p/a

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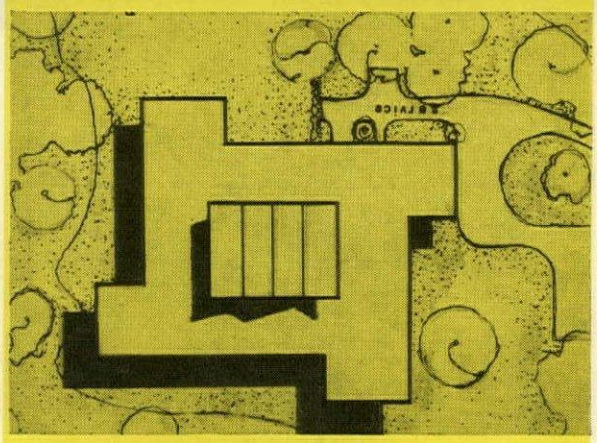
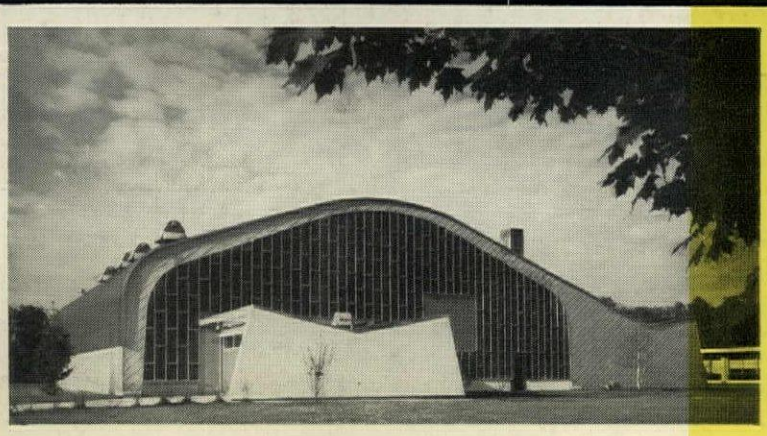
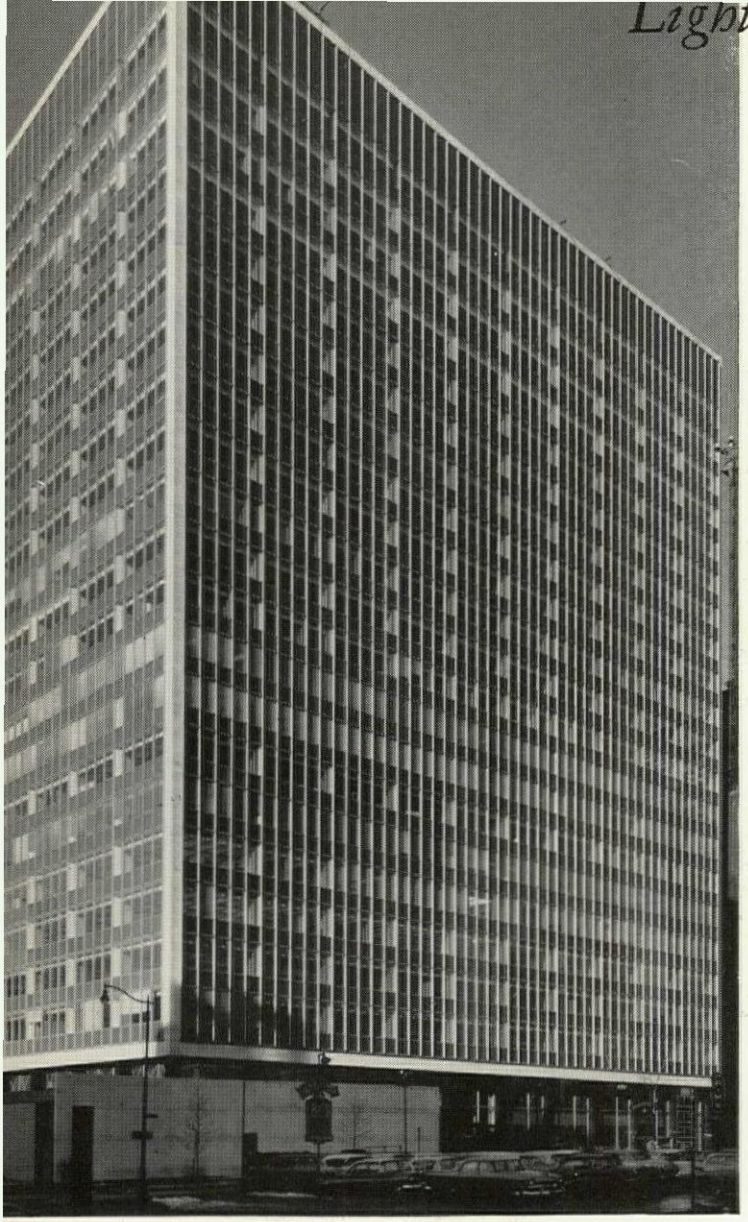




schools

Lightweight Concrete Skyscraper...



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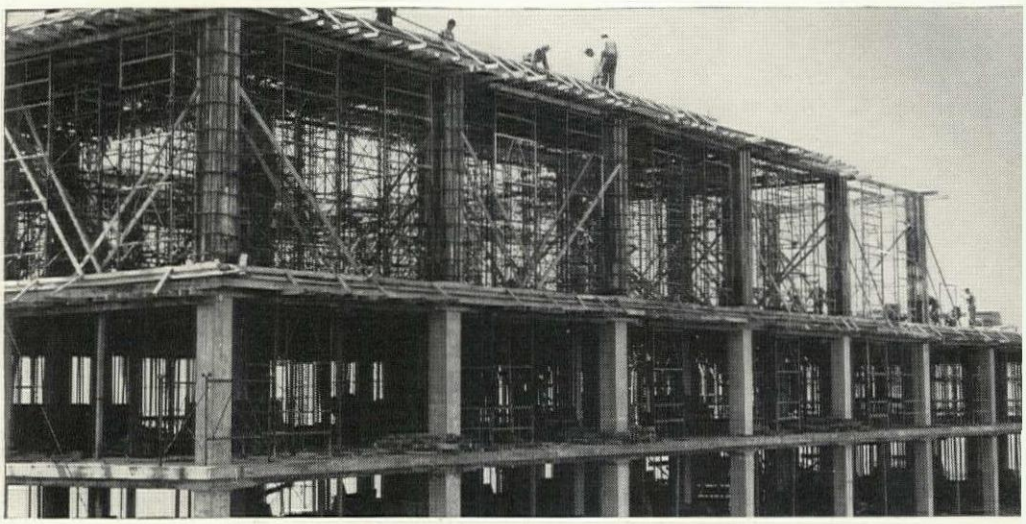

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PROGRESSIVE ARCHITECTURE

August 1958

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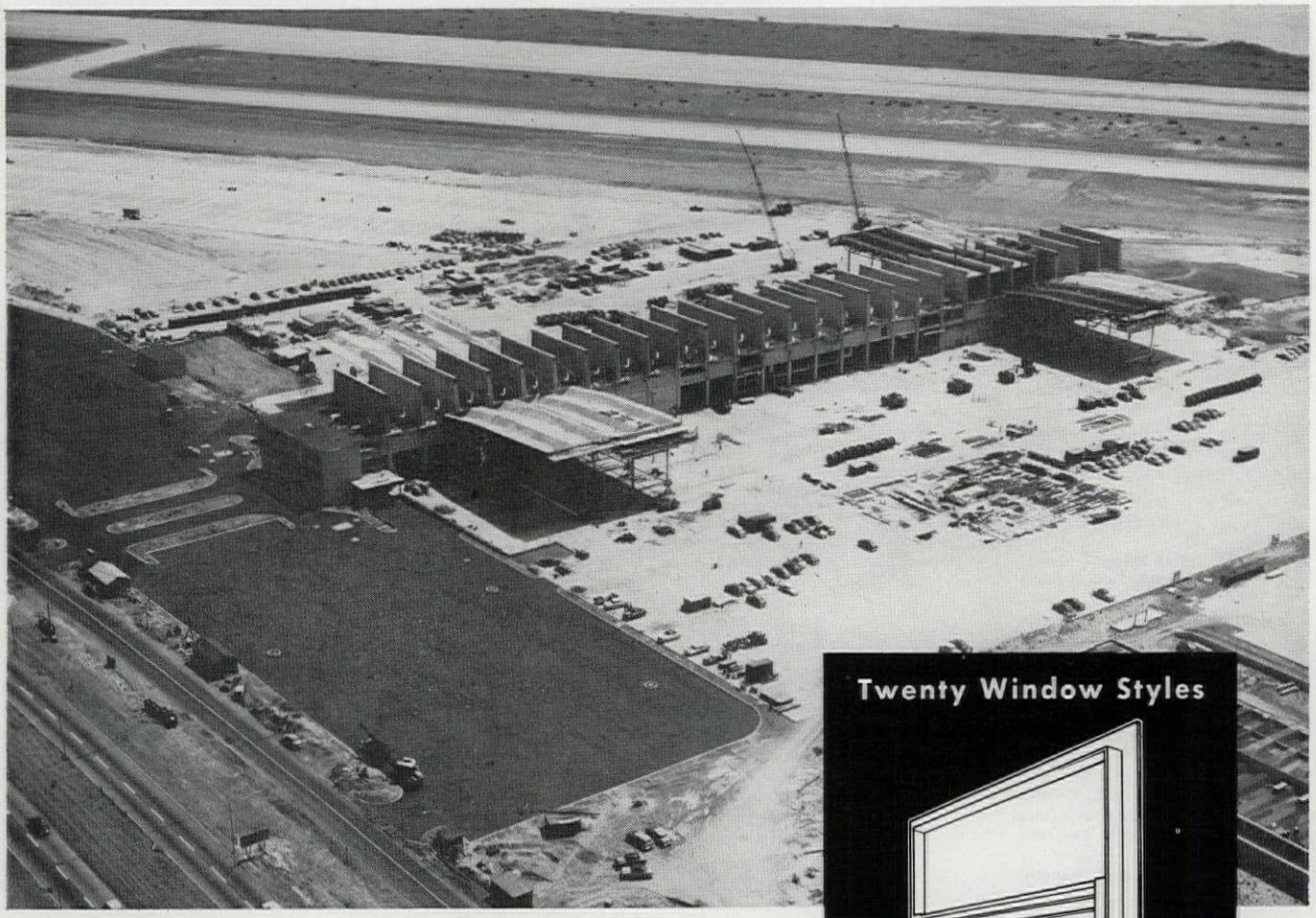
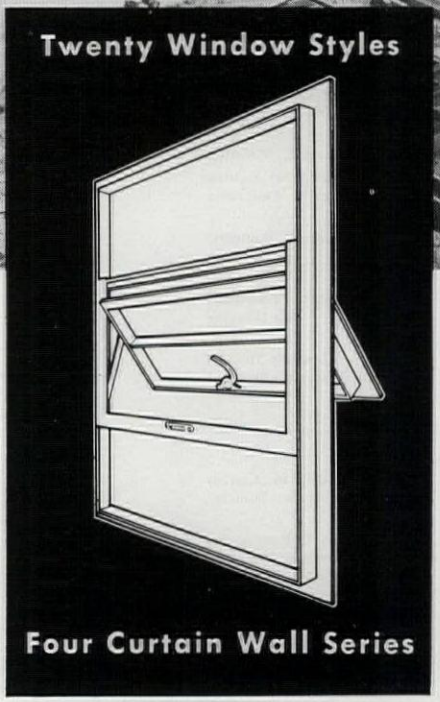
Volume XXXIX, No. 8

Ualco Windows Complement Handsome Hangar Design





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It's the Law by Bernard Tomson

P/A Office Practice ***article reporting additional favor shown by the courts to "esthetic" provisions of zoning ordinances.***

Esthetics (in a zoning ordinance) and property rights squared off against each other in a recent New York case, with esthetics the apparent victor. An appellate court, of New York, by a divided opinion, has recently upheld a zoning ordinance which required a minimum of two acres for a single family residence (*Levitt* v. *The Incorporated Village of Sands Point*). This decision reversed a lower court determination that the ordinance was unconstitutional because it was apparently based upon esthetic factors only and could not be justified on the ground of public health, safety, morals, or general welfare (*see* IT'S THE LAW, JANUARY 1958 P/A).

The Village of Sands Point had originally been zoned to provide for a minimum of one acre for residential construction. The zoning ordinance was amended in 1954 to divide the village into two districts entitled A and B. The residence A district was four times the size of the residence B district and the ordinance provided for a two-acre minimum in the residence A district.

The zoning ordinance was challenged by a property owner who intended to develop property which he had purchased prior to the amendment for one-acre residential sites and which was located in District A. The village contended that there was a demand for more spacious living and that it was within its power to preserve to the greatest possible extent the existing character of the village by providing the two-acre minimum plot restriction. The lower court, however, pointed out that there was no showing that two-acre zoning was necessary to provide adequate light or air or that there was an undue concentration of population in the area. Consequently, it concluded the statute was unreasonable because its apparent purpose had no direct relationship to public health, safety, or welfare.

On appeal, however, the appellate court refused to declare the ordinance unconstitutional and further emphasized that the statute provides that the Village Board of Appeals, within certain limitations, may grant a variance based upon the general character of neighboring property. The majority opinion stated:

"The amended complaint alleged, *inter alia*, that the amended ordinance was unreasonable and confiscatory because there was on the westerly side of Middle Neck Road, directly opposite to respondents' property, land developed with small single-family residences on plots having a maximum area of 7500 square feet, and there was, south of respondents' property and a short distance therefrom, land improved with a multiple low-cost housing project. The amended ordinance provides that the village board of appeals may within stated limitations grant variances of the provisions thereof which respondents complain of 'where the general character of the land in the immediate vicinity is such that residences have been erected on lots of less than two (2) acres.' The record discloses that the variances authorized, if granted, would be sufficient to permit respondents to develop their property in accordance with their plans.

". . . it is our opinion that in view of the provisions of the amended ordinance which permit a variance to be granted under the circumstances complained of in the amended complaint, it has not been established that there has been any deprivation of respondents' property rights which would permit a determination that the ordinance is unconstitutional as confiscatory. Concededly, respondents have not applied for, nor have they been refused, such a variance with respect to any of their property. . . ."

A minority of the appellate court, however, in a dissenting opinion agreed with the opinion of the lower court stating that two-acre zoning bears no relation to public health, morals, safety, or general welfare. The dissenting judges said:

"After respondents purchased in 1951 a 127-acre tract of land for the purpose of subdividing it into then permissible one-acre plots, the village zoning ordinance was amended in 1954 to require that a residential building plot have a minimum area of two acres. This amendment resulted in a depreciation of the value of respondents' property of $1000 an acre (according to appellants) and $2500 an acre (according to respondents). We agree with the learned official referee that two-acre zoning in this village bears no relation to public health, morals, safety, or general welfare, that it would retard the growth and development of the village, that it is not necessary to provide adequate light and air, and that there is no threat of overcrowding or of overconcentration of population. Respondents' property will necessarily remain unimproved and unproductive, and a source of expense to the owners. In the absence of some showing that the property can be put to a profitable use within a reasonable time so that temporary hardship may ultimately be compensated (and there was no such proof here), the burden placed on the owner is in the nature of confiscation."

The number of municipal zoning ordinances based, at least in part, upon esthetic factors is constantly increasing (IT'S THE LAW, NOVEMBER 1950, DECEMBER 1950, JUNE 1952, *and* JULY 1952 P/A). The courts in many instances have construed zoning regulations which involve esthetic considerations as justifiable on the ground of the public health, safety, morals, or welfare. Implicit in the majority decision of the New York Appellate Court is a reluctance to substitute its judgment for that of the municipality as to the reasonableness and necessity of an acreage restriction in respect to the welfare of the community. If this attitude is extended, esthetic considerations in matters of zoning will become increasingly significant.

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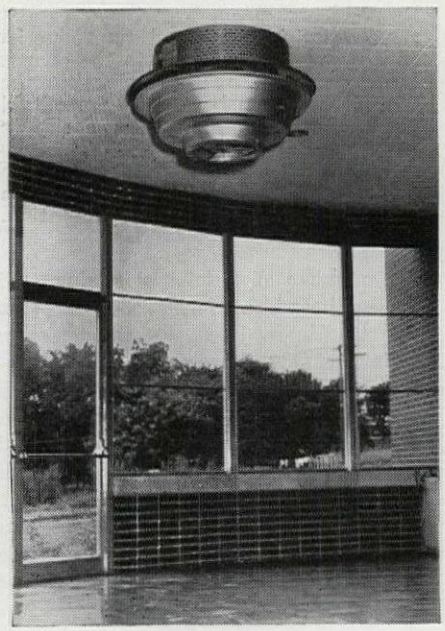

Norman Three-Sixty overhead heating unit in Seventh Day Adventist Elementary School, Lincoln, Nebraska; Vernon S. Dunn, Bus. Mgr., Union College; H. C. Potter, Architect, Beaman's Heating Co., Heating Contractor.

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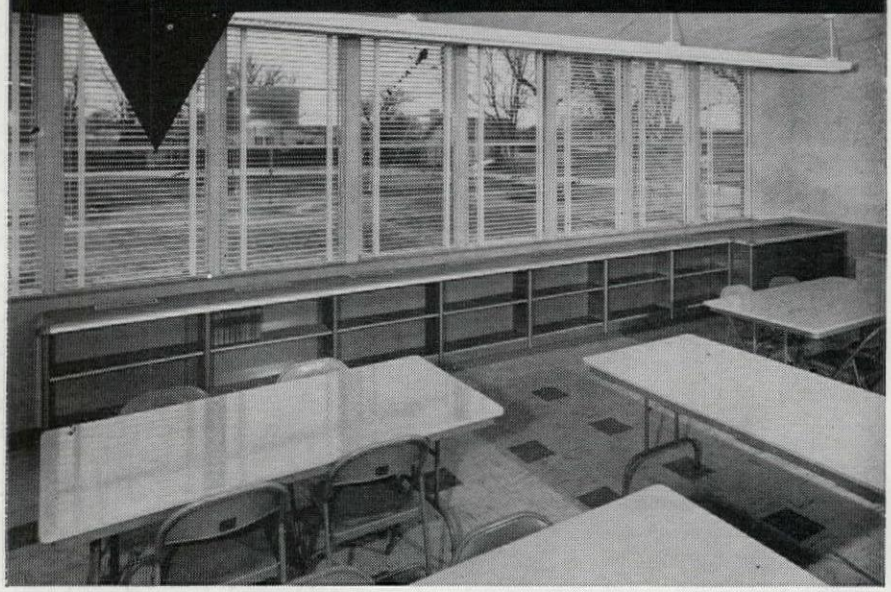

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Mechanical Engineering Critique *by William J. McGuinness*

P/A Office Practice *column on mechanical and electrical design and equipment, devoted this month to the subject, Reducing the Cost of Ventilation.*

Odors arising from human occupancy are minimized by removing some odor-laden air and replacing it with fresh outdoor air. Many industrial processes contaminate the air at rates even faster than those caused by people. Ventilation rates must be greater in these cases.

For human occupancy, the prescribed rates of adding fresh air vary from four to 40 cfm per person. In a classroom of average size containing 30 students, the use of the maximum rate would result in 12 air changes per hr. Assembly halls, restaurants and laboratories may demand 10 changes per hr. These rates are maximum. The air entering a room by normal infiltration seldom exceeds three changes per hr. It will be seen that power ventilation must sometimes operate at three to four times the rate of normal infiltration. During some parts of the spring and fall when outdoor air can be brought in at about the same temperature as indoor air, no expense is involved other than the cost of operating blowers. If the same ventilation rate is to be maintained during the winter and summer, ventilation costs would be high, because under critical winter conditions the outdoor air would have to be heated 70 degrees or more, and in the summer it would have to be cooled about 20 degrees. In extreme cases adequate ventilation can double the cost of heating or cooling. This could easily lead to the temptation to reduce the rate of ventilation in mid-summer and mid-winter when indoor freshness is most desired. This reduction would hardly be in keeping with the modern trend toward the best possible indoor conditions.

This process of conditioning large volumes of air to fill the room numerous times per hour and then sacrificing this work by wasting the heat in the polluted air is quite extravagant. Any device than can recover most of this energy is highly valuable. A heat exchanger can be used which will, in winter, preheat the cold outdoor air by supplying heat to it from the warm indoor air that is being discarded. In summer the process can be reversed. Many of these exchangers depend upon heat transfer through a fixed surface.

A rotary device that achieves this interchange with an efficiency of about 85 percent is the Therm O Wheel. Generally more efficient than exchangers of the fixed surface type, it employs a unique principle. A thick disc of metal wool held in a frame rotates slowly intercepting the two air streams. Exhausted warm air warms the metal fibers which rotate into the stream of cool air, warming it nearly to room temperature. In summer the discarded cool air from the conditioned space can be passed through the wheel to precool the incoming warm, fresh ventilation air. A wheel can handle 3000 to 20,000 cfm depending upon its diameter which ranges from 4 to 10 ft.

It is possible for the air streams to mix in passing through the wheel. The exhaust air is prevented from mixing with the clean fresh air by maintaining the fresh air at a slightly greater pressure. It will be noticed in the illustration (*next page*) that the blowers are located to "push" the fresh air through the wheel while the vitiated air is "pulled" through. The leakage, which seldom exceeds 5 percent, consists of fresh air seeping into the exhaust duct.

Exhaust and fresh air must, of course, be brought together for heat interchange which precludes their being handled at opposite ends of the system. It is possible, however, to carry these two streams of air for considerable distances in ducts if it is found desirable to separate their terminal points. In large installations it is entirely practicable to use a number of wheels. At the Chatham Memorial Hospital, Savannah, Georgia, where 100 percent fresh air is used, three wheels of 10 ft diameter are operated. Some industrial buildings have used as many as 20.

A common use for this heat-conserving mechanism is "comfort" heating and air conditioning. Yet an even greater number of wheels have been installed for industrial purposes. The buildings include repair shops, garages, drying kilns, and those for other uses where heat might normally be thrown away. Now 80 to 85 percent of it may be saved. For special high-temperature use the wheels may be of stainless steel instead of the more usual aluminum.

In addition to operational savings, it is sometimes possible to effect savings on the original cost of plant. A case of reduction in the size of a refrigeration plant for air conditioning illustrates this.

example

Exhaust air, 10,000 cfm at 75 F, to be replaced with outdoor air at 95 F which must be cooled to 75 F.

Refrigeration necessary for this operation—$10{,}000\,(95\text{-}75)\,\frac{60 \times .24}{13.47} =$ 214,000 Btu/hr. This is 17.83 tons of refrigeration. By the use of the wheel, fresh air at 95 F can be precooled to 79 F. Heat recovered—$10{,}000\,(95\text{-}79)\,\frac{60 \times .24}{13.47} =$ 171,200 Btu/hr. This represents 14.26 tons of refrigeration. At about $500 per ton cost to install air-conditioning refrigeration, the money saved is $7100. The cost of the wheel might be enough less than this to show a net saving of several thousand dollars. Operational savings in cooling ventilation air— $\frac{14.26 \text{ tons}}{17.83 \text{ tons}} = .80$ percent.

The pressure drop through the wheel is about ½ in w.g. requiring only a slight increase in power for the blowers. When subfreezing air is used to heat moisture-laden air, ice will form on the wheel. Arrangements to remove this ice consist of a timing device which turns the wheel off for 10 seconds every 15 minutes to permit de-icing.

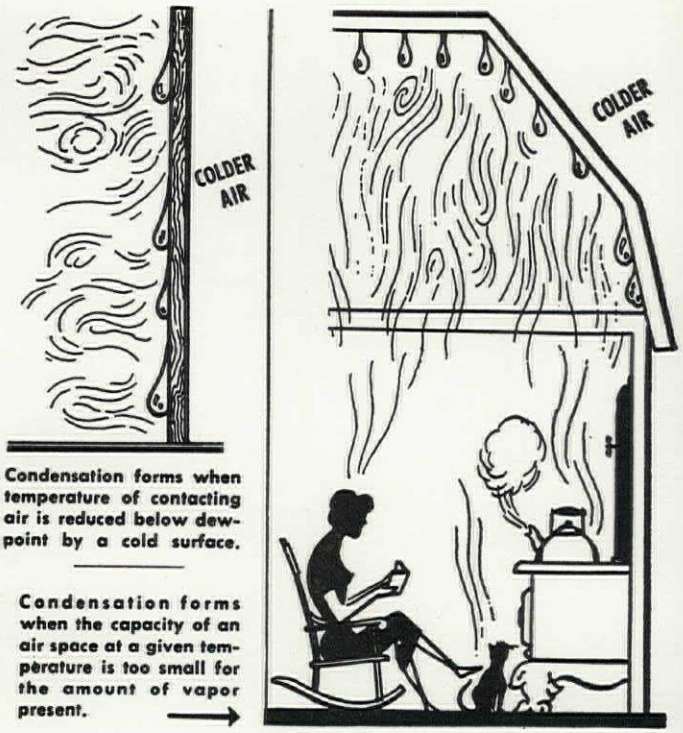
The principle of operation is a fascinating one. Metal is a very fast conductor and loosely packed metal fiber is very quick to accept and give off heat without interposing great resistance to air flow. The relative speeds of the wheel and of the air in ducts are very important to the success of the device. It was invented by Neal A. Pennington and has been developed and improved in the last seven years during which time its use has increased rapidly. Patents are presently held by Therm O Wheel Inc., N. Wolpov, President.

During the development of the wheel in its present form, exhaustive tests were made and many engineering improvements achieved by Charles F. Bonilla, Professor of Chemical Engineering at Columbia University and a nationally prominent authority on the subject of heat transfer.

Illustrations on page 11

How to Reduce CONDENSATION!

Prevent Damage to Wood, Plaster, Paint, etc.



Condensation forms when temperature of contacting air is reduced below dew-point by a cold surface.

Condensation forms when the capacity of an air space at a given temperature is too small for the amount of vapor present. →

As air becomes colder, it can hold less vapor in suspension. The degree of saturation increases until a dew-point is reached and condensation occurs.

Heat flows from warm to cold by conduction. A material in contact with air colder than itself on one side, warmer than itself on the other side, will *continuously* extract heat from the warmer air by conduction and lose it to the colder air. As the contacting warmer air becomes cooler, the amount of vapor it can hold in suspension without condensing becomes smaller.

The denser and bulkier the material, the more heat it can extract before attaining room temperature, if it *ever* does. The scientific construction of multiple layers of aluminum and air spaces minimizes condensation formation on or within this type of insulation.

THE REASON CONDENSATION IS MINIMIZED

Since the first layer of aluminum adjacent to the warm, inner air of a building weighs only about ¼ oz. per sq. ft., it does not need to extract much heat from that air to attain and remain at room temperature. The emissivity of the aluminum surface is only 3%, so little heat is lost by radiation. This helps the aluminum to remain at about room temperature and not extract much heat from that warmer air.

The other sheets of aluminum and fiber retard heat flow by inner as well as outer convection, and conduction is slight through the preponderant low density air spaces. So the aluminum's other surface faces a space colder than the aluminum itself. Because warmth flows to cold in conduction, the aluminum will *give off a slight* amount of *heat* to the colder space, slightly *increasing* the vapor retaining capacity of that space. The successive reflective spaces and layers of aluminum behave similarly. Since each aluminum surface is slightly warmer than the air it faces on its cold side, no heat is extracted from the colder air; *the reverse is true.*

CONTINUOUS VAPOR BARRIER

When *scientific,* joist-to-joist multiple aluminum is used, fortuitous vapor and water (like rain) which intrude into exterior building spaces will, as vapor pressure develops therein, gradually flow out as vapor, through exterior walls and roofs because vapor flows from areas of greater to less density. The vapor, unable to back up through the long, *continuous, almost impervious* aluminum, will flow out, because exterior walls and roofs have substantial permeability in comparison with aluminum, far greater than the required 5 to 1 ratio. Infiltration under its flat stapled flanges is slight.

The U. S. Bureau of Standards has prepared a helpful and informative booklet, "Moisture Condensation in Building Walls," which deserves your attention. Use the coupon to get a free copy from us.

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†Calculated on basis of limiting thermal values cited in Fed. Specs. LLL-f-321b; HH-I-585; HH-I-521c; HH-I-551a.
§Approximate cost, material and labor, new construction between wood joists.

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Mechanical Engineering Critique

Simulation of an installation operating for comfort heating. Outdoor air is heated to 56 F by indoor air that is cooled to 14 F in the process.

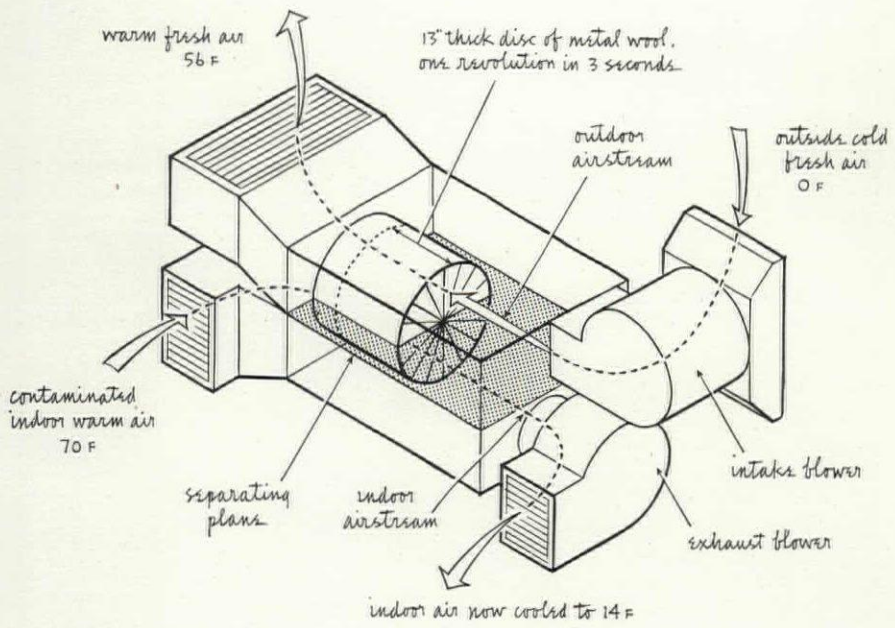
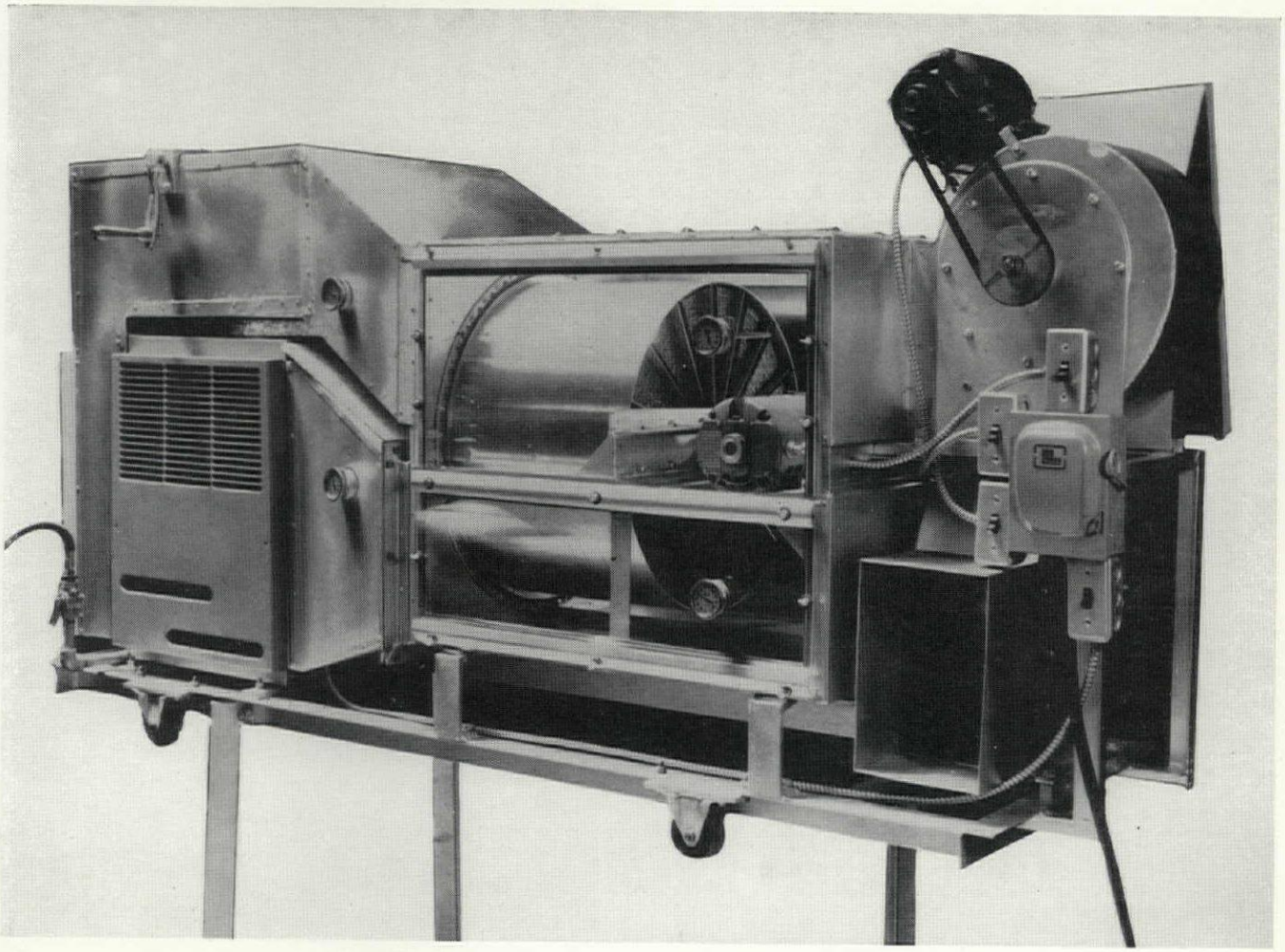


Photo of demonstration model (below). *Glass vision panels in the two air streams reveal the principle of heat transfer by the metal-fiber disc that rotates slowly between the two ducts.*



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Thoughts on Professionalism *by Raymond Spilman**

P/A Office Practice *article adapted from remarks prepared by Spilman for* Oculus, *publication of New York Chapter, AIA.*

One of the severest personal and group problems in attaining publicly recognized professionalism in an art is for the artist, himself, to understand and practice what the word implies in personal and public responsibility. This also implies a knowledge of what professionalism *is not* and the obligation of the professional to practice in such a way that he does not cast a negative image on himself or the profession he represents.

Essentially, professionalism is the life practice of a professed belief; most dictionaries distinctly imply that this belief should transcend the desire for monetary reward and also that the practice of the belief, whatever it may be, should be the single most important thing in the practitioner's life. Looking at professionalism from a pedagogical point of view, you will often find those persons in the more social arts (architecture, engineering, and industrial design, just to mention three loosely grouped elements) are trained in the European educational tradition that presupposes a ruling society of learned men. This group assumes the responsibility of guiding the community and the nation and is made up of the most capable and best-educated men in each country. Businessmen rarely hold a cultural or social rank comparable to the professionally trained citizen. Thus, our current educational system tends to breed professionalism in America on the basis of the European type of education and society, rather than the American type of society. This may be the crux of much of our emotional schizophrenia in trying to adapt ourselves to the American community.

The American community—a so-called "free enterprise environment"—is a far cry from the original European beginnings and has tended to bring out the most atavistic impulses in many of our most aggressive citizens. We call this "competition," "salesmanship," "getting ahead," and by a number of other synonyms covering a basic philosophy that to *sell a product* is the *single most important reason for existence.* Even today, the questions whether the product is good, and whether the product is necessary are rarely considered unless they somehow impair the saleability of the item itself. This is proving to be an expensive philosophy often resulting in business failure. Within the last few years, various segments of American business have modified their "sales at any cost" approach and there has appeared some indication that a somewhat more humane and esthetic American business and social culture might emerge; it may well be good, profitable business to have it emerge.

In this American environment, still predominantly sales-oriented, we find the average European professionally trained American ill-equipped to sell (there is nothing wrong with the word) sheer reason, altruism, and humanitarian aspects of his art in his own land. However, the business world must be housed, must be fed, and must have products to sell each other. Consequently, the skills that are inherent in the practice of architecture, engineering, and design are all recognized necessary parts of our culture—the aggressive sales economy. The crux of our (architecture, engineering, industrial design) emotional and professional problem is, *who is to control the execution of creative effort,* the businessman or the professional.

The average professional looks at this scene and feels sorry for himself; yet it is the normal environment in which we practice and live. I suggest that this environment is a tremendous challenge to the professional. The European economy that has historically been guided by professionals has not been notably successful in creating and maintaining a stable society. At this moment there is a growing group of creative businessmen in this country—like Walter Paepcke of Container Corporation of America, William M. Stuart of Martin-Senour Company, John D. Rockefeller III, John Hay Whitney, and many others—leading and guiding American industry into new channels of thought and expression. These men have challenged the creative professional to contribute something new and different and in their own image, rather than in an image of the businessmen. In effect, they have said, "Show us ourselves, not as we believe ourselves to be, but as you think we should be." As professionals, we must realize that this transfer of decision required great courage on the part of businessmen who have not been seriously trained in any other major areas than sales. Therefore, a venture into esthetics, originality, philosophy, creative design, and so forth, puts them at a serious emotional disadvantage, a condition that is not compatible with their own self-esteem.

The problem—how to pursue successfully a professional practice in our volatile American economy where the businessman is discovering art and design (and where we should discover the businessman)—is a sink-or-swim challenge to the architect, engineer, and designer, rather than to the businessman. It is up to us to re-evaluate our habits and present our services in our own best light. We must understand the psychology of a businessman's mind—and his dedication to his tremendous "sell" philosophy. We have a responsibility to interpret intelligently professional services to the businessman in his own terms to the point where we can command the respect that will allow us to practice our professions as we see fit. It is still very easy to undermine a businessman's confidence in the arts, particularly easy because he usually does not have any confidence in us to begin with and does not expect to get it in his lifetime. Therefore, when a professional in the arts attempts to set up a primarily professional service on a truly competitive or corporate basis the businessman is prone to discount the so-called professional artist as a business image and distrust him as a dedicated professional.

Perhaps our major problem is not so much the immediate violation of professional standards by the wilful and oftentimes confused or desperate offender, as it is to completely review and define the relationship between professionalism and business in America. I am reasonably certain that the European standards of professionalism cannot be eternally applied in their entirety to the American scene, and since there is some indication that the American businessman is broadening the scope of his own cultural outlook, it is conceivable that we might all review *Professionalism 1958* and draw up a more realistic code of practice. We should then rigidly enforce that code within the scope of our various practices.

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* *Raymond Spilman is past National Vice-President and Director of American Society of Industrial Designers. He has his own design office in New York.*

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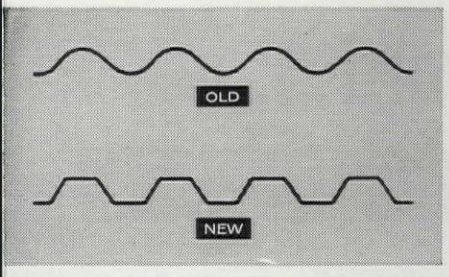

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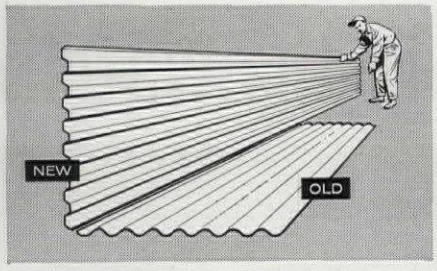

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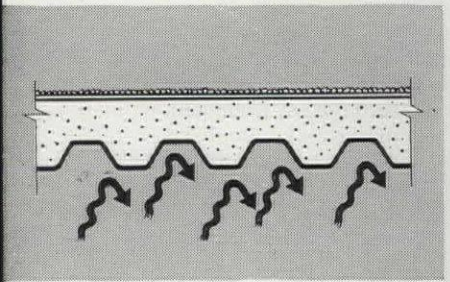

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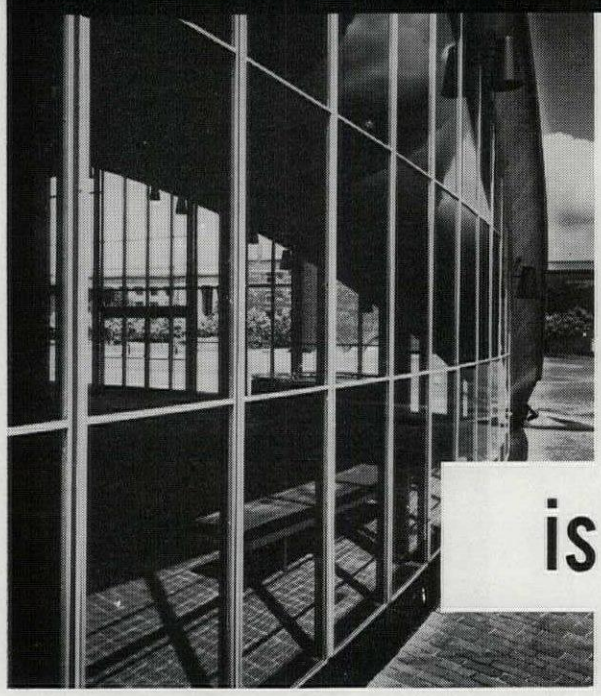

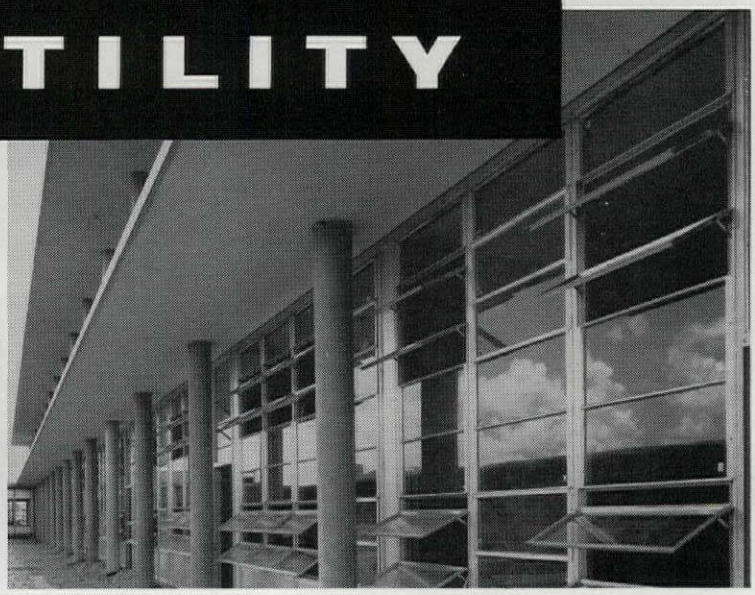

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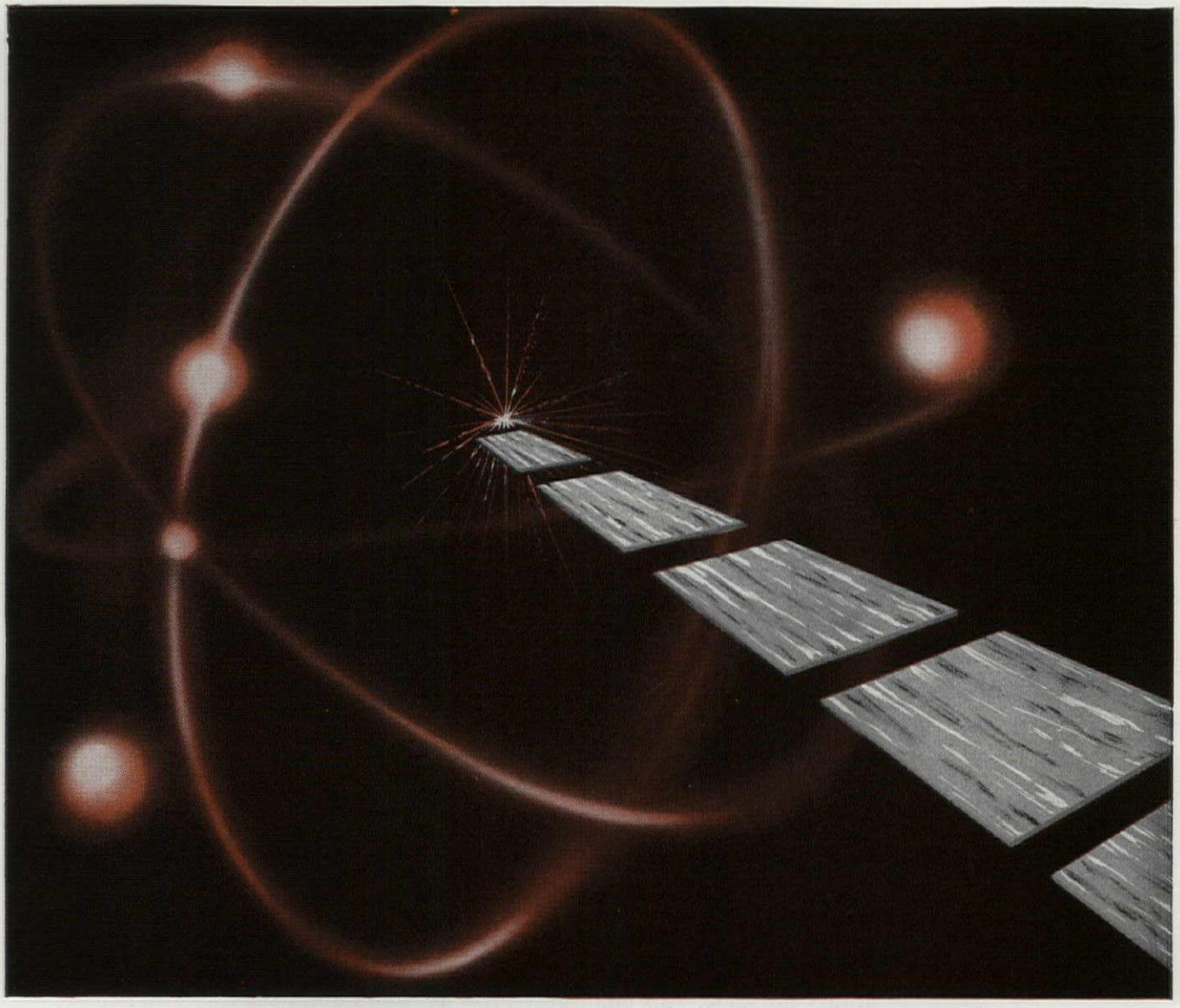

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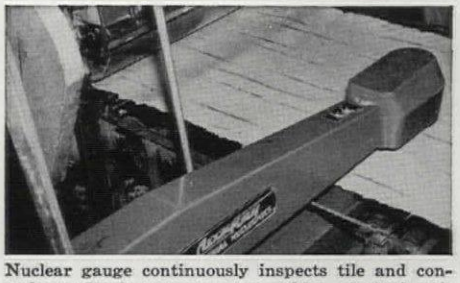

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"improves the quality of our masonry..."

First Methodist Church, Garden City, Kansas. Lehigh Mortar Cement was used with brick, concrete block, stone, and tile.

"We have used Lehigh Mortar Cement for several years," reports R. W. Scott, masonry contractor, "and find that its very good plasticity improves the quality of our masonry. No matter how many carloads we use on a job, the end result is always the same. This uniformity saves us money and trouble."

And architect Howard T. Blanchard adds, "Due to the fine results on previous projects, we readily approved Lehigh Mortar Cement for this project, and were equally pleased with the results."

It is reports like this that explain why Lehigh Mortar Cement is preferred by builders and approved by architects.

Architect: Howard T. Blanchard
Garden City, Kansas

Contractor: Stehwein Construction Co.
Garden City, Kansas

Masonry Contractor: R. W. Scott
Hoisington, Kansas

Dealer: McAllister Fitzgerald Lumber Co., Garden City, Kansas

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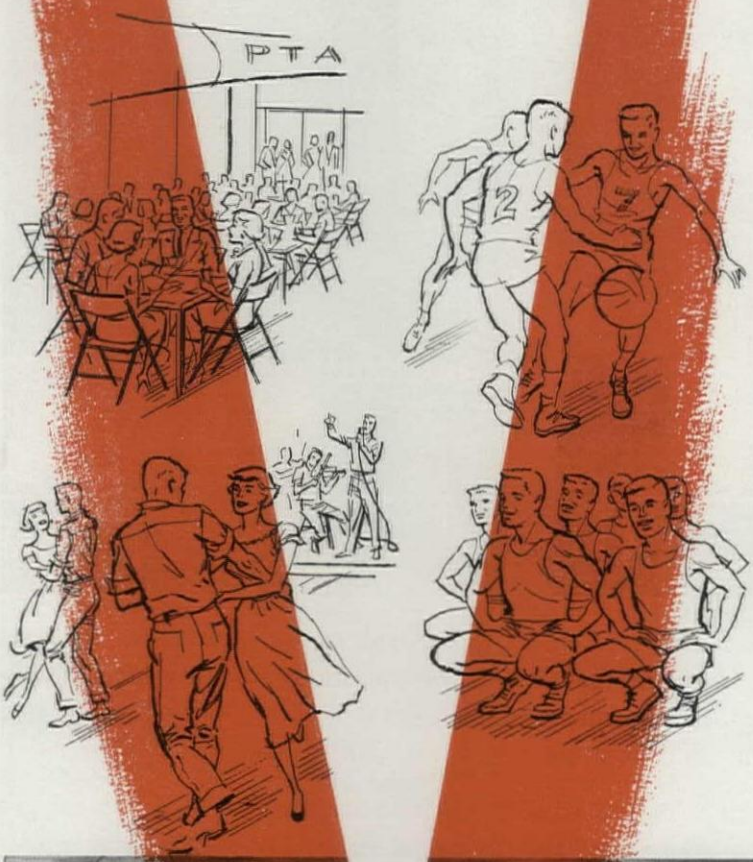
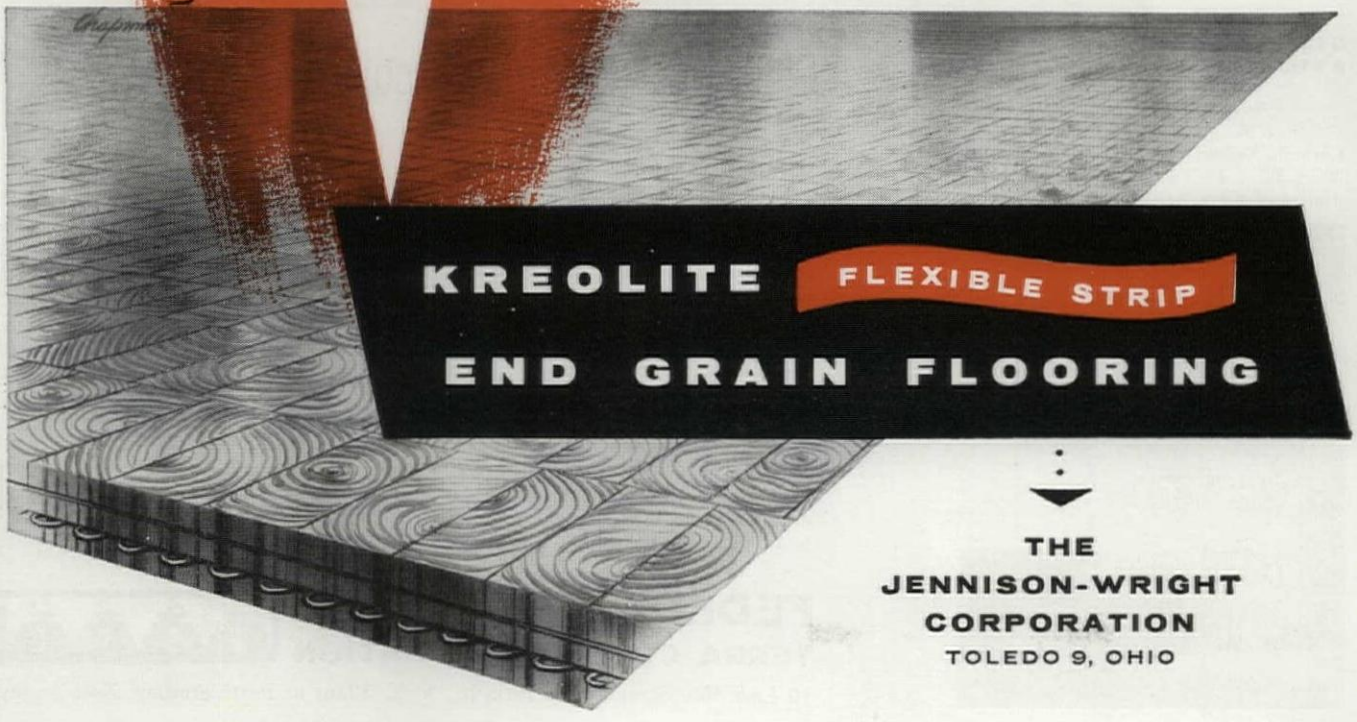


Typical gym floors are subject to many kinds of activities, some of which can mar and scar ordinary flooring. But, with Kreolite Flexible Strip End-Grain Wood Floors, you have flooring that welcomes *any* kind of action and retains its original beauty.

Durable Kreolite gym floors are also noted for their extra resiliency which makes them kinder to feet and less fatiguing. Besides being easier on the feet, Kreolite floors are also much easier on school budgets because they require less maintenance and last longer.

Write today about new Kreolite installation or replacement floors.



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LONG ISLAND CITY, N. Y.
Gustave Iser —*Architect*
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Ceramic Veneer in Sea Mist Green units 20" x 24" x 1¼" was specified for spandrels and piers.

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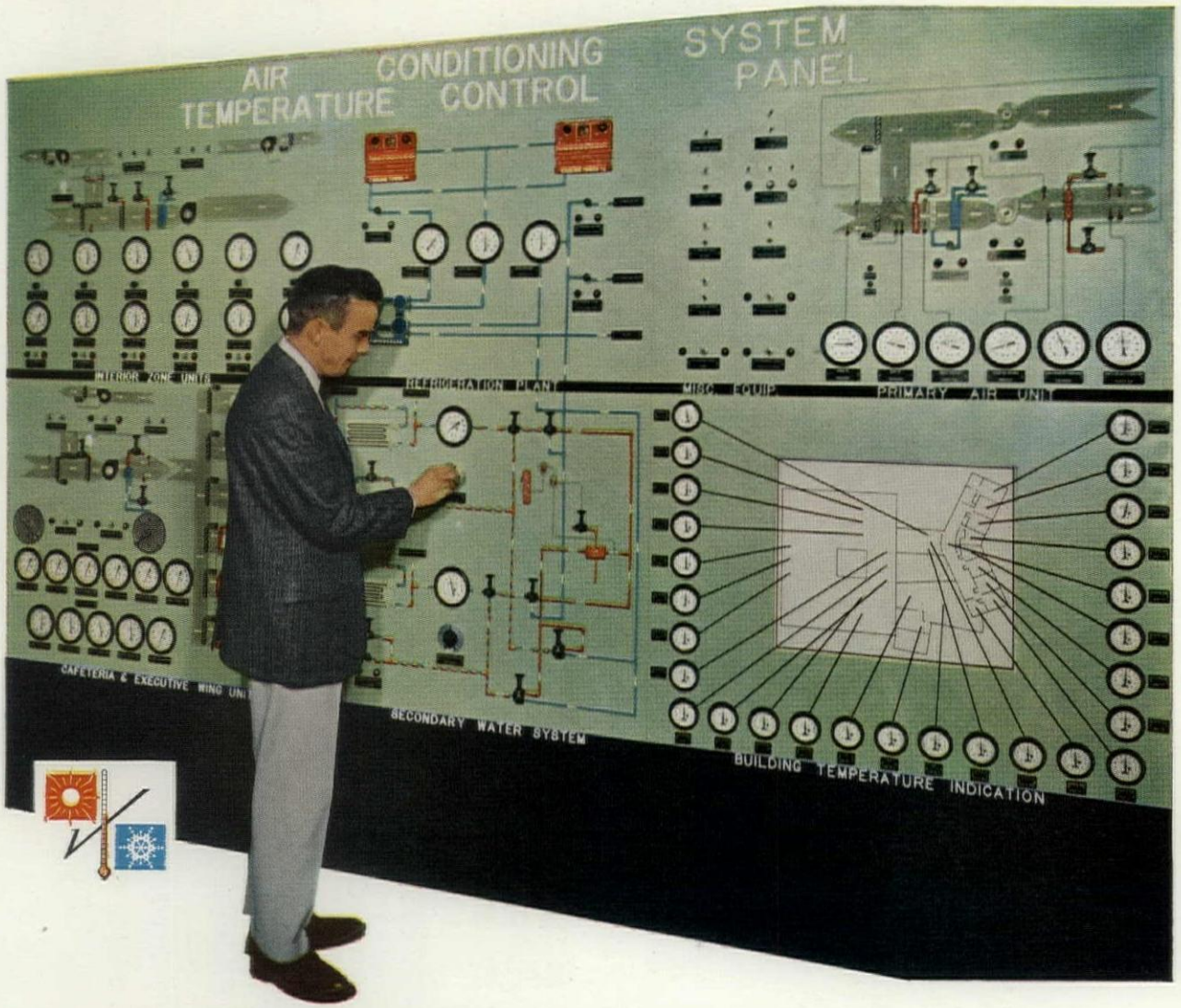

Johnson Control Centers Set the Pace in Comfort, Simplify Air Conditioning Operations

A highlight of Guarantee Mutual Life Company's new home office in Omaha, acclaimed one of the nation's most modern buildings, is this air conditioning Control Center by Johnson.

The Center allows the engineer to supervise and operate all 10 air conditioning systems right from his office! Guiding him is a *continuous* visual display of vital data that shows at a glance the exact operating status of each system and gives him an instant check of building temperatures at strategic control points. To adjust key temperatures, he merely turns a dial! Other functions are equally easy and efficient.

The advantages of the Johnson Control Center are impressive. It simplifies an otherwise complex job, cuts fuel and power consumption, prolongs equipment life. It saves an untold amount of time. And it assures a consistently ideal working climate for Guarantee Mutual's employees.

Johnson Control Centers are now bringing similar benefits to buildings of all types and sizes. A nearby Johnson engineer will gladly supply you with complete information. Johnson Service Company, Milwaukee 1 Wisconsin. 105 Direct Branch Offices.

Guarantee Mutual Life Company, Omaha, Nebraska. Leo A. Daly Co., architects-engineers; Peter Kiewit Sons Co., general contractor; Natkin & Company, mechanical contractor; all of Omaha.

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New fashion in color from Alcoa for aluminum-clad buildings!

With a characteristic flair for color, the Fashion Institute of Technology Building brings a new hue to the New York scene this spring: a curtain wall building of Alcoa® Aluminum in rich Architectural Brown, 4020. The facade of 12-foot panels is beautifully accentuated by Alcoa Gold 4010 window frames. Gold mullions highlight the auditorium, too.

As part of Alcoa's *new look* for architecture, this development brings the number of colors available for aluminum-clad buildings to nine. To help you color-style your next building, and for color swatches and specifications, contact your nearest Alcoa sales office, or write: Aluminum Company of America, 1890-H Alcoa Bldg., Pittsburgh 19, Pa.

Building: Fashion Institute of Technology, New York, N.Y.; Architect: DeYoung, Moscowitz and Rosenberg, New York, N.Y.; Aluminum Subcontractor and Panel Fabricator: General Bronze Corp., Garden City, L.I., N.Y.; Alcoa Approved Architectural Color Processor: Stolle Corporation, Sidney, Ohio.

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preview for september

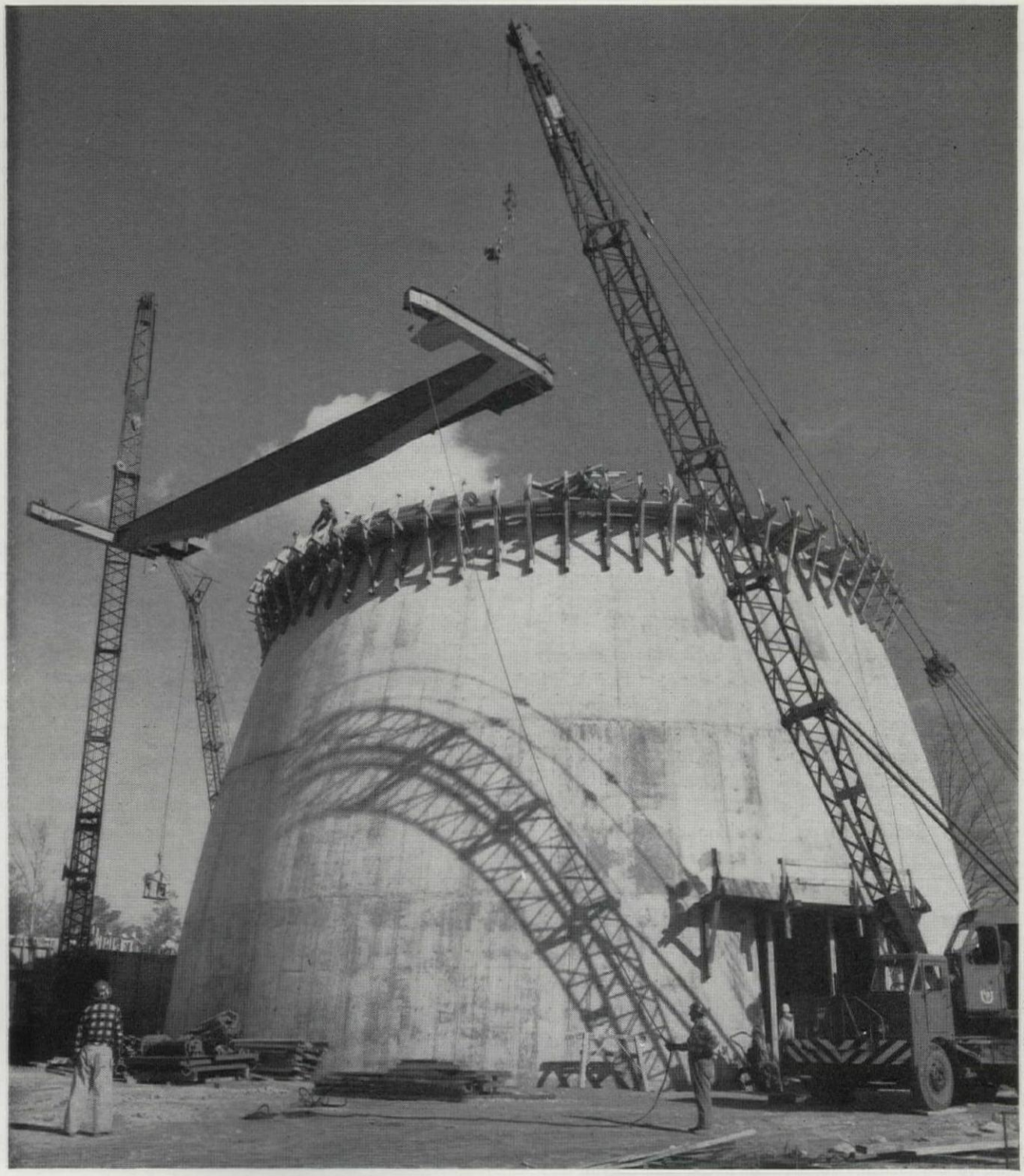
PROGRESSIVE ARCHITECTURE

SEPTEMBER P/A will be another "special interest" issue, this one dealing with all aspects of lighting architecture. A stellar cast of contributing authorities has been assembled for September, headed by Guest Editor Henry Wright. They are C. M. Cutler, Abe Feder, Richard Kelly, and Kenneth C. Welch.

Lighting—both artificial and natural—will be discussed in such articles and features as "Lighting Is Architecture" (Wright); "Light is an Architectural Material" (Feder); "Brightness Relationships in Classrooms" (Welch); "Design Effects through Variations in Lighting" (Cutler); and an analysis of "Lighting Principles" as exemplified by his own apartment (Kelly). Five buildings notable for their use of lighting as a design tool will be featured in detail.

The September *Lighting* issue of P/A is expected to follow the high example for reader-interest and reference-value set by such "special interest" issues as Modular Assembly, Air Conditioning, and Curtain-Wall Construction.

lighting is architecture



Turner Construction Company

ATOMIC ARCHITECTURE—NOVEMBER P/A

In November, P/A will publish a Special Issue on one architectural-engineering challenge that is so new that a mere handful of architects has even a nodding acquaintance with it—design of buildings that house or are related to nuclear reactors. The reactor cores themselves are designed by nucleonics experts; but the architect and engineer design the housing and attendant facilities. In our November issue, technicians provide background data to help the architect-engineer understand just what it is he may be called on to house, and we shall show several completed reactors—power reactors; research reactors; special-purpose reactors. Among those to be presented is the Industrial Reactor Laboratories in Plainsboro, New Jersey, of which a handsome under-construction photo is shown above. Architects for "IRL" are Skidmore, Owings & Merrill; Nuclear Facilities Design by AMF Atomics, Inc.

p/a news bulletins

• AIA Delegates, at 90th Annual Convention in Cleveland, Ohio, elected as President, John Nobel Richards of Toledo. Other officers elected were: Philip Will, Jr. of Chicago, 1st Vice-President; Henry L. Wright of Los Angeles, 2nd Vice-President. Edward L. Wilson was re-elected Secretary; Raymond S. Kastendieck, re-elected Treasurer.

Busy, well attended Convention reaffirmed AIA stand against rebuilding East Front of U.S. Capitol, heard Anthropologist Margaret Meade define architect's position as most important in a society undergoing change; discussed in seminars the architect/homebuilder relationship, office-management problems, moves toward more-accurate estimates, educational responsibilities, professional status, fields for research, and methods of programming—as well as ways to find construction money.

Construction Specifications Institute, meeting prior to AIA sessions, also had successful Convention in Cleveland. CSI concentrated on working seminars and how-to-do-it sessions. J. Stewart Stein, Chicago architect, was elected President. Plans were laid to have independent Conventions in future years, and to continue emphasis on objective, technical discussion of specification matters.

• Long-range building forecast issued by Bureau of Business and Economic Research, University of Miami, in Florida, indicates that nearly 5.8 millions of home-starts are expected between 1958-1962. In 12-month period (July 1, 1958—June 30, 1959), nonfarm units will total 1,169,000 according to current estimates.

• AIA-ACSA Conference on "Teaching of Architecture" was held this year on island of Nantucket. This meeting, designed to improve teaching skills and define teaching goals, was partially sponsored this year by Graham Foundation (further helped by gifts and donated services). Discussion ranged from technical subjects to esthetics; from philosophy to problems of practice.

• In New York, Committee on Slum Clearance, headed by Robert Moses, voted to forego $10 millions in Federal aid over a five-year period, to make this sum available to newly formed Urban Renewal Board for its West Side rehabilitation project. Formal application for funds will be made by Urban Renewal Board to Housing and Home Finance Agency, which has indicated its approval of the undertaking, provided that appropriation would not be in addition to original New York allocation.

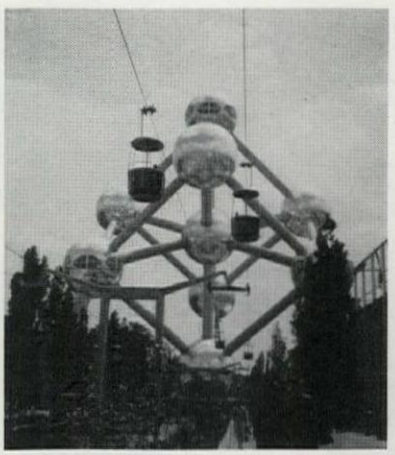
• Metal Curtain-Wall Division, National Association of Architectural Metal Manufacturers, has created several working committees to promote its activities: Research and Development, headed by J. M. Roehm, Director of Research, Kawneer Company; Legislative, directed by D. A. Newman, Newman Brothers Co.; Labor Relations, chaired by Emil M. Pollak, Illinois Bronze Works, Inc.; Market Development, supervised by W. H. Withey, Armco Steel Corp. The new Consultation Committee, under direction of R. A. Biggs, Electro Metallurgical Div., Union Carbide and Carbon Corp., will co-ordinate efforts of Association with other related groups.

• Selected for Awards by Industrial Designers Institute in 1958 Design Awards Program were: Melvin H. Boldt, for design of portable washer for AMI, Inc.; S. M. Highberger, for "Secretary" Model Thermo-Fax Copying Machine, for Minnesota Mining & Manufacturing Co.; Eero Saarinen, for Pedestal Group, for Knoll Associates. Presentation of Awards took place June 19 in Chicago, Ill.

Sibyl Moholy-Nagy

BRUSSELS FOR THE DILETTANTE

The World's Fair at Brussels, like any other man-made enterprise, has its key—a particular detail that reveals its true nature. The planners of this mammoth show had meant it to be the ATOMIUM, visible for dozens of miles if the sun hits the gleaming metal **1**. But the Atomium is as meaningless as a giant child's rattle—clumsy, hollow, and pathetically unrelated to the invisible forces that might well be the end of all of us. The key is much rather a succession of wooden frames, **2**, thinly constructed and thinly painted, that are meant to divert the eye of the incoming visitor from the solid Neo-Classicism of the old Grand Palais, built for an earlier World's Fair. These shoddy frames trail off as soon as the pre-atomic architecture has been left behind and we Supermen can no longer be reminded that we are not our own beginning. Steel frames, glass boxes, and hyperbolic paraboloids take over now. What do they stand for? Science and Technology, of course, the wave of the future, the conquest of the universe, the glorious life of plenty for all. (Additional clichés in the official Exhibition Catalogue.) Be-



1

Photos: Sibyl Moholy-Nagy

2

• Harold B. Gores, Superintendent of Schools, Newton, Mass., has been appointed first President of Educational Facilities Laboratories, Inc.; nonprofit group recently formed by Ford Foundation $4.5 millions gift, for research and experimentation to improve school and college facilities.

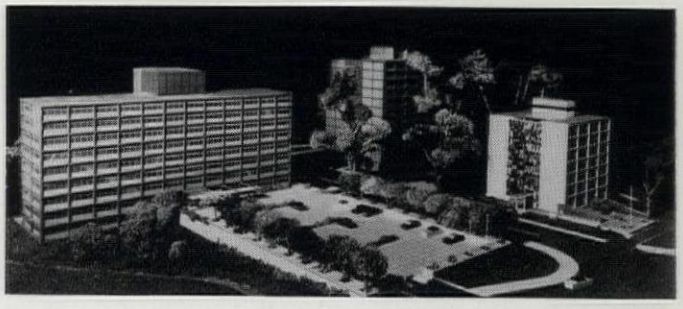
• Mark Tobey, West Coast artist, has been awarded top prize at 29th Biennale Art Exhibition, Venice, Italy, for his "36" painting in the exhibit. Tobey is first American to win highest recognition at international exhibit since 1895, when James MacNeil Whistler copped honor.

• Recent election reveals that Charles H. Topping will preside over Building Research Institute for coming year . . . . Roy R. Neuberger, New York, has been elected President, The American Federation of Arts, succeeding James S. Schramm, Burlington, Iowa. . . . Association of Women in Architecture elected Mary Jane Fournier, St. Louis, Mo., Architect, as President for 1958-1960 period.

• Winner of first prize in competition for design of private and public multiple-dwelling housing at low cost, sponsored by New York State Division of Housing, was Pratt Institute architectural student, Eliezer Frenkel. Second prize was awarded to David Basch, Cooper Union.

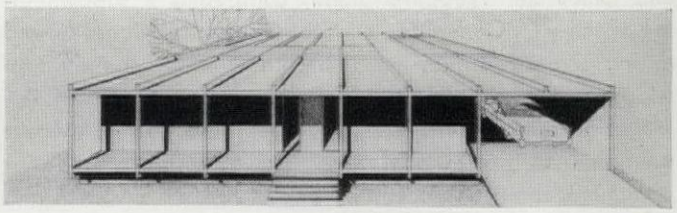
• Third Architects' Tour of Japan, open to architects and their families, will take place in October. Information from: Kenneth M. Nishimoto, 263 S. Los Robles Ave., Pasadena, Calif. (who will lead the tour).

• University of Pennsylvania has been awarded $36,000 grant from Rockefeller Foundation, for continuing and expanding study of landscape architecture in relation to urban development, which has been under way for two years.



• Now under construction in Caracas, Venezuela, is office building (above) for Socony Mobil Oil Co. de Venezuela. Designed by Caracas Architect Don Hatch, structure will be headquarters for Socony's Venezuelan activities. Model shows building and garden mall in relation to new U. S. Embassy (right) and a proposed office structure.

• Utilizing new building materials—primarily a modular, lightweight, cellular-concrete panel (Calsi-Crete), manufactured by Continental Materials Corp.—Terrace House (below), designed by Peter Blake and Julian Neski, features maximum indoor/outdoor living for homes placed on relatively small suburban sites. Living and sleeping areas, connected by semi-open corridors, comprise 1300 sq ft of total 4100 sq ft interior. Remaining space is devoted to indoor patios, reflecting pool, play areas, and indoor landscaping, sometimes covered by plastic skylights. Original living unit can be expanded as needed.



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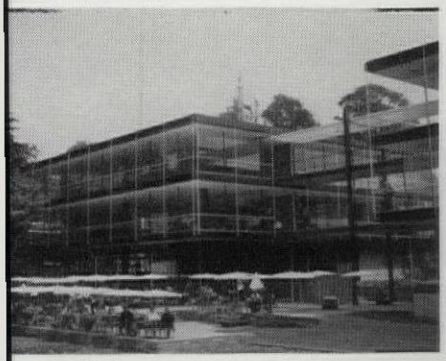

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5

yond the Atomic Rattle stretch avenues of glass boxes on stilts, followed by more glass boxes on stilts **3**, some of Miesian austerity, some adorned with spiky metal abstractions, of which one never wants to see another example **4**, and some with paraboloid roofs. Sometimes the blacksmith art is flat, or it curves and turns like Calder's Pond Mobile. Finally there is one metal sculpture—magnificent, superb craftsmanship, completely original **5**. A Pevsner, a Gabo? No, the propeller of a Turbo-Jet! And that is what remains of

(Continued on page 26)

Washington report

by Frederick Gutheim

May construction contracts reached the highest level for any single month in history. Whether this means that construction is leading the economy out of the slump is conjectural. Whether it justifies the Administration's decision not to expand the scale of Public Works activity is debatable. Certainly it reflects the unprecedented demand for buildings of all types that our burgeoning population, increased urbanization, and social and technological changes have prompted. The higher construction rates, while reflecting gains in productivity, also raise questions about the prospect of inflated building prices. Housing accounted for more than one-third of the roundly $3.5 billions May contract awards. The May figures, as presented by National Bureau of Economic Research, Inc., are the more dramatic against the dullness of the earlier months this year. For the five-month period, this year's total building was down about 5 percent less than 1957.

• The Fifth Congress of Union Internationale des Architects, meeting in Moscow last month, saw an exhibit of American buildings prepared under the direction of Henry Churchill and Chloethiel Woodard Smith, composing a subcommittee of the AIA Committee on International Relations. Viewed during a brief display here, before it was dispatched to Moscow, it contained items familiar to any reader of this magazine (one picture per building). There was an evident confusion of professional aims and a desire to make a statement about this country's way of life, its affluence and productivity, its mechanization and mobility, and other things about which we, as Americans, appear self-conscious.

These are resolved in a presentation of professionally interesting work of unarguably high standards, but in a non-technical fashion, i.e., by employing popular rather than architectural photography, by suppressing plans and technical data, and not saying too much about any one thing. Once over lightly is the formula! Among the themes that survive this treatment very well are those of architectural open spaces and prefabricated housing. The handling of transportation, cultural and religious buildings struck me as less successful. Housing, to which a good part of the exhibit was devoted, seemed cluttered and confused. I wished the exhibition had a clearer and firmer point of view. And I wished that the genuflection to the Soviet passers-by had been eliminated. I think we need to put our best foot forward, without equivocation, and without any tedious explanation and apology. I am not sure the Russians will ever like us, our ideas, or our way of life. But I am sure they can be brought to respect our accomplishment in fields so clearly comparable to those in which they would like to excel. This was not the intention of those who prepared this exhibition, and I will be curious to hear from our architects who visited Moscow what sort of a reception our exhibit received.

• The trend toward office buildings with integrated parking facilities is illustrated by a number of projects now under construction here. The Cafritz development at Connecticut and Florida Avenues (still remembered as the site for Frank Lloyd Wright's ill-fated "Crystal City") continues that builder's efforts to move the tenant's parking space as close as possible to his desk. If anybody in Wahington is really aware of this problem it is probably National Automobile Dealers Association, which has announced a major addition to its headquarters building on K Street, to contain three

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Brussels ***(continued)***

this whole battlefield of Technology as Architecture: the machinery conveys its own meaning but the man-made interpretations fall flat—fall almost flat, because the roller-coaster structure of the French Pavilion **6** and Le Corbusier's "Poème Electrique" for Phillips, Holland **7**, look as if they might fall any minute.

It's not only the jumble of structural parts that repels the visitor; it is especially the brutal misconception of exhibition space. If the fig-leaf frames before the Grand Palais are the key to our visual helplessness, the Poème Electrique, performed every hour inside Le Corbusier's building, is a pretentious key to our spiritual embarrassment. Standing in a "ghost house," known from any country fair, the visitor is treated to a cacaphonous symphony by Varèse while the gleanings from 50 years' newsreel cutting are projected in mad disorder across the slanting planes. The whole old bag of surrealist tricks is emptied once more—apes and eyes, Chaplin and Clara Bow, babies and atomic clouds—amid squeaks, grunts, whistles, screams. Only once does a solemn choral intervene: when The Master's Algiers, Marseilles, and Chandigarh projects flash over the dizzy planes.

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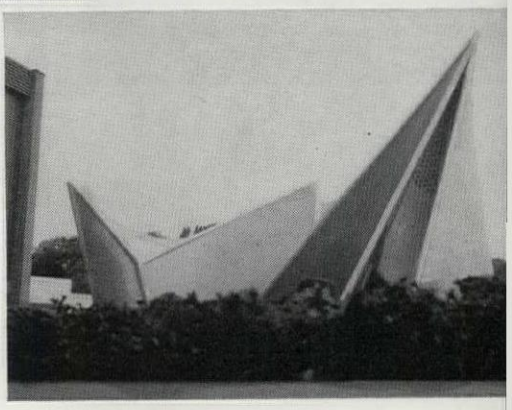


7

levels of parking with space for 75 cars.

• On the heels of one good solution to an architectural preservation problem—turning Robert Mills' original Patent Office building into a National Portrait Gallery—Rep. DeWitt Hyde has come up with perhaps another. He proposes to earmark the vast, barny Pension Office, built in 1885, for conversion as a National Air Museum. This institution, part of the Smithsonian complex, tracing the evolution of the science by the actual aircraft themselves, has been housed in a pair of galvanized-iron buildings. "The Spirit of St. Louis" is one of the sure-fire hits in the collection. But the bulk of the aircraft comprising the collection—from World War II—still lies crated in elephant Quonsets at nearby Andrews Field, awaiting space for their exhibition. Smithsonian officials, with a view to soliciting industry funds for such a building, have proposed a site on the Mall. Here it would be absurdly out of scale, particularly by comparison with Pope's National Gallery of Art. Rep. Hyde's proposal is a good one, assuming the desirability of such an institution at all. While I confess to being an aircraft fan, I have never been able to envisage exhibits of this sort in the type of museum proposed by the Smithsonian and designed by McKim, Mead & White.

Full-size aircraft, up until now, but especially from here on into the age of flight, comprise a collection so huge and so exhausting that it probably belongs at some airport rather than in the center of the city. Much of it does not even belong in a building. A highly selected half-dozen or so full-size exhibits, plus a display of models and smaller exhibits, would fit the Pension Office perfectly and gain rather than lose from the counterpoint of its Victorian architecture. This proposal is worth further careful study.

• As an issue, preventing extension of the East Front of the Capitol has been losing steam. Facing the adamant opposition of Speaker Rayburn, to whom the project has become an intensely personal affair, there seems little chance of getting the House to reconsider its earlier approval of the extension plan. As of this writing, the Senate could probably muster enough votes to amend the earlier legislation, which appears to make the extension mandatory. It is also within the realm of possibility that, despite the Speaker's objection, the Commission on the Extension of the Capitol could strike a decisive blow against the project. But the presumed opposition of the House remains the chief factor.

As to the merits of the case, Ralph Walker said the last word when he pointed out that the East Front could be fully repaired and an entire new separate office building erected for the money the extension project is estimated to cost. Nevertheless, if Congress adjourns without further action on this measure it seems probable that the Architect of the Capitol will let construction contracts immediately, unless AIA (still fighting) can block demolition.

• Whatever the future of the Capitol may be, there is no doubt the legislative branch of the Federal Government is expanding at an unprecedented rate. A new Senate office building will be occupied this fall. Construction has begun on a new House Office building. Both projects will give space for expanding office staffs of legislators, Congressional committees, and services. Further parking facilities are also being planned. Finally, on the lower slopes of Capitol Hill the Taft Memorial, designed by Douglas William Orr, is approaching completion, and will shortly receive its superb set of carillon bells.

• The Octagon, historic house and headquarters of the American Institute of Architects, will stand alone in a block which the General Services Administration will shortly be authorized to purchase. This will ultimately be used as a Federal buidling site.

8

9

No—technology as content has nothing to offer. The repetitiveness of the clichés is boring beyond endurance. Technology posturing as architecture is a fraud. It is a lesson one can learn in Brussels, not only from the many failures but more convincingly from the few successes. Few buildings are completely satisfactory—meaning a complete interaction of architectural form and exhibition space. All in all, but three, at least for this visitor.

But there are a few interesting attempts at an escape from the technological jungle, some brave tries at meaning expressed with technological means. The two most curious compromises in this direction are by Britain and Russia. The English Pavilion is a gleaming shell structure, straight out of Nervi. It houses the most unlikely exhibit of the whole Fair: a tool-chest of Kingmanship, with scepters, swords, crowns, and orbs arranged on camphor-smelling red-velvet beds, around a gigantic color postcard of Her Majesty. At the approach to this royal oddity sit Moore's famous King and Queen, **8**, looking unbelievably prim, and forcing the visitor to identify their faceless heads with Philip and Elizabeth. The other ideological oddity is the Russian Pavilion—a huge glass barn filled to the hilt with the latest machinery and atomic research material. But the walls bear giant murals, as if this were 1920, an evangelical Lenin, the happy collective harvesters, and Young

(Continued on page 28)

Brussels *(continued)*

Russia on the March **9**. The waiters in the Russian restaurant are the only ones who have gold-braided epaulettes on their blouses — and while I was there the Hi-Fi played the "Radetzkimarch."

There remain the three thoroughly successful expressions of architectural intellect—the brain children of true architecture: Italy's Architecture as Idea, the Netherland's Architecture as Function, and the United States' Architecture as Delight. These three buildings are a rewarding experience.

Italy, the most historical, the most urban, and the most humanistic nation of Western Civilization, decided to display what is its very own: urbs, the town, in its purest essence **10**. Rogers-Peressutti-Carlo have built the essence of the town —agelessly traditional and agelessly contemporary—as it grew along the gentle slopes of Tuscany and Emilia. Whitewashed walls, a careful touch of color, steps, piazzas, rising, falling, with ancient sculptures still participating in a full life. The hilly ground and beautiful trees of the Brussels park have been left as they were, allowing delightful garden effects with a graceful Mascherini dancer floating weightlessly over the lawn **11**.

The Dutch exhibit is the most successful expression of the Function of an exhibition. No competition here between technological gimmicks and contents. The Land is the problem of Dutch existence, and the land is the dramatic person of this exhibit, adequately sheltered in several round and square pavilions which do not intrude. Land is besieged by huge artificial waves, maintained by dykes, worked by peasants. In a refreshing outburst of humor, so appallingly rare in this grim display of our perfection, two figures symbolize all there is to life on this precious land: a bronze Mynherr, solid as a rock, **12**, gazing up into the threatening sky as all dyke people must, and a goat, alive, **13**, grazing on a carefully graded slope.

There remains architecture as Delight that pleases the senses so much that one wants to stay, relax, and look around. This is where the United States has done better than anybody else. One might regret Ed Stone's recent obsession with endlessly repetitious screen walls: here they

10

11

p/a financial news

by William Hurd Hillyer

Even in the midst of this recession the long-term threat is inflation, declares Pres. William A. McDonnell of Chamber of Commerce of the United States. At a recent Congressional hearing, he estimated that if the American dollar should depreciate to the extent suffered by the French franc since World War II a low-priced car would cost $250,000 and a $100 Social Security check would barely buy two pounds of hamburger. McDonnell's homely illustration reflects the sober sentiment of many economists and businessmen (shared by this page). The conservative view, which does not expect nor wish for a too rapid recovery, is gaining ground and the phrase "inflated depression" is no longer a hidden heresy. Instead, such authorities as Pres. Homer J. Livingston of The First National Bank of Chicago clearly imply that once the present business decline ends we shall see a resurgence in strength of inflationary pressures. Consequently, Livingston advocates "weighing with great care changes in monetary and fiscal policies." He does not believe that inflation is a necessary condition of full employment.

Meanwhile, the architect, whatever his economic views, is presented with a ready-made argument against waiting for low costs and "better conditions" talked of by those who consult him in regard to contemplated building construction. In no responsible quarter are falling prices regarded as foreseeably near. On the contrary, the wellworn concept of a hedge against inflation may today be aptly applied to investment in buildings, residential or otherwise.

• "Fanny May" (FNMA) is offering $100 millions 9-month debentures to yield 1.65%. She is using the proceeds to retire maturing 4⅜% debentures. Her ability to lower her borrowing rate so sharply demonstates the ease with which this Federal mortgage institution is able to raise funds for stabilizing the real-estate-loan market. Consonant with this development, further declines in mortgage lending rates are expected by the National Association of Mutual Savings banks, following reported dips of ½% reported from many parts of the country, some rates being slightly under 3%. Partly as a result of a large savings pileup and consequent borrowing ease, residential starts are running ahead of 1957's midyear pace. Marked increases in apartment-house erection and other rental enterprises are foreviewed by both the National Association of Real Estate Boards and the U. S. Savings and Loan League. The latter-named organization notes that multifamily construction now accounts for 20% of total housing starts, a six-year percentage record.

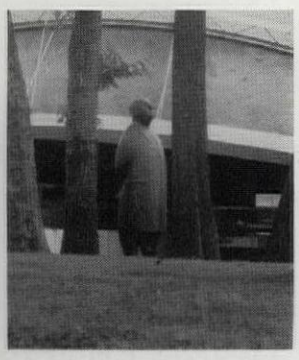
• The Federal Reserve System lacks the power to control an inflationary wage-price spiral, the Brookings Institution advises. "Whatever the state of the budget, if wages and other costs are rising, prices will rise." Control of inflation

are superbly adequate. The delicate lacework of white and gold contains a noble interior rotunda, roofed by beautifully finished metal-and-glass fins. The perforations keep inside and outside in continuous contact through kinetic patterns of light and shadow. There is nothing one can say for our displays. They range from the ugly (metal sculptures, cut-up photo enlargements stuck in the pool, and Steinberg's repulsive collages) to the painfully ridiculous (three beach cabanas, looking like carnival paper sculptures, **14**, apologizing for the Negro Problem with clumsily edited newspaper clippings, making unwarranted promises for integration.)

But, architecturally speaking, the American Plaza and the rich circular form of the Pavilion virtually sing with the delight of representing a Democracy—infecting even the most conscious skeptic with gaiety.

An I-beam looks the same from Iceland to Timbuktu, and an Atomium at a Summer Fair is a poor joke. What still concerns man more than anything else is man; and Italy, the Netherlands, and the United States had the good sense and the talent to hand over to true architects the task of sheltering man's first concern. To see this refutation of building technology as building content is worth the trip to the Brussels World's Exposition.

12



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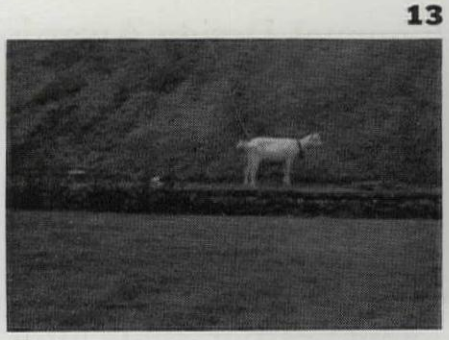

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can only be achieved by control of wages, which neither the Treasury nor Federal Reserve can bring about, the Brookings president-emeritus told the Senate Finance Committee. Federal agencies can depress the economy by cutting money supply, but they cannot cure a depression nor head off a spiral of inflation, his testimony made clear.

• Business and financial keys continue to open fresh architectural vistas in the "shopping center" realm. These vistas, heretofore looking toward broader horizons, are of late tending to invade vertical dimensions as land supply diminishes. For example, the projected Westchester Terminal Plaza Shopping Center at New Rochelle, N. Y.—first of its kind—will embrace nine levels of parking and shopping in an urban area of 12 acres, instead of the 80 to 100 acres occupied by many comparable suburban projects. Furthermore, according to the Biddle Survey, the New Rochelle experiment indicates a calculated effort to draw consumers to the shopping area for activities other than retail purchasing. Already banking facilities are included in the plans of the larger shopping centers and when various recreational and institutional structures are added—as in New Rochelle—this type of project should afford architects augmented opportunities.

• Lumber output is running around 6% below this time last year, and orders are down 12%. Out of the ten customary items listed in Dun & Bradstreet's latest weekly statistics, only two boasted a plus sign as compared with 1957—wholesale food prices and business failures, up respectively 7.1% and 20.3%. Not included in the listing is paperboard, for which new orders show a reported year-to-year gain of nearly 10%. Dollar volume of retail trade, according to last accounts, is running around 4% below comparable '57 figures. As further evidence of the mixed outlook, employment is increasing at the rate of some 1,200,000 a month and "signs of better times ahead are accumulating," informed Wall Street sources believe. Currently home building is "on the upgrade," declares Frederick W. Jackson, Vice-President, Dime Savings Bank of Brooklyn. He expresses the opinion that the slowdown in home building last year was caused primarily by psychological factors coupled with a "temporary" mortgage-money tightness which has recently been succeeded by terms more liberal than at any recorded time. Industrial layoffs in the Dime Savings area, Jackson reveals, "had absolutely no effect" on his bank's 69,000 home mortgages.

• The recession was "long overdue," Executive Vice-President Heimann tells members of the National Association of Credit Men. We shall be out of it much sooner, he thinks, if we do not "try to legislate, sloganize or inflate our way out by cheap money, easy credit, and political handouts." Such desperate measures, he warns, "simply defer the day of reckoning."

Anticipated expansion in construction activity will tend to "alleviate the recession," Federal Reserve Bank of Minneapolis tells its member banks. The effect will begin to be felt during the second half of this year. The Federal Resreve reminds us that the volume of construction activity is still large by comparison with other post World War II years.

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ANNUAL P/A DESIGN

PROGRESSIVE ARCHITECTURE announces its sixth annual Design Awards Program. Awards will be made to architects and their clients for PROJECTS NOW IN THE DESIGN STAGE to be built in 1959 in the United States.

PURPOSE of the Design Awards Program is to give recognition to good design in the period of design development, rather than after completion, in order to encourage the designers and owners of the projects so honored.

AWARDS will be given by a distinguished Jury to best projects chosen from nine categories — COMMERCE, EDUCATION, HEALTH, INDUSTRY, PUBLIC USE, RECREATION, RELIGION, RESIDENTIAL DESIGN, URBAN DESIGN. Awards will be on the basis of site use, choice of structural system and materials, solution of client's program, and over-all design excellence. The Jury will assign projects to the various categories, and reserves the right to withhold an Award in any category, as well as to honor additional projects by CITATIONS.

FIRST DESIGN AWARD will be given for the one best project submitted.

JURY will be composed of Ladislav L. Rado, of the firm of Antonin Raymond & L. L. Rado, New York; Hugh A. Stubbins, Jr., Cambridge; Philip Will, Jr., of the firm of Perkins & Will, Chicago; Minoru Yamasaki, of the firm of Yamasaki, Leinweber & Associates, Detroit; and Milo S. Ketchum, of the firm of Ketchum & Konkel, Consulting Engineers, Denver.

AWARDS PROGRAM

for projects not yet built

JUDGMENT will take place in New York during September, 1958. Winners of AWARDS and CITATIONS will be notified (confidentially) immediately after the Judgment.

ANNOUNCEMENT of the winning projects will be made at a presentation in the home town (if practicable) of the recipient of the FIRST DESIGN AWARD. Winning projects will be presented in January 1959 P/A. As in the past, PROGRESSIVE ARCHITECTURE will arrange for general publication of winning projects in other media, particularly those in the localities of all the AWARD and CITATION winners.

DEADLINE FOR MAILING is September 2, 1958. No application blanks are necessary. Simply send, for each project you submit:

1. Client's name; location and proper name for project.
2. Brief explanation of the program and your solution.
3. Site plan.
4. Basic plans and pertinent sections and details.
5. Perspective drawing or view of model, *unmounted photographs or photostats*—no original renderings, exhibit panels, or models, *please!*
6. Interior plans and sketches, if available.

ADDRESS on or before September 2, 1958, to:

Awards Editor, PROGRESSIVE ARCHITECTURE
430 Park Avenue, New York 22, N. Y.

P/A will carefully guard and return all material that is submitted.

One very important reason for the success of the P/A DESIGN AWARDS PROGRAM has been the quality of its Juries. We are very proud of the fact that this group of architects, and engineers concerned with architecture, has been willing to devote its time and critical judgment to the PROGRAM. Following, in alphabetical order, are the names of the Design Awards Jurors since the inception of the PROGRAM in 1954.

Robert E. Alexander	1956	Morris Ketchum	1955
A. L. Aydelott	1956	Carl Koch	1958
Pietro Belluschi	1956	William Lescaze	1956
Marcel Breuer	1957	I. M. Pei	1958
Gordon Bunshaft	1957	Emil H. Praeger	1957
Felix Candela	1958	L. L. Rado	1959
Edgardo Contini	1955	Eero Saarinen	1954
Arthur Q. Davis	1958	Paul Schweikher	1955
Charles M. Goodman	1955	Fred N. Severud	1954
Walter Gropius	1955	Hugh A. Stubbins, Jr.	1959
Victor Gruen	1954	Harry Weese	1957
George Howe	1954	Paul Weidlinger	1956
Huson Jackson	1957	Philip Will, Jr.	1959
Henry L. Kamphoefner	1958	Minoru Yamasaki	1959
Milo S. Ketchum	1959		

After five years of the AWARDS PROGRAM, it is also interesting to see who has won AWARDS. Since 1954, 31 AWARDS and 112 CITATIONS have been made by the Juries. Award winners to date are the following:

Boston Center Architects *(Belluschi, Bogner, Koch, Stubbins, TAC)*	COMMERCE	1954
Curtis & Davis	HEALTH	1955
Curtis & Davis	EDUCATION	1957
Curtis & Davis	PUBLIC USE	1957
Campbell & Wong	RECREATION	1956
Corlett & Spackman *(with Kitchen & Hunt)*	RECREATION	1958
Geddes, Brecher & Qualls	RESIDENTIAL (Public Housing)	1958
Vernon DeMars *(with Donald Hardison)*	PLANNING	1958
Gilboy, Bellante & Clauss	PUBLIC USE	1955
Bertrand Goldberg Associates	RESIDENTIAL (Apartments)	1954
Victor Gruen *(with Yamasaki & Stonorov)*	URBAN DESIGN	1956
Donald Hardison *(with Vernon DeMars)*	PLANNING	1958
Hellmuth, Obata & Kassabaum, Inc.	RELIGION	1958
Kitchen & Hunt *(with Corlett & Spackman)*	RECREATION	1958
George Kosmak	RESIDENTIAL (House)	1954
Carl Louis Maston	RESIDENTIAL (House)	1956
Richard Neutra & Robert Alexander	URBAN DESIGN	1955
Rufus Nims	HEALTH	1956
Eliot Noyes	RESIDENTIAL (House)	1954
Antonin Raymond & L L. Rado	COMMERCE	1958
Reisner & Urbahn	INDUSTRY	1954
Paul Rudolph	RESIDENTIAL (House)	1955
George Vernon Russell	INDUSTRY	1956
Eero Saarinen & Associates	EDUCATION	1956
Paul Schweikher	EDUCATION	1957
Sherlock, Smith & Adams	HEALTH	1954
Eberle M. Smith Associates	EDUCATION	1957
Eric W. Smith, Jr.	RELIGION	1954
Oskar Stonorov *(with Yamasaki & Gruen)*	URBAN DESIGN	1956
Hugh A. Stubbins, Jr.	EDUCATION	1956
Thalheimer & Weitz	RECREATION	1954
John van der Meulen	RECREATION	1955
Harry Weese	URBAN DESIGN	1955
Minoru Yamasaki *(with Stonorov and Gruen)*	URBAN DESIGN	1956
Yamasaki, Leinweber & Associates	COMMERCE	1957

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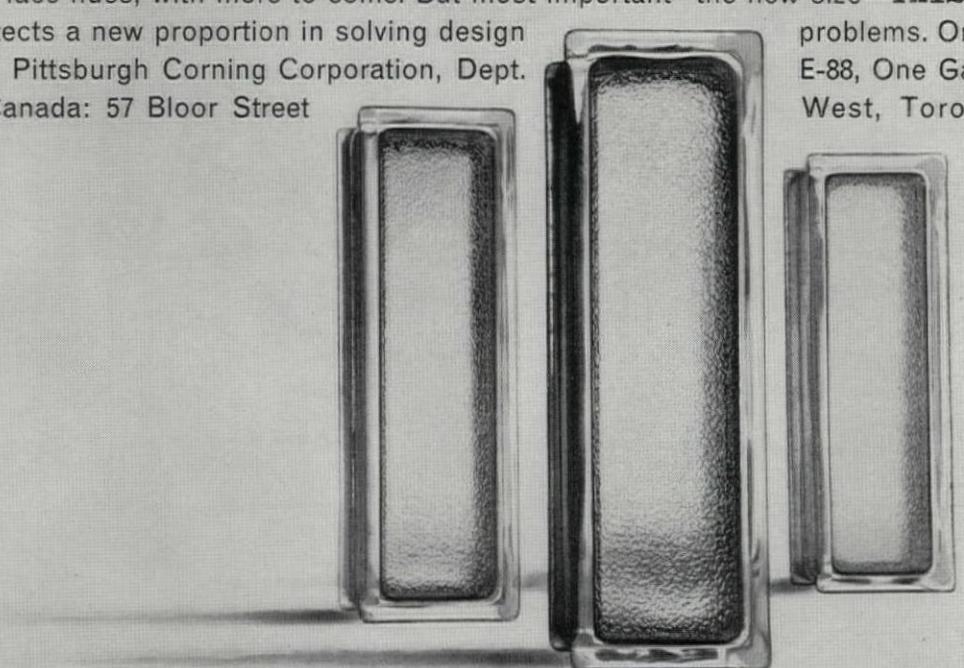

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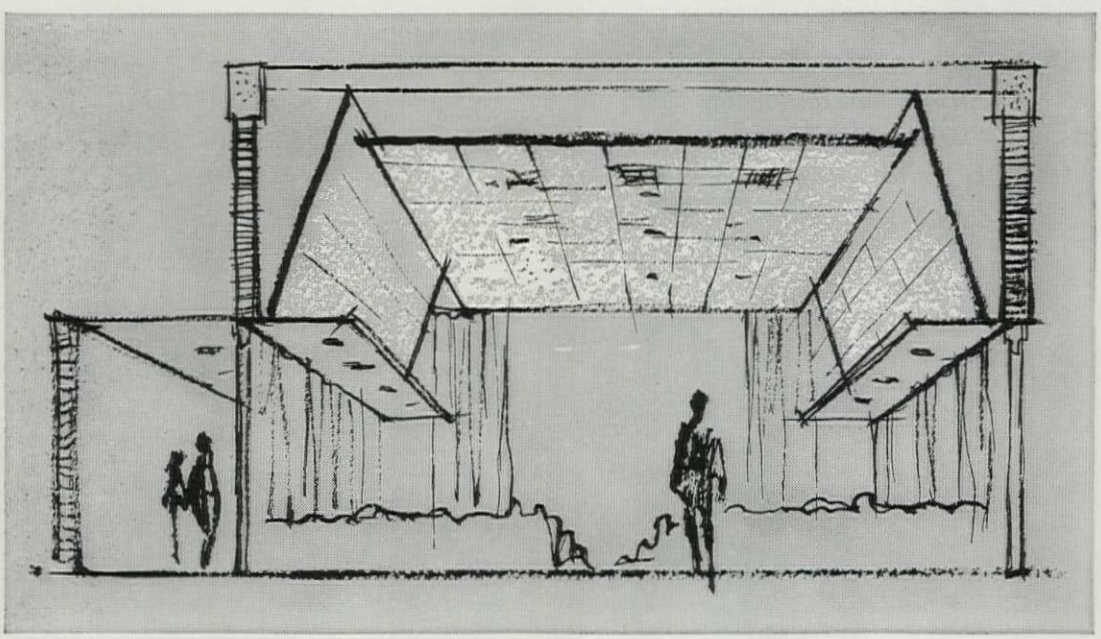

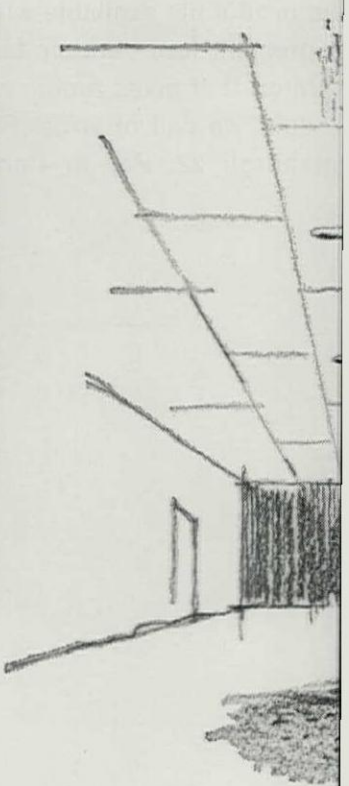

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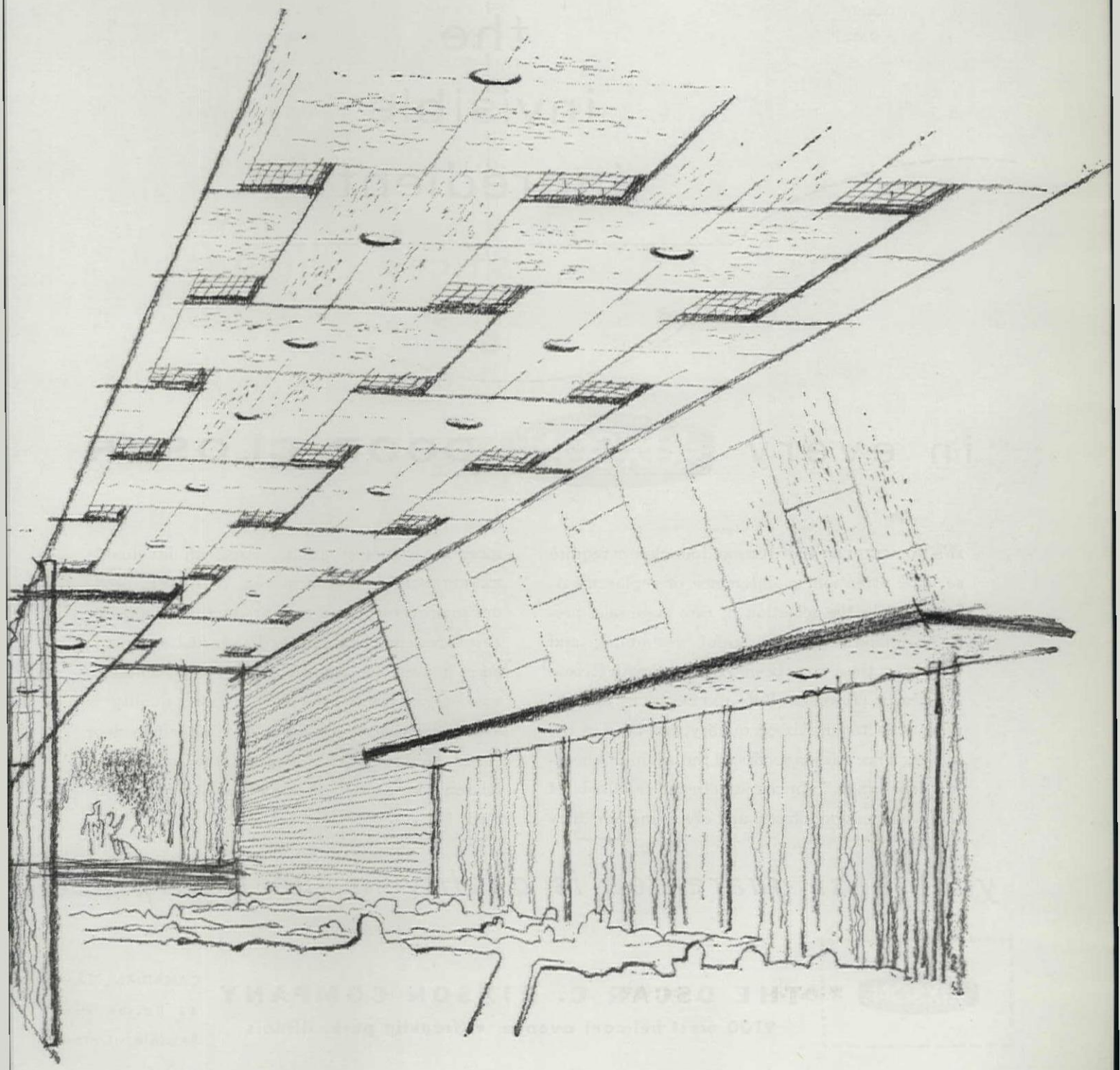

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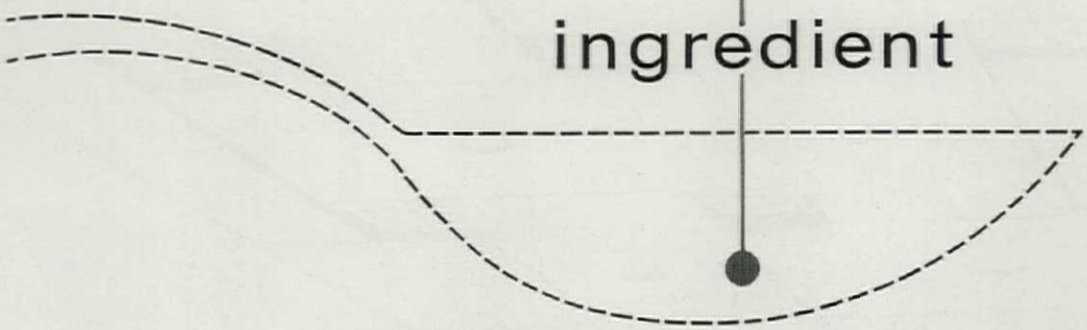

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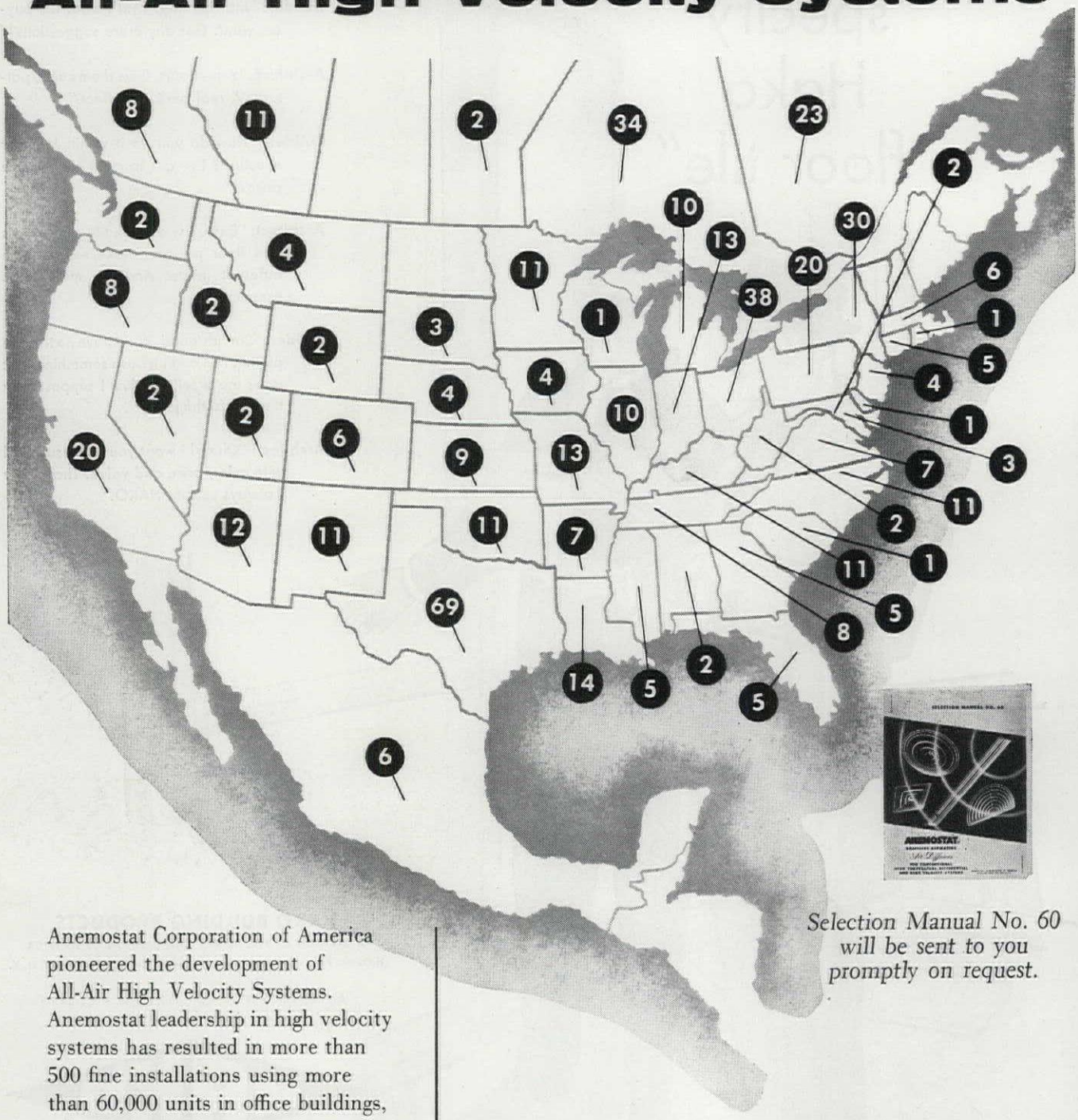

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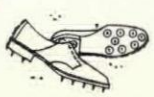

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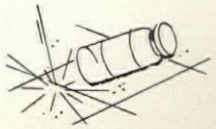

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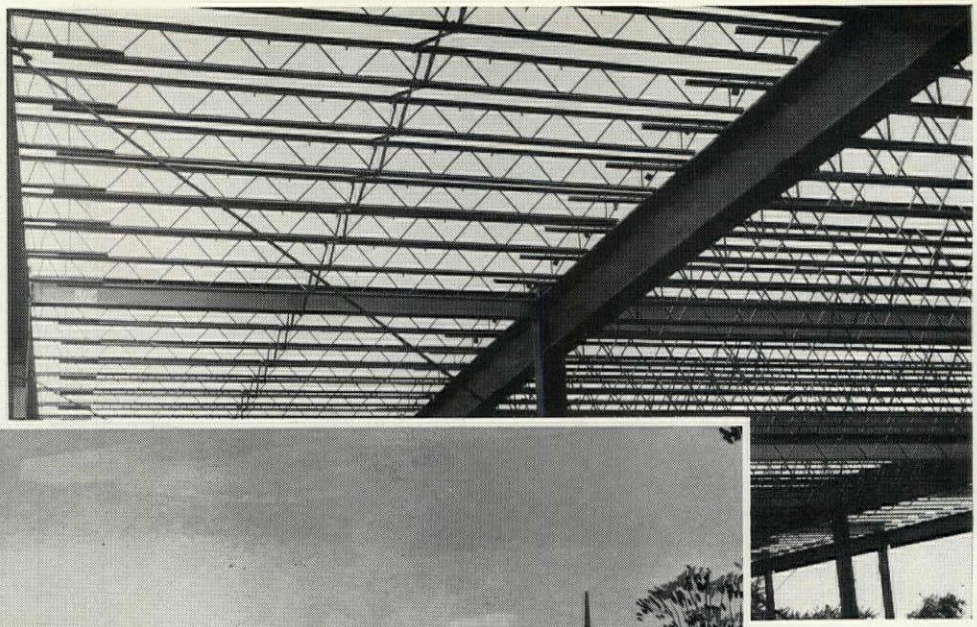

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The reason? Laclede joists fill the need for high strength, light weight and versatility — a key to the simplicity of line and proper design strength typical of today's buildings.

Builders find Laclede joists easy to handle, utilize the open web for convenient passage of conduit, piping, and wiring.

STEEL JOIST MEMBER INSTITUTE

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LACLEDE STEEL COMPANY

SAINT LOUIS, MISSOURI ◆ Producers of Steel for Industry and Construction

Stafford Intermediate School, Stafford, Kansas
Architects: Hibbs, Robinson and Petit, Wichita, Kansas

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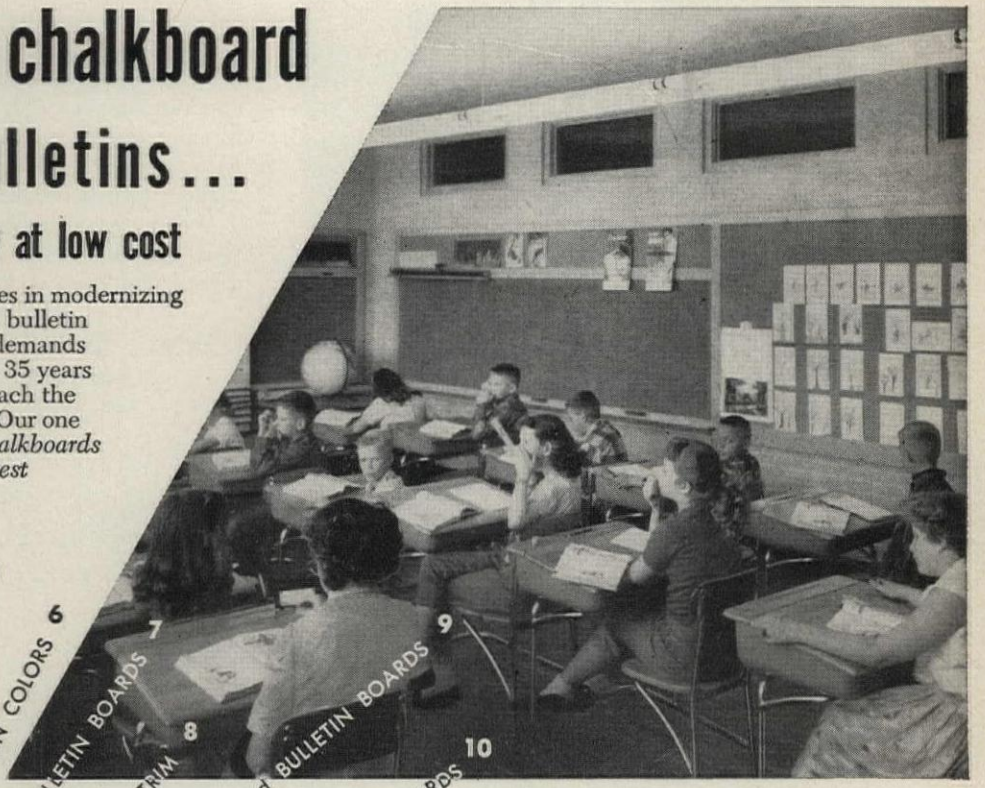
CLARIDGE has made great strides in modernizing and improving chalkboard and bulletin boards to keep pace with the demands of present day education. Over 35 years experience enables us to approach the problem on a know-how basis. Our one ultimate purpose: *the finest chalkboards and bulletin boards with greatest educational value.* Thousands of schools the world over, and many leading architects use CLARIDGE as their standard of quality.



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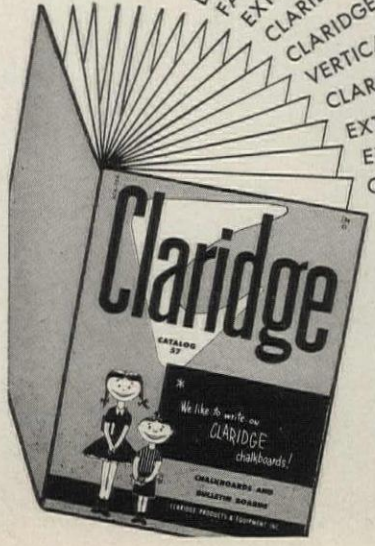
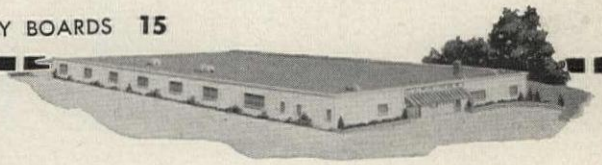
If you've a chalkboard or bulletin board PROBLEM . . . for new building or replacement or remodeling . . . send for Catalog '58 It contains a vast amount of information which can help you solve your problem.





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New Overline® TILT-A-FRONT encloses classrooms faster... saves 60% in field erection time

Tilt-A-Front is a new type of factory assembled hollow metal wall framing system which tilts into place like a ladder, fits like a glove. It has gained wide acceptance for exterior and interior use on schools, offices and commercial structures of one to three stories.

Tilt-A-Front's all-welded unit construction eliminates trial-and-error field assembly . . . cuts erection time by 60% under conventional methods of wall framing. It encloses space much more economically, is structurally sound and requires none of the usual exposed plate reinforcements, angles or stiffeners. Tilt-A-Front is available in baked enamel steel (Colorclad), stainless steel or aluminum.

We can provide detailed sections and elevations in Tilt-A-Front design for your requirements. Write us today for complete information.

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A combined Colorclad steel Tilt-A-Front and Overline entrance door installation—over 69' in length—encloses the spacious cafeteria of Meadowlawn Jr High School, St. Petersburg, Florida. Architect: Glenn Quincy Johnson, St. Petersburg, Florida.

METAL PRODUCTS SINCE 1888

you can

HEAT & COOL SIMULTANEOUSLY

with these

Outside weather conditions, or inside requirements may make it necessary to heat some sections of a building at the same time that other sections require cooling. Where these conditions exist, the McQuay "MC" MULTI-ZONE air conditioning unit will furnish balanced comfort *simultaneously* to different determined areas with either filtered, *cooled* and dehumidified air, or filtered, *heated* and humidified air . . . or a mixture of these in any desired proportions . . . at your command.

If *you* have this problem, contact the nearest McQuay representative for consultation, complete engineering data and costs . . . When it's McQuay, you can be sure that engineering research and know-how have produced the finest, most efficient and dependable equipment available . . . and, only McQuay makes the famous Ripple-Fin coils. McQuay, Inc., 1638 Broadway St. N.E., Minneapolis 13, Minn. Representatives in all principal cities.

McQuay "MC"

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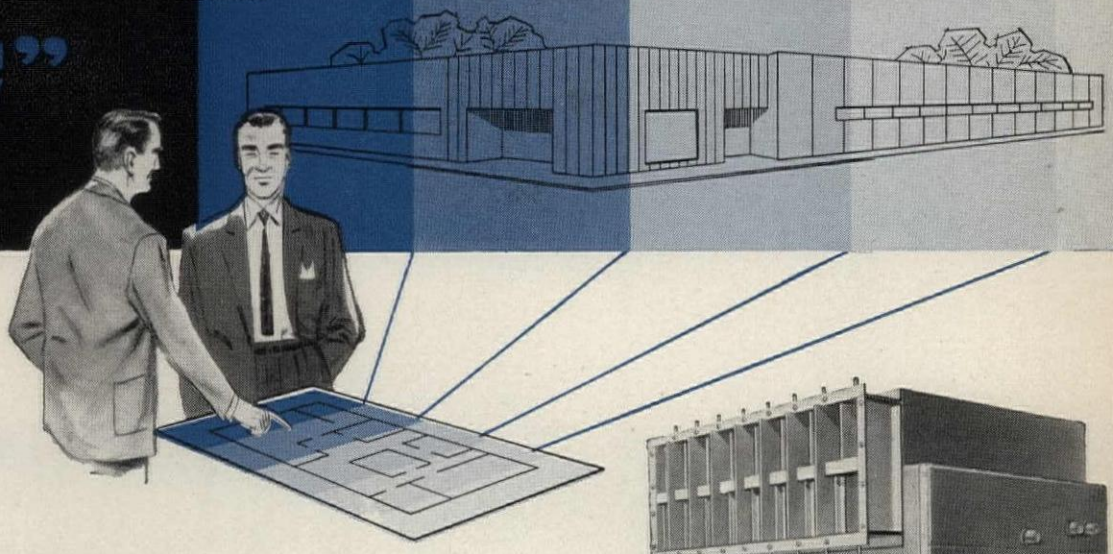

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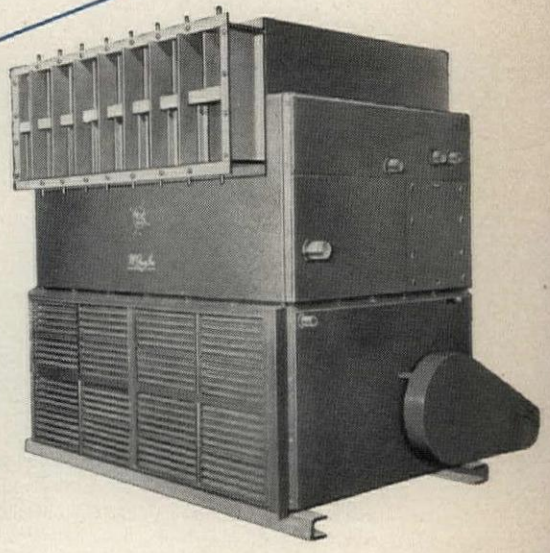
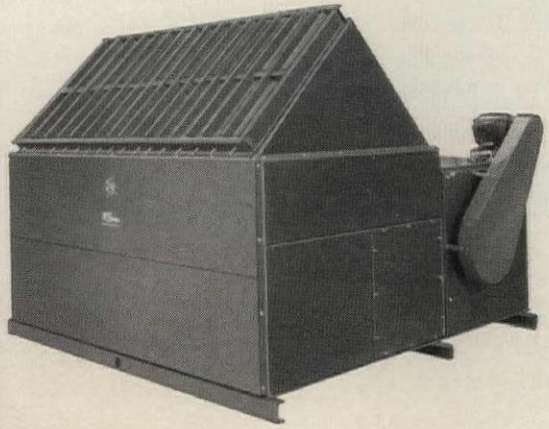


McQuay VERTICAL Multi-Zone unit

McQuay HORIZONTAL Multi-Zone unit



The McQuay "MC" Multi-Zone air conditioning units are available in 8 sizes from 1370 c.f.m. to 21,000 c.f.m. Each unit has a standard number of zones available from 6 on the smallest to 22 on the largest. All zones are interconnected by a single external connecting rod. A full line of accessories is available . . . preheat steam coils, filter sections, mixing boxes, humidifiers.

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Barclite is getting the big build-up everywhere! It's the reinforced fiber glass panel of exceptional design versatility. Inside... build dramatic room dividers, movable walls, partitions and dropped ceilings in homes, showrooms, offices, restaurants, hotels, motels, stores and beauty parlors. Outside... use it for roofing, siding, glazing, fences and hundreds of other applications! Specifying Barclite makes sense. Why? **Economical**... lightweight, easier to handle, faster installations, easier to maintain. **Translucent**... diffuses light yet assures desired privacy. **Shatterproof**... 14 colors, new decorative panels, too. Write for free samples and consultation services for your specific needs today.

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*affiliate of Barclay Manufacturing Company, Inc.

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No other standard fiber glass panel has earned all these seals!

Typical classroom of John J. Shaughnessy School Lowell, Mass., showing exposed glulam roof girders spaced at 8 feet. Timber arches spaced at 16 feet frame the general purpose wing. Architects: **Hugh Stubbins Associates** *Cambridge, Mass.* **Vara Construction Company** *of Boston was the general contractor.*

PROJECT DATA

Space provided:
Twelve classrooms, all-purpose room, administrative offices, housing for mechanical equipment.

Pupil capacity: 400.

Exterior walls:
Brick with cinder blocks back up; steel window walls.

Interior walls:
Cinder block partitions; corridor and toilet walls of structural clay tile.

Heating and Ventilating:
Central boiler plant supplying hot water to air handling units within each of the clusters of four classrooms.

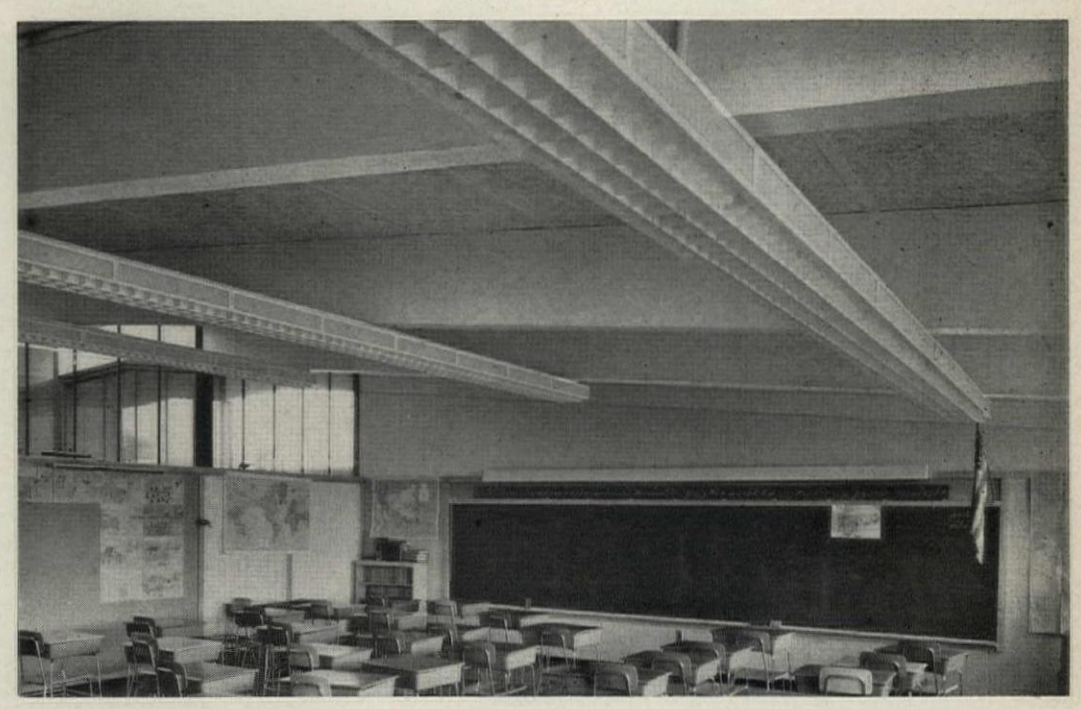
Lighting:
Fluorescent fixtures.

Floor covering:
Asphalt tile; hardwood floor in general purpose room.

Cost per square foot:
$14.70

*Winner of Top Award in School Executive's 6th annual competition for better school design; citation by Progressive Architecture; included by U. S. State Department in international school building exhibition in Geneva, Switzerland.

Modern Framing for Modern Schools



Glulam timber members by Timber Structures, Inc. provide structural framing for prize winning Lowell, Massachusetts school

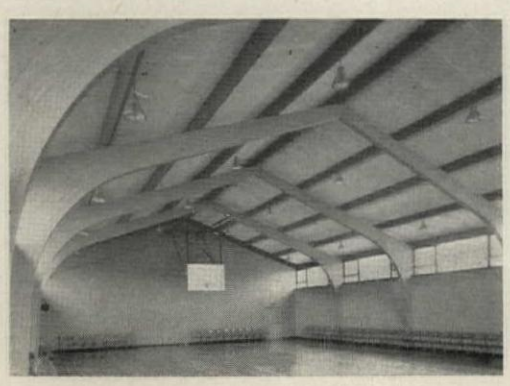
Competent and imaginative planning has earned international honors for this thoroughly modern school. The durability, economy and safety of its engineered timber framing will earn the approval of citizens and taxpayers for generations.

The school is located within an established playground area, and is planned in three clusters of four classrooms each which form three sides of a partially covered play area and entrance court. The fourth side of the court is closed by the general purpose room, administrative quarters and mechanical equipment.

Glulam timber girders support the roof deck over the classrooms. Acoustical material applied to the under side serves as finished ceiling. Glulam timber arches frame both the roof and sides of the general purpose wing, and non-bearing curtain walls are used for ends and sides of the building.

Thus engineered timber framing brings to this school, as it has to thousands of others, the friendly charm of wood, the economies of functional construction, and the safety of unexcelled resistance to destruction by fire.

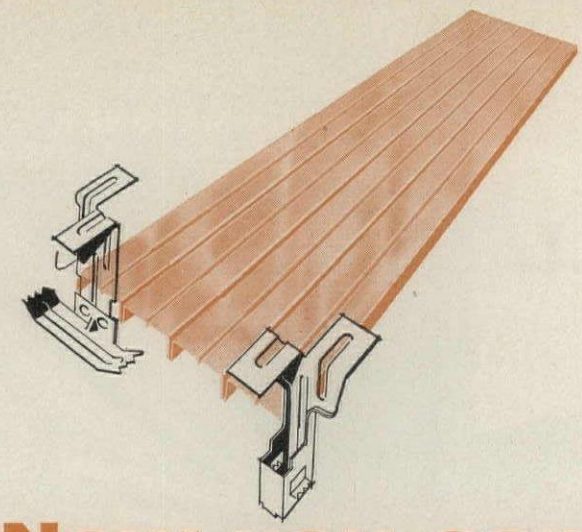
Examples of outstanding school construction are contained in the informative brochure, "Timber Framing for Modern Schools". Get your copy from your nearest Timber Structures representative, or write to us directly.



1 Roofer inserts clip into installation tool.

2 Blow of mallet seats clip between ribs

3 Clip securely holds insulation in place.



Now you can get Class 1 fire ratings for roofs with Milcor Steel Deck

New Milcor insulation clip eliminates asphalt coating

New, *non-piercing* clip seats firmly between the ribs of Milcor Deck and securely holds insulation in place. The job is an easy one for the roofer — and the cost of asphalt is saved.

So now you can add greater fire protection to these other advantages of Milcor Steel Deck: (1) Exclusive Bonderized, baked-enamel primer that cuts field painting costs in half; (2) Speed of erection in any weather; (3) Savings on size and cost of structural members.

Write for samples of the clip made to our specifications by the Geo. A. Tinnerman Corp. And See Sweet's section 2f/In L — or write for catalog 240.

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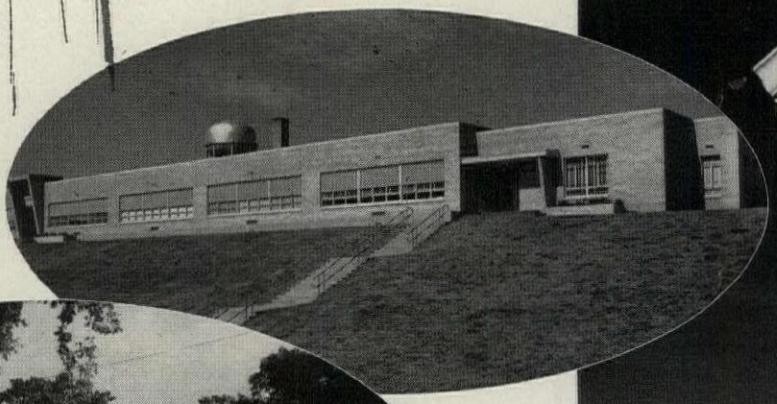
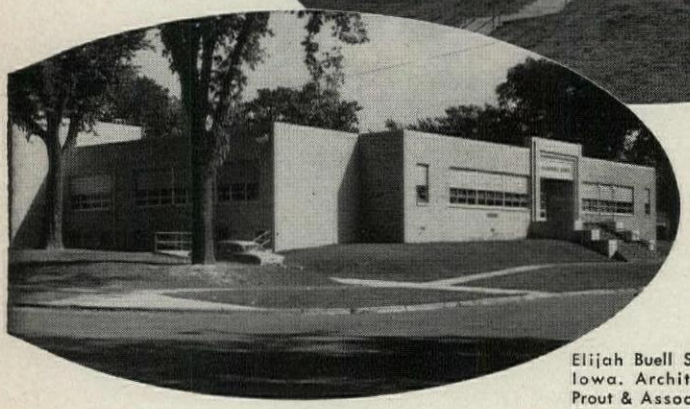
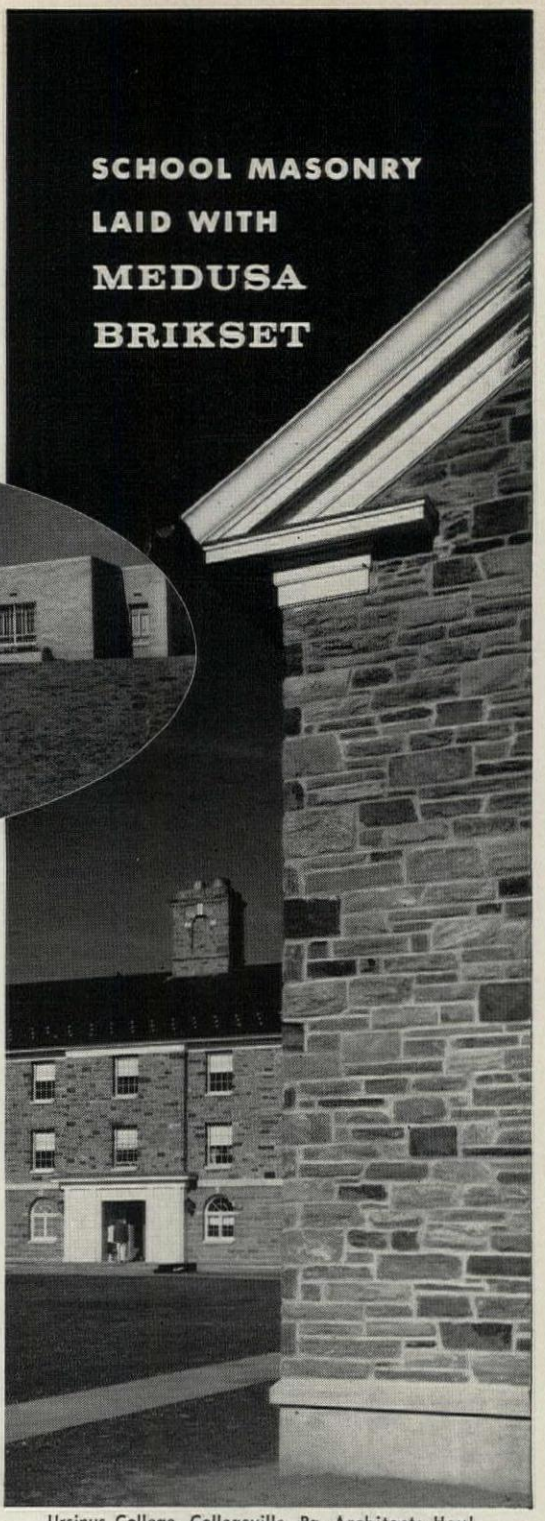


Henry Sabin School, Clinton, Iowa. Architect: McCann-Prout & Assoc. General Contractor: Clinton Engineering Co.



Elijah Buell School, Clinton, Iowa. Architect: McCann-Prout & Associates. General Contractor: O. Jorgensen & Sons Construction Company.



Ursinus College, Collegeville, Pa. Architect: Heyl, Bond & Miller. General Contractor: Irwin & Leighton. Subcontractor: John Conti Company Incorporated.

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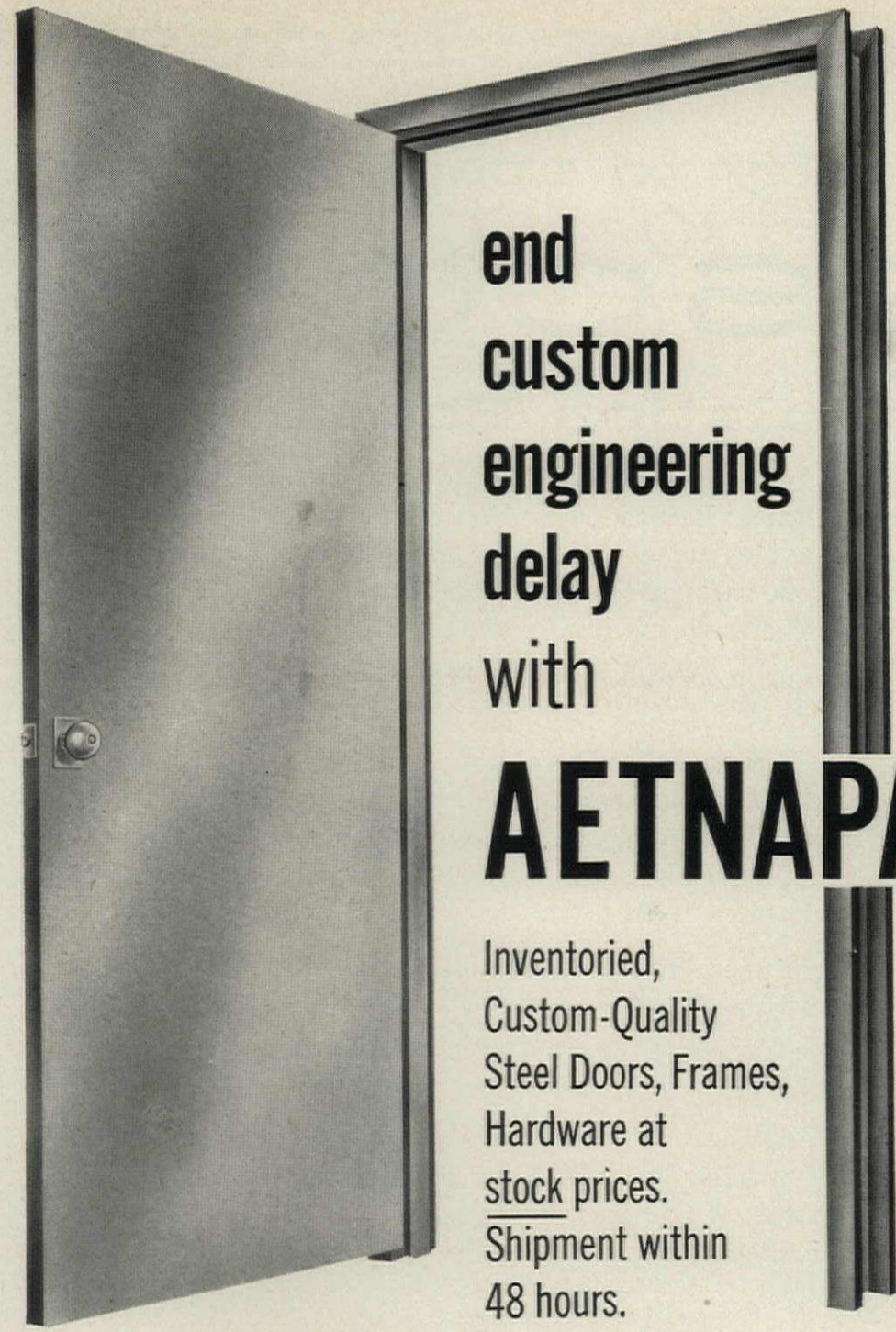

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Over 500 type-and-size combinations from 16 always-in-stock basic types. Completely flush-design swing and sliding doors. Your choice of AETNAPAK hardware.

Check these *custom* features never found in ordinary stock doors:

- √ Completely flush door (no lines)
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- √ Mortised flush bolts
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- √ Furniture-grade steel
- √ Standard bevelled door stiles
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Your choice of mortised or cylindrical locksets, hinges, push plates, closers, push bars, panic devices and other accessories.

Order AETNAPAK door-frame packages (with or without hardware); doors separately or frames separately. Delivered anywhere to meet *your* schedule. Send for complete catalog.

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FESCO®

Roof Insulation Board

For Favorable Insurance Rates: Because Fesco Board is formed of all-mineral perlite, it provides the ultimate in incombustibility, exceeding the maximum code ratings. Even under extreme temperatures Fesco Board remains physically stable, contributing importantly to fire containment. Fesco Board carries the label of Underwriter's Laboratories, Inc.

For Maximum Insulation: Because Fesco Board has no wick-like action (as do fibrous boards) it remains essentially dry on the job and in the job. Fesco Board absorbs only 1.5% water by volume on 24 hours total immersion. Remember, as moisture content goes up, insulation value goes down!

For Faster Laying: It is not uncommon for mechanized crews to place and cover, with 4 plys of roofing, 8 squares of Fesco per day per man. High in compressive strength and scuff resistance, Fesco withstands the weight and wear of high speed, mechanical roof application.

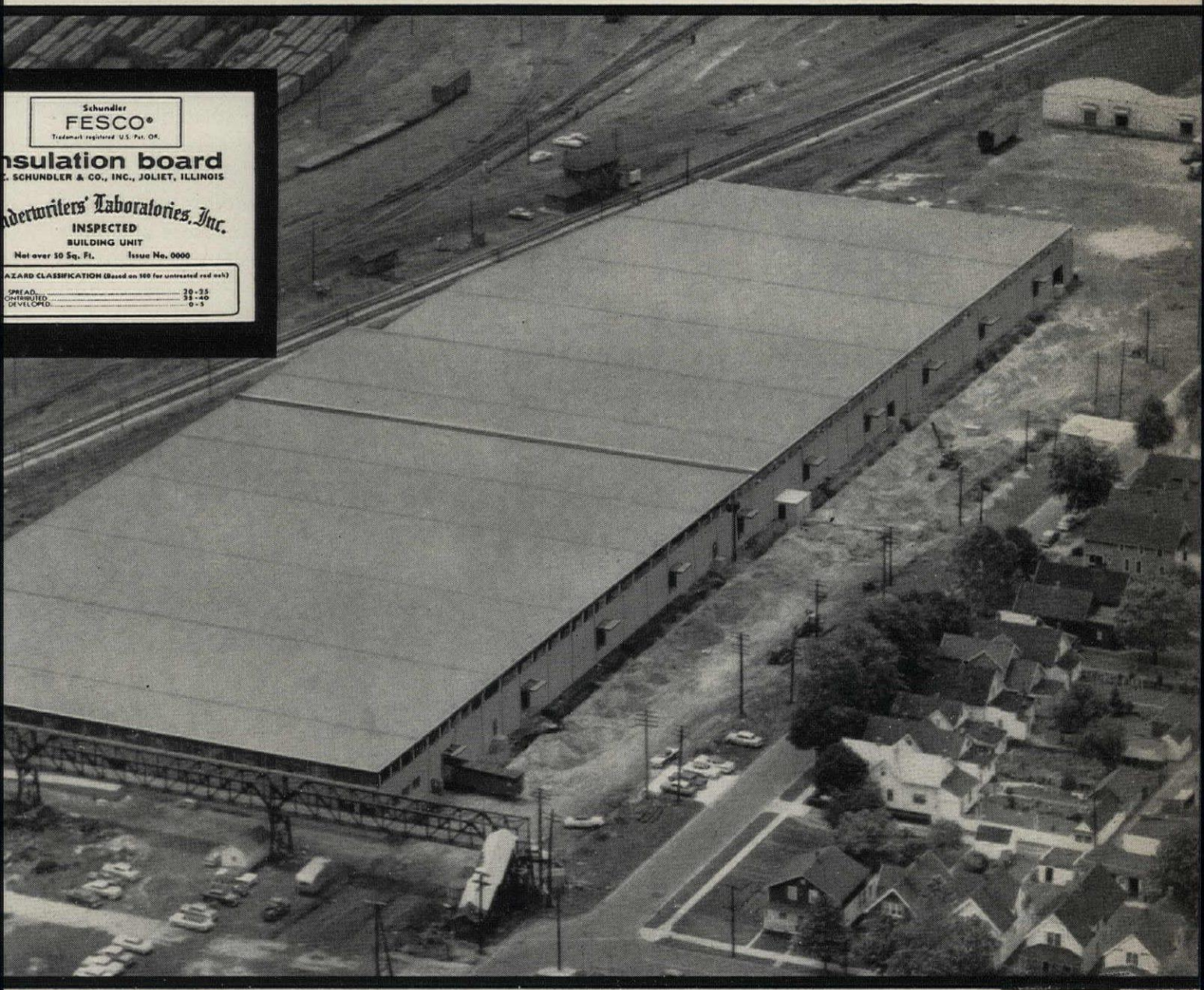
For Better Workmanship: Smaller (24″ x 36″) size permits easy handling, accurate placement. And Fesco Board cuts cleanly, quickly and evenly, for shaping to flashings, hatches, monitors, and other deck openings.

For Longer Roof Life: All-mineral perlite is chemically inert, and non-absorptive — will not rot, mildew, deteriorate. This permanent physical stability permits Fesco Board to withstand the heavy roof traffic normal to industrial occupancy. Fesco Board has a compression resistance of 174.8 P.S.I.

For Lighter Weight: Fesco Board weighs only nine ounces per board foot, yet will not expand, shrink or curl. Linear change at 100% R.H. at 10 days is only $+\frac{1}{5}$ of 1%.

Buildings?

PROJECT: Edgar's Warehouses, Inc., Toledo, Ohio
ENGINEER: Campbell Engineering, Inc., Detroit, Michigan
GENERAL CONTRACTOR: H. F. Campbell Construction Co., Inc., Detroit, Michigan
ROOFING CONTRACTOR: Pranis Roofing Company, Detroit, Michigan
ROOF AREA: 225,080 square feet



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153 High Temperature Insulation Blocks

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get predictable, dependable load-bearing . . . specify

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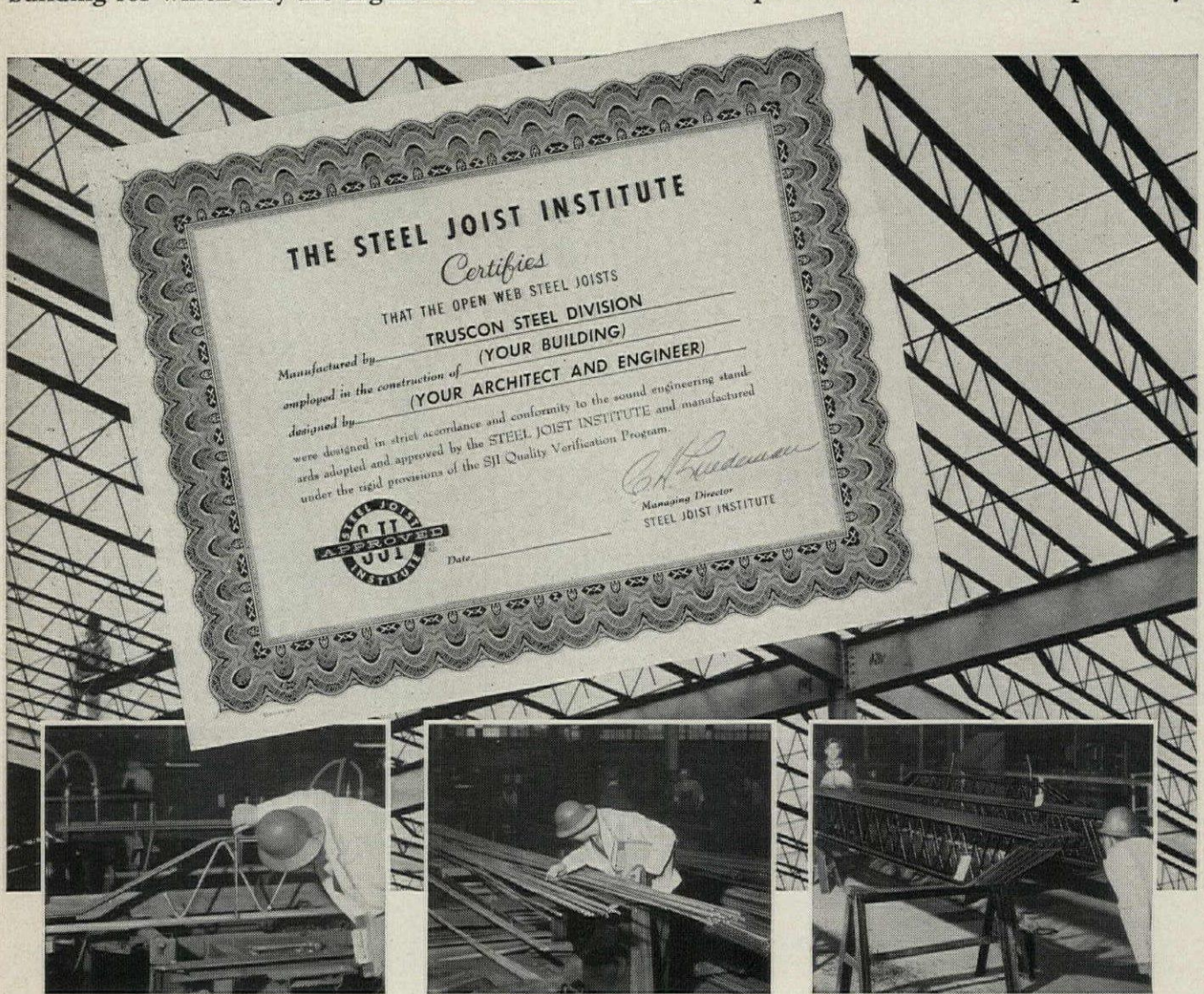
Now . . . for your protection! Republic's Truscon Steel Division offers you, upon request, written certification that the Truscon "O-T"® Steel Joists you specify are manufactured in accordance with the standards of the Steel Joist Institute and are fully qualified to bear the SJI Seal of Approval.

This certification is issued by authority of the Steel Joist Institute to cover "O-T" Shortspan Open Truss Steel Joists for each individual building for which they are engineered. Written certification will also be provided the owner at your request.

This is further assurance of predictable, dependable load-bearing. Don't take chances on just any joist. Specify Truscon "O-T" Shortspan Steel Joists . . . manufactured according to the rigid standards of the Steel Joist Institute and fully qualified to bear the SJI Seal of Approval—and now certified in writing.

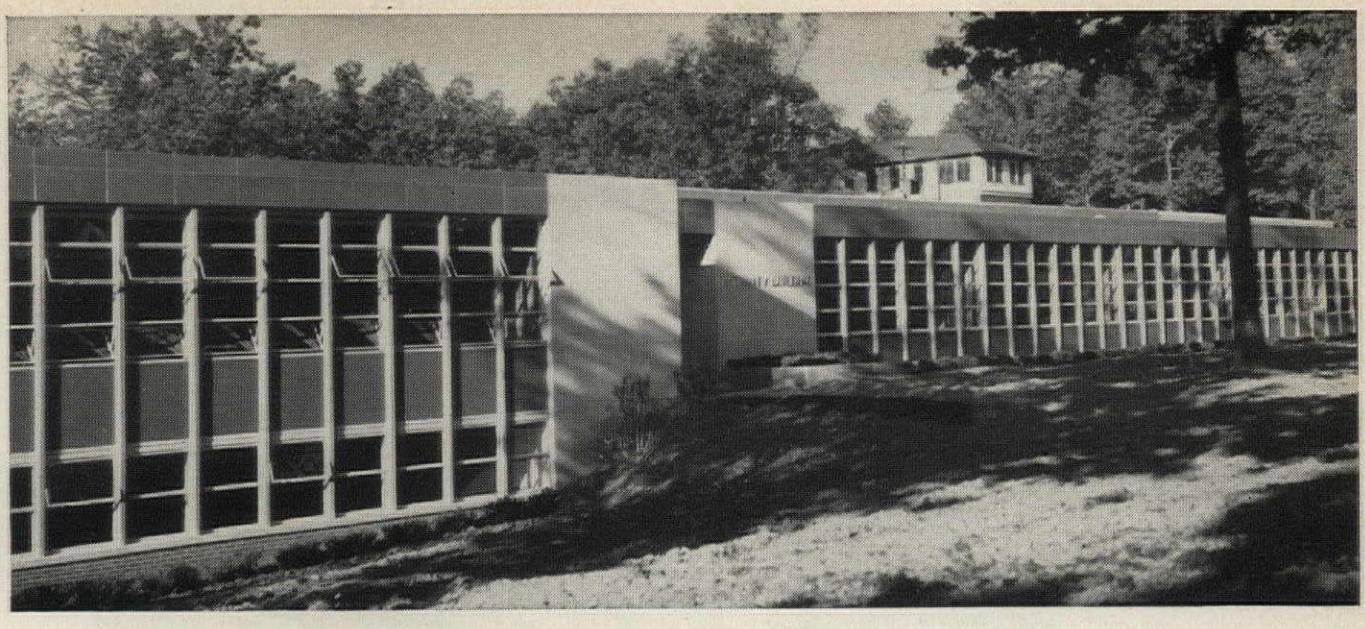
For additional information, see or call your Truscon representative . . . or send coupon today!

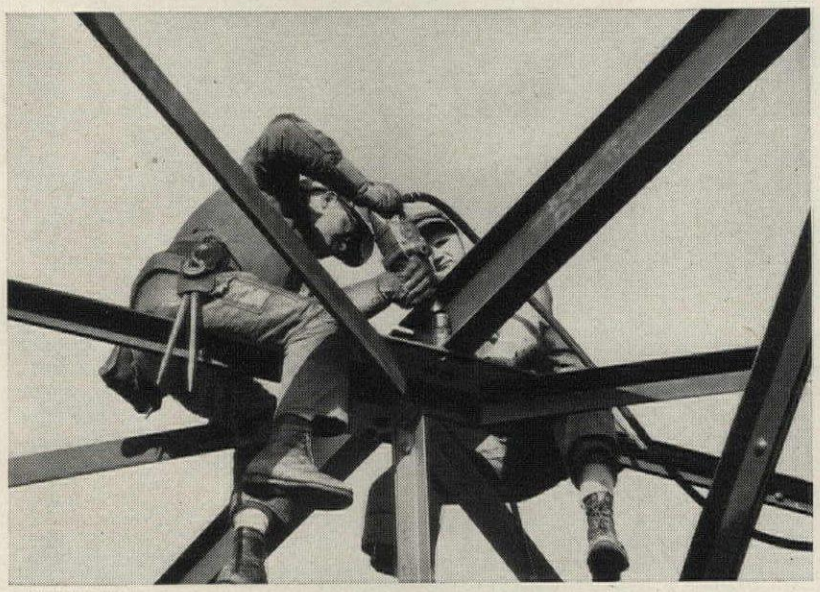


The Quality Verification Program conducted by "this man in the white coat" is a continuing program of checking and inspecting of member company joist manufacturing processes and materials.

This thorough inspection on an unscheduled basis protects the integrity of the Steel Joist Institute Seal of Approval. This voluntary program gives the Seal of Approval real meaning.

The Quality Verification Program is administered for the institute by a nationally known testing laboratory. Every fabricating step is checked for adherence to standards. And, Truscon certifies it!





TWO MAN CREW SAVES TIME AND MONEY using Republic High Strength Bolts for structural joints in Caterpillar Tractor Company's new Industrial Engine Plant at Mossville, Illinois. Only an air-driven torque wrench and a holding wrench were required. As shown, final tightening was done with the torque wrench alone. Installed bolt costs were about 31¢ per unit as compared with twice the amount for field-driven rivets.

TRUSCON VISION-VENT INSTALLATIONS such as this now can be specified with exclusive new Truscon Super-Coat Finish to eliminate field painting. Pictured is Activities Building, Georgia Training School for Girls, Adamsville, Ga. John J. Barte, Architect. Abco Builders, Contractor.

REPUBLIC ENDURO® STAINLESS STEEL was used for elevator doors, moldings, and fluted wall panels in the lobby area of the American Hardware Mutual Insurance Building, Minneapolis, Minnesota. The softly finished ENDURO added to the beauty of marble floors and walls.

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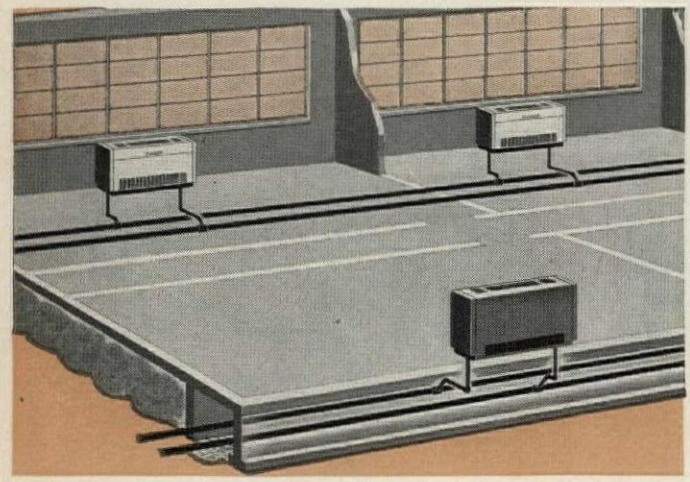
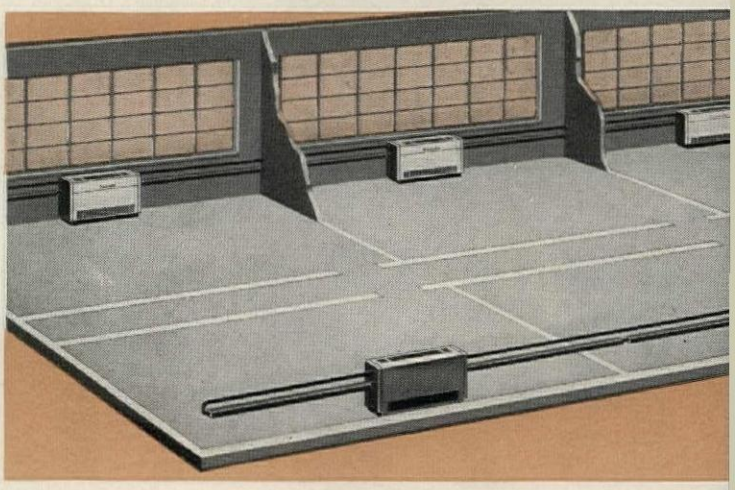
▲ Teacher and pupils are comfortable in any weather . . . in every part of the room with this Nesbitt heating, ventilating and natural cooling system. It combines the use of a Nesbitt Syncretizer unit ventilator in each classroom with Nesbitt Wind-o-line radiation installed all along the window sill (see above). Radiant heat protects teacher and pupils against excessive loss of body heat; while convected heat along the sill warms chilling downdrafts. Three-way classroom payoff: outstanding comfort, operating economy, good appearance. Layout diagrams below help to show how the Nesbitt Series Hot Water Wind-o-line System provides protected learning environment.



▲ Conventional layout (showing how perimeter trenches are used to carry the supply and return piping under the floor), is used for both steam and hot water systems. As you can see, it calls for costly trenches or crawl space, mains, runouts and pipe insulation. All take a big bite out of your heating and ventilating dollar, and all can be dispensed with when you use . . .



▲ the Nesbitt Series Hot Water Wind-o-line System. The Nesbitt Syncretizer unit ventilator, installed in each classroom on this system, requires only about ⅓ as much hot water as do conventional systems. As a result, smaller pumps and pipes are used. The only supply and return piping you need in a classroom wing (see above) is the Nesbitt Wind-o-line Radiation itself.

Here are the figures that prove you can have a

Quality Heating and Ventilating System

. . . within a sound, realistic budget!

Nesbitt Systems are making possible savings of as much as 20% over conventional systems in typical schools all across the country.

Some of the Recent Low Costs for Quality Heating and Ventilating Systems:

IN NEW JERSEY $1.67 sq. ft.
Pennsauken High School,
Pennsauken, N. J.
Architect: Faint & D'Anastasio
Engineer: John Knecht
Capacity: 1800 pupils
Gross Area: 188,000 sq. ft.
Total Contract: $2,844,659
Heating and Ventilating: $314,986

IN OHIO $1.91 sq. ft.
Young Elementary School,
Springfield Township, Ohio
Architect: W. B. Huff & Assoc.
Engineer: Paul Fleming
Capacity: 300 pupils
Gross Area: 22,000 sq. ft.
Total Contract: $335,071
Heating and Ventilating: $42,025

IN ILLINOIS $1.41 sq. ft.
Creve Coeur Elementary School,
Creve Coeur, Illinois
Architect & Engineer:
George Poppo Wearda
Capacity: 256 pupils
Gross Area: 11,800 sq. ft.
Total Contract: $156,124
Heating and Ventilating: $16,664

Compared with the installed costs of some other systems, the Nesbitt Series Hot Water Wind-o-line System saves you as much as 20% on construction, equipment and installation costs. Each classroom has its own Nesbitt *Syncretizer* unit ventilator for heating, ventilating and natural air cooling. And Nesbitt Wind-o-line radiation extends along the sill to protect pupils seated near windows from cold walls and window downdraft.

No other unit ventilator provides *controlled* heating, ventilating and natural cooling as effectively as the Nesbitt *Syncretizer*. When used in combination with Nesbitt Wind-o-line radiation, the result is healthful, productive comfort—free of physical distraction —for every pupil in the room whether he sits near the window or at the other side of the room. *Only the comfortable student can maintain maximum learning efficiency.*

Send for the big book on the value of controlled ventilation, **More Learning per School Dollar.**

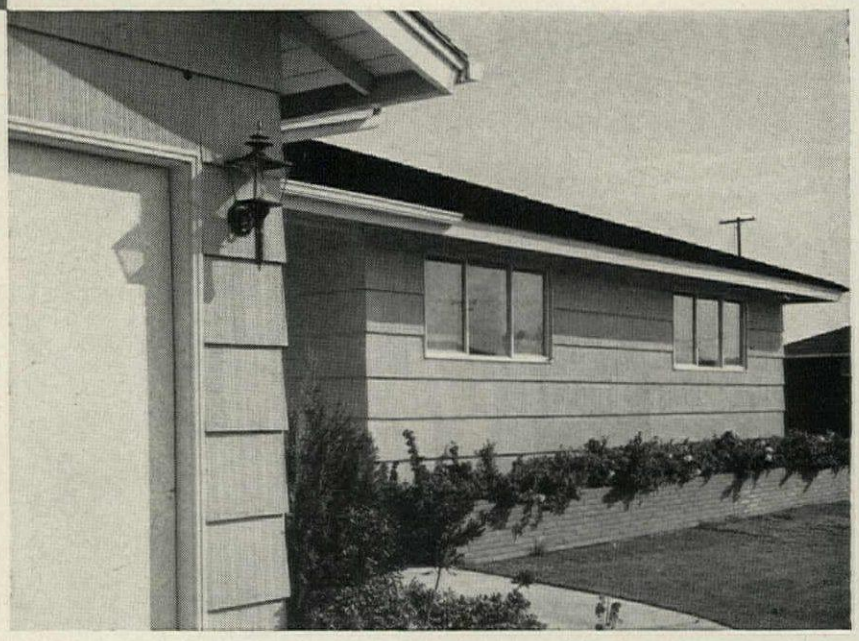
Nesbitt

THERMAL COMFORT ALL WAYS

Made and sold by John J. Nesbitt, Inc., Philadelphia 36, Pa.
Sold also by American Blower Corporation and American Standard Products (Canada) Ltd.

CEDAR SHAKE WALLS

an ageless integrity...

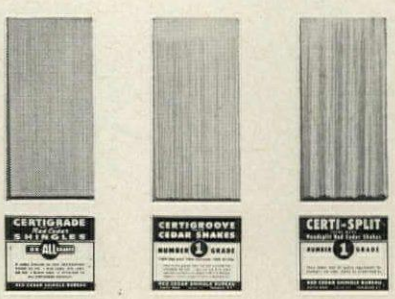


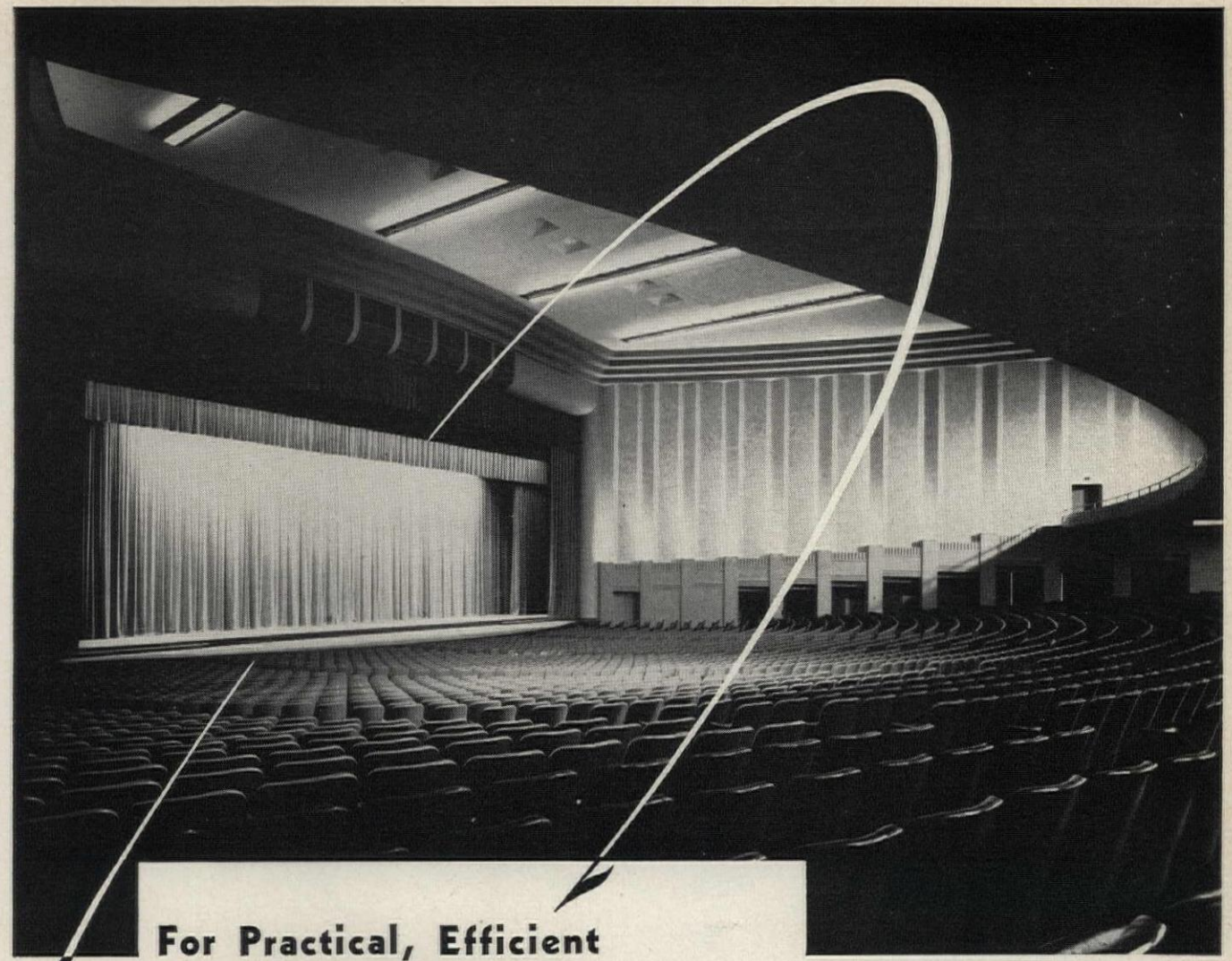
...in the clean, crisp idiom of today

The modern cedar shake is a shingle that has been squared and striated to fulfill the need for *line and texture* in exterior home design. Cedar shake walls, with their clean-cut striations and dramatic shadow accents, enhance any area where a natural material is desirable. That is why *genuine red cedar shakes* have become the dominant wall material in so many of the better communities.

RED CEDAR
SHINGLE BUREAU

5510 White Building, Seattle 1, Washington
550 Burrard Street, Vancouver 1, B. C.





For Practical, Efficient
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USE **CLANCY'S**
ENGINEERING ASSISTANCE

Purdue Music Hall —
Walter P. Scholer, Architect;
stage engineered and
equipped by Clancy

The intricate technicalities in developing good sight lines . . . in planning the height of the gridiron . . . and in arranging mechanical equipment to facilitate back-stage operations . . . all have much to do with the final cost and efficiency of every stage.

Solving such engineering problems for architects has been Clancy's job for over 75 years. Their experience in engineering and equipping stages of every type — from preliminary drawings to final installation — results in a working stage that fully expresses *your* design ideas.

For the Free Folder
"HOW TO BUILD A MODERN STAGE"
and answers to any
stage-planning questions you have,
write without obligation to:

J. R. Clancy, Inc.
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1020 WEST BELDEN AVENUE
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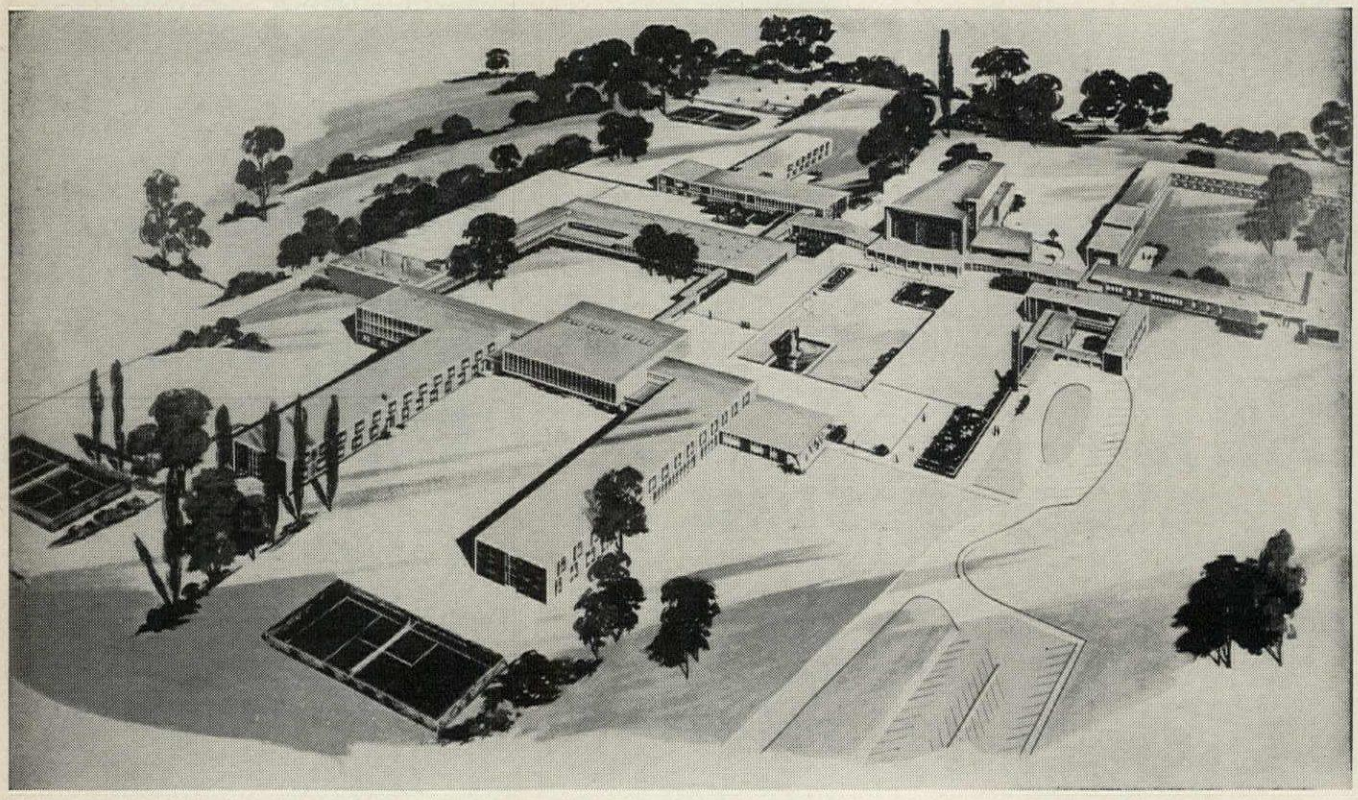
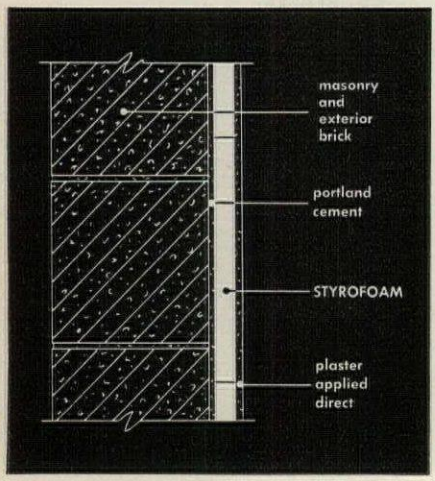
CREATORS OF FAMOUS STAGES FOR THE ENTERTAINMENT CAPITALS OF THE WORLD

Milwaukee architects show how new building method using Styrofoam® saves time and money

John Brust, A.I.A. of Brust & Brust, Milwaukee, discusses the speed, economy and quality of masonry-insulation-plaster construction



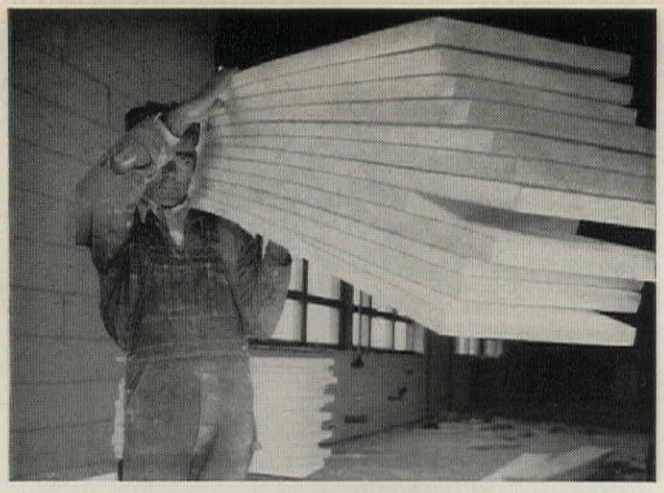
Notre Dame Of The Lake, Mequon, Wisconsin. Building contractors: Gebhard-Berghammer, Inc., Ed. Steigerwald & Sons, and H. Schmitt & Son, Inc., all of Milwaukee.



"We rate Styrofoam* as the most economical and feasible recommendation from the standpoint of our client, the most workable for the contractor, and of the highest insulating quality," says Mr. Brust. "It has a positive moisture resistance, a flexible expansion rate, and it adheres well to mortar and plaster.

"In this project at Notre Dame Of The Lake College For Sisters, all exterior walls are insulated with 1" and 1½" of Styrofoam, plastered on the inside. The wall cross section consists of 4" of exterior brick, 8" of lightweight concrete block backup, ¼" mortar, Styrofoam and plaster (see sketch). In all, 100,000 sq. ft. of Styrofoam are used. It is our experience that 1" of Styrofoam on outside walls keeps them warm to the touch, even in zero weather."

*STYROFOAM is a registered trademark of The Dow Chemical Company



"**SEVERAL 8-FOOT BOARDS** of lightweight Styrofoam can be easily carried to the job site by one man. In just one stroke, Styrofoam is cut to 48-inch lengths using the sharp edge of a mortar trowel. Not only does Styrofoam cut easily, but the cut surface is as smooth as if done by machine. This facilitates working around pipe, conduit, duct work, etc."

"**AN AUTOMATIC MORTARING JIG** evenly coats each 4-foot section of Styrofoam with ¼" of mortar. The boards are pushed manually through the box and passed on to the installation man who puts them into position. Styrofoam adheres directly to the masonry, eliminating furring. This operation is so fast and simple that we achieve time reduction and cost savings by its use."

"**PLASTERING DIRECTLY** over Styrofoam eliminates complete operation of lath installation, permits substantial savings in cost. Styrofoam has the flexibility to give with expansion and contraction, provides a firm base for plaster."

For more information about Styrofoam, write to THE DOW CHEMICAL COMPANY, Plastics Sales Department 1924F-1, Midland, Michigan.

YOU CAN DEPEND ON DOW

RAYNOR OVERHEAD TYPE DOORS

Designed for Specific Requirements

Raynor Doors are available in a wide range of sizes and styles, with unlimited mechanical adaptations. Shown here, Cities Service Oil Company's warehouse, Cicero, Illinois, where Raynor Model VL22 doors were installed. This Raynor vertical lift door is designed for use on commercial and industrial openings where ceiling is high and depth is limited. The vertical lift is also used where horizontal tracks would form an obstruction to traveling cranes, fork trucks and where additional height for storage is required. Galvanized hardware, 3-way stress construction in sections, "Lifetime Guarantee" Masonite panels are but a few of the Raynor features. The Raynor Engineering Department is available at all times to advise on any unusual door or installation. Shop drawings furnished free upon request.

When you specify . . .
write specifications that keep out failure . . .
RAYNOR OVERHEAD TYPE DOORS!

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3737 South Cicero Ave., Cicero, Illinois

Designed By:
CITIES SERVICE OIL COMPANY

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RAYNOR MFG. COMPANY

DIXON, ILLINOIS

Builders of a Complete Line of Overhead Type Doors

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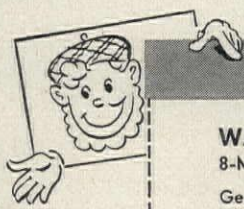
STAINLESS COSTS LESS THAN ALUMINUM—

Do you know that the square-foot cost of stainless steel sheet for curtain wall panels is usually **equal to or lower than** aluminum when compared in thicknesses of equal indentation resistance? For example, Type 302 stainless steel, .022″ thick is equal to .051″ aluminum and costs only 62¢ per sq. ft., as compared to 67¢ per sq. ft. for 3003-H14 anodized aluminum.



For additional information on all gauges, fill in and mail the coupon.

Washington Steel Corporation
WASHINGTON, PENNSYLVANIA

MAIL COUPON *Today!*

WASHINGTON STEEL CORPORATION
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Gentlemen:
Please send me full information on comparative costs of stainless steel vs. aluminum for curtain wall panels.

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AIRLINE TICKET BUREAU . . .

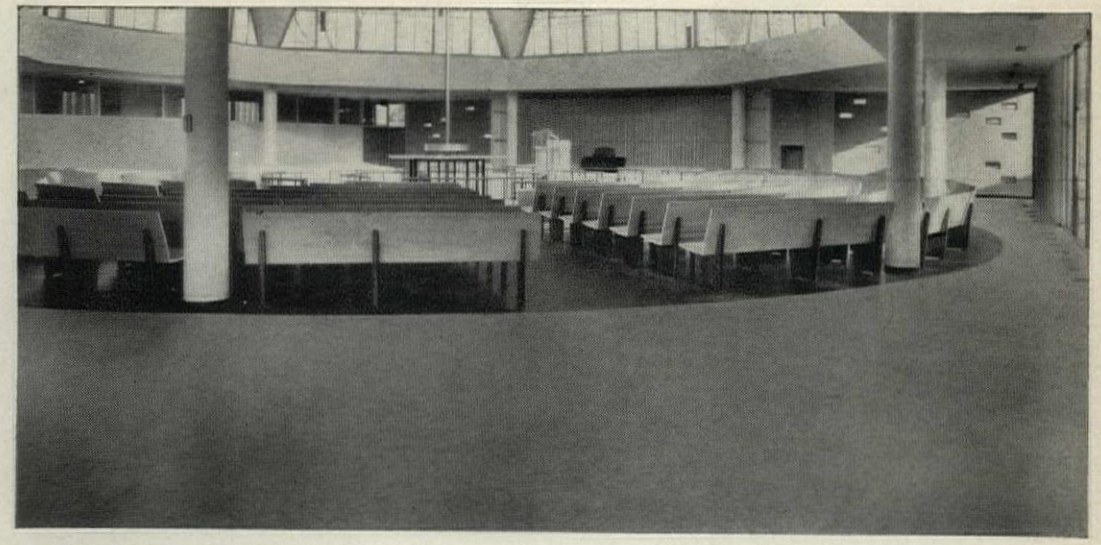
MODERN ELEGANCE

The elegant atmosphere of this airline bureau is the sum of a perfectly harmonized interior. One of the most important features is the floor of Armstrong Vinyl Corlon. The delicately flecked Granette sheet plastic perfectly complements the simple Japanese design. Its smooth, glistening surface is easy to maintain. Because it's a sheet-type flooring, there's a minimum of dirt-catching joints.

Japan Air Lines, Rockefeller Center Ticket Office, NYC
architect: Raymond and Rado, NYC, and Junzo Yoshimura, Tokyo, associated architects

CHURCH . . . OFFICES

the flooring spec: Armstrong Vinyl Corlon



DESIGN FLEXIBILITY

Note closely this circular floor design created with two contrasting colors of Armstrong Sheet Vinyl Corlon. Because Armstrong Vinyl Corlon is made in rolls 6 feet wide and in any practical length, curved designs like this are easy and economical to achieve with simple scribing of the material.

St. Peter's Lutheran Church, Minneapolis
architect: Ralph Rapson, Douglas Baird, associate

PRACTICAL STYLING

Over 24,000 sq. ft. of Armstrong Vinyl Corlon was selected for the new IBM offices. The Terrazzo styling in Vinyl Corlon hides dirt and scuff marks. The floor stays attractive all day. At night, the smooth, almost seamless expanse of Vinyl Corlon permits maintenance crews to do a thorough cleaning job quickly.

IBM, 425 Park Ave., NYC
architect: Eliot Noyes and Associates

Armstrong Sheet Vinyl Corlon gives excellent service in residential and light commercial interiors. It is dimensionally stable; highly resistant to grease and alkalis; long wearing. The colors are inlaid right through to the backing. Vinyl Corlon comes in a variety of colors and stylings. Armstrong Vinyl Corlon with the exclusive, alkali-resistant Hydrocord Back is the only sheet flooring recommended for subfloors below and on grade, and on lightweight aggregate concrete. **Armstrong Architectural-Builder Consultants** will help you decide on the best flooring spec for any interior and make available to you the services of the Armstrong Research Center and Decorating Bureau. Call your Armstrong District Office or write to Armstrong Cork Company, 308 Watson Street, Lancaster, Pennsylvania.

Armstrong a b c ARCHITECTURAL BUILDER CONSULTANTS

Armstrong FLOORS

Approximate Installed Prices per Sq. Ft. (Over concrete, minimum area 1000 sq. ft.)

Linoleum Tile Asphalt Tile, 1/8" (A, B, C, D) Linoleum, light gauge Asphalt Tile, 3/16" (A, B)	35¢ to 45¢	Linoleum, standard gauge Asphalt Tile, 3/16" (C, D) Linoleum, 1/8" ("Battleship") Greaseproof Asphalt Tile Cork Tile, 3/32"	45¢ to 60¢	Corlon (Sheet Vinyl) Linoleum, 1/8" Cork Tile, 1/8" Excelon Tile (Vinyl-Asbestos) 1/8"	60¢ to 70¢	Rubber Tile, 1/8" Cork Tile, 3/16" Linotile Corlon (Hydrocord Back)	70¢ to 90¢	Custom Corlon Tile (Homogeneous Vinyl) 3/32", 1/8" Cork Tile, 5/16" Rubber Tile, 3/16"	95¢ to $1.30	Custom Vinyl Cork Tile Imperial Custom Corlon Tile

KEYWALL

GALVANIZED MASONRY JOINT REINFORCEMENT

The Chicago Sun-Times Building contains newspaper offices, printing facilities and rented office space. Architects: Naess and Murphy. General Contractor: George A. Fuller Company.

Masons like to use Keywall. It easily unrolls in place on the wall. It's easy to lap at corners without adding thickness to the joint. Mortar flows readily in, under and around Keywall to give full embedment and a complete bond. Masons find Keywall easy to handle on the scaffold.

Keywall is made for the following wall thicknesses: 4″, 6″, 8″, 10″ and 12″.

the reinforcement that does what masonry joint reinforcement is supposed to do..fights cracks!

Resistance to stresses that cause cracking is a basic purpose of masonry joint reinforcement. While it does increase the ultimate lateral strength of masonry walls, architects and builders depend on masonry joint reinforcement mainly to eliminate damaging and unsightly cracks caused by shrinkage during curing and aging.

The basic multi-directional design of Keywall assures superior resistance to cracks. This has been demonstrated repeatedly on jobs from coast to coast. The new Chicago Sun-Times building is just one example.

Keywall-reinforced walls in the new Sun-Times building show far greater resistance to cracks than comparable walls with other masonry reinforcements, extensive studies reveal. Keywall was used to reinforce exterior masonry backup walls and interior partition walls of the Sun-Times building.

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fastidious

How to keep the Fountain of Youth from Aging...

Lewin-Mathes Seamless Copper Tube and Pipe showers its benefits in a pure, steady stream on a little girl. And decades later, it will show equal regard for her grandchild.

Through the years, the Lewin-Mathes installation performs like new without maintenance because—as Copper Tube *Specialists*—we build Copper's resistance to everything except flow. Lewin-Mathes' fastidious-minded inspectors — at every operation throughout our *completely integrated plant*—demand shiny smooth surfaces *inside* as well as outside our products.

When installing piping materials, be sure that your *first* cost is your *last* cost. Ask your architect, designer or engineer to specify Lewin-Mathes.

LEWIN (M) MATHES

SAINT LOUIS, MISSOURI

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Indexed in Art Index, Architectural Index.

REINHOLD

sealer for tile

Dear Editor: Reference is made to the article "Quarry-Tile Roof Decks," by Harold Rosen (JUNE 1958 P/A).

The exposed surface of quarry tile is generally treated with linseed oil to prevent grout from penetrating into this surface, thereby detracting from the appearance of the tile. Occasionally the linseed oil penetrates, or because of improper application, is allowed to coat the sides and bottom of some of the tile. When this happens, adhesion of the cement mortar and/or the expansion joint sealer to the tile is seriously impaired. Dry wax has been used and I understand it is preferred to linseed oil.

I would also like to point out that hot-tar joint-sealer coated with talc or dry portland cement in a ¾-inch-joint width would not be satisfactory for foot traffic because of the tracking that would result. A better solution to the sealer problem is a cured thiokol rubber-type sealer. These sealers set up to a firm consistency, form an excellent and permanent bond, and present absolutely no problem concerning tracking. Our product is known by the trade name of VERTISEAL and interested readers can contact me for further information.

G. C. VYTLACIL
Servicised Products Corporation
Chicago, Ill.

strengthen position!

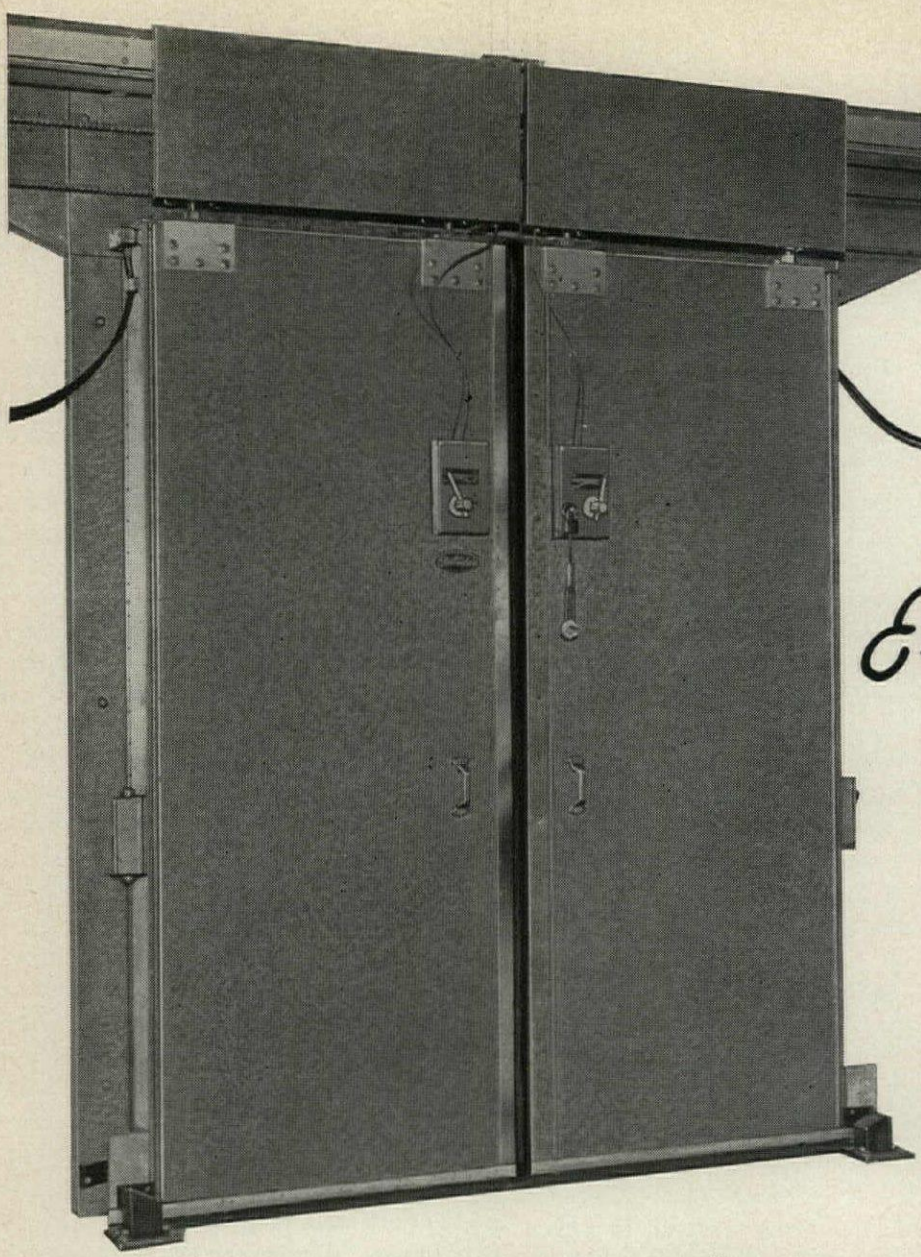
Dear Editor: In JUNE 1958 P/A, there appeared a letter by Henry Kohler of New York, entitled, "Is The Practice of Architecture A Profession."

I agree with his views in every respect except for his naïvete in regard to how we should be professionals. He says, "Insist that our city, state, and federal building departments require filing and approval of all construction and alterations by licensed architects," and "Make existing laws so strict that none but a registered architect can file drawings to build, alter, or repair any structure. Have the penalties strong enough to discourage the practice of construction work without approved plans and specifications," and further, "Publish recommended-minimum-fee schedules and insist that they be followed!"

For a number of years in California, we have tried, unsuccessfully, to strengthen our architectural practice act. Each time we have sponsored legislation at the state level, our revisions have met violent resistance from many sides. Objections have come from unexpected sources. The Building Contractors Association has been extremely active in fighting our bills. Allied with this group has been an organization of building designers, unlicensed operators who will not make the effort and in some cases have no desire to take the state architects' license-board examination for a certificate to practice architecture. In lieu of that, they choose to cry that the architects cannot legislate to deprive them of a livelihood—*and this bears weight with the lawmakers.* Added opposition has come from the communication industry, the aircraft manufacturers, and the motion-picture industry.

Because of our experience here, we know now that we must lay a firm groundwork with our state senators and assemblymen before we again submit new bills covering the practice of architecture. This is well under way, with each chapter of AIA getting acquainted with their local representatives in the legislature and showing them by personally

(Continued on page 70)



NEW *Electroglide** DOOR

automatic power operation speeds high volume trucking

A COMPLETELY NEW design for a power-operated door. Electroglide delivers famous Jamison Cold Storage Door performance plus fast, automatic opening and closing. Available as both bi-parting and single leaf.

smooth, spring cushioned no shock operation

- Exclusive cam lock compression seal with "down" and "in" action assures positive gasket contact.
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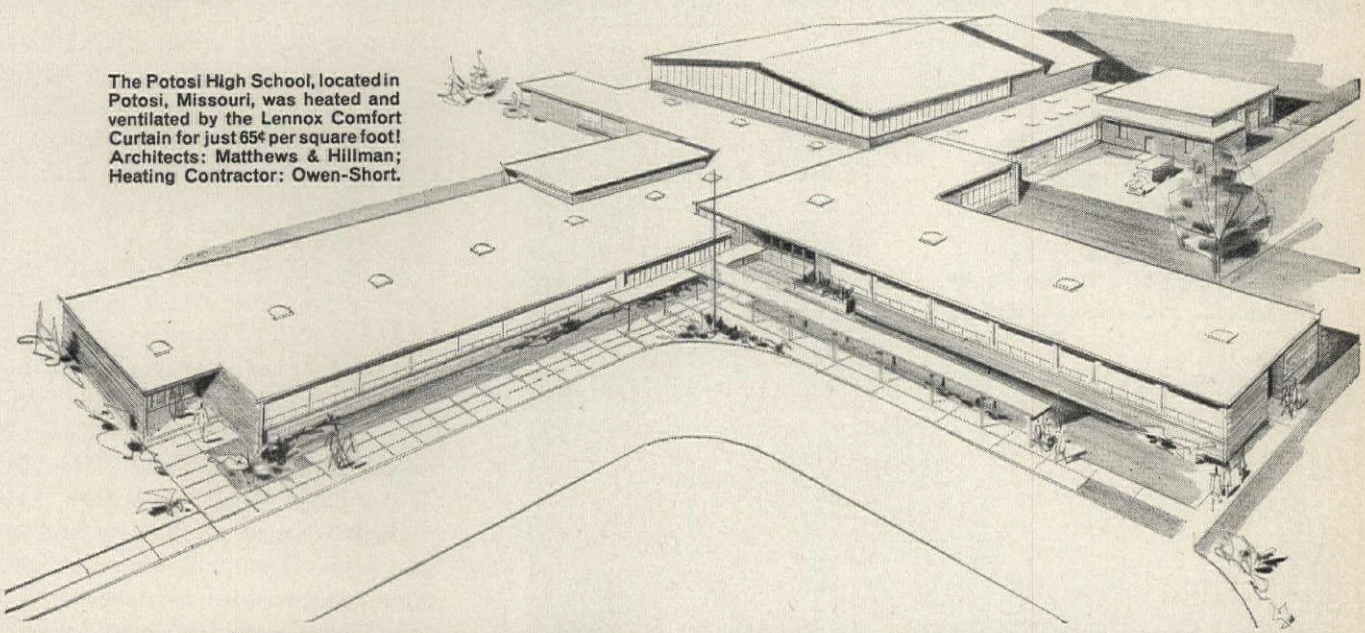
- Emergency controls; padlocking provision; rear emergency release.
- Tough, durable gaskets. All gasket contacts visible.
- Doors are factory assembled and given operating tests before they are shipped in easily erected units.

For descriptive bulletin write today to Jamison Cold Storage Door Co., Hagerstown, Md.

*JAMISON TRADEMARK

JAMISON
COLD STORAGE DOORS

Potosi school gets the finest in fresh air heating and ventilating—installed complete with automatic controls—for just 65¢ per square foot!



The Potosi High School, located in Potosi, Missouri, was heated and ventilated by the Lennox Comfort Curtain for just 65¢ per square foot! Architects: Matthews & Hillman; Heating Contractor: Owen-Short.

New Lennox Comfort Curtain System automatically draws in fresh air from outside . . . warms, cleans and circulates air quietly and evenly throughout the classroom!

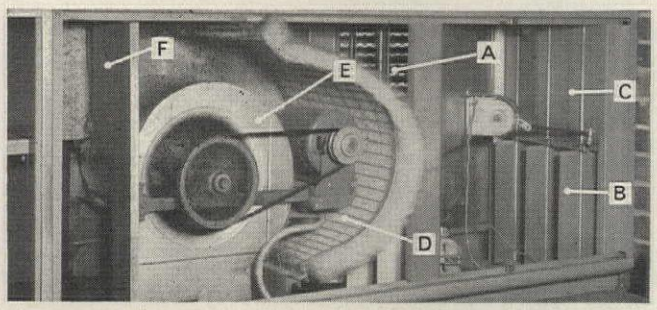
Hard to believe, isn't it?—that after all these years a new and better fresh air heating and ventilating system can be installed *for a fraction of the cost* of systems used previously. Yet it's true! 65¢ per square foot was the *complete* cost of the Lennox Comfort Curtain System in the Potosi, Missouri High School. Including fully automatic controls, ductwork, labor—everything!

Of course, 65¢ per square foot is unusually low, even for the Comfort Curtain. But costs of $1.03 in Indiana, $1.15 in Montana, and $1.12 in South Dakota are *usual and typical* of the amazing savings offered by the Lennox Comfort Curtain.

How is this possible? The Lennox Comfort Curtain System applies to schools the sound, tested principles of warm air heating. It eliminates expensive pipes, boilers and chimneys. Moreover, it saves hundreds of dollars per classroom per year *every* year it is in use. Fuel is consumed only when heat is required, maintenance is amazingly simple and low-cost. Yet—and this is important—the Lennox Comfort Curtain System does a far better job than costlier systems used previously.

It provides a full, even flow of air throughout the entire length of the exposed classroom wall. It is amazingly quiet. And it holds room temperatures to a variance of six-tenths of one degree, circulates air continuously for perfect distribution, introduces a continuous supply of fresh air into the daytime heating cycle, and provides *tons* of needed fresh air cooling without the cost of refrigeration!

Get full information on this new low-cost system of classroom heating and ventilating. Send coupon below for free booklet, today!



Lennox Air Processing Unit introduces fresh air in adjustable volumes (A); transmits warm air (B) from adjacent or remote heating unit; continuously recirculates indoor air (C); filters air clean (D). Lennox' exclusive floating blower (E) and acoustical lining (F) assure a degree of quietness never before achieved.

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Gentlemen: Please send me your free booklet on the Comfort Curtain system of classroom heating and ventilating.

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ADDRESS_____

CITY_____ ZONE____ STATE_____

p/a views

(Continued from page 67)

conducted tours of offices, dinner meetings, and other contacts what an architect is and what he does. It is amazing to find how little is known about the architect and how he operates. Legislators will listen to us rather than our opposition, provided they have first-hand knowledge of our value to society. This is where we have to start and it is a long-range job.

As to Henry Kohler's ideas regarding fee schedules, I wonder if he knows about anti-trust laws, and that Chapters of the American Institute are being investigated by the FBI to see if there is evidence of price fixing. Legal counsel for the California Council AIA has repeatedly warned us that we are on dangerous ground in even publishing a recommended fee schedule.

It all adds up to this. In our present status, we cannot legislate ourselves into an exclusive position. The time has long since passed when we had that opportunity. The only thing left is to try to strengthen our position in small steps, and to do this every licensed man will have to get in line and help.

WM. GLENN BALCH
Los Angeles, Calif.

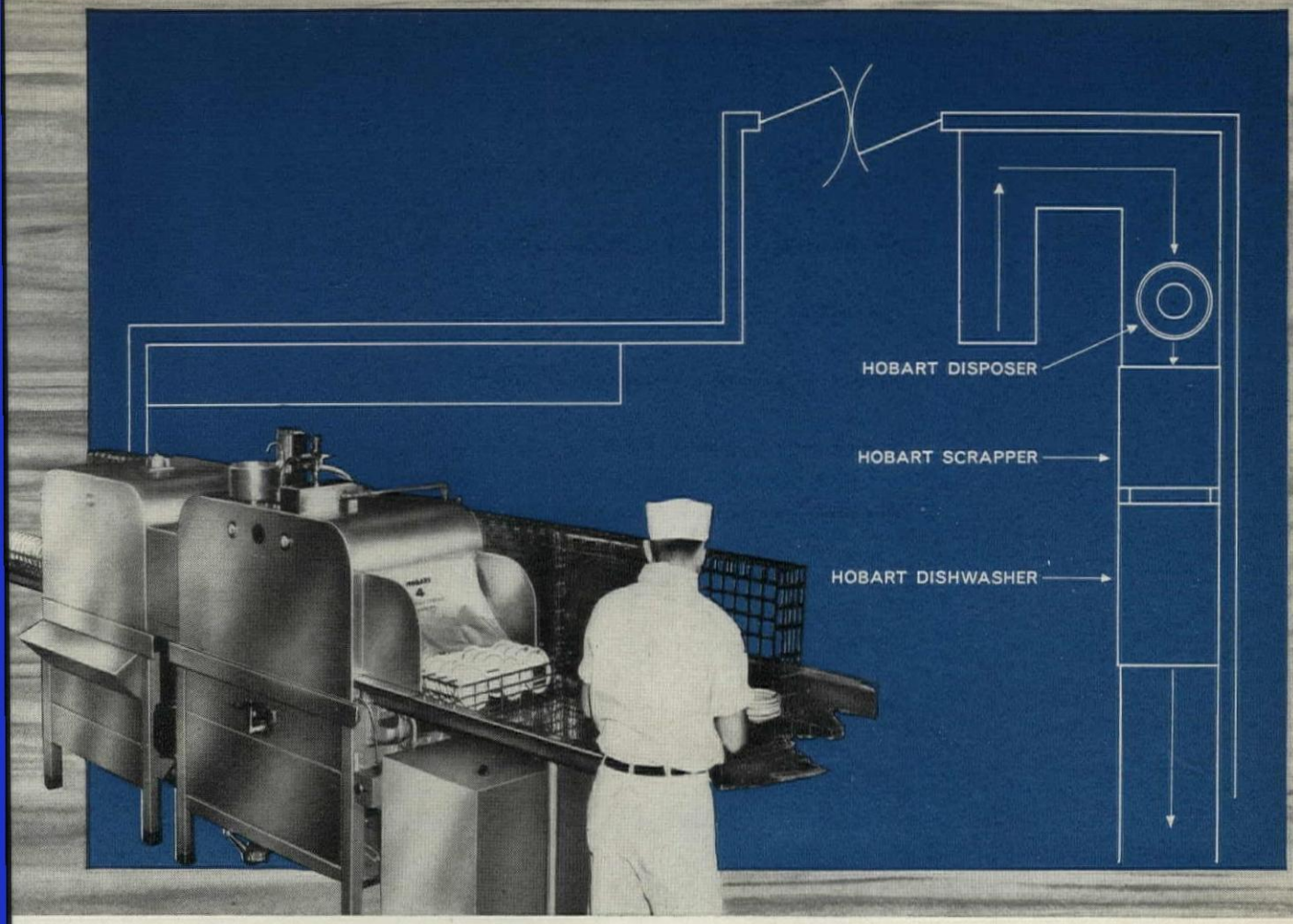
fee-splitters overlooked

Dear Editor: You did a very commendable thing in MAY 1958 P/A when you came to the defense of the profession in your customarily stimulating P.S. page.

Architecture certainly does need someone to periodically give its morale a boost, and its sagging ego a shot in the arm.

However, in all fairness to ourselves, it does seem that you were, for the most part, looking at architecture and architects through rose-colored glasses, obscuring the fact that there are bound to be some undesirable elements within our ranks, who might have commenced their respective careers with starry-eyed idealism, but who have per-

(Continued on page 74)



r kitchen efficiency and convenience... specify

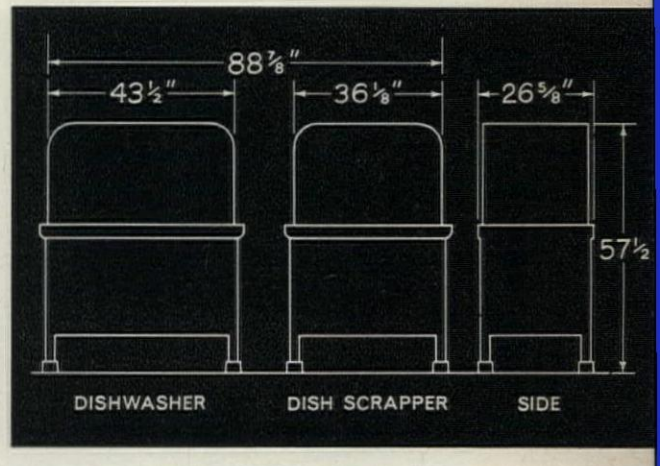
Hobart automatic dishwasher-scrapper combination

The complete dishwashing operation can be speeded up and the drudgery eliminated with an automatic dishwasher-scrapper combination by Hobart.

The conveyor is connected so that racks of soiled dishes will be automatically conveyed through the dish scrapper into the dishwasher wash chamber and through the rinse compartment. There is a real savings in hot water and detergent because the overflow from the dishwasher tank is used for the scrapping operation before it is discarded. This saves water and detergent and assures proper water temperature and detergent strength for the scrapping operation.

It is good insurance for you to specify machines that can be depended upon to guarantee the efficiency of the kitchens you design. As an architect you'll readily appreciate the performance and dependability that are synonymous with kitchen machines bearing the Hobart name. You'll appreciate the flexibility of choice offered by the complete line of Hobart equipment.

Check Sweet's Architectural File for complete specifications on all Hobart kitchen and dishwashing machines. Or send in the coupon.



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The World's Largest Manufacturer of Food, Kitchen and Dishwashing Machines

The Hobart Manufacturing Co., Dept. HPA, Troy, Ohio

- ☐ Please send information on automatic dish scrappers.
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- ☐ Please send information on other kitchen machines.

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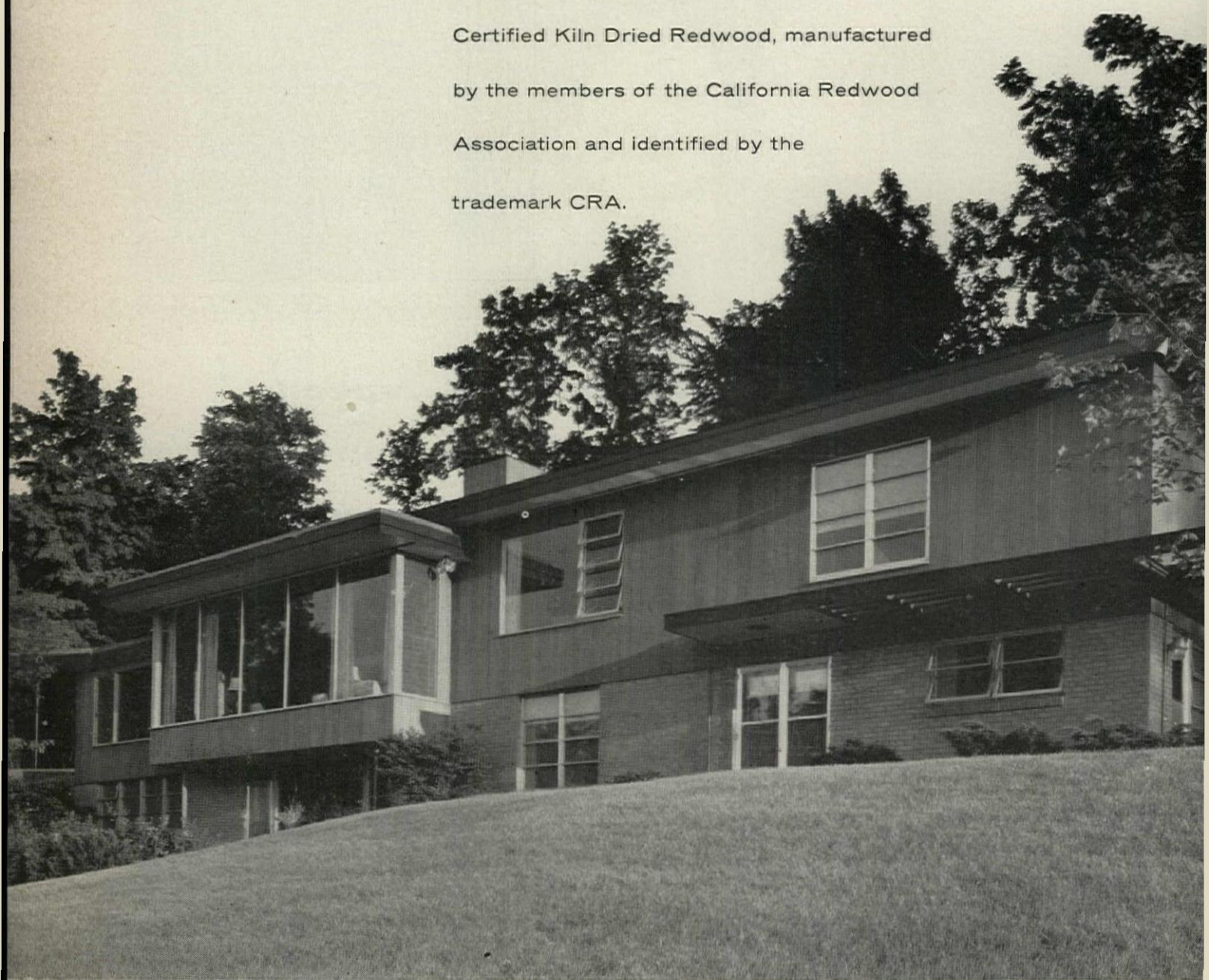
Address.....

City.....*Zone*.....*State*.....

Happy harmony

of home and setting is achieved gracefully and naturally when the home is faced with California redwood. Appropriateness to its surroundings—rustic or urban, casual or formal—is one more reason today's residential architect specifies redwood. His choice—Certified Kiln Dried Redwood, manufactured by the members of the California Redwood Association and identified by the trademark CRA.



Architect: Ernst Payer, AIA

Photographer: Hedrich-Blessing

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New steels are born at Armco

Beauty and Function combined in

Porcelain Enamel Curtain Walls

Architect: Zeller & Hunter
Mechanical Engineer: W. C. Koenig and Associates
Contractor: J. I. Barnes Construction Co.
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One of two porcelain enamel curtain wall dormitories at Wittenberg College, Springfield, Ohio.

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(Continued from page 74)

heating, ventilating, and air conditioning for our students in engineering and architecture.

I have read the Neergaard article with interest and agree that he has raised some interesting points. However, the value of insulation and double glazing has long been realized by the engineering profession. As far back as 1939, a paper presented by Prof. S. Konzo, of the University of Illinois, discussed this subject and presented comparative data. This paper is to be found in *University of Illinois Bulletin, Vol. XXXVI, No. 76* (page 79). In essence, Professor Konzo showed a load reduction of approximately 35% due to the use of insulation and a 31% reduction due to storm sash, the equivalent of double glazing. The combined effect produced a load reduction of 66%.

The effectiveness of insulation and double glazing is unquestioned and the major problem is to convince the architect that large glass areas must be double glazed—or equivalent.

The tremendous discrepancy between interior volume and square feet of equivalent direct radiation, in the cases presented, is undoubtedly a function of load, fluid temperature, building design, and building orientation, as well as system control.

In my opinion, the primary value of a comparison of the operating cost of several identical buildings would be an evaluation of the individual systems and their type of control rather than the benefits to be accrued from insulation and double glazing.

A. L. HESSELSCHWERDT, JR.
Assoc. Prof. of Mechanical Engineering
Massachusetts Institute of Technology
Cambridge, Mass.

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Dear Editor: The printed page and TV channels are so filled with unsupported claims and statements that the one way to convince a discerning public is to produce proof, not empiric statements. Charles Neergaard is on sound ground in proposing a demonstration of controlled results in identical multistory housing units in order to evaluate various insulating and heating situations.

All too often, in the past, "proofs" have been weakened by the presence of extraneous factors which prevent the situations being identical. As a result we depend upon laboratory tests to eliminate these other factors and, from the viewpoint of general acceptance, laboratory tests often do not carry the conviction of practical results demonstrated right in the field of daily operation. Here, as in so many other matters, one convincing and unassailable proof demonstration is worth more than a thousand unsupported claims.

G. HARVEY AGNEW
Agnew, Peckham & Associates
Toronto, Canada

p/a design awards seminar I

In January this year, at the time of announcement of results of the P/A Design Awards Program, a group of Case-Study Seminars was held, with the co-operation of the Department of Architecture, at University of Pennsylvania. As in the previous year, when these Seminars were held at Tulane University, Award-winning projects were analyzed, the architect presenting his project, a discussant analyzing it, and comment following from the floor. On this page begins the first presentation, edited from tape recordings, of the five 1958 Award winners. Others will follow in subsequent issues.

Project: **Public Housing Project**

Client: **Delaware County Housing Authority**

Location: **Chester, Pennsylvania**

Architects: **Geddes-Brecher-Qualls**

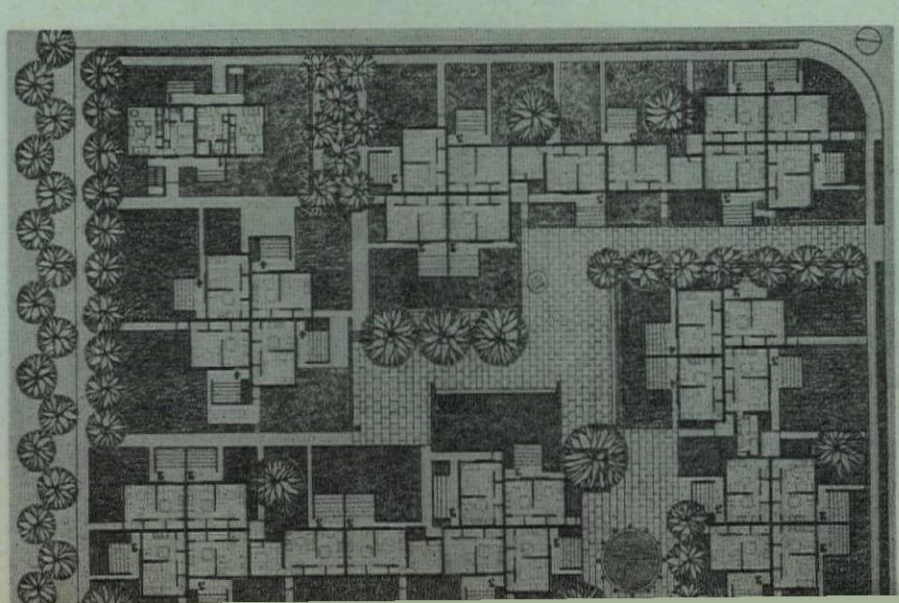
Presentation:

Robert L. Geddes

The project is a federally sponsored public-housing project to be built by a local housing authority in one of the surrounding suburban counties just outside of Philadelphia: the Delaware County Housing Authority. It is to include 36 dwelling units, and is an extension of an existing public-housing project which was built in a very standard way about five years ago.

The total area of the site is one-and-a-half acres. The density, then, is 23 dwelling units to the acre, or about 105 people per acre. Thus it is a dense and intensively used area; that fact affects the way in which the land is handled. There are one-, two-, three-, and four-bedroom units. The one-bedroom units, of which there are only four, are located in the northeast corner. The two-bedroom units are mixed throughout the site, as are the threes. The four-bedroom units are concentrated at both ends of the central court; they are in the three-story buildings. Now, the basic plan is quadriform, with plumbing stacked in the center, and utilities coming in at that point. The two-bedroom plan becomes a three-bedroom plan by the addition of one bedroom joining a unit on the second floor, and one bedroom on the first floor joining the other unit. So the three-bedroom joints, or links, make possible the long buildings.

Outside, concrete-block screen walls enclose paved areas for drying clothes, for perambulators, for bicycles, and so forth. The project is designed so that the individual tenant has a defined paved and garden area which he maintains himself; the remainder of the site is maintained by the project management. The buildings cover 25% of the site, and only 38% of the site is actually for grass area to be maintained by the individual families; because of the density we paved over the maximum amount that the PHA rules would allow. In general, the four-bedroom units get more space around them than the threes and the twos; the one-bedroom units are placed so that these couples, presumably without children, would have no maintenance.



There are two service drives into the project. Parking will be handled by parking bays, directly off the street, on the project site. This is a matter which is being thrashed back and forth now, and is not shown here. In the initial stages of the plan we considered having a large parking area, with buildings moved about to accommodate it. We submitted two alternatives: one with a parking compound, and the other with parking bays off the street. The regional and central offices of the PHA decided that the parking bay was the better scheme. Before we build it we may find the parking compound back on the site.

The buildings have brick exterior walls and prefabricated, modular wall panels, of which there are two or three types—some with doors, some with windows. These panels fit into the brick walls in a manner which is very much the same as that with which the standard-row-house builder of Philadelphia is familiar. You could say that this follows the local tradition.

Presentation:

George W. Qualls

I would like to talk a bit about the guiding techniques we used in developing this project.

We started off with certain prejudices about the existing housing that you find in the Philadelphia area, and in other parts of the country. We were opposed, for instance, to the typical row house in Philadelphia, which produces the same element lined up down both sides of the street. We wanted to create a project that would have a certain variety of space and certain visual stops, as you move through it. So we began to think of something that was basically nondirectional: a unit that we could use which would become as flexible as possible, and provide the possibility of static spaces.

At first we tended to break things up completely into smaller spaces; we thought this would be pleasant in terms of scale of the units. But as we went on we realized that the thing had to have more strength, and that is what we tried to provide with this site scheme, which revolves

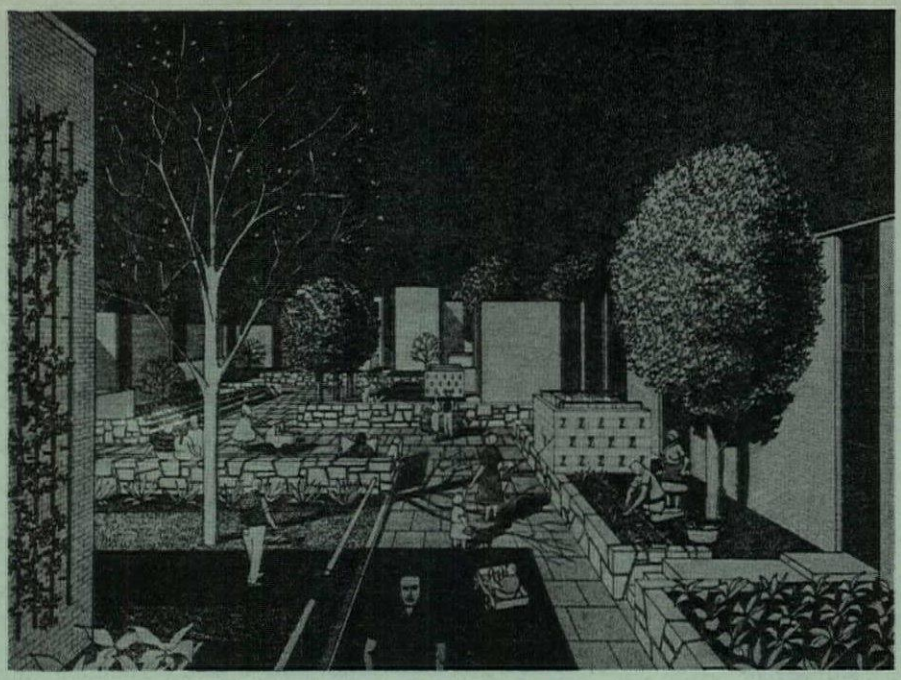
around a major space — a major "room" with subsidiary rooms. By keeping building façades simple and broad we felt that they could be handled in scale with the rather large space. Then the "furnishing" of the space came with the introduction of the drying yards and the little walls. We feel some of the walls are justified in terms of maintaining the grade, which does slope off slightly; the rest are quite frankly put in as units within the space to give it an element of interest as you go through. We came up with the very simple rectangle, which in most cases orients in only one direction. Trying to get full through-ventilation or windows on opposite sides hampered us in the flexibility which we wanted. By orienting each simple rectilinear shape as much as possible in a different direction we could break down "the front and the back" stigma. The project which Geddes mentioned, across the street, is like that: front doors on the street, and rear yards facing each other. In many cases people have no great sense of responsibility about the kind of trash that accumulates in the "rear." We felt that this might be overcome if we could juxtapose service entrances with front doors and then provide some kind of screen or fence for hiding what I would call the visual noise that tends to occur around the back door. What we have really done then is to set up a flexible system that will allow us to do many things with it.

On the problem of fenestration in a public-housing project, your first thought is to put in a lot of glass and treat it very simply. But you have the problem of vandalism and breakage. We found it difficult to handle successfully the problem of just a window in a wall with our kind of building techniques and budgets. The Colonial architects could do it, with their elegantly detailed white woodwork and trim. We finally decided upon a simple prefab panel containing the fenestration, alternating with brick panels.

Presentation:

Robert L. Geddes

We are still not completely sure about lots of things in this project, and one is the link (the third bedroom) between the initial basic two-bedroom units, joining them together. In some cases we feel that this is only partly successful. It was done in order to strengthen the sense of enclosure in the central space. To the landscape architects in the audience, I would like to say that this is an example of architects consciously shaping the architecture with the knowledge that it is the *exterior* space which is being formed. In a sense, it is the exterior space which is the least expensive to build and is the most meaningful to the people. The thing which is probably most interesting to us is that by not working with a completed form or a simple building we were able to manipulate space, scale, building sizes and shapes, and so forth in a way which had no fixed formal qualities.



". . . space, scale, building sizes and shapes with no fixed, formal qualities."

Our last word: we feel that it was a challenge to do a public-housing project for a public agency. A lot of people said that it is impossible (and perhaps it is impossible, for certainly this one isn't built yet). We have made at least five trips to Washington, and we spent many hours talking to the regional office and the people who were going to make the decisions. We found that we had to have them waive some of their standards, because many standards are set for conditions which this project does not assume. Many of the spacing standards are based on the idea of two parallel buildings parallel; perhaps each building 100 ft long. We found, however, that it is possible to present what we thought was a good plan, and to have it accepted and to get waivers without anything involved but the loss of time. In the end it took months to do it, but waivers were obtained and nothing substantially has been changed in the project due to PHA standards.

Discussion:

Dean Henry L. Kamphoefner

I think this project has a certain amount of shock value in a very positive and good sense. I think all of us on the Jury had been looking at public-housing projects all over the United States and hadn't seen very much to be commended. But here we saw one that had a very fresh, well unified point of view. One of the things we liked about it so much was that the architects considered almost as important as the buildings, the spaces around the buildings. It seemed to us, in a sense, that they were even using the buildings as backdrops for a beautiful spatial relationship outside. We felt too that the use of these low walls seems to be just right to segregate spaces. If they had been any lower the children wouldn't have paid any attention to them and the grass would have been mutilated so it wouldn't be worth anything, but here the circulation through the project on the paved spaces seems to be very well studied from a functional point of view. Someone might actually be out here sunning, sitting along on the walls, in the little garden area that they have, as the perspective shows. The clothes-drying yards we thought were very good. The walls are perforated enough so they can get air moving through them; you can also put bicycles, scooters, and so forth, in back of them so that you can get them out of sight. So that the place could have order, if you get a reasonable

amount of co-operation from the 36 tenants who will be living there.

When Tom Creighton asked me to be discussant on this particular project, I sat down with three of my colleagues in the School at North Carolina, and I asked Horacio Caminos, George Matsumoto, and Cecil Elliott to go over the project with me. So some of these things that I am going to bring up were jointly arrived at by the four of us. We thought, in examination of it, that the imperative quality of the quadriform scheme (as Bucky Fuller would say) is that it's a turbining of the elements around the axis, determined one way here and another way there. We felt that thus you get a variety of outlook, and a variety of observation from various apartments. And we think that we realize the importance of this kind of scheme from many other points of view. It is the best way to soundproof. You don't have anybody living on top of or underneath the other person, and that's where the worst problems come in apartment living. This scheme, we thought, eliminated about as much of the noise as you can, by getting the bedrooms piled on top of one another; in the four-bedroom units they are piled up so that this apartment becomes three stories high. We thought that was good. There is, however, a question of what you suffer in the view that some people get. Whether what you gain is partially lost by what you lose in the difference in orientation in the four apartments is a question. We wanted to ask, too (Bob Geddes partially brought it up in discussing garbage collection, trash collection, and deliveries): how did you expect to control service-drive entrances to prevent somebody from driving his car in and parking?

Geddes: We thought we'd put up a chain.

Kamphoefner: I wouldn't say that was impossible. You haven't indicated how you are going to handle the garbage collection at that point, though, and this is really a problem.

We thought (the P/A Jury *and* my faculty group) that there is very pleasant variety within a clear unity, so that it isn't a monotonous project at all. The different heights, the low walls and the pavements and the other elements all make it a project of good variety. Cecil Elliott, of my faculty, had some comments to make on it that I would like to quote, regarding articulation. He has this to say: "While articulation is a household god of architecture today, it seems in this case it may have been carried beyond its natural and reasonable limits. The size of the spaces; the low dashing walls and the façades of the buildings bouncing toward and away from the observer; the sort of rigid, irregular use of trees; all of these things produce an over-all complexity which may be a bit too much like fruit cake for my pound-cake taste. Of course, the personalization and individuality of area and protection against pedestrians passing through are important in the scheme. But it should have been managed with less trying complexity. In short, I would say that the design technique here is one common today, that is a basic formality diminisned by the addition of the profusion of somewhat irregularly placed contrapuntal motifs." Fair or not fair? I'll let you answer that later.

I have one more point I want to bring up: if a certain living room, dining room and kitchen area is right for the two-bedroom apartment, is it right also for the three-bedroom and four-bedroom units?

Qualls: On the last question: as we pointed out, spaces were prescribed as to maximums. Of course, when you begin stacking buildings like this that really aren't row houses, you begin to find something that can't fit. What you will find here is that according to public-housing standards in the four-bedroom unit, the ground-floor plan is right on the line, so to speak; and everything else is a little over. In other words, there is a little more space in the three-bedroom unit's living room and dining room than is actually required, and more also in the two-bedroom unit. We felt that that was something we had to do in order to get any discipline in the scheme at all. We didn't feel it would make any sense at all to set back the lower floor, although if you were being very strict about square footage you could do it—but it would probably be a more expensive scheme.

On the problem of trash and servicing the various apartments we stretched PHA limitations right down to the nail. A woman with a load of groceries who parks her car outside has a maximum of just 250 ft to walk, which is the maximum allowed.

Geddes: I would like to speak to my friend Cecil Elliott. I think that he is very perceptive. He has analyzed exactly what we are doing, but he thought it was a bad thing to do.

Kamphoefner: He thought you had done it to a fault.

Geddes: Well, I will say to Elliott that if he wants us to, we will draw a more articulated scheme to show logically that this is not the end of articulation. For example, the units themselves are not clearly articulated, and we have many studies to show that. You cannot see where every unit begins and ends. You don't see every single unit separately. By the use of the walls we began to merge units. (I think that an answer to Elliott is that this design is not like a Gregorian chant.)

Grant Manson: I don't like subtleties. I don't understand why these units aren't symmetrical in every case, why each apartment was not arranged within the quadriform, as you call it, exactly like each other. Then each one would have had—instead of the short view right out on the street and across, perhaps into something not very attractive—at least a raking view down the lawns, over which you would have some control. I've always been bothered by that, from the first time I saw it. Maybe you can explain it to me now.

Geddes: It is a matter of composition, a word which you may feel is falling out of modern architecture. We felt that it would be better, abstractly, to have a long wall and a short wall, rather than to have one short wall and another short wall. Perhaps it is a matter of scale, or a matter of emphasis: a matter of studied contrapuntal irregularity. Now it may be in some places that everyone would be happier if it were all one way. Well, perhaps they would. In some cases it was unnecessary to get the long wall for the composition. In the other cases, we felt that it was necessary.

Frank B. Hunt: I am a little bothered about the interior courts. The stone walls and the screens for your laundry are of different materials; one is stone and the other appears to be concrete block. Would it be nicer perhaps if they were both concrete block?

Qualls: Probably the screen walls would be more successful if we were able to build them out of brick, such as we are using on the buildings. It's frankly an economy measure, and we may find that we are able to use brick, which would eliminate one material, and would still allow the stone to go through unhampered.

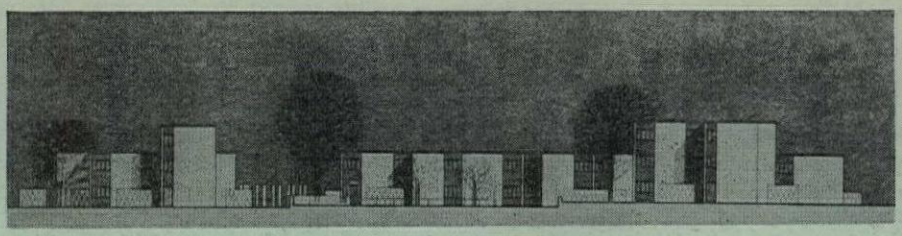
Donald L. Hardison: I'm very intrigued by this pattern which has been achieved, and the scale as I see it here, but I am curious as to what the effect is going to be on an individual when he moves in and finds out that his next-door-neigh-

bor's entrance is actually the service entrance. This scheme has certainly eliminated monotony, but wouldn't it involve all sorts of social problems, mixing entrances with service features?

Geddes: We have studied that and our solution is to put the only major ground planting, at that point, in order to separate the two entrances. After all, they aren't at exactly the same point; they occur some distance apart, and the two will be separated by prickly bushes of some sort. Speaking of that, almost all the money to be spent on plant materials will be for wall planting rather than for ground planting. This is the only spot where we expect to have much planting; we expect to have ivy and wistaria and so on, on the walls themselves.

Qualls: I would like to go back just for a second to Elliott's criticism of the scheme in terms of its being too articulate. One of the things we were trying to accomplish here was a richness of profile in the buildings that we found difficult to achieve with a flat roof. With pitched roofs, gables, and hips that you find in traditional buildings, you do have a profile that lends great character to the buildings. In this case we would never really feel quite right in putting an attic on the buildings, nor could we seem to justify in the bedroom units a sloped ceiling of any sort. We felt that by the in-and-out technique that we used we were getting a broken profile against the sky, which would make it more interesting and a bit more human in scale.

Lewis Davis: In contrast to Obata's church (Priory of St. Louis and St. Mary; Hellmuth, Obata & Kassabaum, Architects. JANUARY 1958 P/A, p. 112), let us say that this project is designed for actual human activity. Everything is scaled down to the human being, so that man is very important. We like to think that we dominate our homes, whether we do or not; at least everything is designed for us, so that we are the important beings. Now, I like this project, and I can almost feel myself walking through it and enjoying every minute of it, but don't you think it would be a nice change of pace to be able to walk across the street into, say, Obata's church, where I would become totally insignificant; where there is no scale and I become as important as I think I am or as insignificant as I think I am. I think this change of pace is very important in our present society. In this missile age we never know what's going to happen. In a well organized society where we had well organized architectural patterns, it might be just a bit monotonous; I would regret to think that a city would have all thin-shelled roofs. I think that the haphazardness of a city, building up and creating its individual spaces with their individual characteristics, somehow must be considered as very important.



". . . a broken profile against the sky . . . more interesting . . . more human in scale."

Geddes: I think scale is one of the elements of architecture which must be manipulated and must be handled, and that you cannot abdicate your position as a designer and let only materials and structure be the things you are concerned with. For example, a lot of us are working on the Toronto City Hall Competition. There we are obviously going to work on a different scale than in this project. I absolutely agree that there must be bigger buildings, more important buildings, with a large scale —there may even be very small buildings with a large scale.

Qualls: I think much has to do with the program with which you work. If this program had not been one of just housing, but had included shopping, maybe a school, a religious facility, if you will, greater variety of scale would be possible. Many times, though, it seems to me that architects get themselves into hot water by trying to manufacture this kind of space that you are talking about in a program in which it doesn't exist.

Carl Koch: I want to raise the question of the kind of attitude you found the Public Housing people had on the units themselves. This is the first public-housing project I've seen in many years that's really interesting. However, one thing that I assume you just took on faith was the room sizes they gave you. That's the one thing that bothers me. I would love to walk through the project but I would never contemplate living in it. I imagine you feel the same way about it. I just wondered what kind of attitude you got from them on room sizes.

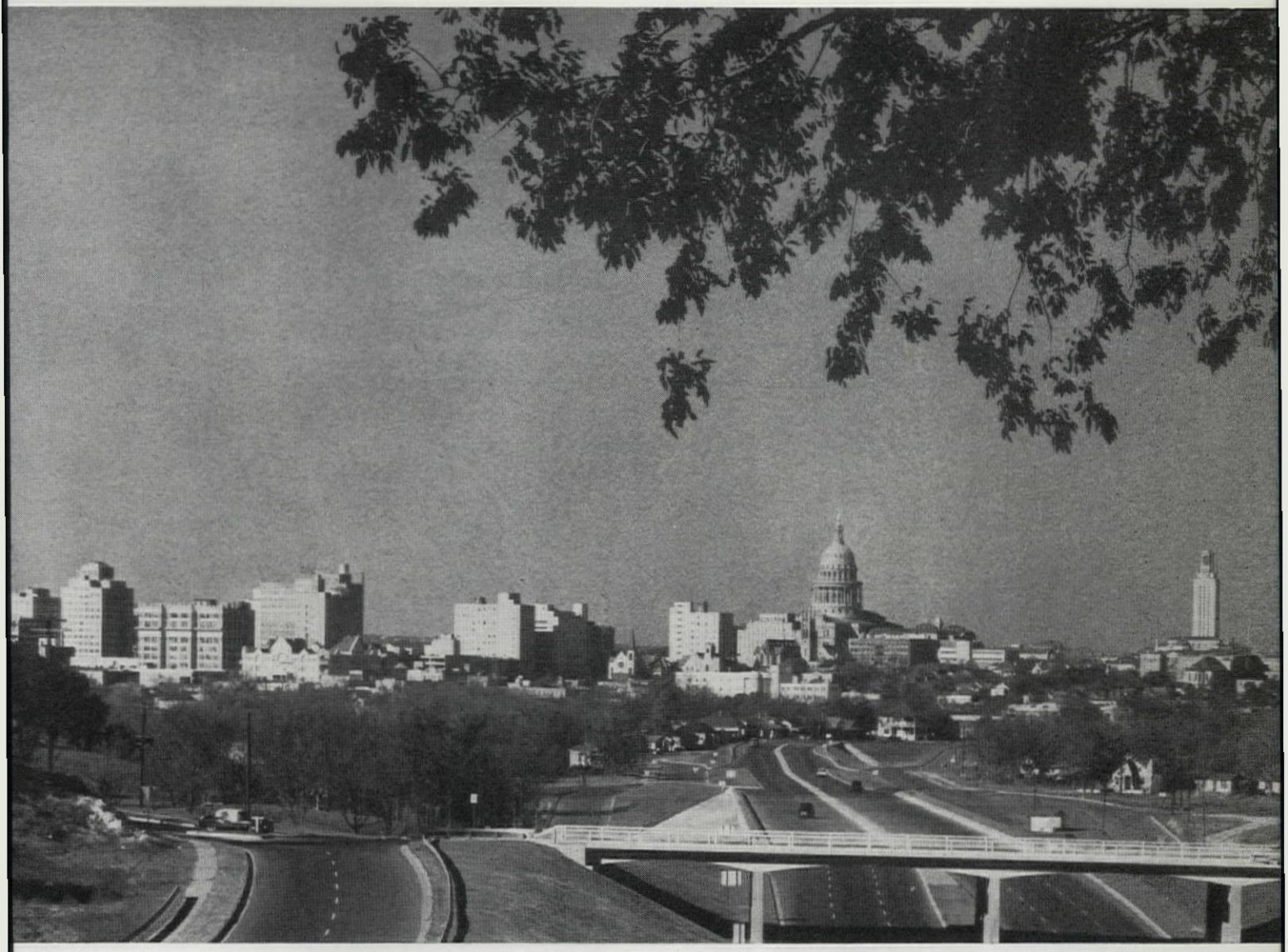
Qualls: I'm afraid we never really challenged that. We just accepted it and said, let's take it and do what we can with it, although I certainly would agree that these rooms are immensely inadequate in terms of space for large families.

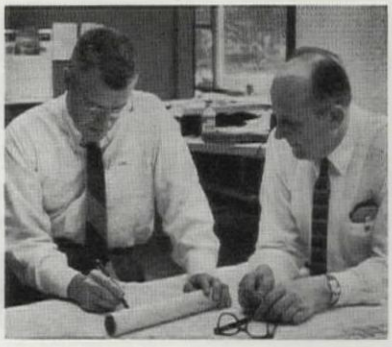
Geddes: It never occurred to us to fight that, you know. We had too many other goals in mind (one of them winning this Award!) It never occurred to us, and, Mr. Koch, I suppose if architects like yourself, who have done a lot of work in housing, would want to make a concerted drive and look at that we'd sure take an active interest in it. It's a little embarrassing when you come down to how small those rooms are, I suppose.

Ian L. McHarg: I think this is a wonderful project. I think it is the first time that the ideas developed by Henry Wright have got to the point of architecture, and the first time the spaces that have been organized in a project of this sort have become interesting spaces. But in this context I have one fear: I think that the spaces are enormously vulnerable. All the people who have been given open spaces to maintain are perfectly at liberty for personal expression, and this expression may take the form of allowing planting in the open spaces to become rank weeds, or to be dominated by magenta azaleas, or for these areas to be covered with compost heaps, old bicycles, or rusting perambulators. And I think, assuming that one could overcome this (and I see no possibility, as there is no vernacular for treating the open space in a civilized and elegant way), the other vulnerability is the liberty of the Housing Authority to insist on only the poorest of materials. The paving, for instance, is not an elegant material, but is sidewalk concrete, and the walls are not of stone but are of concrete block, so something of the quality of the space would disappear. I would like to hope that some solution will be found of organizing the open space in such a way that it does have a unity which will strengthen its appeal and induce the Housing Authority to spend enough money to insure that the elegance which we have seen will in fact be realized.

a practice that has grown with its city

Bill Malone





Granger *Fehr*

In documenting the phenomenal growth of the Office of Fehr & Granger, we add an architectural chapter to the fabulous Texas story. As in P/A's previous "The Architect and His Community" studies, we describe how the practice began and grew; how the staff is organized; how it handles a commission. We also attempt to analyze the design philosophy behind the firm's performance; and we present several of its recently completed buildings. *Photos (except as noted): Dewey G. Mears*

THE ARCHITECT AND HIS COMMUNITY: FEHR & GRANGER—AUSTIN, TEXAS

The Charles Granger residence, Austin—1951

Lizzie M. Burges Elementary School, Seguin, Texas—1954

In 1937, when Arthur Fehr first hung out his shingle in Austin, the city had a population of 83,000, and the office consisted of a single drafting board in the back of a wood carver's studio. In the early '30s, Fehr had worked with the National Park Service, and one of the student architects who worked with him was another Austinian—Charles Granger. In 1938, the two joined forces, and, while they subsequently went their separate ways for a time, they picked up again after World War II. Today, the City of Austin has a population of about 186,000; the Office of Fehr & Granger has a thoroughly up-to-date, air-conditioned office building of its own; and work on the boards or under construction totals nearly $6.5 millions. In addition to the two partners, there are now four associates — Herbert Crume, Lankford Griffin, Thomas Shefelman, and George Zapalac—and in all, the staff consists of some 20 persons, 9 of whom are registered architects.

Both partners received their initial professional training (B.S. Arch.) at the University of Texas. After graduation in 1925, Fehr went on to take graduate study at Columbia University, the Beaux Arts Institute of Design, and New York University. Later, he traveled extensively in Europe, worked in offices in both New York and San Antonio, and was Architect for the National Park Service (1934-36) before launching his practice in Austin.

Granger was graduated in 1936 and first worked with Richard J. Neutra in Los Angeles. This was followed by five years in association with Fehr in Austin. In 1944, he was granted a Fellowship at Cranbrook Academy, where he worked with both Eliel and Eero Saarinen and earned his Master of Arts in Architecture and Urban Design. During the war years, the Austin office was closed, and Fehr participated in war work on AE contracts and as Architectural Engineer with the War Department, while Granger's war stint included planning co-ordination on AE contracts and work in the Engineering Division of Consolidated-Vultee Aircraft Corporation. Since 1946, Fehr & Granger have pooled their talents as Architects and Planning Consultants.

There was never any doubt that the two partners were destined for careers in architecture. Asked how he happened to choose architecture as a profession, Fehr countered with: "Why did I get married?" Raised in a highly disciplined environment, and with a naturally inquiring mind, he was attracted to the manual arts in high school. "The fascination for things under construction was introduced diagrammatically to me . . . I came in contact with architectural drawing," he reports. "Here was a way of life where I could dream and build and most likely find happiness, or so I thought. . . . Sticking to my chosen game has proved to me that in serving a community there is a rich reward, not just of monetary value, but in satisfied living." As for Granger: "As long as I can remember, I have been fascinated by buildings. . . . The first time I actually became aware of an architect was when I was about 14 and was exposed to a drafting course

given in the public-school system. Sam Martin taught this course and had some copies of *Pencil Points* in his office. I became completely infatuated with the beautiful drawings and the wonders of what a trained hand could do with a simple pencil or pen. From that point on, it seems to have been just a logical progression through all the drafting courses given in the public schools, and when I graduated there was no question in my mind about going into architecture."

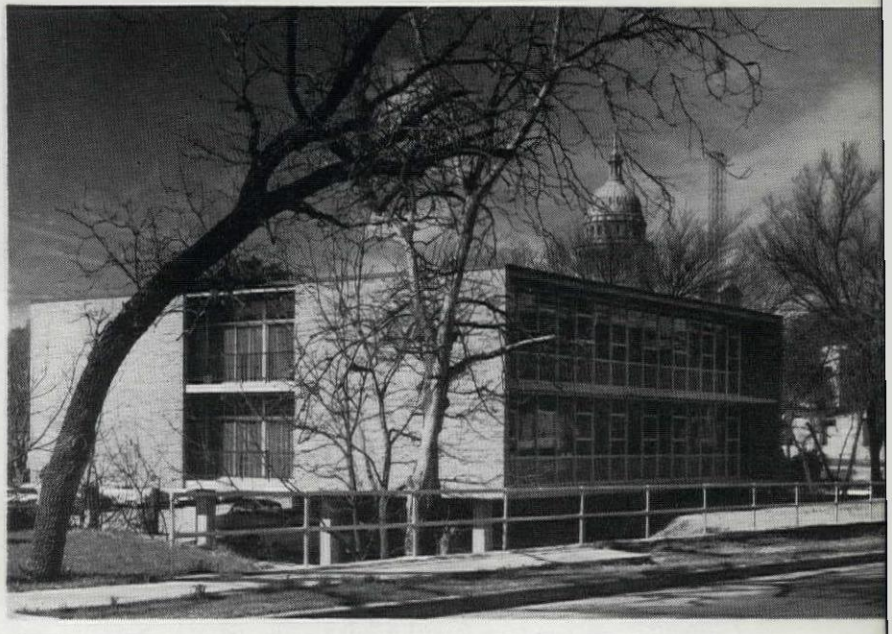
Both partners have worked in cities outside of Texas, but the decision to be a part of Austin's growth was eventually made, by Fehr, because "it's home to both of us. . . . Our two biggest industries are the University of Texas, third richest school in the world, and seat of the Texas Government. There's adequate water in this area for a population in excess of 500,000. . . . In our book, any town of more than 25,000 population can support several architects." Granger reports that, while opportunities for associations have presented themselves in both California and Michigan, he decided to return to Texas after receiving his Master's at Cranbrook, "because the future of Texas looked extremely bright (as it does today), and I felt it was a chance to return and establish a good practice in a growing country. Austin is an ideal location in Texas in which to live. I guess that fundamentally I am a country boy and have never been able to bring myself to spend an hour or two a day commuting, in order to work."

In the office organization, the two partners and four associates "play" many positions, but there is a delegated line of authority. Fehr is mainly concerned with the administrative end, while Granger has complete charge in the drafting room, and the four associates serve as project managers. When a commission comes to the office, one of the partners sits in on the original conferences to learn the program, and research is launched immediately. A program is written and given to the owner and to the associate who is to be project manager. Designing is carried out by the principals—the first sketch being just a flow chart, or, in some cases, a simple two-dimensional sketch. After elements are established in relation to one another, a carefully prepared sketch is presented, and the project may be studied in rough models or quick perspectives.

What are the firm's design goals? "We sound the client's tastes and desires," says Fehr, "and then try to elevate these wishes and give the structure something extra. We try to give a living space charm; a church a feeling of awe; and a work space a pleasant atmosphere to add interest and excitement to the time spent there." Obviously, both partners agree that a building should be well planned, well proportioned, of good color; and should take into consideration the site, functional requirements, and economic limitations. But then, according to Granger, "we try to contribute in some small way a little something of beauty to our physical environment, and, through beauty, bring a little happiness and pleasure to those who come in contact with it."

The Arthur Fehr residence, Austin—1949

Fehr & Granger's office building, Austin—1957

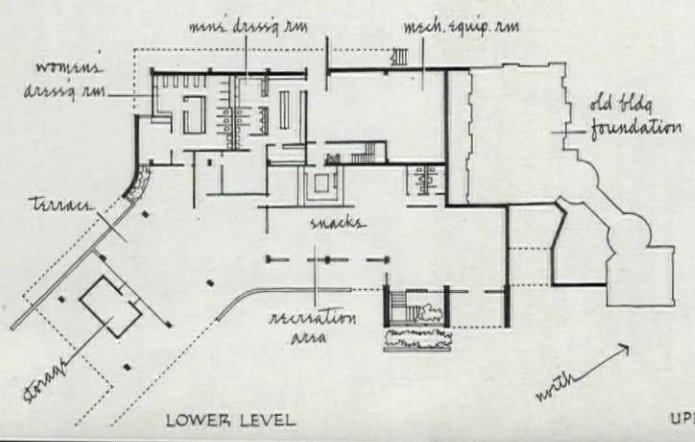


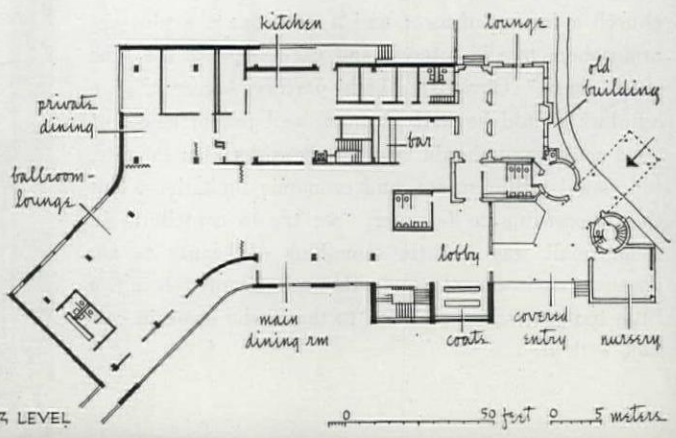
Chapel for St. Stephen's Episcopal School, Austin—1954 (below)

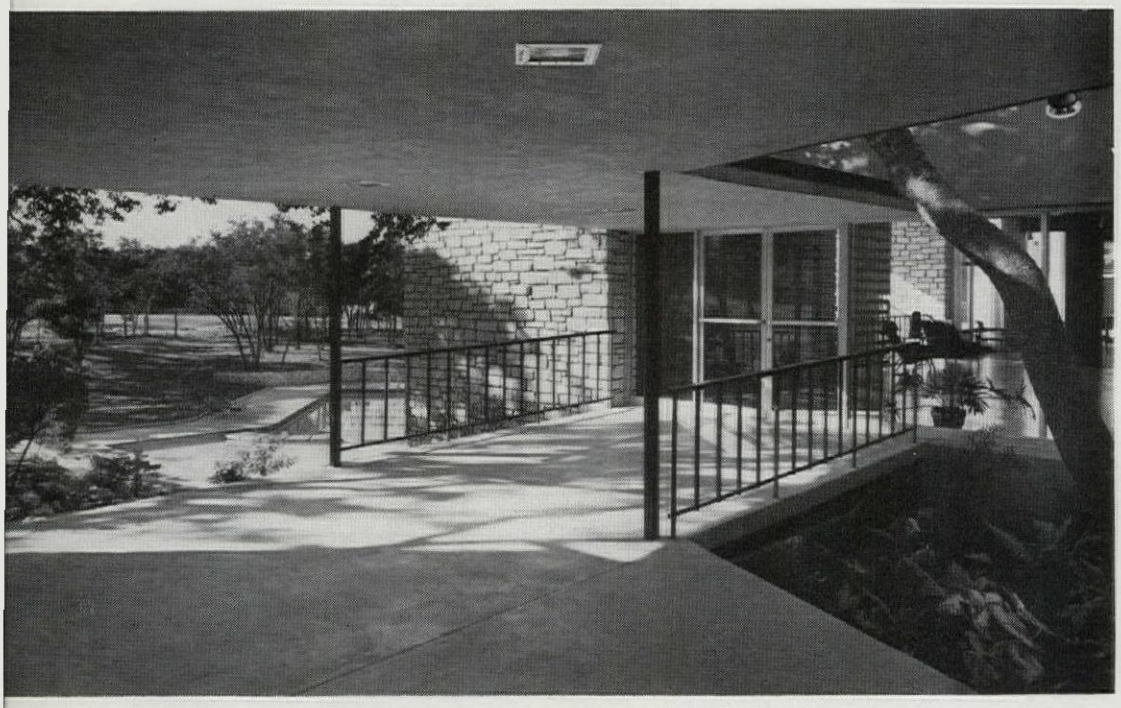
country club

At the Westwood Country Club, Austin, major club facilities have been added to a high-styled old mansion on a rugged property adjoining Lake Austin. A variety of activities—ranging from formal evening dinners and dances, to swimming, to boating—had to be served. Since funds were limited, use flexibility within the building is provided by an open plan with movable divider partitions; the upper floor mainly serving activities of adults, and the lower level, adjoining the swimming pool, chiefly for younger members. Several games, such as shuffleboard, horse shoes, and ping pong have been set up on the terrace; a future program calls for construction of tennis courts. At the foot of the property is a boat dock for 53 boats.

Structure is a one-way beam-and-slab system supported on exposed-concrete columns spaced 32′ o.c. Exterior wall materials combine painted concrete block and native stone. Sash are aluminum; floorings include wood block, terrazzo, marble chips, and ceramic tile. The club is year-round air conditioned. Associated were Watson-Lewis, Interior Decorators; W. Clark Craig, Structural Engineer; Herman Blum Consulting Engineers (Mechanical); A. C. Bryant, General Contractor.







A covered bridge joins the new structure and existing stone mansion.

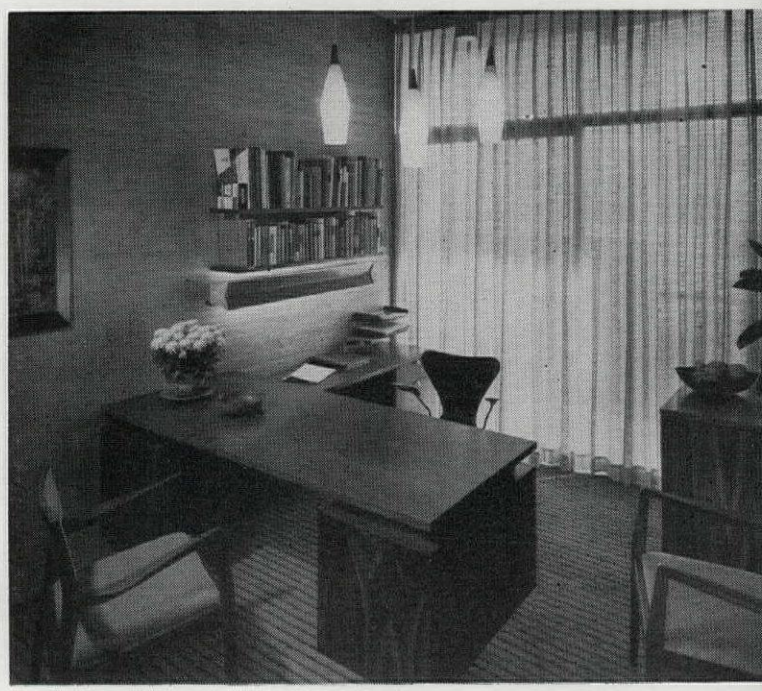
In the main stair hall (right), *a tile screen extends the full height of the building; chairs are upholstered in orange and red damask; the table is walnut; and the sculptured head is by Blossom F. Burns.*

Walls of the main dining room (below) *are covered with wall canvas in a special print in dark olive green, silver, and gold tones; chairs, upholstered in gold antique leather, have mahogany frames with a grayed oil finish.*

office building

By taking advantage of a site which others had felt to be unfit for building purposes, Fehr & Granger have constructed their own offices (plus some rental space) within a stone's throw of the State Capitol. The reinforced-concrete building is perched on the banks of a creek, on columns spaced 20′ both ways which, in turn, provide a 4-ft module for the fenestration on north and south walls. The architects occupy most of the upper floor, with 440 sq ft rented to a structural engineer. The lower floor is rented to a single company; and at basement level are mechanical and storage rooms, a model-building room, and parking space for 10 cars. The building is fully air conditioned. Masonry exterior walls are of a specially burned, glazed brick in a color range of from orange to sunset red. Charcoal-toned porcelain-enameled panels occur between the aluminum members on the north and south walls. As the architects point out, "If you come within sight of our building, you cannot miss it. It is known all over town as 'that red-brick building on the creek.'"

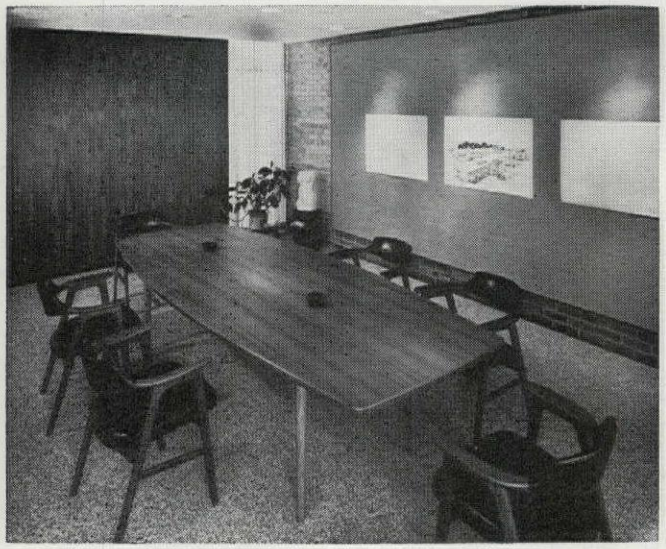
Associated were Herman Blum Consulting Engineers, Mechanical Engineers; Wilson & Cottingham, Structural Engineers; Dean Johnston, Electrical Engineer; Porter Plumbing & Heating Company, Plumbing and Air Conditioning; and Yarbrough Construction Co., General Contractor.



The firm's reception room (top) *has a wall of random-width black-walnut stripping applied on black-walnut plywood; opposite wall is painted concrete block; ceiling is wall-to-wall eggcrate; and flooring, beige vinyl tile.*

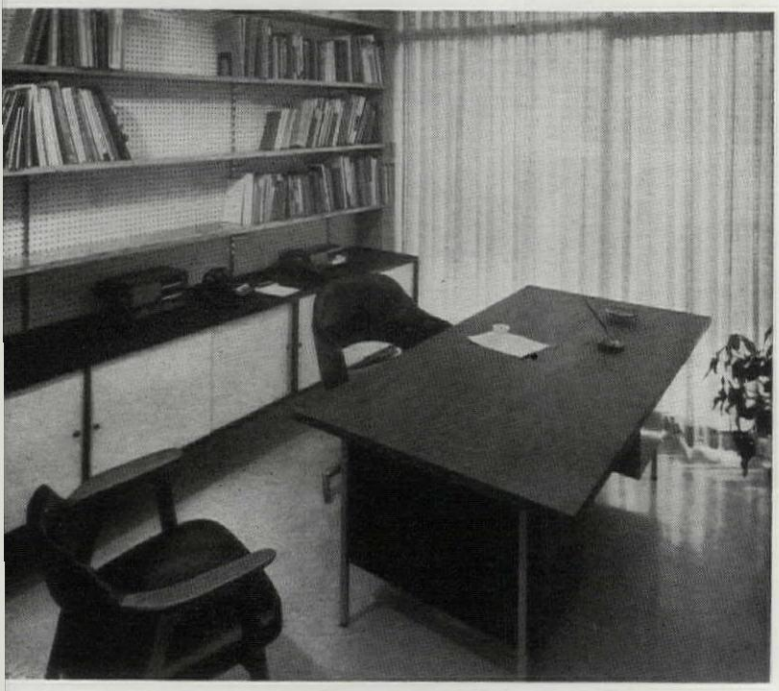
Fehr's office (right), *with sliding doors to outside balcony, has one wall of Japanese grass-cloth; two, of black-walnut plywood. The desk was Fehr-designed.*

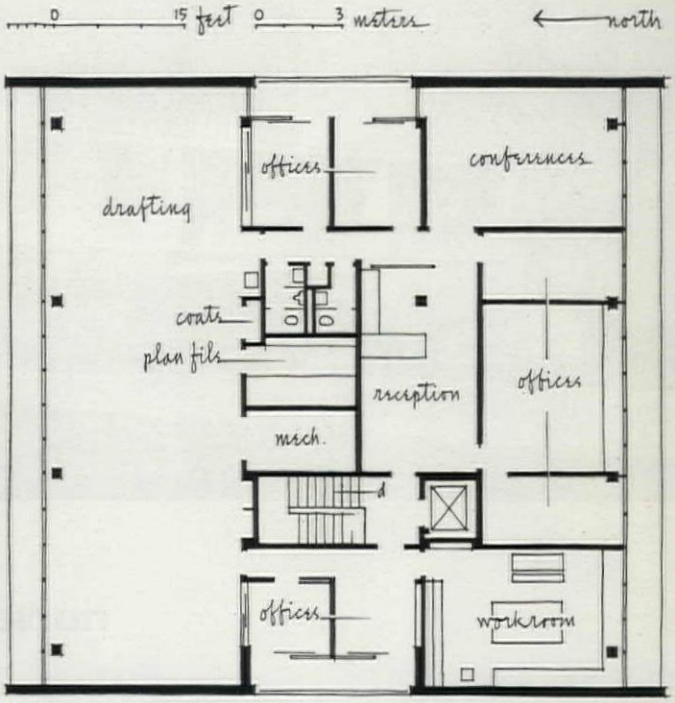
Far wall of conference room (below) *is of black-walnut plywood; side wall of glazed brick, with tackboard panel. Furniture is teak.*



Granger's office (below) *also has sliding aluminum doors to balcony; one wall of bookshelving, with pegboard back; vinyl floor.*

The drafting room, with complete north wall daylighted, can accommodate up to 30 draftsmen. Glazing is gray glass, to control sky glare. Between drafting cubicles are baffle walls of a pegboard on a steel frame. The architects designed the drafting tables.



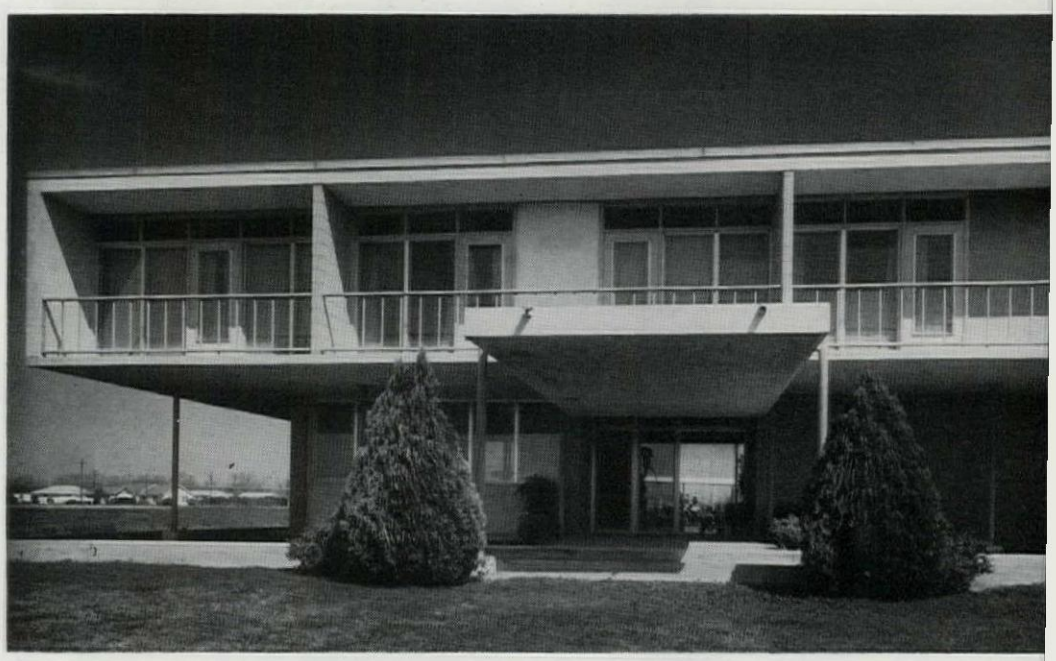


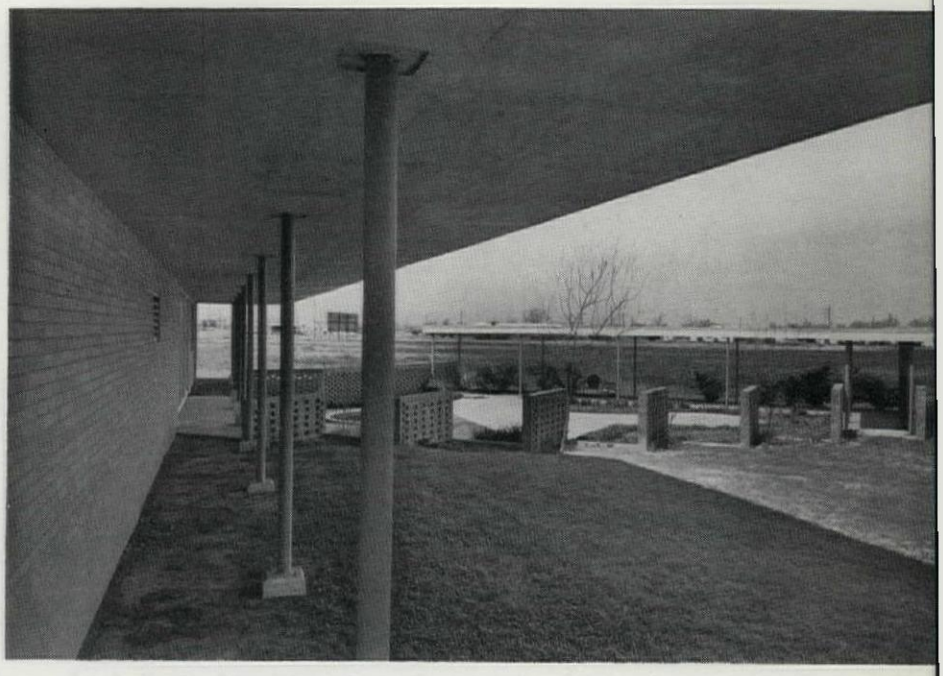
nurses' home

A P/A Award Citation winner in January 1954, the Josephine Traylor Brooking Memorial Nurses' Home, in Wharton, Texas, is the first of several similar structures sponsored by Gulf Coast Medical Foundation to supplement neighboring health facilities. Each two-student room on the upper floor has a private, open balcony to catch the Gulf breeze. On the ground floor are an apartment for the house mother; a social room; mechanical room; and office for the Foundation.

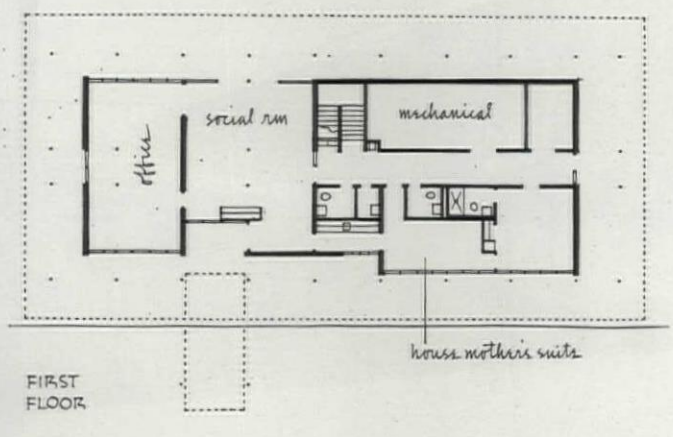
Construction consists of a reinforced-concrete slab on piers for the first floor; concrete slab supported on pipe columns for the upper floor. The roof is framed with wood joists. Rigid glass-fiber insulation is used in the roof.

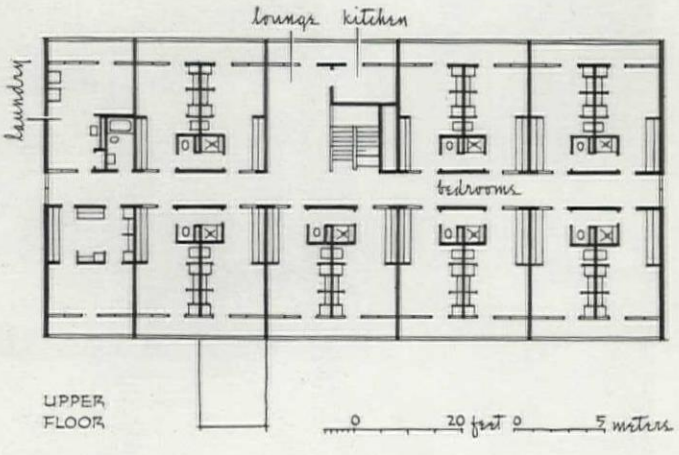
Heating and ventilating were designed for maximum future flexibility with minimum initial cost, with provision made for later installation of cooling coils in the fan coil units that now provide the heating. Space below the ground floor was used for a return-air plenum, with floor return located in the floor. Collaborators were Wilson & Cottingham, Structural Engineers; Blum & Guerrero, Mechanical Engineers; Drymalla Construction Co., General Contractor.

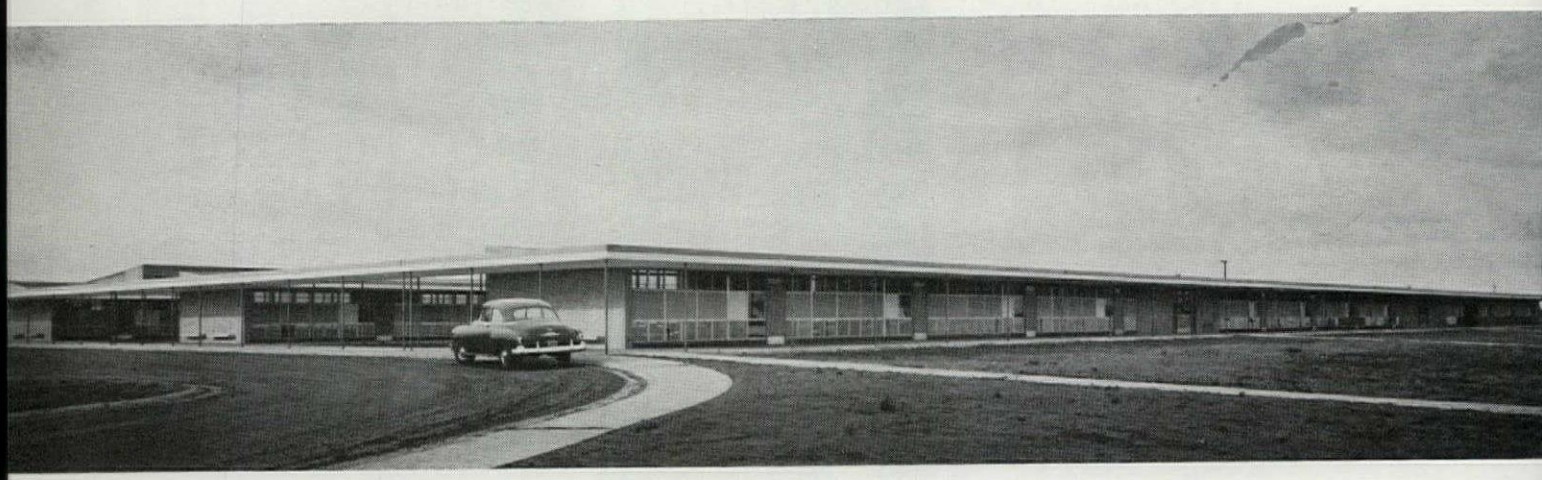




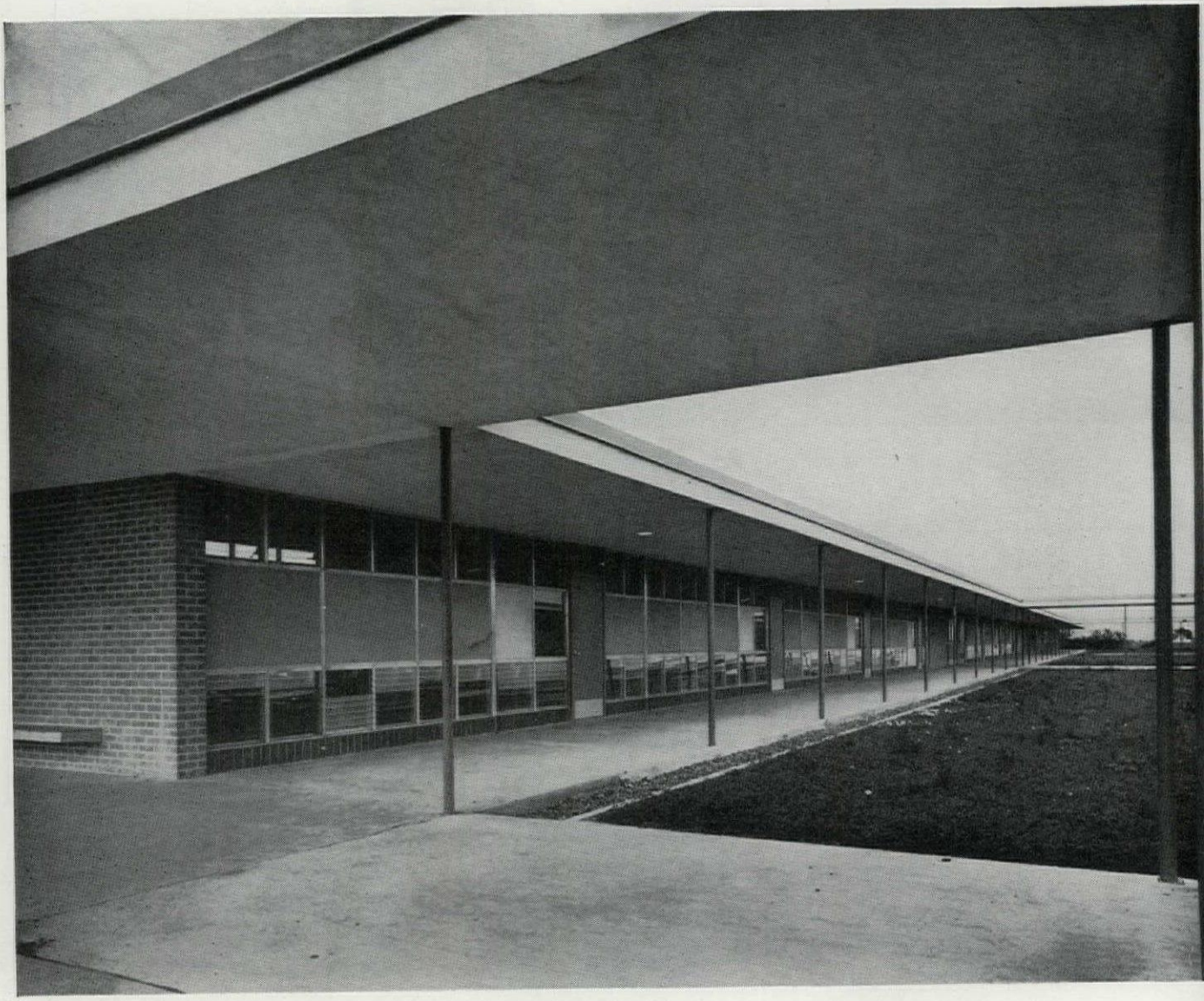
From the ground-floor lounge (below) *one looks out to a fountain and developing garden-pergola area* (right) *at the rear of the building.*







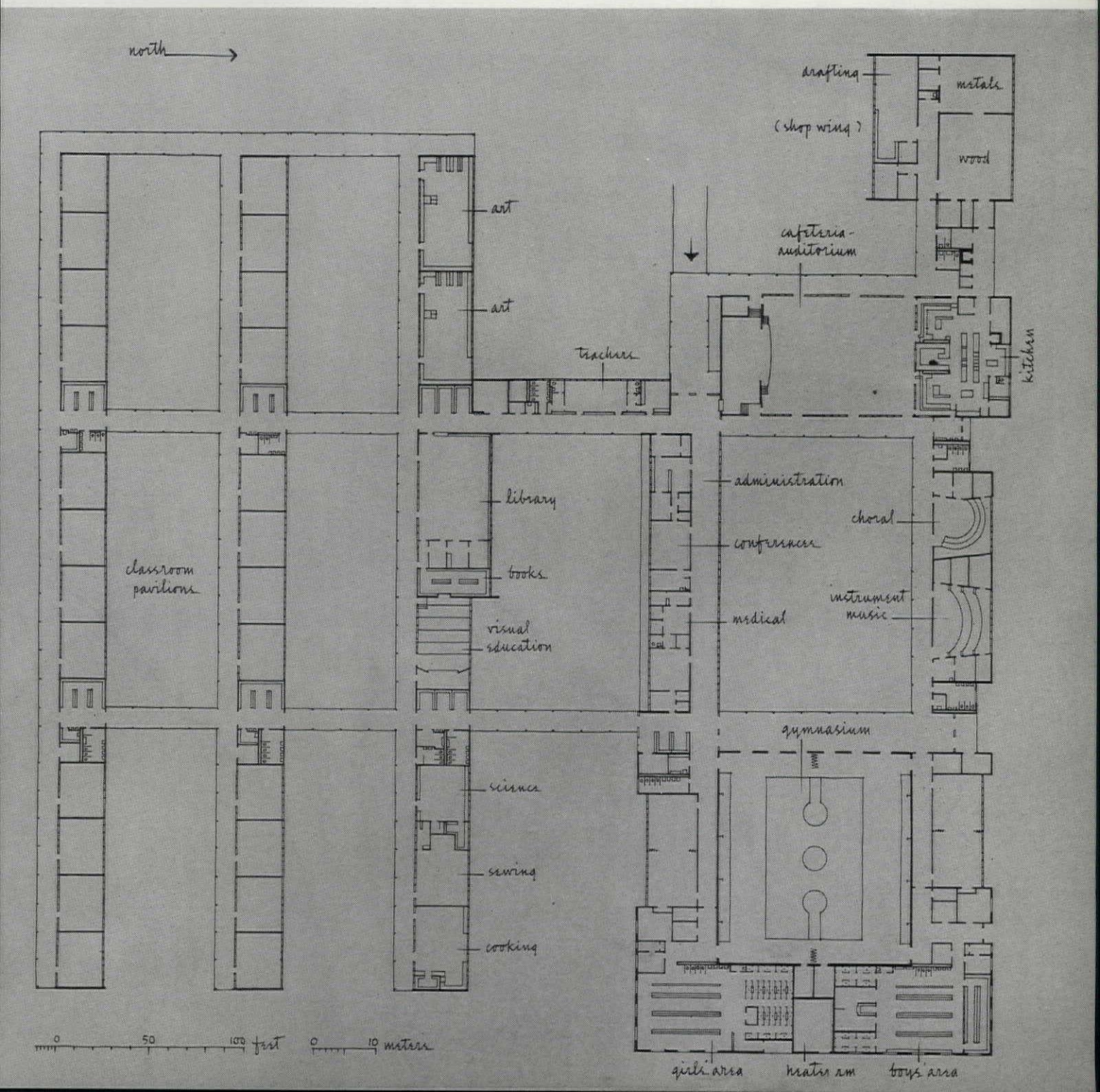
junior high school

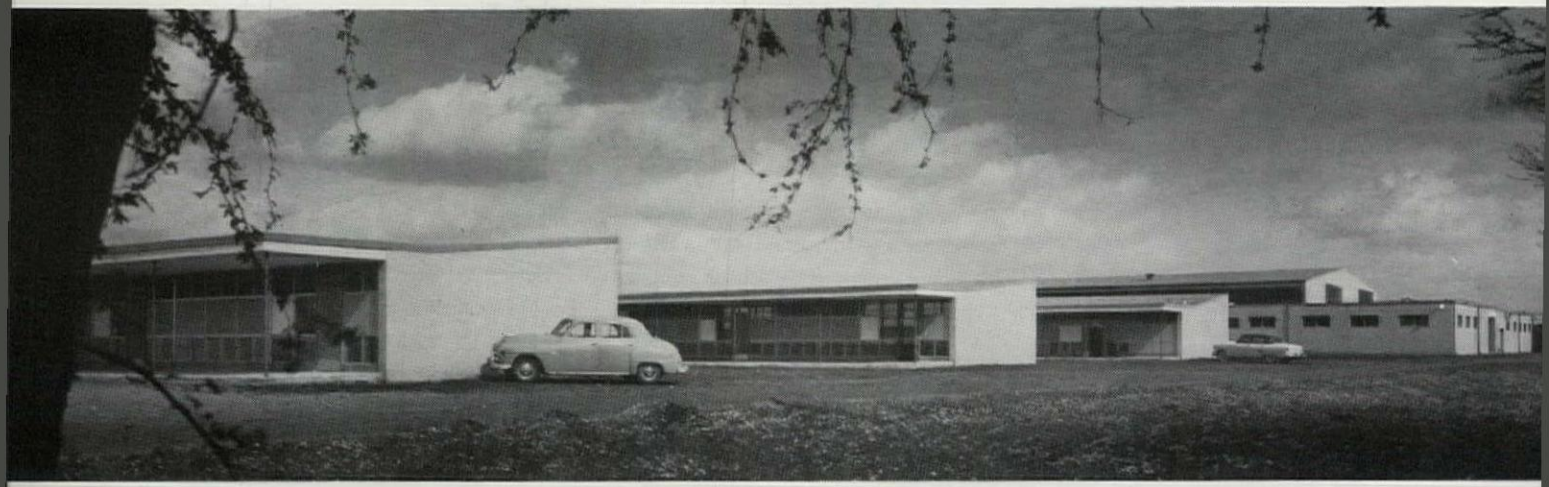


The basic requirements for design of the Crain Junior High School, in Victoria, Texas, were developed by the board of trustees working closely with the architects. A single-loaded corridor scheme was desired to achieve maximum natural ventilation and openness. It was further requested that the building be zoned in such a way that it could readily be used by community groups, as well as by school students, and provide good noise control. To accomplish this, all public-use rooms (cafeteria/auditorium, gym) and all noisy areas (wood and metal shops, kitchens, music rooms, locker rooms) are isolated at the north end of the scheme, to the left of the main entrance and corridor. Administrative offices, teachers' rooms, library, health offices, and a conference room are conveniently placed in relation to main entrance and centrally located with regard to the classroom pavilions which are organized around courts at the south end of the plan. The outside corridors occur along the south faces of these classroom wings, and tall walls of windows face north. The school contains 108,437 sq ft and was accomplished at a cost of $1,054,118 or $9.70 per sq ft.

The building is framed in light steel, with concrete-joist floors and light-steel roof framing. Walls are of brick outside, concrete block inside; floorings are asphalt tile. Ceilings are finished with acoustical plaster, and partitions (except in toilets, where marble is used) are of lightweight-concrete block. Steel sash, with glare-reducing glass is supplemented by plate glass and plastic skylights for certain interior areas. A hot-water heating system employs continuous radiation.

Wilson & Cottingham were Structural Engineers; Blum & Guerrero, Mechanical Engineers; and Starling Construction Co., General Contractor.

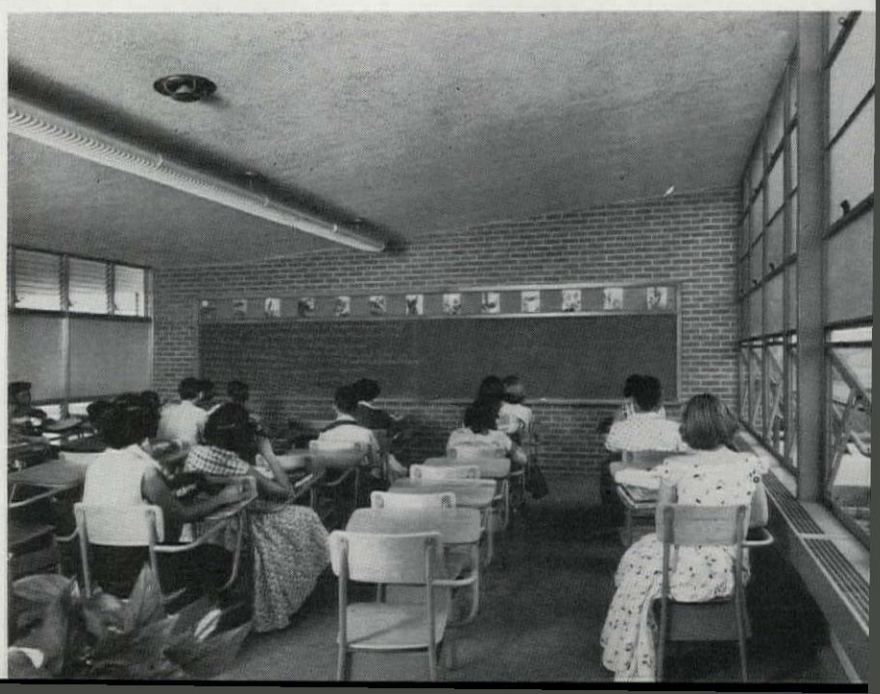




The mass of the gym-locker-room unit at the north end of the complex appears beyond the three classroom pavilions (top).

School offices (left) *border a court immediately inside the main entrance.*

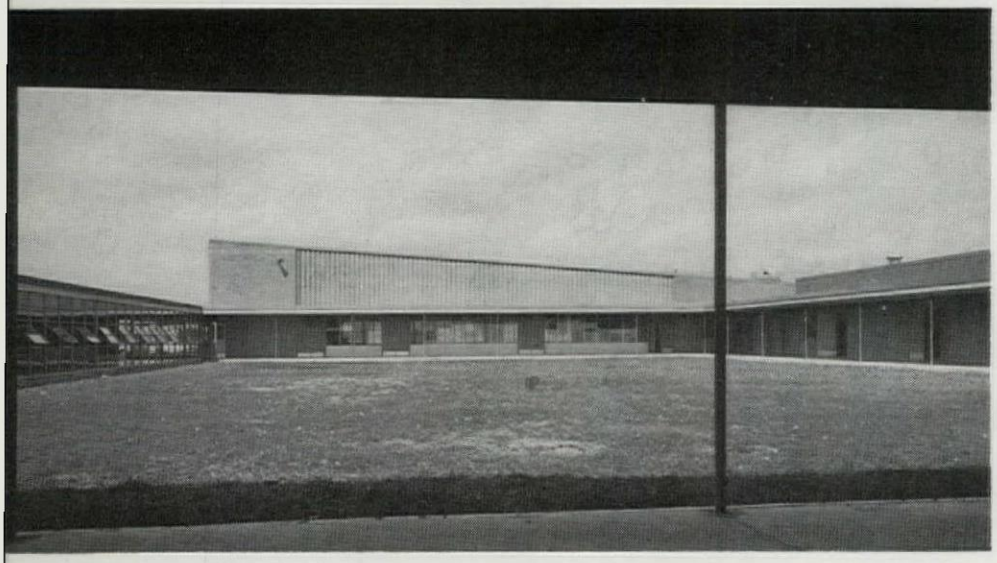
The typical classroom (below) *has tall, north-facing windows and a lower wall on the corridor side, with strips of jalousies above and below opaque panels.*

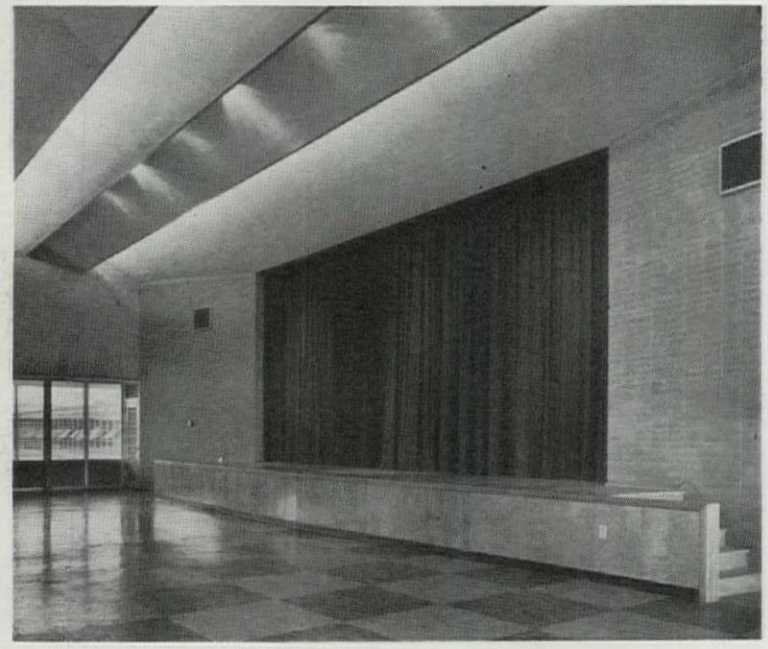


The choral-music room (right) *is located well away from classroom areas.*

The centrally placed school library (below) *has a clerestory to supplement the lighting along side walls.*

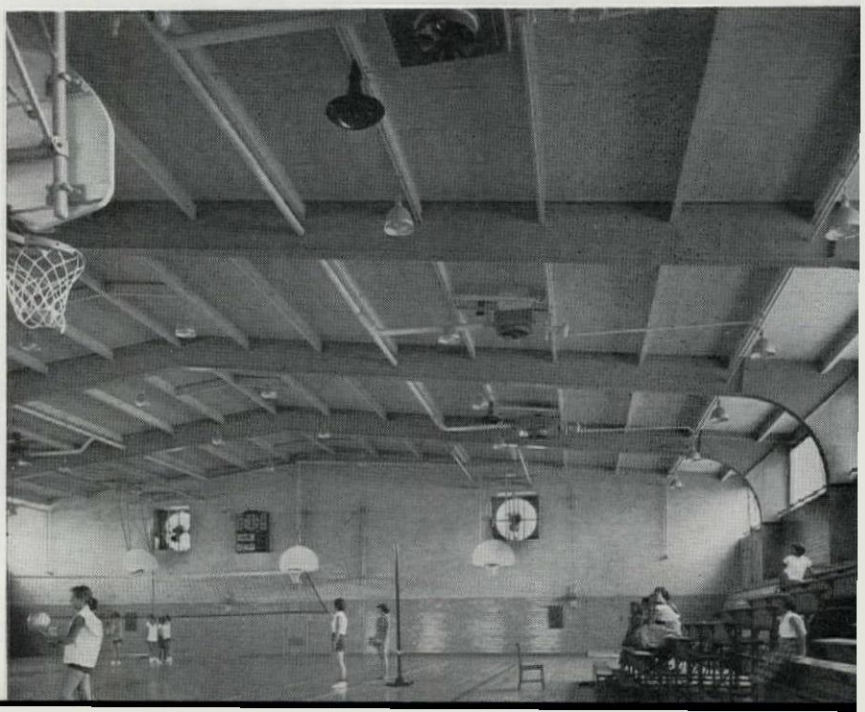
Broad courtyards separate the many fingers of the plan (bottom).





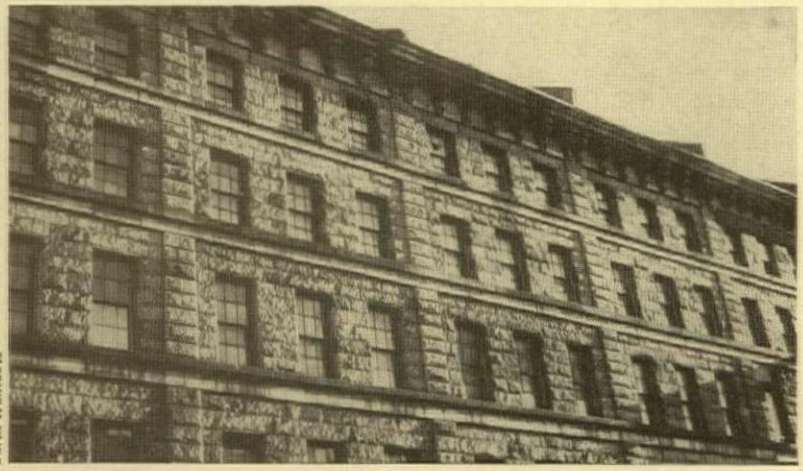
At the west end of the rear court (above) *the element with the upsweeping roof marks the auditorium* (left) *that also serves as the school cafeteria.*

Sturdy steel bents frame the commodious gymnasium (below), *which may be divided in two by a folding partition. Flooring is maple.*



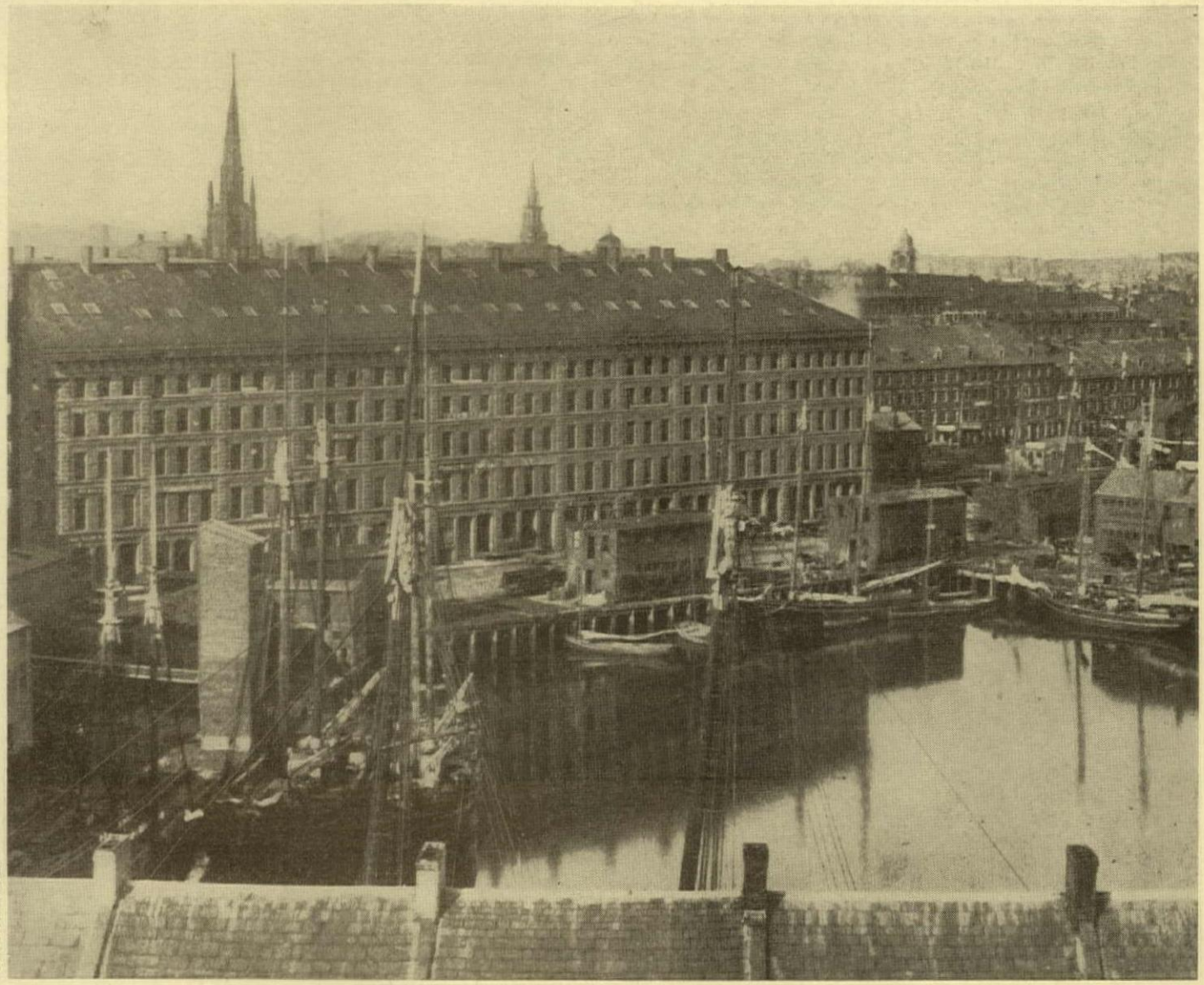
PROGRESSIVE ARCHITECTURE IN AMERICA

COMMERCIAL BUILDINGS—c. 1850-1870
Boston, Massachusetts
Gridley James Fox Bryant, Architect



Garth Huxtable

Mercantile Wharf Buildings, 1857.



Boston Athenaeum

Boston Athenaeum

"New England Magazine"

Gridley James Fox Bryant

"Sketches and Business Directory of Boston for 1860 and 1861"

State Street Block, 1858 (above). *57-75 Franklin Street* (right).

"Art thrives most, where commerce has enriched the busy coast." (Cowper)

Commerce in the 1850's had enriched Boston to the point where the city was enjoying a business-building boom comparable to the present phenomenon of postwar New York. The thriving art was architecture, and its most successful and prolific practitioner for commercial interests was Gridley James Fox Bryant (1816-1899), a man now almost forgotten.

Downtown Boston, from the 50's to the 70's, was a Bryant-built city. His warehouses, wharf buildings, and store blocks—often erected row on row and street after street—were all of granite, in the established tradition of Boston's superior commercial architecture, and all were distinguished by the powerful, functional simplicity of their handsomely proportioned masonry façades. These strong granite blocks were as omnipresent and characteristic of their age as the curtain-wall skyscraper is of the business world today. State Street, Commercial Street, Milk Street, Summer Street, Pearl Street, Devonshire Street, Winthrop Square, and the newly opened Franklin Street, as well as the city wharves, had imposing Bryant edifices, and among those structures that survived the fire of 1872 (152 Bryant buildings were destroyed, of which he was commissioned to rebuild 111!) many bear the Bryant stamp. This is a stamp of such solid authority—Henry-Russell Hitchcock states, in his *Guide to Boston Architecture*, Bryant's ranges of granite warehouses "are hardly equalled anywhere in the world"—that the rediscovery of his buildings and the re-evaluation of his reputation establishes him in the front rank of America's commercial architects.

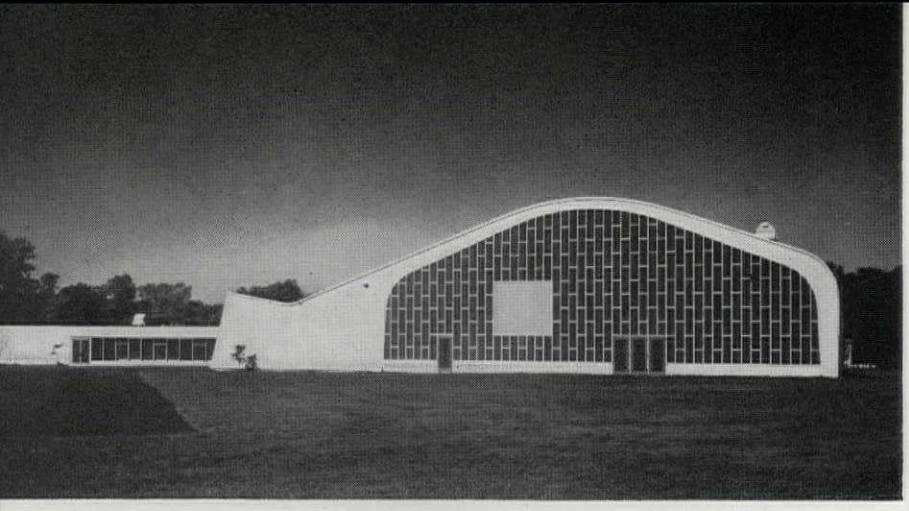
It is an ironic commentary on changing taste that this impressive body of utilitarian building was then considered Bryant's less important work. He was celebrated as the architect of 19 state capitols and city halls, 36 court houses and jails, 59 hospitals, reformatories, schools, and other public institutions, 8 churches, 16 railroad stations, and 16 customs houses, post offices, and government buildings—most of which were executed in a gawky Second Empire style. It is the final irony that although he lived extravagantly, with a genteel Boston flamboyancy, he died indigent in a Home for the Aged (of his own design).

His commercial work, however, did not lack admirers, even in that era. Contemporary observers were "overpowered by the massiveness and grandeur" of his "stately . . . palaces of trade . . . composed with a breadth and force which are admirably suited to the solid material employed." They admired the "noble proportions, strength and massiveness . . ." and remarked a "general air of unity in all the masses of the front which impresses the eye of the spectator in a most agreeable manner." By the 90's, with the rise of a taste for the tortured and the picturesque, the tone was more patronizing: ". . . the buildings, although substantial, were generally severe in outline . . . yet, to the inhabitants, they were beautiful and imposing." Today, we have come full circle, and once again praise their impressive simplicity. Walter Kilham has called them a sane and practical kind of architecture in an architecturally uncertain age. Giedion has pointed out that their functional monumentality has a pre-Richardsonian importance that is in the direct line of development of contemporary design.

Bryant's continuation of the Boston style of massive masonry construction is no accident; granite was part of his heritage and training. He was the son of Gridley Bryant, owner of Granite Railway Company and the Quincy granite quarries opened by Solomon Willard for the building of the Bunker Hill monument, and he received his professional education in the office of Alexander Parris, architect of Quincy Market and many of the city's early granite commercial buildings. The years 1856 to 1860, however, established him as the city's leading commercial designer. As the result of a bequest of a wealthy Bostonian, Joshua Sears, $2,000,000 was left to be invested in real estate, mortgages, and improvements, and in 1856-57 the property was purchased that opened Franklin Street. By 1860, Franklin Street was lined with the city's most impressive new business buildings—almost all by Bryant. The subsequent creation of more new streets and the increase in surrounding property values led to the immediate erection of numerous business blocks, either from designs by Bryant, or in a remarkably similar style. Still standing are the Commercial Street warehouses of the 1850's and the State Street Block of 1858, which is impressive even now, in spite of its disfigurement by a later mansard roof. The straightforward character of these buildings led Walter Kilham, in *Boston After Bulfinch*, to designate their style as "Plain American," and it is this consistent, powerful simplicity that characterizes Bryant's best (and least pretentious) work. For Bryant was, as his old friend Henry Bailey observed, not "an architectural genius to build epoch-making structures . . . he was the faithful, conscientious, laborious servant of solid men, the merchant princes . . . who . . . laid the foundations for 'Greater Boston' . . ." and, it should be added, for much of today's architecture.

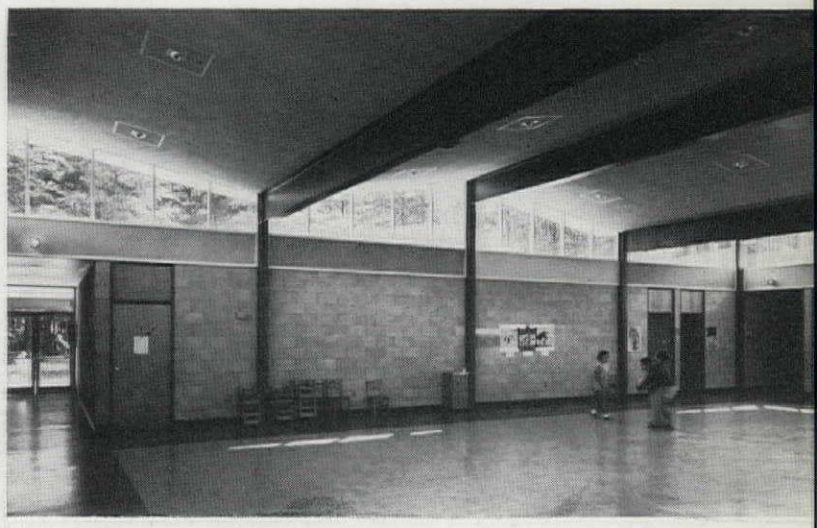
ADA LOUISE HUXTABLE

Research assistance from Boston Athenaeum and Bostonian Society is gratefully acknowledged.

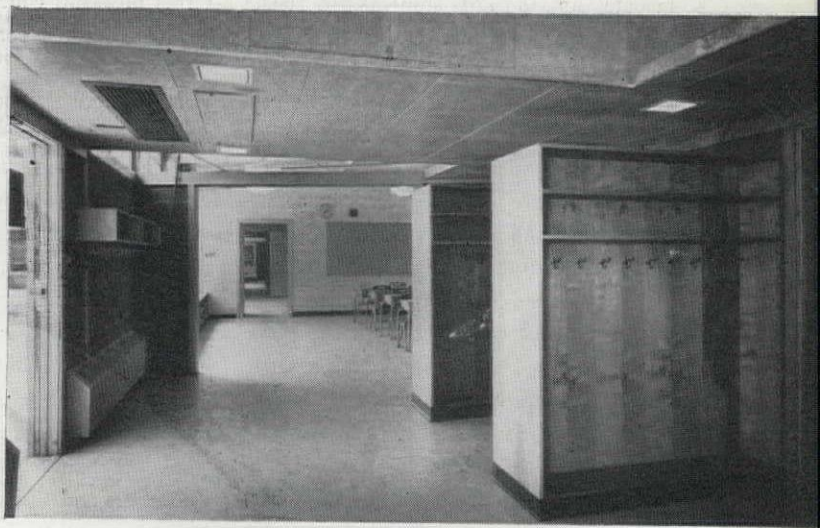


Litchfield High School
Litchfield, Connecticut

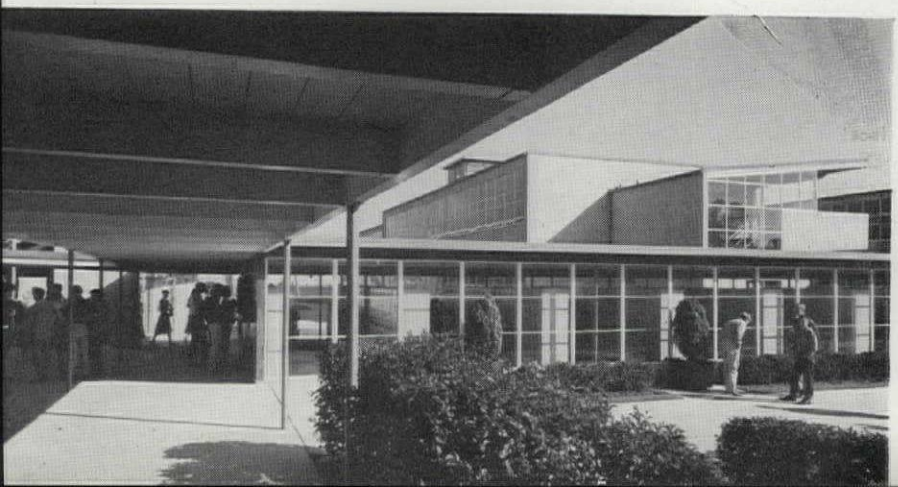
Green Acres Nursery and Elementary School, Montgomery County, Maryland



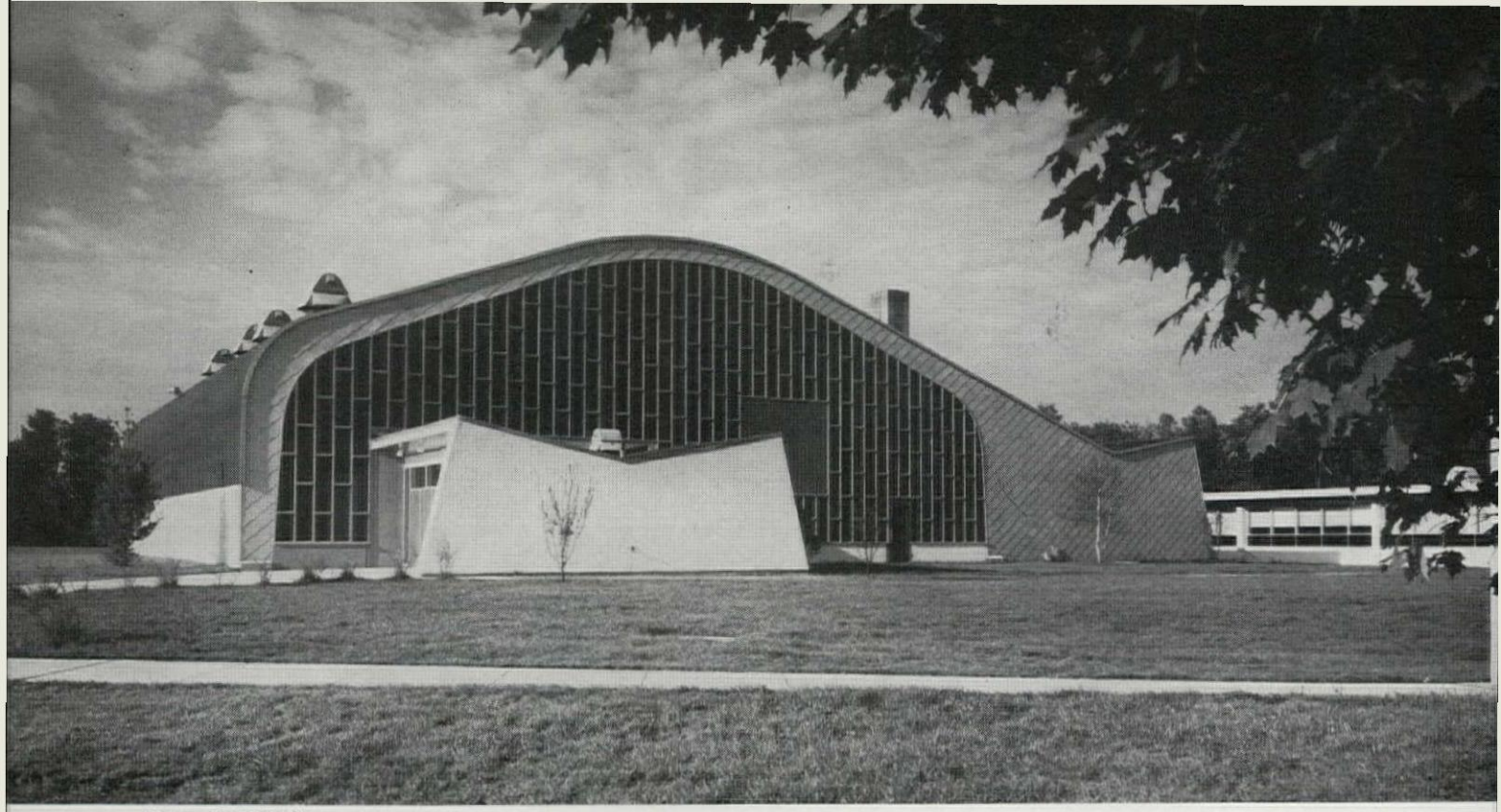
four schools



Paul L. Best Elementary School, Oak Park, Michigan



Senior High School, South San Francisco, California



Photos: Ben Schnall

high-school gymnasium

The program for Litchfield High School called for a school that would accommodate up to 720 students. A basic desideratum was that major sound-producing elements—gymnasium; shop unit; and auditorium—should somehow be separated from classroom areas. Solution has been to organize administrative offices, classrooms, labs, and cafeteria in a one-story, Y-shaped mass, with main school entrance near the joining of the wings. The shops are placed at the north end of the group and connected with the classroom building by a windowed passage; the gym, similarly connected, is the southernmost element of the complex and adjoins playing fields; the future auditorium will be centrally located, northeast of the main group and directly accessible from the entrance roadway. The architects point out that the Y plan shape both keeps circulation space to a minimum and forms pleasant, courtlike exterior spaces, "defined but not confined."

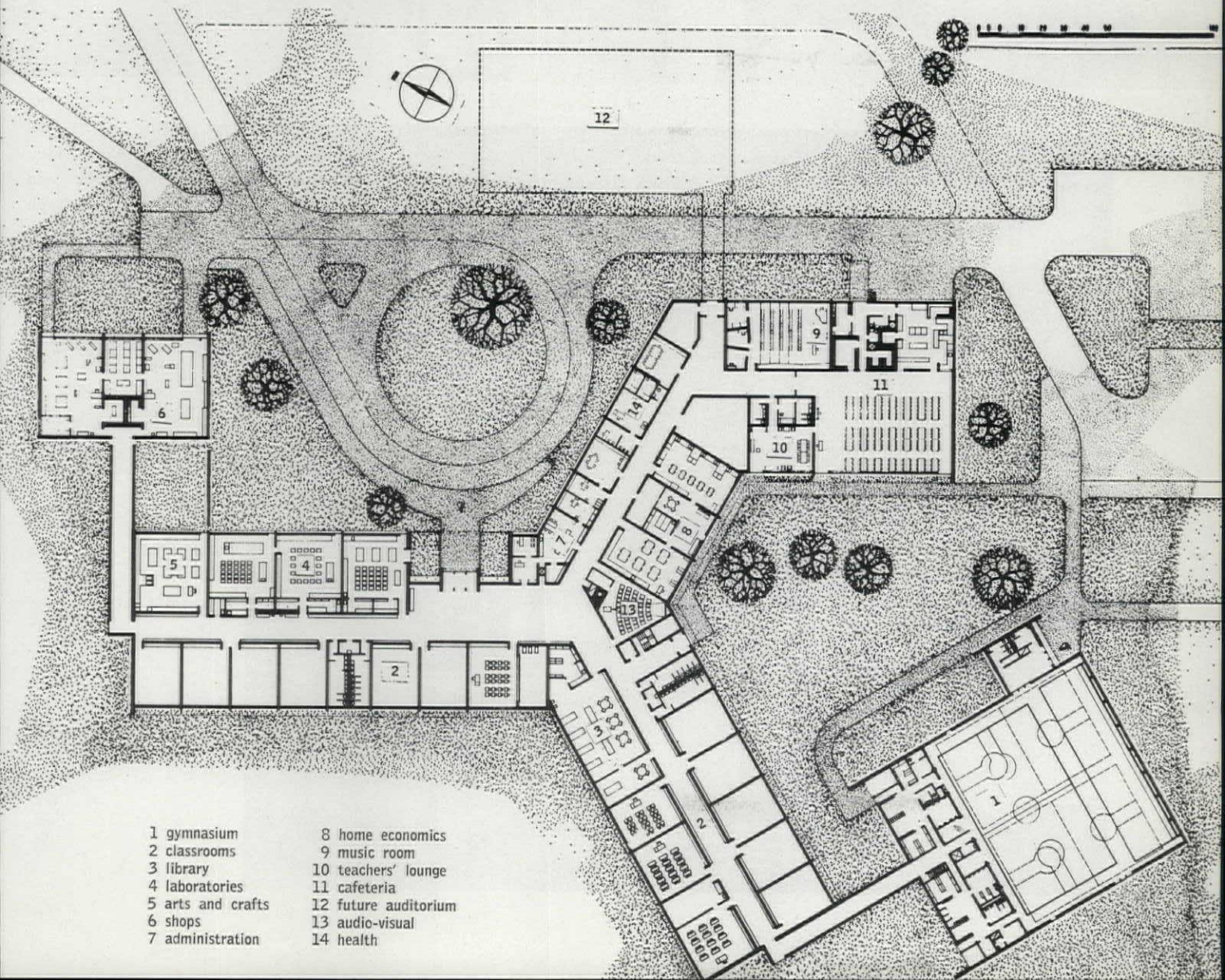
Structure consists of loadbearing, lightweight-concrete block supporting laminated-wood beams, left exposed; floors are concrete slab on grade. The gymnasium is spanned by formed, laminated wood arches spaced 12 ft o.c. These arches, left exposed, support a wood-joist roof structure. Exterior surfacing is of asbestos shingles, selected for their light weight and minimum maintenance requirement. The closely spaced window mullions are wood. In the main, exterior walls are painted white, though certain wall areas and the trim and millwork are light gray. All roof soffits are bright red. Interior block walls are mostly unpainted, though an occasional area is strong blue.

A furnace room occurs under the meeting of the wings of the Y. Here, fans draw air partly from outdoors and partly from return ducts, blow it through furnaces and then through tubular ducts into each room. Trunk ducts are in trenches under corridors, and branch ducts run from trenches to outside-wall supply registers. Exhaust ducts lead to a return air plenum in the trench above the supply ducts; roof fans exhaust whatever air is not required by the furnace-room fans.

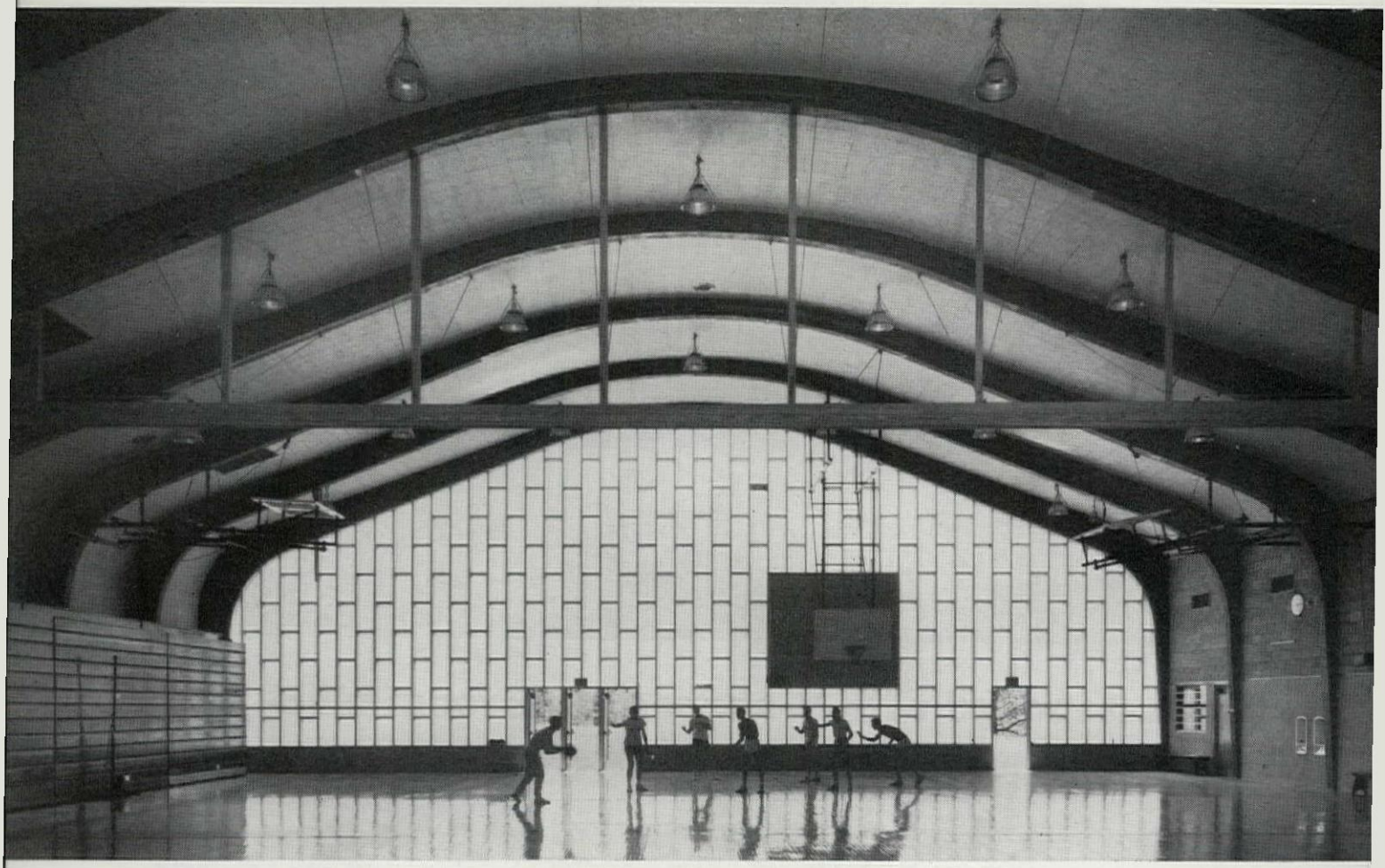
Associated with the Architects were Paul Weidlinger, Structural Engineer; Fred Dubin Associates, Mechanical Engineers; Bolt, Beranek & Newman, Acoustal Engineers; and Bonvicini Building Company, Inc., General Contractor.

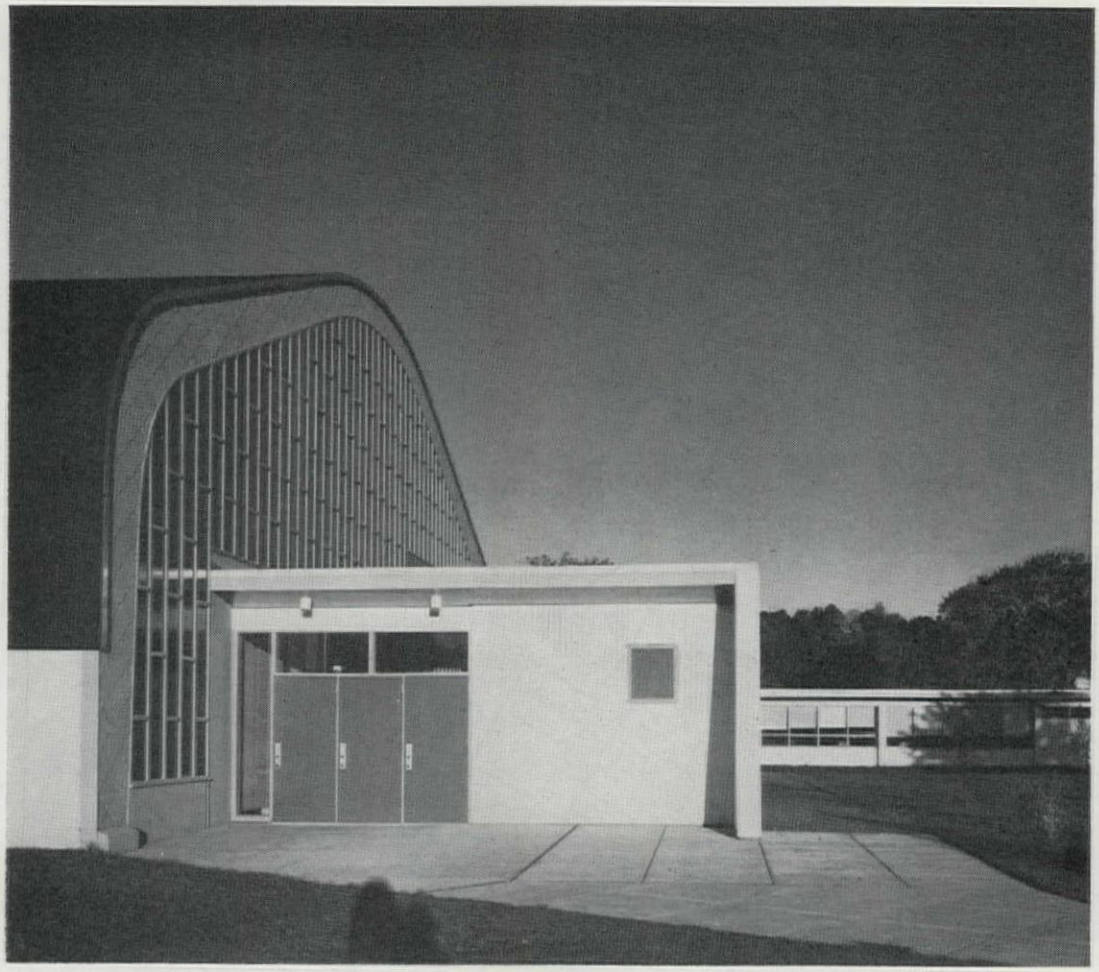
location	Litchfield, Connecticut
associated architects	Marcel Breuer and O'Connor & Kilham
associate	Herbert Beckhard
job captain	Richard de Rham
landscape consultant	Bryan Lynch

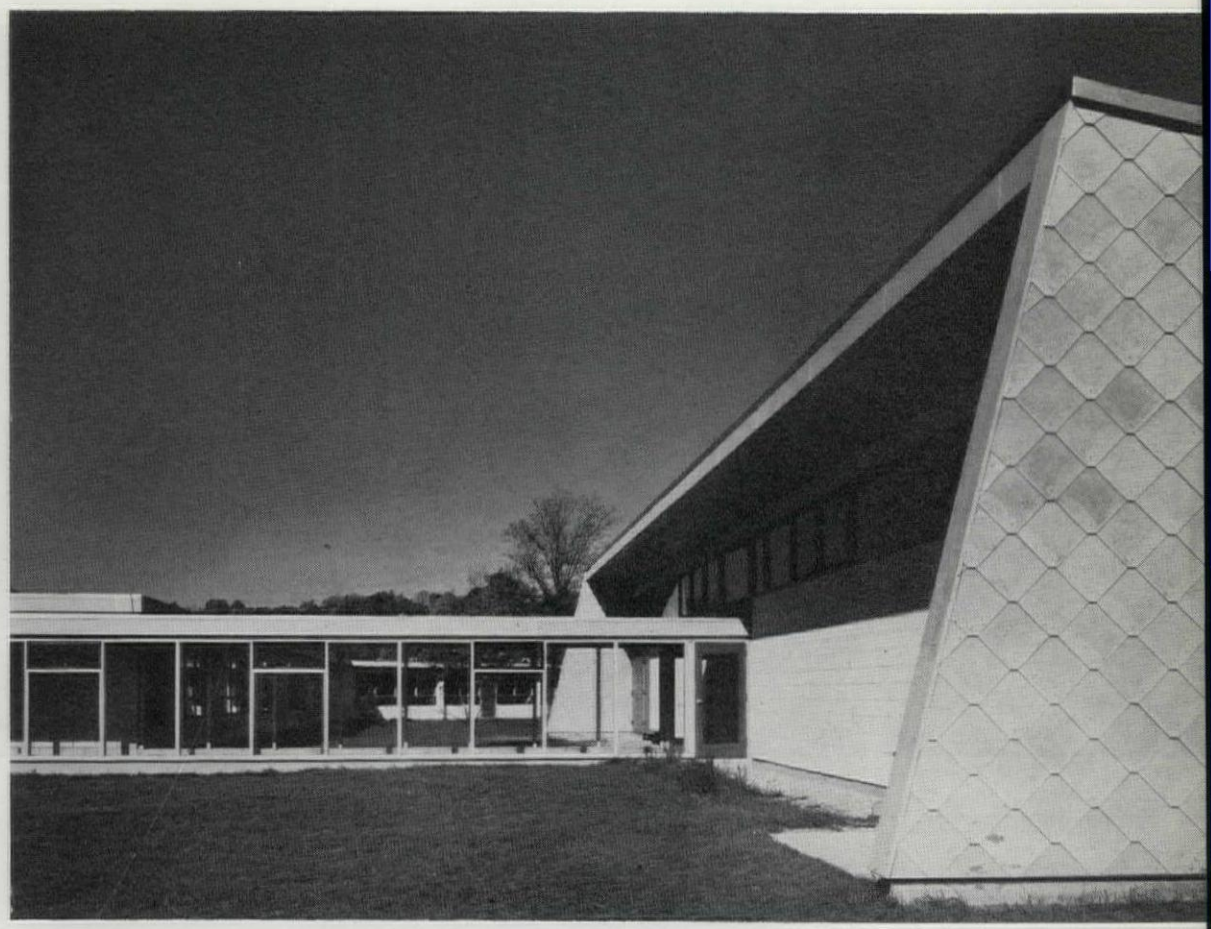
boldly juxtaposed with Y-shaped classroom block

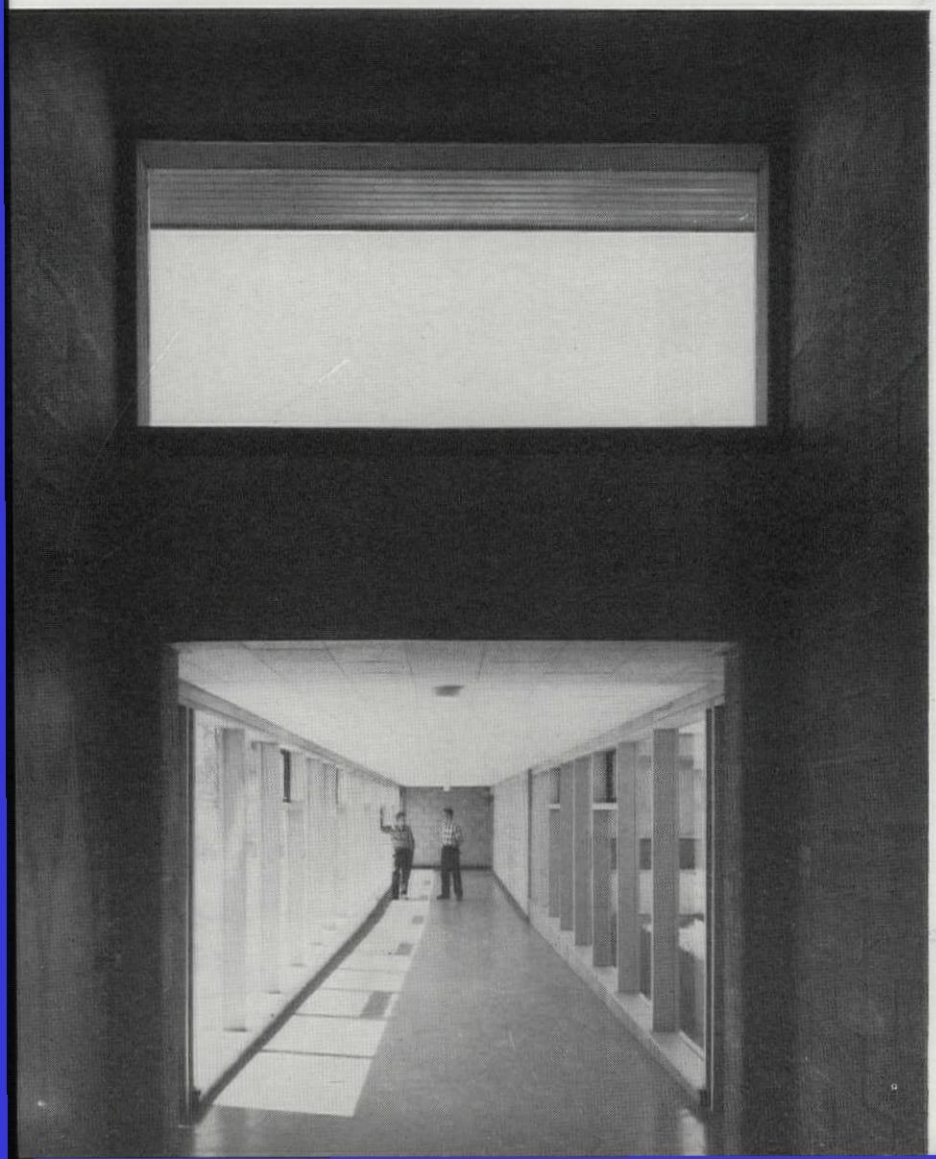


1 gymnasium
2 classrooms
3 library
4 laboratories
5 arts and crafts
6 shops
7 administration
8 home economics
9 music room
10 teachers' lounge
11 cafeteria
12 future auditorium
13 audio-visual
14 health



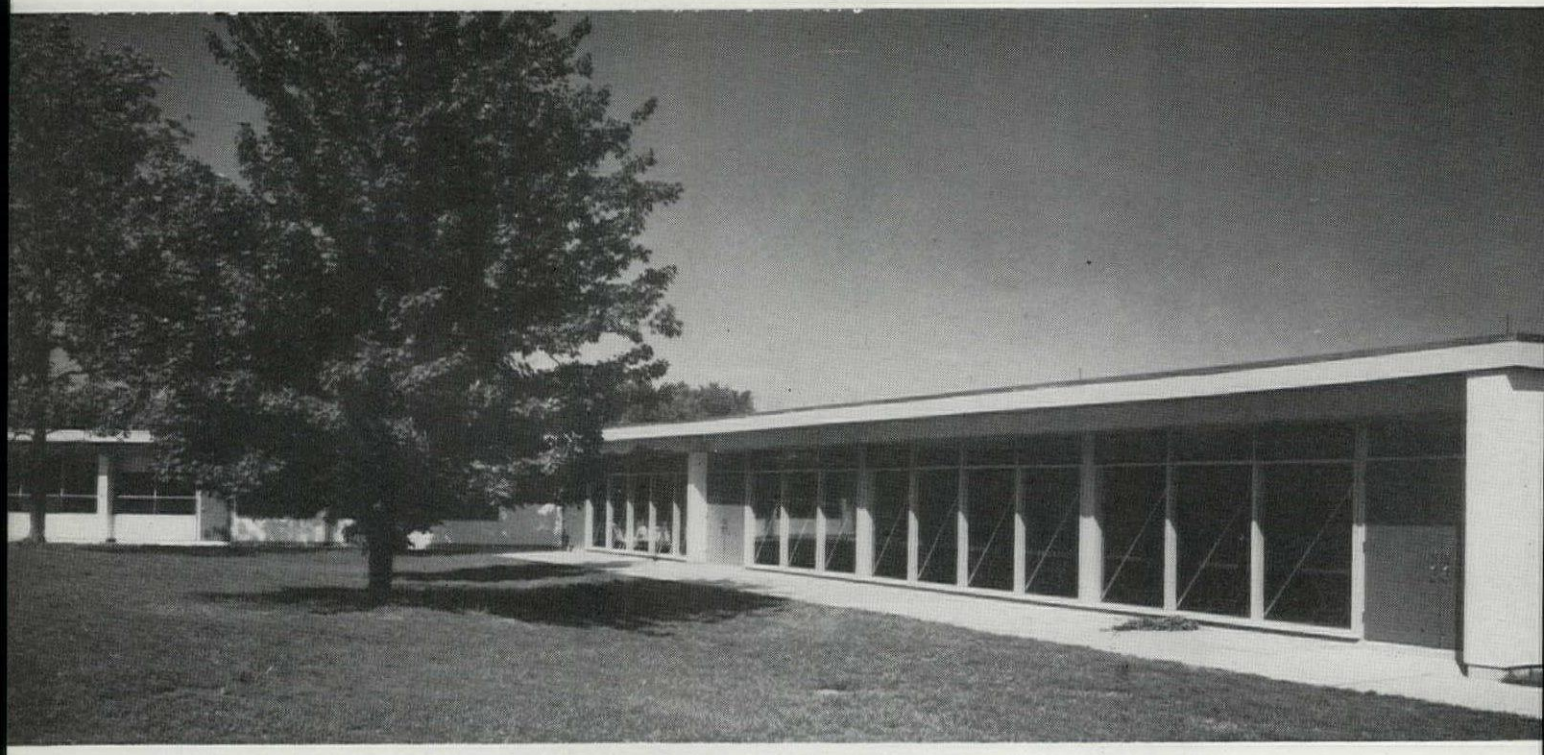


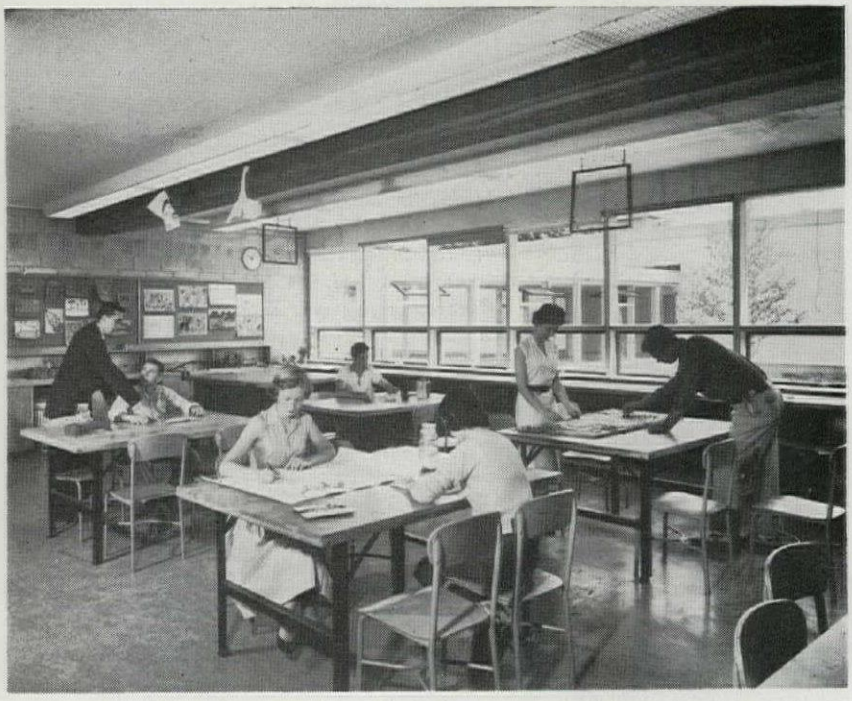




The dramatic form of the gym-multipurpose unit is a bold foil to the long, low wings of the academic building. Fold-out bleachers provide spectator seating; artificial lighting is from dome-reflector, incandescent, ceiling units.

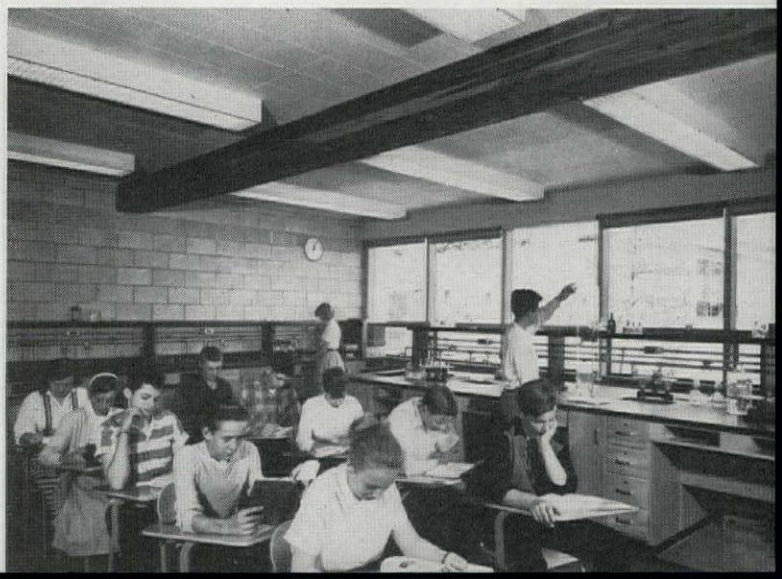
Connecting this unit with the classroom building is a glazed, covered passage (above *and* left).





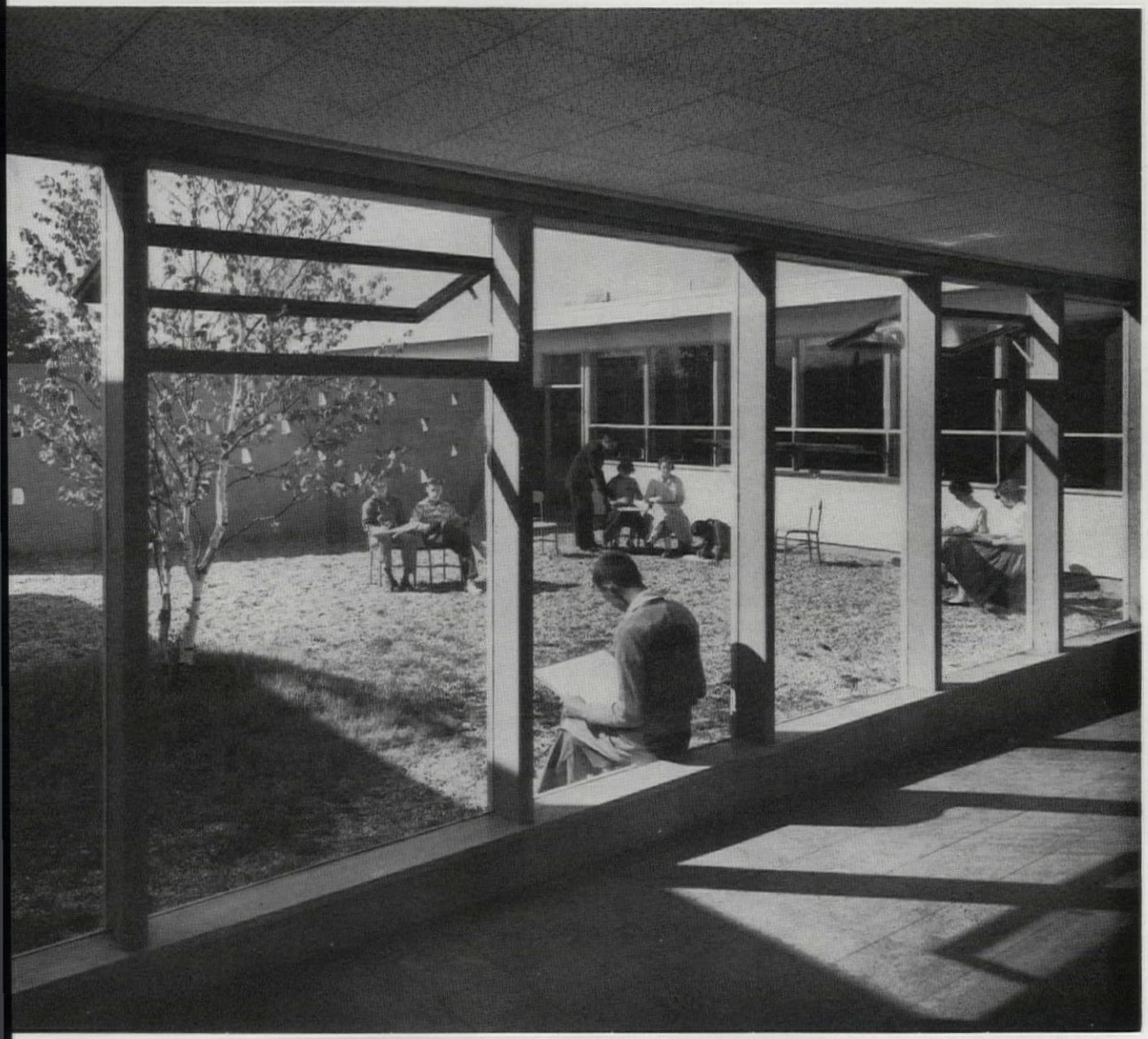
A teachers' lounge and the school cafeteria line one entire wall of the southeast wing (above). *Sash are wood.*

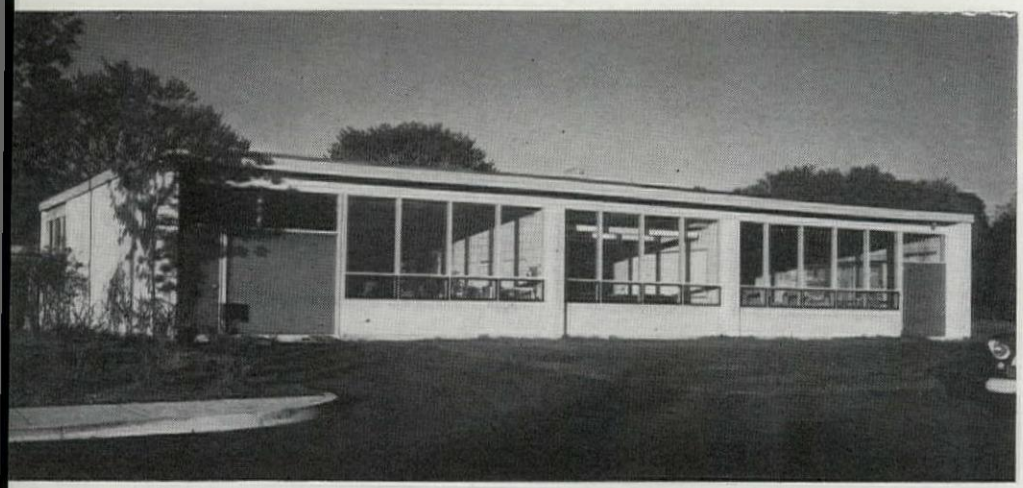
In the wing nearest the passage to the shops building are arts-and-crafts room (left); *chemistry lab* (below); *and biology-and-physics laboratories.*



The school library (right) *has floor-to-ceiling windows. Ceiling, as in classrooms, is surfaced with random, perforated, cane-fiber acoustical tile. Artificial lighting comes from surface-mounted, 8-ft, fluorescent fixtures with clip-on fin louvers.*

Outside the arts-and-crafts room is a landscaped classroom area (below).





The shops building (above *and right of photo* below) *occupies a wing of its own. The music room* (SELECTED DETAIL, acrosspage) *has a broken-plane plan and multifaceted acoustical ceiling designed by the acoustical engineers.*

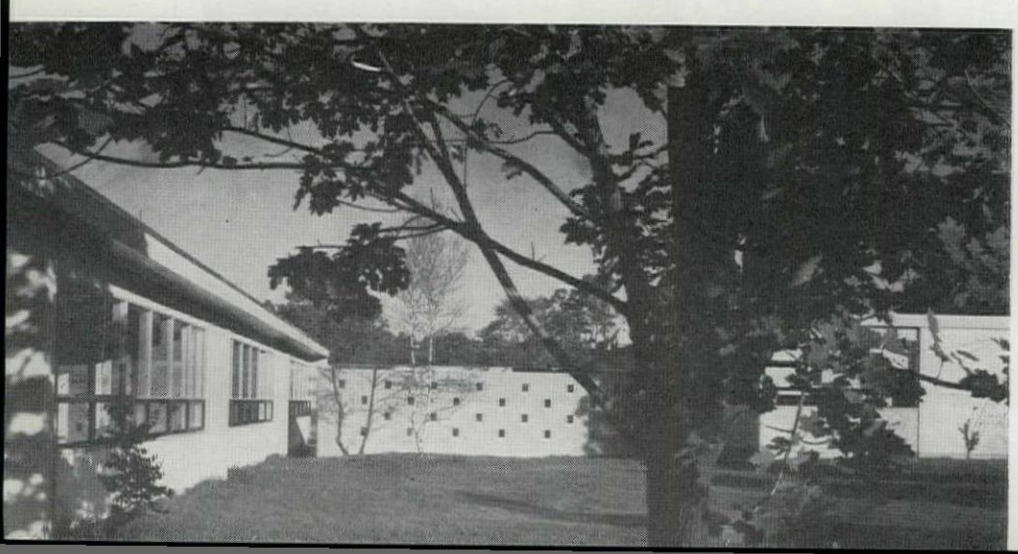
Materials & Methods

construction

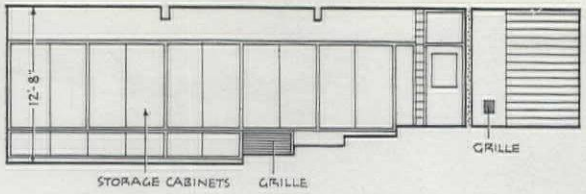
Foundation: reinforced concrete—Ceco Steel Products Corporation. **Structure:** walls: lightweight-concrete block—Plasticrete Corporation; floors: reinforced concrete, steel over furnace rooms; roof: laminated wood girders, arches. **Wall Surfacing:** outside: latex alkyd masonry paint—National Chemical and Manufacturing Company; rest rooms, toilets: glazed wall tile—Mosaic Tile Company. **Floor Surfacing:** asphalt tile—Mastic Tile Corporation of America. **Ceiling Surfacing:** perforated cane-fiber tile—Celotex Corporation. **Roof Surfacing:** built-up roofing—Koppers Company, Incorporated; tar, slag and mineral surfaced. **Insulation:** thermal: mineral-wool blanket and aluminum-faced kraft paper. **Roof Drainage:** drains: high dome-cast iron—Josam Manufacturing Company. **Partitions:** interior: lightweight-concrete block—Plasticrete Corporation; toilet: hollow metal—Henry Weiss Manufacturing Company. **Windows:** sash: wood; glass: double strength—Libbey-Owens-Ford Glass Company. **Doors:** interior: flush wood—Ipik Door Company, Incorporated; entrance—Nuroco Woodwork, Incorporated. **Hardware:** lock sets, door closers, panic exit—Sargent & Company.

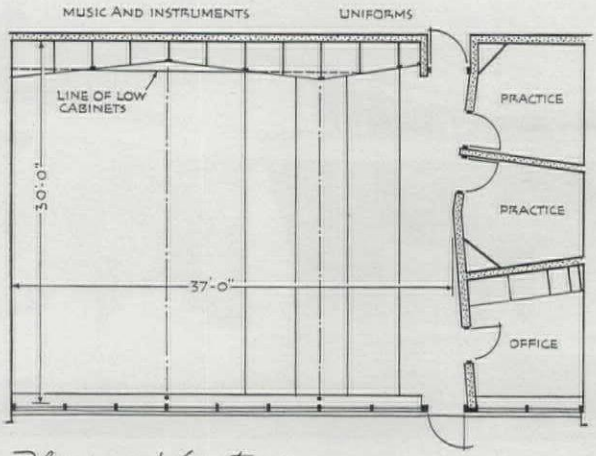
equipment

Specialized Equipment: kitchen: stainless-steel counters—Universal Products Corporation; public address: sound system—Dukane Corporation; public seating: telescopic gymnasium seats—Wayne Iron Works Company. **Lighting:** classroom area: fluorescent—Westchester Fluorescent Fixture Manufacturing Corporation. **Electric Distribution:** panelboards—Federal Pacific Electric Company. **Plumbing & Sanitary:** lavatories—Crane Company. **Heating:** steam boiler—Fitzgibbon Boiler Company, Incorporated; hot-air furnace—E. K. Cambell Company; fuel: oil; tubular fiber ducts; unit heaters—Trane Company; ventilators—Davidson Fan Company; controls—Johnson Service Company.

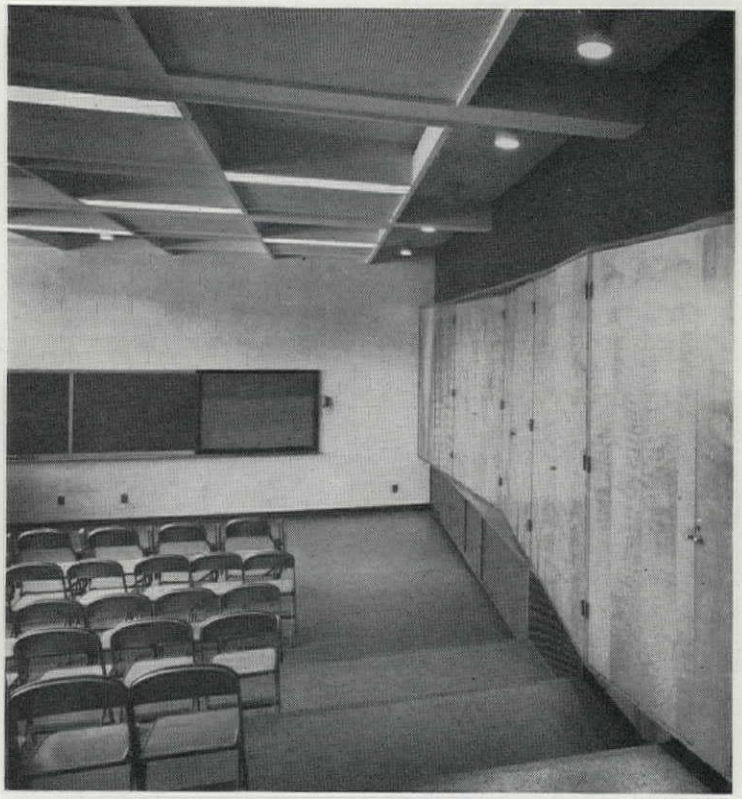


music room

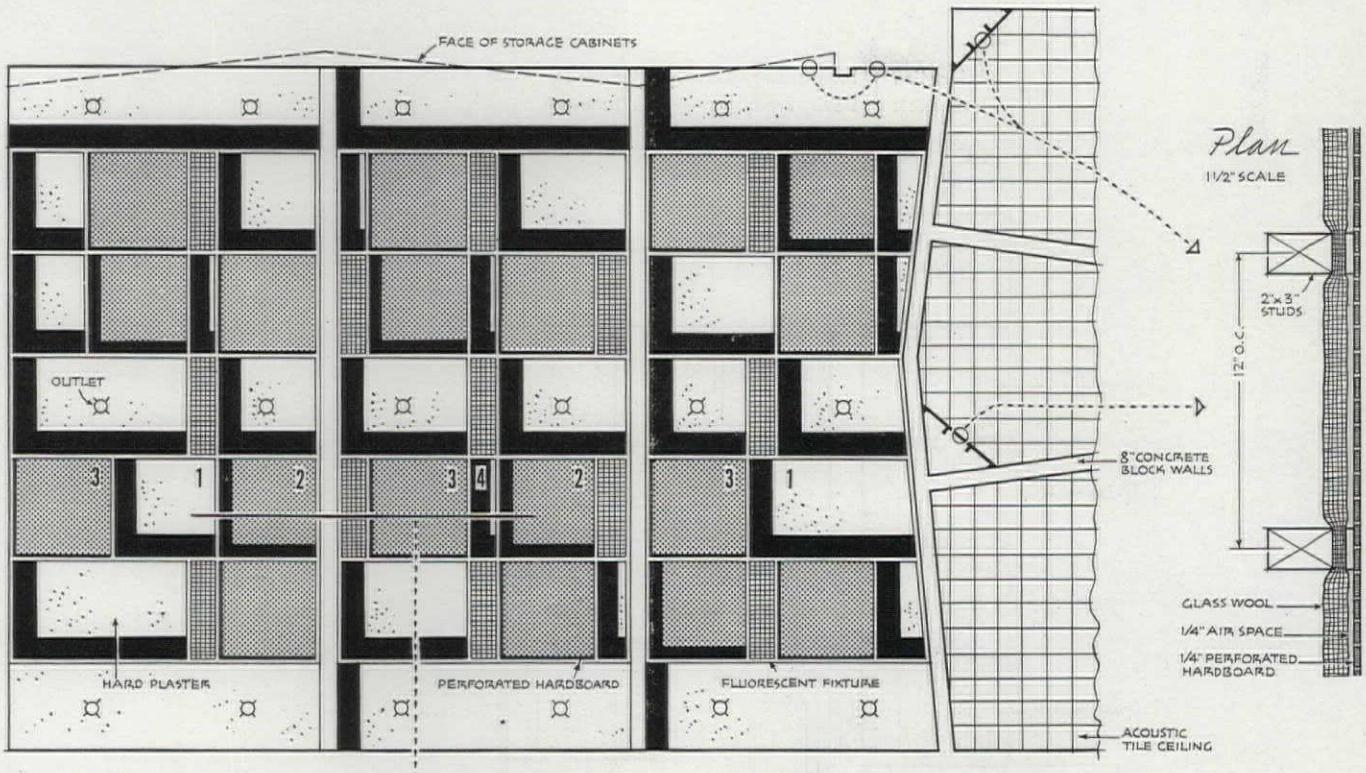




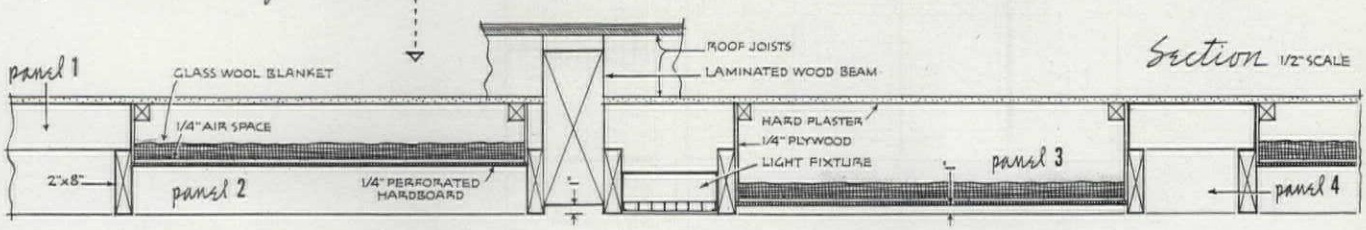
Plan and Section 1/16" SCALE



BEN SCHNALL

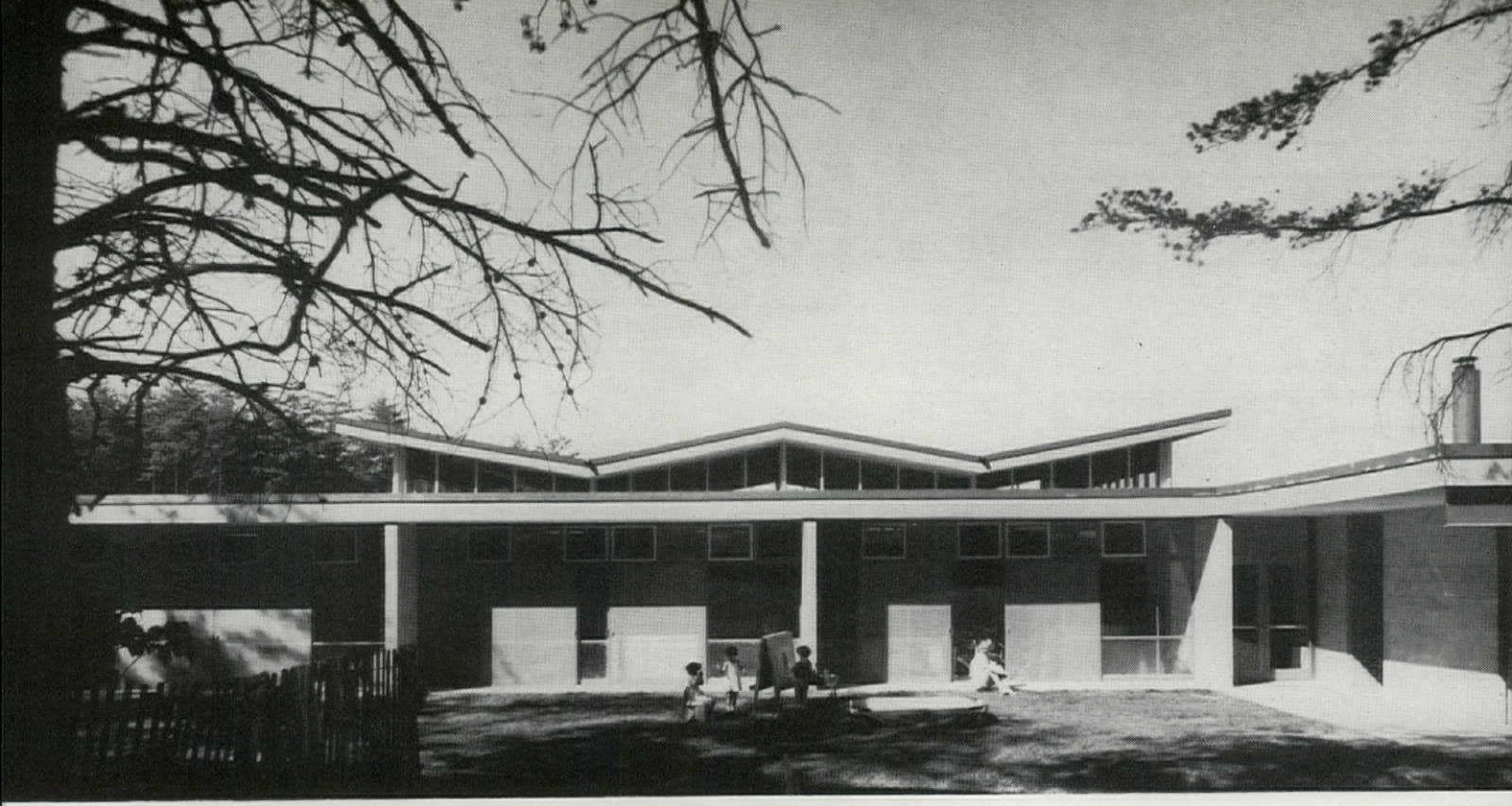


Reflected Ceiling 1/8" SCALE



Section 1/2" SCALE

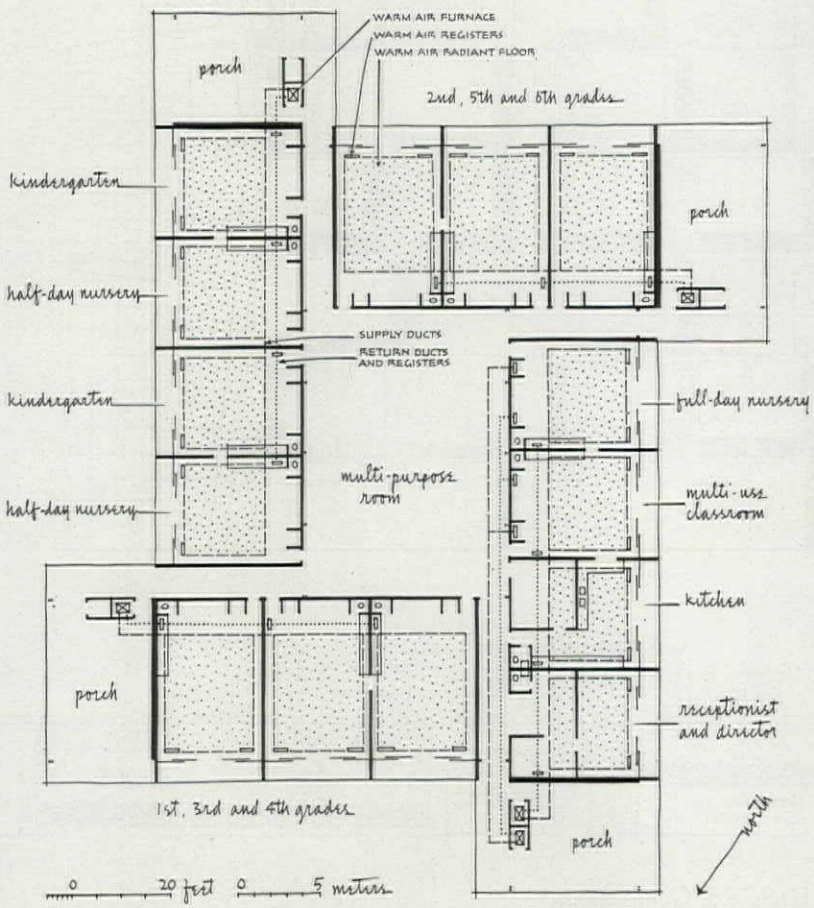
LITCHFIELD HIGH SCHOOL, Litchfield, Connecticut
Marcel Breuer and O'Connor & Kilham, Associated Architects



Marc Neuhof

central multipurpose, economical solution

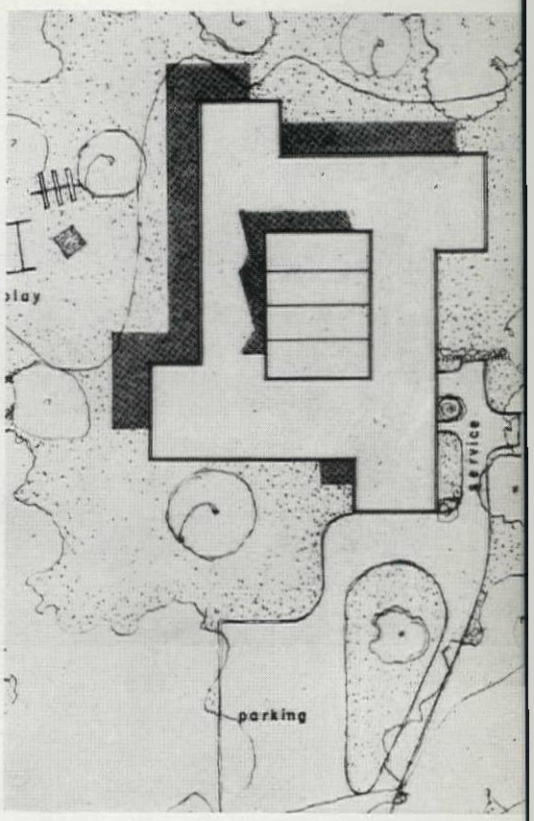
location | Montgomery County, Maryland
architects | Davis, Brody, Juster & Wisniewski



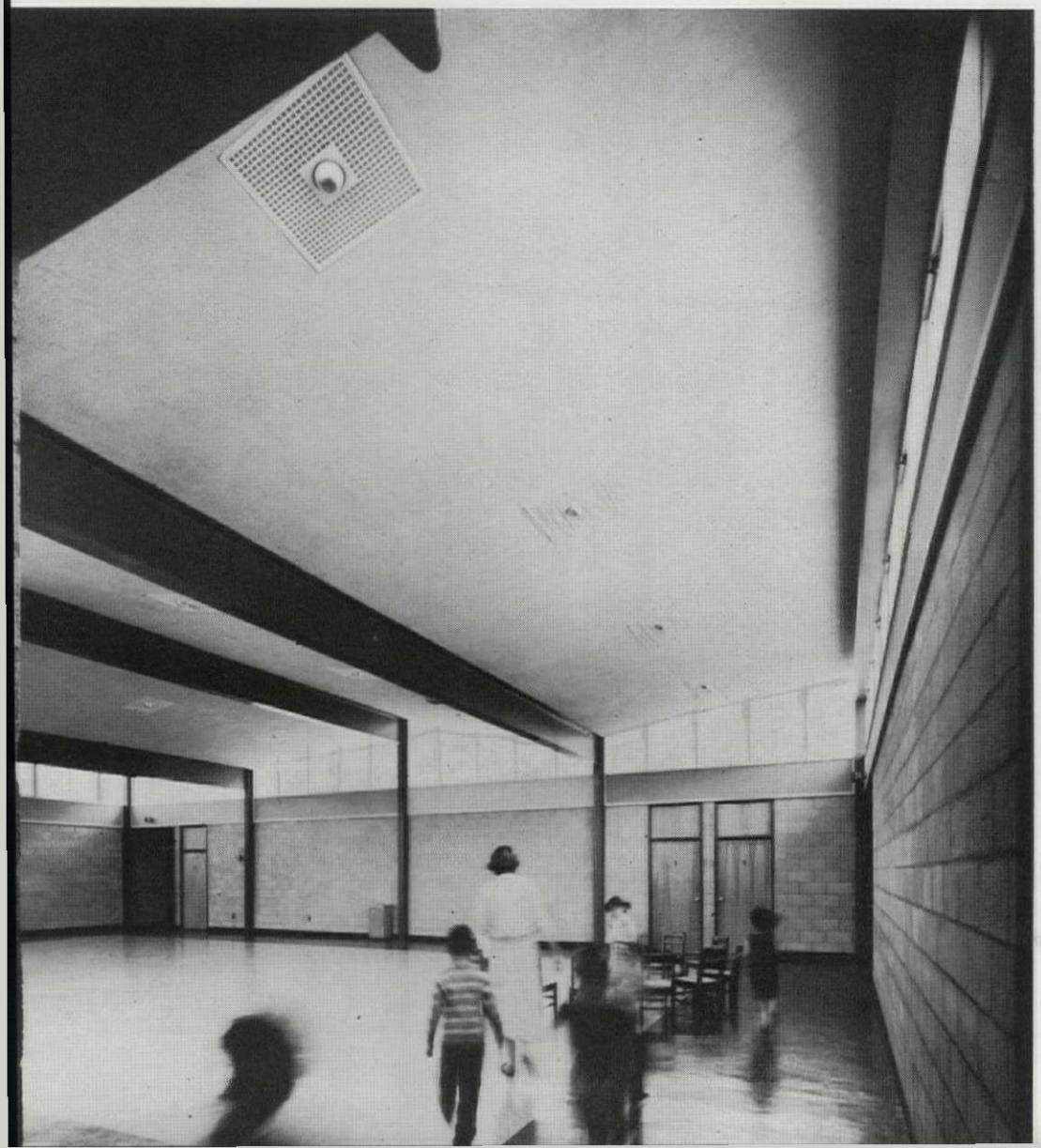
Green Acres is a private nursery and elementary school, planned to serve pupils from kindergarten age through the sixth grade. To meet the faculty's wish to have children of different age groups mix freely, the four wings of the building are organized around a central, clerestory-lighted multipurpose room, which serves as corridor space as well as for various types of gatherings. At the end of each wing is a play porch for use in inclement weather; and each of the end walls of the classrooms has sliding, steel-framed doors which open to a small, private, paved terrace. Walls of the rooms toward the multipurpose room incorporate storage and toilet spaces, which provide the desired noise barrier. Interior portions of the rooms are daylighted by plastic skylights in the ceiling.

The structure of the wings is simple loadbearing concrete block (or brick), with wood-joist roof frame; the central room as well as the play porches, are framed in steel, which was left exposed. Heating, deriving from separate warm-air furnaces in each of the wings is distributed through a cellular floor system, formed by concrete poured over stamped-metal pans. Registers occur under the large window areas to eliminate drafts. Expansion of the school can be made readily by adding rooms to any of the four wings.

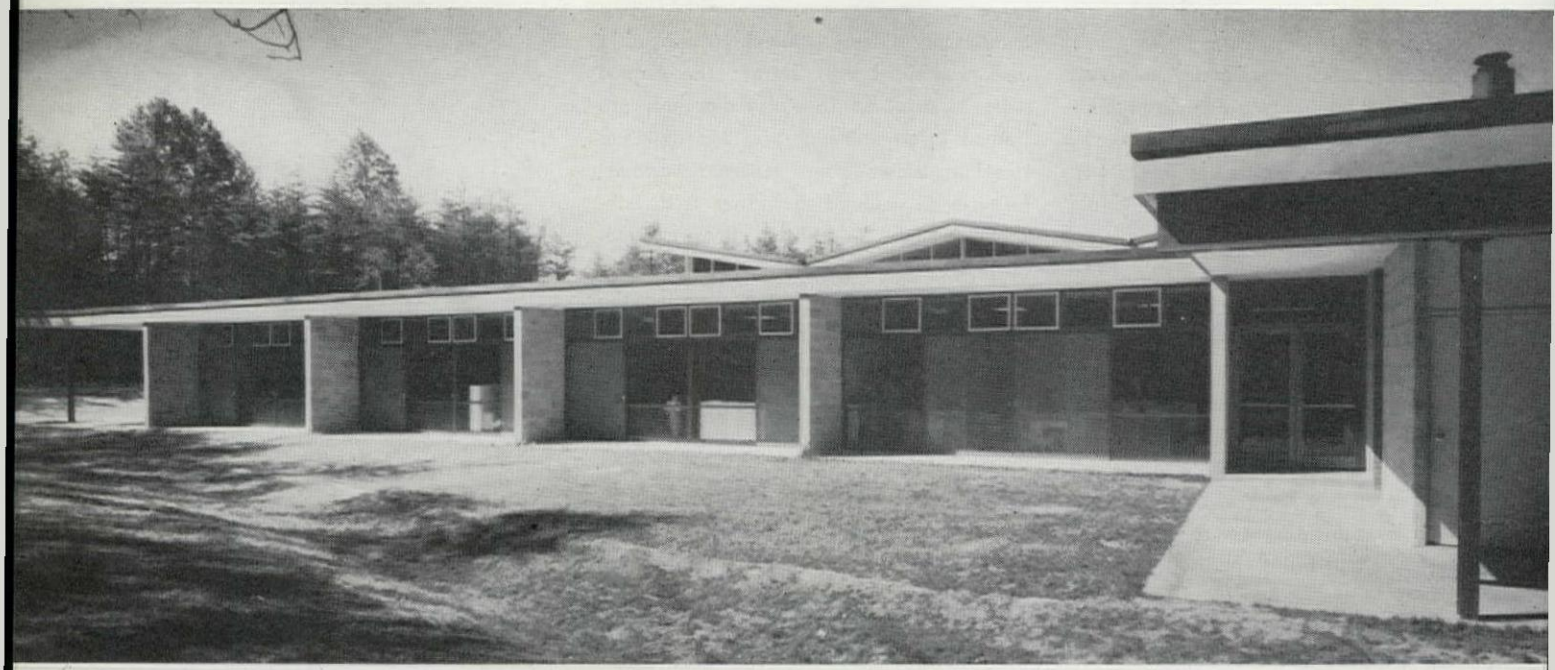
Structural Consultants on the job were Wiesenfeld, Hayward & Leon; Bernard F. Green was Mechanical Consultant; and Demory Brothers, General Contractors. Howard H. Juster, member of the firm when the school was designed, is now with Perkins & Will. The firm again practices as Davis, Brody & Wisniewski.



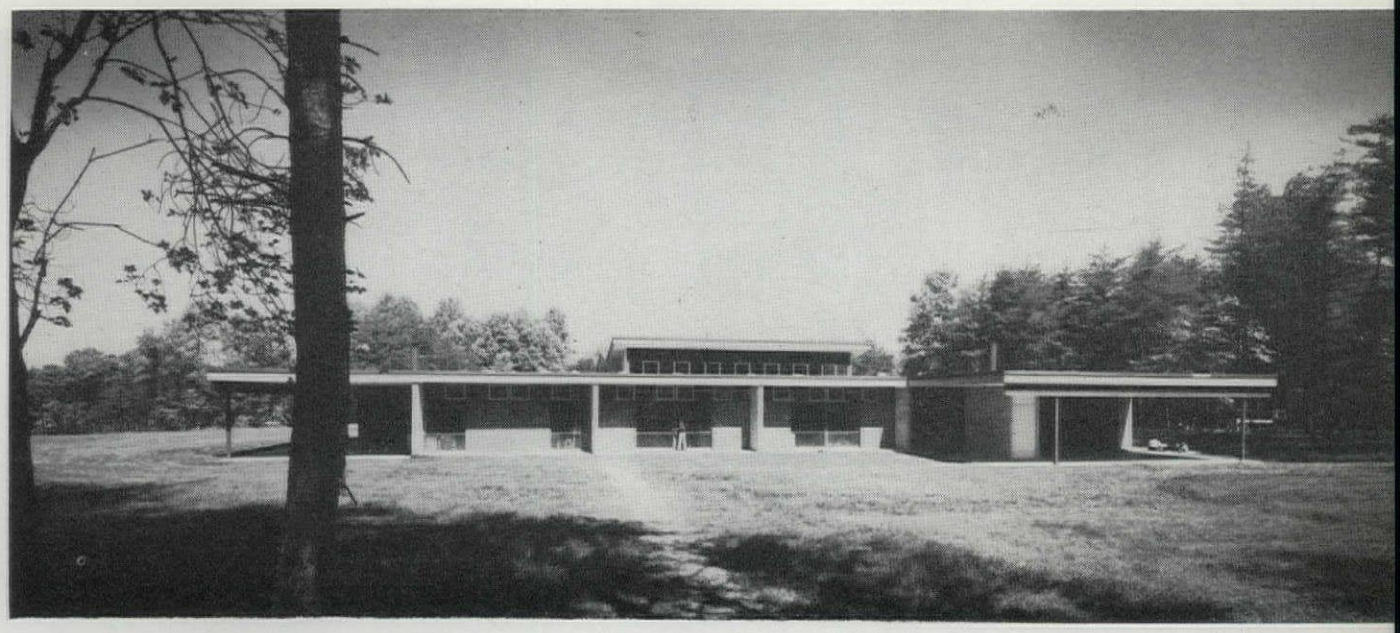
for nursery/elementary school

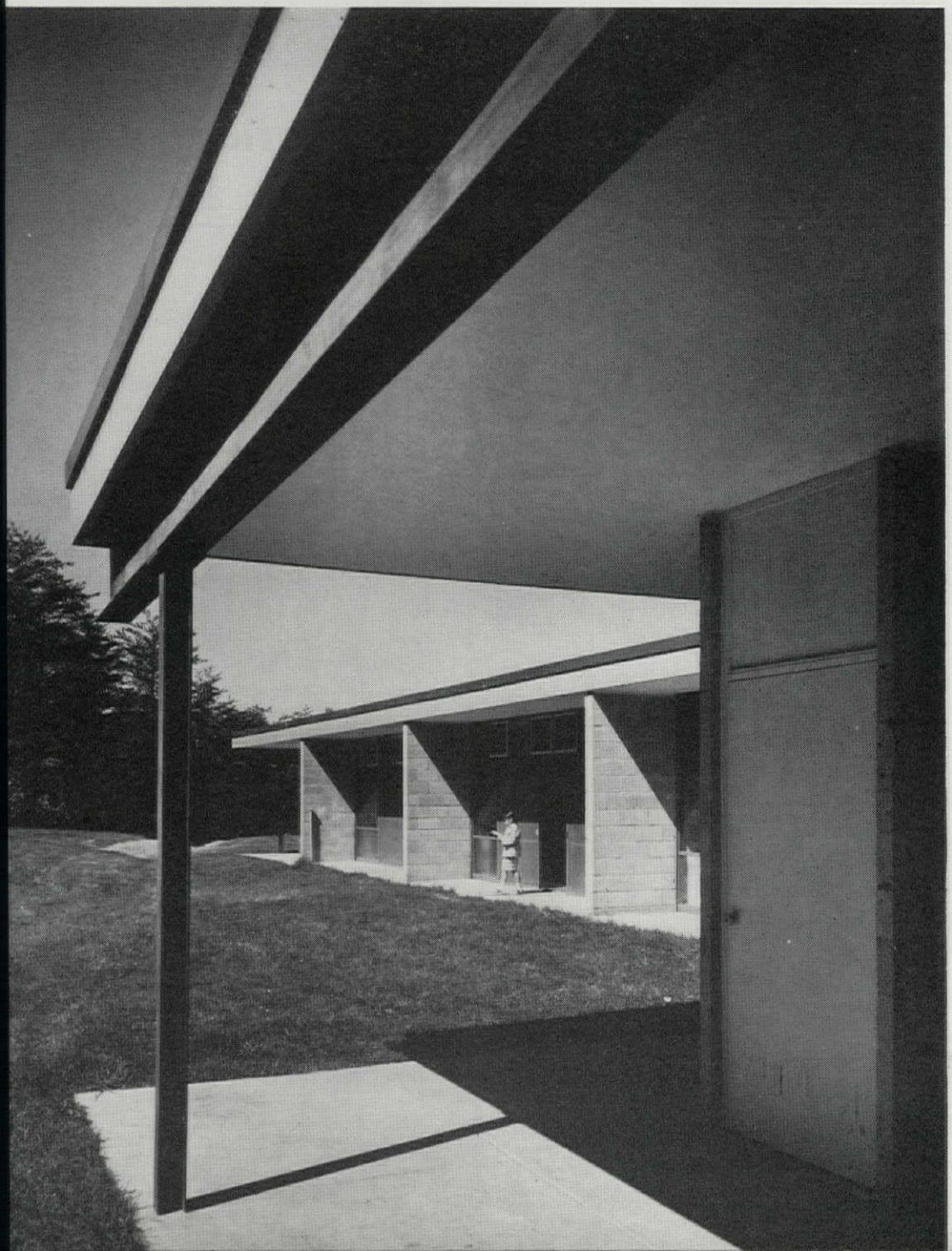


Photos (except as noted): Robert C. Lautman



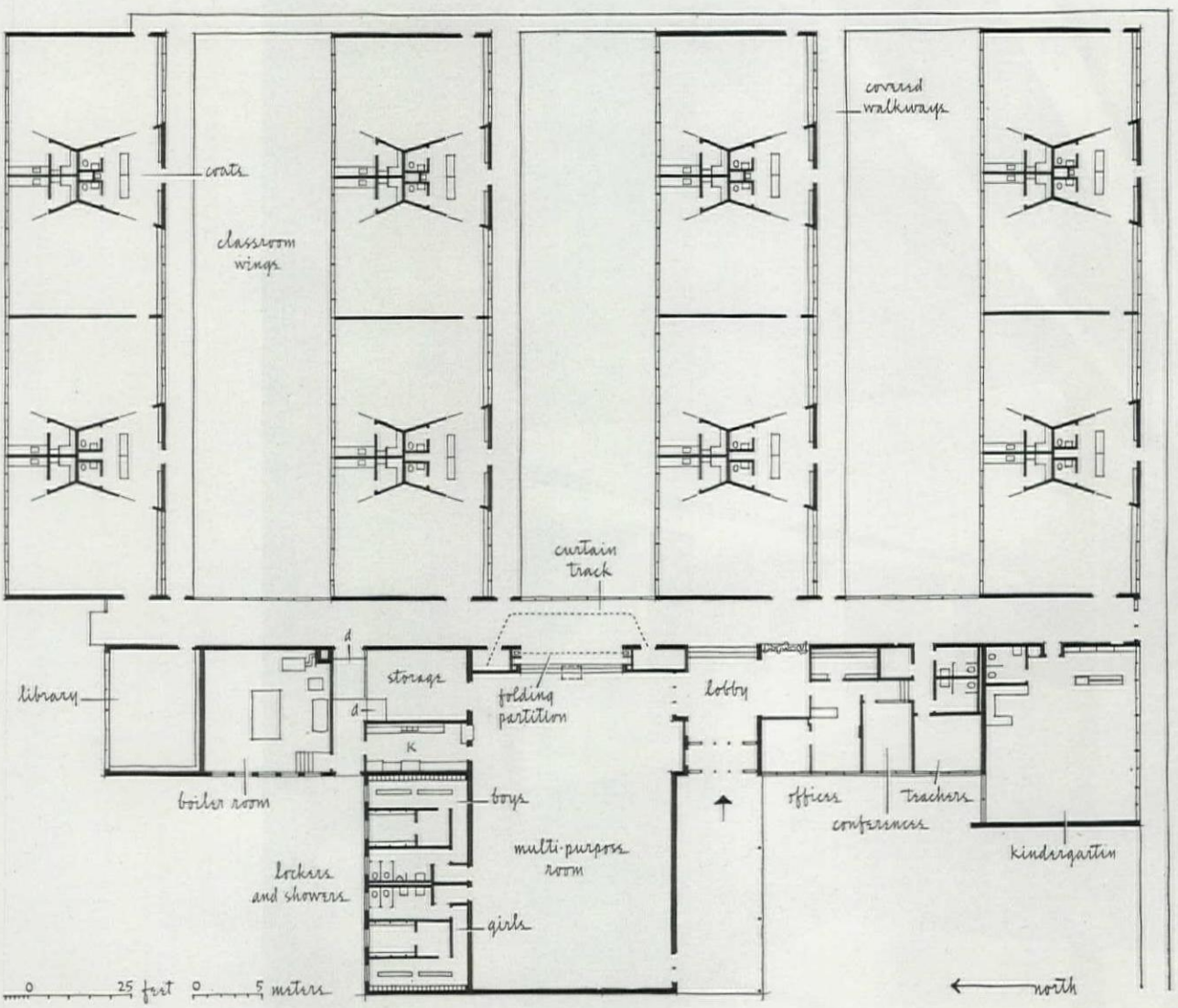
Indoor-outdoor classroom work and play are stressed at Green Acres. Above sliding doors on exterior walls of classrooms are operable sash. The recessed plan scheme provides a small, private outdoor space for each room.





Photos: Alexandre Georges

no-corridor plan,



location | Oak Park, Michigan
architects | Swanson Associates, Inc.

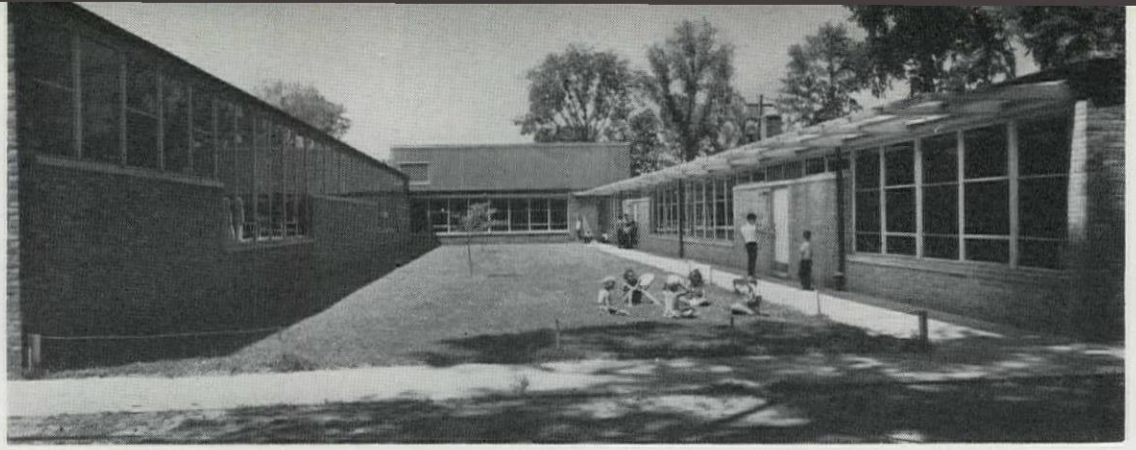
workable scheme for elementary school

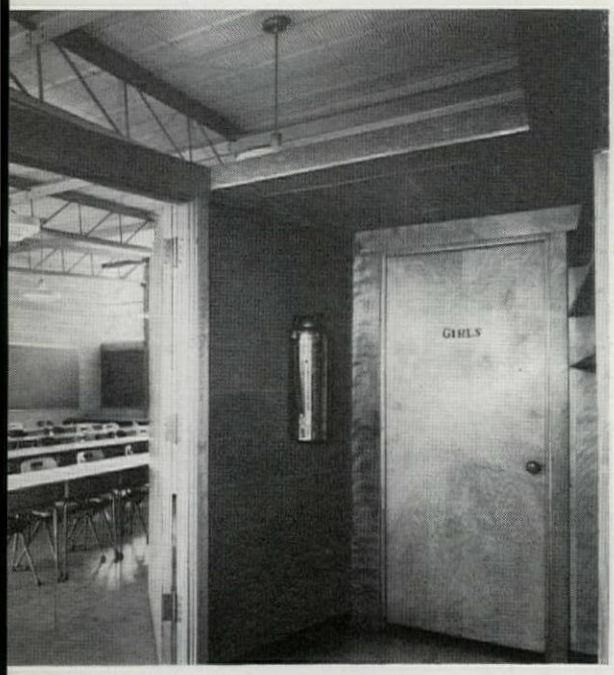
Requirements for the Paul L. Best Elementary School, in the school district of Ferndale, Michigan, were typical—rooms for children of from kindergarten through eighth-grade age; a multipurpose room that would also serve the community; administrative offices; and a small library. The plan solution, however, is anything but typical—especially in the paired grouping of corridorless classroom units (*see* SELECTED DETAIL, *overpage*). Not only does this scheme increase the classroom area some 20 percent over that of a conventional room-and-corridor plan, but also there was a saving of 10 percent of sq ft costs. Furthermore, the design of the splayed "teaching wall," with hinged panels at either end, provides great flexibility for sound control and different room arrangements. Each pair of rooms is organized around a common entrance area, with toilets and movable coat cabinets. Mechanical ventilation for each pair of rooms occurs in a plenum space above this common vestibule.

Almost as ingenious is the economical provision of a stage for the multipurpose room. By opening the room at the end toward the main building corridor (which is three steps above the level of the big room), the corridor itself becomes a stage by the simple device of drawing across a cyclorama curtain that is stored in a closet when not wanted.

The all-exposed structure consists of steel frame, open-web joists; walls of brick with block backup. Built-up roofing occurs over insulation, poured gypsum deck, and gypsum acoustical formboard, with no additional acoustical application required. Slab floors are finished with asphalt tile, with rubber base. Hot-water heating derives from both radiant floor slab and convectors. Daylighting is controlled on the south face of classrooms by plastic overhangs, which also provide shelter above outside walkways.

The black-and-white photographs, unfortunately, do not reveal it but the "skin and bones" structure is painted in bright colors to provide a happy mood for young children—a color scheme developed by Pipsan S. Swanson. R. Stewart Company, Inc., was General Contractor.



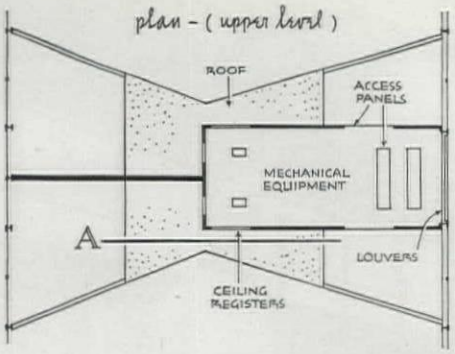


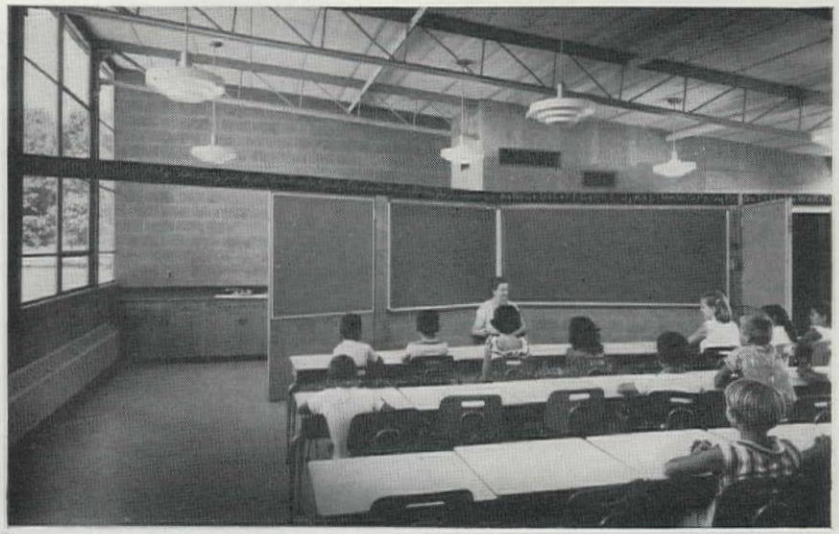
Each of the four, east-extending wings of the school (above) *is made up of two groups of the combined, corridorless, classroom units. When future expansion is needed, similar wings can be readily added.*

Each pair of rooms shares a common vestibule-coat cabinet-toilet area (left).

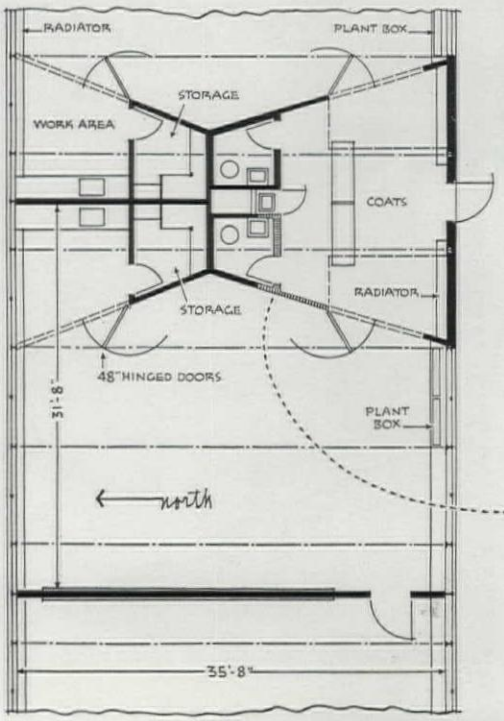
The hinged end units of the wing-shaped teaching wall (below) *allow unusual variety in space use and noise control.*

classroom

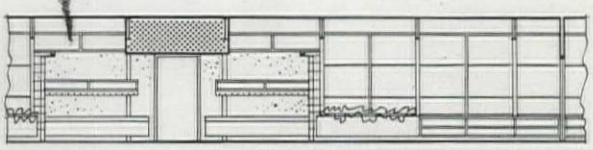




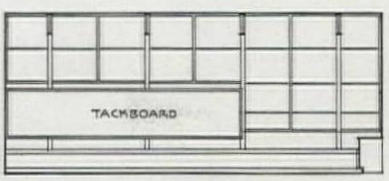
ALEXANDRE GEORGES



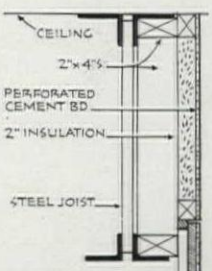
Classroom Plan 1/16" SCALE

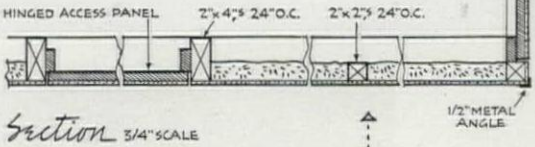


south side

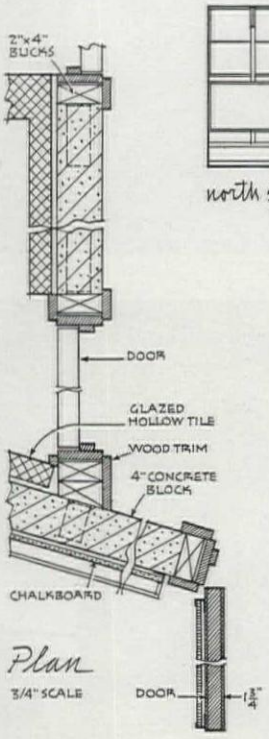


north side

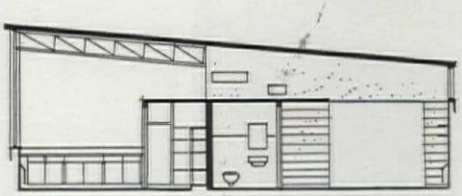




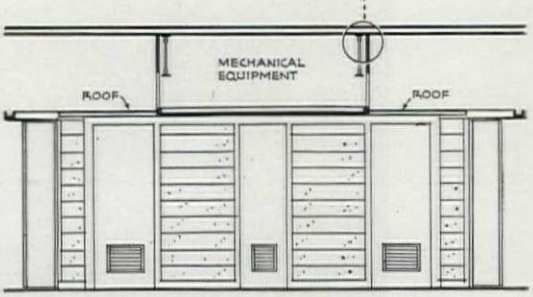
Section 3/4" SCALE



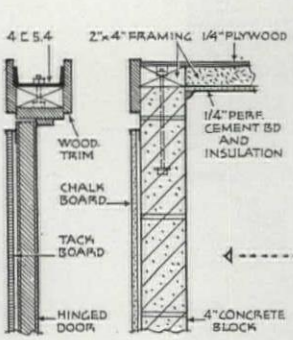
Plan 3/4" SCALE



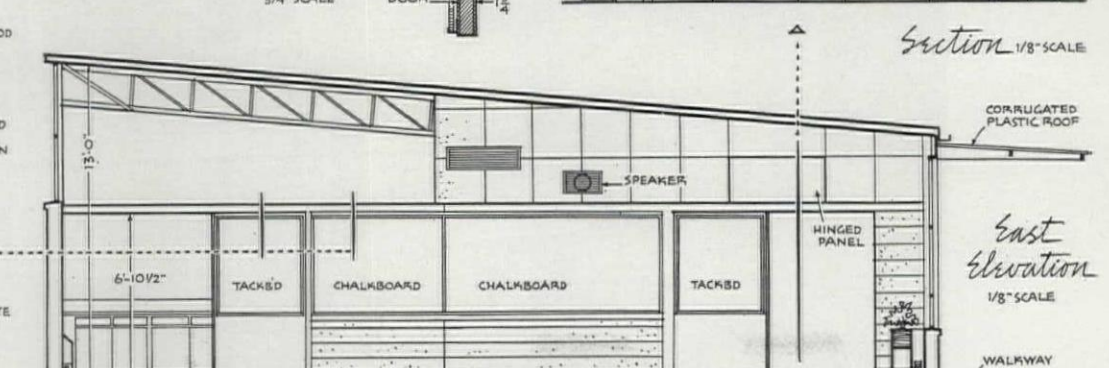
section A above



Section 1/8" SCALE

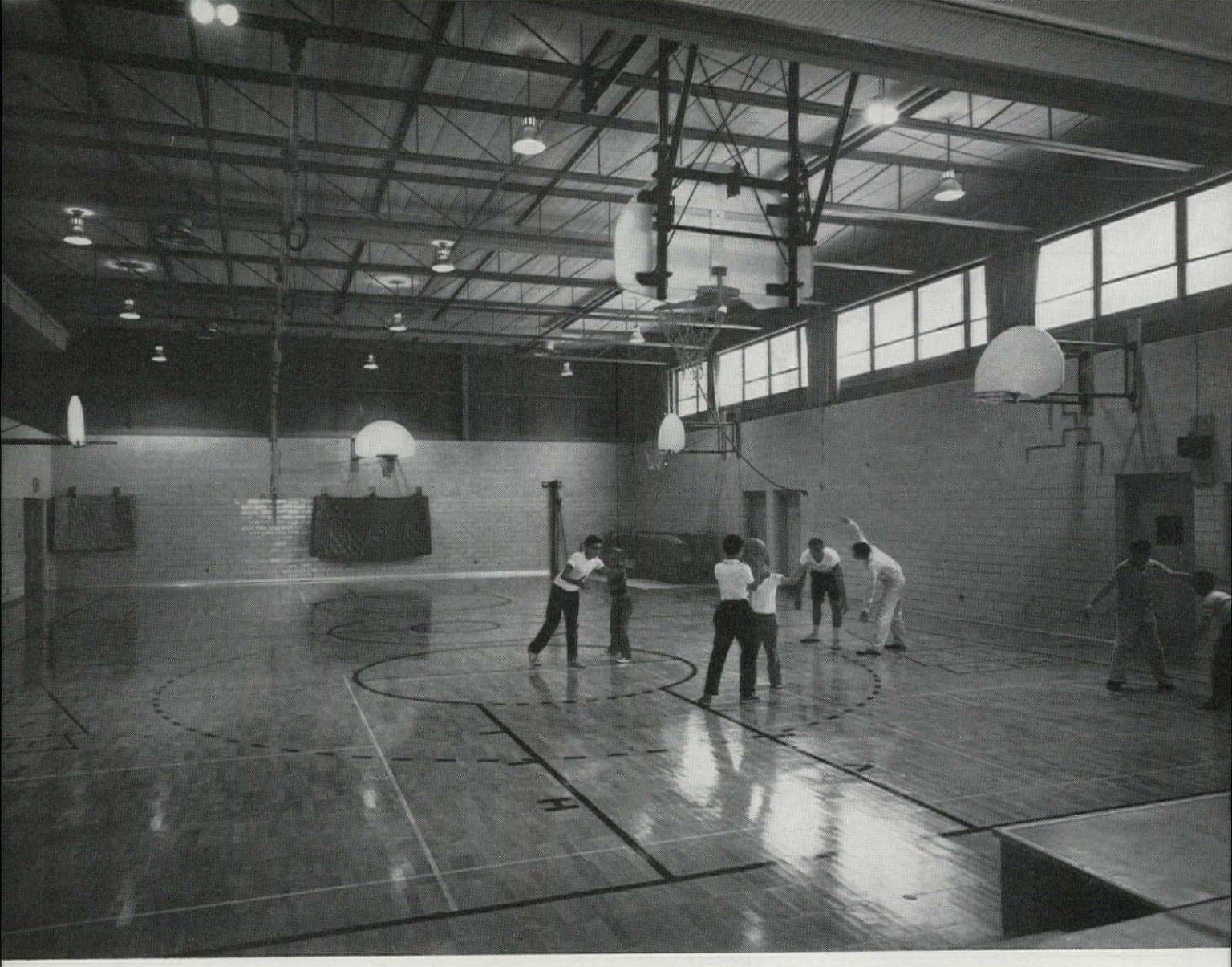


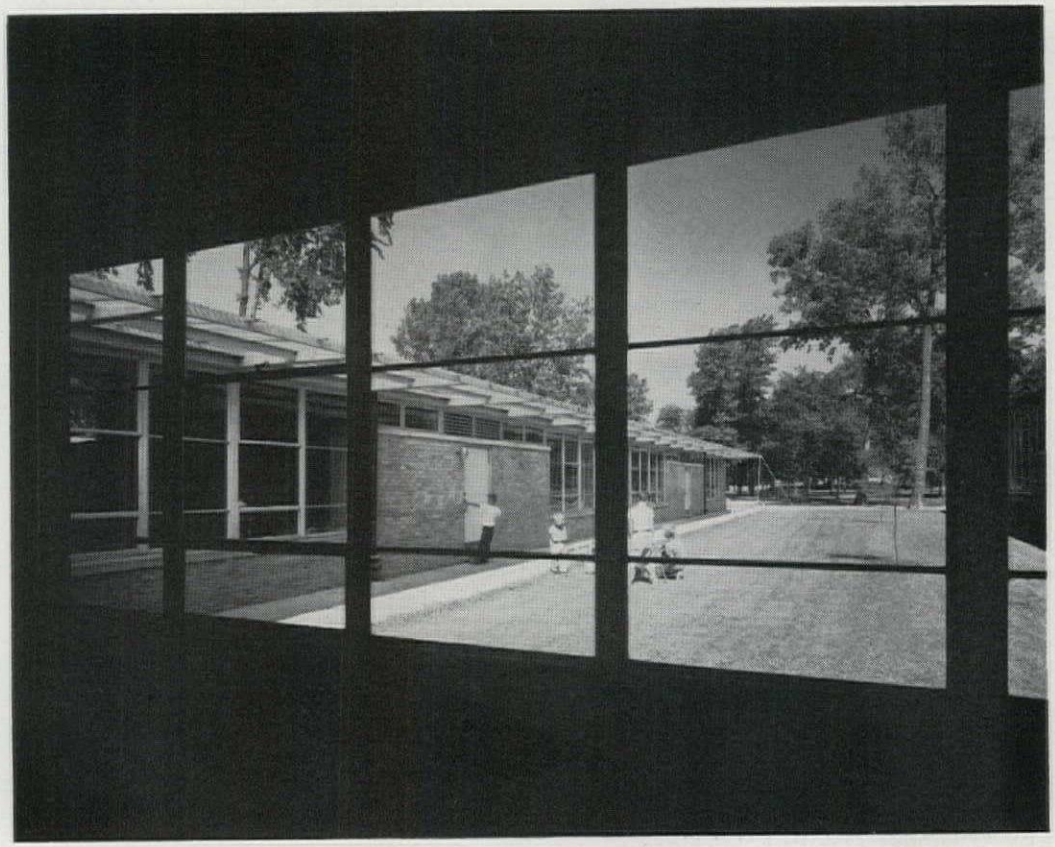
Sections 3/4" SCALE



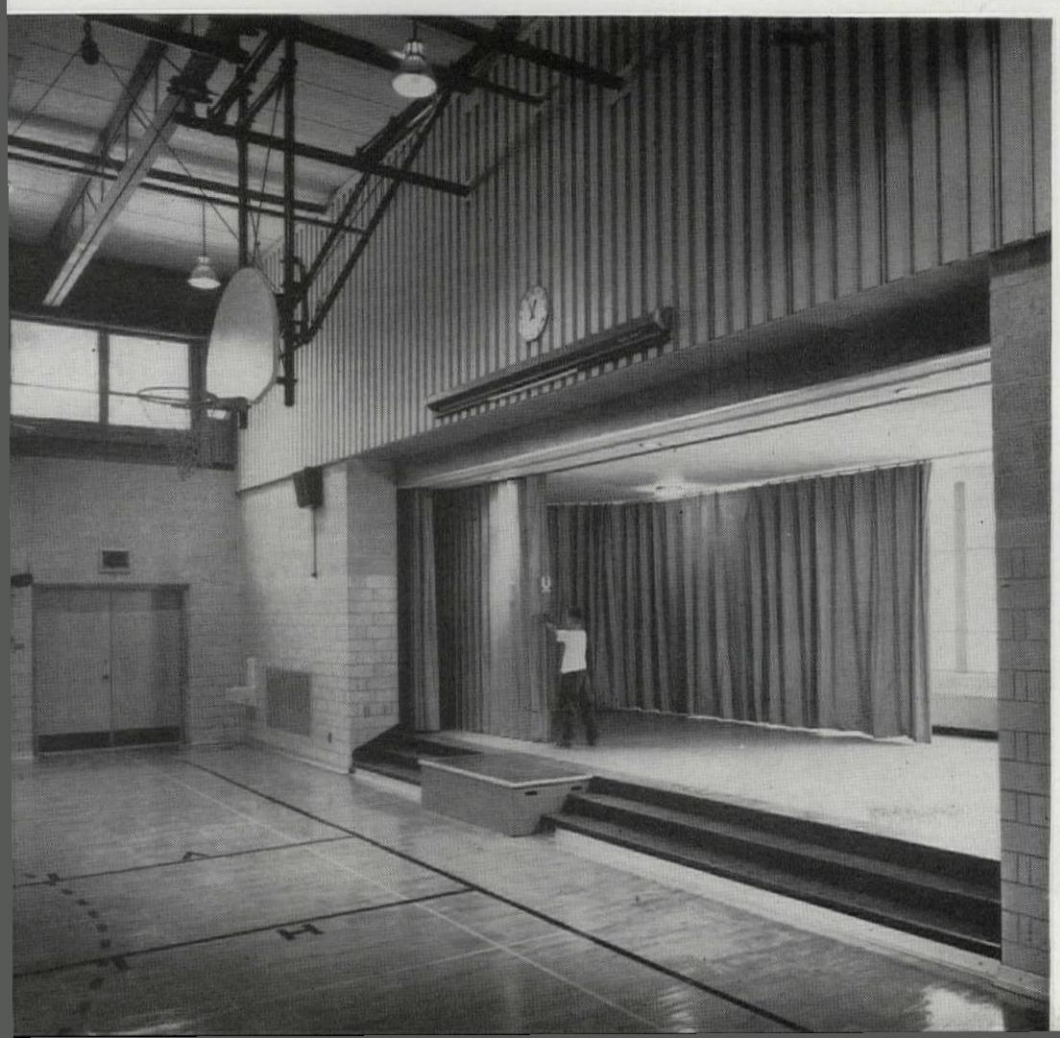
East Elevation 1/8" SCALE

BEST ELEMENTARY SCHOOL, Oak Park, Michigan
Swanson Associates, Inc., Architects





Simple devices give the multipurpose room, which is also used by the community, great flexibility. When the room is used for basketball or other games, a folding partition closes the opening in the east wall. When used for lectures or histrionics, the partition is pushed back into side pockets; a cyclorama curtain in the corridor space forms a backdrop, and there are proscenium curtains that may be drawn across.



campus plan for 2500

The South San Francisco Senior High School has been under construction, unit by unit, since 1949, and more is yet to come. Present enrolment is 1430; 1650 students are expected next fall; and eventual plans call for a student body of 2500. The school has grown according to a master plan that the architects developed back in 1947. To conserve the 23-acre site and provide a more compact scheme, two-story, single-loaded corridor classroom buildings are used, with a covered walk serving the ground floor; a covered balcony, the second.

In this rapidly growing suburb of San Francisco, economy had to be the watchword throughout. Classroom buildings and cafeteria unit have light-steel frames, with steel joists and roof decks of diagonal wood sheathing; second-floor slabs are reinforced concrete. The gym is framed with three-hinged steel arches; the roof deck is of wood sheathing; locker rooms are framed with steel joists. The auditorium is spanned by three-hinged, laminated-wood arches, with roof deck of 4-in. wood members placed horizontally. Exterior walls are stucco on wood lath except for the auditorium and gym walls, which are reinforced concrete. Spandrel areas on the north wall of classroom buildings are corrugated cement-asbestos, left exposed.

Heating, in the main, is by warm-air heating units; classroom buildings have unit ventilators. All artificial lighting is by means of incandescent fixtures; perforated acoustical tile provides noise con-

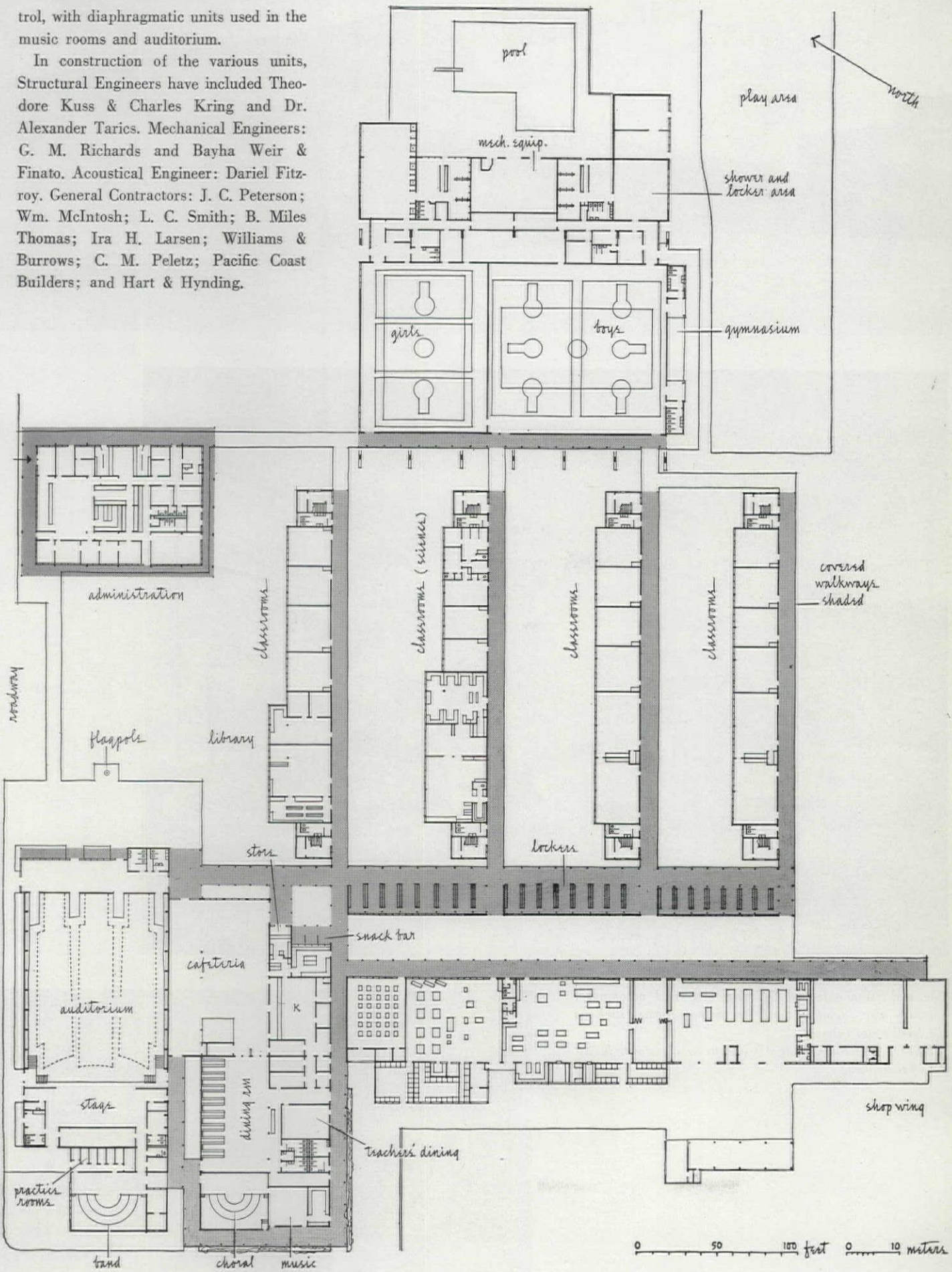
location	South San Francisco, California
architects-engineers	John Lyon Reid & Partners
partners-in-charge	Richard S. Banwell, Burton L. Rockwell

Photos: Roger Sturtevant

senior high-school students

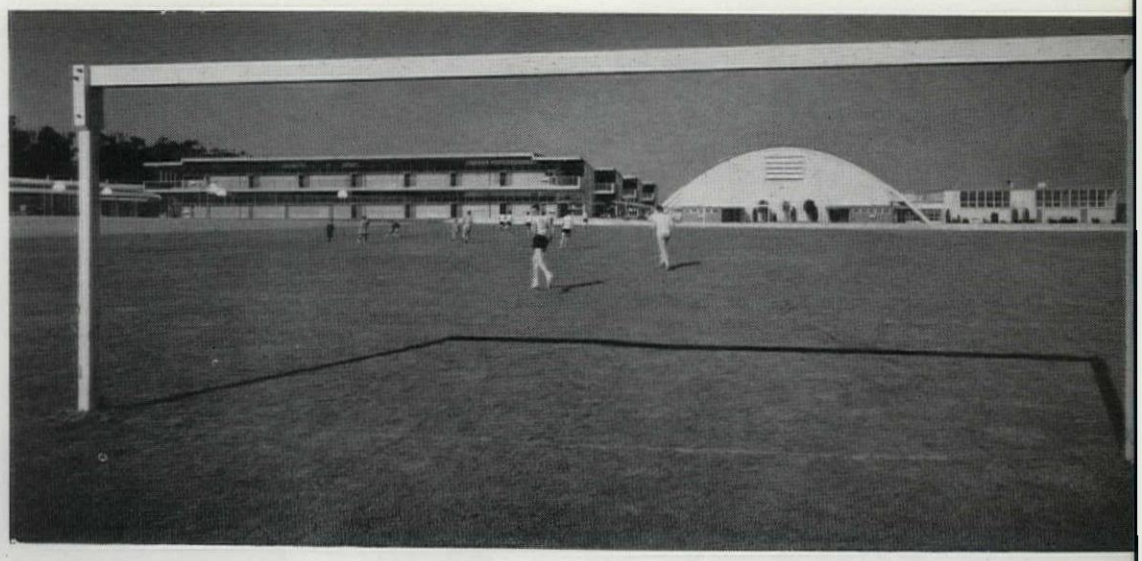
trol, with diaphragmatic units used in the music rooms and auditorium.

In construction of the various units, Structural Engineers have included Theodore Kuss & Charles Kring and Dr. Alexander Tarics. Mechanical Engineers: G. M. Richards and Bayha Weir & Finato. Acoustical Engineer: Dariel Fitzroy. General Contractors: J. C. Peterson; Wm. McIntosh; L. C. Smith; B. Miles Thomas; Ira H. Larsen; Williams & Burrows; C. M. Peletz; Pacific Coast Builders; and Hart & Hynding.



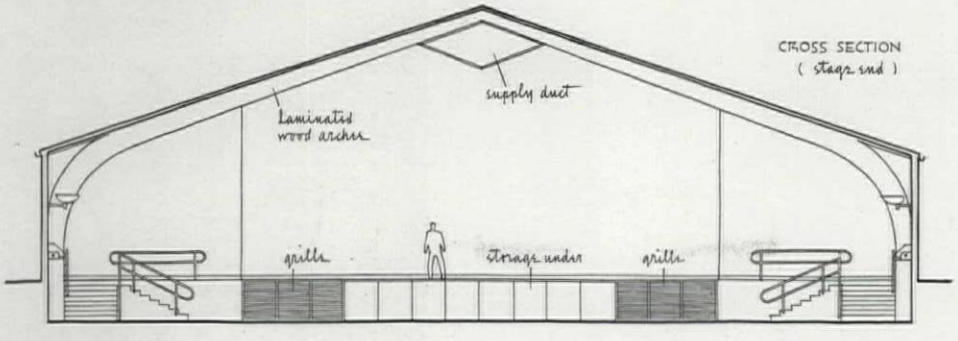
The auditorium-cafeteria building (top *and* acrosspage, bottom) *also includes music-instruction rooms, such as the band room* (above).

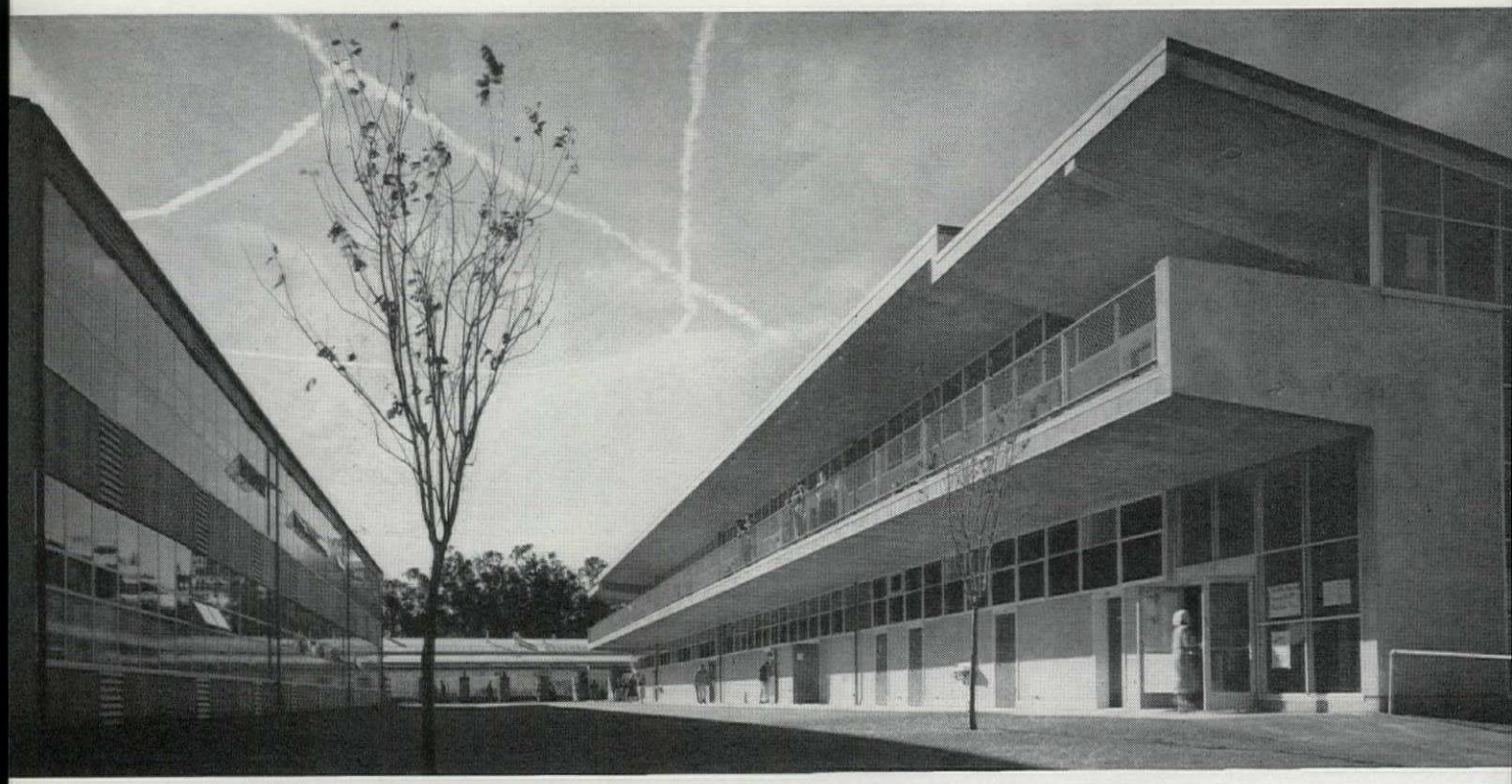
Science classrooms (right) *occupy a classroom building of their own.*

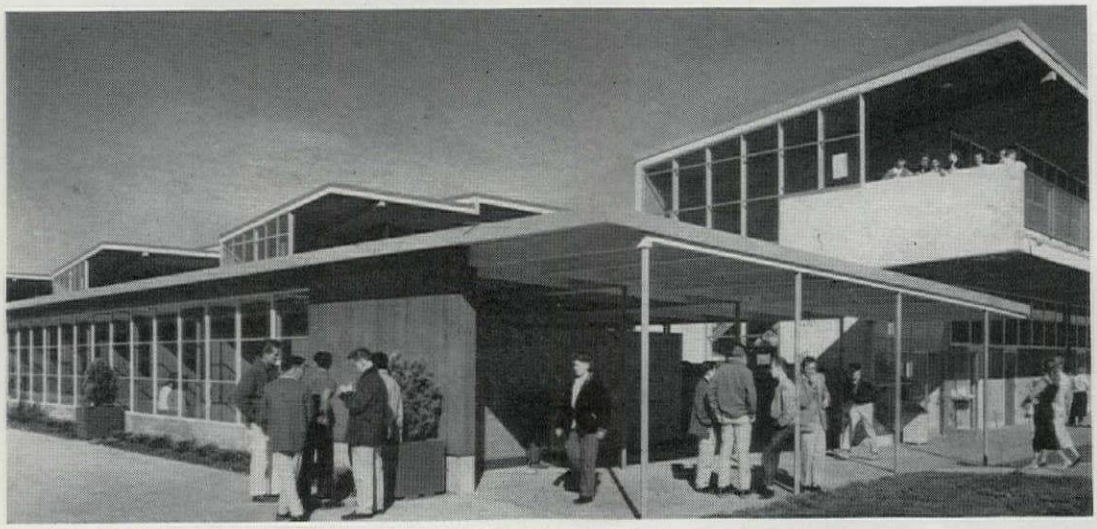


General view from the south (right) *shows two-story classroom buildings at left; gym unit at right.*

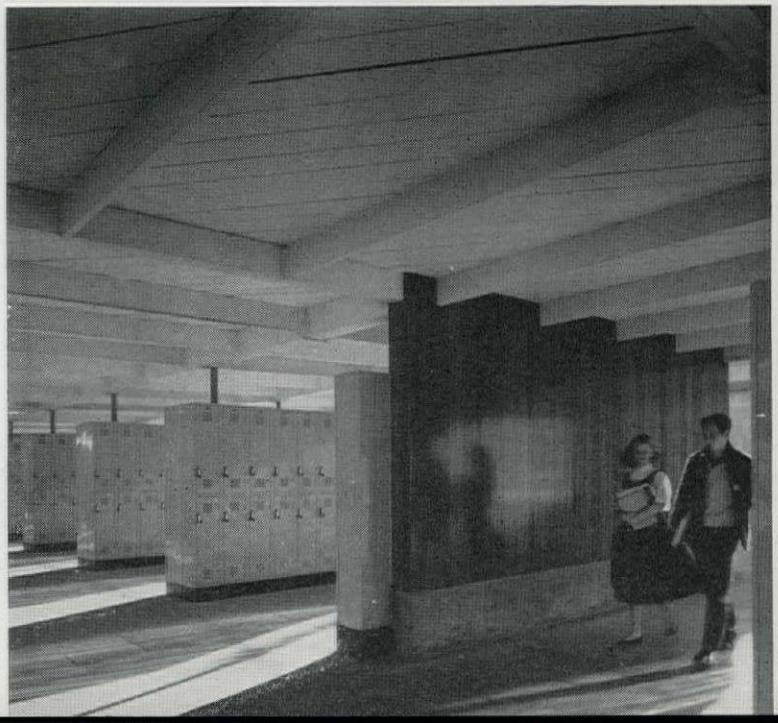
Three-hinged, laminated-wood arches span the 1500-seat auditorium, which uses diaphragmatic ceiling tiles (similar to those in the music rooms) for acoustical control.

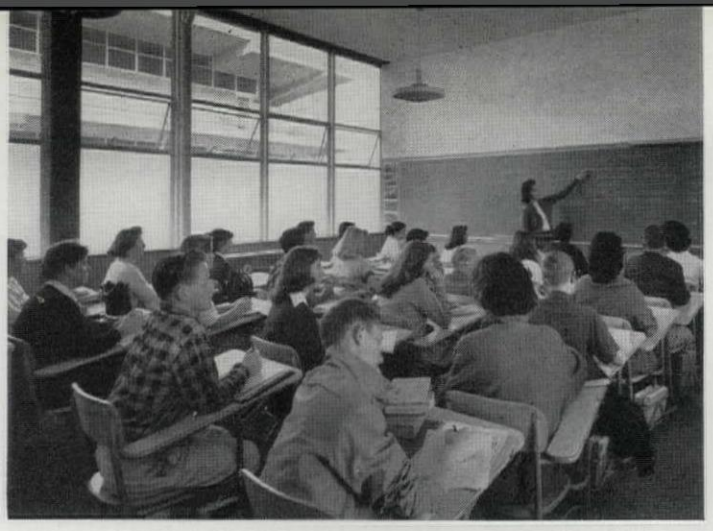






The courts between classroom buildings are subtended at the west end by the locker pavilion, which also appears in foreground of photo immediately above and in photo at right.





The typical classroom (above *and* right) *has high strip windows under cantilevered deck or roof on the south, and deep, north-facing windows.*

Circulation at the second-floor level is by means of balconies (below).

all-electric flameless high school

by Albert A. Horner*

An all-electric, flameless school—the Lamar Junior High School, of Bryan, Texas—has just completed its first year of operation. Travis Lipscomb, principal, has reported: "We have found the electric radiant system wholly adequate. . . . Without qualification, I consider it the most comfortable, clean, efficient, healthful, silent, and above all else, safe heating system that I have ever experienced."

The system installed in this half-million dollar high school is said to have produced a $10,000 savings for the taxpayers. Heating, lighting, class and alarm bells, and clocks are all controlled by an electronic master-control system; nowhere in this modern school plant is there a flame-producing element which could be a source of danger to the building or the occupants.

heating considerations

Designed and engineered by Philip G. Norton & Associates, Architects-Engineers (Bryan, Texas), and Bernard Johnson & Associates, Consulting Engineers (Houston, Texas), the building is a 52,000-sq-ft single-story structure consisting of four units, designated as A, B, C, and D (*acrosspage*). Unit A consists almost entirely of classrooms; Unit B of administrative offices, teachers' lounge, library, arts and crafts, and homemaking areas; Unit C of the cafeteria, kitchen, and storage areas; and Unit D of the gymnasium, including a stage, athletic and seating areas, dressing rooms, shower rooms, supply rooms, baths, etc. The calculated heat loss for these units amounts to 1,293,405 Btu/hr, broken down as follows: A—403,456; B—394,728; C—150,483; and D—344,738. The heat-loss calculations were based on recommendations of the Technical Advisory Committee of the American Society of Heating and Air Conditioning Engineers; that is, on a 97½ percent basis with outside design temperature of 30 F and inside design temperature of 70 F. Each room and area to be heated was calculated separately, with due consideration being given to the direction of exposure of its outside walls, and the necessary electric equipment specified for the specific room and/or area to be heated to offset its heat loss. However, no weight was given to the 300 to 400 Btu per hr radiated by each student, nor to the 5 or 6 Btu/hr per sq ft from the lighting system. Nor was any consideration given, in arriving at the electric-heating equipment to be installed to the sizable amount of solar energy radiating into the structure through its large glazed area. These several heat inputs, neglected in the calculations more than compensate for the electric energy necessary to temper required air changes.

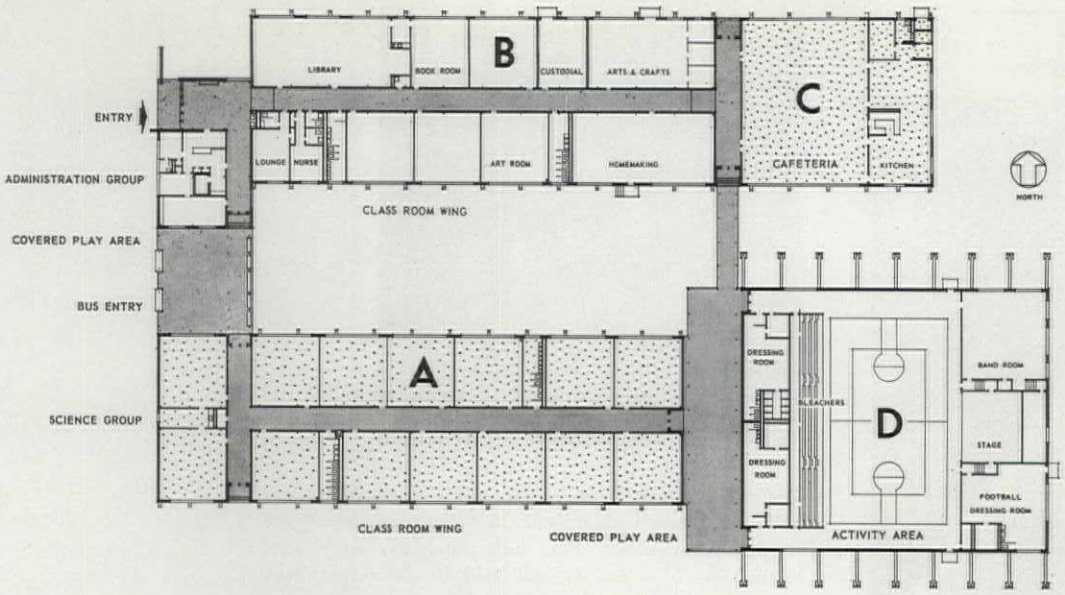
Heating has been accomplished through the use of two sizes of deflector-top, radiant-glass, heating panels, surface mounted on walls at a prescribed distance above the floor. Panels under windows are mounted midway between the floor and the sill; junction boxes are recessed into the walls. Glass panel sizes are as follows: 17¼″ x 47½″ x 2¼″, 208-v, 155-w, 5150 Btu capacity; 19¼″ x 26⅝″ x 2¼″, 208-v, 1000-w, 3413 Btu capacity. Some 84 panels are required for Unit A, the classroom area; the same number for the administrative area, Unit B; 30 for the cafeteria and kitchen, Unit C; and 71 for the gymnasium and athletic area, Unit D. The connected heating load for the entire plant will be 395 kw.

Roof-type exhaust fans and wall-type fans facilitate the ventilation of the structure.

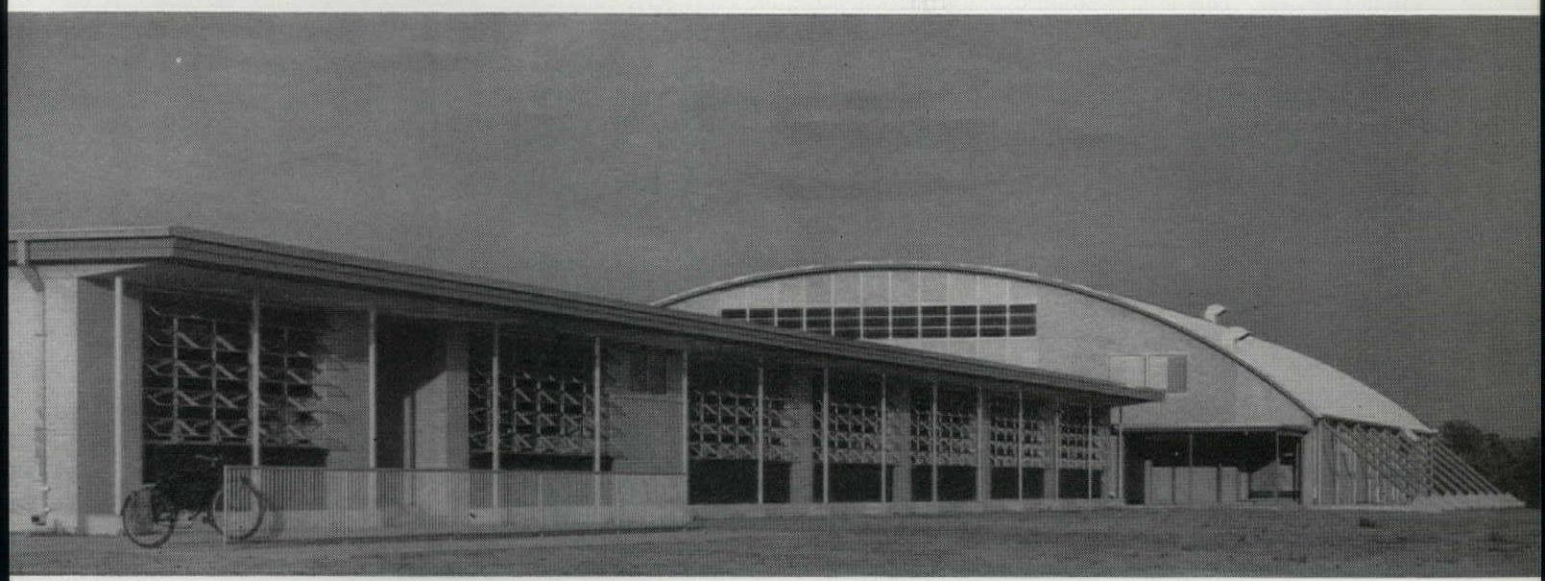
electrical services

Other electrical equipment of interest includes a bell-and-clock system, kitchen equipment, vandal detection and showcase lighting (conventional lighting will be in

* *President, Electric Heating Corp., Austin, Texas.*



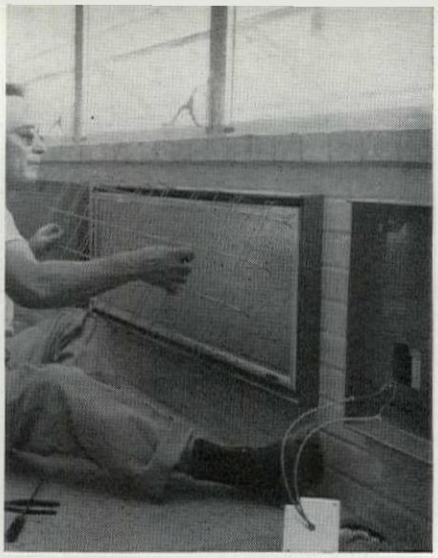
For purposes of computing heat losses, the school was divided into four units as shown (above). *Roof-type exhaust fans, wall-type fans, and awning windows in season ventilate the various units* (below *and* acrosspage).
Photos: Lyman S. Reed



form of fixtures suspended from structural members by standard bar hangars), and the sound system. Classroom clocks are provided with nine in. dials, corridor clocks with 12 in. dials, and the gymnasium clock with a 15 in. dial. Inside signal bells are four in.; outside 10 in. Separate circuits are provided by equipping signaling devices with the proper receiver for corridor and cafeteria signals, outside signals, and all clock circuits. Electric kitchen equipment includes water-pan food warmer, bake oven, range, potato peeler (20 lb in three minute capacity), food mixer, and dishwasher with booster to give 180 F water. The hot water needed in the gymnasium for the boys', girls', and football-squad's dressing rooms are provided by three electric booster heaters having a connected load of 37.5, 37.5, and 45 kw respectively. The sound system features the usual intercom system between administrative offices and classrooms, three-speed record changer, and emergency disaster telephone. The gymnasium and stage have a completely independent system so wired that a program originating there may be transmitted to the central-control console for distribution to any or all classrooms.

control

Of particular interest is the fact that the electrical heating, the vandal detection and showcase lighting, the bell system, and the clocks are all controlled by an elec-



Radiant-glass/panels under windows are mounted about half-way between floor and sill; junction boxes are recessed into walls. Two unit capacities were used throughout—5150 Btu/hr and 3415 Btu/hr respectively.

tronic master system which operates all auxiliary equipment by an electronic impulse without the use of special wiring between the master control and the controlled devices. This is accomplished by plugging a receiver into any available 115-v a-c service, and connecting the device to be controlled to the receiver. The receiver automatically receives the proper signal from the master control to perform the program duty assigned to it. These circuits can be changed to compensate for seasonal changes or bell schedule changes without the use of special tools, or without changing any of the receivers. The system can be programmed so that hall and classroom lights are turned off at night, or even so that lawns may be sprinkled at night when water pressure is high and surface evaporation is at a minimum. Lastly, the system can also be extended if the building is enlarged.

The electric heating is controlled by a receiver and magnetic contactor at the heating panels. The program calls for heat to be turned on in different parts of the building at different times, to give the load increments time to diversify under control of room or zone thermostats, and to minimize the demand peak. This sort of timed control also makes it possible to preschedule extracurricular events—such as after-hours recreational activities, athletic events, Parent-Teacher meetings, etc. —so that appropriate areas are comfortably heated when the occupants arrive. All of these are accomplished without the extra expense and concern of arranging for an after-hour attendant.

The main electrical heating power-distribution panel for these services is centrally located in the main class-room unit. Feeders radiate from this location to serve conventional panelboards strategically placed in the various centers of the electrical heating load.

cost factors

So much for some of the salient features of the physical system in this all-electric, flameless school. Let's take a closer look at the problem of cost, mentioned earlier.

Of real interest to taxpayers in these days of high taxes is an electrically heated school plant which offers safety and health to its occupants, and at the same time offers financial advantages. This is perhaps all the more interesting, since this school was built in a state where gas is a common and supposedly inexpensive fuel. The savings over a conventional combustion-type/gas-fired/hot-water boiler system that will be realized in this school come about, chiefly, for the following reasons: (1) With an all-electric system there is no need for a boiler room, smoke stack, chases, tunnels, etc. (2) Initial installation cost of a radiant-glass/panel-heating system is less than for a gas-fired system. (3) No firemen or engineers are needed to operate the system. (4) No boiler insurance is required. (5) There is a preferential rate for fire and comprehensive insurance. (6) There is a reduction in the need for redecorating and for other forms of care and maintenance. (7) Depreciation is small. Altogether, it is conservatively estimated that an annual net savings of some $2500 will be enjoyed for these—a sum more than ample to pay for the electric energy needed to heat the school (*Note 1, Appendix*).

Records furnished by the business manager of the Bryan school system show that it costs 10.8 mills per sq ft annually to heat the schools of the system with gas at 27c per thousand cu ft. At this rate, the cost of heating the new school would be about $561.00. Basing calculations on 1700 degree days, the outside and inside design temperatures mentioned earlier, and a total heat loss of 1,293,405 Btu/hr, and using the approved FHA-REA formula for computation of fuel consumption, we get a figure of 98,160 kwhr annually as the amount needed to heat this school plant *(Note 2, Appendix)*. This figure is based on a 10-hr day, 6 day week, which will allow for a 2-hr morning preheating period and such after-hours extracurricular activities as have been mentioned. At the current 1½¢ rate, the estimated cost of heating the school with radiant-glass/panel heat would be $1472 a year. It should be noted that this estimate does not take into consideration the heat energy from students, lights, sun, and that required for temper-

ing the fresh air intake.

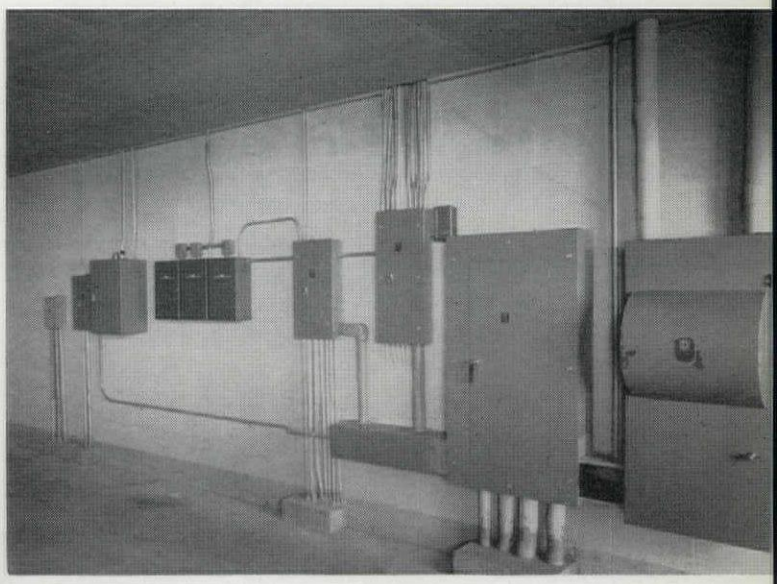
But, the taxpayers of Bryan own and operate the municipal utility, and, hence, the actual cost will be at the rate of about 5 mills per kwhr, a rate which covers the approximate two mill gas cost required to generate one kwhr *(Note 3, Appendix)*, leaving the remaining three mills to cover overhead and amortization of the necessary transmission lines and transformers. Hence, the actual cost of fuel to heat the school electrically is only $491, or about 15 percent less than the cost would be if gas were used. The calculations are based on current rates; records indicated that the cost of gas fuel has continually risen over the years while that of electricity has continually declined *(Note 4, Appendix)*.

Closely allied to cost is the matter of precision of control. Because classrooms are normally occupied during the warmed 7-hr period of the day, detailed tests conducted indicate that even in the more frigid climates, classrooms are generally overheated by conventional heating systems. In most schools, indeed, the main problem is one of cooling and ventilating rather than heating. In the torrid-temperature climate of Texas, under average daily winter conditions, no supplementary heat is necessary to offset the heat loss of the structure, since the heat radiated by the students, lighting system, together with that received from the sun, is more than the building's heat loss, thus making cooling and ventilating necessary except during the preheating period in the morning before classes begin, during recesses, and the lunch hour.[1] In fact, it is probably not an exaggeration to say that buildings heated with the more conventional central combustion-type systems are rarely properly conditioned thermally at all times and at all places, in view of the variable heating sources mentioned above. There are simply no controls on the market today which are precise enough to preclude the heating lag inherent in central systems.

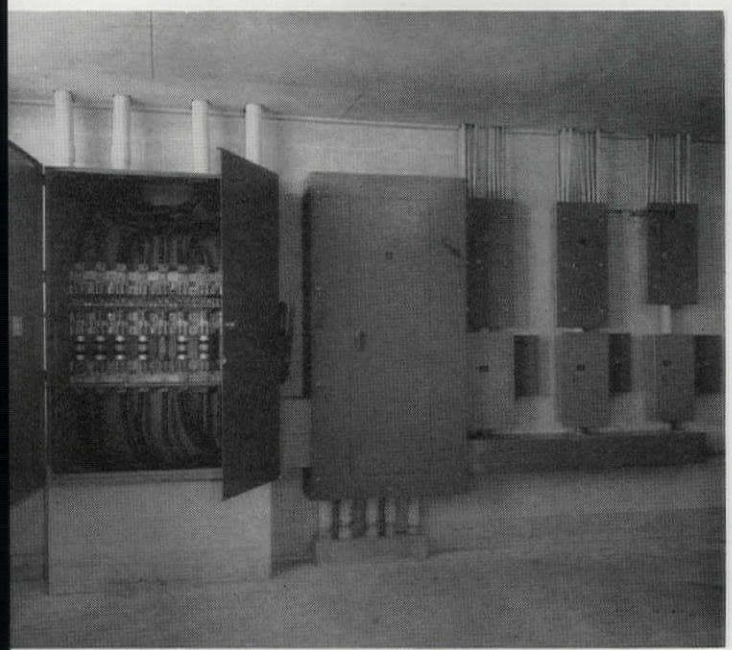
On the other hand, controls accurate to within one half degree are available for the decentralized room and/or zone operation of an electric heating system.

Finally, there are intangible but nonetheless real values favoring an all-electric school. These include safety and the healthfulness of the infrared rays emitted by the electric radiant-glass/panels. These panels neither consume oxygen nor lower humidity appreciably, and tests conducted by bacteriological researchers have indicated that bacteria are destroyed in classrooms heated electrically. The use of these

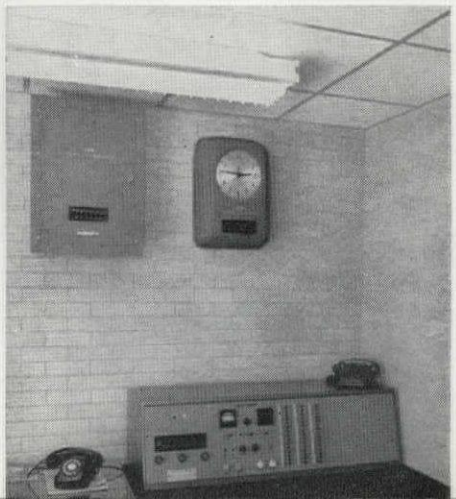
[1] *"Thermal Comfort Report,"* JANUARY 1956 P/A.



Two views of switch-room equipment (right *and* below). *Sound console in office* (below right) *contains following equipment: control panel, room switch panels, AM-FM tuner, loudspeaking*



intercom kit, speed record changer in pull-out drawer, program amplifier, console case, disaster kit, and emergency disaster telephone. Note time control on wall.



panels thus definitely results in higher attendance, since sickness absences are lowered.

proper heating guides

There can be no doubt that the proper heating of schools poses special problems. The *ASHAE Guide* devotes a separate section to this subject in which the following points are made: (1) Low initial-cost heating systems are not necessarily the most economical; maintenance and depreciation must be given due weight. (2) Systems having zone and/or room control of temperatures are essential, if all rooms and areas are to be comfortably conditioned. (3) Only heating systems which respond quickly and accurately to rapid temperature changes should be specified.

As George Bush has pointed out,[2] electric heating meets these requirements by possessing the following advantages: (1) cleanliness—no smoke, soot, ashes, oil, or gas fumes; (2) sensitive control—to within one-half degree variation; (3) efficiency—near 100 percent; (4) flexibility—addition or elimination of circuits is easy; (5) low first cost—no boiler room, stacks, pipe funnels, ventilation ducts, etc.; (6) low maintenance—nothing to do but turn on switches.

All in all, then, the citizens of Bryan should have reason to be pleased with their new all-electric, flameless junior high school, for they shall have an economical plant that offers precious advantages of health and safety to their children.

appendix

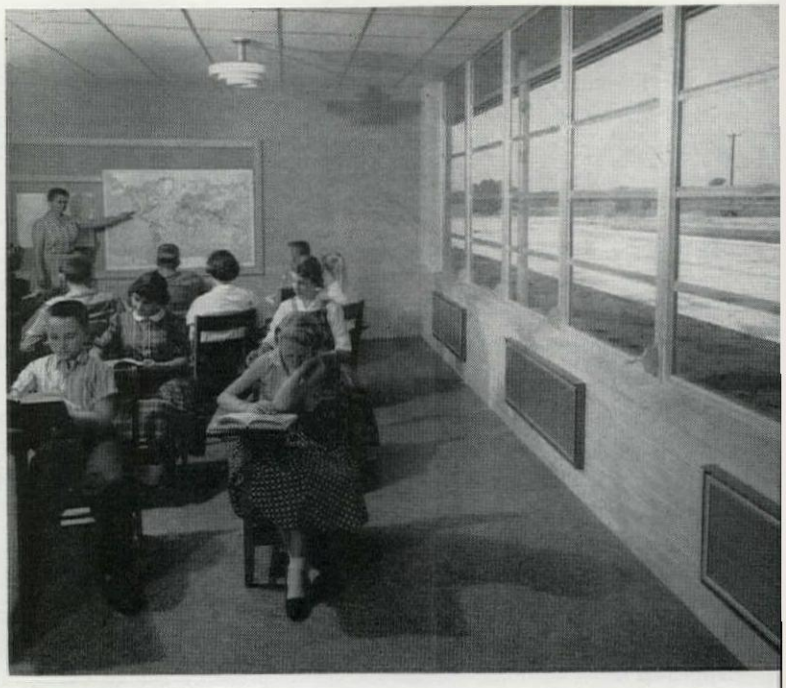
Note 1. $1500 savings in maintenance and depreciation based on 5 percent annual rate for combustion gas-fired hot-water system, and a conservative 2.5 percent for a radiant-electric/glass-heat system.

Note 2. FHA formula for any fuel used is as follows:

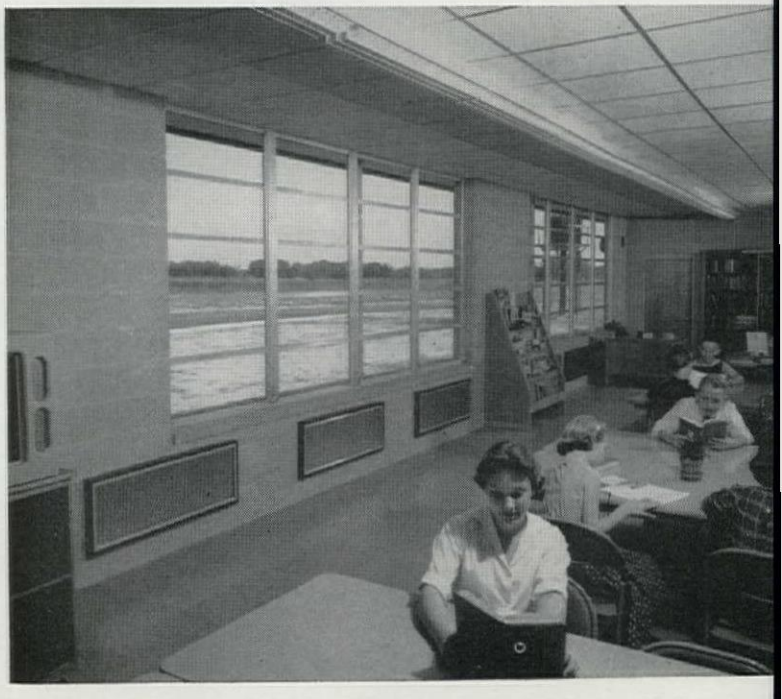
$$F = \frac{H \times D}{T \times K} = \text{where:}$$

F = Fuel requirements/season
H = Total heat loss Btu/hr
D = Average annual degree days
T = Design temperature difference
K = Constant for fuel used
(K = 170 Direct electric resistance;
K = 200 Radiant-glass heating panels)

[2]January 1957 *School Board Journal.*



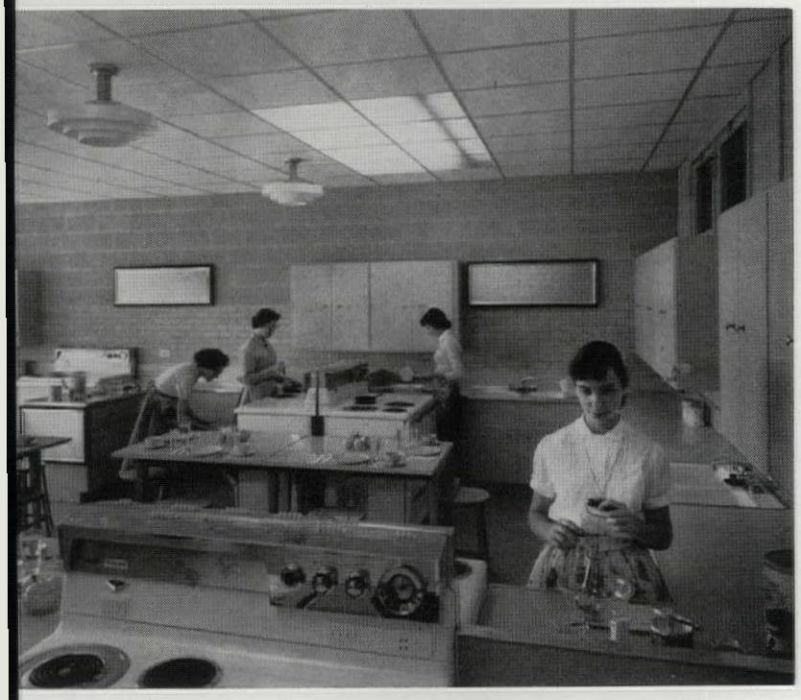
1



2

Typical areas of this school heated electrically are: **1**—*classroom;* **2**—*library;* **3**—*gymnasium;* **4**—*homemaking room;* **5**—*kitchen. A total of* 269 *radiant-glass/panels were installed—connected heating load for entire plant is* 395 *kw. Since taxpayers own and operate the municipal utility, the cost of fuel to heat the school electrically is about* 20% *less than that of gas.*

3



4

5

$$F(24 \text{ hr day}) = \frac{1{,}293{,}405 \times 1700}{40 \times 200} = 274{,}847$$

$$F(10 \text{ hr day}) = 274{,}847 \times \frac{10}{24} = 114{,}520$$

$$F(10 \text{ hr } 6 \text{ day wk}) = 114{,}520 \times \frac{6}{7} = 98{,}160 \text{ kwhr}$$

Note 3. 11-20 cu ft of gas is required to generate a kwhr, depending on the efficiency of the generators. Bryan Utility pays 16-17c per 1000 cu ft for its gas.

Note 4. The only certain hedge against the inevitable rise in gas prices is to use electric energy for fuel, because if gas prices should rise 100 percent, the direct consumer of gas pays the full amount of the increase. However, if he is using electric energy and gas costs increase 100 percent, the cost of producing a kwhr is increased not more than 2 mills, which is but a fraction of the 10-30 mills per kwhr which is the delivered cost today.

Consistently lower costs for electric energy result from two basic facts:

1. The increase in the efficiency of generators has been greater than the increased cost of fuel to generate electric energy. As an example, prior to World War II, electric generators required approximately 20 cu ft of gas to generate one kwhr of electric energy. Today, there are in operation generators which can produce one kwhr with only 11 cu ft, and generators now being fabricated and scheduled to operate next year will produce one kwhr with only 10 cu ft of gas.
2. Prior to 1950, air conditioning was in its infancy. All utilities then, including those in the southern states, had winter peaks. Today, all utilities in the South have much dormant winter generating capacity, as do most of those in the North, due to the public's spiraling demand for air conditioning, which is predicted to be eight times greater 10 years hence. As a result of the spiraling summer-load curve, the load factors of most utilities are steadily declining. Their only salvation for continued profitable operations is to proffer invitinng "off-peak" rates for electric heating—the only load that can in any way level off the valleys of their peak demands. Many utilities have already inauguarted such inviting heating rates. Others will be forced to fall rapidly in line.

welded cantilevered trusses frame elevated school

by Omer Blodgett*

A most unusual and spectacular arc-welded structure — designed by Architect Charles R. Colbert with Consulting Engineers B. M. Dornblatt & Associates, Inc.—is the new Phillis Wheatley Negro Elementary School in Orleans Parish, New Orleans, Louisiana. Its two classroom wings (11 units in each) and two full-length corridors are carried in a steel framework position 10 ft above grade. The entire steel frame, measuring 312′x118′ over-all, is supported by two rows of concrete piers—each pier encasing two steel columns.

The classrooms flank an inner open court, 220′x34′, providing a play area for the 770 pupils. This construction gives an unobstructed area beneath the building, except for piers and end columns, providing ample indoor and outdoor facilities in one city block for a school which, by national standards, should

* *Design Consultant, The Lincoln Electric Co., Cleveland, Ohio.*

Two rows of classroom wings, placed 10 *ft above ground level to provide additional play area, are supported by cantilevered welded-steel trusses* (above). *End trusses are carried on diagonally braced columns.* Photos: Frank Lotz Miller

Centerline module of trusses occurs at location of classroom walls (right). *Open-web joists of roof framing support bulb-tee purlins. Heavy WF beams in floor securely tie main trusses together.*

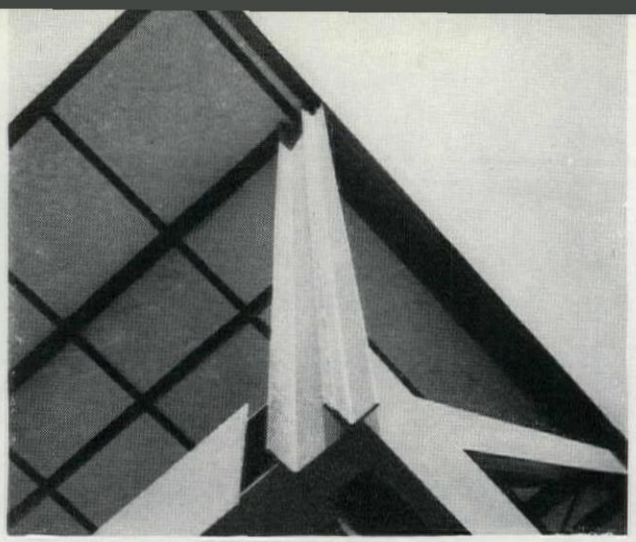
Concrete piers supporting superstructure (acrosspage) *encase structural steel columns. Note open corridors running in front of classrooms.*

have six times the land area.

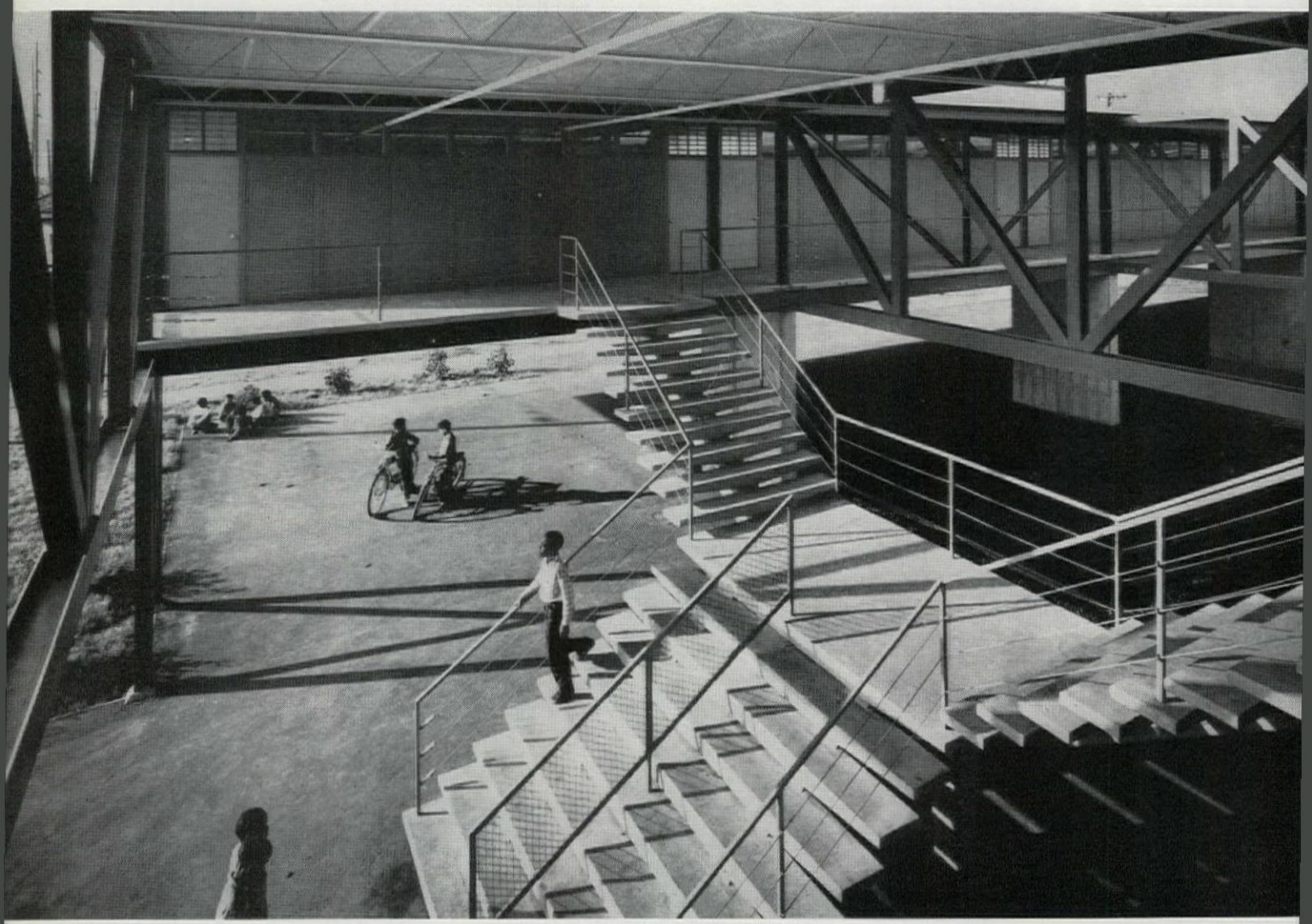
Most unusual angle of the design is the fact that all the "payload," so to speak, is cantilevered—the classroom wings overhang the foundation supports by 35 ft on either side. This called for a considerable amount of stress analysis. A unique system of unbalanced truss design, longitudinal diagonal bracing, and a tight network of roof and floor framing were all welded into a rigid unit.

Basic elements are 12 rectangular trusses 118 ft in length and 10 ft in depth. They are built up by shop and field arc welding of wide-flange beams and comprise 14 panels, each with a diagonal brace. All bottom-chord members are spliced by groove-butt welding and some ¼ in. fillet welds.

Details of some of the welded truss connections are shown (*following page*). Of interest is the use of plate inserts around the lower panel points—fillet-welded to chord, verticals, and diagonals. Joints at the top chord are of the groove-butt type, since this member is the same depth as the verticals and diagonals. However, it will be noted that the connecting beams are cut back along the flanges to make a square fit with the



Corner detail of building (right) *with floor beam welded to end truss. Fascia plates are shop welded to flanges with ½ in. fillets. Note overhang of roof framing. Wide stairs at either end give access to corridors flanking classrooms* (below). *Truss members are nested into lower chords and the joint fillet welded.*



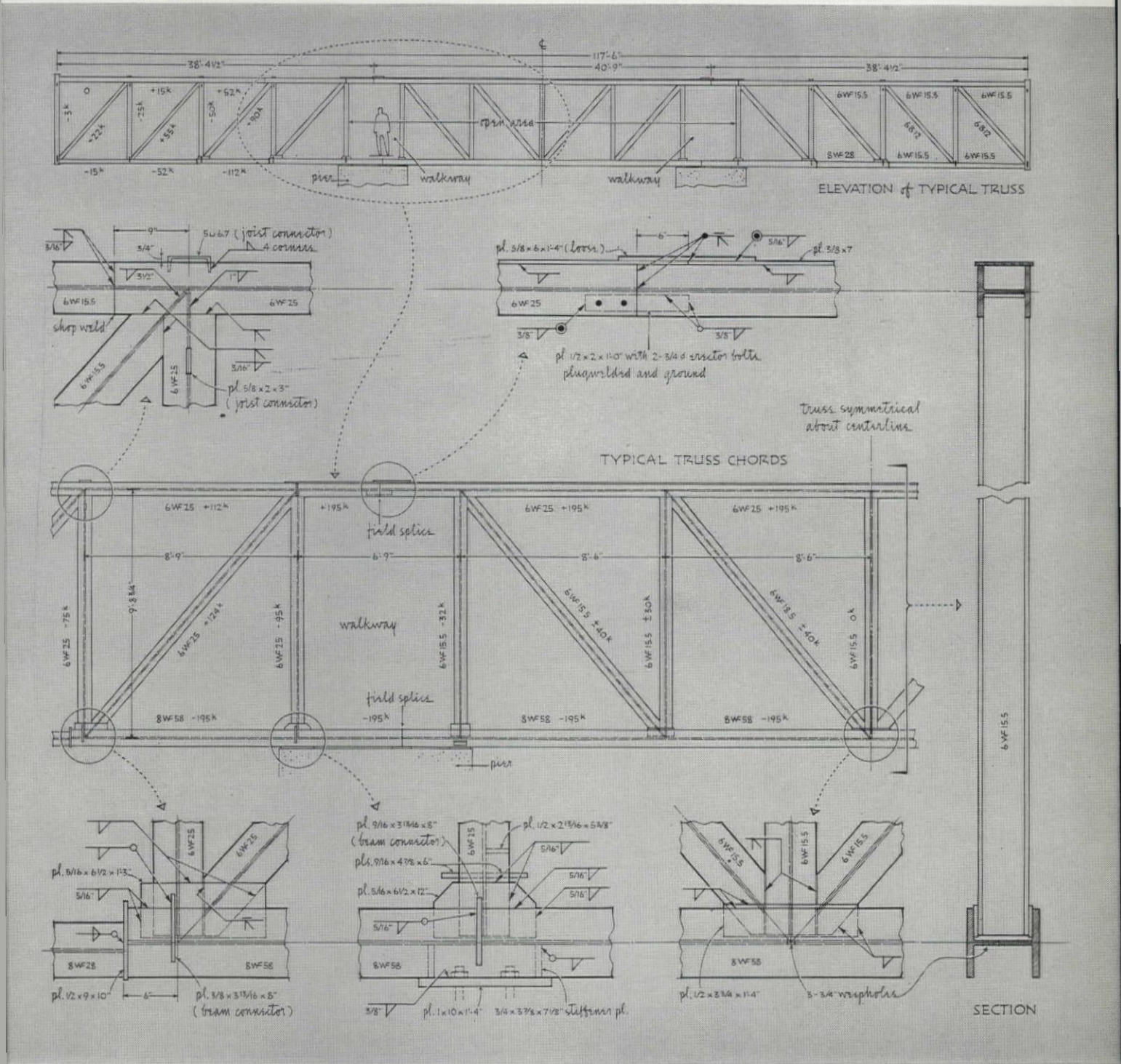
chord flanges and to allow the web to follow through to the web of the chord, where the joint is fillet welded.

Total steel tonnage involved was approximately 300 tons, and it is estimated that, by the welded design, a saving of at least 15 percent in steel tonnage was realized. Furthermore, appearance was enhanced considerably by the clean, smooth lines of welds, absence of rivets, gusset plates, etc. This was an important factor, since, it will be observed, most of the structural work is permanently exposed, outer walls being glassed in from top to bottom.

The 12 trusses comprise supports for floor and roof framing. The former is an assembly of 8 WF and 12 WF beams of varying section weight, while the roof framing consists of bulb-tee purlins, 2′-9″ o.c., supported by lightweight longitudinal roof trusses.

Wide stairways at either end provide ready access to the corridors on both sides, from which the classrooms are entered. Classrooms have bilateral lighting, cross ventilation, and perimeter heating to avoid cold areas near the walls.

A considerable amount of edge and end preparation on beams was required in shop operations before erection of the trusses and connecting diagonals, since flanges had to be flame-cut to the proper



angle, as mentioned, and back from the projecting web. The bulk of the welding was done in the field, using gas engine-driven generators and A.W.S. Class E-6010 electrode.

A separate one-story building, measuring about 135′x80′, also all-welded, is connected to the classroom structure by covered walks and houses an administrative suite, clinic, and a combination auditorium and cafeteria.

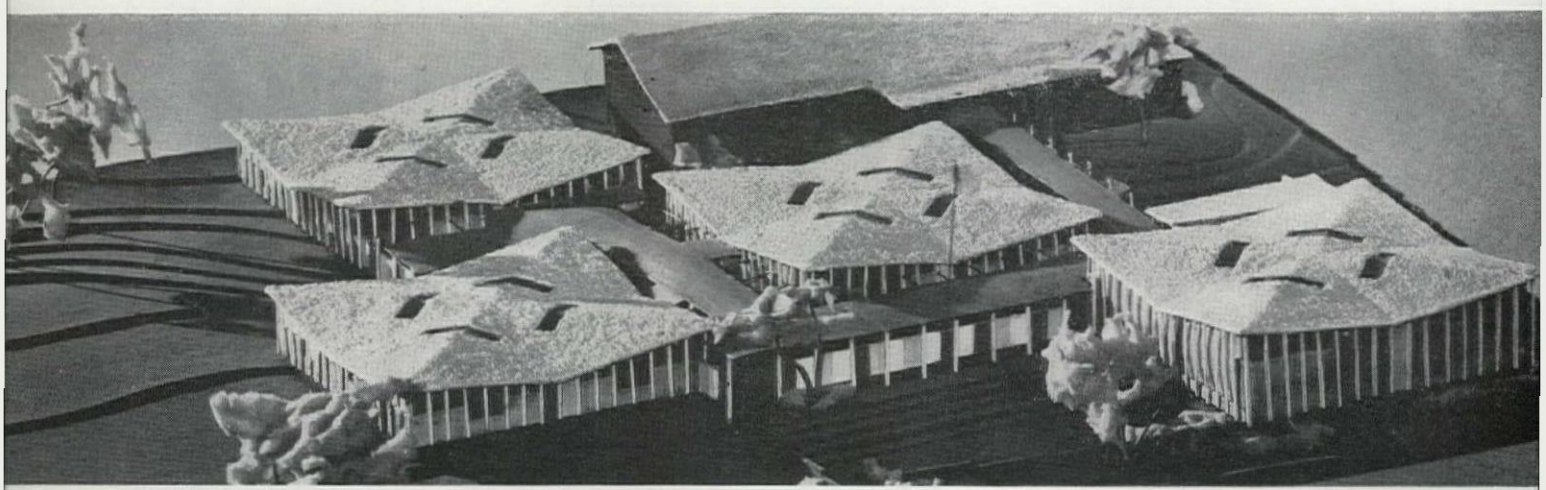
Details of cantilevered welded truss (above) *show welding techniques used at various panel points.*

stressed-skin plywood panels form folded-plate roof

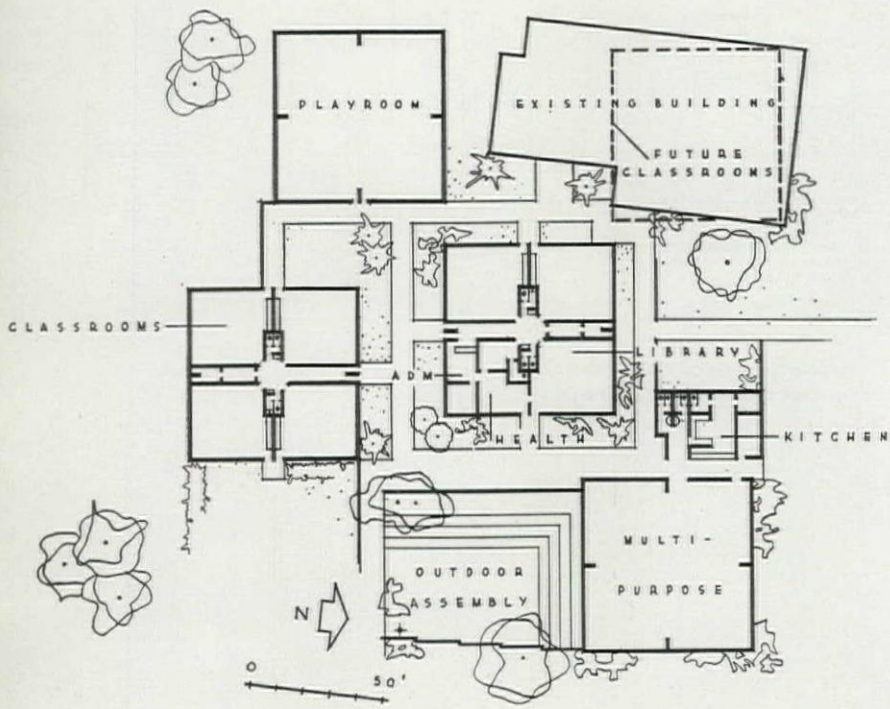
While developing plans for Northeast Tacoma Elementary School, Architects Johnston, Evans & Parker felt that a campus-type plan with the advantages of identical construction components would provide the best opportunity of utilizing the existing terrain without expensive grading. Further, the campus approach could be more easily scaled to the first-, second-, and third-grade pupils who would use the new facilities.

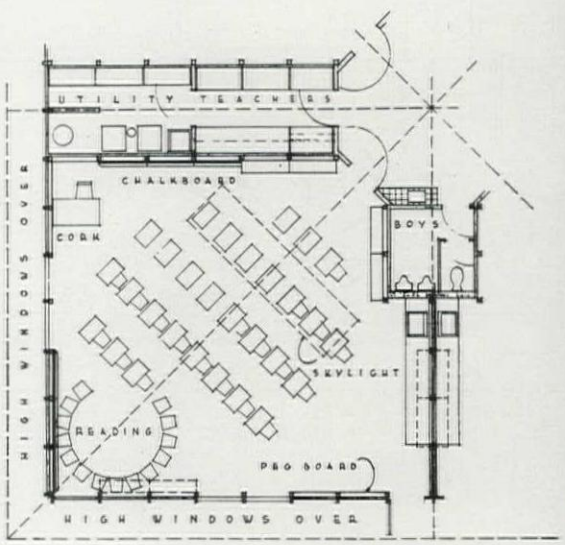
From this beginning, a cluster of four units evolved—two having four classrooms each, a third and fourth serving as playroom and multipurpose units respectively. Each will be erected of standard building components making them identical, except for the multipurpose unit which is to have a higher ceiling. (An existing school building on the site will be removed as more classrooms are required, and a fifth unit will be built in its place.)

The shape of the buildings in the cluster offered the opportunity for an imaginative roofing method. The resulting roofing system is a combination of stressed-skin fir plywood panels designed to function as folded plates in a straight-sided cloverleaf pattern. The panels are



Courtesy Douglas Fir Plywood Association





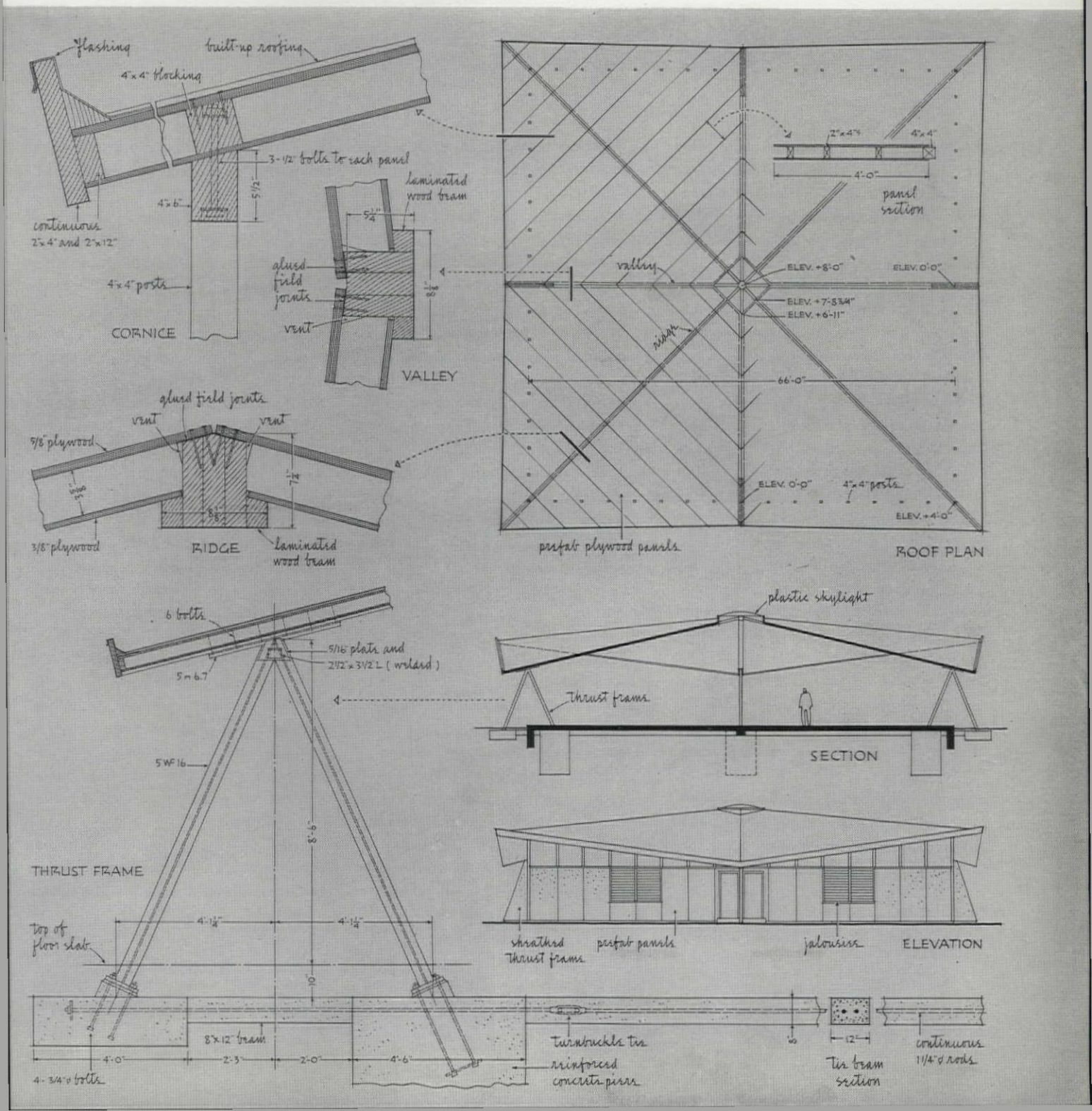
Typical classroom arrangement (above) *and campus plan showing four new units* (left). *Existing building* (in upper right of photo) *will be removed and replaced by new classroom unit as school expands.*

Details of fir-plywood folded-plate roof construction are shown (acrosspage).

supported by 4″x4″ perimeter columns, 4-ft on centers, and four steel frames which absorb thrust exerted by the roof at the end points of the valleys. Minimal glue-laminated wood members at ridges and valleys were designed to act as beams only during the placement of the panels—thereafter the laminated units would work as tension connectors for the folded plates. This structural solution provides a low-cost component roof system applicable to all units, permitting a clear-span structure with unusual interior flexibility. This is the first time stressed-skin plywood panels have been designed in this manner, and the first time a plywood folded plate has been used in a cloverleaf pattern of this type. The school is only the fourth structure on record in the United States to have its roof engineered as a plywood folded plate.

Each of the classrooms and the kindergartens will be fitted with standardized shelving and storage units, plus pin, peg, and chalk boards to be installed and varied to meet the requirements of each area. The multipurpose room will be equipped with a movable stage and contain kitchen facilities for the entire school. It will be completely glazed—opening toward a view of Mt. Rainier and amphitheater below. Its position on the site and self-contained equipment will permits its use by the community for evening activities. All units will be covered by covered walkways with plastic inserts, providing weather protection with light transmission. Sheltering windscreens will protect the outdoor corridors against wind. Total cost, per sq ft, will be only $10.97.

Structural engineers were: Smith & Murray, Consulting Engineers, Technical Department, Douglas Fir Plywood Association.



radiant ceiling/automatic anthracite heat

by Arthur J. Stickney*

Schoolrooms are probably the most critical areas for care and preservation of child health during both winter and summer. With constantly improving standards of living, the importance of proper heating has been further emphasized.

Thus, when schoolboard members of Attica, New York, were planning a new 680-pupil junior-senior high school with 28 classrooms, they were anxious to obtain the best possible type of heating. Several board members made trips to nearby new schools to examine heating systems firsthand. The system that most impressed them was a radiant-acoustical ceiling which distributed heat through metal ceiling pans attached to pipe coils. This method of heating, they found, insured an even temperature throughout the room, even close to windows. Furthermore, the floor was found warm enough for pupils to sit on during the coldest days of the winter.

Radiant heating works on the theory that for a student to be comfortable, in cold weather, he will lose a certain amount of heat to his surroundings, depending on his activity. Too much loss would make a student feel cold, and not enough loss, too warm. Heating engineers point out that a person's heat loss should be accomplished as follows for maximum comfort: 20 to 25 percent by evaporation; 20 to 25 percent by convection; and 50 to 60 percent by radiation—thus it is seen that the radiation factor is a most important consideration.

To understand the principle of radiant heating, consider the heat that comes from the sun. When a person is sitting in the sun he feels warm, because he intercepts direct sun rays. Let the sun go behind a cloud, the person immediately feels cool—not because the air around him is chilled, but because the sun's radiation is cut off. Transferring this concept to a schoolroom, the hot-water coils heating the ceiling area act as the sun radiating heat. Floors, walls, desks, chairs—any objects that intercept the radiation heat rays—are warmed. Since heat always radiates from a warm to a cool body, a pupil feels comfortable and will stay comfortable as long as the ceiling is maintained at the proper temperature.

In addition to the ceiling serving as a heat radiator and acoustical treatment, provision has been made in the boiler room of the Attica school for future installation of a water chiller to use the radiant ceilings for summer cooling.

A further advantage of this ceiling is the easy removal of panels for maintenance of all mechanical and electrical services or changes in lighting. The 1′x2′ panels made of .032 in. aluminum with a baked-enamel finish, fasten in place with a clip.

With the radiant-ceiling type of heat, there is complete freedom of floor space, since there are no radiators along walls. Also, since the heating system can be made in the normal ductwork that would ordinarily be required by an air-conditioning system.

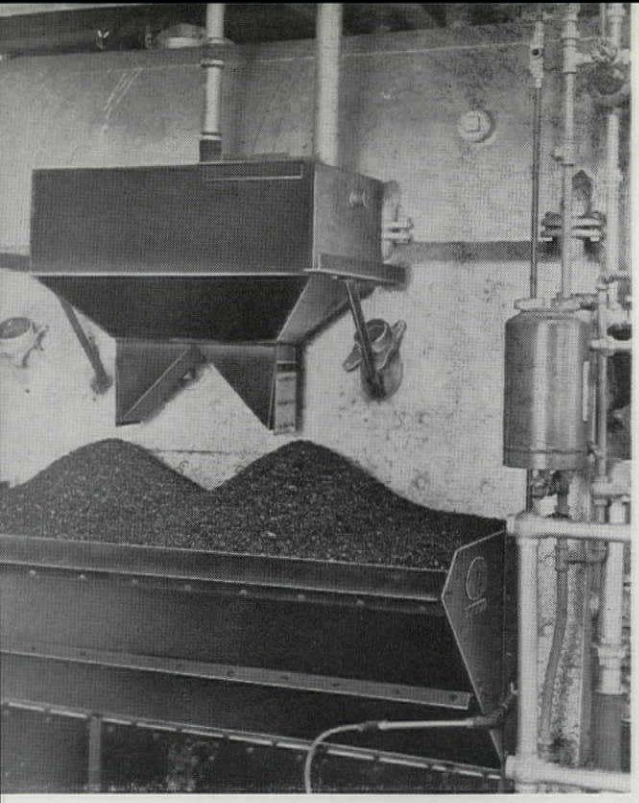
Another saving is made in the over-all weight of the building, since the weight of the aluminum panels plus the water-filled feeder pipes totals only 25 percent as much as a plaster ceiling.

To heat the water in the central boiler room, the latest development in automatic anthracite heat was chosen—the water-cooled grate. This is an automatic moving grate which pulls rice coal (one of the least expensive sizes) into the fire zone, where it is burned and gives up a maximum amount of heat because of the grate construction. Water from the boiler is circulated through the grate at all times. This enables the stoker to operate up to 15 percent more efficiently than is possible with other grate arrangements.

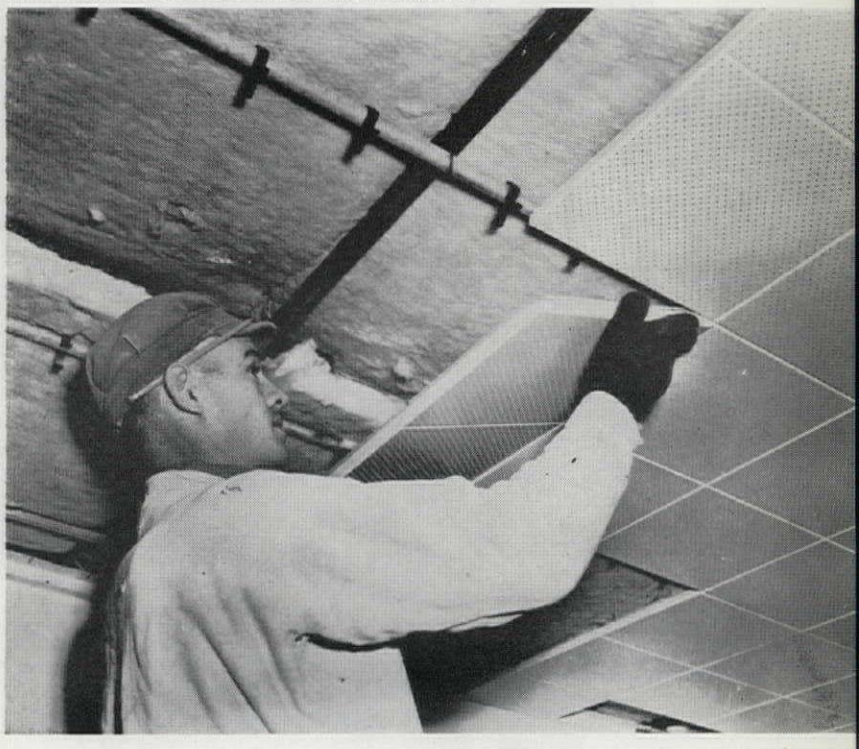
Coal and ash are both handled pneumatically in the Attica school. Thus a custodian need spend no more time in the boiler room than he would if the fuel were oil or gas. What makes coal an attractive fuel is the economy possible. Figures show that fuel costs are as much as $3.00 per pupil per year lower when coal is burned.

With the radiant ceiling providing steady, draft-free heat, excellent student comfort has been obtained with economical installation and operating costs, and moderate first cost. Despite the quality of the system, costs were well within current New York State averages for school building.

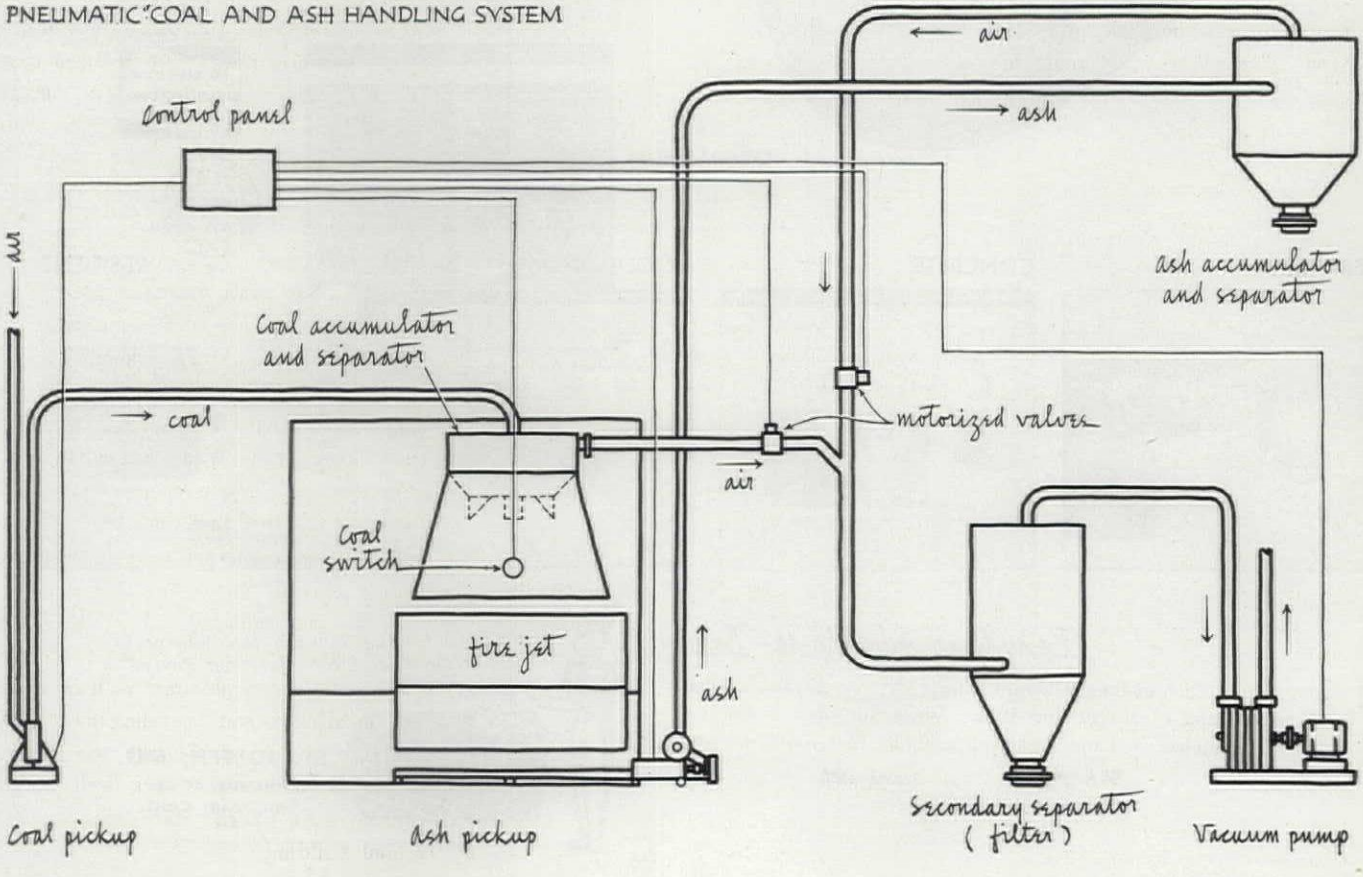
* *Registered Architect, Rochester, N. Y.*



Photos: Electric Furnace-Man Inc. and Burgess-Manning Co.



Pneumatic coal-feed system used at Attica, New York, Junior-Senior High School (above). *Aluminum radiant-ceiling panels are fastened to water-carrying pipes by means of clips* (right). *Diagrammatic scheme of pneumatic coal-and-ash handling system* (below).



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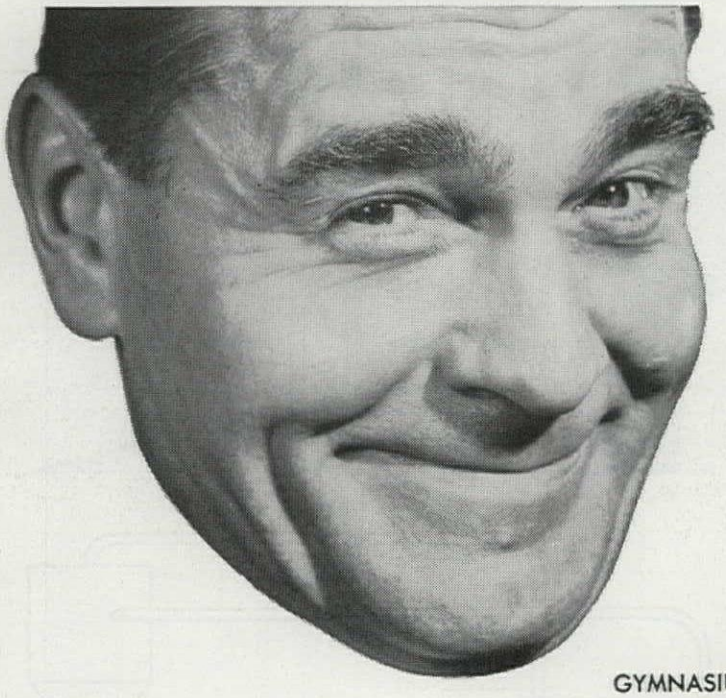

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Glazing Compounds and Sealants

*by Harold J. Rosen**

Until the advent of the panel curtain wall, very little difficulty was experienced with glazing of wood or metal sash. Glazing compounds or glazing putties had been used for several centuries and until metal sash was introduced, putty had changed very little in either its chemical or physical properties. When metal sash made its appearance it took some time before workable and satisfactory steel-sash putty was finally developed.

The conventional glazing putties are composed essentially of linseed oil and/or mineral oils with low-absorption pigments. Elastic glazing compounds are composed of high-oil-absorption pigments and a higher percentage of oils is used.

In installations where the buildings are comparatively rigid, glazing areas small (generally not over 24 in. in both directions), and the sash well supported, conventional putties and elastic glazing compounds can be used with a high degree of practical success, especially if initially and periodically protected by painting. Old mansions dating back to the pre-Revolutionary period still have some of their original windows and glazing material.

While the eventual hard, brittle nature of these compounds precludes their successful use in panel curtain-wall or large glass-area installations, their low cost still makes them attractive for small, rigid sash-glazing applications.

It was not until panel curtain-wall construction was introduced that the shortcomings of conventional glazing compounds were realized. Did the first designer of panel curtain walls make provision for a ¼ in. increase in size of a 10-ft section of aluminum undergoing a 150° temperature change while the glass was only changing by 1/10 of an in.? If he knew it, he still did not have at that time the proper glazing compound to fill the joint between these materials, which would have been effective in sealing the joint. Nor did this same designer have at hand a glazing compound capable of withstanding the great stress placed upon it if it were used to fill the joint of a 5′ x 10′ light of glass which deflects 1¾ in. under a 100 mph wind.

As a matter of fact, the conventional glazing compounds could not be improved upon to answer the demands of the panel curtain wall requirements. Completely new formulations bearing no chemical resemblance to putty have been and are being evolved, and the term "Sealants" are being applied to these new jointing materials. For use in panel curtain-wall construction an effective glazing material must be formulated that will be capable of withstanding the severest exposure conditions. The Building Research Institute is one of several organizations that are attempting to define these conditions. They suggest considerations of temperatures of −40 F and 160 F, loads produced by wind velocities of 150 mph and rainfalls of 8 in. per hour.

To obtain effective glazing one must recognize what is required of the sealant material. To prevent leaks the sealant must exhibit properties that will permit accommodation of the chemical and physical conditions to which it will be subjected. An effective glazing material must provide a weathertight seal that is stable and resistant to the effects of solar radiations, oxidizing and corrosive atmospheres, water, and to the stresses and departures produced by movement. In addition the relative movement of glass and sash produced by thermal expansion, wind loads and vibration, and its effect on sealants must also be recognized and defined.

The Pittsburgh Plate Glass Company has a large stake in the success of panel curtain-wall construction. In this respect it has been engaged in the evaluation of sealants and in the development of suitable sealing materials with the most severe performance requirements in mind. The following properties have been proposed by Pittsburgh Plate Glass that an effective durable sealant must possess:

1 *Permanent Good Adhesion, High Cohesive Strength and Controlled Yield Point.* The glazing material should yield at a significantly lower stress than that required to produce bond failure.
2 *Extended Resistance to Weathering Agents and Weathering Cycling.* Glazing seals, which may successfully withstand rather severe separate exposure conditions, may deteriorate rapidly when exposed to a combination of two or more weathering conditions.
3 *Permanent Elasticity and Resiliency.* A glazing seal should be elastic to yield with the movement of parts and be suitably resilient to prevent permanent physical displacement.
4 *Stability Under Infrared and Ultraviolet Exposure.*
5 *Low Water Absorption.*

Within recent years some of the more promising sealants have been Thiokol mastic fillers and neoprene gaskets. All Thiokol formulations are polysulfide rubber compounds. They are a two component-type compound to which an accelerator is added to the base material, just prior to use. These accelerators cure the base into a rubbery form. Additives to the base polymer and to the accelerator determine such properties as rate of cure, degree of cure, and adhesion. Some of the drawbacks to Thiokol are its short pot life after mixing, but this is being overcome by some suppliers in certain areas furnishing the compound to applicators, premixed and frozen. Adjacent surfaces must be protected with masking tape, and workmanship must be careful at all times to insure filling joints. Neoprene gaskets depend upon flexibility and elasticity rather than on adhesion for their sealing action. Sash must be designed with removable stops that are screw drawn into position either perpendicular to the glass pane or by a rocker action to provide the necessary pressure of this gasket seal.

Another sealant showing much promise is a vulcanized butyl-base extruded-tape-type compound manufactured by Pittsburgh Plate Glass Company and known as #1072 Duribbon Butene Tape. This tape has been extensively tested and found to have excellent, durable adhesion to glass and metal surfaces. Repeated rapid cycling to extreme temperatures and prolonged exposure to ultraviolet radiations have indicated no adverse effect on performance. This tape should be used only where, in joint assembly, the tape material can be flowed to produce good, continuous contact with surfaces being sealed. Glass stops should be of the pressure type as previously described for neoprene gaskets. Other practices found essential to effective butene tape glazing are as follows:

1 The tape thickness should be twice as thick as the nominal glass-to-stop clearance.
2 Glass and metal surfaces should be clean. Install 40 to 50 durometer glass centering shims that are approximately 3″ long and of a thickness that is slightly less than the glass-to-stop clearance. These shims should be positioned a minimum of ¼″ from the top edge of the stop on about 2 foot centers both indoors and out.
3 Apply butene tape about 1/16″ below sight line of sash overlapping ⅛″ to ¼″ at corner and splice areas.

*Associate, Kelly & Gruzen, Architect-Engineers.

New dimensions

Architect: Frank L. Hope
Formica: 18-FC-22 Tawny Walnut

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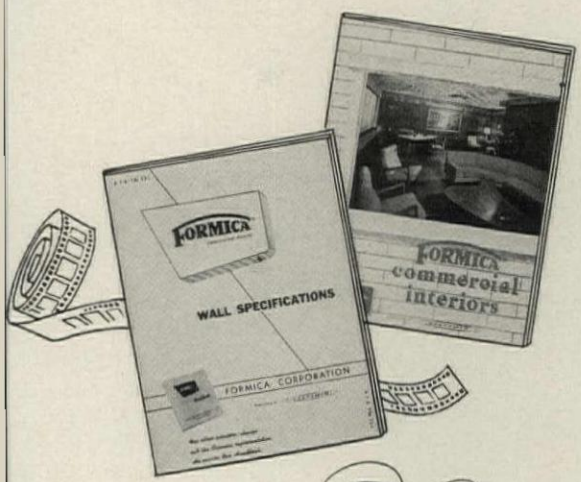

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Louise Sloane

banks

The complete reversal of the financial atmosphere from "forbidding" to "inviting" that has been taking place in bank design is notably evident in the three examples we illustrate—from California and Washington, on the West Coast, and New York, in the East. A look of openness, achieved with shining surfaces, uninterrupted areas, and floods of light, is calculated to encourage and reassure the customer.

Art Hupy

Roger Dudley

In a frame building, adaptable for future expansion in a fast-growing community, this small branch bank appears larger than it is because of its design treatment. The plan presents an unbroken expanse, with 12-ft ceiling in lobby and working areas; accent walls, one of ceramic mosaic tile, the other of walnut veneer; and a closely related color scheme of beige-and-brown with light gray-green.

client | Branch of Seattle First National Bank
location | Burien, Washington
architects | Naramore, Bain, Brady & Johanson

data

Color Plan: Terrazzo floor, light in over-all effect, with chips of red, white, and some black marble. Lobby counters, tawny-walnut plastic-laminate with cocoa-color tops. Walnut wall has natural stain. Mosaic ceramic tile combines 40% light chocolate, 30% light tan, 20% gray granite, 10% dark chocolate. Small area of painted surface is gray-green, as are draperies. Work-area floors are light beige with streaks of chocolate, dark coral, white.

cabinetwork

Millwork: birch/ Nordquist & Engstrom, Seattle, Wash.

Counters: Formica/ Formica Corp., Subsidiary of Cyanamid, 4630 Spring Grove Ave., Cincinnati 32, Ohio; Corlex/ Armstrong Cork Co., Lancaster, Pa.; Micarta/ United States Plywood Corp., 55 W. 44 St., New York 36, N.Y.

doors, windows

Wood Doors, Partitions: birch.

Aluminum Sash: Fentron Industries, Inc., 2801 Market St., Seattle, Wash.

Heat-Absorbing Glass: Solex/ Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh, Pa.

Patterned Glass: Doublex/ Blue Ridge Glass Corp., Kingsport, Tenn.

equipment

Bank Vault: Diebold, Inc., 818 Mulberry Rd., S.E., Canton 2, Ohio.

Drive-Up Window and Night Depository: Mosler Safe Co., Hamilton, Ohio.

Clock: Time Equipment Co., Seattle, Wash.

furniture, fabrics

Bank Fixtures: Kellog & Son Fixtures, 4809 Airport Way, Seattle, Wash.

Office Furniture, Files: Niagara Green/ Art Metal Construction Co., 1951 Clark St., Jamestown, N. Y.

Furniture: Magnuson Furniture Mfg. Co., 1122 W. Spokane St., Seattle, Wash.; Arrow Industries, 1101 Ballard Way, Seattle, Wash.

Draperies: gray-green Fiberglas/Moss-Rose Mfg. Co., Allegheny Ave. & Hancock St., Philadelphia, Pa.

lighting

All: Lightolier, Inc., 364 Claremont Ave., Jersey City 5, N.J.; Litecraft Mfg. Corp., 8 E. 36 St., New York 16, N.Y.; Columbia Electric & Mfg. Co., 2310 N. Fancher Way, Spokane, Wash.

walls, ceiling, flooring

Ceramic Tile: exterior and interior, vault wall, porcelain-type random pattern, 1"x2" tiles/ The Mosaic Tile Co., 1949 Pershing Ave., Zanesville, Ohio.

Plywood Panels: ¼" walnut/United States Plywood Corp.

Ceilings: cane-fiber-fissured acoustic tile/ Simpson Logging Co., Shelton, Wash.

Lobby Flooring: terrazzo/ Northwest Marble & Terrazzo, Seattle, Wash.

Work-Area Flooring: Matico Aristoflex/ 4" vinyl-asbestos tile/ Mastic Tile Corp. of America, P. O. Box 1151, Newburgh, N. Y.

Base: 4" vinyl tile/ Robbins Floor Products Co., Tuscumbia, Ala.

banks

client | San Fernando Valley Federal Savings and Loan Association
location | Van Nuys, California
architects | John Hutchison, James Larson

The interior is expressed as a single, large room with a luminous ceiling. Two walls are glass from floor to ceiling, interspaced with panels of granite finished on both exterior and interior. Sun-control is accomplished with vertical aluminum louvers, set several feet out from the glass at the line of the exterior columns. Louvers are electrically operated by means of a time clock. Counters and desks are of design integral with the building, of random-width walnut plywood with granite tops.

Photos: Julius Shulman

data

Color Plan: As simple and direct as possible, combining the natural colors of materials. Walls are red face brick and natural walnut, with black granite and aluminum mullions, and one painted wall a neutral beige. Floors are terrazzo in public areas, cork-asphalt tile in working areas.

cabinetwork, doors, windows

Fixtures, Doors: Nelson Refrigeration & Fixtures, Inc., 11733 Sherman Way, N. Hollywood, Calif.

Windows: The Kawneer Co., 1105 N. Front St., Niles, Mich.

Vertical Louvers: Aluminum Skylight & Specialty Co., 3545 Greenwood Ave., Los Angeles, Calif.

equipment

Vault: Mosler Safe Co.

lighting

Luminous Ceiling: Luminous Ceilings, Inc., 2500 W. North Ave., Chicago, Ill.

Other: Gotham Lighting Corp., 37-01 31 St., Long Island City 1, N.Y.; Leadlight Mfg. Co., 800 100 Ave., Oakland, Calif.

walls, flooring

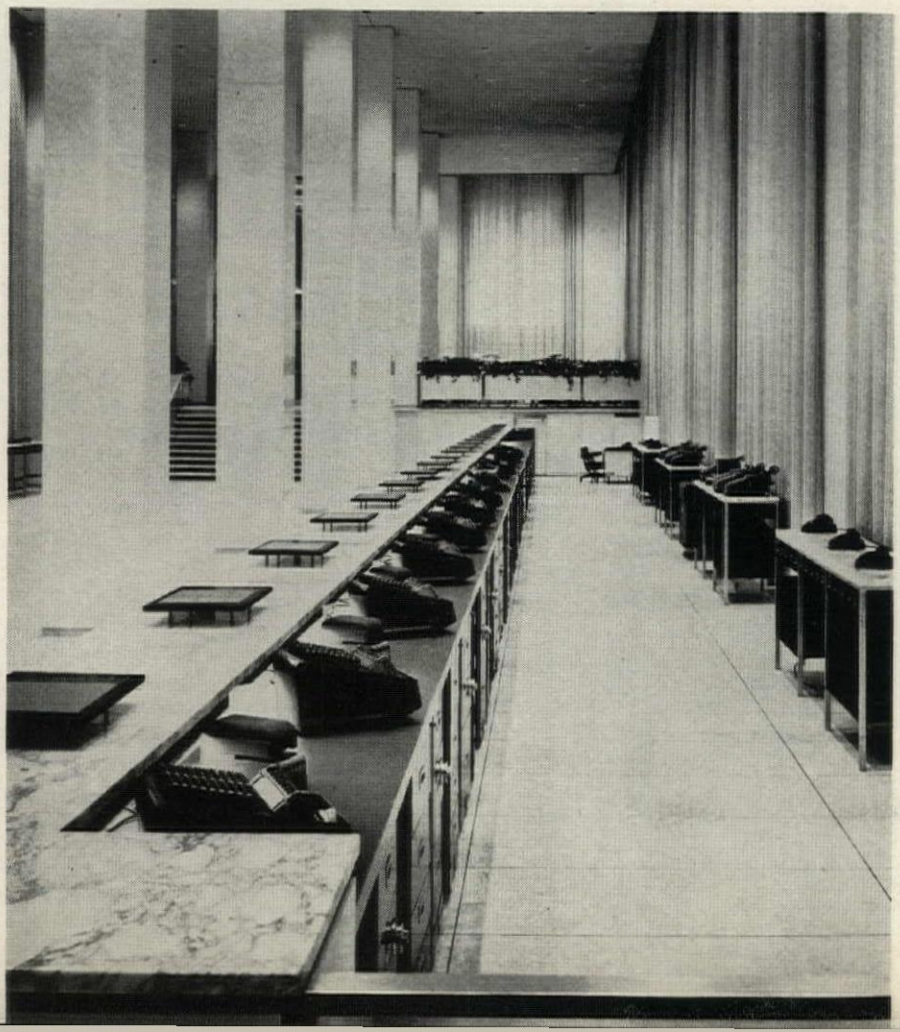
Walnut Walls: Roddiscraft/ pre-finished random-width walnut plywood/ Roddis Plywood Corp., Marshfield, Wis.

Work-Area Flooring: Matico cork-asphalt tile/ Mastic Tile Corp. of America.

banks

In this Wall Street branch of Manufacturers Trust Company, the first-floor banking room presents an uninterrupted block-through expanse of 193′x44′ with two rows of 16 white marble columns reaching 31 ft to the ceiling, illuminated by more than 130 recessed lights. Glass and white marble walls, white terrazzo floor, marble and white Formica tellers' counters, and pale gold Fiberglas curtains, add up to a dazzling lightness. Only color accents are red elevator doors, a bright blue wall at the end of the elevator lobby, greenery in planters. *Photos: Ezra Stoller*

client	Manufacturers Trust Company
location	New York, New York
architects	Skidmore, Owings & Merrill
interior designer	Eleanor Le Maire



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cabinetwork

Tellers' Counters: Italian Cremo marble top, bronze frame, white melamine plastic front/William Somerville, Inc., 172 E. 124 St., New York, N. Y.

Customers' Write-Up Desks, Tellers' Back Counters: McCloskey-Grant Corp., 20th & Indiana Ave., Philadelphia 32, Pa.

equipment

Elevators: Otis Elevator Co., 260 11 Ave., New York 1, N. Y.

furniture, fabrics

Desks: Macassar ebony top, white melamine plastic front, bronze frame/ Al Huller Furniture Co., Inc., 1780 Boadway, New York, N. Y.

All Seating: Edgewood Furniture Co., Inc., 334 E. 75 St., New York 21, N. Y.

Upholstery: leather/ Johnson Leather Co., Inc., 95 Madison Ave., New York, N. Y.

Draperies: Rufnet Fiberglas/ Thortel Fireproof Fabrics, Inc., 101 Park Ave., New York, N. Y.

walls, flooring

Elevator Wall: Roman Travertine.

Columns: white Vermont Statuary.

Painted Walls: white, Thalo blue/ Benjamin Moore & Co., 511 Canal St., New York 13, N. Y.

Flooring: white terrazzo.

Carpet: Scotch chenille/ Jas. Templeton & Co., 281 Fifth Ave., New York, N. Y.

accessories

Desk Accessories: leather/ Froelich Leather Craft Co., 43 W. 16 St., New York, N. Y.; metal/ Smith Metal Arts Co., Inc., 225 Fifth Ave., New York, N. Y.

Ash Urns: Loumac Supply Corp., 333 E. 103 St., New York, N. Y.

Lounge chair and ottoman by Charles Eames/**Herman Miller Furniture Co., Zeeland, Mich.**; Japanese Ramma Fret screen/Bill Keliehor Designs, Inc./**M. Singer & Sons, 619 Merchandise Mart, Chicago, Ill.**; oiled walnut light-box lamp/**Leslie Larson, 819 Madison Ave., New York, N. Y.**; planters/**Architectural Pottery, Box 24664, Village Station, Los Angeles 24, Calif.**; candle-holder/**Sun Glo Studios, 1538 Merchandise Mart, Chicago, Ill.**

A praiseworthy segment of the University of Illinois educational program for student architects is the annual "For Your Home" exhibit. Chairman of the 1958 Exhibit Committee, Prof. H. C. Young, says, "In designing homes, architects must be familiar with the kinds of furnishings to be used in them." More than 400 objects, representing the best of contemporary design, comprised the exhibit, effectively displayed in the Architecture Building at Urbana, Illinois.

Hans Olsen's flexible divan unit (above) forms a convertible living grouping. Cane backs and seats mounted on a daybed base are removable to form floor-sitting backrests. Table section in center of divan provides cocktail or coffee table service, while cushions convert the daybed for lounging, expanding seating facilities/**Selected Designs, Inc., 9276 Santa Monica Blvd., Beverly Hills, Calif.**

Conical fireplace by Wendell Lovett/**Condon-King Co., HOOPS, 614 Michigan Ave., Chicago, Ill.**; Bohus Vattan rug/**Elizabeth Hanna Imports, 801 De Haro St., San Francisco, Calif.**; plastic panel screen/**Arch Gordon Co., Inc., 600 Merchandise Mart, Chicago, Ill.**; magnesium tables/**Mueller Metals Corp., Grand Rapids, Mich.**; decanter set/**Lietzke Porcelains, Saxe Road, Mogadore, Ohio**; chair by Henry Glass/**S. J. Campbell Co., 6-171 Merchandise Mart, Chicago, Ill.**; carpet/**Bigelow-Sanford Carpet Co., 140 Madison Ave., New York, N. Y.**

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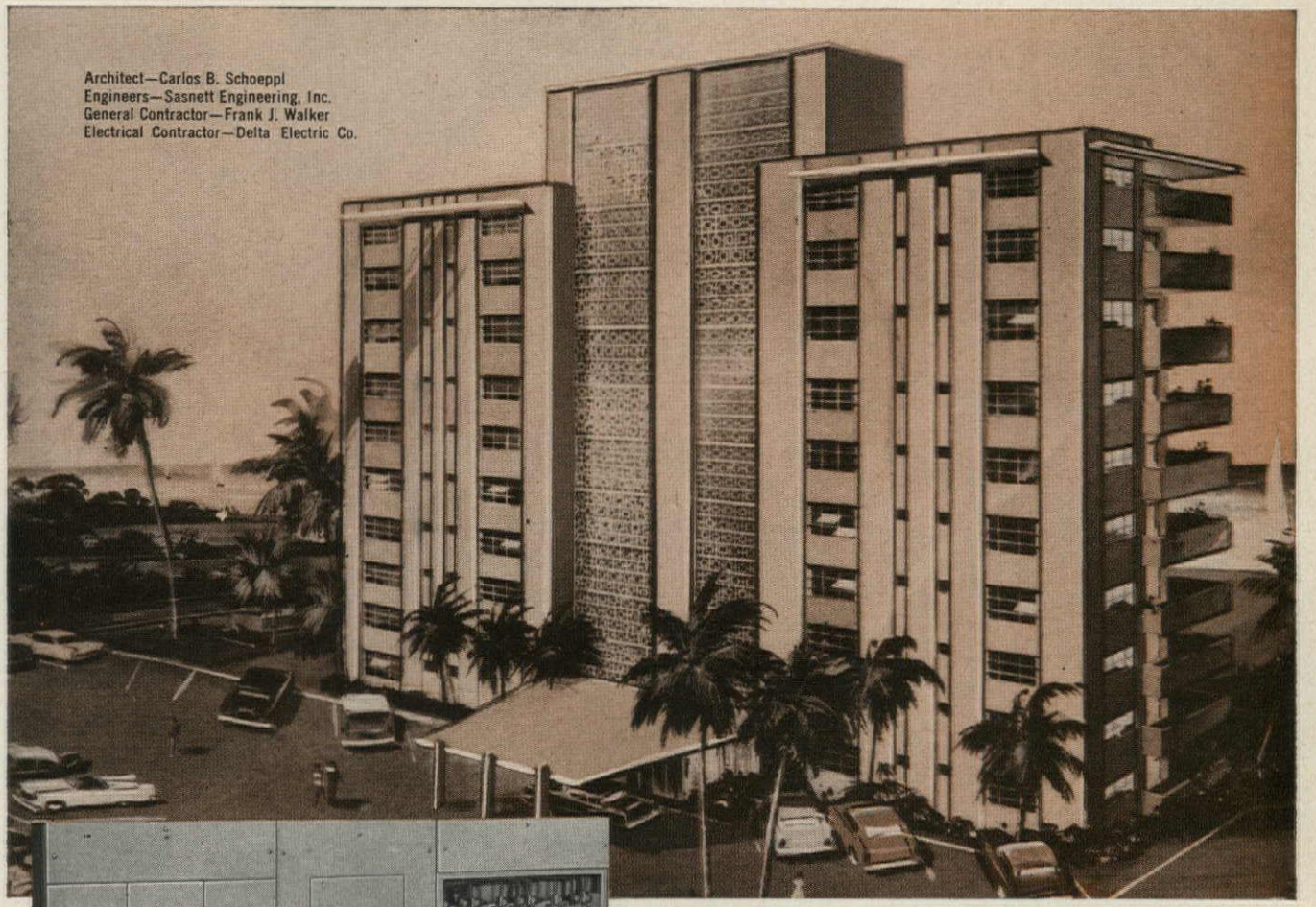

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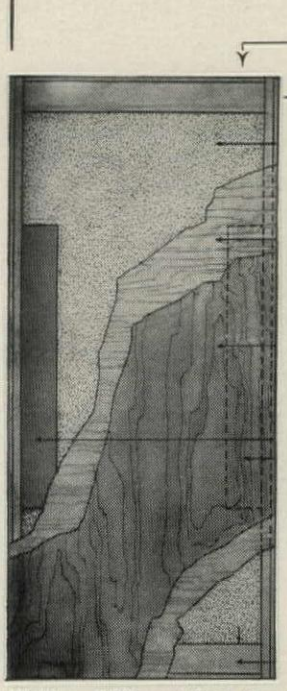


Weldwood Mineral Core Door Construction

FLUSH DOORS

Weldwood "Stay-Strate"® Mineral Core Doors—*End complaints and service problems.* An interior-exterior door that combines the natural beauty of choice face veneers in standard thicknesses with Weldrok®, the incombustible mineral core. Assures maximum dimensional stability, heat insulation, vermin- and decay-resistance, and over 30 decibels sound reduction.

Recommended for exterior doorways and wherever frequent exposure of one side to high humidity presents severe warping conditions. Also recommended for children's and recreation rooms and multi-dwelling corridor doorways where high noise retardance is desirable.

In birch, Korina®, mahogany, oak, walnut and other hardwood faces. Standard sizes in 1¾" stock thickness; special sizes on order. Light or louver openings available.

Weldwood Wood-Faced Mineral Core Fire Doors—*Double protection from fire.* Incombustible Weldrok Core enables Weldwood Fire Doors to give positive protection against searing fire, destructive heat. In sizes up to 4/0 x 7/0 with or without vision panels. Tested and approved, and labeled by Underwriters' Laboratories, Inc., for Class "B" and Class "C" openings.

Recommended for single and multi-family residences, hospitals, hotels, schools, institutions, office buildings, theatres, museums—wherever fire protection *and* heat insulation are essential, and where the beauty of real wood-faced doors is desired.

GUARANTEE

Weldwood Stay-Strate and Weldwood Fire Doors are guaranteed unconditionally against warping, twisting, or manufacturing defects for the life of the installation, when installed in accordance with good carpentry practice. Any door found to be defective will be replaced without charge . . . *including all labor costs of hanging and refinishing.*

Weldwood Institutional Hollow Core Doors—*To withstand exceptionally heavy use.* The economy and lightness of hollow core construction, plus the reinforced construction that accommodates heavy-duty hardware. The rugged, husky frames take in stride the shock and stress of institutional use.

Recommended for hotels, hospitals, schools, libraries and other public buildings where doors must withstand severe opening actions. Standard construction may be varied to your specific requirements. Birch, oak, walnut, and other woods.

Weldwood Lumber-Core Flush Doors—*Top quality door at moderate price.* Staved lumber core of pine or equal species gives exceptional dimensional stability. Door is virtually warp-free and is guaranteed for life against delamination.

Recommended for interior or exterior use to match Algoma-grade plywood paneling. Available in mahogany, oak, Korina, and other faces; in all standard sizes and in special sizes up to 6/0 x 12/0 and in 1⅜", 1¾", 2", and 2¼" thicknesses.

Hollow Core Doors—*Leader in the low-price field.* Popular quality door in the lower price range. Proven in a wide variety of uses, for homes, office buildings, and institutions. Available in both interior and exterior. Select from birch, oak, gum, walnut, and African and Philippine mahogany—handsome woods that finish beautifully painted, stained, or natural. Standard sizes come in both 1⅜" and 1¾" thicknesses for interior uses and in 1¾" for exterior uses.

Weldwood Custom Royal Doors—*Colorful laminate-faced door.* Decorative Micarta® or other high-pressure laminate, is bonded to the face of any of the Weldwood flush doors for colorful, scuff-proof interior doors that require *no* maintenance, take heavy punishment. Need no kick- or push-plate. Doors are easily worked with ordinary tools.

Recommended for restaurants, hotels, schools. Come in a wide range of colors and designs, including Tru-Grain Micarta (that simulates wood grains). All standard sizes available with light or louver openings.

CLOSET DOORS

Weldwood Novoply® Wardrobe Sliding Door Units—*For warp-proof sliding doors.* Flattest, most stable door panel ever made, Novoply, a 3-ply engineered panel with face plies of resin-impregnated wood flakes bonded under heat and pressure to a specially prepared wood chip core, won't warp so doors can't stick or bind. Novoply Flush Doors finish beautifully—painted, stained, or natural. Come pre-cut, ready to install in a complete package unit with precision rolling hardware, select jambs, headers, and fascias. Sizes: 3' x 6' 9½" to 8' x 8'. Thickness: ¾".

SPECIAL-PURPOSE DOORS

Weldwood Louver Doors—Made of Ponderosa pine or fir are available in single doors or in pairs in standard sizes, 1⅜" or 1¾" thick.

Weldwood Metal-Clad Doors—A wide choice for restaurants, hotels, and other buildings where unusually heavy physical abuse demands utmost durability.

Weldwood Sound-Insulating Doors—For professional sound reduction requirements, furnished in three thicknesses, each with its own laboratory-certified decibel rating.

Weldwood X-Ray Doors—Lead-lined doors that limit the passage of X-rays, for hospitals, clinics, medical, and dental offices.

Bi-Fold Doors—*Provide full closet opening access.* Individually packaged complete units save space because they require no framing-in or headers. Can be installed in 30 minutes in any plain square cased opening. Made of flat, stable Novoply, Paniflex Bi-Fold Doors allow floor to ceiling closet doors, eliminate 2 x 4 studding. Available in a wide range of sizes.

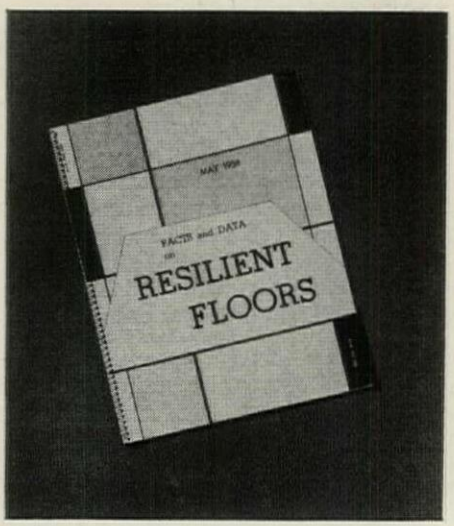
WELDWOOD DOOR FINISHING

Evergrain—One of the finest wood finishes ever developed. Is factory applied over natural or stained veneers of your choice to bring out and fully protect the natural beauty of the wood. Also excellent protection for painted surfaces. Other custom finishing can be done to our rigid specifications or to others of your choice.

FREE BOOKLET. For detailed information, send for Weldwood's free new booklet: "Weldwood Doors, Interior and Exterior."

Weldwood® DOORS

UNITED STATES PLYWOOD CORPORATION
Dept. PA-8-58, 55 W. 44 St., N. Y. 36, N. Y.



Facts and Data on Resilient Floors, *recently revised manual (1957 edition was cited for technical excellence by American Institute of Architects), released by Congoleum-Nairn Inc., is a guide to flooring procedures. Section I is devoted to general information on resillient flooring materials—including placement on grade, and desirable characteristics such as resiliency, gage, dimensional stability, thermal and electrical conductivity, etc. Numerous tables, charts and sketches illustrate the presentation.*

Featured in Section II of the booklet is data on the Gold Seal line of linoleum, vinyl, rubber, asphalt, and cork surfacing materials, depicted by colored photos of available patterns. Specifications and installation suggestions are given.

983. Facts and Data on Resilient Floors, *36-p. Congoleum-Nairn Inc.* E. C. D.

Editor's note: Items starred are particularly noteworthy, due to immediate and widespread interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable.

air and temperature control

179. The ABZ of Electric Heat Today, AIA 30-L, 8-p. describes advantages of electric heating, especially for school applications. Planning, operation, cost of electricity as fuel, and special requirements of schools are discussed. Two new units in line of Electromode heating-ventilating equipment shown. Electromode, Div., of Commercial Controls Corp.

180. Snug Baseboard Panels, 6-p. booklet illustrates radiant baseboard-panel heating system. Panels can be placed to give maximum comfort, allow uniform temperature. Two sizes; live front and finned rear surfaces give convected heat. Hot-water ratings charted; assembly table given. Weil-McLain Co.

181. Summer Cooling Equipment, 4-p. brochure shows features of cooling system which can be used in conjunction with radiant-heating system. Separate piping circulates chilled water. Sketch shows installation in residence. Several important characteristics of system are: quiet operation, easy control, independent air circulation, effective dehumidification. Units pictured. Weil-McLain Co.

182. Seal-Tite Duct, Pipe & Fitings, AIA 30-B-1, 40-p. catalog contains data on complete line of prefabricated duct, pipe, fittings, for heating and cooling systems. Charts, diagrams, engineering information aid selection for all types of cooling, forced air and gravity heating installations. Specifications, sizes, numbers, ordering information given. The Williamson Co.

183. Package Chimney, 2-p. sheet concerns chimney designed for all fuels. Unit is fabricated from aluminized steel—has 7" stainless-steel flue. Design allows quick draft and even temperature from top to bottom. Low cost is feature, as well as light weight and durability. Cutaway photo shows components. McQuay Chimneys Inc.

184. Design Criteria for Stacks and Breechings, Chapter 12, 23-p. file discusses this basic element in operation of fuel-burning equipment. Definitions of terms used, principles involved, sizing techniques given; connections, height, stack caps, rain hoods, horizontal breeching, elbows, material used, insulation, dampers are described. Detail drawings and graphs illustrate data. Orr & Sembower, Inc.

185. Manual on School-Room Packaged Heating and Ventilating Systems, 38-p. catalog describes in detail requirements for classroom comfort—even temperature, distribution of air, perimeter heating, comparison of wet heat to warm air. Complete discussion of Norman system—applications, installation operation, maintenance, etc. illustrated by drawings. Performance and design data given. Specifications, enginering data includd. Individual units also shown. Norman Products Co.

186. High-Velocity Systems, 52-p catalog gives engineering and performance data for 19 types of Thermo-tank-Agitair high-velocity air-conditioning systems. Units for ceiling, perimeter, interior-zone installation number 106. Operation and construction data, charts, drawings, photos for each general type. Performance information in table form. Duct design, typical systems, layouts displayed. Air Devices Inc.

construction

★ **238. Metal Lath,** AIA 20-B-1, 20-p. booklet containing specifications for metal lathing and furring. Fire-resistive ratings given for metal lath and plaster fireproofing. Materials are specified: design tables, and specifications for all types partitions, lath attached to non-combustive ceiling supports, etc. Drawings illustrate data; erection specifications included. Metal Lath Manufacturers Association.

239. Type HP Movable Interior Walls, 12-p. brochure illustrates features of low cost movable wall system (P/A PRODUCTS, *June 1958*). Full-flush panels can be reused when layouts are changed. Typical elevations given, with details and drawings for all steel, steel and glass, all glass

systems. Adapters also included. The E. F. Hauserman Co.

240. Translucent Building Panel, Type A, 2-p.
241. Translucent Building Panel with Integral Protective Lip, Type B, 2-p.
242. Translucent Wall Panel System with Integral Protective Lip and Interlocking Joint, Type C, 2-p.
Three separate data sheets present a new kind of building panel available in three types. Panels are glass-fiber, translucent, reinforced-plastic bonded to heavy extruded aluminum frame and grid. Cutaway drawings demonstrate construction of panels and features. Installation details included. Various sizes—standard 1½" thickness. Panel Structures, Inc.

243. Monarch Wall, AIA 15-M-1, 4-p. catalog on porcelain-on-steel veneer panels for interiors and exteriors. Panels have aluminum moldings, hardboard backing; material can be laminated on most rigid-core materials. Finish is gloss or semi-mat. Minimum calking required. Davidson Enamel Products, Inc.

244. The Talents of Tile, AIA-23-A-2, 12-p. booklet is compilation of Romany Spartan installations in school and college buildings. Color photos show use in interior lobbies, gymnasiums, swimming pools, etc. United States Ceramic Tile Co.

245. Test-O-Graph, 4-p. leaflet shows how to test architectural porcelain when specifying grades. Tests can be performed in the office—means of testing are simply described. Included are tests for visible stain, dry-rub, wet-rub, blurring highlight, disappearing highlight. Graphic chart illustrates test results and how to evaluate them. Davidson Enamel Products, Inc.

246. Proper Use of Concrete Admixtures, 22-p. booklet prepared by R. A. Jessen, discusses use and selection of admixtures. These basic admixtures—retarding densifier, accelerating densifier, air-entraining resin—are explained with test data from numerous sources showing characteristics of each as used with varying amounts of water, sand, cement. Tables illustrate bleeding, etc. Necessary uniformity—water content v. slump, effect of temperature on uniformity, strength development—included. Quality control for concrete and evaluation of field tests, summary of basic properties given. Admixture specifications suggested. Sika Chemical Corp.

doors and windows

353. Excel - Framing, Erecto - Framing Glass Doors, AIA 16-N, 16-p. catalog shows stainless-steel Twinstile series, and stainless or bronze Fulite line of glass doors. Construction features of both lines explained with drawings; specifications offered. Excel-Framing and Erecto-Framing details given for both types. Fulite is a fully prefabricated door. Schacht Associates, Inc.

★ **354. Vertically Pivoted Window VPA-1,** AIA 16-E, file folder presents specifications for aluminum window which rotates 360 degrees. Feature is automatic locking at 180 degree angle. Sash is weatherstripped; extruded tubular sash with corner reinforcement gives strength. Glass up to 1" thick can be accommodated. Photos show window in action. Sectional drawings for vertically pivoted window with hopper or twin mulled are inserted. Michaels Art Bronze Co.

355. Von Duprin 66 Exit Devices, AIA 27C, 8-p. publication concerns stainless-steel or bronze exit devices for single or double doors with mullion. Mortise vertical rod series also discussed; accessories. Drawings, dimensions, as well as some details given. Vonnegut Hardware Co.

356. Glidorama Horizontal Gliding Aluminum Windows, AIA 16-E, 8-p. booklet contains sectional drawings for package window units. Features are automatic locking bolt, double weatherseal and interlock, double glazing, needle roller bearings broad fins. Standard window sizes, drawings of mullions, glazing. Specifications, installation details given. Glidorama, Div. of Whizzer Industries, Inc.

357. Steelcraft Steel Doors and Frames, 12-p. catalog of doors for homes, schools, hospitals, offices. Fabricated from steel, doors are mechanically stiffened for rigidity—finish can be baked-on primer, finished colors, or wood grained. Detailed specifications given; standard types and sizes for doors and frames included. Drawings of swing doors; frame, hardware details shown. Exterior entrance door-frame units, sliding recess doors and sliding closet doors described. The Steelcraft Manufacturing Co.

electrical equipment, lighting

469. Lighting by Good, AIA 31-F-2, 80-p. catalog includes data on fluorescent lighting luminaires. Details on construction and installation troffers, geometrics, commercial strip and industrial luminaires are given. Dimensional data, light curves, coefficients of utilization, and complete engineering information are provided. Good Manufacturing Co.

470. Fluorescent Island Lighter, 4-p. brochure about all-aluminum luminaire for very high output lamps. Units can be bolted together to give any desired length. Light chambers are tilted at 20 degree angle. Drawings show construction, component parts of brackets and poles. Description and weight table. Revere Electric Manufacturing Co.

471. Home Intercom Radio and Chime System, 4-p. folder describes system that operates on transistors. One built-in unit provides two-way intercom service, radio, and door-chime service. Volume is controlled at each station; privacy allowed, if desired, by special switch. Total capacity of system is eight stations, including master. The Rittenhouse Co., Inc.

58 Wadsworth Guide, AIA 31-D, 162-p. is complete catalog of all products available from this company. Included is technical information, cabinet sizes, arrangements, etc. for following types: industrial safety switches, general duty safety switches, service equipment, raintight switches, panelboards, wiring troughs, fittings. Write direct: The Wadsworth Electric Mfg. Co., Inc., Covington, Ky.

472. Reflections on Hospital Lighting, 24-p. publication containing seven articles by H. Haynes and K. A. Staley on hospital lighting, which appeared in *The Modern Hospital* during 1957. General categories include: "Lighting Public Spaces," "Lighting Corridors," "Lighting Nurses' Stations and Laboratories," "Patients' Rooms and Wards," "Dining Areas, Auditoriums, Chapels, Classrooms," "The Operating Theater and Recovery Room," "Sunlight, Sunlamps and Germicidal Tubes." Necessary footcandles and other factors in choosing appropriate lighting for these areas are detailed. Illustrated by photos and drawings. Large Lamp Dept., General Electric Co.

(Continued on page 166)

PROGRESSIVE ARCHITECTURE, 430 Park Avenue, New York 22, N. Y. I should like a copy of each piece of Manufacturers' Literature circled.
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181	240	354	555	758	984
182	241	355	556	759	73
183	242	356	557	836	74
184	243	357	663	837	
185	244	469	664	838	
186	245	470	665	839	

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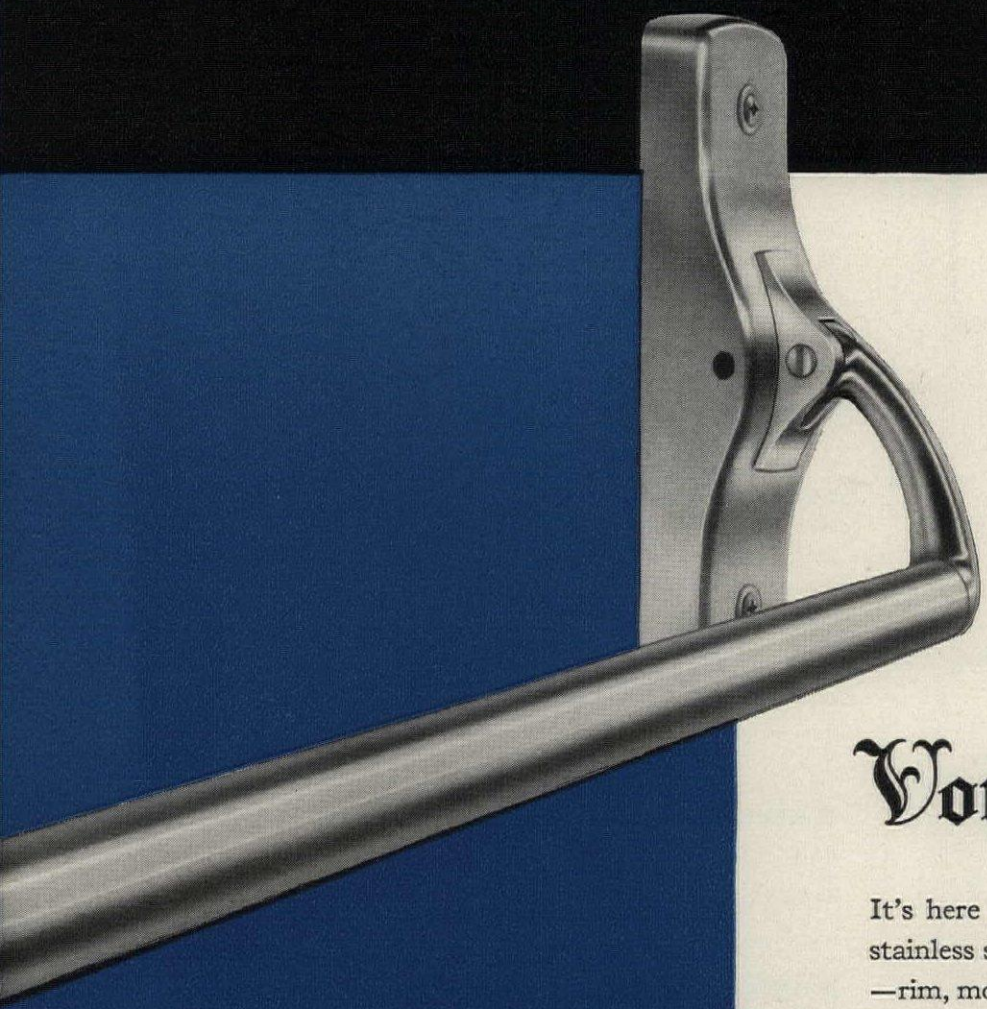
Now.

Stainless Steel



"the safe way out!"

Von Duprin 66

It's here . . . a sleek, slim exit device of stainless steel! Available in a complete line —rim, mortise lock and vertical rod models in either stainless steel or bronze. And a smart new series of matching outside trims.

If you have not yet received your catalog section on Type 66, please write:

VONNEGUT HARDWARE CO.
VON DUPRIN DIVISION
INDIANAPOLIS 9, INDIANA

p/a manufacturers' literature

(Continued from page 163)

finishers and protectors

555. Why and Where to Specify Latex Paint, AIA 25-G, 18-p. booklet includes description of development of latex—rubber-based—paint. Minimum standards for interior flat paint are outlined; performance characteristics listed. Colors are shown by photos. Properties of exterior latex finishes given. The Dow Chemical Co.

556. Acrylic-Emulsion Paints for Exterior Masonry, 10-p. booklet is based on lectures given by Gerould Allyn for Univ. of Florida's 1958 Short Course in Paint Technology. Included are discussions of development of water-thinned paints, acrylic paint formulations, outdoor application, summaries of fourth and fifth year exposure findings on mildew resistance, color retention, etc. Tables and photographs. Rohm & Haas Co.

557. 25 Years of Color Trends in America, 6-p. booklet reports on events in the use of color in the past quarter-century. Chart shows preferences evidenced since 1933 for three categories—paints and wallpaper, automobiles, home furnishings. Of note is trend in past decade to light colors in all groups. Preferred colors discussed. Faber Birren & Co.

insulation (thermal and acoustical)

663. How to Quiet Your Home, 16-p. brochure describes what the individual can do about home noise. Suggestions for use of sound-conditioning materials are illustrated by photos. Types of sound conditioning-materials and how they act are discussed. Installation and planning information included. Acoustical Materials Association.

664. Diamontex, 4-p. folder on "lay-in" acoustical panels for ceiling applications. Installation shown by diagrammatic drawings. Sound-absorbing material is rolled on cold-rolled steel panels at time of installation, when panels are layed on grid system. Fire-resistance and low maintenance claimed. Test data shown in table form; specifications. Diamond Mfg. Co.

665. Clairtone Acoustical Tile, 2-p. sheet concerns line of perforated cellulose-fiber tile. Available in two styles: random and regular patterns, with textured finish and high reflectivity. Sizes, sound absorption, specifications and installation data given. Acoustical Products Div., Baldwin-Hill Co.

666. Catalog for Most Efficient Sound Control for Business and Industry, AIA 39-B, 8-p. brochure discusses various types of acoustical tiles—acoustical tile of pure wood fiber, tongue-and-groove tile, aluminum acoustical systems explained. Sound absorption characteristics shown by tables; maintenance, adaptability to specific installations, complete description given. Perforated acoustical formboard, sound absorbers mentioned, as well as noise-reduction panels and silencers for air-conditioning systems. Elof-Hansson, Inc.

sanitation, plumbing, water supply

757. Showergon Multi-Station Shower Fixtures, AIA 29-H-3, 6-p. brochure describes series of surface-mounted shower fixtures. Features include concealed pipe, basic modular design, chromium plated finish, stainless-steel housing. Units are adaptable to all types of construction. Model numbers, available components listed. Drawings and photos, roughing-in measurements. The Logan Manufacturing Co.

758. Sipco Dunking Stations, 4-p. folder shows cigarette receptacles, in particular new model for mounting on walls, posts, columns. Glass-fiber inner liner in cast aluminum canister is partly filled with water to reduce chance of fire and to offer sanitary solution to smoking residue. Various models pictured. Standard Industrial Products Co.

(Continued on page 170)

DEERING MILLIKEN BUILDING FEATURES

WINDOWS AND ARCHITECTURAL METALWORK

by GENERAL BRONZE

Here's a striking effect in exterior design that accentuates the vertical in an eight story office building. Carson & Lundin, the architects, have effectively designed narrow bays of stainless steel window frames with fixed sash and glass spandrel panels between mullion columns of white marble.

In addition to fabricating the stainless steel window frames General Bronze has also supplied the stainless steel revolving door entrance, the lower floor store fronts and other architectural metalwork.

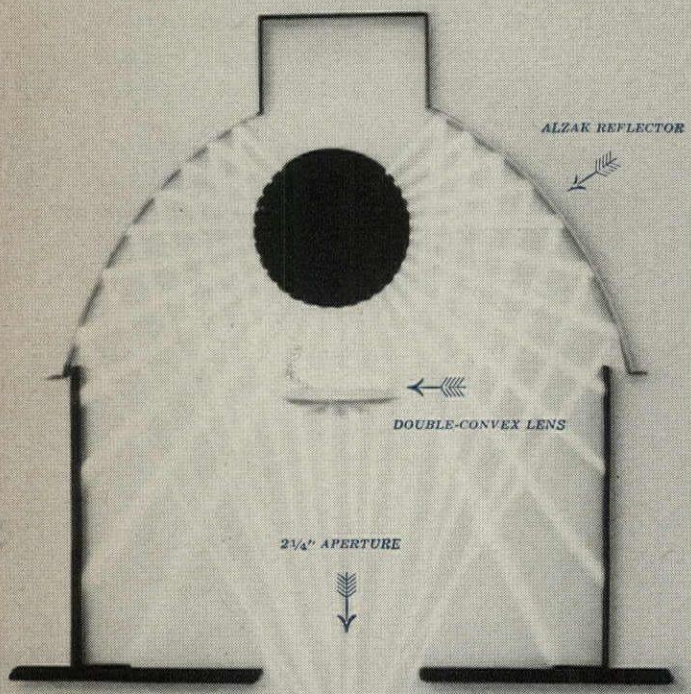
As the country's foremost producer of curtain walls, windows and architectural metalwork in either aluminum, bronze or stainless steel, General Bronze is anxious and ready to serve you, too. See our catalogs in Sweet's.

Deering Milliken Building,
New York, N. Y.
Architects: Carson & Lundin
Contractor: Turner Construction Co.

GENERAL BRONZE
CORPORATION · GARDEN CITY, N.Y.
SALES OFFICE: 100 PARK AVE., NEW YORK, N.Y.

PERMATITE DIVISION—Custom-built Windows, Curtain Walls, Architectural Metal Work and Revolving Doors. ALWINTITE DIVISION—Stock-size Aluminum Windows and Doors. BRACH MFG. CO. DIVISION—Radio, Television and Electronic Equipment. STEEL WELDMENTS, INC. DIVISION—Custom fabrication in Steel and Iron.

This photograph of a mock-up explains the principle of Gotham's new 841/851 Recessed Pin-hole Downlites.* A mathematically precise Alzak reflector and double-convex lens project light (from an ordinary 100-watt inside-frosted lamp) through a 2¼" aperture—resulting in a wide-angled cone of illumination, uniformly distributed. The high efficiency and low maintenance cost provided by this new inconspicuous recessed ceiling unit make it ideal for many lighting applications.

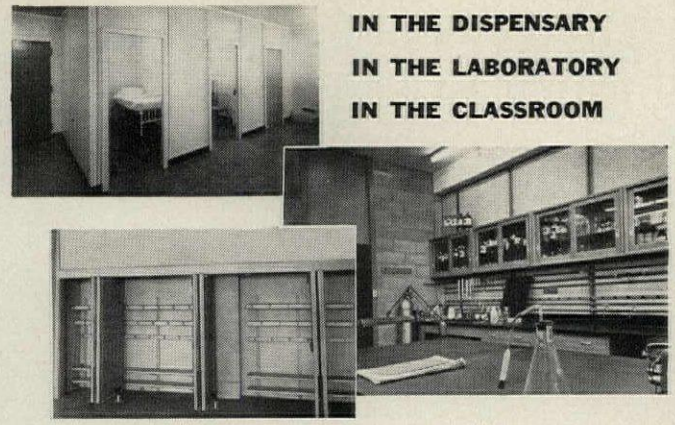


*For data write:

Gotham Lighting Corporation

37-01 THIRTY-FIRST STREET, LONG ISLAND CITY 1, NEW YORK

How Schools make better use of floor space with POWER-STRUT Movable Walls



IN THE DISPENSARY
IN THE LABORATORY
IN THE CLASSROOM

Shown above are just three of the many applications of Power-Strut movable walls in the school. These partitions are low cost and easy to install. They can be readily moved as classroom conditions change. Standard structurals are used throughout. Power-Strut storage shelving units for classroom closets can be used to advantage in every room in the schoolhouse. The walls themselves are designed to handle any apparatus — pipe, conduit, gas lines, electric plug molds, shelves, benches, cabinets, and a tremendous variety of experimental devices. For any school job — Power-Strut solves the partitioning problem.

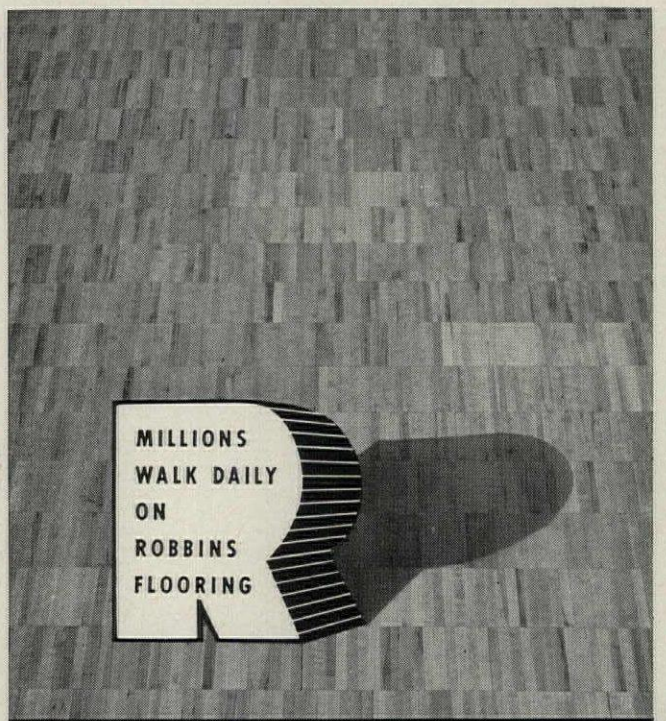
Manufactured by

A POWER-STRUT Sales Engineer will be happy to demonstrate with a visual sales kit, or write for brochure No. 580.

POWER-STRUT, INC.

24 CLAFLIN STREET, FRAMINGHAM, MASS.

BOSTON CHICAGO NEW YORK PITTSBURGH PHILADELPHIA SAN FRANCISCO NEW ORLEANS TORONTO CINCINNATI MONTREAL VANCOUVER



ROBBINS FLOORING COMPANY

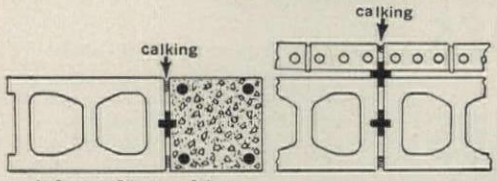
Reed City and Ishpeming, Michigan

Ironbound* Continuous Strip* Hard Maple Floors ● Perma-Cushion* Resilient Floor Systems ● Other hardwood floors ● Dri-Vac Protection Treatment available on all wood

The New Way to Protect and Strengthen Masonry Walls

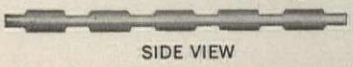
BLOK-JOINT
Pat. Pend.

For Control Joints



BLOK-MESH

Deep Swedged Reinforcing



SIDE VIEW

Write For This FREE BLOK-JOINT Sample

and detailed literature on both Blok-Joint and Blok-Mesh "2-Point" Masonry Wall Protection.

BLOK-JOINT Permits Contraction AND Expansion In Control Joints

BLOK-MESH Reinforcing Has Deep Swedges For Better Mortar Bond

Today's accepted method of building masonry walls includes reinforcing and control joints. Control joints relieve stresses and strains and reinforcing adds strength and resistance to cracking. Use both to provide maximum strength and protection.

BLOK-JOINT is a cross shaped rubber extrusion for making fast, effective control joints in masonry walls. It is used with ordinary metal sash blocks. No special blocks or building paper and mortar fill is needed. Blok-Joint forms a secure interlock for lateral stability —allows *both* contraction and expansion. It can be used in single walls, block walls faced with other masonry, cavity walls and at pilasters or columns. Molded of "100-year life" rubber, Blok-Joint meets ASTM and Federal specifications.

BLOK-MESH is the masonry reinforcing with the exclusive deep swedged deforming. The well-defined, squared notches give more gripability with the mortar than conventional reinforcing with superficial nicks or burrs. Blok-Mesh provides effective dovetailing—yet requires no more area in the joint than other types.

For Further Information See

4h/Car Architectural File

3c/Car Industrial Construction File

CONSTRUCTION MATERIALS
CARTER-WATERS
KANSAS CITY, MISSOURI

Blok-Joint and Blok-Mesh are products of The Carter-Waters Corp., 2440 Pennway, Dept. PA Kansas City 8, Missouri.

Available in the U. S. through Concrete Block Manufacturers and Building Material Dealers.

Blok-Joint is distributed in the Canadian Provinces of Alberta, Saskatchewan and British Columbia by CONSOLIDATED CONCRETE INDUSTRIES, Ltd., 9th Ave. & 24th St. East, Calgary, Alberta, Canada.

p/a manufacturers' literature

(Continued from page 166)

759. Chester All-Aluminum Pools, 8-p. booklet describes pools in all sizes for municipalities, institutions, country clubs, motels, hotels, residences. Aluminum construction allows easy maintenance and eliminates rust, cracks, leaks, seepage. Pools are installed on site from prefab parts. One feature is built-in recirculating duct, plus diatomaceous earth vacuum-type filter. Various sizes and shapes available. Chester Products Co.

specialized equipment

836. Lundia Patented Pre-Fabricated Adjustable Wood Shelving, 10-p. package details features of new Swedish-patented adjustable wood shelving. Brochure depicts commercial and industrial shelving, with design features, specifications, photos of actual installations. Data on wood utility shelving line also included. Price list and accessory information. Lundia Div., Swain & Myers, Inc.

837. Kodagraph Materials for Drawing and Document Reproduction, 12-p. booklet outlines possible short cuts in drafting room and reproduction departments by use of photographic papers and films. Seven applications are suggested: protection of original drawings, print distribution, restoring old drawings, reproduction of blueprints and direct-process prints, drawing revision, combining standard designs, photodrawings. Examples shown. Eastman Kodak Co.

838. Architects Specification of Stage Equipment, 60-p. publication contains specifications and drawings of all kinds of stage equipment and components. Including all elements from gridiron to footlights, booklet features full-page drawings of each component, plus complete specifications. Hubert Mitchell Industries, Inc.

839. Designcraft, 16-p. booklet concerns line of steel office furniture. Variety of basic units and component parts may be reassembled and rarranged as desired. Three series shown—Multi-Line, Credenza, Viking—each with slightly different design. Auxiliary units also available. All units available in gray, tan, green, with linoleum or formica tops. Designcraft Metal Manufacturing Corp.

840. Foodveyor, 4-p. booklet discusses features of variable-capacity cold and radiant-heated compartments in one conveyor, which can serve from 18 to 24 people. Unit remains at 49" height for easy serving. Fabricated of heavy-gage welded stainless steel, unit has blower cooling system, eight drawers for hot foods, aluminum drawers and try racks, sliding doors for refrigerated sections. Especially useful in hospitals. Specification data given. S. Blickman, Inc.

surfacing materials

984. Weldwood Textured Wood Panelling, 8-p. brochure gives information on wood paneling for interiors. Description of four principle types of paneling—Surfwood, Sea Swirl, Weldtex, Planktex—included. Installation described, and detailed discussion of means of application suggested. U.S. Plywood Corp.

interior furnishings

73. How to Provide Lower Cost School Seating, 6-p. folder describes line of easy-to-handle folding chairs. Safety and engineering features are pointed out. Photos show use in numerous schools and colleges. Hinge action and double-tube construction illustrated. Clarin Manufacturing Co.

74. To Make a Good Room for Learning, 16-p. brochure is guide to school seating and related equipment. Design features are illustrated. Both movable and stationary units available. Sizes and photos of specific types given. Arlington Seating Co.

WHERE

windows reflect savings

Savings are mirrored in every gleaming aluminum framed Brown & Grist window at "One Bala Avenue." Initial cost was low. B & G engineered "shortcuts" saved costly installation time. And superior aluminum construction means a lifetime of top performance with little or no maintenance.

HOW

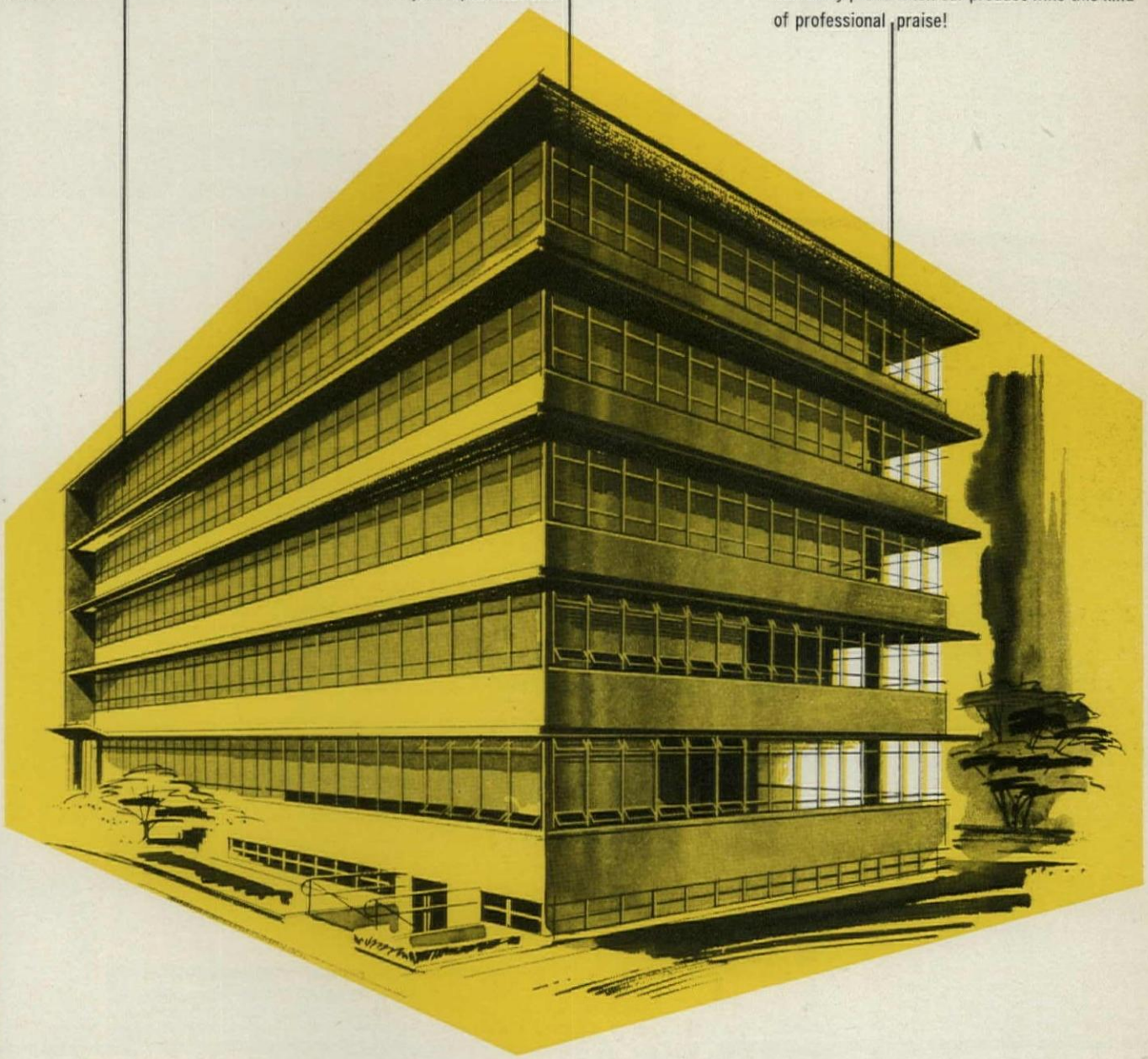
code problem was decoded

Building code regulations required 4" masonry backing for porcelain enamel spandrels. This created an extraordinary sill condition. But, as the architect said, "Details of B & G windows were so flexible they adapted easily to this unique form." B & G custom-designs windows to your specifications.

WHAT

did the architect say

Architect Aaron Colish said Brown & Grist Windows were picked for "excellent design and strength of sections, ease of installation and adjustability of mullions." Other important factors: "ease of operation, weather tightness, and excellent appearance." We're always understandably proud when our product wins this kind of professional praise!



Office Building—"One Bala Avenue," Bala Cynwyd, Pa. • Architect—Aaron Colish • Builder—S. Yellin and Son
B & G Representative—Charles G. Noska Co., Philadelphia

BROWN & GRIST AWNING WINDOWS

Got a building on the board? Refer to Sweet's for B & G Window and Window Wall Catalogs.

BROWN & GRIST, INC. 25 Tyler Avenue, Warwick, Va.

Mahon ROLLING DOORS

STEEL CURTAINS OF ALL MAHON DOORS ARE BONDERIZED

Illustrated here are Two of Five Mahon Power Operated Rolling Steel Doors installed in the Udylite Corporation's new plant, Detroit, Mich. Architects: O'Dell, Hewlett & Luckenbach. General Contractor: Barton-Malow Company.

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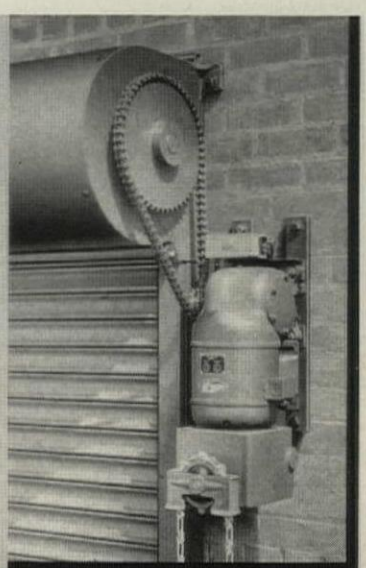
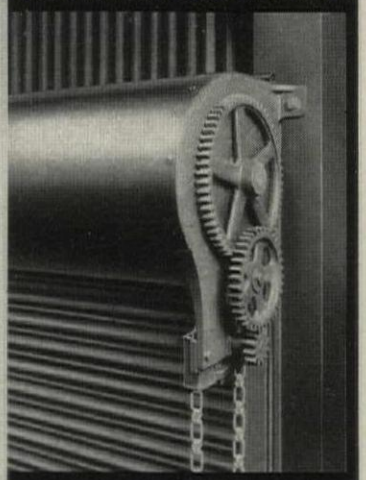
STANDARD or UNDERWRITERS' LABELED



MAHON STANDARD
POWER OPERATOR 920-P



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- Underwriters' Rated Metalclad Fire Walls
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- Steel Roof Deck
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☆ *For INFORMATION See SWEET'S FILES or Write for Catalogues*

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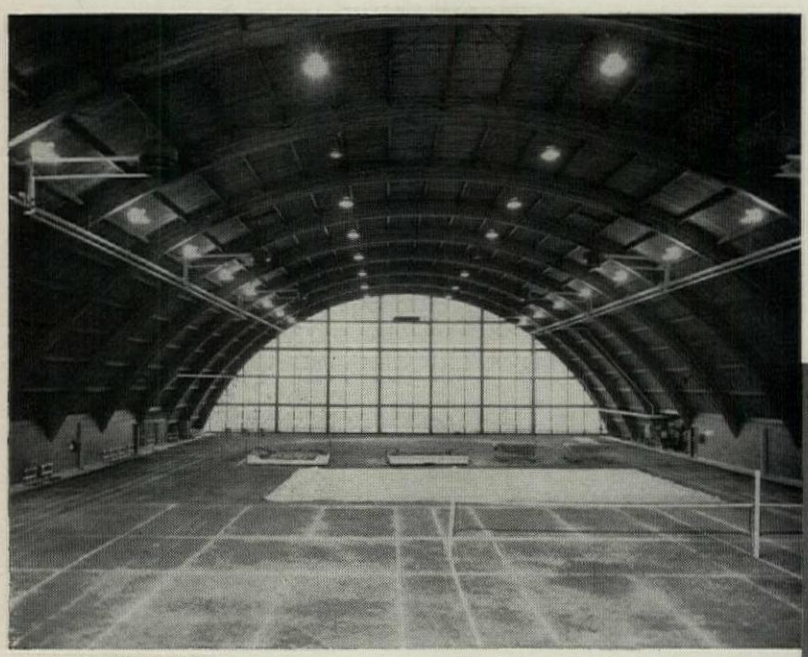
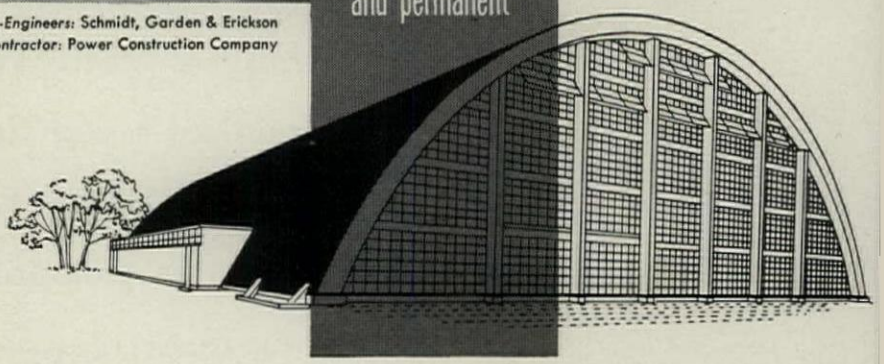


BLOOM FIELDHOUSE
Chicago Heights, Illinois

Architect-Engineers: Schmidt, Garden & Erickson
Contractor: Power Construction Company

versatile – as only wood can be – and permanent



Soaring arches give span without obstruction—a feeling of space without weight—in the new Bloom Fieldhouse. And plenty of room, too, for track and field events, football drills and infield baseball practice! All because the architect-engineers chose glulam timber arches and decked them with 96,534 FBM of 2″ x 6″ —12′ C/M Wolmanized® pressure-treated lumber.

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75 Koppers Building, Pittsburgh 19, Pennsylvania

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Modern beauty and flexibility of Alcasco Windows are reflected in this Award Winning Elementary School.

Alcasco Aluminum Intermediate Projected Windows are especially suited for schools, churches, hospitals and any monumental or commercial structure.

The unusually heavy extruded aluminum sections exceed standard specifications.

Alcasco Windows are quality controlled from ingot to the finished product. The billet casting, extrusions, fabrication, etching, anodizing and finishing are all produced in one plant.

Alcasco supplies windows and all miscellaneous trim for complete installation.

Our manufacturing facilities in one location give you prompt delivery of a superior window at a competitive price.

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SCHOOL
Birmingham, Michigan

ARCHITECT:
Smith, Tarapata, MacMahon, Inc.
Birmingham, Michigan

CONTRACTOR:
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Alcasco Products is the Window Division of Detroit Gasket & Manufacturing Company, a major supplier in the automotive field with plants at:
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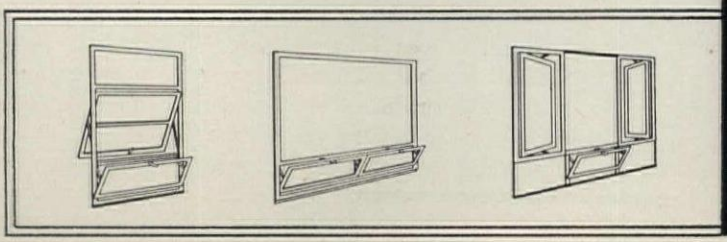
LENS-ART PHOTO ©



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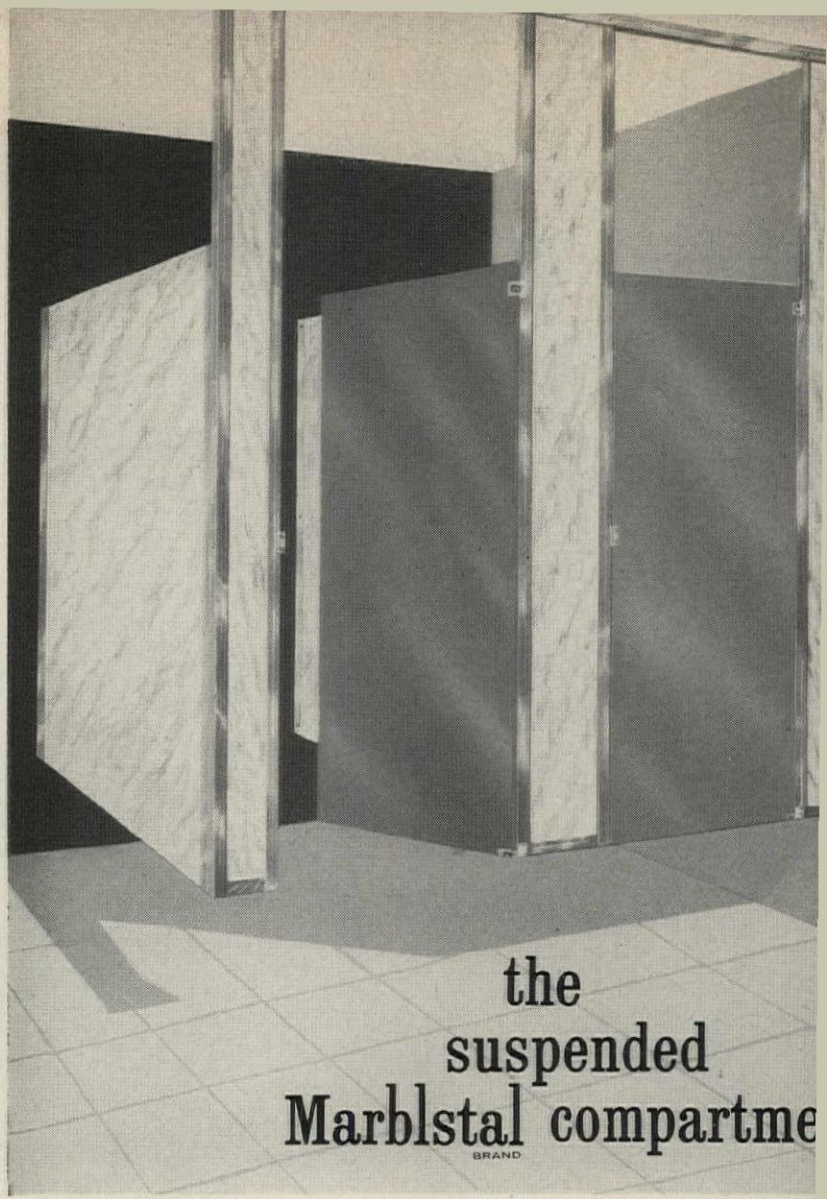
Note:

One of the outstanding features of the new Marblstal Compartments is the use of vinyl shock absorbers for both suspended and floor-mounted units. These vinyl cushions (between all marble to marble and metal to marble contacts) protect the marble components against the rough usage common to schools, hospitals and other public buildings.

Marblstal *brand* units are shipped finished, complete, and ready to install



the suspended Marblstal BRAND compartme

Introducing

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PREFABRICATED MARBLE COMPARTMENTS

available in floor-mounted and suspended installations

This new prefabricated package provides the beauty and low-maintenance luxury of genuine marble at an exceptionally low unit cost. Each Marblstal package is complete — from the marble components, anodized aluminum extrusions, and baked enamel finished metal doors right down to the coat hook, hinges and screws. Installation is fast and easy — no special skills or tools are required — directions that come with each unit are as simple as they look.

modern aluminum extrusions support marble, provide shock resistant mounting . . . handsome, heavy duty metal door is finished with durable baked enamel

the floor-mounted Marblstal BRAND compartment

you can specify units in these three varieties of marble

Georgia Mezzotint Marble

Tennessee Cedar Marble

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Please send me complete information on the new Marblstal units.

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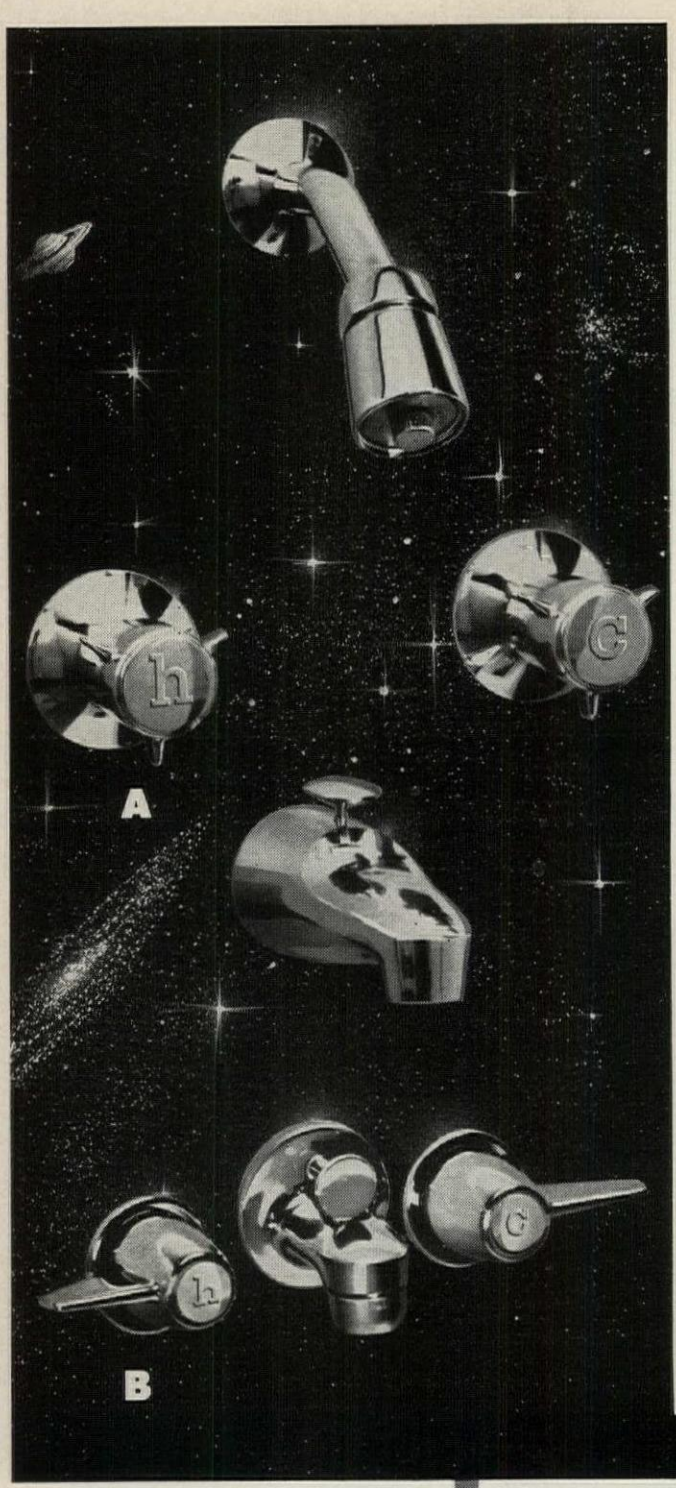

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Briggs delivers the most advanced styling possible today in brass fittings! Contemporary lines in complete harmony with the modern look of Briggs Beautyware fixtures. Designed by Harley Earl, Inc., these bright chrome-plated brass fittings are available with interchangeable inserts to match Briggs compatible colors as well as white and chrome. Specify them for residential and commercial uses. Write now to Briggs for complete information.

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A T-8116. Combination bath-shower fitting, with automatic diverter valve in spout.

B T-8715-S. Shelf-back lavatory fitting, 5¾" centers, with aerator and pop-up drain.

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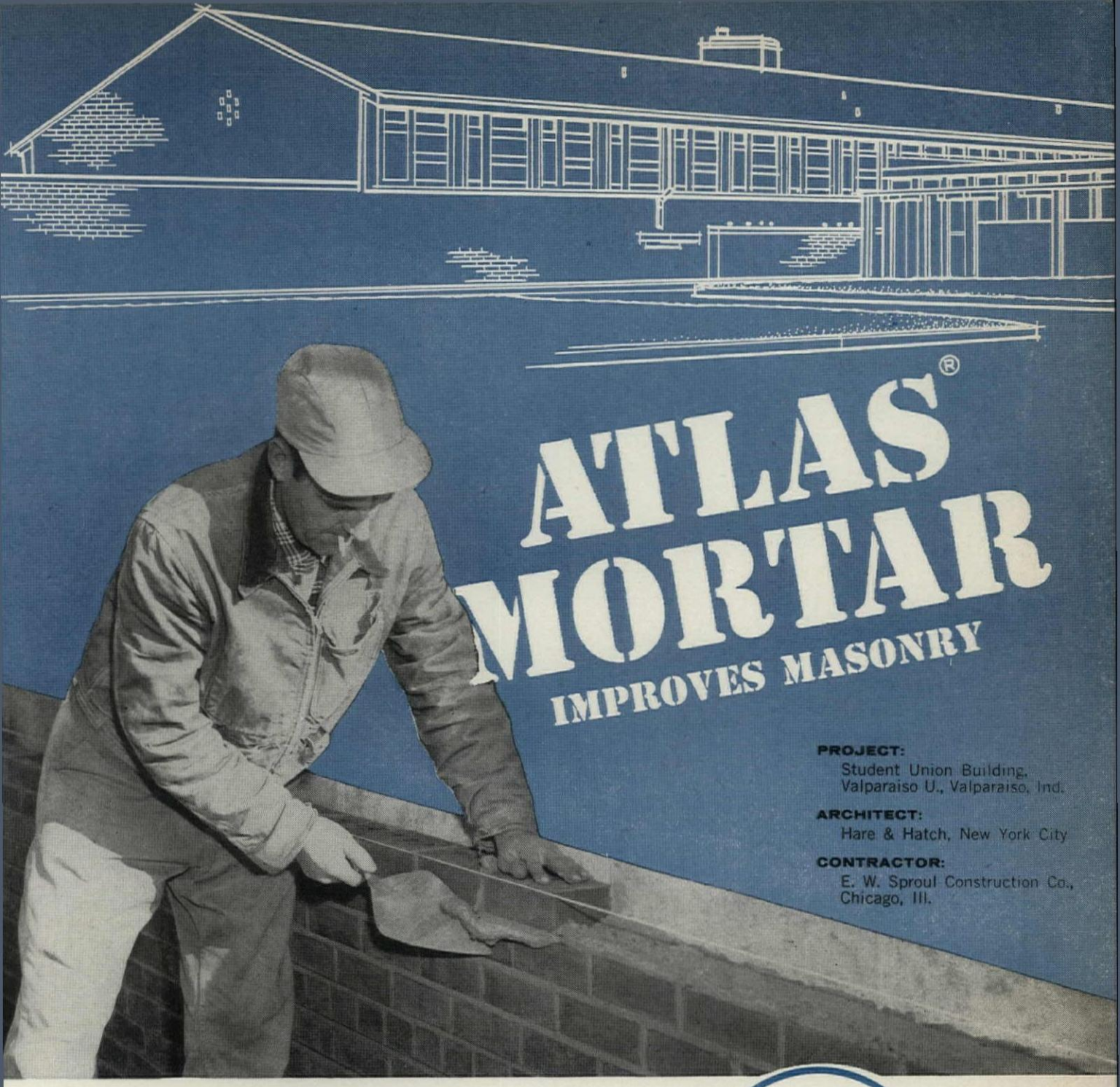

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ARCHITECT:
Hare & Hatch, New York City

CONTRACTOR:
E. W. Sproul Construction Co.,
Chicago, Ill.

best in workmanship... best in strength,"

says Henry Gagne, Masonry Foreman,
E. W. Sproul Construction Co.

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M-72

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Gymnasium, Riverside School, Riverside, Ill., floor of First Grade Northern Hard Maple.
Architects: Schmidt, Garden & Erikson, Chicago. Photograph courtesy Hedrich-Blessing, Chicago.

Northern Hard MAPLE —by all means for floors meant for feet!

Physical education and athletic authorities *all* approve floors of Northern Hard Maple. Few of them will accord even reluctant acceptance to any other kind of floor. That's a documented fact.* And the reasons voiced aren't whims, but expert judgment that demands the respect of school building committees.

Certainly, genuine MFMA-millmarked Northern Hard Maple, properly laid, costs a bit more than splintering woods or makeshift synthetics. But it's *enormously* better—more enduring, more resilient, brighter, tighter, warmer, more pleasant to walk on, stand on, run on, jump on, dance on and, if need be, to *fall* on! It's backed by many thousands of dollars spent for research to improve manufacturing, uniformity of design and dimension and *proper kiln drying.* MFMA educational work on waterproofing and trouble-free installation methods is available in free booklets, pamphlets and technical research papers. See Sweet's 13j-MA.

*Ask for Coaches' Survey Summary, available to all Architectural and School people.

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GUARANTEES:

that the wood is all genuine HARD Maple, grown north of the Ohio River.

that it is precision-milled, per MFMA standardization blueprint.

that milling is checked with MFMA precision gauge blocks.

that grading has been supervised by MFMA under direction of its official traveling representative.

that flooring is true to species (*acer Saccharum*), to dimension and to MFMA grading and bundling rules.

that flooring is unequivocally warranted to be a product of a manufacturer-member of MFMA, pledged to abide scrupulously by all rules of the Association, the object of which is to produce —

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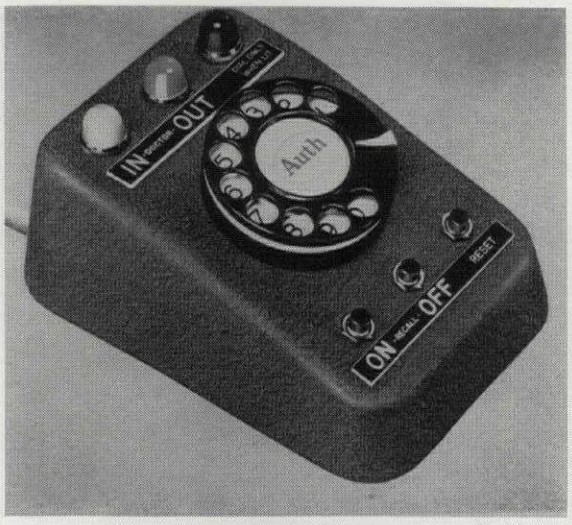
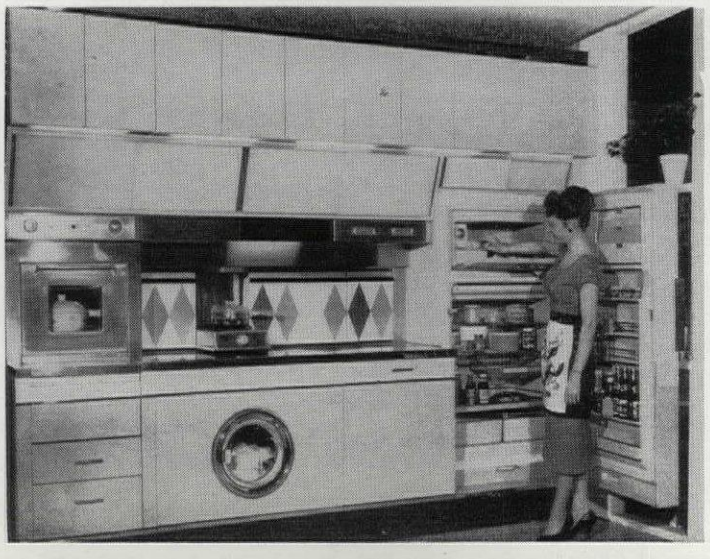
where wordless "welcome" softly glows . . . you'll find the finest floor that grows

NORTHERN HARD MAPLE
BEECH and BIRCH

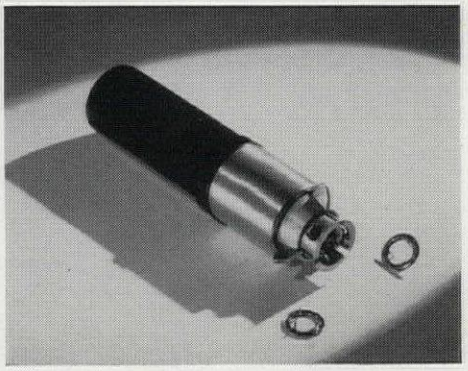
Compact diazo printer (above), *caled Blu-Ray, requires no warm-up time and makes copies as fast as 4′ per minute. One hundred copies can be turned out in less than 15 minutes at a cost of 1½ cents apiece. Machine makes either black-on-white or blue-on-white prints—background can be varied as desired. Blu-Ray, 400 Main St., Ivoryton, Conn.*



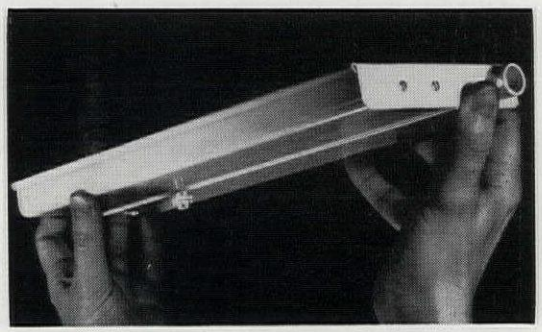
Small unit (above) *replaces conventional doctors' in-and-out indicator and message-flash keyboard in the hospital telephone-operators' room. For use primarily in hospitals that have 100 or more staff and visiting doctors, the* IN-FORMER *will, when dialed by operator, disclose whether any doctor has registered in on the entrance register. Auth Electric Co., Long Island City 1, N. Y.*



Tack-N-Taker (below) *places tacks or reclaims them for later use. Requiring only a push to "take or tack," the three-pronged tacks easily penetrate wood, cork, fiberboard, and linoleoum; tacks have little tendency to fray or tear paper. Stores its own "ammunition" in an easily filled magazine. Four inches long and less than 1 inch in diameter, the device sells for $5.95. ColorFix Import Co., 1409 Willow St., Minneapolis 3, Minn.*



Looking for an unobtrusive undercabinet light? Now, one of the nation's best-known kitchen manufacturers has developed a lighting fixture (below) *12½″ long, 5″ deep, and only 1″ thick! Can also be used inside base and wall cabinets or for counter lighting. It contains a single 8-w fluorescent tube and for added convenience has an auxiliary ac outlet. Undercabinet light, equipped with cord, built-in push switch, convenience outlet, and 8-w cool-white tube lists at $16 each. Mutschler Brothers Co., Nappanee, Ind.*



New Gas Multimatic Wall offers in one package the five major household uses of gas: cooking, laundering, refrigeration, house heating, and water heating. Made entirely of steel in color co-ordinated baked enamel finish, unit is 10′ wide, 7′-11″ high, and 33″ deep. Beneath oven is a counter-top broiler and three storage drawers; between oven and refrigerator is a 5′ stainless steel counter with washer-dryer below and along top are five fold-away surface burners which pivot down for cooking. Across top, behind storage cabinets, is a horizontal heating system. American Gas Association, 420 Lexington Ave., New York 17, N. Y.

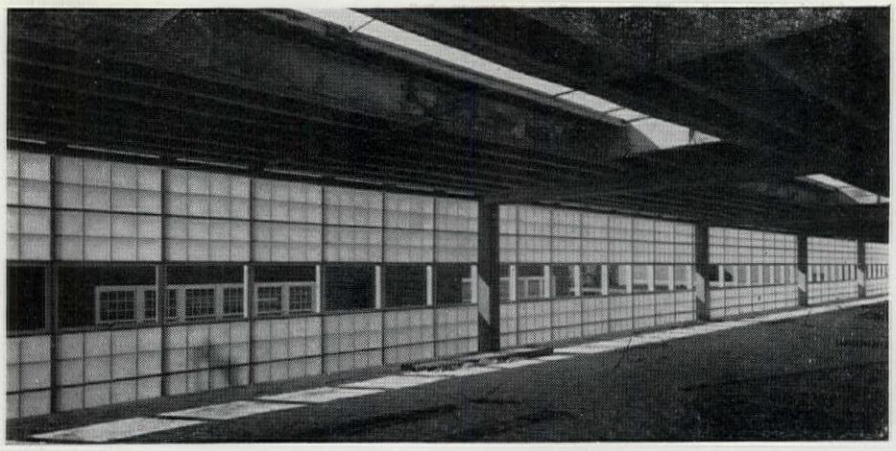
p/a products

(Continued from page 183)

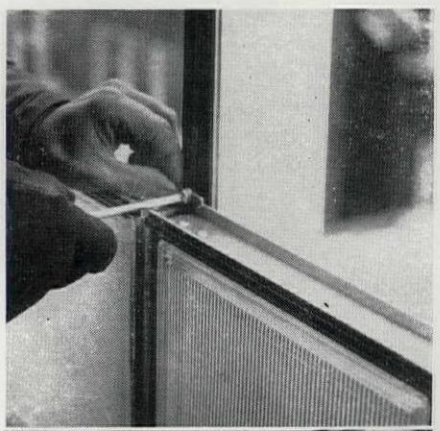
Thinlite Curtain Walls

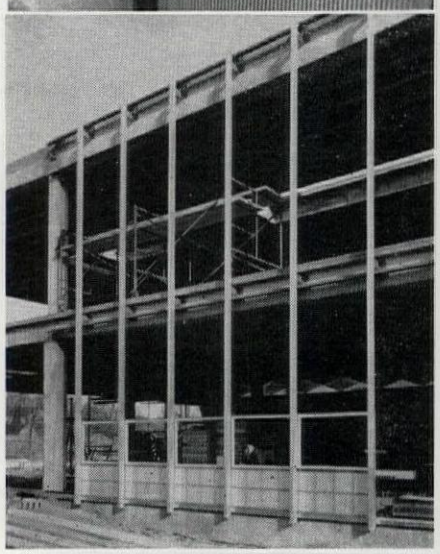
Owens-Illinois has developed a new system—the Thinlite—to include all elements needed in a prefabricated curtain wall, including interior and exterior finish, insulation, structural independence, and attachment to supporting frame. Design flexibility is a major benefit.

The Thinlite series includes daylighting panels—utilizing either clear or solar-selecting glass units (installation shown, *photo above*) — and ceramic-face glass panels. Clear panels have either smooth interior and exterior faces, or smooth extior and configurated interior surfaces. Ceramic-face panels, for use in spandrels or non-light transmitting areas, have opaque finish in various colors. Accessory panels include supplementary windows and porcelain-enamel faced panels. All panels have the same interlocking extruded aluminum perimeters (*below*), allowing arrangements for utility or design.



Basic component of the system is a thin, lightweight glass unit — a two-in.-thick, 12 in.-sq hollow element, which acts also as an insulation barrier. These units are assembled at the factory into two-ft high panels, based on four or five ft module, and are installed on site (*bottom*). Owens-Illinois Glass Co., Toledo 1, Ohio.





(Continued on page 188)

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Baseboard, steam specialties and unit heaters supplied by Dunham-Bush.

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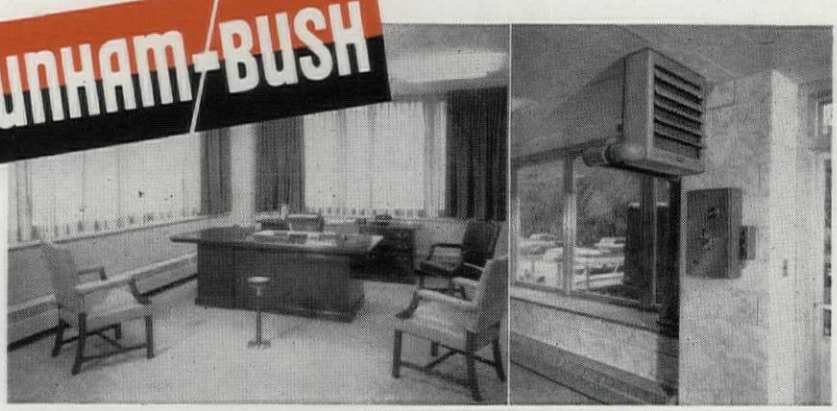

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This Metals Service Center for Copper & Brass Sales, Inc. demonstrates an effective use of new Kaiser Aluminum architectural extrusions in contemporary design.

In addition to the gravel stop, facing system and window sill used on this project, Kaiser Aluminum offers a complete line of extrusion products engineered for the functional requirements of today's architecture.

Included in the line are a variety of gravel stops, copings, window sills, thresholds, and handrails as well as fascia expanders, fascia system, architectural and structural shapes, rod, bar, pipe and tube. All are now readily available in a wide range of sizes from Kaiser Aluminum distributors.

Investigate the advantages these lightweight architectu extrusions offer for your designs. Natural corrosion resi ance assures permanent beauty, minimum maintenance.

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Kaiser Aluminum & Chemical Sales, Inc., *General Sa Office,* Palmolive Bldg., Chicago 11, Ill.; *Executive Offi* Kaiser Bldg., Oakland 12, Calif.

KAISER ALUMINUM

What the architect conceives ... aluminum achieves!

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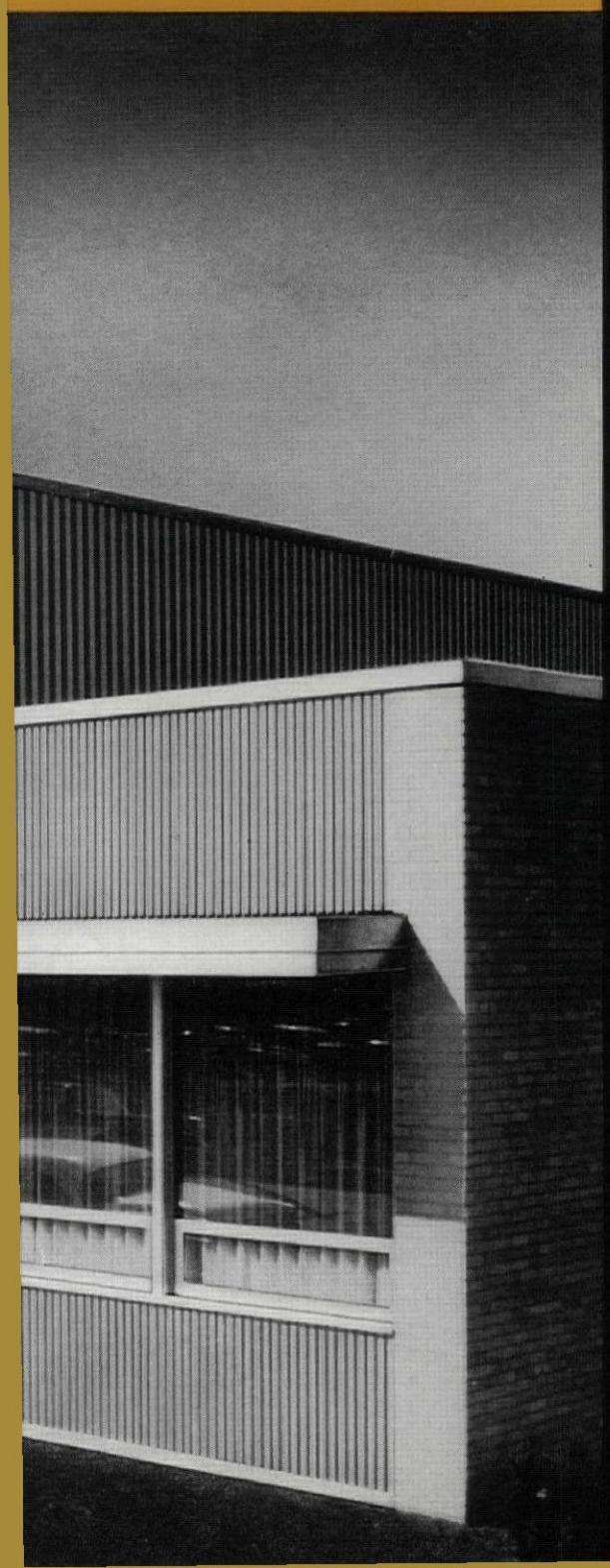
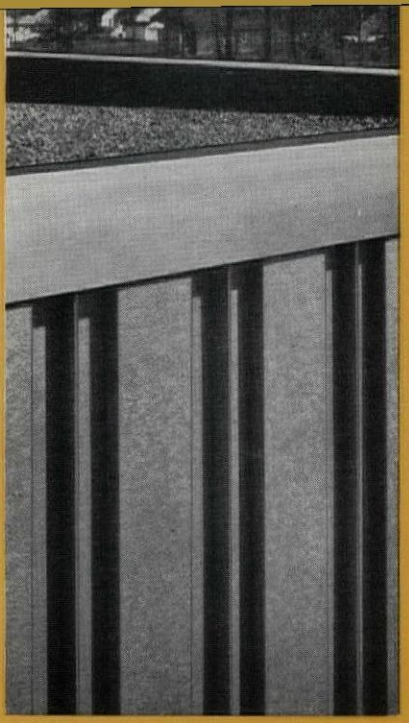
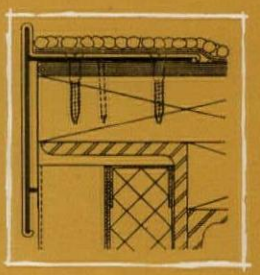
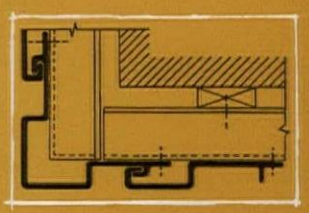


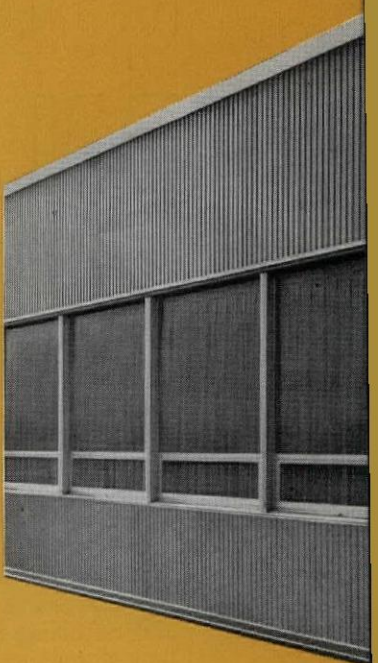




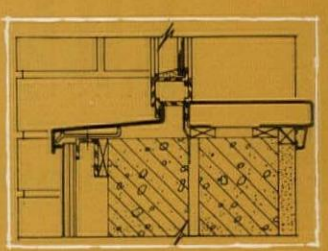
Typical detail and photo of Kaiser Aluminum's Type K-1 Gravel Stop. Note simplicity and pleasing shadow line that results from the straight drip edge feature.



Kaiser Aluminum's standard Facing System may be used for interior or exterior applications. Typical detail shows outside corner components in horizontal section. Photo shows pleasing texture effect of the configuration.



The straight drip edge feature of Kaiser Aluminum's Type K-1 Window Sill is shown in typical detail and photo. As in the Type K-1 Gravel Stop, this feature contributes to the structure's contemporary design. Standard sill widths range from 2⅛" up to 8¼" plus ⅜" drip overhang.



ENGINEERS AND ARCHITECTS: Giffels & Vallet, Inc., L. Rossetti

CURTAIN WALL FABRICATOR-ERECTOR: The R. C. Mahon Co.

GENERAL CONTRACTOR: Perron Construction Co.

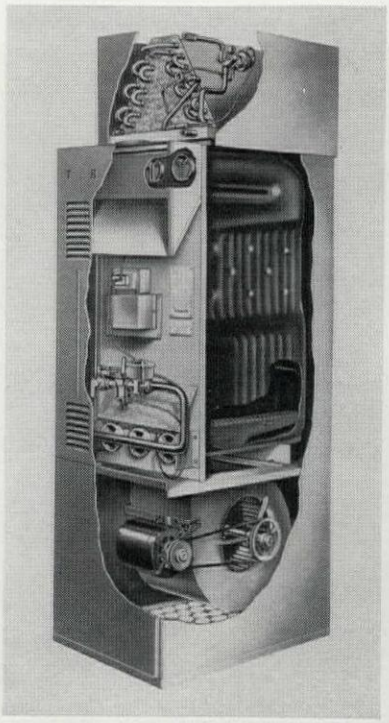
Copper & Brass Sales, Inc. (Kaiser Aluminum Distributor), Detroit, Michigan

p/a products

(Continued from page 187)

aid and temperature control

Trane Residential Heating and Cooling Units: manufacturer of equipment for big building applications has now entered residential field. New series will include year-round air-conditioning models, gas-fired heating furnaces, components to give cooling capacity to existing warm-air heating systems, cooling equipment for wet



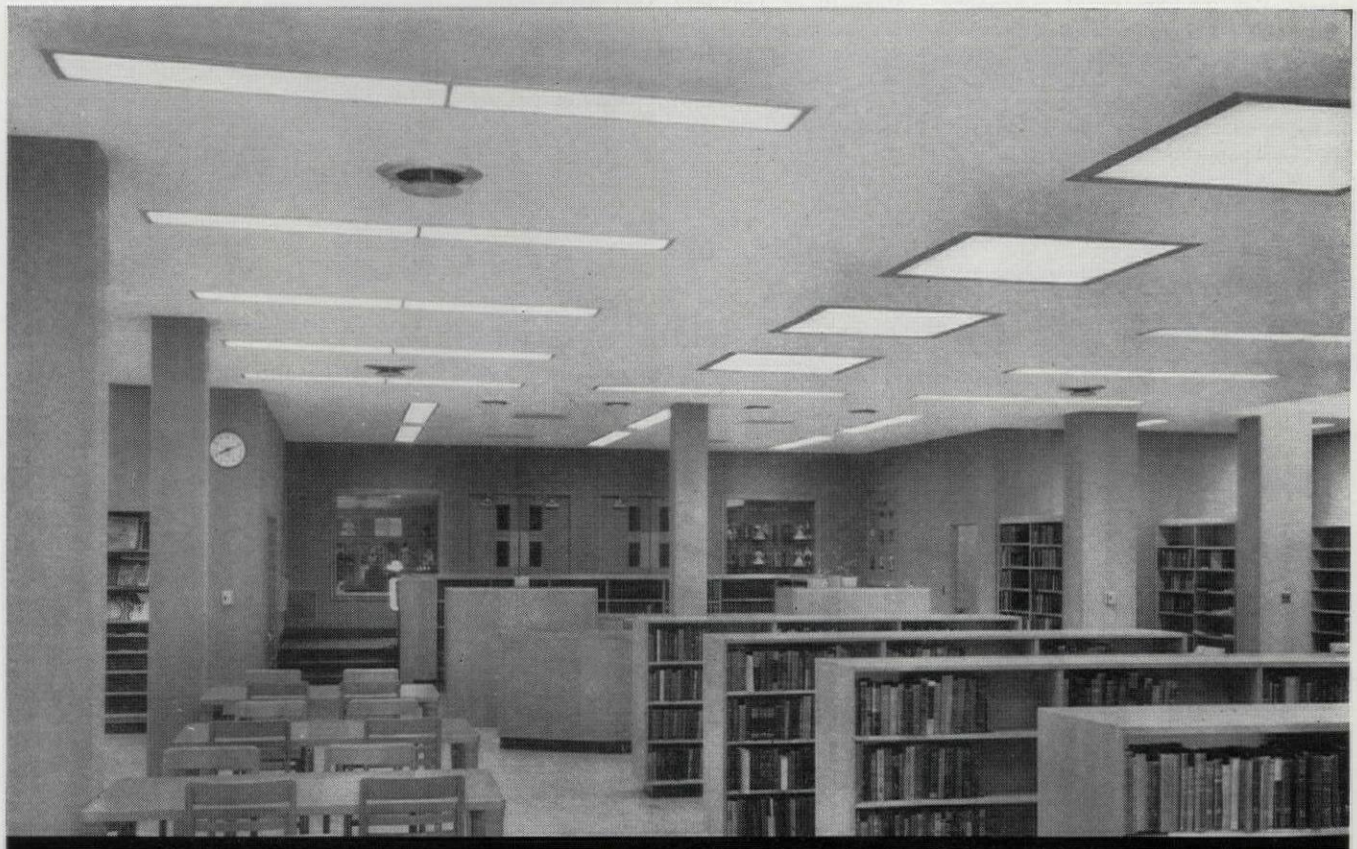
heat systems. Photo *(above)* shows Climate Changer heating unit with mounted bonnet cooling unit—one member of the series. The Trane Co., La Crosse, Wis.

doors and windows

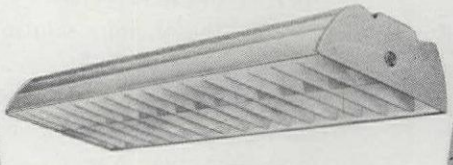
Woodlin Window: non-metallic window is constructed to act also as thermal insulator. Material is high-impact plastic wedded to aluminum trim. Construction prevents inside condensation or frost formation under extreme weather conditions. Window will not absorb moisture or oxidize, rust, rot, corrode. It is resistant to heavy impact, abrasion, acids. Available in picture, sliding window styles or with jalousies. Woodlin Metal Products Co., Marshall, Mich.

Overhead Door Futura: new type of residential garage door is flush-steel unit. Door is in five sections, fabricated from cold-rolled steel, zinc-coated and bonderized to give smooth surface; door is lacquered to neutral off-white on both sides—may be painted if desired. Each section is reinforced by two steel struts. Nylon tires on rollers operate on steel tracks for quiet performance. Overhead Door Co., Hartford City, Ind.

Visioneers...and how they help young minds mature



Curtis Eye-Comfort Louvered Troffers and Sky-Lux Luminaires provide well diffused high-level illumination, pleasant, comfortable atmosphere at Hopkins High School library, Hopkins, Minn. Architect, Bissell & Belair; Engineer: G. M. Orr Engineering Co.



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CURTIS

Visioneers in Planned Lighting

books received

Architects' Year Book 8. Edited by Trevor Dannatt. Philosophical Library, 15 E. 40 St., New York, N. Y., 1958. Illus. $10

Zodiac, Vol. I. American publishers: George Wittenborn, Inc., 1018 Madison Ave., New York, N. Y., 1958. 276 pp., illus. A new international architectural review to be published yearly in two volumes. $9, single volume; $16, two volumes (paperbound)

Guide to Western Architecture. John Gloag. The MacMillan Co., 60 Fifth Ave., New York, N. Y., 1958. 407 pp., illus. $12.50

Pageant of Japanese Art: Architecture & Gardens. Popular edition. Edited by staff members of the Tokyo National Museum. Toto Shuppan Co., Ltd., Tokyo, Japan, 1957. Distributed by Charles E. Tuttle Co., Rutland, Vt. 184 pp., illus. $2.95

The Story of Archaeology. Agnes Allen. Philosophical Library, Inc., 15 E. 40 St., New York, N. Y., 1958. 245 pp., illus. $4.75

The Moderns and Their World. Introduction by Sir John Rothenstein. Philosophical Library, Inc., 15 E. 40 St., New York, N. Y., 1958. 128 pp., 48 full-page color plates, 48 full-page monochrome plates. $12

Directory of International Scholarships in the Arts. Institute of International Education, 1 E. 67 St., New York, N. Y., 1958. 120 pp. (paperbound) Copies of this catalog of awards, offered by governments and private organizations, for study abroad in architecture, creative writing, dance, design, music, painting and sculpture, and theater arts, are available without charge.

clarity and grace

The Works of Pier Luigi Nervi. *Preface and Introduction by Ernesto N. Rogers; Explanatory notes to illustrations by Jurgen Joedicke; Translation by Ernst Priefert. Frederick A. Praeger, 15 W. 47 St., New York, N. Y., 1957. 141 pp., illus. $10*

When Pier Lugi Nervi came to the United States on a combined visit and lecture tour in the fall of 1956, he spoke of his work with matter-of-fact modesty. Modesty—with its implications of pride—is perhaps too pretentious a word for the natural, unaffected manner in which this quiet, gray-haired man presented the remarkable production of over a quarter of a century of pioneer design in reinforced concrete. To questions from his audience about the technical innovations of his unprecedented structures he replied, in a tone of slight surprise: "It was simple . . . the obvious solution . . . the logical thing to do."

From even the most superficial examination of this book, however, it is evident that Nervi's solutions go far beyond the obvious: his uniquely personal, intricate structural logic has established a creative highpoint in 20th Century engineering and architectural design. If, unlike many gifted people, he feels no need to press proof of his genius upon the public, his work speaks eloquently for him. The clarity of its structure and the grace of its forms combine

(Continued on page 196)

Illustrated is B. F. Goodrich "Agatine" in Black White and Tapestry, just 2 of 16 sparkling colors.

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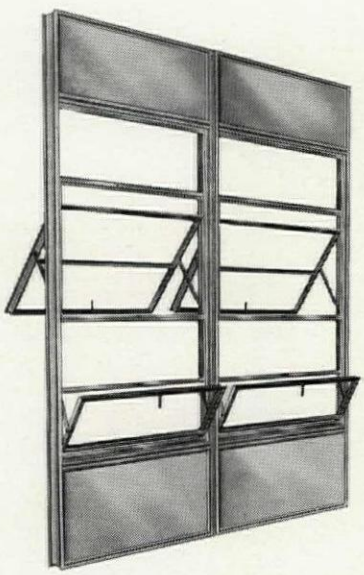

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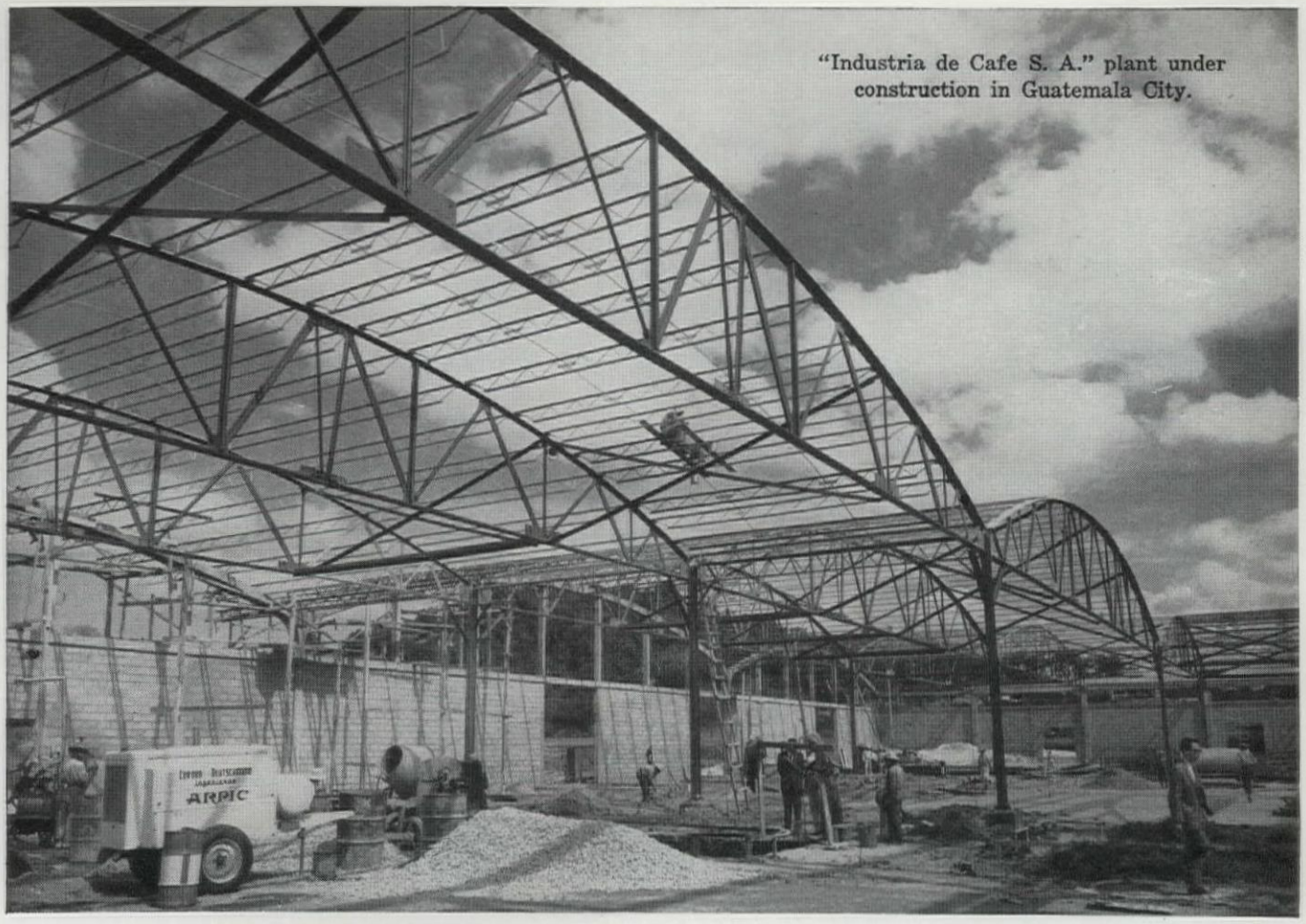
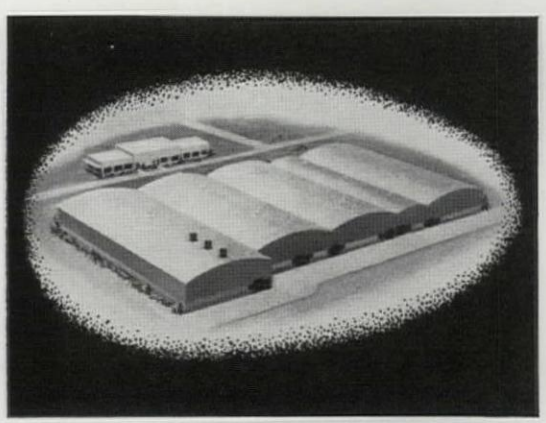


"Industria de Cafe S. A." plant under construction in Guatemala City.

Clear spans up to 110 feet, designed for hurricane wind loads with...



Completed Reynolds Aluminum Company of Cuba plant located near Havana.

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The inherent strength of the Macomber V-Bowstring Trusses, incorporating the greater structural values of cold-rollformed chords and webs, permits clear spans up to 110 feet for large unobstructed bay areas. The use of standard Macomber steel framing units simplifies design to speed erection and cut costs.

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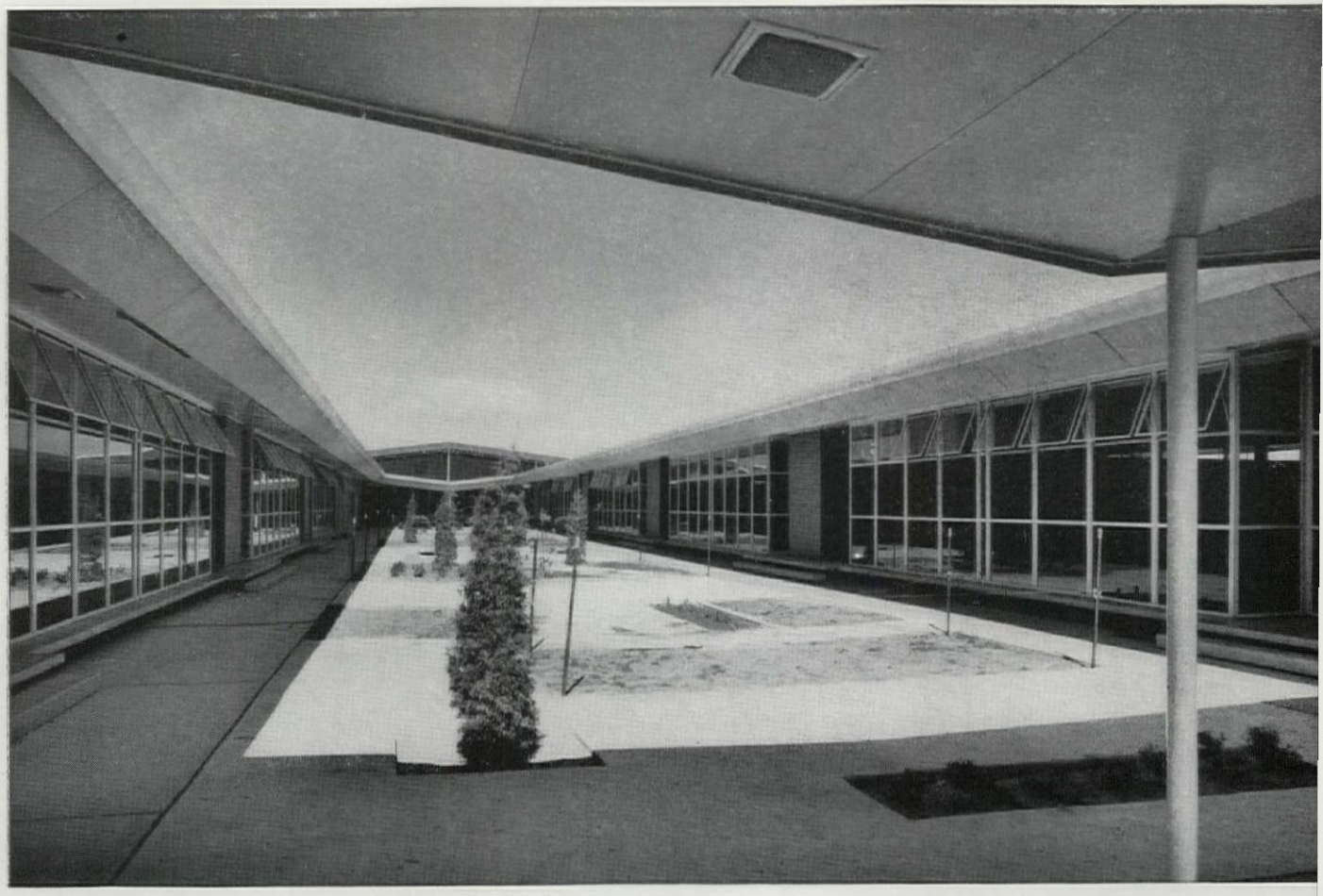
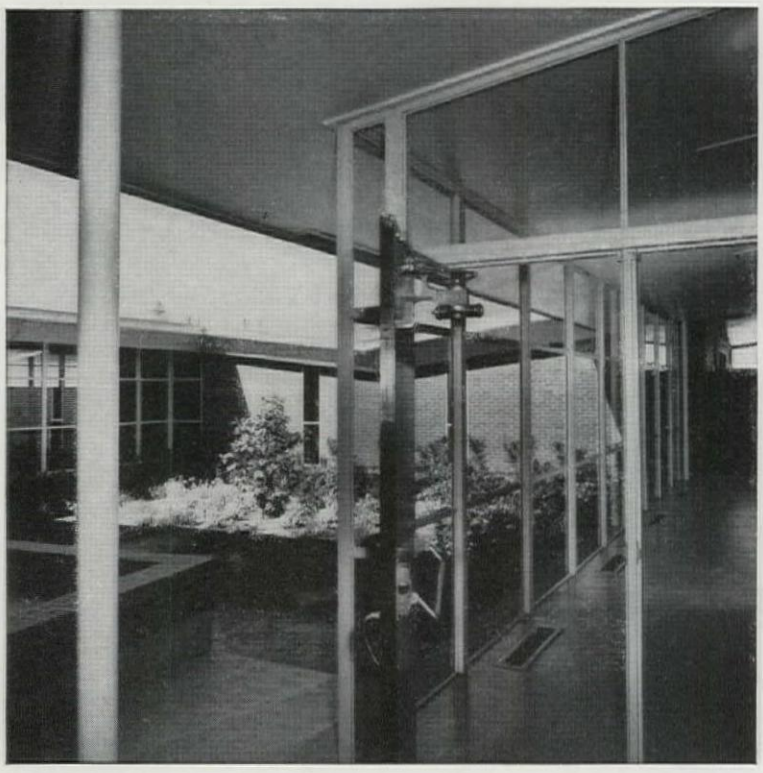


San Andres Elementary School, *Andrews, Texas*

Architects: ***Caudill, Rowlett, Scott & Assocs.,*** *Bryan, Texas*



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—Notice in photo at left how effectively Lustragray reduces sun's glare reflected by brick wall in background. It does this without disturbing the exterior's true color values.

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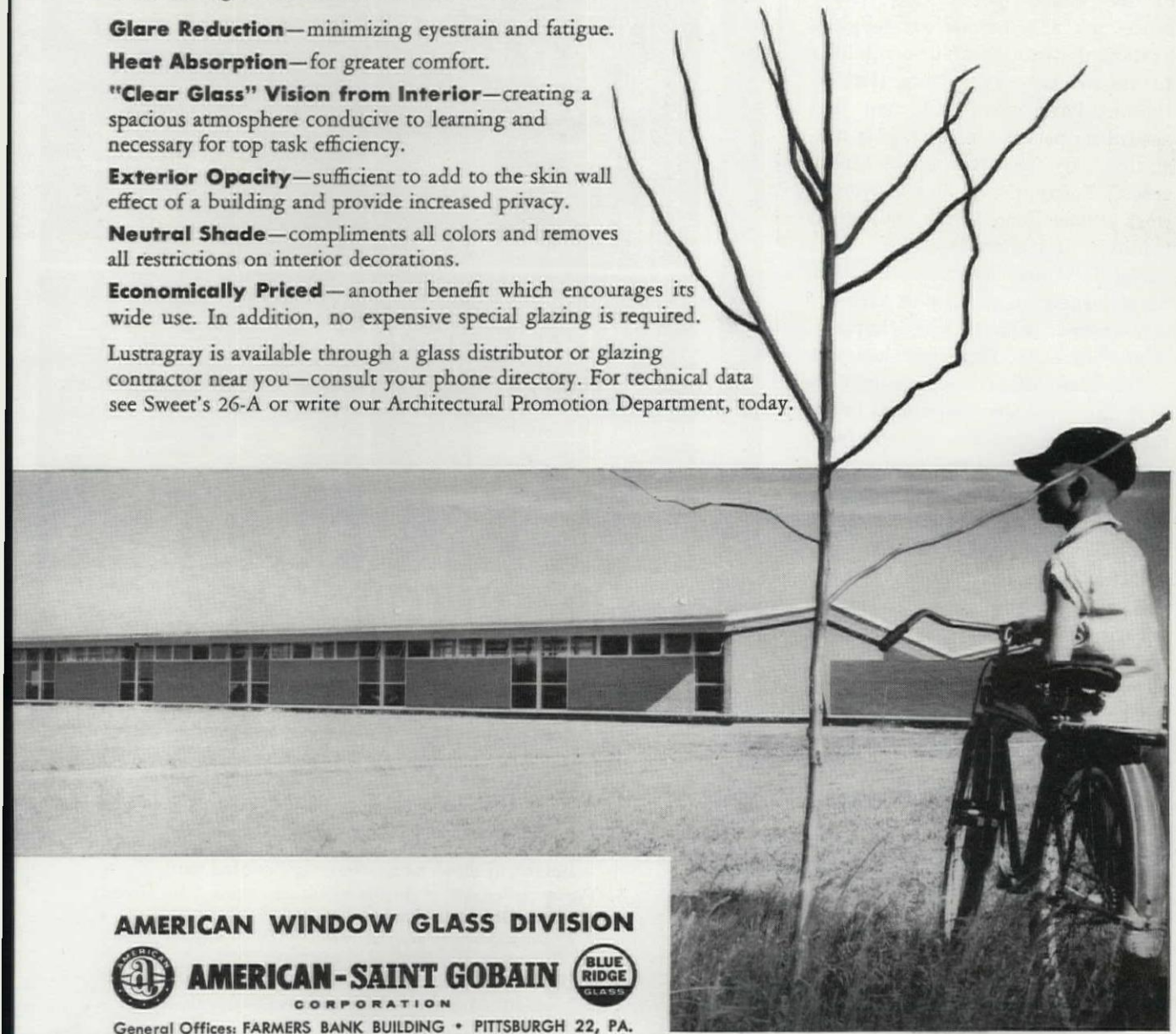

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(Continued from page 190)

to give new meaning to the unfashionable word "beauty."

Nervi's stature in the field of engineering design is acknowledged internationally. This book brings a comprehensive number of his major works together, in English (his own book, *Costruire Corettamente*, was published in Italian by Hoepli in Milan, 1955), presenting the evidence that clearly documents him as one of the legitimate giants of our age. Now that the postwar hoopla about the "rebirth" of Italian creativity has died down, we see much of the widely publicized "renaissance" as a self-conscious, slightly hysterical straining after originality for its own sake. (One thing that the Italians have never lost, and that needed no postwar revival, is a dramatic flair for striking theatrical poses.) Today, the quality of Nervi's work stands alone, in the truly great tradition of Italian design.

Nor is it odd that this tradition, based largely on an elegant array of magnificent palaces and churches, should turn to factories, hangars, warehouses, and exposition halls. It is in these modern functional buildings that we find the current frontiers of design, and the most significant structural and esthetic advances of our age. Their unprecedented and unconventional requirements, in combination with contemporary technology, offer the most challenging opportunities to explore the basic problem of the enclosure of space. Nervi's most successful buildings are outstanding contributions to the solution of this problem—the Florence Stadium, 1930-32; the series of airplane hangars at Orvieto, Orbetello, and Torre del Lago, 1936-41; the Turin Exposition Hall, 1948-49; a salt warehouse at Tortona, 1950-51; a tobacco factory at Bologna, 1952; a wool factory in Rome, 1953; and the recently completed sports arena in Rome—all space constructions of primary significance.

Like most phenomena that burst suddenly upon the public consciousness, and that seem to be without precedent, this daring 20th Century reinforced-concrete architecture has respectable 19th Century antecedents. Although the Victorian Age preferred to call attention to its more effete refinements, it was an era of great structural innovation; beneath the familiar decorative passementerie was the skeleton of iron, steel, or reinforced concrete. Developed by Monier, Cottancin, and Hennebique in France, pioneered by Thomas Hyatt and Ernest Ransome in America, modern reinforced concrete had already demonstrated its revolutionary architectural potential by 1900. Increasing industrialization led to the demand for large-scale factories and warehouses of wide spans and economical, fireproof construc-

(Continued on page 200)

In this ceiling of Acousti-Celotex acoustical panels, a removable block at each grid intersection allows partitions to be readily located in any position within the 62" o.c. module.

(Continued from page 196)

tion. The earliest of these reinforced-concrete buildings, conceived in terms of conventional frame construction, followed wood and metal precedents. However, as the monolithic nature of concrete and the possibilities of scientific reinforcement and pre-stressing were perceived, its radical design possibilities also became evident. From a rigid skeleton of connected, but independent members, reinforced concrete became the fluid, and fluent, material of space enclosure. Robert Maillart wrote a new kind of architectural history—often pure poetry—with his concrete bridges and shells, from 1900 to the 1930's; and today's important chapters are being added by Felix Candela's hyperbolic paraboloid enclosures and Nervi's intricately trussed and ribbed spans.

The intricacy of Nervi's designs are not the least of their fascination. Over the years he has developed a system combining site manufacture of precast elements, the use of forms of reinforced concrete, an adjustable, mobile framework, and *in situ* poured construction. The concrete forms, made in plaster molds, eliminate finishing, and allow the substitution of far more elaborate, fluid shapes for the traditional restrictions imposed by wooden shuttering—such as are achieved in the handsome ribbed network of the mushroom ceiling of the Lanificio Gatti factory in Rome, where the free but accurate forms of the blocks permit the ribs to follow the lines of the main forces, with great visual drama. Nervi's specially developed type of reinforced concrete—*ferrocemento*—a smooth concrete mix of cement mortar incorporating layers of fine steel mesh and bars of small diameter according to his own specifications, is the basic material of these complex designs. Only in a country with abundant and inexpensive labor is such "custom-made" construction possible. In addition, Nervi has had the incalculable advantage of heading his own expertly trained, highly specialized construction company, to carry out his elaborate innovations.

Perhaps the key to Nervi's stature as a designer lies in the fact that this intricacy never leads to obscurity. His buildings are most remarkable for the clarity of their engineering forms. The power and grace of these extraordinary shapes and patterns stem directly from their structural logic, and are inseparable from it. It is possible even for the layman to feel the tension and compression of parts, the direction of forces, and the inevitable correct relationship of structure to shape. The elegant contours of the cantilevered roof trusses of the Florence Stadium, for example, are clearly dictated by the concentration of load

(Continued on page 204)

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Architects: Scholer, Sakellar & Fuller, Tucson, Arizona
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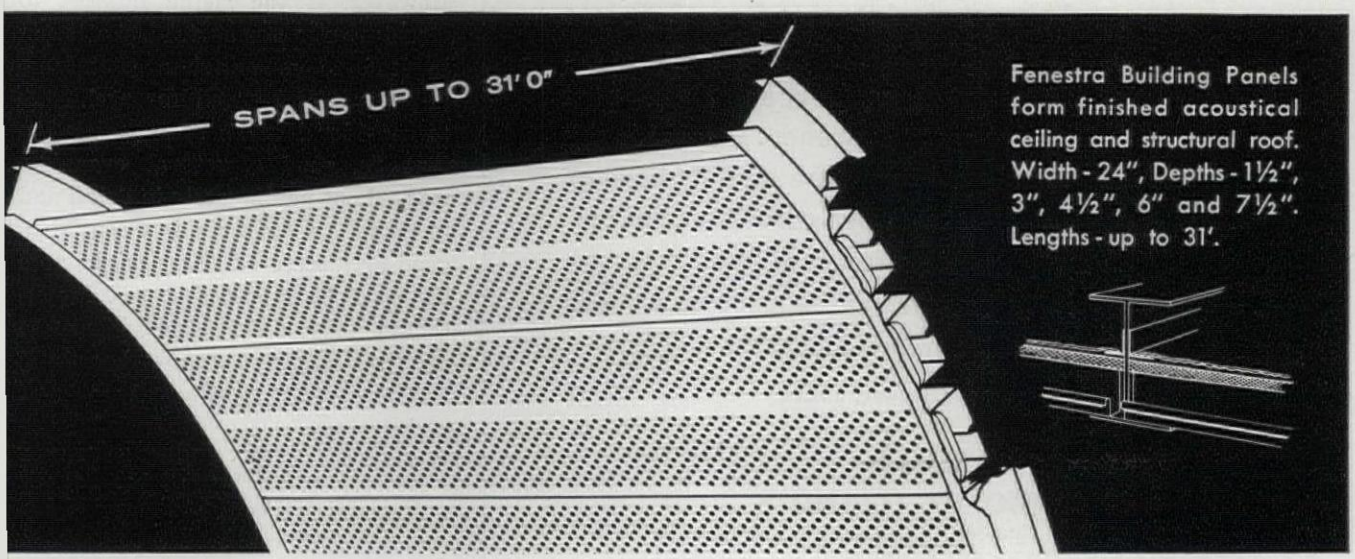

(Continued from page 200)

and reinforcement, and the great arched ribs of the Turin Exposition Hall gather their forces visibly in the fan-shaped ribs at the sides of the hall, to be transferred to the ruggedly handsome buttresses below. This kind of dynamic structural beauty is one of architecture's greatest sensory satisfactions. The fusion of structural function and superb abstract form creates a kind of building that is so fundamentally right that most other architecture seems merely decorative beside it.

This may be why trouble invariably arises whenever Nervi collaborates with architects. In spite of certain self-confessed lapses in his career—when he strove consciously (and disastrously) for architectural effect—his esthetic sense has been as unerring as his engineering judgement. With a clear design logic, he believes in "the inherent esthetic force of a good structural solution." Working with architects, however, Nervi's natural ease with esoteric shapes becomes somewhat strained, his fundamental strength is weakened, the results seem intellectualized and formalized. In the Paris UNESCO buildings, done with Marcel Breuer and Bernard Zehrfuss, one feels that the legitimate imaginative extension of the structural framing of space has taken on something of the air of a *tour de force*—an admirable exercise, more than a simple structural necessity. This is even more true in the scheme for the Pirelli buildings in Milan, with architect Gio Ponti, where Nervi's engineering of the architect's design has produced a result that can only be called "clever"—a description that would never apply to Nervi alone. For as important a contribution as Nervi's work undeniably is, it contains this inherent danger: as engineers become more and more expert, there is no architectural concept—no free-form fantasy or structural *non sequitur*—that cannot be efficiently translated into reality. (A recently published scheme by Salvador Dali for a Mexican nightclub in the shape of a giant snail will be engineered by Candela.) The door of the future is wide open to structural "googie." However, if the rising interest in structure for structure's sake is not to lead to meaningless grotesquerie, it would be well for architects to consider Nervi's recommendation that "a good structural organism worked out passionately in detail and in general appearance is essential to good architecture." They might note the word "passionately," too, for although only a Latin would dare to use it, it implies a state of heart and mind necessary to all great works of architecture.

ADA LOUISE HUXTABLE
Author, Architecture Historian
New York, N. Y.

(Continued on page 206)

"No home is modern without concealed telephone wiring"

—says Mr. F. J. Mallerdino, Builder, of Chicago, Illinois

"I'm putting at least five telephone outlets in every house I build," says Mr. Mallerdino. "They're conveniently located, with the wiring neatly and attractively concealed in the walls. I point them out to prospects, and I advertise them.

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BELL TELEPHONE SYSTEM

(Continued from page 204)

philosophy, religion, and nature

Japanese Gardens. *Jiro Harada. Charles T. Branford Co., 69 Union St., Newton Centre, Mass., 1956. 160 pp., illus. $8.50*

Gardens of Japan. *Tetsuro Yoshida. Frederick A. Praeger, Inc., 15 W. 47 St., New York, N. Y., 1957. 187 pp., illus. $12.50*

Both consciously and unconsciously, *Japanese Gardens* contains the inherent apologia of the amateur who, at long last, is forced to the "you-really-have-to-see-it-yourself" conclusion. Jiro Harada is not the first to arrive at this quandary in describing Japanese gardens. For it is difficult to reach the Western mind with symbolism and mystic inferences, and it is almost impossible to reach the Western architect from a literary approach to gardens.

Although it is precisely the fine instinct of the Japanese—to identify themselves with nature and the universe through their gardens—which is lacking in the Western attitude, I think it is wrong to suggest, as Harada does, that the West could adopt the Japanese setting with much benefit. Philosophically, this amounts to suggesting a change of scenery as a cure for mental illness. We are already too inclined to "adopt" styles in gardens, and we have not yet recovered from adopting the English lawn and perennial borders. In our weakened condition, it would be foolhardy to take on the Japanese who not only play gardening for keeps, but do it with rocks.

The therapy we need is some method of arriving at an indigenous expression in our gardens. From this point of view, Harada's book can be of some assistance since he does take pains, period by period, to outline the steps by which the Japanese worked out their problems of the spirit—their deity—in natural forms which evolved into the Japanese garden. He is handicapped in his mission by poor photographs, which suffer from reproduction, and are taken from a literary rather than an architectural point of view.

However, one senses that the "architecture" of these gardens—in the Western sense of the word—is here really a by-product of the philosophy, the religion, and the love of nature. Although these are expressed in terms of a medieval society and an insular culture, they give a content to the forms that is almost completely lacking in the Western garden synthesis. It would not surprise me if this were exactly the lesson in this book that would be most profitable for the American designer.

It seems unfortunate that the philosophy underlying the garden

(Continued on page 208)

SEAGRAM'S SELECTS GRANT 2200 DRAPERY HARDWARE

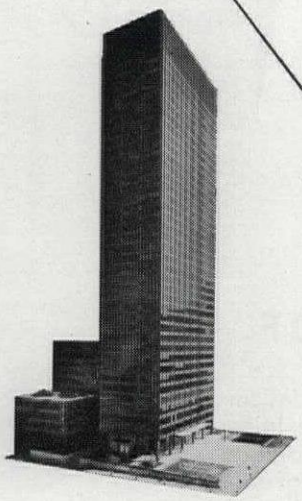

Photo by Ezra Stoller

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Associate Architects:	KAHN & JACOBS
General Contractor:	GEORGE A. FULLER CO.
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reviews

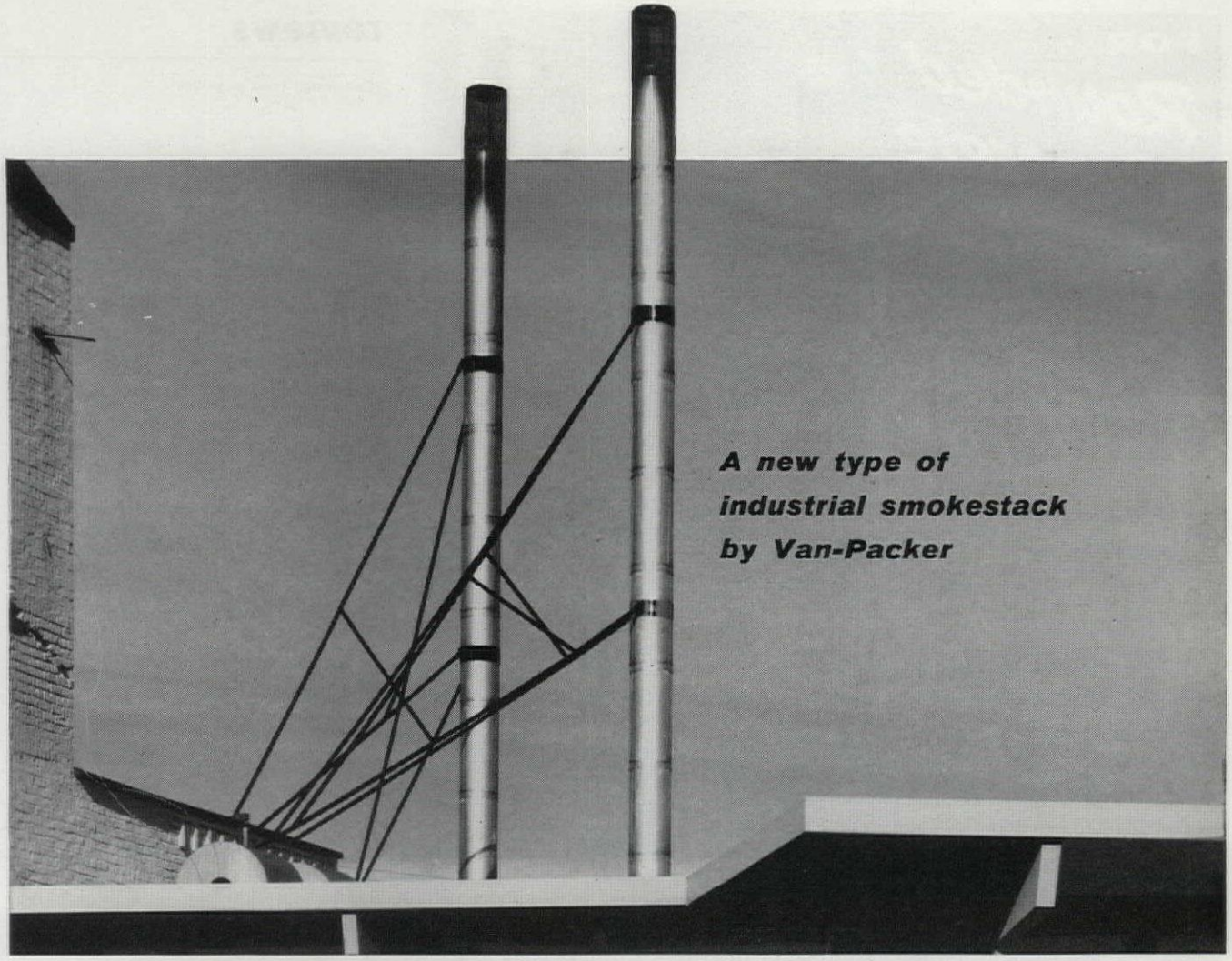
(Continued from page 206)

forms in the different periods is not evaluated. It ranges from the most poetic and eternal concepts of balance and the opposing forces in nature to the kind of sentimentalism ("Behind the small hills . . . is the pond which was said to have been designed in the shape of the Chinese character for 'heart,' reversed.") that might well have been lifted out of one of our house and garden magazines in 1930. The result sufficiently enlightens and sufficiently confuses to make one wish that the same subject and material would be undertaken by Sigfried Giedion with his remarkable talent for clarifying the abstruse.

Tetsuro Yoshida, on the other hand, has brought all this up to date in *Gardens of Japan.* His text is clear, concise, and as Western as Webster's dictionary. In the first 65 pages, he states—with the aid of 89 illustrations—the general characteristics of Japanese gardens, their historical development, a resume of the various types, and an analysis of the essential details such as the use of water, stones, bridges, fences, plants, tea-houses, and garden arbors. This is all highly informative. In addition to four-color pages—scattered throughout the book—the remaining 118 pages are full page black and white photographs, mainly of garden details, which are strikingly beautiful and will delight the heart of any architect.

The apparent simplicity of this layout must have been a convenience in assembling the book, but it is not a convenience for the reader since he is left with the chore of tracking down references to illustrations which do not occur on the pages where they are mentioned. Aside from this annoyance (and the curious circumstance that the contents is the last page instead of the first) the book tells the Western architect exactly what he wants to know about Japanese gardens in the way that he likes to be told.

(Continued on page 210)



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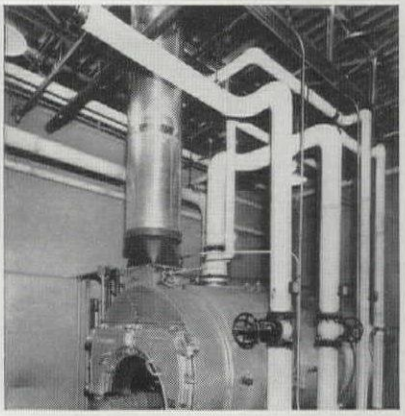

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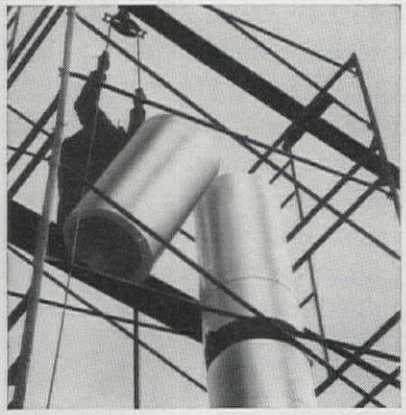

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reviews

(Continued from page 208)

I cannot resist the observation that *Gardens of Japan* benefits enormously from its concentration on details—which is certainly the way to show Japanese gardens to their best advantage. I find the over-all plans less palatable, and some of the "concept" drawings make me believe that there might be a market for my own book[1] in Japan. After all, one can take just so many acres of stones—however deftly they are placed.

JAMES C. ROSE
Landscape Architect
Ridgewood, N. J.

"the key is light"

The Chapel at Ronchamp. *Le Corbusier. Frederick A. Praeger, 15 W. 47 St., New York, N. Y., 1957. 136 pp., illus. $5.50*

In his preface to this book, Le Corbusier writes: "Never in my life have I explained a painting. The painting will go out and will be loved or hated, understood or not. Do you think that bothers me?" The same statement is applicable to the Chapel at Ronchamp. Le Corbusier's attitude toward the reader or the viewer of the chapel is one of complete detachment. As far as he is concerned, the beholder has to take his work as it stands.

If Le Corbusier ever really deigns to explain his work at Ronchamp, he may have done so in this book. It is a fascinating document, more revealing of Le Corbusier than of his chapel. It consists primarily of photographs selected and arranged in sequence by the author. Interspersed among the pictures are brief snatches of words and a few of Le Corbusier's sketches.

The book is divided into three parts. The first examines the chapel from a functional viewpoint, as a place of worship. The second, and by far the longest, treats it as a work of art. The third devotes itself to the construction of the edifice. In-

[1]Creative Gardens. *Reinhold Publishing Corp.*

cluded is a series of sketches in which Le Corbusier traces the steps and thoughts which lead him to the final arrangement of the altar.

In studying "Notre Dame du Haut," one can do worse than to follow Le Corbusier's own approach. The chapel is functional. It contains all the elements one associates with a pilgrimage chapel. One of the chief achievements of the architect is that he has managed to give the pilgrim a feeling of seclusion and privacy inside the chapel, while on the outside all is space. The chapel becomes a backdrop for outdoor services which blend the building, nature, and throngs of worshippers into one. Constructionwise, the chapel speaks for itself—it exists! Its form and lines may be unorthodox but its walls, its columns, and its great roof are structurally sound.

It is far harder to analyze Le Corbusier's treatment of the chapel as a work of art. Art is subjective. Its appeal varies from person to person. A second problem arises, in that Le Corbusier regards art and architecture as synonymous. A building is not a super-sized piece of statuary—yet Le Corbusier, throughout this book, deliberately calls attention to the sculptural elements of his work.

To give the student of "Notre Dame du Haut" a guide to follow, Le Corbusier states that:

"The key is light
and light illuminates shapes
and shapes have emotional power."

The use of light and shapes in architecture is not new. One cannot have architecture without it. Le Corbusier has gone further than most in deliberately exploiting light and, above all, the contrasts of light and shadow to intensify the sculptural elements of his composition. He invites his readers to turn the photographs 90° or even 180°. This is a negation of the chapel as a building. A building and its users both stand in a direct relationship to the terrain. A struc-

(Continued on page 212)

reviews

(Continued from page 211)

ture is not a two-dimensional abstract painting, which one turns to see if its elements balance. If one is willing to equate art and architecture as Le Corbusier does, one has to admit that he has succeeded in creating a work of art in this chapel. One may not like it, but one cannot deny it that title.

What is one to think of "Notre Dame du Haut" at Ronchamp? It is a work of art, but it is the personal statement of its creator. Is it architecture? The answer depends on one's definition of the term "architecture," and on what one considers the relationship of art and architecture. What is its significance? Here one must remember that the chapel is an expression of Le Corbusier's personality. The secret of its appeal (and the appeal of this book) lies in the fact that this expresses the creator's aims to a high degree. Neither chapel nor book are to be blindly imitated. Both depend on Le Corbusier's touch to lift them above being mere "stunts" to being (albeit controversial) a form of artistic expression.

DR. FREDERICK HERMAN
Department of Social Studies
College of William and Mary
Norfolk, Va.

forms and methods

Reinforced Concrete in Architecture. *Aly Ahmed Raafat. Reinhold Publishing Corp., 430 Park Ave., New York, N. Y., 1958. 240 pp., illus. $15*

The first question in a book review is a simple one: "Is it worth reading?" The answer here is: "Very much so."

The next is: "What will I get out of reading it?" The answer to that one is not quite so simple. You will get a very comprehensive history of the development of concrete in all its ramifications. It is amusing to note that one of the earliest buildings, built here in 1873, was by a

(Continued on page 214)

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reviews

(Continued from page 212)

mechanical engineer who used concrete for external and internal walls, cornices, and towers in his own private residence. This residence is in a truly remarkable state of preservation, seeming to be almost flawless after these many years.

The "tendency to impose antique forms on new developments" is deplored but is illustrated by some striking examples of the versatility of concrete, and the results that can be attained by painstaking and meticulous workmanship.

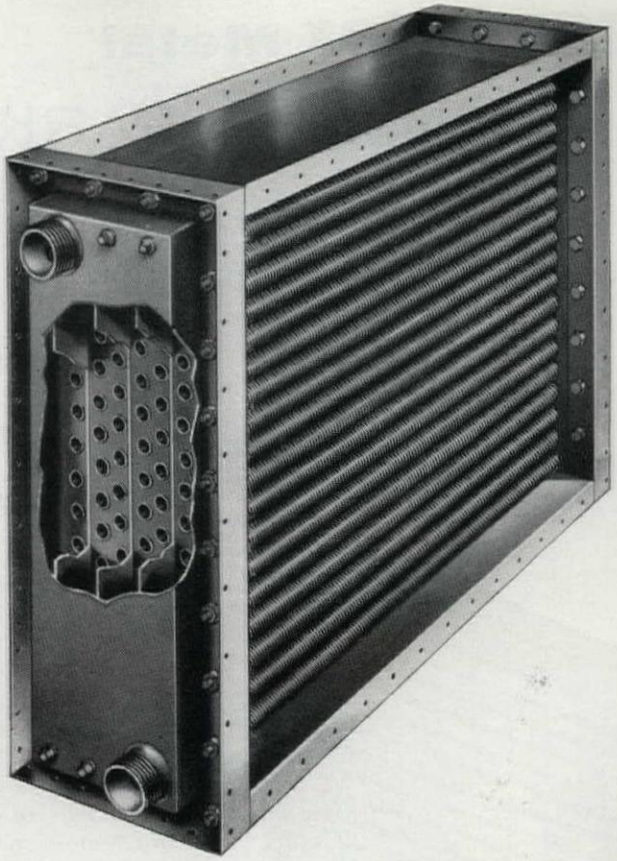
After this warm-up, Raafat swings into his full stride, plunging into domes and shells. His general presentation throughout is concentrated on forms and methods rather than paying much attention to details. In that way, his material is very easy to follow, and it covers the highlights of practically all the important structures in this field. His treatment of prefabrication is also very ably handled, including such novel techniques as the prefabrication and lifting of thin shells.

Of necessity, much information has already been published; but it would, of course, be impossible to write a book of this kind without including some of the outstanding work of Nervi, Candela, Torroja, Freysinnet, and here in this country Ammann and Whitney, Roberts and Schaefer, and Weidlinger and Salvadori. The inclusion of such projects, well known as they may be, serves to highlight many of the principles that are enunciated, and makes this book a very convenient reference for the employment of concrete from flat slab to its unlimited possibilities in form and combination of forms.

He has also given us a peek into the future by presenting some spectacular structures still in the embryo stage.

After the book is closed, there is one thought that lingers behind more than any other, and that is that in no other field is it so ap-

(Continued on page 216)



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reviews

(Continued from page 214)

parent that a distinct demarcation line between architect and engineer is fictitious. The creation of forms, beauty, and stability in accordance with the natural flow of stresses requires the best that these professions can muster. By the architect grasping the engineering principles and the engineer becoming more conscious of the beauty of form, personal contributions can be achieved regardless of labels to create a harmonious whole. By presenting in a challenging way what has been done, Raafat has given us all a very welcome nudge.

So read the book. It *is* worth reading.

FRED N. SEVERUD
Severud-Elstad-Krueger-Associates
New York, N. Y.

pedestrian/auto traffic analyzed

The City, The Automobile and Man. *Carl B. Troedsson. Distributed by Dawson's Book Shop, 550 S. Figueroa St., Los Angeles, Calif., 1957. 49 pp., illus.*

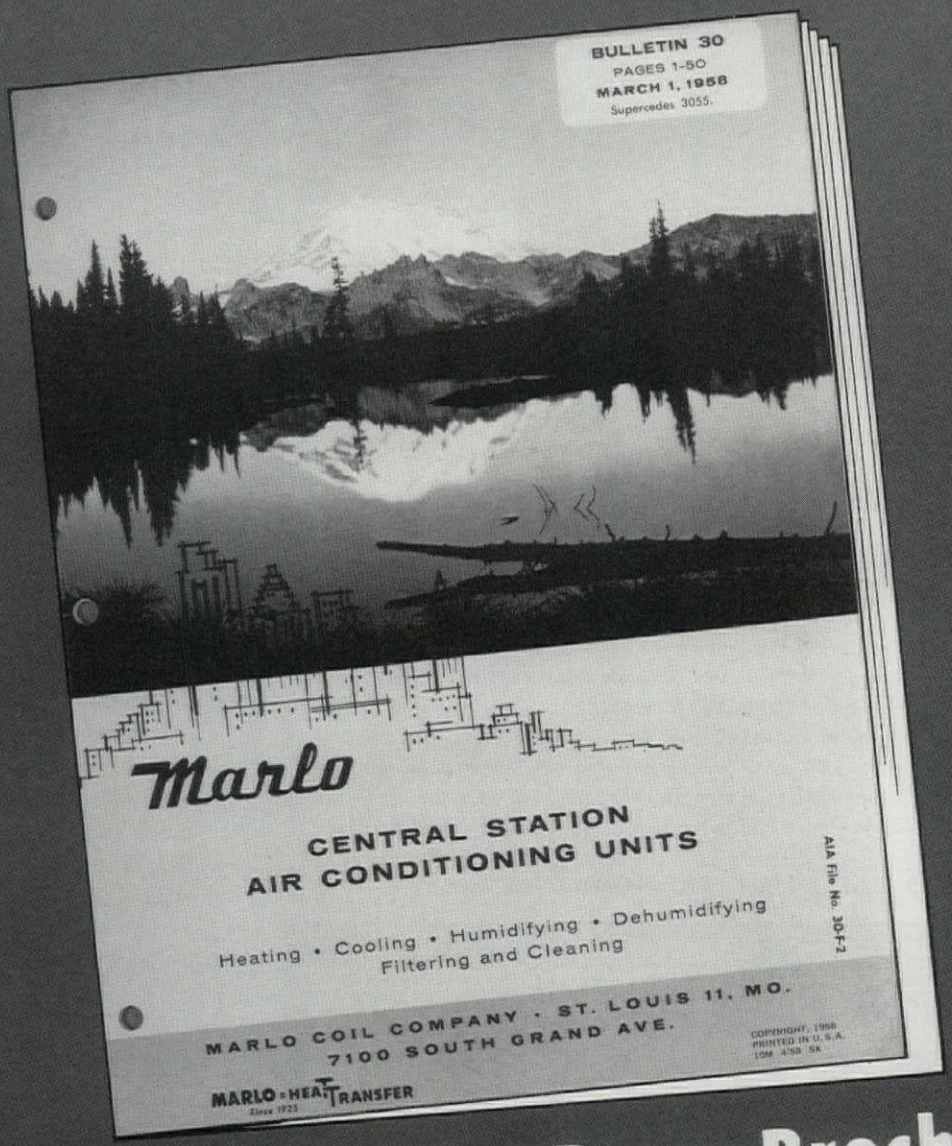
The book's theme is more than faintly familiar: the obvious obsolescence of the city and its streets, its residential and downtown areas; because of a cause too well known—the automobile.

In these pages the nature and problems of pedestrian traffic are contrasted sharply with those of automobile traffic; the differing speeds have developed different scales: one that of "a driver directing 40 to 250 horsepowers and a ton of steel and the other in keeping with the pedestrian."

The author advocates both scales—each within its own proper sphere; and, keeping his proposals within the possible and the practical, by an adaptation and modification of street layout and land usage as now exist to achieve separation of pedestrian and automobile ways.

He localizes his study in Los Ange-

(Continued on page 218)



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reviews

(Continued from page 216)

les, with which he is well familiar. Like those of all cities, its residential and downtown areas require rehabilitation. His proposal is that the residential areas be divided into City Towns; these would be at pedestrian scale—a mile square. All distances —from homes to schools, churches, stores—would be achievable on foot and by bridges over automobile ways. Thus safety for the pedestrian and speed for the automobile are attained.

The downtown areas are to be similarly scaled and traffic separated: smaller blocks would be grouped into superblocks; some existing streets would become landscaped pedestrian ways, pleasant and appealing; other streets would become parking areas and automobile ways; existing building would be generally preserved until obsolescence.

Knowing the author well, this reviewer cannot readily reach an impartial and impersonal appraisal of the book. Some readers will scornfully sniff at the suggested solutions —as time-honored, as obsequiously timeserving, as timidly timorous. Despite all that, the suggestions merit reading and reflection.

LAWRENCE E. MAWN
Alhambra, Calif.

notices

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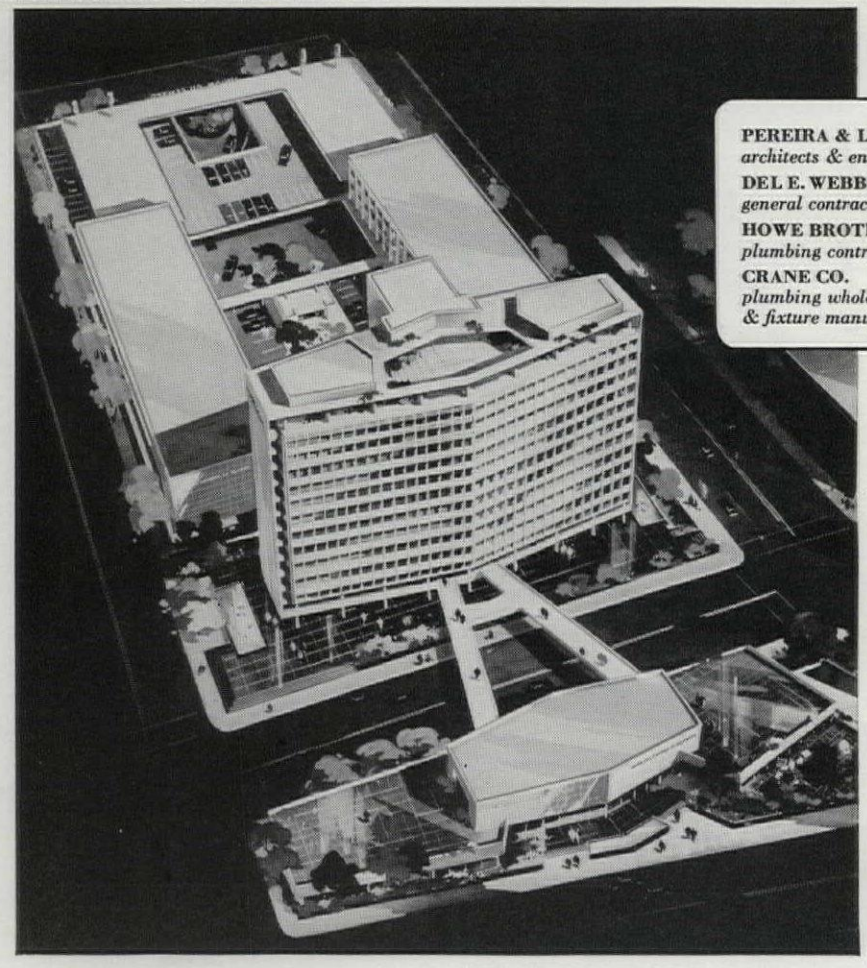

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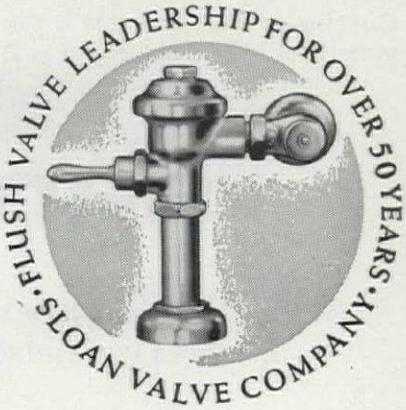

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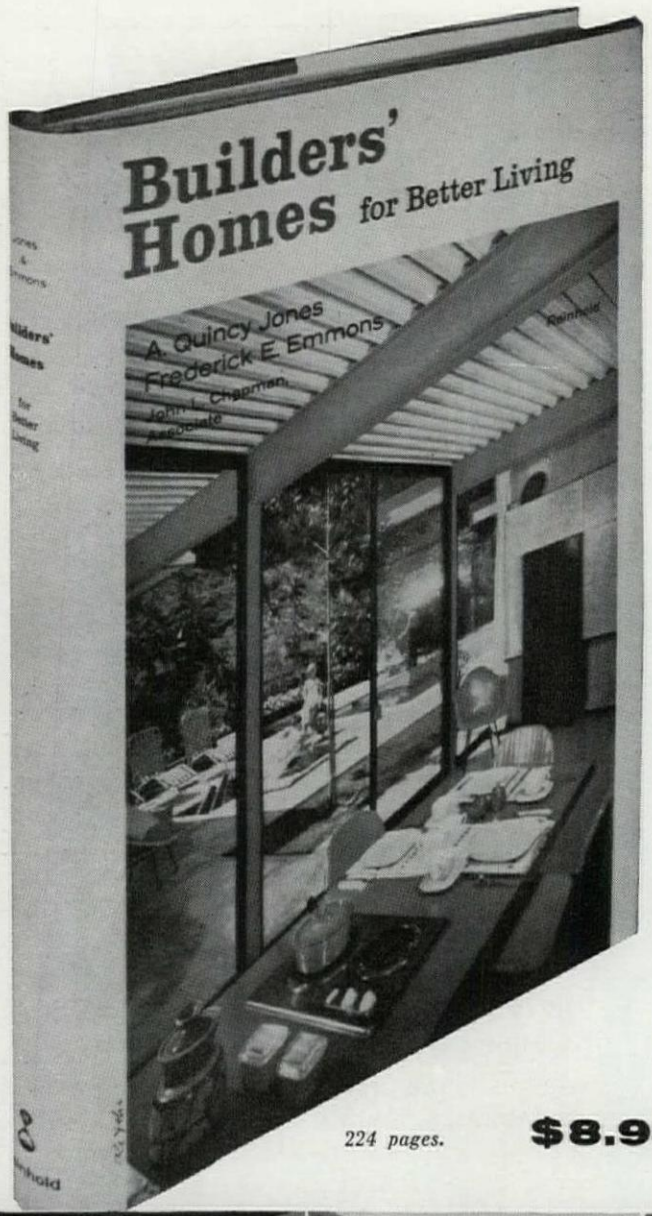

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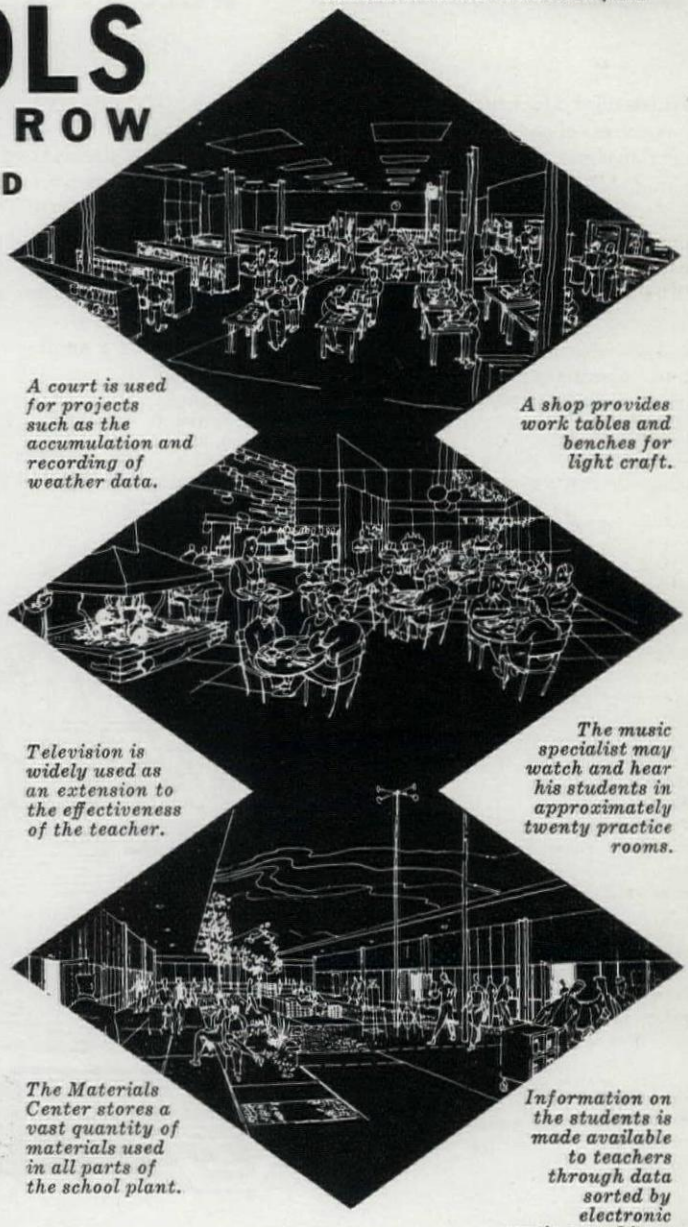

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P.S.

watch out, Detroit!

Industrial Designer Henry Dreyfuss has an excellent article in the July issue of *Consumer Reports* on the subject of automobile design. Titled "The Car Detroit Should Be Building," it covers thoughtfully the functional matters now overlooked, of seat shape and materials: "Detroit has somehow scrambled its picture of the human body"; controls, brakes, steering, lights, and other important miscellany; visibility: ". . . they've given us a new blind spot plumb in the middle of our field of vision." And then Dreyfuss gets to the matter of design, or what Detroit (even in its building design and technical-center planning) calls "styling."

"Sadly, the harried stylists don't even have the satisfaction of being original," Dreyfuss reports. "The 'styling sections' watch one another tensely—are rumored to have a tightly organized system of espionage. . . . How imaginative can you be within the rigid limits imposed by fashion, in a game of follow-the-leader in which all are followers and all are leaders?"

While I was reading this complaint, there came a letter from Philadelphia architect, George Qualls, of the P/A-Design-Award-winning firm of Geddes, Brecher & Qualls, on the same general subject. George reports that he had a nightmare, presumably after thinking about the Detroit "stylists," and imagined several well known architects in the position that Dreyfuss describes of "highly paid automobile cosmetician." The sports cars that his nightmare produced, Qualls named *The Breuerbuggy*, *The Wright Wrambler*, *The Corbucruiser*, *The Miesmobile*, and *The Stone Scooter*.

Thomas H. Creighton