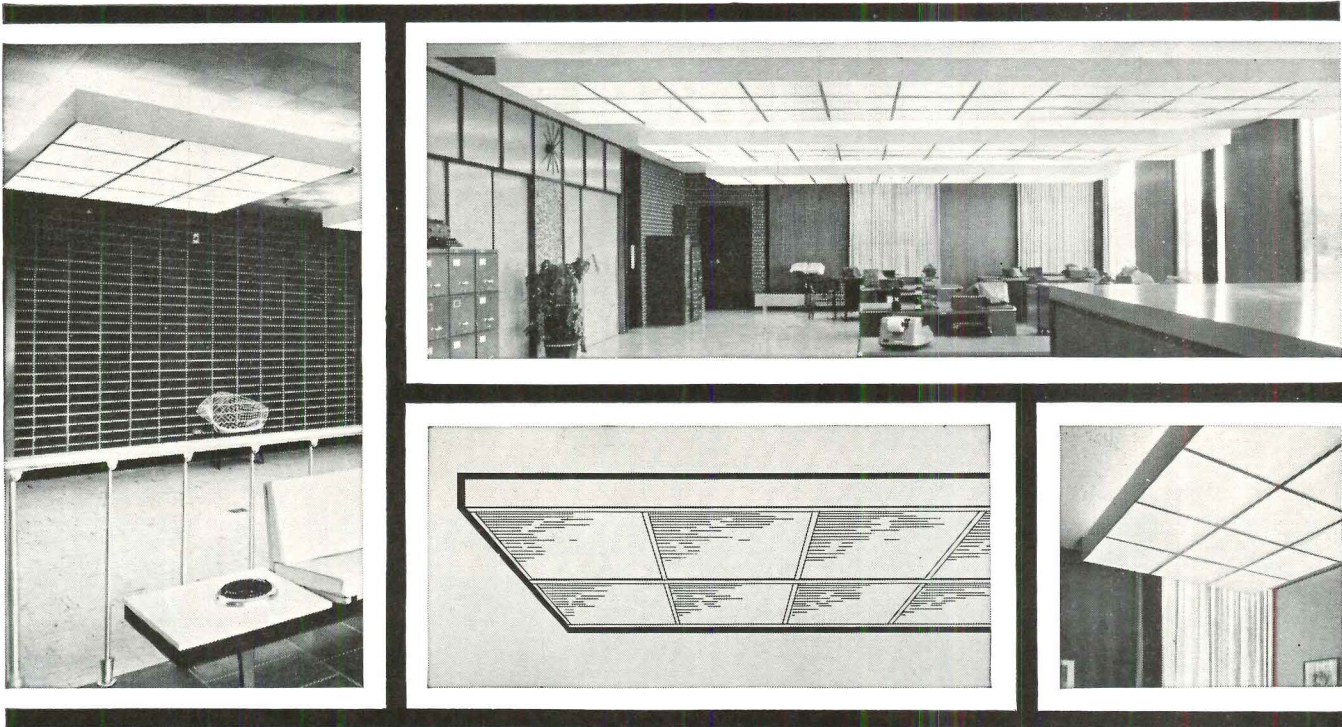
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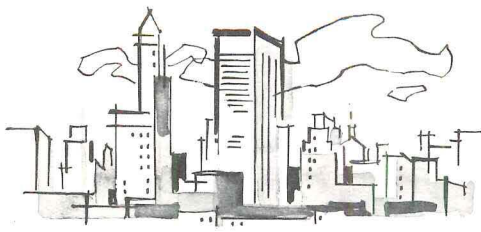
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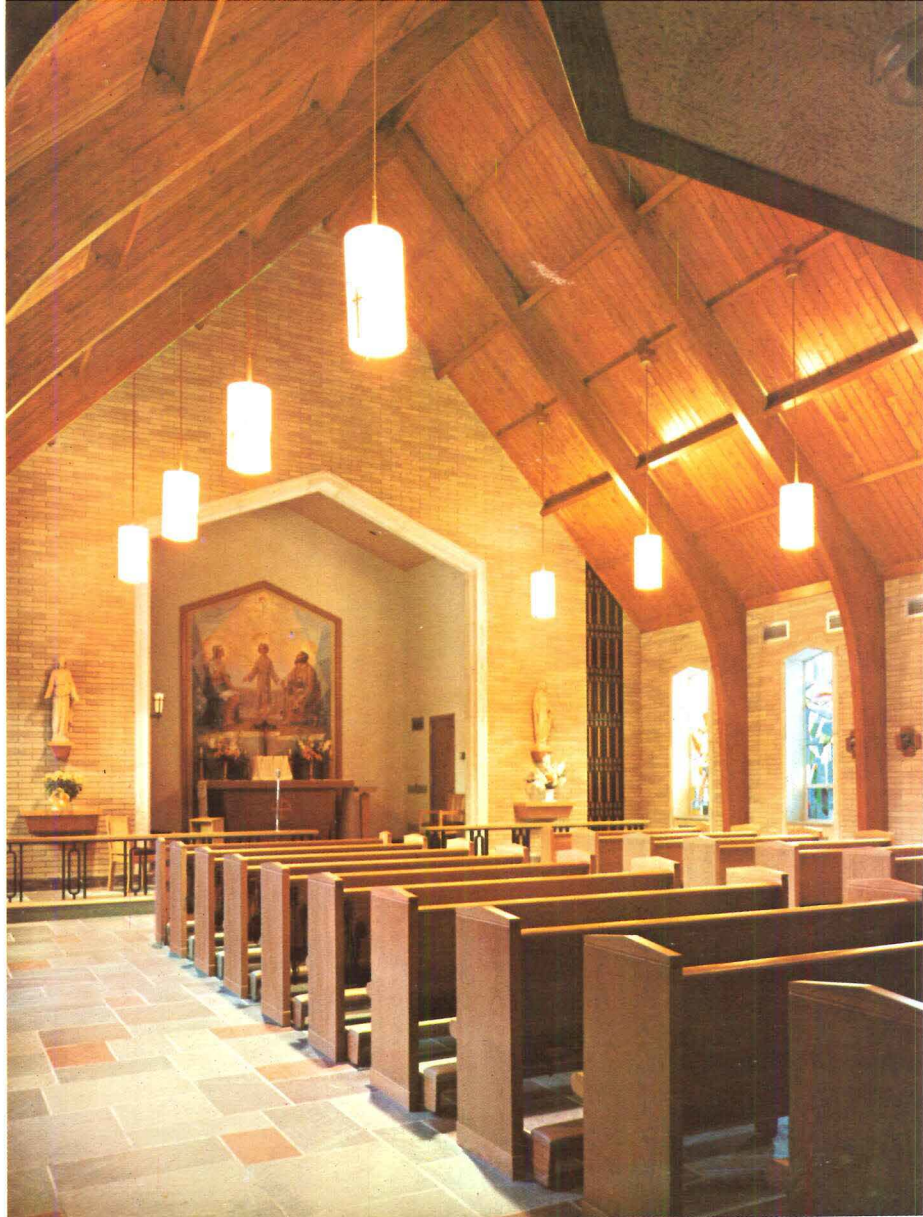
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LOBBY, TRENHOLM MOTOR LODGE, West Henrietta. Architect, Paul F. Fox, A.I.A. P & L products used are Vapex Wall Primer, and Lyt-all Flowing Flat Spectrum Colors.



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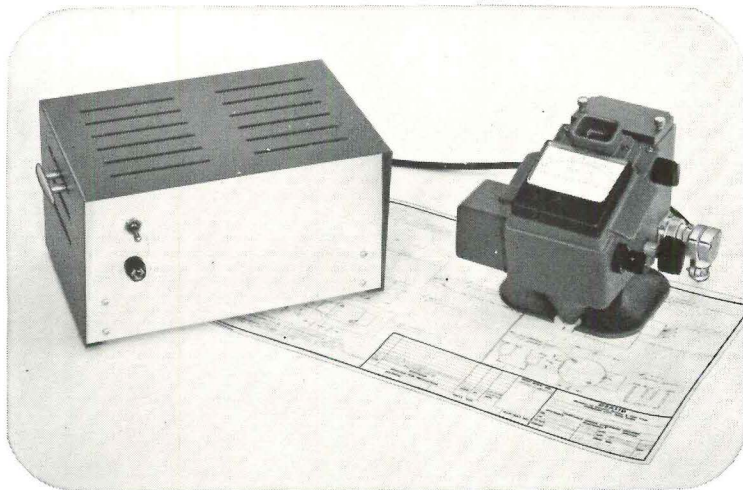
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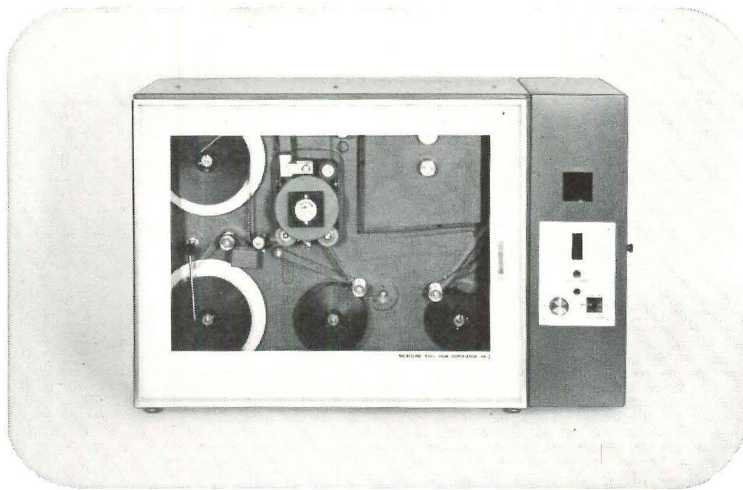


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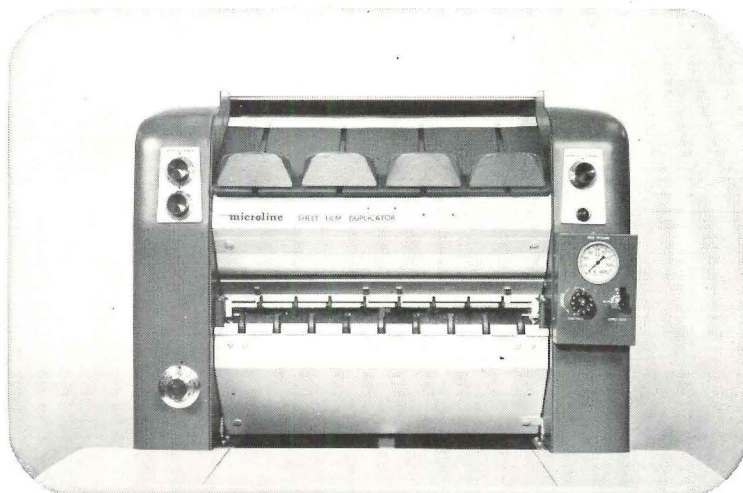
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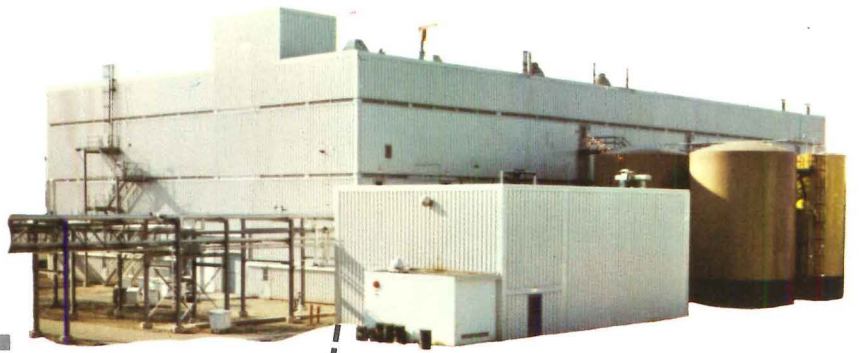
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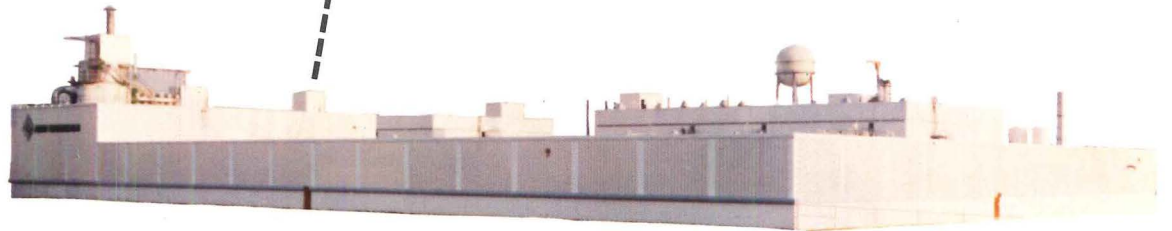


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# Continental

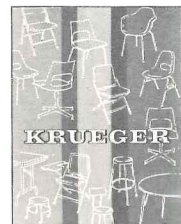
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The new Glenwall is the first wall-hung to compete in price with conventional floor-mounted toilets. It enables you to place this much-wanted fixture in any home, apartment house or motel, even where price considerations loom large. The Glenwall has the same flushing mechanism as our luxury closets, the sleek good looks of our new Cadet. Available in all colors including our new Colors of the Year—Venetian Pink, Fawn Beige and Spice Mocha. Moreover, a built-in Aquaguard Liner is available to minimize tank condensation problems indefinitely. We know your clients will be delighted when you give them Glenwall.

*For more information see your American-Standard representative or write American-Standard Plumbing and Heating Division, 40 West 40th Street, New York 18, N.Y.*



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LAMINATED PLASTIC

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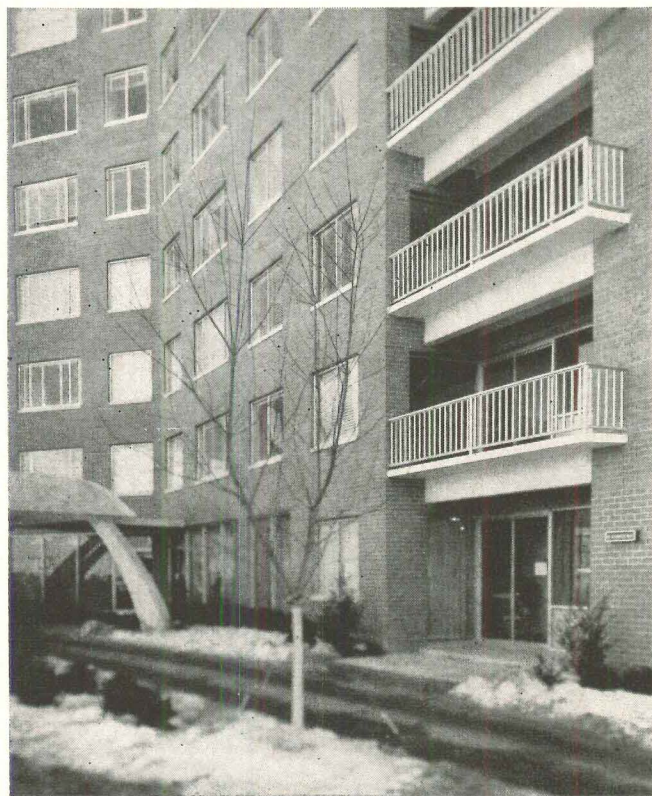
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 Send samples of G-E Textolite® laminated plastic.  
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*“...complements the design, safeguards the tenants...”*

says E. Wolman of the Jerry Wolman Construction Company, Silver Spring, Maryland.



“Anchor’s All-Aluminum Picket Railing protects nine levels of balconies around Summit Hill Apartments in Silver Spring. We chose it for its elegance and attractive appearance, the way it complements the design and safeguards the tenants.”

Consider new Anchor All-Aluminum Picket Railing for *your* choice, too . . . whenever its lasting beauty and positive protection are compatible with your building design. Pickets, posts, and handrail are all bright, rust-proof Reynolds Aluminum. And Anchor’s national network of skilled erectors provides quick and efficient installation.

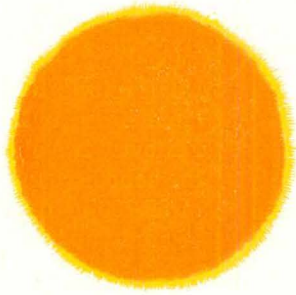
For detailed information, call your local Anchor office or write: ANCHOR POST PRODUCTS, INC., 6689 Eastern Avenue, Baltimore 24, Maryland.



Plants in Baltimore, Houston, Los Angeles.

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## ANNOUNCES A MAJOR ADVANCE IN GLASS TECHNOLOGY

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### **LHR Coated Glass that both reflects and absorbs solar energy**

A new metal oxide LHR (Light and Heat Reflective) Coating for glass has been developed by PPG research to provide more effective control of solar energy transmittance. ■ Tests indicate this *reflective* coating affords a unique reduction in radiant heat transmittance even over extended periods of direct solar exposure. While transparent, the weather-durable coating also substantially reduces visible light transmittance, thereby effecting a high degree of glare-control. In addition, the glass is heat-strengthened during the coating process. ■ Practical effects of installation: reduced solar heat load on air conditioning equipment, with subsequent reduction in operating costs; increased comfort as sun, sky and cloud brightness and glare are reduced. Specific data for LHR-coated Solargray, Solarbronze, Solex and clear glass is available upon request. ■ LHR Coated Glass is now available for TWINDOW installation, and in limited quantity, for single glazing. For details, contact your local PPG Architectural Representative or write Pittsburgh Plate Glass Company, Room 3504, 632 Fort Duquesne Boulevard, Pittsburgh, Pennsylvania 15222. ■

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Pittsburgh Plate Glass Company / Paints / Glass / Chemicals / Fiber Glass / In Canada: Canadian Pittsburgh Industries Limited

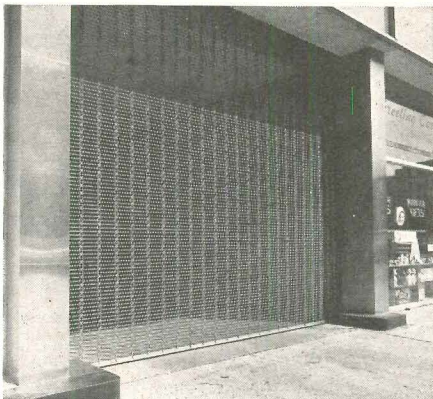
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# Kinnear ROLLING GRILLES



Admits air, light and vision while providing an attractive, dependable barricade. That's why Kinnear Rolling Grilles, in either aluminum or steel, are being used in so many places in today's building construction. Spring counterbalanced and coiling above, they're easy to open, completely out-of-the-way. Another adaptation of time-proven Kinnear Rolling Doors! Write for catalog.

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ROLLING DOORS  
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## FELLOWSHIPS AND AWARDS

Seventeen graduates of Columbia University's School of architecture have been awarded William Kinne Fellows traveling fellowships, for the school year 1963-64. Each award of \$2,700 is to be used for six months of study and travel abroad. The winners are Jack Cosner, Laporte, Tex.; Jack DeBartolo Jr., Houston; Peter Frink, State College, Pa.; Richard Kaeyer, Yonkers, N.Y.; John Mahlum, Seattle; Joseph Scalabrin Jr., Butte, Mont.; John Smyth, Newport, R.I.

Also, Constantine Economou, New York City; John Hanna, Baltimore; Henry Korman, New York City; Jack Kushner, Brooklyn, N.Y.; Christopher Moomaw, Lincoln University, Pa.; Timothy Schmiderer, San Juan, Puerto Rico; Harry Parnass, New York City; David Anthony Roth, St. Louis; Thomas J. Thomas, Teaneck, N.J.; and Arthur Thompson, Waxahachie, Tex.

Robert Vickery Jr. is the recipient of the 1963 James Harrison Steedman competition in design which provides a \$3,000 stipend for one year of travel and study of architecture abroad. Mr. Vickery, who is on the staff of the architecture school at Washington University, St. Louis, will use the money to study architecture in Mexico and Japan.

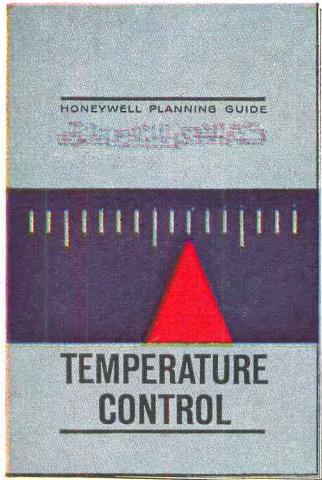
The \$5,000 Brunner award of the New York chapter of the A.I.A. has gone to Sidney Cohn of Seattle who will study how legislative action determines design standards in European countries. A grant-in-aid of \$1,500 was awarded to Philadelphia architect Anne Griswold Tyng for development of educational aids for studying three-dimensional form.

Donald L. Williams, Fern Creek, Ky., has been awarded the \$2,000 Edward L. Ryerson Traveling Fellowship in Architecture for 1963-64; and Thomas H. Johnson, Elgin, Ill., the \$2,000 Edward L. Ryerson Traveling Fellowship in Landscape Architecture.

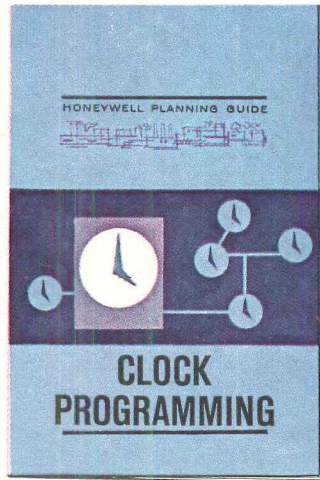
Mr. Williams' alternate is Ronald E. Schmitt, Alton, Ill. Fellows were selected "for artistic ability, technical competence, personality, and promise of leadership in the profession of architecture."



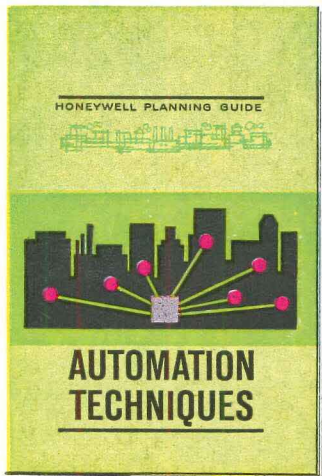
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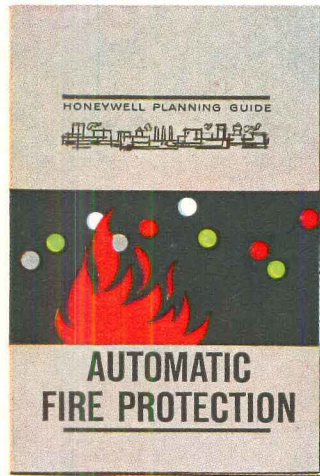
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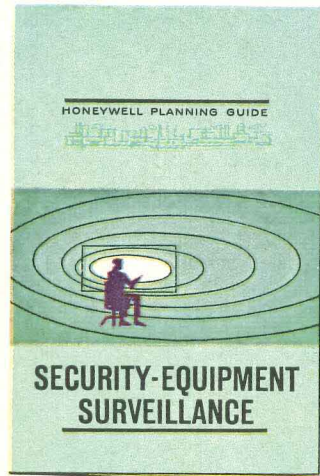
②



③



④



⑤



⑥

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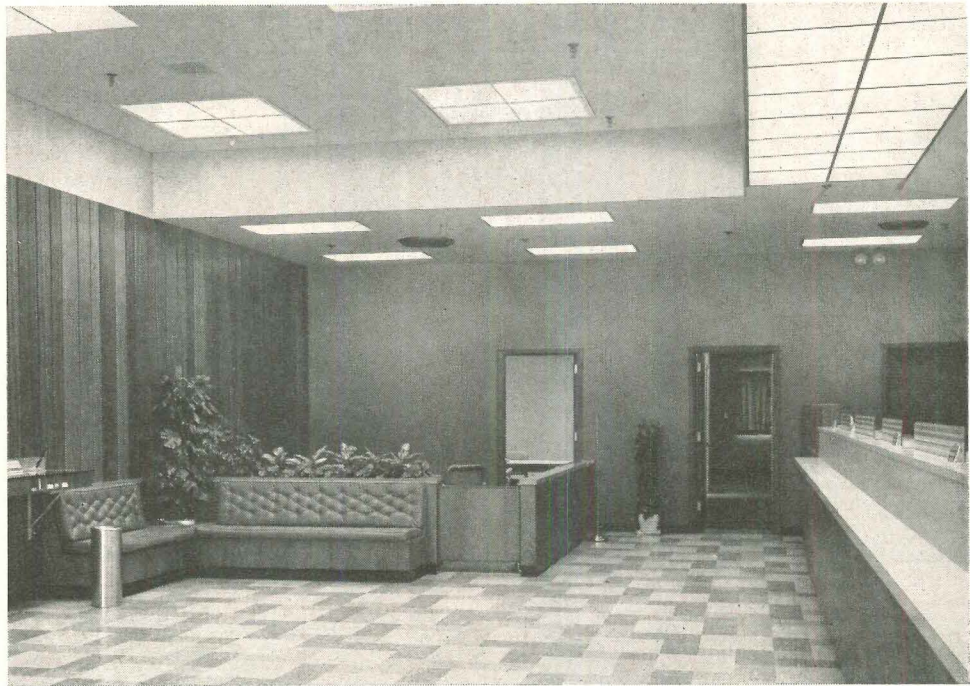
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## One Good Litecontrol Lighting Job Deserves Another

**INSTALLATION:** Woonsocket Institution for Savings—Two branch banks: Walnut Hill Plaza Shopping Center, and Park Square Branch, both in Woonsocket, Rhode Island.

**ARCHITECT:** Walnut Hill, R. Gretchen Nelson, Pawtucket, Rhode Island. Park Square, Modern Store Fixture Company, Providence, Rhode Island.

**ENGINEER:** Robert J. McCormick, Blackstone Valley Gas & Electric Company, Woonsocket, Rhode Island.

**CONTRACTOR:** Walnut Hill, Electric Sales and Service Company, Woonsocket — Park Square, Electric Maintenance and Engineering Works, Inc., Woonsocket.

**LITECONTROL DISTRICT SALES REPRESENTATIVE:** Dallas G. Dearmin, 5 Hillcrest Avenue, Greenville, R.I.

**FIXTURES:** Luminous Lens Ceiling, #R8884RS-6025 4' x 4' recessed fixtures, and #9344RS-6025 2' x 4' recessed fixtures, all using Holophane #6024 and 6025 acrylic lenses, and Deluxe Cool White Lamps.

**AVERAGE INITIAL INTENSITY:** Banking Counters, 200 footcandles in service. Tellers' Work Area, 175 footcandles in service. Lobby Area, 150 footcandles in service.



The Litecontrol fixtures in their Walnut Hill Branch were so adaptable to banking that the Woonsocket Institution for Savings specified that only Litecontrol fixtures could be in their Park Square Branch, recently completed. The effect and intensity of lighting complemented the functional design of each branch.

Three different lighting systems — each designed to do a specific job and to furnish a high footcandle level — are blended to give the bank interiors a harmonious, functional appearance.

Intensities at both branches are higher than IES recommended figures for banks. This was achieved by using Litecontrol's best quality fixtures with Holophane acrylic lenses and Deluxe Cool White Lamps.

Litecontrol can help you, too, with your lighting problems. Write for information.



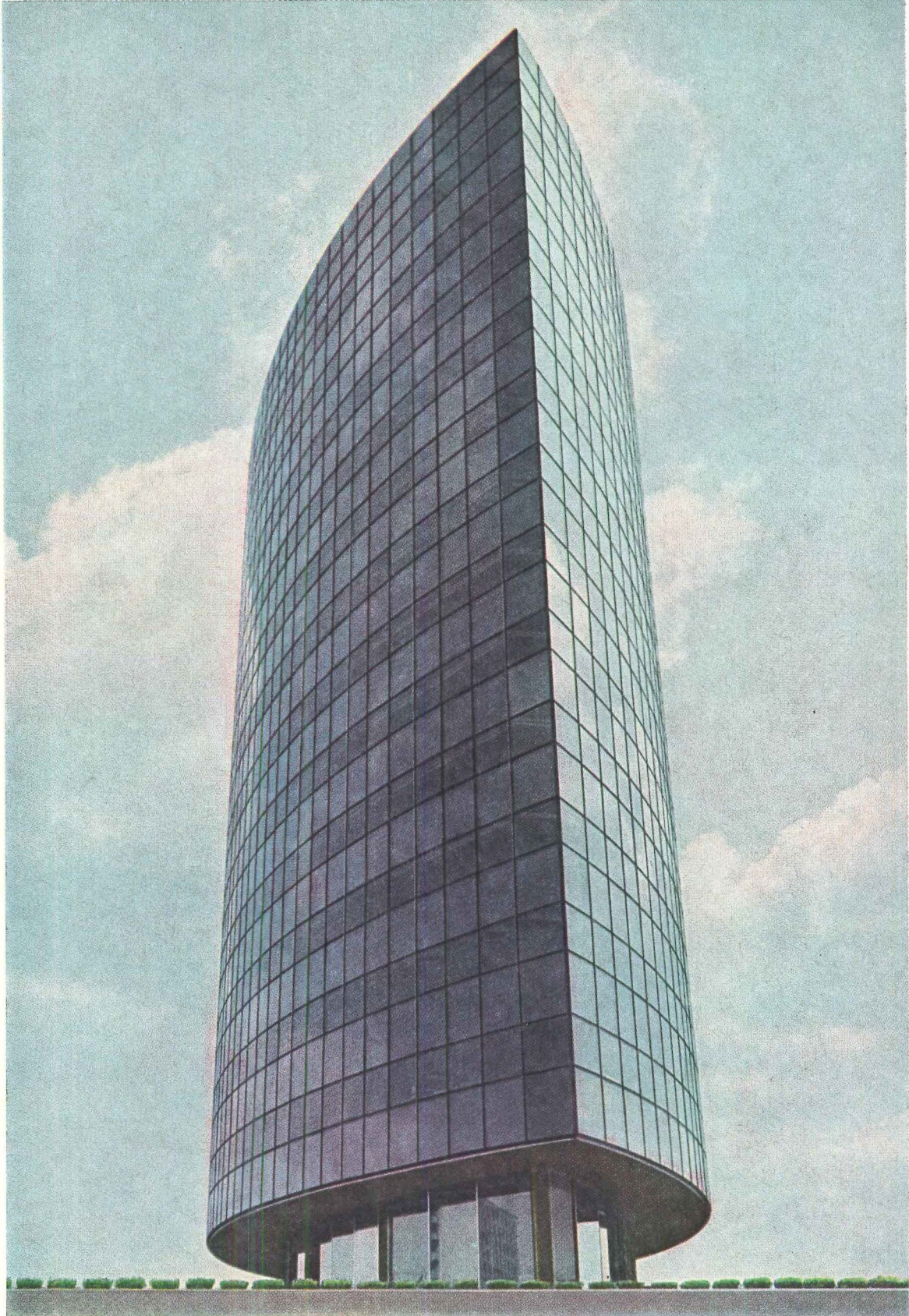
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**A New Shape in Steel... WORLD'S FIRST ELLIPTICAL OFFICE TOWER**

*It was designed by Harrison & Abramovitz for Phoenix Mutual Life Insurance Company, in Hartford, Connecticut.*

*It is fourteen stories high, rising from a three-story, block-square base.*

*It is an eminently practical building . . . and most people think it's quite beautiful.*

*It is framed with structural steel.*

structural engineers: Edwards & Hjorth;  
mechanical engineers: Jaros, Baum & Bolles;  
electrical engineers: Ebner Associates;  
general contractor: George A. Fuller Company;  
steelwork: Bethlehem Steel Company.



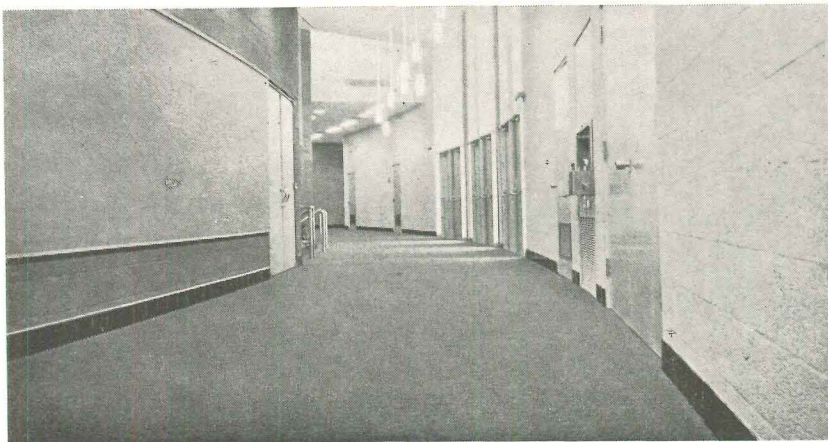
**BETHLEHEM STEEL**



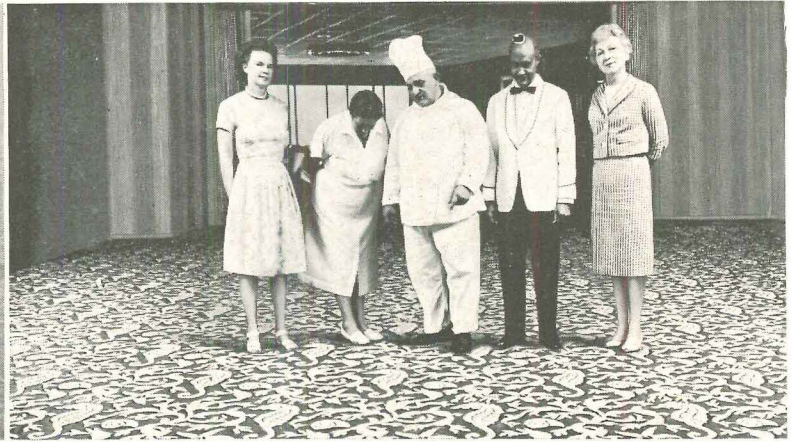


# 6 FAMOUS BATTLEFIELDS

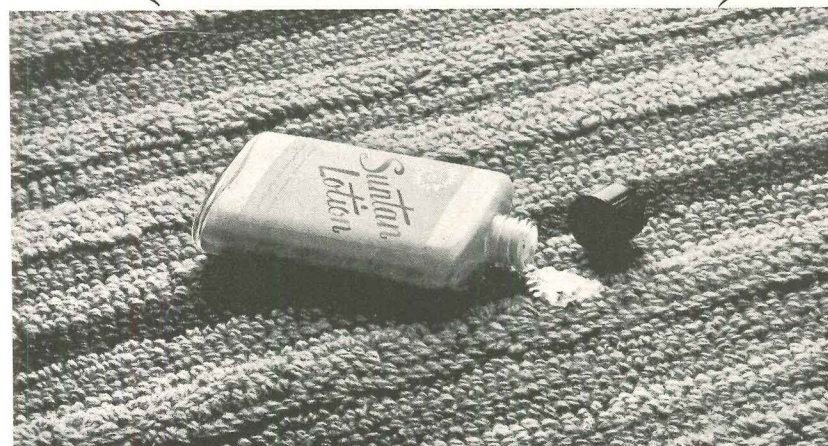
## [CAN YOU NAME THEM?]



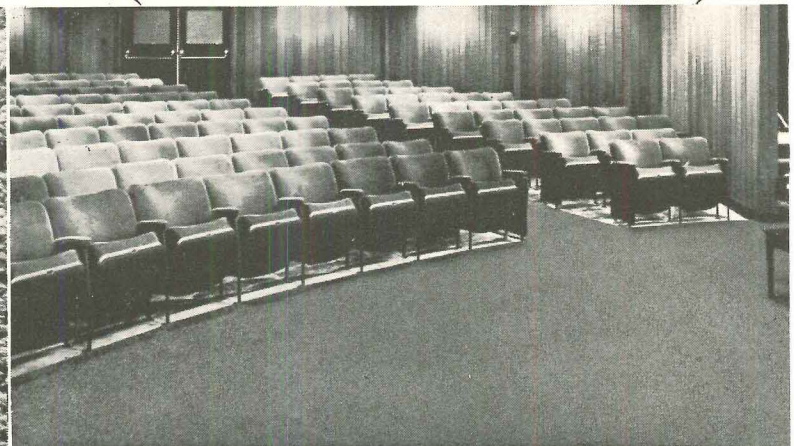
**BOULDER CITY.** The battle of the 505 students. They pound up and down the halls of this Nevada high school all day long on carpet made with Acrilan®. Acrilan is the fiber that gives carpets a luxurious pile yet makes them tough and easy to maintain.



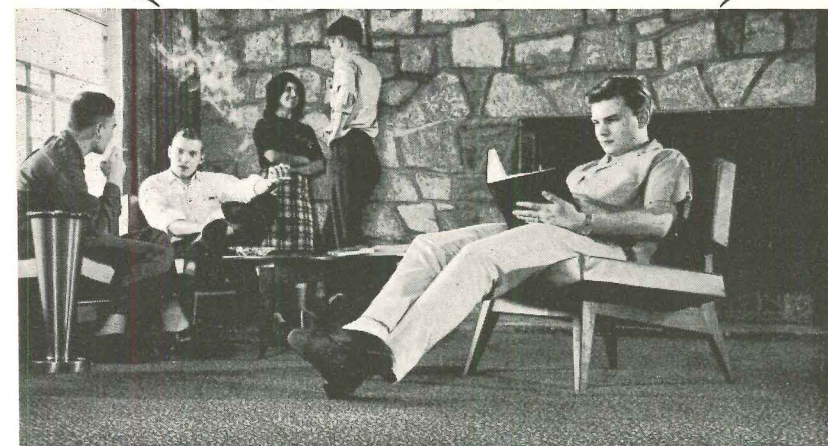
**BEACON MANOR.** The battle of the bottle of ketchup. This New Jersey restaurant installed carpet made with Acrilan. A year and a lot of assorted spills later, they ordered more. No one could tell the difference between new and old, the old still looked so good.



**DIAMOND HEAD TOWER.** The battle of the beachhead in Hilton Hawaiian Village. Strong sun. Tracked-in sand. Spilled suntan lotion. Wet swimsuits. Carpet made with Acrilan acrylic fiber in the pile resisted all, cleaned up fast, stayed handsome.



**FOOTHILL COLLEGE.** Acrilan conquers the sound barrier on a California campus. 4000 square yards of carpeting made with Acrilan improved acoustics, made quiet quieter, made study easier, made classroom, library, & music room look warmer, more impressive.



**OHIO UNION.** Neither snow nor rain nor hail (tracked in daily by 15,000 students at Ohio State) nor Kaffeeklatsches can destroy this carpet made with Acrilan. It's 5 years old and it still looks new—with just one thorough cleaning a year.



**DIAMONDHEAD CIRCLE.** Home on the range in Dallas, Texas, they installed acres of carpet made with Acrilan in new luxury apartment houses. Why did they specify Acrilan? In this case, for beauty that will stay beautiful cleaning after cleaning.



The true incidents on this page prove that Acrilan can go through the wars and stand up beautifully. Specify carpet made with Acrilan for your clients.

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THESE ARE AMONG THE MIL'S NOW LICENSED BY CHEMSTRAND FOR ACRILAN: BARWICK, CABIN CRAFTS, CALLAWAY, CORONET, CRESTLINE, DOWNS,  
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At Ohio Union, the carpet pile is 70% Acrilan acrylic, 30% modacrylic. At Boulder City High, Foothill College, Diamondhead Tower and Diamondhead Circle, 80% Acrilan acrylic, 20% modacrylic. At Beacon Manor the carpet pile is 100% Acrilan acrylic.

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\*ESCAL-AIRE is a trademark of Otis Elevator Company

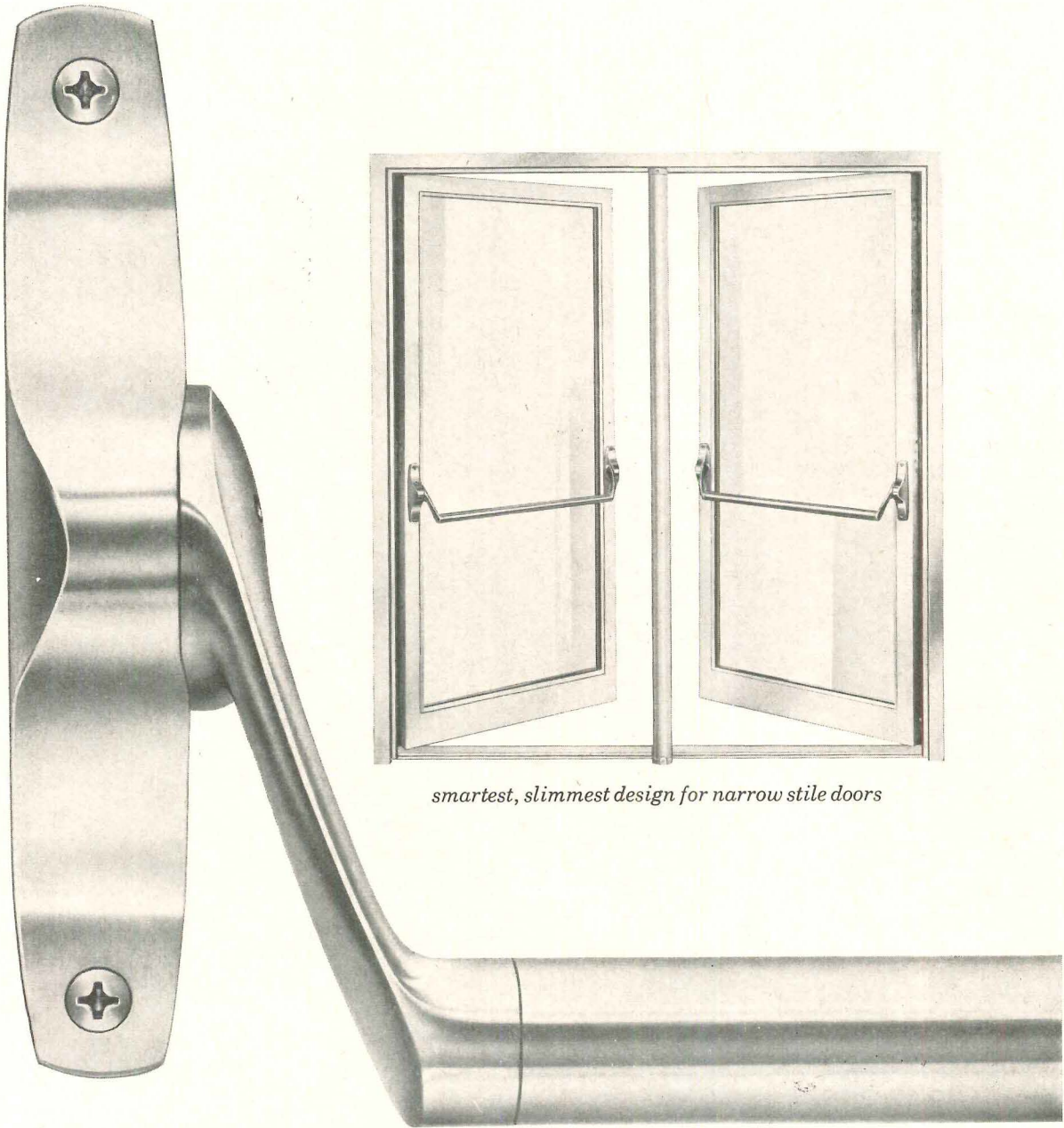
**a great new escalator** has captured the imagination. It is the ESCAL-AIRE. By OTIS. Created for magnificent tradition-breaking hotel and office building lobbies and shopping center malls. □ Visualize balustrades that are crystal clear. Light. Airy. Or intriguingly translucent. Tinted. Textured. Sparkling. □ With handrail colors picked from a rainbow. □ The new ESCAL-AIRE can be designed to vanish into its setting. □ Or be subtly inspiring. Or boldly scintillating. As the imagination fancies. How enthusiastically has the ESCAL-AIRE been received? Sales, to date, exceed 100 ESCAL-AIRES.



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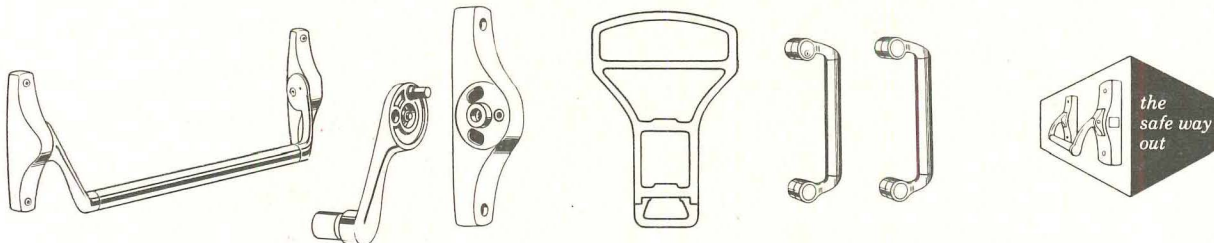
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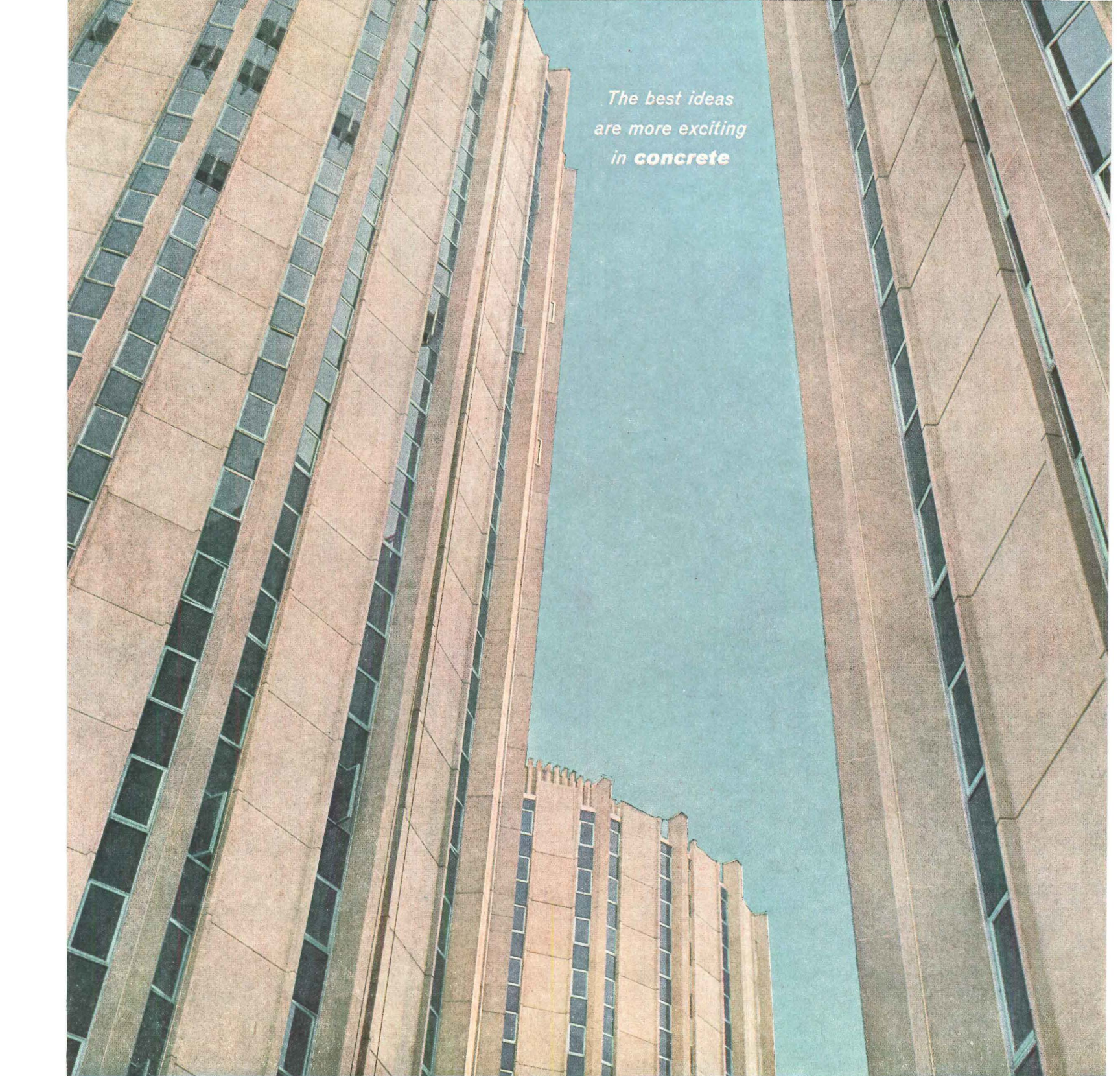
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*NEW! slim styling . . . side mounted lever arms . . . triple core mullion . . . modern trims*

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*The best ideas  
are more exciting  
in concrete*



## CAMPUS LIVING IN THE ROUND

### **Precast concrete curtain walls give space for 40 extra rooms**

The new dormitory towers for men at the University of Pittsburgh adapt to the modern scene the traditional house system used in England for centuries. Here the "houses" are separate, self-contained units each 3 stories high, stacked one above the other in the circular towers. Each of the 1,868 resident students enjoys an outside room.

The towers are structural concrete throughout. Finished to match the limestone of the older University buildings, enclosing panels of precast concrete are just 5 inches thick, including sandwich insulation. They conserve 7,300 sq. ft. of floor space that would have been lost with conventional walls. Today, the versatility of modern concrete is stimulating a whole new trend in architectural design.

### **PORTLAND CEMENT ASSOCIATION**

**An organization to improve and extend the uses of concrete**

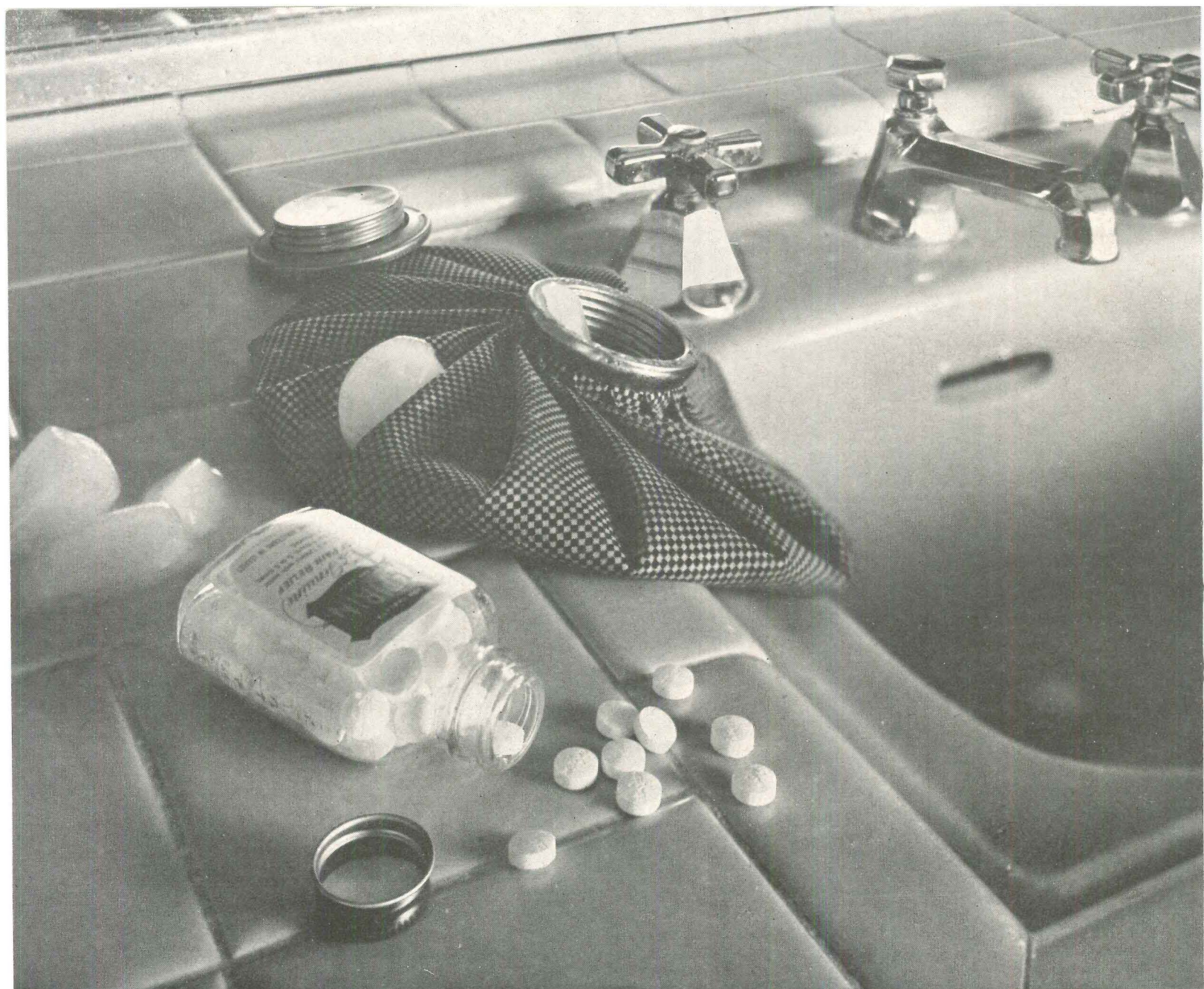
Men's Dormitory Units, University of Pittsburgh

• Architects: Deeter & Ritchey, Pittsburgh

• Structural Engineer: Martin C. Knabe, Inc., Pittsburgh

• General Contractor: Dick Corporation, Pittsburgh





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*Designed by William J. Mouton, Structural Engineer and Assistant Professor of Architecture, Tulane University*

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This unusual home reaches the ultimate in livability with \*SPA Southern Pine. The setting blends breathtaking beauty with gracious warmth. All rooms share a sense of spaciousness and casual comfort. The details reflect a new freedom of form and styling. This is made possible by the strength and precision of SPA Southern Pine.

The floor system employs new techniques of timber engineering. The resiliency of wood decking over solid beams alleviates fatigue of household work and walking. The high strength of the engineered wood roof permits larger rooms . . . with complete freedom of vision. With all its exceptional qualities, this home was remarkably economical to build.

*Send for a free copy of "New Dimensions of Design" with color illustrations and descriptions of new techniques in many forms of building. Write: Southern Pine Association, AR-10 P.O. Box 52468, New Orleans 50, Louisiana.*

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***Pre-Shrunk for greatest structural strength***

FROM THE MILLS OF THE SOUTHERN PINE ASSOCIATION

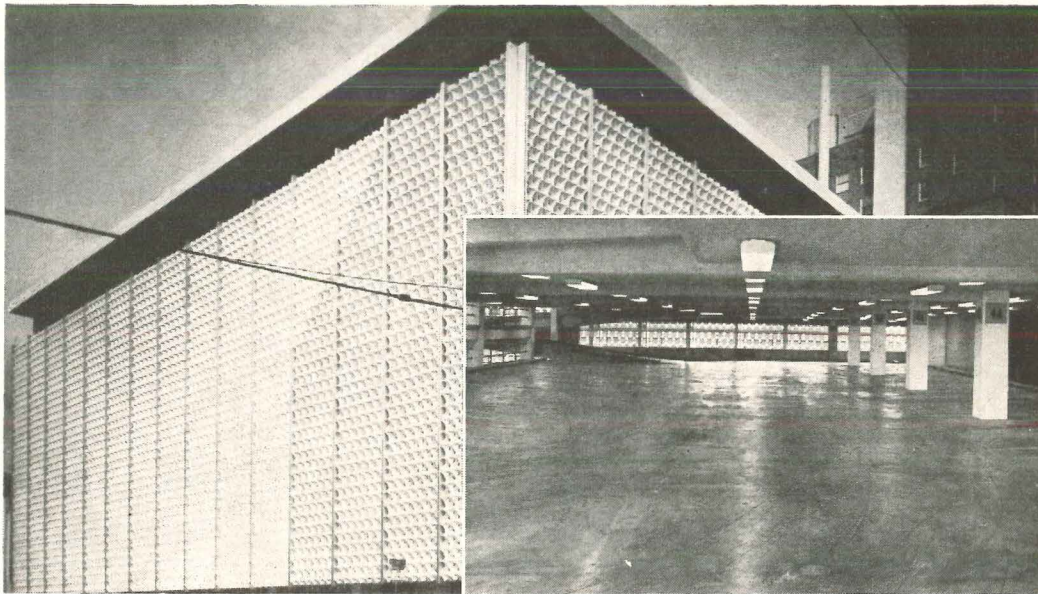
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# A. C. HORN

FLOOR MATERIALS

## Horn A. E. Dispersed Black adds tone to ramps and floors of Beaumont bank



A. C. Horn Products

SINCE AS FAR BACK as 1897, A. C. Horn has been another way of saying quality and dependability in construction and maintenance products.

Horn product lines you hear most about include CAULKS and SEALANTS, FLOOR MATERIALS, ADMIXTURES, WATERPROOFING and ROOFING MATERIALS, ADHESIVES and BONDING AGENTS, TECHNICAL COATINGS and SPECIALTY PRODUCTS.

There are more than 200 time-tested and performance-improved products available from Horn. Chances are you will find one specifically designed to meet your particular construction or maintenance requirements. The man from Horn is ready to work with you — contact him through the nearest regional office listed below.



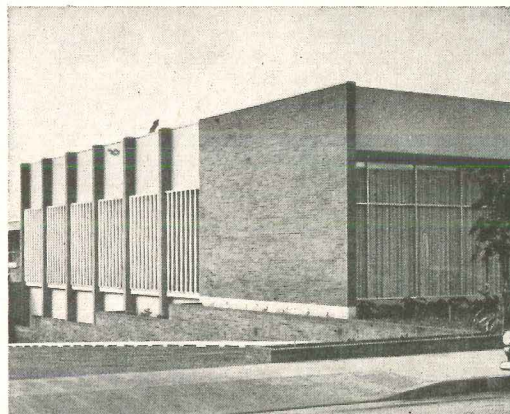
Pre-cast solar screens keynote the structural elegance of the new \$3,500,000 First Security National Bank building in Beaumont, Texas. Floors and ramps of interior parking areas reflect it further, with the help of HORN A.E. DISPERSED BLACK. Some 16,000 pounds of this liquid Horn tinting agent were used to make the concrete flooring an attractive tone of grey, permitting color contrast for space markings and effectively camouflaging stains and tire tracks. Easy-to-use A. E. DISPERSED BLACK permits any degree of intensified tonal value from

light grey to solid black. It will not alter compressive and flexural strength nor affect air entrainment in concrete. HORN THIOPOXY 62 CONCRETE ADHESIVE and several types of Horn sealants were also used in the Beaumont structure. Architects: Pitts, Mebane & Phelps. Contractor: Thad Dederick Construction Co.

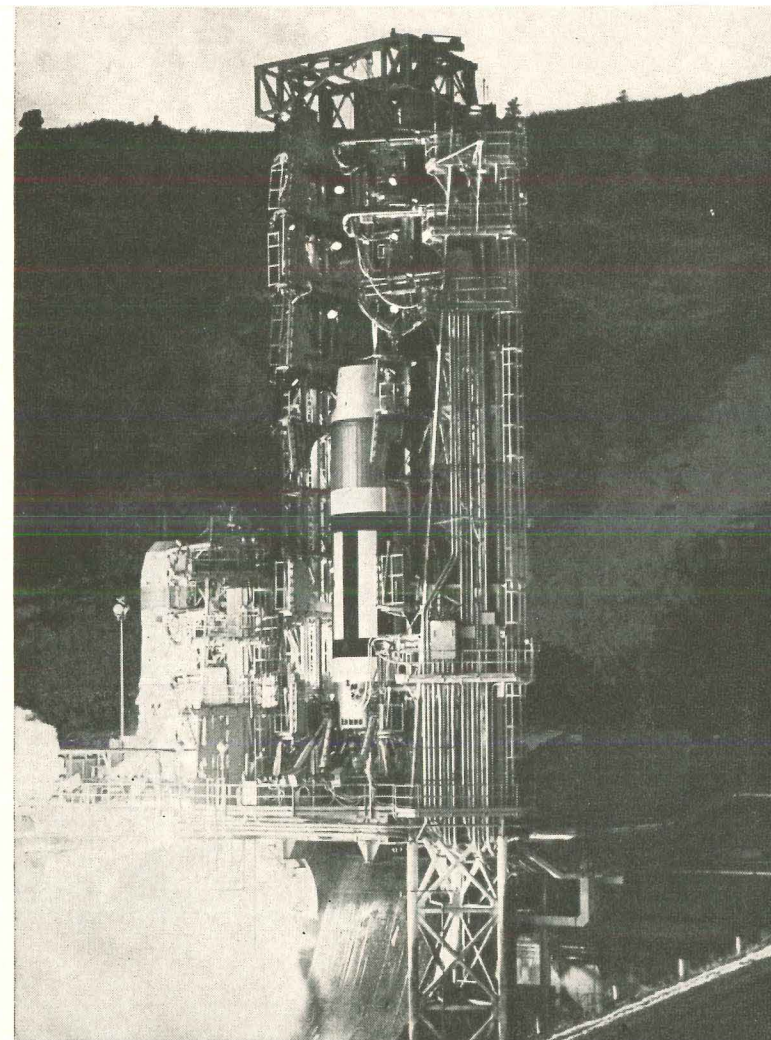
*(Horn also features well-known Colorundum dust-on colorant and hardener for floors, walks and driveways, as well as integrally-mixed Stay-brite colors for blocks, panels, poured concrete).*



**Horn Duraflor helps streamline Swingline floor care.** At the well-kept Long Island City plant of Swingline Staplers, major importance is attached to efficient maintenance of floors. Critical floor areas—subject to oil or acid spillage and heavy abrasive traffic—are treated with chemical and acid-resisting HORN DURAFLOR epoxy coating. Less critical areas are decorated and protected with Horn floor enamels. Meanwhile, HORN THIOPOXY 60 TOPPING and PATCHING COMPOUND is used to keep all concrete flooring in good repair.



**Horn Colorundum stars in floor show at Los Angeles Chamber of Commerce.** Colorful concrete floors reflecting a colorful community image were specified for the Los Angeles Chamber of Commerce building in the form of decorative HORN COLORUNDUM. Easily dusted-on COLORUNDUM provides a bright, permanent coloration. At the same time it helps produce a hard, abrasion-resistant surface, thus enhancing both the function and appearance of the structure. Architects: Heitschmidt and Thompson. Contractor: T-S Construction Company.



**Horn Tread-Sure skid-proofs loading ramps at Martin missile site.** Safety underfoot is a vital factor on the loading ramps of Martin-Denver's missile test stands in the hills of Colorado. That's why HORN TREAD-SURE got the skid-preventing job. This plastic, abrasive-filled brush coating is as easy to apply as paint. It provides a heavy, slip-resistant finish that makes both floors and safety records *stand up* in the face of oil, grease or acid. Also used at the Martin-Denver missile complex was HORN SUPER-BONDSIT in concrete toppings for leveling administration building floors. And HORN DURAFLOR was chosen as an acid and abrasion-resistant finish for the plating room. Inside and out some half-dozen other well-known Horn products were specified to keep the missile site moisture-free and weather-tight.

**GRACE**

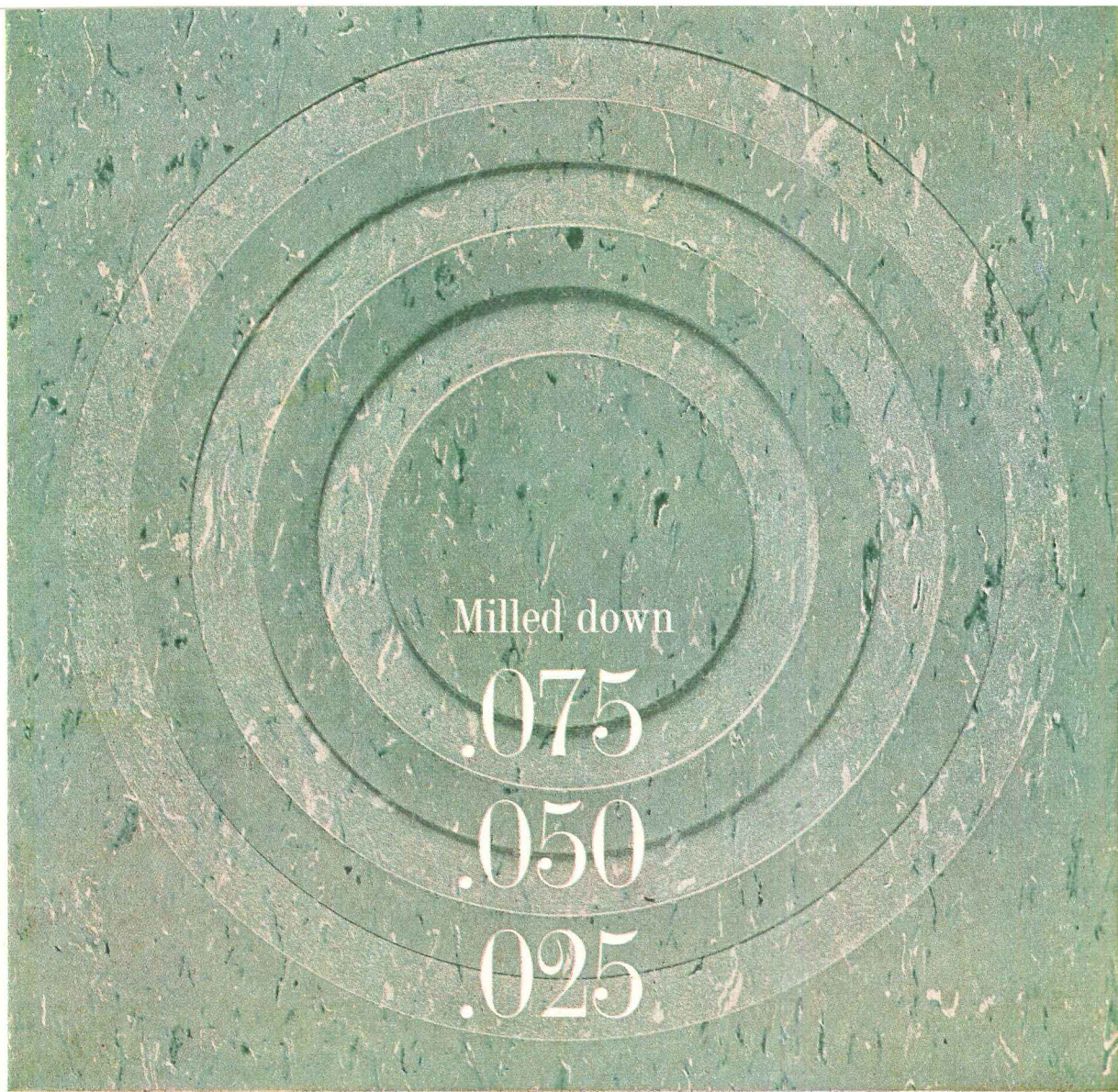
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the pattern never wears out—  
 because the chips go all the way thru  
**RUBEROID THRU CHIP Vinyl Asbestos Floor Tile**

Here's a floor designed specifically for heavy traffic areas that must look attractive. The color chips extend all the way through the thickness of the tile, maintaining the terrazzo beauty for the life of the tile. This means you can

specify Ruberoid's new Thru Chip Vinyl Asbestos with complete confidence in its durability and lasting beauty. 12 patterns 9x9, 1/8" thickness, exclusive with Ruberoid. **For quality and styling—Keep your eye on Ruberoid.**



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# ARCHITECTURAL DETAILS

## 1. MIES VAN DER ROHE

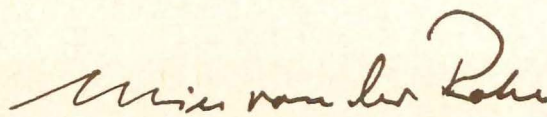
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This presentation of work of a great master opens a new series on significant details of significant architecture

Construction is the truest guardian of the spirit of the times because it is objective and is not affected by personal individualism or fantasy. The idea of a clear construction is one of the fundamentals we should accept. We can talk about that easily, but to do it is not easy; it is difficult to stick to this fundamental construction, and then to elevate it to a structure.

Architecture begins when two bricks are put carefully together. Architecture is a language having the discipline of a grammar. Language can be used for normal day-to-day purposes as prose. And if you are very good at that you may speak a wonderful prose. And if you are really good you can be a poet. But it is the same language and its characteristic is that it has all these possibilities.

The physicist Schroedinger said of general principles, "the creative vigor of a general principle depends precisely on its generality," and that is exactly what I mean when I talk about structure in architecture. It is not a special solution. It is a general idea. And, although each building is a single solution, it is not motivated as such.



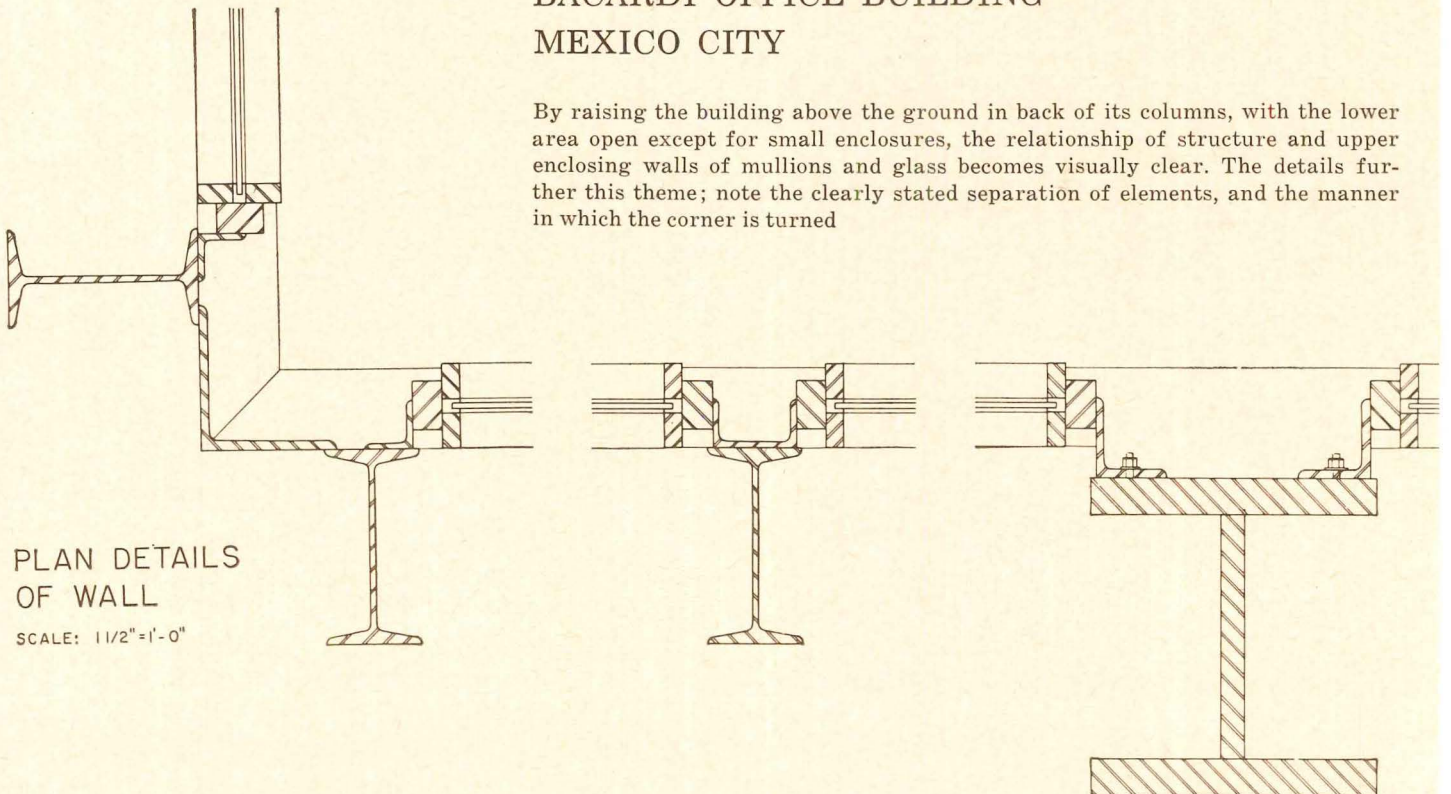
MIES VAN DER ROHE





### BACARDI OFFICE BUILDING MEXICO CITY

By raising the building above the ground in back of its columns, with the lower area open except for small enclosures, the relationship of structure and upper enclosing walls of mullions and glass becomes visually clear. The details further this theme; note the clearly stated separation of elements, and the manner in which the corner is turned



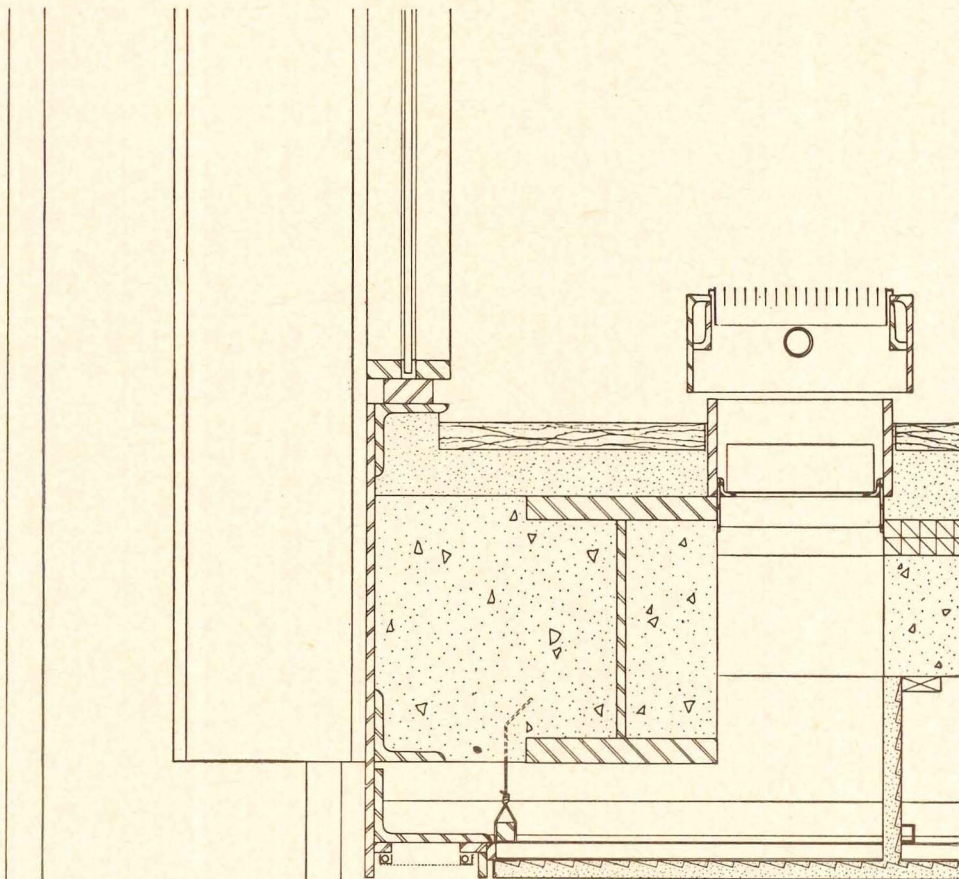
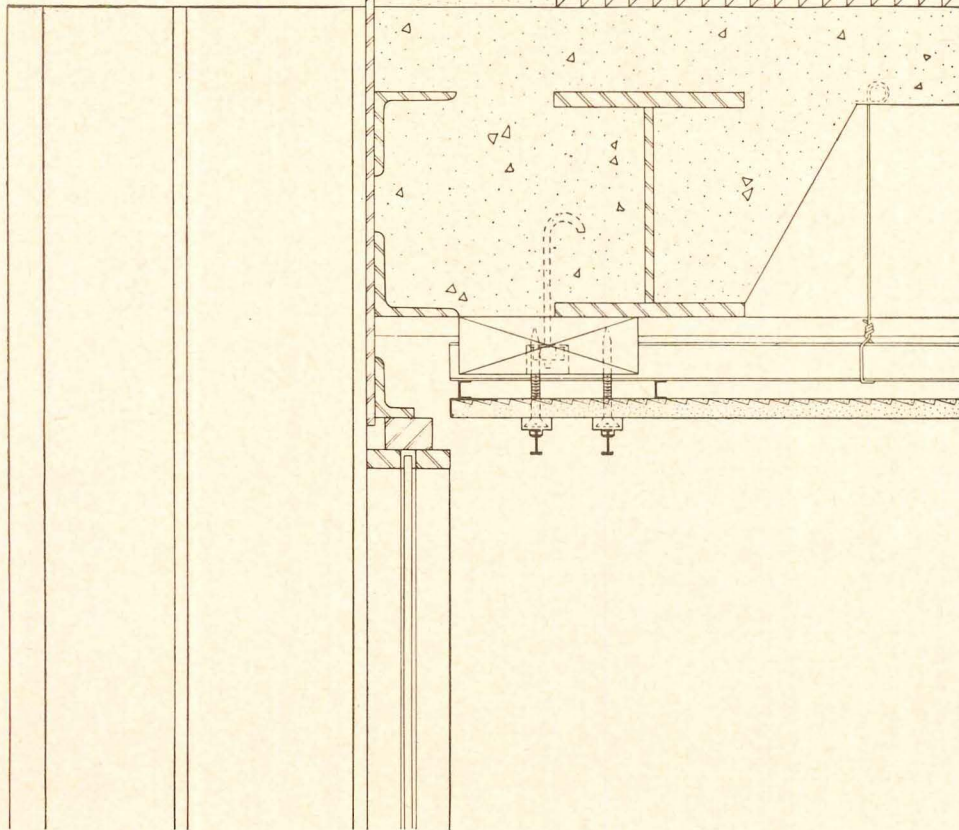
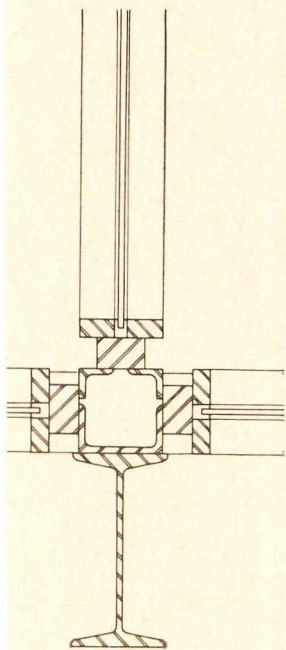
PLAN DETAILS  
OF WALL

SCALE: 1 1/2" = 1'-0"





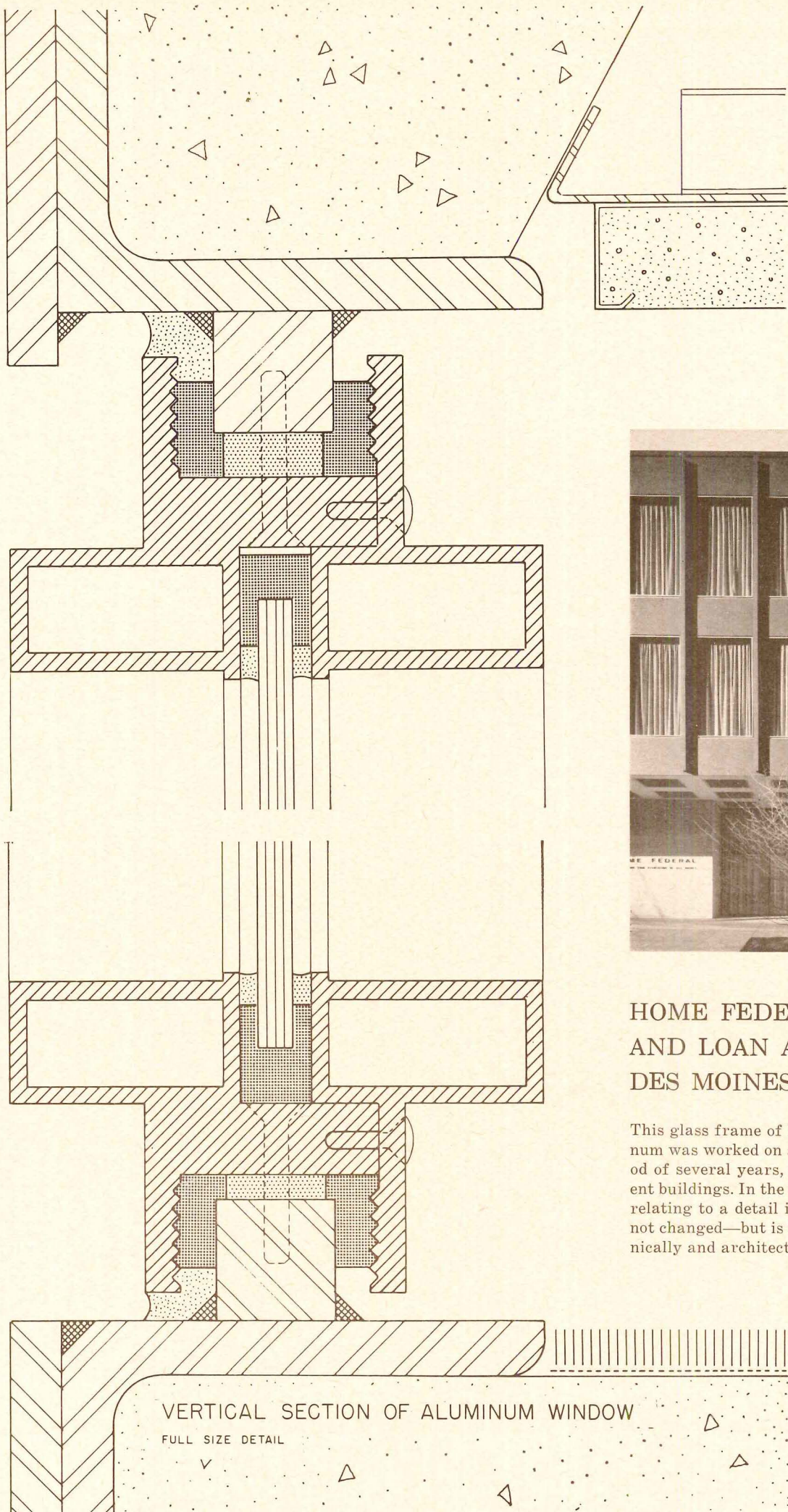
Balthazar



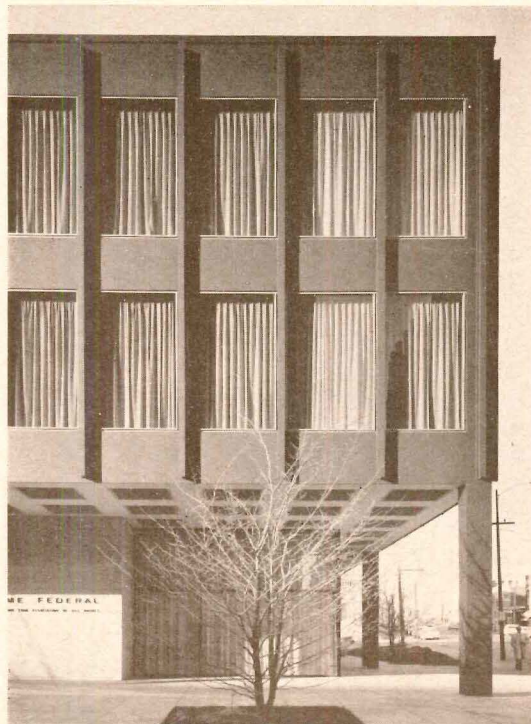
VERTICAL  
WALL SECTION

SCALE: 1 1/2" = 1'-0"





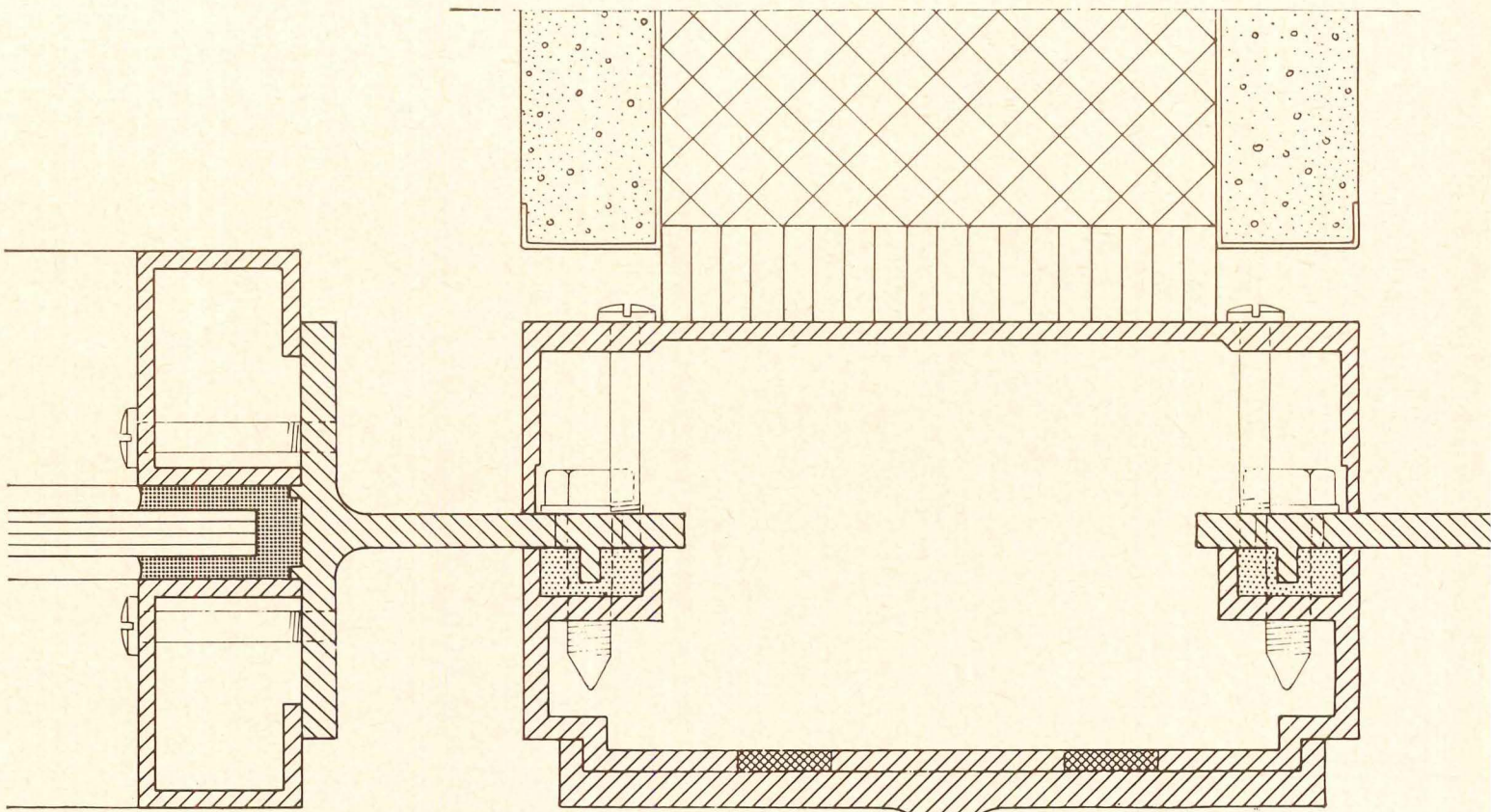
*Hedrich-Blessing*



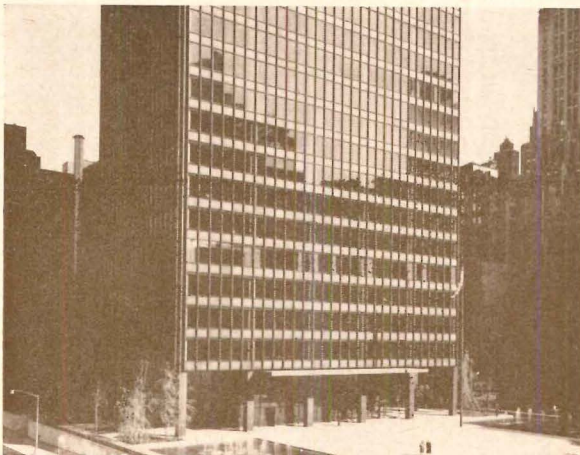
## HOME FEDERAL SAVINGS AND LOAN ASSOCIATION DES MOINES, IOWA

This glass frame of hard anodic coated aluminum was worked on and developed over a period of several years, and used for three different buildings. In the Mies office, if the situation relating to a detail is similar, it is repeated—not changed—but is further refined, both technically and architecturally





© Ezra Stoller

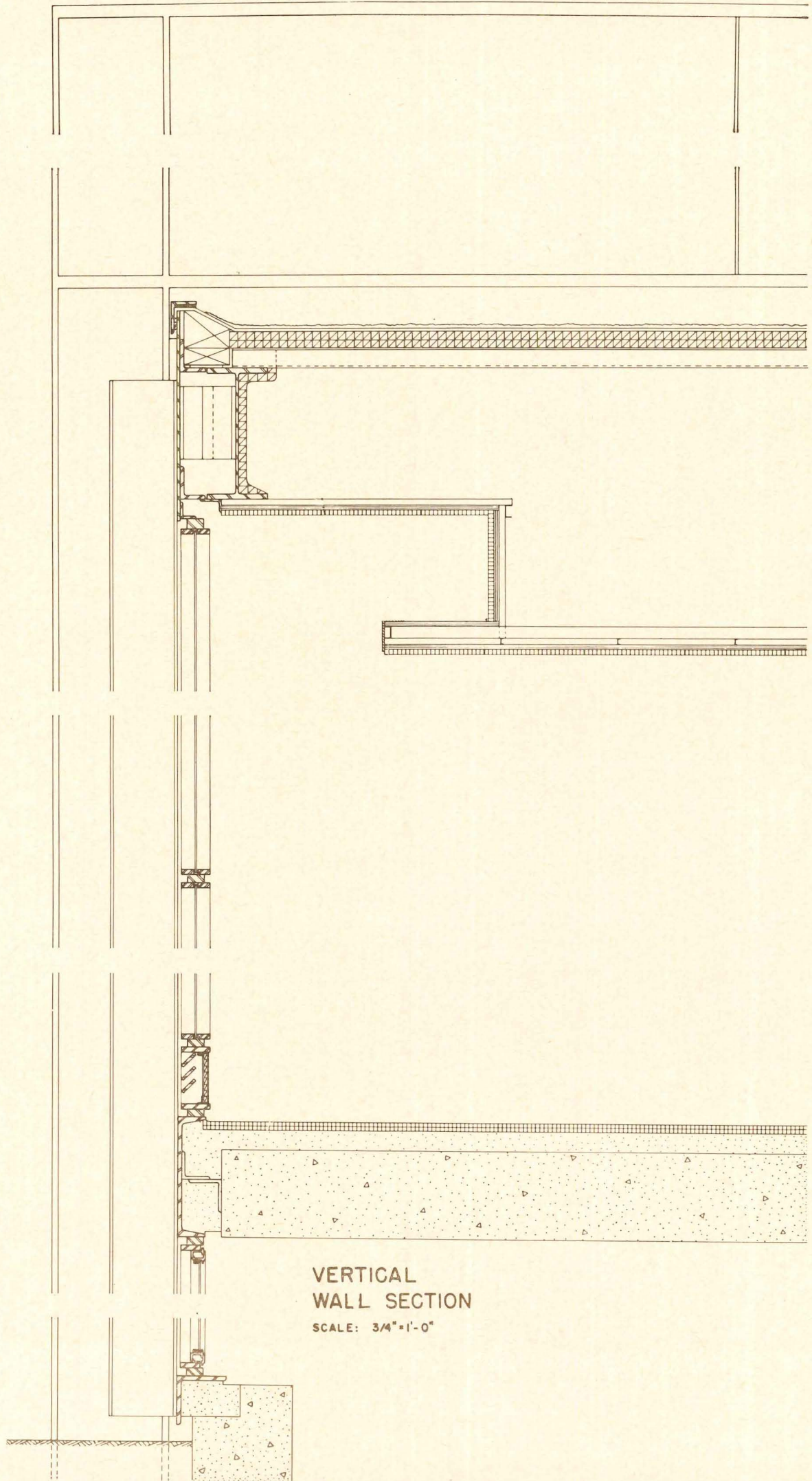


## THE SEAGRAM BUILDING NEW YORK

Note the articulation and separation—by means of reveals—of glass frame and mullion. From his earliest work, Mies has brought building elements together in a similar manner. Each element is expressed as clearly as possible for its own sake, then the various elements brought together and interrelated to produce a harmonious whole

BRONZE SKIN  
FULL SIZE DETAIL



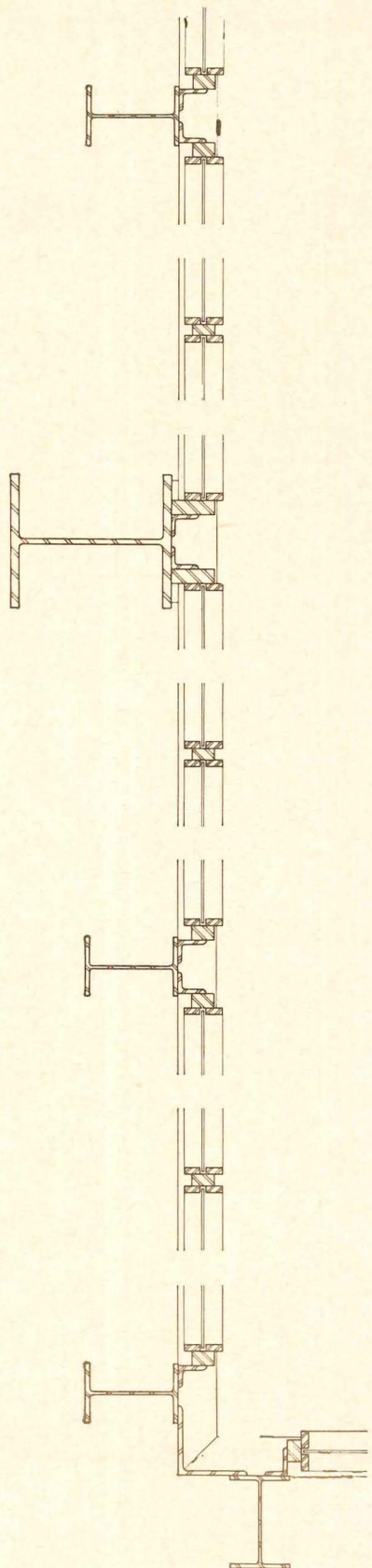
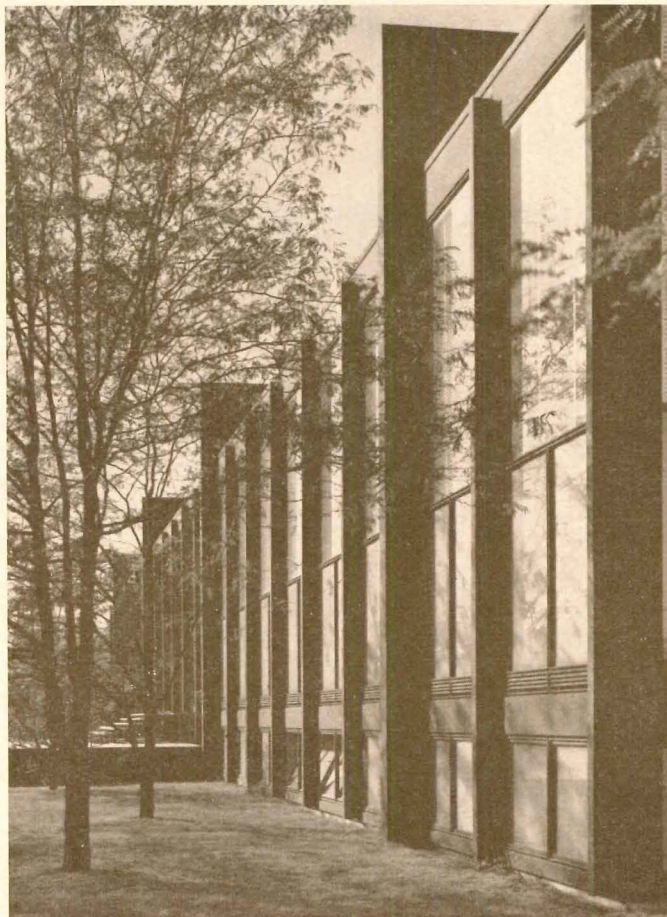


VERTICAL  
WALL SECTION

SCALE: 3/4" = 1'-0"

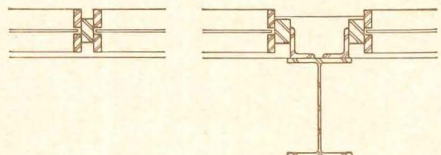


Balthazar



CROWN HALL  
ILLINOIS INSTITUTE OF  
TECHNOLOGY, CHICAGO, ILLINOIS

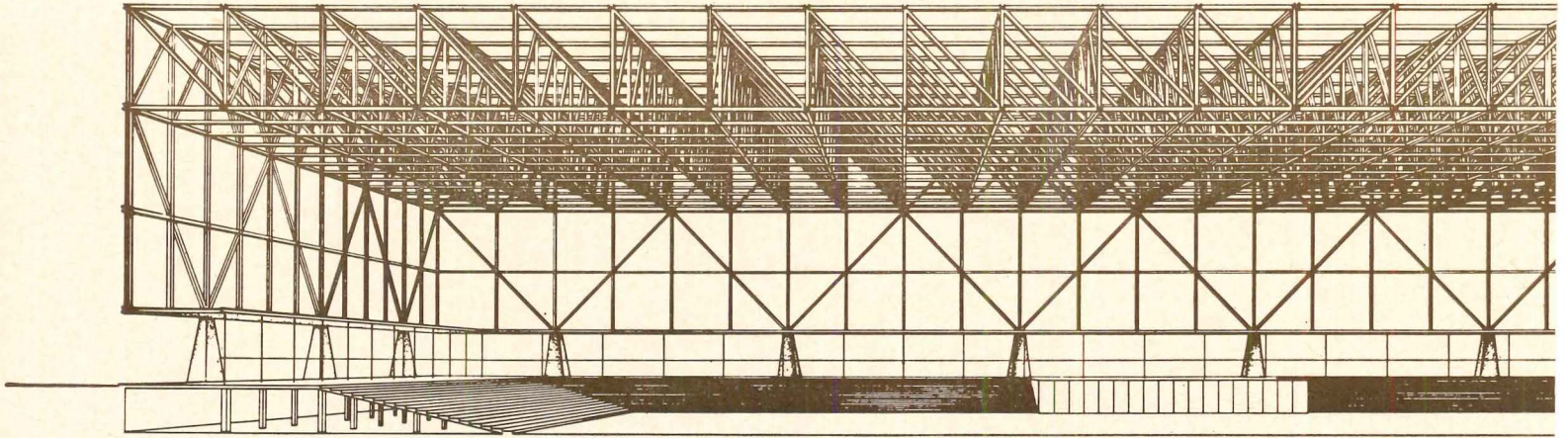
This is one of Mies' boldest and clearest expositions of steel structure; the columns and girders are strongly stated. Proportions and the relationships of parts give the building dignity and strength



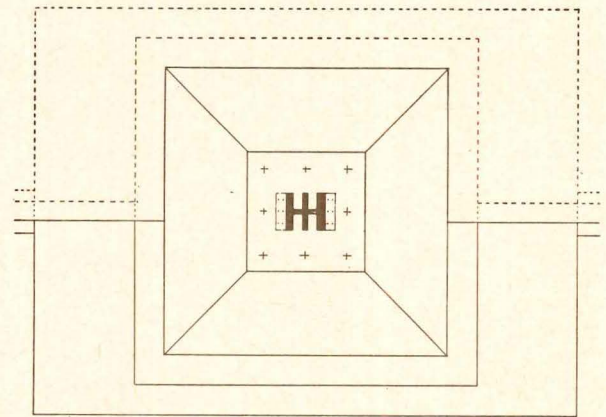
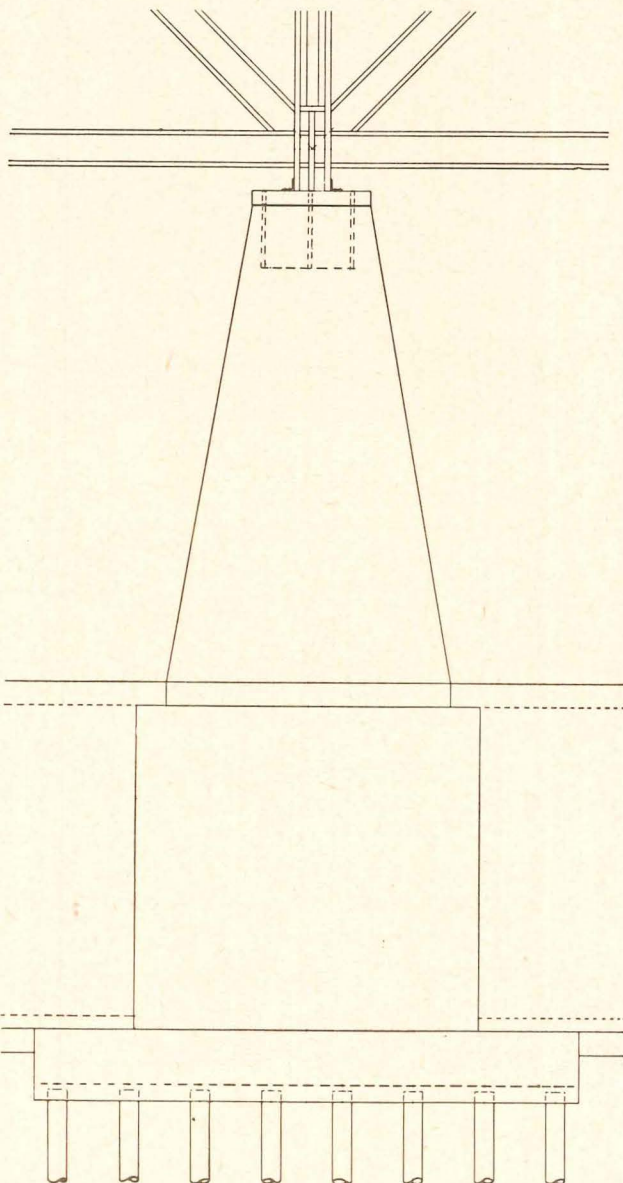
PLAN DETAILS  
OF WALL

SCALE: 3/4" = 1'-0"



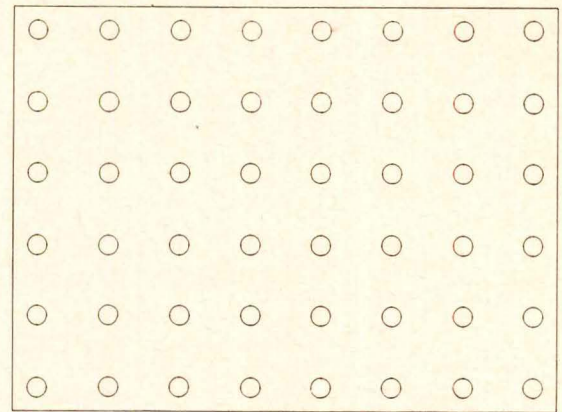


In developing buildings that involve exposed structure, such as this one, Mies works in very close collaboration with the structural engineer, since structure then becomes architecture and vice versa. Various possibilities are studied in model form to arrive at the final solution



PLAN OF BASE PLATE TO FOUNDATION

PLAN OF PILES

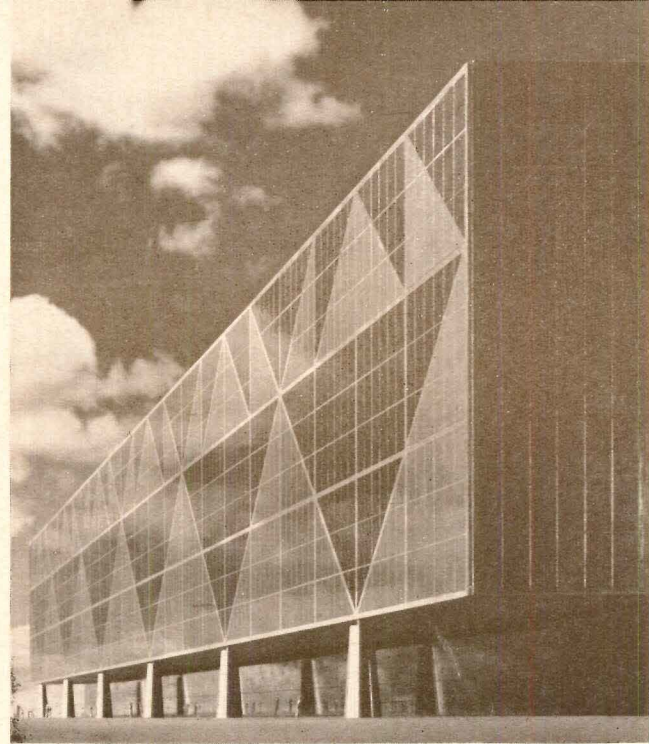
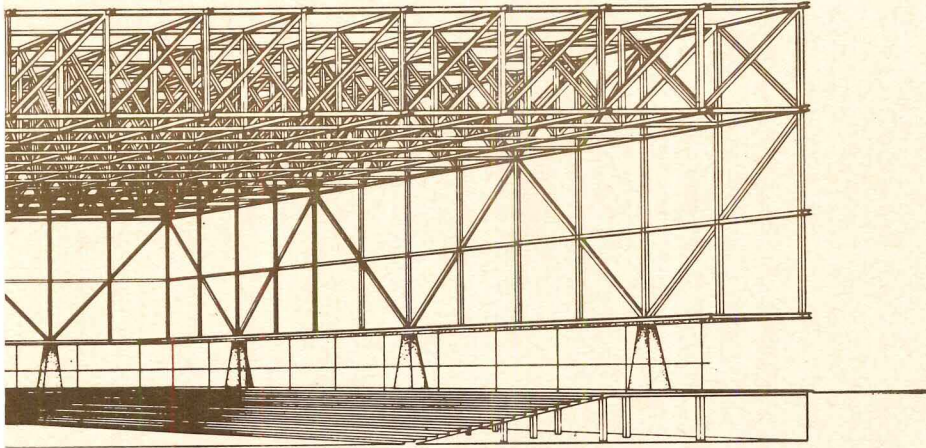


CONCRETE COLUMN SYSTEM  
FOUNDATION AND BASE DETAILS

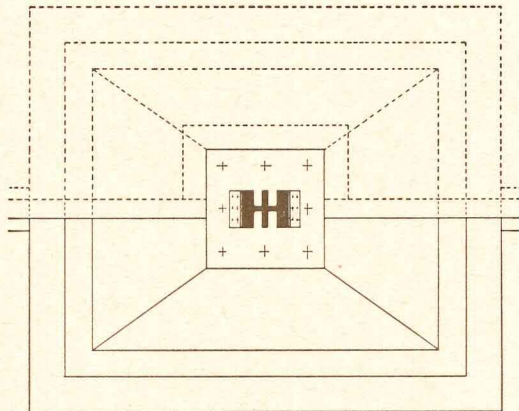
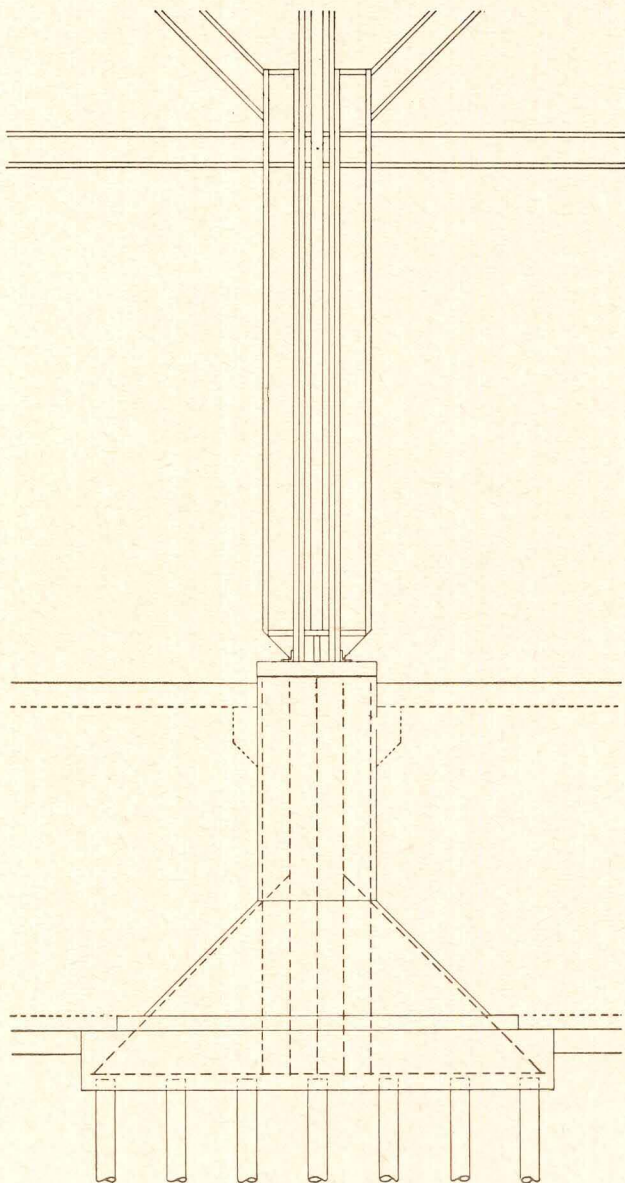
SCALE: 1/8" = 1'-0"



PROPOSED CONVENTION HALL

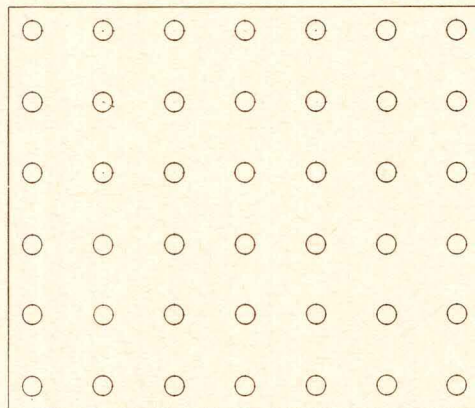


Balthazar



PLAN OF BASE PLATE TO FOUNDATION

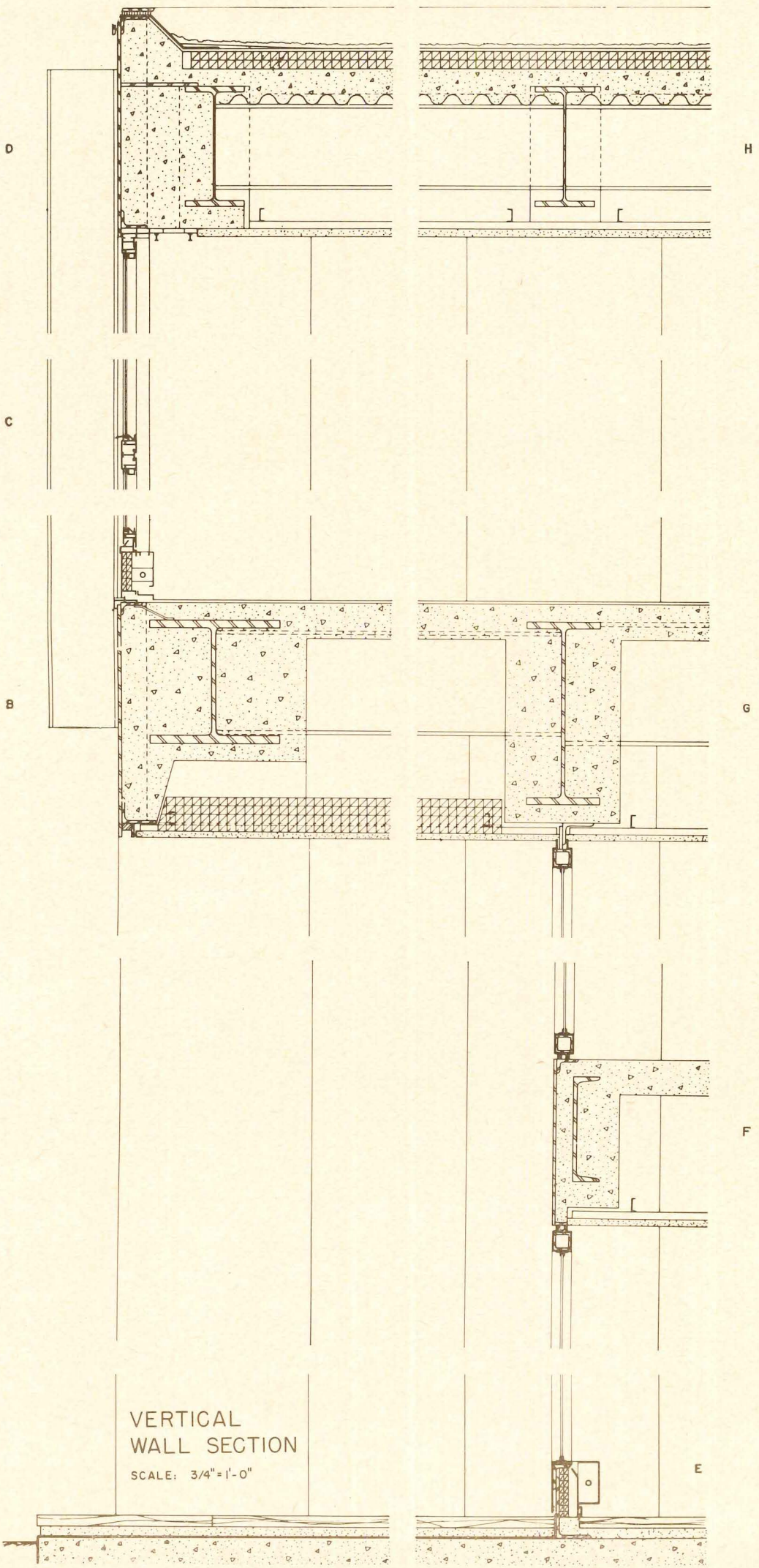
PLAN OF PILES



STEEL COLUMN SYSTEM  
FOUNDATION AND BASE DETAILS

SCALE: 1/8"=1'-0"



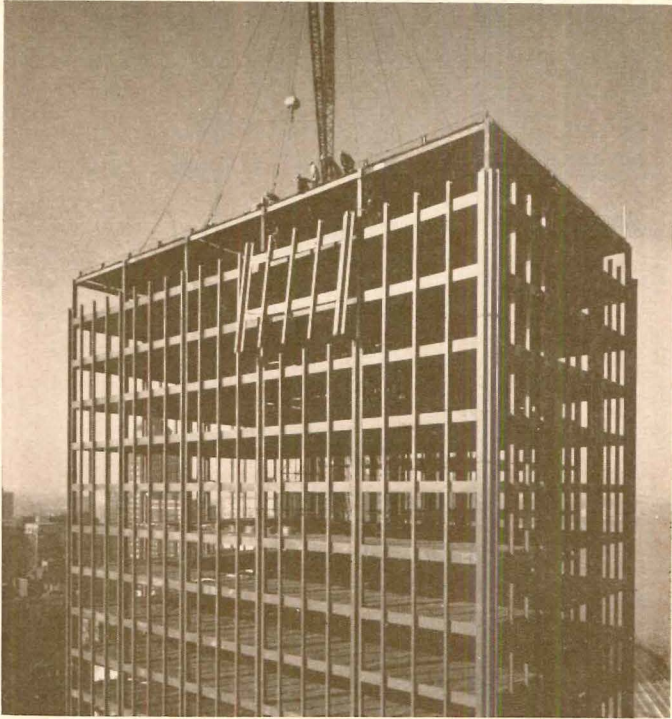


VERTICAL  
WALL SECTION

SCALE: 3/4" = 1'-0"

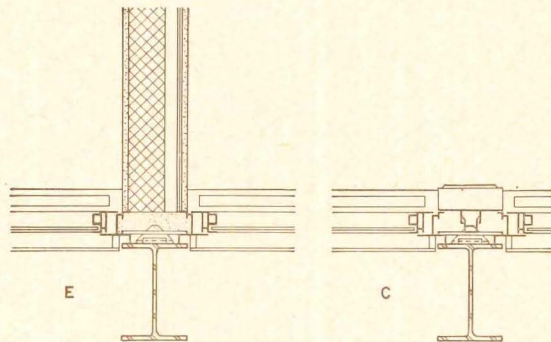
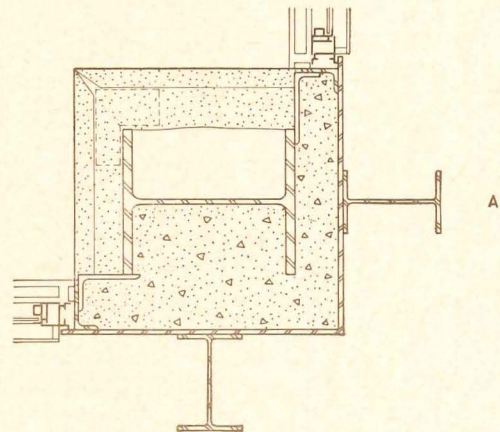
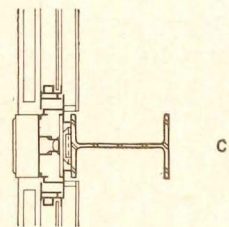
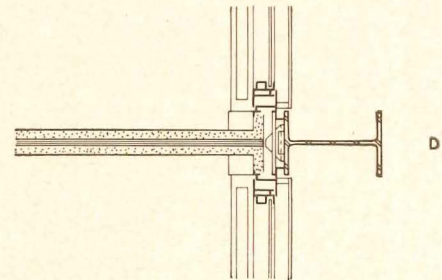
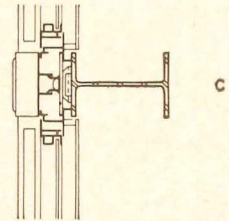
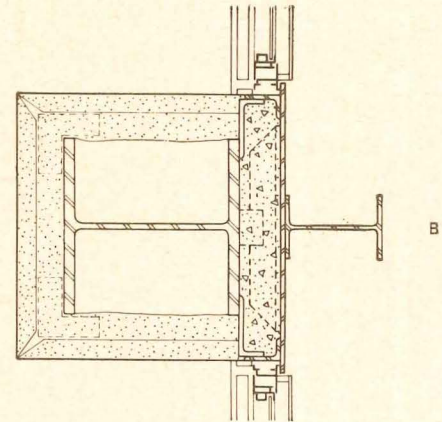


Hedrich-Blessing



860 LAKE SHORE DRIVE  
CHICAGO, ILLINOIS

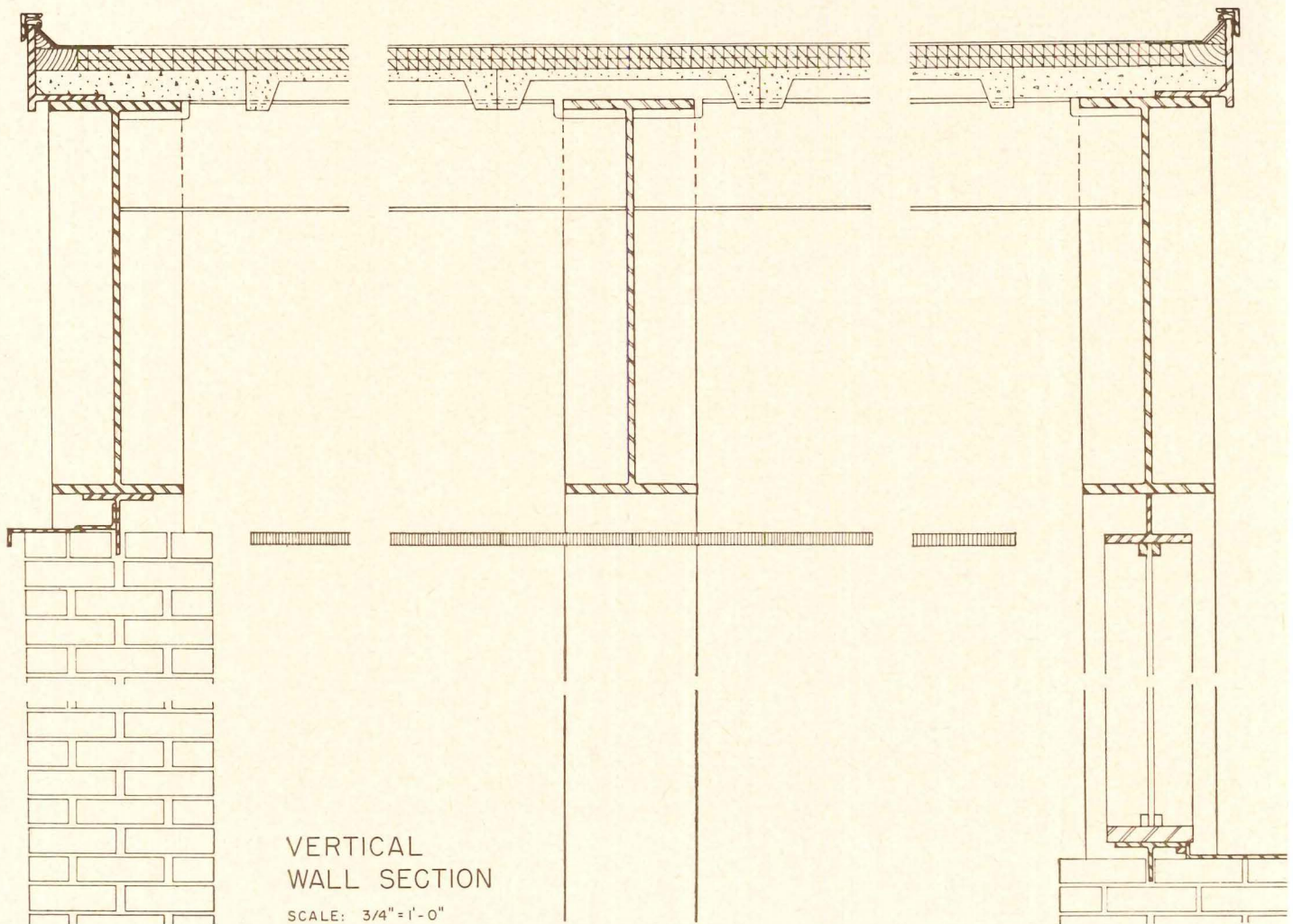
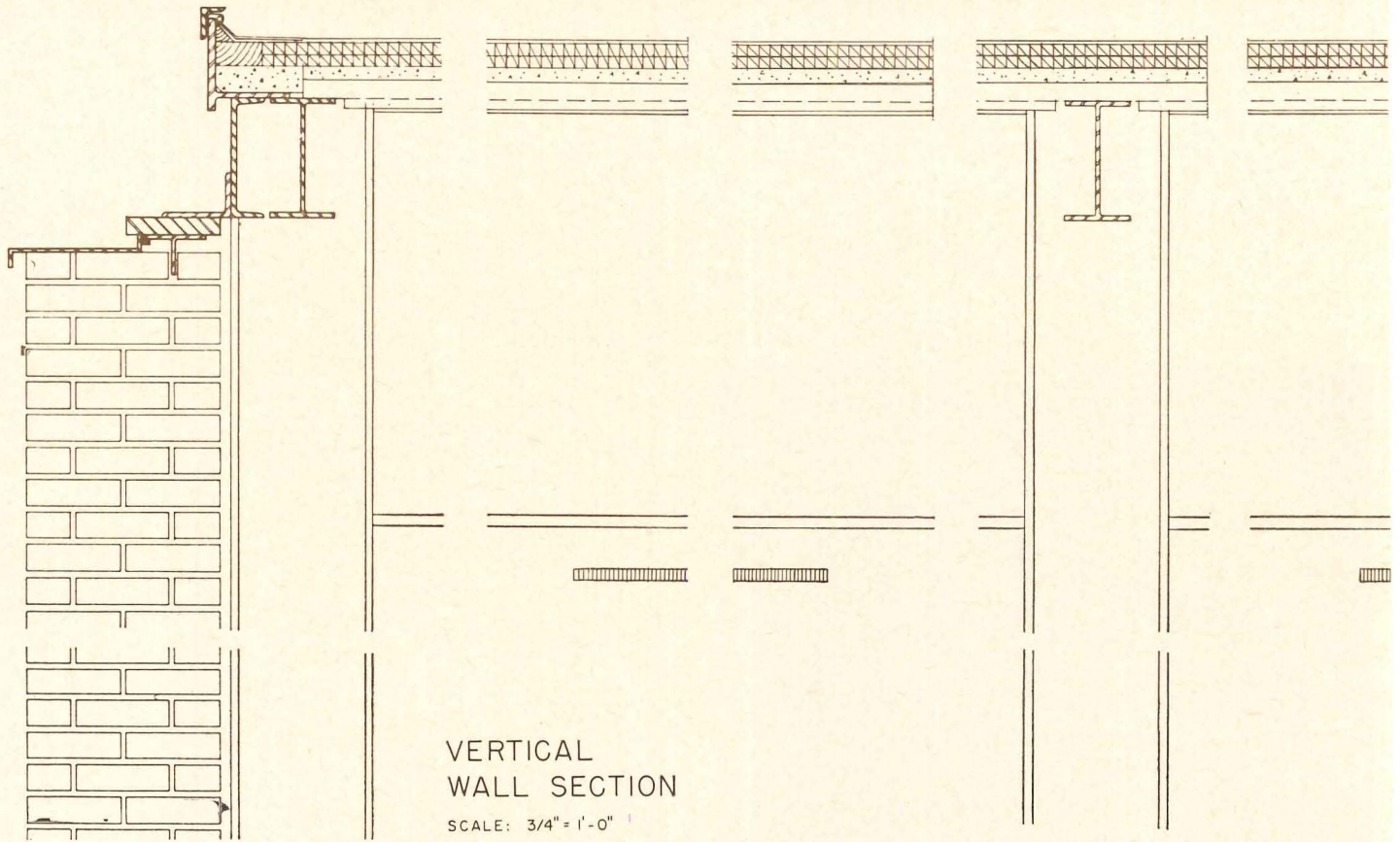
In a tall building such as this it was of course necessary to fireproof the structural frame, so the fireproofing was clad in metal to express the structure. The form and character of the 860 apartment building stem from the steel skeleton. Here again, note the studied refinement of parts and their careful articulation



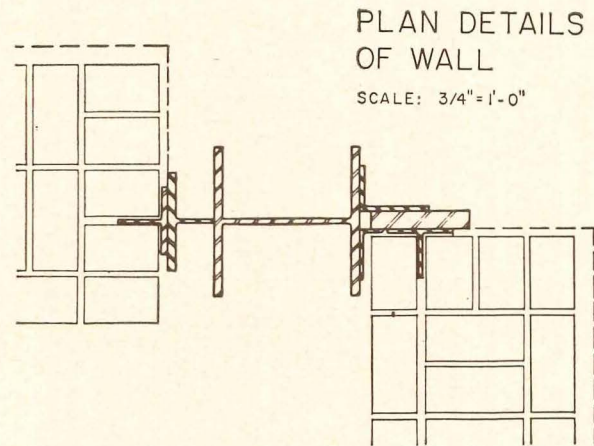
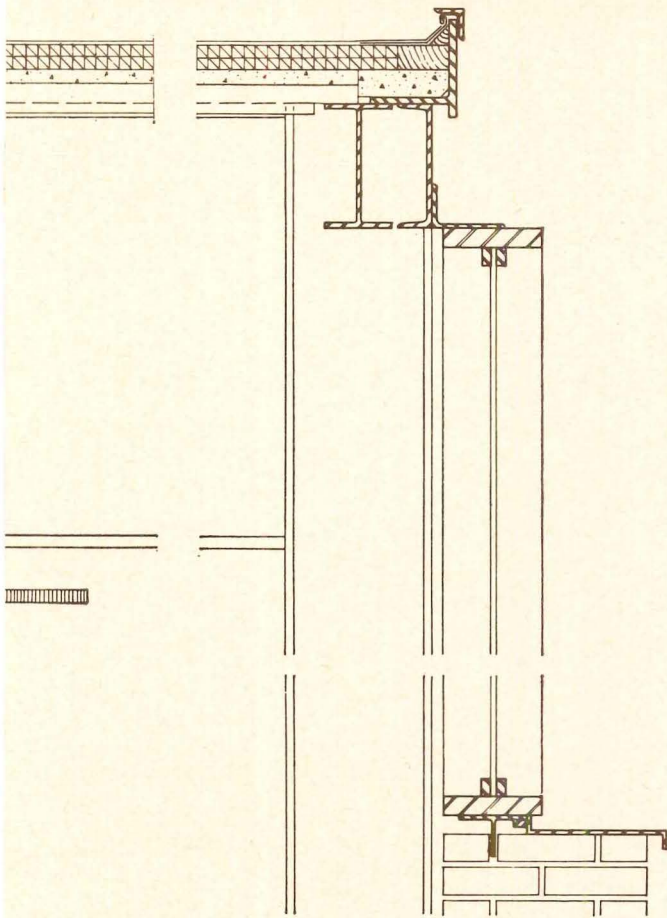
PLAN DETAILS  
OF WALL

SCALE: 3/4" = 1'-0"



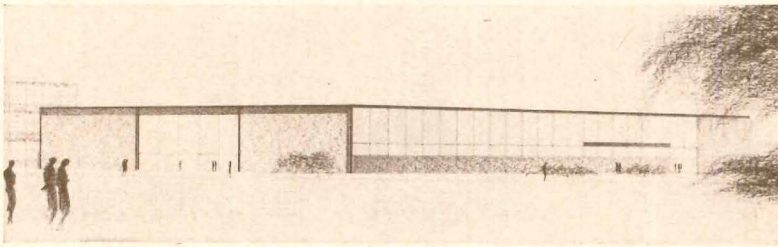






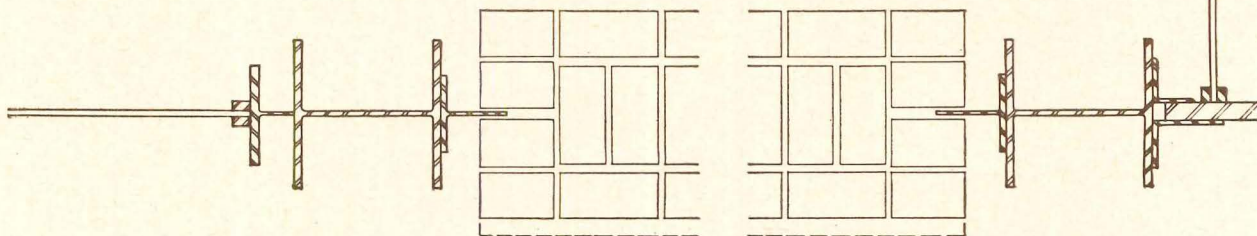
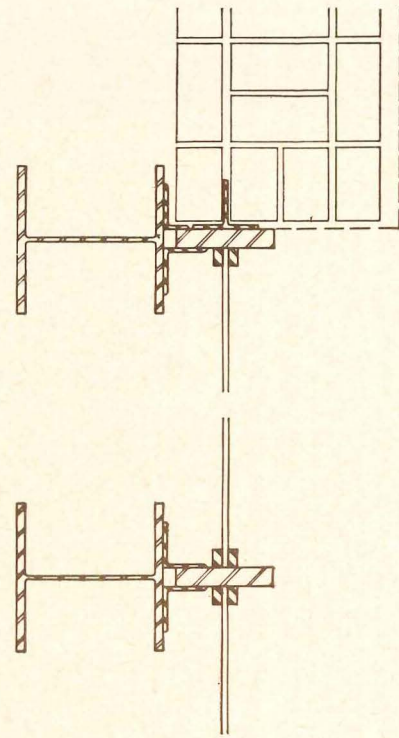
PLAN DETAILS  
OF WALL

SCALE: 3/4" = 1'-0"



LIBRARY AND ADMINISTRATION BUILDING  
ILLINOIS INSTITUTE OF TECHNOLOGY  
CHICAGO, ILLINOIS

Although never built, this remains as one of the architect's most important works. Since the building is one story in height, the structural frame could be left exposed and infilled with panels of brick or of glass and metal. The relationships of columns, brick, glass surrounds, and fascias were studied by means of full size models



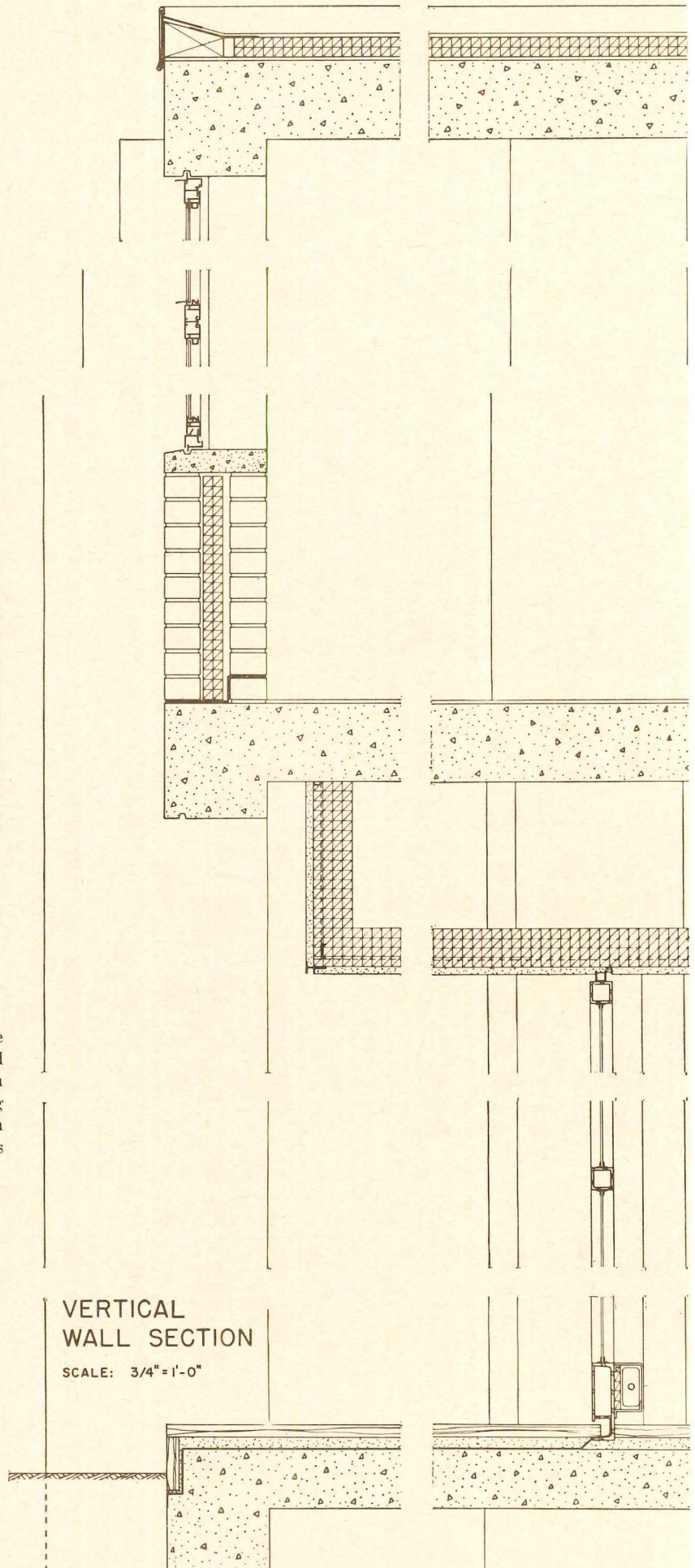


Hedrich-Blessing



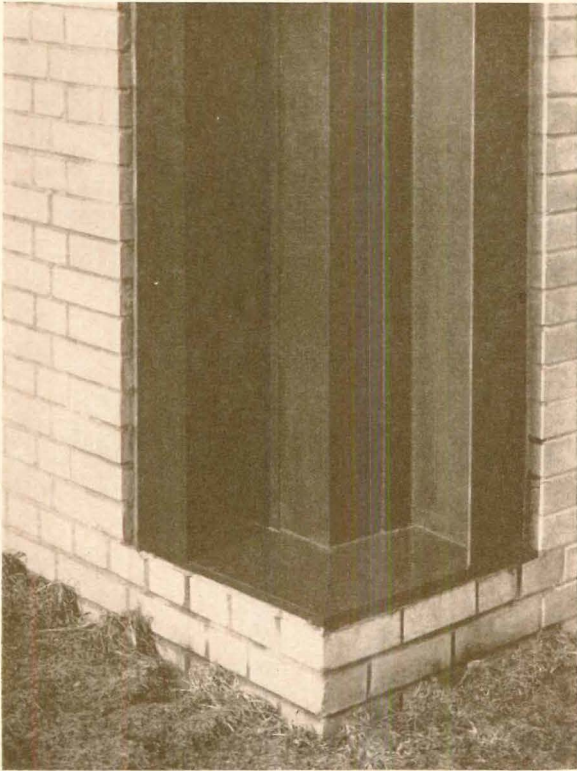
### CARMAN HALL ILLINOIS INSTITUTE OF TECHNOLOGY, CHICAGO

This example was selected because it illustrates the architect's use of the concrete frame as exposed structure. The columns decrease in cross section in accordance with the decrease in applied load. Infilling panels are of a brick and insulation sandwich, with brick as the interior finish. The building contains apartments for faculty and married students



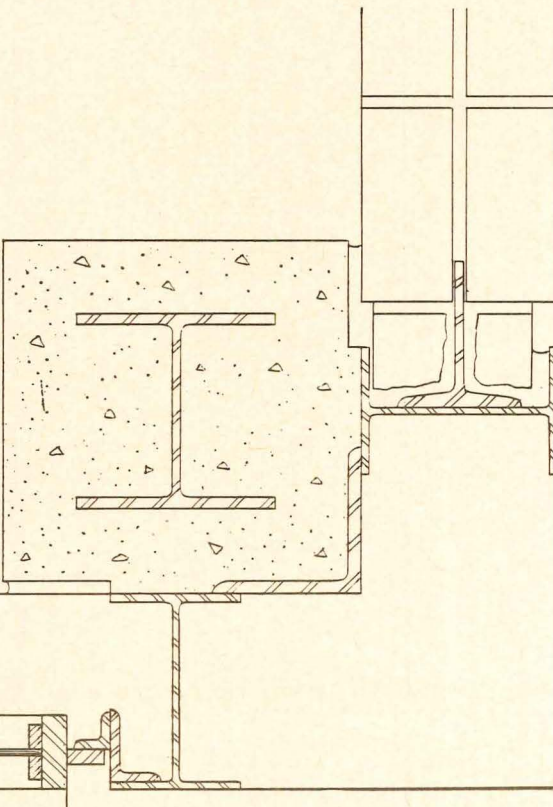
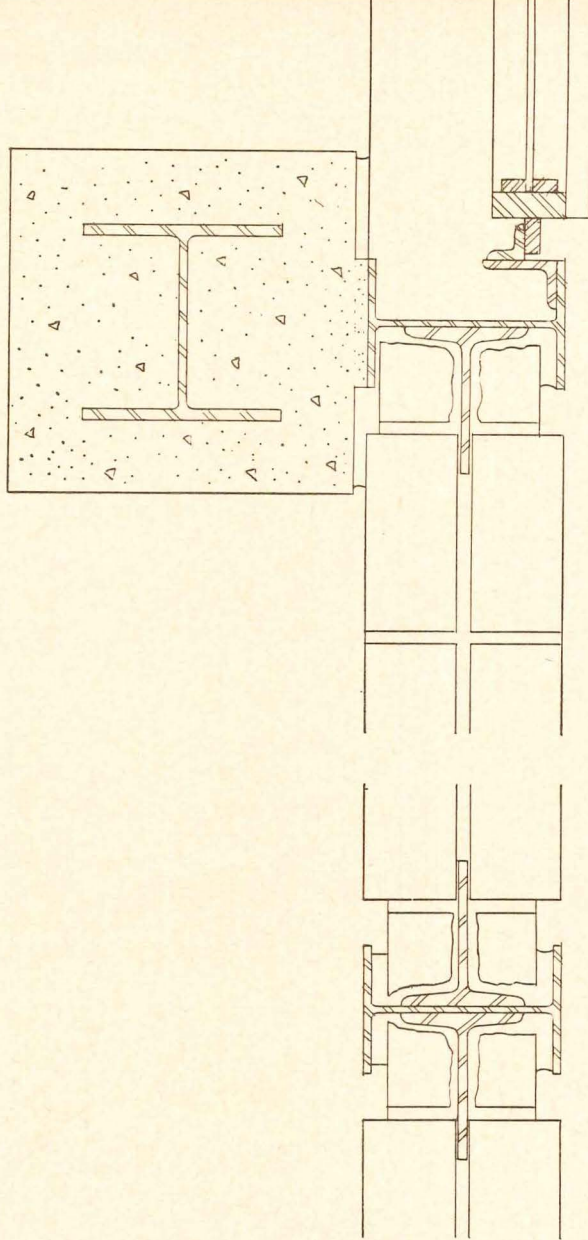


Hedrich-Blessing



## ALUMNI MEMORIAL HALL ILLINOIS INSTITUTE OF TECHNOLOGY, CHICAGO

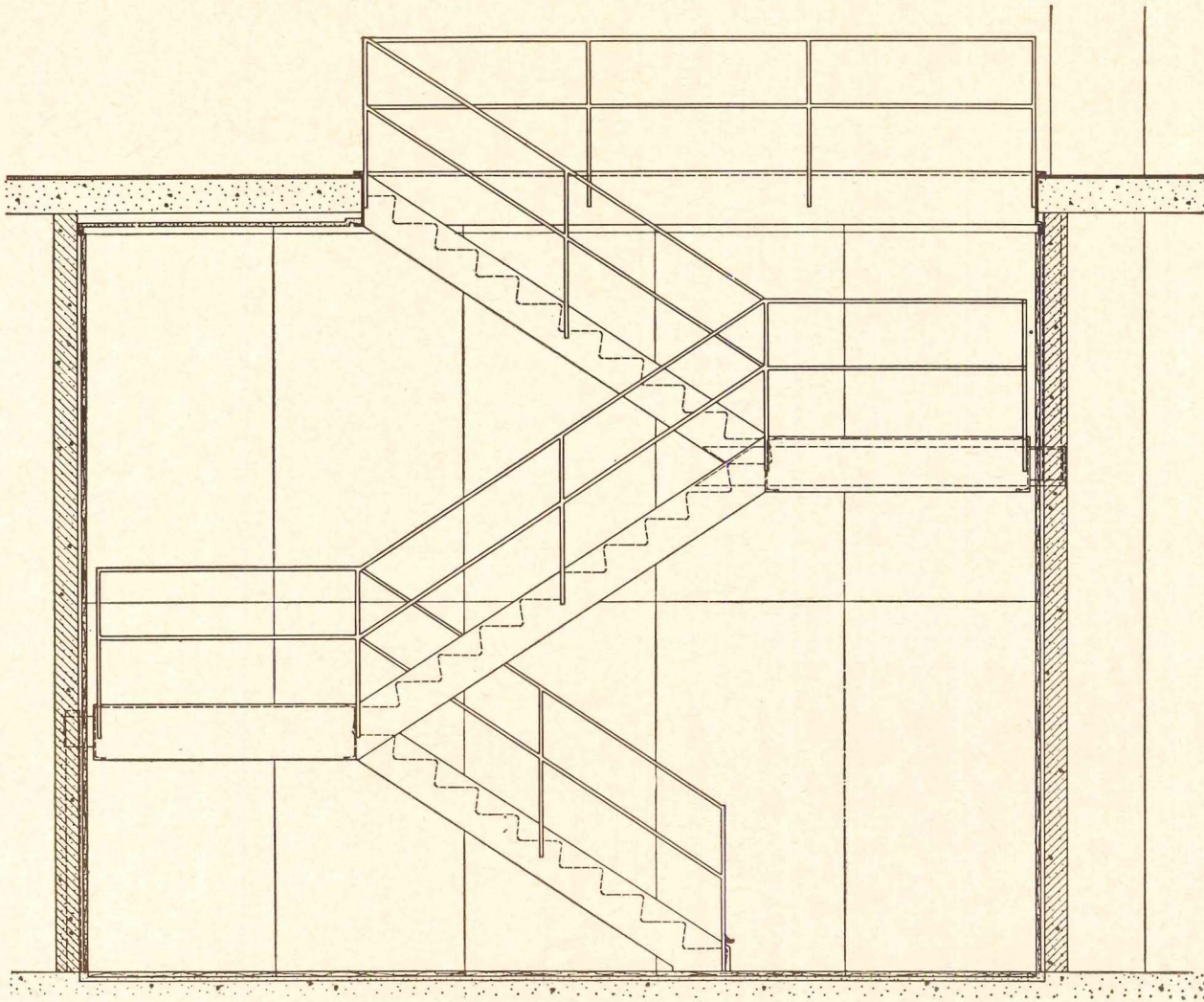
This example was chosen to show the manner in which the architect turns the corner in expressing the fireproofed steel frame, and also to illustrate the way the structural expression is terminated at the base of the building. Note how the integrity of each element is maintained by separation joints, and how the corner mullions are located on column centers in both directions



PLAN DETAILS  
OF WALL

SCALE: 1 1/2" = 1'-0"



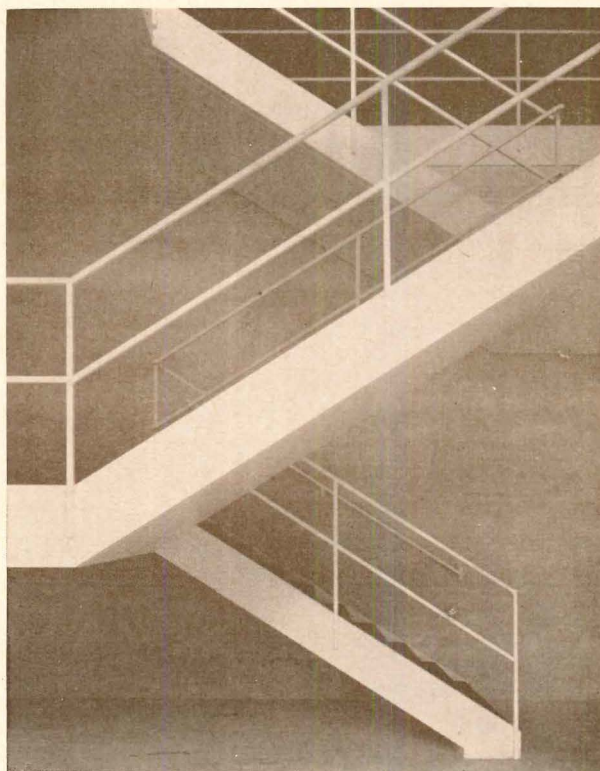


SECTIONAL ELEVATION

SCALE: 1/4" = 1'-0"

STAIRWAY,  
THE ARTS CLUB  
CHICAGO, ILLINOIS

This stair is of steel, painted white, and is placed within a well of beige travertine. In this situation it becomes a piece of free-standing sculpture. The integrity of its form is maintained by keeping it clear of the wall at all points







*Bill Engdahl, Hedrich-Blessing photos*

## AIRPORT FOR JETS AND PISTONS

The Metropolitan Airport Terminal in Memphis, Tennessee, designed by architects Mann & Harrover, is a simple and handsome solution to the complex circulation problems presented by different types of aircraft operated by a number of airlines of varying size







Main approach. Entrance from ramp leads to main passenger floor

*By Roy P. Harrover*

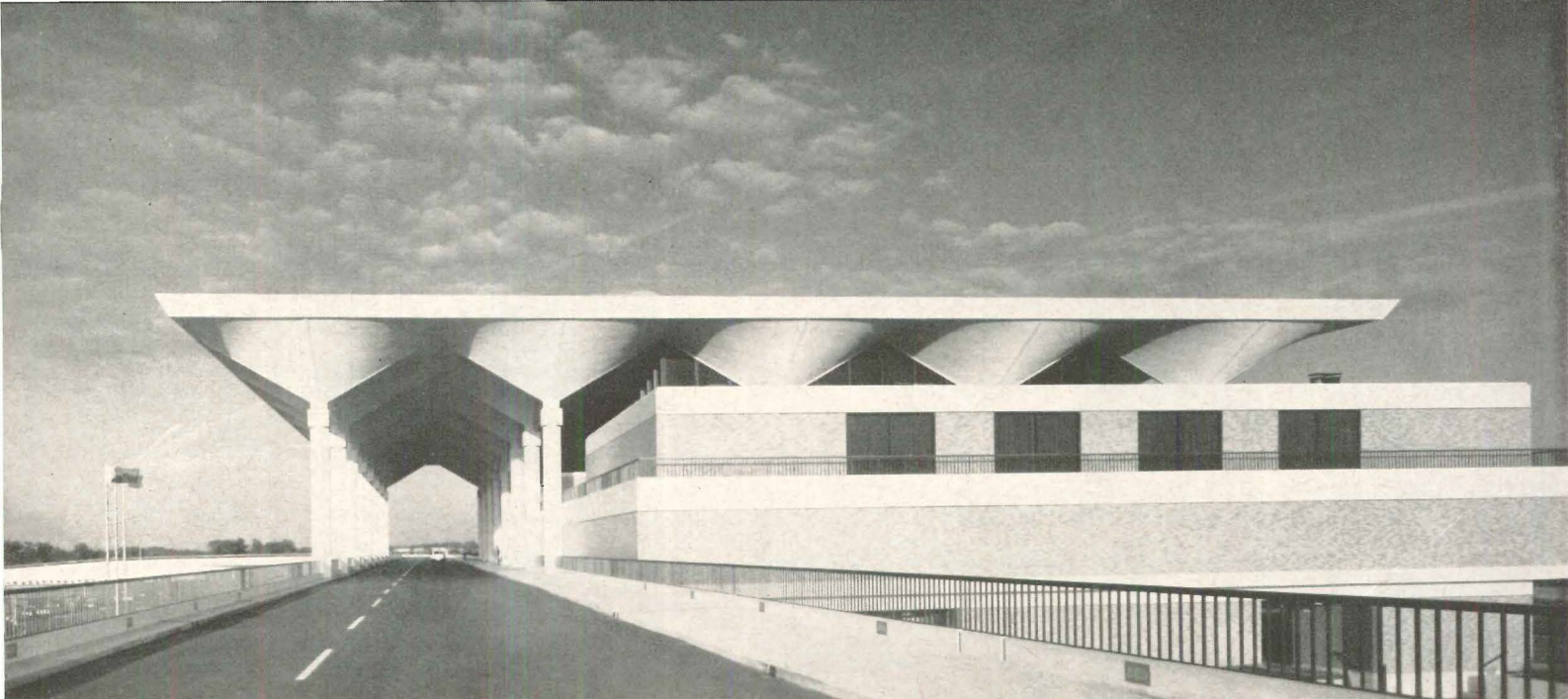
Memphis is a mid-continent air hub, where routes converge. Seven airlines serve Memphis. Two of these carry 75 per cent of the passengers, using large jet and turbo-prop equipment. Feeder airlines serving the rural communities must use smaller equipment, even the DC-3. Thirty-five per cent of the passengers boarded here have changed airplanes at Memphis. Countless more step off a flight for a quick stretch, a look, and perhaps a few minutes of shopping before continuing. This diversity of aircraft, of airlines, and of passenger connections presents a problem vastly different from that of the highly specialized jet airport, of the coastal airport where most passengers originate or terminate their flights, or of the terminal housing a single airline.

The first step in our arrival at a concept for the terminal was to decide on the best method of getting the passenger from the building to the airplane. There are two ways—he walks or he is carried. We were well aware of the unpopular walk. So we began by investigating methods of carrying the passenger to the plane. The moving sidewalk, while it held possibilities for the future, was at an early stage of development. At this time it did not seem a practical way to move large numbers of people to different points. If it was moving slowly enough to be safe, it was too slow for a hurrying passenger. It

seemed that a vehicle might be the answer. Saarinen was developing Dulles International Airport at this time. We were familiar with the mobile lounge concept and the estimated cost of such lounges. We projected 22 gates. This meant that at certain times we expected 22 boarding aircraft at one time. The estimated first cost of mobile lounges would have taken half of our budget. (As it turned out, we were wrong. Mobile lounges in first cost alone would have wiped out our entire budget.) We turned to a careful economic analysis of the use of regular city-type buses. This still cost too much, particularly in drivers' salaries and operating expenses. Buses were not very flexible in scheduling between connecting flights. (Neither are mobile lounges.) The passenger still faced a potentially cold, wet walk up to the plane from the bus. We had arrived at the firm belief that for the terminal of medium size, the only economical, the most flexible, and the fastest way to get from building to aircraft and from aircraft to aircraft is to walk.

Having arrived at this decision to construct some form of concourse, we analyzed various concourse schemes to find the best solution for Memphis. The terminal building falls between two parallel runways oriented north-south. To fall within bounds of available land, these runways are fairly close together, allowing an ultimate maximum of three



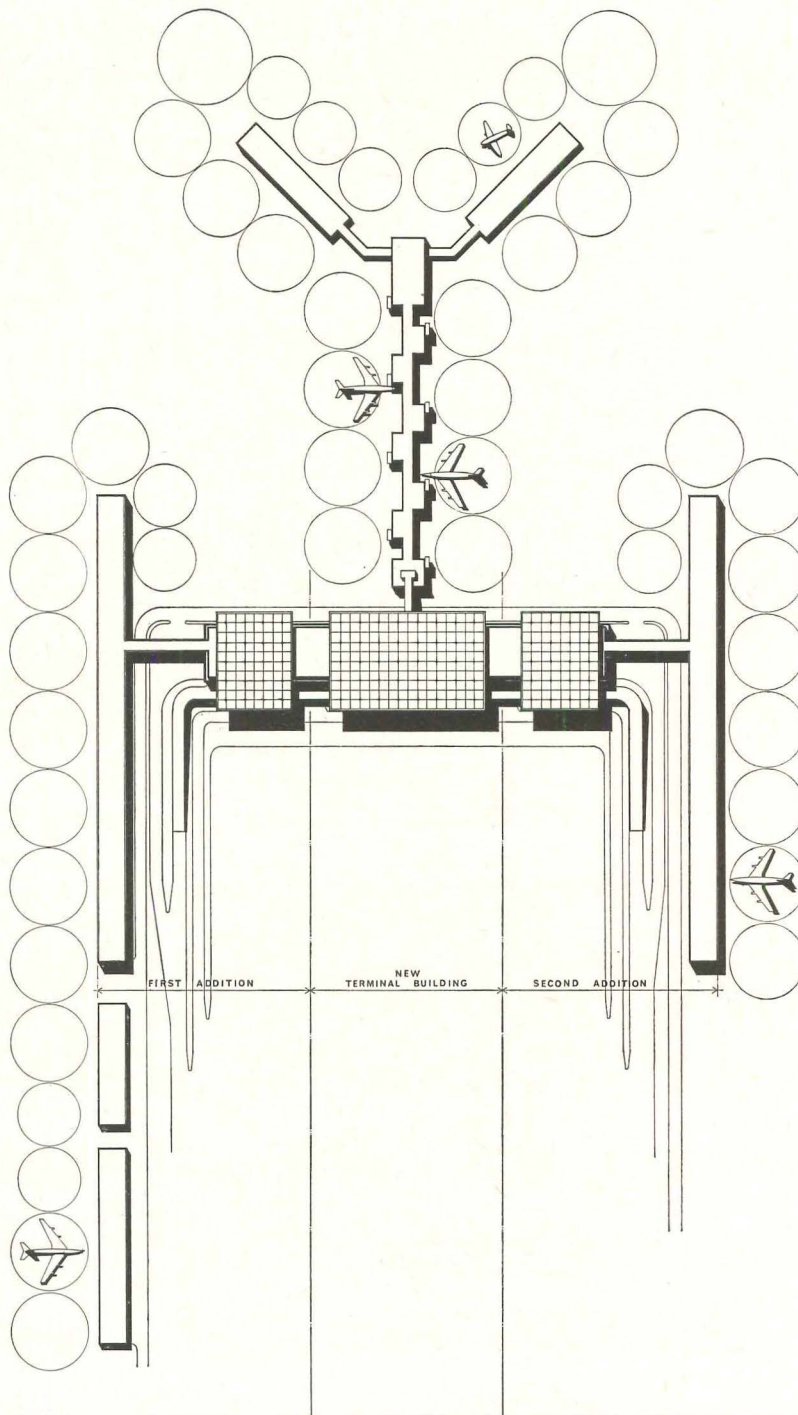


Terminal facade from approach ramp

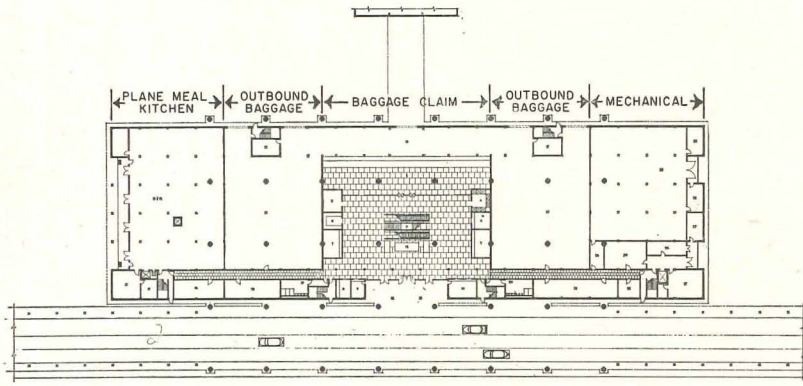
concourses with clearance for parking and taxiing of planes. After checking walking distances and aircraft movement patterns for various concourse layouts, we found the best layout to be one large Y-shaped concourse for the present, with future concourses to the east and west. Eight of the 22 gates now required would be used by the two major airlines serving Memphis with jets. Since these gates would serve by far the greatest number of passengers, they were placed closest to the building in the trunk of the Y. Each of these gates would have a gate lounge holding about 80 passengers. All-weather boarding would be effected through enclosed telescoping bridges from the gate lounge directly to the door of the aircraft. This arrangement requires that these gates and the main trunk concourse be elevated to the second floor level to align approximately with the floor of the aircraft. Separation of passengers and apron service traffic is thus nicely effected, with passengers on the second level and apron vehicles free to pass through below. The apron or ground level of the two-story concourse contains airline operations areas (ready-rooms, communications rooms, maintenance areas, pilot and stewardess lounges, etc.). The remaining 14 gates were disposed in two ground level arms of the Y. These gates serve the smaller aircraft.

The design of the main terminal

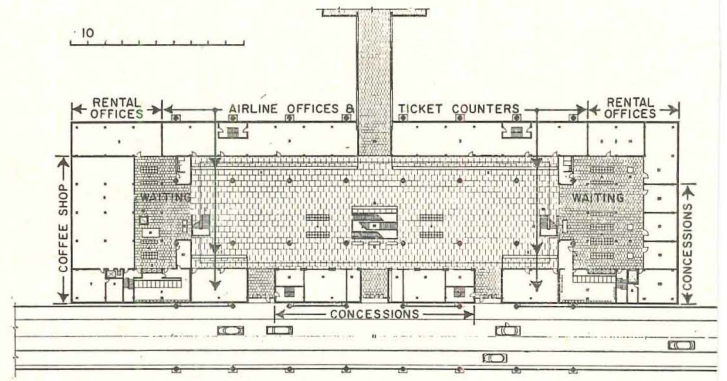
Plan shows proposed terminal extension



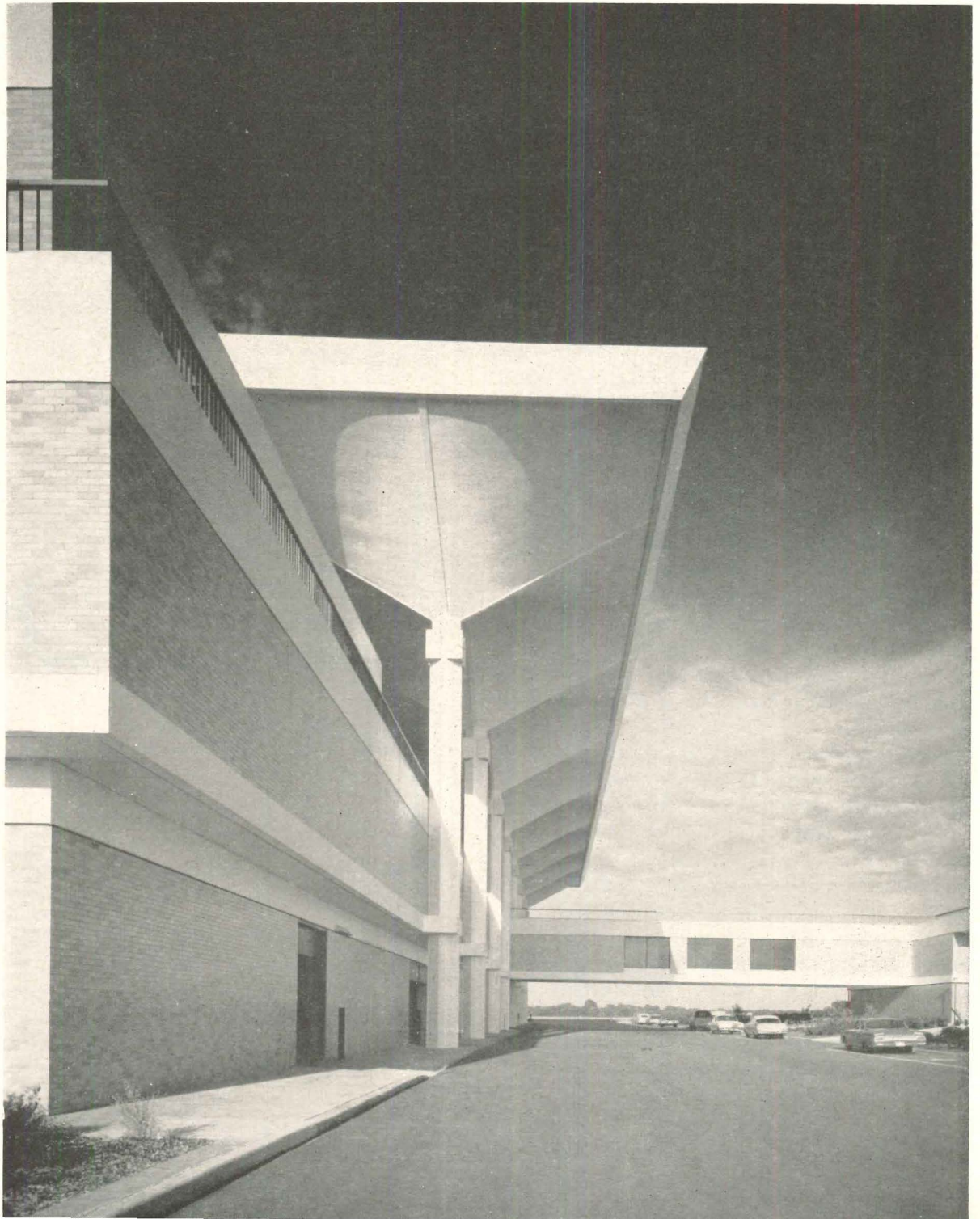




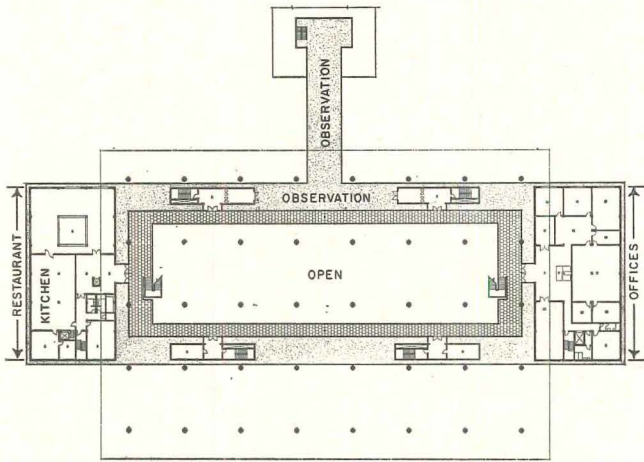
Deplaning passengers exit to cars and buses at apron level



Emplaning passengers enter main floor from ramp





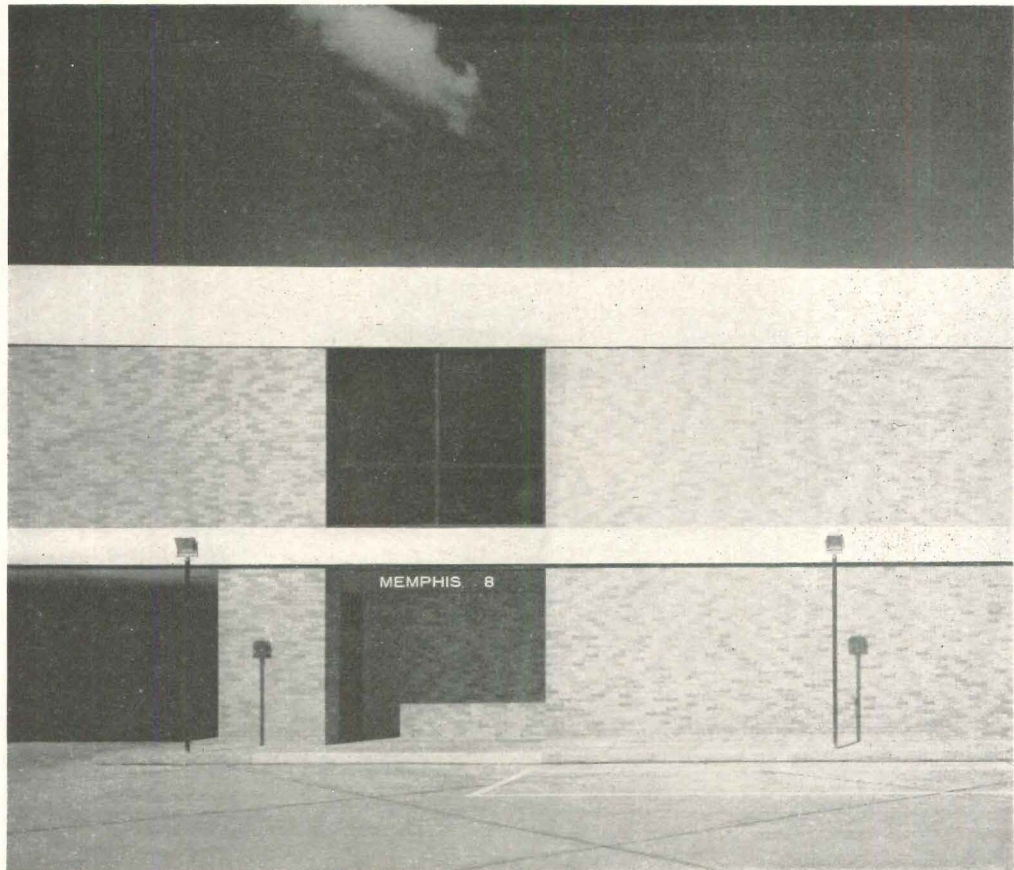


Mezzanine is at level of observation deck

ARCHITECTS: *Mann & Harrover*  
 MECHANICAL & ELECTRICAL ENGINEERS: *Allen & Hoshall*  
 STRUCTURAL ENGINEERS: *S. S. Kenworthy & Associates*  
 AIRPORT CONSULTANTS: *Landrum & Brown*  
 GRAPHIC CONSULTANTS: *Jane Doggett and Dorothy Jackson, Architectural Graphics Associates, Incorporated*  
 INTERIOR DESIGN: *Mann & Harrover*  
 LANDSCAPE ARCHITECTS: *Ewald Associates*  
 GENERAL CONTRACTOR: *J. A. Jones Construction Company*

was greatly influenced by the over-all decisions affecting the concourse and the method of boarding. Another major factor was the solution of the arrival and departure of passengers by automotive transportation. In many terminals we had seen, the biggest bottleneck was in the loading and unloading of passengers traveling in cars, taxis and limousines. This problem was solved by our decision to place the main passenger facilities of the building on the second floor. By the construction of an elevated three-lane roadway, all passengers arriving at the building are brought to this level. Passengers leaving the building do so on the ground level. The scheme for the building is three-level. The ground level contains service facilities: baggage rooms, boiler and storage rooms, plane-meal kitchen and public baggage claim. The second level is the main passenger floor: ticket counters, waiting lobbies, shops and stores, coffee shop and snack bar, nursery, etc. The third level is for spectators.

The building, as architecture, grew from these many functional decisions. We wanted from the beginning a large space to work with architecturally. We later decided that a large room, a great hall, could most flexibly contain all of the public functions of a terminal. With the necessity for a spectator mezzanine, we had people moving vertically through the space. The monumental stairs at the ends of the lobby were carefully designed to make this vertical movement as exciting as possible. In choosing a roof



Typical gate

Jets are loaded from the front by means of telescoping enclosed bridges







Restrooms  
Telephones

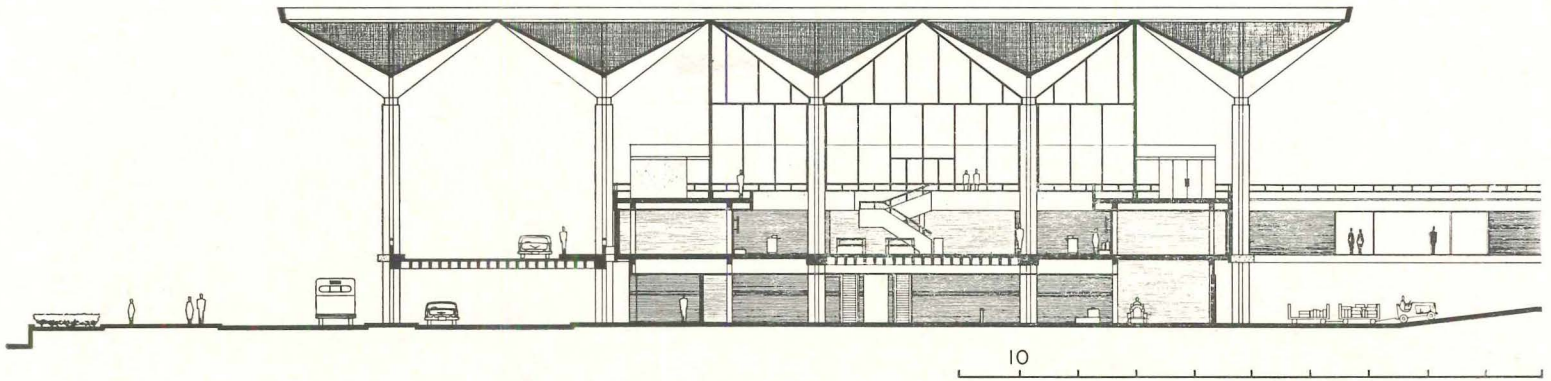
Lockers

Barber Shop

Snack Bar

Emergency Exit Only





Section through terminal including apron level, main passenger floor, concourse bridge and mezzanine

system for this large room we desired a major element which could mold and articulate the space and extend beyond to embrace and shelter the automobile ramp and spectator gallery. This element was most important in giving the building its scale, dignity, and the visual impact of a symbol. We chose the hyperbolic paraboloid roof with its supporting columns because it fulfilled these requirements and two others. It was economical, and it had a quality of visual lift, particularly appropriate to an airport. This subtle lightness relates the building to the air above, hints a preparation for flight. An airport terminal is also a place of safe return to the earth. The horizontal concrete and masonry masses of the concourse and the two lower floors of the building relate the building strongly to the earth. These masonry walls, the absence of windows, and the reinforced concrete structure insulate the building against jet blast and noise.

In addition to being quiet we wanted the building to be visually restful. A passenger in transit is in an anxious state. He is confronted with too many messages, too much confusion. We did not want to add to this confusion, so we used a very few basic materials, eliminated tricky details and kept to neutral colors.

This simplification of details and limited range of materials contributed greatly to the low cost of the building and enabled us to stay within the budget of \$5,500,000. Total cost of signs including their graphic design was \$81,000.



Main passenger floor as seen from mezzanine, showing hyperbolic paraboloid roof

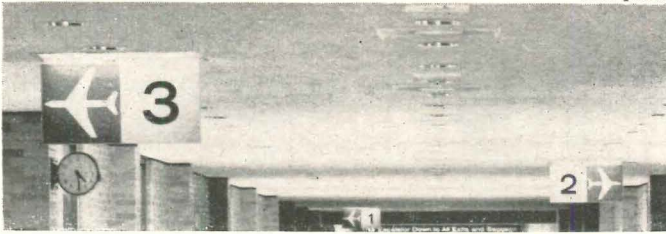
Concourse. Typical gate lounge to left





## Memphis Airport Terminal

API photo



Graphic consultants Jane Doggett and Dorothy Jackson, who designed all signs and symbols used through the airport, describe their selection of a letter style as follows: "For the terminal building we wanted a consistently proportioned legible alphabet, expanded in form. We based our alphabet designs on a German typeface, *standard extended*, and determined to use all upper case for the airlines' titles exclusively, and upper and lower case for the informational sign messages. For exterior automotive directionals our choice was based on regular *standard bold* upper case, which has great immediacy and authority"

API photo





Balthazar photos

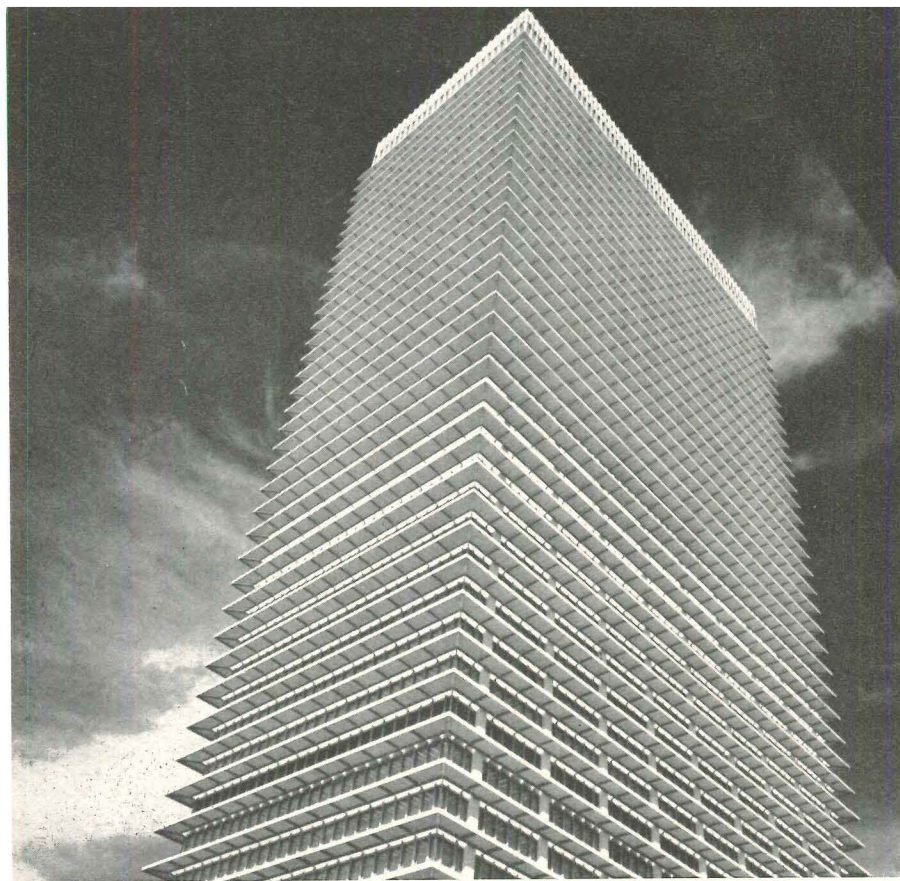


View from plaza at Cullen Center. Lower building in foreground is parking garage which serves office tower

## DESIGN AGAINST SUN AND GLARE

The home office for Humble Oil and Refining Company in Houston, Texas, designed by Welton Becket, has continuous horizontal sun shades on four exposures to reduce air-conditioning costs





*Above:* Sun screen is composed of approximately 14,000 individual porcelain enameled aluminum panels. *Below:* North and south lobbies are 29 feet high. Mezzanine is faced with formed bronze pans, terrazzo floors are charcoal brown to match the exterior podium, chairs and sofas are burnt orange, carpets are gold, columns are finished in white Vermont marble, and the elevators are warm-toned travertine

*Home Office of Humble Oil and Refining Company  
Houston, Texas*

*ARCHITECTS: Welton Becket and Associates*

*CONSULTING ARCHITECTS: Golemon and Rolfe,  
George Pierce and Abel B. Pierce*

*LANDSCAPE ARCHITECTS: Bishop and Walker*

*GENERAL CONTRACTOR:*

*W. S. Bellows Construction Corporation*

*STEEL CONTRACTOR: Mosher Steel Company*

*MECHANICAL CONTRACTOR:*

*Sam P. Wallace Construction Company*

*ELECTRICAL CONTRACTOR:*

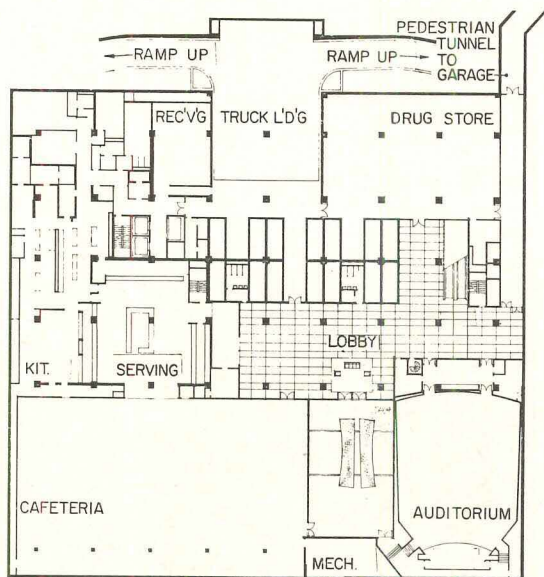
*The Howard P. Foley-Fisk Electrical Companies*



The new office skyscraper for Humble Oil is unusual in two important respects. Broad "eyebrow" type aluminum sun shades are used at every office floor on each face of the building, and these, enameled gray on top and white below, give the building facades a unique character. The 7-foot cantilevered shades completely screen out the summer sun; in the spring, fall and winter they admit morning sun on the southeast and late afternoon sun on the southwest. Studies have proved to the satisfaction of the owners that the screens will save enough air-conditioning dollars to pay for themselves every five years. A site diagonally across from the city block selected for the office tower was acquired by the building owners for a parking garage. The architects conceived the idea of placing the boilers, compressors and three cooling towers on top of the seven-story parking structure rather than at the penthouse level of the tower, thus achieving substantial economies.

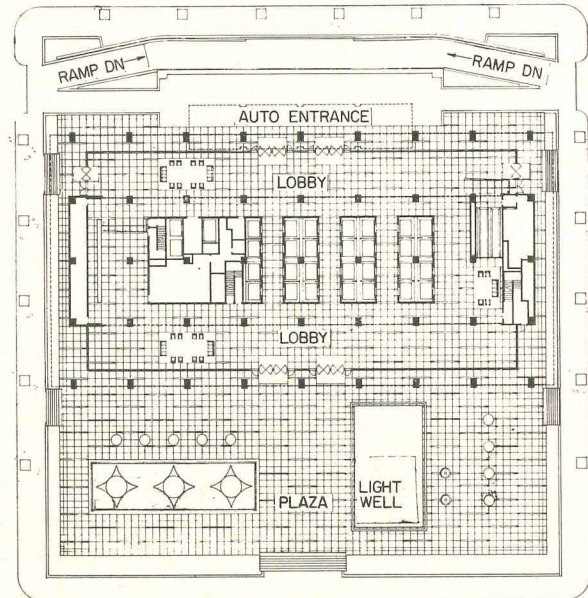
While the 280-foot-square city block on which the office tower is built is not quite large enough to provide a generous plaza, the 225-foot-long by 115-foot-wide rectangular building has been set as far back from the major street as possible. The entire site has been designed as a raised podium.





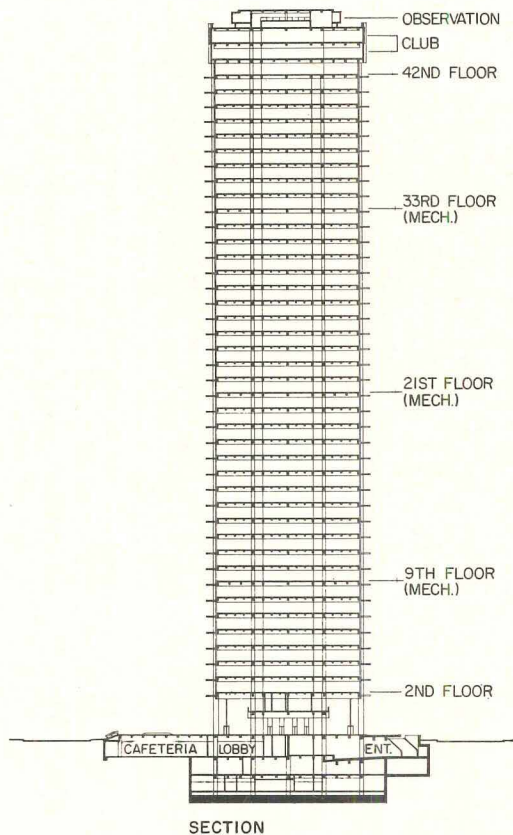
CONCOURSE FLOOR

Concourse floor plan shows the 900-seat cafeteria and a 500-seat auditorium placed below grade to accommodate wide space requirements which could not be conveniently located in the tower. The cafeteria is lighted by a glass enclosed sunken garden courtyard. A pedestrian tunnel at the concourse level connects to the parking garage



GROUND FLOOR

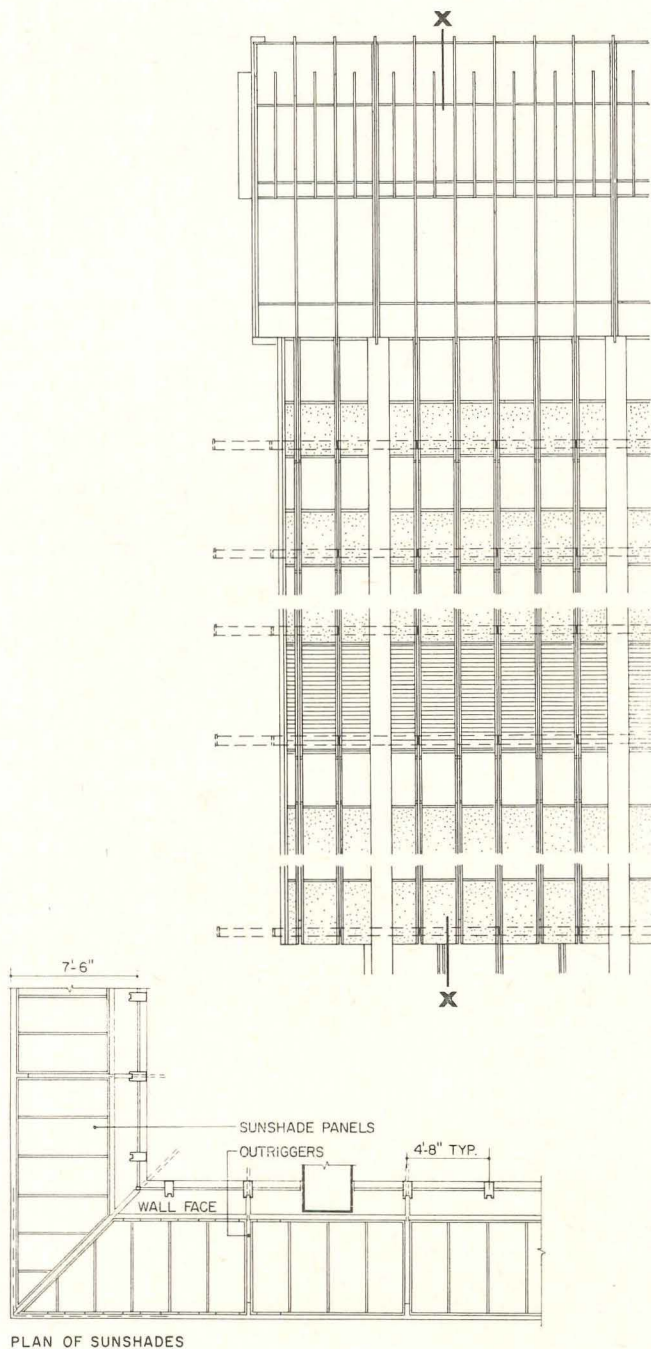
The tower shown at lobby level in the ground floor plan comprises 40 per cent of the site. It is set back on a podium which rises 3½ feet above the sidewalk level, and is approached by five broad granite stairways. Three fountains and the cafeteria light-well interrupt the podium surface. The south entrance provides access by ramp for taxis and limousines, as well as ramps down to the concourse level for truck loading



SECTION

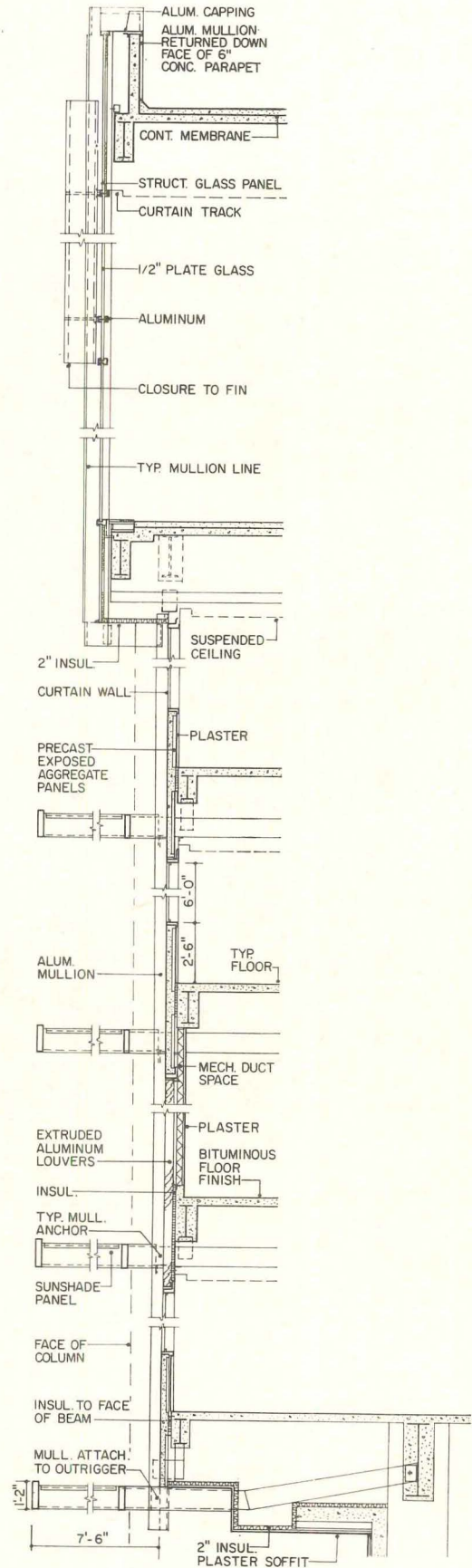
Floors 9, 21, 33 and 45 shown in the section (left) are mechanical floors, but they contain only electrical equipment and fan facilities for air-conditioning and ventilating. All boilers, compressors and cooling towers are located on the roof of the parking garage across the street. Not only does this eliminate noise and vibration in the office building but it reduces the dead loads on the steel structure, resulting in a lighter and more economical building. A two-story, glass enclosed private club and observation platform are located on top, where the heating and cooling equipment would have been, and printing, duplicating and other services, plus shops and storage, are located in the basement. The office tower rests on a 7-foot-thick reinforced concrete mat





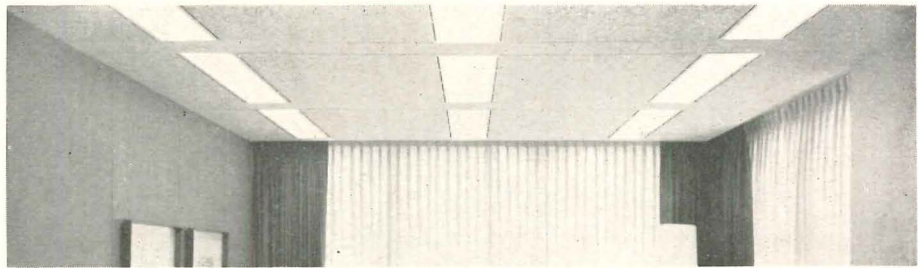
PLAN OF SUNSHADES

Continuous horizontal sunshades are cantilevered a distance of 7 feet from 41 of the building's 44 floors. They control solar radiation, reduce the air-conditioning load and create changing patterns of light and shade on the facades. Supported on aluminum outriggers, the aluminum panels are covered with a light gray porcelain enamel on the top surface to reduce glare, and white porcelain enamel on the bottom surface to harmonize with the facade. The panels are held at the line of the projecting white-marble-sheathed structural columns, a distance of approximately 1 foot 6 inches from the curtain wall. Air thus can circulate freely up the face of the building and warm air pockets are avoided. The shades support maintenance men when they wash the structure's 6,241 fixed glass windows. They are designed to carry a 200-pound dead load and to withstand wind velocities up to 150 miles per hour. The 4-foot 8-inch-wide precast spandrel panels of the curtain wall have an exposed Texas dolomite facing which is self cleaning. Aluminum mullions are natural finish

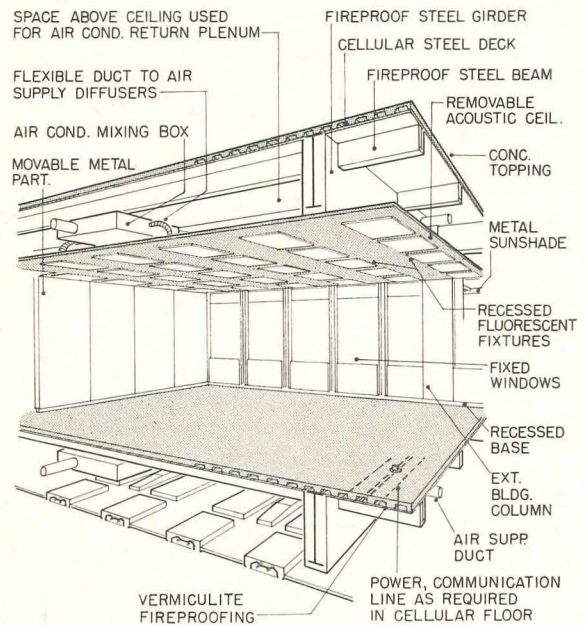


SECTION X-X

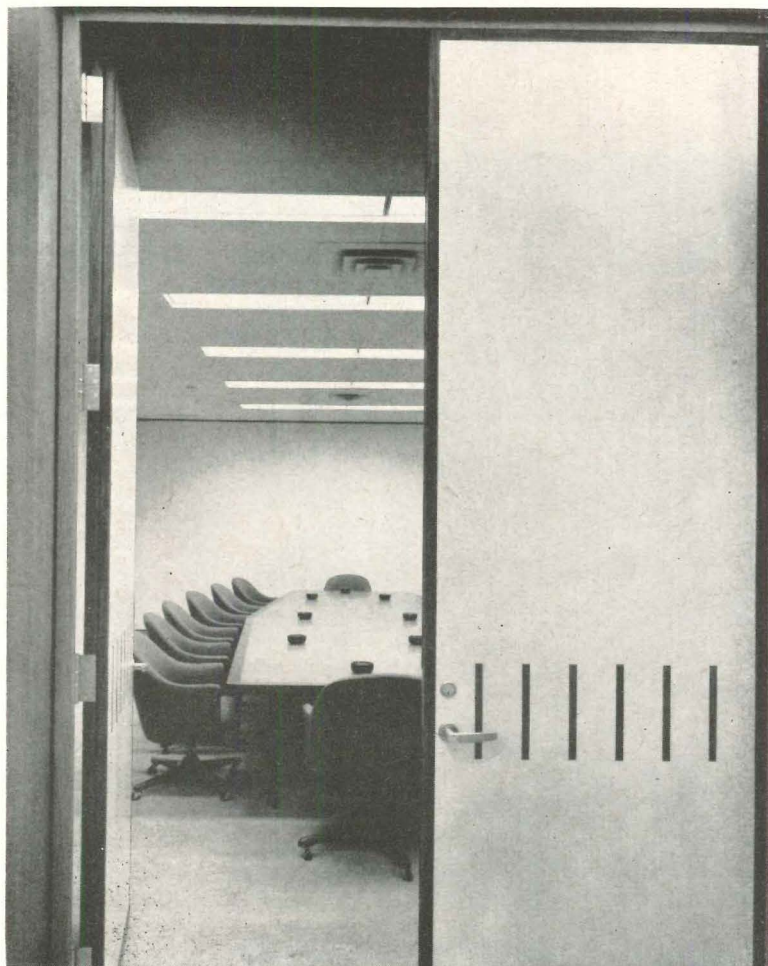
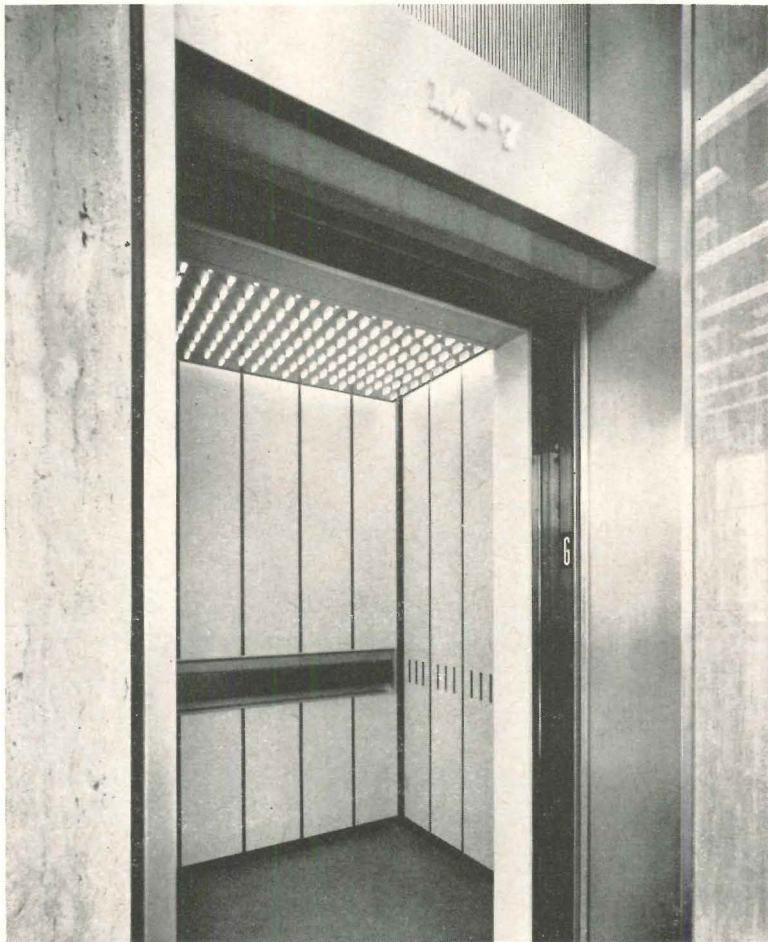




Typical office floors are planned on a 4-foot 8-inch building module located around a central utility core. Each module is a self-contained unit with its own under-floor electrical and communications connections permitting completely flexible partitioning. On office floors, conditioned air is supplied through flexible ducts leading to combination air-conditioning and lighting fixtures recessed into the removable acoustical ceiling (top right). This fixture, developed by Welton Becket for another building, is now a standard item. It consists of a recessed fluorescent light with air slots on either side. Certain of the slots supply air while others are used to exhaust or return the air, the ceiling acting as the return air plenum. Since the fixtures are modularly spaced across the entire ceiling, it becomes an air-conditioning source, with even air distribution and no noise or drafts. There are approximately 2,000 individual zones of temperature control, which allow each individual office to control its own temperatures. Illumination in excess of 100 foot-candles is provided throughout the office area







All interior design was coordinated by Welton Becket Associates. Elevator cab interiors (*above left*) are color keyed to the floors each serves. Ceiling effect in cab is achieved by rectangular plastic cubes, edge-lighted from hidden fluorescent lights above. A lighting cove around the edge above the floating ceiling washes the walls of the cab with indirect light. The three walls of each cab are faced with a putty-colored plastic into which strips of walnut inlays blend with a walnut railing in the rear of the cab which is partially inset in the backwall. The cove into which the handrail is set is colored to match the cab's carpeting, which in turn matches the carpeting and color schemes of the elevator lobbies on the floors served by that particular elevator. Colors utilized are red, yellow-gold, olive green and blue. Conference room door (*left*) has walnut inlays similar to those in elevator. The architects developed the three-way telephone stands in the lobby (*above*) and refer to them as "telephone pods"



# NEW GERMAN THEATERS AND CONCERT HALLS

Views From the Audience

By G. E. Kidder Smith, F. A. I. A.

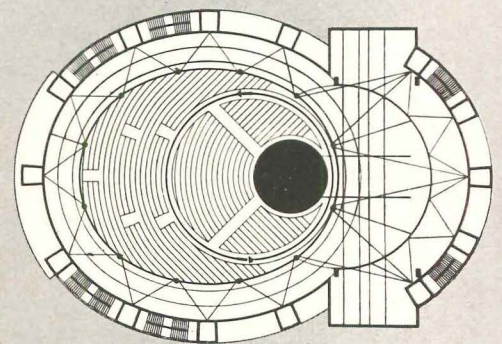
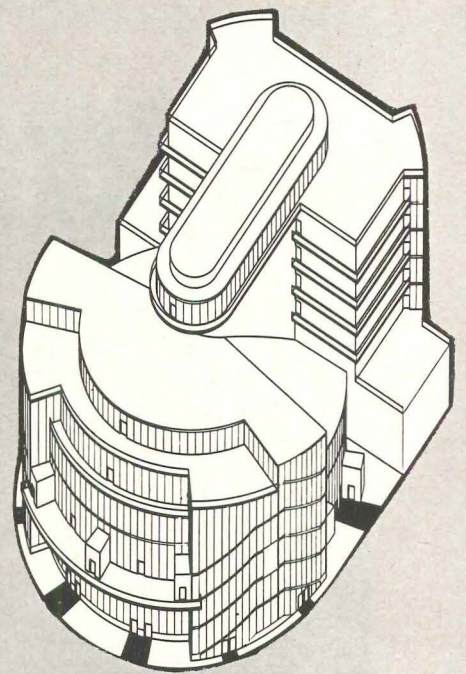
In postwar Germany, there are more fine new theaters built and being built than in all the rest of the world together—well over a hundred theaters and concert halls of importance in the last 15 years. Interestingly, this is a repeat of German theater achievements following World War I.

Theater-going has been, in fact, an important element of German social life since the days when each principality had its own theater and centered many of its social activities thereon.

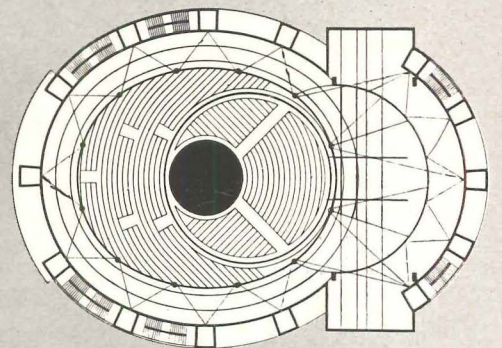
Several German cities, notably Kassel, have made particular efforts not only to place their theaters at points of visual civic importance, but to surround them with ample—and tree-screened—space for parking. Kassel further made elaborate parking provisions for a large number of chartered buses which bring people from the countryside. This is common practice at numerous other communities throughout Germany, enabling the theater to reach out far beyond normal city drawing power. Public transportation, of course, is used far more for all occasions in Europe than in this country.

A theater exterior can and should create an invitation to delight and fascination, to escape and pleasure. Taking the cue brilliantly established in 1943 by the City Theater in Malmö, Sweden (still one of the finest anywhere), theaters such as those in Münster, Gelsenkirchen, Kassel, Mannheim, the Stuttgart Liederhalle and the Berlin Conservatory of Music all reveal, through walls of glass, their main public rooms in a wonderful blaze of warm light, sparkling chandeliers, color and pageantry. This constitutes potent advertising, particularly on a damp, cold evening; it makes theater-going definitely desirable, even to casual passers-by.

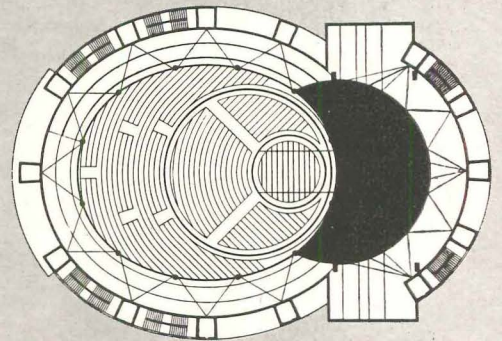
On entering many of these new playhouses and concert halls one finds a large section of the ground floor devoted to coat rooms, in pointed contrast to the miserable closets common in the U.S.A. The public rooms and lounges are capacious and generally delightful, a proper setting for intermission and that see-and-be-seen promenading so dear to Con-



Proscenium stage in position



Arena stage in position

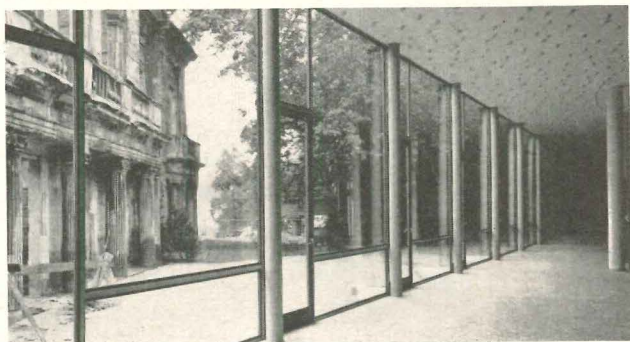


Deep stage in position

It is appropriate to recall that many of the most progressive ideas for today's work stem from the Bauhaus experiments of the mid-1920's (and from Russia of the same time). The Total Theater project of Gropius, Schlemmer and Moholy-Nagy represented such advance thinking that it is still *avante-garde*. Sketches above (Courtesy George Braziller) serve as a reminder



G. E. K. Smith photos



### MUNICIPAL THEATER, MÜNSTER

ARCHITECTS: *Deilmann, von Hausen, Rave and Ruhnau*

The Münster Theater (ARCHITECTURAL RECORD, March 1957, pages 217-222) is one of the most consistently sophisticated and elegant of new German theaters—and also the most imaginative. Its exterior, though not particularly cohesive, is expressive and full of radiance; its lobbies and restaurant flow with space and careful detailing; its auditorium is quite extraordinary. The theater's chief fault lies outside its property lines rather than within, for it is crowded into a medieval town section with little elbow room. The tight location, plus the commendable desire to incorporate into the new building a section of the bombed ruins from the historic Romberger Hof, prompted the auditorium's slightly diagonal placement on the lot. The exterior is particularly effective at night, when it blazes with a warm inviting atmosphere. The ground floor is devoted to coat rooms and services, and one walks up one flight to the agreeably spacious and well-decorated lobby. This foyer is almost totally glazed in front, transmitting outward a lively intermission impression of the audience, while its shape provides an inward series of corners and nooks for conversation. A restaurant and bar, full of imaginative details, stretch across the left front, and open, like the lobby, onto the small interior patio with the neo-Classic remains. The restaurant is also accessible directly from the street.

The auditorium, which seats 950 with no seat further than 60 feet from the proscenium, is unique in its fantastic ceiling of 1,200 lights, each set in a wire "wheel." These lights, which can be lowered for servicing, form an optical ceiling some feet below the acoustical ceiling of exposed structure and services.

tinentials. And these rooms are in relaxed contrast to the attention-compelling demands of the stage. Bars, snack bars and even restaurants are common to most of the new German houses. Beethoven Hall in Bonn has a lovely restaurant right on the Rhine;

that in Stuttgart is probably the finest in the city. Both are also open to the public throughout the year. Many of these public rooms display a commendable amount of contemporary art. Gelsenkirchen, in an appropriate gesture, went to both England and France to get top artists to help decorate its lofty main lounge. The theater at Kassel has a constantly changing series of pictures on loan from the local museum. Münster incorporates the nostalgic ruins of the bombed Rombergerhof in a small, elevated outdoor patio between its gay restaurant and flowing lounge.

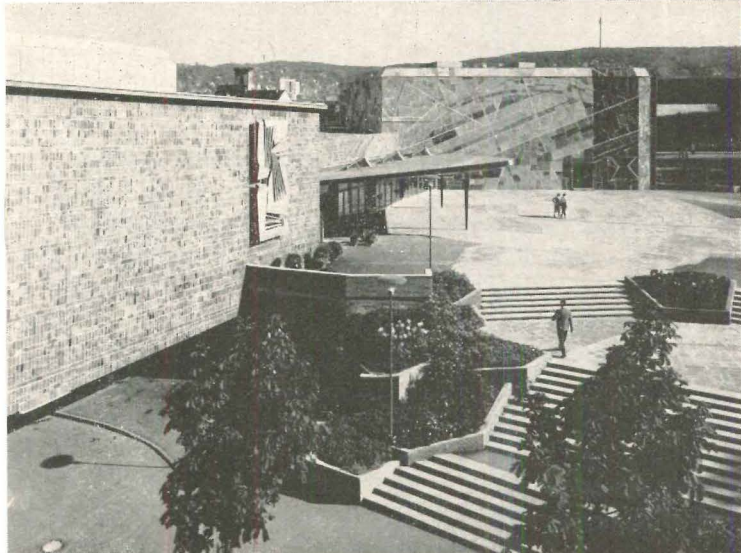
Many of the new German theaters harbor not just a single theater but two: a little or experimental theater (Kleines Haus) conjoined with a large auditorium (Grosses Haus) which might serve opera and concerts as well as dramatic productions. Both sections are able to hold performances simultaneously. They share a variety of both public and work facilities. At the National Theater in Mannheim (see page 183) both auditoriums are elevated a full story above the ground floor entry, lounges and ticket offices, and are placed back to back, sharing common work and scenery facilities in the middle. At Kassel (see page 186) the large and small theaters are at opposite ends of the building and are entered separately. At Gelsenkirchen (see page 192) the small theater is located in a side wing with its own entry and public rooms. Beethoven Hall in Bonn (see page 190) boasts a main theater with three additional multi-purpose rooms (138 to 324 in seating capacity) which can be used for chamber music, concerts, intimate stage productions, lectures and conferences, all sharing foyers and public circulation. The Stuttgart Liederhalle (*opposite*) has a similar variety of facilities.

Incidentally, in almost all cases the smaller theaters are finer architecturally than the main ones. A stiffness and a too rigid formality tend to mark the major rooms. Furthermore, the smaller theaters are almost always more advanced and experimental in stage-auditorium relationships and in staging proper than the main auditoriums. Even in the small theaters, though, one wishes for more daring, more far-out searching for new theater possibilities.

In studying the shapes of the new German auditoriums, large and small, one will note that the once beloved, almost automatically stated, pie-slice shape that for so many years stood for the ultimate theater is rarely found today. Instead of this "fan-plan orthodoxy of the thirties," as it has been termed, one is apt to find broader, more spread out stages for theaters and opera houses, and more rectangular shapes for concert halls. It should be noted in this regard that German architects team with acoustical specialists from the inception of planning. Another occasional acoustical team member is the artist-sculptor who helps make an esthetic end of acoustical needs.

A final point in German auditorium design is that





Ludwig Windsrosser photos

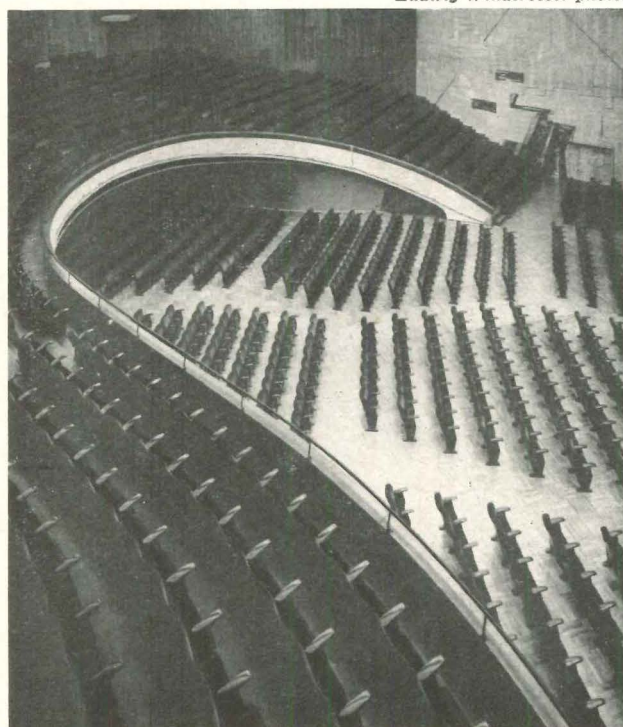
## LIEDERHALLE, STUTTGART

ARCHITECTS: *Rolf Gutbrod and Adolf Abel*

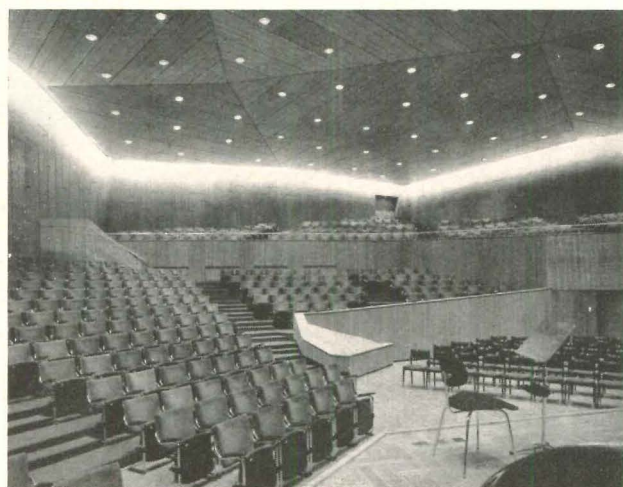
Although one is greeted at this concert hall by a fantastic exterior, and is swirled through an enormous lobby to a desperately busy main auditorium, there are many positive values here worthy of study. Its program includes one large, multi-purpose auditorium with two smaller chambers. The three rooms are widely separated entities sharing a single, two-story foyer.

The main approach is most agreeable, with excellent landscaping and well worked out changes in level, but one is almost stopped in one's tracks by the bizarre wall of stone veneer to the right of the main doors. Side entries give direct access to the two smaller rooms and to an excellent restaurant. A 200-car garage is located in the basement.

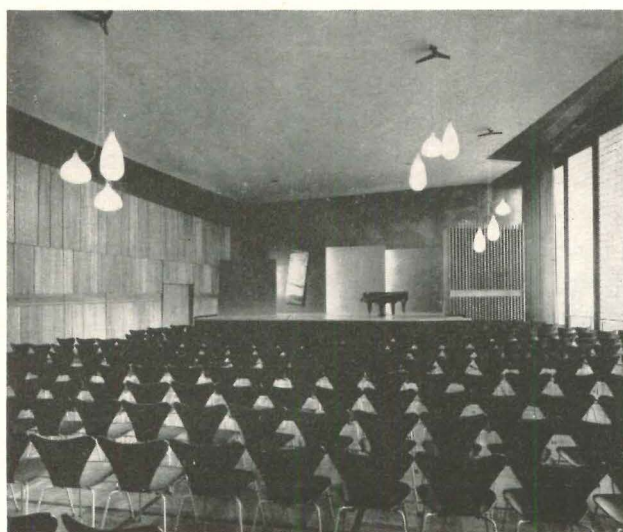
The lobby serving all three assembly rooms is large and flowing on two levels, adequate but somewhat uninspired. The main auditorium seats 2,013, or, alternately, has dining space for a banquet of 900. The room's unique feature is its balcony whose seats swoop with great flourish down to the main floor on one side (and one only). The finest single room, however, and a room further distinguished by its superlative acoustics for chamber music, is the pentagonal Mozart Room, finished almost completely in natural wood panels with a series of intimate levels for its 725 seats. The Silcher Room, which seats 350, was designed to accommodate small recitals or conferences, and can even be used for banquets, with its own buffet being tied to the central kitchen.



Great Hall



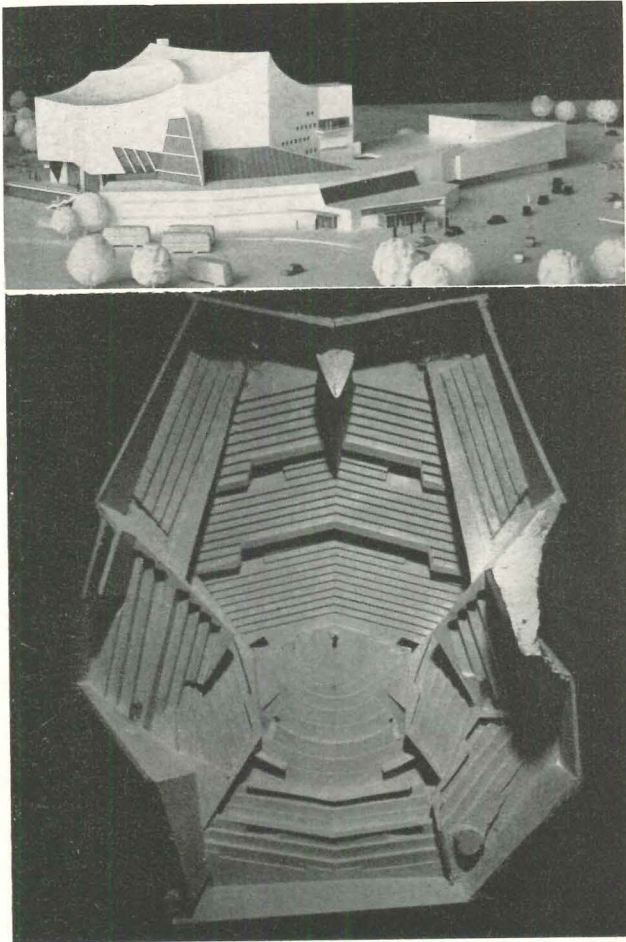
Mozart Room



Silcher Room



Walter Köster photos



### CONCERT HALL OF THE BERLIN PHILHARMONIC

ARCHITECT: *Hans Scharoun*

West side of model (*top above*) shows main entrance to the large concert hall, now completed, to the right of which is an attached smaller concert chamber planned for later construction. Plaza toward the south is continuous with that of the reconstructed Matthai Church. Tiergarten is to the north. Construction model (*above*) shows seating arrangement surrounding the concert stage in the main hall.

the traditional, rigid, symmetrical seat layout is, in several new theaters, giving way to freer disposition. The Stuttgart Liederhalle is a prominent example of this; its main floor seats form somewhat irregular groupings of people so that one is not lost in a grid of rigid anonymity. Aalto's projected design for Essen is markedly asymmetric in room shape (recalling his House of Culture in Helsinki). Hans Scharoun's building for the Berlin Philharmonic, though symmetrical about two axes, places the orchestra almost in the middle of four separate irregularly shaped banks of seats.

In many of the new auditoriums in Germany, as elsewhere, one trend is clear: the picture frame proscenium is often being replaced or augmented by an

open stage and occasionally by an arena—which develops far greater flexibility and far greater intimacy between actor and audience. In no country has this been carried as far as the Ford Foundation's Ideal Theater, nor, indeed, have they advanced as far as the Bauhaus' Total Theater of 1927.

It is sobering—and enlightening—to realize that virtually none of the 200-odd old and new theaters and concert halls in Germany could have been built or operated without substantial help from their cities and regions. At Gelsenkirchen, for instance, the city contributed the \$5,000,000 cost of the theater and pays approximately \$1,000,000 a year toward its budget. With 16,000 regular subscribers and an average admission charge of 75 cents, there is rarely an empty seat in the house.

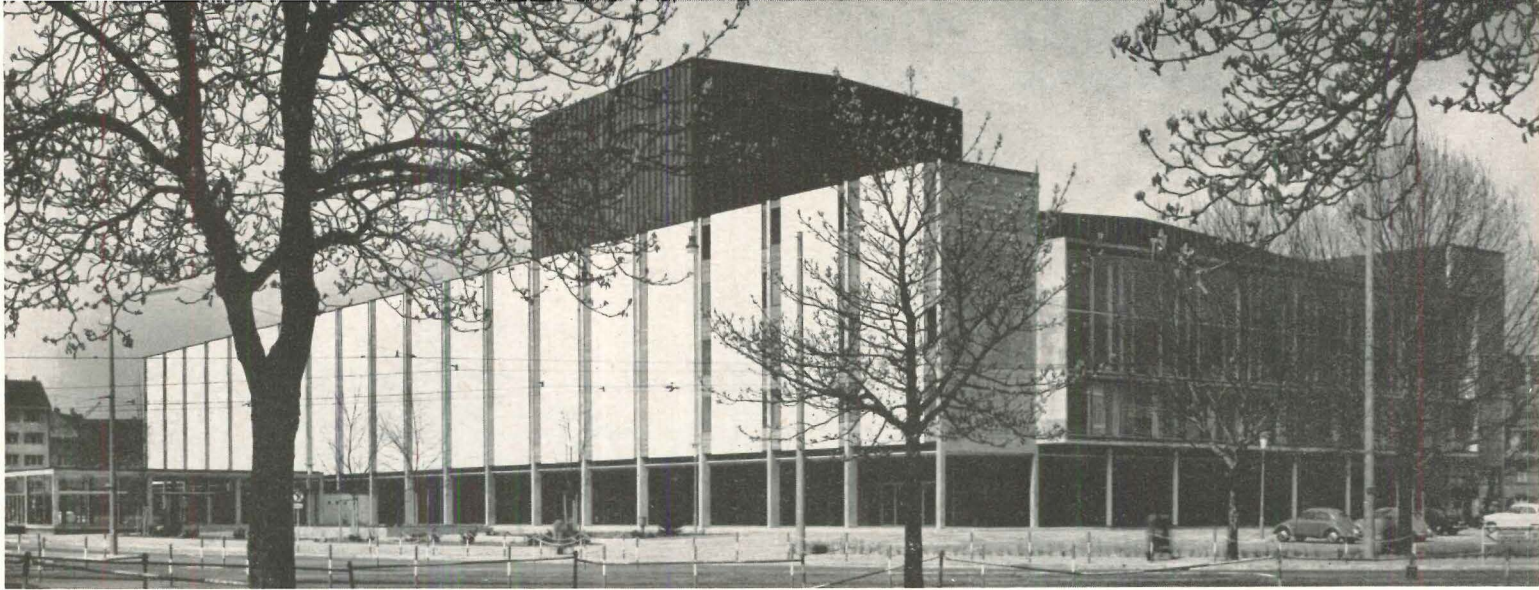
Some of the features of German theaters shown here are not necessarily pertinent to American theater customs, play preferences (the Germans tend to prefer the classics), finances or even labor practices. Only a few of those yet built are as daring as one might hope—although they far outstrip the rest of the world. And, it must be strongly pointed out, even fewer are *in toto* architectural triumphs. They share, in general, a design inability to know when to stop; too many materials, too many shapes. All, however, have parts of great merit, several are virtually unequalled, and those now in construction hold forth even greater promise. Although this survey is from the point of view of the audience, not the actor or stage technician, some of the technicalities of theater operation, backstage equipment and the spatially exciting, even mysterious, lofts and mechanical accouterments are suggested in plans. For our present purpose, suffice it to say that the German theaters are in general superbly equipped.

Several other new German theaters and concert halls should be mentioned. The Hamburg Opera House by Weber, Lux, Gastreich and Ebert, though lamentable on the exterior and not distinguished in its public space, does have a well-ordered auditorium of restrained dignity. Its "reversed stepped" ceiling, the steps hiding the spotlight bridges, is clever. In Berlin both the Concert Hall of the Conservatory by Paul Baumgarten and the Academy of Fine Arts by Werner Düttmann (who did the delightful library at Interbau) have points of considerable interest. The former is particularly good on the exterior and in its lobbies, though a bit wooden in the auditorium. The recently opened Academy has an excellent small experimental theater as part of its whole cultural complex.

In spite of such success thus far—a success measured both in quality and in quantity—it might well be said that the best is yet to come. For the Germans are pushing forward with a scintillating promise of extraordinary new theaters and concert halls.

No country in the world can touch the imagination, the enthusiasm—and the results—of present-day Germany in this increasingly important field.





Artur Pfau

## NATIONAL THEATER MANNHEIM

ARCHITECT: *Gerhard Weber*

The name, National Theater, has been a treasured one to the people of Mannheim for almost 200 years. In the early 1950's it received international notice when 10 architects, including Mies van der Rohe, accepted its invitation competition to design a dual theater to replace that lost in the war. The prize and commission went to Gerhard Weber.

The theater has a lovely, full-square-block location that was, however, encumbered by a great air-raid shelter which supposedly could not be removed. Thus the two theaters are raised a full floor above the square, and the ground floor is devoted to foyer, ticket office, snack bar and services. The exterior, whose upper part is extended à la Mies beyond the lower, is somewhat graceless and rigid. In plan it has a slight taper toward the west. Projecting at right angles on the south side of the theater is the glass-enclosed entrance and box office. From this, one enters the centrally placed, pleasant and spacious foyer, and Professor Weber has thoughtfully carried the texture of the paving of the square into these ground-floor public areas. From this level one takes one of four somewhat lengthy flights of stairs which rise to and flank the two theaters above. The large theater, which is primarily an opera house and which seats 1,200, is placed at the slightly broader east end of the building. It is a joyless and unexciting room with almost clinical lighting and an orchestra pit that provides a distinct chasm between actors and audience. The 600-seat Kleines Haus at the west end is, however, full of both architectural and theatrical interest. Its straight side walls of acoustical brick taper slightly toward its stage, while the rear wall is partly glazed to the park. The broad steps up to the auditorium hug the side walls, and above them and stepping up to the elevated projection booths in the rear balcony are ramp-stairs which rise from the stage and can double as an extension of the stage proper, with actors virtually enveloping the audience.

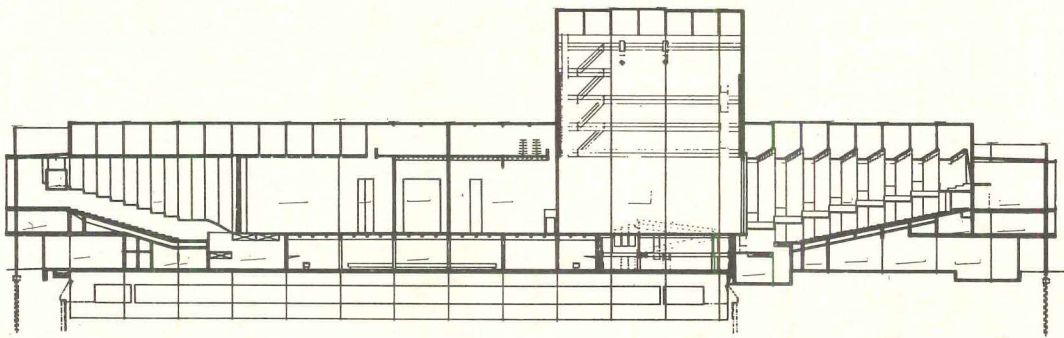
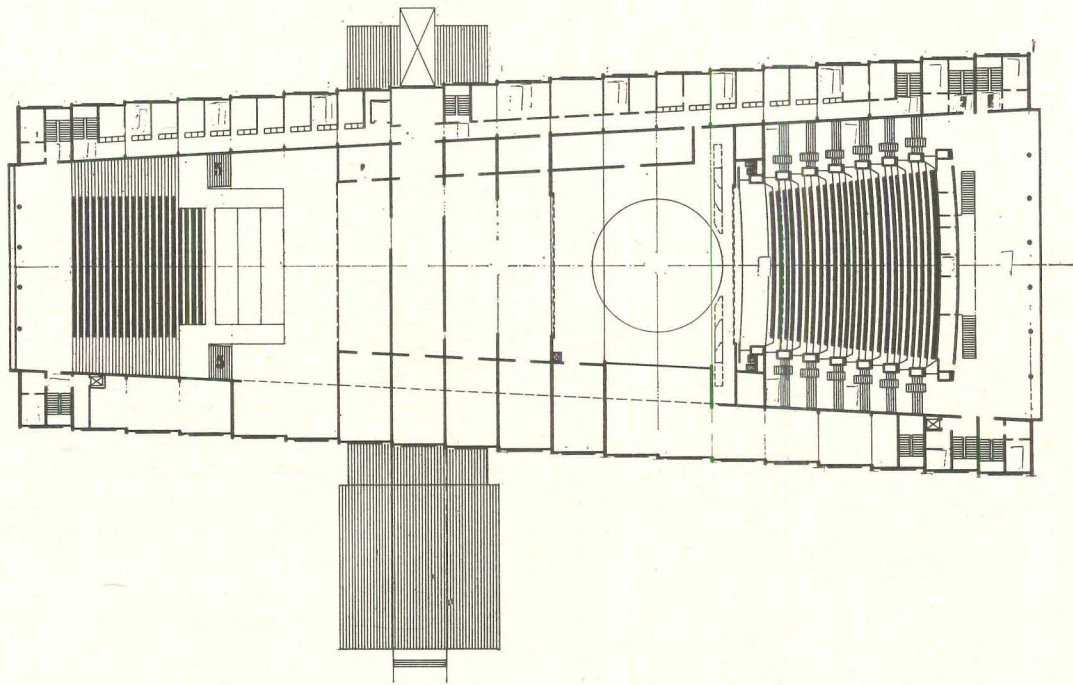
The ceiling consists of an ingenious series of flush panels which can be pulled down for lights at any point. The stage is highly flexible, has hydraulic lifts, and can be used for semi-arena productions as well as direct proscenium. The whole small theater is distinguished not only by its great flexibility but its admirable directness of materials.

Backstage areas of the two theaters are separated by a soundproofed, covered transportation zone for handling scenery.

G. E. K. Smith

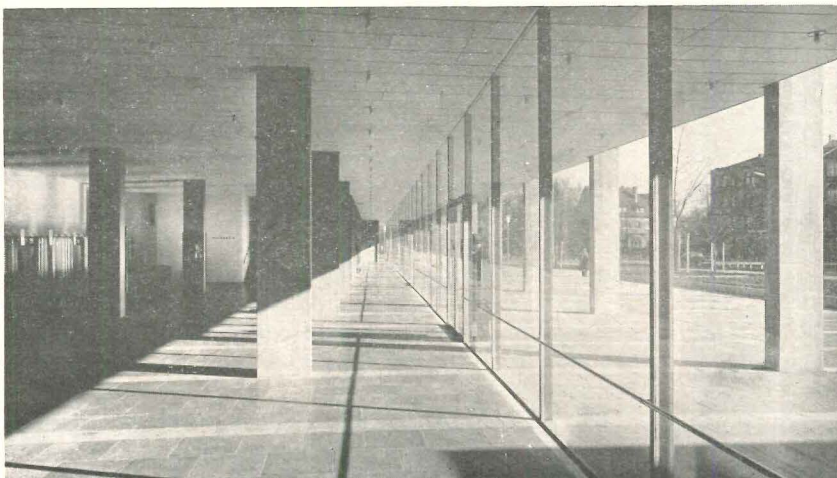






Robert Hauser

Artur Pfau



Promenade with coat-check counter at left



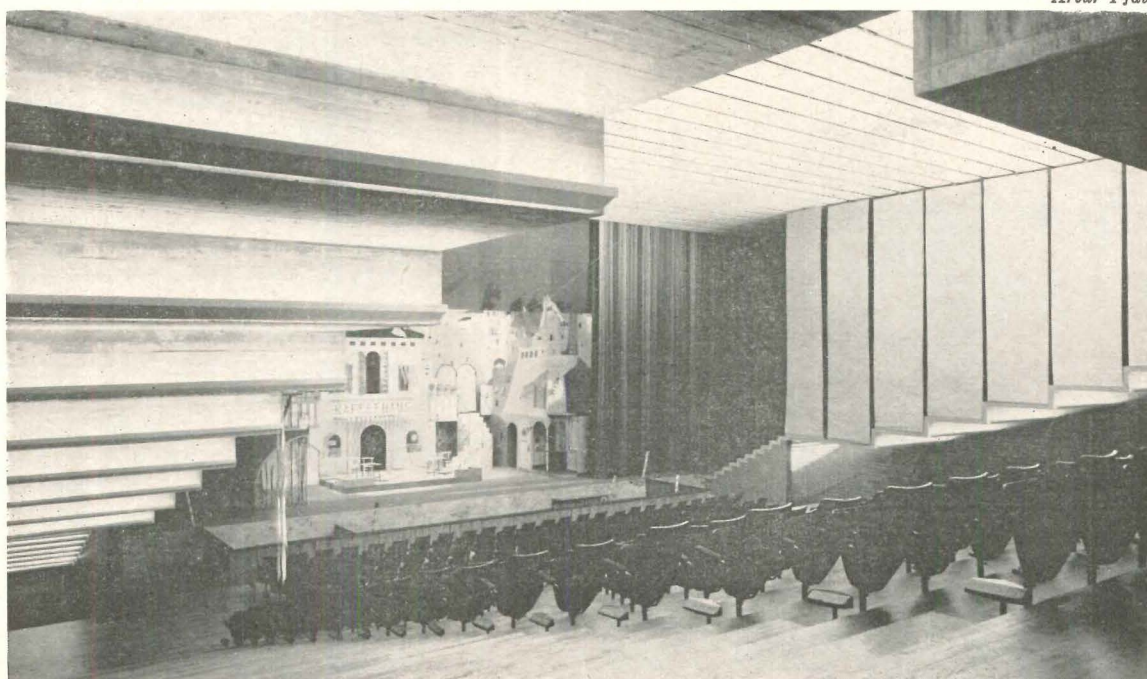
Steps to side loges of great hall





View from loges of the great hall

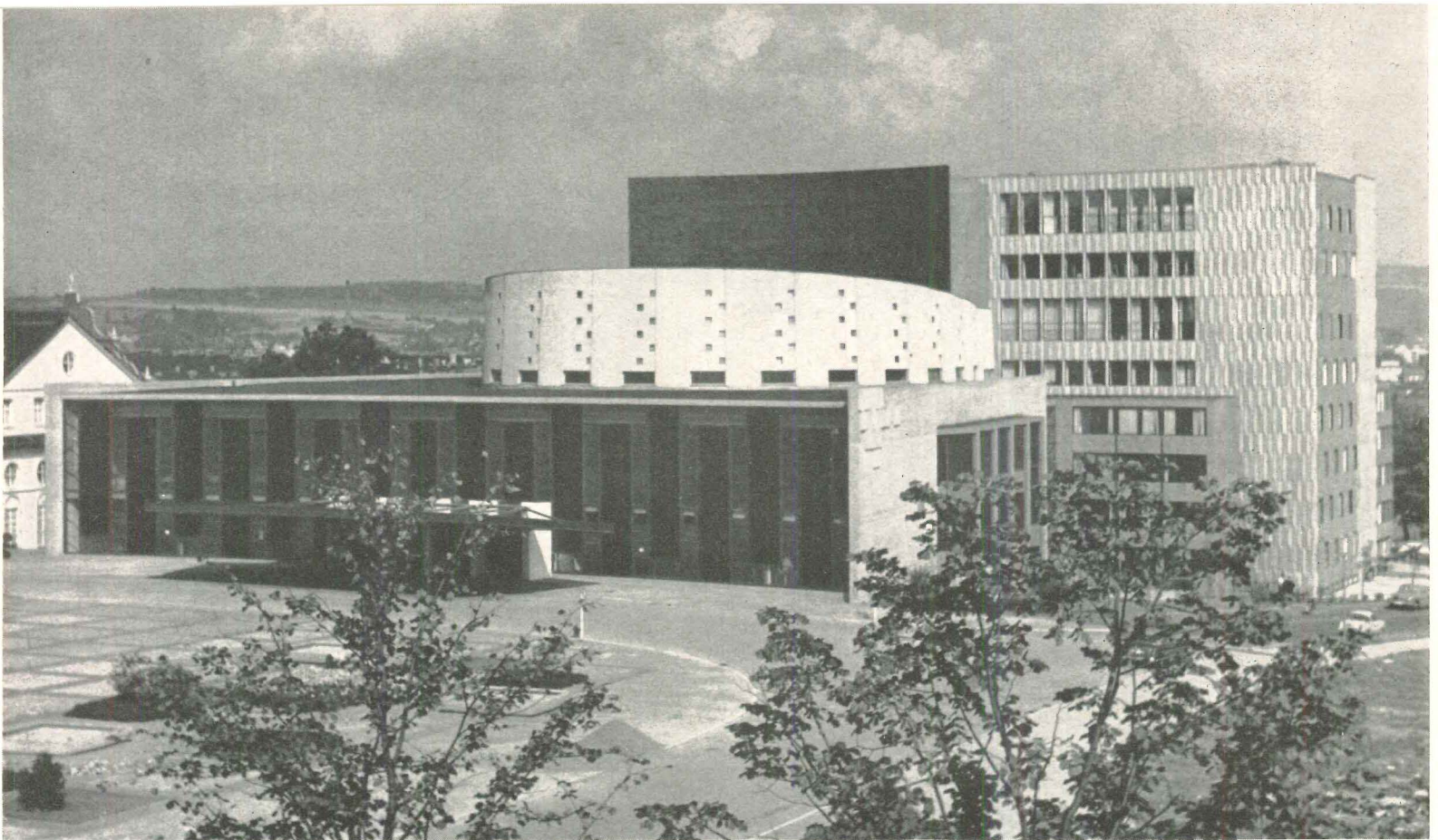
*Robert Hauser*



*Artur Pfau*

View from rear of small theater





Georg Schevermann

## CITY THEATER KASSEL

ARCHITECTS: *Paul Bode and Ernst Brundig*

Georg Schevermann



Entrance to small theater

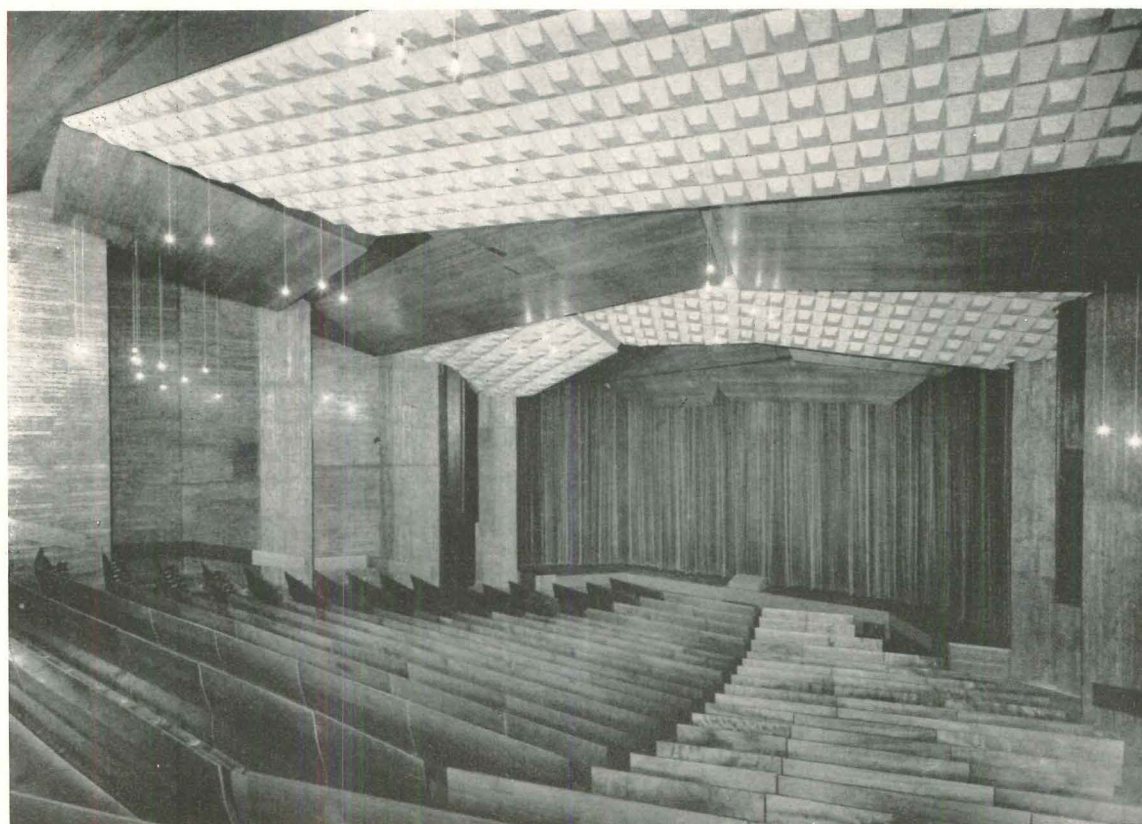
The Kassel Theater Competition, which blossomed excitingly with Hans Scharoun's somewhat outlandish First Prize in 1952 (there were 116 other entries), settled eventually into the more prosaic mold shown here. Scharoun's, it was claimed, was too expensive, and besides, it was submitted too late. The site plan, the parks and the parking facilities of the building which were eventually built are very happily carried through—among the best. The approach both by car and by foot is pleasurable throughout. The architecture, however, is weak in general though strong in the Kleines Haus. The project consists of two theaters placed back to back with a large stage house and administrative block in between. A conflict of scales, materials and rhythms can be seen on the outside, but the plan appears very workable. A generous two-level foyer wraps around the main auditorium, a lobby whose relaxed openness stands in pointed contrast to the miserable affairs perpetrated on the United States. The interior of the horse-shoe shaped Grosses Haus, which seats 945, is unfortunately the weakest feature (interiors were done by a consultant). No one knew when to stop. Walls, ceiling, balconies, even curtains are jazzed up to a frenzied pitch. Attention should, of course, be on the actors, not the ambience, and it is useful to recall Gelsenkirchen's "blacked-out" auditorium in this regard. The Kleines Haus has, happily, a different cut of jib, both in its lobby and auditorium. Raw concrete, brick and natural wood are the main ingredients, and they are used directly and well. The auditorium, which seats 534, is a fine, intimate theater with raw concrete side walls and an unusual ceiling made up of angled panels of plywood and planes of acoustical tile. Though a bit distracting in esthetic theory it works satisfactorily in space. Top ticket price for both theaters is about two and a half dollars.





Interior of great hall

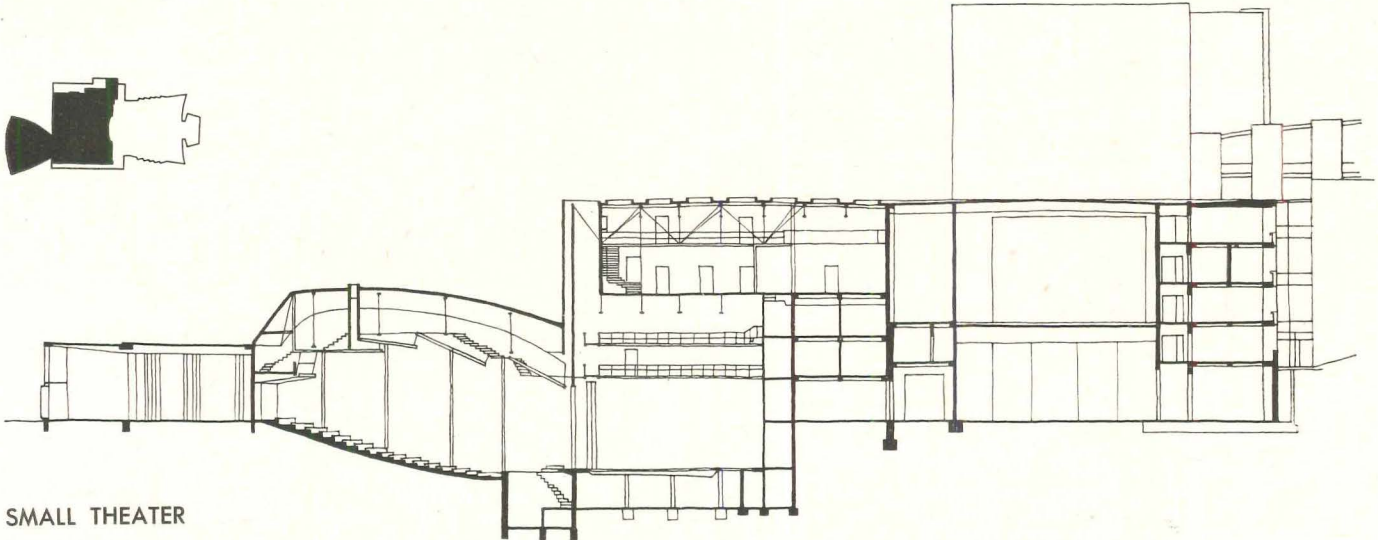
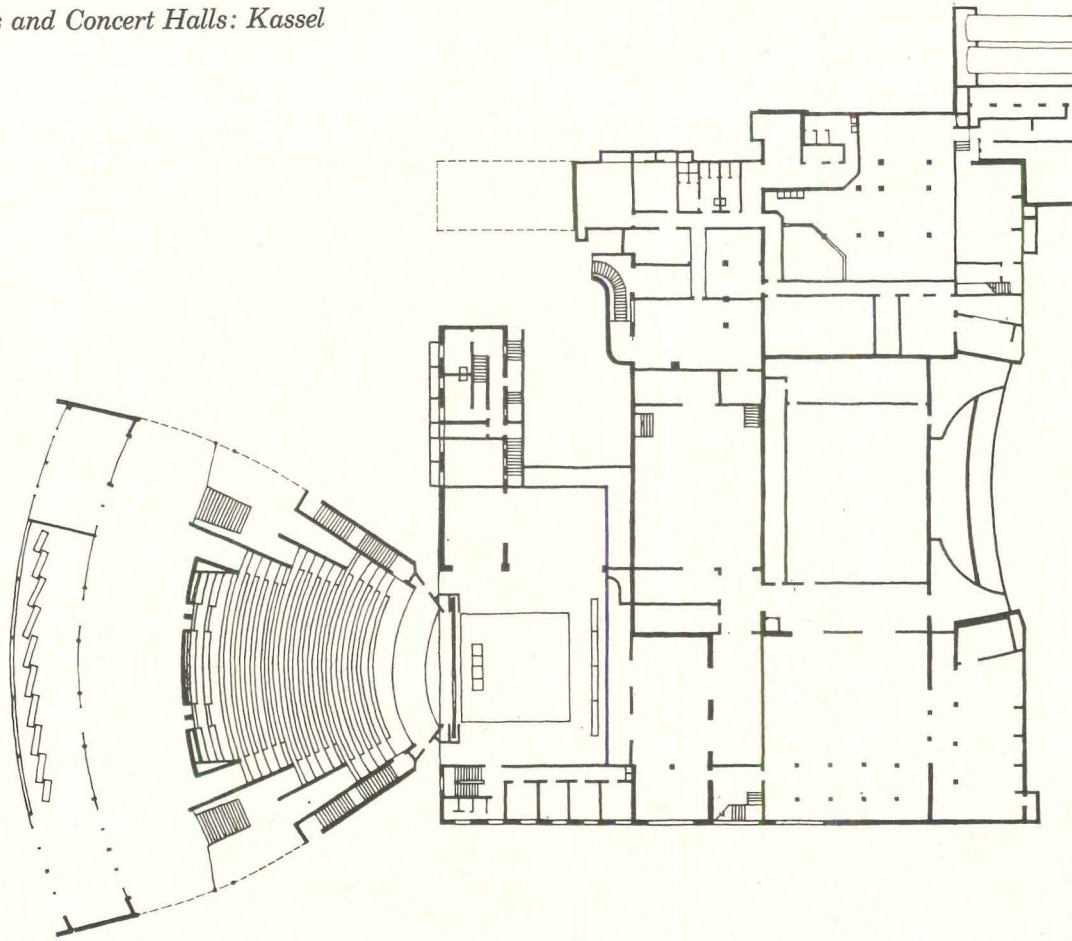
H. Urbchat-H. J. Fischer



Interior of small theater

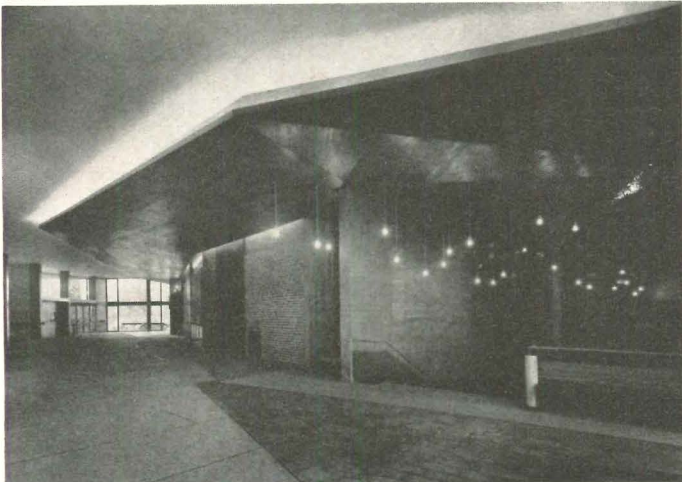
H. Urbchat-H. J. Fischer





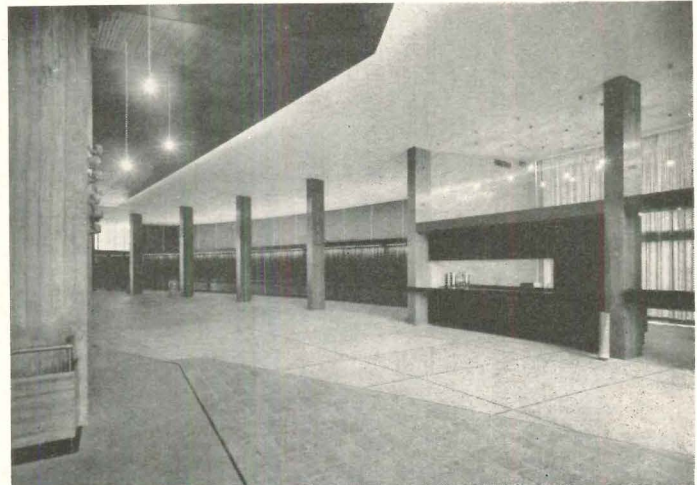
SMALL THEATER

Ostram



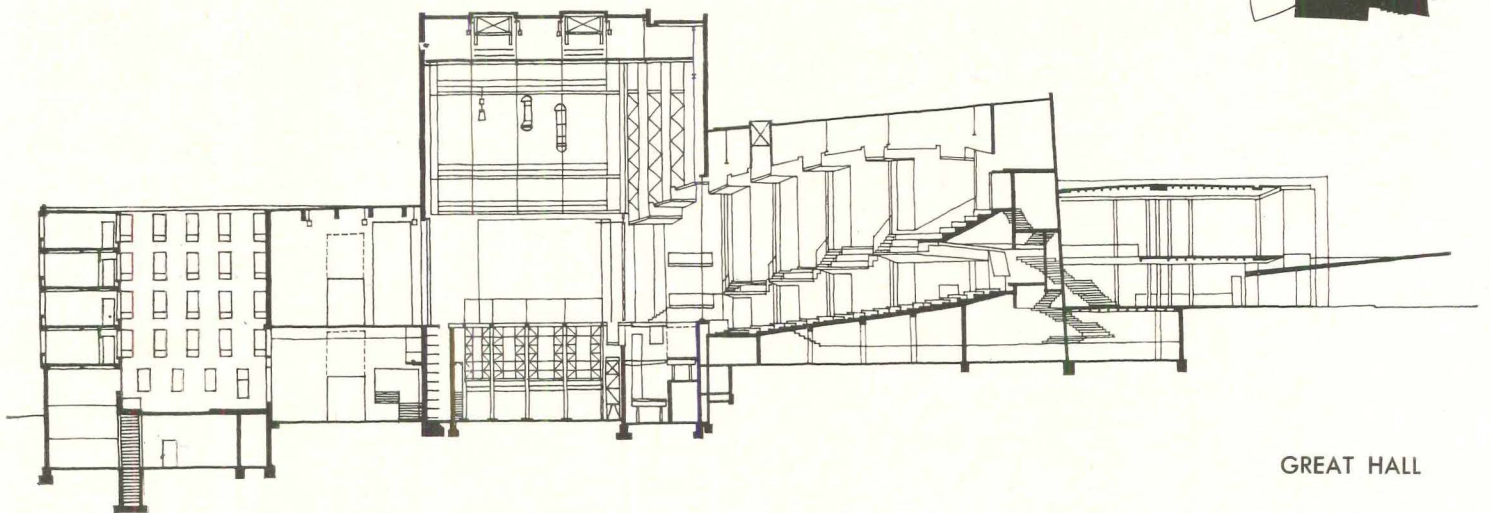
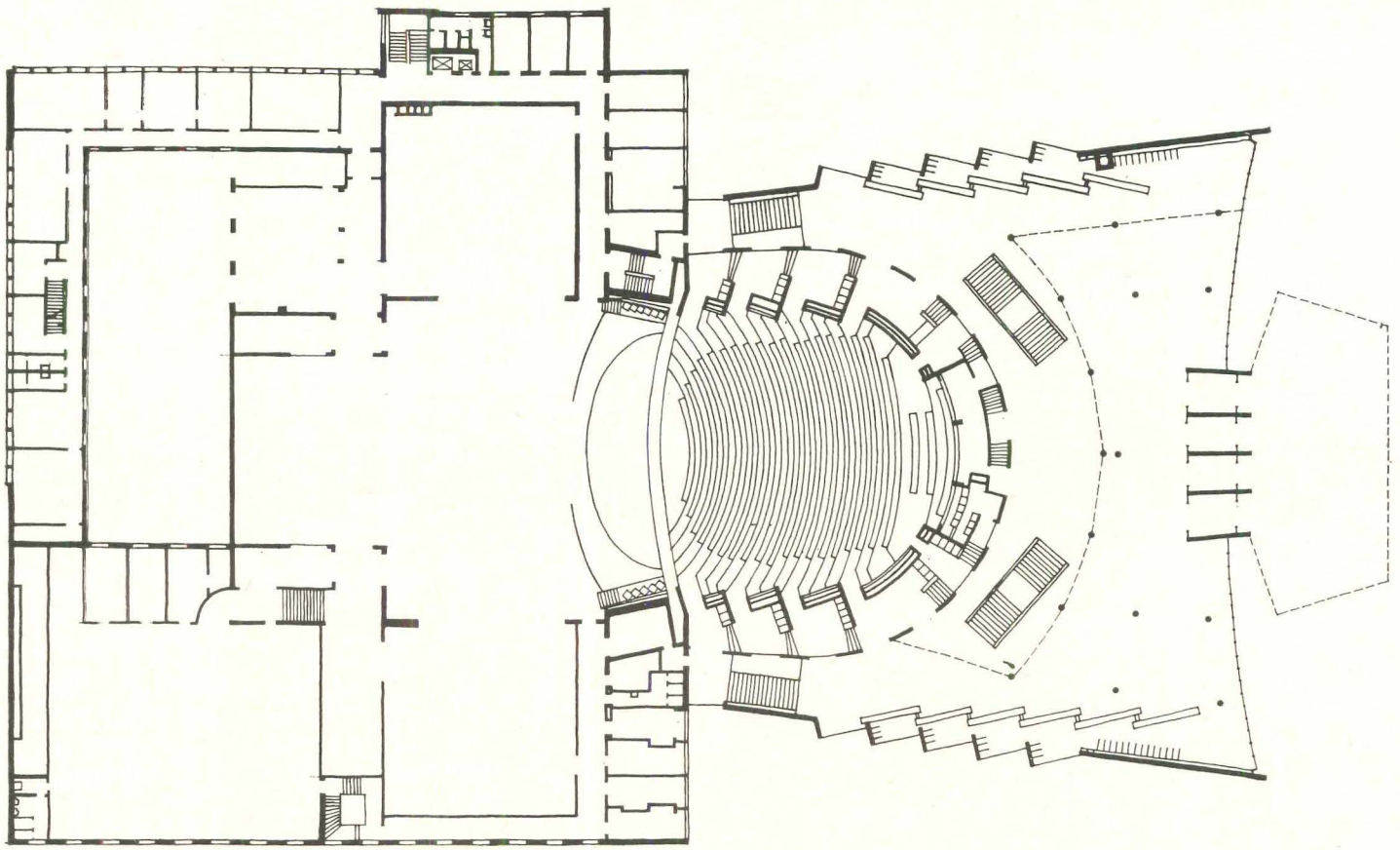
Foyer of the small theater

Urbschat-Fischer



Snack bar and coat check in small theater foyer





GREAT HALL

*Orram*



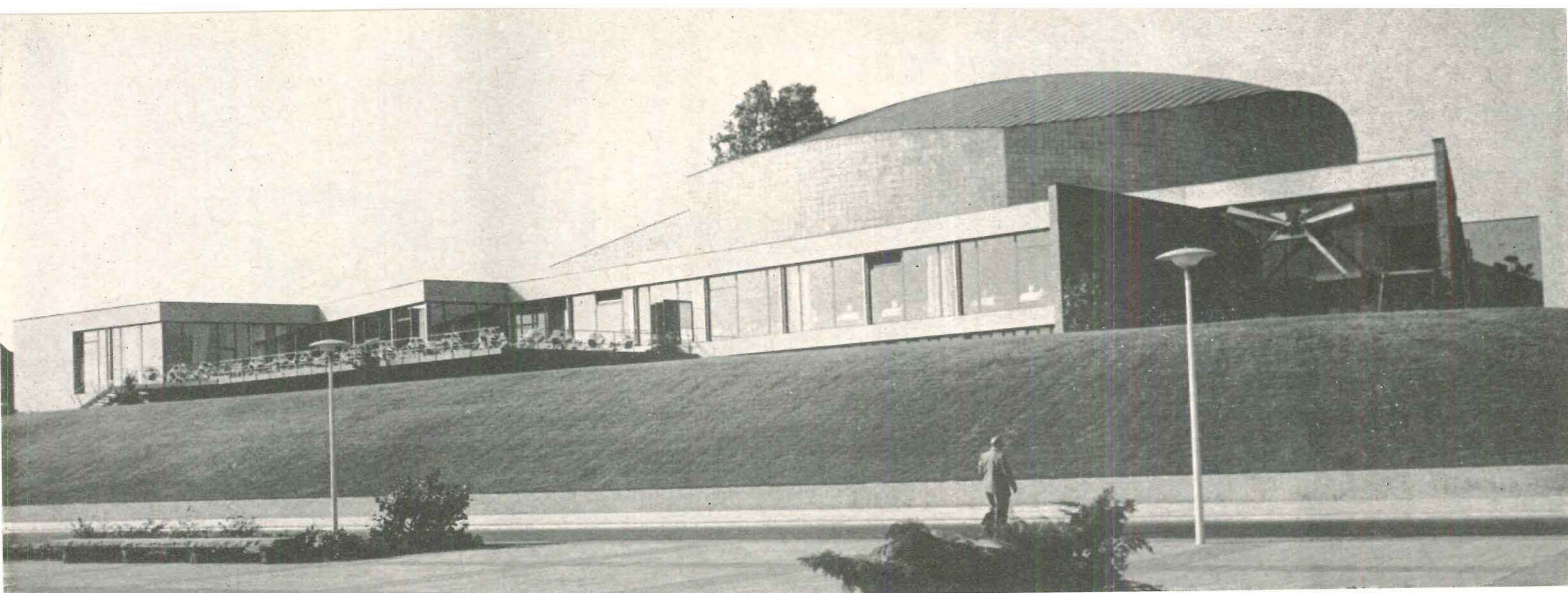
Lower foyer of the great hall

*Urbschat-Fischer*



Upper foyer of the great hall





Schafgans photos

## BEETHOVEN HALL BONN

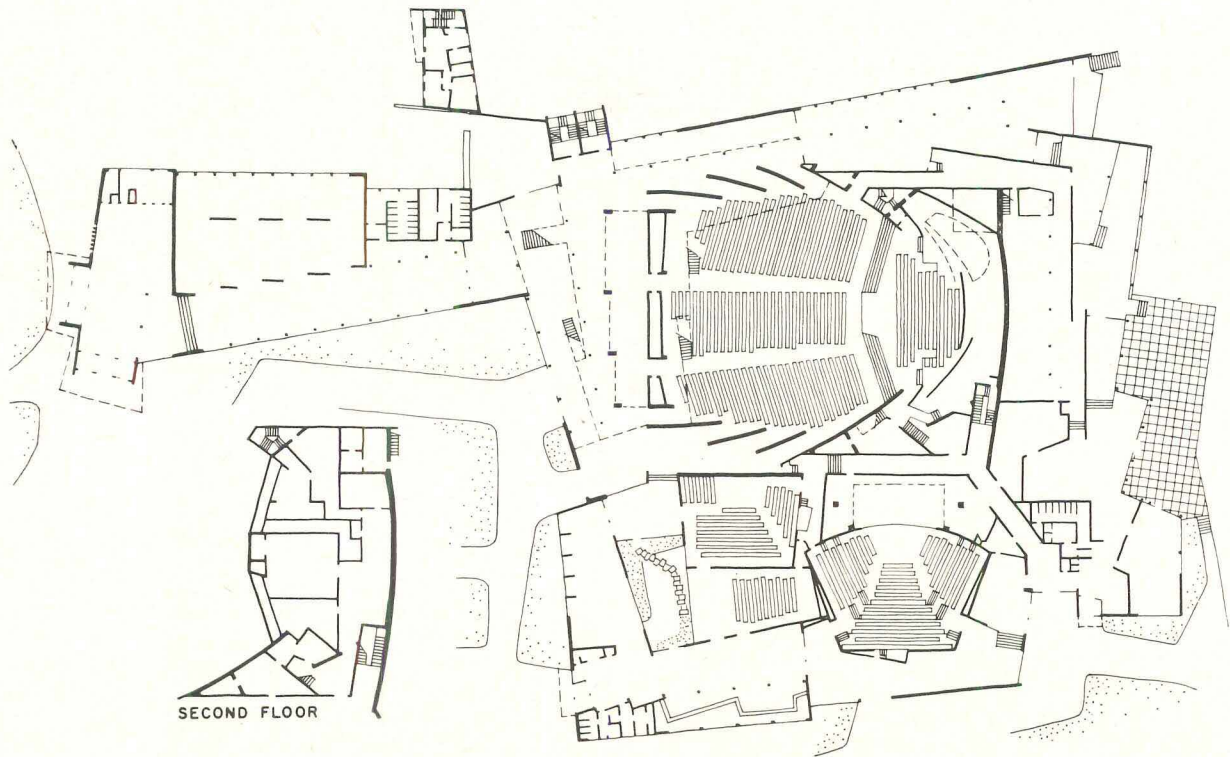
ARCHITECT: *Siegfried Wolske*

The recently finished Beethoven Concert Hall, the design for which was won in competition, incorporates one large, flexible main room, seating 1,030, with three smaller chambers grouped on the south side. The hall is set in a fine, spacious lot to the north of the center of the city and directly overlooks the Rhine. The exterior form with its shallow domed main auditorium and cluster of lower units gathered about on all sides is a bit amorphous and irresolute, and it is marred by too many changes of materials. The landscaping, however, is handsome. The most unusual feature of the design is a long, access finger, of irregular shape, canted out from the main cluster and lined with ample and well-screened coat rooms on the broken north side, and glazed to the garden to south. This provides a fine introduction to the main foyer, which, with various shapes and ramifications, completely encircles the front and two sides of the building and ends up in the restaurant overlooking the river. Side entrances to the three smaller chambers and a separate entrance to the restaurant are also provided. The main lobby is of straightforward and competent design but has a too busy black and white and gold rear wall. Public circulation, however, is excellent. The main auditorium has a flat floor with removable seats, hence can be used for congresses (very important in this the capital of West Germany) and balls, as well as major concerts. Obviously some compromises with sightlines and with hearing had to be made to permit such multi-use functions, but equally obviously the ability to use this hall for a variety of functions has made it more economically feasible. The plan of the auditorium is somewhat conventionally egg-like with splayed side walls. It is topped by an extraordinary near-flat ceiling made up of some 1,800 small shapes, basically domes alternating with pyramids, whose plaster and vermiculite composition provide excellent acoustics. Direct lighting fixtures are interlaced with these. This somewhat agitated ceiling extends directly over the stage (there is no curtain or proscenium), making for great intimacy between musician(s) and audience, which link is further aided by the flanks of broad stairs on either side of the stage proper. The removable chairs are in wood partly upholstered with a nice blue-green fabric. The sides of the auditorium are of wood and wood grills. The three smaller rooms are tied directly to the south side of the main auditorium and use its internal services.

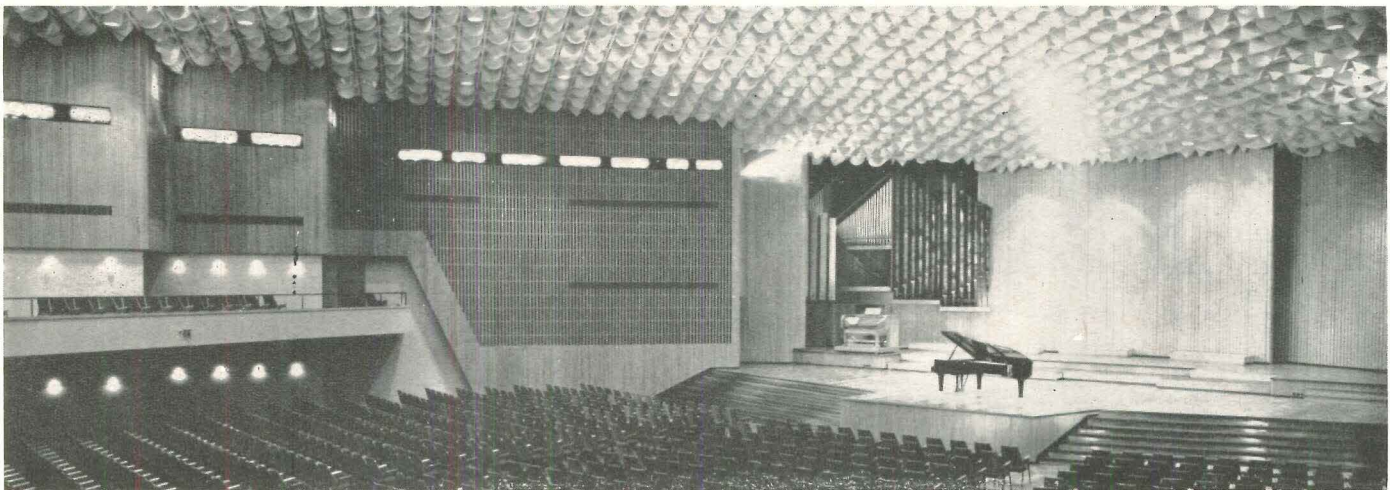


Lobby of great hall



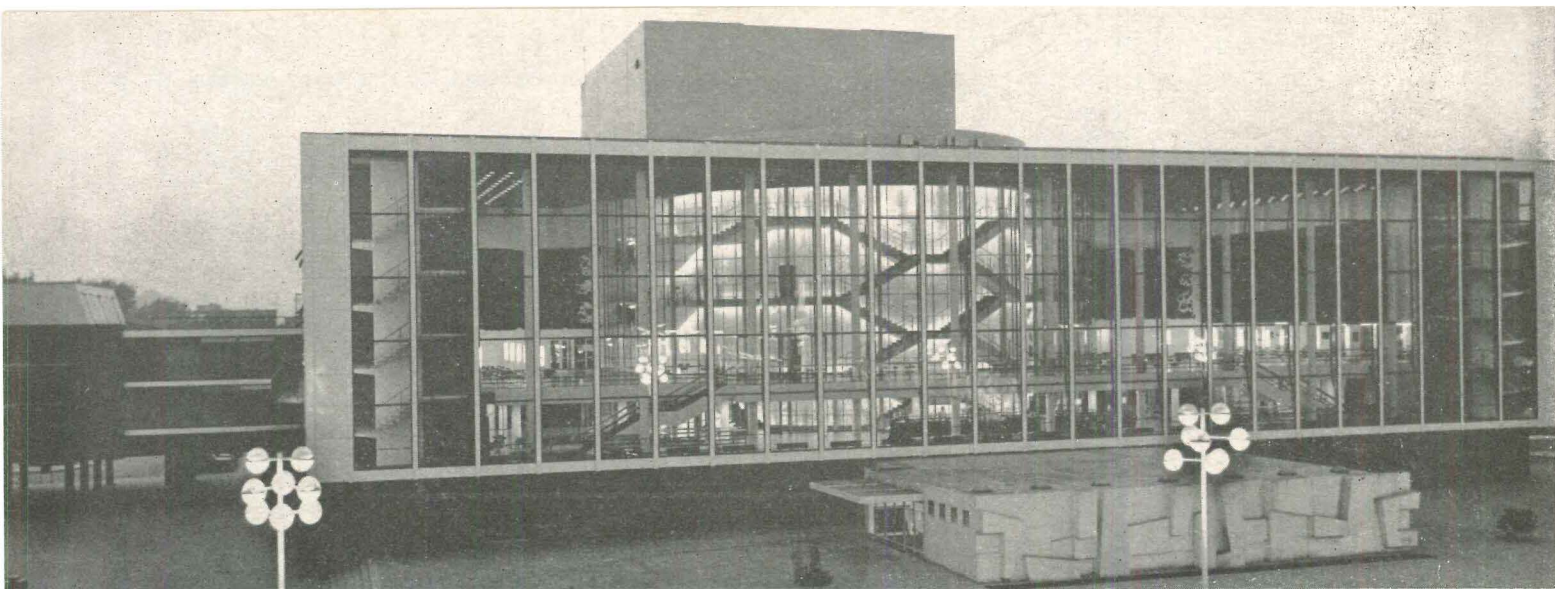


Small theater or studio



Great hall interior





Peter-Mogenburg

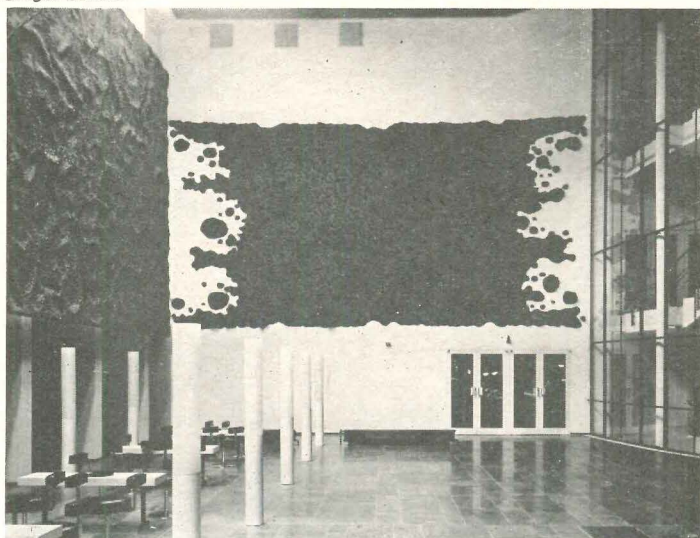
## CITY THEATER GELSENKIRCHEN

ARCHITECTS: *Werner Ruhnu, Ortwin Rave  
and Max von Hausen*

This theater in a doleful industrial city just northeast of Essen is one of Germany's finest to date. It abounds in ideas: its over-all planning which includes the eventual development of the entire area; its art which was carefully integrated with the theater design from the beginning; its clever architectural marriage between auditorium and stage. The exterior, glazed from end to end and from top to bottom, atop a solid entry floor, is the most striking feature, particularly at night when it blazes with a fetching display of people having a good time. As a foil to the transparency of the facade, a concrete relief by Robert Adams, the British sculptor, covers the front of the low entry pavilion and provides a visual anchor and accent. To the left of the main theater, and at right angles to its axis, is the Kleines Haus whose front wall is decorated with a clever "relief" of simple aluminum tubes by Norbert Kricke. The main foyer, a large, tall and somewhat antiseptic room, is decorated with abstract, near solid color, highly textured, powerfully scaled, murals by Yves Klein, the French artist. A glazed, semi-cylindrical grouping of stairs gives access—somewhat convoluted access—to the three levels of seats at the rear of the theater. The auditorium floor has a steep rake, and its seating is augmented by two rear balconies which are extended along the sides almost to the proscenium by staggered loges. Total capacity is 1,050. The walls of the auditorium are particularly fascinating for they were designed to "disappear" when the house lights go off, and thus to project the brightly illuminated actors into the audience—an effect in part cancelled by the matte black color of the walls and by their wood strip construction which eliminates reflection. These fins are mounted over a wire mesh with acoustical material behind. It is important to note that the strips of the side walls continue past the proscenium onto the stage itself, thus making the stage more a visual extension of the auditorium. Furthermore the ceiling of the auditorium—black like the walls—also partly extends over the stage doubly binding the two. Though not a glamorous room, being a bit hard, this auditorium is highly imaginative and provocative.

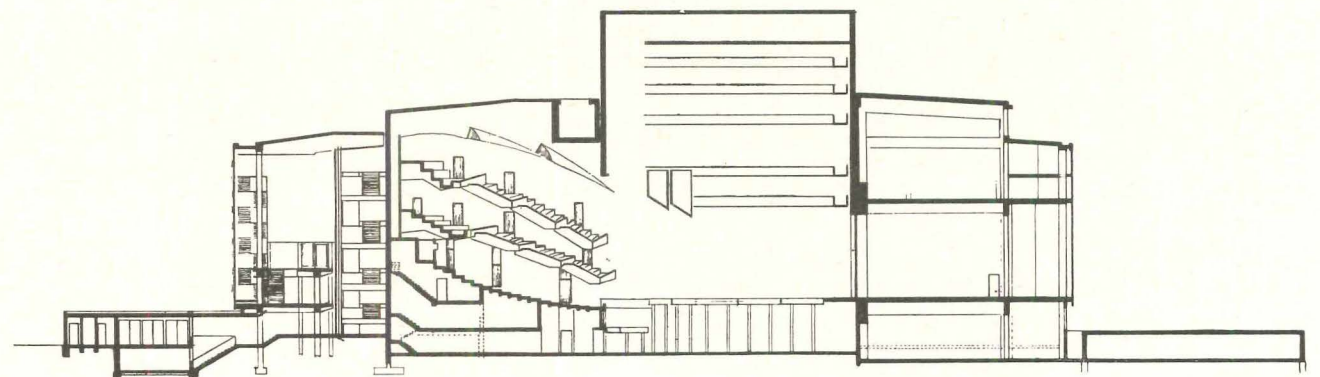
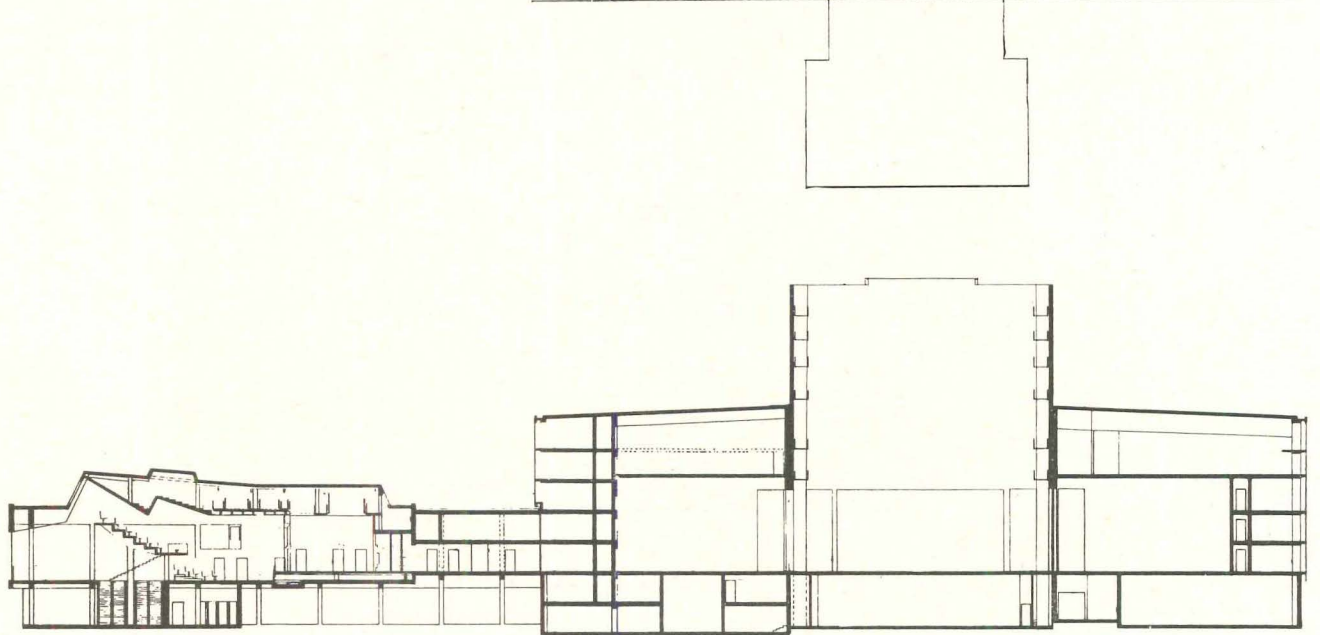
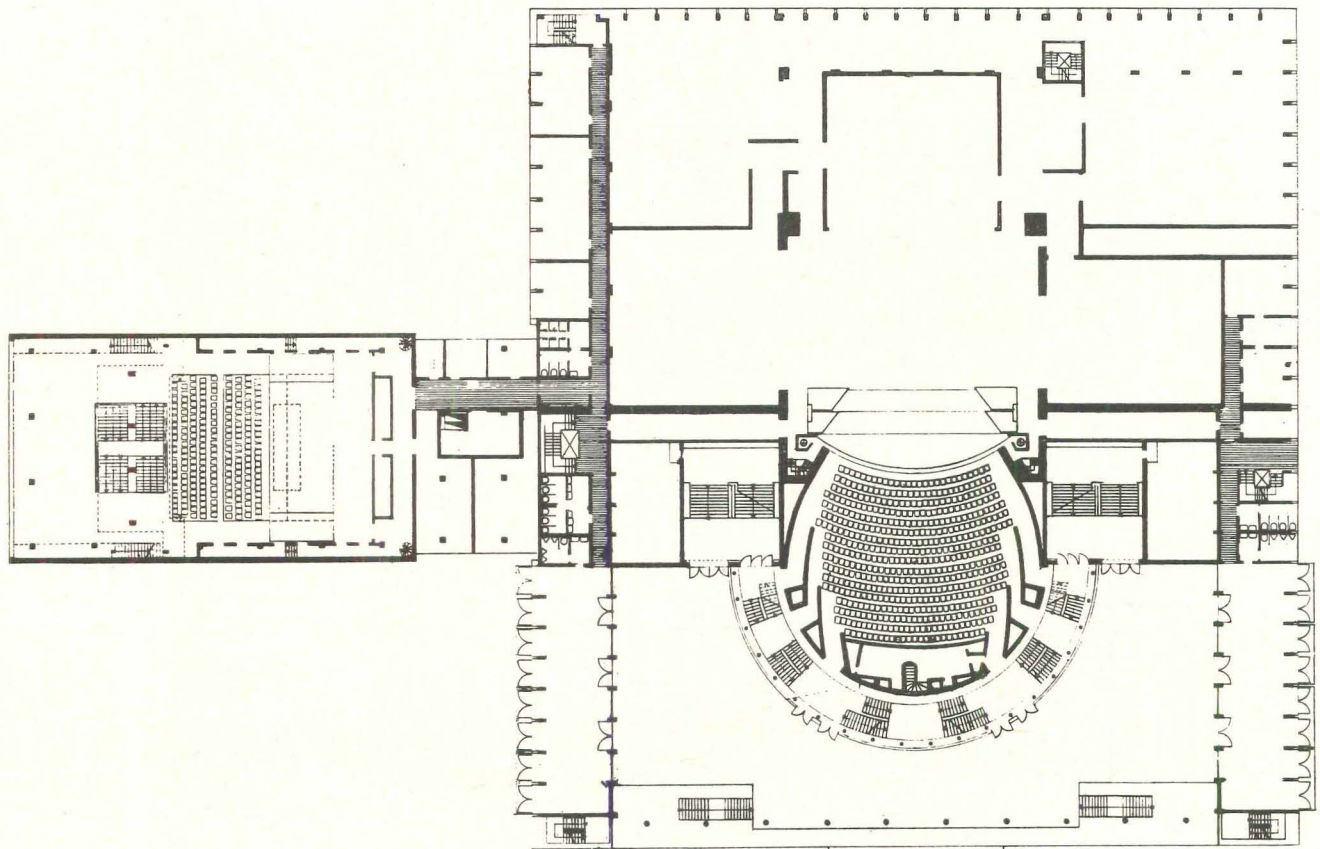
The smaller theater is well articulated with the Grosser Haus both on the outside and in. Its auditorium and public spaces (largely in black) are all capably handled, the foil between the two being particularly well studied as one goes from foyer to orchestra.

Gregor Stühler



Main foyer murals by Yves Klein



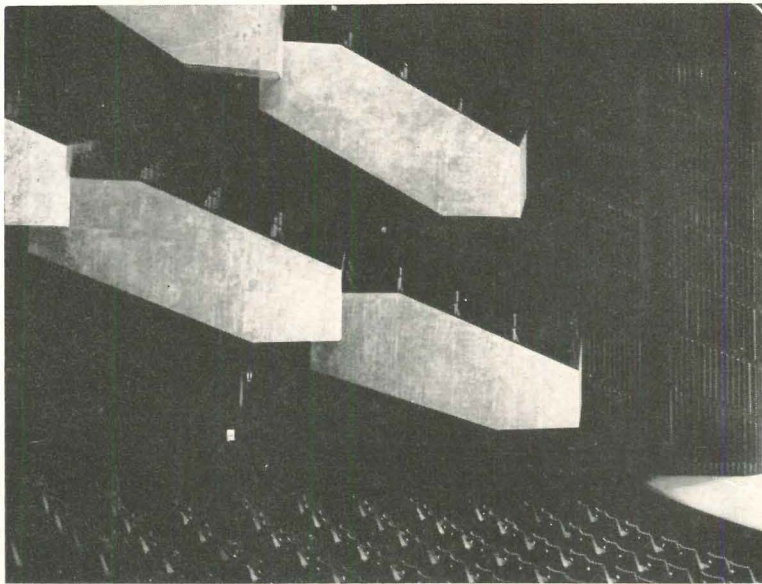






Planck

Convolute access to three levels of seats in the great hall at Gelsenkirchen



Kurt Saurin-Sorani

Staggered loges approach stage in concrete accents against black walls of the great hall



Interior of the small theater





*Morley Baer photos*

## HILLSIDE HOUSE FOR AN ARTIST

George Rockrise fits a family home and separate studio into an unusual site





*The Bomberger House*



This casually simple and warm house for a commercial artist and his family has been tidily nestled into the steep slope of an unusual pie-shaped sector of land. The site is characterized by numerous oak trees, rock outcroppings, and a fine view of Mount Tamalpais and San Francisco Bay. Major program requirements included making the most of these natural features, and providing effective isolation for bedrooms, living areas and a working studio.

As built, the house was placed about 50 feet uphill from the road to take advantage of an existing shelf, and to permit space for parking, storage and entrance under the house. The studio, designed as a separate structure, was placed about 50 feet farther up the steep slope, where it commands an equal view with the house as noted in the photos (*top right*). In both buildings, generous open decks supplement the necessarily limited on-grade terraces.

In the main house, living and bedroom areas are separated by an open stairwell, and connected by a little bridge. All main rooms are oriented to the views, with service areas banked toward the hill.

The structure is post and beam frame on reinforced concrete foundations. To blend with the natural landscaping, exterior walls are creosote stained, resawn redwood; the roof is built-up tar and gravel. Interiors are lacquered redwood, accented by the large stone fireplace which serves as partial screening for the living, dining and kitchen areas. All ceilings are two-by-six tongue and groove decking.



*Residence for Mr. & Mrs. Bruce Bomberger  
Kent Woodlands, California*

ARCHITECT: *George T. Rockrise*

ASSOCIATES: *Robert C. Mountjoy*

*J. Matthew Myers*

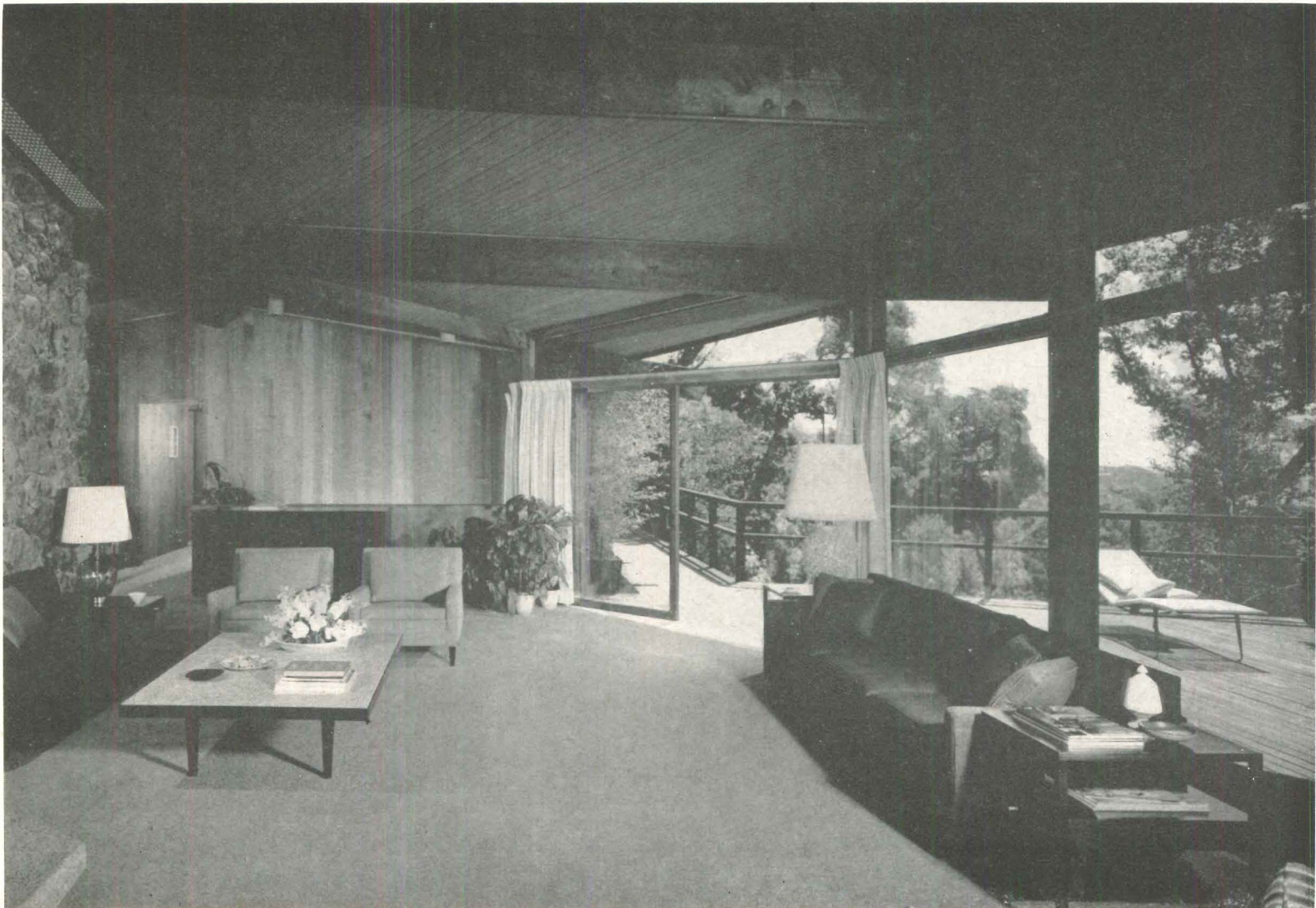
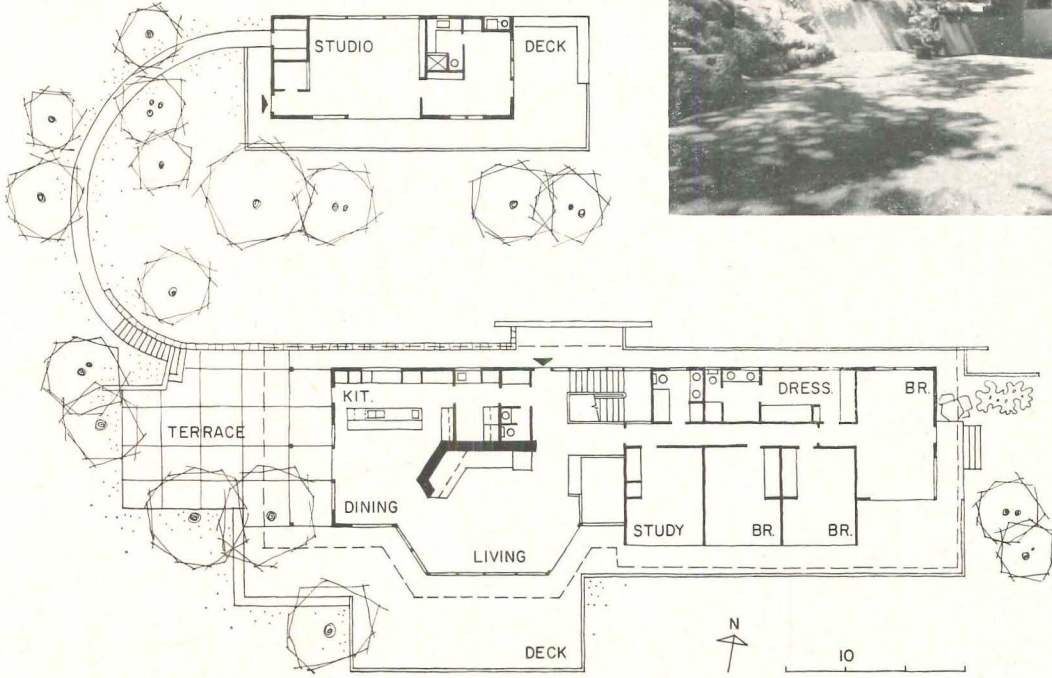
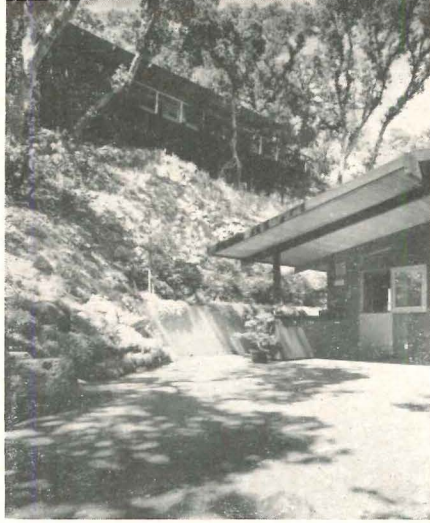
CIVIL ENGINEER: *William B. Gilbert*

CONTRACTOR: *Wilson & Wedekind*

LANDSCAPE ARCHITECT: *Lawrence Halprin*

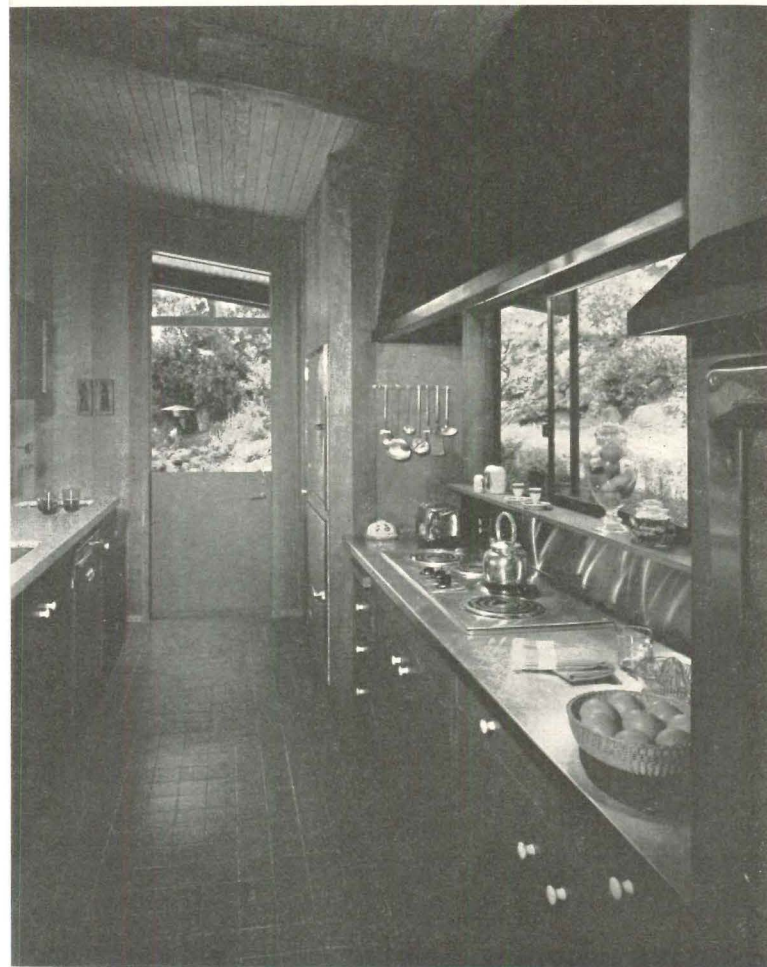
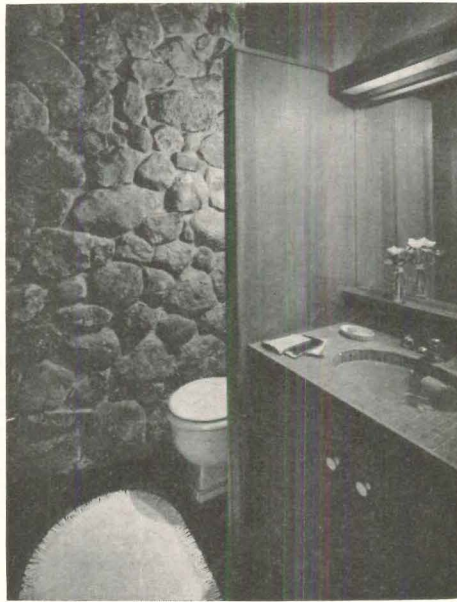
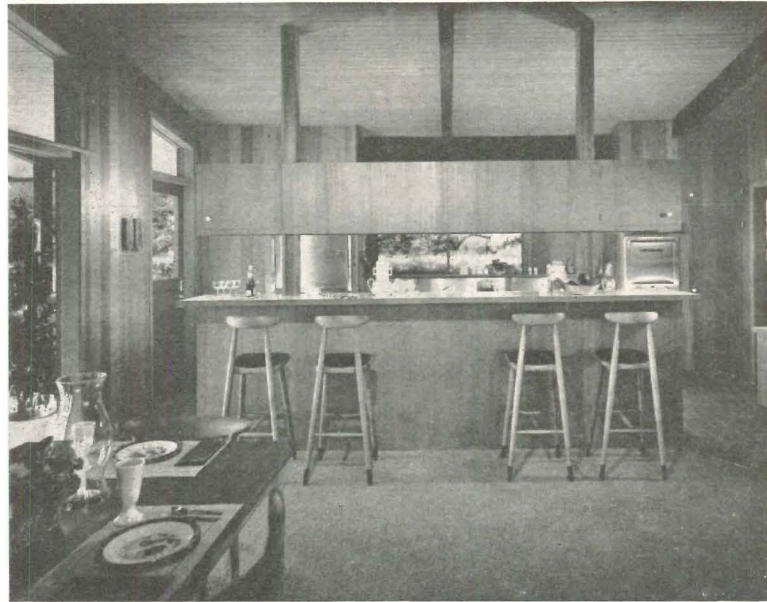
INTERIOR DESIGNER: *Lola Philhower*







*The Bomberger House*



All rooms in the Bomberger house, including kitchen and baths (as can be noted in the photos shown here), share the same pleasant, natural finishes. Most of the equipment is built in, including the electric range, sinks, refrigerator, freezer, washer, dryer, garbage disposer and bathroom wash basins.

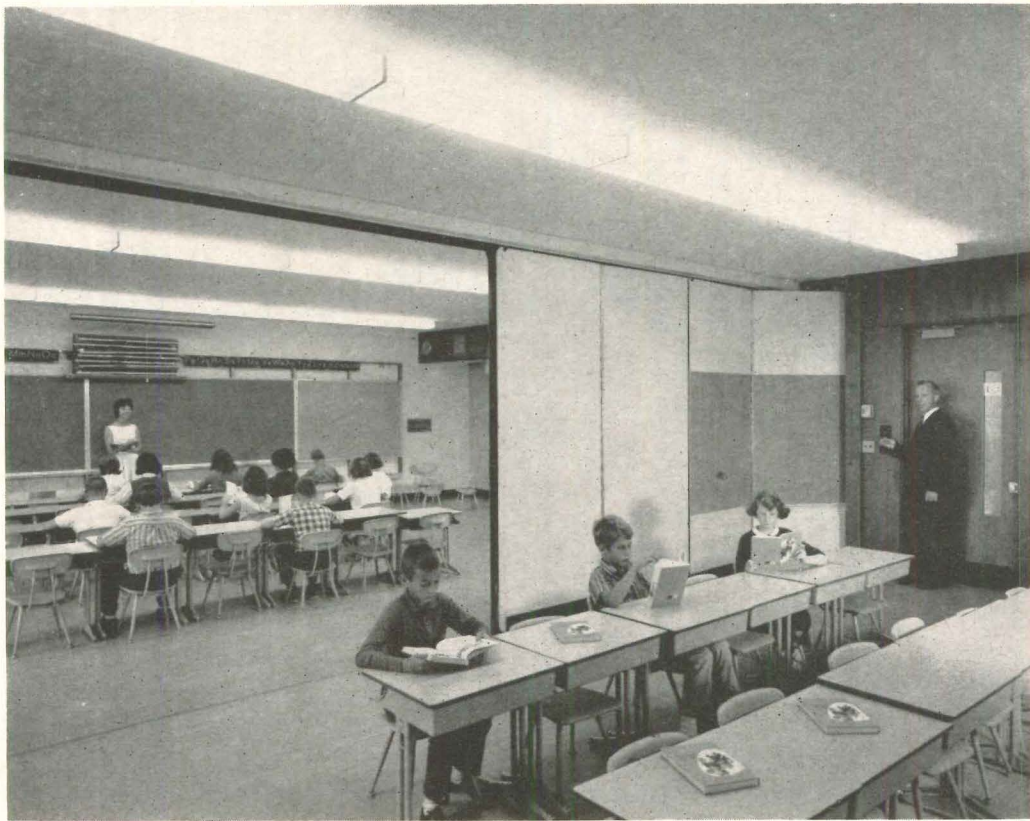
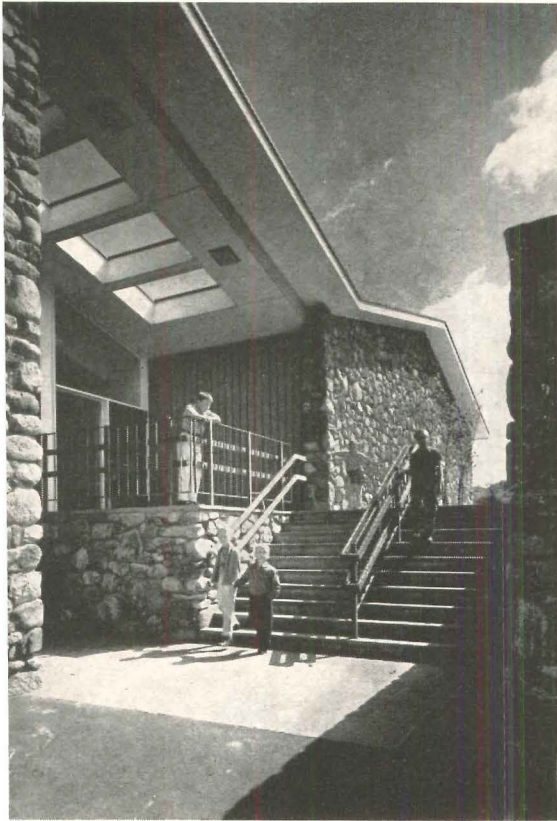
The house is heated by two gas-fired hot air furnaces. Other equipment includes low-voltage wiring, push-button switches and an intercom system. Floors are carpeted in the living areas, ceramic tile in the kitchen, mosaic tile in baths





# SCHOOLS

*Planning for change is a real necessity for school design today, and may be defined as flexibility, expansibility, adaptability, convertibility—or all at once. Whatever the term used, a really good school must adequately serve the teaching programs of today and tomorrow. This study presents a group of completed schools, with a wide variety of educational approaches, which go well beyond the average in meeting this need.*

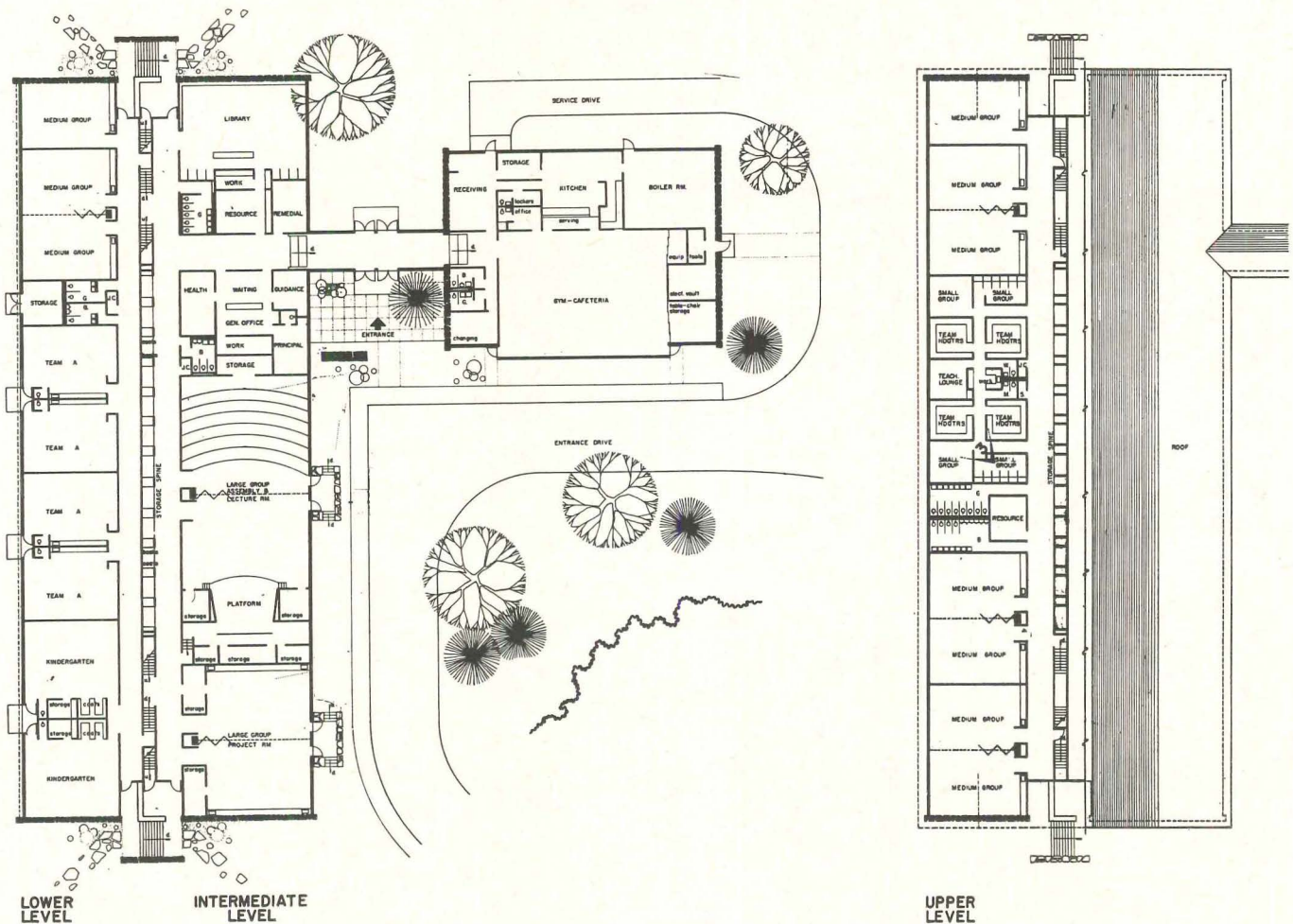
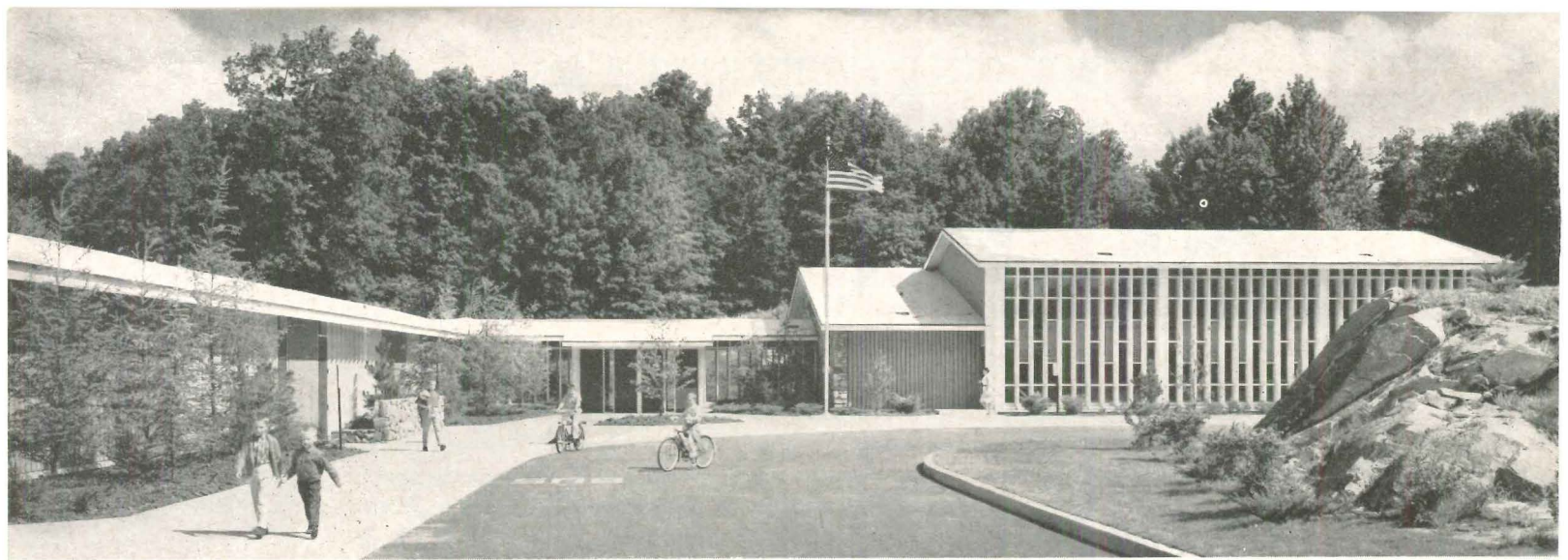


Joseph W. Molitor photos

## ELEMENTARY TEAM TEACHING IN OPERATION

After a year in operation, Perkins and Will's Dundee School in Greenwich, Connecticut, offers an excellent example of how the planning theories for team teaching at an elementary level are working out. One of the first at this level to be built, its architectural program was developed along with the training of the nucleus of a faculty—which began in the summer of 1959. This preparation was done with the assistance of a \$25,000 grant from the Fund for the Advancement of Education, which subsequently granted an additional \$60,000 for a detailed two-year evaluation of the results. Interest in the school is also attested by the fact that more than 4,000 professional visitors have been in the school since it opened. And on such a visit, one is immediately impressed by the pleasant, cheerful atmosphere, and by the bouyant attitudes of the pupils and teachers. When asked if such young children were really able to get, usually unattended, to their individual or group spaces, one teacher smiled assurance and said, "Well, most of the time!"

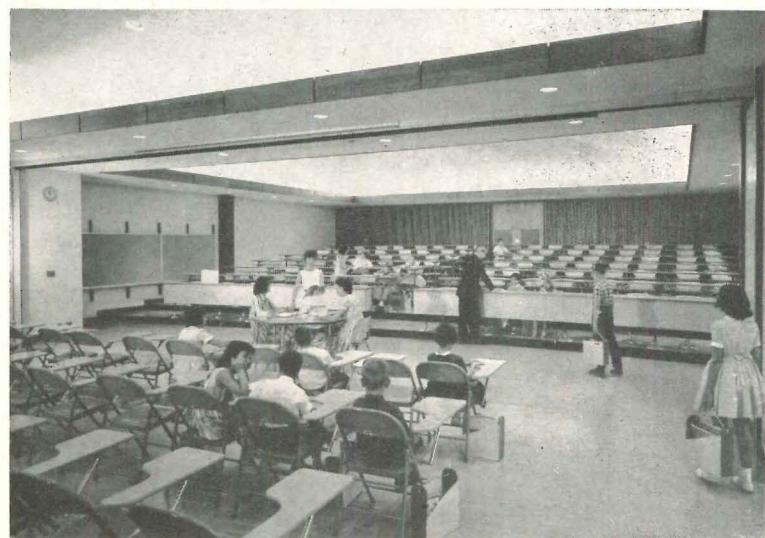
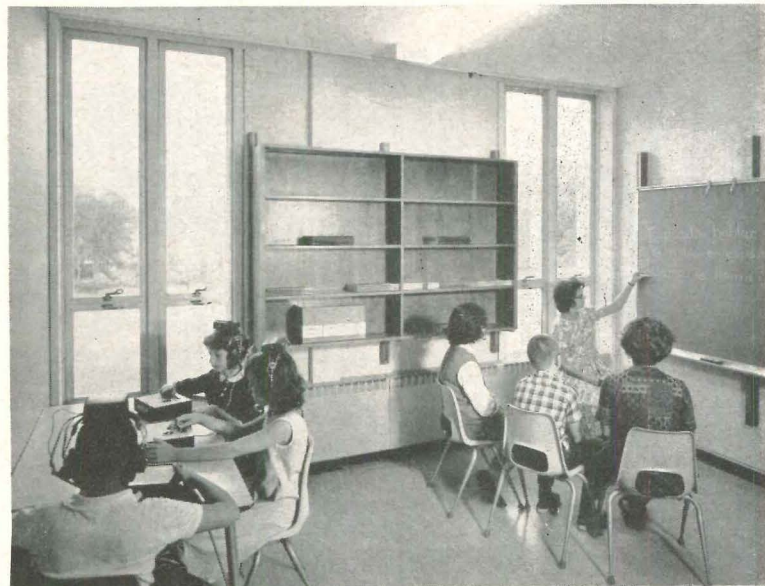




In discussing the school, the architects state that: "Flexibility in planning for the program is evidenced in all parts of the building. There are spaces provided for small, medium and large group instruction on all three levels (see plan). The large project room, amphitheater and library are located on the middle level allowing for ease of movement from both the upper and lower levels of the building. The split level design provides for a central storage spine, which makes possible maximum (and convenient) storage areas for the various teaching teams. On the upper level are the team headquarters with office and work areas and a lounge. On the middle level is a curriculum materials resource center, which provides audio communication to all rooms in addition to being the center for instructional materials. One wing of the building provides for the physical education and lunch facilities." Automatic, operable walls are used in many of the rooms to give the needed flexibility in spaces for varied sized groups.



Some of the many varieties of spaces in the school are shown here and on the preceding page. Four small group rooms flank the team center: two of them bare except for tables and chairs seating five to ten students (*right center*), two of them equipped with individual study spaces and tape recorders for language work (*top right*). Medium size group spaces (see page 199) are each joined to its neighbor by throwing back an operable wall. A lecture-demonstration area with tiered seating for 120 pupils adjoins its neighboring space to form an auditorium for some 300 children (*bottom right*). The kindergarten is divided into two areas: one for "quiet" activities, and one for noisier ones (*below*)

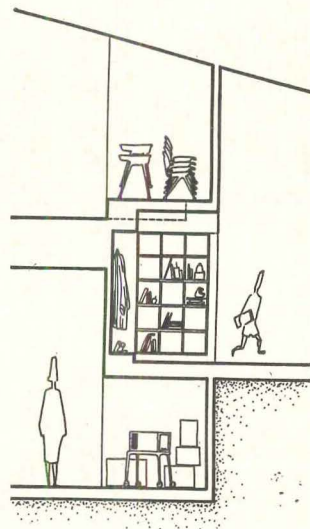
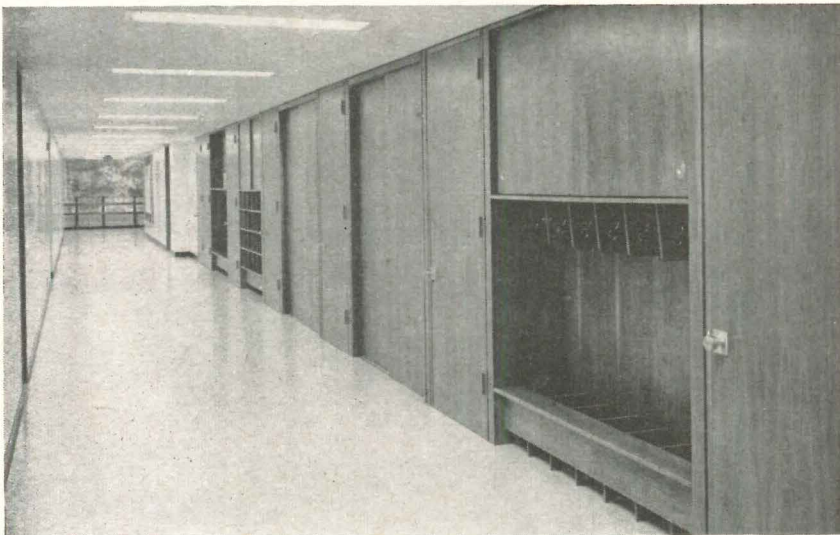


The architects add: "The program is working, with the pupils progressing at the level hoped for. And the divisible rooms work and are used; however, in the large spaces . . . additional exits to the corridor from both rooms would relieve the occasional traffic problem at peak times. Scheduling, after the first two or three months' 'shakedown,' has been easy and smooth with the exception of the gym area. The original program called for the main entrance to the school to double as a commons and an extra area for the reading program. The added space needed was eliminated because of economics which means the gym doubles as a cafeteria. This means 'we lose 21½ hours of physical education time each day which builds an inflexibility into an otherwise flexible program,' the principal, Robert J. Hamilton says. He further adds, 'if the team teaching headquarters could be as flexible as the teaching spaces, it would permit changes in teacher grouping. In our own school, for instance, we started with four teams and now there are three'."

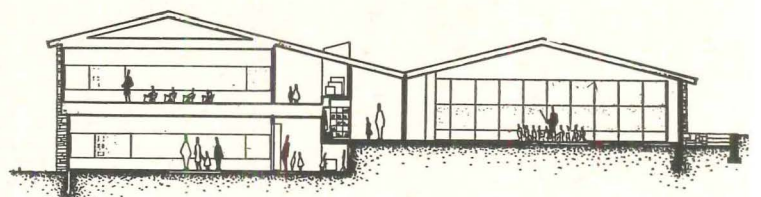




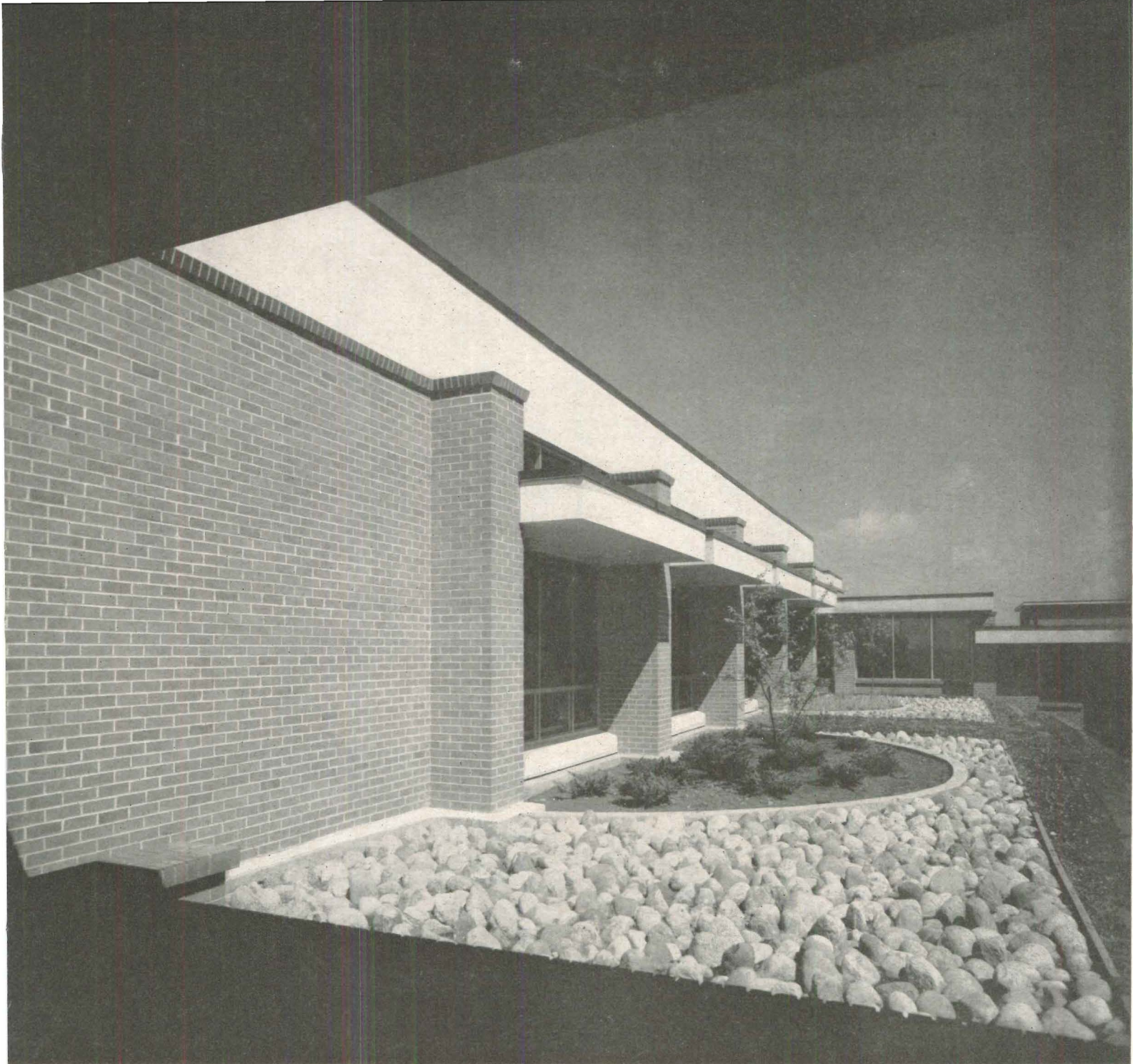
*Dundee Elementary School*  
*Greenwich, Connecticut*  
 ARCHITECTS: *Perkins and Will*  
 PROJECT ARCHITECT: *Howard Juster*  
 CONTRACTOR: *Bonwit Construction Company*



Each teaching team has its own room complete with desks, bookcases and filing cabinets. Space, too, is provided for the team's clerical aid (*above top*). With the change to three teams, the clerical people will be placed in one room, apart, giving a better use of the offices for conferences. The corridors have been turned into a "storage spine" as shown in photos (*above*) and plans (*right*). The structure is steel frame, with end walls of stone and side walls of metal panels and steel sash. The interiors are finished with plaster







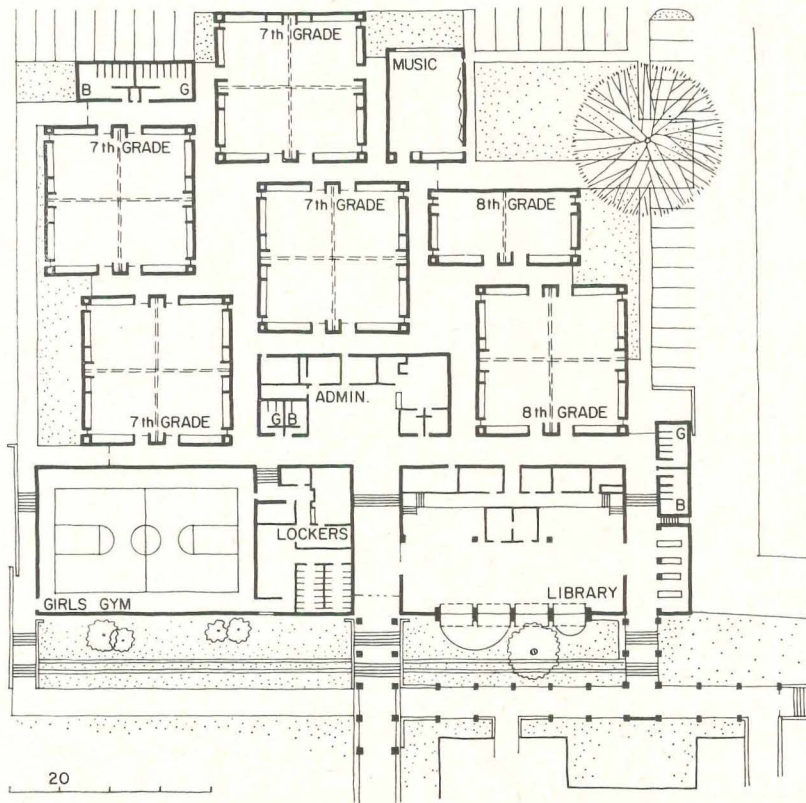
*Bill Engdahl, Hedrich-Blessing, photos*

## JUNIOR HIGH ADDITION FOR A CORE CURRICULUM

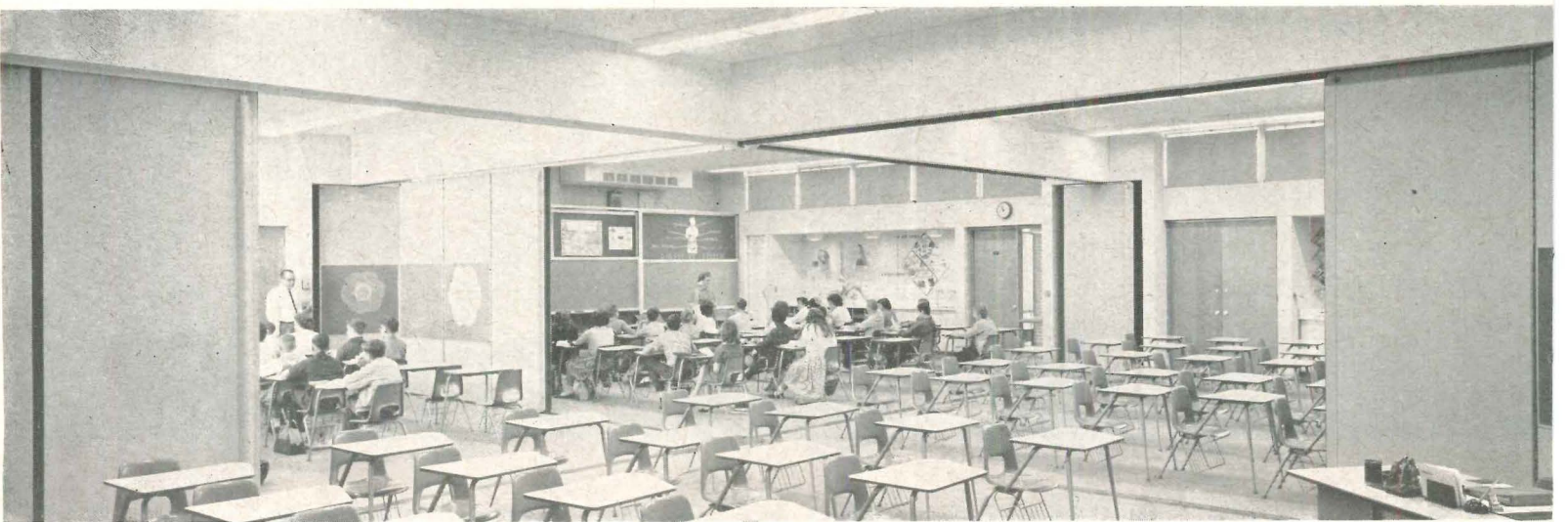
In designing this large addition to the existing Berkeley, Missouri, junior high school, Gyo Obata of Hellmuth, Obata & Kassabaum, states: "The problem was not only to arrive at an architecturally sound relationship between old and new elements, but—at the studied request of the school administration—to provide facilities directly adapted to the realization of newly defined educational goals and a core curriculum of four components: English, social studies, mathematics and science. Basically, the task was to provide (for the seventh and eighth grades) an environment that would ease the transition of pupils from the self-contained, one-teacher classroom unit of elementary school to the wider and more specialized learning experience of junior high." A new cluster-type resulted.

The new addition contains 54,000 square feet, 23 classrooms, and a new girls' gymnasium and central library for the entire school. Boys' gymnasium, auditorium, cafeteria, etc., are in the existing structure.





*Berkeley Junior High School, Addition  
Berkeley, St. Louis County, Missouri  
ARCHITECTS: Hellmuth, Obata & Kassabaum, Inc.*



As can be noted, in the plan and photo (*above*) and in the diagram (*right*), the basic planning element for the seventh grade level is the use of clusters of four classrooms each. Designated for the four different subjects taught, the rooms may quickly be opened via electronically-operated partitions into a single "home room" for the group. To gain both blackboard and storage space along the outer walls, special vertical-sliding panels were devised.

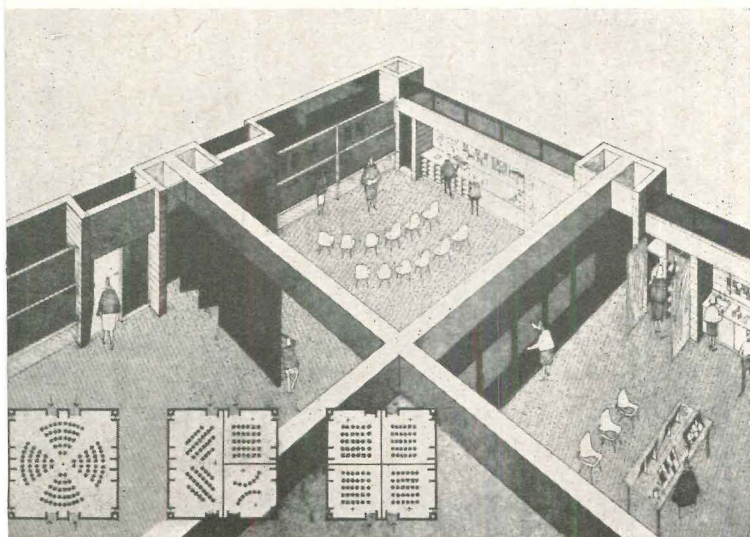
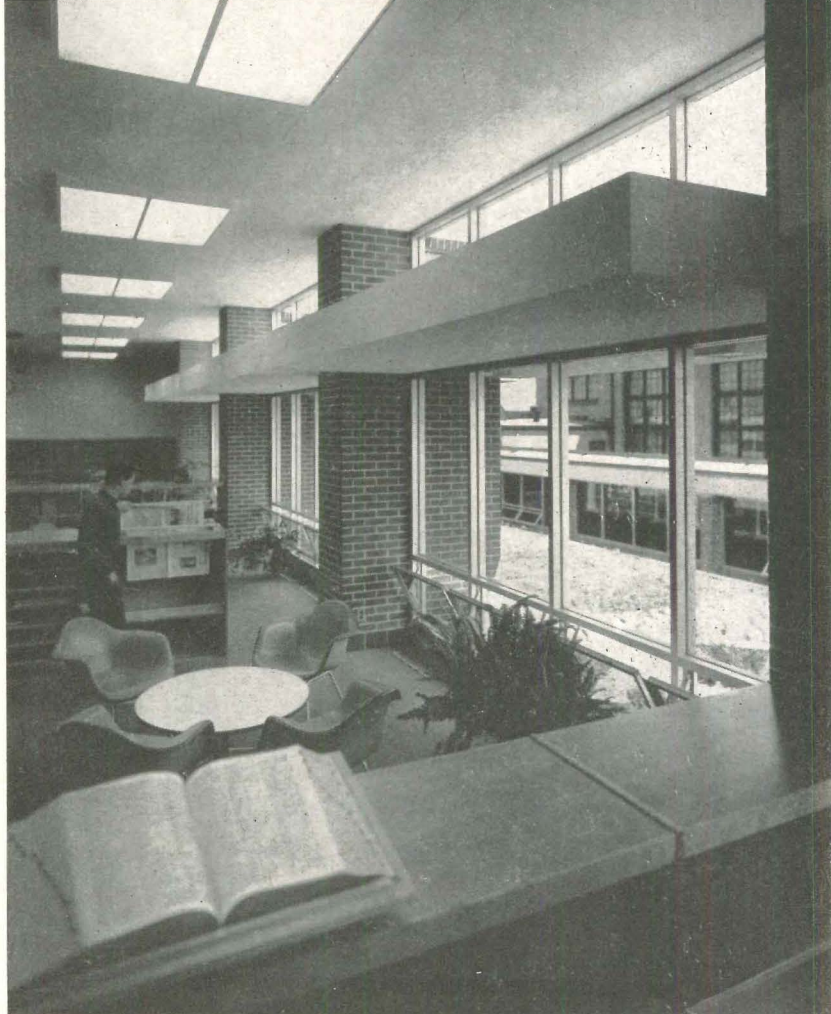
Each classroom cluster has considerably higher ceilings than the surrounding corridors, which provide clerestory light in each area, and better scale to the space when the partitions are open. Classrooms for the eighth grade are similar, but arranged in groups of two instead of four.

All classrooms and the library have an extremely quiet and pleasant atmosphere resulting from the use of carpeting. Obata comments: "From the point of view of cost, the wisdom of this decision has been amply jus-



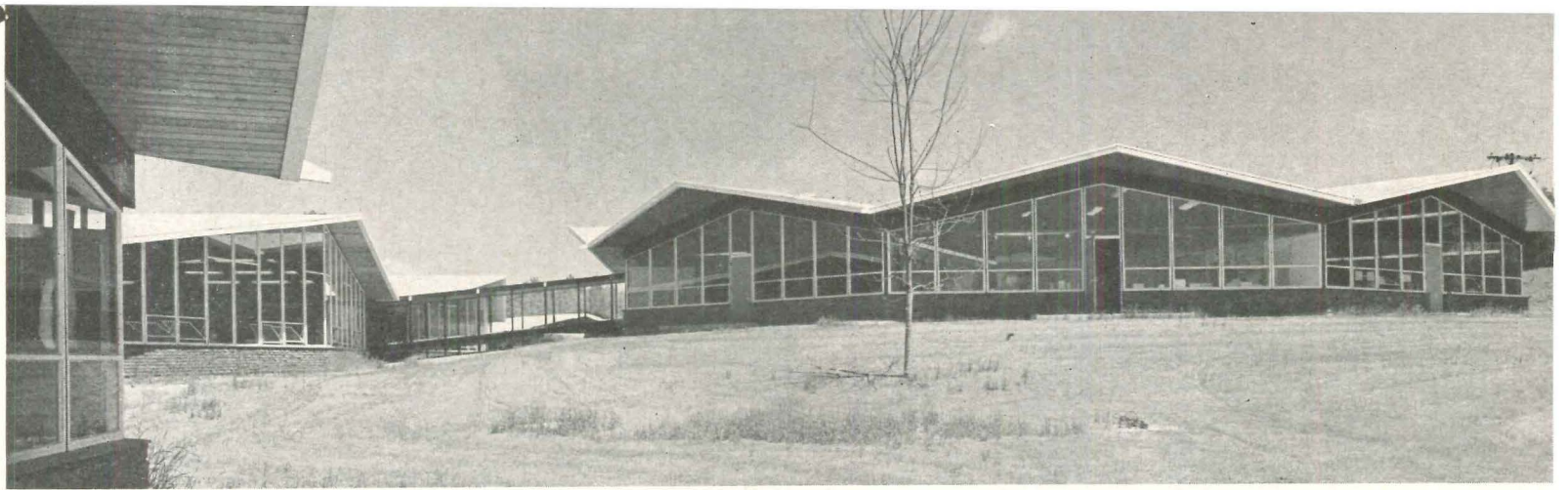


The corridors linking the classroom clusters are interestingly varied from time to time, becoming larger at one point to form a reception lobby (*above*), and in two other spots to form skylighted indoor "courts" (*below right*) designed to contain planting. As one moves along the halls, glass vision strips at the ends help to avoid any shut-in feeling. The library (*right*) and gym are for the use of both existing school and the addition. Brick with masonry block back-up is used for all walls. The cluster units are framed in steel to give a clear span



tified by ease and economy of maintenance. It is principally, however, in the direct esthetic sense that carpet has made itself felt." The school principal, Edward C. Huitt, adds: "The carpeting has added measurably to the children's pleasure and pride in their school. The quiet concentration of study groups in the library is the kind you might more expect of college students." When questioned about the carpet getting stained, Mr. Huitt simply retorts, "We use ball point pens." About the operation of the school, he says: "The whole atmosphere is good. We have a happy situation. The classroom cluster arrangement has proved itself in practice, and the folding walls have proved altogether satisfactory and soundproof. A further consequence is friendliness and good morale among each group of about 100 children per cluster of four classrooms. All have a feeling of belonging. We could not be more pleased with the total environment. Its effect is apparent in the pupils' attitude toward study and in their achievement."





George Cserna photos

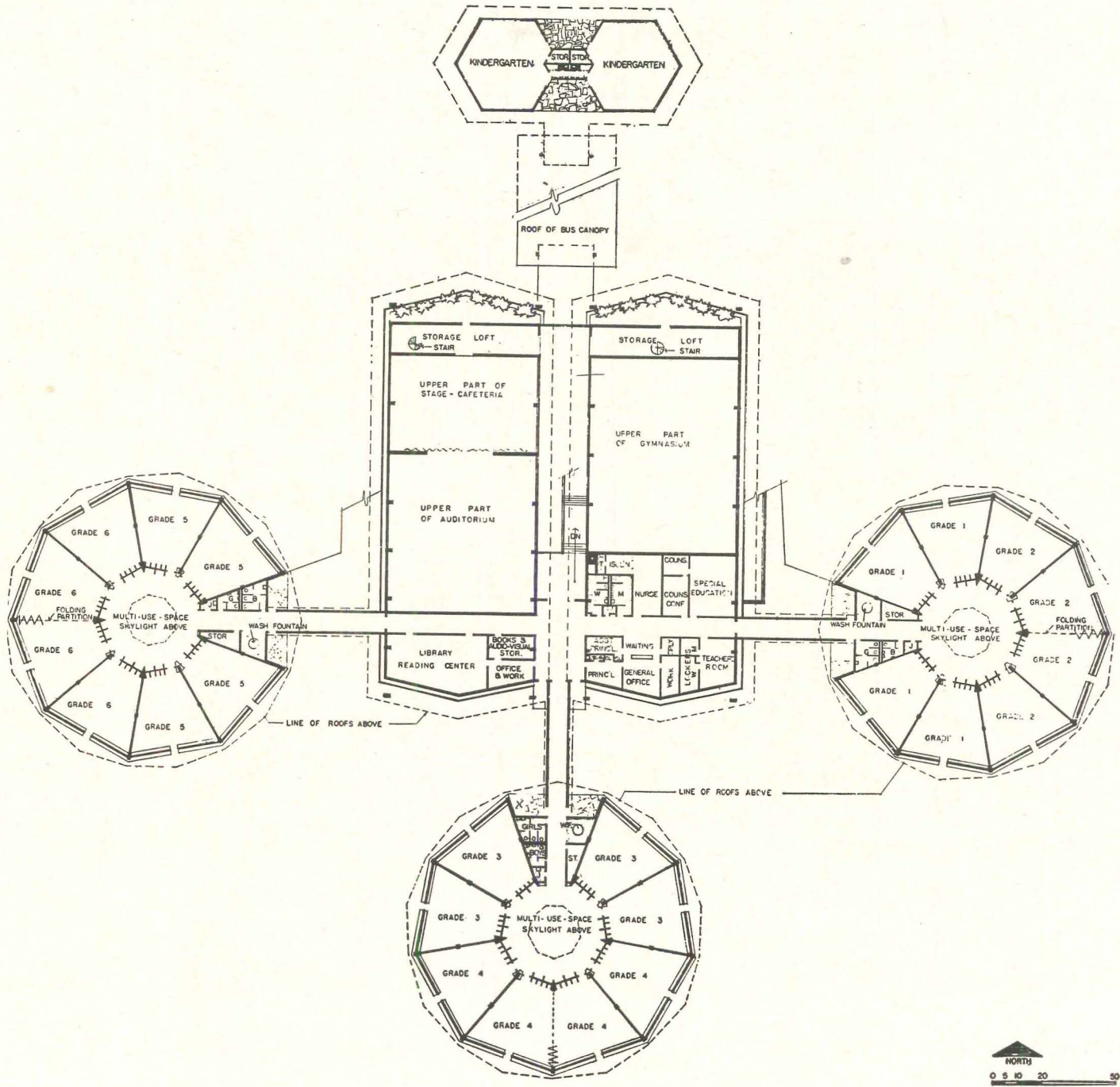
## SCHOOL CONVERTIBLE TO FUTURE TEAM TEACHING

For the new Riverbank Elementary School in Stamford, Connecticut, Curtis and Davis have devised this radial cluster scheme, which has a high degree of adaptability—both to the uneven terrain and to possible curriculum changes. The architects say that “although the Stamford School System does not use the ungraded classroom system at the present time, they are studying the pros and cons, and will undoubtedly go to team teaching or to greater use of educational television in some of their schools in the not too distant future.

“The following provisions were made in order to keep this school as flexible as possible in the face of changing classroom requirements:

(1) the classroom design has been determined to some extent by the optimum shape for viewing television; (2) television conduit, amplifier case and bases for antennae were installed at time of construction, with all classrooms equipped for future installation of television; (3) in order to



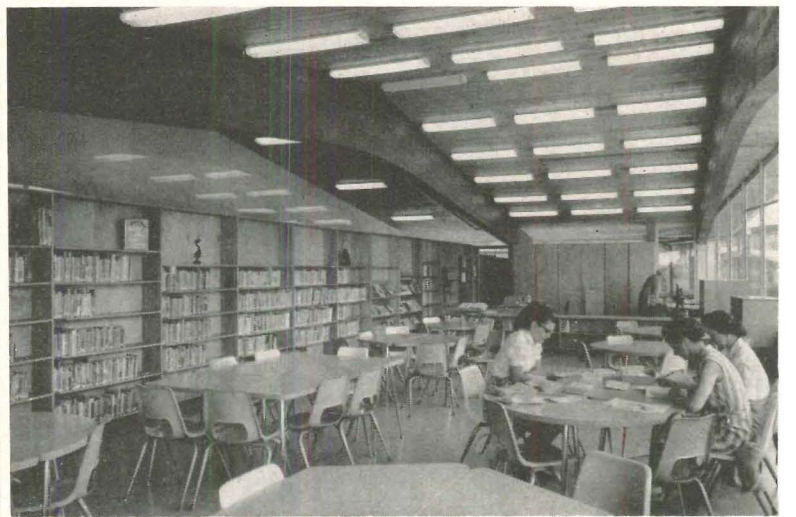
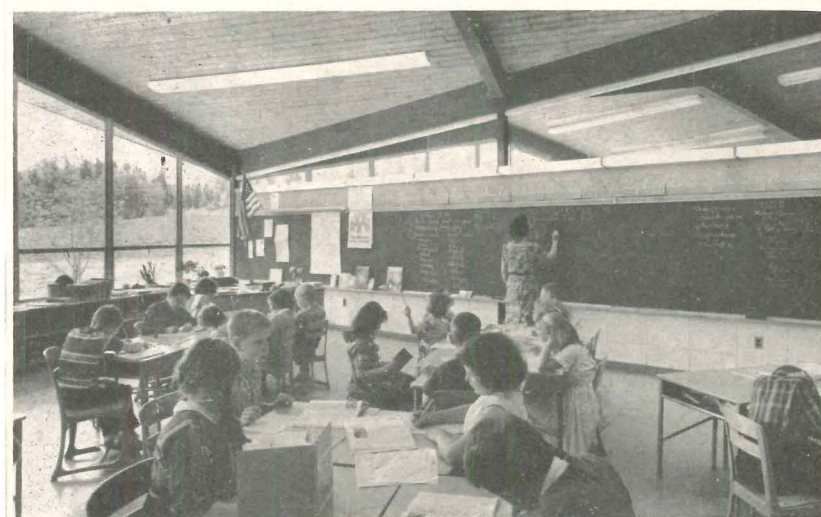


provide the variety of classroom shapes for team teaching, dividing walls are non-load bearing and contain no utility lines, and can be easily replaced by folding partitions. In the meantime, multi-use corridors in the classroom wings, and the large spaces in the central building, are available for a partial program.”

This center building contains all spaces used by the community after school hours, and has the slightly out of the ordinary combination of cafeteria and auditorium stage. A large, skylighted corridor forms an extremely pleasant concourse through this building; the gym, cafeteria and auditorium all gain light from high windows along this corridor.

The school’s principal, Margaret C. Toner, reports that “after having lived in our new building now for approximately six months, we have some first hand information about how this type of architecture lends itself to the program of an elementary school. On the whole, we find the building





George Cserna photos

most functional, enjoyable and challenging. The large entrance corridor provides more than adequate space for many classes of children passing at the same time. The cafeteria on the stage has worked out extremely well, and we think at this point it is very adaptable. Each wing consisting of eight classrooms contains two grades, which separates the age levels very conveniently for individual work and appropriate programs. The 'rotundas' are used for a variety of activities.

"There are always some changes we would make after living within its walls: additional storage space and shelving; additional toilet facilities for children and personnel in the administrative area; some of the glassed-in areas should be made solid to provide better sound proofing; some plan is needed to relieve the few areas affected by low sun during some months of the year. But all in all, we are enjoying this wonderfully new setting." The school is a pleasant one, and should adapt for the future.



*Riverbank Elementary School  
Stamford, Connecticut*

ARCHITECTS:

*Curtis and Davis*

STRUCTURAL ENGINEERS:

*Fraioli, Blum & Yesselman*

MECHANICAL ENGINEERS:

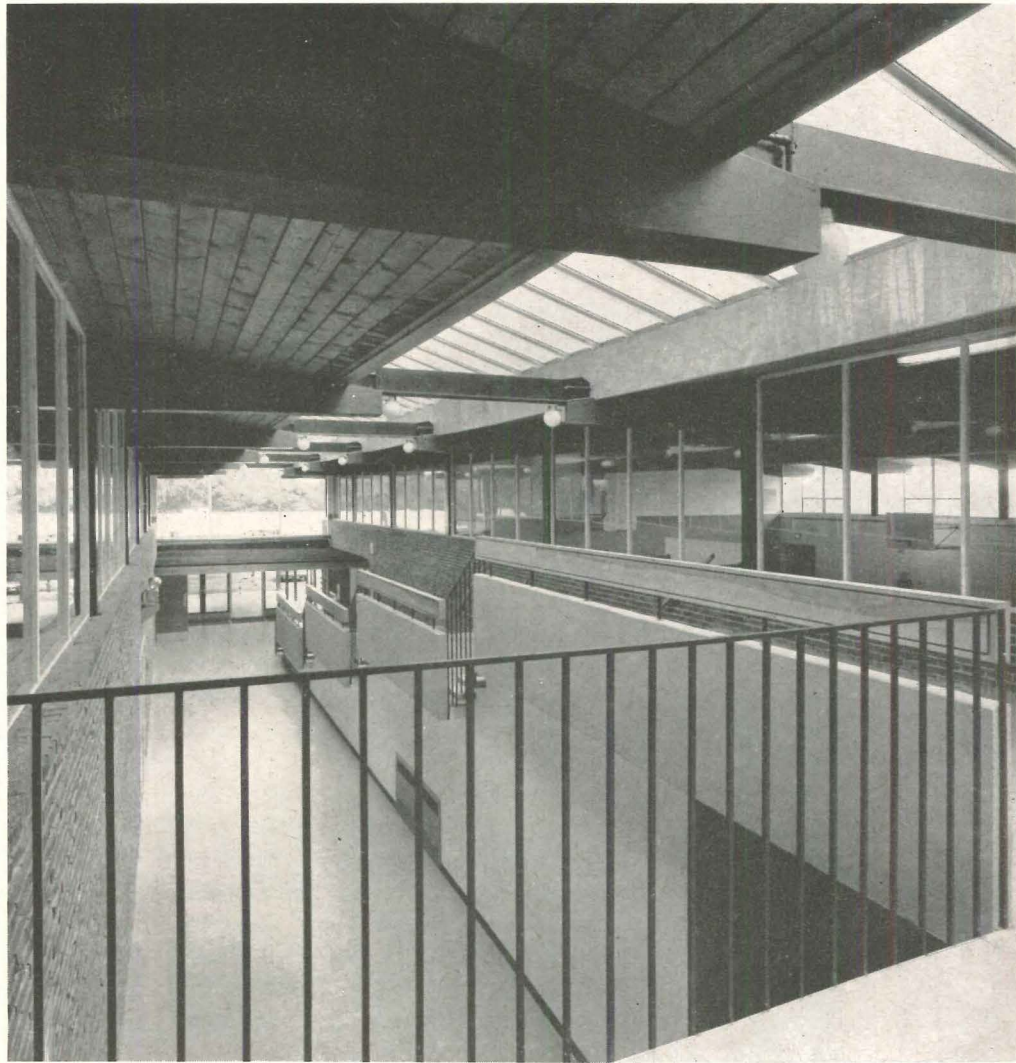
*Tizian Associates*

LANDSCAPE ARCHITECTS:

*Schreiner and Schmitt*

ACOUSTICAL ENGINEERS:

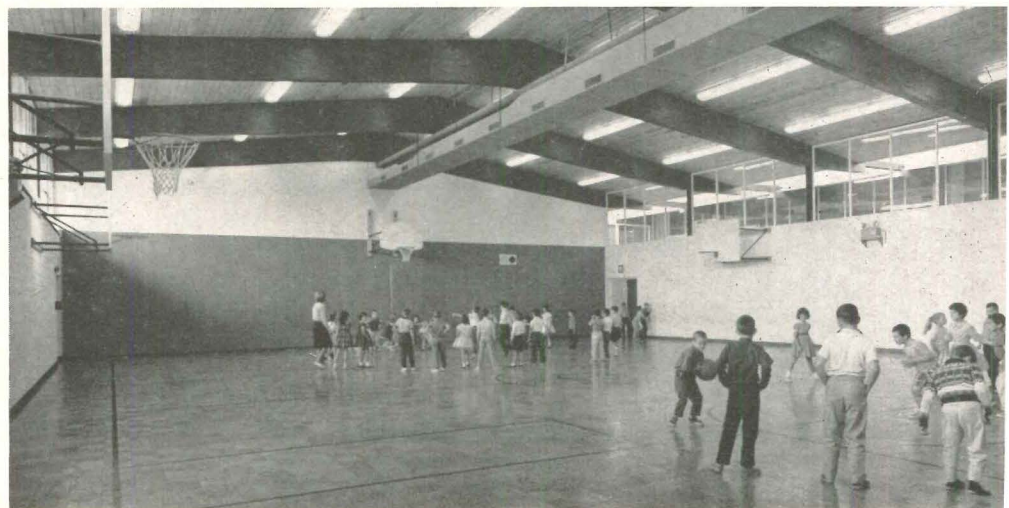
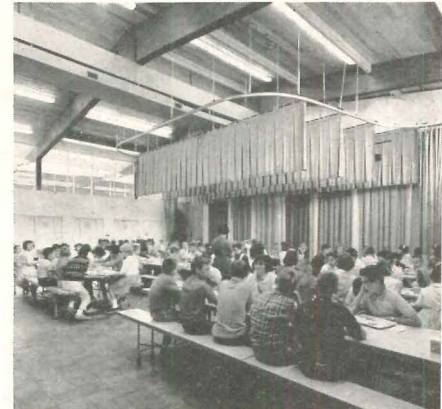
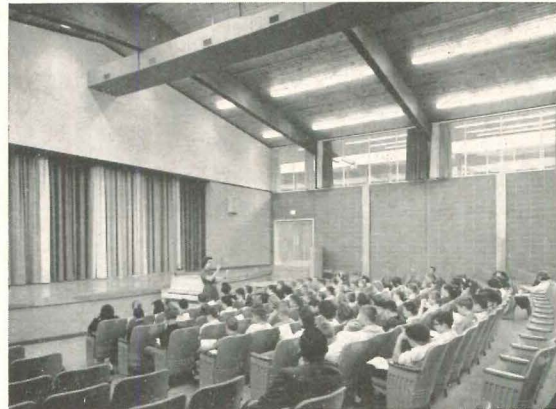
*John A. Donohue*



The central corridor (*top right*) of the main building of the Riverbank School functions as lobby to the auditorium and stage-cafeteria (*center right*), as well as the gymnasium (*bottom right*). The library (*near left*) is on the second level of this building. The remaining photos show a typical classroom, and a central multi-use space in one of the classroom wings.

The structure of the school combines concrete slab foundations, and a frame of steel columns and laminated wood beams. Wood decking is used for roof and exposed ceilings; all lighting is hung just below the deck.

Exterior walls are brick and glass; interior partitions are concrete block and glass. The slab floors are covered with asphalt tile. Considerable skylighting of interior areas is used to reduce daytime lighting costs; enclosed toilets have low plastic ceilings to also borrow from the natural light. The pitched roofs of the classrooms bring the visual ceiling height to 7 feet, yet provide for adequate light and air at the peaks





# RESOURCE CENTERS: EDUCATORS' NEW FOCAL POINT

The redefinition of libraries calls for new spaces and their organization, based on a new Educational Facilities Laboratories' report and an interview with N. L. Engelhardt Jr.

New technological media and new educational concepts and practices have caused a marked acceleration in the evolution of high school libraries. The redefinition of school libraries by educators and architects in terms of these changes has resulted in radical modifications in the location, layout and content of the library as well as its function. Accordingly, the updated library is frequently the core or heart of the building, with direct access to the street for evening use, and in close proximity to classrooms, lecture halls and other teaching spaces. Moreover, the new libraries have more than doubled in size and now house tape recorders, closed circuit television receptors, and many other audio-visual devices and materials.

Foremost among the educational trends is the great interest in helping students formulate individual attacks on problems, to think and study independently, and at their own pace. The library has been of primary importance in translating this concept into a physical reality as it is the major academic area ordinarily planned for individuals. Thus, this article is concerned with the design of secondary school libraries for individual use.

Educational consultant N. L. Engelhardt Jr., partner, Engelhardt, Engelhardt and Leggett, states that the over-all pattern of organization described here is becoming generally accepted by educators. He also points out, however, that the required number of study carrels, large group areas, and other elements of the library, are not known as yet because there has not been enough experience with high school student bodies to make such a determination.

To begin with, the library or resource center is not a catch-all. It is primarily a teaching instrument. This definition means:

1. Students have direct access to many authoritative sources, enabling them to form their own hopefully objective opinions and conclusions.
2. Students are individuals and need a wide variety of facilities to work alone and in small groups. The old study hall, where students are herded into one large room and watched over by one or more teachers, is no longer considered acceptable for most students.
3. The physical environment of the library strives to be comfortable, friendly and inviting as an inducement to study and good conduct.
4. Students are encouraged by teachers to do individual research and study.

Perhaps the easiest way to describe the updated high school library is to take a look at a typical example. Engelhardt has called the library of Byram Hills Senior High School of Armonk, New York, "one of the best from the point of view of organization." This library, serving 800 students, was designed by Warren H. Ashley of West Hartford, Connecticut.

The library is located in the center of the school to encourage use. The entire central section of the school, as opposed to the surrounding classroom and other perimeter areas, is devoted to the individual pupil rather than to groups of students. The entire library area is 8,500 square feet, in contrast to the standard 3,000 square feet of many high school libraries. The general offices, including those of guidance counselors, a large lecture room, and teachers' work rooms, are all physically tied in with the library as shown in the plan. Thus the library is an integral part of the entire school system.

Twenty-four study carrels are located along two sides of the library. Book stacks separate the carrels from the rest of the library so students are undisturbed by library traffic. Attached to the teachers' work rooms are seminar spaces where students may come in to discuss projects they are working on with their teachers. The classroom teacher is thus "part" of the library and can see to it that students are approaching problems correctly.

The central resource center, in effect, is conceived of as a place where students may operate at their own speeds and in their own areas of competence without regard to conformity with the "standard" 25-pupil class size and 45-minute schedule for learning. Another significant breakthrough is the fact that Byram Hills and many other libraries are now providing 20 or more books per pupil, as opposed to the old formula of 10 books per pupil in the library.

It can also be seen that the library is designed for all kinds of purposes and activities. There are rooms for small groups (seminar spaces) and for large-group instruction. There are places where individual students of high ability may seclude themselves for concentration on study and research. Work spaces for teachers are also provided, so that the faculty may also have available all the resources of the library, and where they may find opportunity to work informally with students. In addition, the resource center should provide an informal reading area where students may browse over new materials. And, of course, the library must provide ample work space where the librarian and the staff of



specialists can carry on the organization and development of the center.

As mentioned previously, there are no known norms to follow as to how many spaces of each type should be provided, but Engelhardt suggests that the specific areas in such a resource center include:

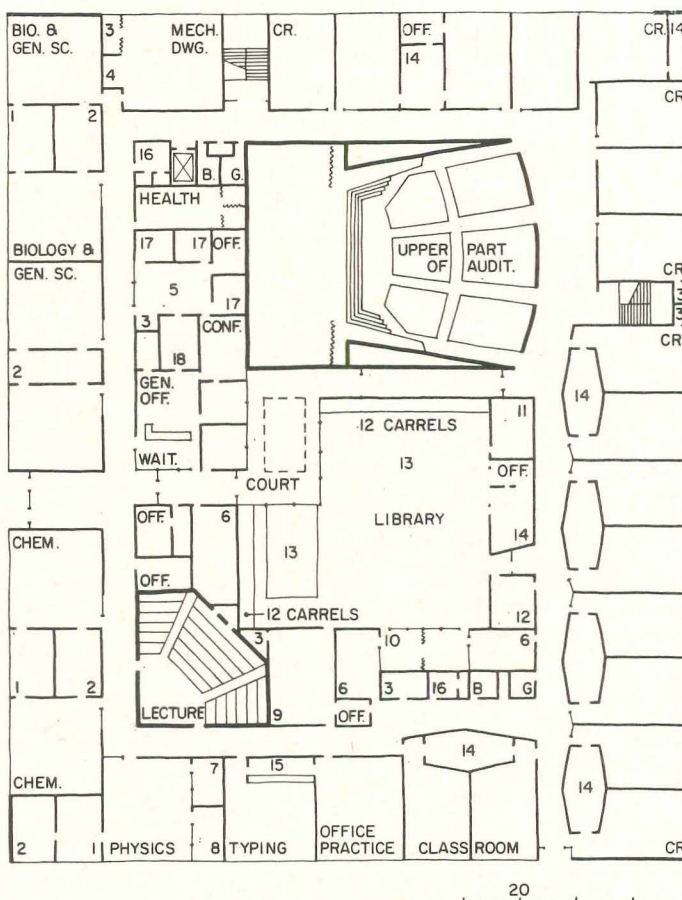
1. Central reading room to seat approximately 5 per cent of the student body.
2. Informal reading room area to seat from 15 to 30 students.
3. Individual study carrels to seat from 3 to 10 per cent of the student body and equipped for programmed instruction. (See Time-Saver Standards, page 233.)
4. Library classroom to seat 30.
5. Developmental reading room equipped with all kinds of devices for improving reading comprehension and speed.
6. Stack space for books 20 or more per student.
7. Librarian's office should be behind reference consultation desk and easily accessible to readers.
8. Magazine and microfilm area.
9. Audio-visual room for storage and repair of audio-visual equipment. All audio-visual equipment should be built on movable carts, eliminating the possible damage caused by rough handling in transporting movie projectors and other machines.
10. A group of teachers' workrooms to serve the various subject matter fields.
11. A series of seminar rooms which are wired for recording and listening and which might well be designed for motion pictures, slide films and television.
12. Typing rooms for student use.
13. Teachers' room for professional materials.
14. Large-group space in which lectures and demonstrations may take place for groups of 100 to 200 students. It is highly desirable to have a preparation room, rear-view projection behind the platform and amphitheater type of seating in this area.

Educational Facilities Laboratories' report entitled "The School Library" by Ralph E. Ellsworth and Hobart D. Wagener, recommends the following arrangements and space requirements for these additional elements of the library:

1. Card catalog of about 100 square feet.
2. Reference collection of about 300 square feet.
3. Reference consultation desk placed close to the reference collection.
4. Circulation desk plus work area requiring 10 by 12 square feet.

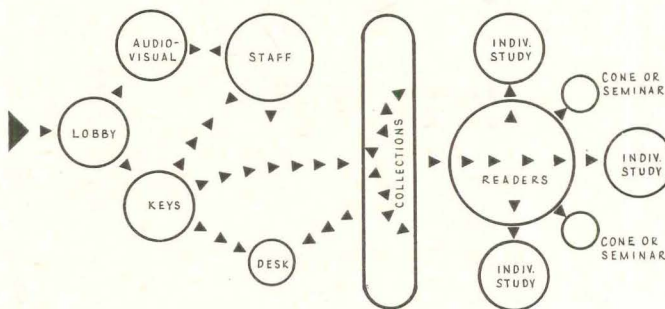
Total reader space according to the E.F.L. report should be apportioned as follows: study carrels—60 per cent; group study rooms that may also serve as rooms for the use of audio-visual equipment—15 per cent; flat top tables—8 per cent; lounge furniture—17 per cent.

The general organization of the library is diagrammed at right. The layout is critical in a library; areas should be zoned according to function.



BYRAM HILLS SENIOR HIGH SCHOOL

- |                            |                         |
|----------------------------|-------------------------|
| 1. Chemistry research      | 10. Seminar             |
| 2. Preparation and storage | 11. Periodical room     |
| 3. Library storage         | 12. Audio-visual room   |
| 4. Printing                | 13. Stacks              |
| 5. Guidance library        | 14. Work room           |
| 6. Teachers' work room     | 15. Business machines   |
| 7. Dark room               | 16. Teachers' rest room |
| 8. Shop                    | 17. Counsel             |
| 9. Developmental reading   | 18. School records      |



LAYOUT AND CIRCULATION

Circulation flow that routes student traffic from entrance to keys to materials to reader spaces, as shown, will assure privacy and proper use of facilities



# LABORATORY TO TEST NEW EDUCATIONAL METHODS

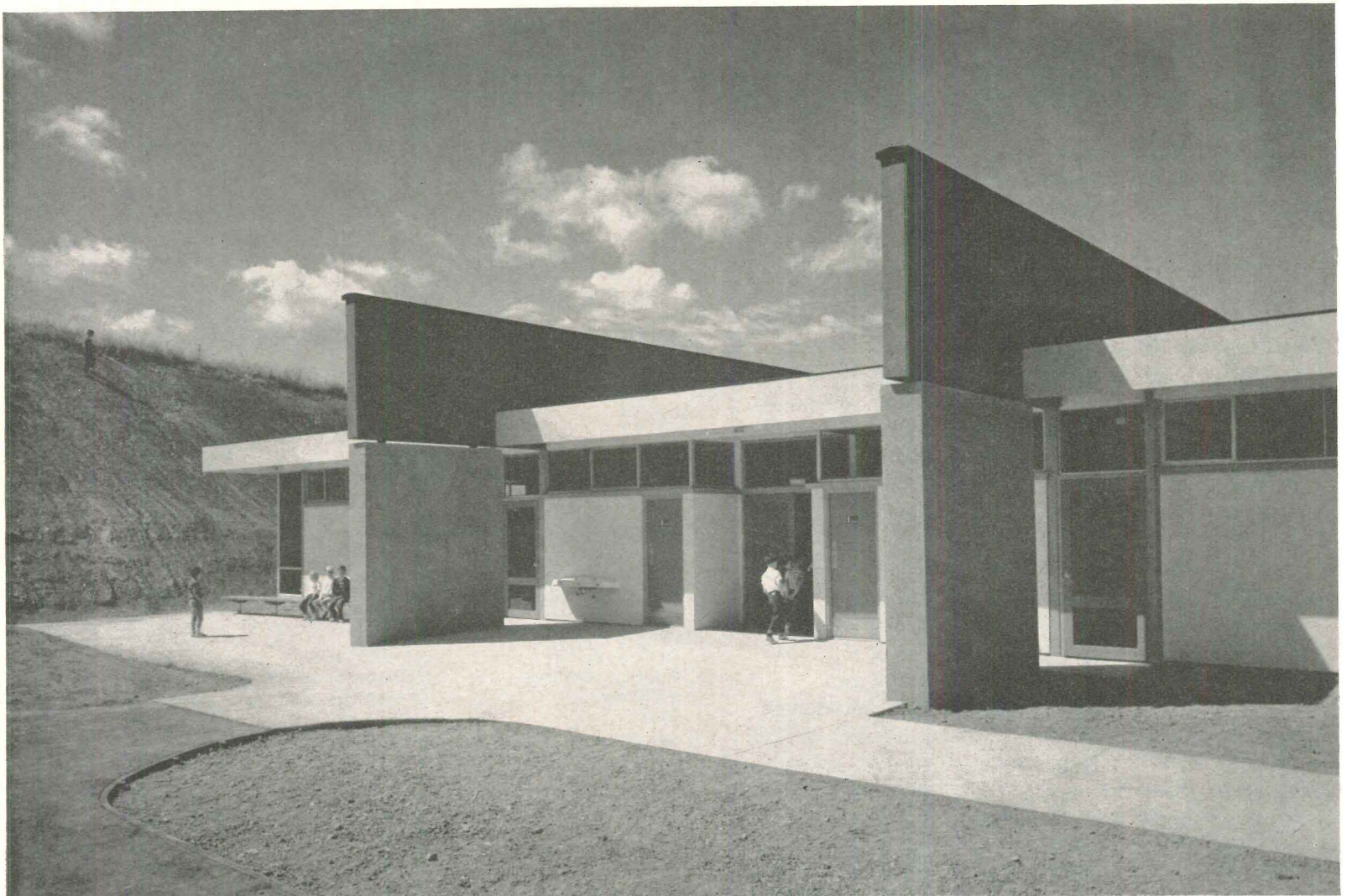
*Camino Pablo School, Moraga, California*

ARCHITECTS: *Marshall, Leefe & Ehrenkrantz; John J. Kilian, Job Captain*

LANDSCAPE ARCHITECTS: *Sasaki, Walker, Lackey Associates*

ENGINEERS: *Gilbert, Forsberg, Diekman, Schmidt (structural);*

*Ara Malayan (electrical); Kasin Guttman & Associates (mechanical)*

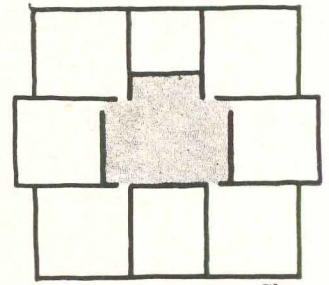
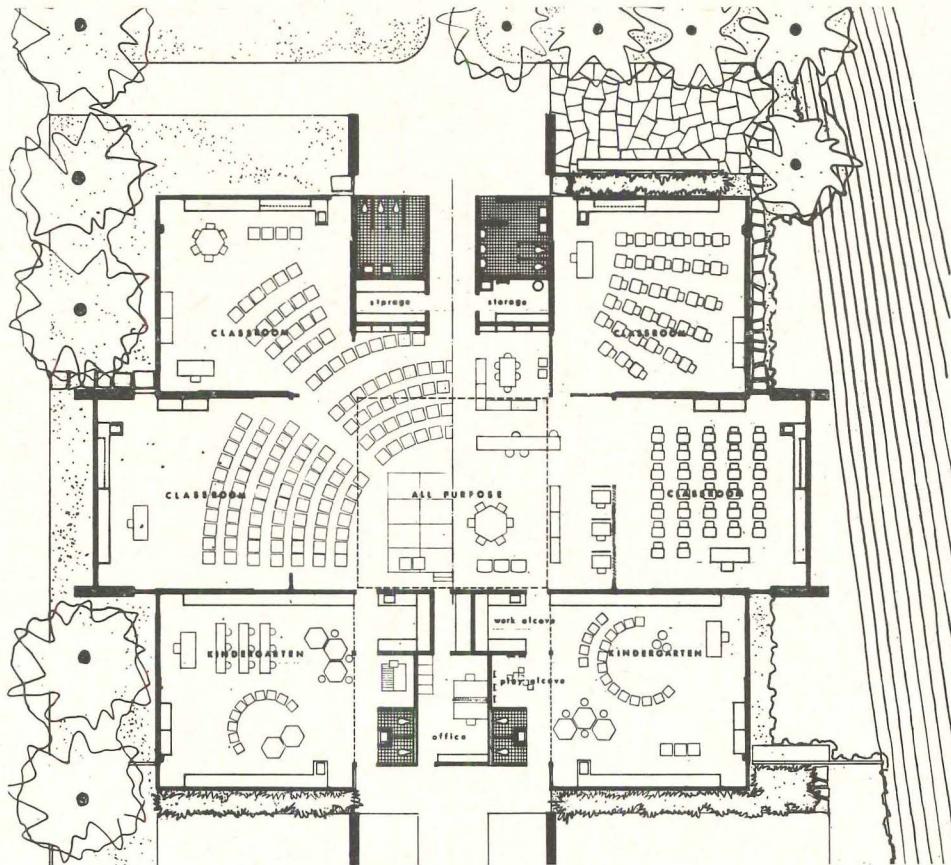


*Roger Sturtevant photos*

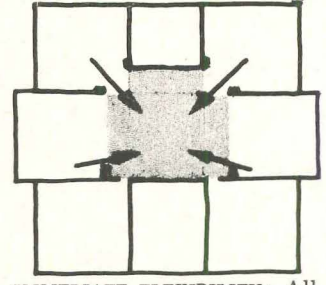
This experimental addition—for kindergarten, first and second grades—was designed for a small but fairly rapidly growing school district near Oakland. The program called for a facility which would serve the present curriculum, function as a laboratory within the community to test the use of new educational methods, and also offer a means of testing various plan arrangements to guide future school construction in the district. Full utilization of space was also a dominant criteria. As can be noted in the diagrams, the school meets these needs.

The focus of the plan is a large central multi-use area which is used for internal circulation, and onto which the six classrooms open. Operable partitions separate four of the classrooms from the center space; two of these partitions are demountable and supported by their own structural frame, so they may be relocated. The plan indicates a few of the instructional and community-use arrangements that can be set up. Each room has a roof-mounted heat pump unit for year-round air-conditioning. Wood box beams on concrete buttresses free the interior for rearrangement.

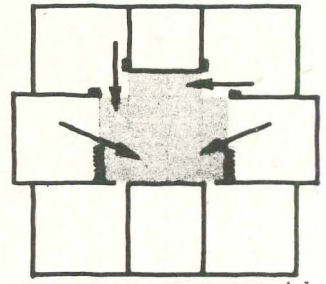




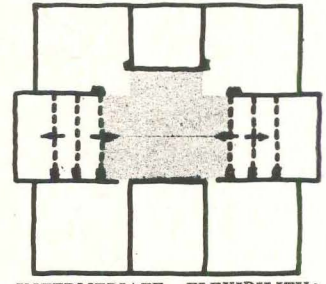
**PRESENT CONDITION:** Classrooms shown closed. All-purpose space used for special activities, audio-visual presentations, lunch activity



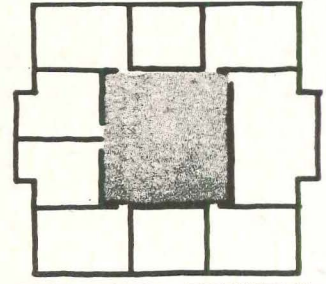
**IMMEDIATE FLEXIBILITY:** All classrooms open to central space for large groups



**IMMEDIATE FLEXIBILITY:** Adjacent rooms use all-purpose room as an (assigned) extension of normal space



**INTERMEDIATE FLEXIBILITY:** Folding partition moves to dashed positions by shifting



**LONG RANGE FLEXIBILITY:** Fixed walls moved to a group of new locations, with no structural alteration



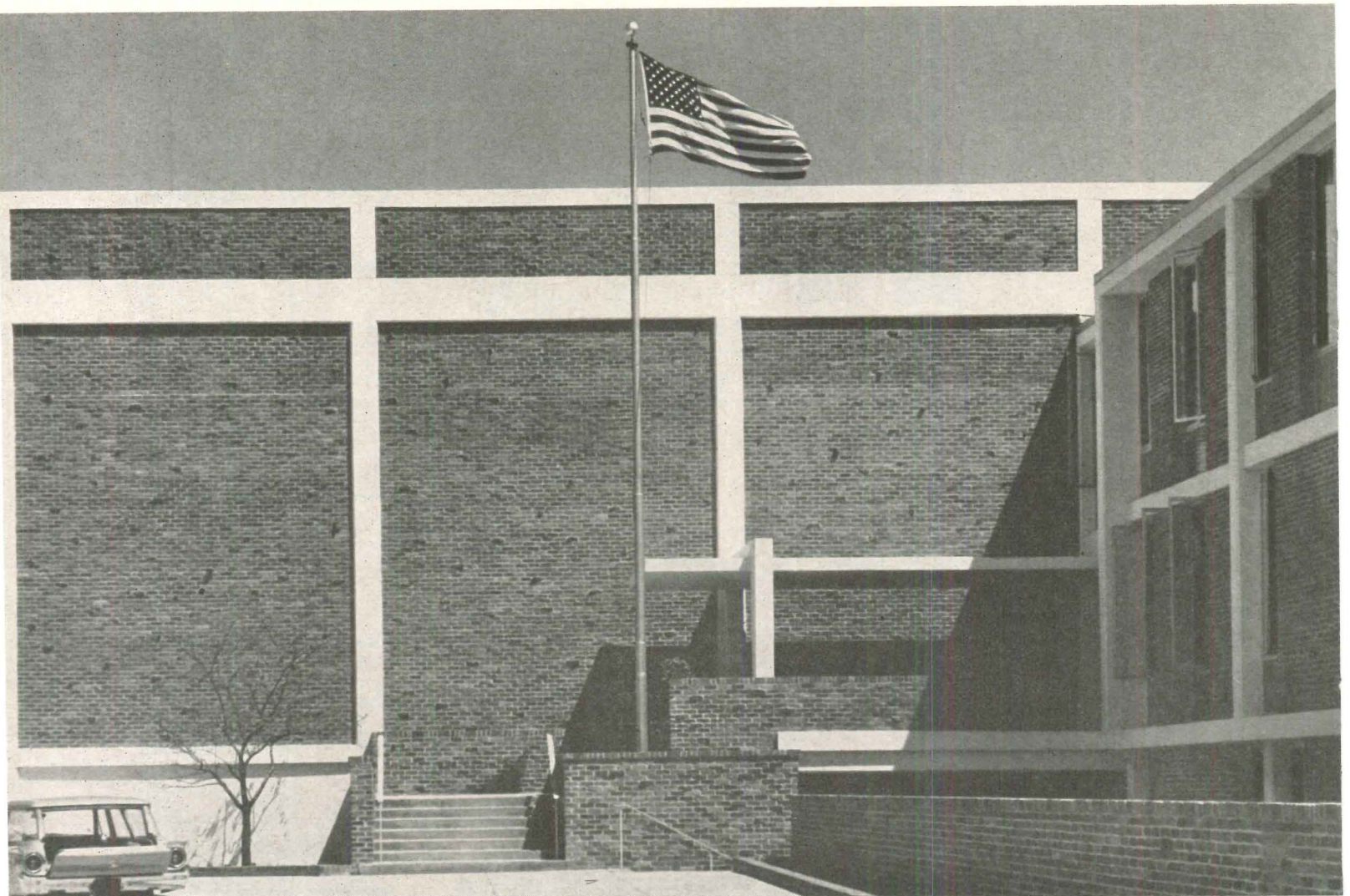


# AN URBAN SCHOOL FOR PROGRESSIVE EDUCATION

*Francis W. Parker School, Chicago, Illinois*

ARCHITECTS: *Holabird & Root*

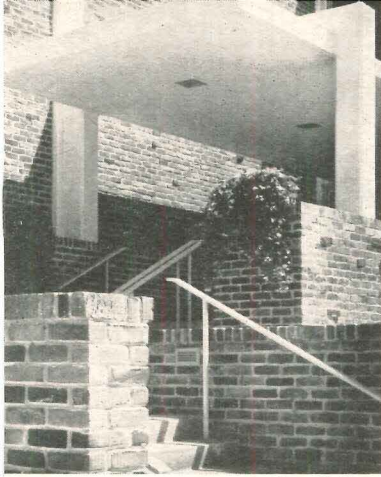
CONTRACTOR: *E.H. Marhoefer Jr., Co, Inc.*



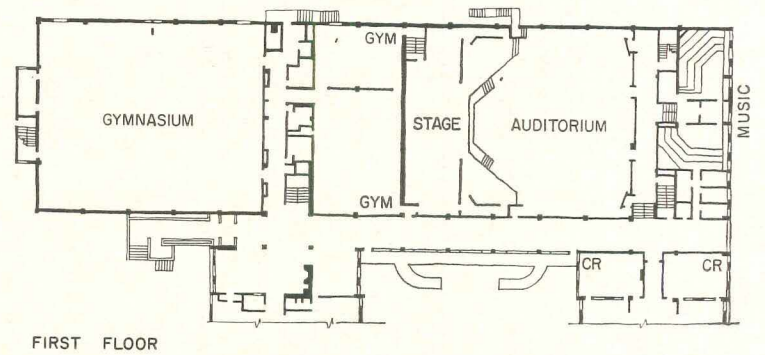
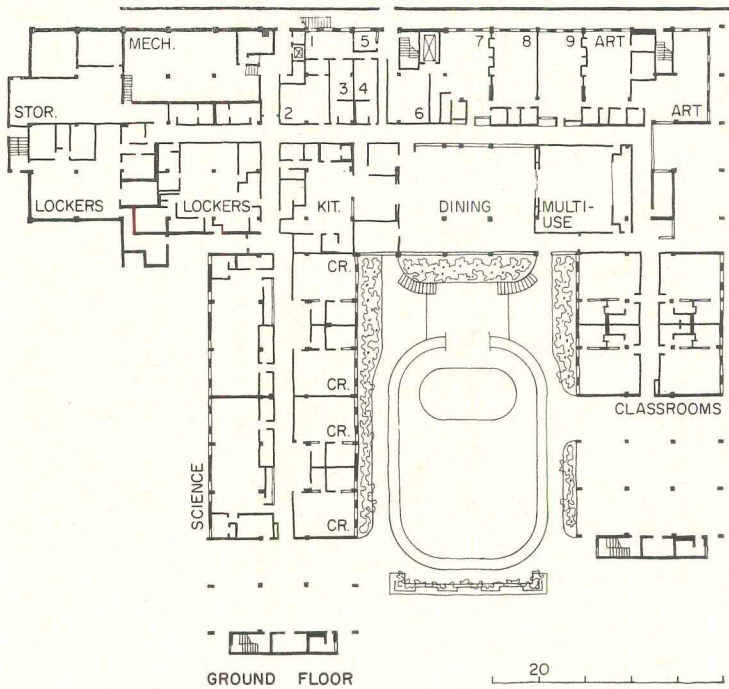
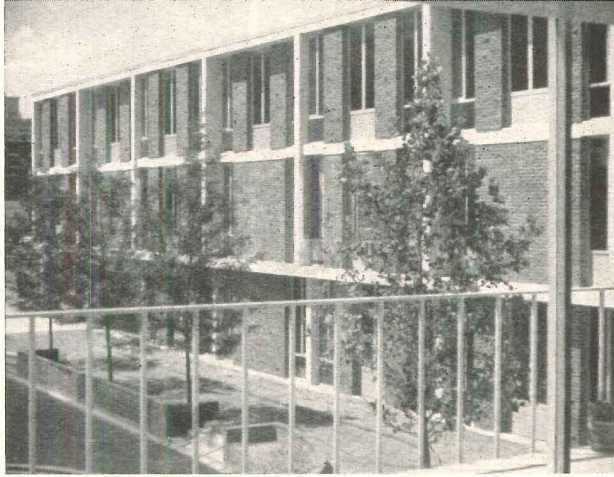
*Roy T. Zaret*

These bright new quarters for private, 62-year-old Francis W. Parker School provide up-to-the-minute facilities for the institution's famous progressive educational program. The school accommodates 570 pupils, both boys and girls, from first grade through high school, and includes courses far beyond the typical high school program—such as anthropology, sociology, advanced math and physics. Classrooms are sized for 20-22 pupils, with one teacher for every 11 students. In addition there is a full-time psychologist and 25 part-time teaching assistants. Teachers specialize in one subject and cover it at various levels. Each teacher has an office for private consultation with parents, students or other teachers. Classrooms are grouped in two three-level wings flanking a central block housing facilities used by all grade levels. The wings enclose a pleasant landscaped court for outdoor activities, and several covered play areas at ground level. The school is extremely well equipped for such subjects as science, theater, the arts and audio-visual instruction. It also serves as a community center for cultural events.

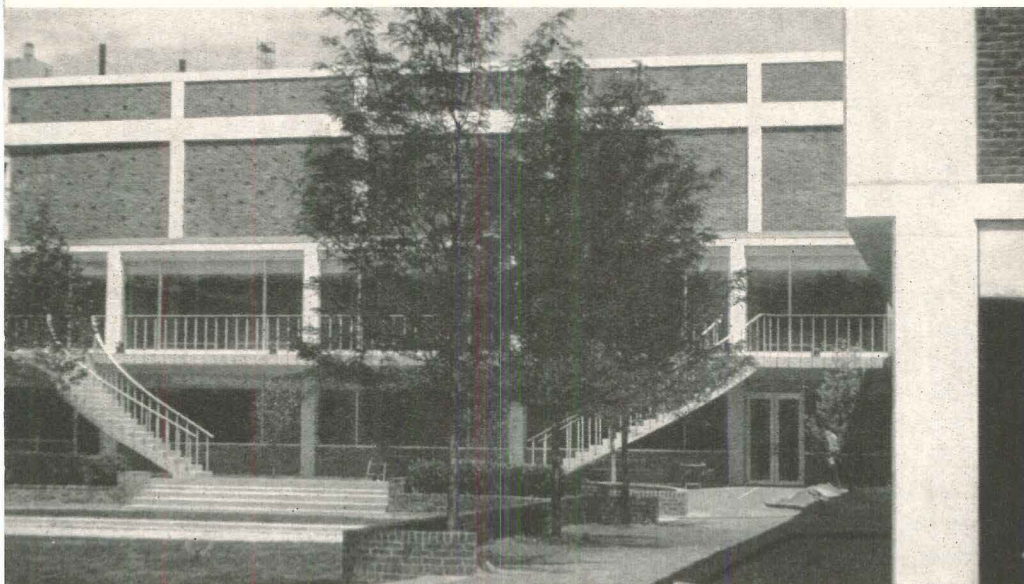




Roy T. Zaret



The school has a reinforced concrete frame; the academic wings have 20-foot bays, and the auditorium and gym have 80-foot, long-span joists. The exterior is face brick; interior walls are concrete block. The roof is cement plank, and ceilings are suspended metal pans. Floor slabs are covered with asphalt tile. Heating is by fan coil window units with circulating hot water, gas-fired boiler. (Numbers on plan show stagecraft areas.)





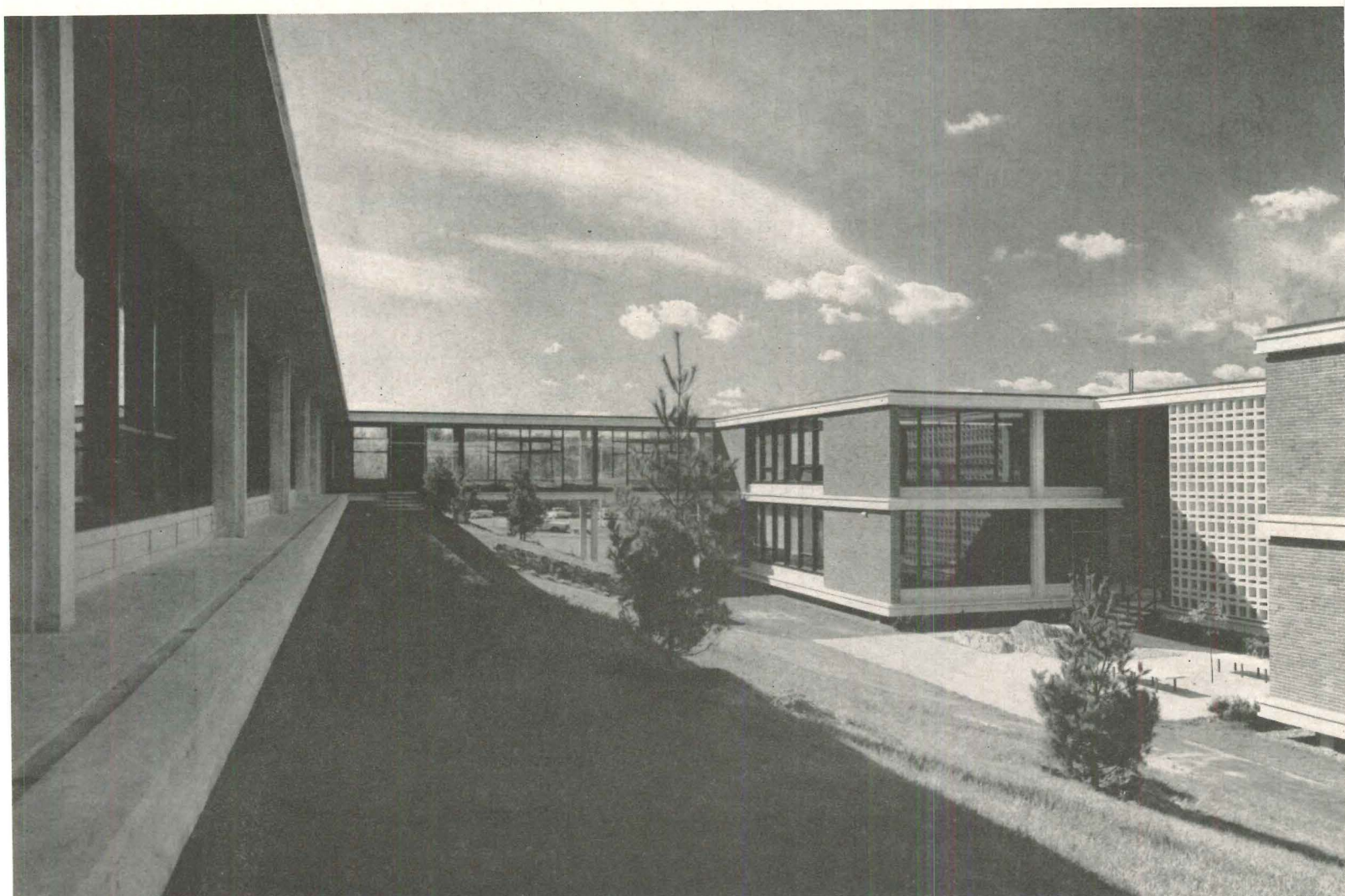
# AN ADAPTABLE CAMPUS PLAN FOR A JUNIOR HIGH

*Derwood A. Newman Junior High School, Needham, Massachusetts*

ARCHITECTS: *The Architects Collaborative, Inc.; Norman Fletcher, Partner in Charge; Herbert Vise, Job Captain*

ENGINEERS: *Souza and True (structural); Buerkel and Company (mechanical); John F. Maguire Jr. (electrical)*

CONTRACTOR: *Park Construction Company*



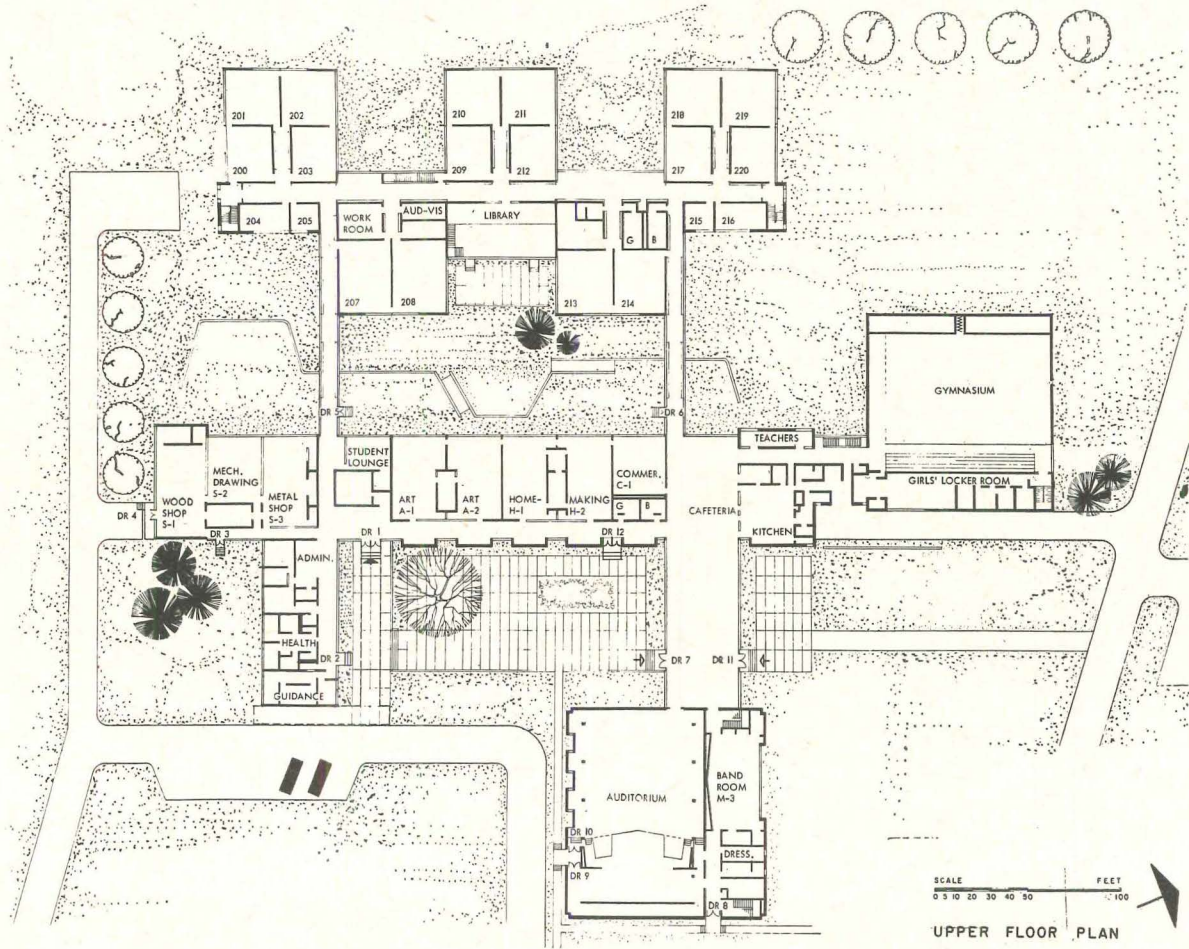
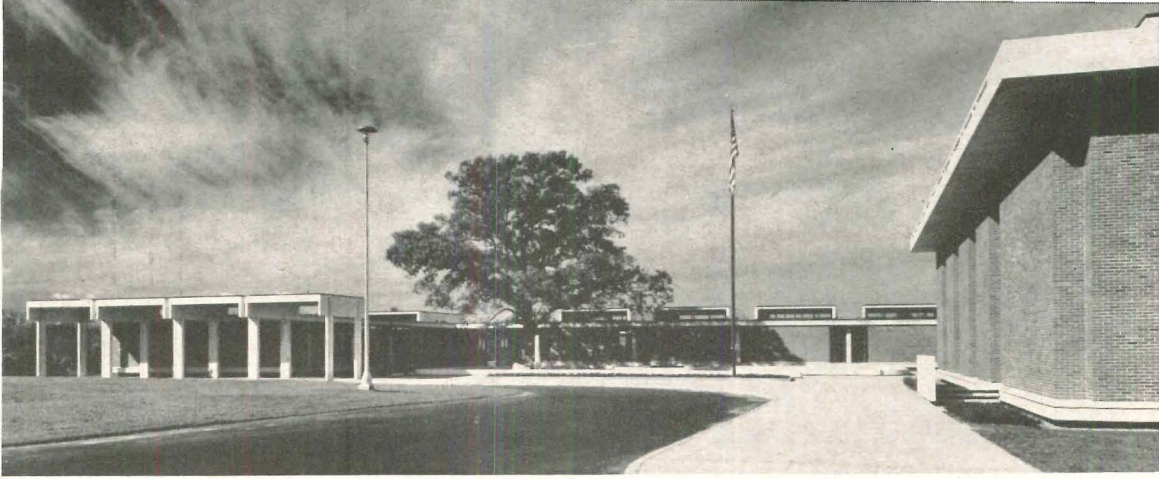
*Louis Reens photos*

This singularly handsome and forward-looking school provides a very convenient campus plan for its present standard curriculum, and is pre-designed for simple conversion to team teaching if desired. Each of its four linked buildings contains features well worth noting.

The main classroom wing is composed of two floors of classroom clusters, with a two-level library in the center. Devoted to general academic instruction, each cluster is structurally and mechanically designed so that it may be partitioned as one to four rooms, and is flanked by small conference and seminar rooms. An audio-visual department and a 28-station language laboratory are also in this wing.

Most of the "special learning" classrooms are in a one-level building located on a rise in the site. An administration wing projects from this unit for easy public access. The gymnasium has stacked locker rooms for boys and girls, and an automatic dividing partition. The fourth building is a performing arts center, with the cafeteria doubling as foyer. The structures of all units are concrete with brick and glass filler panels.







## BUDGET SCHOOL OFFERS PLEASANT ENVIRONMENT

*Avocado Elementary School, Homestead, Florida*

ARCHITECT: *Robert B. Browne*

ASSOCIATE ARCHITECT: *George F. Reed*

STRUCTURAL ENGINEERS: *Walter C. Harry & Associates*

LANDSCAPE CONSULTANT: *Jens Koch*

CONTRACTOR: *Stobbs Bros. Construction Company*



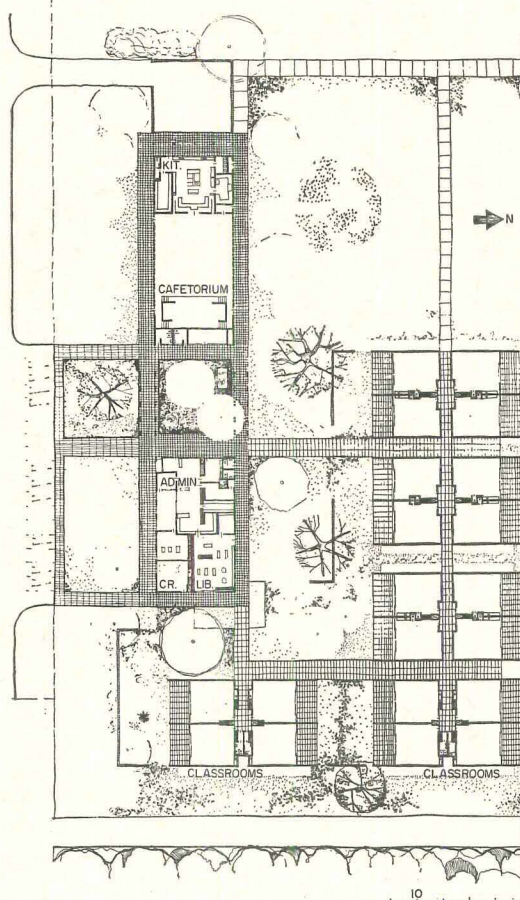
*Joseph W. Molitor photos*

Basic to planning for both now and the future is the fact that a modest budget need not preclude an appropriately pleasant teaching environment. This attractive little school (35,210 square feet at a bid price of \$398,390) is a good example of how structure and benefits of locale can be used to achieve this.

The school houses 600 students, and contains 20 regular classrooms, two special classrooms, cafetorium, library and administrative spaces, according to criteria established by local and state regulations. The warm climate permitted the use of exterior classroom spaces adjoining each interior class, and separated by sliding glass doors. Screens are used to separate the outdoor spaces from circulation and other distractions. Rooms are lighted from above by heat-diffusing skylights.

According to the architects, one of the major economies in construction—and also a major design feature—is the use of precast concrete folded plates covered with fluid-applied roofing. The plates form a roof area of about 60,000 square feet, and rest on prestressed concrete columns.

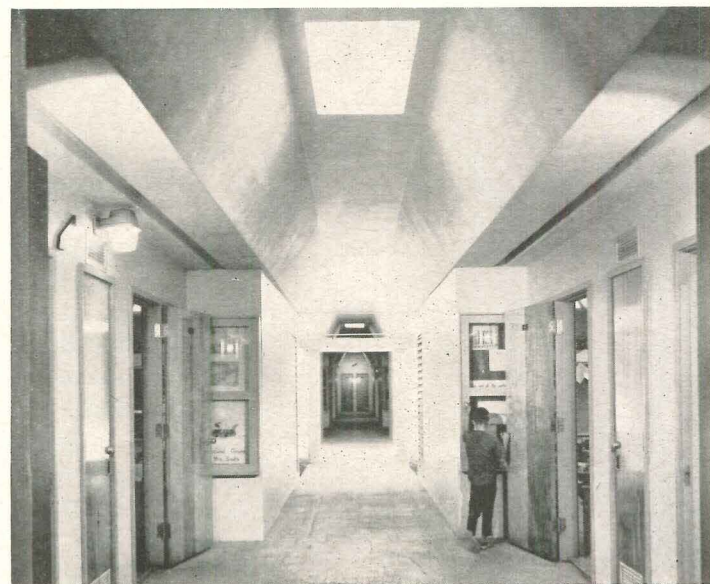
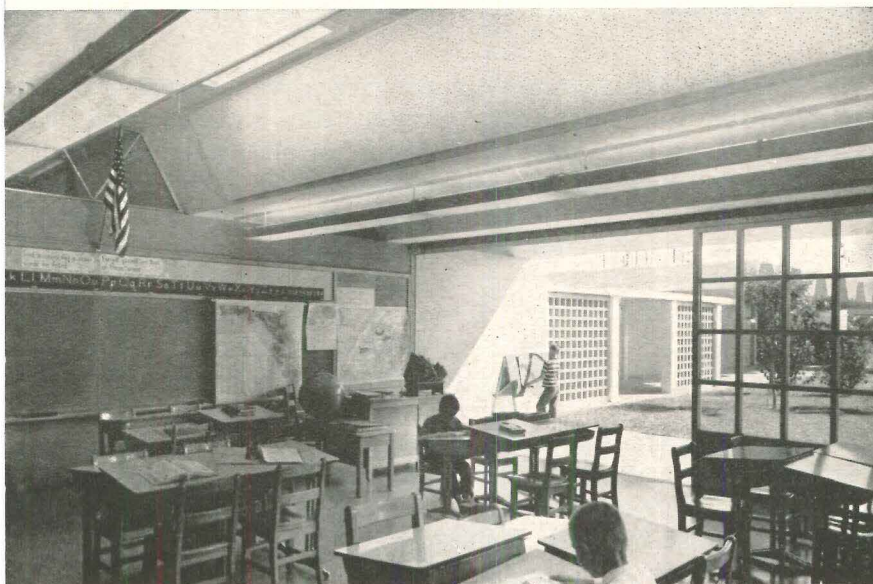




Ninety plates were used to cover the roof of the school. Each measures 9 feet in width, 70 feet in length, and 3 inches in thickness. The columns were anchored to the foundations by a bolted connection, and the folded plates anchored by a welded connection to the columns. A grout space between plates has interconnected dowels from each plate poured to give a continuous rigid connection.

The exterior walls of the school are concrete block, stuccoed and painted. The inside surfaces of the block are plastered and painted. The floor of the cafeteria is terrazzo; all other floors are asphalt tile on concrete slab. All ceilings have acoustical tile panels on the exposed roof slab.

The classrooms are banked into units of two, with a gas-fired warm air heater placed to serve each pair. Metal framed jalousies and sliding units are used for all classroom window walls, and fluorescent strip lights are used throughout for artificial illumination.



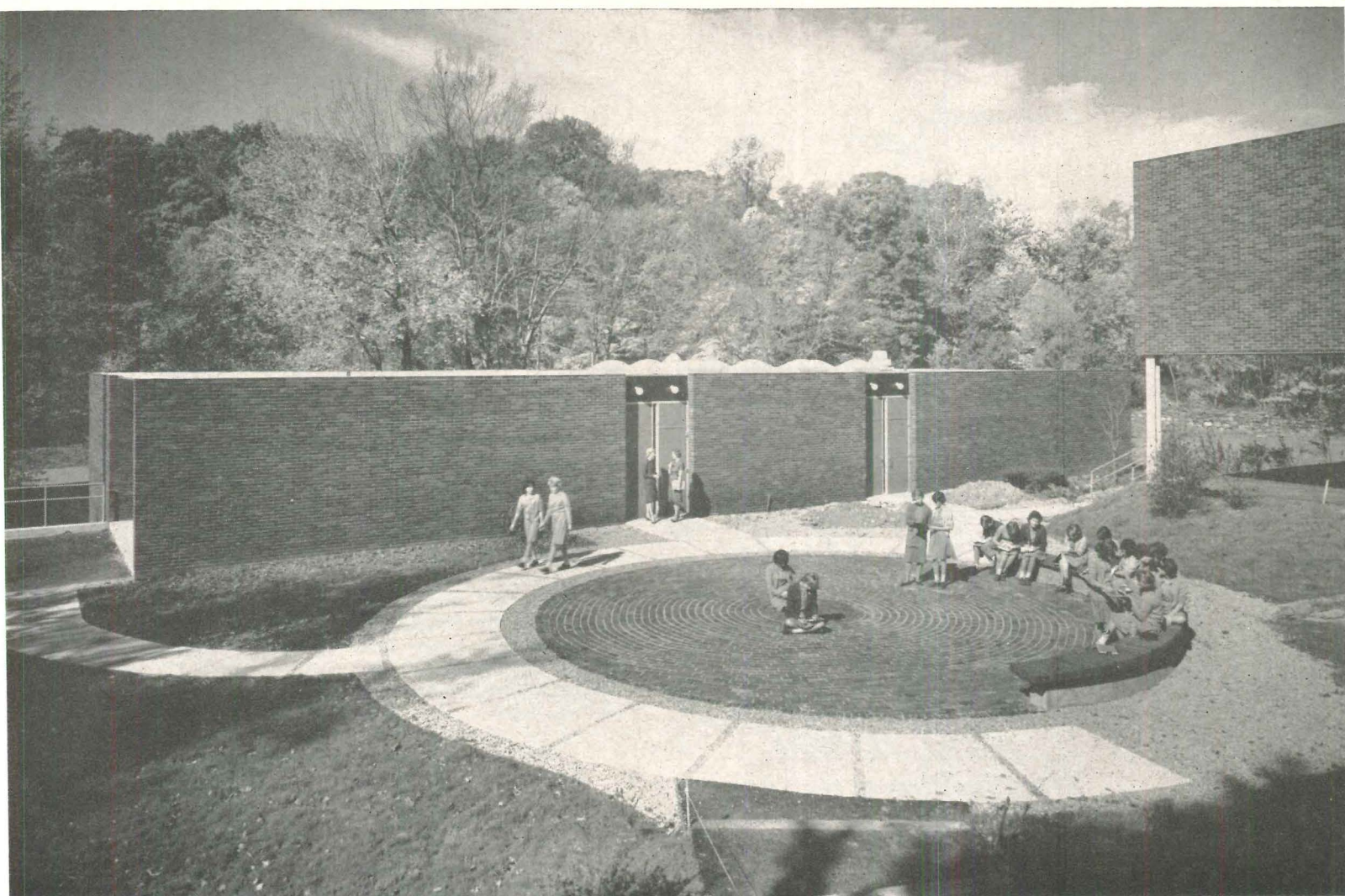


# NURSERY THROUGH HIGH SCHOOL FOR GIRLS

*Greenwich Academy, Greenwich, Connecticut*

ARCHITECTS: *Sherwood, Mills and Smith*

ENGINEERS: *Werner-Jensen & Korst*

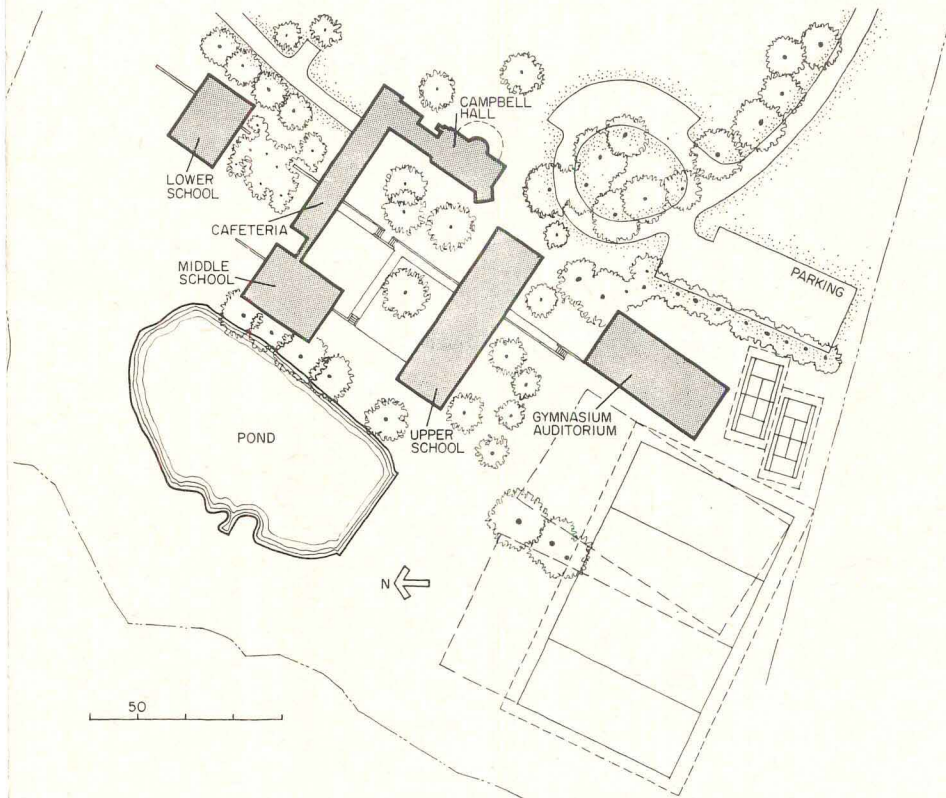
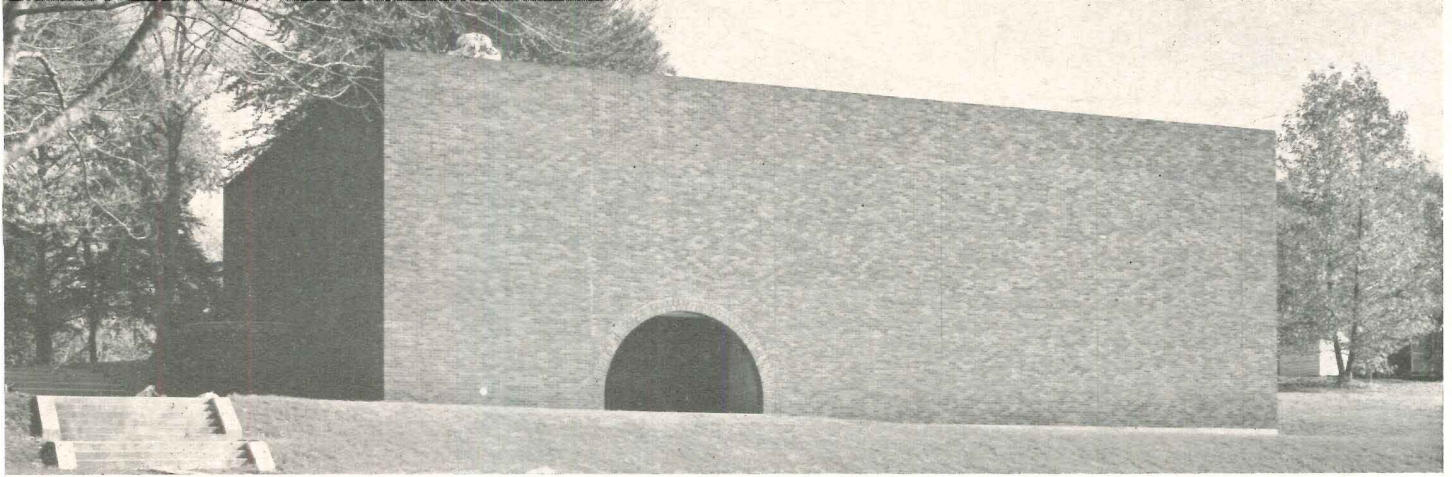


*Ben Schnall photos*

For more than 130 years, this academy has provided private schooling for girls. Having outgrown its older facilities, the architects were engaged to prepare a complete master plan for a new campus for all grades, nursery through high school; the complete school to be built in stages. The academy is located on a large, 24-acre site. Its present enrollment is 375 girls. The middle school (grades five through eight), gymnasium-auditorium and cafeteria, comprising the first stage of construction, are now complete. Still to come are new lower school and upper school buildings, and an extension of the gymnasium. All buildings have been designed to harmonize with—and complement—the dark brick and the plan of the existing main academic hall.

The master plan of the academy has been oriented to a pond on the site and to the existing building. All of the buildings are related to two-level courtyards which were designed to function as outdoor teaching circles, as well as rest and conversation areas. Landscape design, performed by the architects, has preserved the many large trees on the campus.



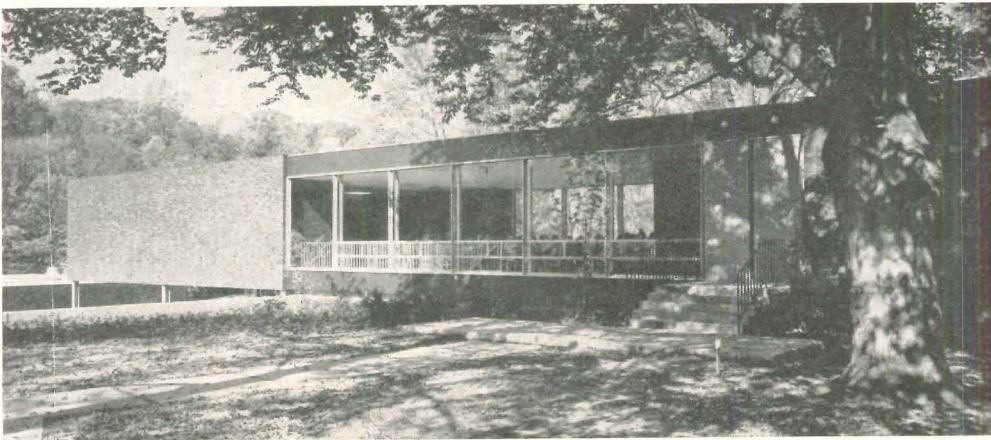


The photograph (*left*) shows the middle school (grades five to eight) with the cafeteria at the right. In the foreground is a typical paved courtyard area, which may be used as a teaching circle. Underneath the cafeteria building is a covered play area for nursery and lower school students. The gymnasium-auditorium (*above*) will eventually be enlarged to about twice its present size. The middle school classroom facade overlooking the pond is shown (*below*).

Classroom buildings and cafeteria structures are steel frame with bar joist floors and roofs. The structure of the gymnasium-auditorium is steel frame with concrete beams. Interior partitions are concrete block with vinyl-covered gypsum board surfaces that are used as tackboards. Ceilings are acoustical tile adhered to gypsum board. Flooring is polymerized asphalt tile. Exterior walls are brick with steel windows and aluminum sliding doors. Buildings are heated with a combination oil- and gas-fired central steam system with boilers located in one end of the cafeteria.

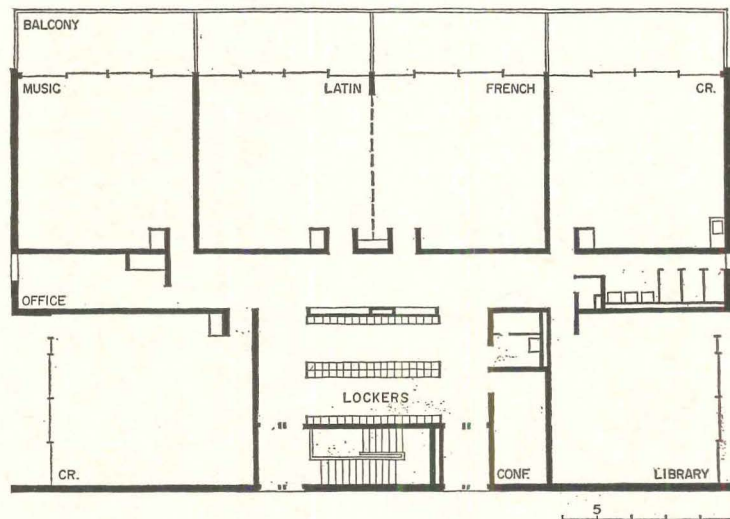






The cafeteria building (*above*) spans a slope in the site to form a link with the middle school shown in plan (*right*) and photo (*below*). Fullest possible use was made of the park-like setting of the school. Large and complete playing fields are provided at one end of the site, and the grades of the site allowed a covered play area to be incorporated into the cafeteria building for the use of the nursery and lower school children.

The cafeteria also serves as an activities area at present. Provisions have been made for future expansion, if required; all new buildings contain electrical, plumbing, heating and ventilating designed to take care of future as well as present needs





# Architectural Engineering

## Selected Papers of Hardy Cross

"America's greatest teacher of structural engineering" are the words used by Professor Nathan M. Newmark to describe the late Hardy Cross. In the introduction to a new book of selected papers of Hardy Cross, Professor Newmark, who is head of the department of civil engineering at the University of Illinois, notes that "... in the memory of many of his students he had no peer. In the classroom he was an actor and artist of consummate skill. . . . He might stage an impatient exit after 10 minutes in class because no one had attempted a certain problem, and then ask a few minutes later in his office . . . 'How did it go over' ?"

As a former student of Hardy Cross, who is probably best known for his moment distribution method, Professor Newmark found it necessary to avoid being carried away by some of Cross' generalizations used for emphasis, and perhaps over-emphasis, but Cross always kept the limitations in mind. Newmark says he used to tease Cross about his anthropomorphic concepts of structures ("You must learn to think as the structure thinks"). "But," Newmark points out, "he came closer to teaching judgment to his students than any other teacher I have ever known. And some of this comes through in his papers."

In one of the included papers on "Limitations and Applications of Structural Analysis" published in *Engineering News-Record* in 1935, Hardy Cross' words have a familiar ring: "There are many cases in which standard structural forms fail to satisfy functional and esthetic requirements . . . In some cases the rise of new structural types has produced a group of protagonists who find in them all of the virtues and none of the faults of more standard forms. It is always to be remembered that a special advantage enjoyed by a new type of construction is the lack of restricting precedent; age-old experience fails to warn, and we dare cut the margin of safety to a point which later experience may indicate to be injudicious. There is no argument against the use of the new type; we want new types, new solutions . . . But it is clearly important that we correlate our experience with standard forms to the theory to be used in designing the new type."

"Arches, Continuous Frames and Conduits," the selected papers of Hardy Cross, has been published by the University of Illinois Press, Urbana (\$5.00).

## Solar Gain Through Glass

A mathematical analysis for the total heat gain through a double glass barrier with inside shading of either Venetian blinds or draperies, published in the August issue of the *ASHRAE Journal* (American Society of Heating, Refrigeration and Air Conditioning Engineers) gives a convenient, quick method for determining this heat load factor. While considerable experimental and analytical analysis has been done on solar heat gain through single glass with inside shading, a method has not been available for double glazing.

## On Toxicity of Burning Plastics

The products given off by burning plastics materials may present a hazard to life, but this hazard is considered secondary to the presence of carbon monoxide and lack of oxygen in the atmosphere, the Underwriters' Laboratories, Inc. reported in its latest research bulletin. The findings of several investigators reviewed in bulletin No. 53 show that there is no clear distinction between the toxicity of smoke from burning plastics materials and from wooden or other cellulosic materials. The bulletin is a survey of available information on the comparative life hazards resulting from the inhalation of the combustion and thermal decomposition products of polystyrene, ethyl cellulose, saran, nylon, pvc resin, rayon, wool, silk, wood and paper under fire conditions. The survey was sponsored by the Plastics Group of the Manufacturing Chemists' Association.

## This Month's AE Section

*PRECAST FRAMING GROWS TALLER: THREE EXAMPLES*, page 224. *SOUND ISOLATION BETWEEN TEACHING SPACES*, page 229. *TIME-SAVER STANDARDS: Individual Study Carrels*, page 233. *BUILDING COMPONENTS: A New Plastics Coating Process for Metals*, page 239. *Products*, page 241. *Literature*, page 242.



# PRECAST FRAMING GROWS TALLER: THREE EXAMPLES

*Technical Tower, Boulder, Colorado*

ARCHITECT: *Hobart D. Wagener, A.I.A.*

STRUCTURAL ENGINEERS: *Ketchum & Konkel*

Since the tenant of this building, Ball Brothers Research Corporation, specializes in space exploration, electronics and materials research, the architect felt that an exposed precast concrete structure of advanced design would appropriately mirror these technological activities.

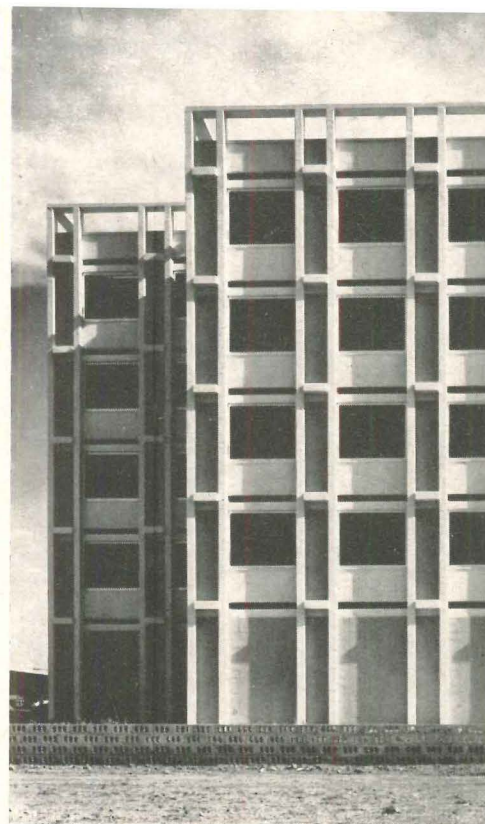
A multistory building was chosen because it saved land, provided more daylight for scientists' offices, provided good identification for the company, gave greater access to the striking mountain scenery of Boulder and permitted fast construction.

The structural system consists of a one-way, composite precast-prestressed and cast-in-place floor slab carried on composite beams and girders to precast "ladder" columns, founded on spread footings which have sockets to receive the columns.

The "ladder" columns were constructed and erected in one piece at the exterior and two floors at a time

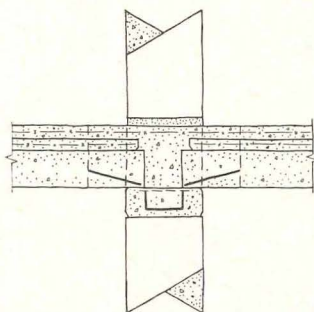
at interior locations. Precast-prestressed girders 8 in. deep and 24 in. wide, and beam soffits 6 in. deep and 16 in. wide were then erected and shored at midspan. Next precast floor planks 5 ft 8 in. by 9 ft by 2½ in. thick were laid over the girders. Finally, the upper portions of beams and girders and top of the floor slab were poured in place.

The structure was designed for continuity in both directions. Positive bending moments in the beams and girders are carried by prestressing strands; negative moments are taken by mild steel reinforcing in the cast-in-place portions. Horizontal shear is resisted by stirrups in the beam and girder soffits extending into the cast-in-place sections. While there is no mechanical anchorage between the precast and poured portions of the floor slabs, welded wire fabric provides negative moment restraint and control of cracking.

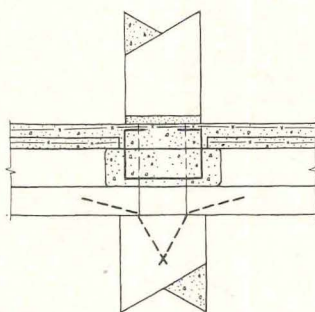


*Above and right:* Exposed precast "ladder" columns, projecting girders and precast spandrel panels, plus an infilling of concrete block, establish the architectural expression of this five-story building to house space and electronics experts.

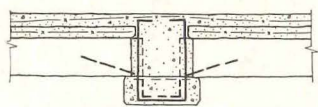
*Below:* The skeletal components stand out against mountain scenery: exterior "ladder" columns, girders and beam soffits (stirrups projecting) and interior square columns. After precast floor planks are laid, cast-in-place concrete finishes off beams, girders and floor slab system (see details)



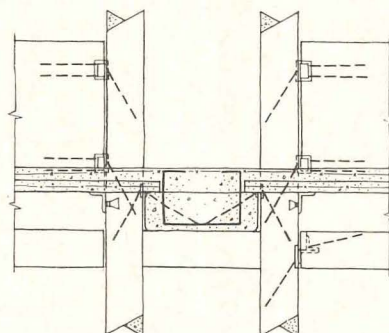
Beam and girder connection  
(at interior columns)



Girder to interior column connection

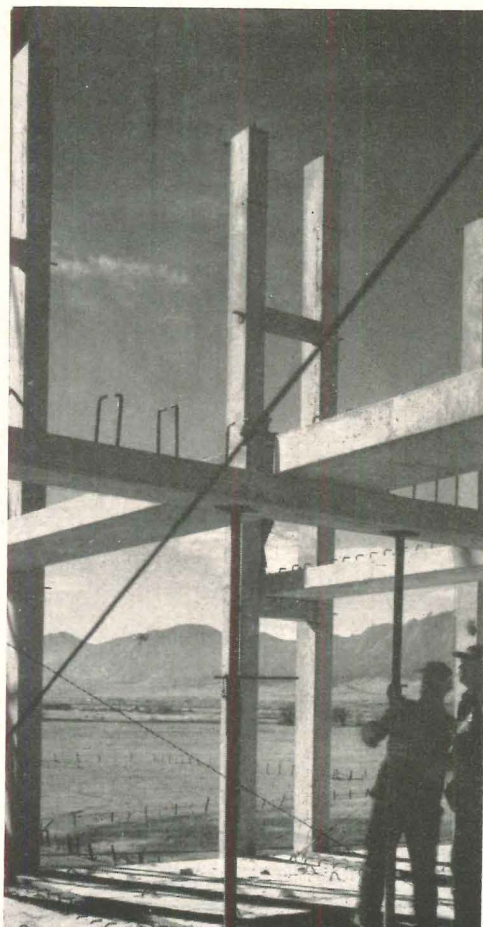


Beam to girder connection  
(between columns)

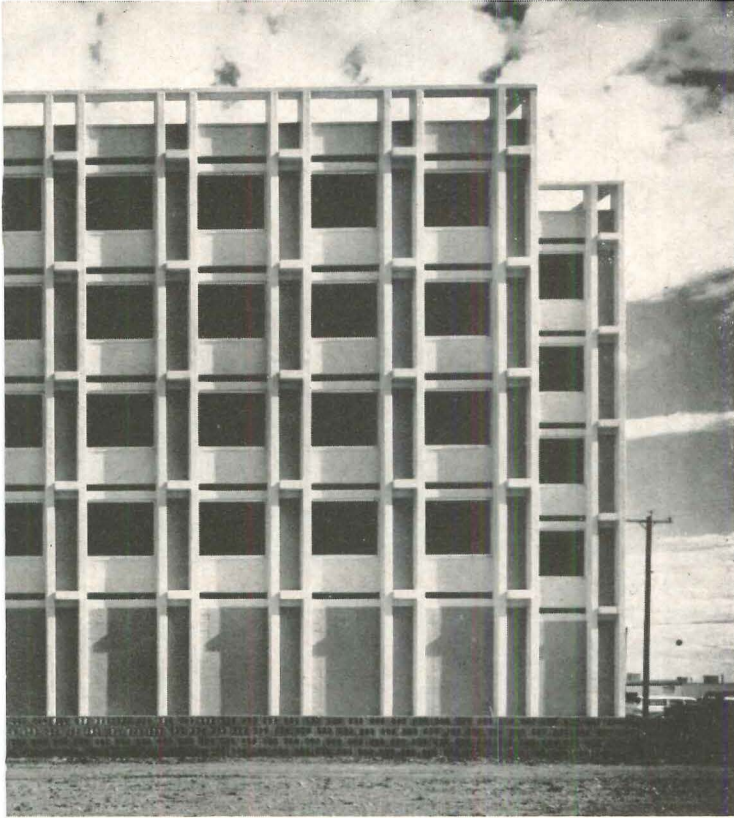


Girder to "ladder" column connection

Cast-in-place concrete ties the whole structure together for continuity



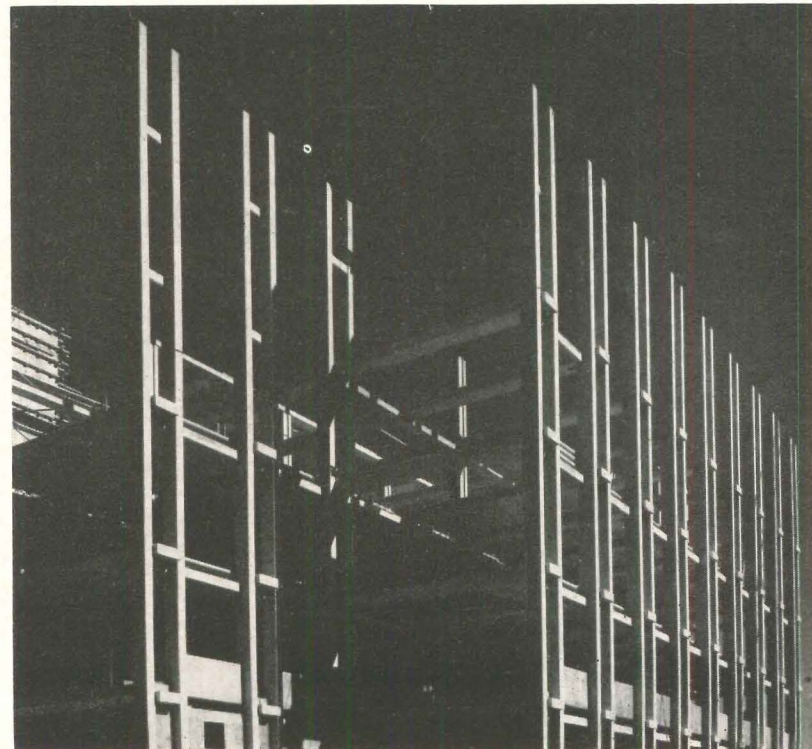




*James H. Roberts photos*



*Above: Crane hoisting precast floor plank to an upper story. Some of the precast spandrels are installed. Space above the spandrels is clear glass; slot below is of tinted glass, which helps give a lighter feeling to the structure inside and out. Below: Several floor planks have been laid on beams*





# Precast Framing Grows Taller

## Nine-Story Office Building

University of California at Davis

ARCHITECTS: Gardner A. Dailey, F.A.I.A., and Associates

STRUCTURAL CONSULTANT: T. Y. Lin and Associates International

The most noteworthy structural feature of this prefabricated concrete building is the nine-story height of its precast-prestressed columns, a record height for the United States.

All columns, each precast in one piece, are exterior with precast-prestressed floor channels spanning 36 ft between them. This gives a 36- by 127-ft area of open space on each floor.

The two-story-high wall panels, spanning between columns, are pre-tensioned to withstand handling stresses and also to minimize possibility of cracking. Since the wall panels are two stories high, the floor channels butt against the wall panels on one floor and project over them at the next.

A 3-in., cast-in-place structural topping over the channel slabs provides a horizontal diaphragm to transmit earthquake and wind loads to the cast-in-place stair and elevator

towers at the ends of the building.

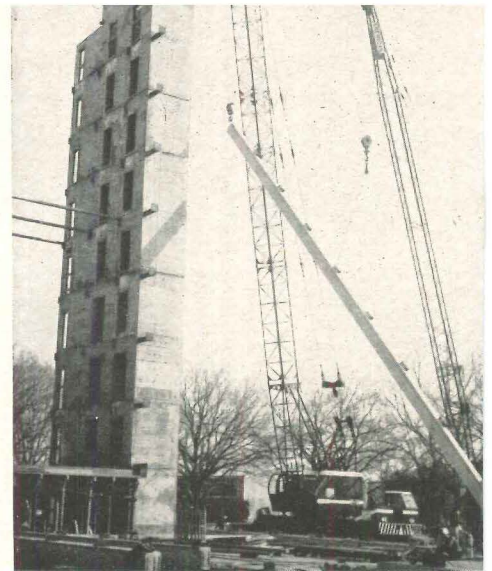
Support for ends of the floor channels is provided by tee-shaped seats of steel plate cast into the columns.

Columns are tied to the structural floor system by dowels which pass through the tee seat and extend into the cast-in-place topping. Where required, the doweled connections are supplemented by the welding of metal clips cast into the precast units.

Exposed aggregate for the wall panels is of a warm gray granite from the Sierra foothills. The column members use a light gray cement which will be stained with a warm gray waterproofing compound.

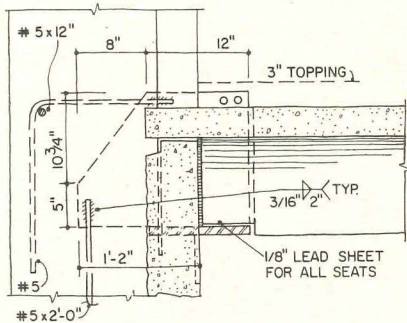
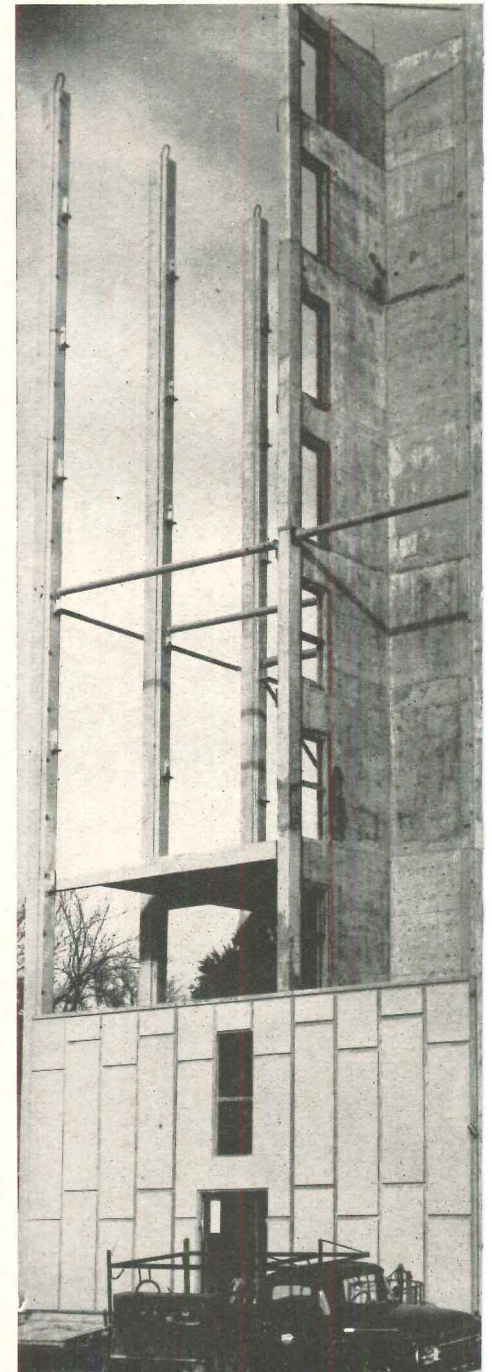
The underside of the floor channels will be left exposed except in the corridors where a suspended ceiling will be hung to cover utilities.

Panel-column joints and panel-slab joints are sealed with a drypack grout followed by a bead of polysulfide mastic.

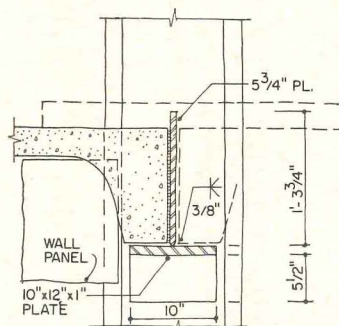


Cranes hoist 86-ft-long precast column; it will be braced against elevator tower at left

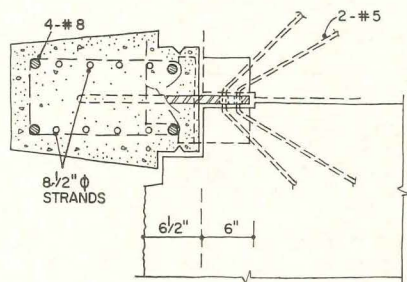
Basalt Rock Co., Inc.



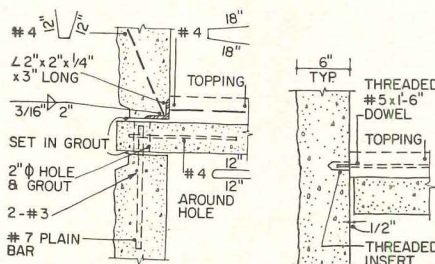
Section: Channel-column connection



Section: Channel seat

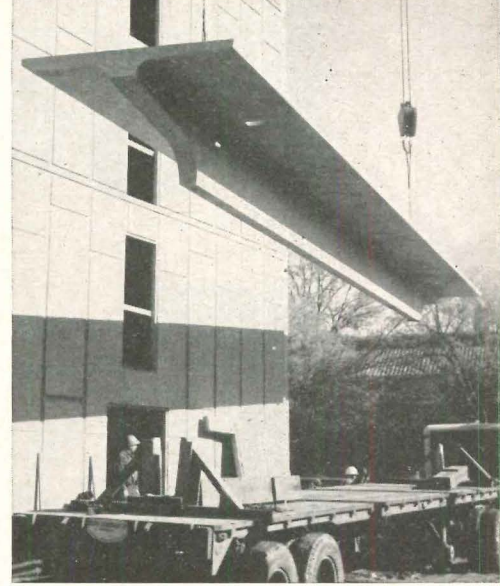
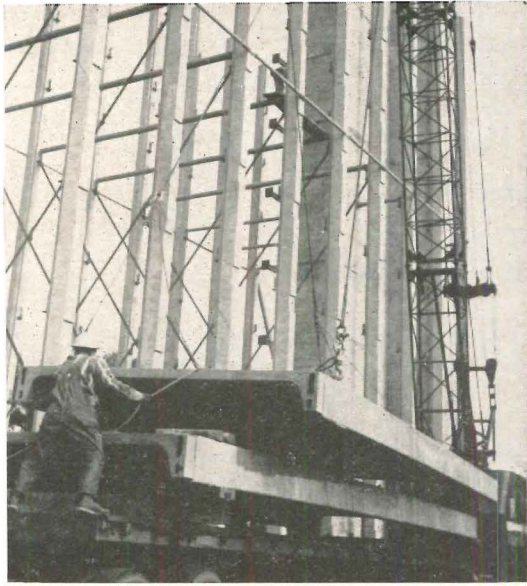


Plan: Channel-column connection



Wall-floor channel connections

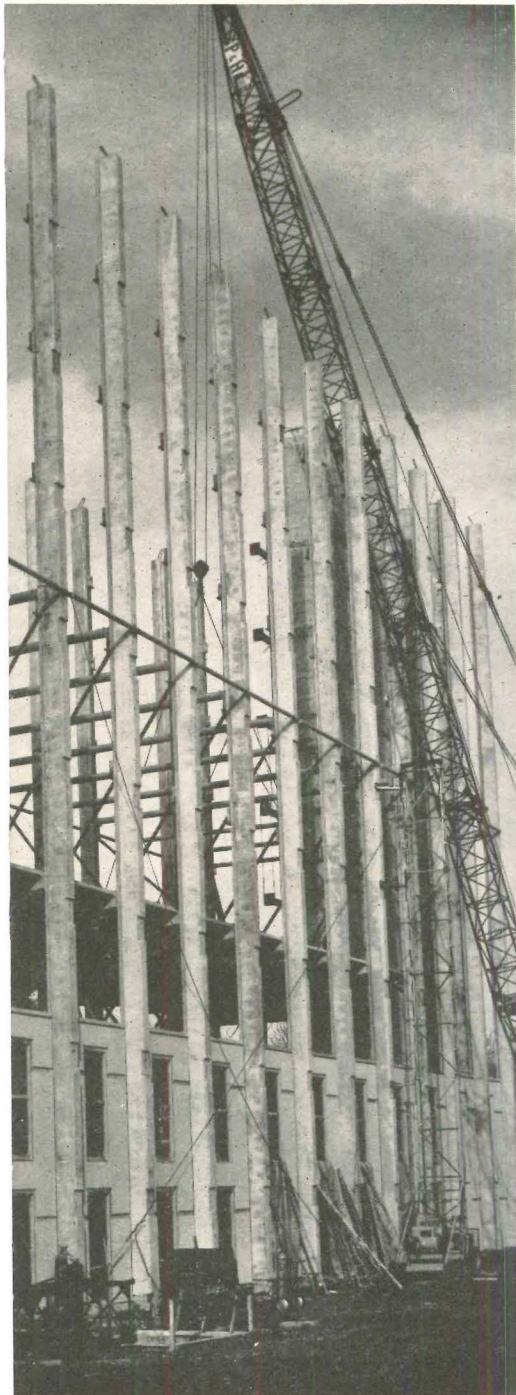




Prestressed channels span 36 ft; are supported by inverted T's set in columns. Pipes and straps temporarily brace columns

Two-story-high wall panels have grooves to provide shadow-line pattern. Roof structure consists of sculptured T-beams

*Basalt Rock Co., Inc.*



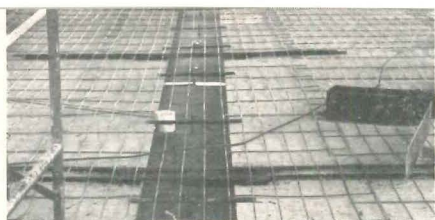


## Precast Framing Grows Taller

Medical Building, New Haven, Connecticut

ARCHITECTS AND ENGINEERS: *Westcott & Mapes, Inc.*

PRESTRESSING CONSULTANTS: *C. W. Blakeslee & Sons, Inc.*



Welded wire fabric reinforces structural topping cast over floor tees



Welder making top moment connection between column tee and floor tee

Basically the same type of structural member, a precast-prestressed single tee, works both for the wall-columns and the floor structure of this five-story, fully precast building.

Approximately 75 per cent of the exterior area is enclosed by exposed precast members, continuous from foundation to roof. The remainder of the wall is a combination of exposed aggregate precast concrete panels and a metal and glass curtain wall. Even the two cores containing stairs and elevators are of precast wall and column construction.

The prestressed floor tees span 41 ft from the exterior wall-column tees to an inverted T-shaped girder at the center of the building which is a rectangle 83 ft wide and 148 ft long. Smaller, 32-ft prestressed tees span between the exterior and the precast core.

Vertical and horizontal joints in the precast core are cast-in-place to

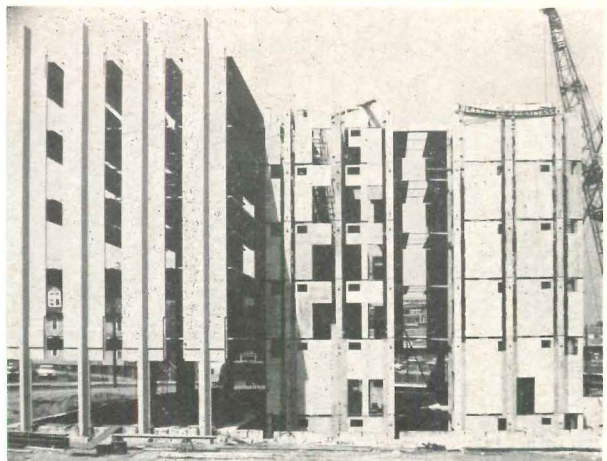
tie precast core panels to columns and to the floor, providing a rigid, monolithic structure to resist the lateral force of winds.

A moment and shear connection between floor tees and column tees is made by welding two steel connection plates in the floor member to an inverted structural tee cast in the exterior column. A top moment connection between the floor tees and the columns is made by welding threaded rods attached to the columns to plates set in the top surface of the floor tees.

Ducts and pipes for this air-conditioned building are run through holes provided in the stems of the floor tees.

A 14-in. space between floor tees is filled by a 5-in. cast-in-place slab to prevent rocking of the panels and provide lateral stability.

Wall-column tees are prestressed to withstand handling and wind loads.

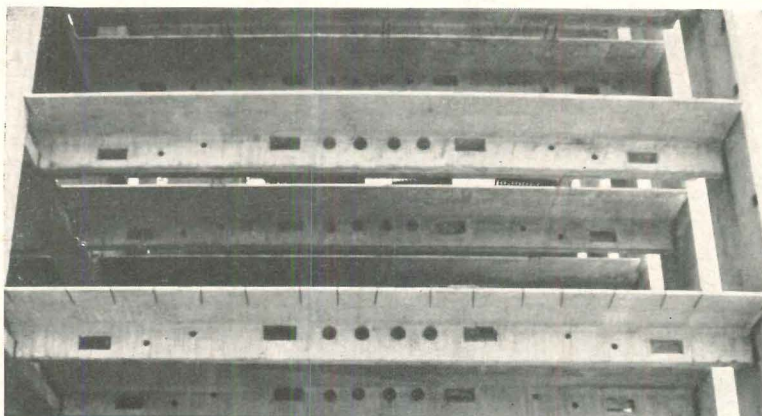
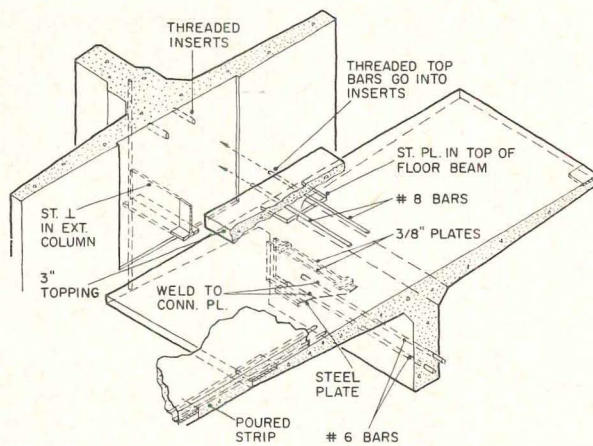


Precast walls and columns become monolithic by casting in place horizontal and vertical joints



Lash Bauman photos

Webs of the wall-column tees, extended at the top to engage future two-story column extensions, make interesting pattern



Floor tees span 41 ft between exterior wall-columns and interior inverted T-girders. Holes in web are for duct and pipe penetrations



# SOUND ISOLATION BETWEEN TEACHING SPACES

Since team teaching relies on flexible spaces, the criteria for movable partitions become increasingly important. Some criteria can be quantified; others depend mainly on judgment

*By W. Ranger Farrell, Bolt, Beranek and Newman, Inc.*

Movable partitions have helped significantly to implement the team teaching concept since its inception. In the last 10 years, more and more folding partitions have been specified for schools, and, concomitantly, a greater variety have come onto the market. These new products range in cost from \$30 to \$40 per square foot down to as little as \$5 or \$6 per square foot. They range in ease of operation from partitions which require an adult male to open and close to those that can be operated by an elementary school student. More pertinent to this article, they range in their sound isolating ability from partitions permitting easy conversation from one classroom to the next, to partitions which permit the playing of loud music on one side while a lecture is in progress on the other.

Under these circumstances, how can the architect decide what partition will best suit his purposes? Although this article is specifically directed at a discussion of the sound isolation properties of folding partitions between teaching spaces, there are a number of other factors which must affect the architect's decision as to which partition he will use. In addition to cost and ease of operation mentioned above, he must take into consideration whether or not a blackboard can be attached to the partition and whether the partition is rigid or flexible. The partition's appearance is another important factor; and, of course, the structural problem of weight and whether that weight is suspended from the ceiling or rests on the floor is a question which affects the basic structural design of the building. Obviously then, the architect never makes a decision wholly on acoustical requirements.

There are, nevertheless, four objective and measurable elements which can be established by the architect to assist him in making a fairly rational

selection of any partition on the basis of sound isolation. These four factors are:

1. Voice Loudness
2. Room Absorption
3. Background Noise
4. Partition Isolation

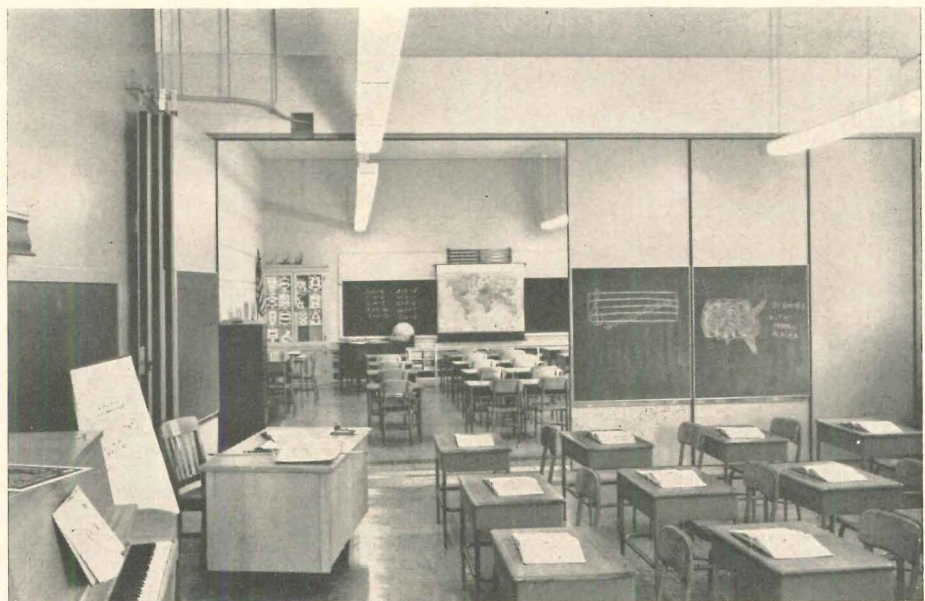
A fifth factor to be considered, the criterion for classroom isolation, has not yet been established.

Before discussing these five items individually, I should like to emphasize that all five factors are variables. We all know, for instance, the voice is loud at times and quiet at others, and that different people use different voice levels. Moreover, the amount of absorption in rooms is different at different frequencies, as are the sound-isolating qualities of partitions and, finally, the ambient noise in the listening space. Consequently, the architect has to deal with averages of the time variables and graphs of the frequency variables.

Analyzing each factor separately, the architect obviously must first know the level of the noise to be isolated. In the classroom, this sound is usually the teacher's voice. In small group discussions, teachers will undoubtedly use a normal conversational level of voice or perhaps a slightly raised voice. No special consideration need be given to the use of audio-visual devices since with proper discipline these may be played at a level no louder than the teacher's voice with no less intelligibility.

In order to determine the amount of absorption of sound in a room, the second factor mentioned above, one need know only the dimensions of the room involved and the sound-absorbing characteristics of the materials of which the room is constructed.

A general rule for background noise is: the greater the background or masking noise level, the less the requirements for sound isolation. It works this way: as a speaker's voice



Individual panels of this folding partition stack up against the wall. Mt. Kisco, N. Y. Elementary School, remodeled school by The Architects Collaborative



travels from the source room to a person in the adjacent classroom, the speaker's voice level will be reduced both by the sound absorption in the rooms and by the intervening partition. Nonetheless, some sound energy will enter the listening room. Whether or not it is audible or intelligible will depend first on the amount it has been reduced, and secondly by the amount that it is "covered up" by the noises in the listening room. These facts, I might add, are measurable, demonstrable, and have been proven both in the laboratory and in the field.

At this point I would like to skip over the effectiveness of the partition as a sound isolator, since I deal with it in subsequent paragraphs, and discuss first the criteria for classroom isolation. To date, the specific requirements for sound isolation between teaching spaces has not been established as there has been no controlled research to determine such criteria.

At first glance, the criterion might appear very simple—let's make what goes on in one room inaudible in the next. But this may be both excessively costly and may not even be necessary. This was true in Newton, Massachusetts, where two third-grade teachers had been sharing the school gymnasium as their teaching space, anticipating a move into new classrooms. The gymnasium had no dividing partitions. After the teachers had moved into the new class-

rooms they were asked how they felt about the change. They both expressed disappointment and a lack of communication between the two different classes. On the other hand, there have been many instances where teachers and administrators alike have felt that the sound isolation provided even by fixed partitions was insufficient for conducting adjacent classes.

Despite the lack of scientific research on sound isolation criteria for schools, I think a number of generalizations can be made on the basis of common sense and experience. First, the amount of isolation required generally increases with the grade level. Nursery school and kindergarten groups can often share one room with complete success. But as more instructional material and course separation are introduced into the curriculum, more sound isolation will be required. At the college level, I think most people would agree that complete isolation of speech sounds is desirable.

Another generalization that seems valid is that one need not isolate all kinds of sounds at all times. If the third-grade group sings songs for 15 minutes twice a week, this is such a short-time disturbance to the neighbors that it perhaps may be ignored. Certainly, the science teacher's detonation of a Van de Graaff generator once a term should never establish the acoustical design goal.

A third generalization, and one

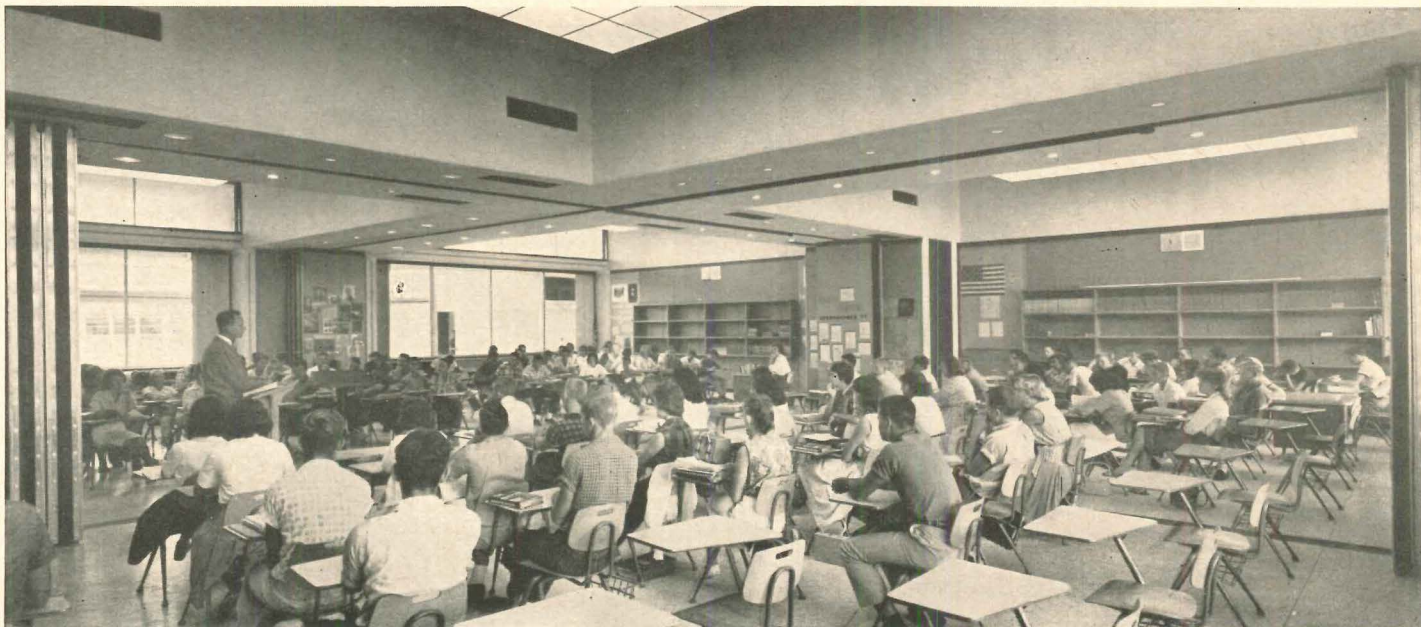
that is well documented with case histories, is that consistently noisy activities, such as carpentry shops and band practice rooms, must be well isolated from any of the quieter activities. The sound isolation requirements for such areas are often so extreme that one may safely assume no economical practical folding partition could ever be designed to resolve their sound isolation requirements.

In addition to these generalizations, certain assumptions can be made which will aid the architect in making a rational selection of folding partitions. The first and most important assumption is: limiting the intelligibility of speech transmitted from one room to another when the speaker is using a normal or slightly raised voice level is the governing determinant of the sound isolation requirement. A second assumption is: the physical behavior and properties of sound, and people's ability to understand speech sounds, are the same in classrooms as they are in offices, hotel bedrooms and other small rooms.

All of the information I have discussed up to now is readily available but, unfortunately, few people have the background information or the patience to carry out this scheme in a fully quantitative manner.\*

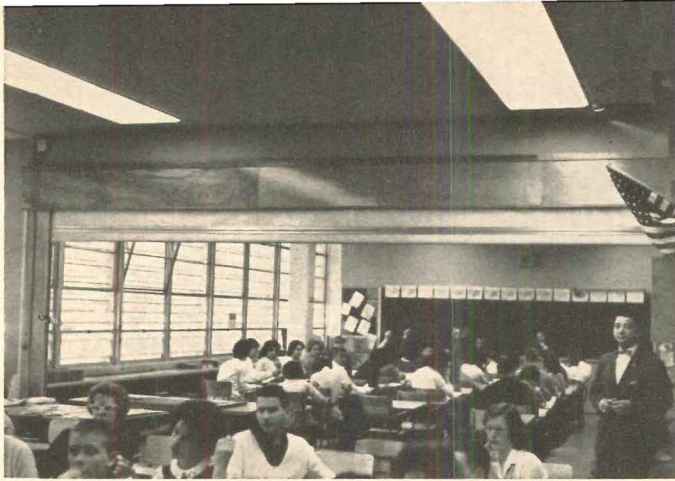
\* Owens-Corning Fiberglas' "Speech Privacy Analyzer" has reduced this information to laymen's terms

Philip H. Hiss



With four folding partitions pushed out of the way, space is available for lecture to large group in Sarasota Junior H.S.





Classroom space in Montgomery County, Maryland Junior High School is divided by roll-up, leaded-vinyl plastic partition



Here the leaded-vinyl divider is being operated by a teacher. Architects for this school were McLeod and Ferrara

Jonathan King

Despite the admittedly bewildering background information, there are indeed some rules of thumb which will aid the architect in making the proper selection of folding partitions.

#### Partition selection rules

For any partition to be an effective sound isolator, it must have an effective sound isolating panel. There are both single and double paneled partitions.

1. *Single Panel*—A single panel whose main sound barrier is a sheet of steel, a sheet of lead, or a dense plastic or other high-density material, must weigh at least three and preferably six or more pounds per square foot to reduce speech sounds sufficiently in the presence of the background noise levels of typical classrooms. Furthermore, it must be limp though not necessarily to the extent of being drape-like.

2. *Double Panel*—A panel of double construction, in the acoustical sense,

is a panel made up of two separate leaves, each of which will vibrate independently. In general, each face of such a partition should weigh at least two pounds per square foot, should be connected by a minimum of framing elements, and should have an interspace well filled with a loose mineral or glass wool fill. A well designed double panel can provide far more isolation than a single panel of the same total weight.

#### Edge sealing mechanisms

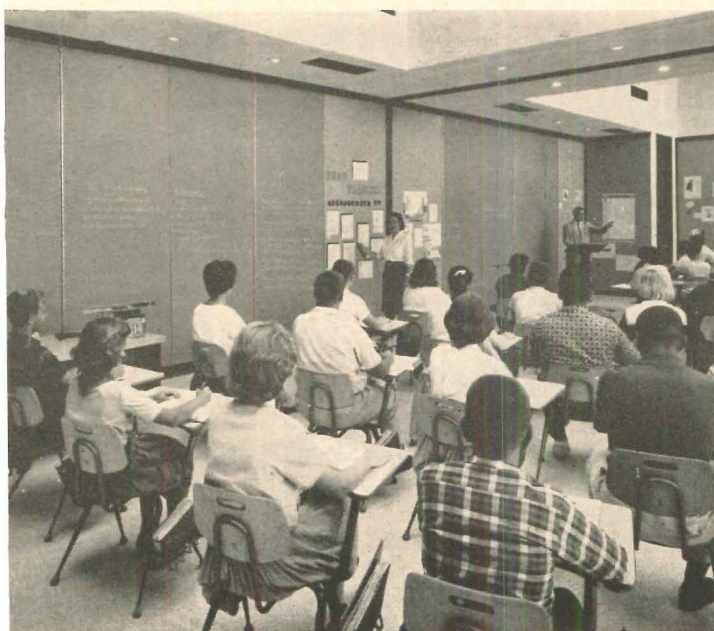
The first and most obvious rule for edge sealing mechanism is that there should be as few joints in the partition as possible. Thus, the rigid panel folding type partition should have panels as large as operationally possible. The so-called accordion type doors have an obvious advantage because there are only two or three vertical joints which need be sealed.

A second useful fact is that vertical joints which are hinged may be

sealed with unbroken rubber or plastic flaps. These should form an airtight seal with the adjacent panels or between the end panel and the wall.

A third rule is that the floor and ceiling juncture, as well as vertical joints, must be fitted with gaskets which are: (1) capable of filling the gaps caused by normal building tolerances; and (2) sufficiently flexible and compressible to fill small cracks or other irregularities. Felt and extruded materials such as vinyls and rubbers are too rigid to accomplish either.

Fourthly, the horizontal joints at the top and bottom of the door are undoubtedly the most difficult to seal effectively. Sweep gaskets, which continuously drag along the floor and ceiling, can, if properly installed, be quite effective. But the better these gaskets work acoustically, the harder it is to pull the door against their drag. The safest kind of closure for the top and bottom, though undoubt-

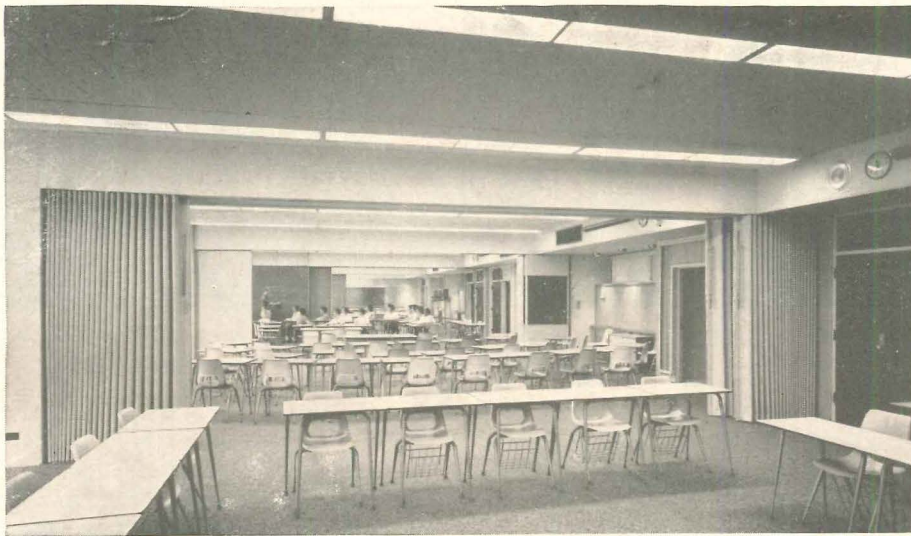


When same room is divided in half, it is used by two teachers for team teaching. Note bulletin and chalk boards



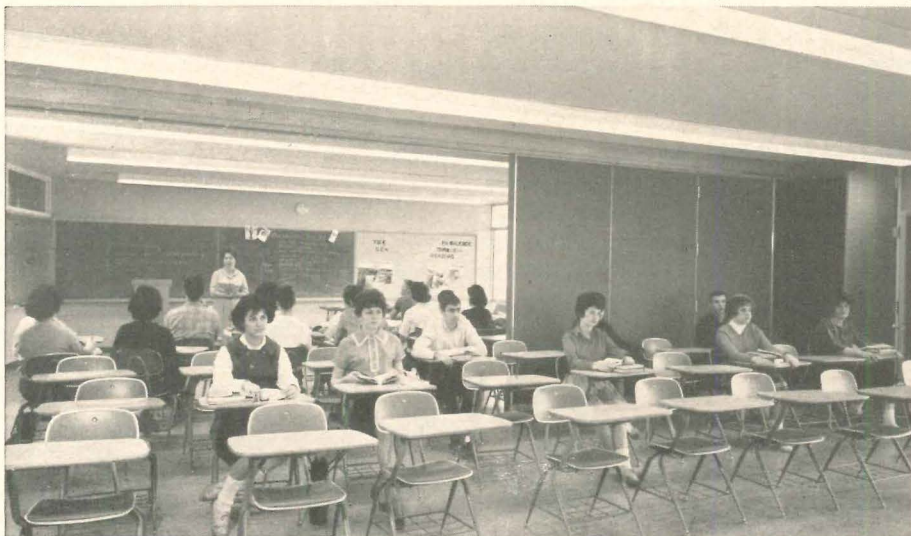
Space halved again becomes private enough for spelling test. Architect for Sarasota Junior H.S. was Bert Brosmith



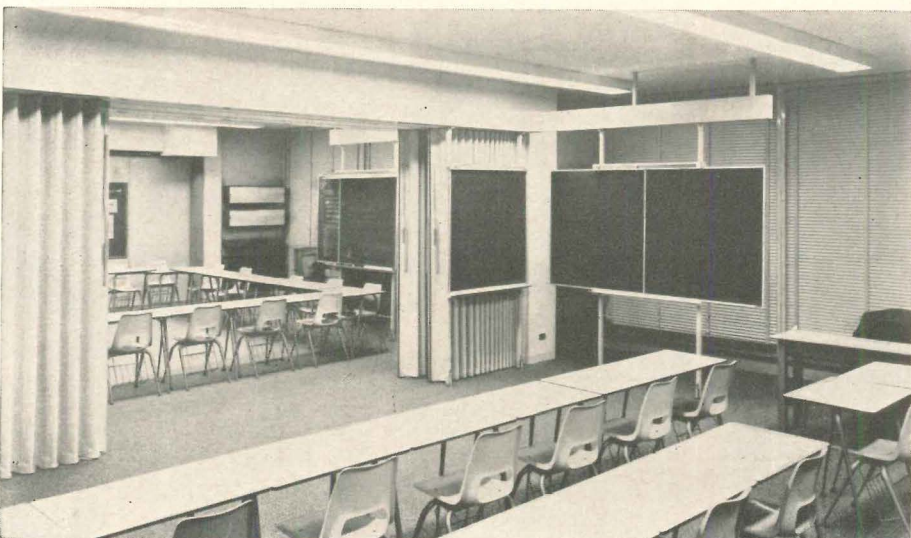


Field test using folding partitions of different types to divide a large space took place at University of Chicago High School; Perkins & Will, Architects

Bill Engdahl, Hedrich-Blessing



Top photo showed accordion-type folding partition in the foreground. Here in the same school is a hinged panel-type partition, shown only part of the way out



After the original installation of the accordion-type partition, the manufacturer developed an independent chalk board which can be slid in front of the partition

edly the most expensive, is that which is mechanically, pneumatically or hydraulically actuated into a pressure-tight fit.

When evaluating test data, give first preference to data taken in an actual field situation by an independent acoustical engineering firm. Give second order weight to field type laboratory tests which are made on a full-sized operative specimen. Finally, use ASTM E-90-61T data only for comparing the effectiveness of different panels because the limited size of test openings prohibits the use of full-size samples including all cracks, gaskets and other openings.

#### Partition installation rules

An important rule in partition installation is that the partition manufacturer cannot be held responsible for sound which is transmitted through other elements of the building. These existing "flanking paths" must be avoided in the design of the building or must be specially treated in buildings. Examples of such paths are through the ceiling, along the ceiling plenum, through ventilation ducts and through doors into corridors. The importance of such flanking paths increases as more effective sound isolating partitions are used.

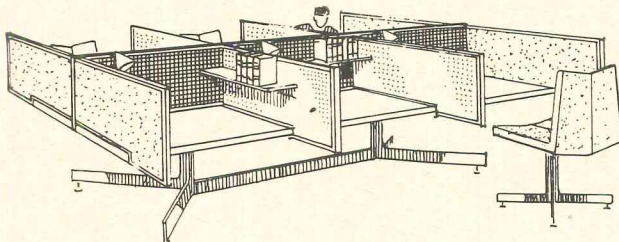
The second rule is to be sure that the general contractor has provided opening dimensions which are within the allowable tolerances which the particular partition's gasketing system permits.

Finally, do not release the installer of the partition, be it the contractor or the vendor, from his responsibilities until the effectiveness of the installation has been personally checked. It is desirable to run both a visual check and an acoustical check. The visual check is conducted by visiting the rooms at night and standing in one room where the lights are all turned out. If the lights are turned on in the adjacent room, and the partition is properly installed, there should be *no* light leakage from the lighted room to the dark room. The acoustical check requires two persons. The installation should be visited at a quiet time, and one person should talk in a normal or raised voice while the other walks around listening in the adjacent room. This test must be run after the ventilating equipment or air-conditioning equipment has been installed, and while that equipment is running.

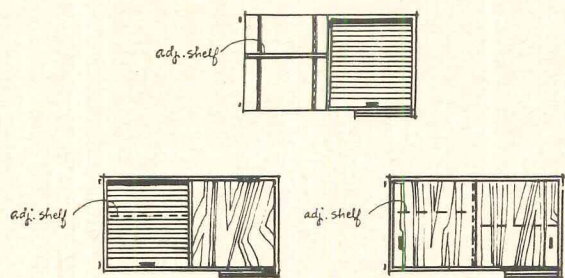


# INDIVIDUAL STUDY CARRELS: 1

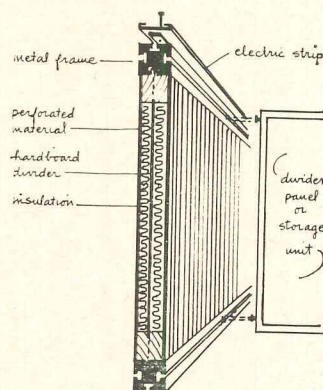
From an Educational Facilities Laboratories report\*



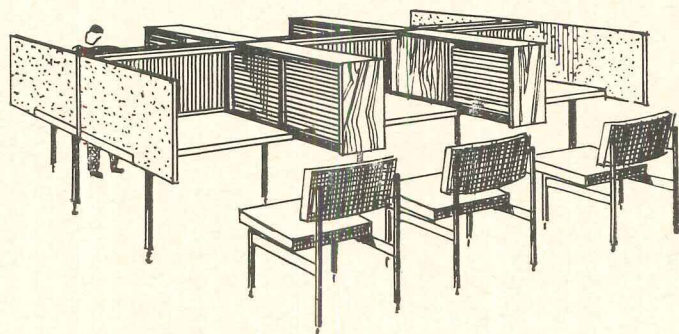
Conventional library table subdivided by panels



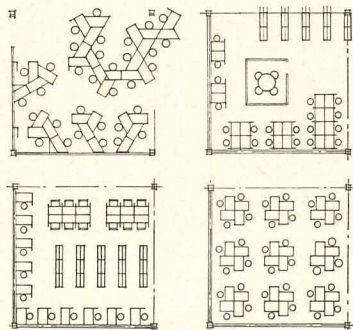
Typical storage units: (top) exposed adjustable shelf, (left) tambour door, (right) sliding doors



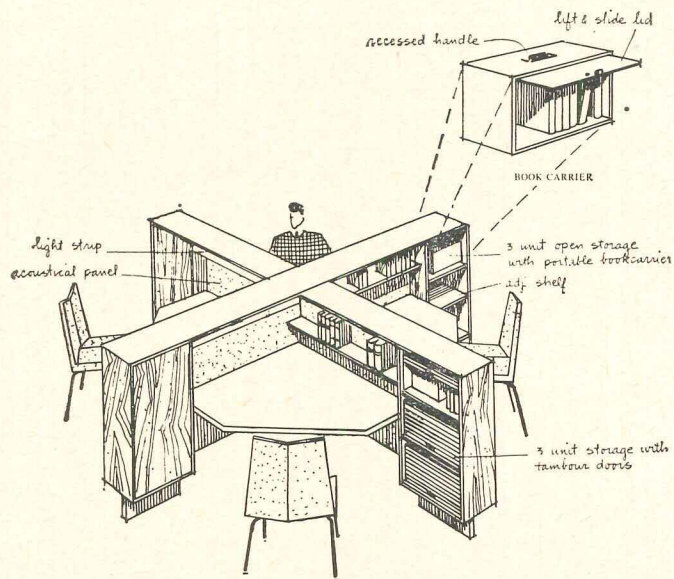
Divider panel and center divider. Side panels or storage units can be slid along tracks of center divider to change carrel size



Library table with storage units as dividers



Possible carrel arrangements



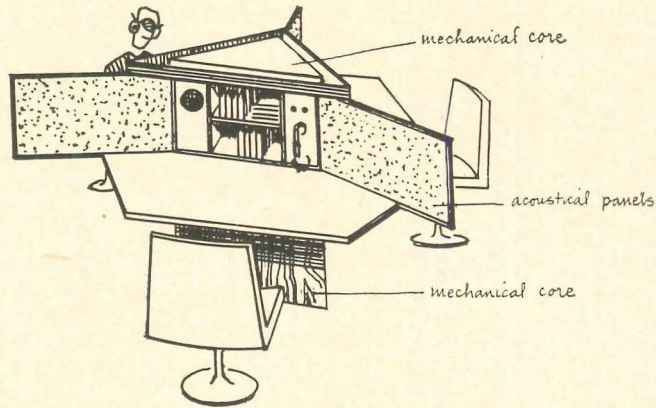
Carrels for four student places using octagonal table

\*"The School Library, Facilities for Independent Study in the Secondary School," by Ralph E. Ellsworth, Ph.D and Hobart D. Wagener, A.I.A., edited by Ruth Weinstock

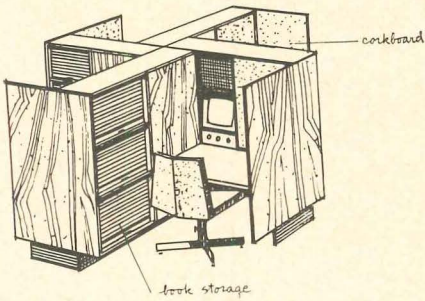
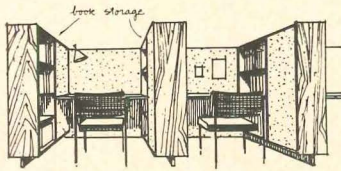


INDIVIDUAL STUDY CARRELS: 2

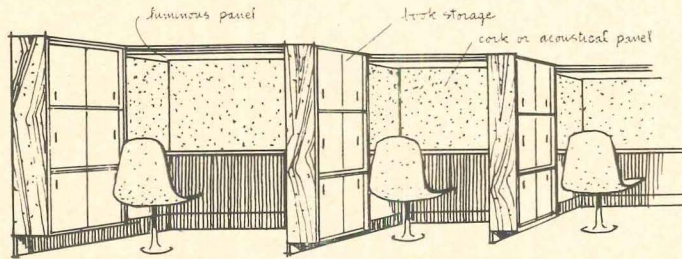
From an Educational Facilities Laboratories report\*



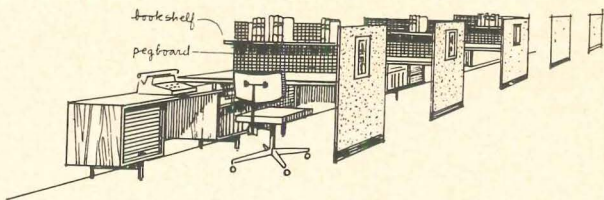
Hexagon-based carrel with mechanical core



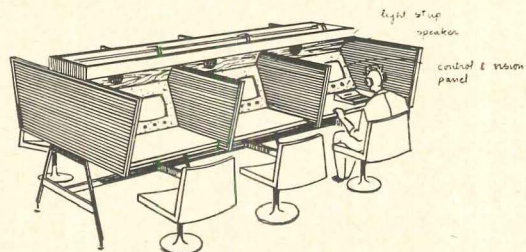
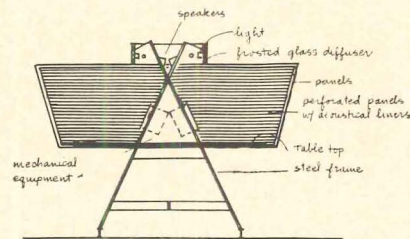
Carrel arrangements using standard bookcases and tables



Carrels with storage lockers for books



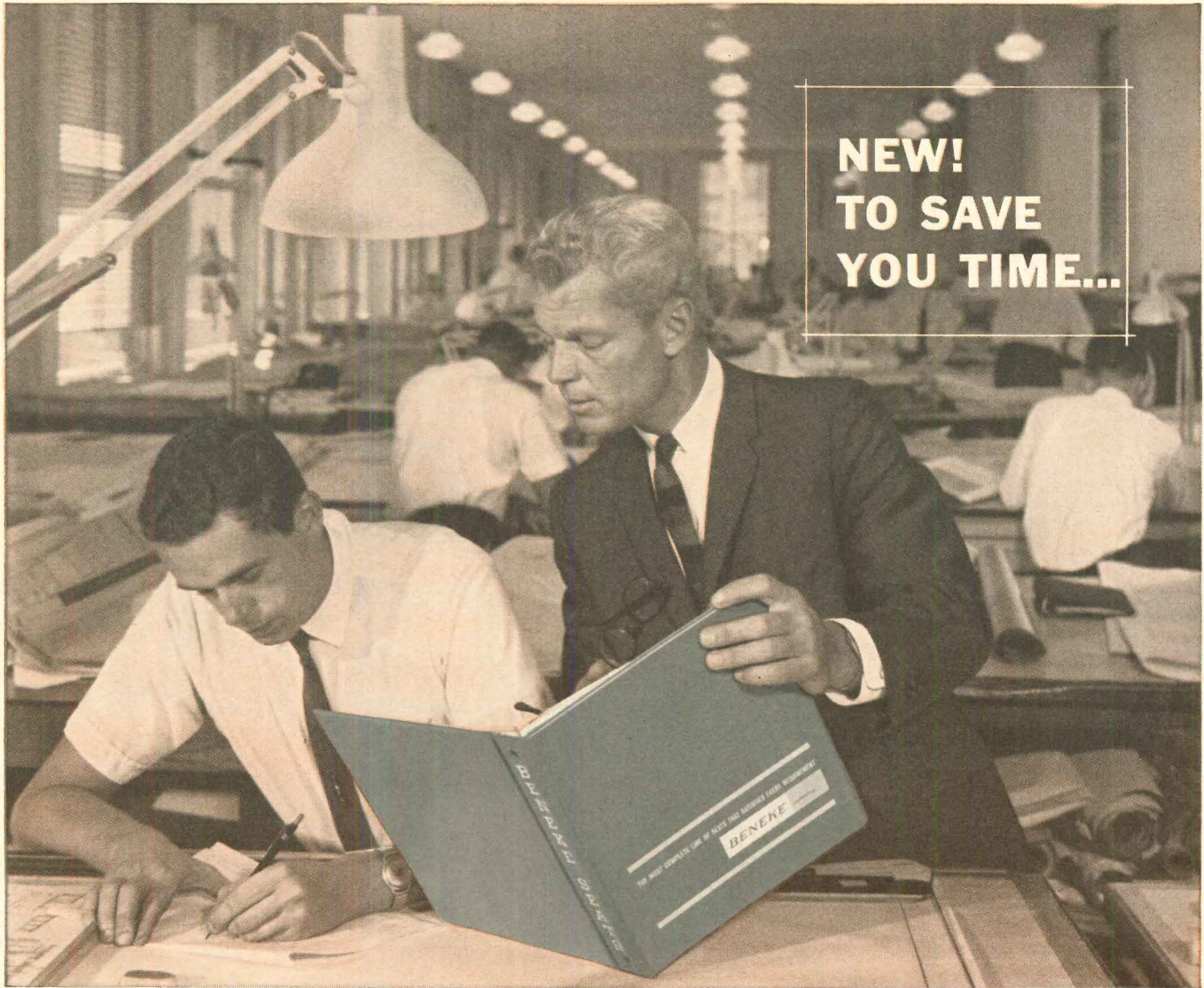
Carrel provided with typing unit



Carrels with audio-visual equipment built in

\*"The School Library, Facilities for Independent Study in the Secondary School," by Ralph E. Ellsworth, Ph.D and Hobart D. Wagener, A.I.A., edited by Ruth Weinstock





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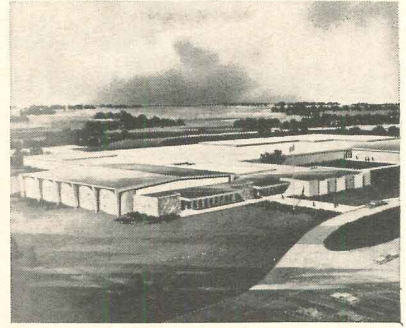
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It retains all the beauty of conventional wood siding, yet stands up better and needs less care. Made of tough wood fibers heat-bonded with resin, it's knot-free and grain-free, won't split or crack. Goes up fast, because it comes in standard straight lengths that saw and nail easily. Arrives at the site completely primed: face, edges, and back. Takes finish paint easily, holds paint longer. And you can specify any of three types—horizontal lap, vertical grooved, and vertical plain panels—to blend with any style architecture.

For further information, write Armstrong Cork Co., 4110 Rock St., Lancaster, Penna.

**Armstrong SIDING**

For more data, circle 110 on Inquiry Card



## A NEW PLASTICS COATING PROCESS FOR METALS

Fusion bonding of plastics to metals has already produced striking new designs in automotive body components, furniture and appliance housings. Currently, this new process is showing promise in the field of architectural components.

As opposed to metals as metals, or plastics as plastics, the new technology combines in one end-product the inherent strength of a metal substrate with the surface protection of a fusion-bonded plastic up to 60 mils in uniform thickness. The choice among both metals and plastics is quite broad. Metals can be steel, stainless steel, cast iron, aluminum and zinc alloy die castings, copper, bronze and brass. Plastics applied are nylon, vinyls, epoxies, polyethylene, cellulose and chlorinated polyether.

A metal is chosen for its modulus of elasticity, machineability, economy or decorative form.

A plastic is selected for its corrosion resistance, electrical insulation, impact and abrasion resistance, weathering resistance, economy or decorative appearance. Generally, the coating of durable plastic completely encapsulates the metal product, regardless of configuration, thereby adding immeasurably to the product's ability to resist sunlight, industrially contaminated atmospheres or other end-service conditions.

While applications are just getting underway in architecture, products being manufactured now include coated steel window frames, expanded-metal stairway panels, open mesh flooring, ducting, fencing, cable trays and conduits, ballustrades, decorative window shade blades and quality furniture.

A few architects who have heard of the new coating technology are experimenting with products custom-

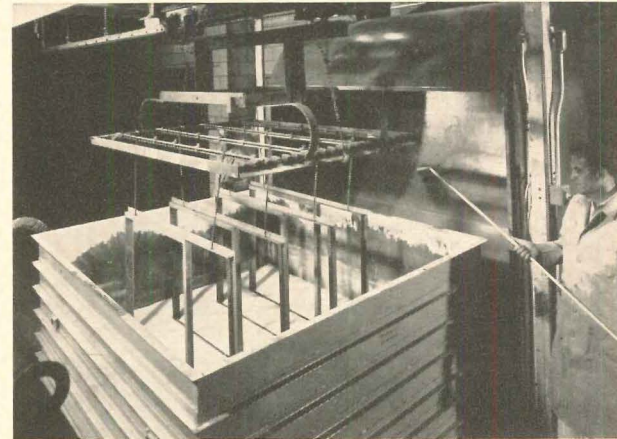
coated in small quantities. Several steel companies are evaluating potential applications in construction, and are studying preliminary cost estimates for volume production of coated siding, roofing and other standard building components.

### Fluidized Bed Technology

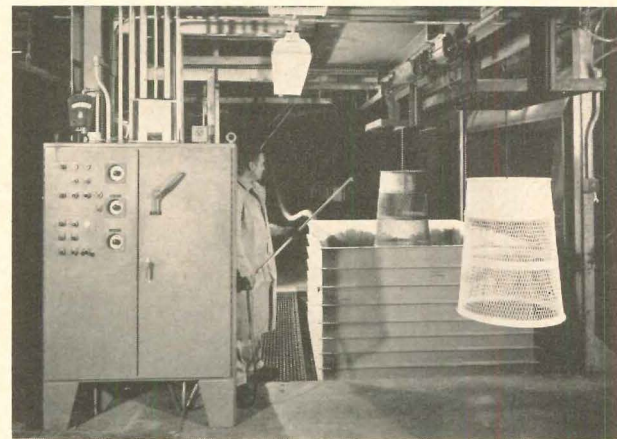
Fluidization of solid particles *per se*, has been practiced for many years in chemical processing, ore roasting and similar raw-material compounding. But the concept of using a fluidized bed for applying plastic resins to form an impervious surface is new. It was invented 10 years ago by Erwin Gemmer of the Knapsack-Griesheim Division of Farbwerke Hoechst, one of the largest chemical companies in Germany. Commercial development of the process was greatly intensified beginning in late 1955, when North American licensing rights were obtained by the Polymer Corporation of Reading, Pa.

The technology appears to be deceptively simple. The metal part to be coated is heated in an oven to a temperature above the melting point of the plastic to be applied. It is then dipped for only a few seconds in a bed, or tank, in which finely-divided plastic powders at room temperature are "fluidized" by an upward current of air. In this condition, the powders look and act much like a liquid, the level remaining even when the tank is tilted or rocked. The dry powder particles fuse and adhere on contact with the heated part surfaces. The part is sometimes briefly postheated to completely coalesce the coating; it must be postheated if it is a thermosetting compound to cure the resin.

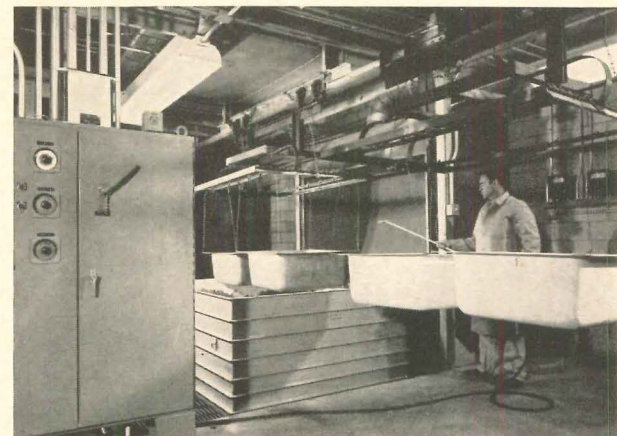
Unlike conventional coating methods, which usually are indigenous to one industry, and often to one service, the fluidized bed system is basi-



Steel window frames being dipped in tank for coating by fluidized plastic process



Wire-mesh components, difficult to coat by conventional methods, get even plastic cover



Forms for concrete waffle-slab construction are protected from corrosion by plastics. A further advantage is that they can be removed easily after the concrete has hardened



cally the same whether the product requires corrosion resistance, electrical insulation, protection against abrasion or impact or simply a decorative appearance.

### Architectural Advantages

Principal advantages of the fluidized bed coating system for architectural applications have been identified as these:

1. Ability to apply a controlled, uniform thickness of coating from 5 to 75 mils in a single dip without use of solvents.
2. Low cost substrates can be used. Carbon steel coated with an appropriate vinyl can give excellent service in outdoor applications.
3. Plastics can be selected for specific end-service conditions: outdoor weathering, damage resistance, insulation, corrosion protection.
4. Pre-finishing edges of many parts, such as wire goods, can be eliminated. Because it is a solids system, edge coverage is uniform.
5. Practical coatings can be applied to perforated and expanded metal because drips and bridging are eliminated.
6. Color choice is extensive for most plastics. Coatings may be given a matte finish. Foamed coatings create unusual effects. The coatings feel warm to the touch.
7. Fluidized bed coatings are low in cost.

### Architectural Applications

At this time any appraisal of fluidized bed applications for architectural components must emphasize the potential rather than the realized.

Back in 1958, Ceco Steel Products Corporation of Chicago began to investigate coatings for steel window frames. To determine if "new" coatings offered advantages over traditional finishes, a nationally-known consulting laboratory conducted comparative tests in the laboratory and in outdoor exposures on a number of materials. It reported that fluidized bed coatings offered excellent coverage, particularly at edges and corners.

Ceco installed fluidized bed-coated windows in six industrial buildings, largely in the Midwest. Polymer's custom coating plant in Chicago coated the windows in a variety of sizes and shapes. The thick coating offers a weathertight fit, is virtually maintenance-free, no field

painting is required, and color choice is extensive.

At Chicago's new O'Hare International Airport terminal, more than 10,000 sq ft of wire mesh panels coated by the fluidized bed system are installed around stairways at airline boarding stations.

An official of the C. F. Murphy Company of Chicago, architects for the airport building, stated: "With the large number of people passing through the arrival-departure stairways, the panels are constantly being kicked and scraped. For this reason, we selected a plastic coating which has much better wear properties than paint, and which we expect to last 10 years or more."

The Chicago Ornametal Iron Co. of Melrose Park, Ill. which fabricated the wire panels, found the smooth and uniform coating eliminated sharp edges which could tear passengers' clothes.

On the West Coast, Cupples Products Corporation, a division of Alcoa, has installed thousands of nylon-coated aluminum door handles for sliding glass doors in residences.

Many other provocative applications of fusion bond coatings have been made in the architectural field: steel fencing around a school for blind children to provide a smooth coating; aluminum storm doors and windows; street and beach litter baskets; toilet seats; balustrades; door-knobs and other decorative hardware. Two makers of furniture, Herman Miller, Inc. and Knoll Associates, Inc., use fusion bond coatings on exclusive designs for interior and exterior use.

### Related Applications

For more than two years, Jones & Laughlin tested fluidized bed coated steel pipe for adhesion, indentation, impact, electrical insulation, flexibility, weatherability, soil stress and fungus attack. In announcing its Jal-Bond pipe in September, 1962, J & L said: "The adhesive strength of the plastic-to-metal bond is greater than the cohesive strength of the plastic itself" and that the pipe "can easily be welded, cut, threaded, bent and driven without impairing the bond." The new pipe now is being produced in volume for gas distribution pipelines, and other applications of coated pipe are under consideration by J & L.

Speculation as to the potential for

the new technology in the building industry is far-ranging. As one example, expanded metal is a useful design material, but because this material essentially is all edged, corrosion dangers often preclude its use. A few coated expanded metal products have been produced in this country. In England, where fluidized bed coated architectural components are more common, a variety of expanded metal installations are in service.

Polymer engineers are certain practical applications can be made to roofing and siding, curtain walls, metal clapboard siding, gutters and downspouts, stairways, catwalks and many others. Stadium seating represents an obvious application.

Interior applications might include air-conditioning ducts and outlets, heating enclosures, partition walls and metal doors. Decorative finishes have been applied to door-knobs; nylon coated water taps are less expensive than chromium plating; coated cold water pipe exhibits no condensation; with a wide choice of colors, factory piping systems can be color-coded.

A wealth of research data accumulated by nationally-known testing organizations as well as by Polymer is available to architects and engineers. For example, at Cape Hatteras, N.C., marine exposure tests on fluidized bed coated panels have been conducted for more than 18 months. The test panels were exposed to half-tide, sea water immersion and buried in mud. In accordance with usual procedure, some panels were unscored and others were scored to determine if under-film corrosion developed.

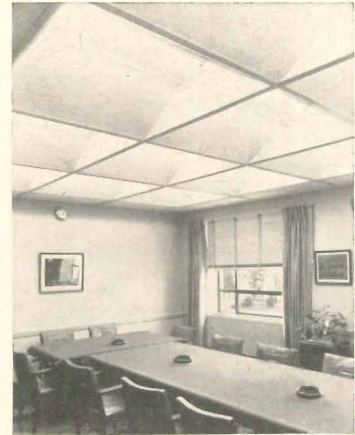
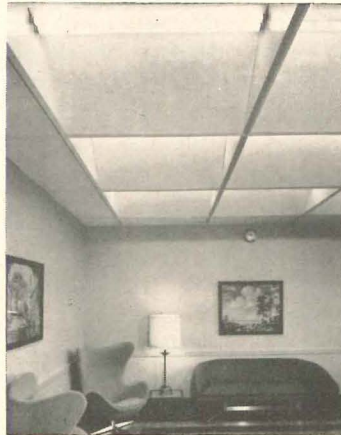
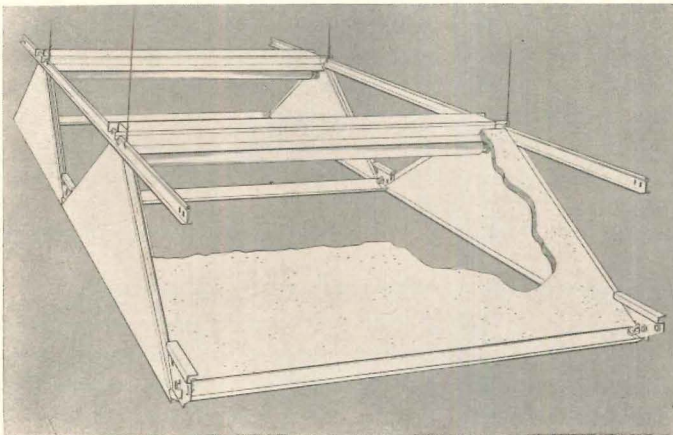
Results reported were these: the vinyl formulation compounded by Polymer for corrosion resistance plus outdoor weathering durability tested out on the unscored panels to provide complete corrosion protection with little or no loss of adhesion. On the scored panels, undercutting ranged from 0 to  $\frac{3}{16}$  in. This test is one of a wide variety of continuing research operations now underway throughout the country.

In most cases, test data is available for study from Polymer, along with technical counsel on possible applications. A number of custom coating firms around the country also provide assistance to companies who are interested in exploring potential applications of the new finishing technology.



For more information circle selected item numbers on Readers Service Inquiry Card, Pages 269-270

## TOTALLY INTEGRATED CEILING SYSTEM



The *Armstrong Luminaire Ceiling System* provides lighting, air distribution, acoustical control and a convenient 50- by 50-in. module for partition location.

The ventilation technique is the same as used with Armstrong's flat ventilating ceiling system involving a pressurized plenum.

The basic structure is a metal framework supporting inclined acoustical panels with provisions for installation on one, two or three fluorescent lamp units at the apex, providing 75, 150 and 225 ft candles

respectively. Finished in white, the framework is prefabricated at the factory and shipped as a fully assembled unit. The main runner is hung by wires, or by rods or strap hangers in areas where code requirements specify such means of support. The cross tees are inserted between the main runners as in a standard exposed grid suspension system.

The light fixture rests on the top bar and is then keyed into the main runner for locking purposes. This insures proper alignment and prevents the fixture from moving when

the wires are connected and the ceiling boards installed. A light diffuser may be attached to the light fixtures as shown in the photo (*far right*).

Flat panels may be used to vary the ceiling design and to accommodate such situations as low beams, column penetrations and perimeter edge conditions.

The lay-in panels provide accessibility to the ceiling area for maintenance of services. *Armstrong Cork Company, Lancaster, Pa.*

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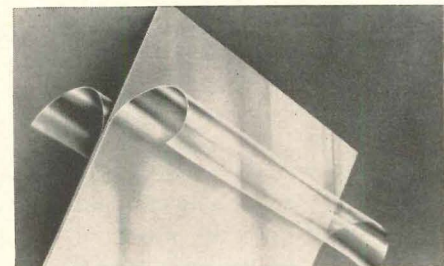
## COPPER FLASHING

Designed specifically for use in all concealed flashing applications, *Dry-seal Copper Flashing* features a dense film of polyethylene laminated to both sides of the copper sheet. This new flashing, the manufacturer states, provides a stain, alkali, acid, and moisture resistant barrier that is unaffected by temperature extremes.

Moreover, it is about one-third the weight of asphalt coated metal flashings.

The flashing is supplied in 200-ft rolls in standard and specified widths. *Revere Copper and Brass Incorporated, 230 Park Ave., New York 17, N.Y.*

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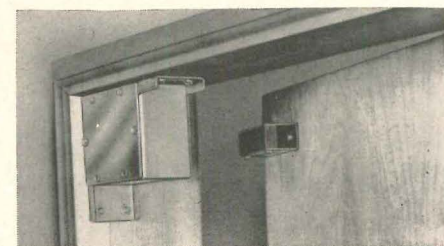


## DOOR SECURITY DEVICE

A new door security device for home, hospital and industrial use secures doors without locking them. The *Cenco Magnetic Door Lock* operates on an electro-magnetic principle. When engaged by the flip of a switch, the lock secures the door in either a closed or open position. In an emergency, how-

ever, the electro-magnetic circuit securing the door may be broken by a sharp push or pull of about 30 to 50 pounds. *Cenco Instruments Corporation, 6450 W. Cortland St., Chicago 35, Ill.*

CIRCLE 302 ON INQUIRY CARD  
more products on page 252





# Office Literature

For more information circle selected item numbers on Reader Service Inquiry Card, pages 269-270

## DRAFTING AND ENGINEERING SUPPLIES

A revised 48-page catalog of drafting and engineering supplies contains 800 items, illustrated with nearly 400 photographs and drawings. *A. Lietz Company, P. O. Box 3633, San Francisco, Calif.*

CIRCLE 400 ON INQUIRY CARD

## MODULAR PARTITIONS

*Kent Line*, a new modular, movable partition system employing a double wall of standard 5/8-in. gypsum board panels and metal joinery, is the subject of an eight-page booklet. *Architectural Systems, Inc., 54300 36th St., S.E., Grand Rapids, Mich.\**

CIRCLE 401 ON INQUIRY CARD

## CONCRETE FINISHES

"Architectural Finishes—A Roundup of Ideas and Techniques" discusses two basic methods of changing the appearance of concrete: (1) through the use of aggregates such as quartz, glass and other materials, and (2) through the use of high or low relief patterns. *Portland Cement Association, 33 W. Grand Ave., Chicago 10, Ill.*

CIRCLE 402 ON INQUIRY CARD

## STORE LIGHTING

"Recommended Practice for Lighting Merchandising Areas" is the title of a new 44-page report by technical committees of the Illuminating Engineering Society. The new store lighting report is the first on this subject by the Society since 1948, and includes in its recommendations all new developments which have occurred in new products research. New, higher I.E.S. recommended levels of illumination, new concepts of area illumination, and the latest types of equipment are illustrated. The booklet is generously illustrated with photographs and schematics showing the latest in typical store interiors, types of show windows, and the most effective kinds of exterior lighting. Price 60 cents. *Publications Office, Illuminating Engineering Society, 345 East 47 St., New York 17, N.Y.*

CIRCLE 403 ON INQUIRY CARD

## AUSTENITIC STAINLESS STEEL

The design, maintenance and cost advantages of the austenitic *200 Series* stainless steels are covered in a 26-page booklet. Tables, graphs, photos and text explain the composition, functions, properties and available forms of these steels, and many new applications are suggested. *Union Carbide Metals Company, 270 Park Ave., New York 17, N.Y.*

CIRCLE 404 ON INQUIRY CARD

## STEEL LOCKERS

In 27 pages Medart describes significant changes in their manufacturing processes to make their steel lockers and locker room accessories better looking, more functional and more durable. The catalog provides complete planning and selection information, and helpful suggestions are included for the planning of a complete locker installation. *Medart Products, Inc., 4427 Geraldine Ave., St. Louis 15, Mo.\**

CIRCLE 405 ON INQUIRY CARD

## VINYL WALLCOVERINGS

Sample book of over 300 fabric swatches in five different weights and 20 patterns for the entire *Suwide* line of vinyl-coated wallcoverings and upholstery fabrics is now available. *Durawall Inc., Dept. N, 509 Madison Ave., New York 22, N.Y.*

CIRCLE 406 ON INQUIRY CARD

## ANTI-VIBRATION PADS

A technical brochure on *Vibra-Guard* anti-vibration pads used under supporting columns of modern buildings, abutments of bridges, heavy vibrating machinery, and for other applications, contains installation details and specifications. *Knapp Mills Incorporated, 23-15 Borden Ave., Long Island City 1, N.Y.*

CIRCLE 407 ON INQUIRY CARD

## MATCHING MOLDINGS

A brochure on matching moldings with an aluminum core gives the various shapes and sizes available, installation directions and other information. *Keller Products, Inc., 41 Union St., Manchester, N. H.*

CIRCLE 408 ON INQUIRY CARD

## FILIGREE WOOD PRODUCTS

"Filiwood Panels and Tabourets" includes eight pages of photographs of custom filigree dividers, screens, doors and other wood products. Insert shows standard sizes, designs and prices. *Filigree Manufacturing Co., 3620 High St., N.E., Albuquerque, N.M.*

CIRCLE 409 ON INQUIRY CARD

## WELDED TIER BUILDINGS

A structural report prepared by Richardson, Gordon and Associates, consulting engineers of Pittsburgh, Pa., deals with design of high-rise welded tier buildings. Welding details of beam-to-column connections, column components and a selected bibliography on methods of tall building analysis and design, are also included. *United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.*

CIRCLE 410 ON INQUIRY CARD

## SOUND INSULATION

The newly adopted industry-wide products specifications for sound deadening insulation board in wall systems are contained in the Insulation Board Institute's "SPEC. No. 4." *R. A. LaCosse, Technical Director, I.B.I., 111 W. Washington St., Chicago 2, Ill.*

CIRCLE 411 ON INQUIRY CARD

## LUMEN OUTPUT

"Lumen Maintenance" discusses the factors influencing lumen output. The bulletin includes curves of current density in relation to lamp life and lumen output. *Champion Lamp Works, Lynn, Mass.*

CIRCLE 412 ON INQUIRY CARD

## STAGE LIFTS

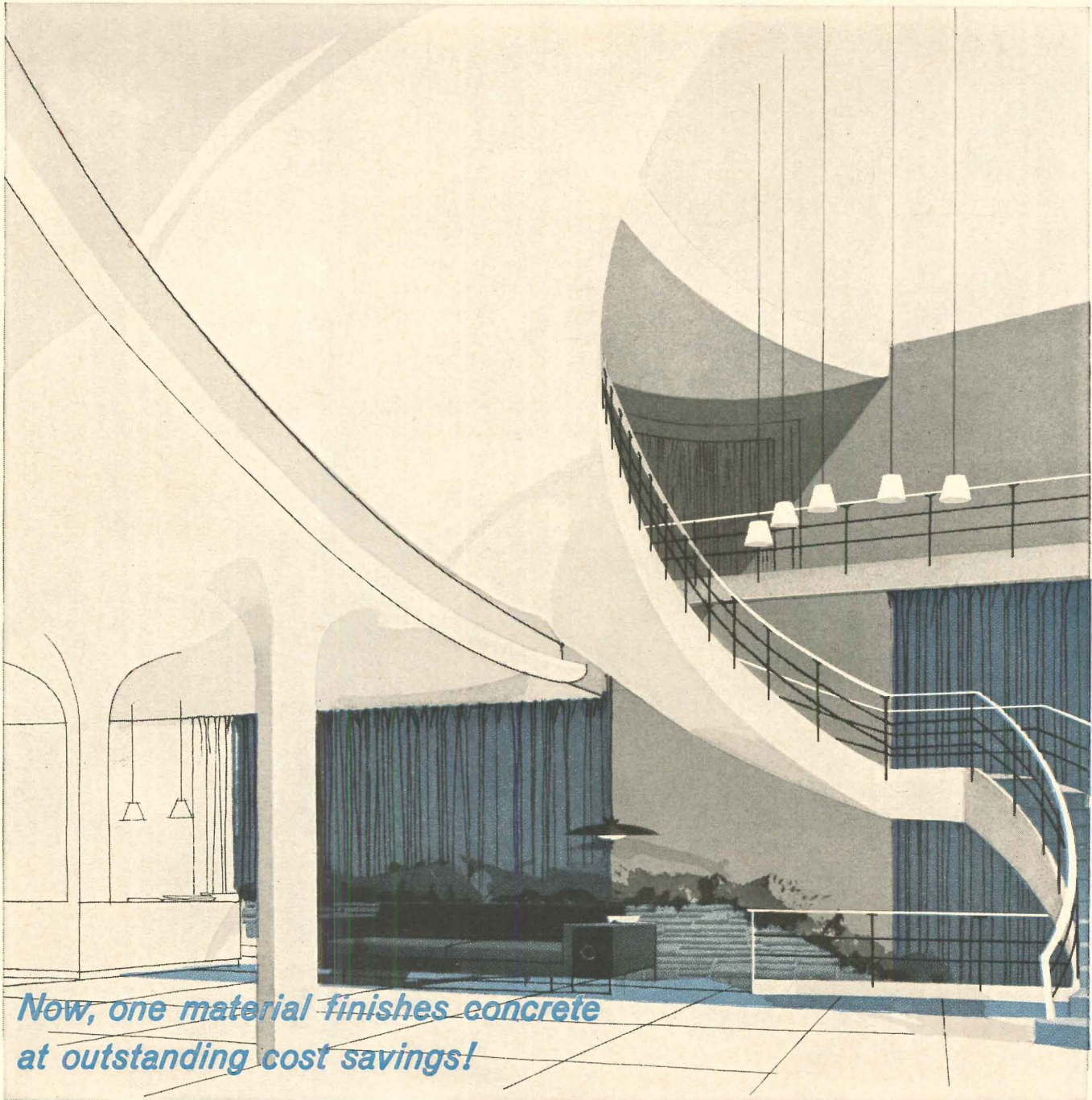
A four-page brochure describes custom hydraulic stage lifts for theaters, music halls, auditoriums, schools and night clubs. *Dover Corporation, Elevator Division, 1054 Kansas St., Memphis 2, Tenn.*

CIRCLE 413 ON INQUIRY CARD

\*Additional product information in Sweet's Architectural File

more literature on page 310





*Now, one material finishes concrete  
at outstanding cost savings!*

**NEW RED TOP**  
CONCRETE FINISH

\* RED TOP Concrete Finish trowel coat easily levels concrete form irregularities. The spray coat gives a distinctive simulated acoustical appearance that dries to a hard, white finish requiring no further decoration. Never before has there been such high performance in a product of this type at such low cost.

If you've been relying on other concrete finishes, take a close look at the results you can expect with RED TOP Concrete Finish. Talk to your U.S.G. Architect Service Representative; or write Dept. AR-35, 101 South Wacker Drive, Chicago 6, Illinois.

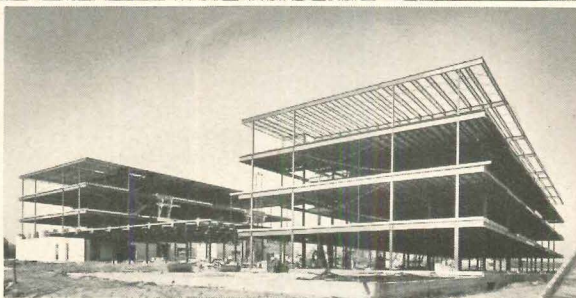
\*T. M. Reg. U. S. Pat. Off.



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THE GREATEST NAME IN BUILDING

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**FONTAINEBLEAU APARTMENTS**  
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 Engineers: Lapin & Dabler  
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## BUILT BETTER, BUILT FASTER, WITH LACLEDE JOISTS

Laclede open web steel joists are finding their way into more and more fine structures throughout the midwest and south. A case in point: The New Fontainebleau Apartments in suburban St. Louis. Residents of this 72-unit complex live the good life, with central air conditioning, a swimming pool, indoor garages, private card rooms and private lockers. The two 4-story wings are connected by an attractive lobby and party room area.

Laclede joists are adaptable to commercial, residential and industrial structures of all sizes and architectural design. They're strong, lightweight, easy to handle time-saving and cost-saving.



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■ Most leading food and beverage processors have the same floor requirements . . . the highest possible resistance to acids, caustics, oil, impact and the highest degree of sanitation with minimum maintenance. All these qualities are characteristic of famous Summitville heavy-duty extruded floor brick. These are the reasons why so many leading processors specify Summitville.

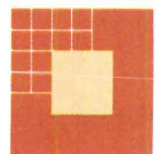
Your local ceramic tile contractor has all the facts or write direct. Ask, too, about Epox-C-Ment . . . The acid resistant material for setting and grouting.



Available in  
5 Floor Surfaces,  
Two underbinding surfaces.  
Also Vertical Fibre  
Packing house Floor Brick.

FLOOR BRICK BY

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Sterick North Parking Garage and Holiday Inn — Memphis, Tenn.



Most of the 24 precast columns and 96 post-tensioned tee-girders are in place. The tees, 20 ft. o. c., rest in deep tapered seats in the columns. Cast-in-place slab was 5" thick, and post-tensioned in 2 directions. Total area approximately 220,000 square feet.

Architects — Furbringer and Ehrman (Memphis); Structural Engineers — T. Y. Lin & Associates (Chicago); Contractor — J. M. O'Brien & Co. (Memphis); Holiday Inn Architects — William W. Bond & Associates (Memphis).

## ADD Holiday Inn® ATOP 7-LEVEL PARKING GARAGE

During construction of the Sterick North 400 car parking garage, the owners decided to add a 120 unit Holiday Inn with swimming pool to occupy the 8th, 9th and 10th levels. Total area of the 10-story structure is approximately 220,000 square feet.

The post-tensioned parking garage structure is a continuous ramp type utilizing 24 columns and 96 tee-girders with a cast-in-place slab. The 71' single tees were post-tensioned using the Prescon System as was the 5" thick light weight aggregate slab which was post-tensioned in 2 directions.

A leveling slab was placed across the top level

of the parking garage. This slab was strong enough to take the column loads of the Inn wherever they occurred. The leveling slab and swimming pool, which was part of the slab, were post-tensioned using Prescon tendons. This formed the 8th level.

The Prescon System of post-tensioning prestressed concrete allows the architect and engineer the utmost in design flexibility, often at the most economical cost. The Prescon System is particularly advantageous where long spans, and column-free interiors are desired. WRITE for brochures showing many examples of all sizes and types of structures that have used the Prescon System.



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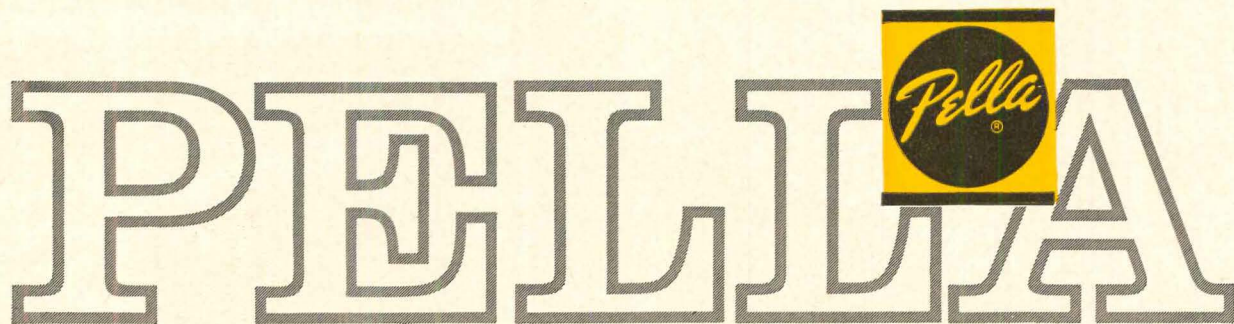


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**1.** . . . When living flows through walls of glass, the wood frames of PELLA Sliding Glass Doors add the feel of good living. Finish or paint them to match any color scheme. Wood frames eliminate condensation, too, even in freezing winter. With stainless steel and wool pile weather stripping, PELLA Doors are exceptionally weathertight. Screens close automatically. O, OX, XO, OXO and OXXO combinations in 33", 45" and 57" glass widths. Transoms to match. Also custom sizes. Regular or diamond shaped muntin bars. **PELLA WOOD SLIDING GLASS DOORS.**

**2.** . . . "Put away" work, storage and utility areas decoratively! Do it with PELLA Wood Folding Doors. Select from PHILIPPINE MAHOGANY, AMERICAN WALNUT, WHITE ASH, BIRCH, OAK or PINE veneers. We'll finish them at the factory or you can do it on the job. Stable wood core construction prevents warping. Patented steel spring hinging assures easier operation . . . longer life. For all widths, heights to 12'1". **PELLA WOOD FOLDING DOORS.**

**3.** . . . Yes, wood windows can be a major design element. And, PELLA Wood Casement Windows are the only windows with ROLSCREEN®, the "instant screen" that rolls down in spring, up in fall (inside flat frame screens available). Then, with self-storing storms and stainless steel, spring-type weather stripping, year 'round comfort is assured. For traditional themes, use muntin bars that snap in and out, to speed up painting and cleaning. Choose from 18 ventilating sizes up to 24"x68" glass size and 48 fixed units. **PELLA WOOD CASEMENT WINDOWS.**



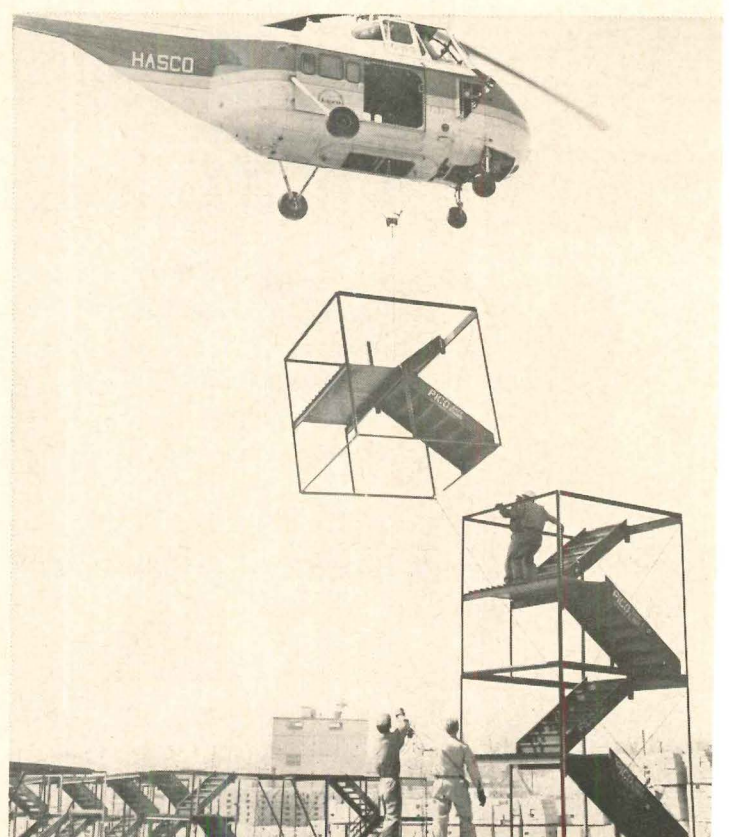
**4.** . . . Traditional windows? No, but PELLA Wood Multi-Purpose and Twinlite® Windows look the part. They're actually awning-type windows designed for quality, beauty and building budgets. Use them singly, stacked, in ribbons or as casements. Regular or diamond muntin bars snap in and out to speed cleaning and painting. Storms and screens are self-storing. Sash locks in 10 positions with Glide-lock® underscreen operator. (Roto operators, too.) Also ask about PELLA trapezoidal units. **PELLA WOOD MULTI-PURPOSE & TWINLITE® WINDOWS.**

**5.** . . . Only the rich grain of real wood closes off excess seating so effectively. The 10 $\frac{3}{8}$ " x 1 $\frac{1}{16}$ " panels of PELLA Wood Folding Partitions are so right for synagogues, churches, schools, clubs, restaurants and offices. Choose veneers of AMERICAN WALNUT, PHILIPPINE MAHOGANY, ASH, BIRCH, OAK, or PINE. Specify finished or unfinished. Patented "live-action" steel spring hinging adds years of extra life . . . makes operation easier. Stable wood core construction prevents warping. All widths, heights to 20'1". **PELLA WOOD FOLDING PARTITIONS.**

**ROLSCREEN COMPANY • PELLA, IOWA**

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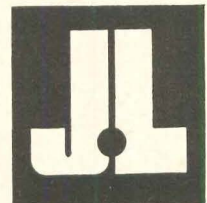
As new buildings keep mushrooming in the construction industry's race for space, new and better building techniques are in constant demand.

That's why the unique, patented Pico Safe Stairs Company (Hyattsville, Maryland) system for pre-erecting stairways in the plant is so important. Utilizing J&L Junior Channels and Junior Beams, their licensee has installed literally miles of steel stairways in the vast complex of new apartment and office buildings rising in Washington, D.C. Their unique design reduces overall cost of erection as much as

50%. Franchised manufacturers are being licensed throughout the Country.

Many other steel fabricators are using J&L lightweight structurals — Jal-Tread Floor Plate, sheets, small angles, pipe for hand rails and stainless steel for modern stair construction.

For more information on J&L products see your latest issue of Sweet's Catalog, or call your nearby J&L office, or write: Jones & Laughlin Steel Corporation, 3 Gateway Center, Pittsburgh 30, Pa.



**Jones & Laughlin Steel Corporation STEEL**

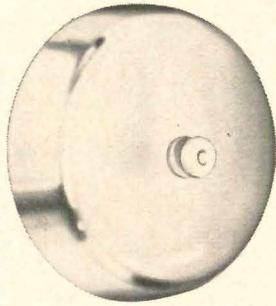
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# Specify the very latest for safety and convenience

new convenience—

## Concealed BATHROOM CLOTHES LINE



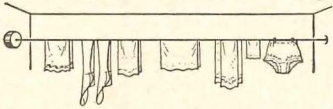
To use—grasp knob and pull out cord—then hook knob in retainer plate on opposite wall.

UP TO 10-FT. WHITE NYLON CORD  
GIVES EXTRA DRYING SPACE

This new Hall-Mack clothes line provides added convenience for all bathrooms, service porches and kitchens—for apartments, motels and hotels. Attractive and small, the chrome-plated case is easily mounted on any wall surface. A strong nylon cord is fed out or retrieved by a spring concealed inside. Simple installation over the tub furnishes ample space for overnight drying of nylons, lingerie and other items.



Wall Retainer Plate



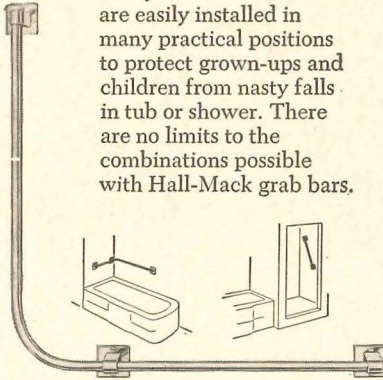
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for safety's sake—

### INSTALL GRAB BARS

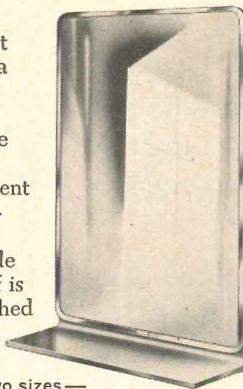
Hall-Mack grab bars add safety and convenience—are easily installed in many practical positions to protect grown-ups and children from nasty falls in tub or shower. There are no limits to the combinations possible with Hall-Mack grab bars.



new utility—

### COMBINATION MIRROR AND SHELF

For guestrooms, washrooms or toilet rooms—wherever a mirror and shelf is needed. Easily installed. There are no obstructions to prevent easy, efficient cleaning by house-keeper, maid or janitor. The 5" wide stainless steel shelf is permanently attached to mirror back.



Available in two sizes—  
16" x 23 $\frac{3}{8}$ " and 18" x 27 $\frac{3}{8}$ "

new ideas—  
ON BATHROOM  
PLANNING

Hall-Mack's colorful new brochure, "Accent on Accessories" is full of original bathroom ideas designed and produced by Hall-Mack. Write for your free copy today.



### HALL-MACK COMPANY

a **Textron** company

000

1380 W. Washington Blvd., Los Angeles 7, Calif.

Please send your "Accent on Accessories" brochure to—

Name \_\_\_\_\_

(PLEASE PRINT)

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Sold by leading plumbing, tile and hardware dealers everywhere.

A K-1063

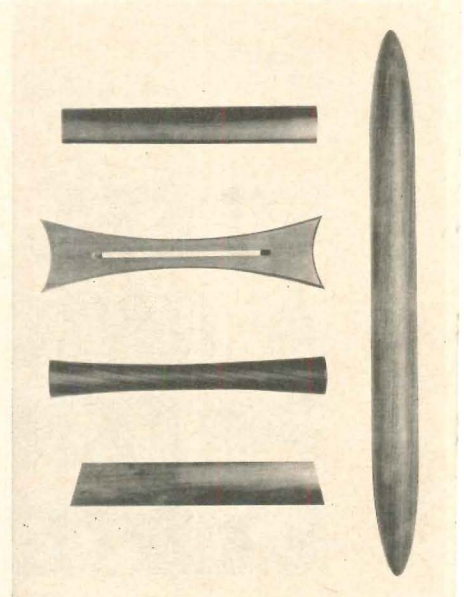
For more data, circle 117 on Inquiry Card

## Product Reports

continued from page 241

### DOOR HANDLES

A new line of *Densiwod* pre-finished door handles and drawer pulls have a smooth, polished finish which is highly resistant to damage and weather. Made of densified natural



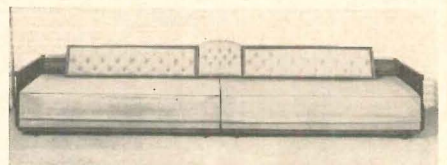
wood by an exclusive process, these handles and pulls are available both in standard and custom shapes. *Lundstrom Laboratories, Inc., Herkimer, N.Y.*

CIRCLE 303 ON INQUIRY CARD

### COUCH-BED

The *Dauphine* is a couch designed primarily for spacious hotel rooms. It can be converted into a double bed or pair of single beds. *Beautycraft Furniture Industries, Inc., Miami, Fla.*

CIRCLE 304 ON INQUIRY CARD



more products on page 261





TRADEMARKS

# Atlas Masonry Cement

1 Cu. Ft. 70 lbs.

**waterproofed**

**Now watertight walls come easier.** A special water-repellent additive is now interground with ATLAS MASONRY CEMENT during manufacture. This new feature results in mortar joints with less water absorption . . . facilitates the building of watertight masonry walls. ■ Masons know that Atlas Masonry Cement assures mortar uniformity . . . in workability, color, strength and yield, batch after batch. Everything except sand and water is delivered in one bag. Proportioning errors are minimized. Complies with current ASTM and Federal Specifications. Specify it for your next job. A product of Universal Atlas Cement, 100 Park Ave., New York 17, N.Y.



**Universal Atlas Cement  
Division of  
United States Steel**

"USS" and "Atlas" are registered trademarks M-91

For more data, circle 118 on Inquiry Card



Drenched, deluged and wind-whipped





# ...at hurricane force and still weather-tight!

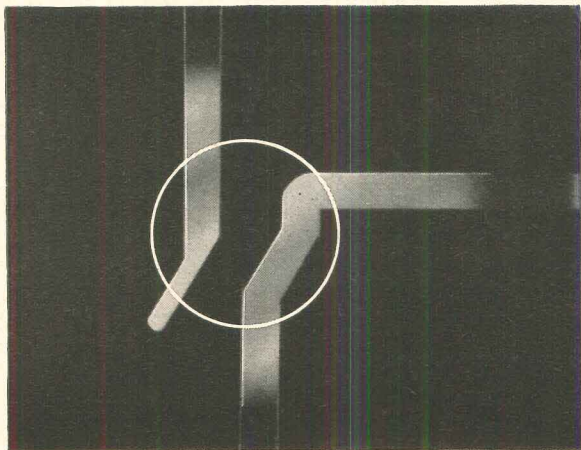
## Independent Laboratory Tests Prove Kawneer Sealair Windows\* Solve Weathering Problems!

The new Sealair window is weather-tight even when subjected to winds and rains of 70 to 80 miles per hour according to recent tests by an independent laboratory.

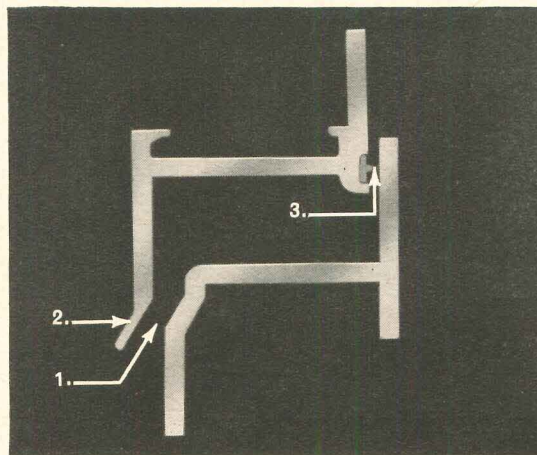
In these tests, the Sealair was installed in a weather test chamber. The window was water drenched as inside pressure was lowered to represent severe weather conditions. Sealair did not leak even when the static load reached 25 p.s.f. Many conventional windows leaked at 3 to 7 p.s.f. The superior weathering performance is the result of a Triple Weather Guard including an exclusive Pressure Equalization Slot. This Kawneer innovation is the most important metal window design change in recent years.

In air infiltration tests, the new Sealair was again far superior, at less than .2 c.f.m., well above industry standards. Here is a window so vastly superior that building interiors remain dust and draft free . . . reducing loads on heating and air conditioning systems. *Get all the facts about this remarkable window.* Write for your copy of the Sealair Window File.

**Commercial and Monumental**—Projected, casement and top hinged Sealair windows are available in commercial or monumental (2") series. Finish: Alumilite is standard—or, non-fading, abrasive-resistant, Anodic hard colors (light bronze, medium bronze and black) are optional.



**Pressure Equalization Slot**—Keeps water out. Pressure within the window sections is equal to pressure outside the building. No pressure difference . . . no partial vacuum . . . no leakage.



**Triple Weather Guard**—1) Pressure equalization slot, 2) integral drip, and 3) neoprene weatherstrip. The Sealair window offers triple weather protection. Weathering where needed, scientifically designed.



**Kawneer Company, A Division of American Metal Climax, Inc.**

Niles, Michigan • Richmond, California • Atlanta, Georgia • Kawneer Company Canada, Ltd., Toronto, Ontario, Canada

\*Patent Applied For

©1963 Kawneer Company

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IN 1957, ONE COAT OF WEST CONCRETE FLOOR TREATMENT WAS USED AT THE TUBESALES PLANT IN LOS ANGELES. IN 1963 . . . NO CHANGE!



**SEE WHAT 6 YEARS  
OF HEAVY TRAFFIC  
HAVE DONE TO THIS FLOOR!**

(PRACTICALLY NOTHING.)

West Concrete Floor Treatment is the one product that cures, hardens, seals and dust-proofs new concrete floors with a single application! Goes on right after troweling!

Just *one coat* of West Concrete Floor Treatment seals concrete and helps minimize staining from acids, oils, and greases during the early construction phases. Protects surface from plaster, paint, mud and abrasive traffic during final construction period. No removal of West Concrete Floor Treatment is necessary prior to the installation of composition tile or other material.

This remarkable time-and-labor saving treatment is effective on all concrete surfaces. It enables concrete to retain over

95% of its moisture. Permits a gradual and even release of moisture so that the curing, hardening and sealing processes occur simultaneously. And it meets ASTM specifications C-156 and C-309-58.

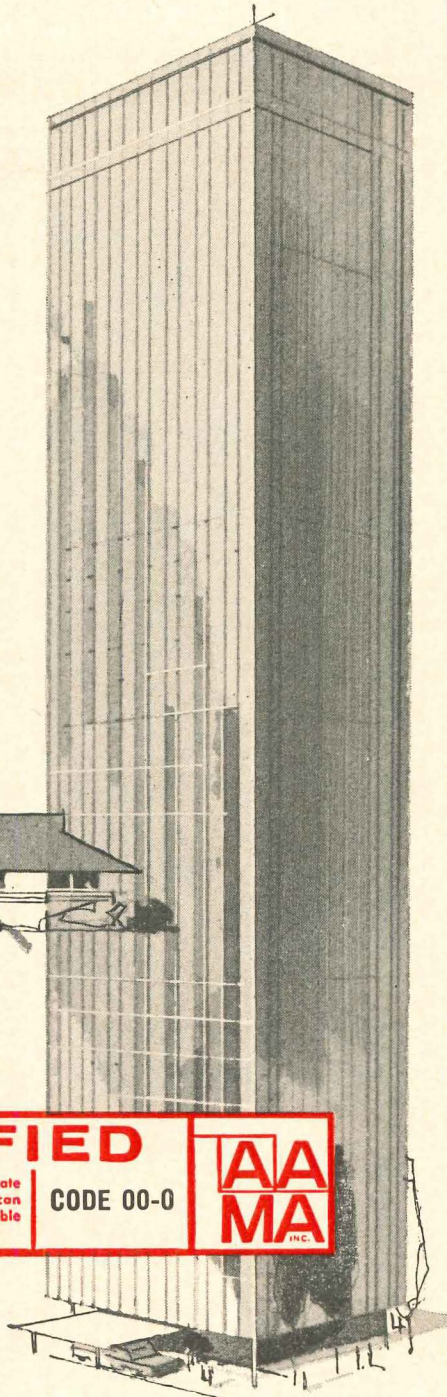
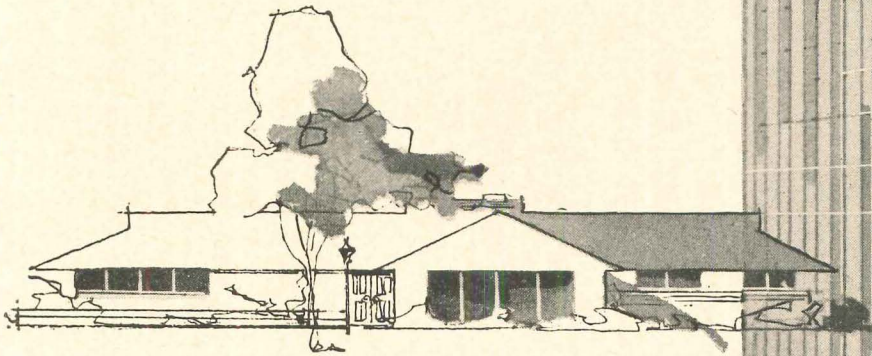
Why not contact the man to help you with specifications and additional information: your West representative. Look him up in your Yellow Pages, or write West Chemical Products, Inc., Construction Division, 42-16 West Street, Long Island City, New York.



For more data, circle 120 on Inquiry Card



**AAMA, INC.**  
QUALITY CERTIFICATION  
LICENSEES



**QUALITY CERTIFIED**

The manufacturer warrants by affixing this label that this window or door is a duplicate of samples independently tested, inspected and certified in accordance with American Standard Practice for Certification Procedures, ASA Z34.1, to comply with the applicable specifications of Architectural Aluminum Manufacturers Association.

CODE 00-0



ADOR CORPORATION  
Fullerton, Calif.  
AIR-LITE METAL PRODS. CO.  
Oakland 1, Calif.  
AMERICAN DURALITE CORP.  
Loudon, Tennessee  
AMERICAN METAL WINDOW CO. INC.  
Shreveport, Louisiana  
THE WILLIAM BAYLEY CO.  
Springfield, Ohio  
BELLHOUSE, INC.  
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THE BRITT COMPANIES  
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Burbank, Calif.  
CECO STEEL PRODUCTS CORP.  
Chicago 50, Illinois  
CORONET ALUMINUM CO.  
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CUPPLES PRODUCTS CORP.  
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MICHAEL FLYNN MFG. CO.  
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Hialeah, Florida  
MAYFAIR INDUSTRIES, INC.  
Lafayette, Louisiana  
MIAMI WINDOW CORP.  
Miami 48, Florida  
MILCO SPECIALTIES INC.  
Rochester, Michigan  
MILLER SLIDING GLASS DOOR CO.  
Miami, Florida  
NUDOR OF INDIANA, INC.  
Geneva, Indiana  
YALE OGRON MFG. CORP.  
Hialeah, Florida  
PEACHTREE DOORS, INC.  
Atlanta 25, Georgia  
PORTA ALUMINUM INC.  
Old Bethpage, L.I., N.Y.  
PORTERFIELD INDUSTRIES, INC.  
Miami 37, Florida  
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Houston 45, Texas  
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REYNOLDS METALS CO.  
Richmond 18, Virginia  
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Tucson, Arizona  
ROYAL ALUMINUM CORP.  
Hialeah, Florida  
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Compton, Calif.  
SLIDE-VIEW DOOR & WINDOW CO.  
Rochester, Michigan  
SOUTHWEST ALUMINUM  
PRODUCTS, INC.  
Dallas, Texas  
STANLEY BUILDING SPEC.  
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SUNLIGHT METAL PRODUCTS  
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SUPERIOR WINDOW CO.  
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TUCKER ALUMINUM PRODS. INC.  
Hialeah, Florida  
VALLEY METAL PRODS. CO.  
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Miami, Florida  
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North Liberty, Indiana  
WEATHER-TITE MFG. CORP.  
Baltimore 5, Maryland  
WINDALUME CORP.  
Kenil, N. J.

**Cost: 2½ to 10 cents...but what's it worth?**

Most seals are inexpensive to print, and some don't mean very much. Is ours any better?

Let's look at the facts:

Before a manufacturer can put the AAMA, Inc., Quality Certified Seal on his aluminum windows or sliding glass doors, his product must pass every one of the demanding tests conducted for AAMA, Inc. by independent testing laboratories.

It takes an outstanding product to pass the rigorous tests on air infiltration, water resistance, wind load, hardware, strength of members and other factors.

But, "What if a manufacturer sends a good window to be tested, and produces inferior windows?" Here's where AAMA, Inc. policing takes over.

The independent administrator, Electrical Testing Laboratories, Inc., makes three unannounced inspections at each factory each year. What's more,

any product bearing the seal can be challenged for cause at the job-site by any AAMA, Inc. member.

And, if either in-plant or job-site inspections disclose a product which is not a replica of the test sample, the manufacturer either "makes good" or gets dropped from the Quality Certification program.

Effective October 1, 1963, this seal on every aluminum window and sliding glass door for residential and architectural applications is your assurance that the product will satisfy your customers. The AAMA, Inc. Quality Certification program has teeth . . . so the seal means something.\*

Ask About Aluminum . . . Quality Certification. Ask any Licensee and write for the AAMA, Inc. Q-C Booklet.

\*Meaningful Quality Certification is assured by complying with "American Standard Practice for Certification Procedures," A.S.A. Z34.1.

**ARCHITECTURAL ALUMINUM MANUFACTURERS ASSOCIATION, INC.**

35 EAST WACKER DRIVE • CHICAGO 1, ILLINOIS



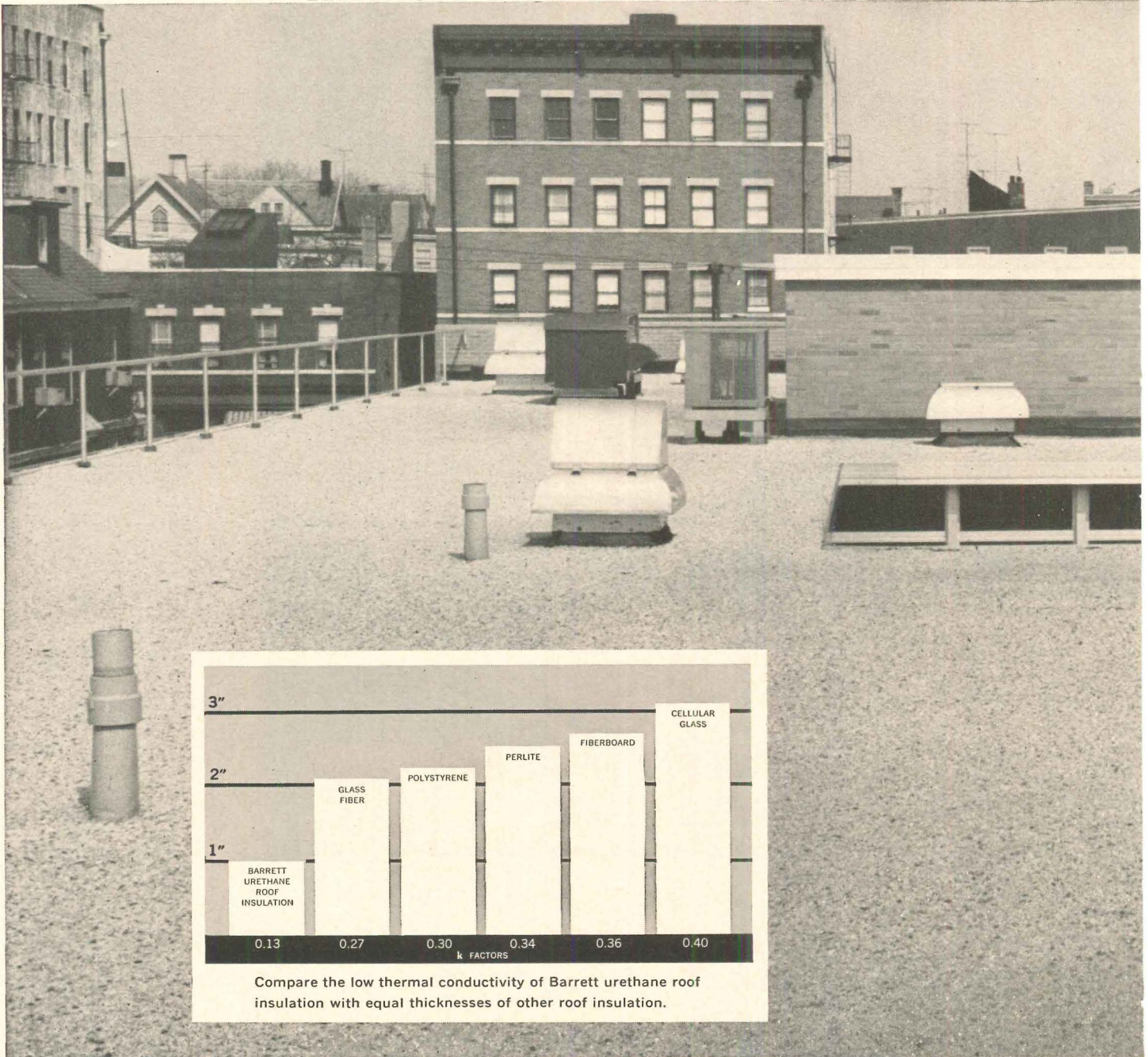
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**BARRETT**  
BUILDING MATERIALS

Allied  
Chemical

NEWS FOR ARCHITECTS



Barrett urethane roof insulation provides maximum thermal efficiency while reducing air conditioning equipment space and costs.

## BARRETT URETHANE ROOF INSULATION CUTS APPLICATION

Save duct and enclosure space, reduce air conditioning equipment size, and provide a more efficient heat and cooling system for your client. You can do this with Barrett urethane roof insulation, a new foamed plastic insulation panel containing billions of tiny, closed cells sandwiched between two layers of a tough roofing membrane. This assembly provides a unique combination of properties which make it a superior roof insulation—particularly for air conditioned or electrically heated

buildings, and other structures designed for optimum comfort. Barrett urethane roof insulation has a K factor of 0.13 as compared to a range of 0.27 to 0.40 for commonly used roof insulations. This means you can design a roof that is half as thick, and still maintain maximum thermal efficiency.

Barrett urethane roof insulation is specifically designed to insulate built-up roofs. It will not bend, buckle or melt when mopped with hot pitch or asphalt. It has a rugged, work-on,





## AND EQUIPMENT COSTS IN AIR CONDITIONED BUILDINGS

walk-on surface that stands up under normal roof construction. Urethane will not rot or absorb water. For less critical insulation requirements, Barrett offers and recommends surface-sized fiberboard insulation.

Free offer: Send today for a free copy of Barrett's heat transfer calculator, the fast, easy way to determine the thickness of Barrett urethane roof insulation for any insulation value.

BARRETT IS A REGISTERED TRADE MARK OF ALLIED CHEMICAL CORPORATION.

Allied Chemical Corporation, Barrett Division  
40 Rector Street, New York 6, New York

(Dept. AR-10)

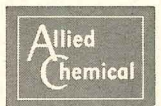
- Please send me Barrett's Heat Transfer Calculator.  
 Please have a representative call.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

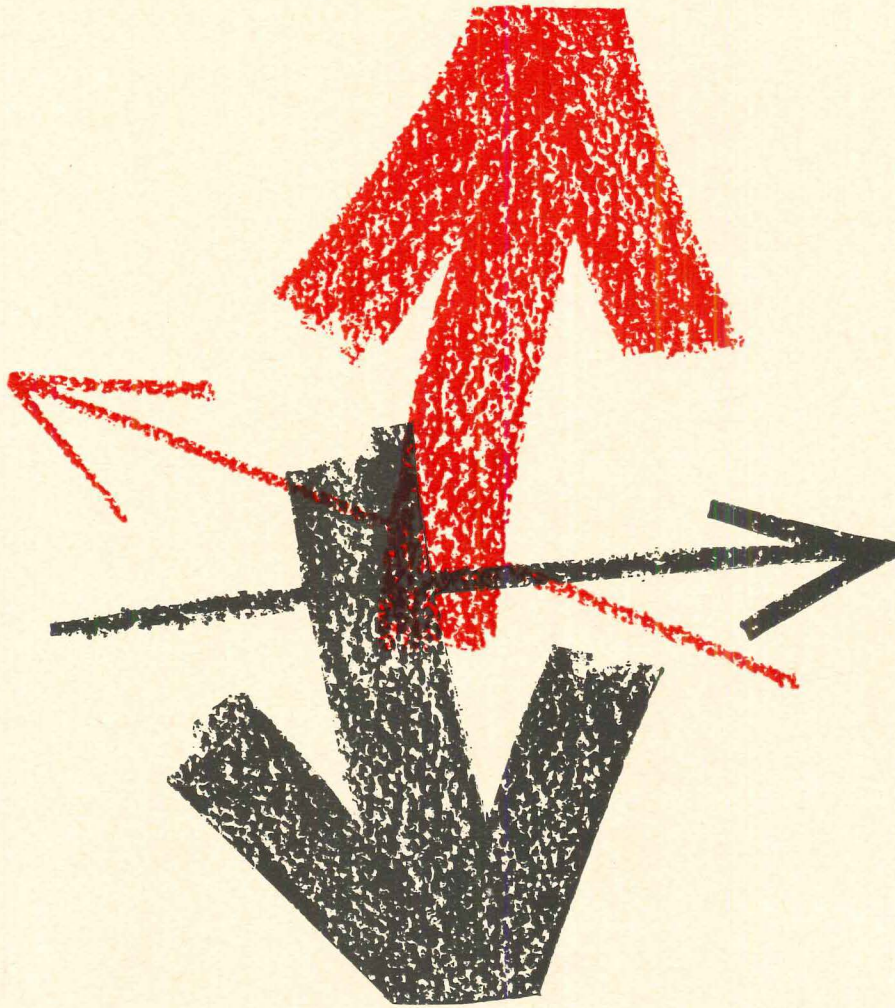
ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_



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## DIRECTIONS IN TRANSPORTATION

We're more than "vertical" transportation specialists. Our products move in all directions:

- passenger elevators
- parking garage elevators
- dumbwaiters
- freight elevators
- moving walkways
- power scaffolds

Modern planning demands flexible methods to move people and products efficiently. Consult us for direction in your transportation planning.



Executive Offices: 311 W. 43rd Street, New York 36, N.Y./Sales Offices Atlanta, Ga.: Philadelphia, Pa.: San Francisco, Calif. Canada Head Office Toronto/Branches in Principal Cities

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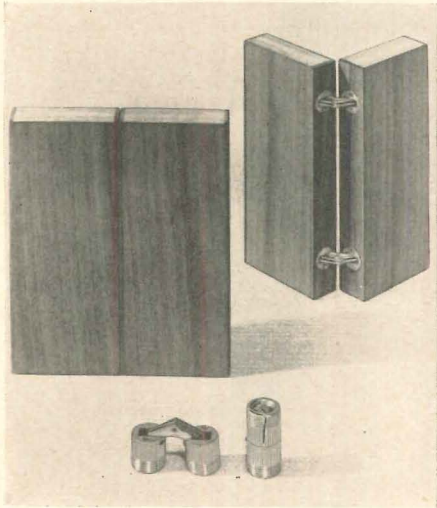


## Product Reports

continued from page 252

### CONCEALED HINGING

Completely concealed hinging without any mortising operations is possible with a new patented hinge. This hinge permits perfectly flush door mountings with no hinge parts showing, and requires only the drilling of a round hole to accommodate the hinge. After the hinge is inserted in the hole, the tightening of a set screw on the hinge creates a wedge effect inside the lumber to assure secure fastening. Because the wedging action operates 90 degrees from the



hinging action, the hinge works equally well on flake-core, chip-core, lumber-core and solids. The hinge is made of solid brass with heavy steel linkage and can sustain heavy loads. Two primary uses are on flush door cabinets and house doors. The hinge, *Model No. 610*, comes in four standard sizes, from 14 to 24 mm. *Selby Furniture Hardware Co., 17 E. 22nd St., New York 10, N.Y.*

CIRCLE 305 ON INQUIRY CARD

### DRAWING INK CARTRIDGE

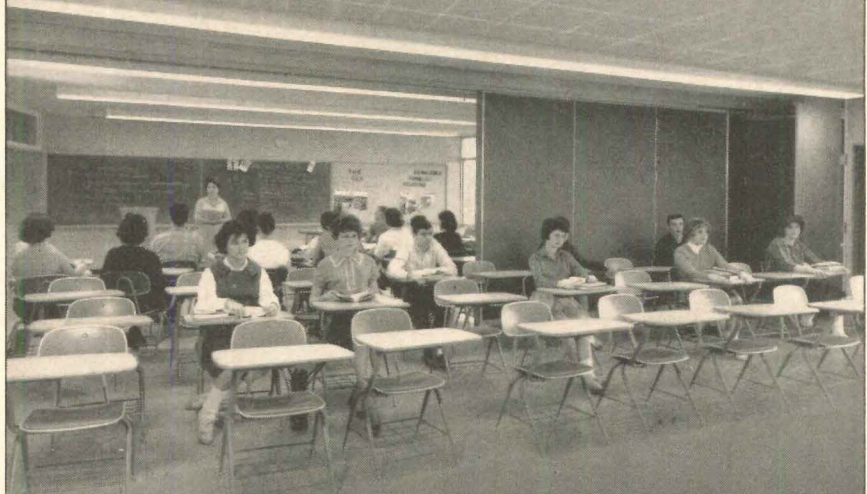
A new pre-filled and sealed ink cartridge is filled with Koh-I-Noor's new *Universal* black drawing ink which produces an intense black, well defined, highly adhesive line on drafting film, cloth or paper, the company announced. The cartridge is easily attached to a *Rapidograph* No. 3065, *Acetograph* No. 3075, or *Brushograph* No. 3066. *Koh-I-Noor, Inc., Bloomsbury, N.J.*

CIRCLE 306 ON INQUIRY CARD

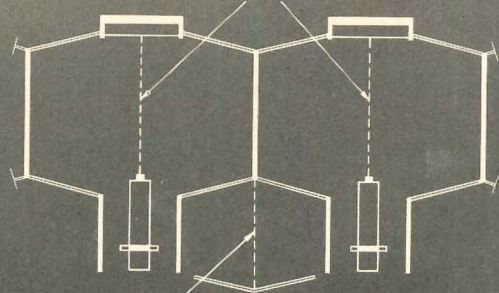
more products on page 276

## R-W CLASSROOM FOLDING WALLS

*... custom engineered to meet the exact functional and sound-retarding requirements of modern educational facilities*



R-W AUTOMATIC ELECTRICALLY OPERATED FOLDING WALLS



R-W MANUALLY OPERATED FOLDING WALL

R-W offers a Folding Wall that is custom-engineered to fulfill the exact requirements of your design concepts. Ideal for classrooms, gymnasiums, auditoriums and cafeterias. For complete information request Catalog No. 602.

Partial Floor Plan of The Chicago Teachers College, Chicago, Illinois. Architects: Perkins and Will, Chicago, Illinois.



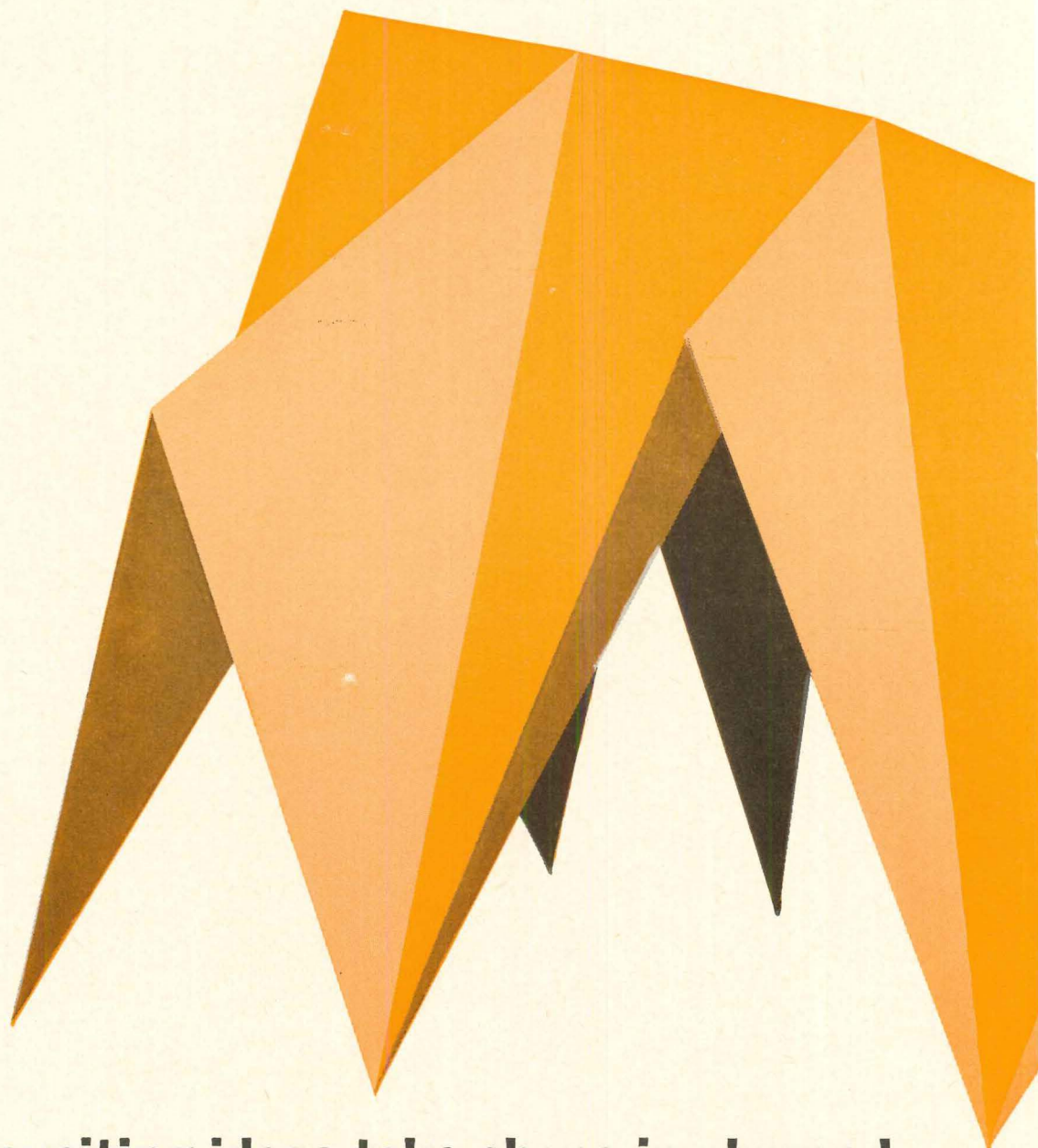
# Richards-Wilcox

MANUFACTURING COMPANY

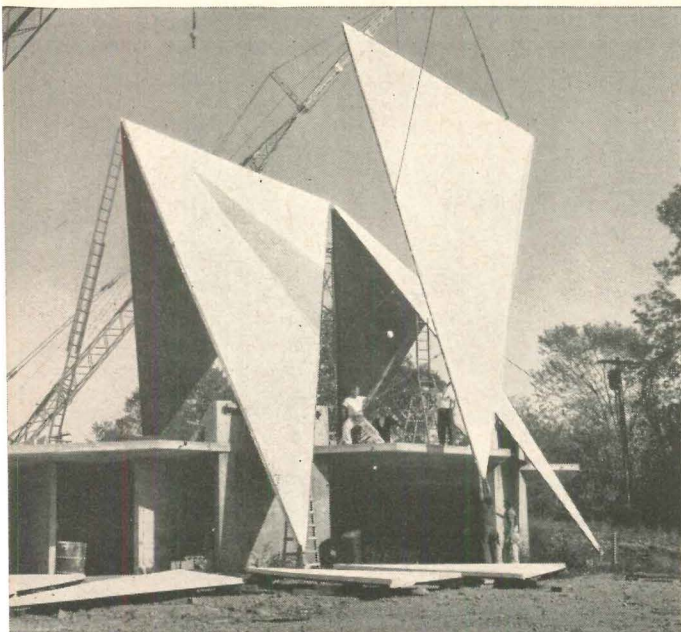
116 THIRD STREET • AURORA, ILLINOIS

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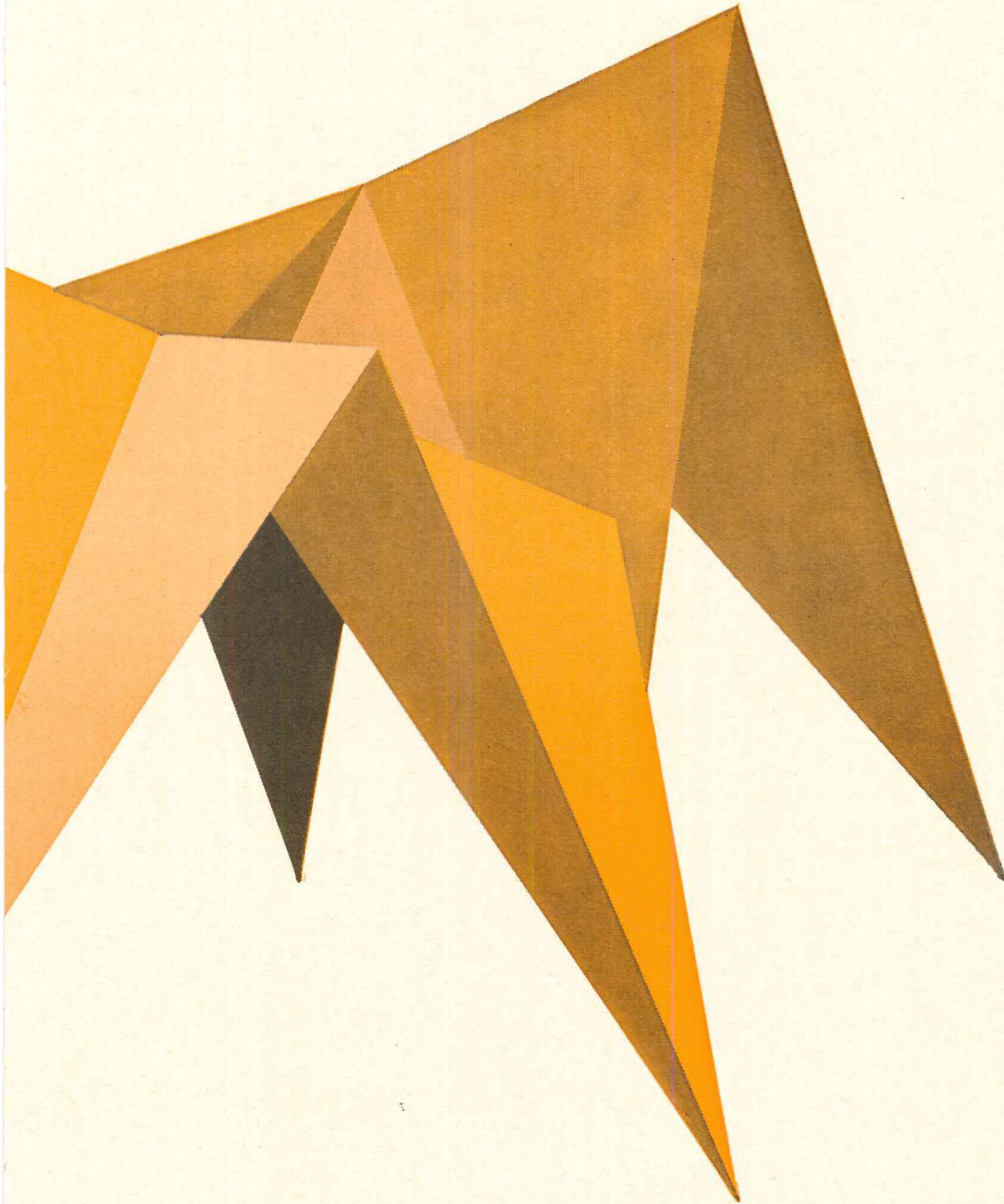




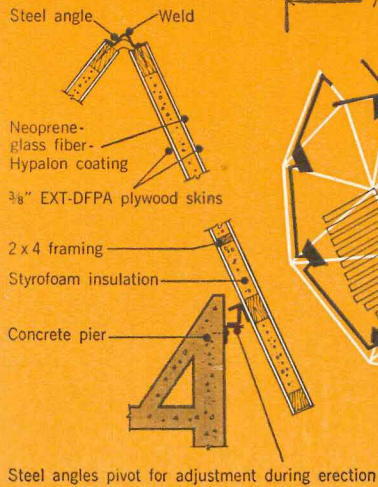
**the most exciting ideas take shape in plywood**



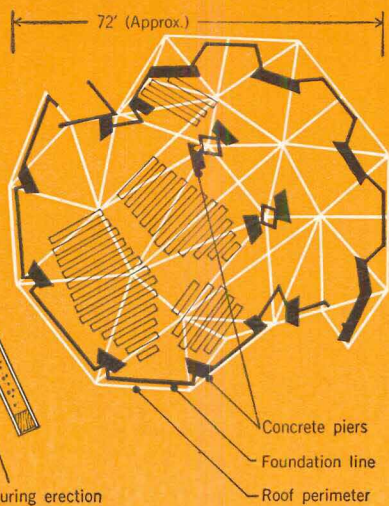




**PLYWOOD PANEL CONNECTION DETAIL**



**ROOF AND FLOOR PLAN**



The soaring canopy of this church demonstrates again how modern plywood technology can turn a sophisticated design into practical reality. ■ Perhaps the most complex plywood space plane yet built, it is actually a variation of the folded plate. The roof becomes self-supporting by the interaction of inclined diaphragms—in this case 42 triangular stressed skin plywood panels. It shelters 5,000 sq. ft. and rises to 35 ft. at two points. ■ Plywood's size, strength and adaptability to precise fabrication made it possible to execute the design within a tight budget, and to erect the entire roof in seven working days. For more information on plywood folded plate systems, write (USA only) Douglas Fir Plywood Association, Tacoma 2, Wash.



ALWAYS SPECIFY BY  
DFPA TRADEMARKS





## Classroom storage is a job for the expert!

From St. Charles comes complete, custom-built beauty and flexibility for every classroom storage need. And only St. Charles gives you such completeness... such a broad range of experience in the design, and construction of casework for **Food and Clothing labs... Arts & Crafts and Science rooms**. St. Charles is your assurance of maximum use of space... uncompromised strength and durability... long-range economy. New 72-page catalog available at request on your letterhead.

*St. Charles Manufacturing Co., Dept. ARS-10, St. Charles, Illinois*

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*St. Charles*

**CUSTOM SCHOOL**

**STORAGE FURNITURE**



# AA WIRE PRODUCTS' RESEARCH AGAIN GIVES YOU NEW DESIGN POTENTIAL WITH...



## THE MOST EFFECTIVE SHEAR TRANSFER TIE

Another new product from AA Wire Products Company, designers of BLOK-LOK, ECONO-LOK, and CAVITY-LOK, AA-LOK has been developed to meet the increased structural requirements of modern masonry construction. It features X brace ties, flush-welded at center and spaced 24 inches on center, thus substantially increasing resistance to shear. Three parallel reinforcing wires control shrinkage and cracking and provide bond and reinforcement against external and internal loads and pressures.

(The following are excerpts from Research Report B-862-1 on Cavity Wall Reinforcing Systems):

"The objective of this research program was the development of a new continuous metal wall tie for cavity wall construction. This tie should act as a shear connector between the two wythes of a cavity wall and thus increase its potential transverse strength. Experimental data were subjected to theoretical analysis and comparisons were made with cavity walls using conventional metal ties. After considerable study the following conclusions were made:

"The required cross section area for single wire cross ties makes them impractical for use as shear connectors in cavity wall construction. However, the use of 2-3/16 inch cross wire 16 inches c-c can increase the strength of a cavity wall 10 to 15 per cent over the use of a single 3/16 inch cross tie every 32 inches c-c. This strength increase is not significant because of the variability in constructing the walls.

"A center-welded X brace tie is more effective in resisting shear and direct compression than the X brace without a center weld.

"Shear reinforcement as provided by the AA-LOK tie increased the lateral resistance of standard 2 inch cavity walls over Z tied

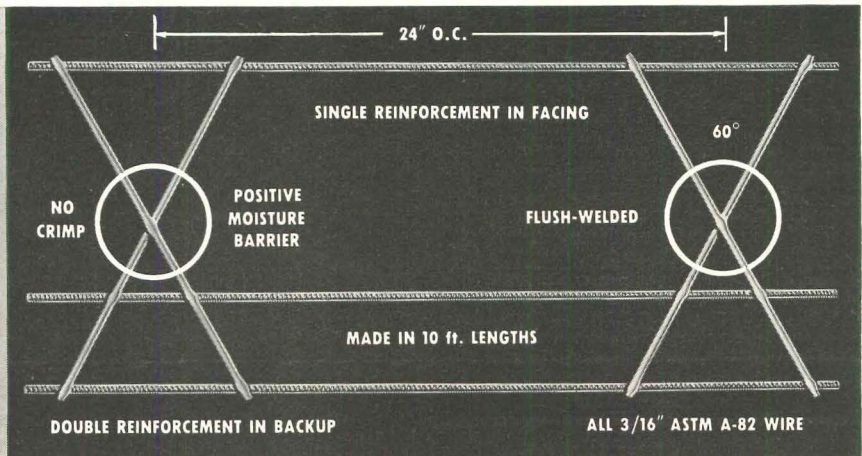
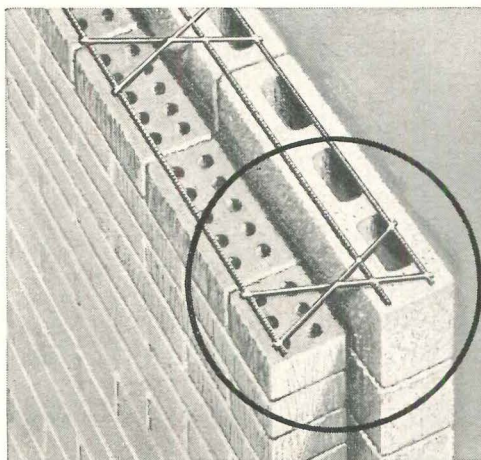
walls by a factor of 1.80. Standard construction for 10 inch cavity brick and block walls consists of ties in every other block joint and the use of a type N mortar. Increasing the number of cross ties by placing reinforcements in every block joint and increasing the bond strength by use of a type S mortar increased the strength of the shear tied walls by a factor of 2.1 over standard Z tied walls. Failure of these walls was due to rupture of the concrete block at the supports.

"For predicting wall strength the reinforced concrete analysis was the poorest. The shear and tied beam analyses both provide design data which approximated experimental measurements. However, the tied beam theory fits the observed behavior more closely than the shear design. Shear design does not account for the cracking observed in the block wythe before ultimate load is attained. The tied beam analysis assumes that the steel in the block wall accounts for the continued load carrying capacity after cracking occurs in the block wythe. These cracks close up after load release.

"The strength increases observed can be explained only by assuming that the AA-LOK tie provides a shear resistance between the wythes. Evidence provided by strain gage data from the experimental walls verifies this assumption. However, these data more closely resemble the stress distribution of a tied beam than those of a shear tied composite wall. The increased stiffness of the AA-LOK tied walls over Z tied wall indicates greater unity of action between the two wythes.

"Continuous ties are more satisfactory in cavity wall construction than noncontinuous ties. The side wires in the bed joints maintain integrity of the wall after ultimate load is reached."

### REQUEST YOUR COPY OF RESEARCH REPORT B-862-1



**AA WIRE PRODUCTS COMPANY**  
**714 E. 61st Street • Chicago 37, Illinois • telephone Midway 3-8203**

Manufacturing plants: Chicago, Illinois; Blok-Lok of Texas, Dallas, Texas; Blok-Lok Ltd., Toronto, Canada

© Reg. U. S. Pat. Off.

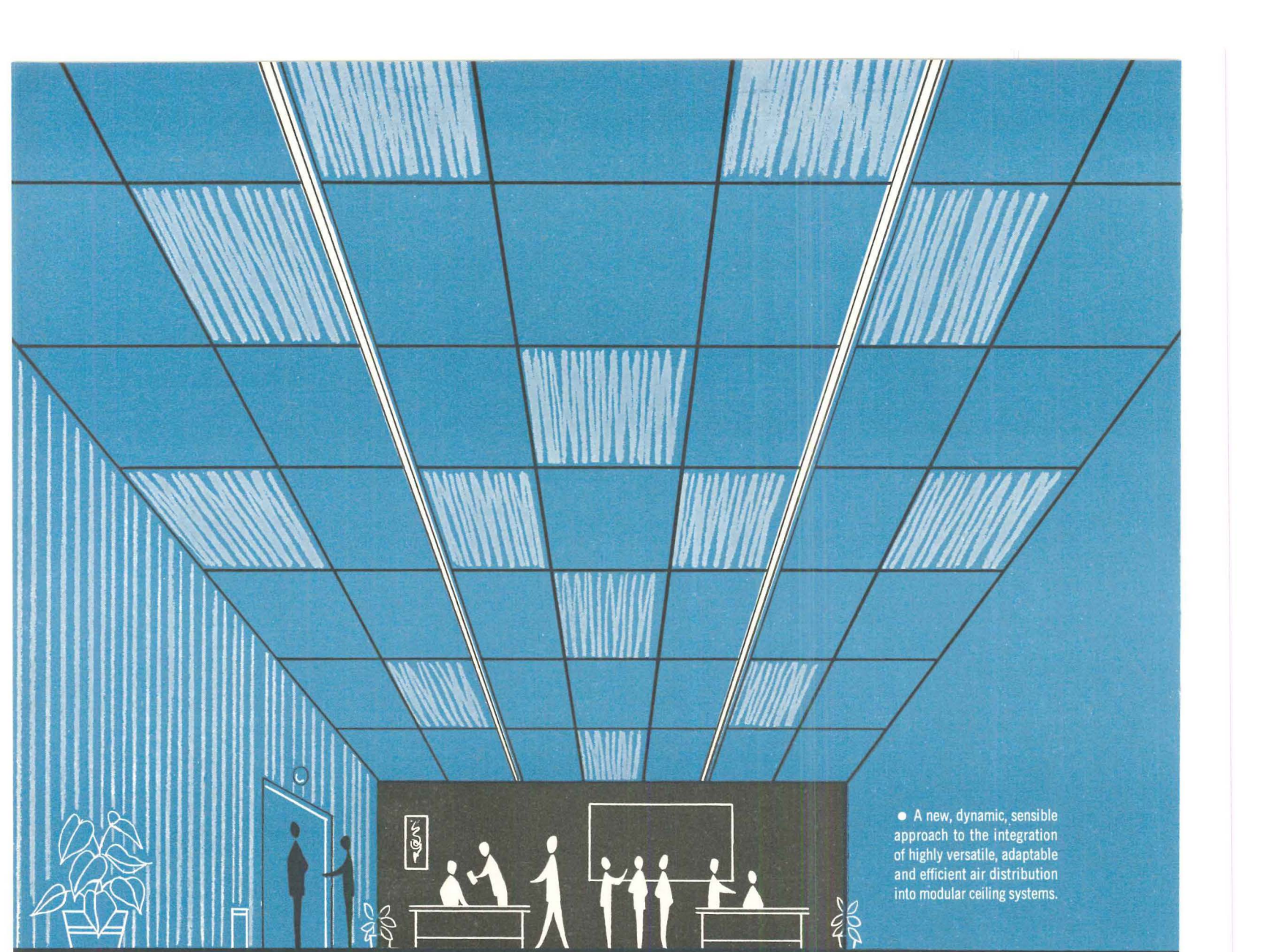
© 1963 AA Wire Products Company

\*Pat Pending

← For more data, circle 127 on Inquiry Card

For more data, circle 128 on Inquiry Card





• A new, dynamic, sensible approach to the integration of highly versatile, adaptable and efficient air distribution into modular ceiling systems.

# MODULinear

Ceiling Diffusers



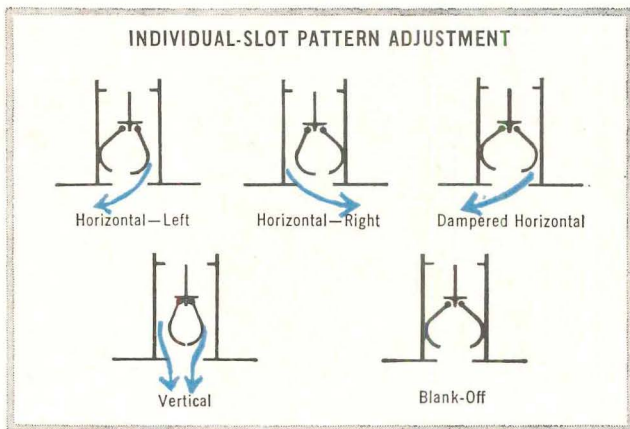
# New MODULinear—combines modern architectural design, superior air diffusion and true flexibility to the highest degree ever achieved in a linear diffuser!

- **FOR NEARLY ALL TYPES OF CEILINGS**—special extruded aluminum design of MODULinears permits them to be incorporated into the modular unit of most ceiling systems—including plaster.
- **INGENIOUS, SIMPLIFIED DESIGN PERMITS AIR PATTERN & AIR FLOW RATE CONTROL FROM SAME SET OF VANES**—vanes are quickly, easily positioned from diffuser face, to adjust air pattern a full 180° (horizontal discharge, left or right, a vertical discharge, or any pattern in between)—and to set air flow rate desired. *Both air pattern and flow rate can be set at any time before, during, or after installation . . . EITHER CAN BE ADJUSTED WITHOUT DISTURBING THE OTHER.*
- **THE ULTIMATE IN EFFICIENT AIR DIFFUSION**—

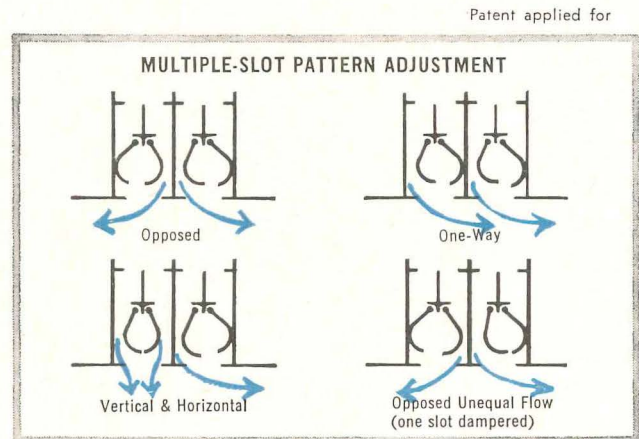
MODULinear can be furnished with special Diffuser Inlet Assembly which provides precisely the chamber necessary for spread and superior air diffusion. Also provides the extra flexibility needed to adapt air distribution to the requirements as dictated by changes in occupancy. Inactive sections of diffusers can be quickly, easily activated (and vice versa.)

- **FAST, EASY INSTALLATION**—furnished with support clips for quick fastening to ceiling suspension system or Tee Bars.
- **SINGLE SLOT & MULTIPLE SLOT MODELS**—available in one-piece lengths up to 8 foot. Sections butt closely together for use in continuous lengths.

## The correct air pattern for any installation



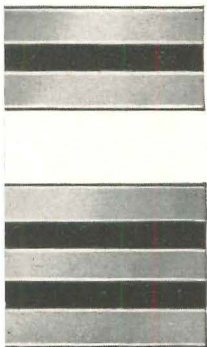
For 1/2" slot, specify Series ML-3400. For 3/4" slot, specify Series ML-3500.



Patent applied for

by

# TITUS<sup>®</sup>



**Mail Coupon for  
New MODULinear  
CATALOG**

TITUS MANUFACTURING CORPORATION, Waterloo, Iowa

Please send NEW MODULinear Ceiling Diffuser Catalog.

Have Titus Representative call on me.

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

For more data, circle 129 on Inquiry Card



# Big news from *Halsey Taylor*<sup>®</sup>

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## CAPACITIES INCREASED

*on popular models of  
Halsey Taylor coolers*  
**WITH NO INCREASE IN COST**

Here's another extra from the makers of Halsey Taylor Coolers, first in their field in styling, dependability and sanitation. Now, due to advanced engineering, you get *increased capacities without any increase in cost!*

In our three popular series, the Wall-Mount, the Wall-Tite and the Free-Standing Models, all coolers formerly 6 and 11 gallons in capacity *are now increased to 8 and 14 gallons.* Thus Halsey Taylor gives you far greater convenience, by serving more people at less cost!

*Ask for latest catalog, or see Sweet's or the Yellow Pages*

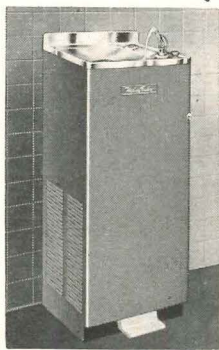
The Halsey W. Taylor Co., Warren, Ohio

# *Halsey Taylor*<sup>®</sup>

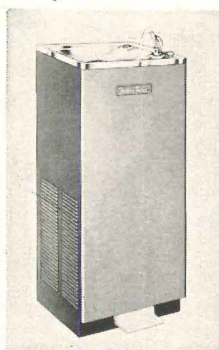
563



**Wall-Mount** — On the wall, off the floor  
8, 14, 16 gallons



**Wall-Tite** — Snug to the wall. Less space  
8, 14, 16, 21 gal.



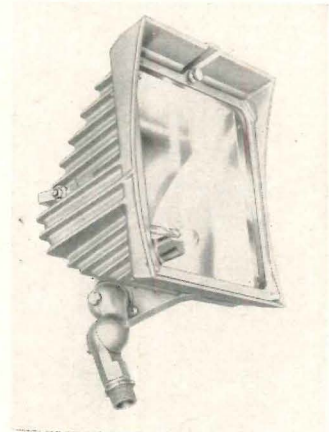
**Free-Standing**  
Away from wall  
8, 14, 16, 21 gal.

## Product Reports

*continued from page 261*

### QUARTZ FIXTURE

An all-aluminum, 500- or 1,500-watt quartz iodine fixture with a single vertical beam adjustment that will allow the contractor to select his own beam at the job site also features a built-in spirit level to insure proper lamp orientation and vertical and horizontal aiming adjustments. The



fixture may be tipped back for relamping and cleaning, and automatically returned to original angle due to the unique mounting arm. *The J. H. Spaulding Company, 3731 Dirr Street, Cincinnati, Ohio*

CIRCLE 307 ON INQUIRY CARD

### INTERCOM CONTROL CENTER

The all-transistorized *Model S300 Intercom-Program Control Center* is designed specifically for low-cost school communication and program systems. This compact unit also is suitable for industrial paging and background music systems.

A few of its features are: 32-watt power; inputs for three low impedance microphones; three high impedance auxiliaries; 16 station selector keys; and selective privacy on intercom. *Rauland-Borg Corporation, 3535 W. Addison St., Chicago 18, Ill.*

CIRCLE 308 ON INQUIRY CARD



*more products on page 284*

For more data, circle 130 on Inquiry Card



# CITY HALL and POLICE BUILDING



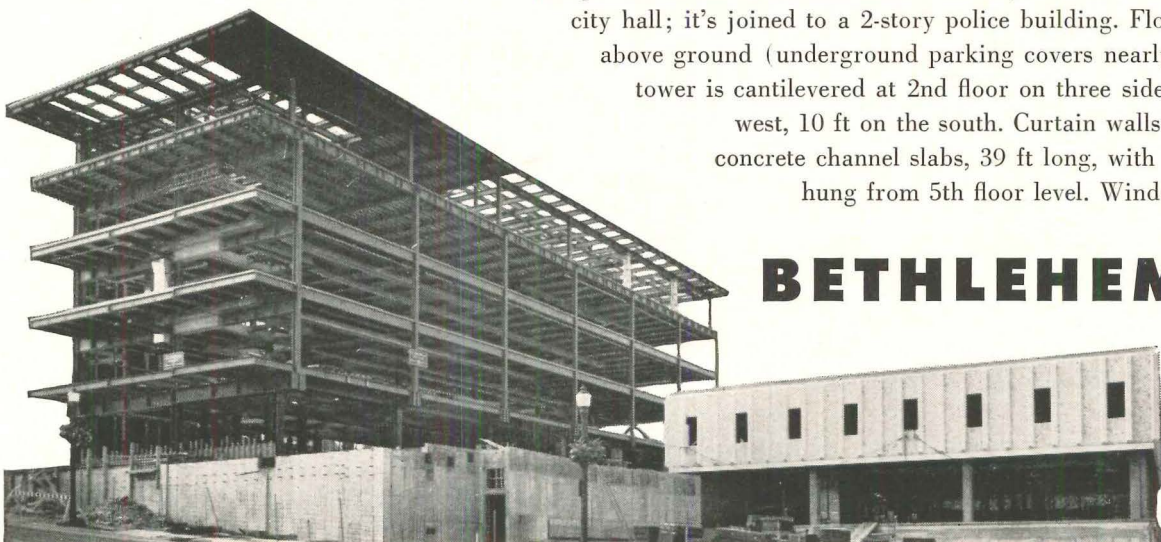
*Allentown, Pennsylvania*



*Everett Associates, Architect-Engineer, investigated both reinforced concrete and structural steel for the framing material . . . then chose steel, when steel proved more adaptable, more economical.*

To be completed late in 1963, the Allentown City Hall and Police Building will be one of the nation's most flexible and complete administrative facilities. The structure launches the first phase of an extensive redevelopment campaign in Allentown, Pa.—an "All-America City."

Main portion of the \$3 million Allentown City Hall and Police Building is a 5-story city hall; it's joined to a 2-story police building. Floor space: 120,000 sq ft above ground (underground parking covers nearly the whole site). Main tower is cantilevered at 2nd floor on three sides—6 ft on the east and west, 10 ft on the south. Curtain walls are precast, prestressed concrete channel slabs, 39 ft long, with a pebble finish; they're hung from 5th floor level. Window pattern is staggered.

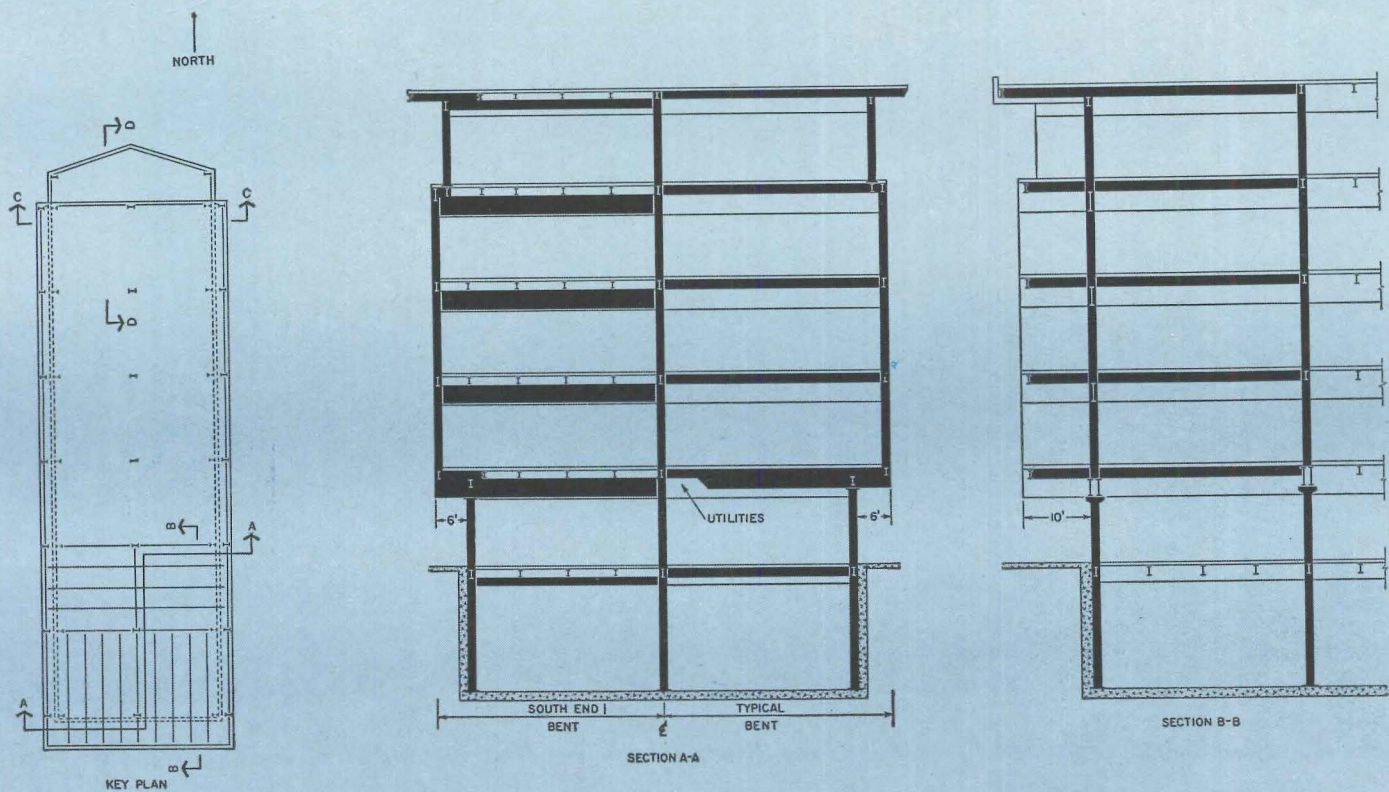


## BETHLEHEM STEEL





# The architect wanted two-way Steel made them easy...



In the unique design of the Allentown City Hall and Police Building, the main tower is cantilevered at the second floor on three sides—6 feet on the east and west, and 10 feet on the south.

At first, these cantilevers looked like a natural for reinforced concrete in a waffle-slab system. But thorough study of both concrete and structural steel proved exactly the opposite.

### **6-ft cantilevers on east and west . . . solved by steel**

In the concrete design, columns were located in the set-back

exterior wall at the first floor, and carried up through the four floors above. This resulted in columns occurring in the middle of certain rooms—an undesirable feature of the concrete design.

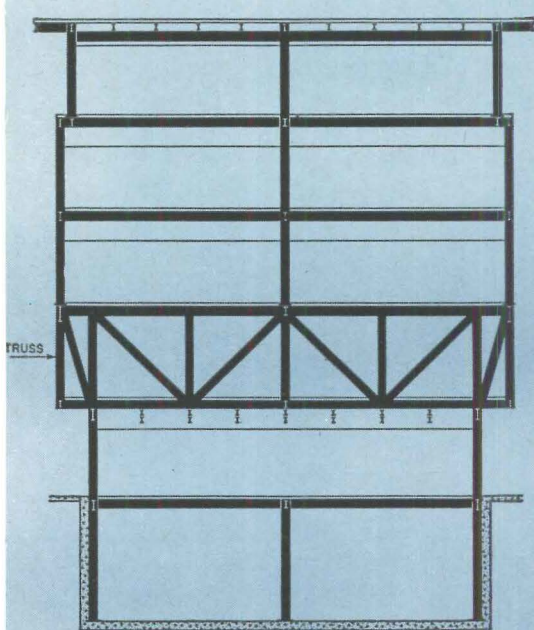
The steel solution is shown on the key plan and Section A-A. Two parallel 30-in. wide-flange steel beams cantilever 6 ft beyond the first floor columns, and carry the exterior columns for the upper floors. This feature allows the exterior line of columns to be moved into the wall, where a line of columns rightfully belongs. In addition, to allow passage of utilities near the interior support of the cantilevered beam, the beam depth was reduced by coping the lower flange and welding on a tapered flange to replace it.



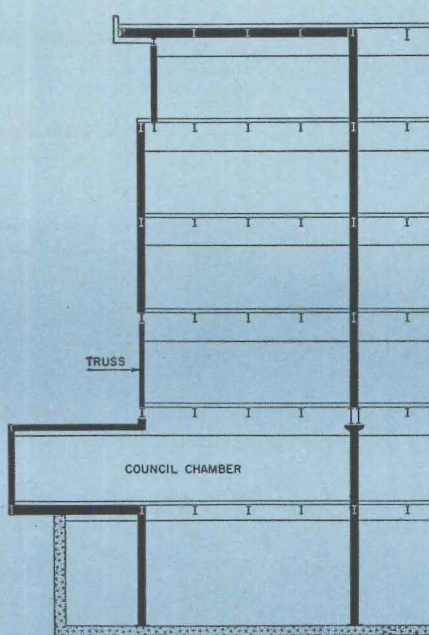


*cantilevers.*

*and saved money, too!*



SECTION C-C



SECTION D-D

**Architect-Engineer:**  
Everett Associates.

**General Contractor:**  
E. C. Machin, Inc.

**Steel Fabricator and Erector:**  
Lehigh Structural Steel Company.

All are Allentown, Pa., firms.

Bethlehem supplied 1,770 tons of structural steel for the project.

***10-ft cantilevers on south . . . solved by steel***

The 10-ft cantilever on the south side, and the two-way cantilevers required at the corners (see key plan) were solved by dropping the girders in the southernmost frame, thereby allowing the filler beams to pass over the girders and develop the cantilevers rather simply at each floor. (See Section B-B.)

***North wall problem . . . solved by steel***

The architectural concept dictated that the north wall be carried from the second to the fifth floors on a column-free support over the center of the council chamber located on the first floor at the north end of the building. Since the

north wall was windowless, this problem was solved by a story-height truss, which carries the columns above, and provides a column-free council chamber at the ground floor.

***Steel frame cost less than concrete***

Steel framing not only proved more adaptable to this unusual architectural concept, but also cost considerably less than the proposed concrete frame, according to the architect.

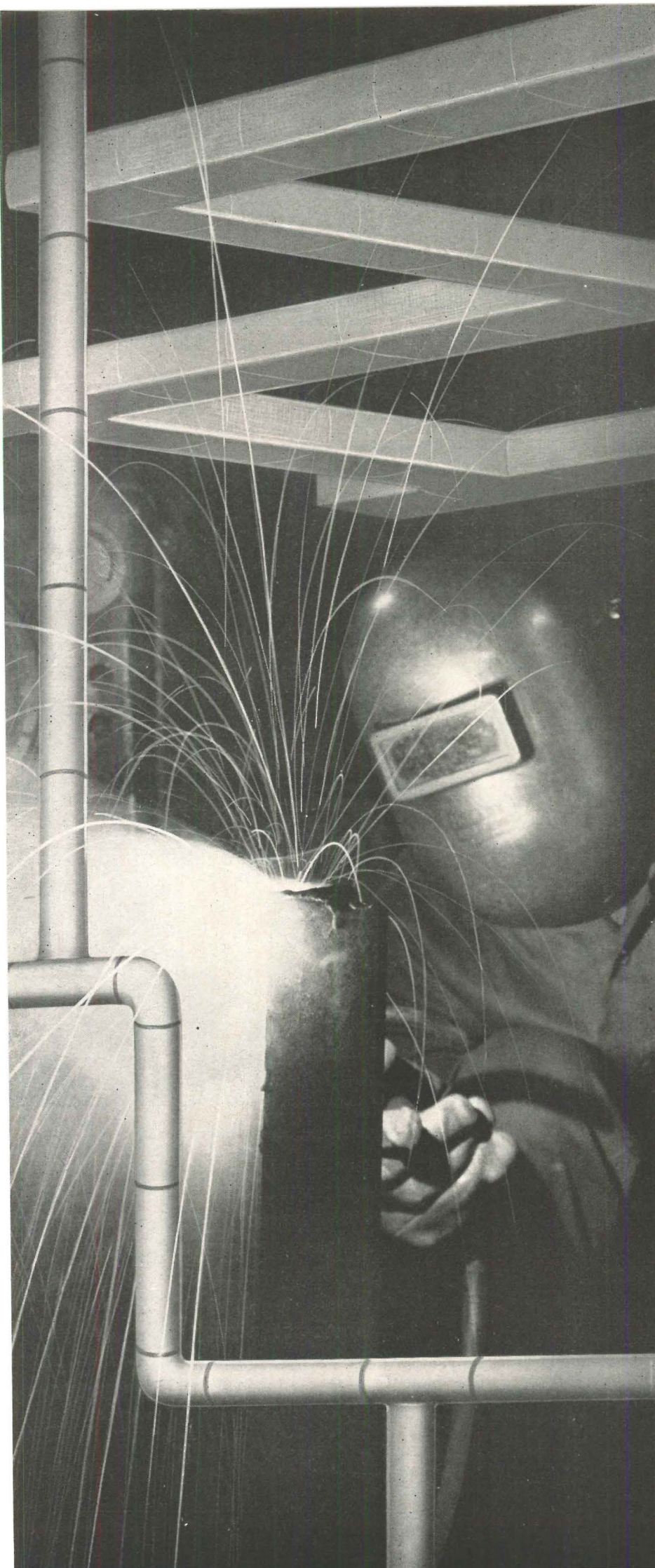
We'd like to prove to you that structural steel, with very few exceptions, can do anything any other structural material can do—and do it better. If you are planning to build or design a new structure, the Bethlehem sales office nearest you will be pleased to discuss the project with you.

**BETHLEHEM STEEL**



BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.  
Export Sales: Bethlehem Steel Export Corporation





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*...with this*  
**U/L RATED  
VAPOR  
BARRIER**

It just doesn't make sense to use fireproof insulation only to cover it with a combustible material that can contribute to the spread of accidental fire from welding sparks or other causes. Pyro-Kure vapor barriers are laminations of kraft papers, aluminum foil or plastic film which are permanently flame resistant. Reinforced for protection against tear or puncture, Pyro-Kure is now being used by the major insulation manufacturers (frequently under their own brand names) as a facing on commercial insulation, as a jacket over pipe insulation and as a liner on air-conditioning ducts. You can specify Pyro-Kure by name or merely insist upon a vapor barrier with a U/L flame spread rating of 25 or below.

**We will be glad to send you**, without obligation, detailed information, physical property data including permeance values and samples. Write to: American Sisalkraft Company, 58 Starkey Ave., Attleboro, Mass. Division of St. Regis Paper Company.

## **PYRO-KURE<sup>®</sup>**

**NON-COMBUSTIBLE VAPOR BARRIERS  
FOR INSULATION FACING AND JACKETING**

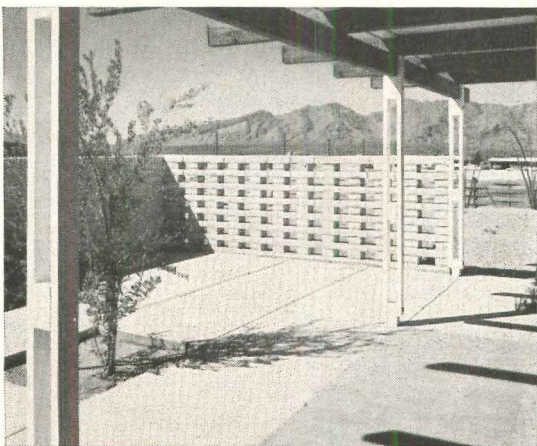
For more data, circle 131 on Inquiry Card



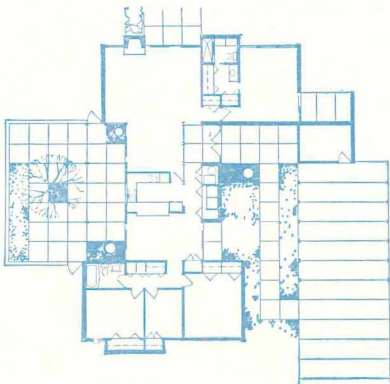
# National award-winning home gives new spirit to desert living with modern concrete



Horizon Home, Tucson, Arizona, winner of 1962 National Design Award. Architect: Cook & Swaim, A.I.A., Tucson.



Slump block in full and half units provides an attractive wall for this patio. Floor plan below shows effective use of zone planning.



A dramatic blending of indoors and outdoors provides stimulating livability in this outstanding design from the Horizon Homes Program, sponsored by the nation's concrete industries.

From the many new and exciting forms of concrete masonry now available, the architect chose slump block. Its natural look and bold dimensions well suit the low, simple lines of the house. To extend the color and texture of the desert floor, wall areas below the windows are finished with stucco in earthy tones. In the courtyard and gardens concrete creates added textural interest—from abstract sculpture to the patio floors, terraces and gardens.

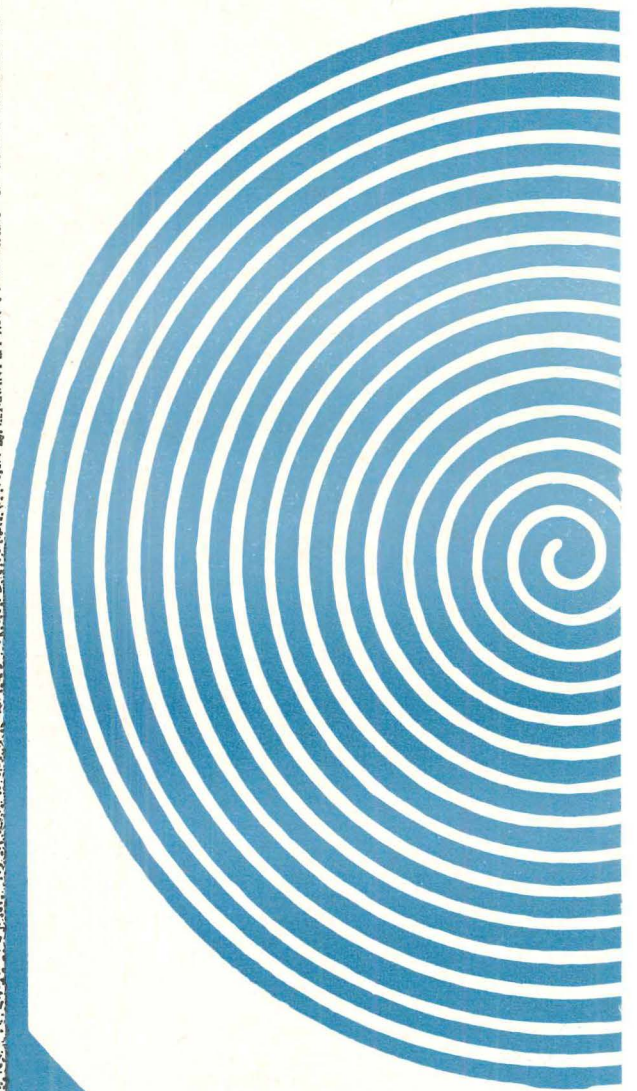
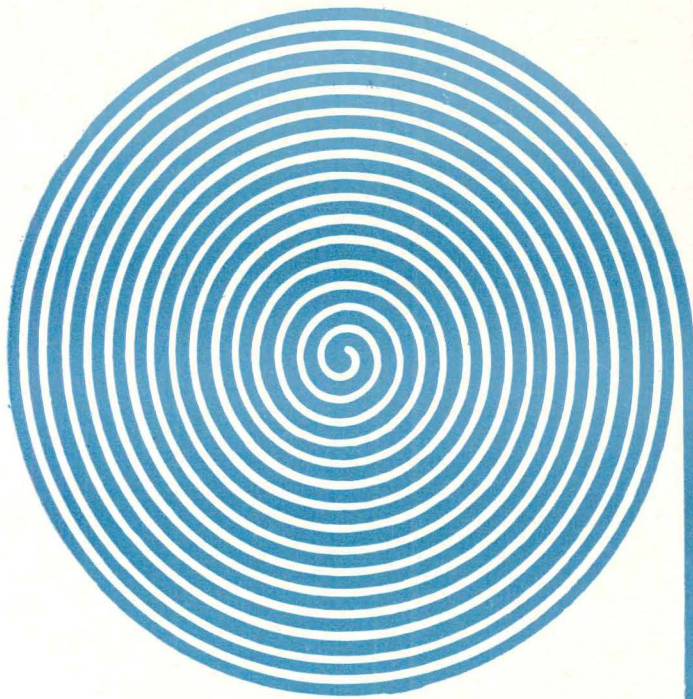
For distinctive home design in every locale, more and more architects are turning to modern concrete.

## PORTLAND CEMENT ASSOCIATION

*A national organization to improve and extend  
the uses of portland cement and concrete*

For more data, circle 132 on Inquiry Card





**THE E. F. HAUSERMAN COMPANY**

7314 Grant Avenue • Cleveland 5, Ohio  
In Canada: Hauserman, Ltd., Don Mills, Ontario

Gentlemen: Please send me complete details on new Double-Wall,  
and its place in the Hauserman Total Interior Concept.

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_





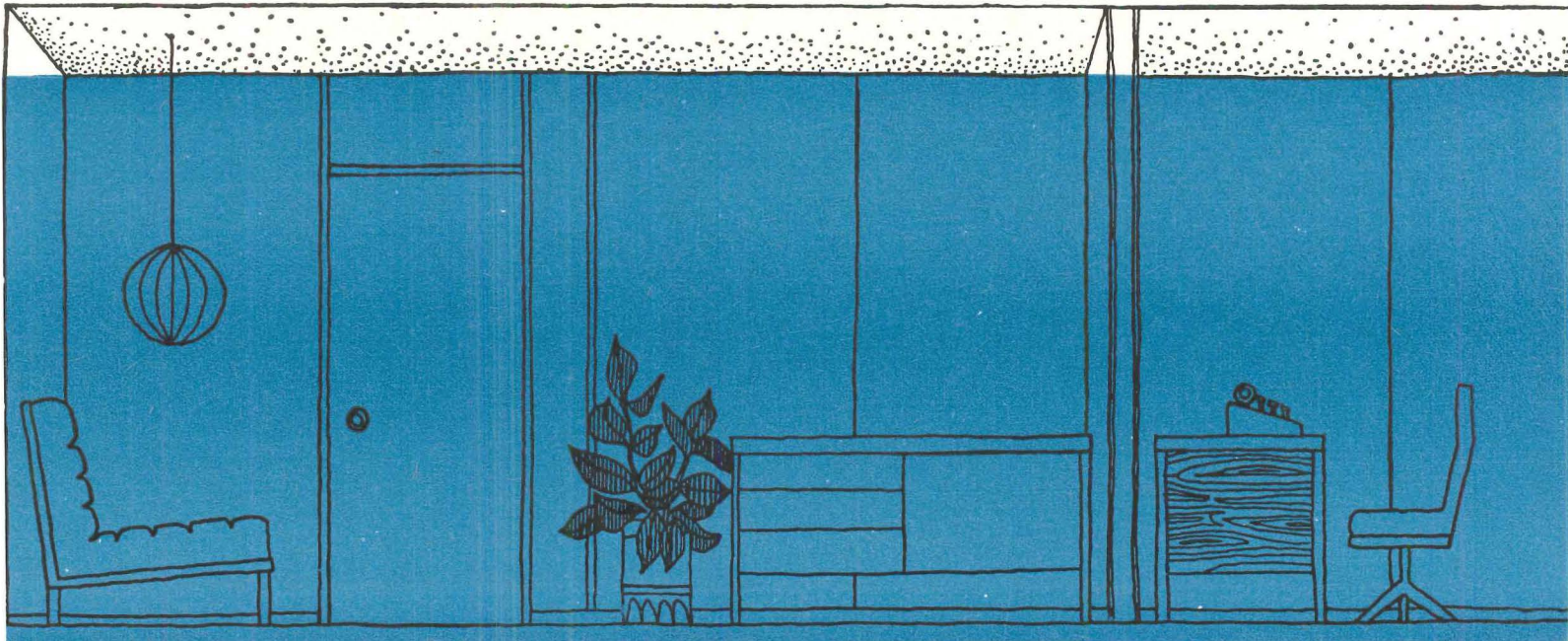
# Hauserman Announces Co-ordinator Double-Wall

## A new metal movable wall system at substantially lower cost

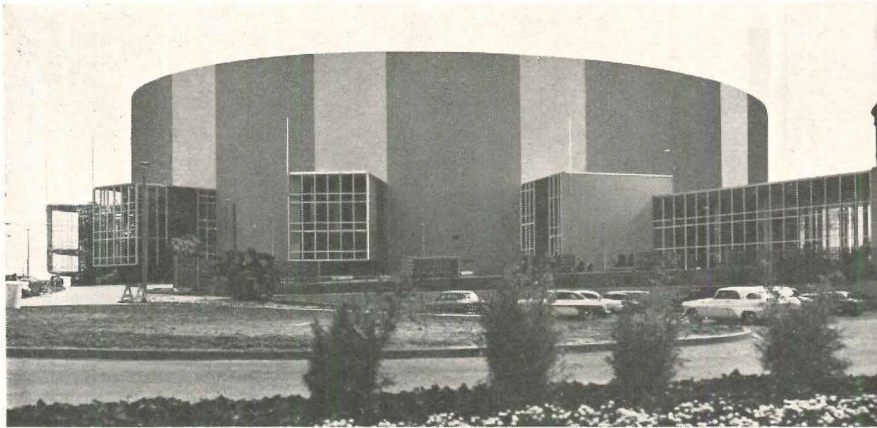
This unique new Hauserman product, Double-Wall, is the first metal movable wall system that can be purchased at only a fraction more than the least expensive space divider. ■ The key to Double-Wall's exceptional low cost is in production standardization and the elimination of costly engineering. Standard components are shipped to the job where they are easily adapted by Hauserman-trained installation experts to meet any building requirement. On-site fitting and finishing allows last minute layout and color changes, permits earlier occupancy for earlier return on investment. ■ No compromise has been made in Double-Wall's appearance or performance. It provides sound control (43 db STC), movability, ease of wiring, and utility access. Its components are 100% re-usable. And it offers trim, handsome appearance, simply maintained, only possible with a metal wall surface. ■ Double-Wall integrates fully with all other Hauserman movable wall systems. Installation and subsequent service of your total interior are guaranteed under our Hausermanaged single-contract responsibility. Never before has a company offered such a flexible, economically practical concept for interior space division. And new Hauserman Co-ordinator Double-Wall is included in the exclusive Hauserman Lease-Wall plan.



For more data, circle 133 on Inquiry Card







## HOW THE SUCCESSFUL LONG BEACH ARENA MASTERS EVERY AUDIO SITUATION

Southern California's \$8,000,000 Long Beach Arena is quite an architectural and engineering achievement. It will seat 15,000 spectators, and its first floor can accommodate as many as 344 display booths. Whatever the occasion—musical event, trade show, exhibition, convention, rally or ice hockey—this remarkable facility can handle it with ease.

The Arena is also a serious business venture. To insure its profitability through repeat bookings, the builders insisted on a sound system that would contribute measurably to its financial success through highest quality available.

### A CUSTOM SOUND AND INTERCOMMUNICATION SYSTEM BY ALTEC WAS THE ANSWER

This Altec system assures Long Beach Arena the ultimate in audio performance, flexibility and reliability. A modular Altec control console provides facilities for switching programs to any part of the building. Altec compressor amplifiers automatically maintain a uniform sound level regardless of variations in source intensity. In the main floor ceiling are 16 mighty Altec "Voice of the Theatre"® speaker systems; and electric hoists can raise or lower 2 additional speaker systems to provide for varying acoustics as the audience size changes. Background music in the corridors is supplied by 150 Altec low-level, flush-ceiling speakers. Need a microphone? There are 78 outlets throughout the building.

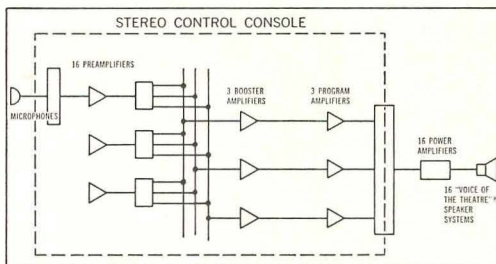
The Long Beach Arena is an excellent case in point why Altec equipment is invariably selected wherever realistic, reliable sound is considered important.

### ONLY ALTEC PROVIDES SINGLE-SOURCE RESPONSIBILITY

Altec, alone, meets the specification requirement: "all products must be of the same manufacturer." This means that Altec does not "fill-in" its line with relabeled or rebranded products of unknown origin and reliability. Altec Lansing designs, manufactures and guarantees every component bearing the Altec name.

### CUSTOM "BUILDING BLOCK" SYSTEMS

Altec systems are not packaged, but assembled on a "building block" basis. Consequently, each installation can be individually designed for today's needs—and easily expanded to meet tomorrow's.



So when your next project includes a sound system, large or small, we suggest you check first with your Altec Sound Contractor (see Yellow Pages) or write Dept. AR-10.

ARCHITECT:  
Kenneth S. Wing, F.A.I.A.  
CONSULTING ENGINEER:  
H. Simmons, E.E., Inc.  
ALTEC SOUND CONTRACTOR:  
Hannon Engineering Inc.

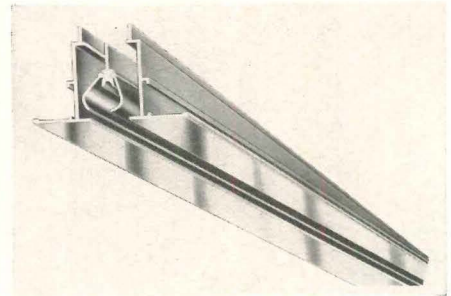


**ALTEC LANSING CORPORATION**  
*LTV* A Subsidiary of  
Ling-Temco-Vought, Inc.  
ANAHEIM, CALIFORNIA

For more data, circle 134 on Inquiry Card

## Product Reports

continued from page 276



### CEILING DIFFUSERS

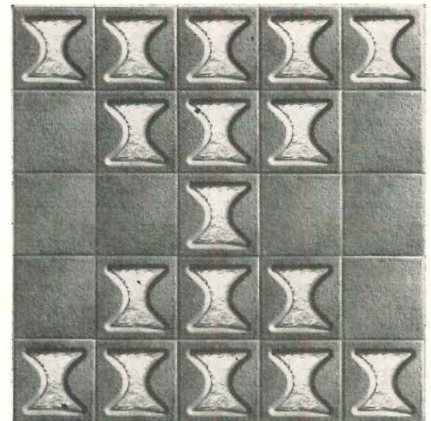
The design of a new line of extruded aluminum linear ceiling diffusers, in which one set of fully adjustable vanes controls both the air pattern and air flow rate, permits the diffusers to be incorporated into the modular units of most ceiling systems. Titus *ModuLinear* diffusers are available in model *ML-3400* in 1, 2, 3 or 4 slots with ½-in. spacing and in model *ML-3500* in 1, 2, 3 or 4 slots with ¾-in. spacing. The diffusers come in one-piece lengths up to 1 ft. Both models feature an exclusive snap-in mounting which permits the diffuser core to be snapped into place after the ceiling has been finished. *Titus Manufacturing Corporation, Waterloo, Iowa*

CIRCLE 309 ON INQUIRY CARD

### OPAQUE GLASS UNITS

Two opaque-textured all-glass building units, with ceramic finish simulating masonry, have been added to Pittsburgh Corning's *Intaglio* line. These *Inter-Mix* units are available in 8- by 8-in. and 8- by 4-in. shapes, and both are 4 in. thick. *Pittsburgh Corning Corporation, One Gateway Center, Pittsburgh 22, Penn.*

CIRCLE 310 ON INQUIRY CARD



more products on page 294



# A proposal to America's engineers, architects designers and draftsmen

**A.W.Faber** offers you free samples of world famous CASTELL drawing pencils. We ask only that you specify the degrees you use most. We shall be happy to supply you with enough pencils to make your own definitive tests of their lead strength, non-smudging qualities, wear-resistance, and rigid uniformity. Test one CASTELL #9000 against another in the same degree — then test it against different degrees.

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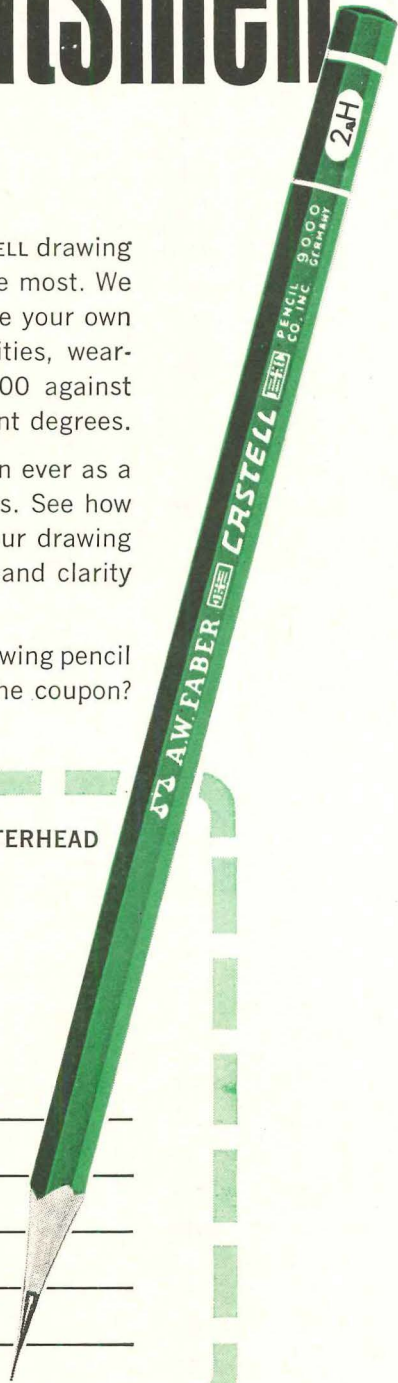
We want you to know why CASTELL is acclaimed as the drawing pencil of the masters. For convenience, won't you please use the coupon?

PLEASE ATTACH THIS COUPON TO YOUR COMPANY LETTERHEAD

**A.W. Faber-Castell Pencil Co., Inc.**  
41-47 Dickerson Street  
Newark 3, New Jersey

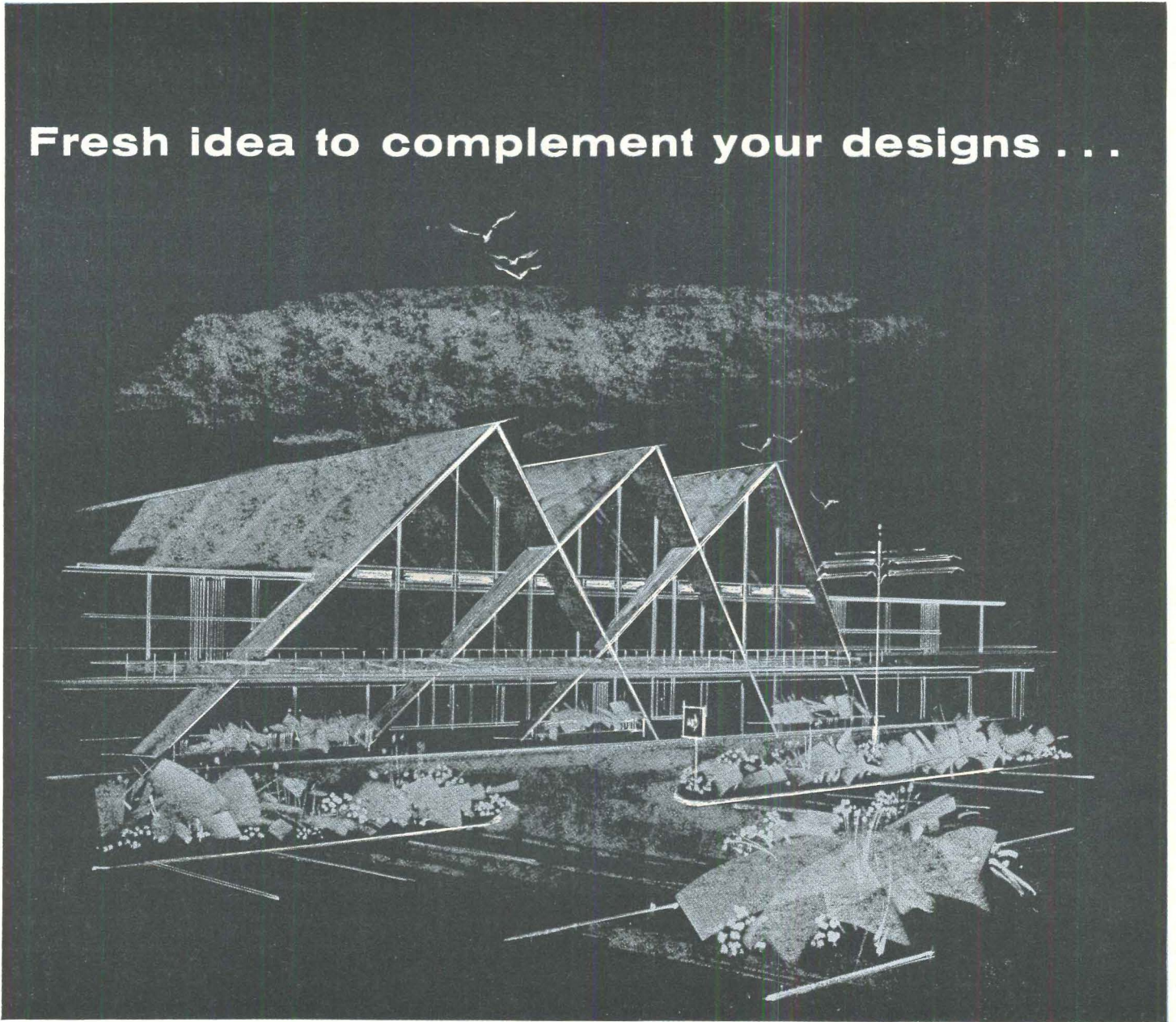
Please send me a sample each of Castell #9000 Drawing Pencils  
in \_\_\_\_\_ degrees for testing purposes.

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COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_

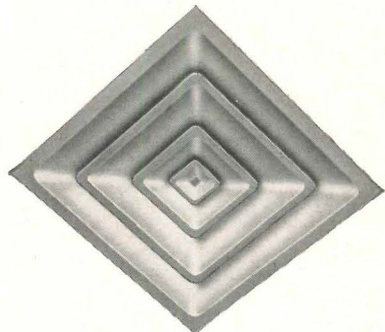




**Fresh idea to complement your designs . . .**



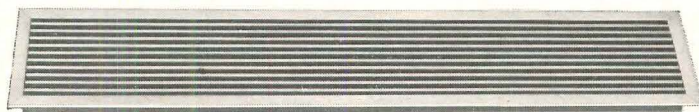
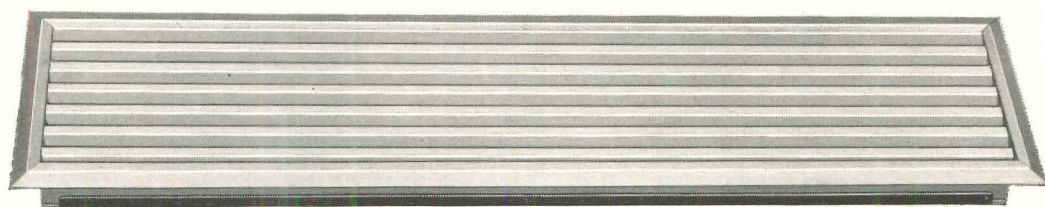
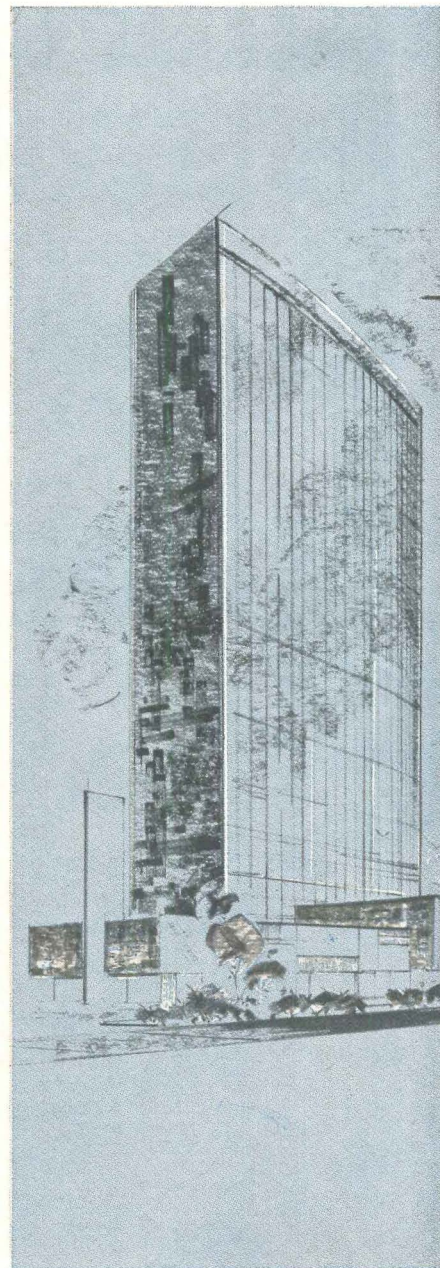
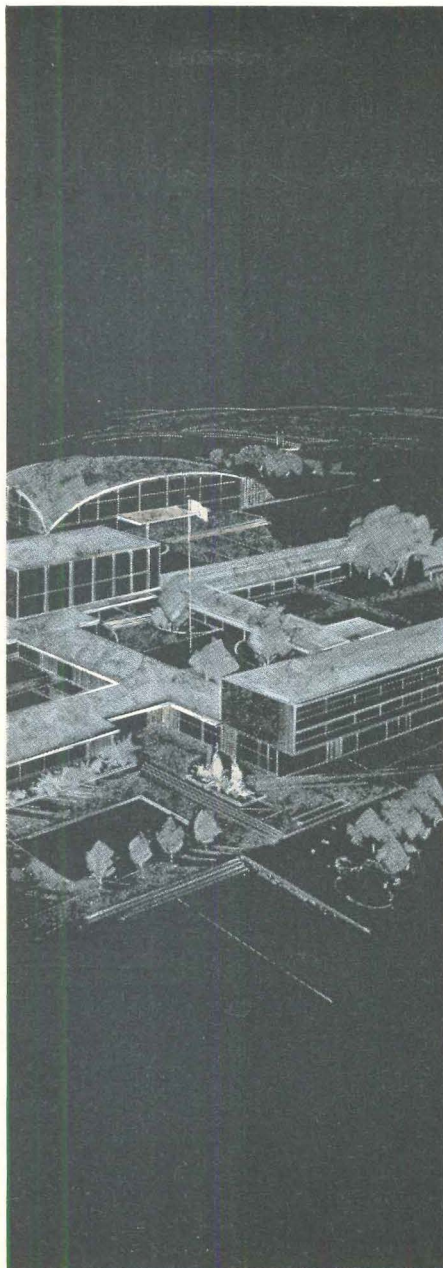
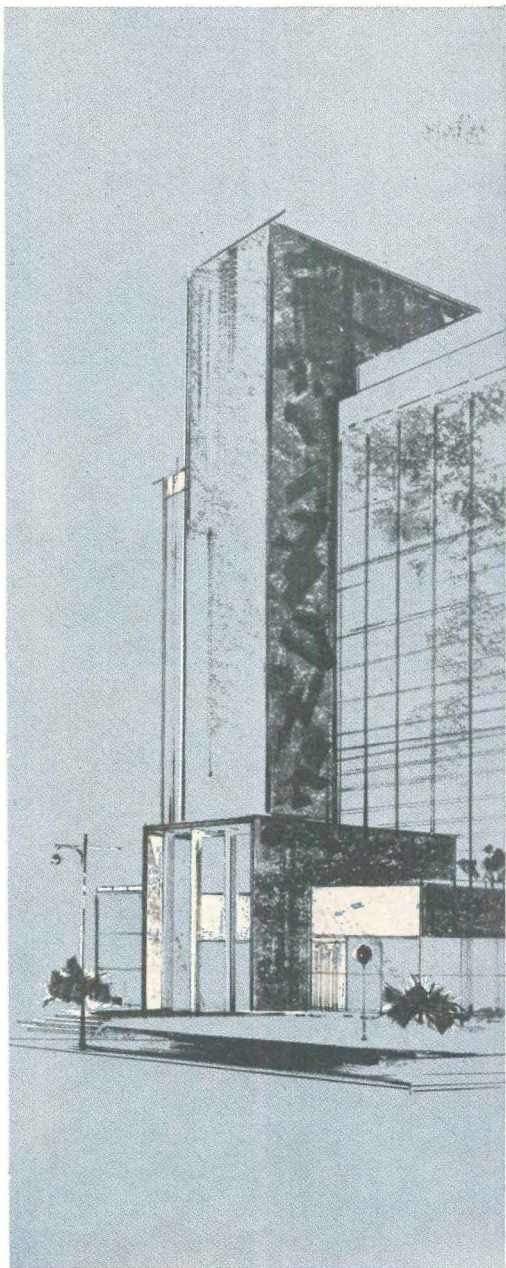
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TUTTLE & BAILEY**



You can specify Tuttle & Bailey air distribution devices to harmonize with, or accent, your design treatments for schools, hospitals, shopping centers, offices and other buildings. Achieve attractive trim line effects . . . offer your clients beauty plus performance. The broad range of Tuttle & Bailey air distribution equipment and accessories for heating, cooling and ventilating answers every requirement for today's modern interiors.

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# TUTTLE & BAILEY

Division of Allied Thermal Corporation  
New Britain, Connecticut

Tuttle & Bailey Pacific, Inc., City of Industry, Calif.



# PERSONAL LIBRARY

for the planner

Architect

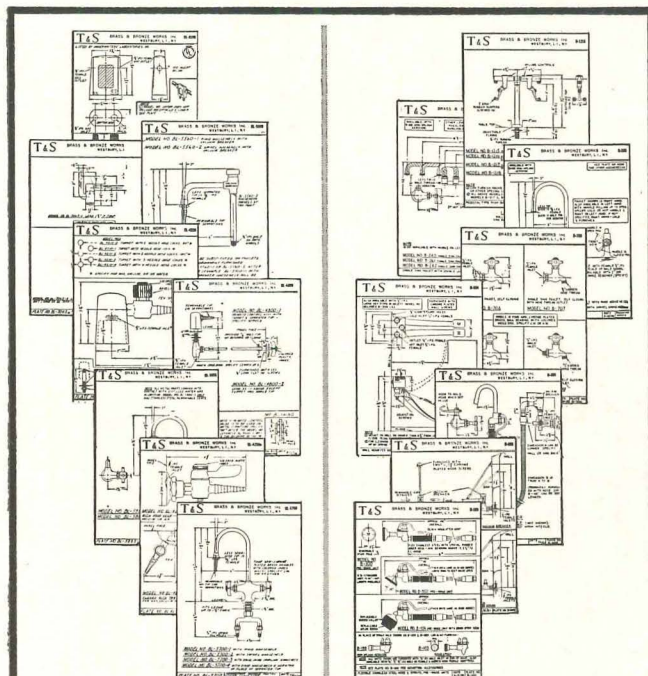
Engineer

Specifier

Contractor

to maintain

QUALITY CONTROL



### COMPLETE PLANNING GUIDE FOR LABORATORY SERVICE FIXTURES

Planning a laboratory's fluid, gas and electrical service outlets layout becomes an easier task with this comprehensive LAB-FLO manual. Contains dimensional drawings and full specification data for each fixture from A to Z, to equip every type of laboratory. Personal, registered copy available to the professional planner.

### COMPLETE PLANNING GUIDE FOR "STREAM-MATED" SPECIALTY WATER FIXTURES

This fully detailed T&S plumbing specialties manual simplifies planning and prepares the way for smooth functioning fixture layouts. Pin-points the specific unit for each job with dimensional drawings and specs, all from one reference guide. Available to the professional planner in a personalized, registered binder.

T&S manufactures industrial and institutional plumbing specialties exclusively. They are the most specified — where quality of product and specified performance are reflected at the user site.

Product Literature Available On All T&S Fixture Lines

Refer to 1963 Sweet's Catalog, Code:  $\frac{35b}{Ta}$



**T&S BRASS AND BRONZE WORKS, INC.**

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The CASE #3000 One Piece Closet is mounted off the floor. You can hardly hear its "Whispering Flush".

Like all Case one-piece closets it positively will not overflow.

The elongated contour seat is more comfortable and more hygienic—especially for public use.



\* We will be happy to send you our catalog and "Look of Luxury" brochure, as well as a complete list of representatives. Also refer to Sweet's Catalog (26A) for additional information.



**CASE MANUFACTURING**

Division of Ogden Corporation  
1128 PINE ST., ROBINSON, ILLINOIS

For more data, circle 137 on Inquiry Card

## BLACKTOP PAVEMENTS

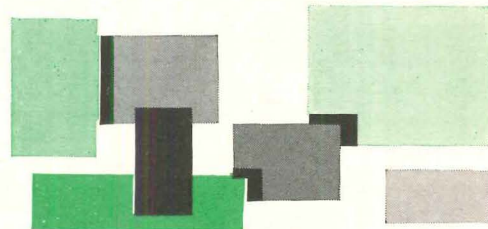
don't have to be

# BLACK

They can be Color-Coated with

## Vynatex<sup>®</sup> 23

Grass Green • Concrete Gray • Brick Red



This new vinyl coating for asphalt pavements provides the charm, beauty and attractiveness of distinctive colors.

**Color-fast • Durable • Easy to Clean**

Write for Architects Specification VA. A-8519A

**MAINTENANCE<sup>®</sup> INC.**  
WOOSTER, OHIO

See our catalog in Sweet's • Distributors in Principal Cities

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AGELESS...BECAUSE IT'S STAINLESS



Architects: Shreve, Lamb and Harmon Associates, New York, New York  
General Contractor: Turner Construction Company, New York, New York  
Stainless Steel Fabricator: Moynahan Bronze Company, Flat Rock, Michigan

## Where stainless steel cost only 6% more: United Engineering Center, New York City

The metal on this soaring curtain wall is nickel stainless steel. It cost only 6% more than the low curtain wall bid in another architectural metal...less than 1% more based on the total cost of the building.

How? The architects designed the building for stainless steel from the beginning. They carefully detailed the mullions and column covers in light, economical gauges made possible by stainless steel's exceptionally high strength and rigidity. They chose No. 4 polished finish stainless for

mullions and windows and a newly developed architectural matte finish for the 24" wide column covers.

The owners, United Engineering Trustees, Inc.—people who know materials and value—preferred a stainless steel exterior and readily accepted the small additional cost. They knew that a 6% premium for stainless steel's greater strength, resistance to New York's corrosive atmosphere, and much lower expansion-contraction rate was well worthwhile in the interest

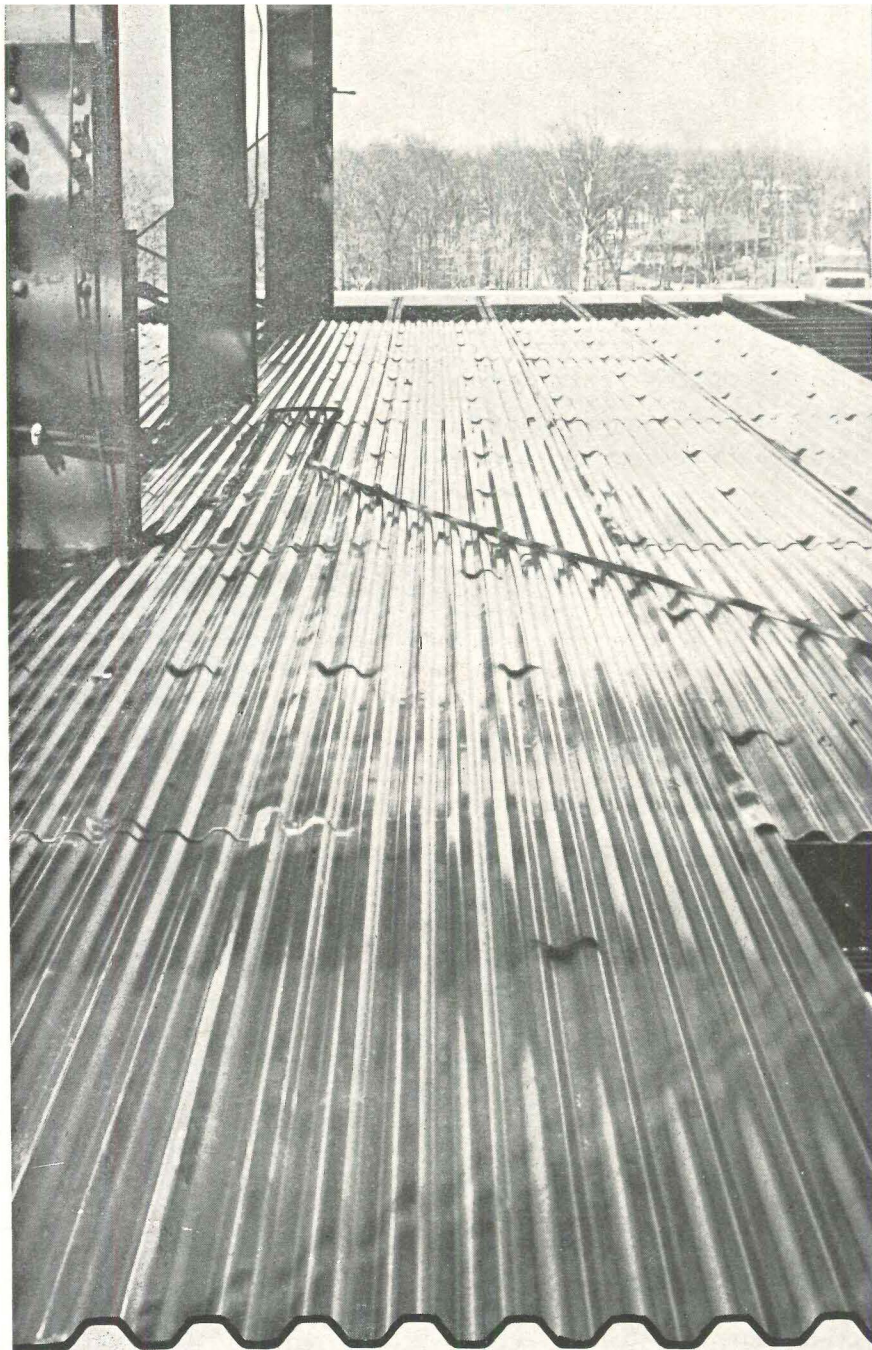
of long-term economy and maintenance. If you're interested in practical design information on curtain walls, windows, entrances or flashings of nickel stainless steel, or for assistance with specific problems, write to:

**THE INTERNATIONAL NICKEL COMPANY, INC.**

67 Wall Street  New York 5, N.Y.

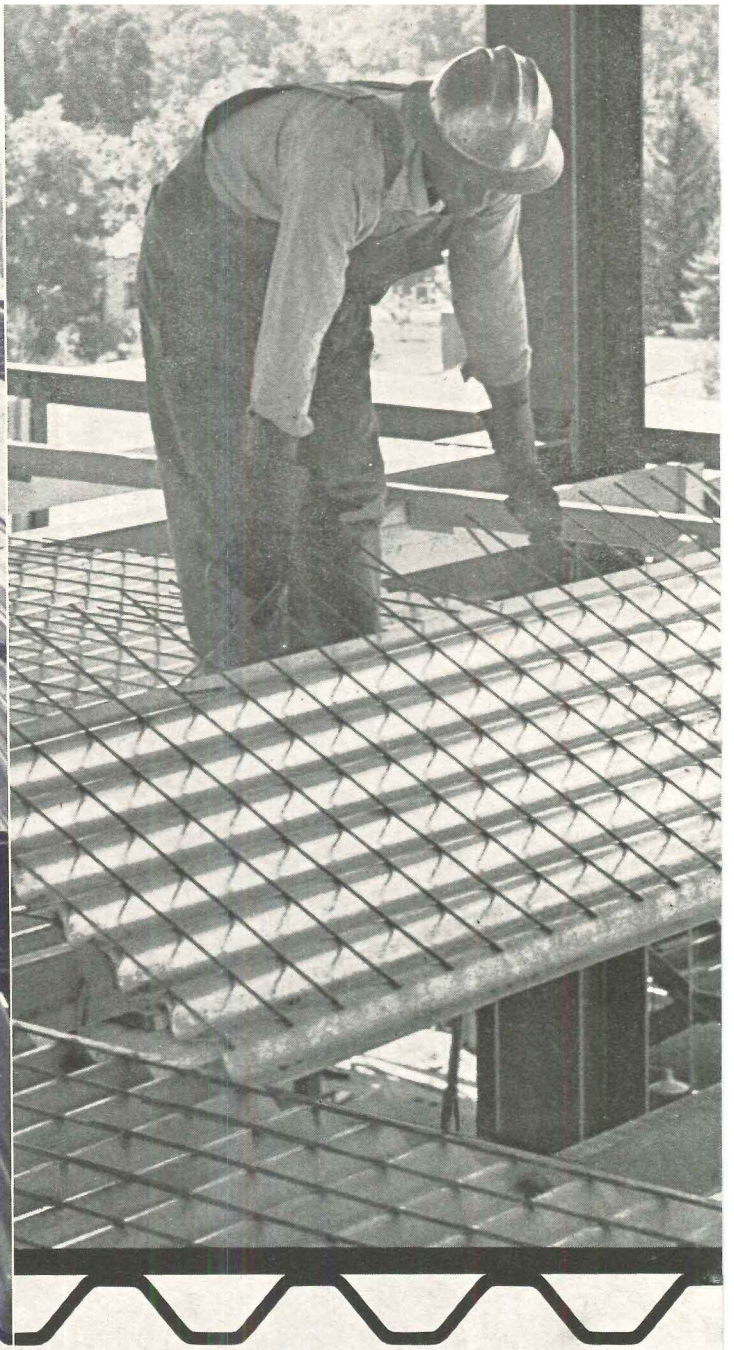
**NICKEL...its contribution is QUALITY**





## **CORRUFORM® and TUFCOR®**

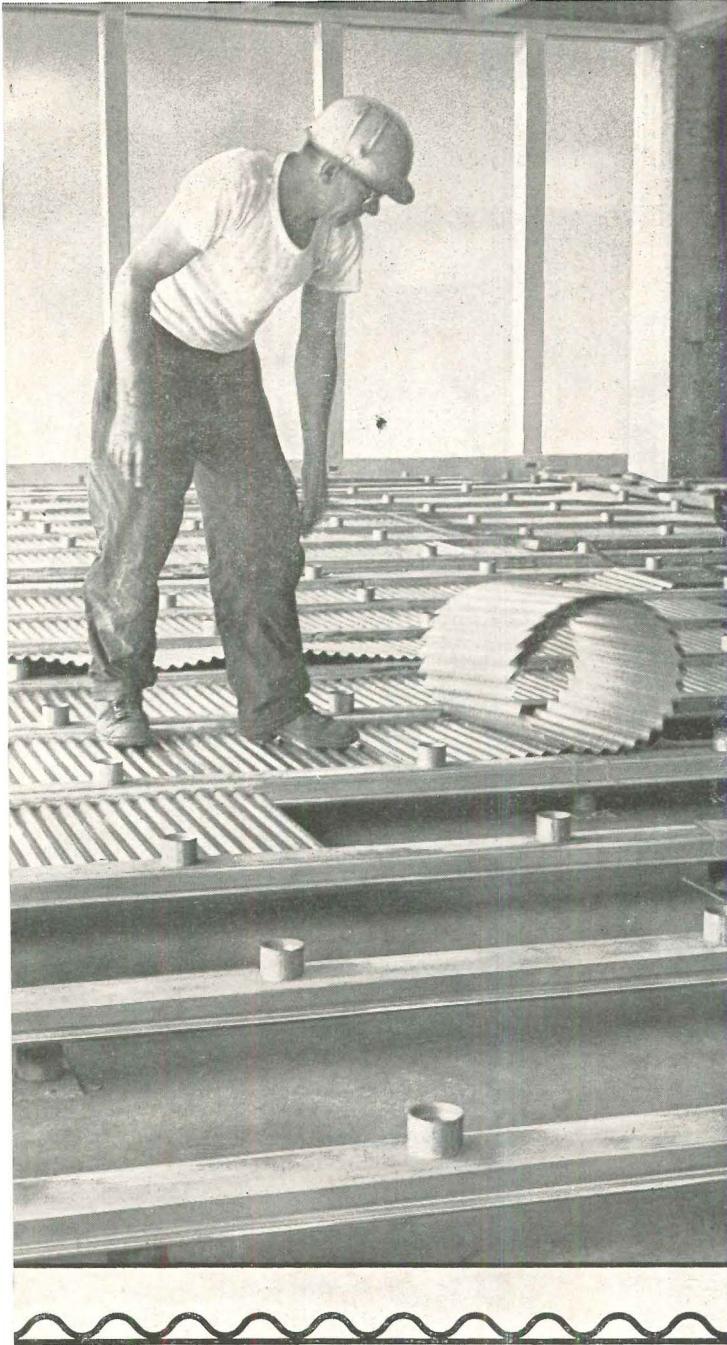
These permanent steel forms provide a fast, 4-step method for constructing concrete slabs over joists and light beams: (1) Lay sheets and clip or weld in place. (2) Unroll reinforcing mesh. (3) Place concrete. (4) Finish floor slab. The tough-temper steel sheets provide a safe working deck for trades; add lateral support to joists. And because this deck doesn't sag or leak, you can save 20 to 40 per cent in concrete. Use Standard Corruform for spans to 3'-6"; Heavy Duty Corruform for spans to 5'-0"; Tufcor for spans to 8'-0". Both Corruform and Tufcor are available uncoated or galvanized.



## **COFAR®**

Cofar is the 4-in-1 product—form, working deck, bottom reinforcing steel, and temperature steel—for reinforced concrete slabs. Construction is fast, proven, economical. Exposed Cofar has 3-hour UL fire rating. New Cofar shear connectors afford even greater economies in Cofar composite beam construction. The shear connectors are field-welded to the beams; make the slab and beams work together as "T" beams. This permits reduction in beam sizes—saves 20 to 30 per cent in steel tonnage. Most economical slab span range is 10' to 16', using either sand-gravel concrete or lightweight structural concrete.





## A-E FLOOR

Granco A-E (Air-Electric) Floor combines air and electrical distribution in one compact in-floor system—coordinates the design objectives of the architect with the needs of the electrical, mechanical, and structural engineer. Basically, A-E floor consists of a finish floor supported by the main structural slab. This floor rests on adjustable steel supports, creating a plenum for distribution of conditioned air. Electrical cells are blended with the A-E forming system above the plenum and provide complete electrical flexibility. A-E Floor is independent of the building structural system; can be used with any type construction.

## *A quality floor begins with a Granco system*

Floor system requirements in today's modern buildings go far beyond satisfying structural needs. Occupants expect more than floor space alone. They need telephones, intercoms, lighting, electrical services, air conditioning. They will need even more, tomorrow.

Granco offers a complete line of quality floor systems to fulfill these present and future needs and meet your specific requirements . . . structurally, electrically, mechanically, and architecturally.

Look them over. You'll benefit from the complete design flexibility they offer. Benefit, too, from the time and material they save in floor system design and construction.

For more information, write: GRANCO STEEL PRODUCTS CO., 6506 N. Broadway, St. Louis 47, Missouri. A subsidiary of Granite City Steel Company. Our catalog is filed in Sweet's. 2j/Gr.

# GRANCO



**DISTRICT OFFICES:** Atlanta • Chicago • Cincinnati • Dallas  
Detroit • Houston • Kansas City • Los Angeles • Minneapolis  
New York • St. Louis • San Francisco • Tampa

**DISTRICT REPRESENTATIVES:** Greenville, S. C. • Little Rock  
Washington, D. C.

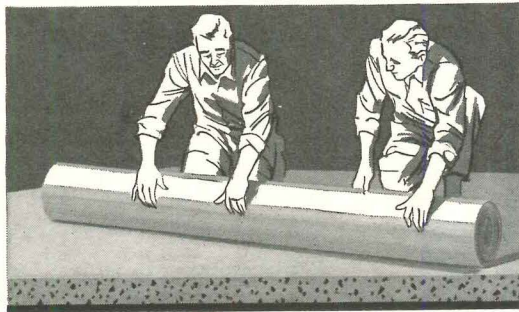


For more data, circle 140 on Inquiry Card





**OR  
BELOW  
GRADE**



**...WHEN THE FLOOR SLAB IS PROTECTED BY THE ORIGINAL TRUE VAPOR SEAL, PREMOULDED MEMBRANE WITH PLASMATIC® CORE**

In the past, there has been a justifiable hesitation on the part of many architects and contractors to specify and install resilient floors of asphalt, cork and vinyl tile and linoleum directly over concrete slabs on-grade or below grade. *Justifiable* because moisture migration into the slab, caused a deterioration of the adhesive that bonded the resilient flooring to the concrete.

However, many forward thinking architects and contractors first protected the slab from excessive moisture by installing PREMOULDED MEMBRANE Vapor Seal and the resilient flooring has functioned effectively for years. Protect your flooring application and the entire structure by first installing the best vapor seal available—PREMOULDED MEMBRANE with PLASMATIC® Core.

**PREMOULDED MEMBRANE with PLASMATIC CORE . . .**  
*the only vapor seal offering all these features . . .*

- Water and vapor proof . . . WVT rating only 0.0048 grains/per square foot/per hour
- Durable, flexible and strong . . . will not rupture or tear under normal installation traffic and handling
- Monolithic when installed to expand and contract in direct ratio with the concrete without breaking bond
- Available in 4' x 8' sheets and rolls 4' wide to .50' long
- Lightweight, easy to handle and install.

FOR COMPLETE INFORMATION REQUEST CATALOG NO. 753.

**SEALIGHT®**

PRODUCTS  
FOR BETTER  
CONCRETE  
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**W. R. MEADOWS, INC.**

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OF CANADA, LTD.**

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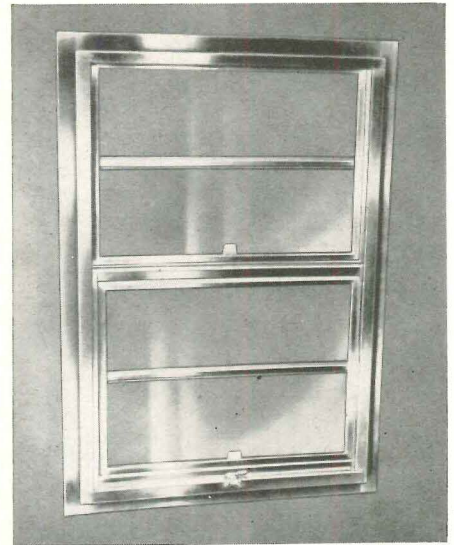
For more data, circle 141 on Inquiry Card

**Product Reports**

*continued from page 284*

**HURRICANE-RATED WINDOWS**

New hurricane-rated, aluminum, single-hung windows can be operated from the inside. The windows fea-



ture inside glazing, with regular or insulated glass, throughout. *IDA Products Company, 3001 Miller, Detroit 11, Mich.*

CIRCLE 311 ON INQUIRY CARD

**FIREPLACE**

A new prefabricated, built-in *El Dorado Model D* fireplace is designed to be built into combustible walls with zero clearance at bottom, back and sides. It is a circulating type fireplace with an intake grill near the



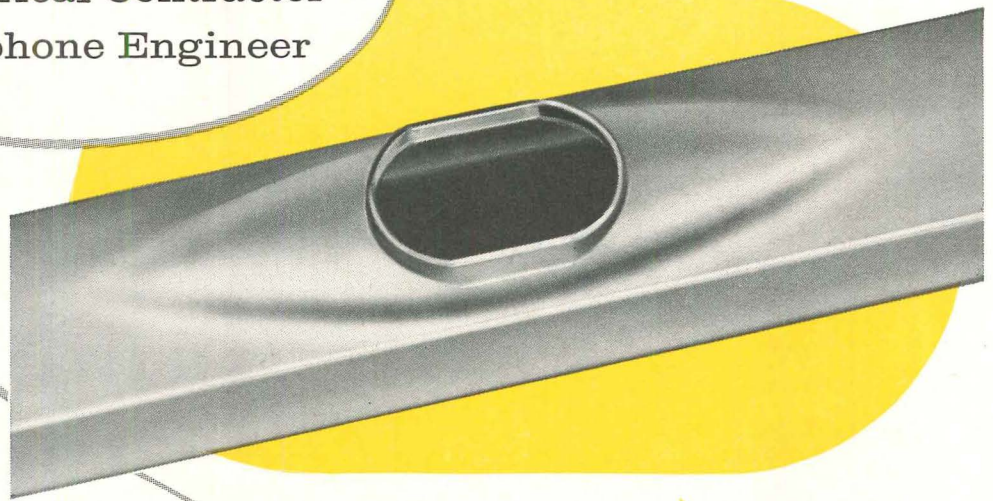
floor and an exhaust heating grill at the top of the fireplace. It is available in four colors and comes completely assembled in two sections. *Space-Planner Co., Box 1191, Tucson, Ariz.*





CIRCLE 312 ON INQUIRY CARD

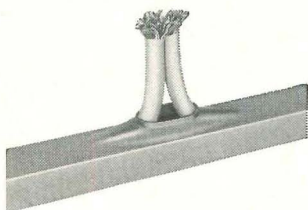
*more products on page 302*



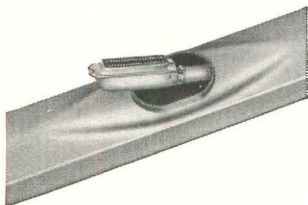
- X Owner
- X Architect
- X Consulting Engineer
- X Electrical Contractor
- X Telephone Engineer



BECAUSE THE INSERT IS SHAPED LIKE THIS    
 INSTEAD OF THIS   ...SQUARE D'S NEW-DESIGN  
 UNDERFLOOR DUCT HAS TREMENDOUS  
 ADVANTAGES FOR **EVERYBODY!**



• Notice how two 100-pair cables can be looped in Square D's exclusive ellipsoid insert—previously a physical impossibility. Naturally—additional insert heights are available.



• See how easy it is to slip the Amphenol connector into the ellipsoid insert and leave the cable undisturbed and ready for immediate reactivation.

• At first glance it may seem to be a simple, minor design change—but don't underestimate the significance of this new and exclusive ellipsoid insert. Here's what it does—

Makes it much easier to "fish" and pull cables...cuts installation time and cost drastically. Especially important in industrial installations because heavy, stiff power wires can be pulled without difficulty.

Permits looping two 100-pair telephone cables in one insert—see top photo at left.

Makes it possible, when telephones are moved from one location to another, to store Amphenol connectors in the underfloor duct, leaving the cable undisturbed and ready for immediate reactivation—see bottom photo at left.

This new ellipsoid insert is only one of several reasons why Square D underfloor duct offers more in convenience, efficiency and economy. Ask your Square D Field Engineer or contact your nearest distributor for the complete story. Or write Square D Company, Department SA, Mercer Road, Lexington, Kentucky.

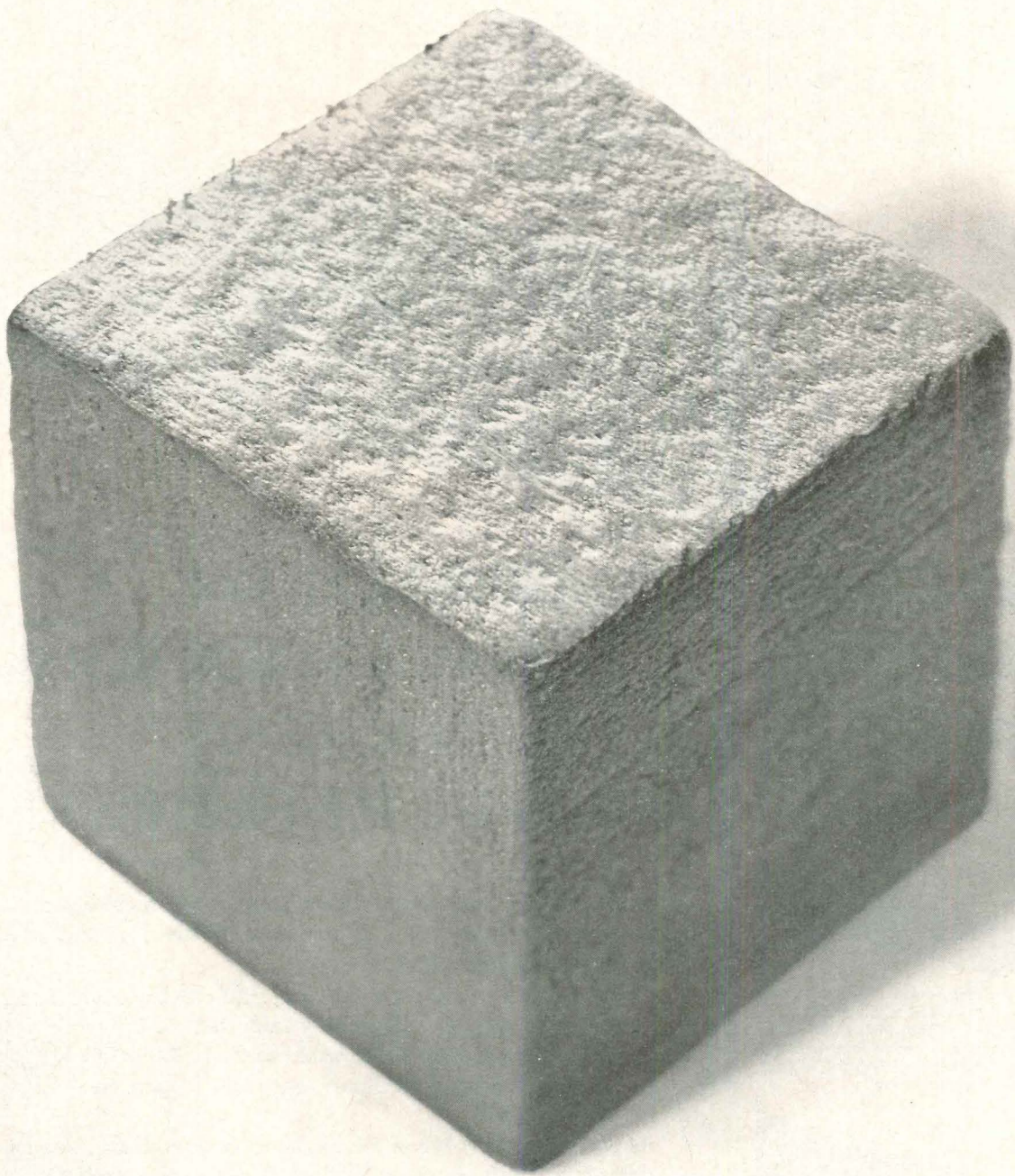


**SQUARE D COMPANY**

*wherever electricity is distributed and controlled*

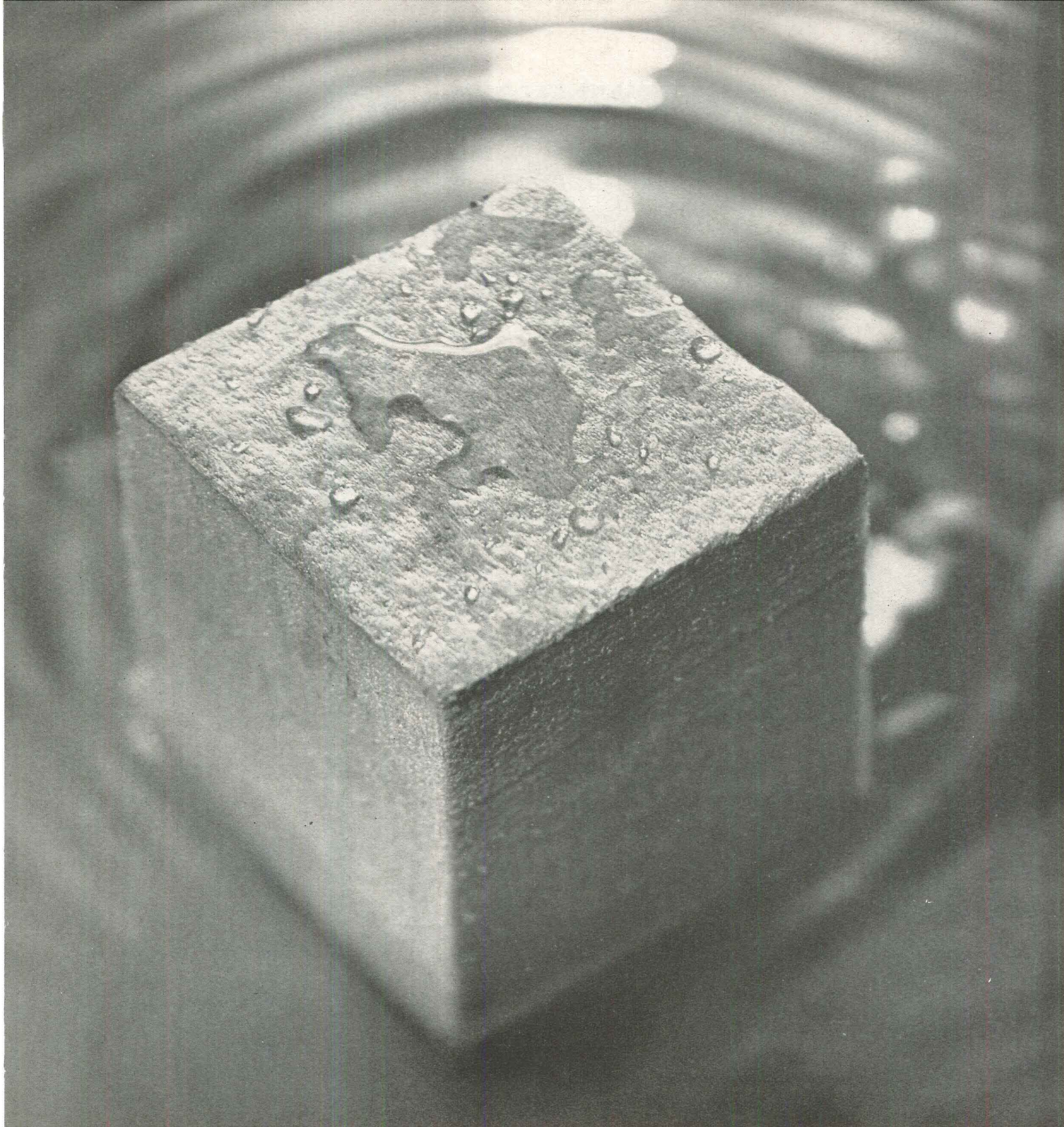
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**Roofmate FR weighs just 2½ lbs./cu. ft.**





## It'll never gain an ounce.

Mostly air cells, Roofmate® FR roof insulation won't soak up outside water, won't let moisture through. Wet, soggy insulation can lose half its original efficiency, run up heating and cooling bills from year to year. Not Roofmate FR! You needn't worry about roof blistering and cracking caused by waterlogged insulation, either.

We extrude Roofmate FR from the same polystyrene we use for Styrofoam® insulation, by the same exclusive process. We simply give Roofmate FR a high-density skin to take the beating a roof insulation gets. It's tough, yet it weighs less than 25 lbs. to the bundle. Roofmate FR is pleasant to handle, easy to

cut and fit. By easing installation, it saves as much as one dollar a square! Roofmate FR comes in thicknesses to meet standard "C" factor requirements. Want more data and specifications? Just see our insert in Sweet's Architectural File, or write us: The Dow Chemical Company, Plastics Sales Dept. 1005N10, Midland, Michigan.



For more data, circle 143 on Inquiry Card



## NO. 14

## reinforced concrete columns

a.i.a. file: 4-a

In the preliminary design of multistory concrete buildings it is helpful if column size can be quickly approximated for a specific column spacing.

This can be accomplished by use of the formula and the chart shown below. Both are based on the Working Stress Design method (ACI 318-63). In structures such as 575 Technology Square, where wind load is resisted by shear walls, only the axial load of columns need be considered.

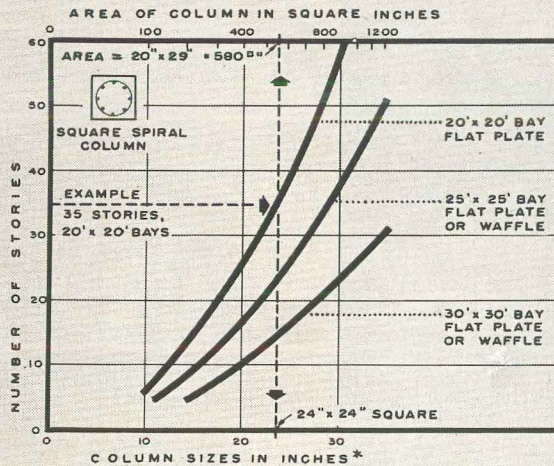
Now coming into wider use is another design method the architect may want to consider. Known as Ultimate Strength Design, it assures the most efficient column size. This approach is not only more consistent with structural behavior, but provides a more uniform factor of safety throughout the building.

For more details, write for free literature. (U.S. and Canada only.)

## PORTLAND CEMENT ASSOCIATION

Dept. A10-8, 33 West Grand Ave., Chicago, Illinois 60610

An organization to improve and extend the uses of concrete



## FORMULA:

The area of any column in square inches for any story is:

$$A = \frac{N (W_D + \frac{1}{2} W_L) B}{k}$$

A = column area in square inches  
 N = number of stories above  
 $W_D + W_L$  = dead and live loads (psf)  
 B = bay area (sq. ft.)  
 For 8% reinforcement +  $f'_c = 5,000$  psi:  
 $k = 3,650$  for  $f_y = 75,000$  psi.  
 $k = 3,170$  for  $f_y = 60,000$  psi.

**NOTE:** The above equation and the graph are based on Working Stress Design (ACI 318-63)

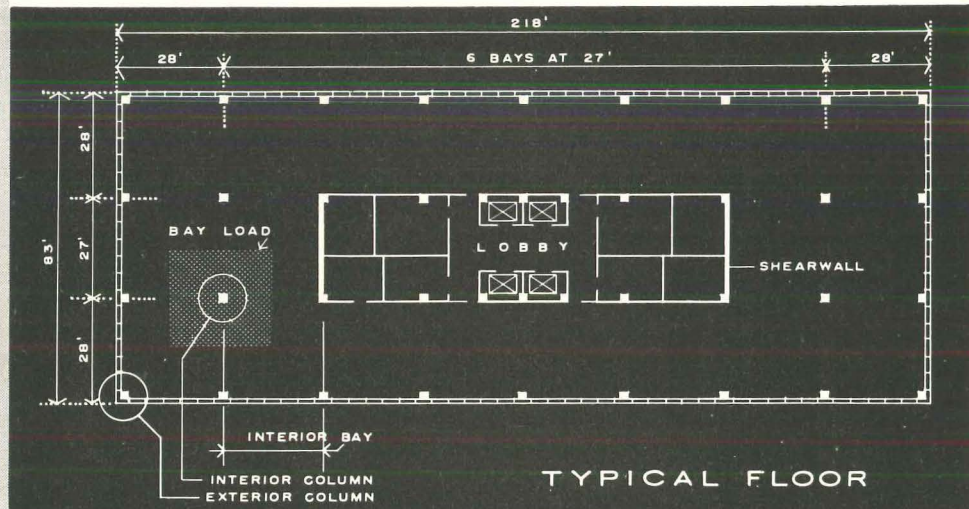
\*Columns are square with 8% reinforcement,  $f'_c = 5,000$  psi,  $f_y = 75,000$  psi and moment is negligible. In addition to the dead load of the structure, graph takes into account 35 psf for partitions, mechanical and ceiling. Assumed live load is 60 psf.

Prepared as a service to architects by Portland Cement Association

Clip along dotted line



Office-Research Center, 575 Technology Square, Boston, Mass. Owners: Massachusetts Institute of Technology and Cabot, Cabot & Forbes Co., Boston, Mass.







## Memorial Hospital of Long Beach

chose Remco Casework

- for its long life
- functional design
- good looks
- and they liked the job-site services that the Remco people always give.

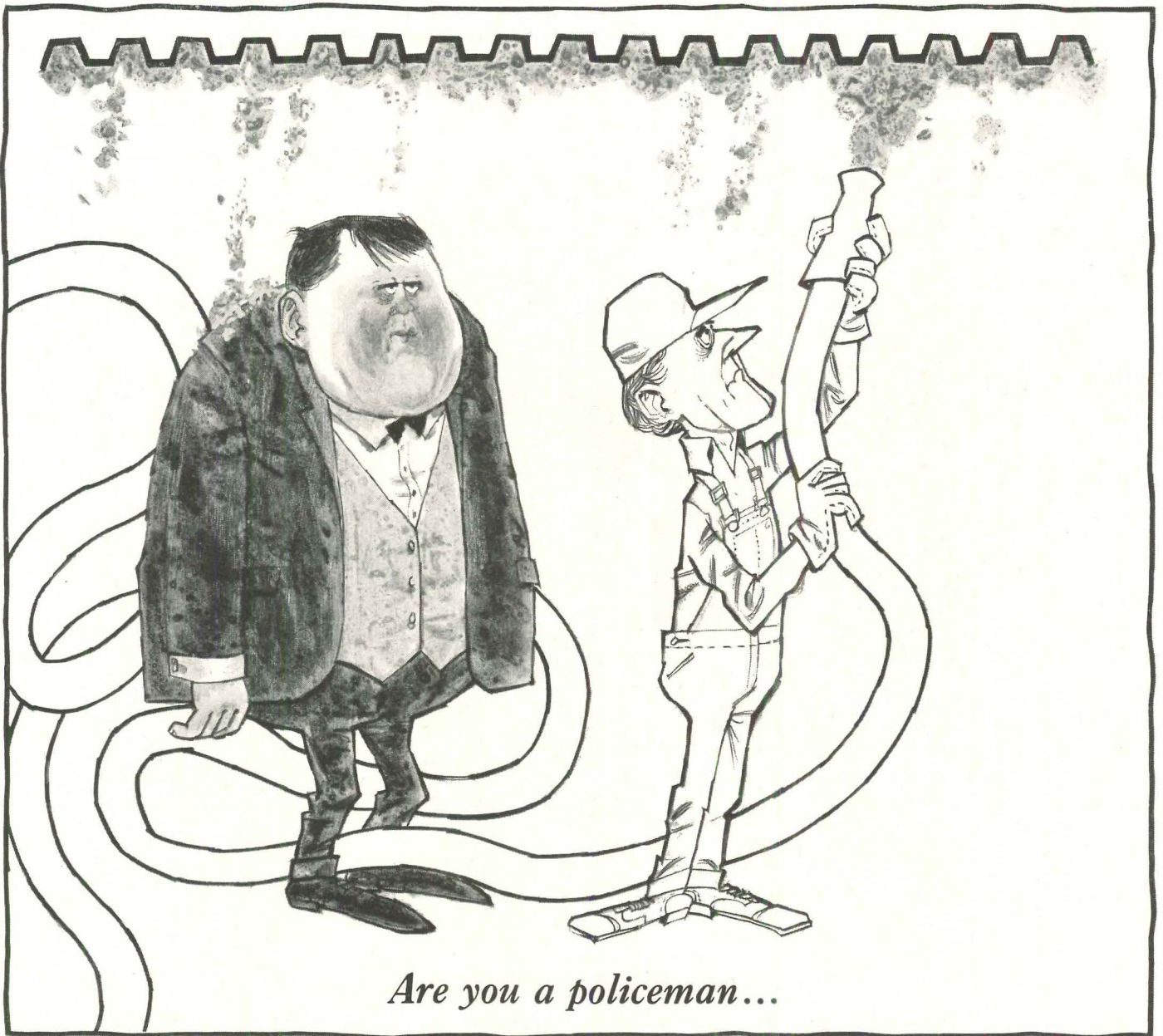
# Remco

HOSPITAL CASEWORK

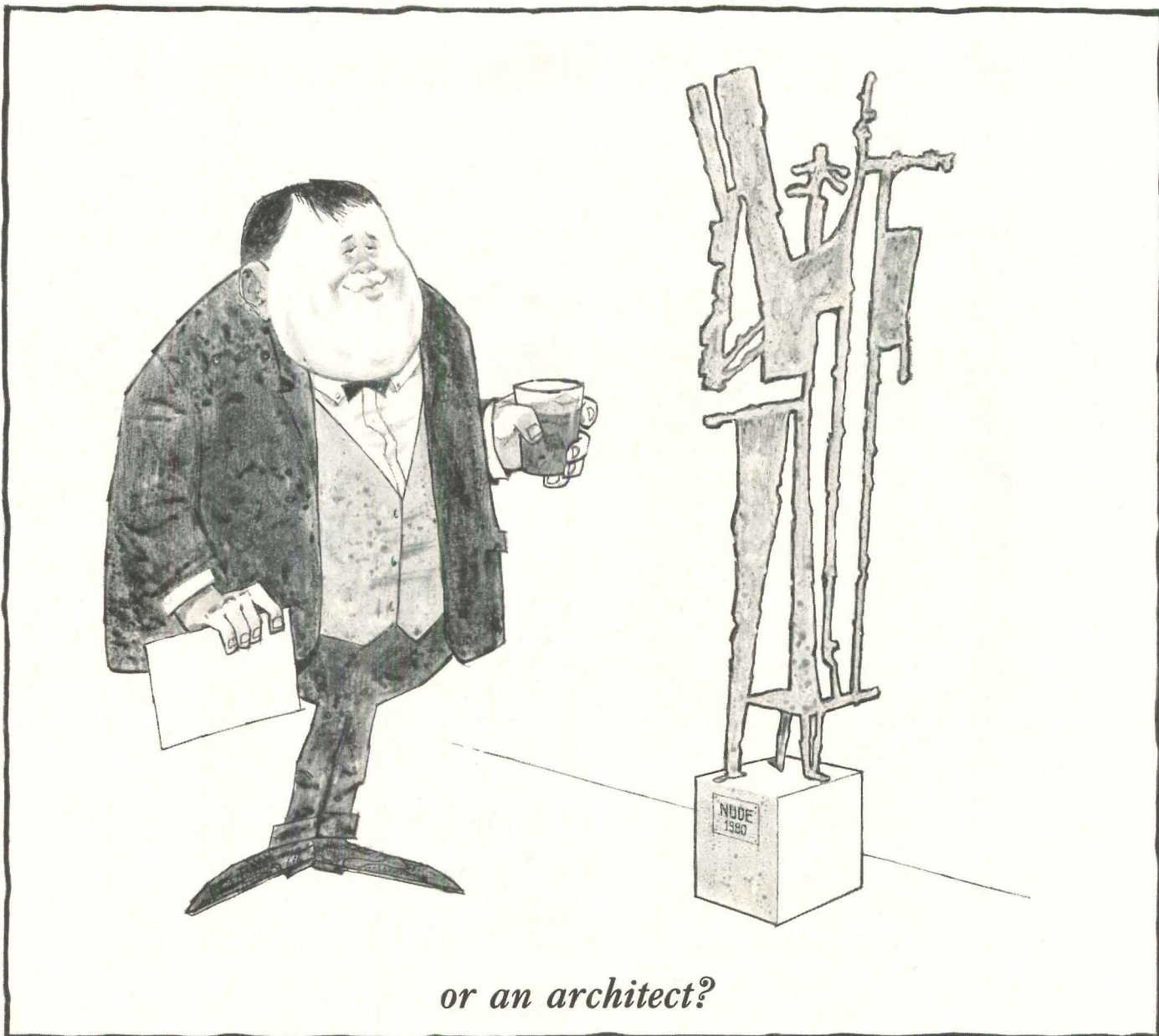
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*or an architect?*

*Zonolite Mono-Kote doesn't need repeated checking. Specify it on your next spray-on, direct-to-steel fireproofing job*

Zonolite Mono-Kote is a *one* step, direct-to-steel fireproofing material. It is sprayed onto the thickness required for the fire rating you want, and that's all there is to it. You don't have to revisit the job again and again to see whether it's still the proper thickness after tamping, because it needs no tamping.

Zonolite offers such a broad range of fire ratings that you can specify it in almost every construction circumstance.

And you don't build a dusting problem into your building when you specify Mono-Kote. It dries hard, not punky... doesn't "snow" when the building vibrates.

All in all, it simply makes sense to specify Zonolite Mono-Kote. It gives you the fire protection you need where the fire protection belongs...on the steel itself. It requires little or no policing. And it causes no problems after it's in place.

For more information, write for Bulletin PA-60, to Zonolite, Dept. AR-103, 135 South LaSalle Street, Chicago 3, Illinois.

**ZONOLITE**  
GRACE ZONOLITE DIVISION  
 W. R. GRACE & CO.

For more data, circle 145 on Inquiry Card



## Now...the ultimate TV/FM outlet for motels, hotels, apartment houses



### JERROLD *ULTRA-TAP*

Now, from the world's leading manufacturer of master antenna systems, comes this simple, attractive, durable all-purpose tap-off unit for TV/FM—the new Jerrald *ULTRA-TAP*. Smart-design flush-mounting cover plates, in a variety of decorator colors and finishes, blend perfectly with any room decor.

The versatile *ULTRA-TAP* can handle TV and/or FM signals. It can be conveniently mounted together with an a-c power outlet under one cover plate.

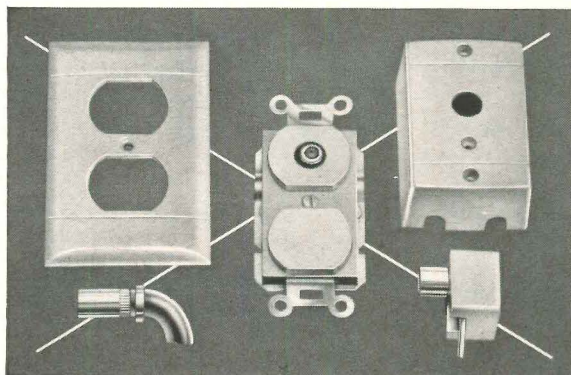


Illustration at left shows the basic outlet, which adapts to flush or surface mounting and accepts either 75- or 300-ohm solderless plug-in connectors. *ULTRA-TAP* is compatible with any TV signal-distribution system. Write for complete information on Jerrald's wide line of antennas and antenna systems.



A subsidiary of THE JERROLD CORPORATION  
Distributor Sales Division, Philadelphia 32, Pa.

For more data, circle 146 on Inquiry Card

## Product Reports

continued from page 294



### WALL PANELS

Three new non-load bearing wall panel systems for institutional and commercial installations are surfaced with laminated plastic in a choice of 18 woodgrain patterns and 34 colors. These new systems offer paneling at prices said to be competitive with many other interior trims.

The spline system consists of 1 1/16-in. thick panels. Installation is made with specially designed cleat-type metal clips attached to both the panel and the furring strips or directly to the wall. The suspended panels are connected with matching or contrasting splines that are recessed 1/4 in. from the face of the panel. This reveal can range in size from a hairline up to 2 in. wide. This is a complete package system which includes all custom wall panel components, splines, factory-made corners, cornice mold, door and window trim and hanger hardware. *General Electric, Laminated Products Dept., Coshocton, Ohio*

CIRCLE 313 ON INQUIRY CARD

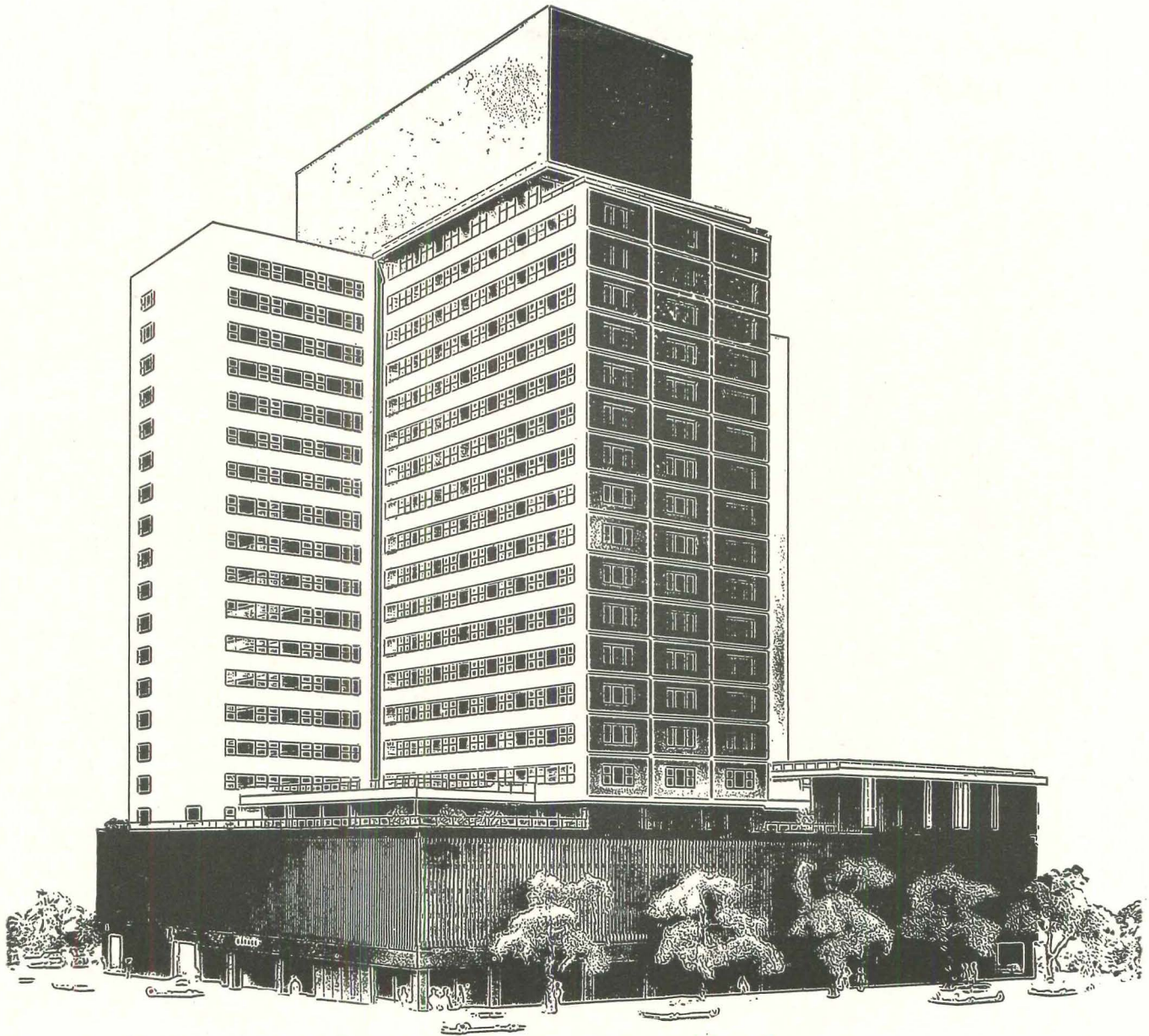
### KITCHEN SINKS

The newest addition to the Jensen line of kitchen sinks features three bowls of stainless steel. The tri-bowl sink has a small bowl in the center designed primarily to accommodate a garbage disposal unit and a larger bowl on each side. *Jensen-Thorsen Corporation, Addison, Ill.*

CIRCLE 314 ON INQUIRY CARD

more products on page 310





## Why the Squire's face is **Red**

The designers chose Hanley **Bradford Red** Face Brick to accent the Hanley Duramic® White Speckled Brick of the new City Squire Motor Inn in New York. The choice was easy because there are 30 Hanley Glazed Brick colors and 16 Hanley Face Brick colors.

If you want to add color, not costs, to your next project take a look at Hanley's more than 50 shades of brick and tile.

**HANLEY COMPANY**

One Gateway Center, Pittsburgh 22, Pa.

Sales Offices:  
New York • Buffalo • Pittsburgh

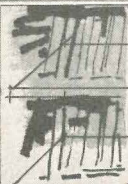
Location:  
51st-52nd Street and Broadway, New York  
Owner: Loew's Hotels  
Architect: Kahn & Jacobs  
Contractor: Diesel Construction Company  
Mason Contractor:  
Waldom Construction Company

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Nature's Freshness



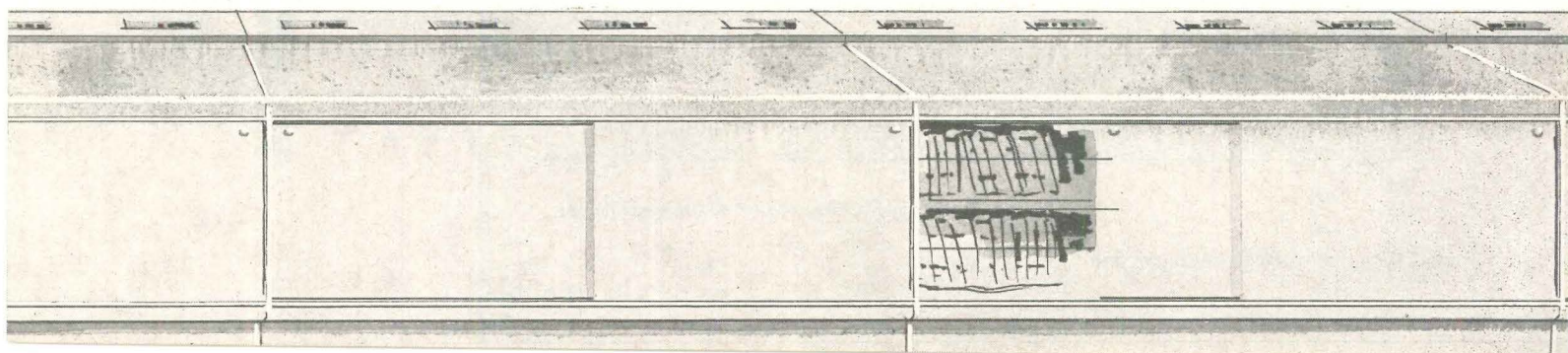




Lennox COMFORT CURTAIN® brings wonderful out-of-doors into busy classrooms—freshness wall-to-wall, child-to-child, head-to-toe—gently, without drafts or cold spots. Only Lennox weaves this curtain of freshness—clean freshness to ventilate, dry freshness to cool; freshness to warm. Only Lennox makes freshness so comfortable—comfort so fresh—with COMFORT CURTAIN: heating-cooling, wet or dry, for new or existing classrooms. *Nature's Freshness Documented:* The existence of a significant, positive relationship between the thermal environment in which children work and study and their efficiency in learning, was recently verified by controlled experiments in the Lennox "Living Laboratory" classrooms. For information on "The Freshest Story Ever Told"—an authentic research report—write LENNOX, 46 S. 12th Avenue, Marshalltown, Iowa.

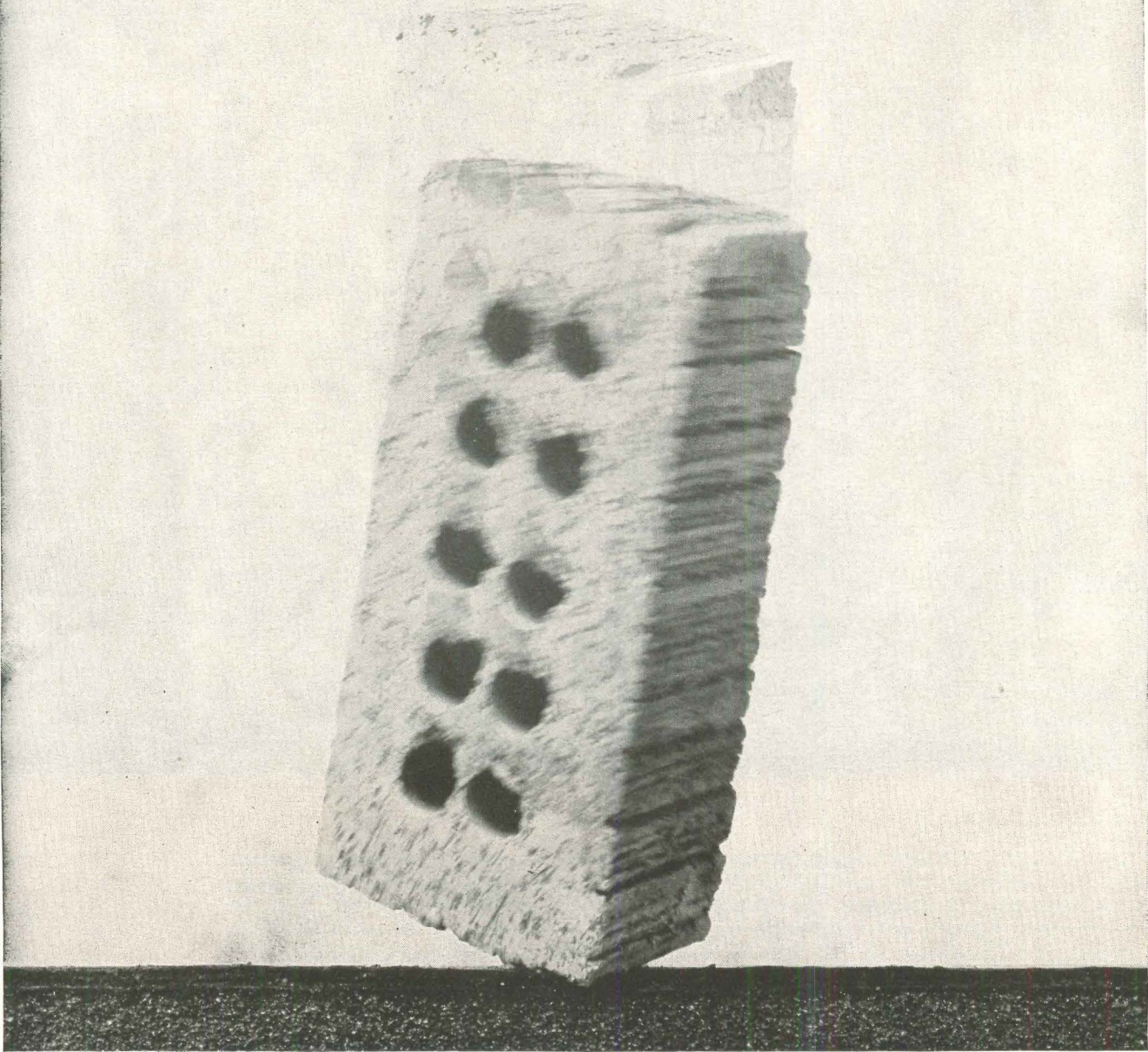
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**LENNOX** *Comfort Curtain*®





# CATCH IT! BEFORE IT RUINS YOUR CLIENT'S ROOF



Picture it. The roof's down on your client's building. A workman carrying bricks for further construction above it drops one from a ladder or scaffold. Wham! It punctures the roofing. What happens to the insulation the next time it rains?

It depends. If it's FOAMGLAS,<sup>®</sup> there's nothing to worry about. The insulation value won't change.

And we guarantee this kind of security for 20 years, in writing, without charge to your client.

You see, FOAMGLAS stays dry indefinitely. Its sealed glass cells can't absorb moisture. That's pretty comforting when you consider the 101 human errors that can damage a roof. Things like ladders, wheels, heels, knives, tools, and pipe can all cause punctures that go undetected until

it's too late. Next thing you know the insulation's wet. You may have to replace the whole roofing system.

Considering the added value of *constant* thermal efficiency in reducing the investment in air conditioning equipment and in cutting operating costs, you'll do your client a service that lasts the life of the building if you specify FOAMGLAS Roof Insulation.

Write today for your sample of the FOAMGLAS guarantee. Remember, it will be like money in the bank when we're asked to sign it.

Write to Pittsburgh Corning Corporation, Box B-103, One Gateway Center, Pittsburgh 22, Pa.

**PITTSBURGH**  
**PC**<sup>®</sup>  
**CORNING**

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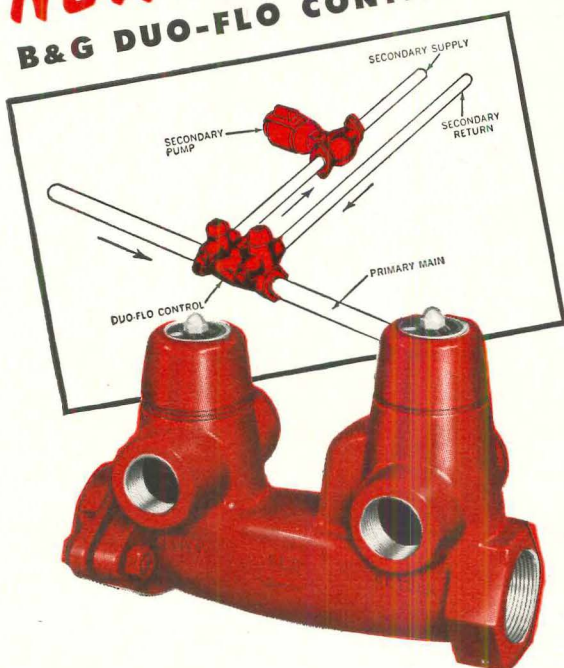
In this Chicago 14 unit apartment, the owners are well pleased with a heating system which provides genuine comfort for tenants at minimum fuel expense.

From left to right: Mr. John J. Limperis, co-owner, Mr. Kenneth Bauer, contractor, Mr. Benjamin Daidone, co-owner.

## DUO-FLO <sup>HEATING</sup>/<sub>COOLING</sub> SYSTEM SAVES MONEY FOR OWNERS ... ASSURES COMFORT FOR TENANTS

**NEW!**

**B&G DUO-FLO CONTROL**



In primary-secondary systems equipped with Duo-Flo Controls, secondary zones are always controlled, even with high head pumps in the primary zone. Use of higher temperature drops permits sizable reduction in pump horsepower. Material saved includes 2 Flo-Control Valves, 2 shut-off valves, 2 or 3 tees and 6 nipples.

Multi-family dwellings are normally hard to heat with economy and at the same time provide comfort for all tenants. In such buildings, the Duo-Flo system, a method of primary-secondary pumping developed by B&G engineers, solves many problems encountered in establishing automatic temperature control.

The B&G Duo-Flo System permits simplified zone control of various building areas to assure proper compensation for the effects of sunshine, wind and occupancy needs. Not only does it improve comfort conditions, but prevents the fuel waste of overheating and can reduce circulating pump horsepower.

As practical evidence of Duo-Flo System value, Kenneth E. Bauer, Vice President of Atomatic, Inc., Chicago Contractors, says—

“In the past few years, I have installed several of your Duo-Flo Primary-Secondary Systems. In my opinion there is no better way to zone a hydronic system than with pumps. It may cost the building owner a little more initially, but in the long run he saves money and is assured of comfortable tenants.

“The low rate of service problems with B&G pumps is well known and the new B&G Duo-Flo Control obviously makes it easier to provide pumped zone control.”



Send for complete information on B&G Duo-Flo Control

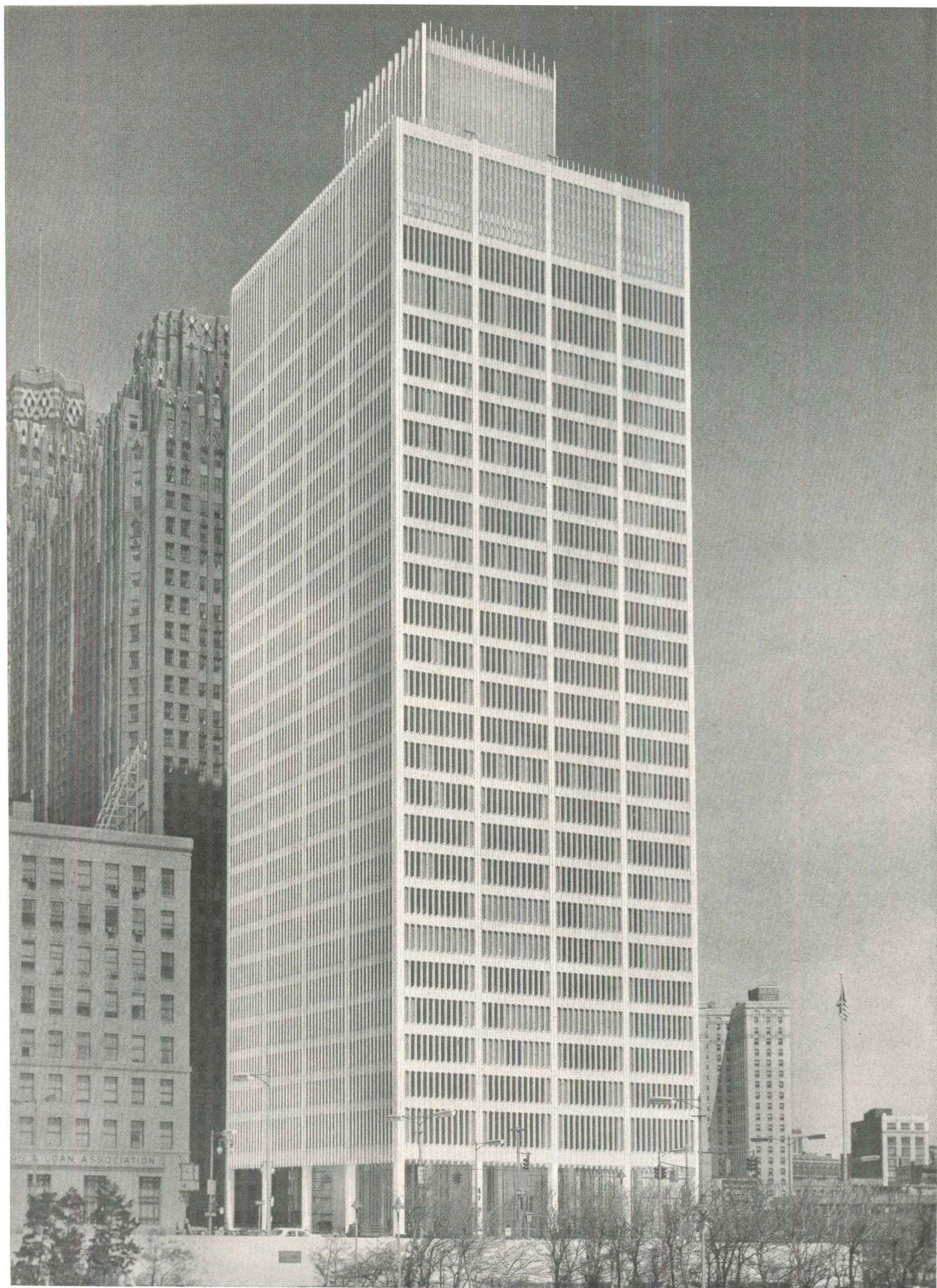
**BELL & GOSSETT**  
C O M P A N Y  
**Hydro-Flo** DIVISION

Dept. HT-32, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

For more data, circle 150 on Inquiry Card







## some feats are impossible without steel

Steel has the most favorable strength-weight-cost combination of any building material. Because of its strength, flexibility of fabrication methods, and wide range of available structural shapes, steel makes possible esthetic and space-saving achievements unattainable with other materials. Steel can be designed as a beam, rigid frame, continuously, compositely, plastically, orthotropically. Steel can be erected in any season, can be handled more roughly than other material. Because there are so many grades of structural steel of varying strength levels, it is never necessary to over-design.

**Only steel columns could bear the load.** The 30-story Michigan Consolidated Gas Company Building in Detroit is the world's tallest all-welded building for a reason: integrated architectural design prohibited use of columns larger than 2 ft., 4 inches square. Reinforced concrete columns that size couldn't carry the required 6½ million pounds. Connections were welded to eliminate bulkiness and achieve smooth right angles between beams and columns. Heavy columns for lower stories are four plates welded into a rectangular box section. Where extra strength was needed a fifth interior plate was added. Lighter upper columns are regular rolled sections. The field-welded wind-resisting system contains the equivalent of 40 miles of 5/16-inch fillet welds. American Bridge Division fabricated and erected 5,700 tons of steel, inspected welds by radiographic and dry powder magnetic particle techniques. Architects: Minoru Yamasaki-Smith, Hinchman & Grylls, Associated Architects & Engineers. Contractor: Bryant & Detwiler Co.

**Steel dome saves Syracuse University \$193,500.** Fabricated and erected by American Bridge, the low-profile dome of the Syracuse University field

house has a rise of only 32 ft. and a diameter of 300 ft. Because there are no interior supports, all of the 80,000-sq.-ft. floor is usable. Seating capacity is over 4,000 with room enough for basketball, track and field meets, or a 70-yd. football practice field. There are over 700 tons of structural steel in the dome and canopy. In a competitive bid with the alternate concrete design, steel saved \$193,500. Architect: King and King. Engineer: Eckerlin and Kleper. Contractor: R. A. Culotti Construction Company.

**High-rise truss walls—now possible with unique design and the "combination of steels."** Through a new building design concept using four different steels of varying strengths, designers trimmed 200 tons of steel (and saved \$300,000) from the skeleton of Pittsburgh's IBM Building, first high-rise building with truss walls. External framework is a diagonal, criss-crossing truss system. Only interior vertical supports are the six columns of the central service core. Outer truss walls direct all wind, wall and most floor loads down to two ground contacts on each side of the building. Using different strength steels (from 33,000 to 100,000 psi) engineers accommodated stress levels much as bridge designers have done in the past. This principle also kept truss members a near-uniform size from top to bottom regardless of stresses, and permitted American Bridge use of time-saving modular fabrication and erection.

Truss walls form the facade, eliminating spandrels and independent curtain wall system. Diagonals were fireproofed with asbestos plaster and sheathed in 22-gauge stainless steel. Architect: Curtis and Davis Associates. Engineer: Worthington, Skilling, Helle & Jackson. Contractor: George A. Fuller Company.

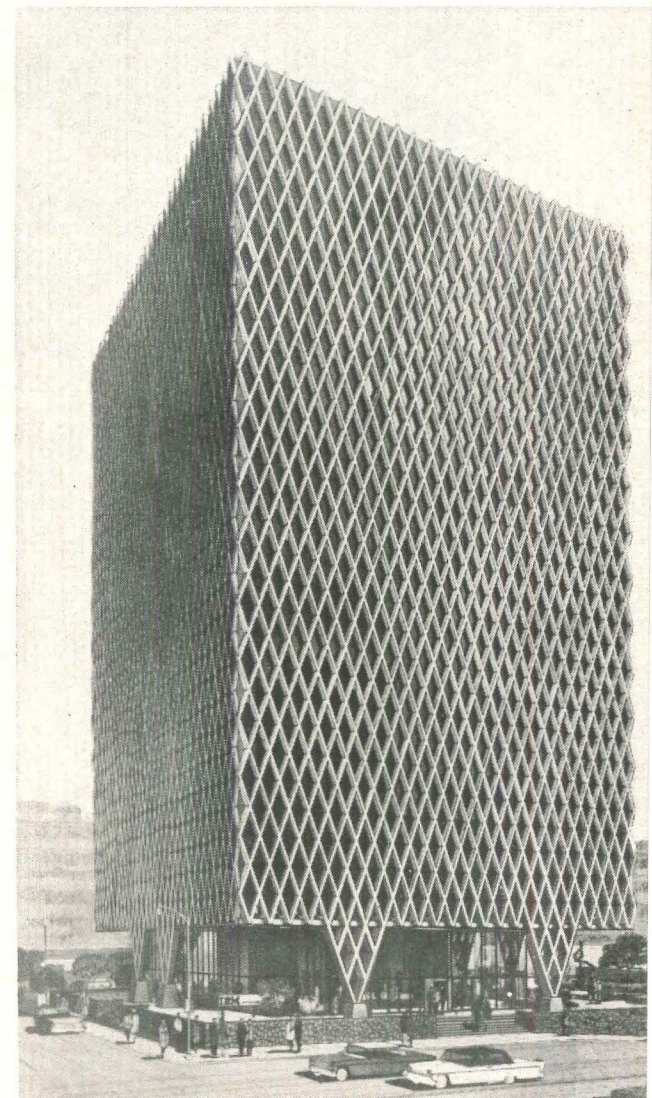
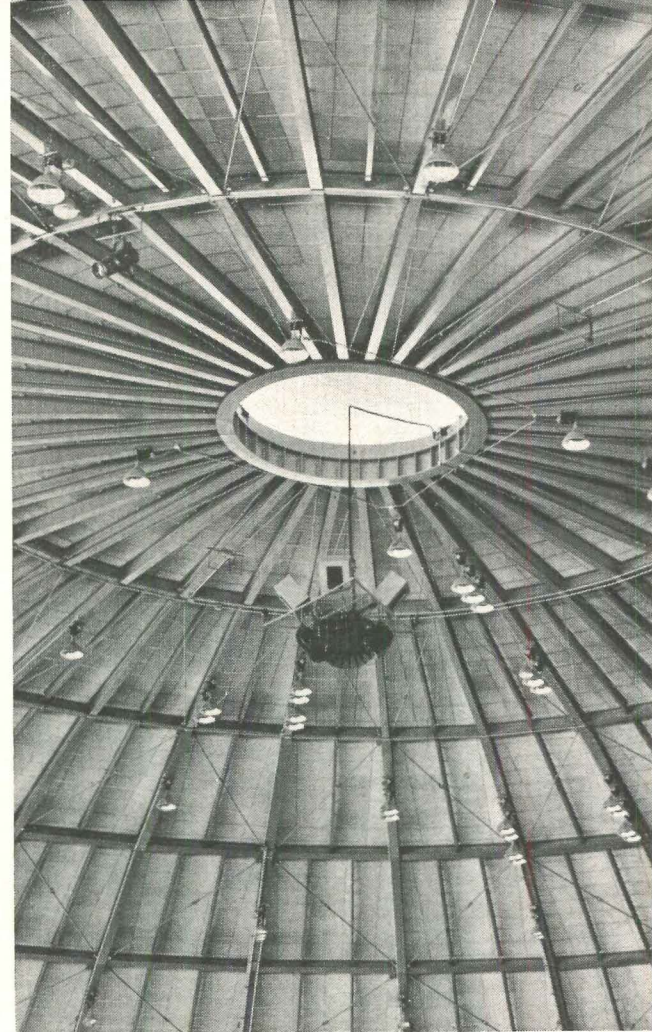
General Offices: 525 William Penn Place, Pittsburgh, Pa. Contracting Offices in: Ambridge • Atlanta • Baltimore • Birmingham • Boston • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Elmira • Gary • Harrisburg, Pa. • Houston • Los Angeles • Memphis • Minneapolis • New York • Orange, Texas • Philadelphia • Pittsburgh • Portland, Ore. • Roanoke • St. Louis • San Francisco • United States Steel International (New York), Inc.

**American Bridge  
Division of  
United States Steel**



TRADEMARK

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## Product Reports

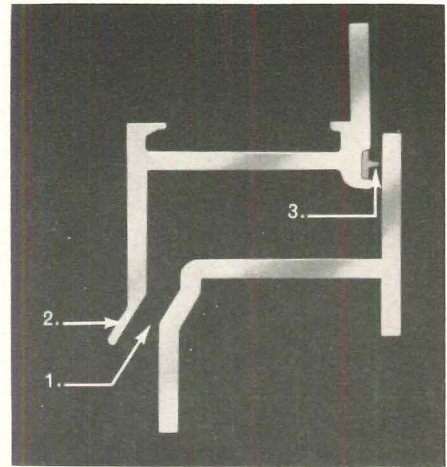
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### SEAMLESS-RESILIENT FLOORING

*Torginol Duresque* is a new, completely monolithic flooring for office, apartment, residential, industrial and commercial buildings. The flooring is a combination of chips and liquid glaze that can be solidified

over new or existing floors of wood, concrete and most other firm surfaces. It can be applied to exteriors as well as interiors and is utilized as a coving and wainscot, providing an extremely tough thin wearing surface not attacked by most acids, alkalies or solvents. A rubber like cushioning waterproofs and increases the durability of the exterior flooring. *Torginol of America, 6115 Maywood Ave., Huntington Park, Calif.*

CIRCLE 315 ON INQUIRY CARD



### WINDOWS

A new model of *Kawneer's Sealair Window* for commercial buildings features: (1) an exclusive pressure equalization slot, (2) an integral drip member and (3) complete neoprene weather sealing.

In a static test, an independent testing laboratory reported the window showed no water leakage even at static loads of 25 psf, equivalent to 80-mph winds. Air leakage is held to .2 cfm per lineal foot of perimeter with the neoprene seal. *American Metal Climax, Inc., Niles, Mich.*

CIRCLE 316 ON INQUIRY CARD



### MODERN KITCHEN VENTILATION

. . . OUT GOES THE CLUMSY HOOD . . . OUT GOES THE DINGY ATMOSPHERE . . . OUT GOES THE GREASE LADEN AIR. EVERYTHING IS LIGHT, CLEAN, AND FRESH . . . YOU CAN BREATHE AGAIN.

Ultra-modern PLEDGAIRE replaces the "catch-as-catch-can" hood with a trim shelf ventilator . . . captures and removes excess heat, greasy air, fumes, smoke, and odors right at their source—before they spread . . . no chance for food to be tainted.

What's more, PLEDGAIRE costs no more than ordinary canopy installations—at the same time pays for itself in superior efficiency, reduced cleaning and decorating costs, improved air conditioning efficiency . . . and provides matchless sanitation and maximum safety.

For the facts about modern kitchen ventilation, just mail coupon.



COCKLE VENTILATOR CO., INC., 1200 S. Willis Ave. Wheeling, Ill. 60090  
Gentlemen: Please send me your booklet "Modern Ventilation for Commercial Kitchens."

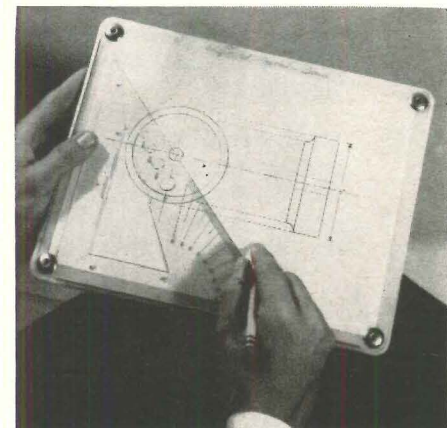
NAME \_\_\_\_\_  
N F P A ORGANIZATION \_\_\_\_\_  
Member STREET \_\_\_\_\_  
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

For more data, circle 152 on Inquiry Card

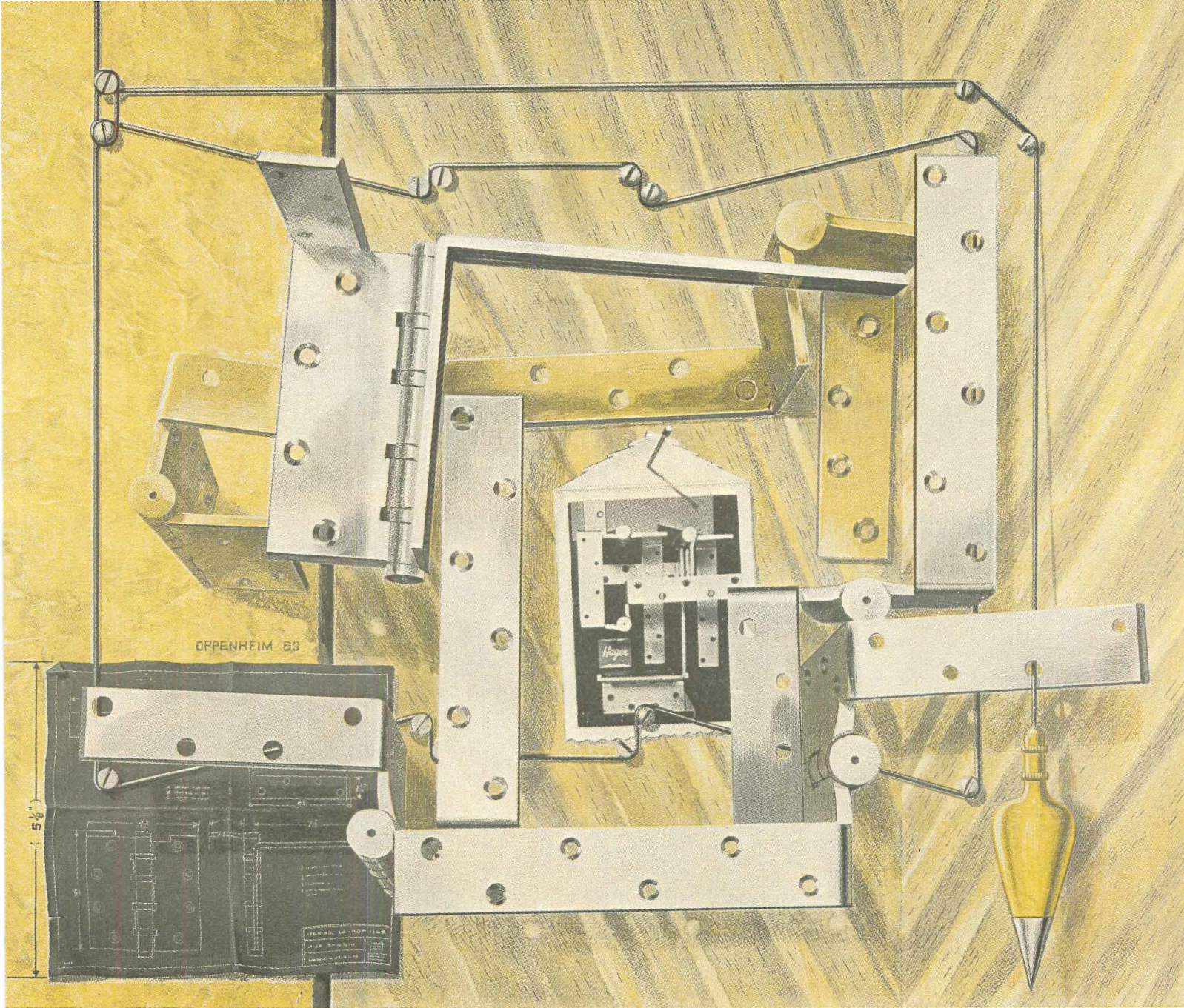
### PORTABLE DRAWING BOARD

The *Graphostat*, a completely equipped portable drawing board set, consists of a 9 $\frac{3}{4}$  by 12 $\frac{1}{4}$  in. chip and crack resistant translucent polystyrene board weighing eight ounces, and two calibrated triangles. The set enables the user to make precise drawing and revisions. The board has retractable straight edges that eliminate the need for a T-square. The 30/60 degree triangle is inscribed with an inch scale. The 45 degree triangle has four graduated circles,  $\frac{1}{4}$  to  $\frac{1}{2}$  in. diameters, and a protractor.

CIRCLE 317 ON INQUIRY CARD







## ART FOR HANGING

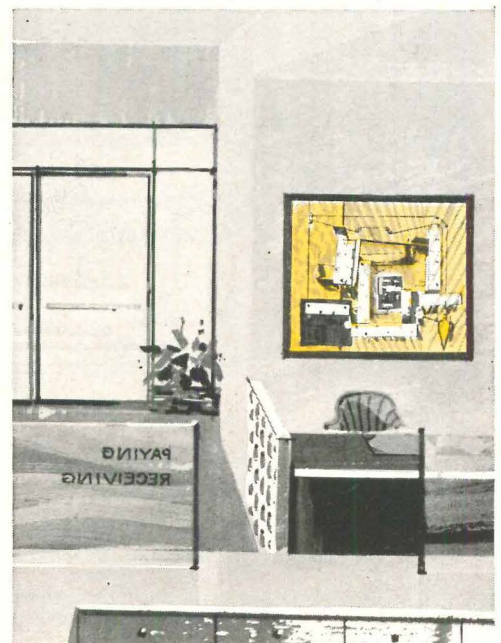
*from the Hager collection*

Functional design seeks interesting line. Architects find it in the Hager Anchor Hinge so often specified for extra-heavy doors of high-frequency use in today's public buildings. The anchor leaves turn functional support of heavy-gauge metal into a design asset. The four-ball-bearing, five-knuckle barrel (another extra strength feature) is kept to compatible scale through advanced processing by Hager craftsmen. Here is hinge artistry that appeals to the architect who expects door hardware to contribute to total concept in building design. C. HAGER & SONS HINGE MFG. CO., ST. LOUIS 4, MO. Hager Hinge Canada Ltd., 61 Laurel Street East, Waterloo, Ontario.

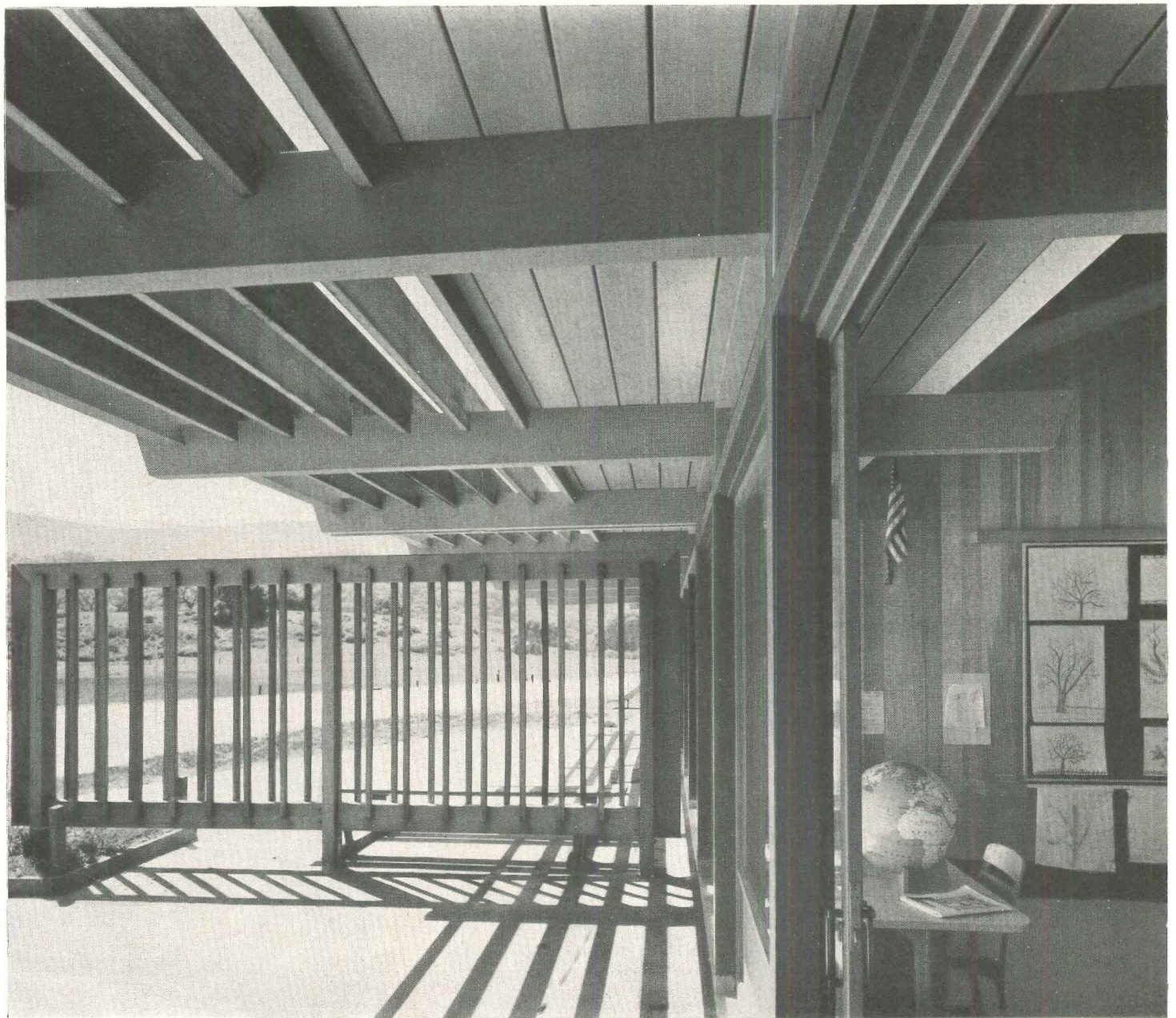
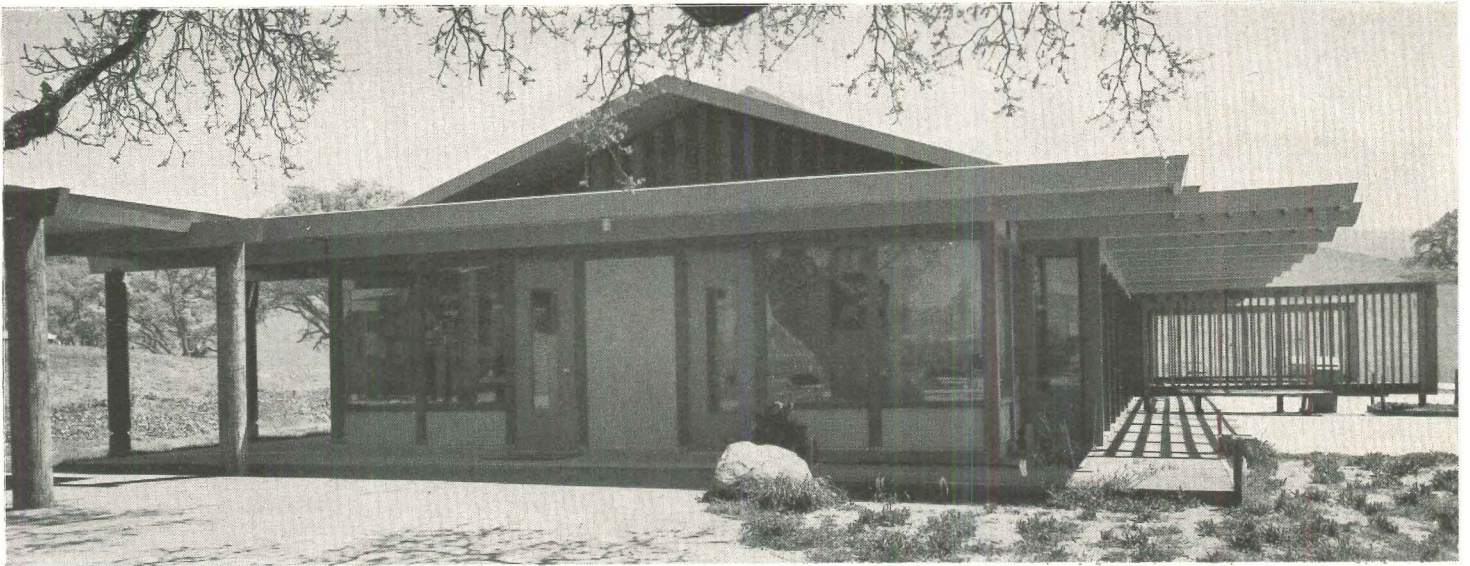


**Everything Hinges on Hager®**

For more data, circle 153 on Inquiry Card







A low slope roof and overhang, such as in the Corte Madera School in California, is just one of the many roof designs easily adapted to UNICOM's modular system.



# unicom:

## and your imagination . . . in buildings for learning

## a new way to use WOOD

Take more time for design with a new school of thought for wood construction . . . UNICOM. It gives you freedom to plan within a uniform modular system. It provides the basic engineered principles for your entire structure.

UNICOM is flexible . . . permits your own design interpretation of any one- or two-story school. Its standards are easily co-ordinated with other materials. Its panel sizes are many. And you can use UNICOM with either conventional or component construction methods . . . or a combination of both.

UNICOM is disciplined . . . with its modular planning grid divided into equal spaces of 4, 16, 24, and 48 inches for width and length. The 4-inch unit sets the standard for the complete system. The 16- and 24-inch units become the multiples for walls, windows, and door panels.

For wall heights, the standard for the first floor exterior is 8' 1½" from the subfloor top to the ceiling joists bottom. Second floor heights vary with your plan. Standardized roof slopes and overhangs have many variations . . . uniform

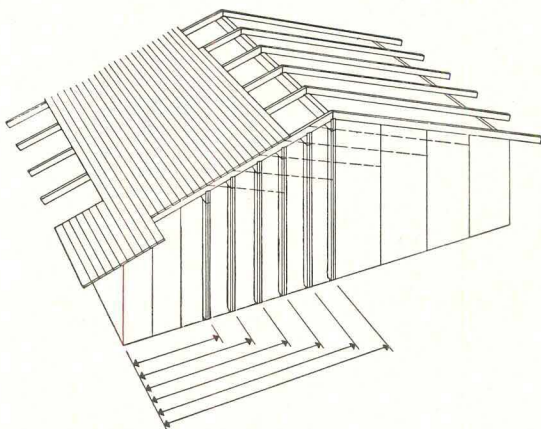
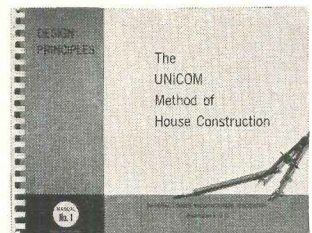
floor-to-floor dimensions allow ready-made stair components for desirable latitude in your school design.

UNICOM is economical . . . with components made to fit, simplified specification, and interchangeability of units from any UNICOM system source.

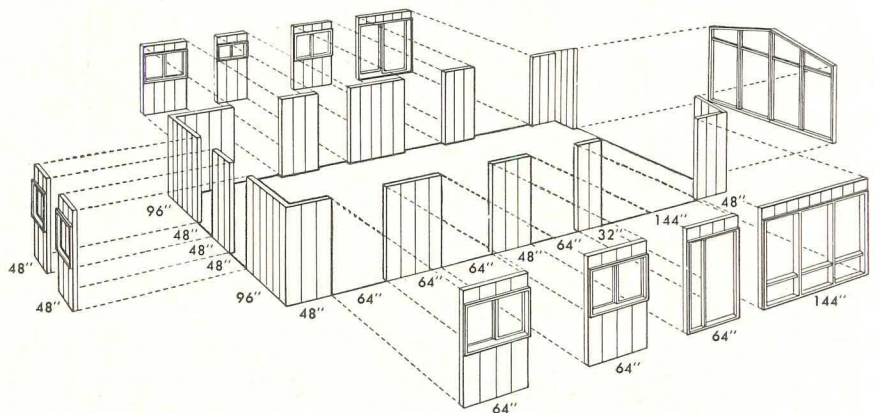
UNICOM adds to the already many advantages of wood . . . helps give the community a better school for their tax dollars, offers you infinite opportunities for new expression in modular form. For more information on designing schools with wood and UNICOM, write:

NATIONAL LUMBER MANUFACTURERS ASSOCIATION  
Wood Information Center, 1619 Massachusetts Ave., N.W., Washington 6, D.C.

UNICOM MANUAL NO. 1: "The Unicom Method of House Construction" . . . 122 pages of design principles, drawings, and modular planning for basic homes of wood. Single copies of Manual No. 1 are available without cost to those associated with or supplying the home building industry. Your request should be made under professional letterhead and sent to UNICOM, National Lumber Manufacturers Association, 1619 Massachusetts Ave., N.W., Washington 6, D.C.



UNICOM's plank-and-beam roof is readily co-ordinated with modular dimensions. Load-bearing walls and columns, in some of these designs, can vary the wall components.



UNICOM's exterior walls, doors, and windows must be given full design and structural consideration with each component to achieve the complete modular structure. Flexibility is necessary for success.

For more data, circle 154 on Inquiry Card



## Office Literature

continued from page 242

### STEEL GRATING

Two catalogs on heavy duty steel grating containing engineering data on six types in three different series, and a third catalog on stainless steel grating, have been recently revised. Safe-load tables are included. *Kerri-gan Iron Works Company, P. O. Box 479, Nashville 2, Tenn.*

CIRCLE 414 ON INQUIRY CARD

### VIBRATION ISOLATION

Fibrous glass vibration isolation material for installations ranging from the mounting of delicate instruments to the cushioning of joists, beams and floor slabs of large structures is described in a new six-page bulletin. The booklet includes performance curves and a typical specification for floor vibration isolation. *Fibrous Glass Products, Inc., Pall Corporation, Mountaintop, Pa.*

CIRCLE 415 ON INQUIRY CARD

### BUILDING CONSTRUCTION

A building construction handbook containing detailed application information on concrete floor and wood treatments, waterproofing and damp-proofing compounds, concrete and mortar admixtures, and caulking and sealing compounds, indexes 46 building maintenance and construction specialty products both alphabetically and by use.

Separate sections of the brochure tell how to measure flat surfaces, stack and tanks. The handbook also discusses and illustrates the design of basement floor slabs to resist hydrostatic pressure. *Sonneborn Building Products, Inc., DeSoto Chemical Coatings, Inc., 1700 S. Mt. Prospect Rd., Des Plaines, Ill.*

CIRCLE 416 ON INQUIRY CARD



DEFY TIME AND  
WEATHER WITH RUSCO  
STEEL WINDOWS IN COLOR

When you want the strongest fabricated tubular steel windows—either original or replacement—order from Rusco. Top quality raw metal has been hot-dip galvanized, bonderized, then epoxy-finished in 21 factory-applied, architect-approved colors. Felt-pile weather stripping insulates against air and

water infiltration. Built to bear uniform and concentrated load, Rusco windows meet or surpass minimum test requirements, and carry a 15-year guarantee on materials. Rusco specialists offer qualified help when and where you need it. Write today for new catalog or send us your specifications.

See Sweets Architectural File 17 b/Ru

#### Accessories —

- all factory-epoxy-enameled
- ▶ self-storing deluxe steel insulating windows
- ▶ self-storing deluxe combination steel insulating doors
- ▶ custom-made steel porch enclosures



A Division of Rusco Industries, Inc. *Serving the architectural, building and home improvement fields in the United States and Canada since 1935*

### STEEL SHELVING

A 24-page steel shelving catalog includes product and ordering specifications on steel and tool room shelving, special pages on shoe and other special purpose shelving, and material handling containers. Also included are many installation views and five pages of typical shelving sections. *Lyon Metal Products, Inc., 58 Plant Ave., Aurora, Ill.*

CIRCLE 417 ON INQUIRY CARD

### EVAPORATIVE CONDENSERS

Evaporative condensers for air-conditioning, refrigeration and industrial cooling are the subject of a new, four-page catalog, No. 91-312. The bulletin gives basic selection data, physical dimensions and engineering specifications for six models of 20-60 ton capacities. *Acme Industries, Inc., Jackson, Mich.*

CIRCLE 418 ON INQUIRY CARD

### VERMICULITE PLASTER SPECIFICATIONS

Vermiculite Institute announces a comprehensive new edition of "Standard Specifications for Vermiculite Plastering and Vermiculite Acoustical Plastic for Sound Conditioning." Among the changes are aggregate reductions in base coat proportioning. Also, suggestions for suspended ceiling construction have been added. *Vermiculite Institute, 208 S. La Salle St., Chicago 4, Ill.*

CIRCLE 419 ON INQUIRY CARD

\*Additional product information in Sweet's Architectural File

For more data, circle 155 on Inquiry Card



■ Architects utilized all of the superior design and construction advantages of monolithic reinforced concrete to create these new residence towers for the University of Pittsburgh. Through the use of monolithic reinforced concrete, they were able to reduce costs and minimize construction time to assure early student occupancy.

The three dormitory towers are set on a common three story pedestal and each tower is 88 feet in diameter. To give all students outside rooms, all of the mechanical functions of each tower are confined to a center shielded shaft which houses utilities, ducts, elevators, and toilet facilities.

On your next project, be sure that you investigate the many superior design and construction advantages of this highly flexible structural material.



*New residence towers for men at University of Pittsburgh  
Architect: Deeter & Ritchey, Pittsburgh, Pa.  
General Contractor: Dick Corporation, Pittsburgh, Pa.*



flexibility and lower  
cost win for monolithic reinforced  
concrete in Pitt Residence Towers

CONCRETE REINFORCING STEEL INSTITUTE

228 North La Salle Street • Chicago, Illinois 60601

1-63





## PROBLEM

Provide year-round comfort for  
the world's largest apartment:

**THE PHILADELPHIAN**  
in Philadelphia, Pa.

## SOLUTION . . . a YORK that uses low-cost

**This modern apartment building was designed to complement Philadelphia's changing skyline . . . as part of a major building "renaissance" in the city.**

Said to be the largest apartment building in the world, the Philadelphian consists of 776 apartments. Heating and cooling comfort are provided by 2,035 individually controlled York Fan-coil room terminal units. Most of these are York's "extra-thin"

models, and will be furred into the walls. 130 new style York lowboys will also be used. These units are only 13" high and are designed especially for installation under low windows. Water chilling for the system will be provided by 2,000 tons of York absorption equipment — using city-furnished low pressure steam.

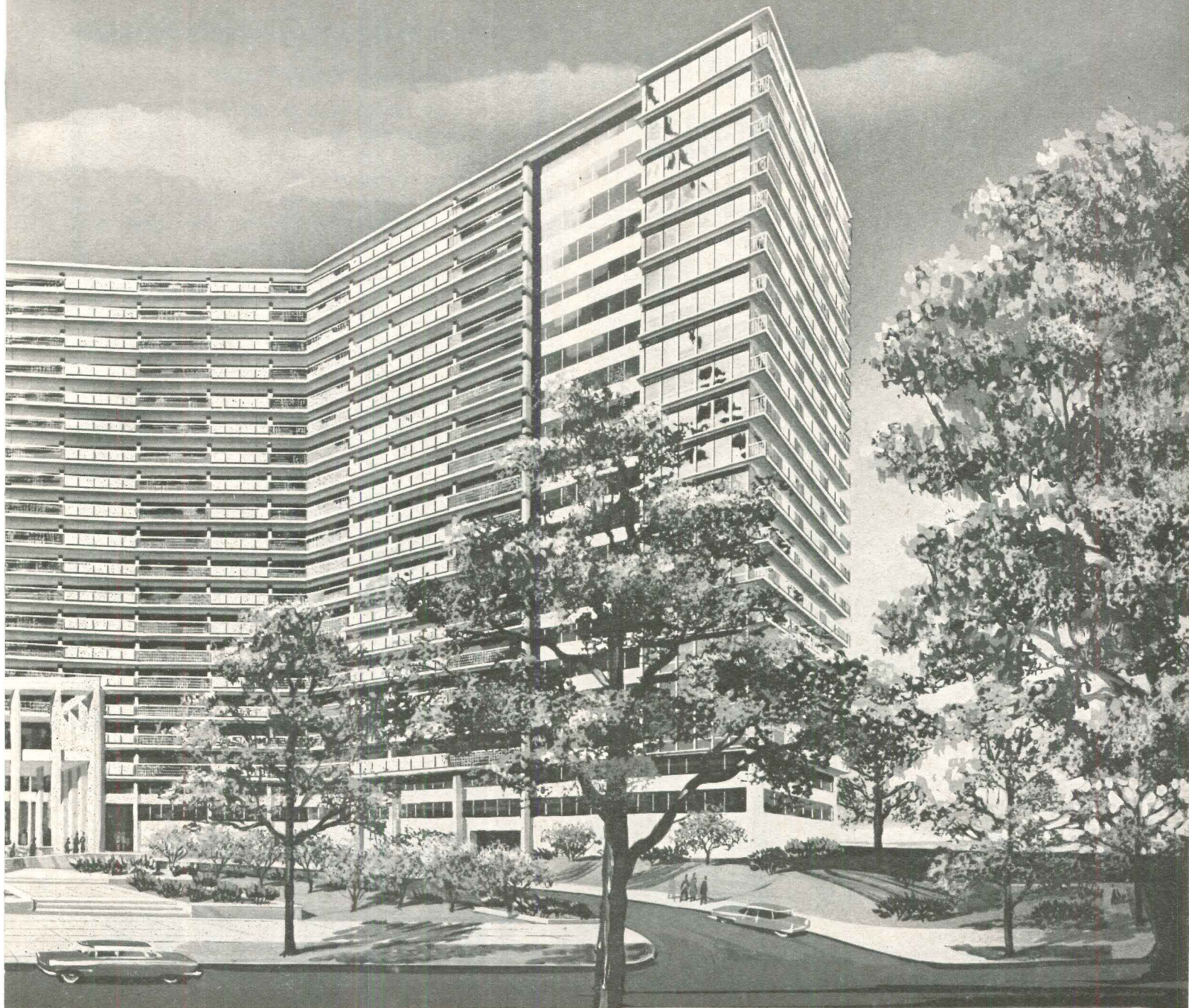
Overlooking Philadelphia's busy Benjamin Franklin Parkway, the Philadelphian is near the well-known Philadelphia Art Museum. Architect Samuel I. Oshiver has designed this large apartment building so that it

presents an appearance in keeping with the area near the museum.

Built by J. P. Lieberman and Max E. Cohen at a cost of \$20 million, the Philadelphian had one of the largest FHA commitments on record. General Contractor, Gilbane Building Company; Mechanical Contractor, Daniel J. Keating, Philadelphia.

**Plan ahead with York** when you plan air conditioning for any type of building. For over 75 years, York has set the pace in raising comfort standards for home, business and industry . . . pioneered many of the major ad-





*Architects and Engineers, Samuel I. Oshiver and Associates, Philadelphia.*

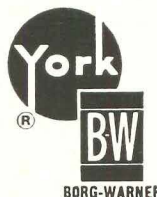
## AIR CONDITIONING SYSTEM municipal steam for cooling!

vances in air conditioning and refrigeration. For specification data on York Fan-coil and Induction units, and on York absorption machines, see your York Representative; or write York Corporation, York, Pennsylvania. In Canada, Shipley Company

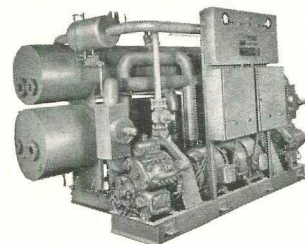
of Canada, Ltd., Rexdale Boulevard, Toronto, Canada. Get complete facts on the York Certified Maintenance Program, and the York Lease Plan that lets your client install air conditioning equipment now, without capital investment.

**YORK** CORPORATION  
Subsidiary of Borg-Warner Corp.  
YORK, PENNSYLVANIA

THE QUALITY NAME IN AIR CONDITIONING AND REFRIGERATION



### ANOTHER YORK SOLUTION!



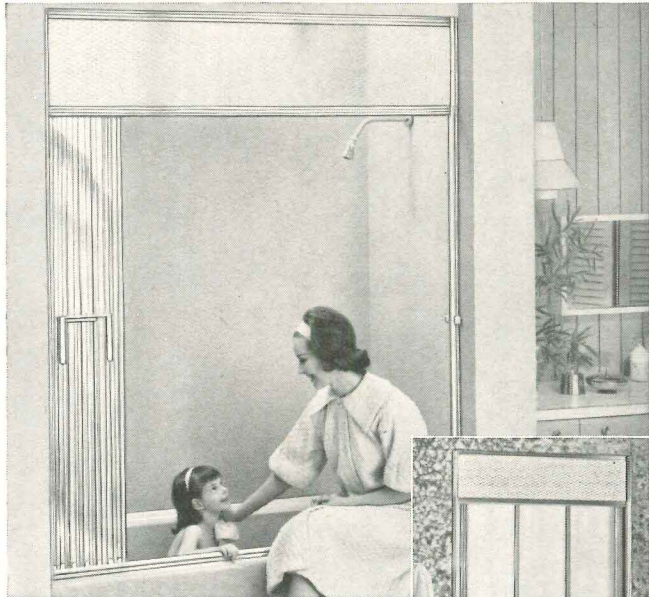
A York Heat Pump uses only electricity and air to heat and cool any type of building. May be located almost anywhere, from basement to rooftop; no space-taking fuel storage.

For more data, circle 156 on Inquiry Card



# AN OPEN AND SHUT CASE FOR SHOWERFOLD®

At last! An enclosure with benefits for you,  
the builder and the tenant.



Showerfold enclosures offer beauty and safety, too! Translucent decor matching panels, gold or silver aluminum trim, give every bathroom the soft glow of luxury. Enclosures open and shut like an accordion, from either end, for benefits that really make sense to home buyers, apartment renters and builders, too.

- Doesn't make the room look smaller.
- Has no open track to scratch or catch dirt.
- Folds open from either end for complete access.
- Meets safety codes and regulations.
- Ends problems of dangerous swinging and by-passing glass doors.
- Installs without costly end-jambes or special tools.



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Tub or shower enclosures come in 7 lovely decorator panel colors. Anodized gold or silver aluminum trim. Fit all size openings. For more information, write:

Leader in Bathroom Fashion

## SHOWERFOLD®

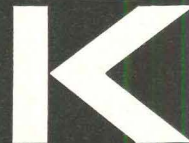
DOOR CORPORATION

A subsidiary of KINKEAD INDUSTRIES INCORPORATED  
5858 N. Pulaski Road • Chicago, Illinois, 60646  
or KINKEAD INDUSTRIES INCORPORATED  
5250 W. 102nd Street • Los Angeles 45, Calif.

For more data, circle 157 on Inquiry Card

## Gold Anodized KARVALUM® . . .

. . . aluminum screens are the esthetic highlight of this foyer designed by C. Arnold Thoma, Architect, for Hartzell Industries, Piqua, Ohio. A variety of patterns, colors, and panel thicknesses are available for both railings and screens—pattern shown is RF-35. Write for catalog EMK-61 showing other patterns, applications, and technical information.



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Standard Conveyor takes full responsibility for your automatic tube system from start to finish. Standard Conveyor has over 40 years of experience in the pneumatic tube business.

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**Standard  
Conveyor  
COMPANY**

312-K Second St., North St. Paul 9, Minn., Telephone: SPring 7-1355

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# SILENT GLISS

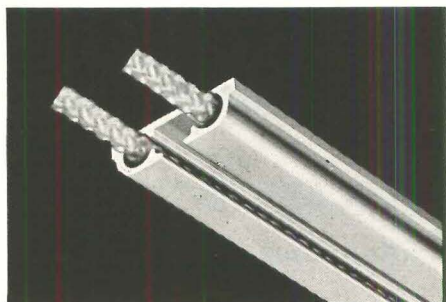


*the silent drapery track<sup>®</sup>*

Whatever you may read, hear, or be told — one thing is sure: *there is no other track to equal Silent Gliss.*

The reasons are clear: ■ No other track has the patented system of cords traveling in separated, semi-enclosed channels (to prevent drooping, tangling, and other problems of tension systems). ■ No other track features the silence of satin-smooth rounded nylon carriers traveling in precisely fitted channels (no annoying "echo chamber" roller noise.) ■ No other track has the slim, trim lines of Silent Gliss (with the gracious contours of the thoroughbred).

Silent Gliss offers *fourteen* track styles to choose from: tracks for surface mounting, bracket mounting, or recessing . . . tracks for cord traversing or hand operation . . . tracks for cubicle, extra-duty or specialty use. All are shown and described in the complete illustrated catalog shown above. Write for full details today; address Dept. AR-10.



□ Here is the *secret of Silent Gliss* . . . with its all-nylon cord, traveling in patented, *separated* channels. This means minimum maintenance, because there's no drooping, no tangling *ever*. It's one of the reasons why Silent Gliss is the *prestige* track, chosen for quality installations the world over.

## SILENT GLISS, INC.

*Distributing Companies*

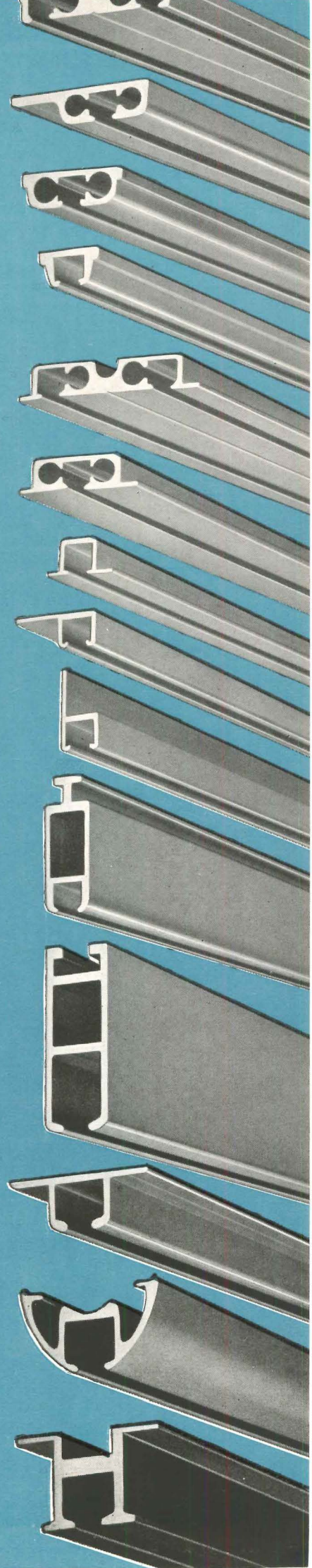
Angevine Co., Freeport, Illinois

Drapery Hardware Mfg. Co., Monrovia, California

THREE OF THE **Newell** COMPANIES

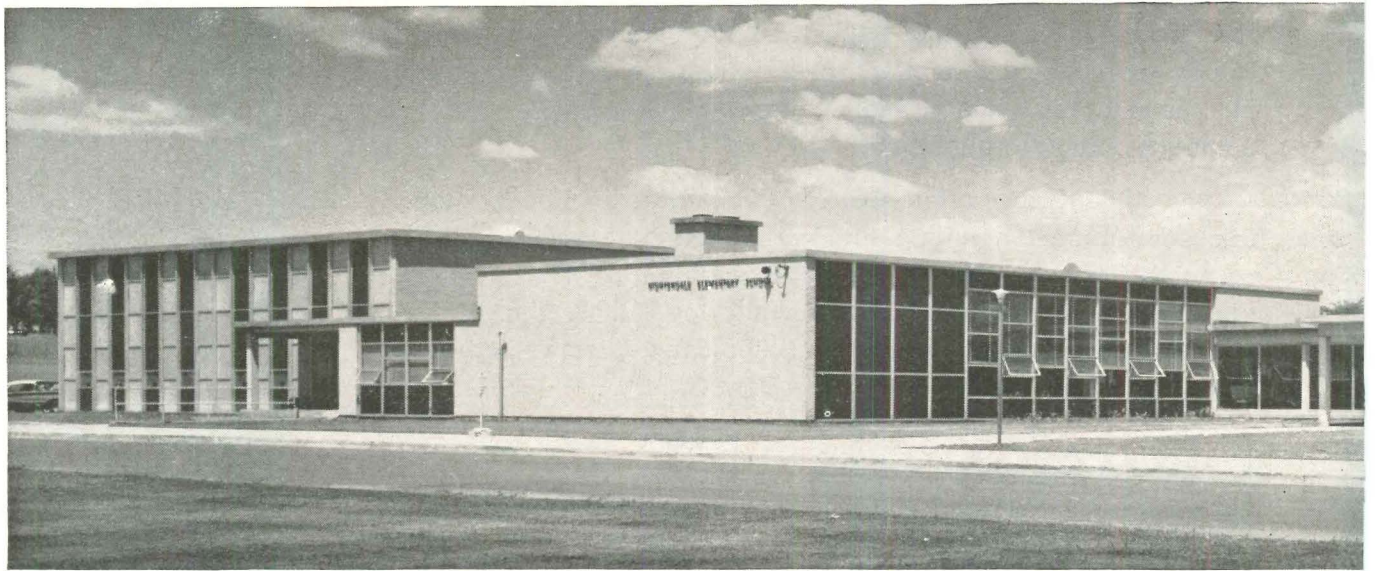
*Manufacturers of Quality Drapery Hardware Since 1903*

For more data, circle 158 on Inquiry Card





Nightingale School, Massena, N.Y. Architects: Sargent, Webster, Crenshaw & Folley, Plattsburg, N.Y.  
Contractor: Louis Gressani Contractors, Inc., Syracuse, N.Y. Photograph by C. V. D. Hubbard.



## **LUPTON CURTAIN WALL WINS HONORS AGAIN IN "ECONOMICS"**

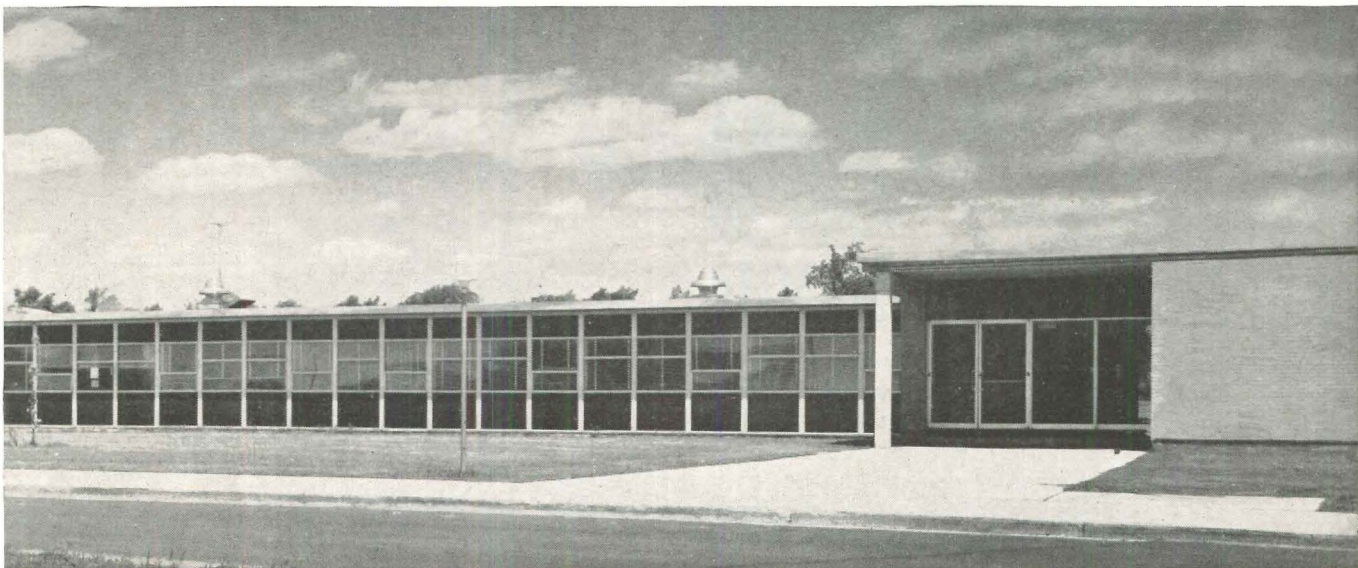
Here, as at hundreds of other schools throughout the country, LUPTON aluminum curtain wall helped create a strikingly handsome and thoroughly functional building. Prefabricated units came direct to the job, ready to go up fast, saving on installation time. What's more, the use of aluminum assures minimum maintenance over the years...our curtain wall can't rust, never requires painting.



# LUPTON

**Michael Flynn Manufacturing Company**

Main Office and Plant: 700 E. Godfrey Avenue, Philadelphia 24, Pa. West Coast Office and Plant: City of Industry (Los Angeles County), California. Sales Offices: San Leandro, California; Oak Brook (Chicago), Illinois; New York, New York; Cleveland, Ohio; Dallas, Texas. Representatives in other principal cities.



Wouldn't it make good budget-sense to contact your local LUPTON man when you're ready to build? He's an expert on curtain wall application who represents a leading company of long-established reliability. And he will be happy to tell you and your architect all about the operation of LUPTON's single-source responsibility, from plans to final construction. To reach him, or to get complete information, just call or write any office listed above.

For more data, circle 159 on Inquiry Card



## On the Calendar

### October

6-11 Ninth annual convention, Prestressed Concrete Institute, presented in cooperation with the University of California, Berkeley, with sessions jointly sponsored by the American Society of Civil Engineers—Sheraton-Palace Hotel, San Francisco

6-12 Fourth Congress of the International Association of Painters,

Sculptors and Graphic Artists—New York City

8-12. International Symposium on Architecture, sponsored by the Union Internationale des Architectes—Mexico City

11-20 National Decoration and Design Show—New York Coliseum, New York City

12-18 Second Pacific Rim Architectural Conference; 18th Annual Convention, California Council, American Institute of Architects; Fifth

California Regional A.I.A. Meeting; 13th Annual Meeting of the Women's Architectural League of California—Maria Isabel Hotel, Mexico, D.F.

14-16 Continuation of ninth annual convention, Prestressed Concrete Institute—Surfrider Hotel, Honolulu

16-18 13th Annual Gulf States Regional Conference, A.I.A.—Dauphin Island, Mobile, Ala.

30th Semi-Annual Meeting, Consulting Engineers Council; through Nov. 1—Disneyland Hotel, Anaheim, Calif.

### November

11-14 16th Fall Meeting, American Concrete Institute—Royal York Hotel, Toronto

11-14 48th edition, National Hotel and Motel Exposition—New York Coliseum, New York City

11-15 International Conference on Permafrost—Purdue University, Lafayette, Ind.

13-27 1963 International Building Exhibition; theme, "Industrialized Building"—Olympia, London, England

17-20 Annual meeting, Air-Conditioning and Refrigeration Institute—The Homestead, Hot Springs, Va.

18-22 10th National Plastics Exposition, sponsored by the Society of the Plastics Industry, Inc.—Sheraton-Chicago Hotel and McCormick Place, Chicago

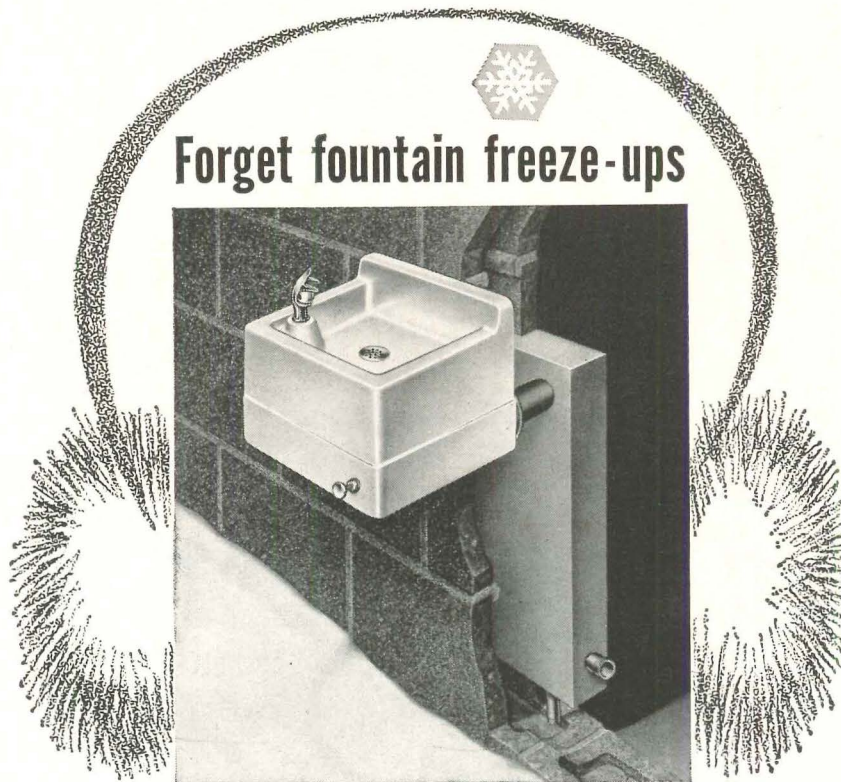
18-24 Annual convention, National Warm Air Heating and Air Conditioning Association—Americana Hotel, Miami Beach

19-21 1963 Fall Conferences, Building Research Institute—Mayflower Hotel, Washington, D.C.

### December

9-10 White House Conference on Community Development—Sheraton Park Hotel, Washington, D.C.

11-15 20th Annual Convention-Exposition, National Association of Home Builders—McCormick Place, Chicago



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### HAWS makes 'em **FREEZE-PROOF**

Freezing winter weather? You can forget drinking fountain worries when Haws Freeze-Proof valve systems provide uninterrupted free-flowing service. Forget costly maintenance emergencies—and choose from the popular designs of Haws exclusive fountains, both wall and pedestal types. Forget winter problems with Haws "Freeze-Proof." Install them now!

**Free to you:** Haws brochure detailing Freeze-Proof units and fountain selection. Write today. Illustrated is Haws Model 7XMK1, just one of many distinctive Freeze-Proof fountains available.



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EXPORT DEPT.: 19 Columbus Ave. • San Francisco 11, California

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## Office Notes

### Offices Opened

Charles M. Sappenfield, A.I.A., Architect, has opened an office at 67 Haywood St., Asheville, N.C.

Weber & Fairfax, a new firm formed by Robert R. Weber, A.I.A., and

*continued on page 328*

For more data, circle 161 on Inquiry Card



# An accent of blue at the Golden Gate

Panels of nonfading Glasweld echo the color of sky and deep water on this striking new high-rise apartment



The new Royal Towers overlooking Telegraph Hill in San Francisco (shown under construction), offers some of the most spectacular views in the country—the Bay, the mists boiling over the hills, and sunsets at the Golden Gate.

The architect found Weldwood® Glasweld® panels the perfect choice for this type of construction. Their soft, attractive colors are permanent. The panels remain optically flat in appearance and are unaffected by sun, salt air—even San Francisco's delightfully changeable weather. They need no maintenance other than the occasional washing you'd give windows. And Glasweld is 100% incombustible (UL rating 0-0-0).

Versatile Glasweld can be used in any curtain-wall system and is available as a facing for insulated sandwich panels or single thickness window inserts.

For complete information about Glasweld, send in the coupon below.

**Owner-developer:** Belle Haven Realty Co.  
**Architect:** Barbachano, Ivanitsky & Associates, El Cerrito, California

## Weldwood

# GLASWELD

*A product of United States Plywood*

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55 West 44th Street, New York 36, N. Y.**

Please send me the following material:

- Weldwood Glasweld data folder
- Weldwood Glasweld portfolio of architectural installations
- Data on Weldwood 1½-hour-rated fire doors
- Weldwood Doors catalog

Name .....

Firm .....

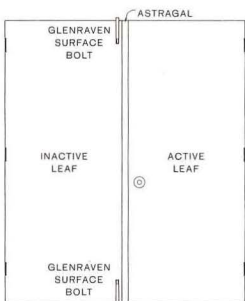
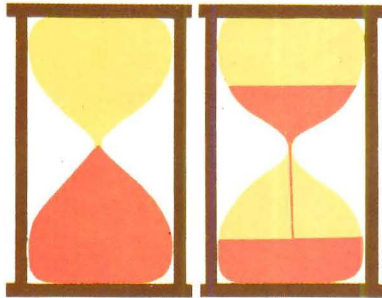
Address .....

City.....Zone.....State.....





Now a **1½-hour-rated** fire barrier can be beautiful, too



**New Weldwood Fire Doors hung in pairs, Class "C"** label, ¾-hour. Maximum size opening 6' x 7'. Astragals and Glenraven surface bolts supplied with doors, but not attached.

You can now use decorative doors in high traffic areas throughout any building where extra protection against fire is required. Weldwood® Fire Doors are available for Class "B" openings requiring a fire barrier rated for 1½ hours. As with other Weldwood Fire Doors, you can specify the face and finish you want, to integrate all doors with your over-all design.

These new 1½-hour-rated Fire Doors retain the incombustible Weldrok® core used in other Weldwood Doors. The cross banding under the face is an inorganic material instead of hardwood. The Underwriters' label describes this difference. Otherwise, they offer the same appearance and dependable performance you expect from Weldwood Doors. And, of course, they have an extremely low rate of heat transmission. This provides a substantial margin of safety in the reduction of fire spread.

Furthermore, the new 1½-hour-rated Fire Doors may be included in a complete schedule of Weldwood Doors, supplied machined and finished to your specifications.

*For technical data on the new fire doors and complete information on all Weldwood doors, send in coupon on the opposite side of this page.*

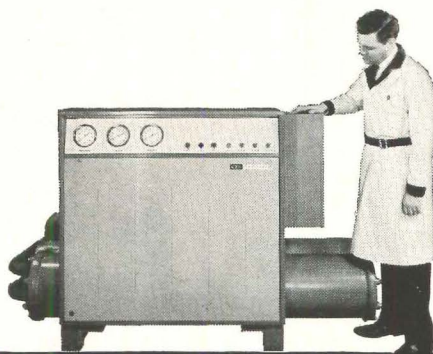
**WELDWOOD®**

**FIRE DOORS**

Products of United States Plywood



Shhhhhhhhhhhhhhhhhhhhhhhhhhhhhhh!



**Why put up with a noisy water chiller?  
The new Chrysler Airtemp 20-100 HP  
packaged chillers have a sound cabinet!**

They are **quiet!** Now — with Chrysler Airtemp's new line of smaller water chillers — you can install an efficient chiller even in quiet areas.

The new chillers are **reliable:** useless pounds of structural steel have been put into "mechanical muscle" for longer life and trouble-free performance.

They are **compact:** even the 100 HP unit will go through a 35" by 6'8" opening. This means that the unit can be taken to the roof right in the elevator.

Other important new features include: a very precise and simple electric unloader (Chrysler originated individual cylinder unloading); a sleek, modern look; a rugged and durable design...and easy accessibility (all controls on these new chillers can be reached from a removable 4' by 4' front panel.)

This new design promises to revolutionize thinking throughout the industry. You can find out more about these remarkable new chillers by writing to Chrysler Corporation, Airtemp Division, Dept. B-610, Box 1037, Dayton 1, Ohio.

**AIRTEMP DIVISION**



**CHRYSLER  
CORPORATION**

For more data, circle 162 on Inquiry Card



**Bring Out the Best in Wood . . .**  
**SHINGLES SIDING CLAPBOARDS PANELING**  
**with Cabot's STAINS**



Architect: Royal Barry Wills & Associates, Boston, Mass.;  
 Developer: Hanslin Associates, Melrose, Mass.; Cabot's Stains inside and out.

**Cabot's Stains, in 35 unique colors, preserve the wood, enhance the beauty of the grain. Stains grow old gracefully . . . never crack, peel, or blister . . . cost only half as much as paint.**

The above is a model home in the Cape Cod community of New Seabury. In planning this home, the architect was striving for beauty, quality, and economy. In the selection of exterior and interior finishes, stains were used instead of paints. Thus the architect realized his conception of beauty, kept costs at a reasonable level, and reduced future maintenance while preserving and protecting the wood for a long, trouble-free life. Today the trend is toward stains.

**For the home . . . inside and outside**



**Cabot's STAIN WAX**

Stains, waxes and seals in one operation. Brings out the best in wood, enhancing the grain and providing a soft satin finish in any one of ten colors plus black, white, or natural.



**Cabot's HOUSE & TRIM PAINTS**

Outside paints of lasting, beautiful gloss in 24 authentic American colors, among them Haddam Barn Red and Hickory Yellow.



**SAMUEL CABOT INC.**

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 Boston 10, Mass.

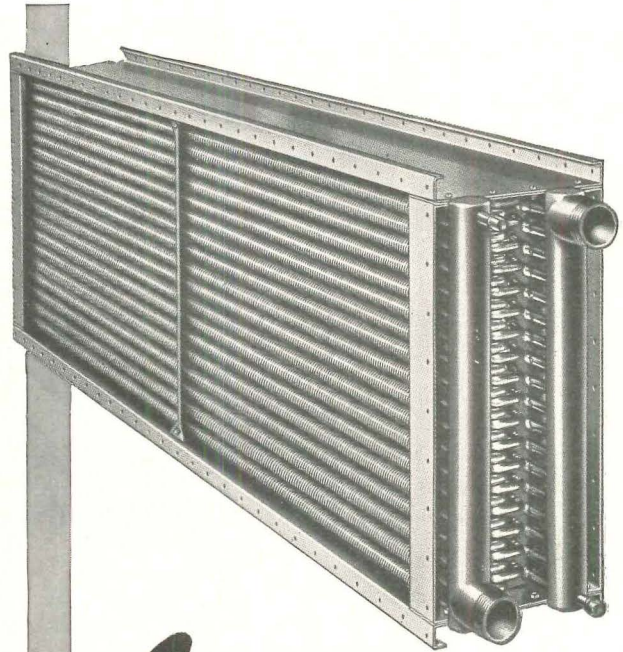
Please send color cards and information on Cabot's Stains and Cabot's Paints.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

For more data, circle 163 on Inquiry Card



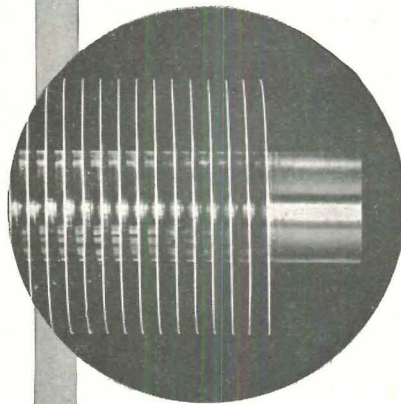
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**Smooth-Fin Coils offer you:**

**Greater Heat Transfer per sq. ft. of face area**

**Lower Airway Resistance - less power per c. f. m.**

Aerofin smooth fins can be spaced as closely as 14 per inch with low air friction. Consequently, the heat-exchange capacity per square foot of face area is extremely high, and the use of high air velocities entirely practical. Tapered fin construction provides ample tube-contact surface so that the entire fin becomes effective transfer surface. Standardized encased units arranged for simple, quick, economical installation.



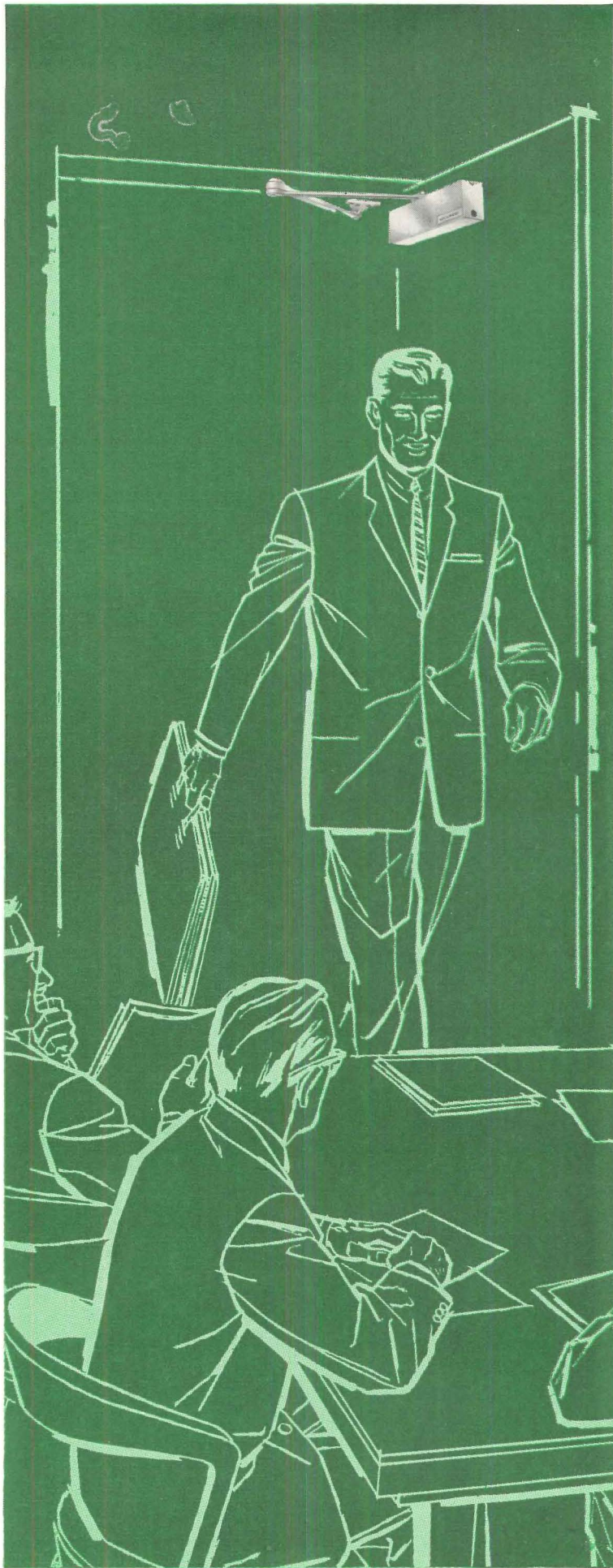
*Aerofin is sold only by manufacturers of fan system apparatus. List on request.*

**AEROFIN CORPORATION**

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 ENGINEERING OFFICES IN PRINCIPAL CITIES

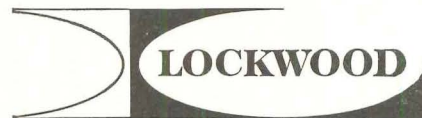
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## Unnoticed?

Not him—not on your life. But, what about the closer, it's one of Lockwood's new 5 Series, you know. Certainly no one will notice the door being closed—that job will be done smoothly, softly and sweetly just the way it should be. The slim trim styling complements the rest of the hardware, even the decor of the building. But then, no one ever notices a door closer—or do they?



LOCKWOOD HARDWARE MFG. CO.  
FITCHBURG, MASSACHUSETTS

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Designed for the architect who wants a 100% leakproof installation — with **no** on-the-job caulking!

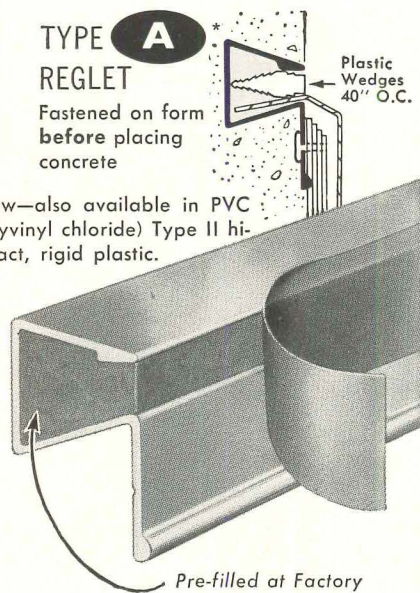


**As a METAL WINDOW REGLET** used at head only for single sash and at head and jambs for multiple frames.

**TYPE A REGLET**

Fastened on form before placing concrete

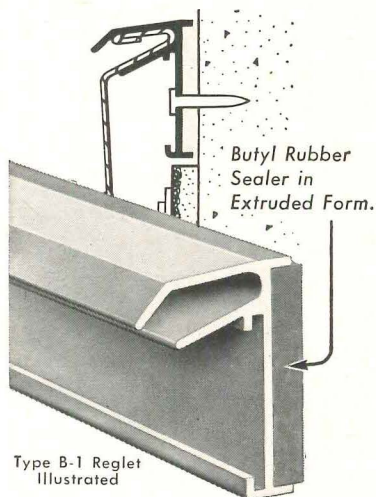
\*Now—also available in PVC (polyvinyl chloride) Type II hi-impact, rigid plastic.



Pre-filled at Factory With Butyl Rubber Sealer—Covered For Protection With Tape.

**NEW COUNTERFLASHING and METAL WINDOW Reglets**

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Type B-1 Reglet Illustrated

**B**

**TYPE REGLETS** For Application Onto Any Surface.

**SUPERIOR**

**Cushion-Lock® REGLETS**

Made of sturdy, .055" Thick **EXTRUDED ALUMINUM** With Protective Coating of Clear Methacrylate Lacquer.

The Superior Cushion-Lock Reglets are available in 4 types ("A", "B-1", "B-2" and "B-3") for application on all types of construction—concrete—stucco—wood—brick—steel. Exclusive snap-in and lock-in feature for counterflashing — Absolutely leakproof joints assured. Installed 50% to 100% faster than other systems. Shipped ready for application. Distributed nationally.

WRITE For Bulletin CL-1—Gives complete details, installation instructions and specifications.

**SUPERIOR**

**Concrete Accessories, Inc.**

Main Office & Factory: 9301 King St., Franklin Park, Ill. Phone 678-3373 (Area Code 312)

Pacific Coast Division Office and Factory: 2100 Williams Street San Leandro, Calif.

Houston Office: 4101 San Jacinto Houston 4, Texas

New York Office: 39-01 Main Street Flushing 54, New York

For more data, circle 165 on Inquiry Card

**Office Notes**

continued from page 322

**Geoffrey W. Fairfax, A.I.A.**, has its offices at 254 Sutter St., San Francisco.

*New Firms, Firm Changes*

**Berenson-Glenny, Architects**, 533 Reymond Building, Baton Rouge, La., have announced the association of **Nancy Porter Heym**, architect.

**Gass-Gay, Associated Architects** is the new name for the firm of **Alan Golin Gass, Robert Brewster Gay, Associated Architects**. Mr. Gay is in charge of a new office at Suite 15, 919 Main St., Rapid City, S.Dak. Mr. Gass is in charge of the office in the Denver Hilton Offices, 1515 Cleveland Place, Denver.

**Harley, Ellington, Cowin and Stirton, Inc., Architects and Engineers**, 153 E. Elizabeth St., Detroit 1, Mich., have announced four appointments: **Vincent J. Crampton** as controller-business manager; **Milton Lenhardt, P.E.**, as project administrator; **George Chipman, P.E.**, as assistant chief electrical engineer; and **Roy I. Albert, A.I.A.**, as design department coordinator.

**William F. Hecker, A.I.A.**, is now a member of the firm of **Wm. B. Ittner, Inc., Architects and Engineers**, 911 Locust St., St. Louis 1, Mo.

**James Reece Pratt, John Harold Box** have announced the addition of **Philip Cristy Henderson** as a partner in the firm of **Pratt, Box & Henderson, Architects/Planners**, 3526 Cedar Springs Rd., Dallas 19.

The architectural firm of **Arthur Rigolo, A.I.A.**, Grove St. at U.S. Route 46, Clifton, N.J., has appointed four staff members as associates. They are **Robert H. Eisele, Lester A. Nelson, Eugene A. Meroni** and **Frank L. Codella**.

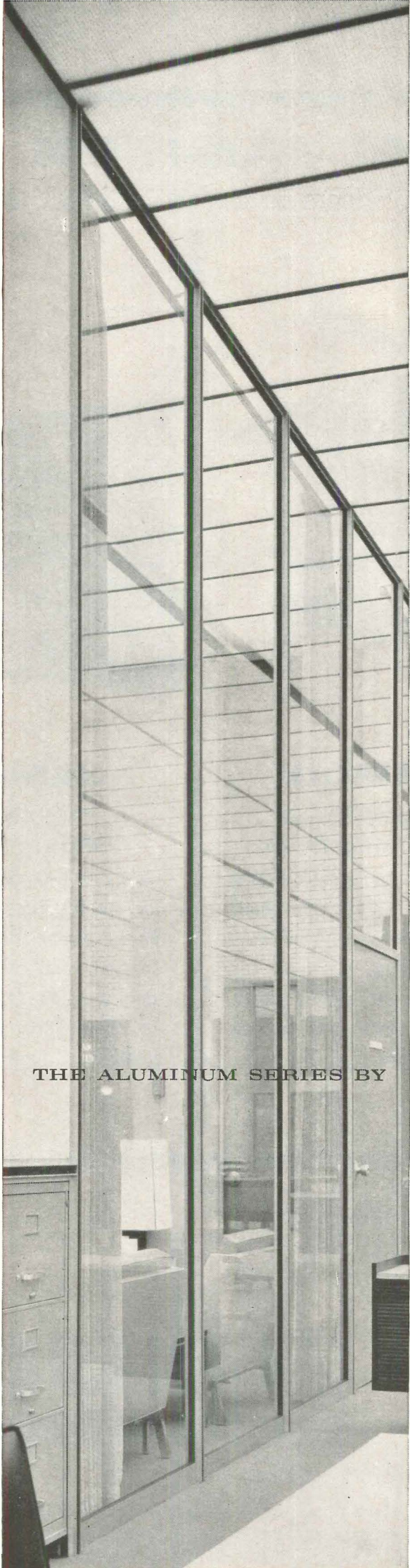
*New Addresses*

**Chatterjee and Polk, Architects, Engineers, Town Planners**, of Calcutta, India, have opened an office at 180 East Post Rd., White Plains, N.Y. **Kenneth L. Haynes**, architect, is their American representative.

**Samuel Wacht and Associates, Architects and Engineers**, 1850 Westwood Blvd., Los Angeles 25, Calif. **Walker & McGough, Architects**, Seattle office, 637 White-Henry-Stuart Building. **Robert J. Nixon, A.I.A.**, is associate architect in charge.

For more data, circle 169 on Inquiry Card





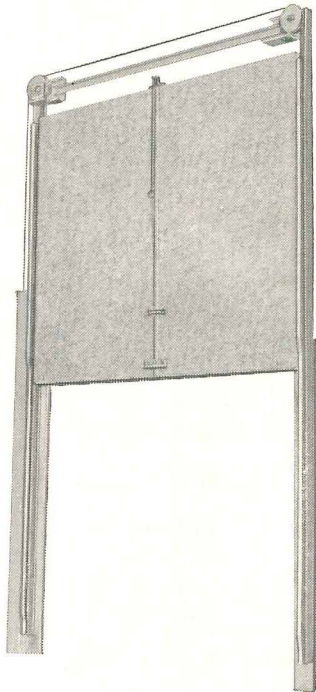
THE ALUMINUM SERIES BY

THE MILLS COMPANY • CLEVELAND



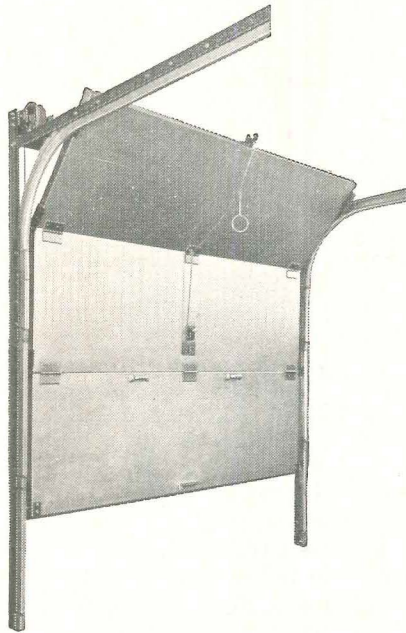
# NEW FROM JAMISON

lightweight, space-saving JAMCO\* doors developed for industrial use:



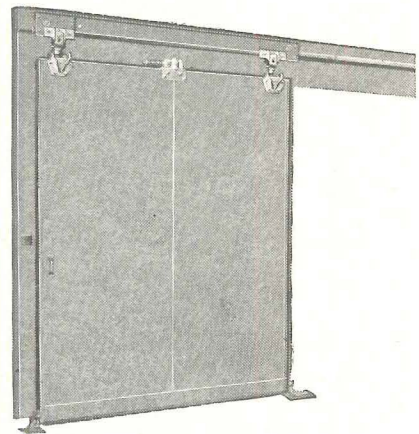
## JAMCO Vertical Sliding Door

Fully counterweighted for easy manual operation. Especially suitable for enclosed loading docks. Doorways can be positioned closer together to service more trucks.



## JAMCO Hinged Panel Overhead Door

Powerful torsion spring assures effortless operation. Ratchet adjustment maintains proper spring tension. For installation on loading docks and other areas with limited ceiling height.



## JAMCO Horizontal Sliding Door

Heavy duty lightweight door for smooth, easy operation. Spring assist opening. Saves space in vestibules, corridors, loading docks. Compact overall dimensions facilitate installation on existing openings.

### JAMCO Industrial Doors have these special advantages:

- extremely lightweight—only 2" thick
- greater thermal efficiency than 12" masonry wall
- fully gasketed
- aluminum or steel finish
- manual or power operation

Write for latest bulletin describing new line of JAMCO Industrial Doors to Industrial Door Division, Jamison Door Co., Hagerstown, Maryland.

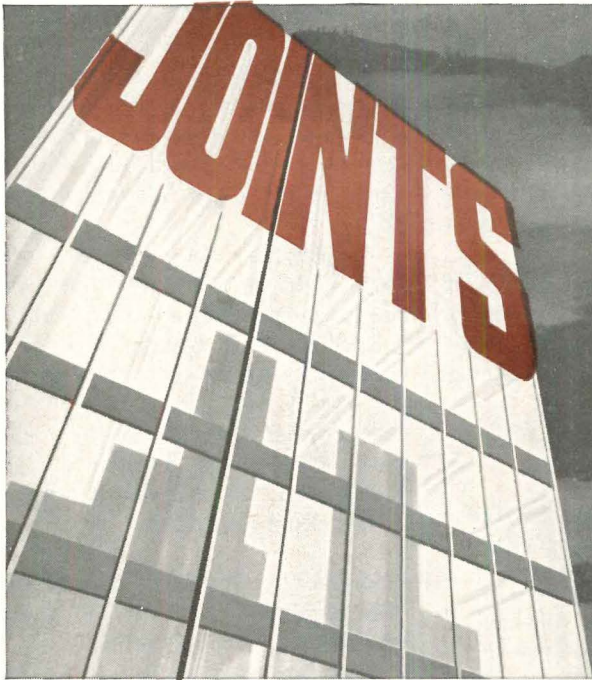
\*Trademark of Jamison Cold Storage Door Co.

# JAMISON

INDUSTRIAL DOORS

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... where and how to seal them  
with compounds based on  
Thiokol's LP<sup>®</sup>  
polysulfide polymer

### PERMANENT WEATHERPROOFING WITH A LIFETIME RUBBER-WELD

Proper application of polysulfide base sealant is like welding with rubber. The compound does more than fill gaps, it joins materials—any and all building materials in any combination—with a bond that is virtually indestructible. Fully cured, sealant based on LP<sup>®</sup> polysulfide polymer becomes a working building component—adding a structural strength of its own. It will expand to better than twice its original width and shape—and recover—over and over again without tearing, cracking or diminishing in its leakproof serviceability.

American Standards Specification A116.1 and Federal Specification TT-S-00227 (GSA-FSS) set quality and

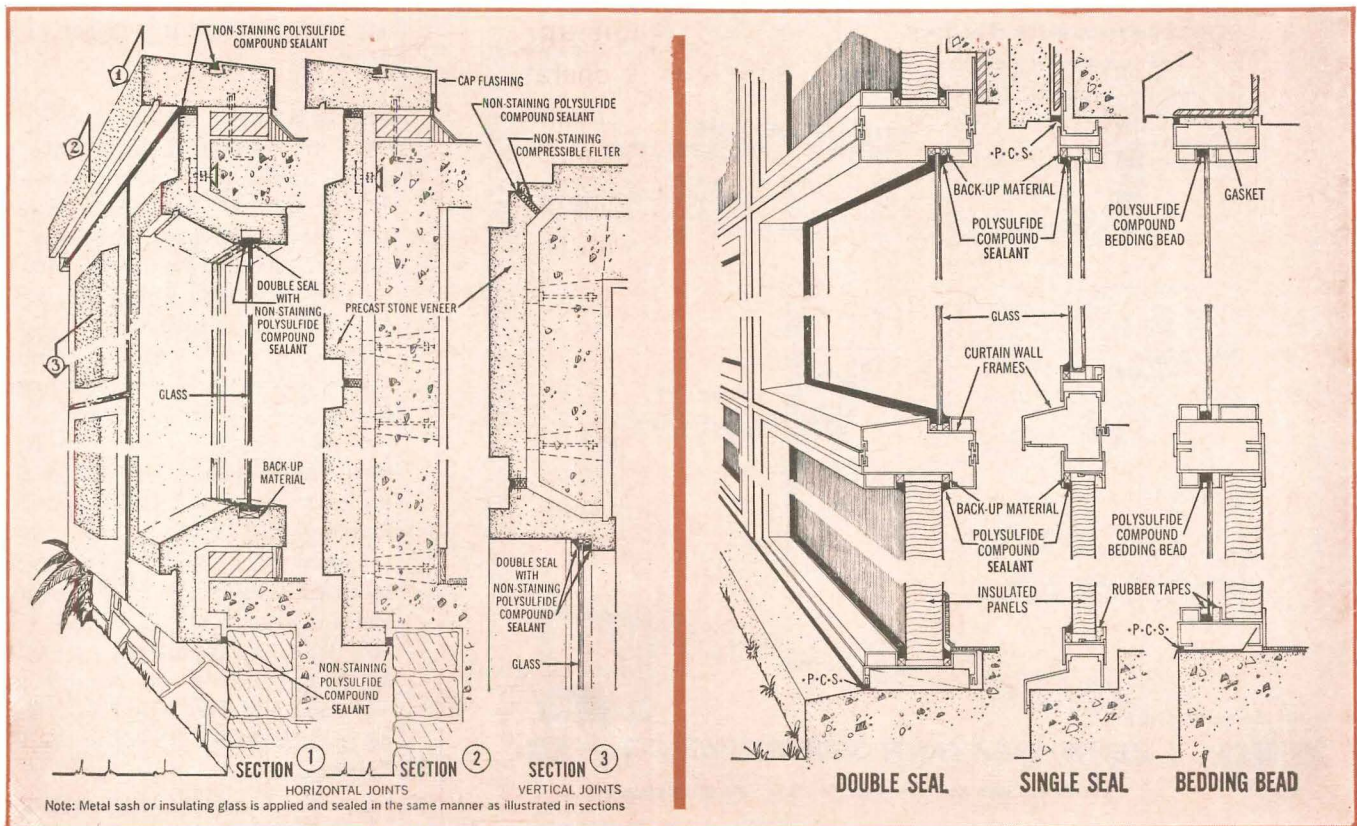
performance requirements for polysulfide base sealants. Use as your guide in specifying weatherproofing materials.

Techniques for sealing curtain wall and other structural joints, for proper joints preparation and sealant handling are shown in Thiokol's new "Joints Sealing Handbook." This is your key to permanent weatherproofing. Write for a free copy.

**Thiokol** CHEMICAL CORPORATION

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## AWARDS GIVEN TO ARCHITECTS AND ENGINEERS

Midtown Plaza, which has revitalized downtown Rochester, N.Y., has won for that city the Ward Melville Gold Medal for Community Improvement. The award is given annually to the U.S. city which has "done the most to improve its cultural, esthetic and economic values."

Cambridge, Mass., is winner of the Silver Medal, the runner-up award, for Technology Square project, a research park under construc-

tion near the Massachusetts Institute of Technology.

Victor Gruen Associates designed the one-acre air-conditioned pedestrian shopping mall which ties together shopping and business areas in Midtown Plaza (March 1960, page 206).

Technology Square is owned jointly by M.I.T. and Cabot, Cabot and Forbes, Boston architects and realtors. The 14-acre project replaces 32 abandoned factory buildings and five acres of cold water tenements. Planned for the area are two nine-story buildings (June 1963, page 13), a 20-story tower and a two-story building.

Douglas E. Parsons, consultant to the director, National Bureau of Standards, Washington, D.C., received the second annual Walter C. Voss award from the American Society of Testing and Materials. The award is given for contribution to building technology.

The University of Michigan, Ann Arbor, awarded an honorary Doctor of Architecture degree to Alden B. Dow, F.A.I.A., Midland, Mich.

Robert B. Newman of Bolt, Beranek and Newman, Boston, was given an honorary doctorate by Lawrence College, Appleton, Wis. Mr. Newman is also on the staff of the Massachusetts Institute of Technology and is visiting lecturer at Harvard.

Six buildings and projects were cited for outstanding architectural achievement by the New Jersey Society of Architects and the New Jersey Chapter of the American Institute of Architects. The jury was headed by Pietro Belluschi, dean of architecture at M.I.T.

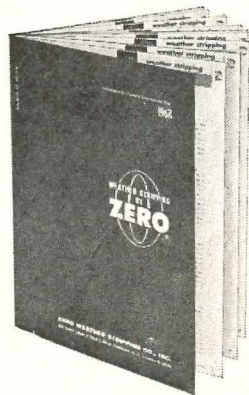
Awards of Merit for completed structures were given to Vincent G. Kling for the American Cyanamid Company headquarters in Wayne, Kelly & Gruzen for Horizon House in Fort Lee, and Milton Klein for a house in Livingston.

Commendations for projects went to Jules Gregory for a chapel in San Felipe, Guatemala; Alfred Clauss and W. C. Cranmer for the Church of Mount Olivet in Mount Olivet Village; and Mr. Kling for the Municipal Services Building in Philadelphia.

more news on page 342

# ZERO meets all your needs for

- WEATHER STRIPPING
- SOUND-PROOFING
- LIGHT-PROOFING



Write for ZERO'S new catalog today.

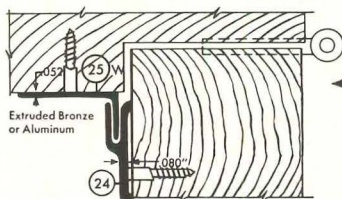
Contains full size details, 142 drawings of weatherstripping and related products, for

- doors
- sliding doors
- saddles
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Architects agree, weatherstripping can be the most significant detail of a structure's success. For 4 decades Zero has been creating and manufacturing to meet changing needs.

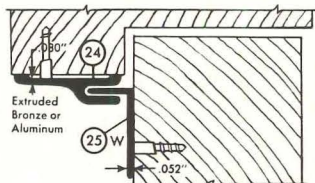
our 40th year

SERIES 42 for wood or H M Door



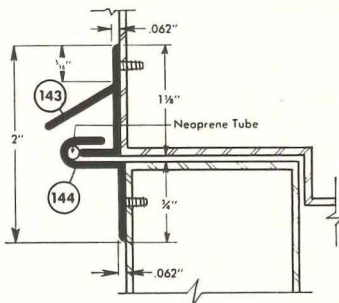
HINGE-SIDE JAMB HEAD & LOCK-SIDE JAMB

Extra heavy weatherstripping for institutional and industrial use—where wheeled vehicle might damage lighter gauge weatherstripping.



SERIES 87

Reduces water seepage hazard on out opening doors with minimum backset. Series 87 is also ideally designed for metal doors with transoms.



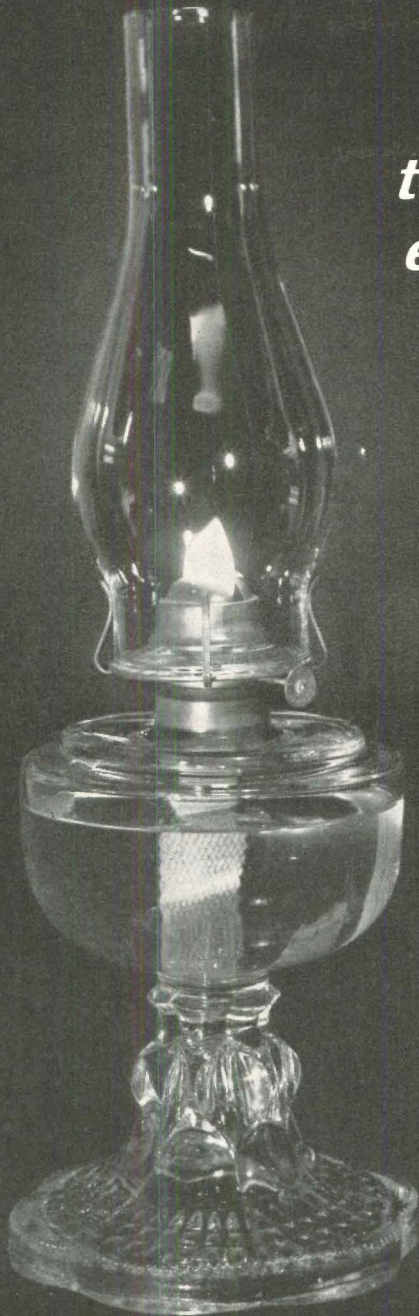
**ZERO WEATHER STRIPPING CO., INC.**

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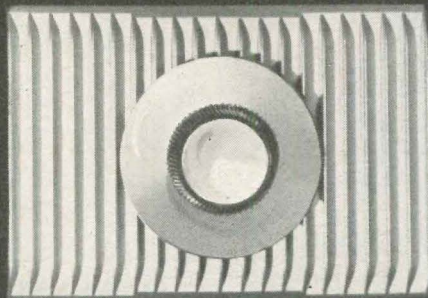
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*"Humph!  
who's given lighting  
the dimming range and  
economy that I have?"*

*"HUNT  
ELECTRONICS  
has!"*




Actually, there was a lot to be said for the Kerosene Lamp. It was romantic; it was economical . . . two benefits electricity has never been able to fully exploit . . . until now. Hunt Dimming Controls use the old Kerosene Lamp concept to bring out a new dimension in mood and effect, plus all the economy possible from modern Lighting.

Hunt Dimmers provide the desired amount of light, from Dark to Full Bright in either Incandescent or Fluorescent models and are fully guaranteed.

In controlling mood and effect, Hunt Dimmers also control power and economy . . . and prolong lamp life. (Incandescent bulb life is increased over 1,000% when burned at 75% of maximum rated wattage.)

If you're interested in both lighting economy and flexibility, take a tip from us . . . the two-way switch is Out. Hunt Dimming Controls are In.

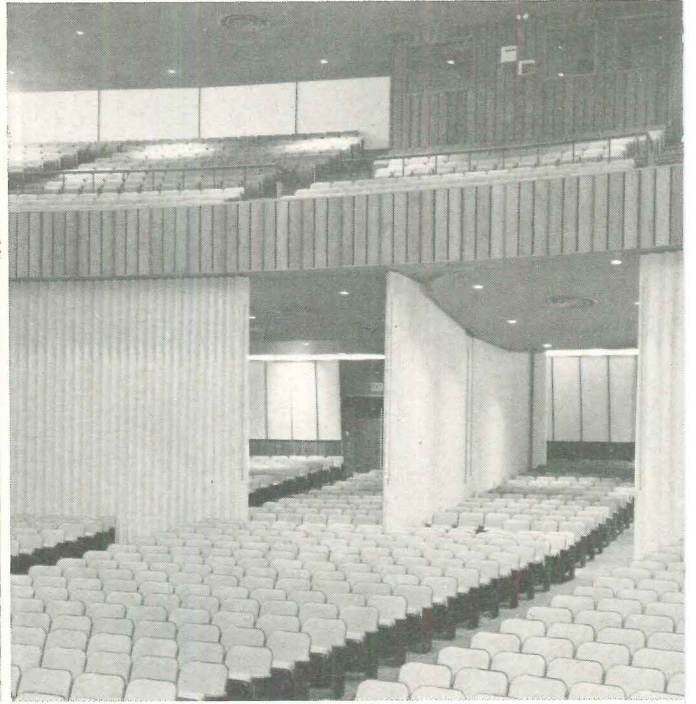
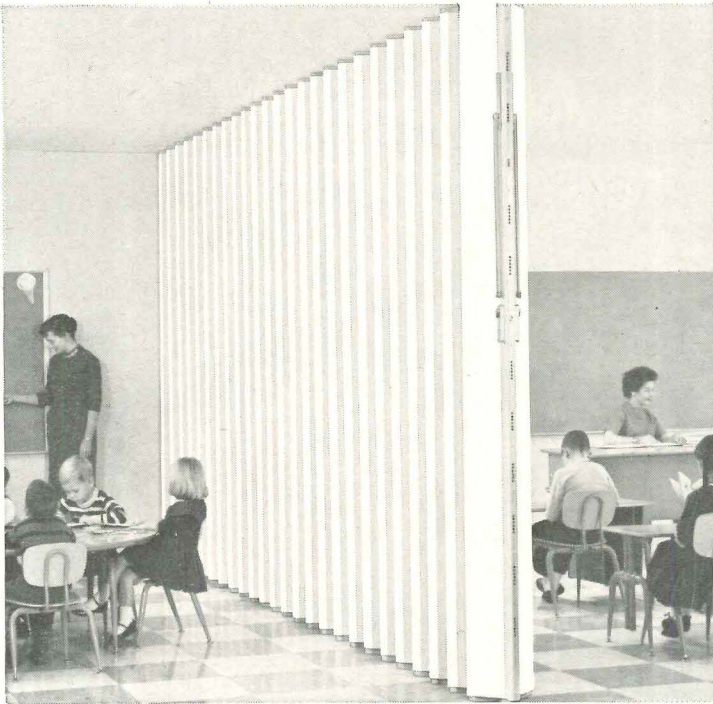
For complete information and specificational data on the Entire Hunt Line of Dimming Controls, contact your local Electrical Distributor or write the people who bring you the Brightest Ideas in Dimming.

  
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**The secret of successful  
division is the right  
construction for the job**

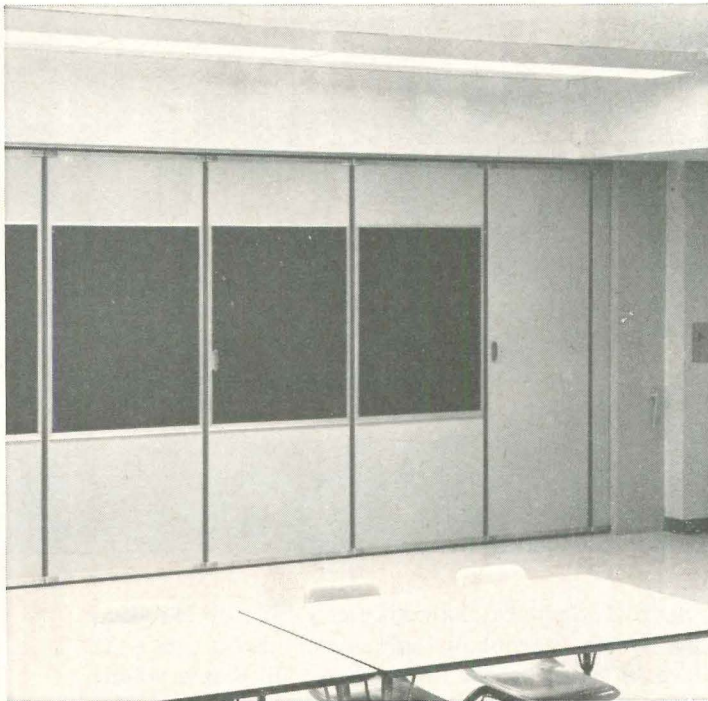
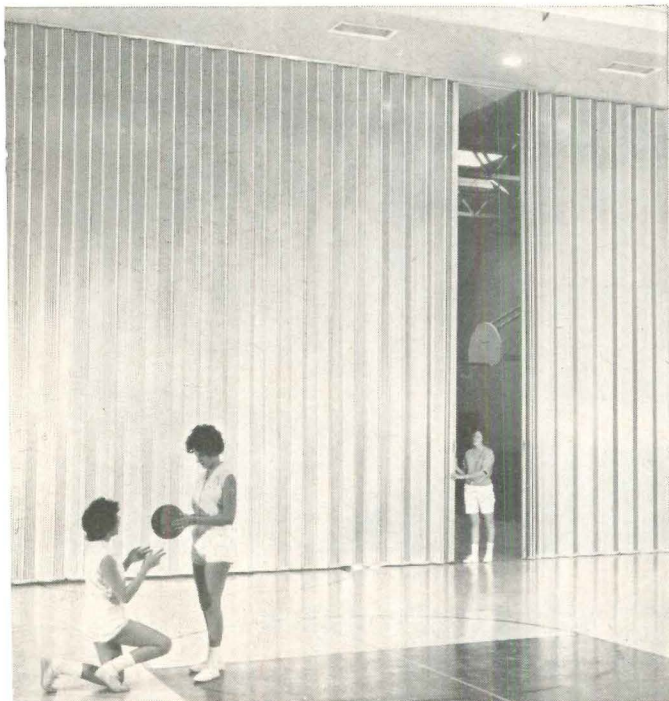
● Point to a partition construction and Modernfold can give you answers. What it will do. What it won't. But most important, Modernfold can tell you which construction is best suited to the job *you* have at hand.

Take a classroom for example. Interior steel panels and effective perimeter seal make the Soundmaster a better sound barrier than a four-inch, painted cinder block wall. You get true flexibility of space and real durability. The two photos above will show you what we mean. (Notice the "extra" classroom space created in the auditorium. A good one for your idea file.)



# You name the job ...we'll recommend the right partition

Modernfold solves division problems. All kinds. It takes four different types of partitions. And a score of models. But you get the right results with Modernfold.



Now look at that aluminum Splen-door you see in the gymnasium. Rugged. Handsome. And almost indestructible. In short: ideal for gym abuse.

Or, how about the new Acousti-Seal operable wall at the right? This is the ultimate. A sound rating of STC 51. (That's as near ultimate as partitioning gets.) It even has a lever-seal mechanism that makes "flat-wall" partitions practical at last.

Which one do we recommend? Show us your job... and what you want and expect from a folding partition. We'll recommend the right model.

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Manufacturers of "Modernfold" Operable Walls, Partitions and Doors; "Air Doors"; "Modern-Cote" Wall Coverings; "Peabody" School Furniture; and "Pyrox" Sheathed Thermocouples.

For more data, circle 174 on Inquiry Card



# How the Dodge Reporter helped reshape science education



Photo courtesy of Lone Star Cement Corp., N. Y.

LaReine High School's distinctive new Science Building conceals a new concept in high school instruction — It combines laboratory and lecture areas in single rooms with amphitheatre type seating. Here is a case where the shape of the unit developed naturally from the functional division of interior space. 1.) The instruction and demonstration area required minimum space, 2.) Student seating required increased area, and 3.) Laboratory area needed maximum space, plus adequate lighting.

It was readily apparent to architect, E. Philip Schreier, that triangular rooms would be the ideal solution. This immediately suggested a circular building. Add the fact that the same facilities, in a conventional rectangular design, would occupy 31% more floor space, and the economic as well as logical reasons for the choice emerge.

"The Dodge Reporter aided materially in helping us complete this job in four months," said Mr. Schreier. "On this project, as on many others, we counted on Dodge Reports to bring our needs to the attention of specific contractors and suppliers — to smooth out office traffic — to brief the men who called on us. We brought this job in slightly under \$15 per square foot (without equipment or landscaping), due in good measure to the healthy bidding climate. Keeping the Dodge Reporter informed usually works to our advantage."

Science Building, LaReine High School, Suitland, Md.  
Owners: The Bernadine Sisters, O.S.F., Villanova, Pa.  
Architect: E. Philip Schreier  
General Contractor: Victor R. Beauchamp, Inc.  
Pre-Cast Concrete Supplier: Farmigli Corp.  
Window walls: Tecfab, Beltsville, Md.

One structure in a \$2,500,000 contract, this modern science building contains biology, chemistry and physics laboratories and accommodates 175 students. Wedge-shaped rooms facilitate demonstrations. With the instructor at the apex of the triangle and the room walls converging toward that area, students' attention is naturally focused on the instructor. All-glass exterior walls along the side of each triangle gives each laboratory table its own window.

Strength and symmetry were achieved with exposed precast concrete columns and arched roof beams. Here, 112 precast concrete slabs, supported by 44-foot, 12-ton precast cement beams, form the domed roof which is 105 feet in diameter and covers 7,450 square feet of column-free interior. Beams rest on cast-in place center core and on 13-foot precast columns outside. Building exterior is window-wall system of aluminum and ceramic-tile face.



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## DODGE REPORTS

CONSTRUCTION NEWS SERVICE  
119 W. 40th St., New York 18, N. Y.





## The man with the purple face ... and the bright red penny

He sells PERMALITE<sup>®</sup>, expanded perlite roof insulation board. It's the total board. And he proves it with performance—not legerdemain.

PERMALITE is mineral... permanent, moisture resistant, feather-light, dimensionally stable, inorganic. It's anti-rot, anti-rodent, anti-mildew. Twenty years after installation it will still have the same high efficiency.

What about fire? PERMALITE practically ignores it. This man heats a penny until it's flaming hot—right

on a section of rigid, tough PERMALITE, held in his hand. There's no burning, no dissolving. And the underside of the material stays as cool as early morning. (The same penny melts a hole through other insulations.)

The PERMALITE penny-test is a meaningful demonstration. Especially to the professional interested in seeing a client keep a roof over his head.

How incombustible is your favorite roof insulation? Is it approved and

rated for Factory Mutual Class I Construction?

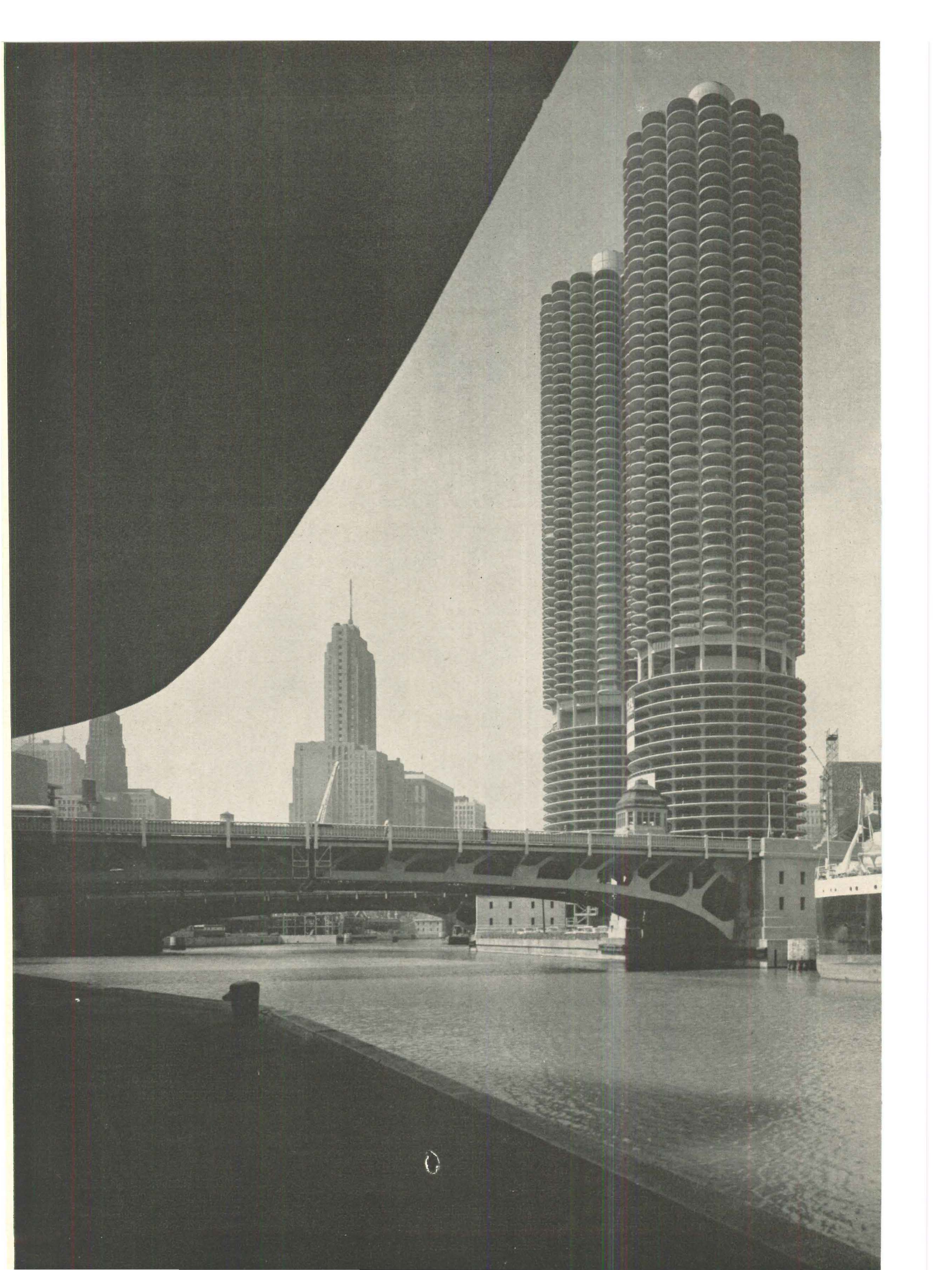
PERMALITE, the extraordinary Roof Insulation Board, can answer your burning questions. Write us for an interesting demonstration.



BUILDING PRODUCTS DEPARTMENT  
Great Lakes Carbon Corporation  
333 N. Michigan Ave., Chicago, Ill.  
Phone FR 2-5445

For more data, circle 175 on Inquiry Card







## Scalloped exteriors, radial interior space...exciting new patterns for drama, enhanced throughout by Devoe Paints



Marina City Building Corp., William L. McFetridge, President; Marina Management Corp., Charles R. Swibel, President; Bertrand Goldberg Associates, Architects-Engineers, all of Chicago.

Indicative of the unquestioned acceptance that DEVOE has earned: interior and exterior paints, chosen to complement Marina City's unique concept of dynamic space, are by DEVOE. Urbane, distinctive, efficient—these describe the total impression resulting from cooperation of architect and paint technician, as America's most strikingly modern architecture is enhanced by the products of America's oldest paint manufacturer.

You, too, can turn to an expert paint technician—"The Man from Devoe"—for experienced know-how and assistance in color planning, whatever your needs. He can draw on the Devoe Library of Colors® system, assuring fast and accurate selection, mixing and matching of over 1,000 shades. And he has a wealth of information on the most technical aspects, as well. His services are yours at no cost or obligation. Just phone or write the nearest Devoe office.



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## ARCHITECTS AND ENGINEERS IN THE NEWS

Charles Luckman, F.A.I.A., Los Angeles, has been named chairman of the Board of Trustees of the California State Colleges. He was appointed to the board three years ago by Governor Brown and has served as chairman of the committee on planning, buildings and grounds. Mr. Luckman is also on the Board of Associates of Northwestern University, the Board of Associates of California Institute of Technology and the University of Illinois Foundation.

New officers of the Illinois Society of Architects are: **Michael F. Gaul**, Chicago—president; **Rudolph J. Nedved**, Chicago—first vice president; **Rudolph C. Sandberg**, Rock Island—second vice president; **Joseph P. Llewellyn**, Chicago—treasurer; **Alfred F. Schimek**, La Grange Park—secretary; **Gerald L. Palmer**, Chicago—executive vice president.

Directors are **Arnold J. Kruegel**, Joliet, and **Al J. Morelli**, Chicago. Elected to the Board of Arbitration were **Murray S. Hanes**, Springfield; **Gilbert A. Johnson**, Rockford; **Granville S. Keith**, Champaign; **James V. Romano**, Chicago; **William H. Stuhr**, Rock Island; and **David C. Wilson**, Mt. Vernon.

**I. Vernon Williams**, Bell Telephone Laboratories, Inc., was elected president of the American Society for Testing and Materials for a one-year term.

Other national officers are **Robert Legget**, the National Research Council of Canada, elected for a two-year term as vice president. **Charles L. Kent**, Jones & Laughlin Steel Corporation, will continue as a vice president.

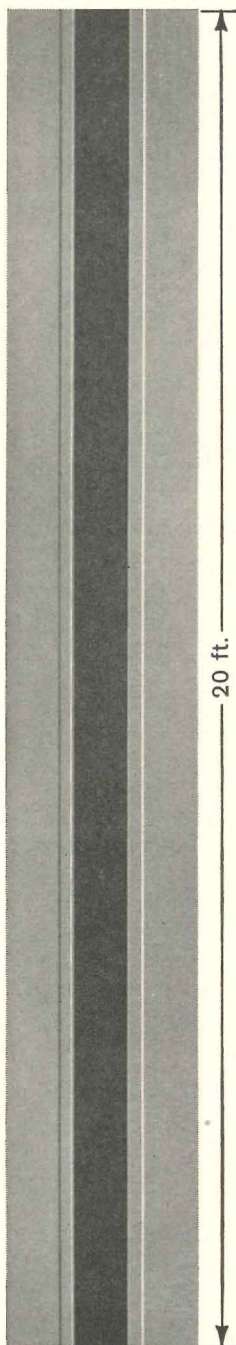
New members of the Board of Directors, elected for three-year terms, are **Harold N. Bogart**, Ford Motor Co.; **Walter A. Gloger**, National Lead Co.; **William L. Glowacki**, Eastern Gas and Fuel associates; **Harold M. Smith**, U.S. Bureau of Mines; **Luther P. Spalding**, North American Aviation, Inc.; and **Lyman W. Wood**, U.S. Forest Products Laboratory.

**Arthur Rigolo**, Clifton, N.J., was elected president of the combined New Jersey Society of Architects and the New Jersey Chapter of the American Institute of Architects. Other officers are **Robert R. Cueman**, Summit—first vice president; **Robert L. Dennis**, Elizabeth—second vice president; **James A. Swackhamer**, Somerville—treasurer; and **Eugene A. DeMartin**, Lyndhurst—secretary.

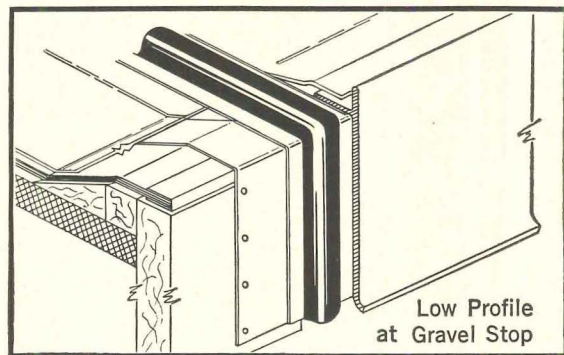
**Alfred Busselle**, Princeton; **Merrill J. Martin**, Fairview; **Joseph M. Kuder Jr.**, Moorestown; and **Richard J. Chorlton**, Princeton, were elected to three-year terms as directors of the New Jersey Chapter.

more news on page 350

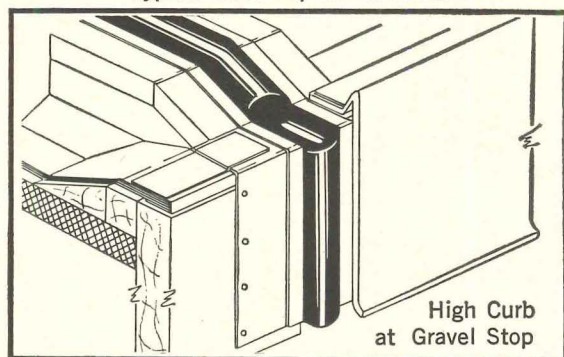
(Enlarged Cross-Section)



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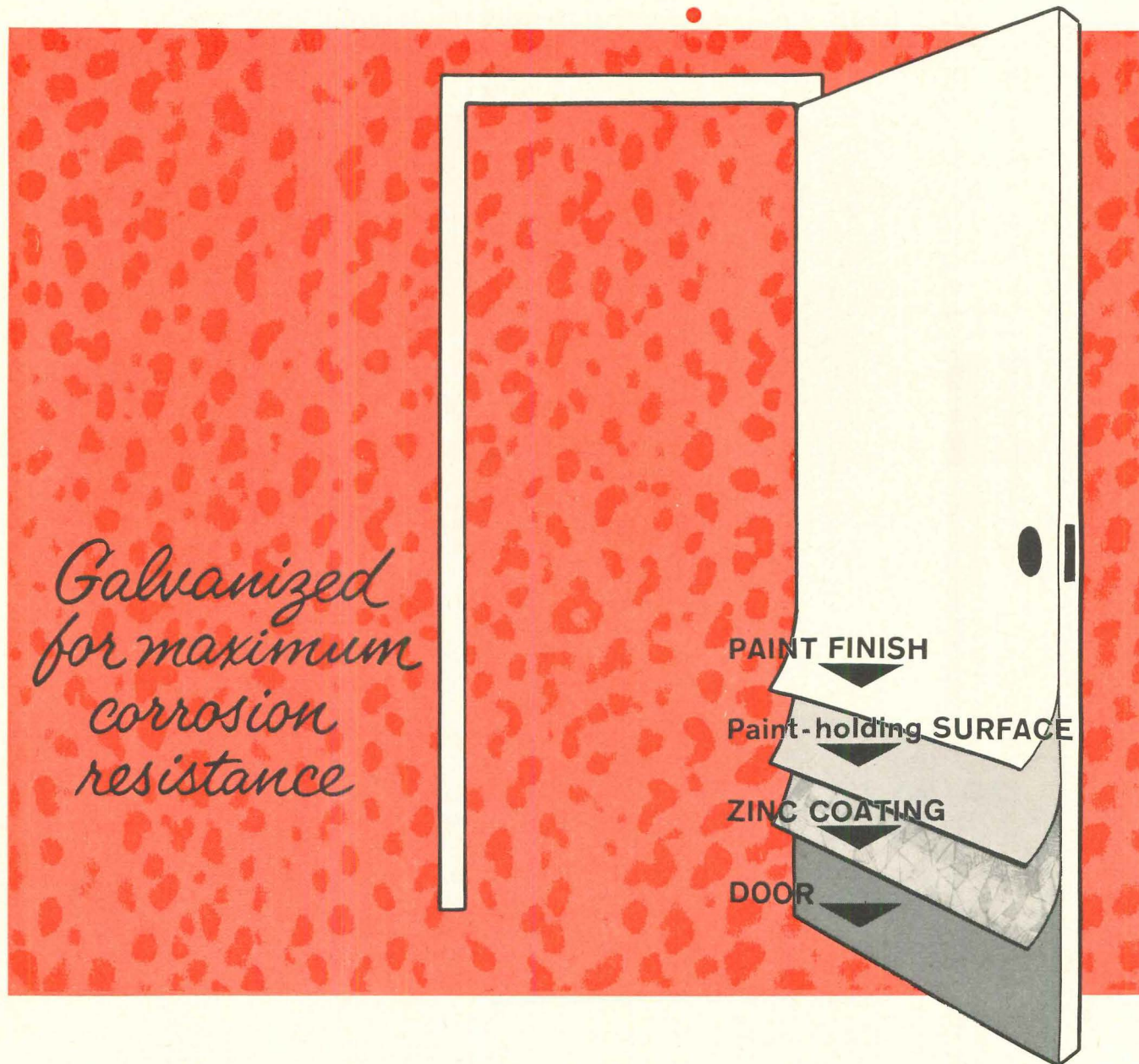
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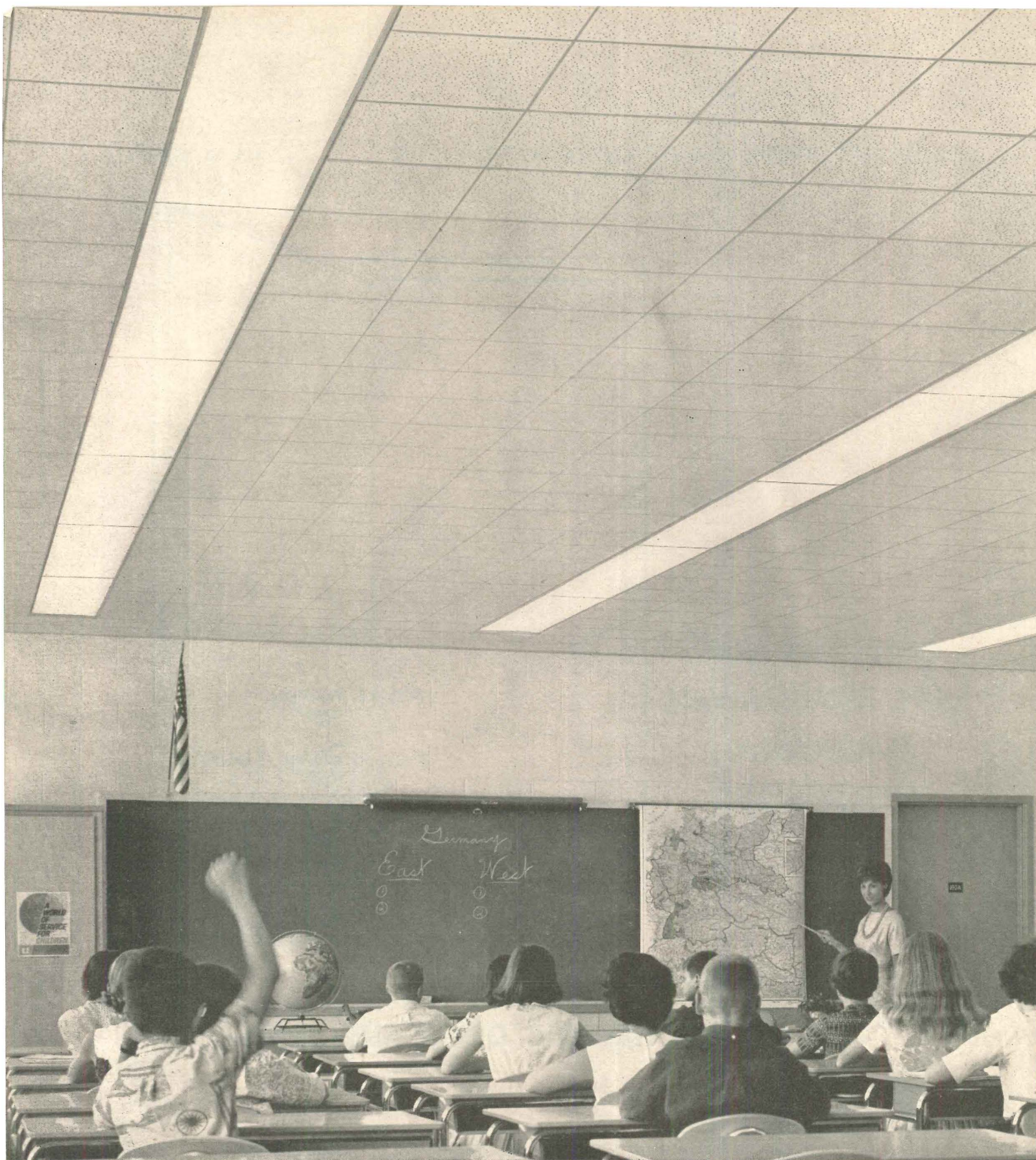
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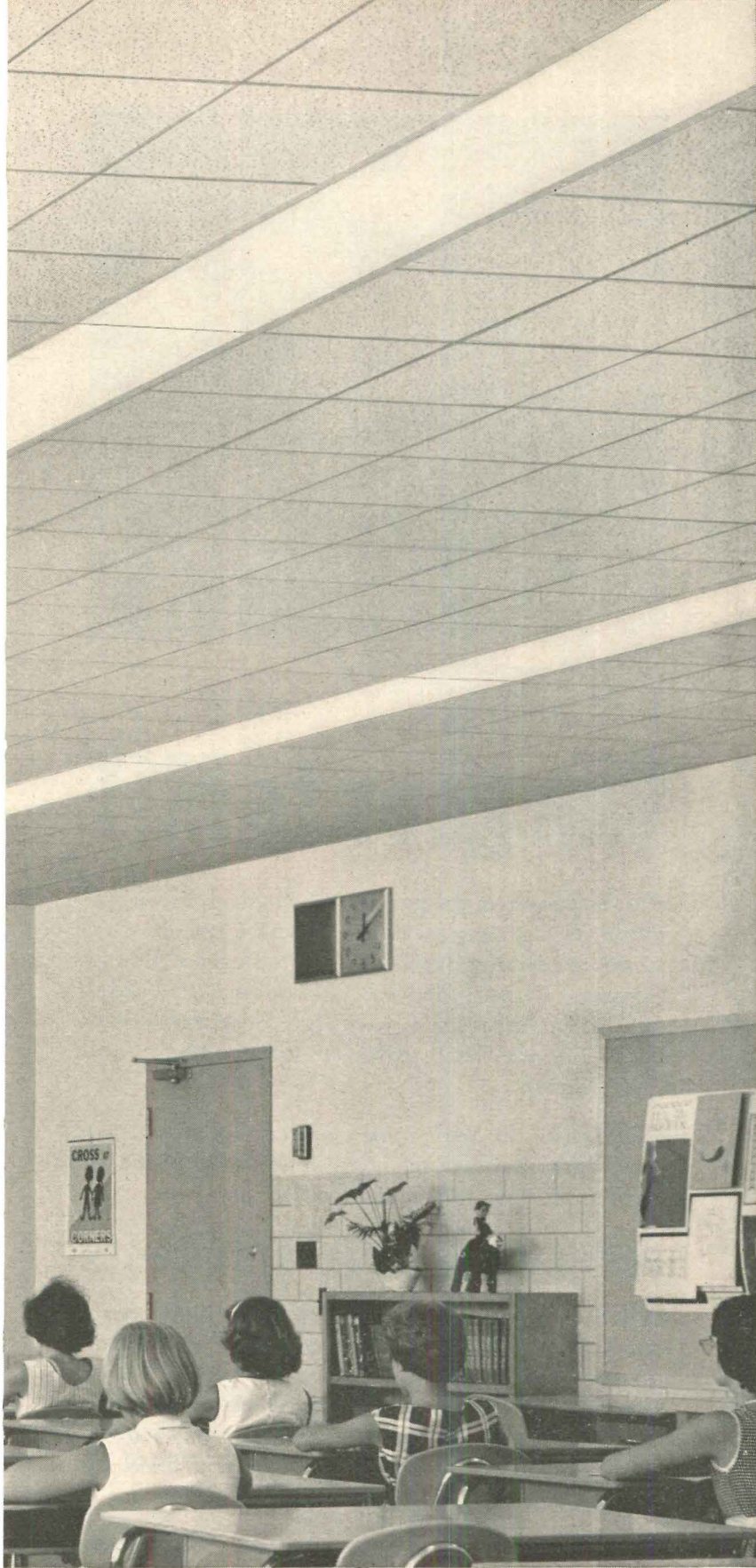




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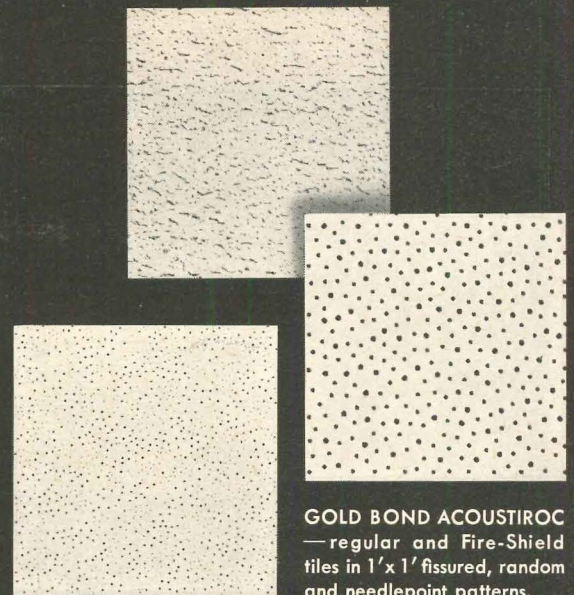


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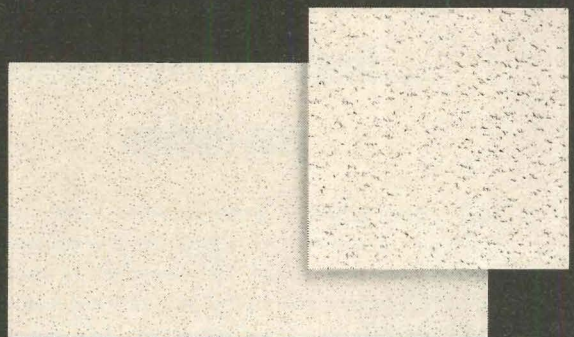
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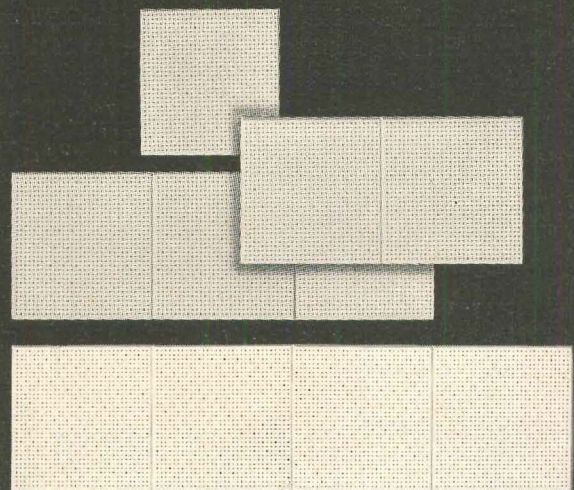
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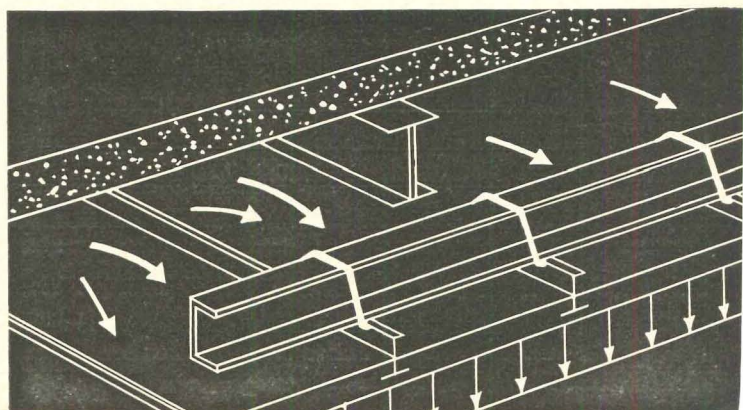
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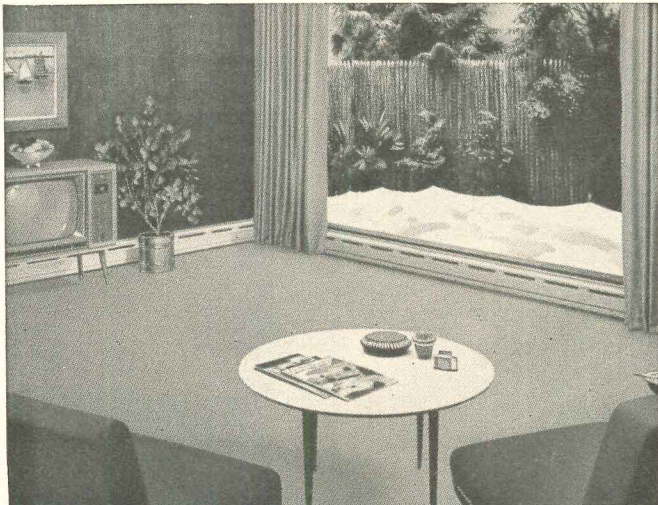
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1'x 3' and 1'x 4' sizes. In needlepoint, diagonal and square  
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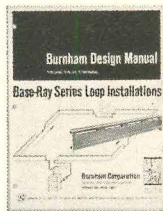
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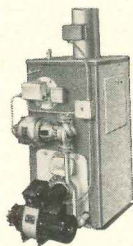
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AR-103

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Cafeteria, Burton House-Conner Hall  
Massachusetts Institute of Technology  
Architects: William Hoskins Brown Associates

## Van goes to MIT

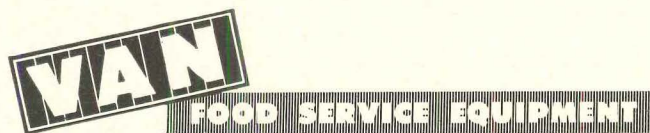
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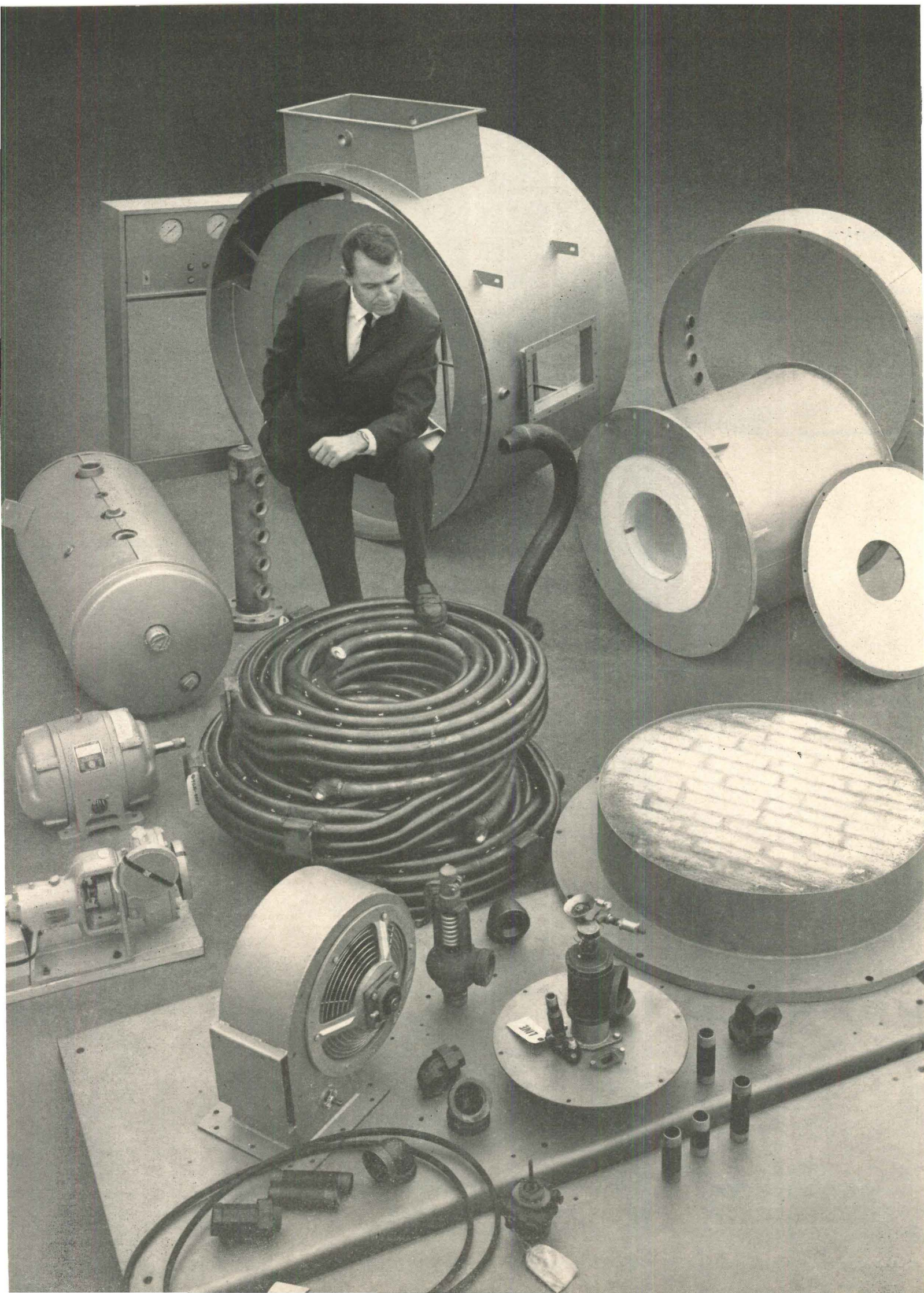
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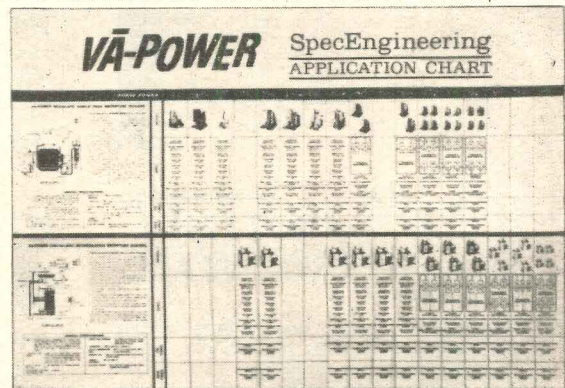
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## In the News

continued from page 342

Philadelphia's T-Square Club, the nation's oldest architectural club, has elected the following officers: **Henry J. Magaziner**, president, **Meir Sofair**, vice president; **Albert F. Dagit Jr.**, secretary; and **Francis T. Brown**, treasurer.

Directors are **John F. Harbeson**, **John S. Carver**, **Joseph D. Kuo**, **George E. Shoemaker** and **Wilbur O. Scholl**.

**Philip Will Jr., F.A.I.A.**, Evanston, Ill., has been elected to a five-year term on the Cornell University Board of Trustees. He was elected by members of the Cornell Alumni Association.

New president of the American Society of Heating, Refrigerating and Air-Conditioning Engineers is **Frank H. Faust**, General Electric Co., Tyler, Texas. Also elected were three vice presidents: **William J. Collins Jr.**, Oklahoma City; **John E. Dube**, Alco Valve Co., St. Louis; and **James W. May**, American Air Filter Co., Louisville. Treasurer is **William L. McGrath**, Carrier Air Conditioning Co., Syracuse, N.Y.

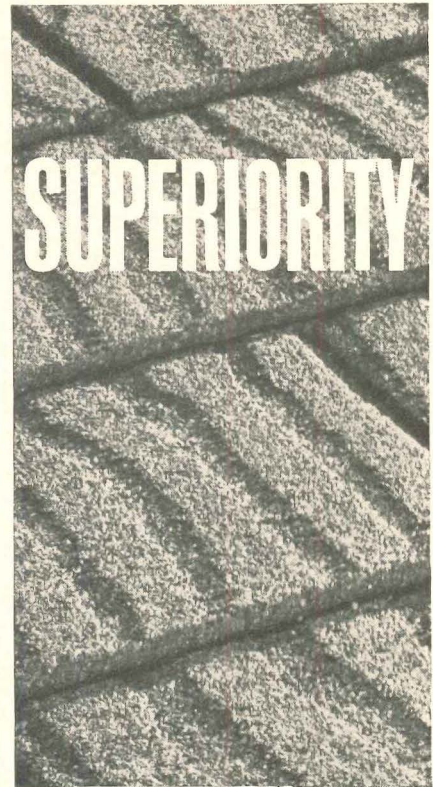
Executive secretary, a new appointive position, is **Robert C. Cross**, Stamford, Conn.

**John M. Morse, A.I.A.**, Seattle, has been appointed to the King County (Washington) Planning Commission, succeeding **Perry B. Johanson, A.I.A.**, Seattle.

## SCREENING FOR A.A.S.A. EXHIBIT

Preliminary screening for the 1964 School Building Architectural Exhibit, co-sponsored by the American Association of School Administrators and the American Institute of Architects, will be done in Washington, November 11-13. Buildings selected at that time will be shown at the National Convention of the A.A.S.A. in Atlantic City, February 15-19, 1964. The deadline for entering buildings was September 16, and materials submitted for screening must be received in the A.A.S.A. office by November 4.

more news on page 358



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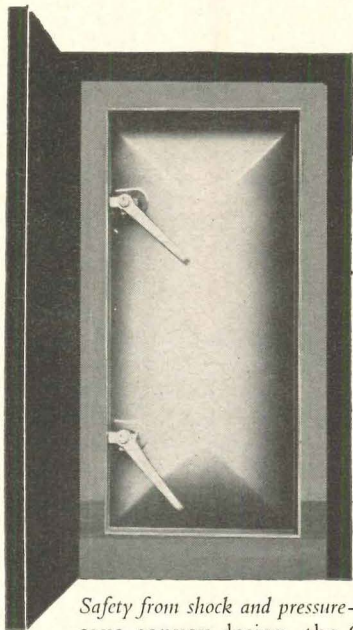


**M** **MUELLER BRASS CO.**

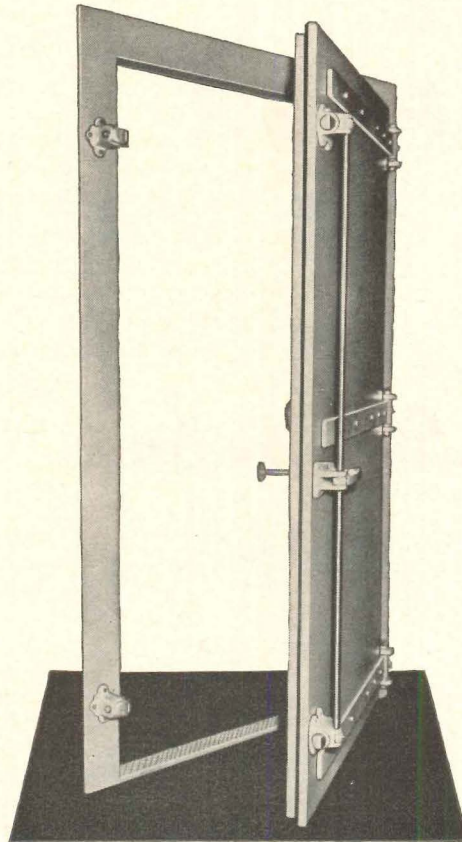
1945 LAPEER AVE.  
PORT HURON, MICH. 48061

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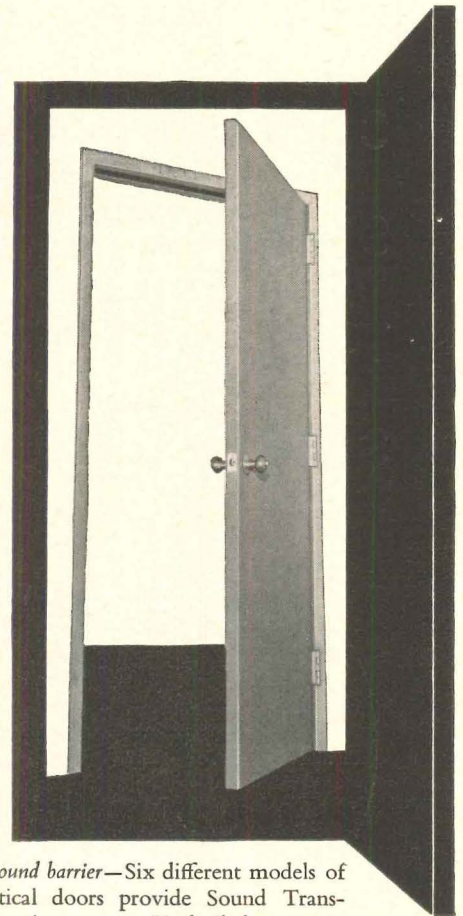




*Safety from shock and pressure*—Using a concave-convex design, the Overly blast-resistant door is engineered in two models to resist pressures up to 10 atmospheres or 147 pounds per sq. in. (Model 10 atü) and 3 atmospheres or 44 pounds per sq. in. (Model 3 atü). Man-sized escape hatches are available with identical ratings. Lower rated doors at 2.5, 6 or 10 psi overpressures are regularly manufactured by Overly in more conventional flush  $1\frac{3}{4}$ " design.



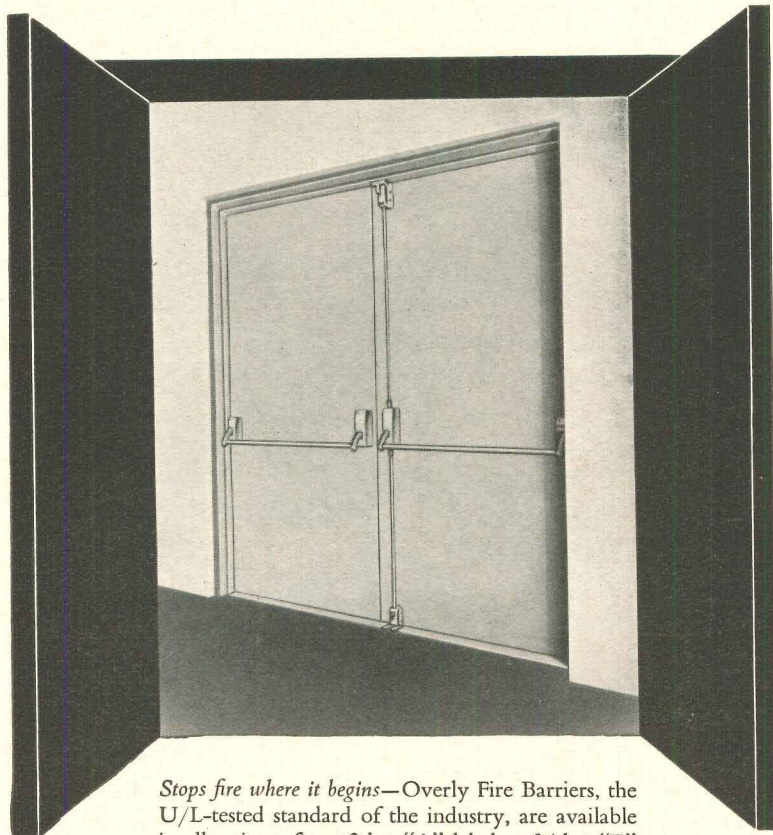
*Fallout shelter*: This Overly blast-resistant and radiation shielding door was installed to protect a special fallout shelter at the Ohio Power Company, Canton, O. Constructed of heavy gage metal, the door contains a lead core that acts as a radiation shield.



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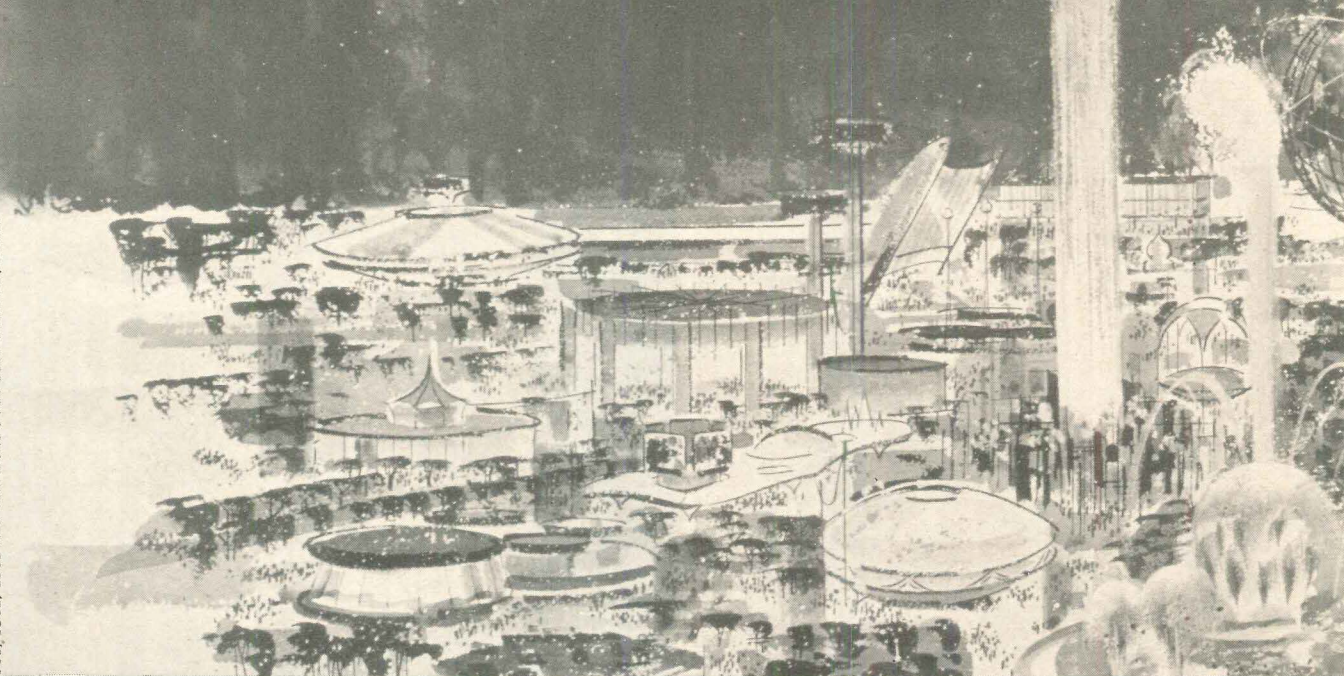
**Greensburg, Pennsylvania**

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# All Over the 1964-1965 World's Fair

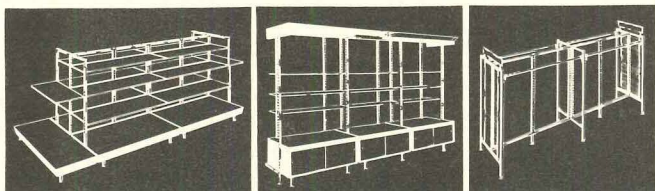
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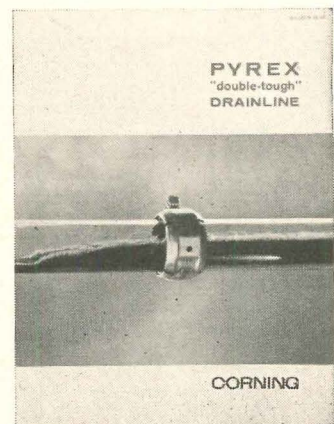
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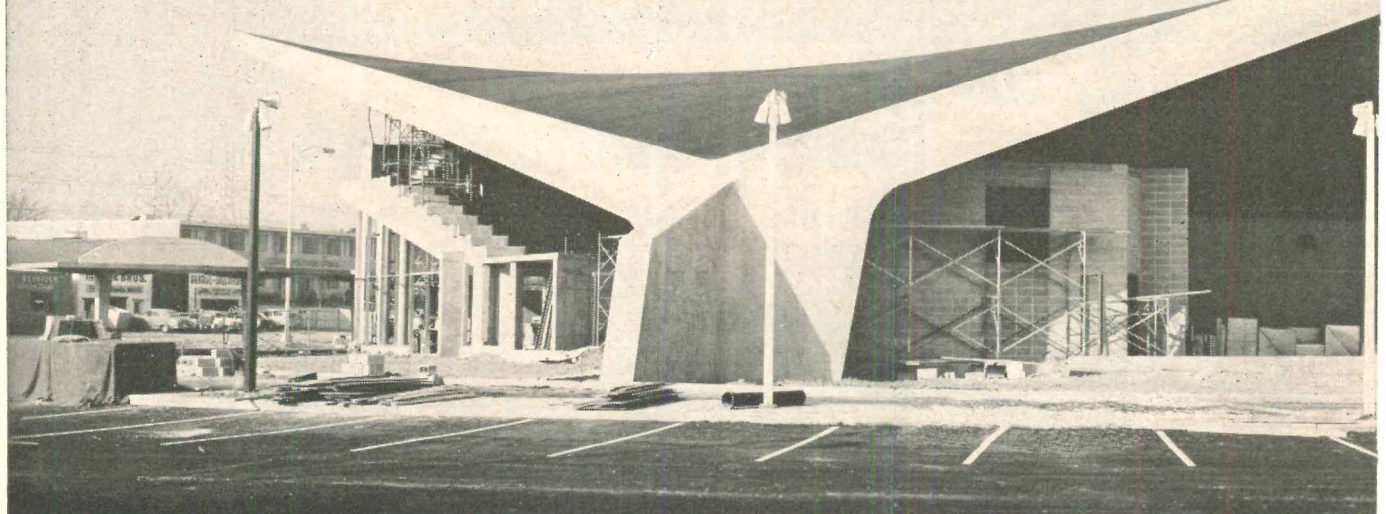
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# LONGER SPANS, LIGHTER SLABS

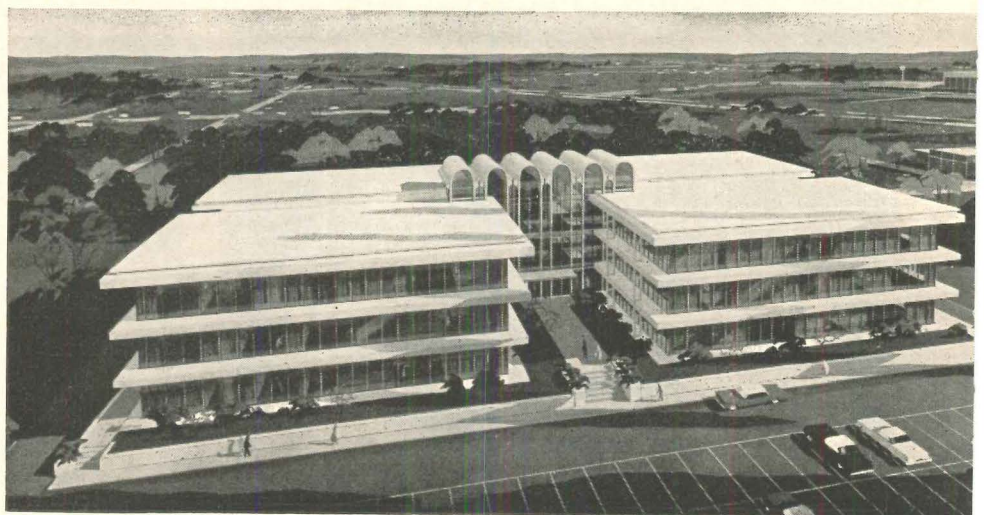
## with RYERSON

### post-tensioning for prestressed concrete



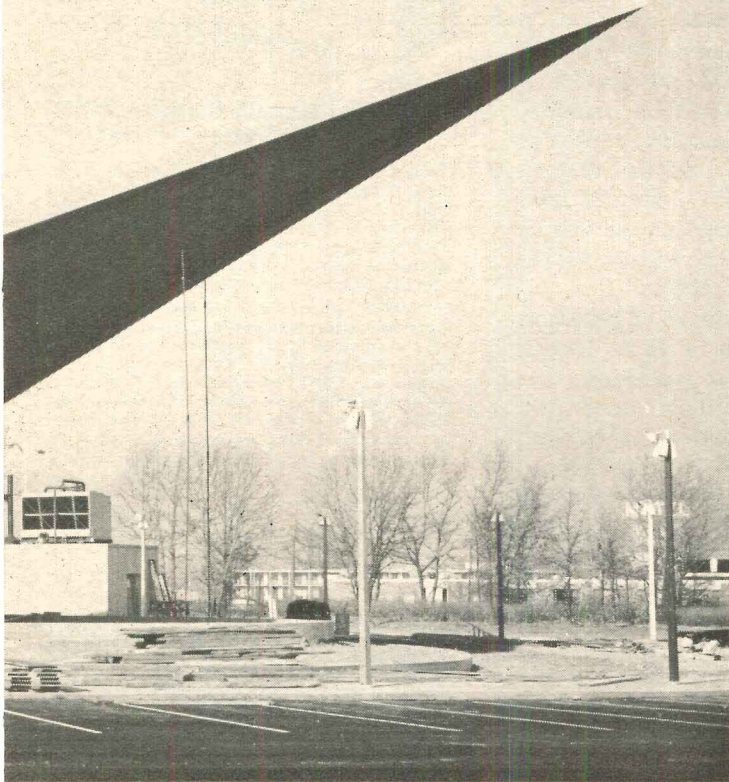
**NATION'S LARGEST HYPERBOLIC PARABOLOID ROOF** keynotes the design of Edens Theatre, Northbrook, Illinois. This saddle shell roof (only 4 inches thick) stretches 159 ft. between working points at the abutments; 221 ft. from tip to tip. The entire shell is rotated about the abutment points so that one tip is 59'6" above lobby floor level; the other 39'6". Vertical Ryerson post-tensioning tendons prestress the abutment walls and these walls rest on post-tensioned foundation pads. To absorb horizontal thrust, the pads are connected by a post-tensioned tie beam. **Architect:** Perkins and Will, Chicago. **Engineer:** The Engineers Collaborative, Chicago. **Contractor:** Chell and Anderson, Chicago.

**SOUTHFIELD OFFICE PLAZA** In suburban Detroit uses Ryerson post-tensioning to give reduced structural depth despite long spans and relatively heavy loads. Sitting on a 4-ft. terrace the handsome building contains 137,000 sq. ft. of floor space in four rectangular units joined by a central service core under an arched roof. In the structural framing, 50 poured-in-place, post-tensioned beams are supported by double-legged columns placed to provide 24-ft. cantilevers. 5½ ft. overhangs at each level shade the continuous windows and conceal air-handling equipment. **Designed by** Samuel P. Havis, presently Havis, Glvinsky Assoc., Detroit. **Engineer:** McWilliam & Keckonen, Birmingham, Mich. **Contractor:** Harold Soble Construction Co., Southfield, Mich.





# LOWER COSTS



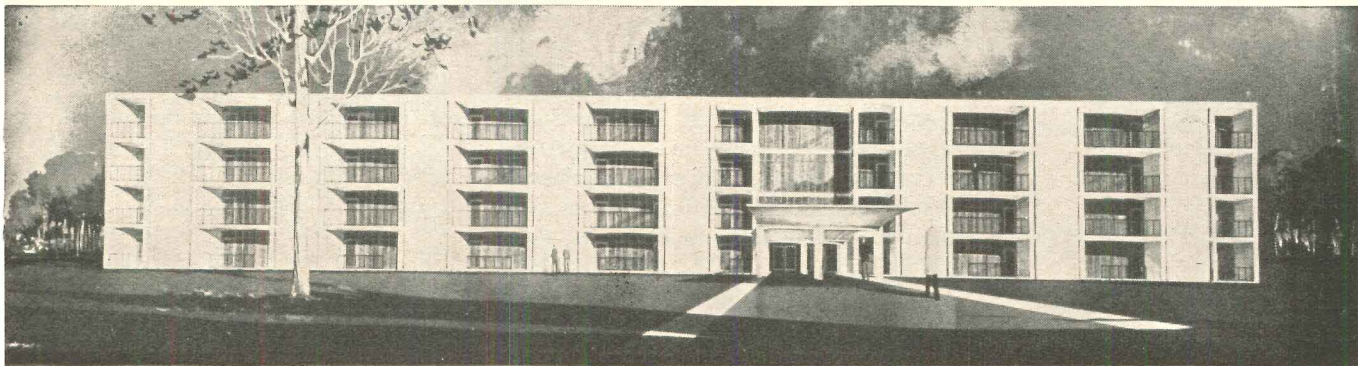
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Adaptable to almost any design concept, Ryerson post-tensioning permits greater column-free areas at reasonable cost...often achieves savings by reducing structural depth...and is widely used in lift-slab structures because it solves deflection control problems and lightens slab weight for easier lifting.

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Three current projects using Ryerson post-tensioning are shown here. On *your* next project consider the advantages of post-tensioning and get in touch with us for comparative cost data, preliminary layouts, force development calculations and any other information that would be of help.

\*Precast concrete members may also be economically prestressed by this system.



**NURSING CARE BUILDING**, Lyngblomsten Retirement Center, St. Paul, Minn., uses Ryerson post-tensioning to maximize the economies and efficiencies of lift-slab construction, and provide deflection control. Four-story structure has 2 lift-slabs (connected by a joining strip after lifting) on each of 5 levels. Each two-unit slab measures approx-

imately 250 ft. x 60 ft. and maximum column spacing is 28 ft., 8 in. x 18 ft., 10 in. **Architect:** Sovik, Mathre & Madson, Northfield, Minn. **Engineering Consultant:** Kolbjorn Saether & Assoc., Chicago. **General Contractor:** H. Halverson Construction Co., Minneapolis. **Lifting Contractor:** Northwest Lift Slab Co., Portland, Oregon.

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## COMPETITION FOR DUBLIN COLLEGE

University College, Dublin, is spon-  
soring an international competition  
for buildings to house classrooms,  
administrative offices and examina-  
tion halls.

The competition is open to archi-  
tects who are members of a recog-  
nized architectural institute or soci-  
ety. It has been approved by the In-  
ternational Union of Architects.

Deadline for registration is Octo-  
ber 17, and £5 (\$14.00) must be de-  
posited with the Competition Regis-  
trar, University College, Dublin 2,  
Ireland. Deposits will be refunded  
to architects submitting a design  
and to those not entering who re-  
turn the conditions by May 1, 1964.  
Last date for receipt of entries is  
June 1, 1964. Awards will be £3,500,  
£2,000, £1,000 and £500.

Chairman of the Board of Assessors  
for the competition is M.A. Hogan,  
professor of civil engineering, Uni-  
versity College. Other "assessors"  
are Eoghan Buckley, F.R.I.A.I.,  
Dublin; W. Dunkel, Dr. Ing. and ar-  
chitect, Zurich; Vilhelm Wohlert,  
M.A.A., Copenhagen; D. FitzGer-  
ald, F.R.I.A.I., professor of architec-  
ture at University College; G. Mac-  
Nicholl, F.R.I.A.I., Office of Public  
Works, Dublin; and Sir Robert Mat-  
thew, president of the Royal Insti-  
tute of British Architects and presi-  
dent of the U.I.A., Edinburgh.

## STUDY IN ROME FELLOWSHIPS

A limited number of fellowships for  
independent study in architecture,  
landscape architecture, painting,  
sculpture, history of art and classi-  
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tricted to U.S. citizens. Each fel-  
lowship provides \$3,000 for the year  
beginning October 1, 1964, plus free  
residence, studio and study facili-  
ties at the Academy. Applications  
and submission of work are due by  
December 31, 1963. Request for de-  
tails should give field of interest and  
be addressed to: Executive Secre-  
tary, American Academy in Rome,  
101 Park Ave., New York 17, N.Y.

more news on page 362



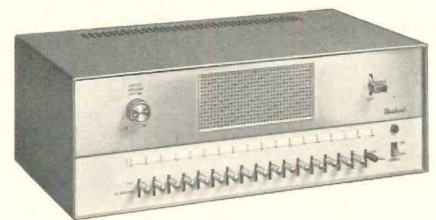
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operation • Ultra-reliable Talk-Listen switch (pro-  
vides over 1,500,000 trouble-free operations)  
• Acoustic noise suppressor circuits • Overload  
protective circuits • Inputs for 3 low impedance  
microphones, 3 auxiliary program inputs • 16  
station selector keys (up to 50 locations can be  
covered by adding S301 Facility Expanders)  
• Choice of voice or light call-in • Selective  
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visory tone signal) • Time or alarm signal avail-  
able • All-Call key • RAULAND S304 AM-FM  
Tuner and/or S402K Record Changer available.



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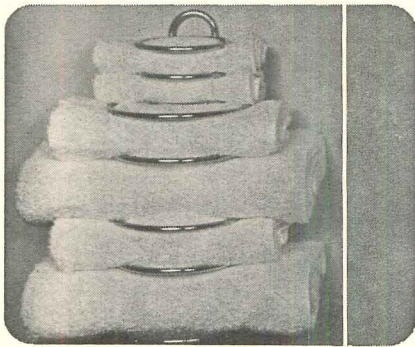
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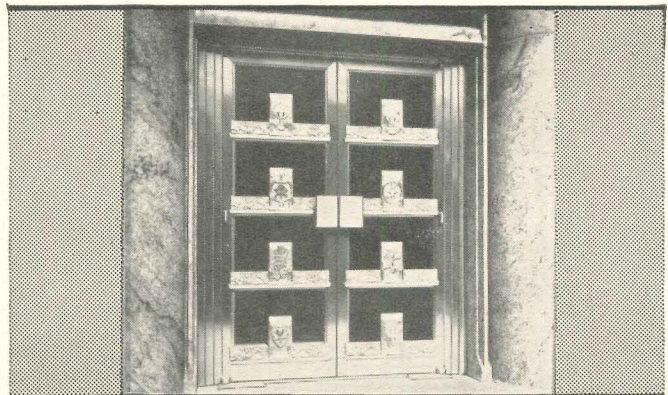
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## FIELD INSPECTION OF BUILDING CONSTRUCTION

by Thomas H. McKaig, C.E., Chairman of the N. Y. State Board of Examiners  
for Professional Engineers and Land Surveyors

Here is a strictly practical book—it is not a textbook. It assumes that you or your inspector have had sufficient theoretical training to put to immediate use the wealth of practical information it contains.

The opening chapter discusses the role of the field inspector—gives sound advice on getting along with the various trades, on treading the line between under- and over-inspection, on setting up the needed records, on reporting through correct channels, and on other general, but important, matters.

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# ARCHITRAC

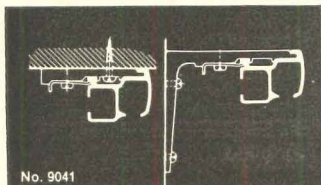
For every window treatment and light control problem you have, you'll find a solution in Architrac®, our original equipment drapery hardware for commercial and institutional buildings. We extrude it from high-alloy aluminum in lengths to 24 ft., and give it an etched and natural anodized finish. We supply Architrac in eight styles (cord and hand operated) for recessed, flush, flange or bracket mounting.

## CORD OPERATED ARCHITRAC

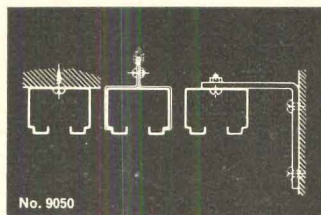
Standard-duty cord traverse Architrac features dual channels. Ball bearing drapery carriers ride in front channel so draperies can pack back closer at ends. Ball bearing master carriers and cords slide freely and smoothly in back, can't bind or drag. With our heavy-duty auditorium track, drapery carriers ride both channels for unlimited overlap.



**Recessed Plaster or Acoustical Tile Installation: No. 9040 Series**—A true recess track with its own plaster ground, No. 9040 needs no expensive, hard-to-install subchannel. It's pre-drilled for direct mounting with screws. The ¼" of track below bead minimizes light leak above draperies. All components can be assembled in track after plastering.



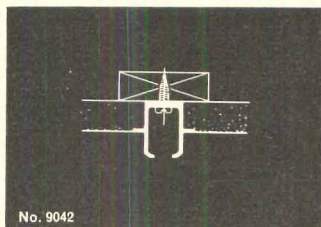
**Ceiling or Wall Installation: No. 9041 Series**—Designed to present a handsome face, No. 9041 Series Architrac doesn't need recessing. Track mounts directly to ceiling, wall or mullion, using our concealed brackets.



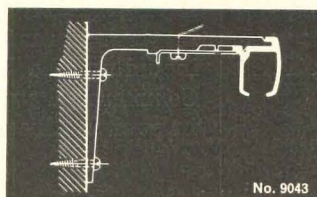
**Ceiling, Overhead or Wall Installation: No. 9050 Series**—For heavy draperies, tall or wide windows and medium-weight stage curtains, No. 9050 Series conceals all moving parts and cord inside track. It can be spliced to span 50-ft. openings; cord-or hand-drawn, even motorized.

## CORDLESS ARCHITRAC

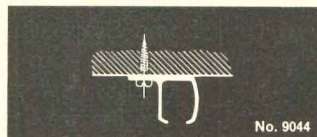
Offers low first cost, easy operation and minimum maintenance. Ball bearing carriers run smoothly, quietly. Drapery panels pack back closely, can be moved to any position along track.



**Recessed Plaster or Acoustical Tile Installation: No. 9042 Series**—A recess track with its own plaster ground, No. 9042 needs no subchannel. Mounts directly through pre-drilled holes; can be curved.



**Wall or Casing Installation: No. 9043 Series**—Used with our extruded aluminum brackets, No. 9043 Architrac mounts on wall or mullion. It presents a good-looking fascia unbroken by supports; can be curved.



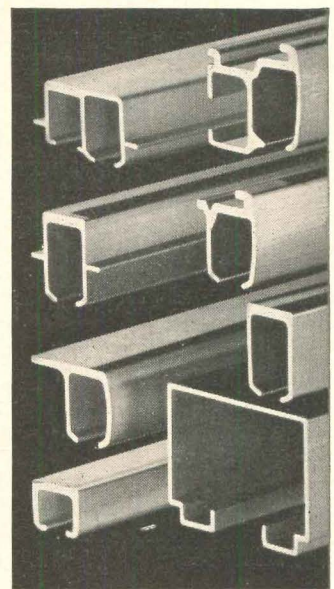
**Ceiling Installation: No. 9044 Series**—With its pre-drilled flange at back, No. 9044 track mounts to ceiling quickly, easily. It cannot be curved.



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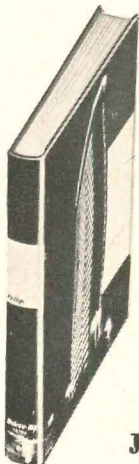
For details and specifications on all Architrac drapery hardware track and accessories, see Sweet's; or send for our free catalog. Ask, too, for price-estimation information and about our nationwide consultation service. Write: Kirsch Company, 323 Prospect Street, Sturgis, Michigan.

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DRAPERY HARDWARE

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How to design for beauty, safety and comfort in lighting



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Here is how to achieve successful lighting schemes that satisfy practical functional needs while contributing to the unity of esthetic concepts in architectural design. Covering both daylighting and artificial lighting, this volume treats the subject from the architect's point of view.

It brings you working information on everything from factors to consider in establishing design aims—through the various sources of light and how they are best applied—to methods of calculating values of illumination from daylight as well as artificial light.

The problem of glare and physical comfort as a lighting design factor is treated along with the less tangible requirements of emotion and intellect. A host of other topics are covered, including a comparison between tungsten and fluorescent lighting . . . factors of installation and maintenance in terms of overall lighting economics . . . methods of designing to combat glare . . . and much more.

## C.E.C. PLANS DIRECTORY OF ENGINEERS

Publication of a directory of U.S. consulting engineering firms interested in international assignments has been recommended by the committee on international engineering of the Consulting Engineers Council.

Committee chairman O. O. Phillips said the directory would be printed in at least three languages and would show specialized fields of practice. Cost of compiling, printing and distributing the publication would be paid by the firms listed.

All council members will have a chance to participate. It is estimated that about 20 per cent of the 1,500 member firms are interested in work abroad. Various agencies, including the U.S. Department of Commerce, have expressed interest in such a directory.

## STUDENTS WIN STAINLESS STEEL COMPETITION

George R. Eubanks, of the Oklahoma State University architecture school is the winner of the 1963 student design competition sponsored by the Committee of Stainless Steel Producers. First prize was \$800, with an additional \$500 contributed to the winner's school for furthering architectural education.

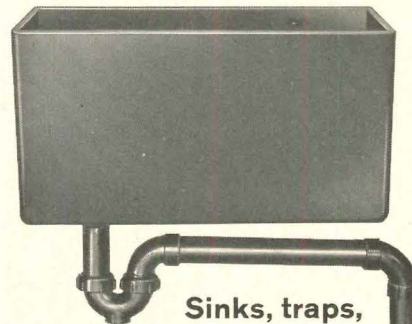
This year's competition was to design a transportation shelter using prefabricated modular units. Mr. Eubank's design used 20-foot hexagonal units with walls of textured stainless steel sandwich panels and glass.

Second prize of \$300 went to J. Renard Bollier of the University of Illinois. Lawrence B. Rosenblum of Columbia University School of Architecture won the third prize of \$200.

Honorable mentions were given to Gerald J. Beberka of the University of Illinois and Owen Francis Brown of Pratt Institute.

Daniel Schwartzman, F.A.I.A., New York City, was chairman of the jury of architects which selected the winners from 63 entries.

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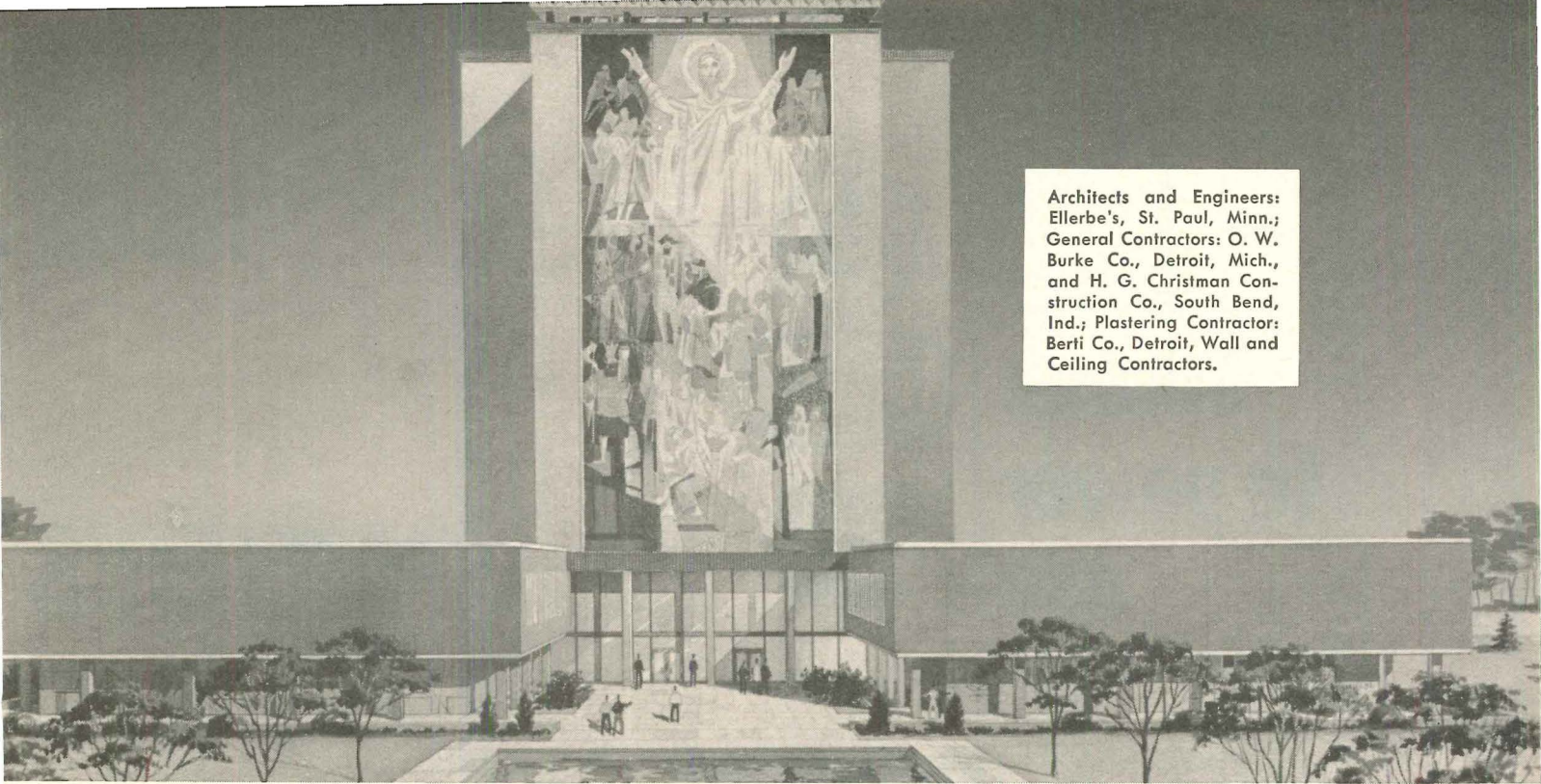
75 PANORAMA CREEK DRIVE, ROCHESTER 2, N. Y.

First with polyolefins for corrosion-resistant drainline systems

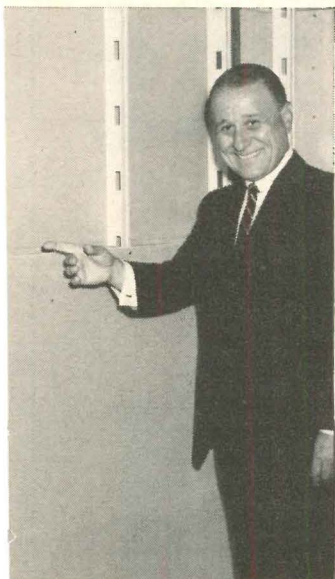
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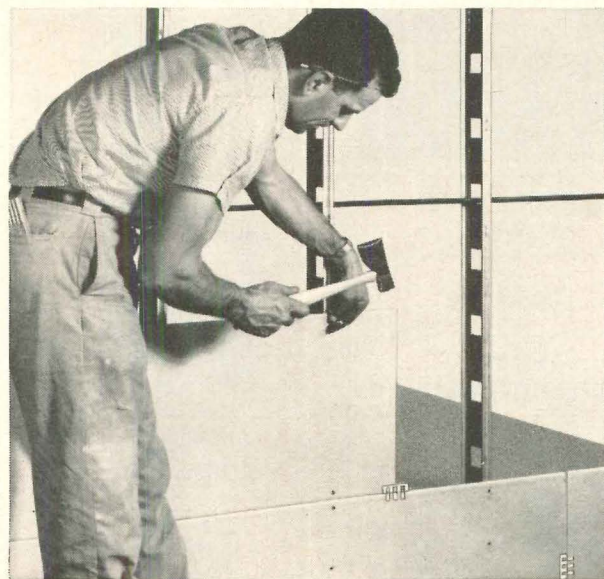




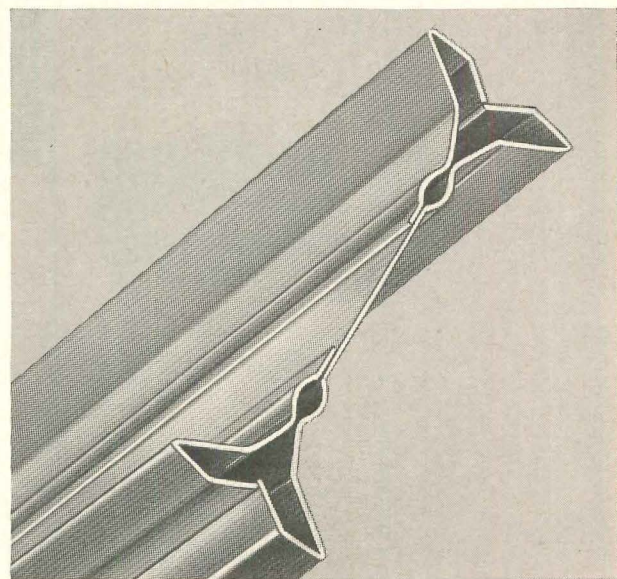
Architects and Engineers:  
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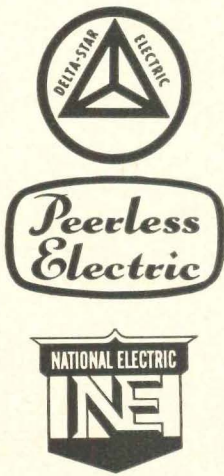
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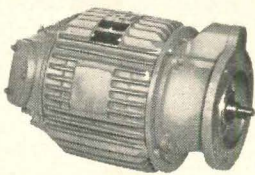


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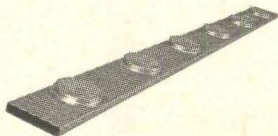


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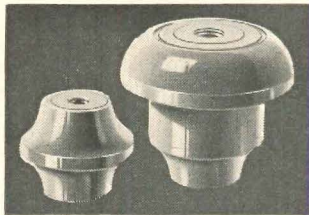
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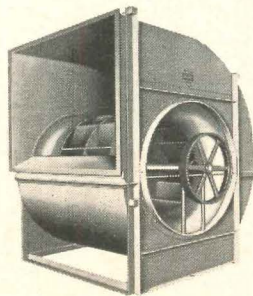
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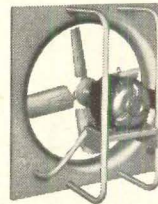
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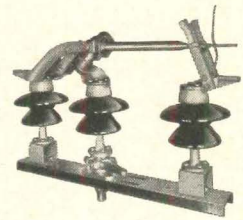
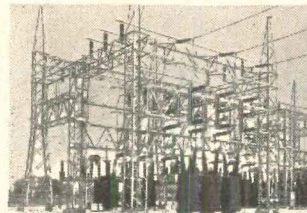


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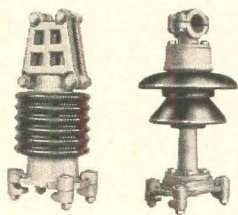
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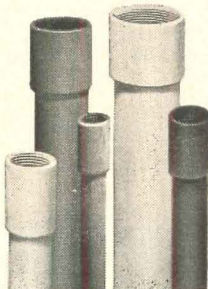
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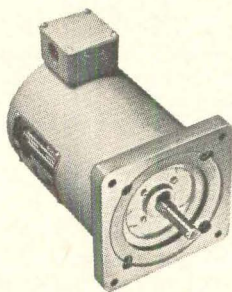
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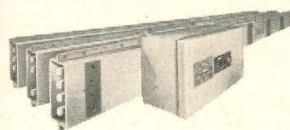
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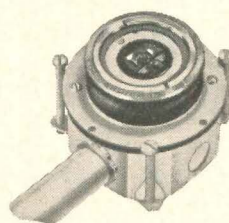
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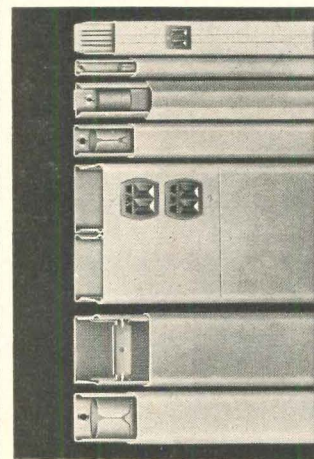


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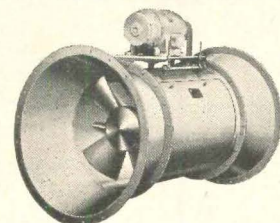
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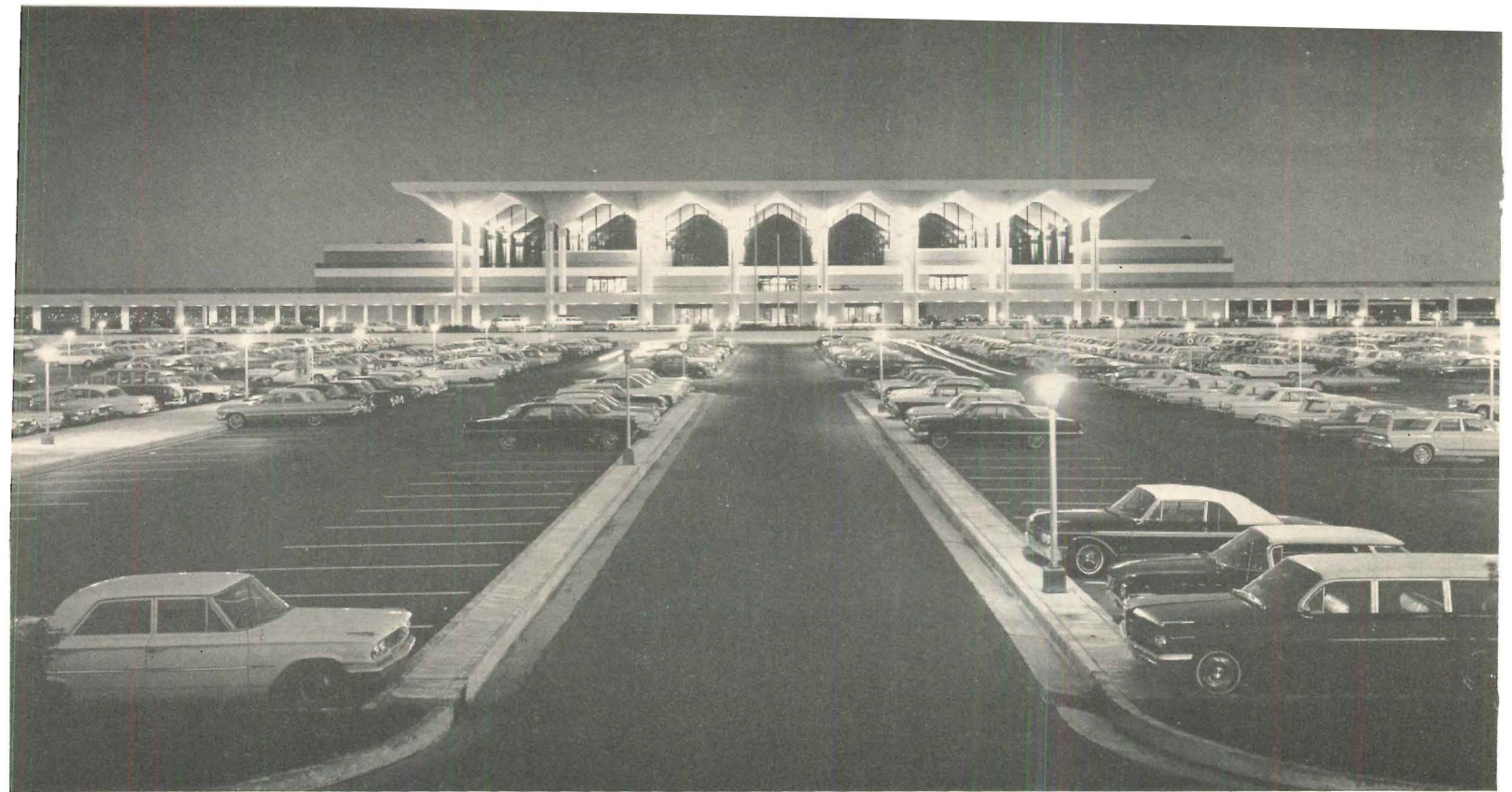


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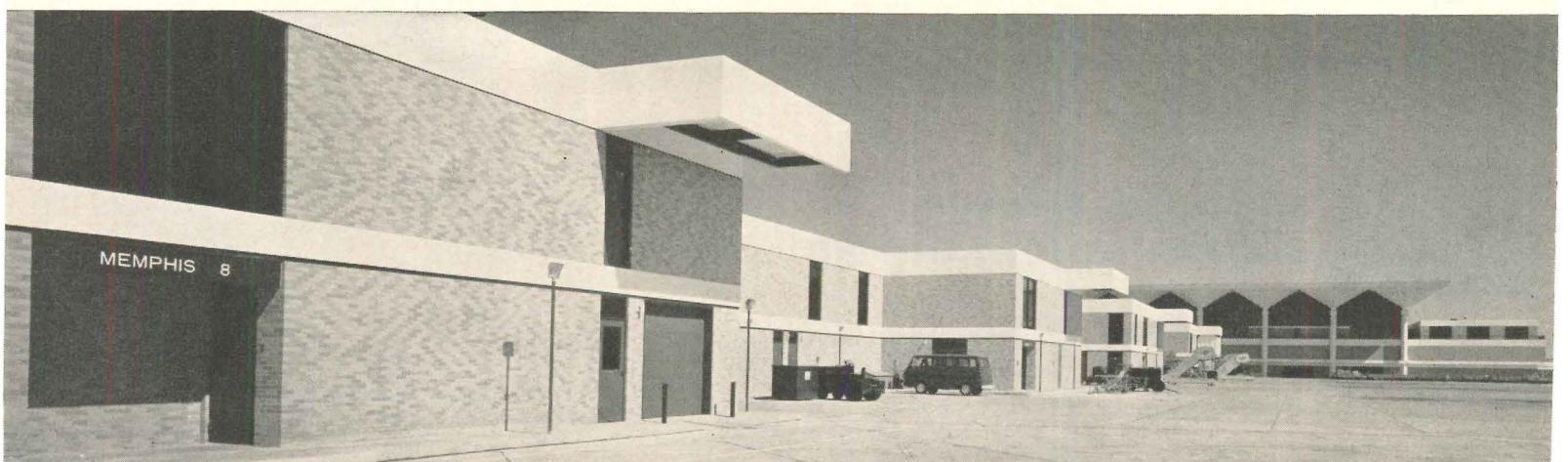
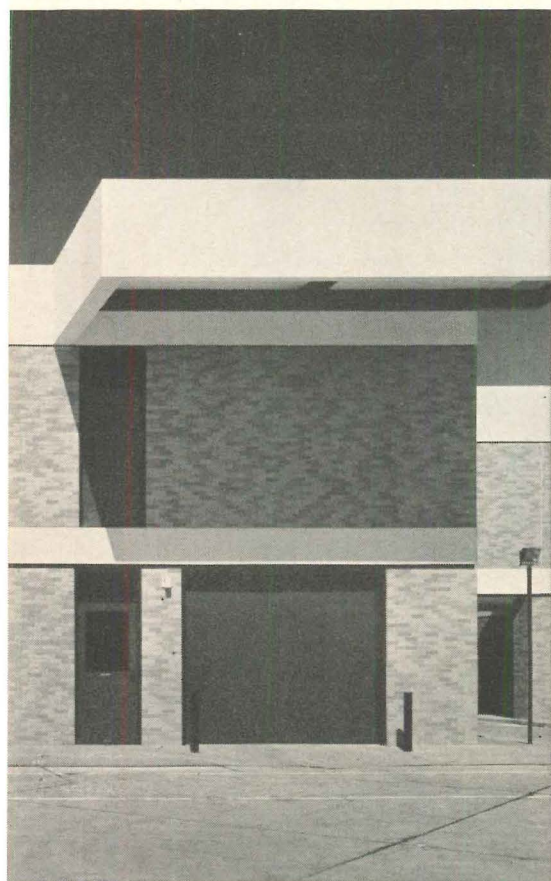
## MEMPHIS METROPOLITAN AIRPORT TERMINAL

82 Crawford Doors in eight sizes implement freight and baggage access facilities

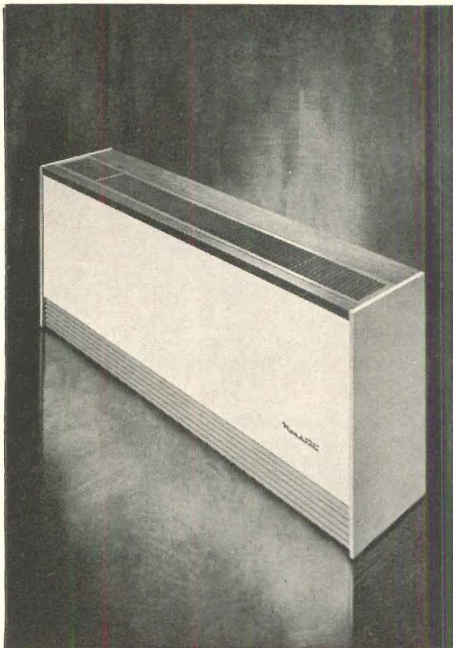
These doors are all Crawford Model 766 Sectional Industrial Doors, with plastic-impregnated fiber honeycomb core bonded under pressure to hardboard panels. This construction assures great strength with lightness, insulating value and durability. Hardboard panels are guaranteed for life against disintegration under normal conditions of use. The simplicity of the flush surfaces, inside and out, offer complete flexibility in the use of these areas as elements of design or with functional color coding and in any desired degree of emphasis. Two doors leading into the baggage area are equipped with Crawford Mainline Operators. Baggage is transferred from the trucks to conveyors which transfer it to the individual airline's baggage pick-up platforms. Doors at these platforms are 12' x 3' with inset glass panel. For information on doors and their many accessories see our insert in Sweet's, call your local Crawford Distributor listed in the Yellow Pages under DOORS and OPERATORS, or, write:

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# Nesbitt

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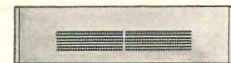
### 45 Years of Leadership

Schools and colleges, with their greatly varying locations, spaces, occupancies, activities, and usage, find a unit system of thermal comfort conditioning to be the most economical. More unit systems are installed in schools than all other kinds; and more of the units are made by Nesbitt than by any other manufacturer.

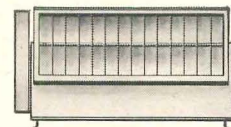
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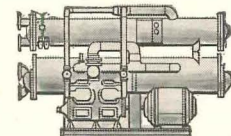
John J. Nesbitt, Inc., Philadelphia 36, Pa.—Offices in principal cities.  
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Horizontal Year-Round Syncretizer with the new Long-Life Motor and Vac-Clean Filter.



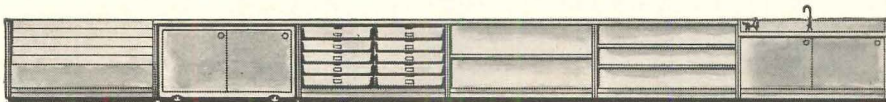
Multizone Central Station Air Conditioner —serves up to 20 separate zones of comfort.



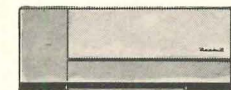
Packaged Water Chillers in refrigerating capacities ranging from 20 up to 250 tons.



Architectural Sill-line—contemporary enclosures for insulated piping or perimeter radiation.

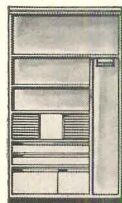


Nesbitt fixed or mobile Storage Cabinets—and Sink — integrated with the Syncretizer for ideal classroom convenience.

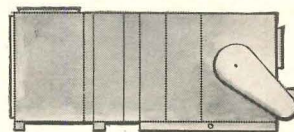


Roommate Air Conditioner with Humid-a-Guard Control System combines comfort and styling for administrative areas.

For more information on any of these products, write to John J. Nesbitt, Inc., Dept. O.



New tall cabinets for teacher-student wardrobes and storage.



Large-volume heating, ventilating, and air conditioning for auditoriums, gymnasiums, cafeterias, etc., or for central-station use.



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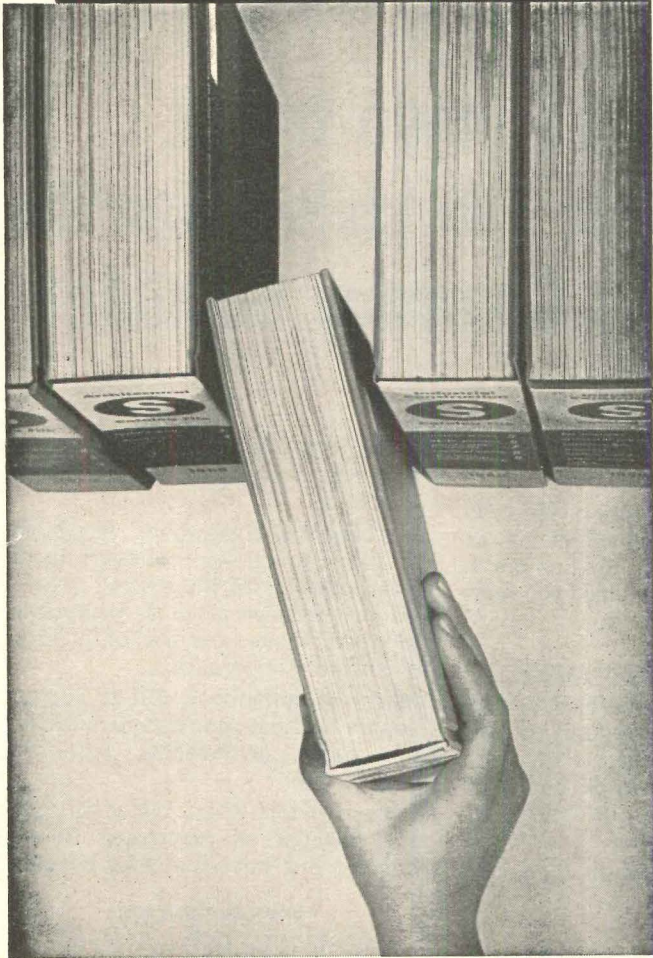
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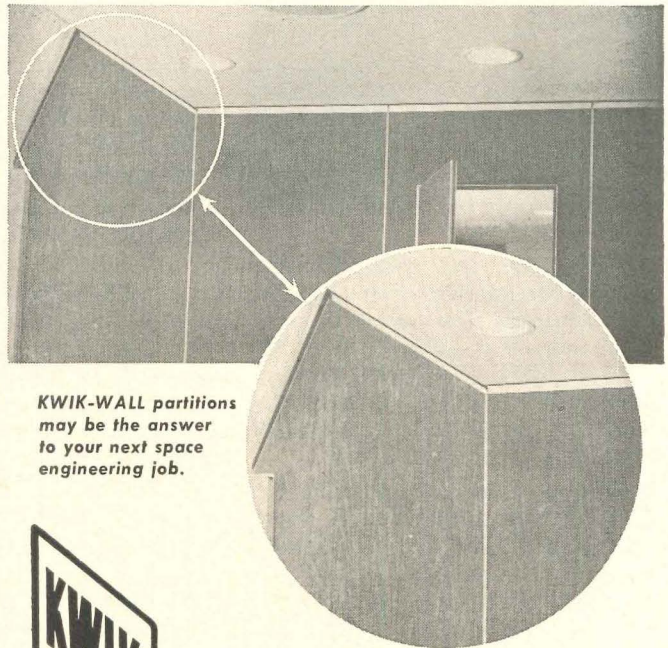


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## Of all the hundreds of floors made today, why was Armstrong Rubber Tile picked for the Michigan Consolidated Gas Company Building?



The architects and designers have provided the interiors of this building with structural features and architectural details to surprise and delight the eye. They have given them an atmosphere of quiet, comfort, and tranquility. These are interiors designed to please people.

Armstrong Rubber Tile fits into this design scheme with unusual appropriateness. It, too, pleases the eye. It has a look of richness without being gaudy. Its lustrous satin finish diffuses light softly without glare.

Rubber Tile is quiet, too. It's noted for the way it cushions the sound of footsteps. And it's comfortable to

walk on because it is especially resilient.

Along with these characteristics which suit this particular building so well, Armstrong Rubber Tile offers a number of other advantages you may find worth knowing about.

### DECORATIVE ADVANTAGES

**Three styles.** A rich marbled design (shown in the color picture), a terazzo-like design called Imperial®, and plain black, all in 9" x 9" and 12" x 12" sizes. The surface on all designs is satin smooth.

**Many colors.** Over twenty. From restrained to brilliant.

### PRACTICAL ADVANTAGES

**Durable.** 1/8" thick vulcanized rubber. Excellent resistance to abrasion. Resistant to indentation from heavy furniture: with properly designed furniture rests, sustains loads up to 200 lbs. per square inch. Design runs through the thickness of the tile, ensuring long pattern life.

**Dimensionally stable.** Seams stay tight, won't peak. Guaranteed to equal or exceed requirements of Federal Spec. ZZ-T-301a.

**Easy to maintain.** Sweeping and mopping keep Rubber Tile clean of ordinary dirt. Usual commercial maintenance

keeps it fresh looking. Its resistance to grease and alkalis is excellent.

**Can be installed anywhere.** Above, on, or below grade—on subfloors in direct contact with the ground (except where excessive alkali or hydrostatic pressure makes the use of any resilient floor impractical).

**Moderate initial cost.** 60¢ to 70¢ per square foot installed. Due to durability and easy maintenance, long-range cost is low.

These benefits, then, are what led to the selection of Armstrong Rubber Tile for this important new building.

### SPECIFICATIONS, COMPLETE DATA, SAMPLES

Call your Armstrong Architect-Builder Consultant. A flooring expert, he can help you solve almost any flooring problem you encounter. He can also get you further assistance from Armstrong research, installation, and technical advisors. And since Armstrong makes a complete variety of resilient flooring materials, he can make unbiased recommendations for any interior. Call him at your nearest Armstrong District Office, or write direct to Armstrong, 610 Rock St., Lancaster, Pennsylvania.



**Armstrong FLOORS**