

ARCHITECTURAL

RECORD



BUILDING TYPES STUDY NUMBER

213

SCHOOLS

## "The Changing Philosophy of Architecture"

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# THE RECORD REPORTS

## P E R S P E C T I V E S

IT WAS A COLD WEEK IN BOSTON — and to begin with, rainy as well. People who packed for the 86th annual convention of the American Institute of Architects with uncomfortable memories of a steaming hot June week in New York two years ago frequently turned out to be adding an unscheduled tour of Boylston and Tremont Street shops to their personal agendas: “I had to go out this morning and buy a coat” became a sort of *bon mot* for the convention. The weather cleared (though frostily) in time to smile on the pleasantest social events of the week: the President’s Reception in the garden of the Museum of Fine Arts, followed by “A.I.A. Night at Pops” — dinner at Symphony Hall and a specially-arranged program by the famous Boston Pops orchestra under Arthur Fiedler’s direction — and, the next night, an outdoor lobster supper and entertainment at “Castle Hill,” formerly the Crane estate, now a state museum, overlooking the ocean at nearby Ipswich. A chilly audience in Castle Hill’s outdoor theater was at least warm in heart by the time it had been exposed to Tom Lehrer’s songs and Al Capp’s illustrated dissertation on “the mother-father-daughter-son complex and other ‘architectural’ problems.”

IT WAS ALSO, not surprisingly, a busy week. As usual, it was the A.I.A.’s biggest annual convention ever (the record is broken regularly every year nowadays), with nearly 2200 registrants. The convention program was as crowded as ever, and it seemed to be harder than usual to keep one session from running into the next; then there was perhaps more than ordinary interest in the organized tours, which had been carefully arranged by the Host Chapter Committee of the Massachusetts State Association of Architects to cover both the historical and contemporary architectural “points of interest” in

which the Boston area is so rich. So there was a tour to Lexington and Concord; a boat trip around the Charles River Basin; a tour that included Swampscott, Marblehead and Salem before it wound up at Ipswich for the lobster party; and of course a tour of Cambridge that focused on Harvard and Massachusetts Institute of Technology and their monuments of contemporary architecture.

THE BOSTON ARTS FESTIVAL was going on in the Public Gardens and everybody tried to find time for that. It included an exhibit of contemporary New England architecture (see July, pages 10–12) sheltered by one of Bucky Fuller’s geodesic domes; the house which won the Festival’s top architectural award (see pages 184–187) was, it turned out, a “controversial” one. Jurors José Luis Sert, George Howe and Burnham Kelly liked its “indigenous character,” thought it represented “a direction to be explored,” but had *not* picked it as the top winner. Or had they?

THE SUN SHONE WARM on Californians, who came off with 22 of the 38 building awards in the A.I.A.’s Sixth Annual Honor Awards Program. More awards were given this year than ever before — six Honor Awards (see one of them on cover and pages 141–148, all six on page 12) and 32 Awards of Merit. The jury comment: “One hundred forty-six buildings submitted give strong evidence of greatly improving architectural performance in the United States.” Submissions included 43 school projects (12 were premediated) 13 hospitals, 39 residence projects and “an unusual variety” of other building types.

THAT FAVORITE SUBJECT of architectural debate — architecture — drew the convention’s biggest attendance for the panel session on “The Changing Philosophy of Architecture.” This was the one people talked about; and

it was the basic agreements, rather than differences, that were most remarked. For what Paul Rudolph, Eero Saarinen, William Wurster, José Luis Sert and Ralph Walker had to say on that memorable occasion, see pages 180–183.

HAVE YOU SEEN THE DOME? was the question of the week. Eero Saarinen’s thin-shell concrete structure for the M.I.T. auditorium, now under construction, seemed to be the object of more private architectural “tours” than anything else in the Boston area.

AS FOR THE BUSINESS OUTLOOK, the prognosis at this convention was good, perhaps rosy. Reports on architectural activity from the A.I.A.’s 12 regional directors at the pre-convention session of the Board of Directors showed the amount of work coming into architectural offices expanding or holding its recent high level in eight of the 12 regions, declining in only four (South Atlantic, Central States, Great Lakes and New England). F. W. Dodge Corporation figures on construction contracts awarded in the 37 states east of the Rockies, reported to the Board during the convention, showed the first five months of 1954 had set new records in all categories. And from the principal speaker at the annual banquet, President Paul B. Wishart of Minneapolis-Honeywell, came the prediction that the architect and the consulting engineer will find “manna from heaven” in Americans’ growing dissatisfaction with standardization, their “unquenchable desire, growing as their ability to pay grows, to have both function *and* individuality to be proud of. . . . The time is at hand,” Mr. Wishart declared, “for those who guide community life . . . to insist upon excellence of design as well as upon economy of cost. Only outstanding design can assure permanent satisfaction and be a continuing inspiration to the community.”

# THE RECORD REPORTS



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A.I.A. Photo



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## NEARLY 2200 ASSEMBLE IN BOSTON FOR A.I.A.'S

THE ART AND SCIENCE OF BUILDING, the pressures of business, the perils of politics and social pleasures all had their place in the American Institute of Architects' 86th annual convention in Boston June 15-19. "Forces that Shape Architecture" was the convention's general theme; and architects and their guests, students and educators, engineers, producers of building materials, and builders registered at the convention's Hotel Statler headquarters to the record-breaking total of nearly 2200.

### The "Political" News

Clair W. Ditchy, F.A.I.A., of Detroit was reelected president of the A.I.A.

for a second year in one of two contested offices which kept political interest at a high pitch till the results of the balloting became known late in the week. Mr. Ditchy's opponent was John W. Root, F.A.I.A., of Chicago, who was nominated after Norman Schlossman, also of Chicago and first vice president in 1953-54, withdrew as a candidate for the top office. In the other contest, Leon Chateleine Jr. of Washington, D. C., won over Edward L. Wilson of Fort Worth, Tex., for the post of treasurer. New regional directors, elected without contest, are: Frank N. McNett, Grand Island, Neb. — Central States; Donald Beach Kirby, San Francisco — Sierra

Nevada; Herbert C. Millkey, Atlanta — South Atlantic; Albert S. Golemon, Houston — Texas.

### Honors Department

The Gold Medal was not given this year; but the Edward C. Kemper Award for service to the Institute went to Henry Saylor, editor of the A.I.A. *Journal*, in a surprise presentation at the awards luncheon. Pre-convention announcements had said the Kemper award would not be given. Julian Hoke Harris, A.I.A., of Atlanta, sculptor as well as architect, received the Fine Arts Medal and Marie Montoya Martinez, Pueblo Indian "potter of San Ilde-



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Robert D. Harvey Photos



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## 1954 CONVENTION

fonso," received the Craftsmanship Medal. And 21 members of the A.I.A. were advanced to Fellowship in a ceremony at the annual dinner (for list, see May, page 15).

### As for the Program —

Convention sessions had their usual peripatetic attendance, except for the symposium on "The Changing Philosophy of Architecture" (see pages 9 and 180-183), which drew and held the convention's biggest audience in the Dorothy Quincy Suite of the John Hancock Building (two blocks from the Statler), where several of the sessions took place.

Edward A. Weeks, editor of *The*  
(Continued on page 278)

### ABOVE: ON THE AGENDA

1. Juan F. Nakpil, F.A.I.A., Manila, addresses opening luncheon; seated (right) James Lawrence Jr., Massachusetts State Association of Architects president and Host Chapter Committee chairman. 2. Chairman Beryl Price, Philadelphia, reporting for Chapter Affairs Committee and 3. Chairman Donald Beach Kirby, San Francisco, for the Chapter Meetings and Programs group. 4. New officers and new regional directors line up at closing session (left to right): Director Herbert C. Millkey, Atlanta—South Atlantic; Director Albert S. Golemon, Houston—Texas; Howard Eichenbaum, Little Rock—second vice president (reelected); Earl T. Heitschmidt, Los Angeles—first vice president; Clair W. Ditchy, Detroit—president (reelected); Leon Chatelain Jr., Washington, D. C.—treasurer; George Bain Cummings, Binghamton—secretary (reelected); Director Frank N. McNett, Grand Island, Neb.—Central States; Donald Beach Kirby, San Francisco—Sierra Nevada.

5. President and Mrs. Ditchy greet the Leon Chatelains at the President's Reception. At the Awards Luncheon, Mr. Ditchy 6. flanked by the Craftsmanship Medal winner, Maria Montoya Martinez, Pueblo Indian potter, and the Fine Arts Medal winner, Sculptor (and architect) Julian Hoke Harris, Atlanta; 7. with A.I.A. Journal Editor Henry Saylor and his Edward C. Kemper Award for Service to the Institute; 8. with William Emerson (right), 80-year-old retiring secretary of the Rotch Traveling Scholarship Committee, who had received a citation for service from Boston Society of Architects President Isidor Richmond (left). 9. Percival Goodman of New York addresses session on architecture and allied arts. 10. Ludwig Mies van der Rohe, Chicago, and 11. Royal Barry Wills, Boston, were two of 21 A.I.A. members elevated to Fellowship. A.I.A. Past President Ralph Walker, chancellor of College of Fellows, is at left



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### BELOW: OFF THE AGENDA

1. Seattle "conference": Robert L. Durham, Paul Thiry and Washington State A.I.A. President John S. Detlie. 2. Thomas S. Holden, F. W. Dodge vice chairman, and A.I.A. President Ditchy. 3. John N. Richards, Toledo, and New York's Hugh Ferriss. 4. R.I.B.A. Past President Michael Waterhouse of London with John W. Root of Chicago and Arthur C. Holden of New York. 5. Roger Allen, the sage of Grand Rapids, with Mrs. Allen and A.I.A. Executive Director Edmund N. Purves. 6. Dan Schwartzman, New York, Dean Olindo Grossi, Pratt Institute School of Architecture, and Prof. Walter Bogner, Harvard Graduate School of Design. 7. John G. Flowers Jr., Texas executive director (center) with RECORD editors James S. Hornbeck (left) and Robert E. Fischer. 8. Miles Colean of Washington and A.I.A. Director of Education and Research Walter A. Taylor. 9. Boston's Henry R. Shepley and Joseph D. Leland.

10. RECORD Publishing Director H. Judd Payne and General Manager Robert F. Marshall with Chief Architect Marshall Shaffer, U. S. Public Health Service, and A.I.A. Past President Douglas Orr of New Haven. 11. Fred Markham, Provo, Utah, N.C.A.R.B. president, and Richard Koch, New Orleans. 12. New England Regional Director Philip D. Creer, Providence, the convention's general chairman, with Mr. and Mrs. Harold D. Hauf. 13. A.I.A. 2nd V. P. Howard Eichenbaum with Frank Lopez, RECORD senior editor. 14. Leonard Currie, up from the Inter-American Housing Center, Bogota, Colombia, Paul Rudolph, Sarasota, Fla., and G. E. Kidder-Smith, of Brazil Builds, Switzerland Builds, etc. 15. Some of the nearly 200 students who were A.I.A. guests at the convention: (front row) Julia Scott, Cornell, Julian Sachs, Catholic University, Audrey Nightingale, Cornell; (back row) D. James Athan, M.I.T., John Beckel, Cornell, and Paul Malo, Syracuse



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Guy Livingstone



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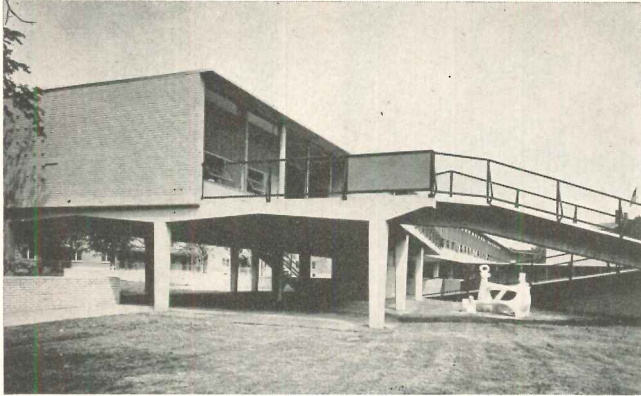


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See page 12 for  
A.I.A. Honor Awards

HONOR AWARDS IN 1954 A.I.A. PROGRAM

*Six Buildings Cited for "Outstanding Architectural Design";  
32 Others Recognized with Merit Awards (List on Page 298)*



*Thomy Lafon School, New Orleans; architects, Curtis and Davis, New Orleans. Jury remarked "unusual solution to provide adequate play space on a limited site," commended "clean structure, excellent detailing," found result "direct, economical and good looking"*



Hedrich-Blessing

*Norman High School, Norman, Okla.; architects, Perkins and Will, Chicago—Caudill, Rowlett, Scott and Associates, Bryan, Tex., associated architects-engineer. "The well-scaled court is the heart of this building . . . much-needed feature for teen-agers"*

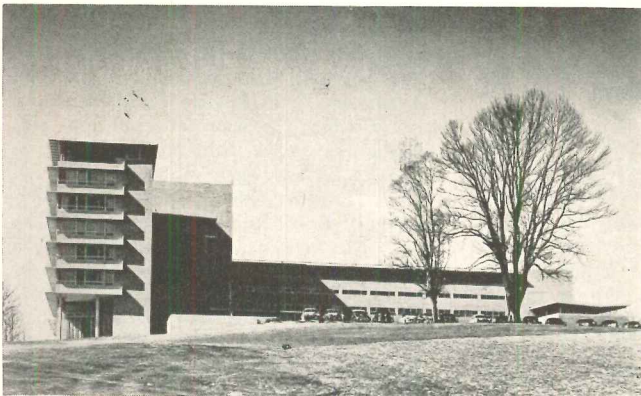


Julius Shulman

*Santa Monica City College, Santa Monica, Cal.; architects, Marsh, Smith and Powell, Los Angeles. "The grouping of the buildings is well managed and achieves an integration in its use of courts, its richness of detail, consistency in building units and landscaping"*



*Moore Residence, Ojai, Cal.; architect, Richard J. Neutra, Los Angeles; collaborator, Dion Neutra. "This house gets its special quality from a beautiful play of light and shade, the handling of materials and textures, the use of water and landscape . . ."*



*Lankenau Hospital, Philadelphia; architect, Vincent G. Kling, Philadelphia. "The real achievement in this building is that it stands out as architecture and is not the standard arrangement . . . more and more characteristic of the complex hospital problem"*



*Fort Brown Memorial Civic Center, Brownsville, Tex.; architects, John P. Wiltshire and J. Herschel Fisher, Dallas. "This is a good example in present-day terms of a basic community need to provide facilities for general public use"*

**Industry and the Bomb**

A SPEED-UP IN DISPERSION was almost unanimously called for by speakers at the recent Washington "Conference on Industrial Defense in the Atomic Age," sponsored by the U. S. Chamber of Commerce.

As Lt. Gen. Willard S. Paul, Assistant Director for Non-Military Defense in the Office of Defense, put it — "... the best defense against nuclear attack is dispersion — don't be there when the bomb hits."

The urgency of such a program was emphasized by a remark of John Redmond that his firm, The Koppers Company, Inc., had found it "impracticable, if not impossible, to either bomb-proof equipment on a plant-wide scale or to construct elaborate bomb-proof shelters for all the employees."

Val Peterson, Federal Civil Defense Administrator, though not calling specifically for industrial dispersion, did urge more rapid progress in civil defense and spoke of the necessity of a strong industrial defense in terms of morale. "To lose a short war," he said, "you lose enough productive people and plants — quickly enough — to demoralize the rest of the nation's defense production and destroy the nation's will to resist." He went on, "... you cannot overestimate what our requirements [in case of an enemy attack] would be."

**Focus on Fire Protection**

THE NATIONAL BOARD OF FIRE UNDERWRITERS is currently conducting a four-

to-five-month course in fire protection engineering, the first and only of its kind to be offered by a national organization. The student body includes 20 June engineering graduates, two of whom have degrees in architectural engineering. Upon completing the course the graduates will remain with N.B.F.U. as staff engineers. Edgar P. Slack, professor and chairman of undergraduate physics at Brooklyn Polytechnic Institute, is in charge of the course.

LESS DIRECTLY CONCERNED with fire protection *per se*, but very much a part of the current effort to focus attention of architects and engineers on fire protection problems, is the scholarship program just set up by N.B.F.U. for architectural students. The scholarships, which will be administered by the American Architectural Foundation, Inc., an organization sponsored by the American Institute of Architects, will be awarded to promising students who require financial assistance. No strings are attached to the awards in the form of prior or future attention to fire protection problems, although N.B.F.U. naturally hopes that recipients will feel some identification with the field.

INTRAMURAL ACTIVITIES in the field have recently included a five-day meeting of the National Fire Protection Association in Washington. The General Motors fire and other large-loss industrial fires came in for a lion's share of the discussion. Large-loss fires were also a matter

**Air Force Names S.O.&M.**

As we go to press, the Air Force announces that architects Skidmore, Owings & Merrill have been assigned the much-coveted job of designing the projected Air Force Academy, to be built near Colorado Springs, Colo. Architects Wallace K. Harrison, New York; Eero Saarinen, Detroit; and Welton Becket, Los Angeles, were chosen to serve as consultants.

Engineering contracts were awarded to Syska & Hennessy, of New York; Moran, Proctor, Meuser & Rutledge, also of New York; and Roberts & Co., of Atlanta.

of concern at the May meeting of the N.B.F.U., at which it was reported that effects of this type of fire extend beyond financial loss to the company to local economic repercussions and damage to the nation's defense potential.

**Design is the Theme**

ARCHITECTS of Washington and Oregon, Idaho, Montana and (possibly) Alaska, meeting August 20-22 at the Eugene Hotel, Eugene, Ore., for the third annual conference of the Northwest District of the American Institute of Architects, will have a series of seminars on design, the overall theme for the conference. Featured speakers on the program, which is aimed particularly at the younger architect, include William Tugman, editor of the *Eugene Register-Guard*; Harwell Harris, dean of the University of Texas School of Architecture; Robert Anshen, San Francisco architect; and Sig Unander, 35-year-old Oregon state treasurer, who will speak on the challenge of state institutional work. Seminar moderators will be Paul Thiry, Seattle; Tom Adkison, Spokane; and Walter Gordon, Portland. In addition, the first public relations workshop to be held in the Northwest region will be presented by A.I.A. Public Relations Counsels Walter Megronigle and Anson Campbell of Ketchum Inc.; and there will be sessions on "Apprenticeship and Registration" and "Correlation of Architecture and the Allied Arts."

**Back to the Campus**

HAROLD DANA HAUF, A.I.A. director of public and professional relations since February 1 and former chairman of the Department of Architecture at Yale

(Continued on page 16)



— Drawn for the RECORD by Alan Dunn

"If the SPCA hears about this you'll be sorry you didn't buy acoustic panels in the first place—"

University, has been appointed head of the Department of Architecture at Rensselaer Polytechnic Institute. The new appointment is effective October 1. Mr. Hauf, who was editor-in-chief of ARCHITECTURAL RECORD from September 1949 until he was called to active duty in the U. S. Naval Reserve in May 1951, had returned to Yale as a Research Fellow after his release from Navy service and went from there to the A.I.A. post. At R.P.I., Mr. Hauf succeeds Donald Mochon, associate professor of architecture, who has been acting head of the Department since Professor Ralph E. Winslow resigned in July 1953 to devote his full time to his work as a consultant.

**Smithsonian and Architecture**

"BUILDING IN THE NETHERLANDS" and "Brazilian Landscape Architecture — New Designs by Roberto Burle Marx" are the titles of two new exhibitions recently announced by the Smithsonian Institution Traveling Exhibition Service. The Netherlands exhibit, which is

jointly sponsored by the Netherlands Embassy and the American Institute of Architects, includes the postwar work of such architects as W. M. Dudok, J. J. P. Oud, Marius Duintjer, F. P. J. Peutz, B. Merkelbach, P. Elling and others. The exhibition was organized by the Bond of Netherlands Architects and the Bouwcentrum and consists of some 50 panels (30 x 40 in.), complete with aluminum standards, and ten models. The Burle Marx show is the first full-scale exhibition in this country of the painter-turned-landscape-architect who has worked with most of the leading architects of South America and who won — for his total contributions to landscape architecture — the "unassigned" prize at this year's Second Biennial International Exhibition of Art and Architecture at Sao Paulo (see June, pp. 10-12). The exhibition includes 25 large watercolors and 35 enlarged photographs, all mounted and uniformly framed, a selection of 15 printed fabrics and a panel of ceramic tiles. Information about schedules can

be obtained from: Mrs. John A. Pope, Chief, Traveling Exhibition Service, Smithsonian Institution, Washington 25, D. C.

**Bucky and the Navy**

FULLER RESEARCH AND DEVELOPMENT is the name of the organization which has been set up at Raleigh, N. C., to carry on the work required by R. Buckminster Fuller's new position as a prime contractor for the U. S. Navy (see June, pp. 24 *et seq.*). The staff consists of James W. Fitzgibbon, A.I.A., former professor of architecture at the North Carolina State College School of Design, and a dozen architecture graduates, mostly alumni of one of Fuller's numerous student projects at architectural schools across the country. They work in two rented store lofts and find outdoor sites for test assemblies where they may — once, for example, it was the Nowicki-Hedrick-Severud North Carolina State Fair Livestock Pavilion. The project is still in the testing stage; no decisions by the Navy or the Marines yet.

**INSULATED FACTORY ROOF WITHSTANDS 1700° FIRE TEST**

*Fire test on roof made of steel deck, lightweight concrete topping and built-up roofing is watched by a group of some 60 industrial building designers, insurance company representatives, code officials and manufacturers*



FOLLOWING in the wake of the General Motors Livonia fire last year, manufacturers of industrial roof materials have been testing and developing roof assemblies designed so as not to be a contributing factor to the spread of fire.

One such roof construction was fire-tested before a group of some 60 representatives of the nation's industrial plant designers, fire insurance associations, roofing manufacturers and building code officials at the Granite City Steel Co., Granite City, Illinois on June 9.

The test roof, heavy-duty corrugated sheet steel, topped by 2 in. of lightweight perlite concrete and a 4-ply built-up, tar and gravel roof, was mounted on a

one-story structure, 25 by 10 ft, and subjected to a 45 min. exposure to fire.

The test sponsors, Granco Steel Products Co. and the Perlite Institute, reported that even though the corrugated decking was exposed directly to flame, there was only a moderate deflection of the deck at mid-span, and the roof supported a manikin, weighted to simulate a 190-lb fireman, for duration of the test.

Fire was supplied by 24 gas burners which by the end of the test had produced an inside air temperature of 1720 F, and a metal decking temperature of 1500 F. Temperature recorded on top of the roof was only 200 F.

Engineers observing the test cited

three main reasons for favorable test results: (1) no combustible vapor barrier was used between the metal and insulating concrete; (2) the cast-in-place concrete slab prevented dripping of tar; and (3) the combination of welded-in-place steel sheets covered by mesh-reinforced insulating concrete added strength and rigidity to the roof framework, which consisted of 12-in. Junior beams on 6 ft, 3-in. centers, welded to 10-in. wide flange main beams.

The sponsors pointed out that the roof design tested is similar to many lightweight insulating concrete roofs now in industrial use. A load test showed that this deck will support 320 lb. per sq. ft. (eight times design load).





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## CONGRESS WINDS UP

### HOUSING MEASURE GEARED TO SPUR PRIVATE ACTION

FEDERAL HOUSING ADMINISTRATION officials were prepared to put new credit terms of the housing measure into effect immediately upon signature of the bill by the President.

The proposed 1954 law had been delayed in the Senate by the filibuster developing on the atomic energy bill, but approval of the conference report on the housing measure was virtually assured, and FHA was "current" with its new rules and regulations setting out the sweeping revisions of down-payment terms. This relaxation was expected to bring a flood of new home buyers into the market and cause home builders to revise their earlier estimates of production upward to around 1.3 million units. The record year of 1950 saw 1,396,000 new homes marketed.

#### Toward a New Fannie Mae

The new measure kept the secondary market pot boiling as briskly as ever while calling for a long-range transition to place the operation primarily in private industry hands. The Federal National Mortgage Association was authorized a \$70 million government capital with private lenders taking this over gradually by a required investment of three per cent with every transaction. This is intended to effect eventual liquidation of Fannie Mae's \$3 billion portfolio in from six to 12 years.

A new system of mortgage insurance was set up for existing dwellings. This is less liberal than that provided for new houses, but it is considerably broader than the previous law. Strengthened prices in this field of used housing could be one important result.

#### Public Housing Restricted

Rehabilitation of run down neighborhoods and conservation of less dilapidated areas formed the nucleus of new efforts to supplement slum clearance. In this respect, too, a 35,000-unit public housing program was approved for fiscal 1955, hedged in with severe limitations that the Administration didn't like. President Eisenhower had sought 35,000 units per year for four years without such limitations.

The non-Federal public works advance planning program was resumed with a \$10 million authorization.

### SCOREBOARD ON CONSTRUCTION FUNDS

(Regular Appropriations Bills)

(In Millions)

AGENCY	FISCAL 1954	1955 BUDGET REQUEST	FINAL 1955
<b>Dept. of Defense</b>			
Military Public Works			
Air Force.....	\$240 *	2 { \$945.9 140 503 (thousand) <sup>1</sup>	
Navy.....	—		
Army.....	—		
<b>Labor-HEW</b>			
Hospital construction (H-B).....	65	75	75
School construction (P.L. 246).....	70	74	70
<b>Independent Offices</b>			
Housing and Home Finance			
Agency (Total).....	73.4	119.1	112.6
Capital grants for slum clearance.....	20	39	39
Atomic Energy Commission (plant & equipment)...	166	236.3	110.8
Public Buildings Service, GSA, (operating expenses)	98.8	98	95.9
<b>Army Civil Functions</b>			
General investigations.....	2.8	2.8	2.9
Construction, general.....	278.6	308.3	300.3
Operation and maintenance.....	79	76.2	76.1
<b>Executive Office</b>			
Public Works planning.....	—	35 (thousand)	35 (thousand)
<b>Civil Aeronautics Administration</b>			
Federal aid to airports.....	—	22 <sup>2</sup>	
<b>Dept. of State</b>			
Construction, op. & maintenance of off. bldgs. abroad.....	—	2.8	2.5

\* AF received \$240 million in a supplemental money bill—no money requested in fiscal 1954 for Army and Navy

<sup>1</sup> Alaska communications system

<sup>2</sup> Supplemental requests pending before appropriations committees at the time this table was prepared

## LEASE-PURCHASE BILL LAYS THE BASIS FOR NEW PUBLIC BUILDINGS PROGRAM

THE FIRST PUBLIC BUILDINGS PROGRAM of any magnitude in more than a decade was in view as the "lease-purchase" bill finally became law last month. The new legislation in effect sets up a "pay-as-you-go" method of financing Federal buildings across the country, allowing the Government to contract with private builders to erect public buildings for lease to the Government on a long-term purchase arrangement.

The General Services Administration, which handles all government construction except post offices, is limited to a \$5 million expenditure in the first year of the three-year program, the Post Office Department to \$3 million. On the basis of 10-year amortization of the loans, this should mean a minimum building program in the first year of \$50 million for GSA; the lease periods are permitted to

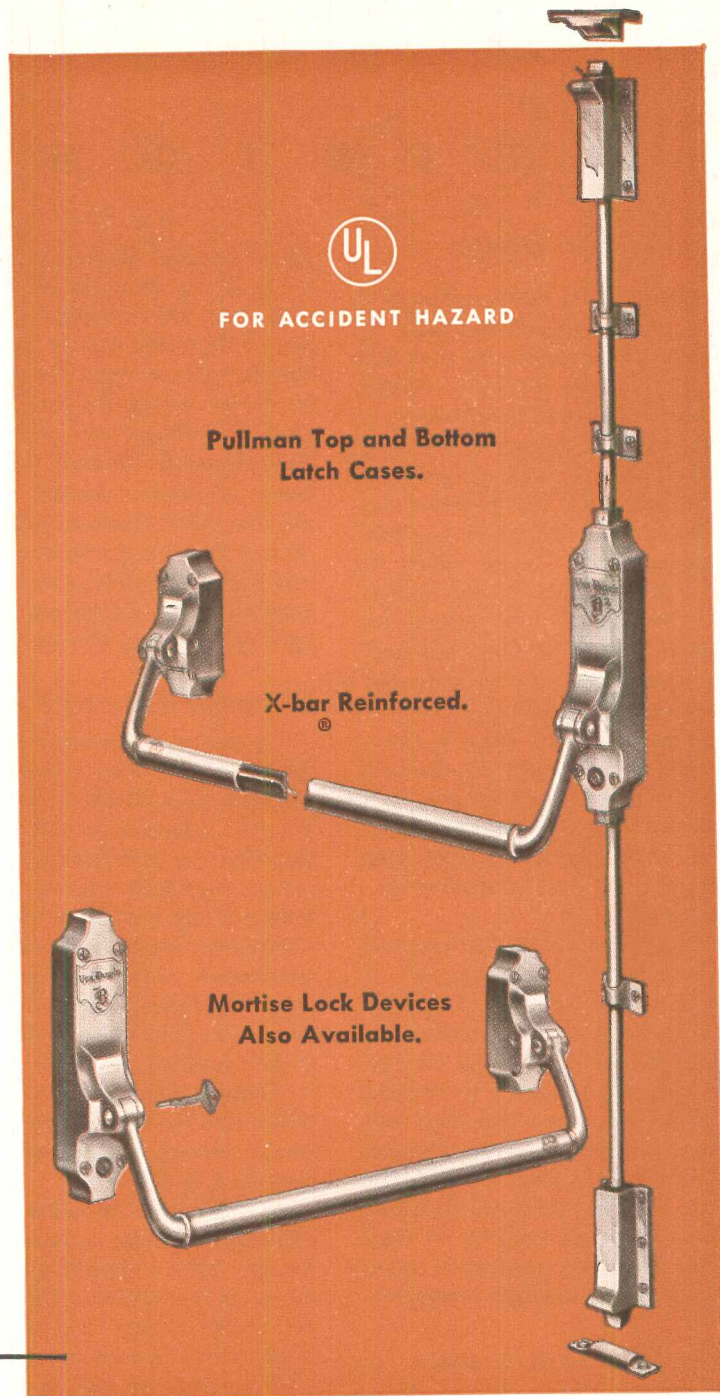
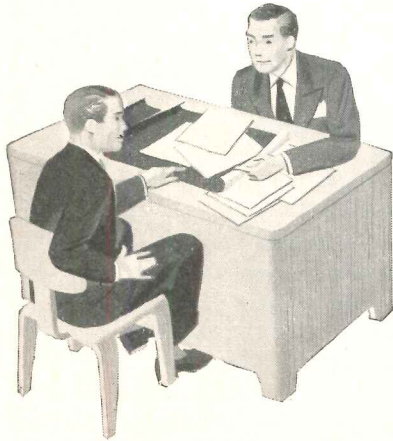
run much longer than 10 years, however — up to 30 years in the case of post offices; and the actual programs to be undertaken therefore are sure to run well in excess of the minimum estimate. Each GSA regional director has been asked to submit his recommendations for projects to be included in the initial list to be sent to the Budget Bureau and Congressional committees for approval. Under the law approval of Congress itself is not required; and so even with Congress in recess the necessary approval from Congressional committees could be secured. GSA and the Post Office Department would then be empowered to commission architects and contract with builders.

There are 5336 projects on GSA's "eligible" list, but only a fraction was expected to be on the initial list.

More news on page 24; additional Washington topics on page 38

**Built to last  
a lifetime —  
Von Duprin B<sup>2</sup>**

- Accepted as the finest available vertical rod type exit device, incorporating every known refinement.
- Completely drop-forged device of architectural bronze with interior parts of bearing metal to assure lifetime quality, never-failing performance and harmonious design.
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O P I N I O N

PLANNING AT ASPEN

THE FOURTH ASPEN DESIGN CONFERENCE closed at noon on June 29 in a flurry of enthusiasm. Not counting the week end taken out, it lasted five days. During those days a number of the participants expressed disappointments of one kind or another, once or twice fiercely from the floor, but in the end everyone was full of hope and formal plans were laid for continuing the Aspen affairs as annual "International Design Conferences." Resolutions were passed, organization discussed. Regional representatives were elected. They are supposed now to develop schemes for a full organizational participation. Thus if everything works out the Design Conferences at Aspen, Colorado, will be put on a permanent footing. As everyone knows, they have owed their existence up to now to the generosity and interest of Mr. Walter Paepcke.

Mr. Paepcke's attitude has been one of working behind the scenes and of generous non-interference. This has meant that each year the planning committee has been a different one, and has had, so to speak, to start from scratch. This has meant in turn that there was not always too much relation between the theme of one Conference and that of the next, and that mechanical details were not always so smooth as they might be. The new organization hopes among other things to supply continuity.

*Taste and the Taste-makers*

This year's committee of Carl Maas, Gyorgy Kepes and Will Burtin aimed a jolt at industrial designers and by the evidence succeeded very well. During the first three days a series of social scientists, editors and operators in other fields opened up the serious question of whether a designer knew what his customers wanted, and how he could find out. Shocked at the outset when they were told by one speaker that they were "taste-makers," and looking at such an appellation as an Old West fighting word, by Tuesday the designers were enjoying it. One can imagine a taste-makers' club being formed any day.

In the last two days things were a little more philosophical. The big questions came up. What is the public taste?

Have the taste-makers a right to make it? Is it the taste-makers' job not to make taste but to pander to it? What can we do to educate the public not to be indifferent to visual stimuli, let alone to elevate the public taste, if it needs elevating? Should the job be, as Saul Bass suggested, oblivious to all the evidence of great historical periods, to give the public a maximized freedom of choice? In such discussions city planning slipped in and commercial design slunk out. Even the bad planning of the town of Aspen was surveyed.

*Comment from the Wings*

The makers of the new Aspen have a good many questions to answer and listing them may afford a critique of the Fourth Conference as well. Aspen is a long way from most centers, expensive to get to, moderately expensive to stay at, wonderful but not cheap. Therefore the Conference must seem intellectually worth while. Aspen is competitive. If a speaker is boring, you can look out the tent at the horses you might be riding, at the mountain you might be climbing or photographing or painting. You can almost hear the trout jumping out of the nearby stream. The Conference had better not be dull.

A conference is a conference, not a Chataqua. The day has passed, even in America, when a big wheel can wheel in, deliver an unprepared address and roll out, hardly having seen the conferees at all. No one is good enough to affront a serious audience with unprepared remarks, and those who speak most badly *ex tempore* are those who most like to do so. There should be many big wheels at Aspen but their job is to stay there for the Conference and participate like anyone else, be available in the lounges of the Hotel Jerome, and so on. Anyone who fancies he is too busy to stay that long should not come at all. He can be replaced by someone who no longer kids himself that flying in, spouting, and flying out is impressive or satisfactory.

*What's a Conference?*

A conference means that everyone ought to participate. This means perhaps no set speeches, preferably papers available at the beginning to be read

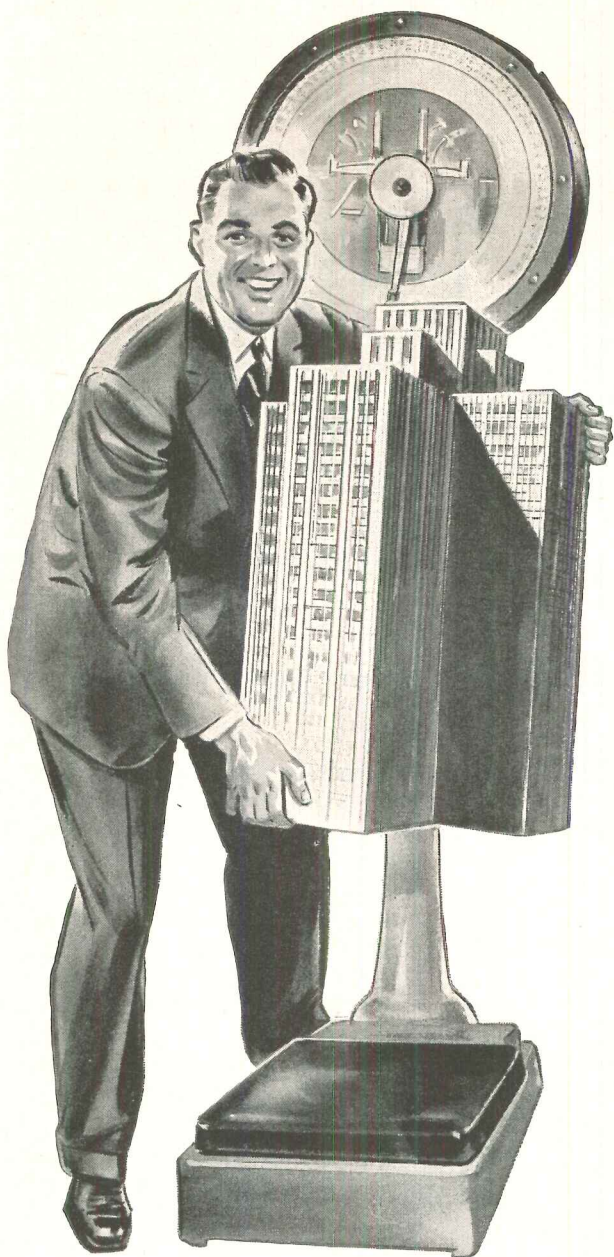
outside the meetings, and then discussed in small groups. A good conference requires that the conferees have confidence in each other. This means that a given group ought to stay together for a long time, perhaps two days, including evening refreshments. The Corning Conference of 1951, on Creating an Industrial Civilization, can supply all the clues to what Aspen might be and was not.

A conference needs a clarity of purpose and some common bond among conferees. This year the regional spread was good, the occupational spread related mostly to one of many possibilities. Of the 150 registered, nearly 70 were independent commercial artists and another 30 commercial artists attached to companies. Twenty came from universities, museums, art schools and other educational places. Seventeen were business executives but very few of these came from policy management. Seven were architects, six from the press (but significantly most of these were local), three were students. There was only one well known painter, and he was not around much. Thus the conferees, or one should really call them the audience, were primarily industrial and commercial designers.

*Whither Aspen?*

Aspen can go on acting chiefly as a workshop for industrial designers if it wants to. If it follows this course it can learn a great deal from the program provided this year because it is of the utmost importance that the artists of commerce stop talking to each other and start listening to what rank outsiders, such as psychologists, sociologists and even philosophers have to say. But the location of Aspen, the existence of the music there, and the opportunities it provides for the other arts suggest that a higher aim might be in order, a conference like the Corning one which would bring in several outstanding artists, critics, educators, architects, policy-makers from the business world, labor leaders and students, and probably several outstanding men of politics. Such a conference could be of enormous help to our country. Whether it later became "international" could be left to the brilliance of its success. A conference is not international because one Brazilian, one Australian and five Canadians happen by. If Aspen's Design Conference could become broader-gaged, a combination of Salzburg and a manifestoless CIAM, it would be a good thing all around.

— John Ely Burchard



# How to reduce multi-story building weight

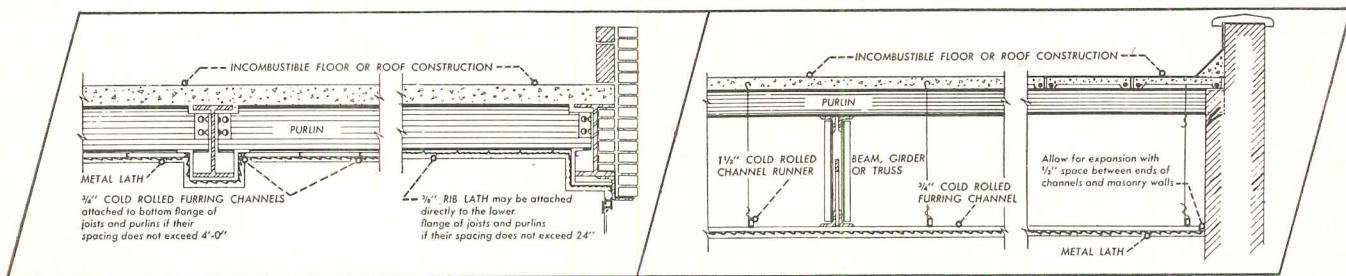
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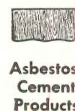
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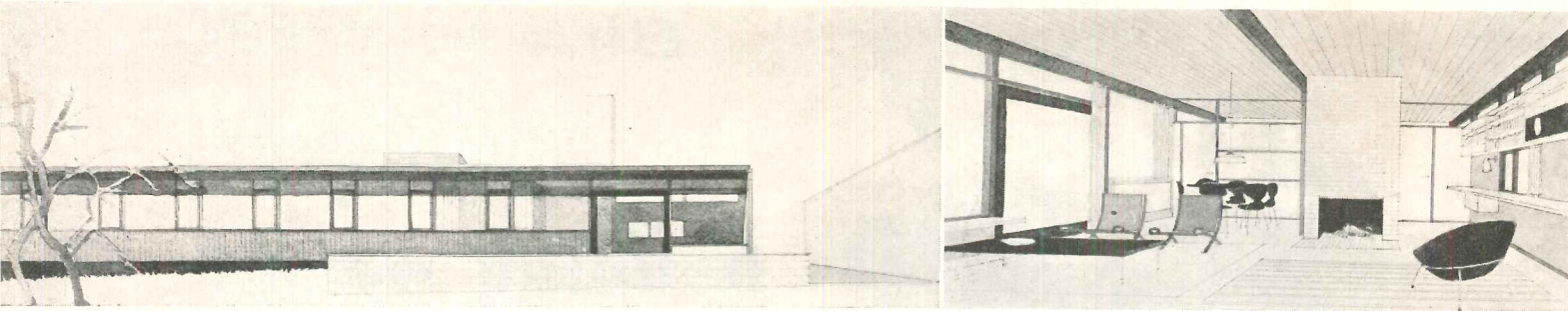


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NEWS FROM CANADA by John Caulfield Smith



"International Championship" went to Danish architect Knud Peter Harboe; jury noted the "essential simplicity, coherent form, impeccable taste"

AWARDS MADE IN "CANADIAN HOME OF TOMORROW" COMPETITION

THE \$5000 INTERNATIONAL AWARD in a world-wide search for the "Canadian Home of Tomorrow" went to Danish architect Knud Peter Harboe. Mr. Harboe's entry in the McGill University International Calvert House Competition was chosen by a three-man jury for its "ordered, intimate, calm, even austere, interpretation of family life . . . providing completely for the individual interest of members of a family."

Geoffrey Hacker, of Winnipeg, Man., won the \$2500 Canadian award, and Scottish architect Gardner Ertman, Edinburgh, received the European award, also worth \$2500. (U. S. entries were not invited.)

In these three projects, the jury, according to its report, "recognized primarily a high degree of simplicity and style, a very human interpretation of the life of a family in both moral and spiritual terms which is given by the intimacy of the first, while in the other two it is given by a brave confidence with life outside, more lively in one and more calm in the other."

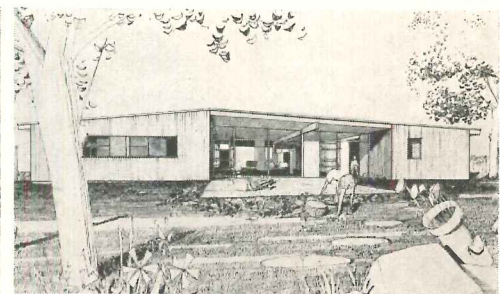
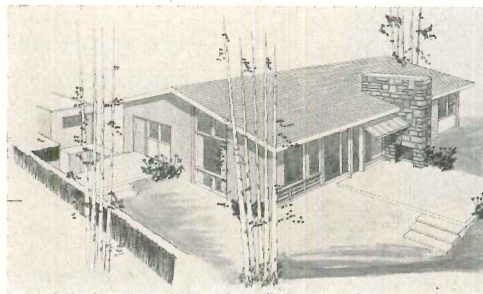
In addition, ten of the 650 entries got honorable mentions, two of which went to Canadians Victor Prus, of Brockville, Ont., and to the joint entry of George S. Abram and James B. Craig, both of Willowdale, Ont. Other honorable mentions were: Jean-Louis Lalonde, Paris; Hans Scasny, Vienna; Jelle Abma, Amsterdam; Eric Defty, England (now studying in the United States); Thomas Barron Gourlay, London; Richard S. Soderlind, Denmark; Geoffrey Michael Fullman, Berkshire, England; and John

Donald Cordwell, England (also studying in the United States).

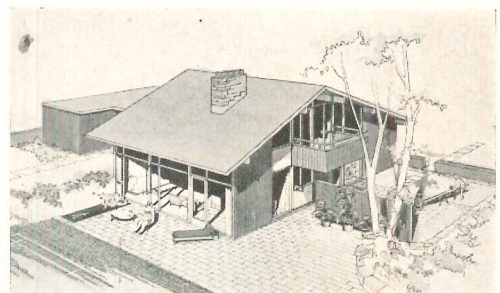
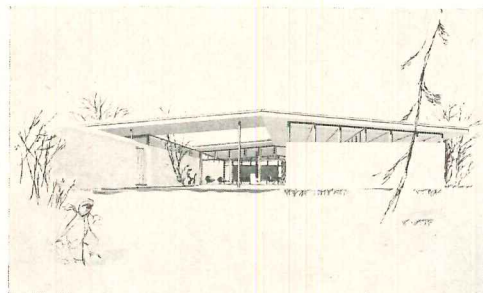
Members of the jury were Gio Ponti, Italian architect, designer and editor; John Bland, director of McGill University's School of Architecture; and Eric Arthur, professor at the School of Architecture, University of Toronto. Mr. Ponti acted as spokesman for the

jury when he said, "Having regard to the evolving character of architecture, the jury considered the Calvert Competition and the cultural internationality it portrays, a popular episode that could have very important results. No house among those submitted could be said to be the Canadian House of Tomorrow,

(Continued on page 30)



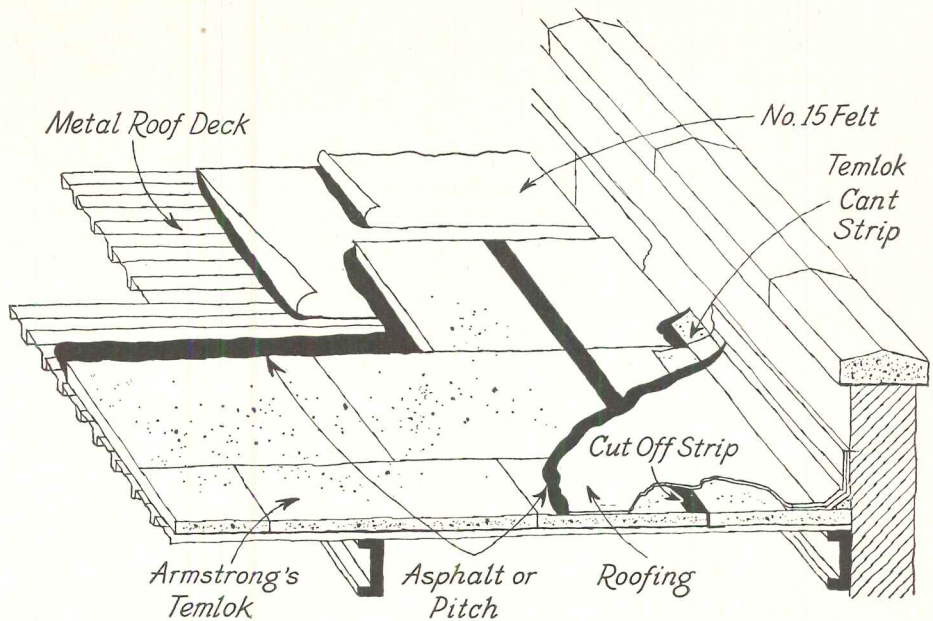
Canadian Award (left) was given to Geoffrey E. Hacker, Winnipeg, for "special grace in the simplicity of the pleasant and ingenious plan." Scottish architect Gardner Ertman won the European Award "because of the tasteful development of the expression of a quiet family life"



Two of the ten honorable mentions awarded went to Canadian architects. At left: entry designed by Victor Prus, Brockville, Ont.; at right: one-and-a-half story house entered jointly by George S. Abram and James B. Craig, both of Willowdale, Ont.

# How would you insulate this printing plant roof?

**PROBLEM:** An air-conditioned, one-story lithographing plant is to be constructed for an outdoor design temperature of minus 20° F. Operating temperatures in the plant will range between 75° and 80°, with a relative humidity of 46% to 48%. In the paper stock room, the humidity will run from 5% to 8% higher. For a flat metal roof deck, completely exposed to the building's interior, what insulation would you choose?



**SOLUTION:** With a maximum inside temperature of 80° and maximum humidity of 56%, a one-inch thickness of Armstrong's Temlok would be adequate to prevent moisture condensation under the roof deck. However, to provide a safety factor in the event of exceptionally cold weather, and to promote more economical operation of the air-conditioning system, many architects would specify 1½ inches.

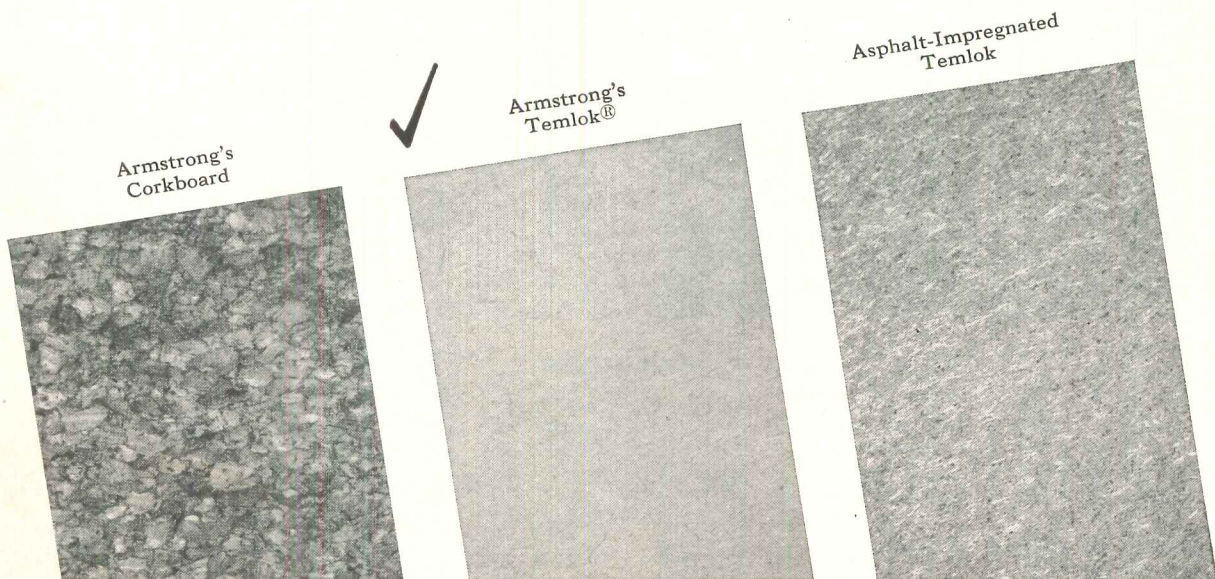
This amount of Temlok, applied over a vapor seal in accordance with Armstrong's specifications, gives the roof a U-factor of 0.18.

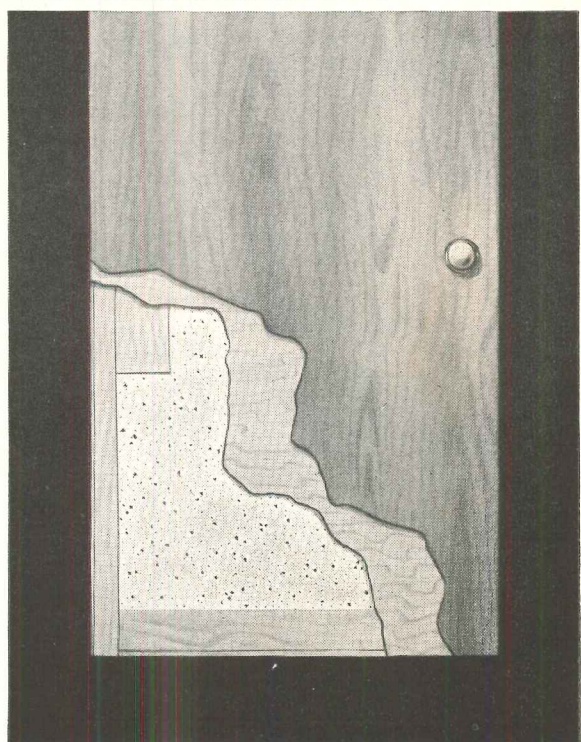
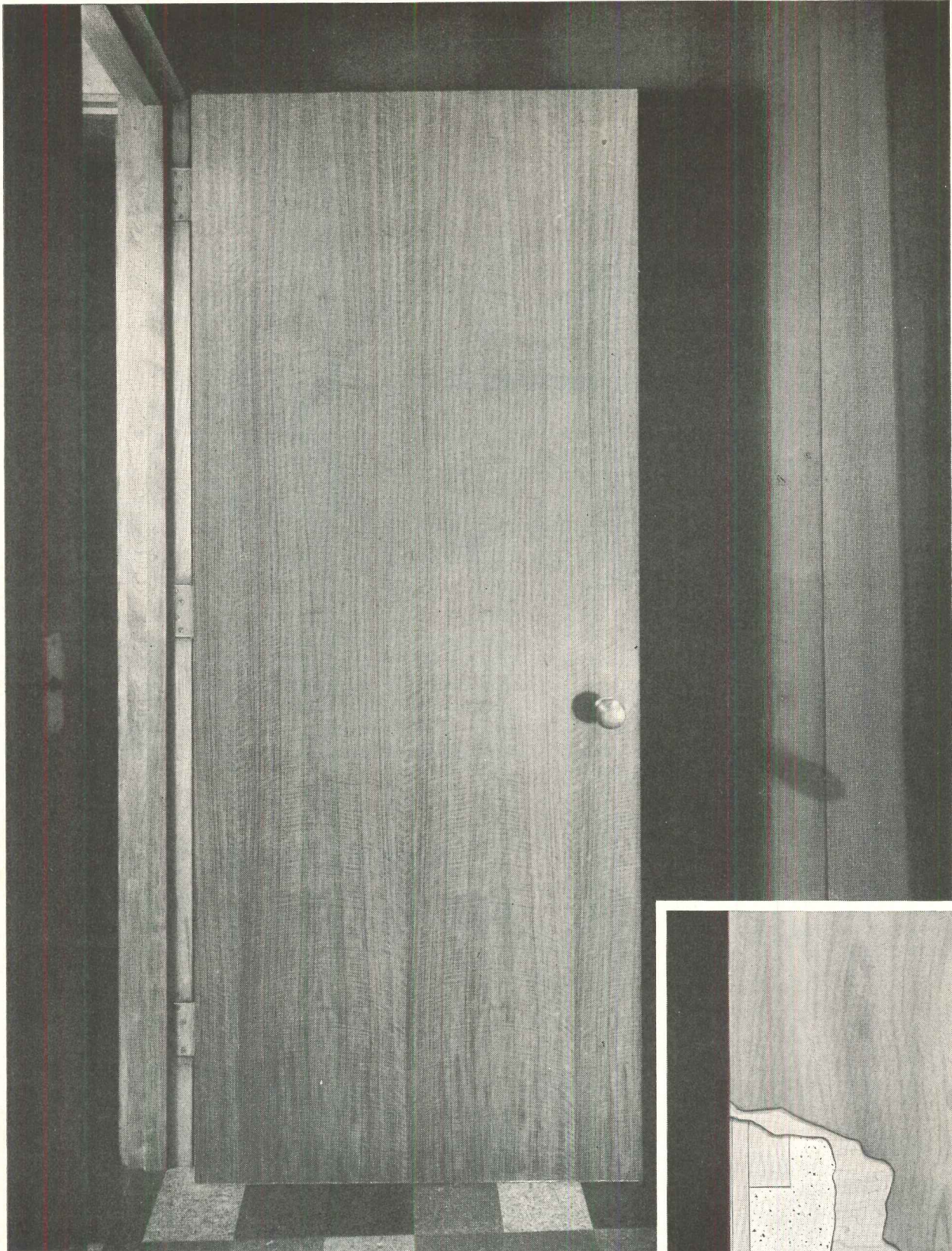
Made from pine fibers, Temlok is a strong, lightweight board with high insulating efficiency. Precision-cut edges insure snug joints, providing a firm, level base for roofing felts.

If service conditions are more severe, you may want to specify Armstrong's Corkboard or Asphalt-Impregnated Temlok. Get full details on all three materials by calling your local Armstrong office or by writing to the Armstrong Cork Company, 3808 Rock Street, Lancaster, Pennsylvania.



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**STANDARD DOOR SIZES**

HEIGHT:	6'6"	6'8"	7'0"
	WIDTH	WIDTH	WIDTH
1 3/4" THICKNESS (Doors with light and louver openings available on order)	2'0"	2'0"	2'0"
	2'2"	2'2"	2'4"
	2'4"	2'4"	2'6"
	2'6"	2'6"	2'8"
		2'8"	3'0"
	3'0"	3'6"	
			4'0"



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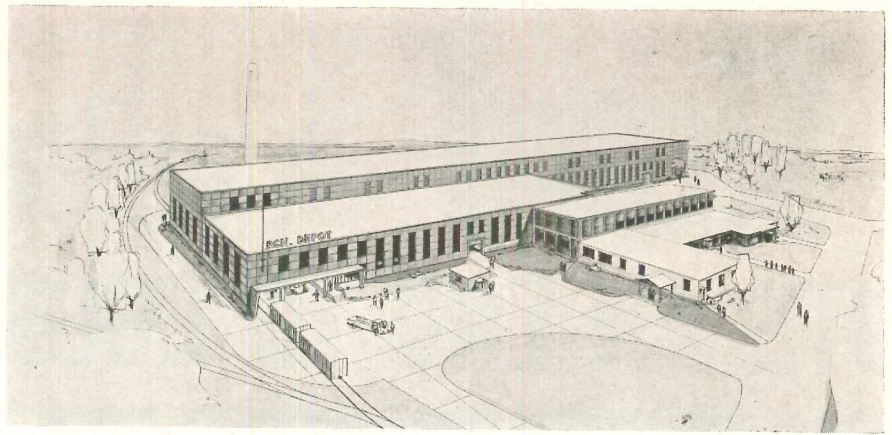
CITY..... STATE.....

## THE RECORD REPORTS

### CANADA

(Continued from page 26)

but many contain ideas that can be exceedingly influential. Many of the projects have a long, low appearance which is somehow in the nature of much of the Canadian landscape. Many of the projects display a fullness, sweetness and calmness which recall poetic notions



Plans for Royal Canadian Navy Armament Depot, now under construction at Longueuil, Que., call for reinforced concrete foundation and prestressed concrete frame with precast concrete sandwich walls. Architect: Grattan D. Thompson, Montreal

cherished by people who derive their moral and spiritual traditions from noble origins, at the same time British and Latin."

Prize money totaling \$12,000 was contributed by Calvert Distillers Ltd., which co-sponsored the competition with the collaboration of McGill University.

### NATIONAL BUILDING CODE NOW READY FOR SERVICE

The National Research Council has announced the completion of a new National Building Code for Canada. While the new document is essentially a revision of the 1941 code, it includes some entirely new material.

The council believes that the new code's section on climate is an innovation in building codes. This section was the result of two years' research by the council's Division of Building Research, and is composed in part of 12 climatological maps showing such factors as rainfall, snow load and wind velocities in various parts of the country. (Another outgrowth of this research was the publication of a climatological atlas for Canada, containing maps and diagrams showing the average climate for all major Canadian cities; this is also available from the National Research Council.)

Another addition to the past code was the inclusion of a section putting forth requirements for the planning of specific building types, such as hotels or restaurants, regardless of the type of construction of materials used.

Still another new section deals with construction safety measures and dis-

(Continued on page 32)

*New Life*

### LIBRARY furniture should inspire!

Worn-out or mediocre designs tend to create a barrier to most people. New Life library furniture has the touch of freshness and perpetual youth that is so important in a library.

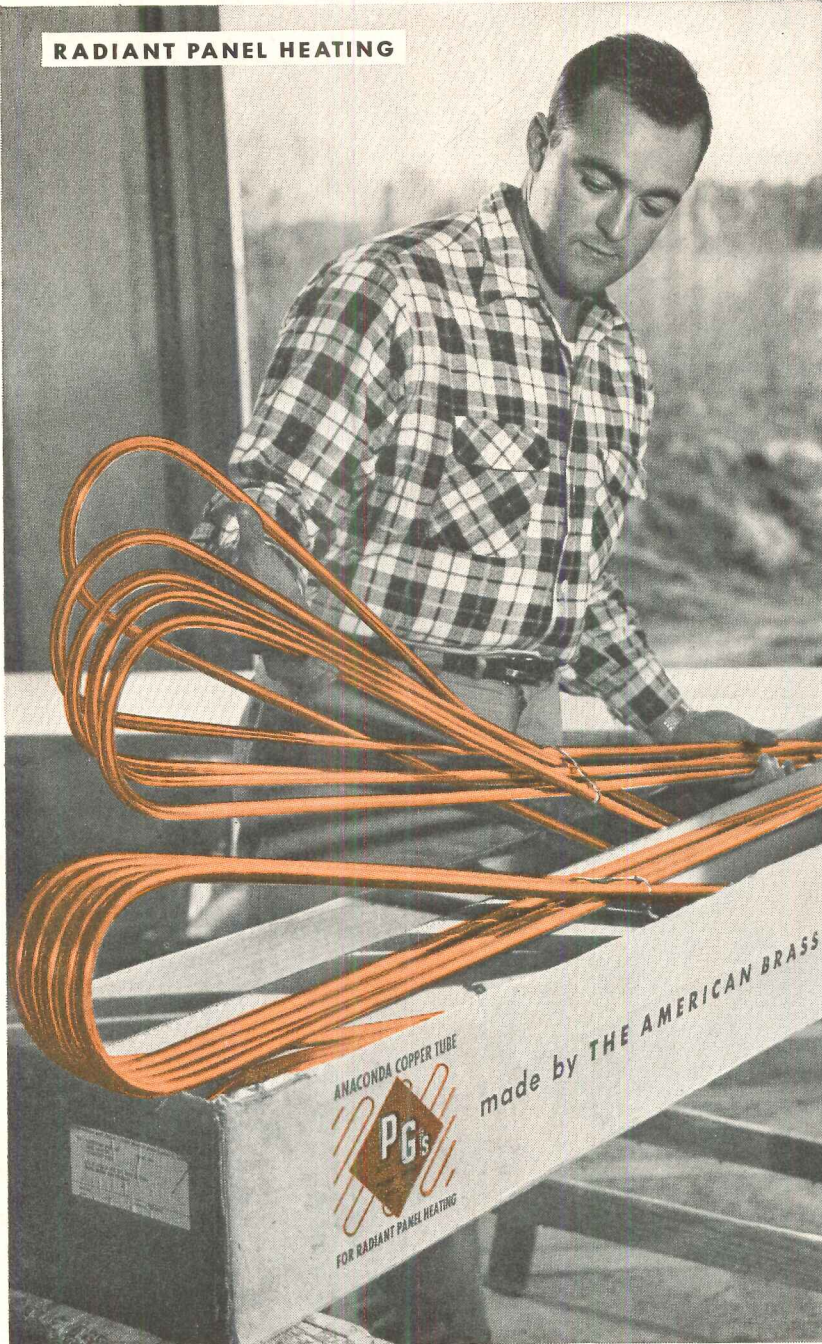
JOHN E. SJÖSTRÖM COMPANY  
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*New Life*

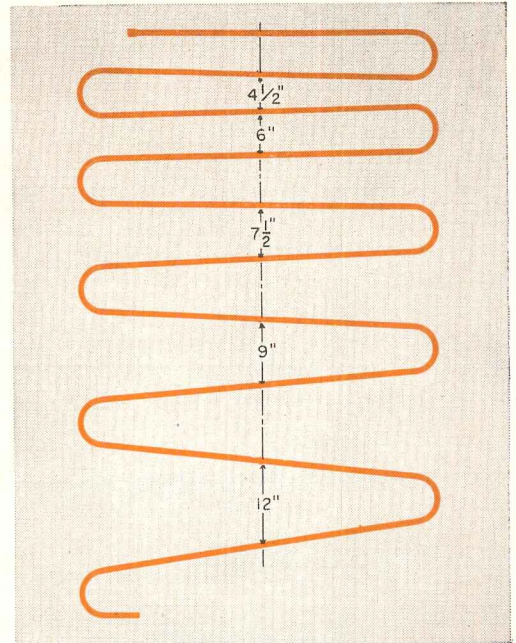


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3/8" PG's contain 50 feet of 3/8" nomi-

nal (1/2" O.D. actual) Type L ANACONDA Copper Tube and come *pre-formed* to common 6" c-c spacing. You can contract or extend them easily by hand to meet all desired spacing requirements within a range of 4 1/2" to 12" c-c.

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easier, faster—and better. For more information about this revolutionary new development in panel piping, write for Publication C-6. *The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.*

\*Patent Applied For

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cusses precautions for making construction safe for both workers and public.

Other parts of the code cover such subjects as administrative requirements, structural design, specifications, a plumbing code, and general services.

The new code was set up in 15 different pamphlets, an arrangement which the council hopes will facilitate constant revision and improvement.

The code is available now from the National Research Council, Ottawa 2. Each of the 15 pamphlets can be purchased separately at \$.25 a copy, or the complete set, in a binder, for \$3.00. As yet the code has been published only in English, but work is underway on a French translation, which the council hopes will be ready before the end of the year.



Two new projects planned for Toronto — above: apartment building, for R. E. Cook Ltd., is raised on stilts to permit parking under entire building; below: glass and steel tower for Anglo-Canadian Fire & General Insurance Co. offices has roof garden opening off of the executive offices. Architect is James A. Murray, Toronto



**ENGINEERS OPPOSED TO UNIONIZATION ATTEMPTS**

The Dominion Council of Professional Engineers, representing 30,000 registered engineers in Canada, concluded its recent annual meeting in Toronto by declaring their strong opposition to any trend toward unionization of engineers in both Canada and the United States. The council feels that the professional engineer, by owing allegiance to any organization other than his professional group, cannot properly discharge his responsibility to the community.

A special committee was appointed by the council to work on the problem of bringing about unity within the Canadian engineering profession. The com-

(Continued on page 36)

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be sure  
to specify**

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**Chair  
Carriers"**



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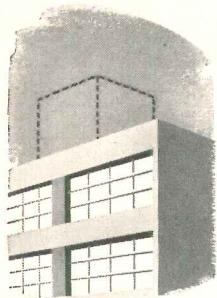
PLUMBING AND DRAINAGE SPECIALTIES

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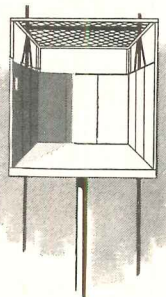
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Rotary Oildraulic Elevators have these architectural and operating advantages



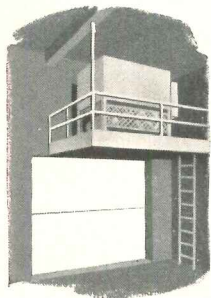
#### No costly, unsightly penthouse

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



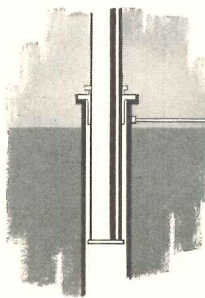
#### Lighter shaftway structure

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



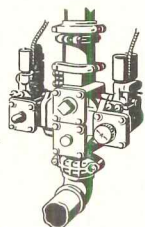
#### Flexibility in power unit location

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



#### Low operating and maintenance cost

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



#### PATENTED OILDRAULIC CONTROLLER guarantees smooth starts, accurate landings

The revolutionary Rota-Flow oil-hydraulic power system gives velvet-smooth starts and cushioned stops. Oildraulic automatic floor leveling positions the elevator car to each landing with exactness . . .  $\frac{1}{4}$ " accuracy guaranteed. The new Oildraulic Controller is a very remarkable device that

handles the functions of seven separate control valves . . . simplifies adjustments and maintenance.

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



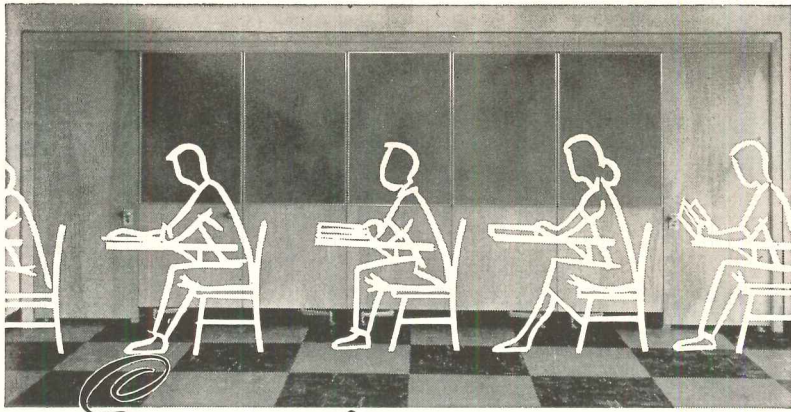
## OILDRAULIC®

# Freight Elevators

THE MODERN ELEVATOR FOR MODERN BUILDINGS

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

SEE OUR FILE IN SWEET'S—For catalog and complete architectural data, write  
ROTARY LIFT CO., 1110 Kentucky, Memphis 2, Tenn.



# Examination SHOWS WHO IS BEST



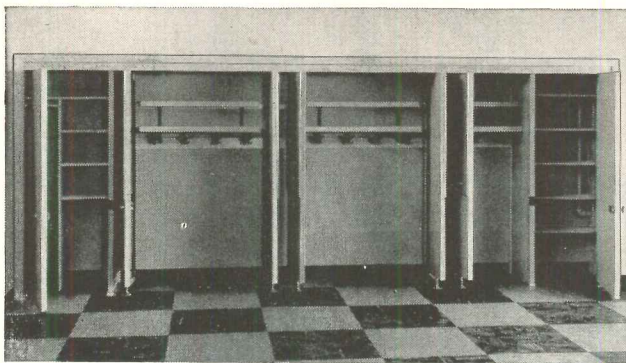
**classroom wardrobes**  
*"The Safe Wardrobe Door"*  
*has the right answers*

EMCO has studied the wardrobe problem harder because wardrobes are their sole business. That's why, of the many types on the market today, EMCO is now recognized by many school officials and leading architects as the quality wardrobe. This is why we say...

### Examine EMCO This Way Or Anyway

- SAFER!** Nothing to trip children, no overhead weight to fall on them. Fingers cannot be pinched or crushed in opening doors.
- SPACE SAVING!** Because doors recede—no extra floor and wall space needed for wide swinging doors.
- BETTER VENTILATION** ... from properly spaced hooks, and from space under doors which permits proper air circulation.
- SMOOTH, QUIET DOOR OPERATION** ... and hardware is adjustable for keeping doors in alignment, even if building settles.
- ATTRACTIVE CUSTOM UNITS** make it easy to plan best use of space. EMCO Models are available in both receding and pivoted type doors—multiple operated or individually operated. Matching teachers' closets, supply closets, bookcases are optional.
- INSTALLATION** by factory trained representatives insures satisfaction.

Patent No's. 2,149,575 & 2,617,155



WRITE for complete specifications of EMCO schoolroom wardrobes, list of EMCO installations, and name of nearest representative.

Installation shown, QUINTON HEIGHTS SCHOOL, Topeka, Kansas  
 W. R. Godwin, Supt. of Schools  
 Carl G. Ossmann & Assoc., Architects

**EQUIPMENT MANUFACTURING COMPANY, INC.**  
 1400-AR SPRUCE ST., KANSAS CITY, MO.

## THE RECORD REPORTS

### CANADA

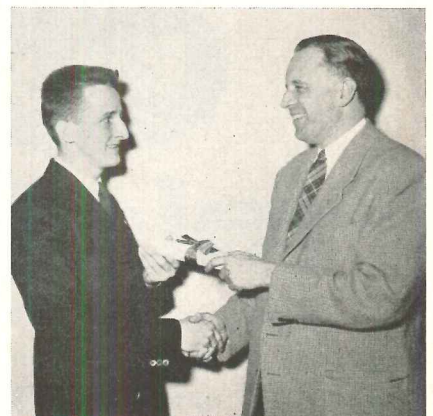
(Continued from page 32)

mittee will discuss a plan for confederation with the Chemical Institute of Canada, the Engineering Institute of Canada, and the Canadian Institute of Mining and Metallurgy.

Other business at the meeting included a report to the council that a uniform syllabus of examinations for the registering of professional engineers is now in force across Canada, and that a free movement of engineers now exists across the country in most cases with their having to pay an additional provincial fee in order to practice.

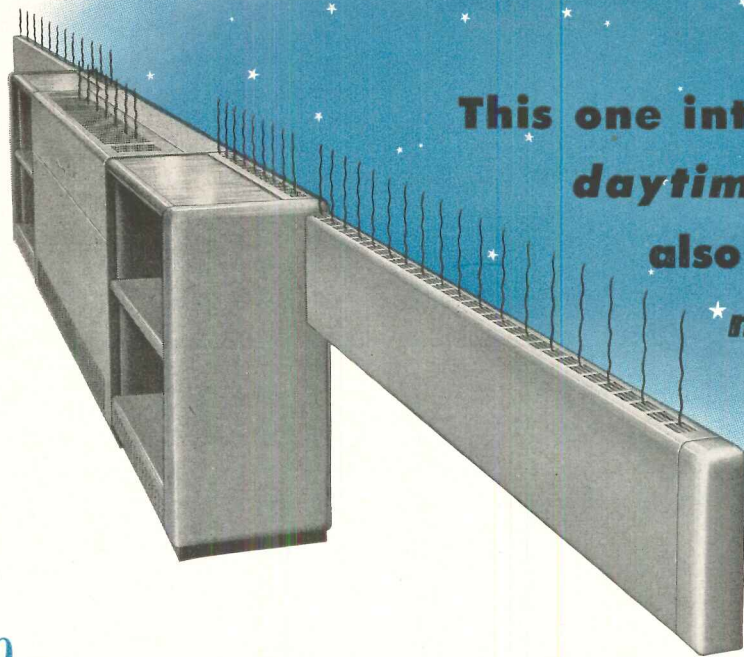


Recent activities of the Ontario Association of Architects included, above, laying the "cornerstone" of the organization's nearly complete new headquarters building; president Alvin R. Prack did the honors while master of ceremonies George D. Gibson looked on. Below: Eugene Turney, apprentice steamfitter, received the O.A.A.'s annual Craftsmanship Award; John Caulfield Smith made the presentation



(More news on page 38)

# Buy One and Get Two!



This one integrated system for daytime classroom comfort also maintains satisfactory nighttime temperatures without other investment!

It is generally agreed that classroom temperatures should be maintained at about 55° overnight and during periods of shut-down in cold weather. This permits quick recovery to comfort conditions and more stable control during the first hours of the next school day.

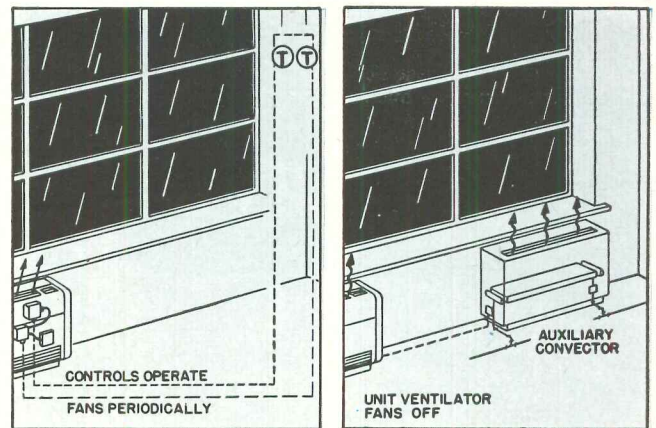
Cutting off the heat altogether, and letting the classroom temperature drop to 40° or 45°, makes the recovery difficult—particularly in restoring heat to the floor slab, walls, desks, etc.—and leads to morning room-temperature fluctuations, possible overheating, and abnormal bodily heat losses to surrounding objects.

In designing unit ventilator systems to maintain an optimum overnight temperature, either of two methods have been employed: a) operating the units as heaters (recirculation only) under thermostat control; or b) installing supplementary gravity heating with additional piping and controls.

Extensive field tests have proved that when Wind-o-line Radiation is integrated with Nesbitt Syncretizers, the combined gravity heating capacity is ample to maintain overnight temperatures of 55° in zero weather. Hence this one system that sets the standard for daytime performance eliminates the cost of separate provision in each room for maintaining overnight temperatures, and simplifies—for greater economy—the control of overnight temperatures from one location in the building.

Get more for your school building dollar . . . go NESBITT.

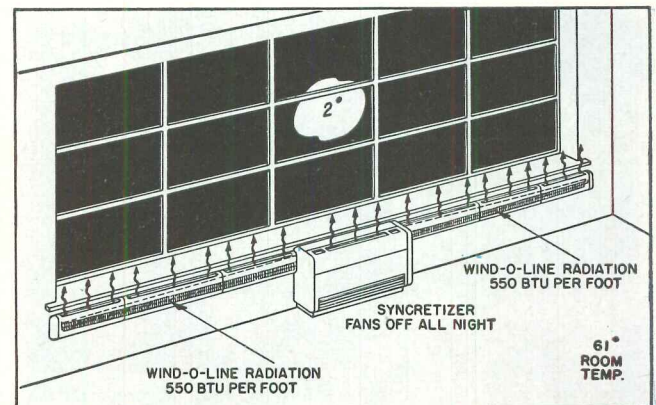
Send for Engineering Report SL-6.



Added controls operate unit fans periodically through the night.

Convactor provides supplementary heat, but is not used during day.

ABOVE: THE OLD WAYS—BELOW: THE NESBITT WAY



Gravity heat of Syncretizer and Wind-o-line maintains satisfactory overnight temperatures—without additional equipment or controls.

## NESBITT *Syncretizer* WITH WIND·O·LINE

MADE AND SOLD BY JOHN J. NESBITT, INC., PHILADELPHIA 36, PA., SOLD ALSO BY AMERICAN BLOWER CORPORATION.

MILITARY ISSUES FIRST OF NEW SERIES OF "UNIFIED" CONSTRUCTION STANDARDS

THE NEW DEFENSE DEPARTMENT directive outlining standards of construction for permanent-type barracks does not change building practices of the military services appreciably. The important thing it does do is bring the three services together under an "um-

rella" of construction criteria for one building type, the first in a series of directives that can be expected eventually to include bachelor officers' quarters; air conditioning for hospitals; warehouses, etc.

With summer issuance of this first

directive in the long-awaited series, Fred Poorman, chief of the technical division under Rear Admiral Joseph F. Jelley Jr., director of construction for the Defense Department, said at least 95 per cent of present construction method in the three services would remain unchanged. The new order merely provides a means of control to assure the voluntary coöperation of the armed services in the overall plan for a unified construction system.

One Living Standard

Key to the directive's significance lies to a large extent in paragraph IV dealing with living space arrangement in barracks. As far as barracks design was concerned, this was a difficult point for agreement by all three branches of the military. Item IV, now in effect, reads:

"Except as herein authorized, sleeping facilities will be provided in squad rooms. Partial partitions may be utilized together with lockers to provide cubicles for greater privacy within the squad rooms. Toilet facilities (outlined in Sec. VI), including lavatories, will be grouped

(Continued on page 310)

HILL-BURTON COVERAGE BROADENED IN NEW LAW

PRESIDENT EISENHOWER signed the bill broadening coverage of the Hill-Burton Hospital Construction Act to include facilities for the chronically ill, aged and physically disabled. The law authorizes Federal funds totaling \$60 million annually for each of the next three years for the construction of nursing homes, rehabilitation facilities, diagnostic or treatment centers, and hospitals for the chronically ill; it also authorizes funds for a survey of state needs for these facilities. Appropriation was to come.

An amount of \$20 million is authorized for public and other nonprofit diagnostic treatment centers; \$20 million for public and other nonprofit hospitals for the chronically ill; \$10 million for public and nonprofit rehabilitation facilities, and \$10 million for public and nonprofit nursing homes. Two million dollars can go into the state surveys.

The law stipulates that no state can receive less than \$100,000 for its diagnostic centers or hospitals for the chronically ill, nor less than \$50,000 in grants for rehabilitation centers or nursing homes.

**NOW**...for the first time in the history of the building industry—a two-hour fire-rated acoustical ceiling.

Tested and approved by Underwriters' Laboratory

**FYRATE SYSTEMS**

A new and highly efficient method of combining 2-hour fire protection with mechanically supported acoustical tile ceilings—another step forward in safety and economy for modern building construction.

*An Important Plus:* The complete assembly provides, in addition to 2-hour fire-rated protection, thermal insulation with vapor barrier, and exceptionally high acoustical properties.

Write for complete data on tests.

**FYRATE, INC.**  
832 W. Eastman St.  
Chicago 12, Ill.  
or  
1909 First Ave., So.  
Birmingham, Ala.

**FYRATE, Inc.** Please send me complete information on U.L. tests of FYRATE.

NAME \_\_\_\_\_

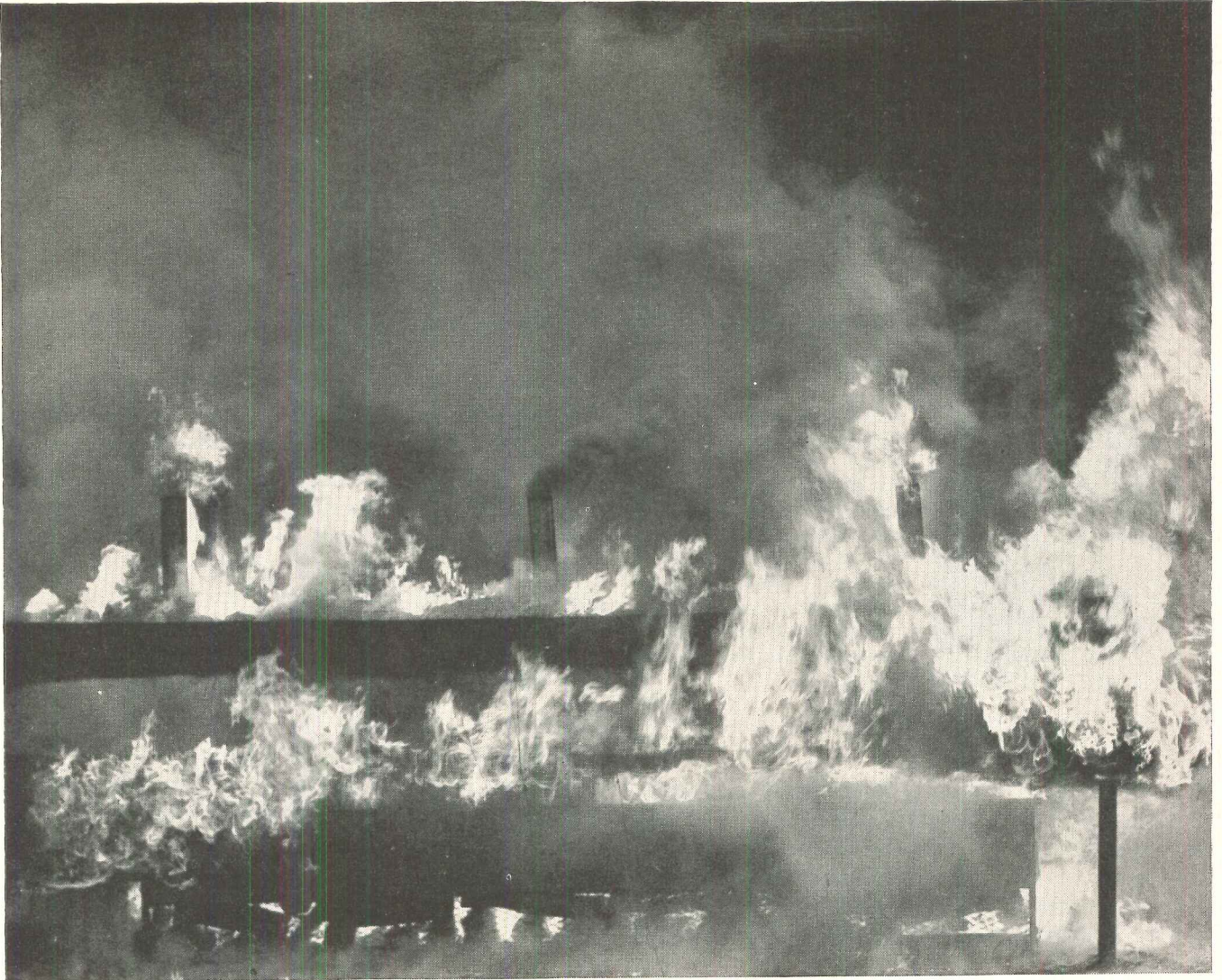
COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_



# B. F. Goodrich announces



## Koroseal now used in roofing helps prevent fires like this

*Koroseal is part of new Lexsuco roof construction*

A NEW type of construction cuts out a fire hazard in flat roofs. Koroseal flexible material is used to replace the conventional vapor barrier made up of asphalt and layers of asphalt-saturated felt.

Use of Koroseal eliminates burnable material between roof deck and insulation. It also prevents tar or asphalt from dripping down to feed fires below the roof. Other features of the new roof make it more rigid, help cut down buckling during a fire.

The Koroseal flexible material used in the Lexsuco roof construction is specially compounded for this use. It

is supplied in rolls for easy handling. It is laid out in strips and the laps are sealed. Full-scale fire tests have proved the advantages of this new type of roof over ordinary construction. Yet the complete roof costs no more, sometimes less than standard roofs. B. F. Goodrich does not make direct sales of Koroseal for roofing—you can get complete facts by writing Lexsuco, Inc., 4819 Lexington Ave., Cleveland 3, Ohio.

Koroseal flexible material is made in many forms: hard or soft, film or sheet, it can be molded or extruded, fabric can be coated with it. Koroseal may have many future uses in the con-

struction industry. It is waterproof; will not crack, chip or peel, is not affected by paint or by most chemicals and acids. If you have a problem Koroseal may help solve, write: *The B. F. Goodrich Company, Marietta, Ohio.*

Koroseal—T. M. Reg. U. S. Pat. Off.

*Koroseal*  
FLEXIBLE MATERIALS  
BY

**B.F. Goodrich**  
**INDUSTRIAL PRODUCTS**  
**DIVISION**

One of a series of papers prepared by leading authorities on air conditioning. The opinions and methods presented are those of the author and are not necessarily endorsed by the Du Pont Company. Reprints of this article, and others in the series, may be had free upon request.

# Where to Locate Air Conditioning Equipment

BY GUY B. PANERO

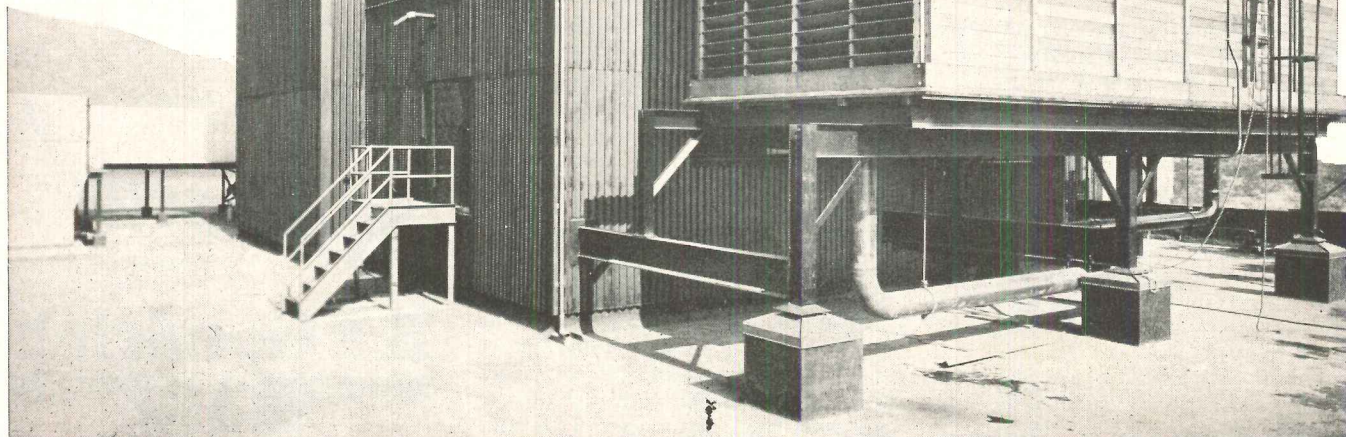


**Guy B. Panero** received his engineering education at Brooklyn Polytechnic Institute and did graduate work at Columbia University. His better-known multistory buildings include the Statler Hotel, Washington, D. C., Chrysler Building and Rockefeller Center, New York. He is consulting engineer on the proposed New York City Coliseum.

Modern designers are giving up the custom-bound practice of placing air conditioning equipment for a multistory building in the basement or sub-basement. Sometimes better results are obtained by putting equipment in a roof penthouse or in some low-rent space just below the roof. Two important factors favor roof-type installations.

(1) In high-rent areas, floors normally used for refrigeration equipment can be rented for commercial enterprises.

Circumstances dictated a roof-top spot as best for this department-store equipment, which is charged with a "Freon" refrigerant.



(2) Improvements in the design of compressors and accessory equipment, and automatic instead of manual operation, make roof-type installations feasible.

The system's total refrigerating capacity in tons will help determine whether it can be more economically installed in the basement or roof. This figure in turn indicates the size and weight of the equipment. Naturally, space requirements and electric power or steam services are equally important.

## VENTILATING MACHINERY ROOMS

Code provisions govern the ventilation necessary for machinery rooms. Ducts are required to bring a fresh air supply to a basement. But with a roof installation it is easy to place grilles or louvers for both intake and exhaust air.

Where evaporative condensers or cooling towers are

used on the roof at one end of the machine room, it is possible to admit air through an opening at the room's other end. When the fans operate, they will draw in fresh air across the entire room, effectively cooling the machinery space.

## PROBLEMS OF STRUCTURAL DESIGN

Heavier structural framing and supports are required for a large-capacity refrigerating system on a roof. New buildings usually have properly designed framing for good load distribution. Many existing buildings also have the necessary structural frame to carry this equipment load. Where the refrigerating load is 400 to 500 tons or more, centrifugal compressors are normally selected; for small, multistory buildings, a number of smaller reciprocating-type units may be used, allowing a less expensive structural arrangement.

Building design is important. Because of space limitations, a building with multiple setbacks and with a high air conditioning load cannot be as readily adapted to a roof installation as a building of more uniform floor area and less height.

All types of compressors and equipment will cause vibration which may be carried to rented space throughout the building unless machinery is properly isolated. In designing the system, some thought should be given to vibration-absorbing bases for the compressors. It may also be necessary to isolate some piping runs to prevent transmission of sound.

## POINTS TO CONSIDER

This summary of advantages and disadvantages of roof installations may prove helpful:

**Advantages—**(1) Equipment is on one floor. Operation of both system and building management can be conducted from offices on roof.

(2) Refrigeration room ventilation is simplified.

(3) Tower on roof simplifies condenser water problem.

(4) Equipment room may be combined with architectural treatment of tower.

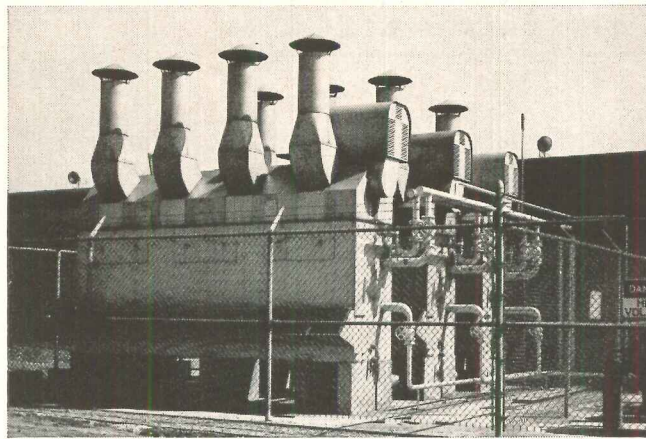
**Disadvantages—**(1) Increases structural and frame requirements in new and existing buildings.

(2) Roof installations are impossible in some existing buildings.

(3) Space conditions in existing buildings are often poor, making roof installation impractical.

## IT PAYS TO SPECIFY "FREON"\* REFRIGERANTS

Air conditioning installation requirements vary with the particular building in question. But of this you can be sure . . . wherever the equipment is located, it will run efficiently and smoothly with Du Pont "Freon" fluorinated hydrocarbon refrigerants.



Sometimes—as in the case of this food plant—refrigeration equipment is conveniently located alongside buildings at ground level.

By recommending machinery operated with "Freon" safe refrigerants, you serve the best interests of your clients. For Du Pont has conducted extensive research in the air conditioning field and has tailored these refrigerants to meet the requirements of modern units. There is a wide variety of units charged with "Freon" available—each prepared to give long, trouble-free service wherever it's installed.

## "FREON" REFRIGERANTS LABORATORY- CONTROLLED ALL THROUGH MANUFACTURE

At every step during production, the quality and uniformity of Du Pont "Freon" refrigerants are safeguarded by strict, scientific laboratory controls. These refrigerants are nonflammable, nonexplosive and virtually non-toxic. You'll find "Freon" refrigerants completely free from acids . . . so they won't corrode the machinery in your air conditioning system. And "Freon" refrigerants comply with building-code specifications everywhere.

All these factors enable you to feel confident that you are serving your client best when you recommend air conditioning equipment operated with Du Pont "Freon" refrigerants. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Div., Wilmington 98, Delaware.

# FREON

**SAFE REFRIGERANTS**

\*“Freon” is Du Pont’s registered trade-mark  
for its fluorinated hydrocarbon refrigerants

REG. U. S. PAT. OFF.

**BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY**

CONSTRUCTION COST INDEXES

Labor and Materials

U. S. average 1926-1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.		Brick	Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel	
	Brick	Frame		Brick and Concr.	Brick and Steel				Brick	Frame
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	96.9	98.5	97.5
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.4	240.0	189.3	189.9	180.6	180.8	177.5
1950	256.2	254.5	249.5	251.5	248.0	194.3	196.2	185.4	183.7	185.0
1951	273.2	271.3	263.7	265.2	262.2	212.8	214.6	204.2	202.8	205.0
1952	278.2	274.8	271.9	274.9	271.8	218.8	221.0	212.8	210.1	214.3
1953	281.3	277.2	281.0	286.0	282.0	223.3	224.6	221.3	221.8	223.0
Mar. 1954	284.2	278.4	291.4	297.5	294.1	219.8	219.5	223.1	224.7	224.8
Apr. 1954	283.1	277.1	290.8	297.0	293.5	218.7	218.2	222.5	224.3	224.4
May 1954	285.0	277.9	293.3	301.6	295.2	218.7	218.2	222.5	224.3	224.4
May 1954	% increase over 1939		% increase over 1939		% increase over 1939		% increase over 1939		% increase over 1939	
May 1954	130.8	127.0	124.4	126.1	126.9	153.4	162.6	134.0	130.3	137.0

ST. LOUIS

SAN FRANCISCO

1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1	243.1
1952	259.1	253.2	249.7	255.0	249.6	250.2	245.0	245.6	248.7	249.6
1953	263.4	256.4	259.0	267.6	259.2	255.2	257.2	256.6	261.6	259.7
Mar. 1954	262.1	256.0	260.5	269.8	262.4	254.5	246.3	261.3	268.9	263.9
Apr. 1954	263.5	256.3	263.3	272.9	265.0	253.6	244.6	262.2	270.4	264.8
May 1954	263.5	256.3	263.3	272.9	265.0	254.3	245.5	262.3	270.5	265.0
May 1954	% increase over 1939		% increase over 1939		% increase over 1939		% increase over 1939		% increase over 1939	
May 1954	139.1	139.5	121.8	127.8	122.7	140.8	147.2	123.4	121.9	127.5

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926-29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110  
 index for city B = 95  
 (both indexes must be for the same type of construction).  
 Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

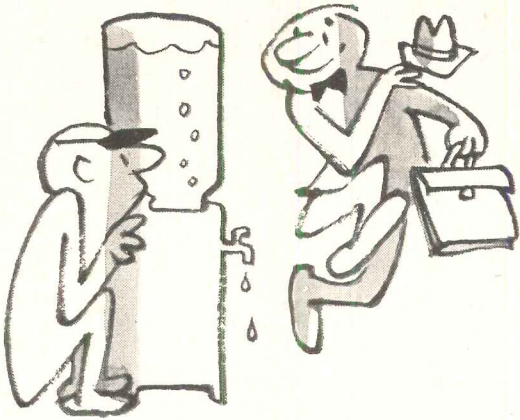
$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

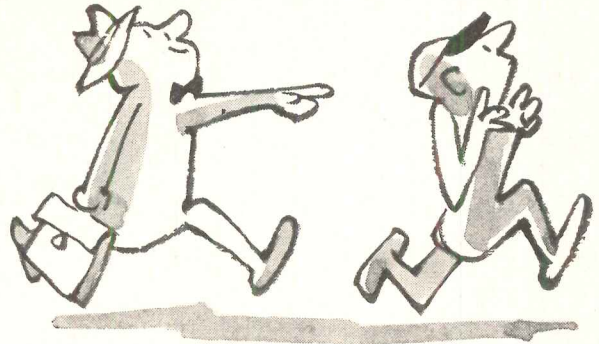
Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.

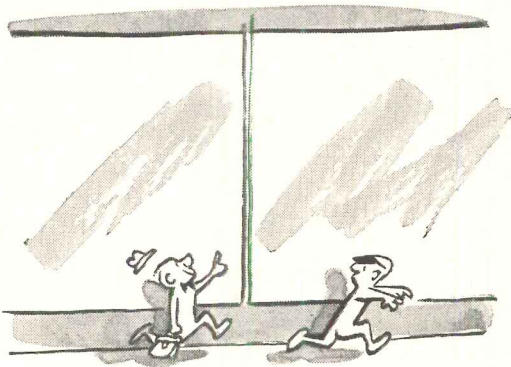
# SALESMAN CALLS



3. **NEEDS NO WATER.** If you're dubious about operating costs, for example, he'll be quick to tell you that the Carrier Weathermaker is available with an air-cooled condenser for areas where water is scarce or costly.



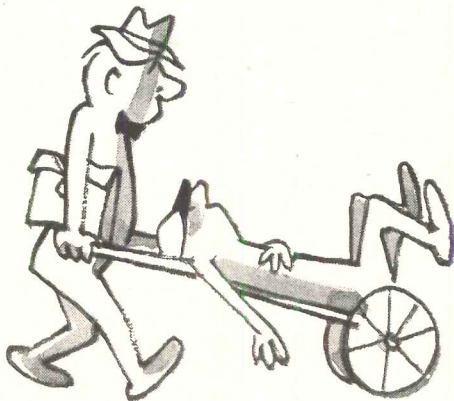
4. **FASTEST SELLING.** He'll probably point out that the Weathermaker is the fastest selling home air conditioner in the country. Builders from Boston to Dallas have chosen it for successful home developments.



7. **BIG WINDOWS.** In a Weathermaker Home, he'll probably say, you can group your windows for a feeling of space, better light, or a view. In the bedrooms, you can place horizontal windows high on the wall for privacy.



8. **USE SOLID WALLS.** He'll remind you that you don't need windows on every wall in a Weathermaker Home. You can use those walls for built-in storage, to allow more attractive furniture arrangement, to keep the sun out.



11. **CAN WE HELP?** When you start with a Carrier Weathermaker you are free to design a new kind of home. You can give your client more comfort, more convenience, more house for the money. We'll help in any way.



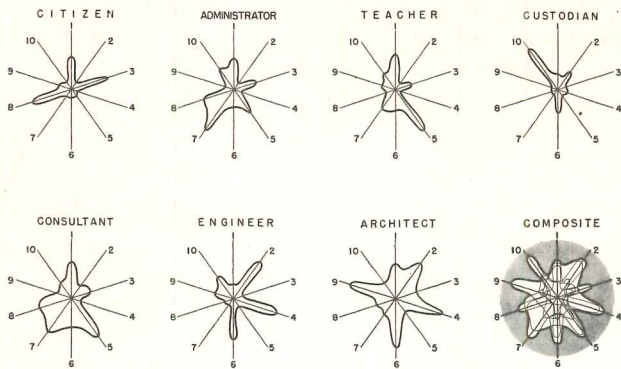
**Carrier**

air conditioning • refrigeration  
industrial heating

CARRIER CORPORATION, 312 S. Geddes Street, Syracuse, New York  
You've got me. Tell me all about the Carrier Weathermaker Home.

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Street \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

# REQUIRED READING



- 1 basic needs of pupil
- 2 structure and materials
- 3 community needs
- 4 construction costs
- 5 learning methods
- 6 environment
- 7 school administration
- 8 public relations
- 9 architectural esthetics
- 10 maintenance

## SCHOOL PLANNING & EDUCATION

*Toward Better School Design.* By William W. Caudill. F. W. Dodge Corp. (119 W. 40th St., New York, N. Y.) 1954. 8¾ by 11¼ in., 288 pp, illus. \$12.00.

BY STANTON LEGGETT, PH.D.

*Engelhardt, Engelhardt and Leggett,*  
*Educational Consultants*

Caudill has written a most stimulating book emphasizing a creative approach to better school buildings for America's children. The theme is his concept of trilateral planning involving a balance among three elements: education, environment and economy.

The book draws together and summarizes much material by the author that has hitherto been available only in scattered sources. The research work that is reported was carried on by Caudill and his associates at the Texas Engineering Experiment Station and bears largely upon the area of environment. The book draws liberally from the creative architectural practice of Caudill and others of his associates in illustrating the methods of a balanced, inquisitive approach to school planning. Throughout, the book is interwoven with a sincere and human philosophy that is characteristically Bill Caudill, a philosophy of people and the responsibilities of people to each other that cannot but inspire the reader. And he never loses sight of the children.

This is a book of "approach." It is necessarily one primarily concerned with the architects' part in that approach to planning, yet recognizing fully the team

characteristic of planning school buildings. The book is sparked, too, by a series of case studies covering some 91 school buildings throughout the country. Each case study shows the solution in a school building of a design problem, again illustrating not the solution itself so much as the wisdom of a creative method of attacking the problem.

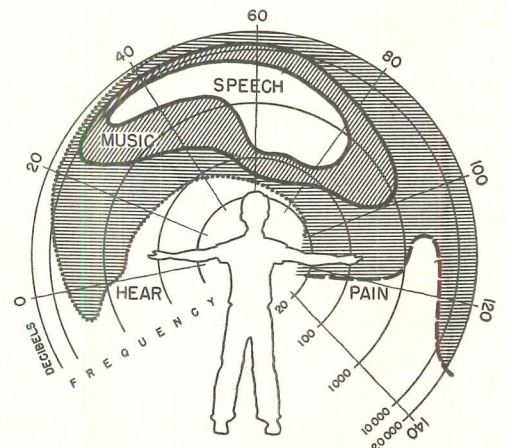
The case studies, if categorized as to types of problems solved, illustrate, perhaps unwittingly, another point: that the architectural solution of predominantly educational problems in school plant planning is not easy. One might go further and state that such solutions really are not often attempted. There is a tendency to become enamored of gadgets. The same can be said for educational solutions to educational problems.

In addition to sections dealing with education and the pupil, environment, and economy, major attention is given to city planning and the school plant, with emphasis upon long range planning and the school facilities; the division of space for effective education, dealing with the types of spaces that are needed in school buildings; economy in school plant planning; and the planning process and the school plant. In the last section an eloquent plea is made for an informed freedom in design.

A stimulating book, by definition, is one in which on points the reader will disagree with the author. For example, on a relatively minor issue, I am not at all convinced of the correctness of the statement regarding illumination levels

that "most authorities agree that the normal sighted pupil benefits from increases of intensity up to 200 foot candles." Of course, I may be disagreeing not so much with the statement as with the authorities. Nor do I, on a relatively important area, agree that the unique nature of the secondary school program is "in the social aspect of pupil development." This concept denies the continuity of development of young human beings. In fact, one might make a good case for the thesis that the social problems met by pupils entering a kindergarten are of a more far-reaching nature

(Continued on page 48)



**SOUND and the PUPIL**

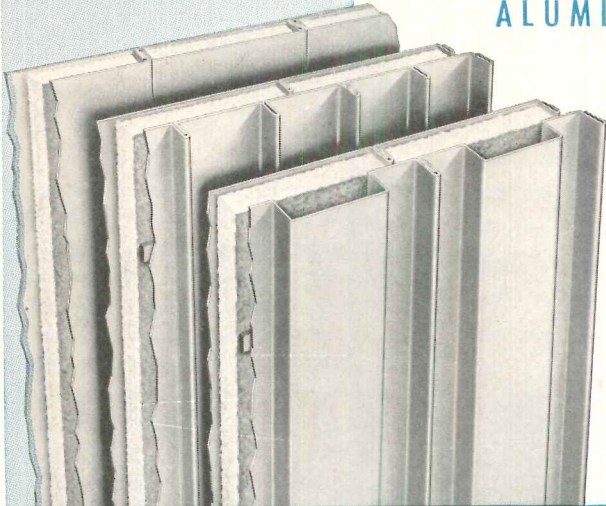
This and chart above are two of many diagrams the author uses to illustrate problems and solutions of school design

**INSULATED**

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ALUMINUM, STAINLESS or GALVANIZED STEEL

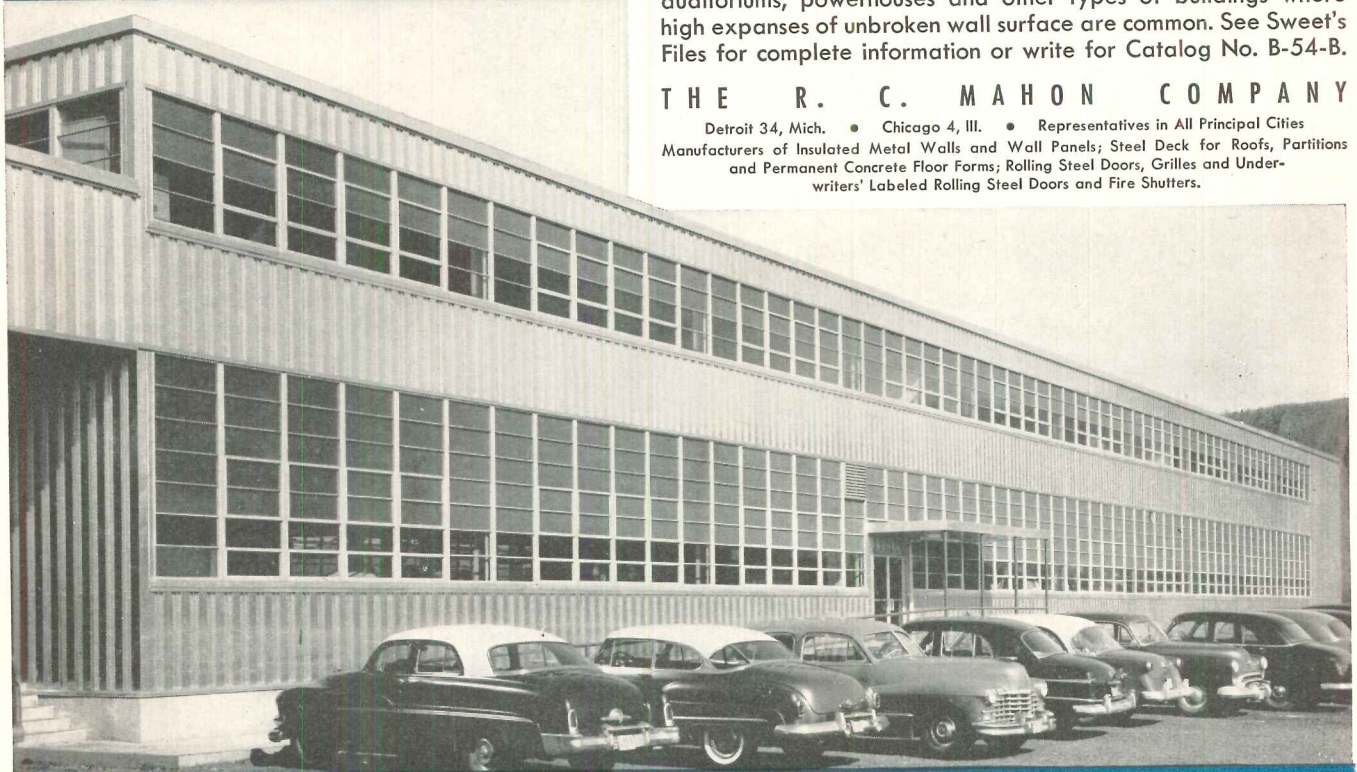


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Over-all "U" Factor of Various Types is Equivalent to or Better than Conventional 16" Masonry Wall

The swing to metal exterior walls is now recognized as the trend by leading designers throughout the country. This acceptance is more than justified by the attractiveness and permanent beauty of Stainless Steel or Aluminum exteriors. Whether used exclusively or in combination with brick or other materials, striking design effects are possible in virtually any type of building—the manufacturing plant below is typical. The decorative aspects of Metal Walls, however, are the least of their outstanding advantages over other types of construction. Substantial building economies can be realized through lower material cost, lower labor cost, and the cumulative savings resulting from reduced construction time . . . buildings can be quickly enclosed with Insulated Metal Walls—even under extreme low temperature conditions which would preclude masonry construction. Other important factors to be considered are the light weight of these modern curtain walls and the maintenance-free permanence of Stainless Steel or Aluminum exterior surfaces. Mahon Insulated Metal Walls are available in three exterior patterns shown at left. Mahon "Field Constructed" Fluted or Ribbed Walls can be erected up to sixty feet in height without a horizontal joint—a feature of Mahon Walls which is particularly desirable in auditoriums, powerhouses and other types of buildings where high expanses of unbroken wall surface are common. See Sweet's Files for complete information or write for Catalog No. B-54-B.

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



New plant for the Hartford Special Machinery Company, Simsbury, Connecticut. 11,500 Sq. Ft. of Mahon Insulated Metal Walls with Aluminum Exterior Plates were employed in this project. Moore & Salisbury, Architects. Standard Structural Steel Company, General Contractors.

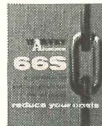
# MAHON

# New Harvey aluminum alloy 66S will reduce your costs

## high-strength-low-cost-ratio

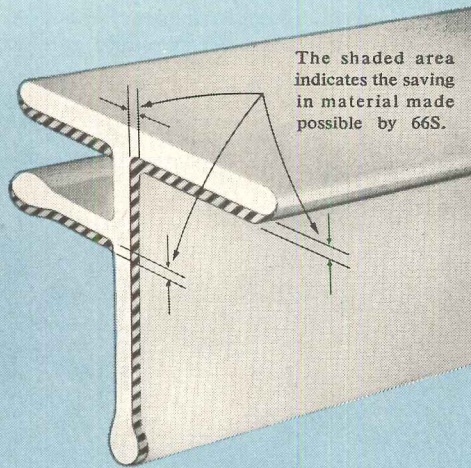
means that Harvey metallurgists have combined the essential qualities of many ideal structural alloys into a single new aluminum alloy—66S. This general purpose alloy is bringing real economy to many industries. It combines the high strength of 24S and the good corrosion resistance, weldability and economy of 61S. Alert

aluminum fabricators can now use 66S to reduce material costs, cut weight without sacrificing strength, and lower fabricating costs. You can reduce your costs at Harvey Aluminum . . . tooling service charges are nominal, and Harvey prepays the freight to your dock. Send for a 66S Bulletin today.



### here's how you save

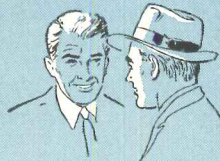
The high yield strength of 66S permits you to reduce the cross section of structural members. This means real dollar savings in material costs. The extrusion at right was made of 61S. By using the high yield strength of 66S its cross section is reduced as shown. The saving in material amounts to approximately 26%. Saving in cost, 21%.



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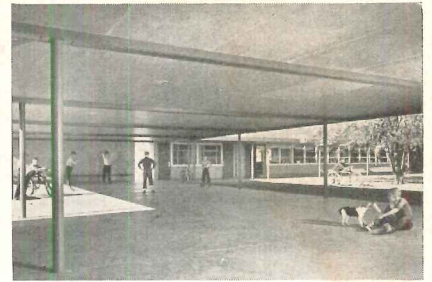


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## REQUIRED READING

(Continued from page 46)



One of a series of photographs illustrating actual solutions to problems in designing schools

than those admittedly major struggles undergone by adolescents. Yet disagreement on detail in no way invalidates the theory of methods of solving school building problems or the great value and interest this volume will have for all concerned with improved school plants.

The strength of the book lies in the clarity of exposition and illustration of the author's concept of approach to the design problems, in the summarization of the research in environment carried on at the Texas Engineering Experiment Station, and in the illuminating insights into the creative architectural process gained by the case studies and by accounts of problems met and solutions evolved by Caudill and his associates in architectural practice.

The weaknesses of the book are few. Cultural history is always difficult to write. The section on architectural appreciation, obtained through a word history of architectural ideas in this country, illustrates that point. The book could have done without it. Perhaps by design, there seemed to be some repetition in the text and in the rather lengthy captions to illustrations. Some elisions of text and greater dependence upon the annotated illustrations might have been helpful.

This is a good book; one to reread and to savor. Readers will thank Bill Caudill for letting them think about school buildings with him.

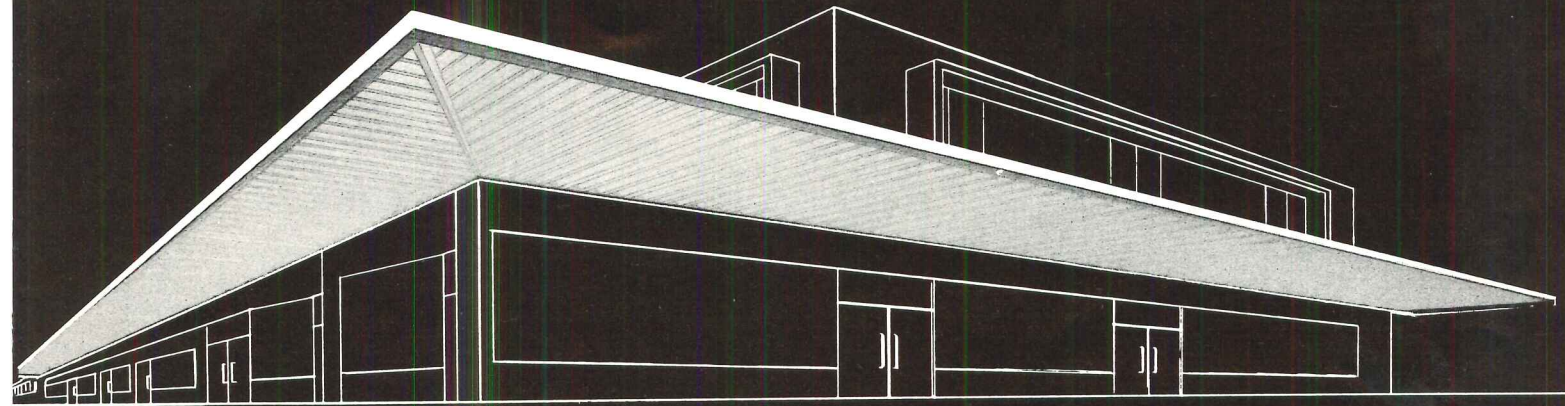
### THE ROLE OF THE AUDIO-VISUAL PROGRAM IN EDUCATION TODAY

*The School Administrator and His Audio-Visual Program.* Edited by Charles F. Schuller, PH.D. Department of Audio-Visual Instruction, NEA (Washington, D. C.) 1954. 6 by 9 in., 367 pp, illus. \$3.75

The Audio-Visual Institute has prepared a source of information on the

(Continued on page 338)





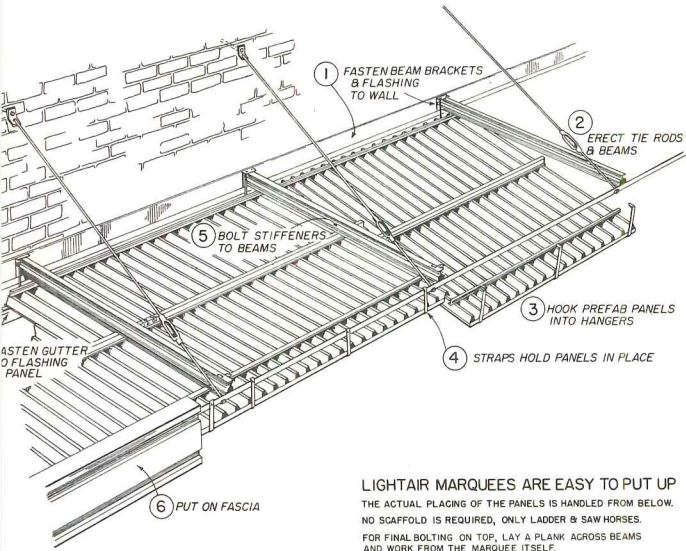
The illustrated utilization is the Edward L. McVey  
Enterprises' Fairport Drive-In Shopping Center,  
Hamilton Road at Fairway Blvd., Columbus, Ohio.  
To be erected by Perma-Stone, Columbus.

# REPORT

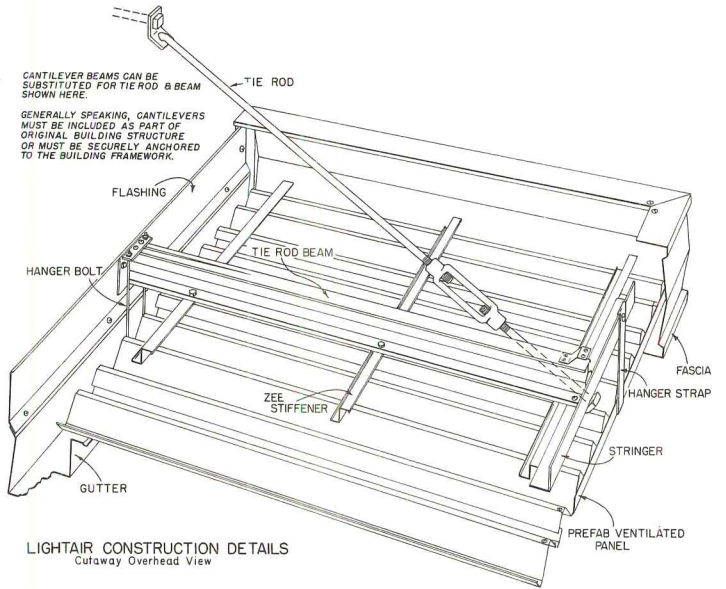
ON A REVOLUTIONARY NEW PRODUCT

REPORT 

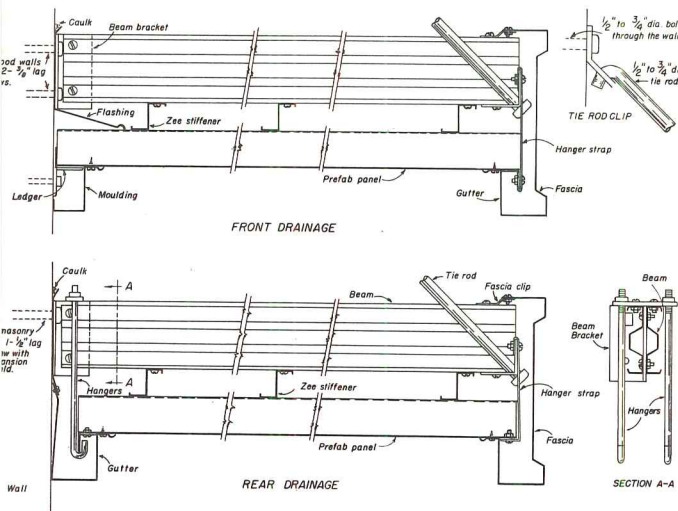
# REPORT



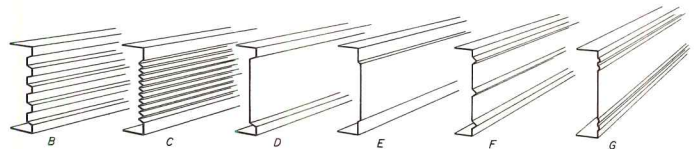
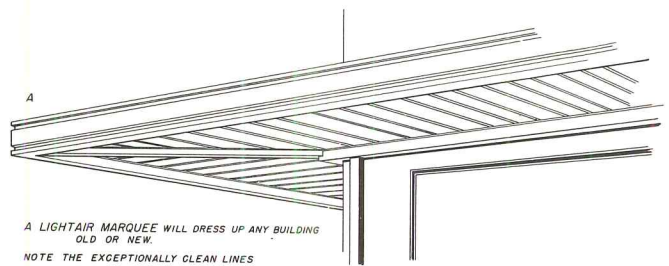
LIGHTAIR MARQUEES ARE EASY TO PUT UP. THE ACTUAL PLACING OF THE PANELS IS HANDLED FROM BELOW. NO SCAFFOLD IS REQUIRED, ONLY LADDER & SAW HORSES. FOR FINAL BOLTING ON TOP, LAY A PLANK ACROSS BEAMS AND WORK FROM THE MARQUEE ITSELF.



LIGHTAIR CONSTRUCTION DETAILS  
Cutaway Overhead View



STANDARD DESIGN FEATURES



NUMEROUS FASCIA PATTERNS ARE AVAILABLE. OR WE WILL COPY YOUR ARCHITECT'S DESIGN.

# REPORT

## ON A REVOLUTIONARY NEW PRODUCT

A new product has just been announced which promises relief from many of the defects architects and designers are so well aware of with previous exterior perimeter weather protection devices. Major applications of this new marquee, the manufacturer states, will be on offices, stores, commercial buildings, hospitals, and schools.

The Shurtleff Company, manufacturer of the LightAir Marquee, have made a long study of the virtues and defects of other weather protection devices erected on exteriors of buildings. Their original design of the "W" shaped leaf marquee running at right angles to the building, and protected by patent number 2618821, has been modified after extensive testing at the Texas A & M College in their wind tunnel. Mr. Wood B. Shurtleff, the President of Shurtleff Company, says that their research has proven that the only practical design for a ventilated marquee is "W" shaped leaves extending at right angles to the structure. This, he claims, has two performance advantages plus an aesthetic advantage—in the LightAir Marquee, each leaf acts as a simple girder giving the necessary strength to accept static loads up to 60 pounds per square foot and winds in excess of 100 miles per hour velocity (not only as mounted on the building, but at a 90 degree angle to the projection of the marquee). The "W" shaped leaf at right angles to the building causes each leaf to act as a primary drainage channel directly to the gutter. With each leaf an unbroken line from outer fascia to the building line, the vista of sight is unbroken by unnecessary and objectionable outriggers, structural members, etc.

The straight "W" leaf has not performed 100 percent under the most extreme drainage conditions; the Shurtleff Company states that in a wind-driven rain, exceptionally heavy rain, or alternately freezing and thawing snow atop the marquee, the straight "W" leaf will admit a small amount of moisture. The performance of the straight "W" leaf projected at right angles was better than any other existing ventilated marquee section tested—but did have a volume failure of 2 percent to 6 percent under most extreme conditions. Hence, the new, improved leaf section has just been announced. The present leaf of the Shurtleff Company extends the "W" shaped leaf with a right angle lip which overlaps and opposes the lip of the neighboring leaf on a plane. This, while allowing the air circulation, gale resistance, and minimal wind deflection advantages of the ventilated marquee, will give full protection from sun, rain and snow. The Shurtleff Company believes they have the best answer to sun and weather protection on the exterior perimeter of any new or existing structure. They point out their advantages over conventional marquees as being appearance, economy, and performance. "Most conventional marquees are heavy and baroque in appearance—utterly misplaced on any building in which there is any pretense of improved, modern, or contemporary design."

Mr. Shurtleff asserted that their ventilated marquees can be cantilevered in almost any projection from new buildings with much lighter structure than necessary with job-built marquees. Also, the fact that the finished marquee weighs only 2 to 2¾ pounds to the square foot allows its erection on existing buildings, which have no marquees, without structural modifications or additions. The average installation of the Shurtleff factory-assembled sections takes only 2 to 4 hours on site—the largest installation no more than 8 hours.



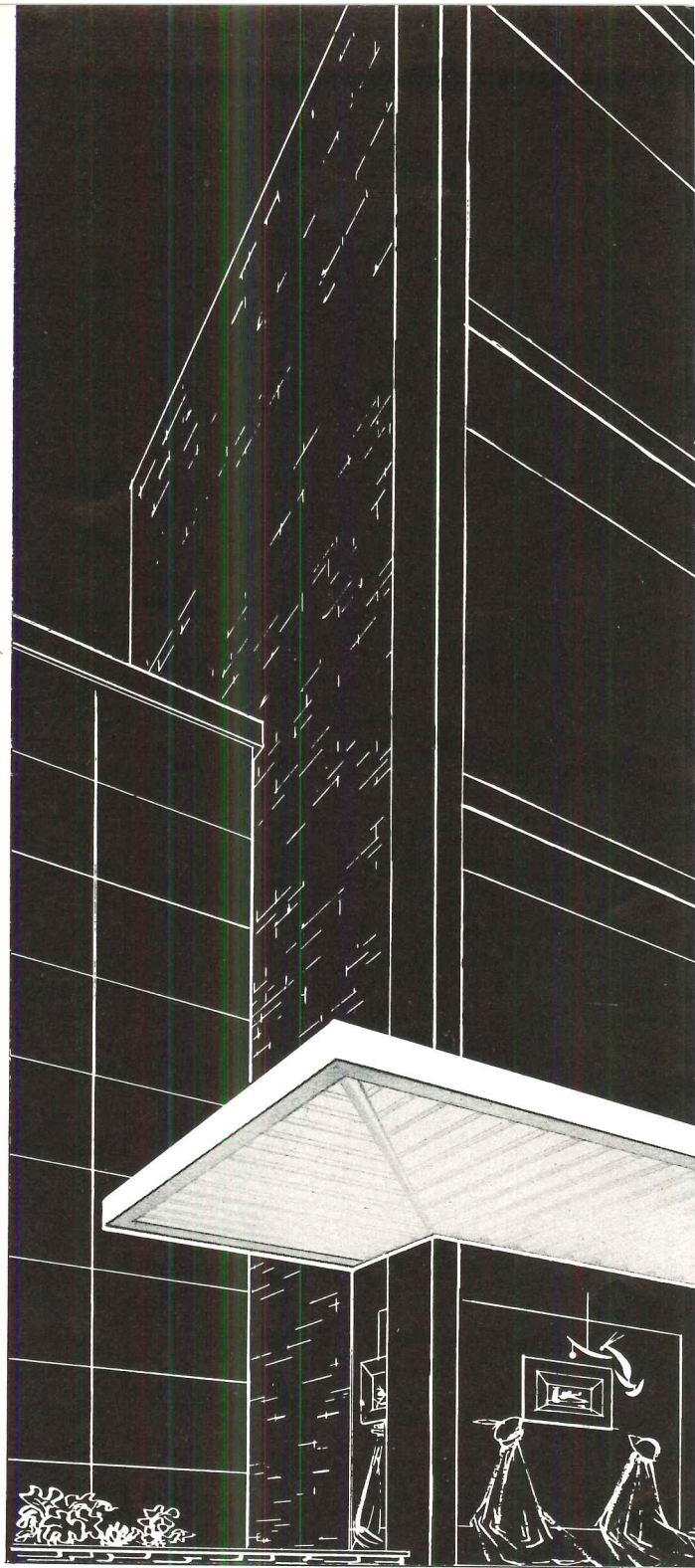
**REPORT**   
CONTINUED ON NEXT PAGE

## REPORT

Mr. Shurtleff is outspoken in his criticism of factories that send out unassembled alumilited sections. "At the most, they save 30 cents per square foot by not designing the job properly and custom-assembling the marquee at the factory. By that I mean that there should be welds where good design calls for it, the leaves should not be affixed to supporting structure by screws, but should be riveted or bolted as it is done in the factory; slitting of leaves should never be done except by factory-trained personnel, since leaks may develop at outer edges if this is done improperly. My biggest objection to local assembly of sections is that the alumilited surfaces are damaged by careless handling and by body acids of untrained assembly personnel handling the product without gloves. The end product cannot be as good, nor as attractive, as the factory-assembled product and yet the cost must be at least \$1.50 per square foot higher than the factory-assembled product since under the most favorable conditions it requires 5 to 6 times as many man-hours to assemble and erect as it does to erect a factory-assembled marquee."

The Shurtleff Company also maintains that ultimate appearance cannot be achieved except by factory-assembled marquees. "Our assembly permits us to allow the architect full scope in achieving the artistic effect desired. We are able to offer a 6-inch module leaf and a 12-inch module leaf. Interesting effects may be had with either, or an infinite variety of treatments is possible by a mixture of random widths."

There is no restriction on fascia design and this can be to sketch if desired. Special fascia details are available permitting protected and concealed lighting behind outer fascia. Light diffusing glass in front of such lights may be easily changed and so can change entire front of store or give desired window effects. *The Shurtleff Company has complete design standards which may be secured by writing the company.* These standards will allow the architect to sketch in the projection and that is all that is necessary since all the cantilever and tie-rods suspensions, projections, loading, etc., are contained in these design standards. On a job factory design assistance is available without charge or obligation.



for complete details  
and specifications  
call or write  
DEPT. C-4

**SHURTLEFF CO.**

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PHONE 2-2200  
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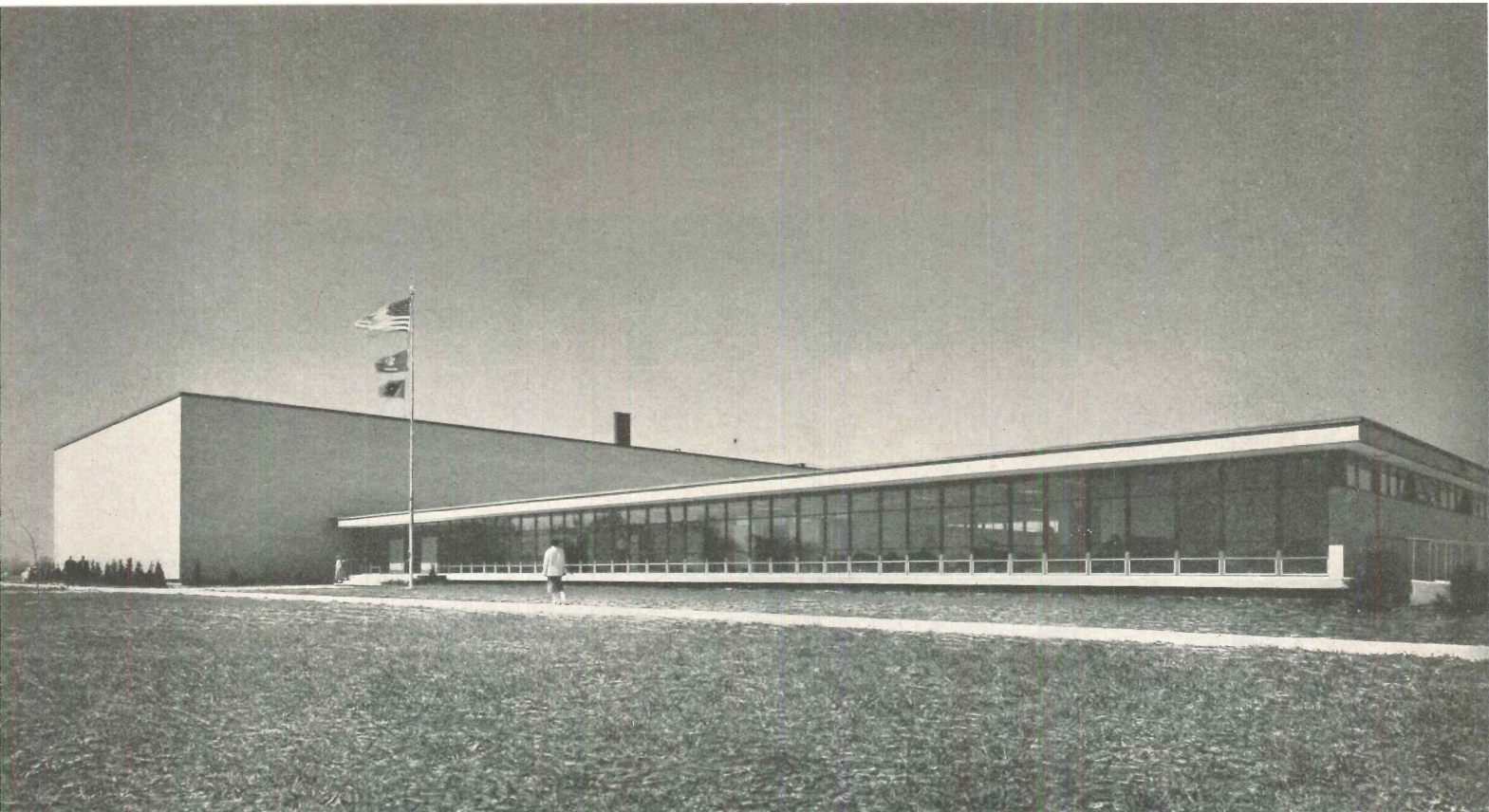
DESIGNED FOR HIGH SCHOOL YOUTH

NORMAN, OKLAHOMA, HIGH SCHOOL; CAUDILL-ROWLETT-SCOTT &  
ASSOC., PERKINS & WILL, ASSOCIATED ARCHITECTS-ENGINEERS

BUILDING TYPES STUDY NUMBER  
®

**213**

S C H O O L S

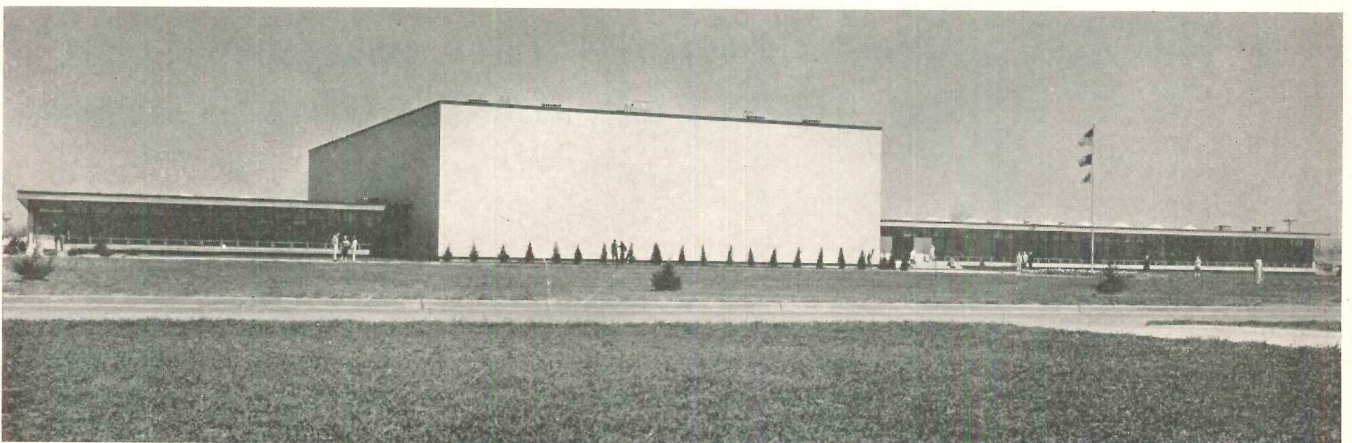


## NORMAN HIGH SCHOOL, NORMAN, OKLAHOMA

*Caudill-Rowlett-Scott & Assoc., Perkins & Will, Associated Architects-Engineers*

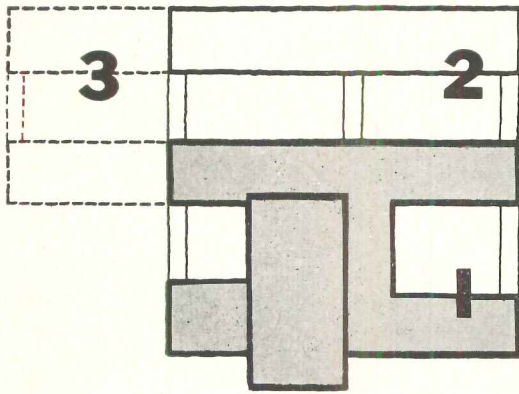
**D**ESIGN of the Norman High School started with consideration of the basic needs of youth: to develop skills, health and citizenship and to understand family life; to comprehend the scientific method, appreciate the arts, respect others and think rationally. These are constant, whereas a list of subjects, schedule of classes or enrollment figures change. Norman High School, then, was designed as a community center for youth, flexibly designed to accommodate fluctuations in enrollment and curriculum so it would not become obsolete during its useful life, and thoughtfully detailed for reasonably economical construction. Six main design premises were established:

- 1. The high school population will continue to grow.** The building was designed to be expanded economically and efficiently; Stage 1 (see sketch) is the present building; Stage 2, future classrooms and laboratories; Stage 3, still further enlargement.
- 2. There will be changes in teaching techniques and in courses of study;** hence the structure is designed for maximum flexibility. Top lighting through the flat roof, and unobtrusive columns, permit the interior partitions to be located wherever they are needed without sacrificing natural illumination. Utility lines run under a raised floor slab and may be tapped at almost any point.

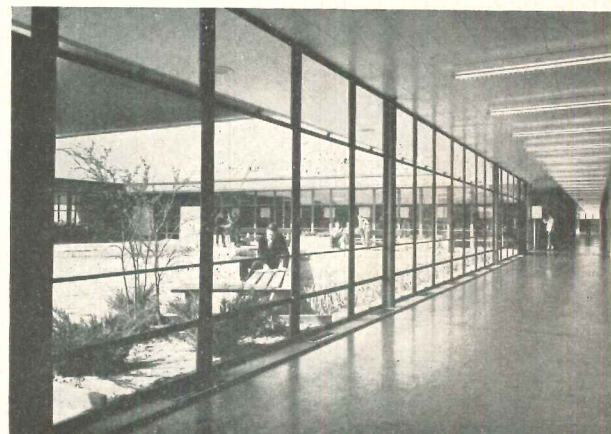
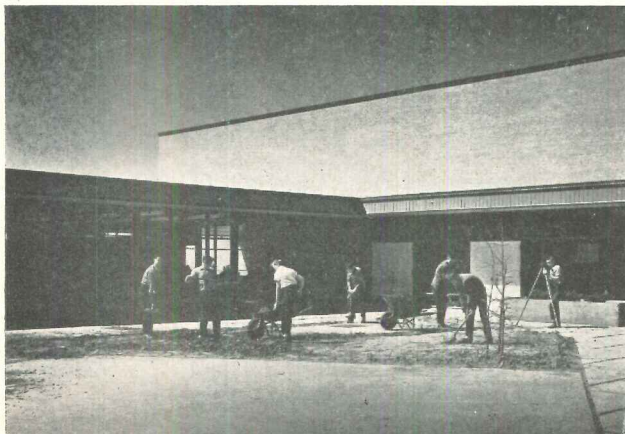
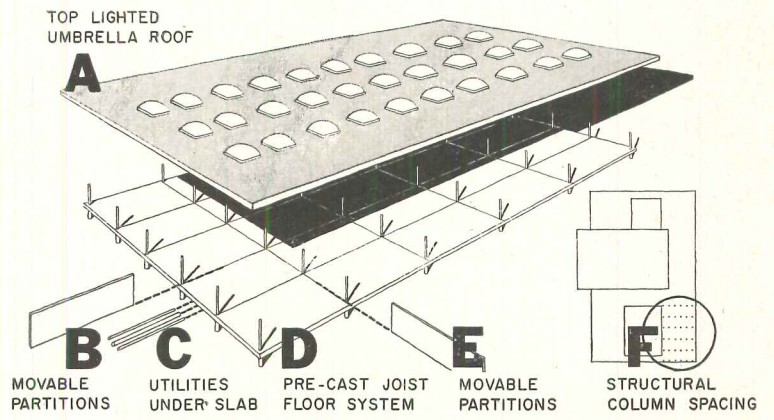


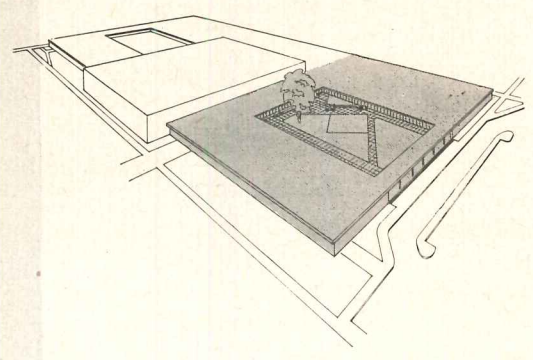
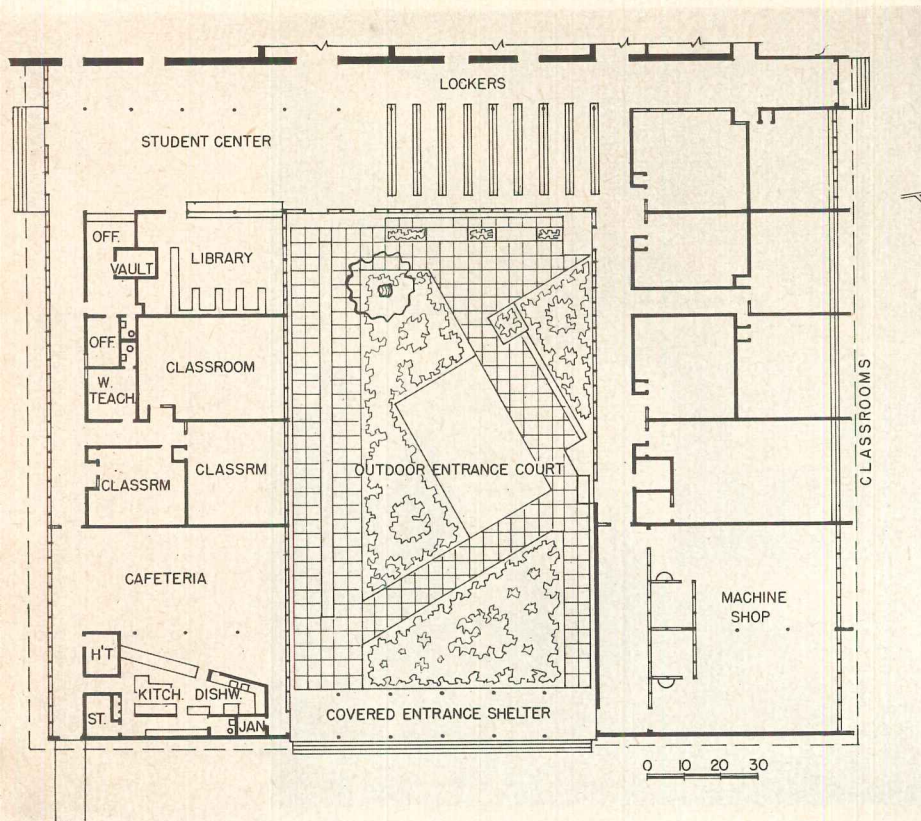


EXPANSIBILITY

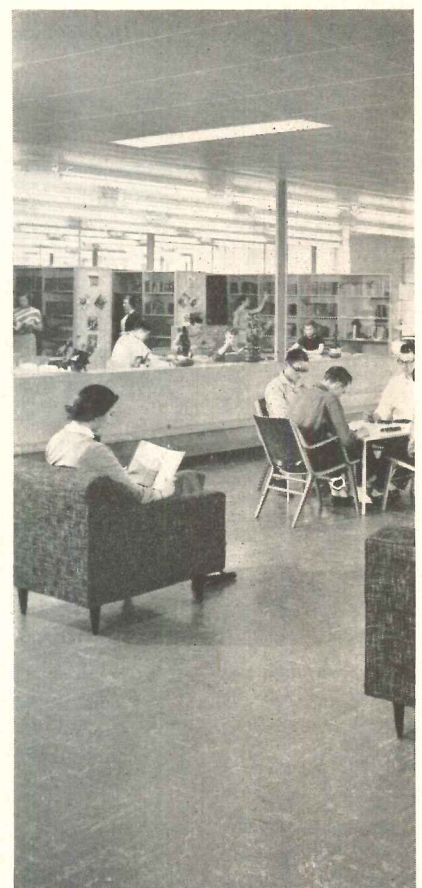
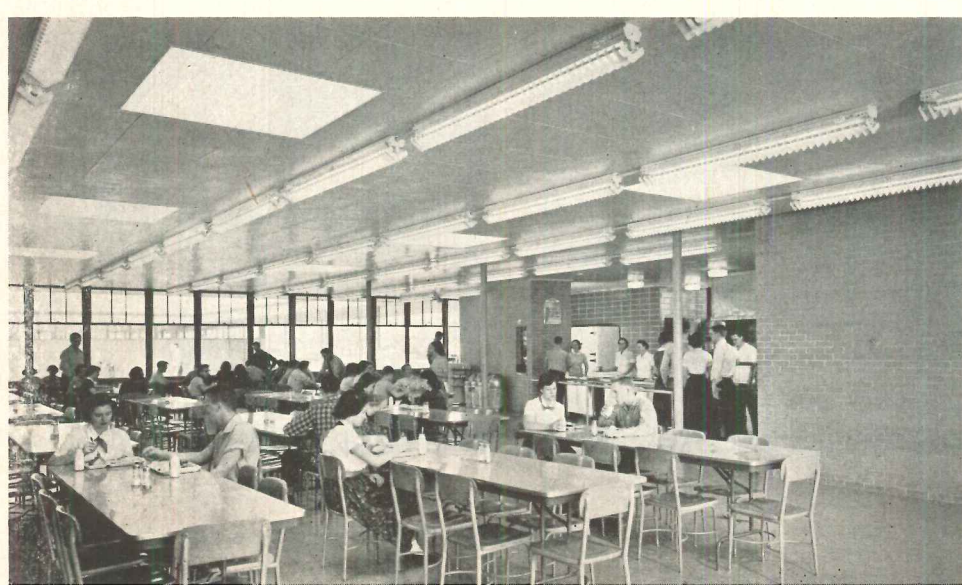


FLEXIBILITY





**NORMAN, OKLA.,  
HIGH SCHOOL**

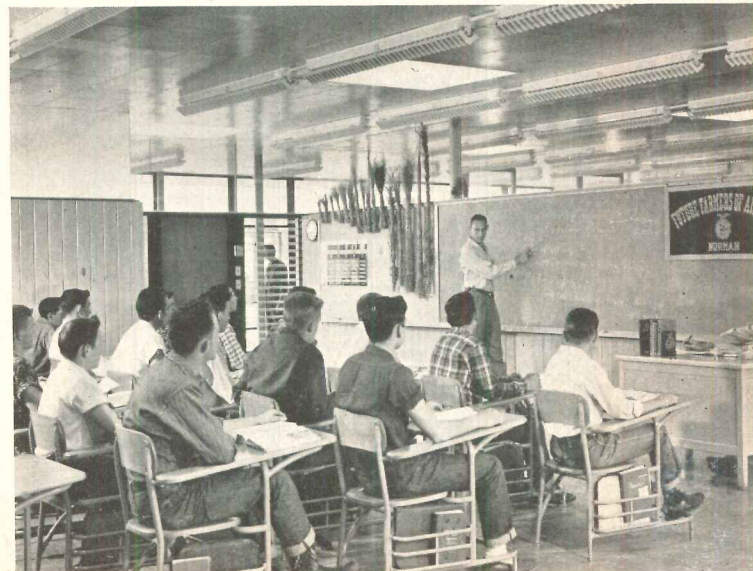
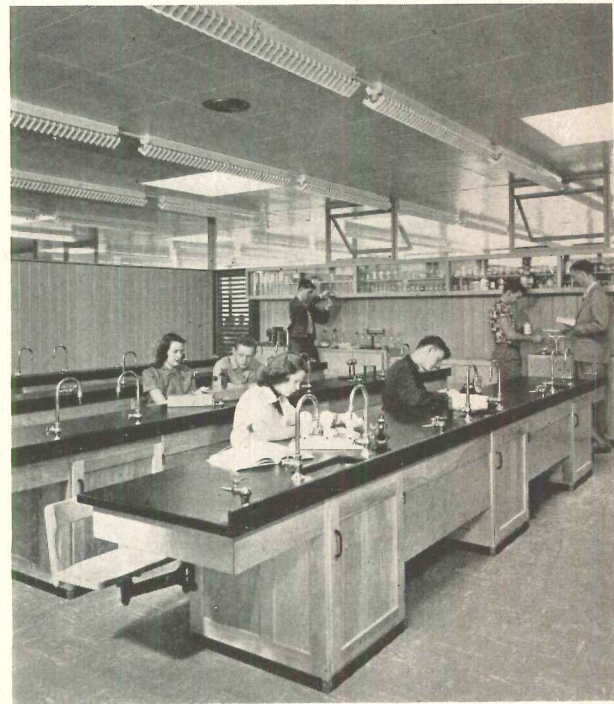
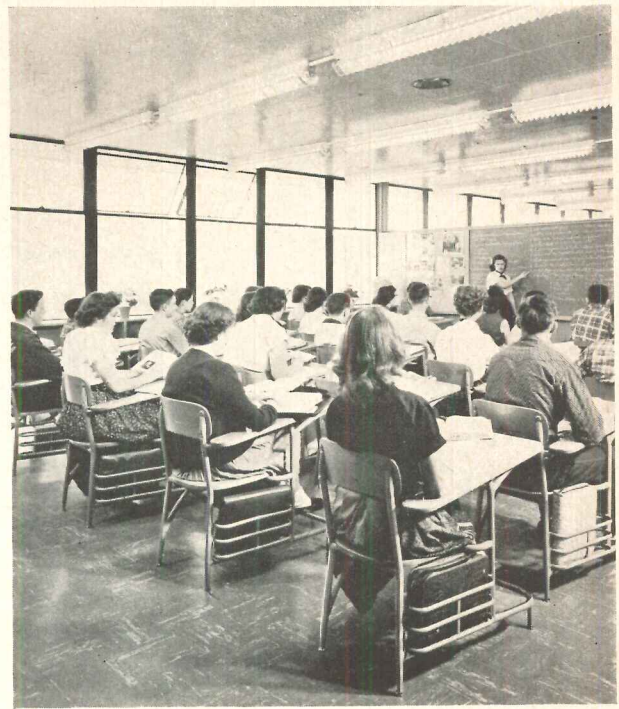
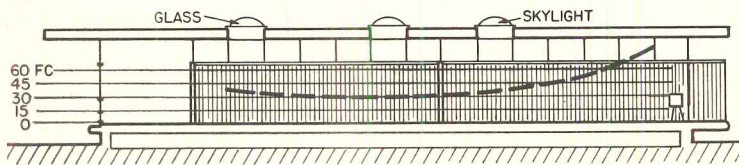


*Left, top, office corridor; bottom, cafeteria. Above, student center*

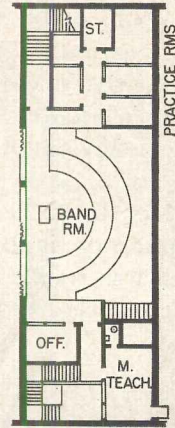
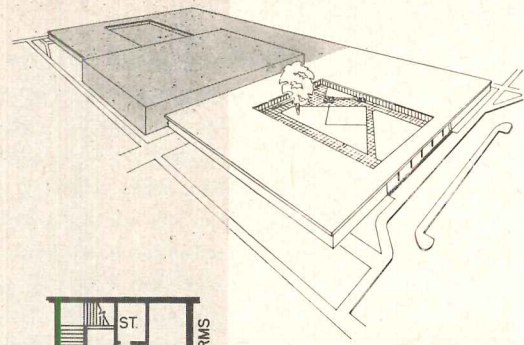
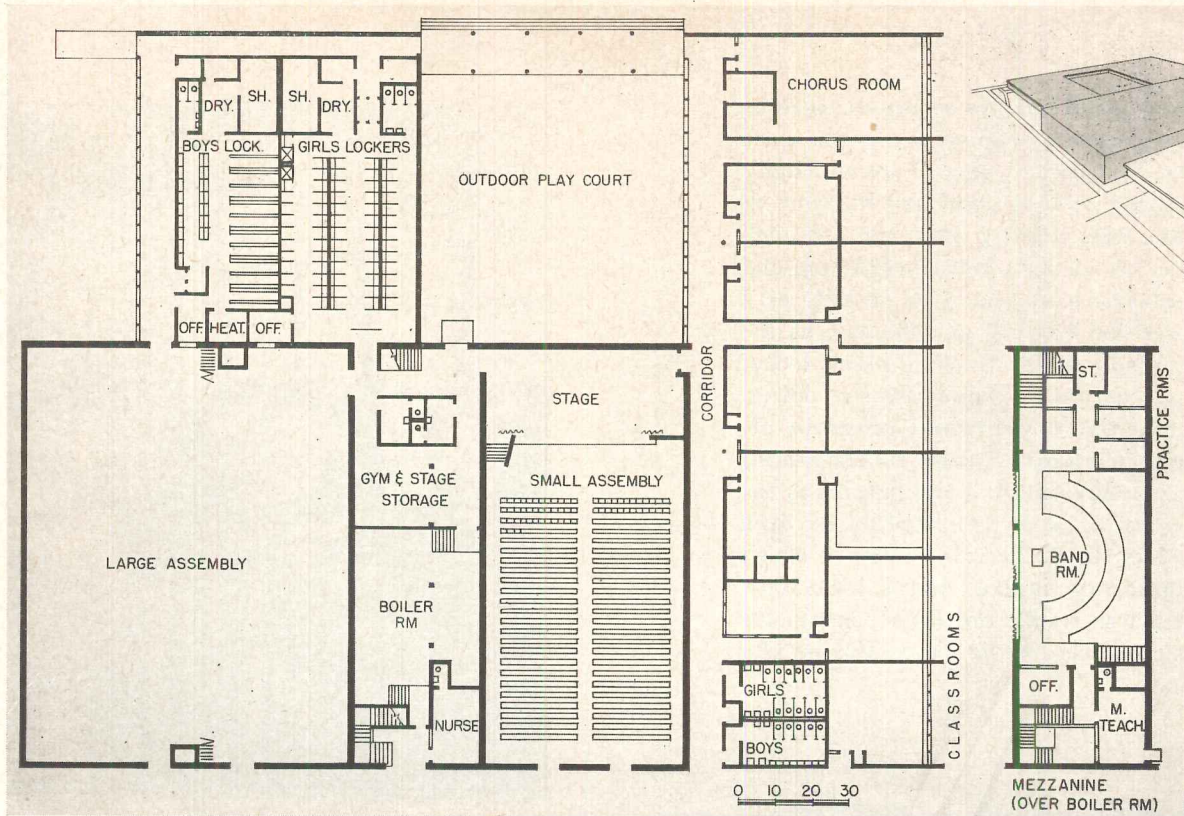


3. The high school pupil spends as much time in corridors as in any one classroom, so corridor space should further the educational aims. Norman High's corridors are well lighted and pleasant (not the conventional dark tunnels), with generous glass areas through which students may see exhibits in each classroom and laboratory. The school's main concourse doubles as a student center, used for exhibits, as a lounge, as the auditorium lobby, reading room for the library, locker room, and waiting room for the administrative offices.

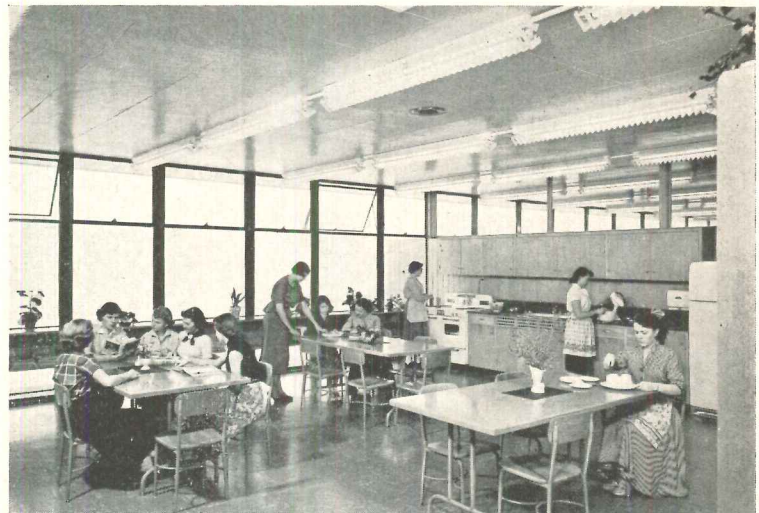
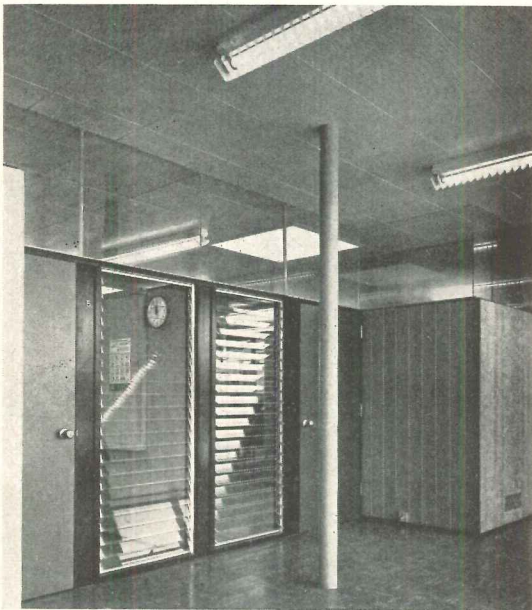
4. A balanced, effective educational program allows each pupil to participate fully in classroom group activities. An advantage of top lighting is the freedom of seating arrangement permitted by the even distribution of natural light. The sketch below shows the amount of illumination, in foot candles, for a 1000-foot-lambert sky. These results are from experiments conducted on scale models by the Texas Engineering Experiment Station.



Photos at right: top, exterior classroom; center, laboratory; bottom interior classroom. Note clear glass partitions above chalkboard

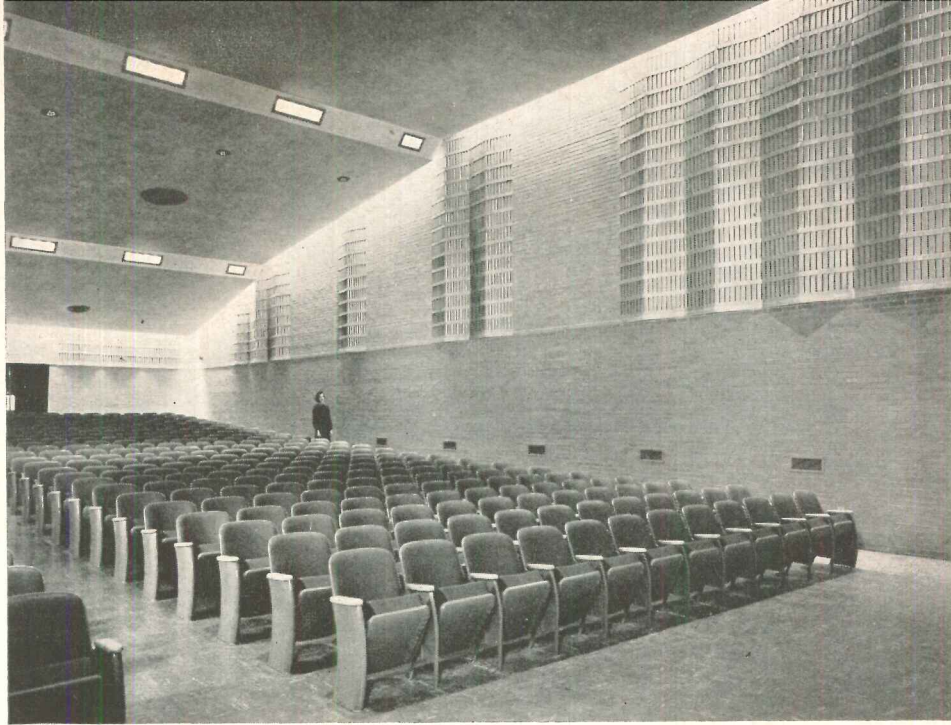


MEZZANINE  
(OVER BOILER RM)



*Photos at left: entrance to a typical classroom showing large areas of glass louvers which permit vision into the rooms and provide ample ventilation. Above, home-making room, with furniture in groups, illustrates the advantages of high-level natural illumination uniformly distributed*

NORMAN, OKLA., HIGH SCHOOL

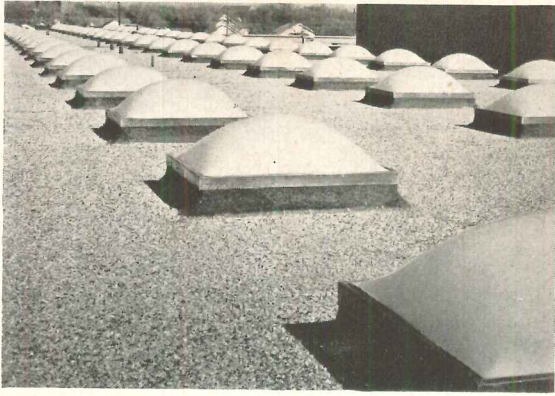


5. The school will be used the entire year for **community improvement, education and recreation.** On its forty-acre tract Norman High has the necessary space for an effective all-year program, with softball and baseball diamonds, space for a future football field and ample parking area. Locker rooms are arranged so they can be used independently of the rest of the building during the summer. The large social court (shown on the cover) serves as the "community's" outdoor terrace.



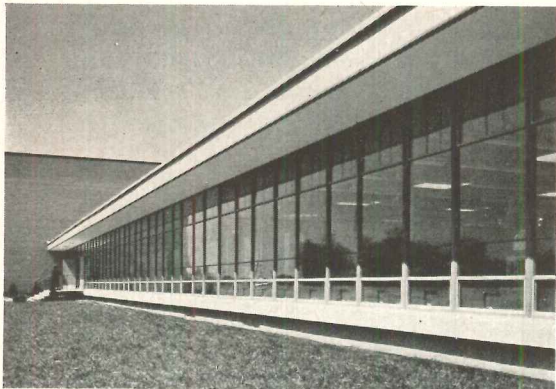
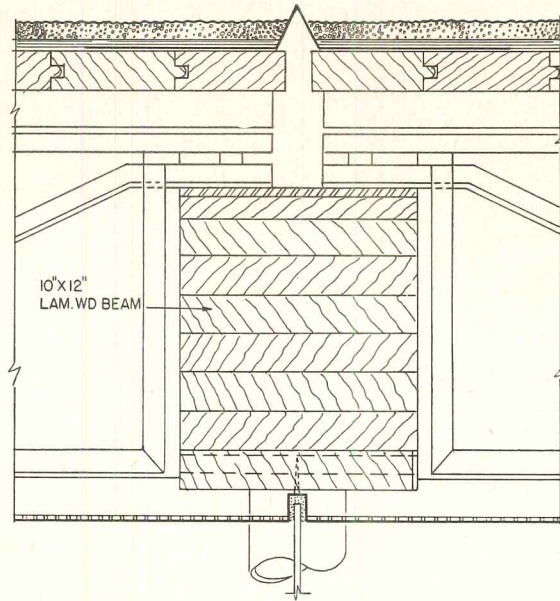
*Photos this page: above, top, band room on mezzanine; center, locker end of student lounge. Right, top, "small" assembly room (capacity over 500) is acoustically designed, has patterned brick panels (to prevent reverberation) which add interest to otherwise plain masonry walls. Bottom, gymnasium-assembly*





NORMAN, OKLA., HIGH SCHOOL

*Structure has reinforced concrete grade beams, concrete joists, concrete slab; light steel and laminated wood framing; projected steel sash; brick and wood interior partitions; face brick on exterior masonry walls; colored tile in toilets; built-up roof on wood deck; plastic skylights. For such an extensive building expansion joints are needed; typical detail at right. Costs: \$13.63 per sq ft; 0.82 per cu ft; \$1,104,007 total*



**6. The school plant should be a real social center for boys and girls of high school age.** The architects have striven to make the new school so functionally satisfactory, so beautiful and well equipped that the pupils will consider it the most desirable place in the community to learn, work and play. The classrooms grouped around the outdoor terrace, the student center, even such structural essentials as the raised floor slab — an excellent, informal outdoor seat — are evidence of this attitude. A measure of its success: money for landscape development was scarce, so students landscaped the grounds themselves.

Hedrich-Blessing Studio



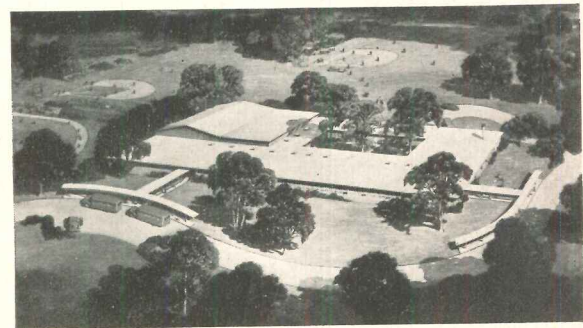
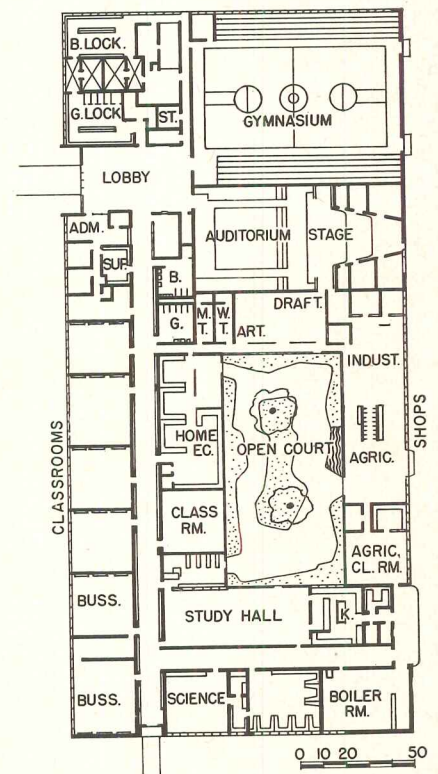
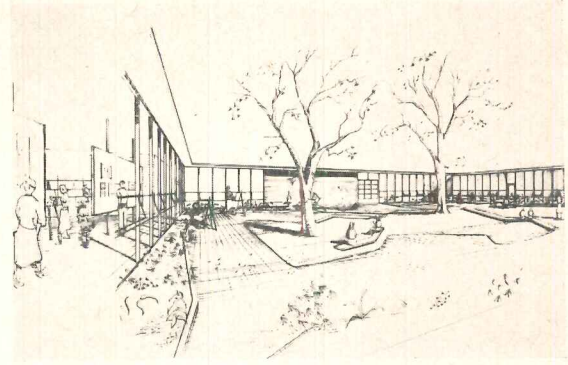
# ECONOMY REMAINS A DETERMINANT IN SCHOOL DESIGN

For many months *Architectural Record*, in a succession of school building studies, has emphasized the importance of economy as a design determinant. We continue to do so; knowing the strain on the finances of community after community, and the increasing number of pupils, we cannot do less. By 1960, it is reliably estimated, elementary school population will have increased nearly 20 percent, high school population almost 30 percent. Even now many a school has to run double sessions; there aren't enough teachers; a number of buildings are so obsolete they seriously hamper the educational process. This adds up to a demand which must be satisfied in spite of strained finances. Nationally we are finding ways — as committees, groups, associations, and as individuals — to build schools more economically.

Some of these are general principles, like those enunciated late last year in Texas by a panel of architects, educators and civic officials: 1, Spread the tax base, use larger administrative units to avoid duplication of inadequate buildings. 2, Cut down land acquisition cost by long-range planning. 3, Program classroom use for more complete utilization. 4, Eliminate unnecessary "trimmings" and non-essentials. 5, Design expensive non-classroom areas (auditoriums, etc.) carefully; investigate their intensive use. 6, Design mechanical systems for actual need, not too outmoded or unrealistic standards. 7, Revise obsolete codes. 8, Standardize — not on stock plans, but on such things as repetitive elements. 9, Employ professional skills fully to solve the specialized problems. 10, Reduce costs by imaginative financing. Many of these principles can perhaps be restated more familiarly as directives in choosing a type of plan, structural system, materials or equipment; as affecting decisions to use modular units or to employ, in even greater degree than we now do, prefabricated assemblies or units.

From the examples of recent schools in this issue one or two generalizations can be drawn. Notice that the "finger" plan, so recently so popular, does not appear. Other types seem to offer more promise: the very compact plan, often with interior, top-lit rooms; or the "cottage" plan, with small, inexpensive buildings connected by walkways.

Of particular interest is the consolidated rural school shown at the right. This plant, now under construction, had to be produced for \$600,000; land, equipment, site work and fees reduced this to \$500,000. The base bids totalled \$477,000; the owners voluntarily added a number of high-quality features, and still the total construction cost is amounting to only \$500,054. How was this 40,000-sq-ft miracle achieved? How was \$12.50 per sq ft (\$0.95 per cu ft) obtained? By eliminating fussy items; by holding to a simple rectangle in plan; by using a modular layout, repetitive framing, and limiting to one or two sizes all windows, doors, joists, mullions and structural members; by making structural elements provide heat and sound insulation and low-maintenance finishes; and by exceedingly careful detailing.



*Southeast Local Consolidated Rural High School, in Wayne Co., Ohio (Joseph Baker & Assoc., Archts): extremely compact plan, careful detailing, brought cost low enough to permit inclusion of a number of high-quality features. Building is under construction (see text)*

Actual school construction costs vary according to time, place and job — to name only a few factors. Individual cost data have only local value and must be judiciously interpreted; so handled they do of course have importance. Recently cost surveys were made in three districts served by F. W. Dodge Corporation. The figures which follow are a few of the contract prices reported during the first quarter of 1954. No

conclusions have been drawn from them except to present their range and a few representative examples. In the Chicago area the low range of school construction costs was from \$7.53 to \$9.99 per sq ft; median, \$11.06 to \$14.51; high, \$15.81 to \$24.23. In the Kansas City district: low, \$8.07 to \$9.83; median, \$10.06 to \$12.19; high \$13.49 to \$19.67. In Texas: low, \$7.17 to \$9.08; median, \$9.41 to \$10.11; high, \$11.53 to \$12.84.

COMPARATIVE SCHOOL BUILDING COSTS --- CHICAGO DISTRICT

<p>Elementary School, Hennepin, Illinois Architect: Otto E. Brunkow, Chicago, Ill. Bids received: February 8, 1954</p> <p>Floor area; 9,000 sq. ft.; face brick ext walls; concr. blk or tile back-up; concrete flr const.; built-up on Cemesto board roof const; asphalt tile finished flrs.; Glazed tile in corridors, plaster and light weight finished walls</p> <p>1 story; no basement; 4 classrooms; kindergarten room, lunch room; kitchen.</p>	<p>Structure \$ 98,000. Plumbing 13,700. Htg-Vent-Air Con. 25,500. Electrical 14,000. Total Const. \$151,200. Per sq. ft. \$16.80</p>	<p>Two Elementary Schools, West Bend, Indiana Architect: Raymond N. LeVee &amp; Assocs., Appleton, Wis. Bids received: January 15, 1954</p> <p>Volume: 547,500 cu. ft.; flr. area: 44,000 sq. ft.; face brk. &amp; stone ext walls.; Waylite blk. back-up; concr. on sand flr. const.; stl. joists, gypsum roof const.; Asphalt tile &amp; terrazzo finished flrs.; Waylite &amp; plaster finished walls.</p> <p>1 story and no basement; 9 classrooms.; 2 all purpose rms.; 2 kindergarten; teachers' &amp; Utility Rms.</p>	<p>Structure \$327,300. Plumbing 25,038. Heat-Vent-Air Cond. 51,301. Electrical 30,625. Total Const. Cost \$433,264. Per cu. ft. \$ .79 Per sq. ft. \$9.87</p>
<p>Grade School, Marengo, Iowa Architect: David B. Toenjes, Waterloo, Iowa Bids received: February 23, 1954</p> <p>Floor area: 12,841 sq. ft.; face brick ext. walls; Waylite blk back-up; on ground flr. const.; Bar-joists-gyp. roof const; asphalt tile and ceramic tile finished flrs.; blks painted finished walls.</p> <p>1 story, no basement; kindergarten; 5 classrooms; Multi-purpose room, kitchen; food stores; teachers' room, storage.</p>	<p>Structure \$ 88,816. Plbg-Htg &amp; Vent-Air Cond. 13,955. Electrical 5,349. Total Const. \$108,120. Per sq. ft. \$8.42</p>	<p>Nerthlawn School, Streator, Illinois Architect: Wm. B. Ittner Inc.; St. Louis, Mo. Bids received: January 1954</p> <p>Volume: 694,766 cu. ft.; flr. area: 49,566 sq. ft.; brk ext walls; lightweight concr. back-up; Bar-joist &amp; concr. flr. const.; Poured gypsum on Fiberglass roof const.; Asphalt tile &amp; Terrazzo Corridors finished floors; plaster corridor &amp; stair halls finished walls.</p> <p>1 &amp; 2 stories and no basement; 15 classrooms.; gym; shop Home Economics &amp; Science rms.</p>	<p>Structure \$446,340. Plumbing 46,677. Heat-Vent 66,660. Electrical 33,500. Total Const. Cost \$593,377. Per cu. ft. \$ .85 Per sq. ft. \$11.97</p>

KANSAS CITY DISTRICT

<p>Elementary School; Winfield; Kansas Architect: William N. Caton, Winfield, Ks. Bids received: January 17, 1954</p> <p>Volume: 398,590 cu. ft.; flr. area: 16,269 sq. ft.; local ledge stone ext. walls; Haydite blk. back-up; concr over rock flr const.; wood joists on stl frame roof const.; Vinal, ceramic tile fin. flrs.; exposed Haydite blks.; glazed tile finished walls.</p> <p>1 story and no basement; 7 classrms.; kitchen; office library, Kindergarten.</p>	<p>Structure \$152,415. Plbg &amp; Htg &amp; Vent-Air Cond. 24,488. Electrical 10,437. Total Const. \$187,340. Cost Per cu. ft. \$4.47 Per sq. ft. \$11.52</p>	<p>Hushton Elementary School, Overland Park, Kansas Architect: Donald Hollis, Overland Park, Kansas</p> <p>Volume: 138,864 cu. ft.; flr. area: 15,190 sq. ft.; face brk. ext. walls; Haydite blk back-up; concr. slab on grade flr. const.; Acoustical stl panels roof const.; Asphalt tile, Ceramic tile fin. flrs.; face brk &amp; painted exposed blk fin. walls.</p> <p>1 story and basement; 6 classrms.; 1 Kindergarten; offices; gym; kitchen; dining area.</p>	<p>Structure \$165,022. Plumbing 10,979. Heat-Vent-Air C 18,905. Electrical 12,945. Total Const. \$207,851. Cost Per cu. ft. \$1.50 Per sq. ft. \$13.68</p>
<p>School, Howells, Nebraska Architect: Carl P. Stangel, Omaha, Nebraska Bids received: February 16, 1954</p> <p>Volume: 165,200 cu. ft.; flr. area: 11,800 sq. ft.; face brk &amp; stone ext. walls; concr. &amp; Haydite blk back-up stl joist &amp; concr. slab flr. const.; stl joist &amp; concr. slab roof const.; concr., Asphalt tile fin. flrs.; plaster paint on Haydite fin. walls.</p> <p>1 story and basement; 4 classrms.; kitchen; dining hall; storage.</p>	<p>Total Const \$116,000. Cost Per cu. ft. \$ .70 Per sq. ft. \$9.83</p>	<p>Grade &amp; High School, Bucklin, Mo. Architect: Ludwig, Moberly, Mo.</p> <p>Flr. area: 32,590 sq. ft.; brk ext. walls; Haydite back-up; concr. flr. const.; concr. roof const.</p> <p>1 story and no basement.</p>	<p>Structure \$233,641. Plbg &amp; Htg 50,819 Total Const \$287,320. Cost Per sq. ft. \$8.82</p>

DALLAS DISTRICT

<p>H.S. &amp; Elementary School, Geronimo, Texas Architect: J. Fred Buenz, H. E. Kellner, San Antonio, Tex. Bids received: February 5, 1954</p> <p>Flr. area: 14,460 sq. ft.; Haydite blk. ext. walls; pre-fabricated stl bldg-incl. cols. rigid frame trusses. susp; concr. flr. const.; metal roof const.; cement fin. flrs.; painted Haydite fin. walls.</p> <p>1 story and no basement; 12 classrms; study hall; offices; storage rms.;</p>	<p>Structure \$ 86,000. Plbg &amp; Htg. 12,506. Electrical 4,692. Total Const. \$103,198. Cost Per sq. ft. \$7.17</p>	<p>High School, Lubbock, Texas Architect: Atcheson &amp; Atkinson, Lubbock, Texas Bids received: January 26, 1954</p> <p>Flr. area: 213,291 sq. ft.; face brk. &amp; Roman brk. ext. walls; clay tile back-up; concr. flr. const.; Gypsum concr. roof const.; Asphalt tile, Terrazzo ceramic tile and cork fin. flrs; plaster and Structural glazed tile finished walls.</p> <p>2 stories and partial basement; classrms; gym; aud.; cafeteria; dining hall; library; band rm.; offices.</p>	<p>Structure \$1,849,600. Plbg &amp; Htg &amp; Vent-Air Con. 390,766. Electrical 124,362. Built-in-equip 107,993. Total Const. \$2,472,721. Cost Per sq. ft. \$11.59</p>
<p>Elementary School, El Paso, Texas Architect: Monroe Light &amp; Higgins, El Paso, Texas Bids received: January 12, 1954</p> <p>Volume: 477,390 cu. ft.; flr area: 32,950 sq. ft.; face brk ext walls; brk &amp; hollow tile back-up; cement slab flr const.; Gyp. Pyrofil deck on Bar joists roof const.; Asphalt tile, Ceramic tile finished flrs.; plaster, exposed face brk fin. walls.</p> <p>1 story and no basement; 12 classrms.; Auditorium; Cafeteria; Boiler rm.; Janitors Apartment.</p>	<p>Structure \$242,390. Plbg. &amp; Htg. &amp; Ventilating 53,400. Electrical 15,847. Built-in-equip. 4,499. Total Const. \$316,136. Cost Per cu. ft. \$ .66 Per sq. ft. \$9.59</p>	<p>Junior High School, Andrews, Texas Architect: Haynes &amp; Kirby, Lubbock, Texas Bids received: February 18, 1954</p> <p>Volume: 708,015 cu. ft.; flr. area: 39,374 sq. ft.; face brk, Terra Cotta, Granite, cut stone ext. walls; clay tile &amp; Haydite blk back-up; concr. slab on fill, slab or stl joists flr. const.; stl. trusses, stl joist l.w. concr. roof const.; maple, Ceramic tile, Vinyl fin. flrs.; Haydite, exposed, plaster, Kalistron Mainscot fin. walls.</p> <p>1 &amp; 2 stories and no basement; 21 rms.; offices; gym showers.</p>	<p>Structure \$443,000. Plbg &amp; Htg &amp; Vent-Air Cond. 46,950. Electrical 15,700. Total Const. \$505,650. Cost Per cu. ft. \$1.71 Per sq. ft. \$12.84</p>

NOTE: Neither the architects who have contributed this data nor the F. W. Dodge Corporation can be held responsible for errors.

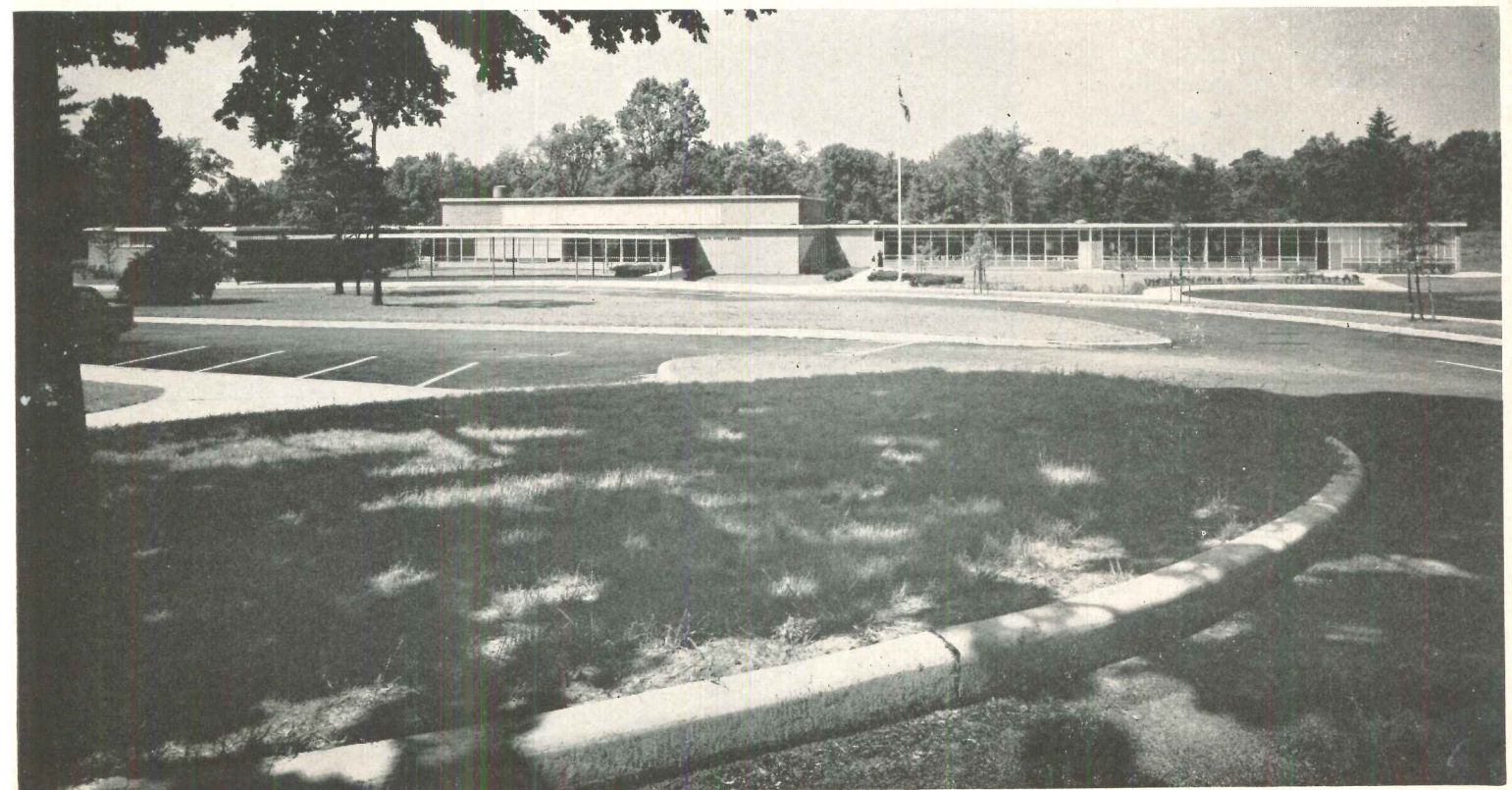


**NEWFIELD SCHOOL (ELEMENTARY), STAMFORD, CONN.**

## **TWO CONNECTICUT SCHOOLS BY THE SAME ARCHITECTS**

*Sherwood, Mills & Smith, Architects*

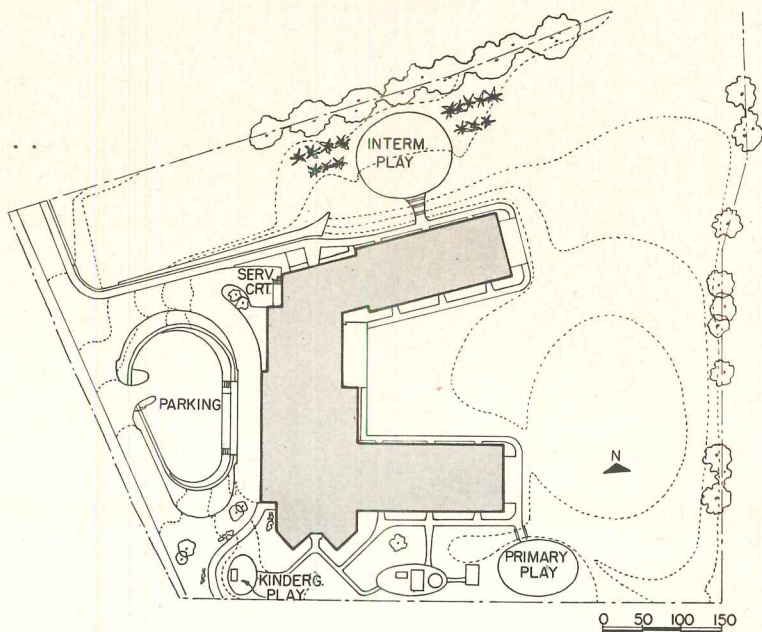
**NORTH STREET ELEMENTARY SCHOOL, GREENWICH, CONN.**



TWO CONNECTICUT SCHOOLS: STAMFORD . . .



Joseph W. Molitor



*Seelye, Stevenson, Value & Knecht, Structural Engineers; Hill & Harrigan, Mechanical Engineers; Bryan J. Lynch, Landscape Architect; Esther S. Mills, Color Consultant*

The Newfield School in Stamford, like the North Street School in Greenwich shown on the opposite page, is built in a prosperous residential community within commuting distance of New York City. The Stamford site is in a secluded area which is rapidly being built up around the school. In the recent competition sponsored by *The School Executive*, Newfield won a special feature award for its exterior character and skillful use of color. Both schools take advantage of wooded sites; at Newfield, grades are utilized to provide a depressed parking area so non-bus traffic creates no hazard and the school is not seen through a maze of parked cars. The intermediate play area is a natural amphitheater, with evergreens forming wings and a grassy bank for spectators. The amphitheater is used by the whole community all year.

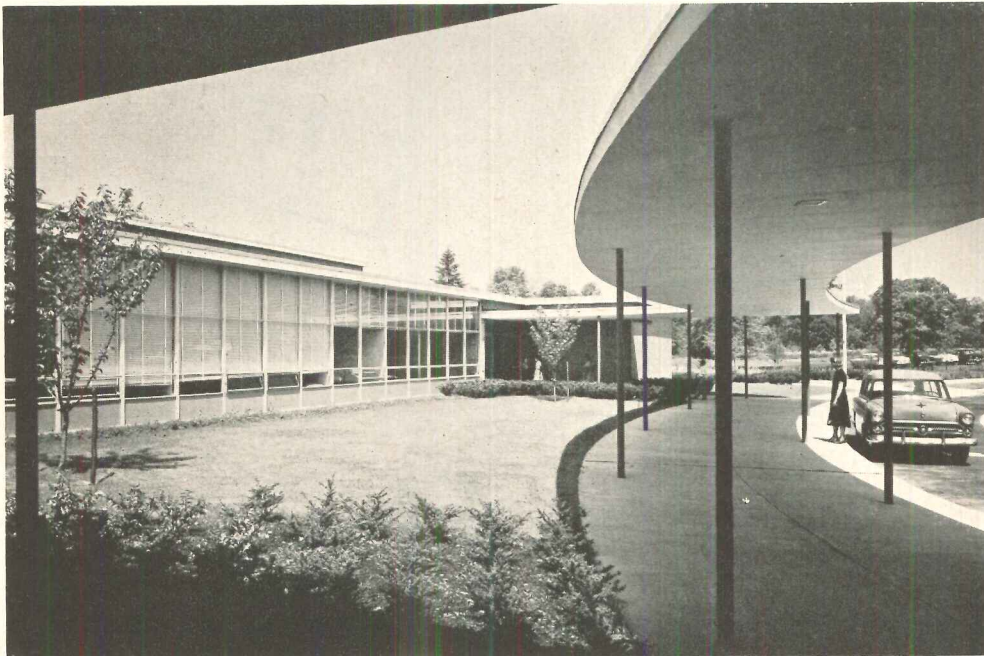
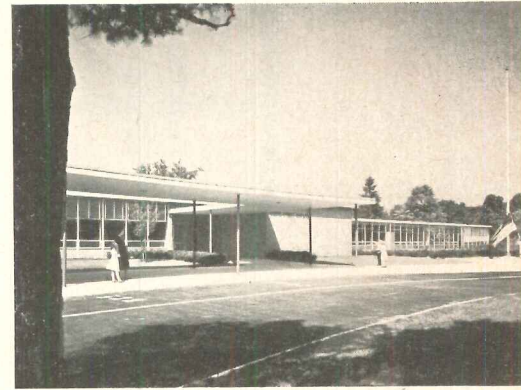
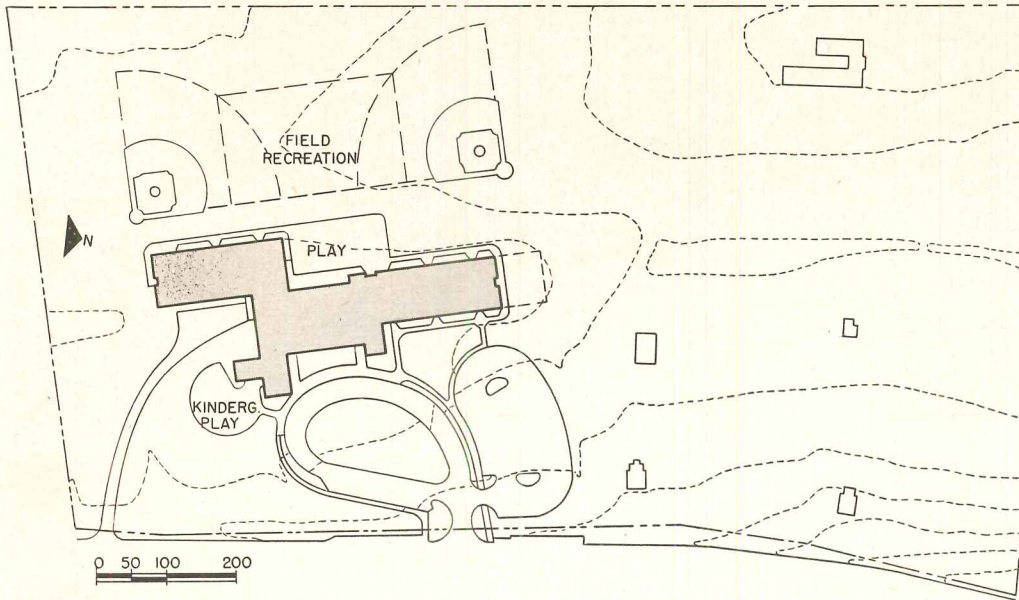


*Stamford's protected bus platform (above) and intermediate play area, used all year*

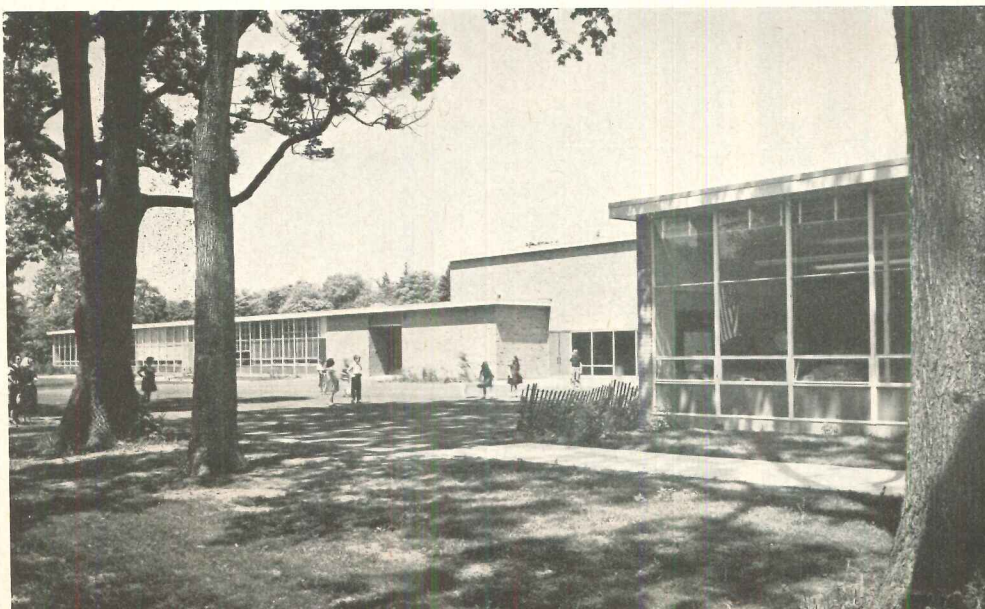




... AND GREENWICH



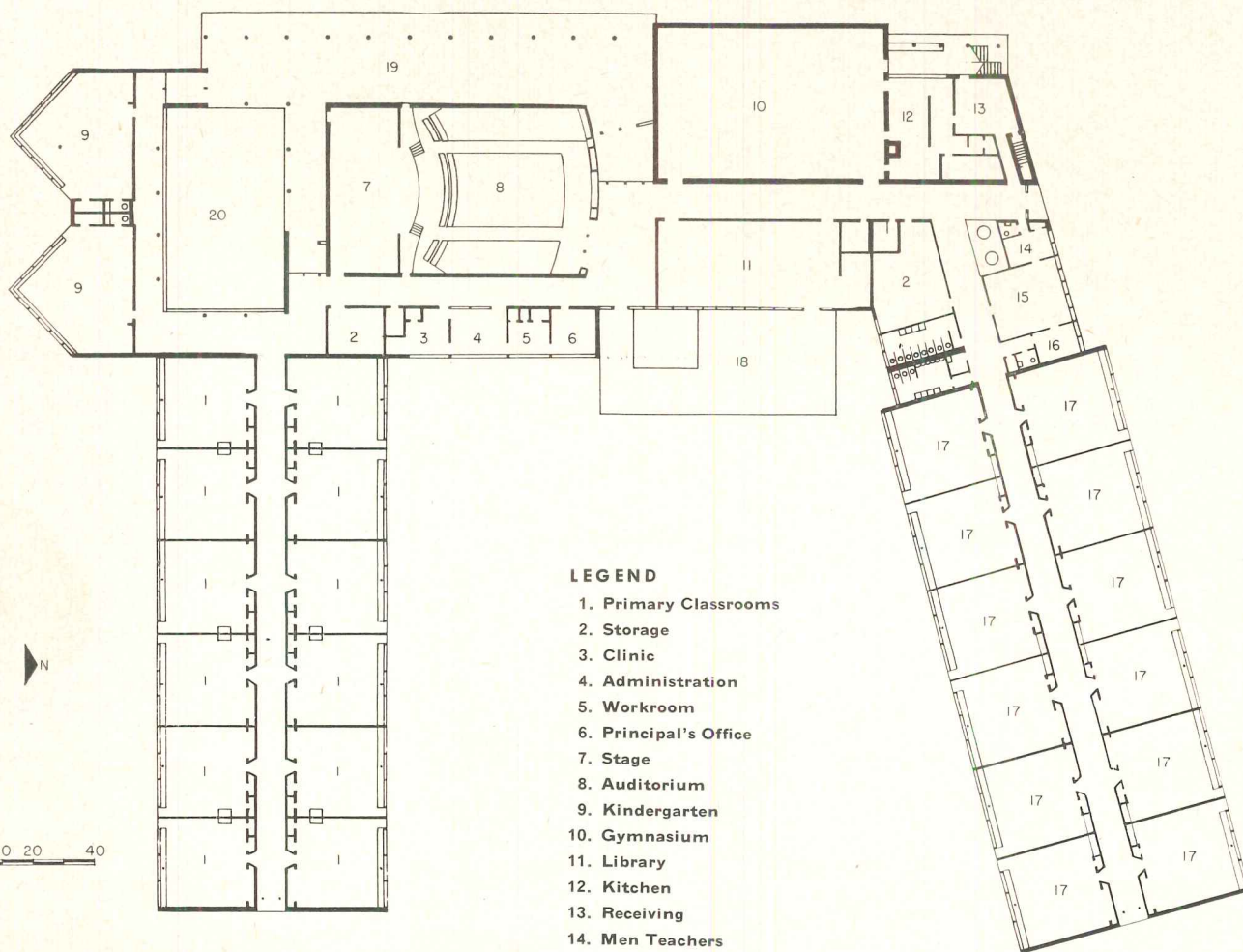
Greenwich: covered walk for bus loading; below, equally superb trees on the site



*Seelye, Stevenson, Value & Kencht, Structural Engineers; Tregenza & Briglia, Landscape Architects; Frederick C. Wood, Special Consultant for the Town of Greenwich*

North Street Elementary School in Greenwich has a plan organization paralleling that of the Stamford School (opposite page), with a central unit of offices and non-classroom areas from which classroom wings extend so they can easily be expanded. Both schools contain kindergarten through sixth grades, with age groups segregated in primary and intermediate wings. The Greenwich site is in an established community, back from main thoroughfares, and formerly was bisected by a wet-weather stream which has been channeled through an underground conduit. The North Street School also won a recent *School Executive* award, an honorable mention for site use, separation of age groups and general excellence. In Greenwich the school authorities wanted a school designed chiefly for children's use, while in Stamford there is more stress on community facilities; this caused differences in some areas.

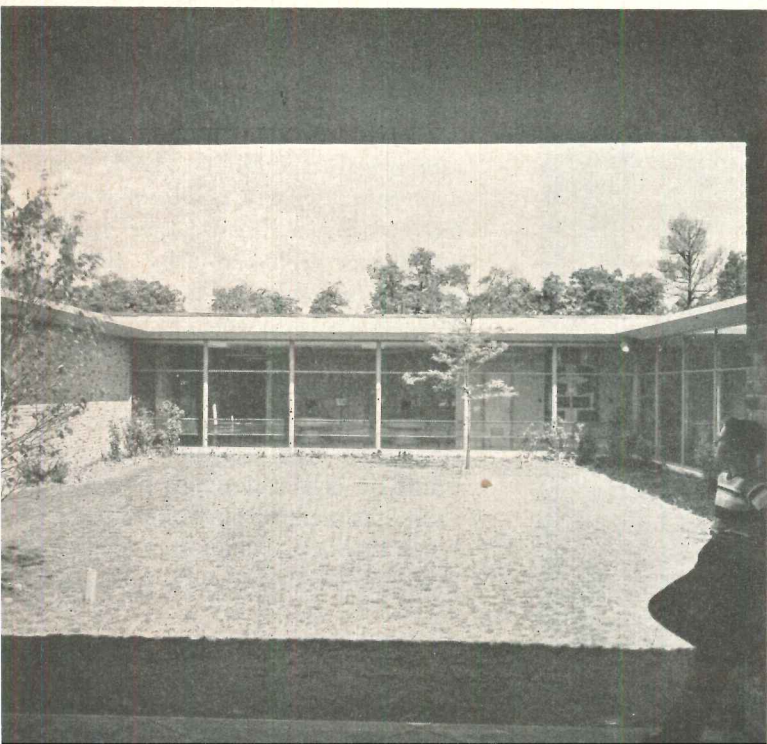
TWO CONNECTICUT SCHOOLS: STAMFORD . . .

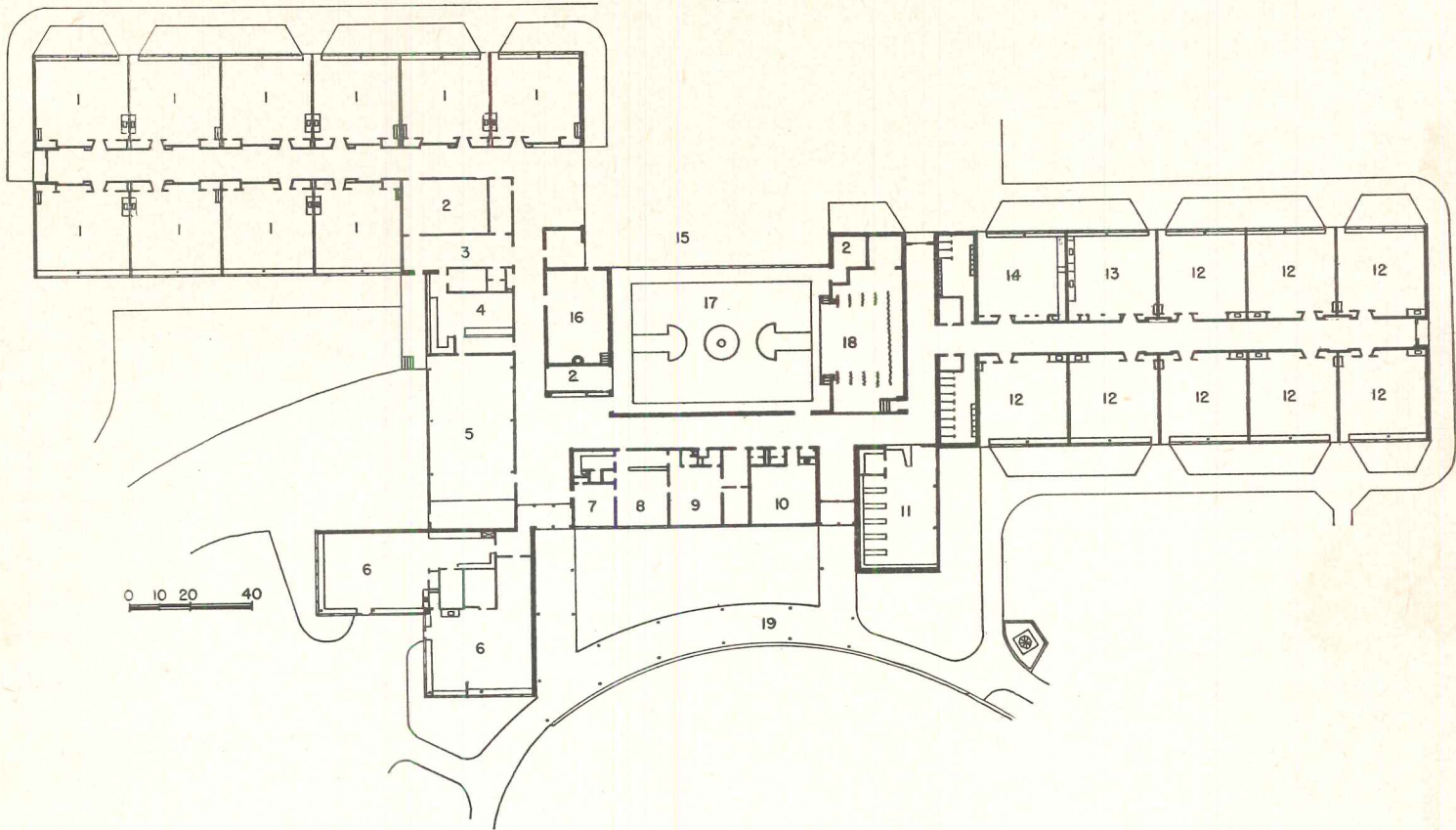


**LEGEND**

- 1. Primary Classrooms
- 2. Storage
- 3. Clinic
- 4. Administration
- 5. Workroom
- 6. Principal's Office
- 7. Stage
- 8. Auditorium
- 9. Kindergarten
- 10. Gymnasium
- 11. Library
- 12. Kitchen
- 13. Receiving
- 14. Men Teachers
- 15. Teachers' Lounge
- 16. Women Teachers
- 17. Intermediate Classrooms
- 18. Terrace
- 19. Entrance — Bus Loading
- 20. Garden Court

*Stamford's Newfield School required a separate auditorium; gymnasium (of limited scope for younger children) is top lighted and serves also as cafeteria. Photos below: left, garden court; right, exterior of library. Imaginative, inexpensive details include school clock made of colored balls, simple abstract brick sculpture laid up as wall was built*

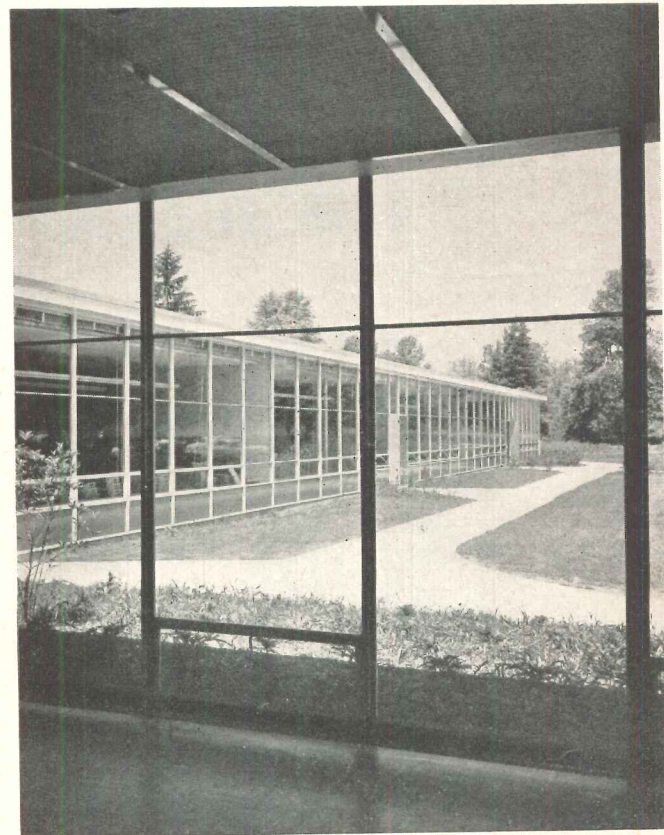
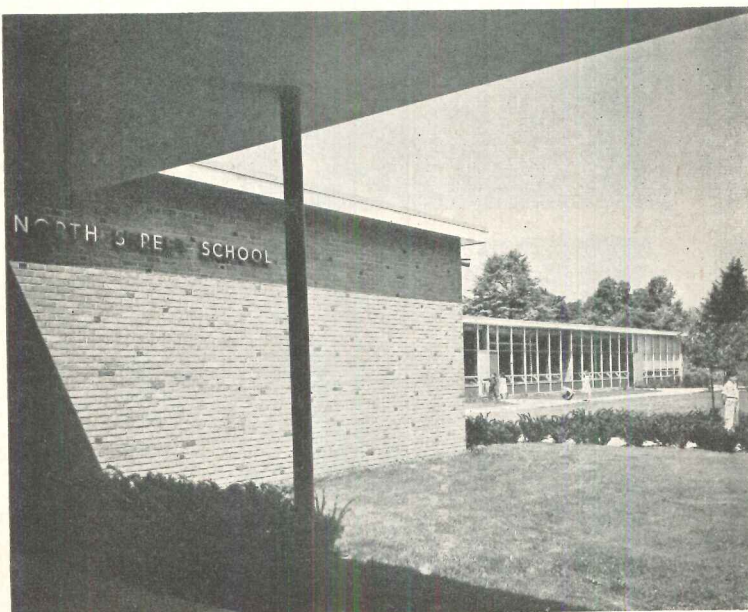




**LEGEND**

- |                       |                             |
|-----------------------|-----------------------------|
| 1. Primary Classrooms | 10. Teachers' Room          |
| 2. Storage            | 11. Library                 |
| 3. Receiving          | 12. Intermediate Classrooms |
| 4. Kitchen            | 13. Homemaking              |
| 5. Multi-purpose Room | 14. Shop                    |
| 6. Kindergarten       | 15. Outdoor Play            |
| 7. Principal's Office | 16. Heating                 |
| 8. Office             | 17. Gymnasium               |
| 9. Clinic             | 18. Stage                   |
|                       | 19. Bus Platform            |

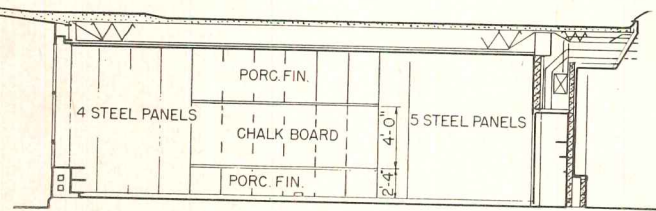
Joseph W. Molitor



*Greenwich school gymnasium has child-height stage, its cafeteria-multi-purpose room a low platform. Photos: library, and view toward intermediate wing*

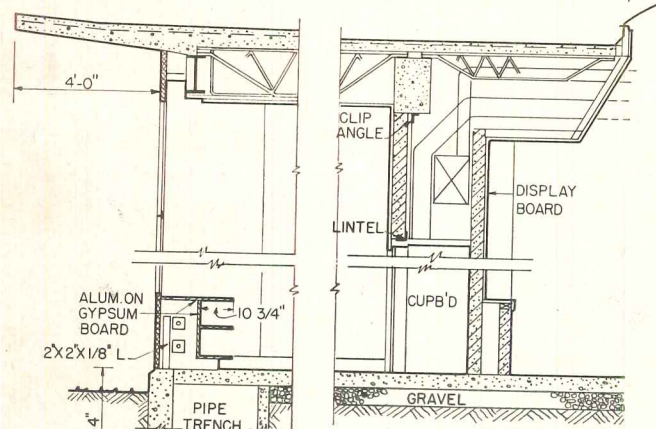
Construction, both schools: slab on grade, light steel framing, cavity walls, prefabricated glazed wall assemblies. These last have light steel members which receive steel sash, fixed glass and plywood panels to which are bonded colored porcelain enamel exterior surfaces, aluminum interior faces. At Stamford the glazed wall is believed to have saved \$11,000. Also first used at Stamford are prefabricated partitions: splined panels 2 x 10 ft, 4 in. thick, with fiberboard core surfaced each side with metal-covered plywood, part porcelain enamel chalk board, part painted magnetic tackboard. Photos, right, top to bottom: kindergarten, classrooms, play sculptures

TWO CONNECTICUT SCHOOLS: STAMFORD . . .



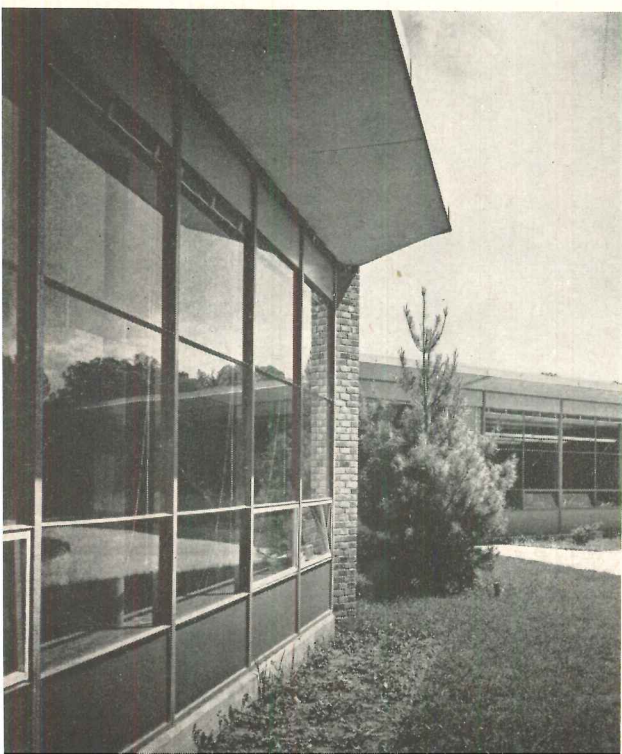
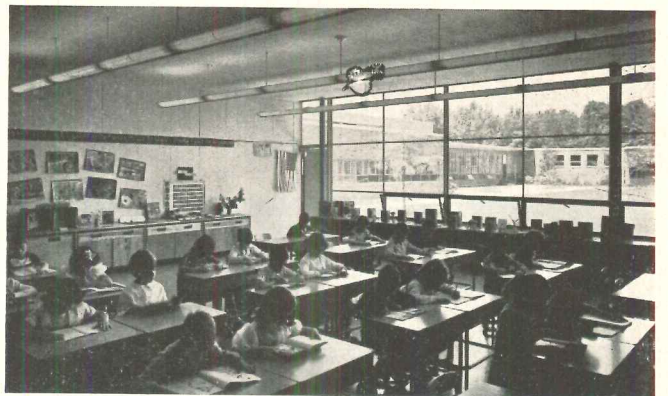
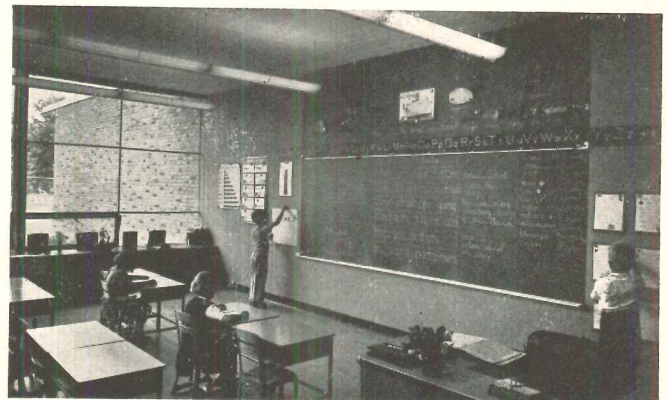
TYPICAL CLASSROOM SECTION

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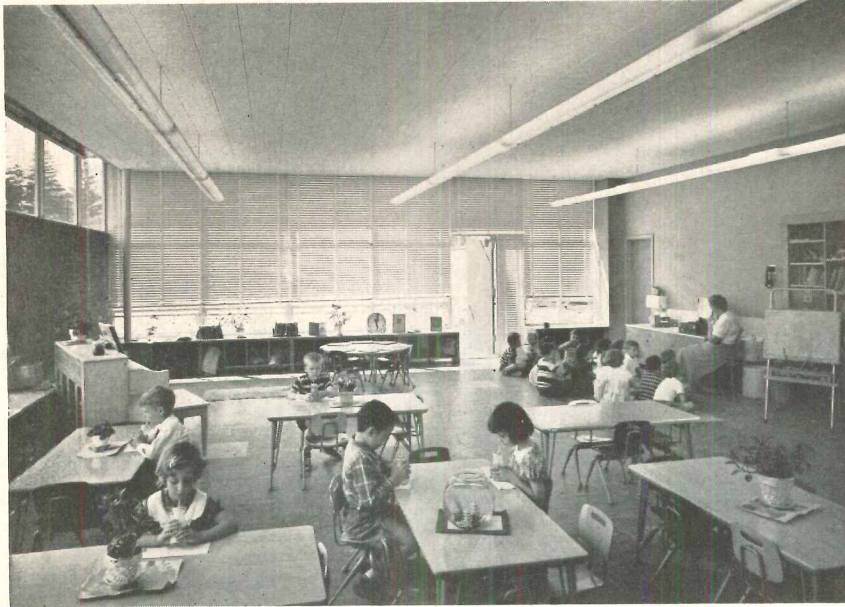
EXTERIOR WALL SECTION

0 2 INTERIOR WALL SECTION

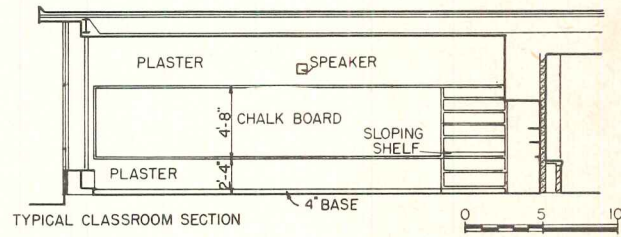
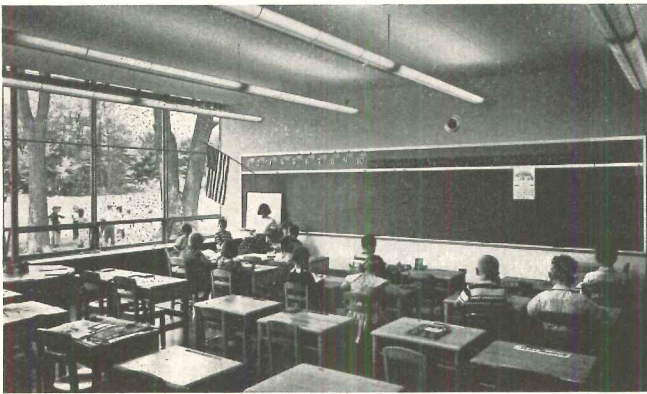


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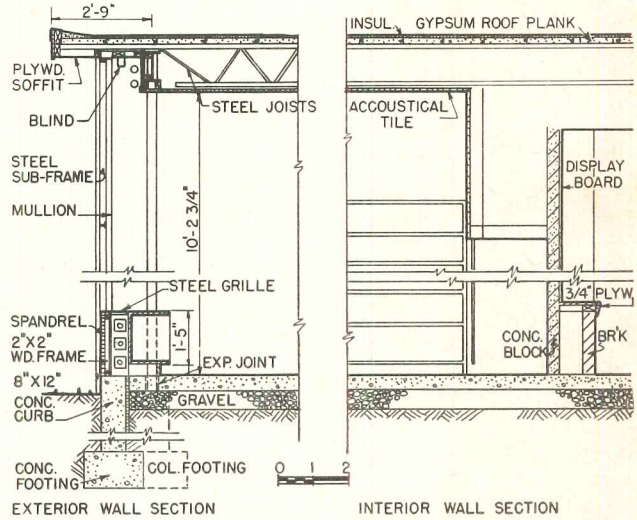
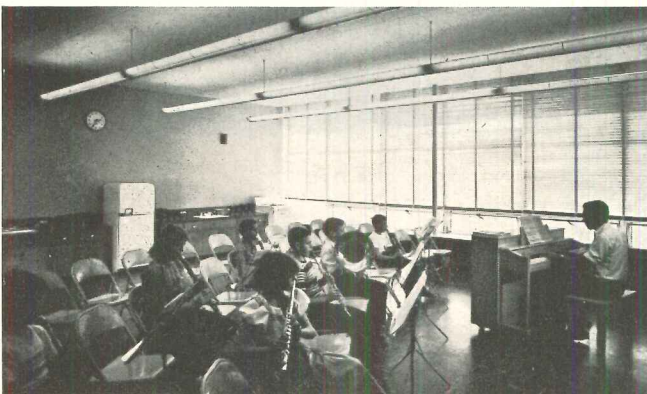
... AND GREENWICH



Photos: left, kindergarten has brick panel with built-in seat for story telling (sketch above); center below, typical classroom; one of two multi-use classrooms for home-making, music, industrial and fine arts; wardrobe units. Details show conventional partition construction, also mains for the overhead, down-feed, hot water system. There is some supplementary radiant heat

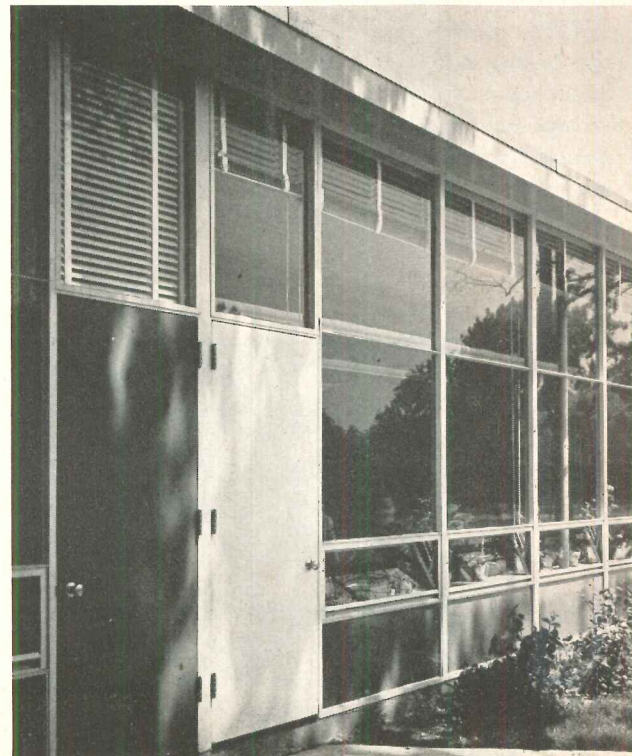
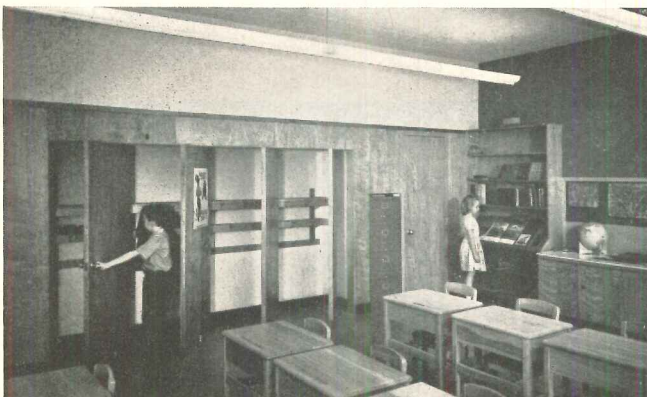


TYPICAL CLASSROOM SECTION



EXTERIOR WALL SECTION

INTERIOR WALL SECTION





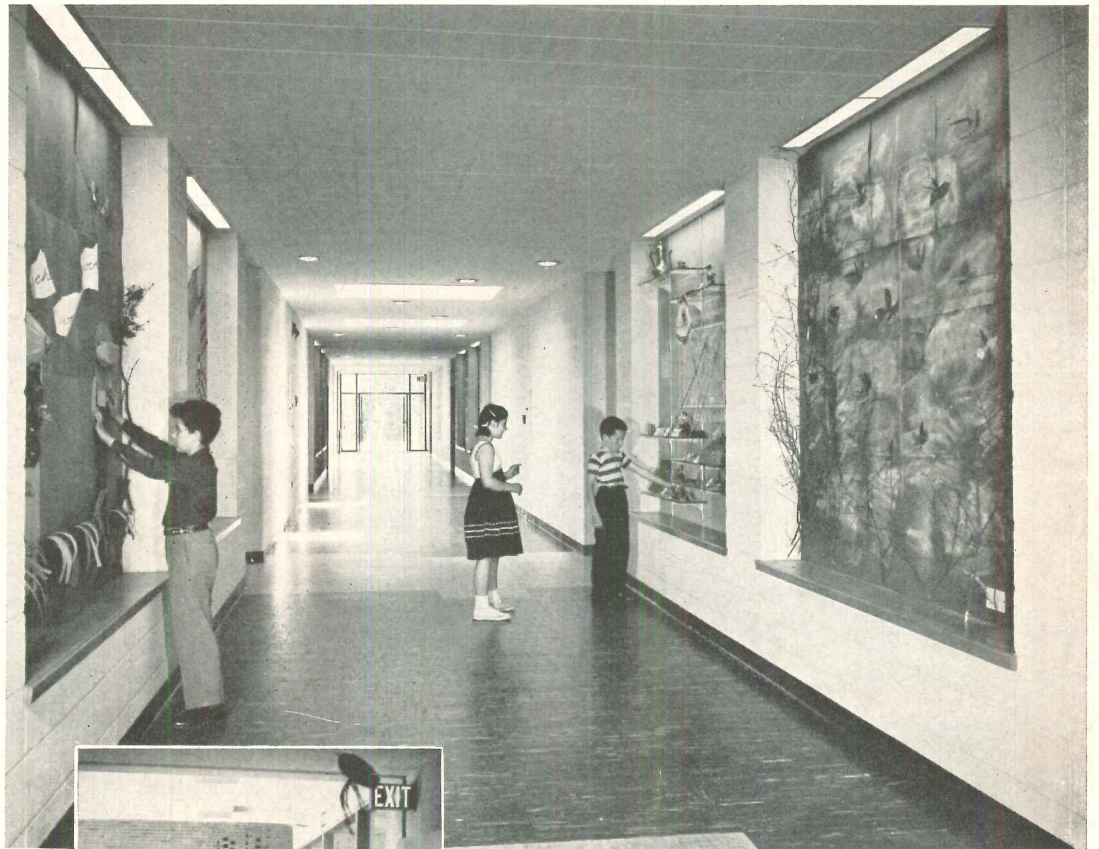
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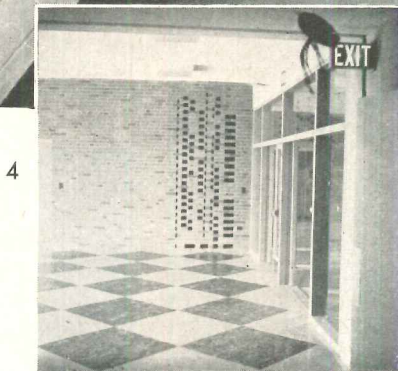
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TWO CONNECTICUT SCHOOLS: STAMFORD . . .

At Newfield School in Stamford, requirements fixed by the school administration and the approach of the designer produced certain results. Among the requirements were wash fountains near the cafeteria, an auditorium and gymnasium suitable for community as well as school use. The designer contributed such things as the colorful school clock, abstract brick patterns, play sculpture made of surplus building materials, and corridors whose length is relieved by plastic skylights, patterns in the asphalt tile flooring and lighted display niches, open for the students to arrange and handle, set in the painted block walls. Building cost was \$914,626.00 total, \$13.70 per sq ft; site cost was \$118,039.00



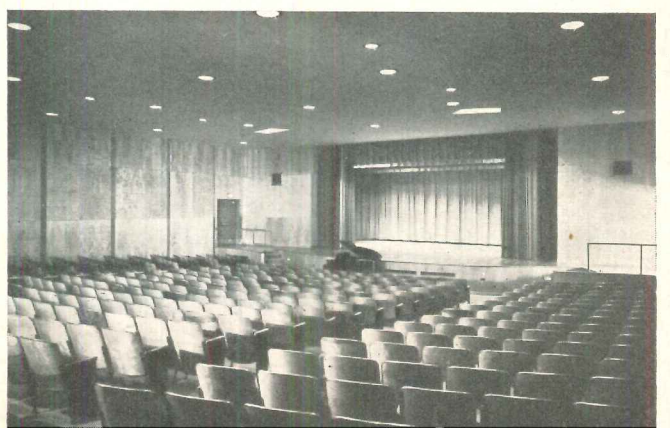
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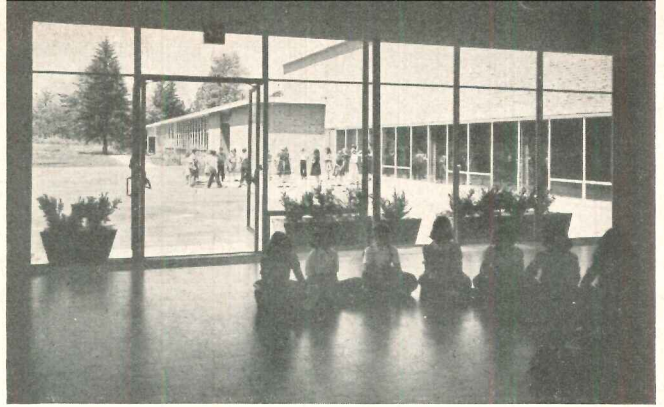


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Stamford photos: 1, teacher-controlled wash fountains; 2, library; 3, display alcoves in corridor; 4, abstract convective grille formed by omitting some bricks; 5, gymnasium doubles as cafeteria; 6, auditorium has sloping floor, fixed seats, is for school and community use

5 6





7 8

... AND GREENWICH



At the North Street School in Greenwich, less stress was placed on community use; for instance, in the gymnasium-auditorium the ceiling is relatively low, baskets are lower than standard height, stage floor is lower than usual so small pupils can see stage action well. In addition to logical planning and economical construction characteristic of both schools, at Greenwich the designer selected a pleasant brick for corridor walls, used a luminous ceiling and delightful color in the library to complement one gauze-curtained glass wall. Construction cost was \$663,000 or \$14.85 per sq ft; site work added \$115,000 to the construction figure

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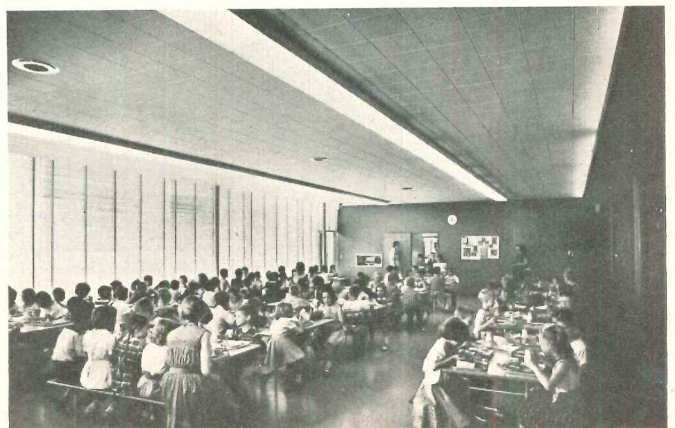
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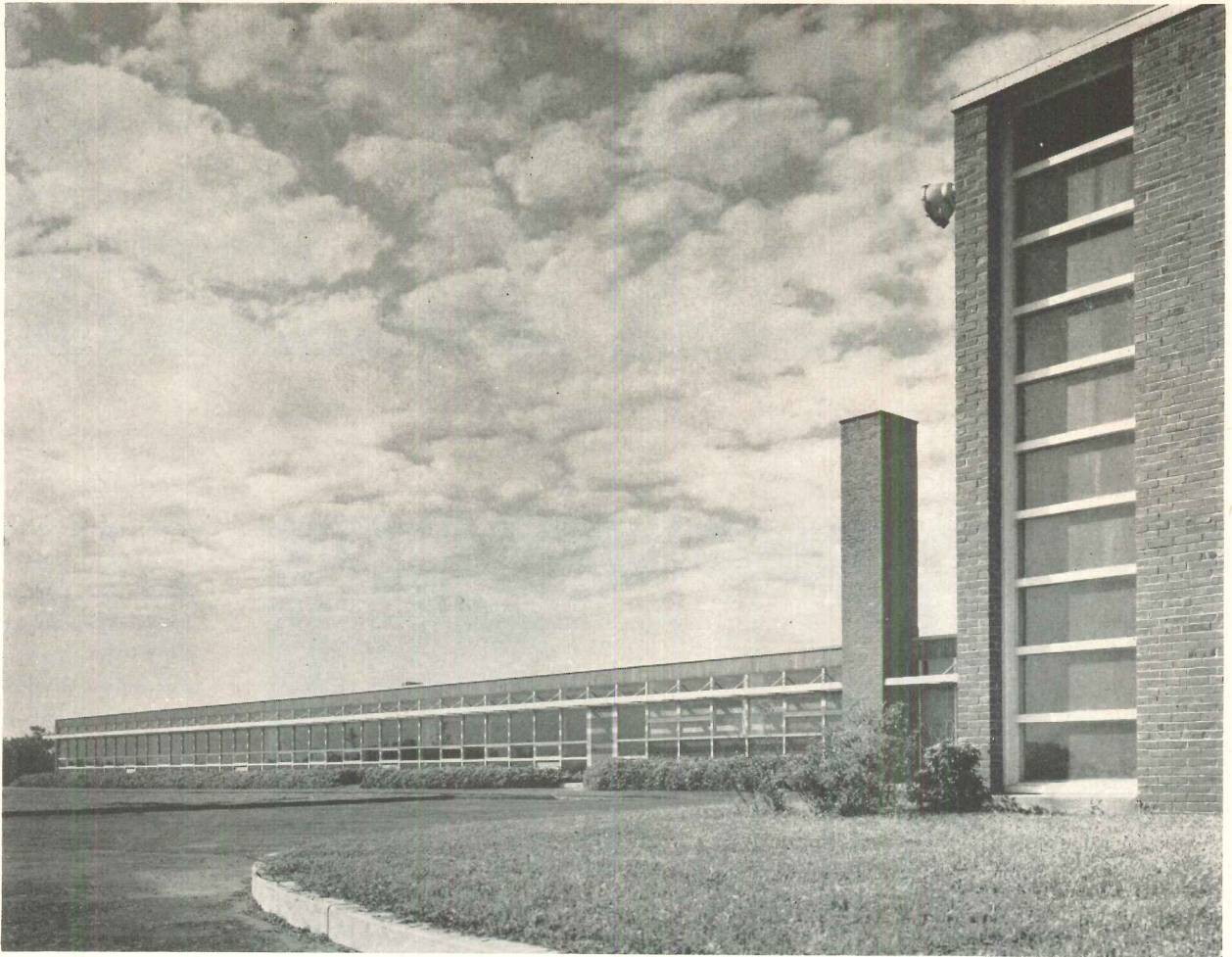


Joseph W. Mollitor

Greenwich photos: 7, library; 8, looking out across paved play space; 9, corridor; 10, multi-purpose room showing platform in use for a school program; 11, multi-purpose room in use as a cafeteria; 12, child-scale gymnasium-auditorium with tempered glass wall

12 11

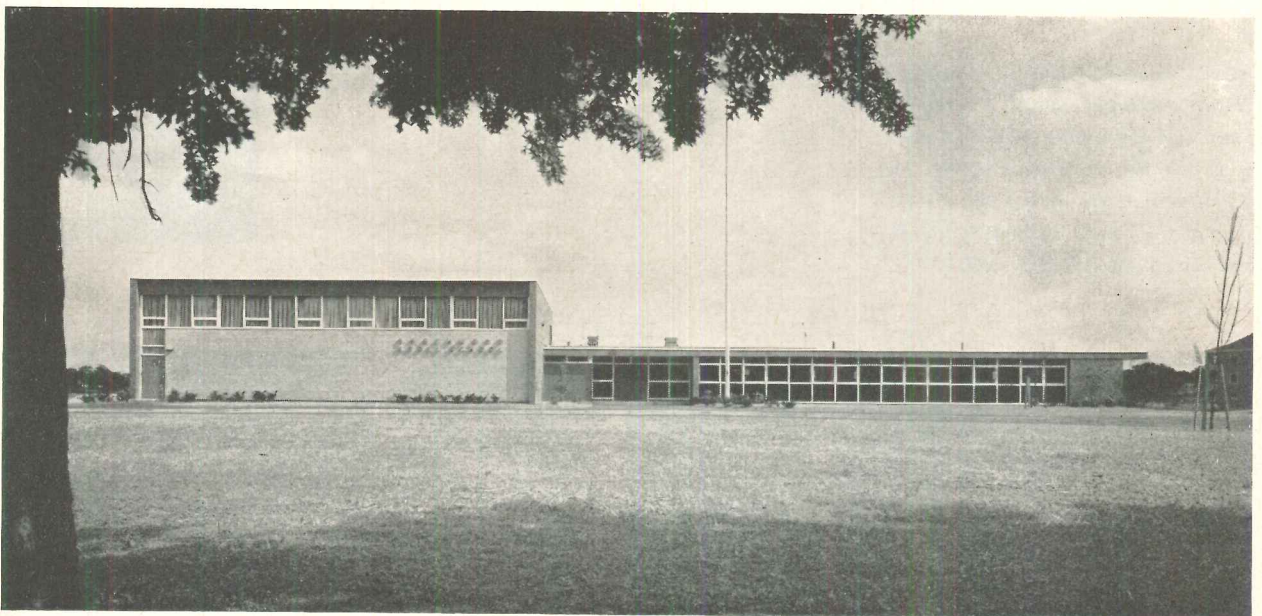




## PORCELAIN ENAMEL USED TO REDUCE WEIGHT

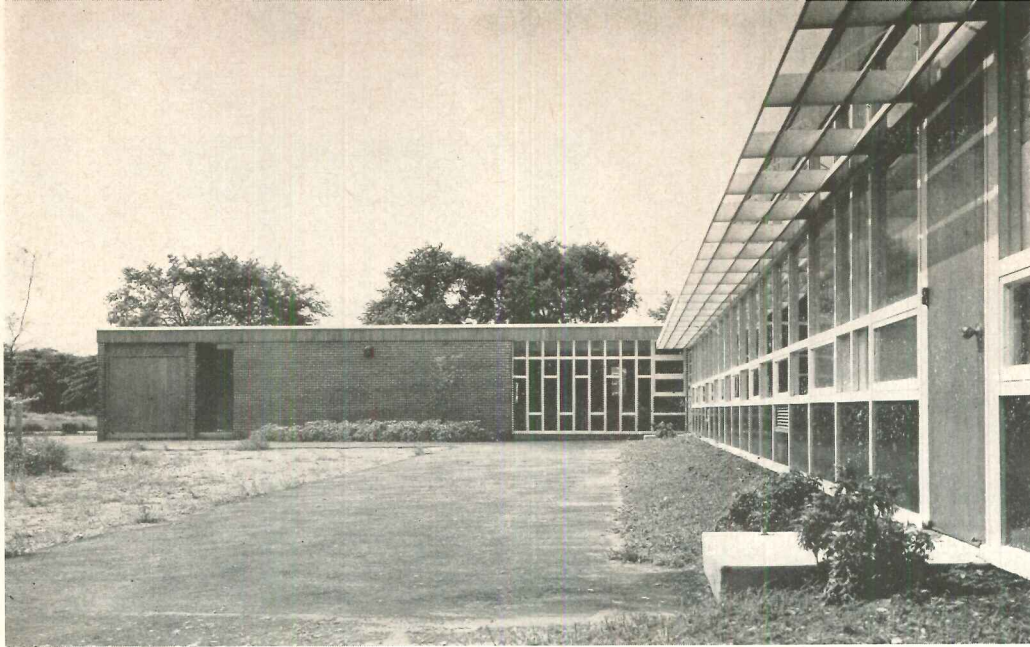
*Beechwood Knoll School, Quincy, Mass.*

*Coletti Brothers, Architects*



Joseph W. Molitor

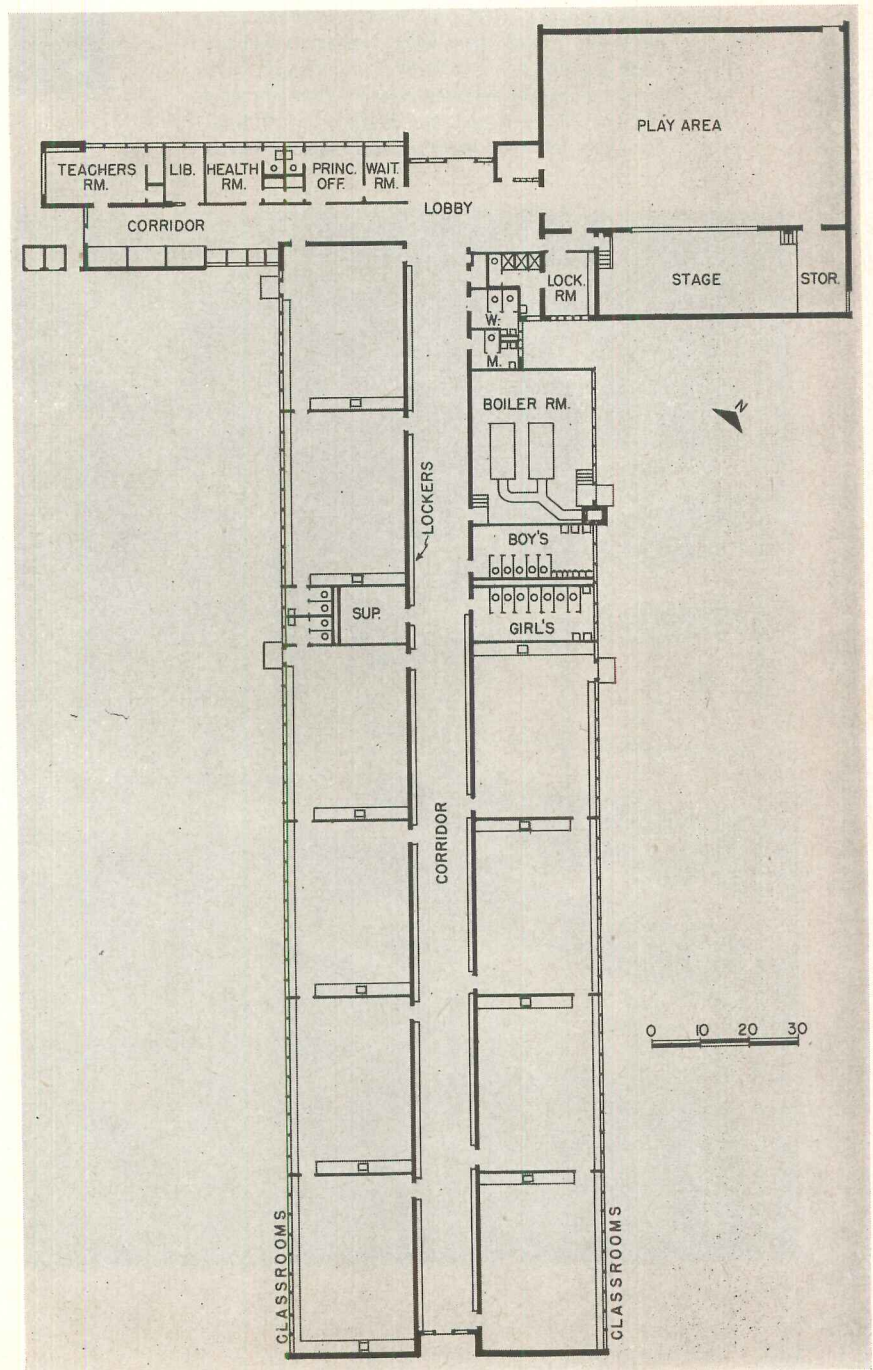




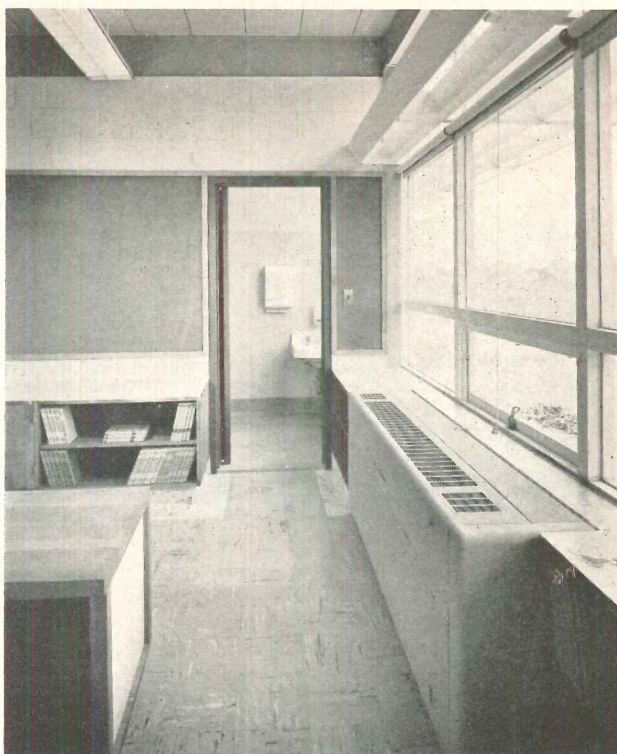
*Insulated porcelain enamel steel panels, deep blue-green in color, reduced the weight of exterior walls substantially and increased the proportion of usable interior area*

Though it is axiomatic that construction cost increases as weight increases, seldom is this fact's importance as dramatically evident as it is in the case of the Beechwood Knoll School.

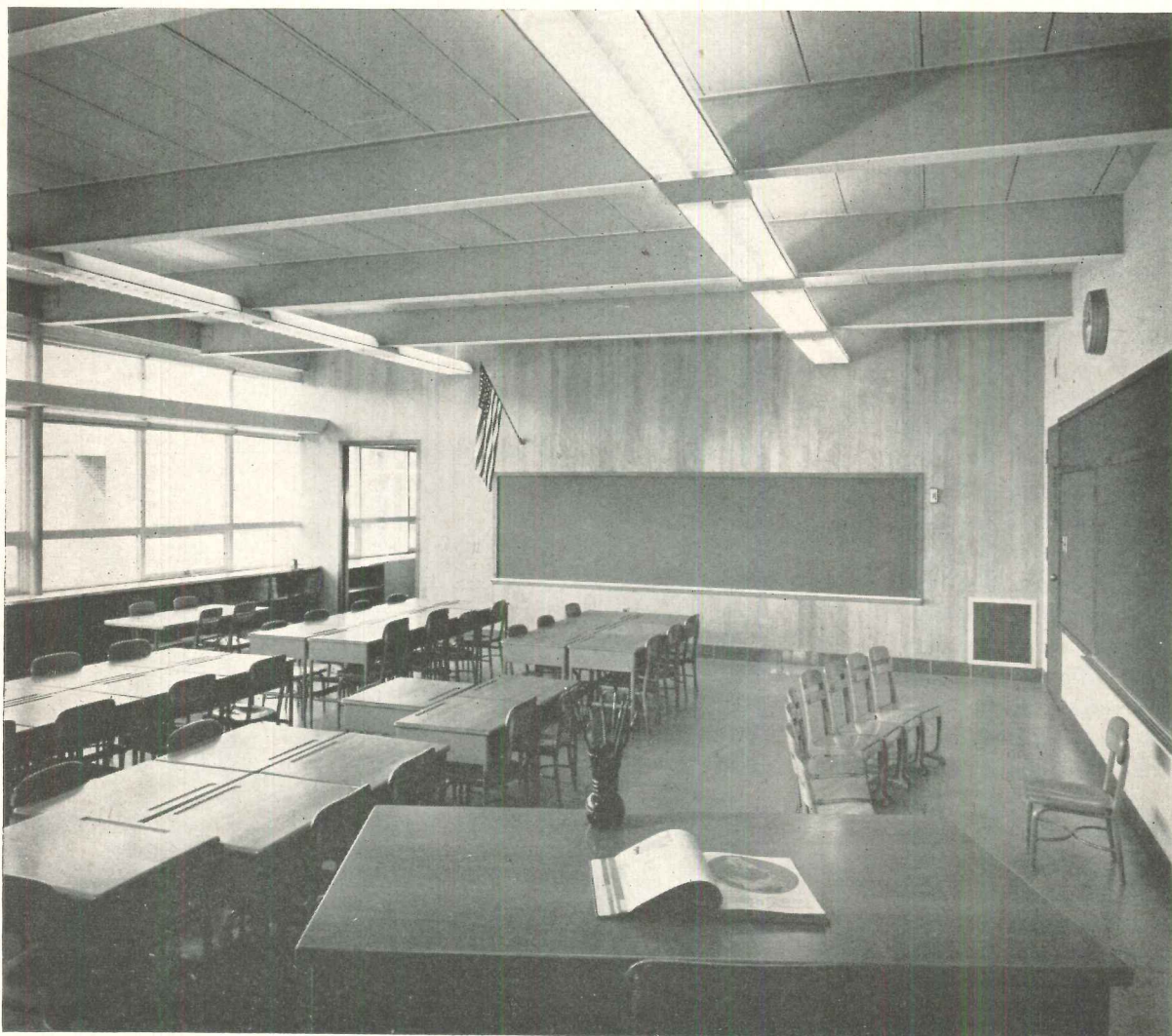
Originally the site was a salt-water swamp about four or five hundred feet from the ocean. The natural grade was approximately eight feet below sidewalk level; thousands of cubic yards of fill were required to bring grade up to a proper relation to streets and boundaries. At times, when high tides inundated the entire area, water levels rose to within four or five feet of the street. This condition not only eliminated all basement areas; since the building had to rest on composite piles (wood into water, concrete below) and yet be very economical, it led to a one-story, lightweight building. Insulated porcelain enamel panels contributed substantially to this end, in one of the earliest, if not the very first, of such uses; the building was completed in 1952 at a cost of slightly more than \$13 per sq ft — a low figure for that date and place, and well within the budget.



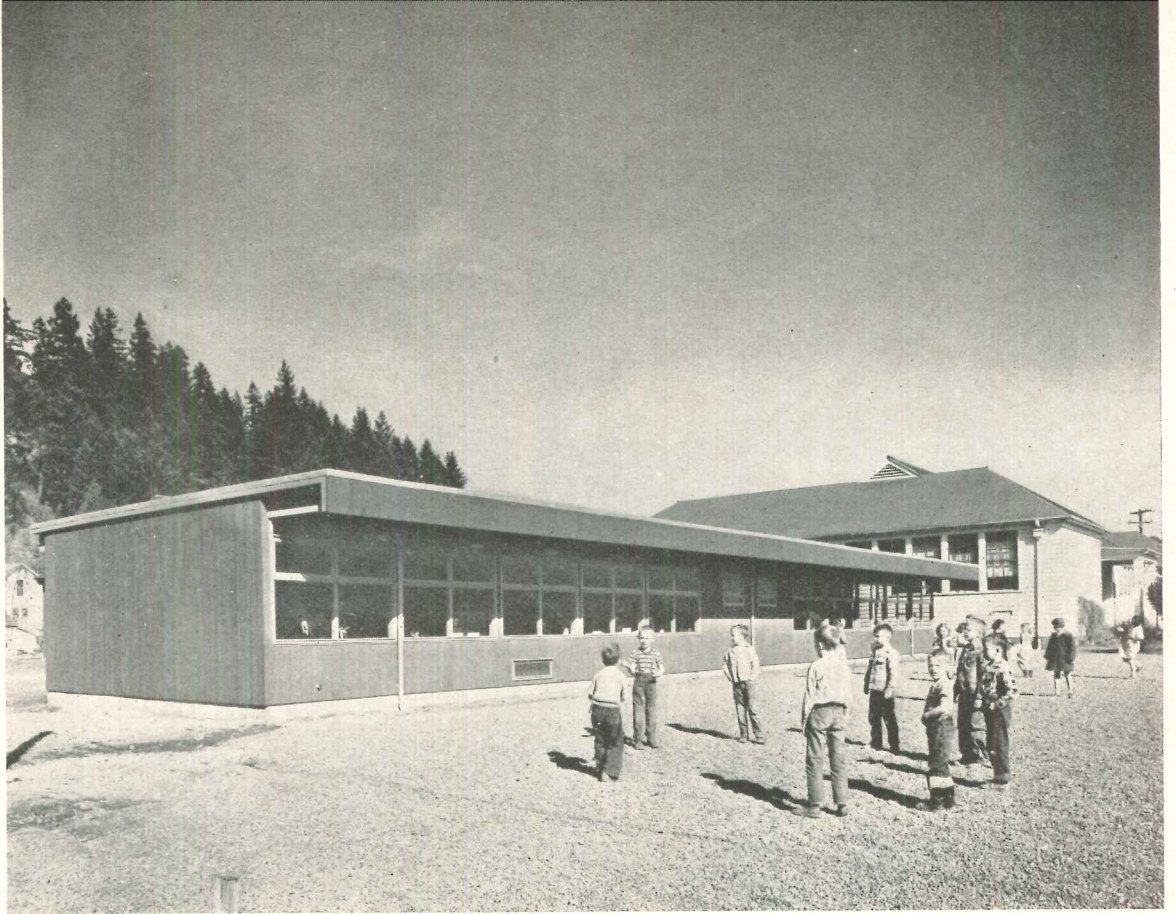
**MASSACHUSETTS SCHOOL:  
PORCELAIN ENAMEL WALL PANELS**



*For economy, steel roof beams, painted, and gypsum plank were both exposed. Conduits and piping are concealed even though there is no plaster or furring; color is used liberally inside. On exterior, for warmth of feeling, some surfaces are flush vertical cypress boards*



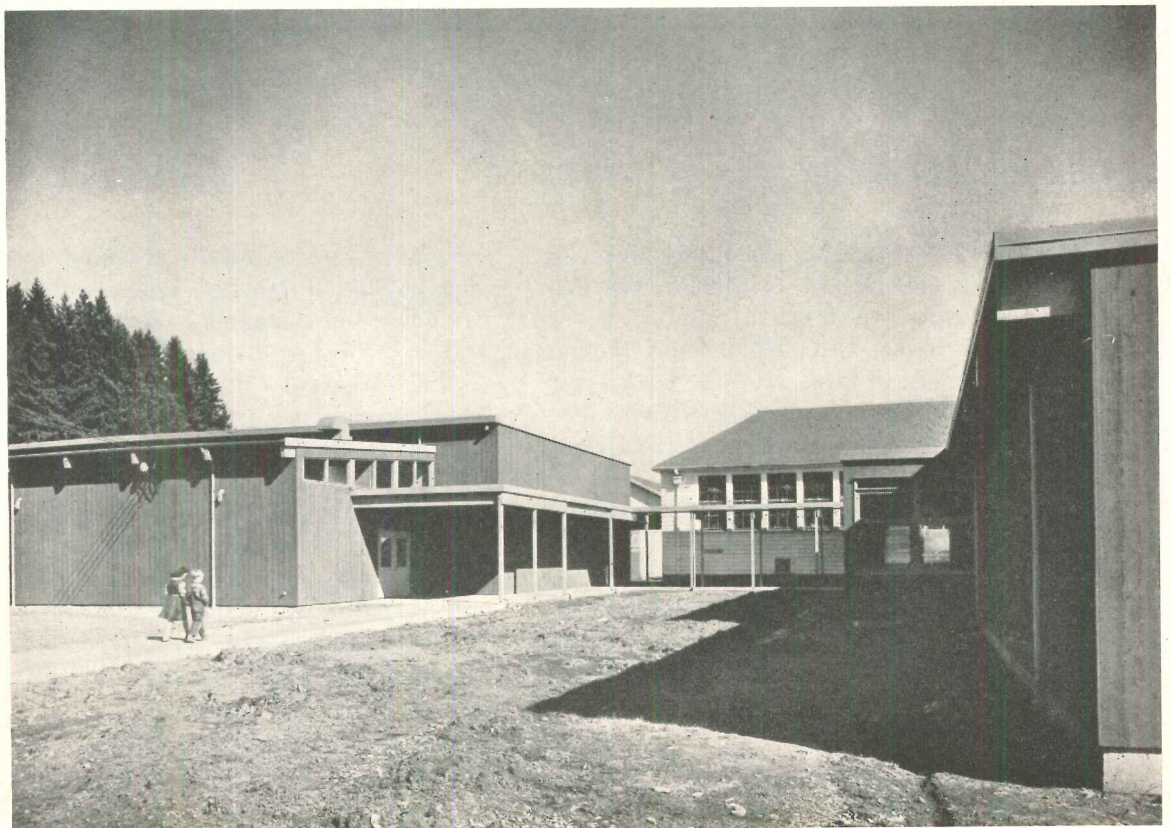
Joseph W. Molitor



## OREGON SCHOOL MODERNIZED: FIRST STAGE

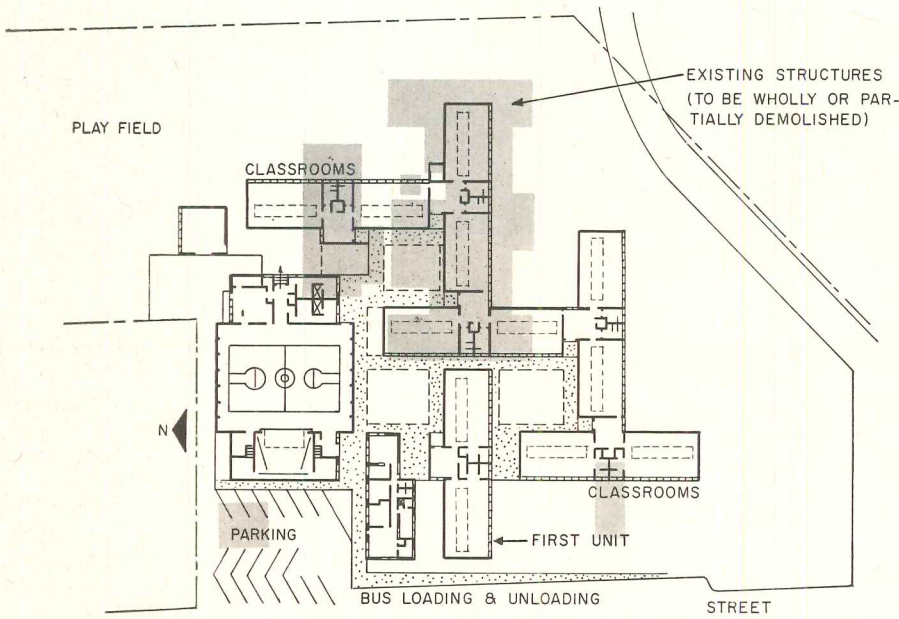
*Addition to Marcola Grade School, Marcola, Ore.*

*Wilmsen & Endicott, Architects*



FIRST STAGE MODERNIZATION: OREGON SCHOOL

Tom Burns, Jr.



*First stage in modernization: construction of a two-classroom building, multipurpose room and service building added to an existing obsolete grade school. Construction is laminated wood framing laid out on 8-ft square modules, with plywood-surfaced interior partitions to which tack and chalk boards, etc., are attached. Lowered skylights have been used by these architects for some time*

**More on School Costs**

To reiterate, the ways of keeping school costs down are almost as numerous as the schools being built. There are certain broad principles which usually apply; yet in a specific instance to accept them blindly may produce results exactly opposite to those wanted. At the same time, in each job there are bound to be circumstances which the ingenious designer can turn to the ends of economy.

In the Marcola modernization (above), the solution which was truly economical, considering the community's pressing immediate needs, probable future requirements, and its pocket-book potential now and in years to come, was a program of gradual replacement, tearing down the old only as the new becomes available. While

this is not as dramatically satisfying as a whole, spanking, brand-new structure, built all at once and probably straining the community credit almost unbearably, it can in the end produce a school plant every bit as good.

The Delaware school which follows is, on the other hand, an example of demolition and building a complete job all at once. All the buildings typically found in a run-down, congested area existed on the Wilmington site. The cases differed in other ways: Marcola is a suburban — if not a rural — school; the Delaware job is urban, a type whose problems have seldom been as well solved. It is a multi-story building, yet it is as well scaled to children's uses as Marcola — something which we seem to find an exceedingly difficult end to attain.

Joseph W. Mallinor

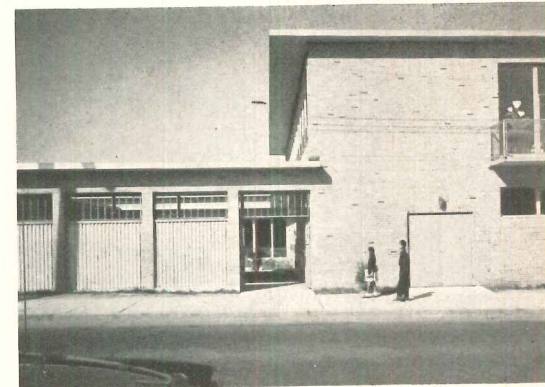


## DELAWARE SCHOOL PROFITS BY ADJOINING PARK

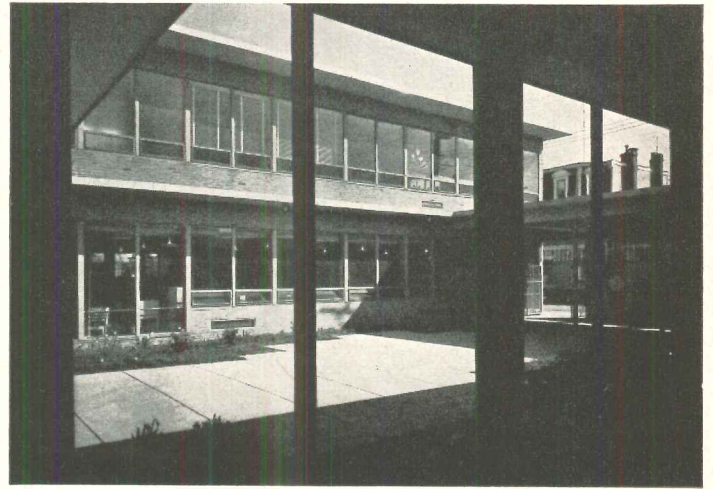
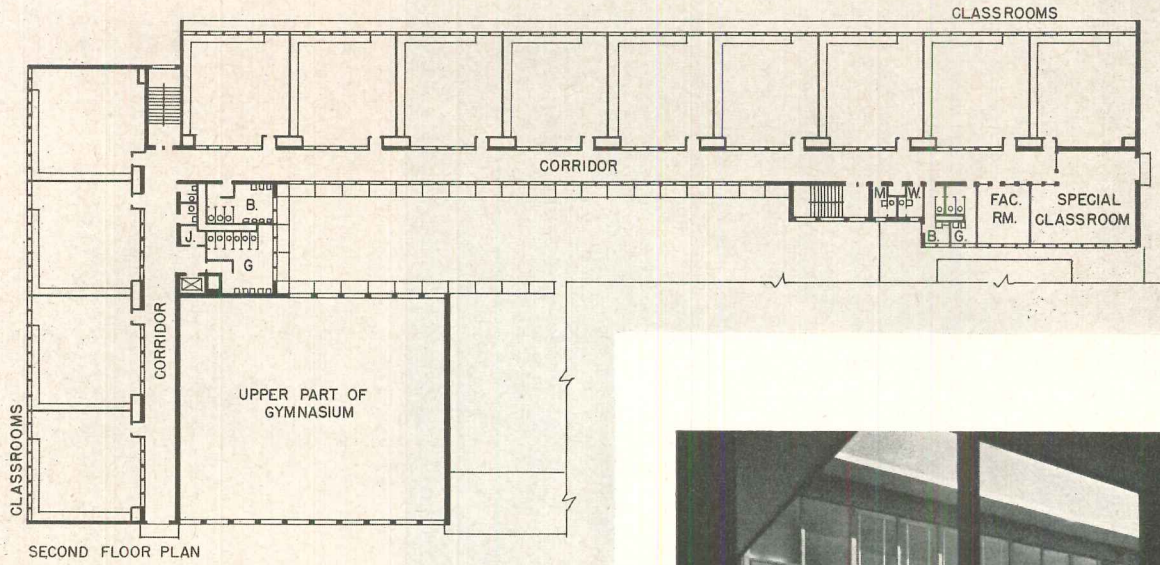
*Frederick Douglass Stubbs School, Wilmington, Del.*

*Victorine & Samuel Homsey, Architects*

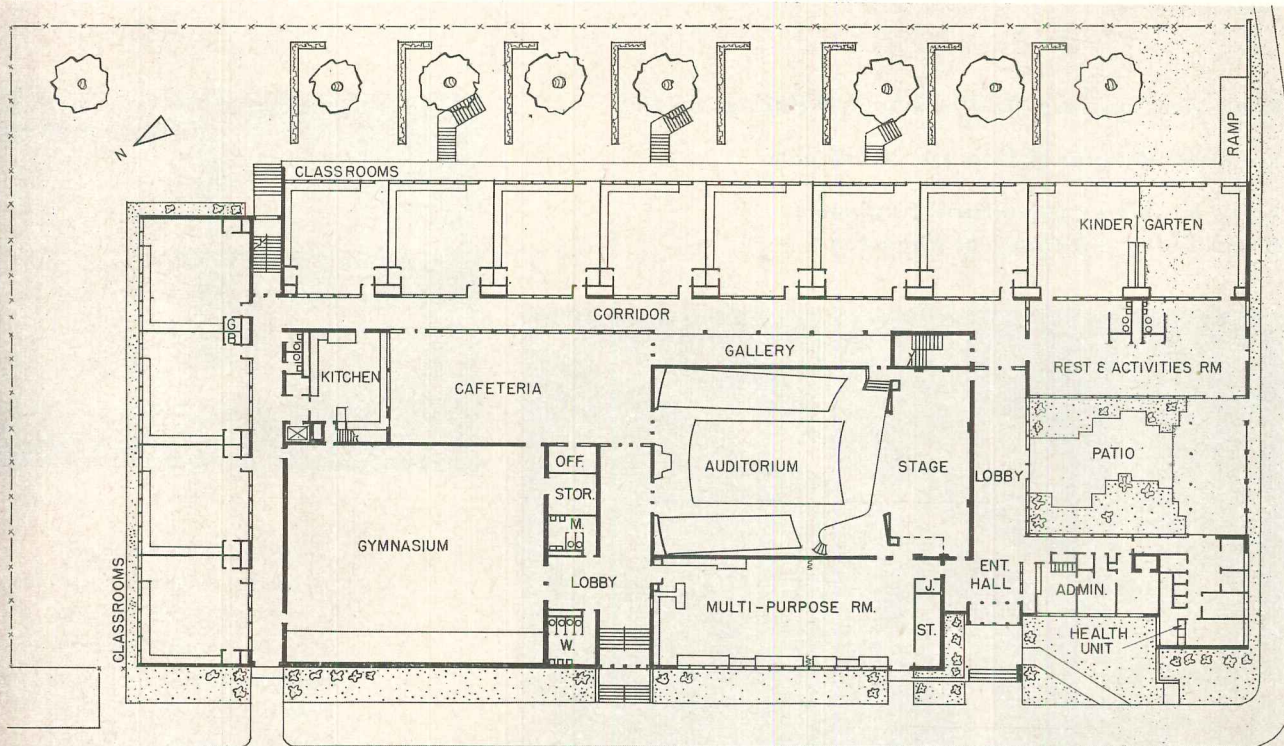
*Louis H. Doane, Structural Engineer;  
Erwin Faller, Mechanical Engineer*



*Site slopes down to a municipal park; building is one-story on street side with two-story (and part basement) classroom units toward park. Photos: top, direct access from lower grades to play and park areas; above, entrance to kindergarten patio; left, covered play area for grade school children*



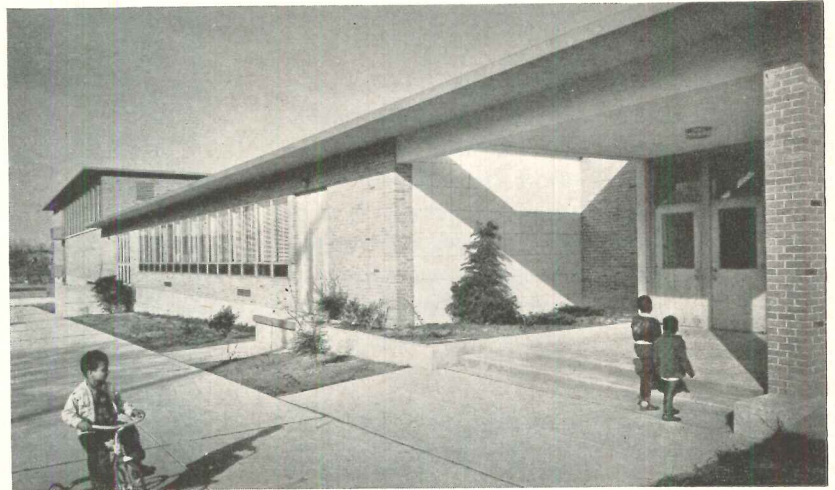
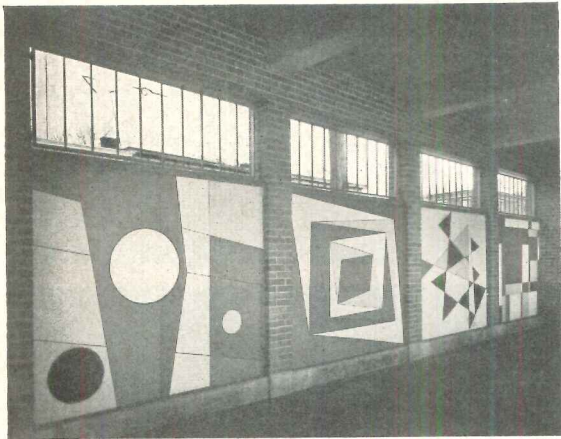
*Classrooms for lower grades (first floor) have access directly to play and park areas while publicly used parts of the building are reached from separate street entrance. When necessary these can be closed off. Administration and health suite is near street intersection, out of main circulation pattern, to permit its use in extra-curricular and community service*



0 5 10 15 20

The Frederick Douglass Stubbs school in Wilmington occupies a sloping city block in a centrally located, congested area. Around two sides of the site is a municipal park, a fact which influenced site selection since it made possible use of the minimum of expensive land. Also, demolition of the existing buildings obviated the necessity for street access on the perimeter of the site, so the streets could be abandoned and included in the useful area. This allowed classrooms to be oriented east and north in two stories overlooking the park, with the gen-

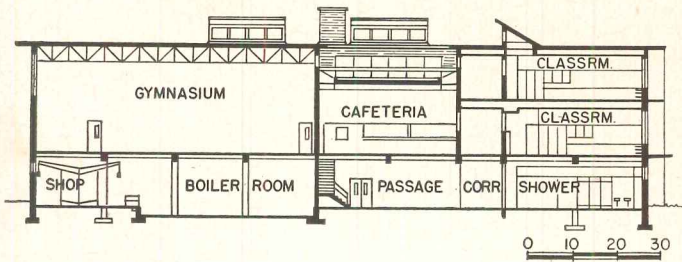
eral rooms located on the noisy street sides. The additional fact that the site slopes toward the park made this scheme even more satisfactory. The elementary school serves 800 pupils and is designed for community use as well. The building is steel-framed, with concrete floor slabs, brick exterior walls, interior partitions of plaster on steel studs. Interior finishes are plywood, plaster, ceramic tile, asphalt tile. Heat is supplied by convectors supplemented by radiant panels. Total cost was \$1,408,073 exclusive of land and fees.



*Above, main entrance. Other photos show the self-contained kindergarten area: facing page, off-street play patio, easily supervised; left, abstract murals by Samuel Homsey decorate street wall of the patio; below, the two kindergartens are separated by a sliding wall*

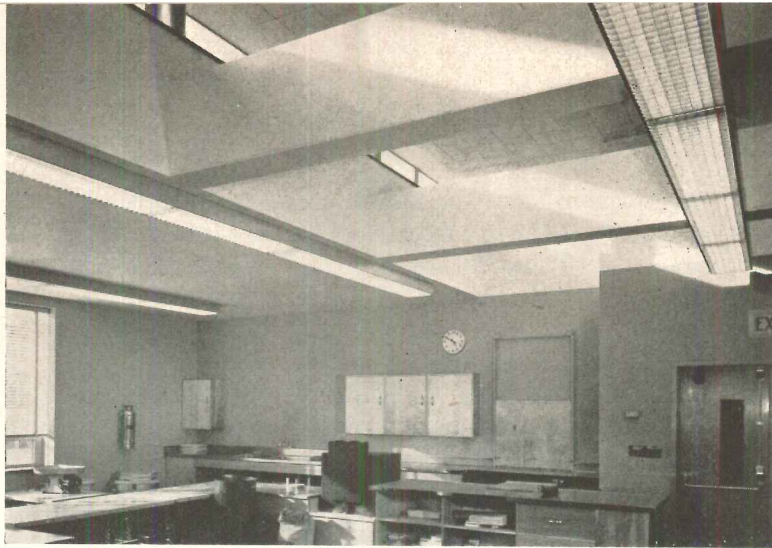


Joseph W. Mellior



SCHOOL ADJOINING DELAWARE PARK

*Right, top to bottom: multipurpose room, cafeteria, gymnasium, auditorium; below, exhibition gallery, open on one side to classroom corridor, is also anteroom to cafeteria. Note, in section above, skylights which daylight the interior cafeteria and contribute to pleasant usefulness of the gallery. Top tier of classrooms has clerestory; lower*



*corridor borrows light from classrooms and cafeteria. The Frederick Douglass Stubbs School was cited in 1953 by Delaware architects as the best building built in the state since World War II*

Joseph W. McInnis



# The Life, The Teaching and The Architecture of Matthew Nowicki

By Lewis Mumford

Part III

## NOWICKI: HIS ARCHITECTURAL ACHIEVEMENT

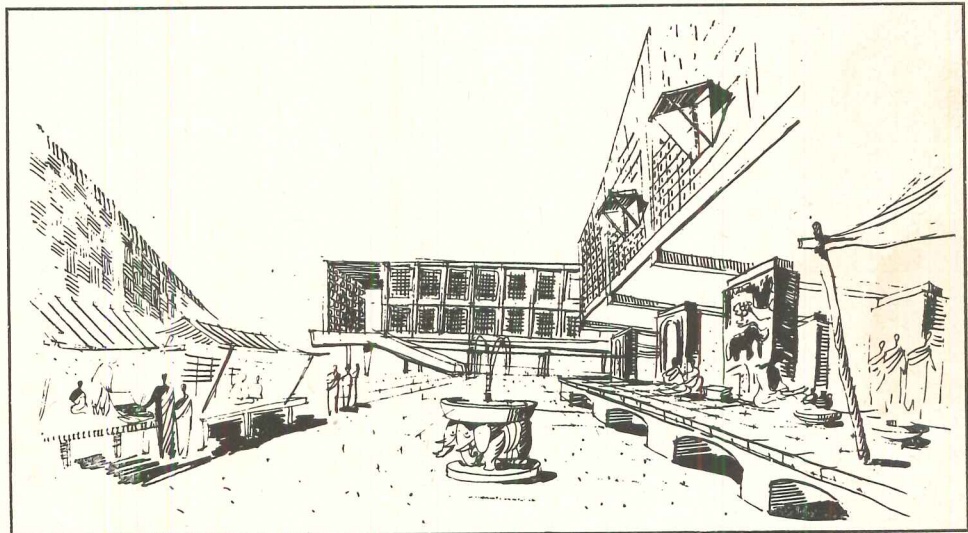
**M**ATTHEW NOWICKI was one of the most creative architects of his generation; but this fact alone was not enough to make him seem destined to be the great architectural leader of our time. In the realm of design there are perhaps half a dozen people who might have remained on a par with him; Oscar Niemeyer, in Brazil for example, or Eero Saarinen, in the United States, to mention only his close contemporaries. What gave Nowicki a special place was a combination of things: a sound and many-sided education, discipline and practice in both architecture and city planning, and the teacher's gift of formulating his ideas and communicating them to others. He had passed through all the phases of the modern movement: classicism, eclectic nationalism, the cubist mannerism of Le Corbusier. In designs as different as those for the State Fair Arena and the State Museum in Raleigh he showed how varied were his resources in facing each new situation.

But in the very last months of his life, on his visit to

India, Nowicki was pushing beyond these earlier approaches to one more richly human, more genial to the spirit if not to the eye. His intuitions of form in India, visible only in a handful of sketches would, I think, have modified still further the change that was going on in his ideas during the last few years of his life. The result would have been no one-sided universalism, like that of the International Mannerists or the Mechanical Functionalists, but a genuine universalism in which the warm, the intimate, the personal attributes of a local culture would have mingled with the ideas and forms that are common to all men in our time. In other words, Nowicki's architectural development pointed the way of the coming age — if the promise of that age be not wrecked forever by irrational hate and genocidal violence.

Nowicki, with his own sense of self-discipline, went perhaps as far as anyone can go without losing himself in the Ice Queen's palace of sterile formalism to which the

*Nowicki's last important project was the design of Chandigarh, India, with Mayer & Whittlesey, where he was "pushing beyond these earlier approaches to one more richly human . . ." His Indian work will be the subject of the next and final article*



brilliant Mies van der Rohe has led himself and his disciples. One of the best examples of this method of approach is the design for the *Architectural Forum* School of 1950: a design for two new types of school building, radically different in both plan and construction from those which the California school has produced. Nowicki here set himself the problem of achieving the utmost economy: to this end he created a building with maximum interior space in relation to the perimeter: an interior that, since it had been based on the modular principle, could be reorganized at will. This led, inevitably, to the design of a classroom much more deep than wide, and to light that classroom — and the rest of the building — he had the bold idea of placing monitors about the roof, so that a great part of the lighting would come from overhead. These monitors were to be Plexiglas bubbles, a means not available in 1950 but actually used in 1953. When he translated this design into a circular school, with an auditorium at the center, he created a maximum amount of usable space with a minimum expenditure on the perimeter. The economy in construction costs, to say nothing of lighting and heating, of such a building, gave justification for this kind of construction. Whether in every other way it was sound would have required the testing of practice. Nowicki's solution of the problem of modular construction and pre-fabrication was different from that which has been applied to the schools of Hertfordshire in England; and here, as well as in another series of buildings in which he had a hand in designing, I feel that Nowicki's sense of human values would have corrected any errors his fidelity to principle might have produced.

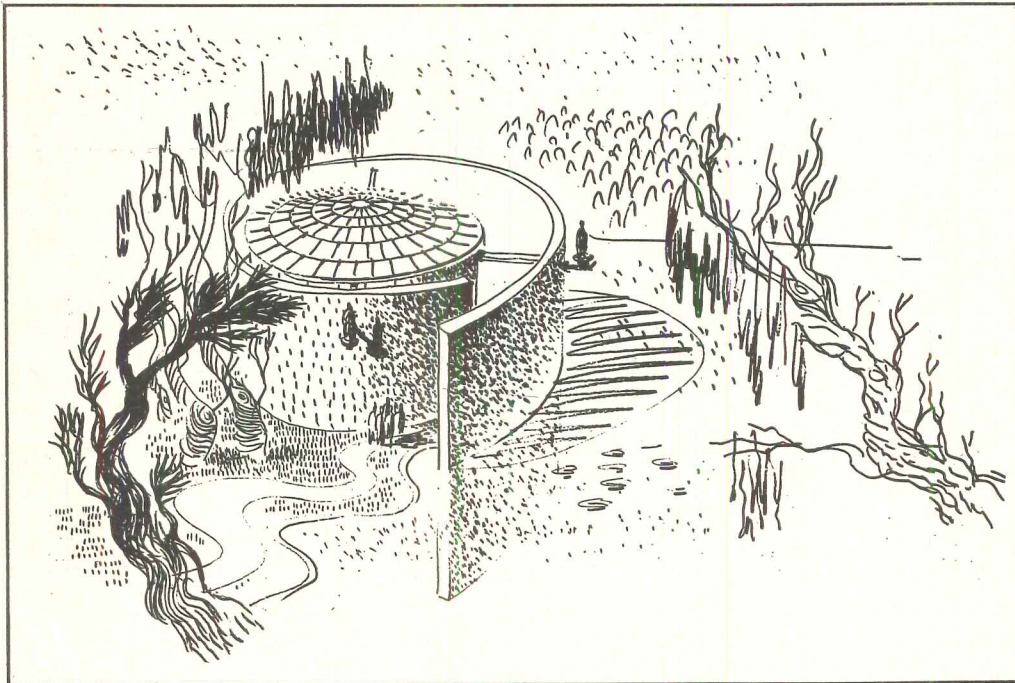
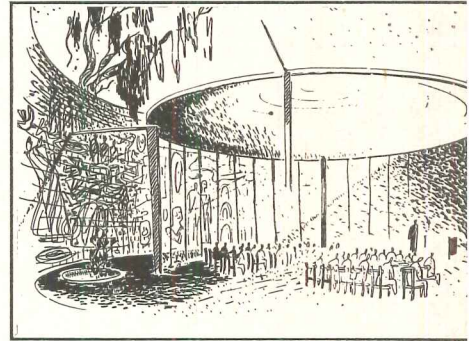
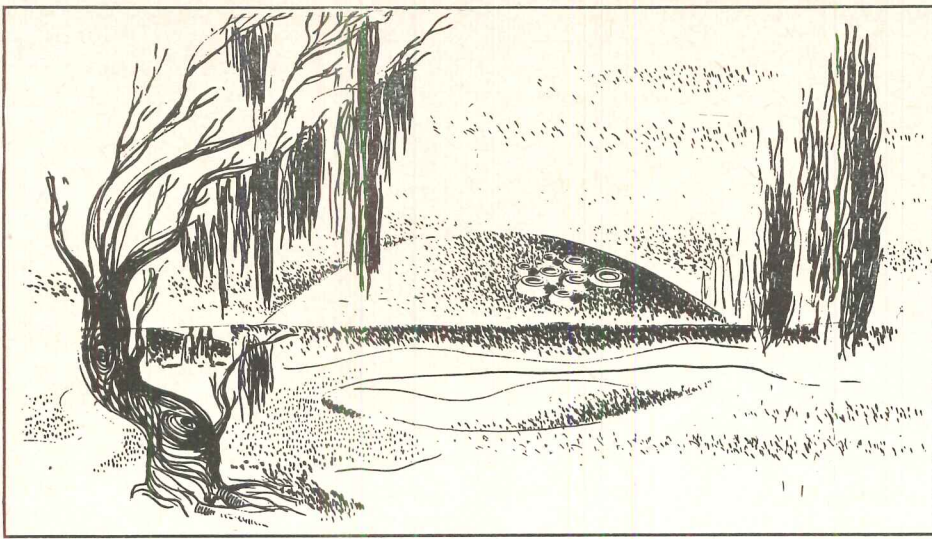
During the vacation period of 1949, Nowicki had a few happy weeks working in intimate collaboration with his opposite American number, Eero Saarinen, on the design of a series of buildings for Brandeis University. The two men liked each other and worked harmoniously as friends; so that it would probably be difficult to determine what each of them contributed to the layout and design of these buildings. The fact that the pen and ink sketches of the Brandeis project are unmistakably in Nowicki's charming idiom does not indicate that they were his solitary contribution, in the sense that his original designs for the Museum and the State Fair Arena at Raleigh show that Nowicki had produced these designs. But the point is that at this particular moment in his own development, Nowicki's desire for economy and esthetic elegance committed him heartily to this mode of design. Some of the buildings show a superb command of the spatial elements, in places where planes and colors, the play of light and dark, are the main architectural facts to be considered. But some of the other buildings are, frankly, a disappointment, possibly because the module had become an inflexible master, rather than a servant. The formal treatment of the façade in the

faculty apartment buildings, with vast panes of glass on the lower floors, despite the formidable New England winters and the lack of visual privacy, and the bleak insufficient window, badly placed, on the upper floor, point to one of the weaknesses of this mode of approach. These buildings are neither genially at one with the landscape, nor are they the best possible answer to human requirements; nor are they, for that matter, so conceived that they could be adapted to other purposes, without radical alterations: so they have the inflexibility of the module itself without the flexible functional rearrangement that the very indifference to specific needs is supposed to create.

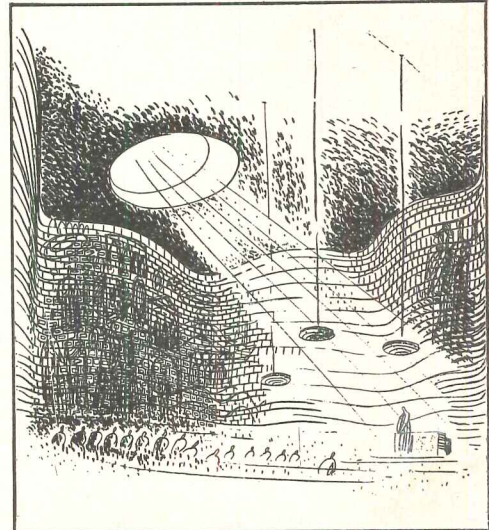
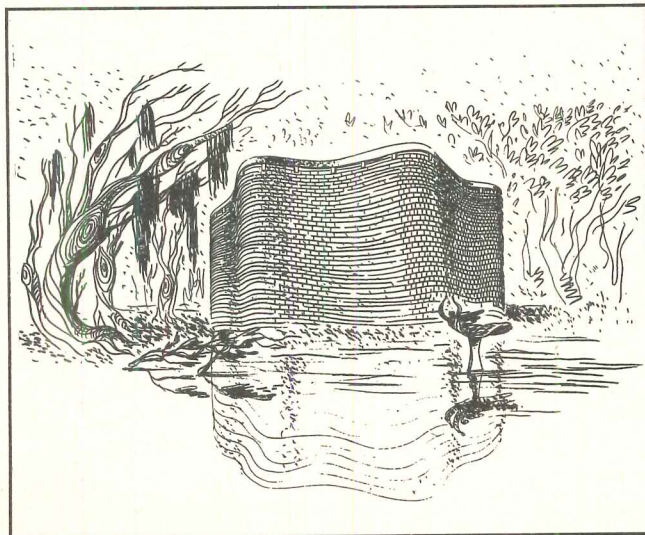
Now it happens that Nowicki himself was one of the first to analyze the problems that his own proposed school scheme and Saarinen's designs for Brandeis had created. In his last published essay he posed the problem raised by Sullivan's old formula that form follows function; and pointed out that modern design, whether one liked it or not had become a style, and that when a style is achieved the architect's choices are, by that fact, limited, so that in fact function follows form.\* As before noted, for Nowicki this form was based, essentially, on the acceptance of the module; and the choice of the module meant not functional exactitude, but functional flexibility. A building, conceived in this fashion, sacrifices exact conformity to the needs to be served at any one time in order to be ready, through this very indifference and anonymity, to serve other needs and later times.

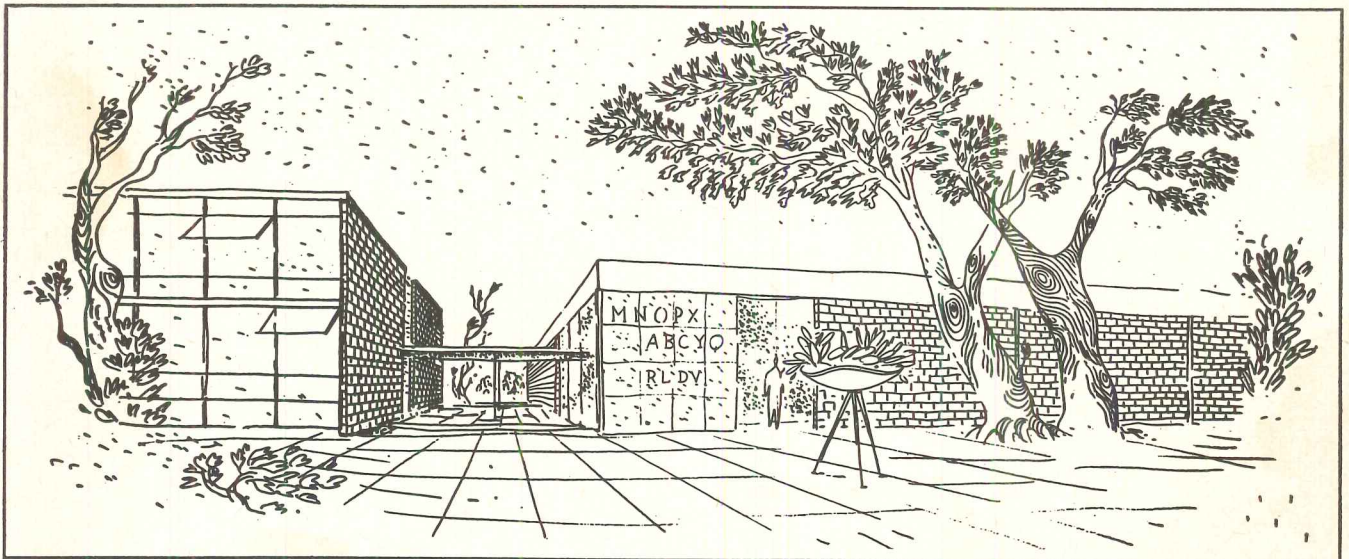
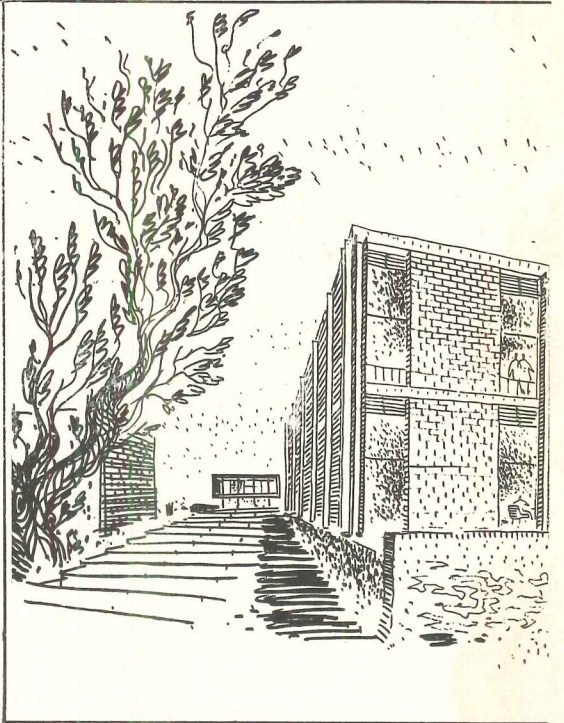
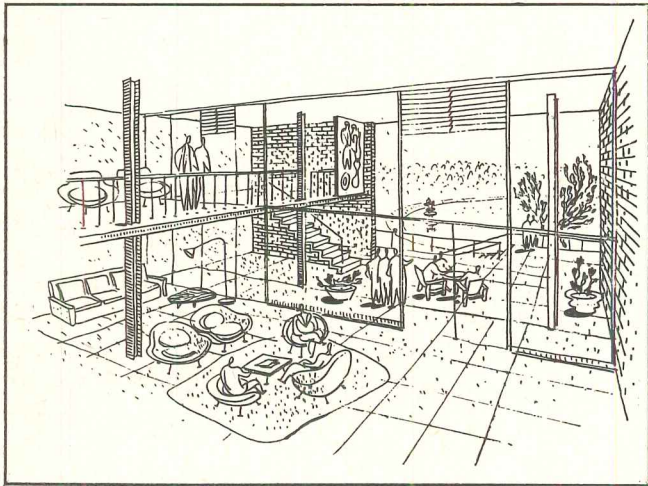
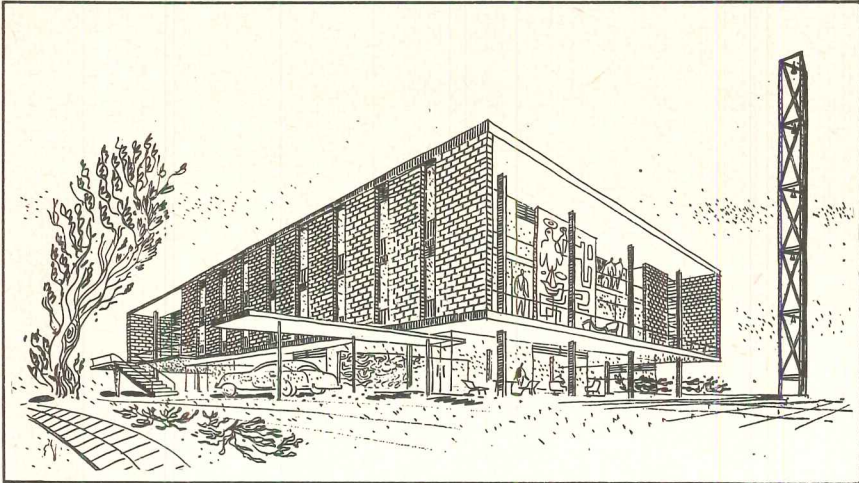
The line of thought that Nowicki opened in this essay needs to be followed even further than he took it, though that short essay is rich in historic perceptions and interpretations. Nowicki realized that what we call the modern movement had taken shape around the middle of the nineteenth century, notably in the Crystal Palace, under the influence both of engineering practice and a fresh theoretic appreciation of gothic construction. That movement, had it been followed through, would have resulted in buildings whose plan and structure would have been closely adapted to every physical need and whose ornament would have been derived from the exposure of the constructive elements, as in a Gothic church. But at a critical moment, Nowicki pointed out, the modern movement had taken a different direction, under the influence of cubist painting: for the desire of the cubists for extreme simplicity and purity had led to a denial of the new, often complicated, constructive elements, as in earlier Renaissance architecture, and the desire for a cubist organization of planes — "areas in color and immaterial paint" — had led to the renuncia-

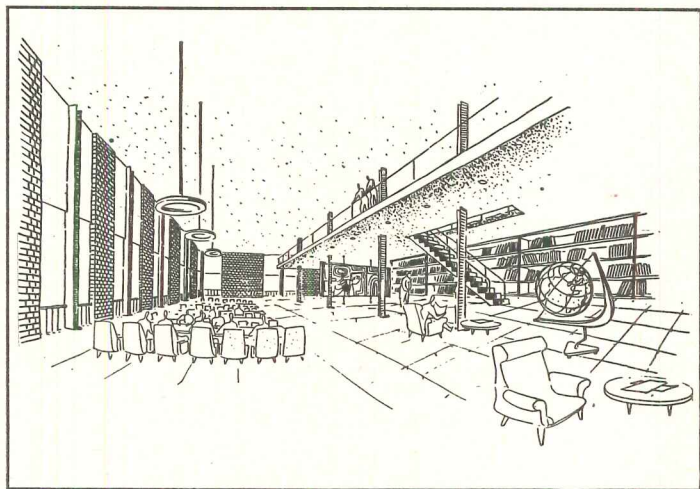
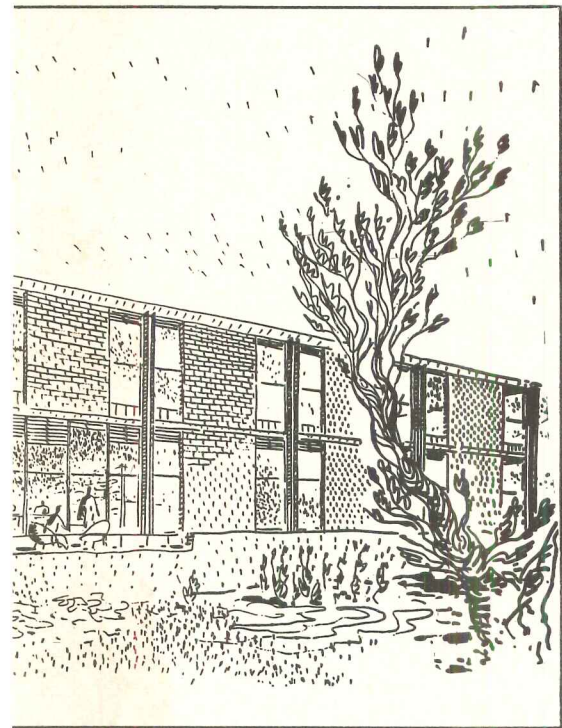
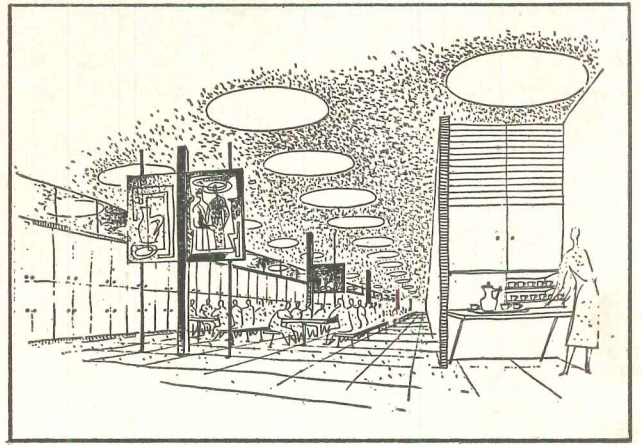
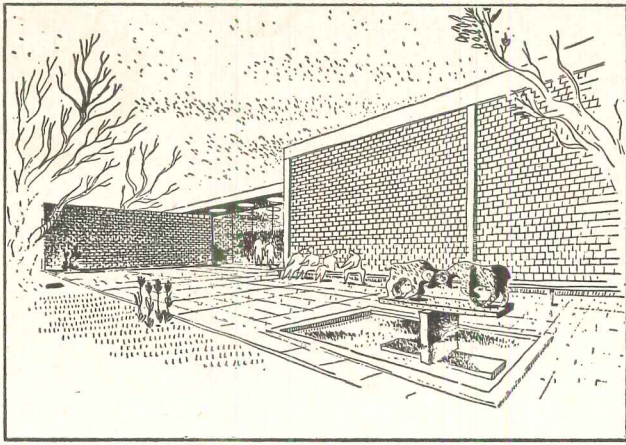
\*See "Composition in Modern Architecture" and "Function and Form" in *The Roots Contemporary American Architecture*, edited by Lewis Mumford.



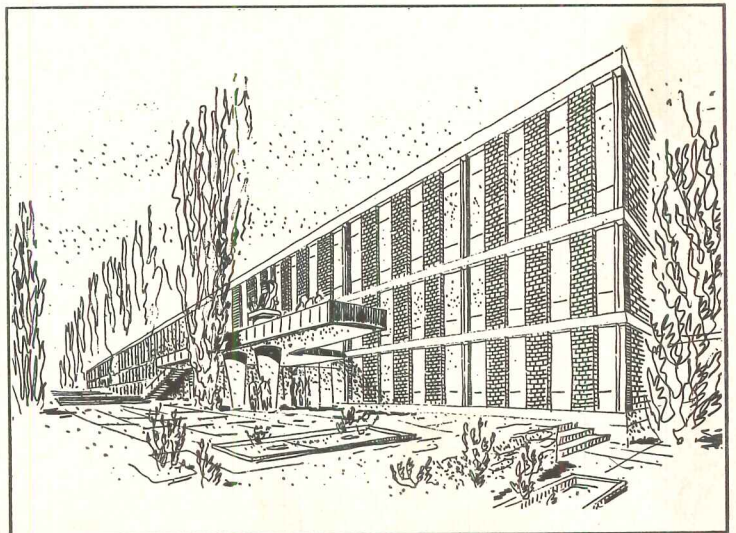
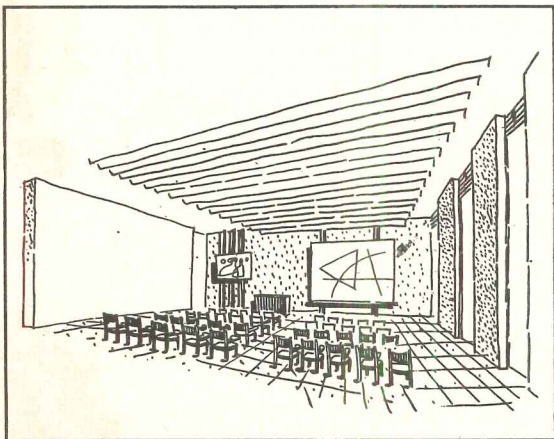
*"... Nowicki had a few happy weeks working in intimate collaboration with his opposite American number, Eero Saarinen, on the design of a series of buildings for Brandeis University . . . The fact that the pen and ink sketches are unmistakably in Nowicki's charming idiom does not indicate that they were his solitary contribution . . ."*

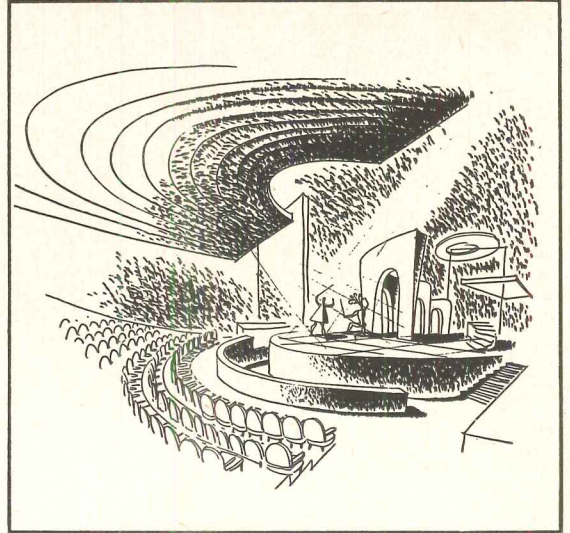
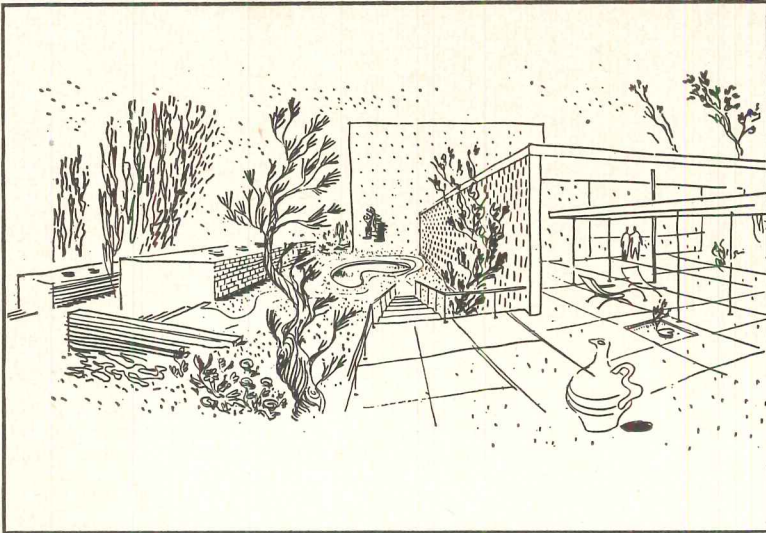




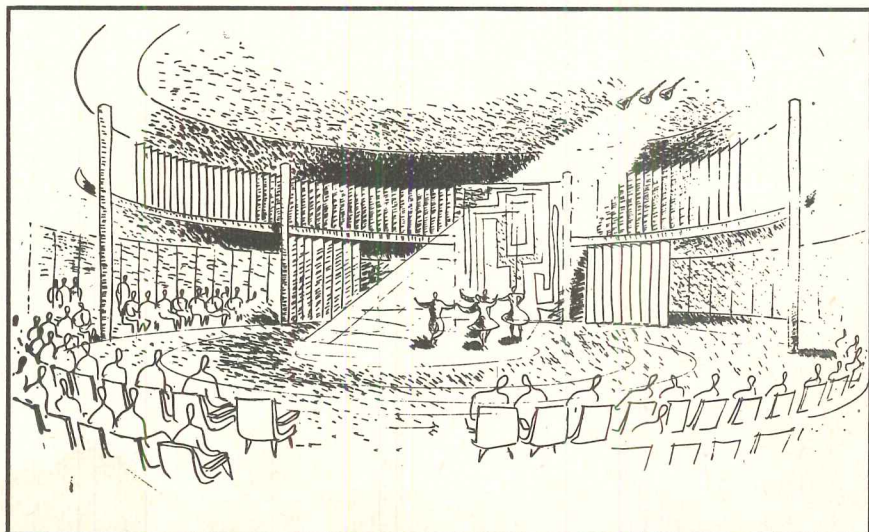
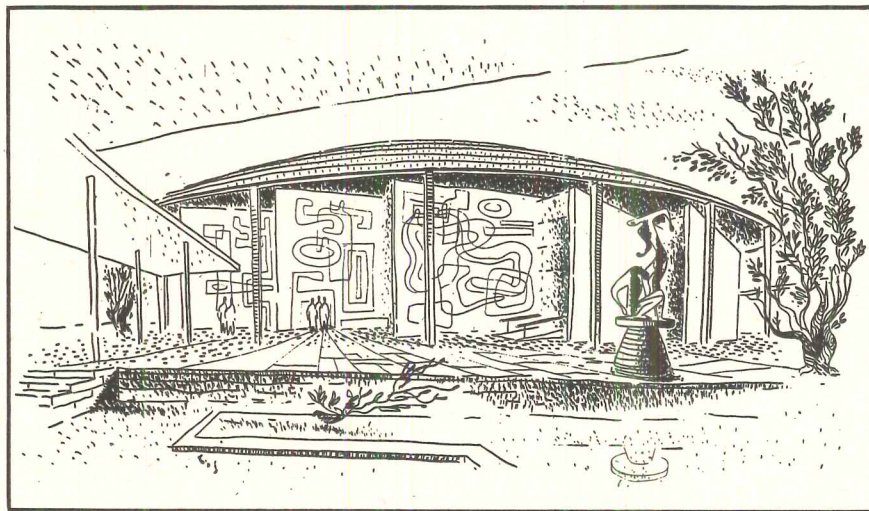
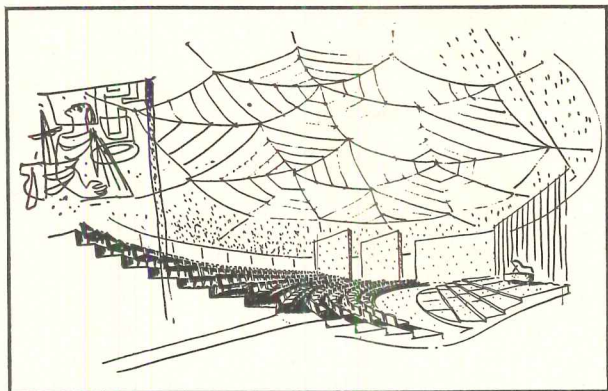


“ . . . at this particular moment in his own development, Nowicki's desire for economy committed him heartily to this mode of design (Brandeis buildings). Some of the buildings show a superb command of the spatial elements. . . .”





*These buildings (still Brandeis) might be taken to represent the full development of Nowicki's response to the more academic theories of modern architecture. In the text Mumford shows that Nowicki went onward from this point to "point the way of the coming age"*



tion of function. The inescapable elements of construction were hidden behind planes and partitions that had only a formal significance. The one connecting link with the older constructivism was in the use of the machine-made element, not as a functioning part, but as a symbolic element: he pointed to the two stacks at the entrance to the Salvation Army shelter in Paris, through which only minor ducts were carried, though they dominated the design. In that case, form did not follow function: it parodied function and distorted it for purely visual satisfaction.

As Nowicki saw it, the next phase in the development of modern design was the divorce of spatial relationships from both physical function and its formal imitation: the determinant was no longer the physical requirement of structure but the human requirement of beauty and order. Under such a mode of design, the actual character of the structure would not be revealed, in any particularity, by plan or elevation: but in response to human need, symbol and decoration would again become an integral part of design.

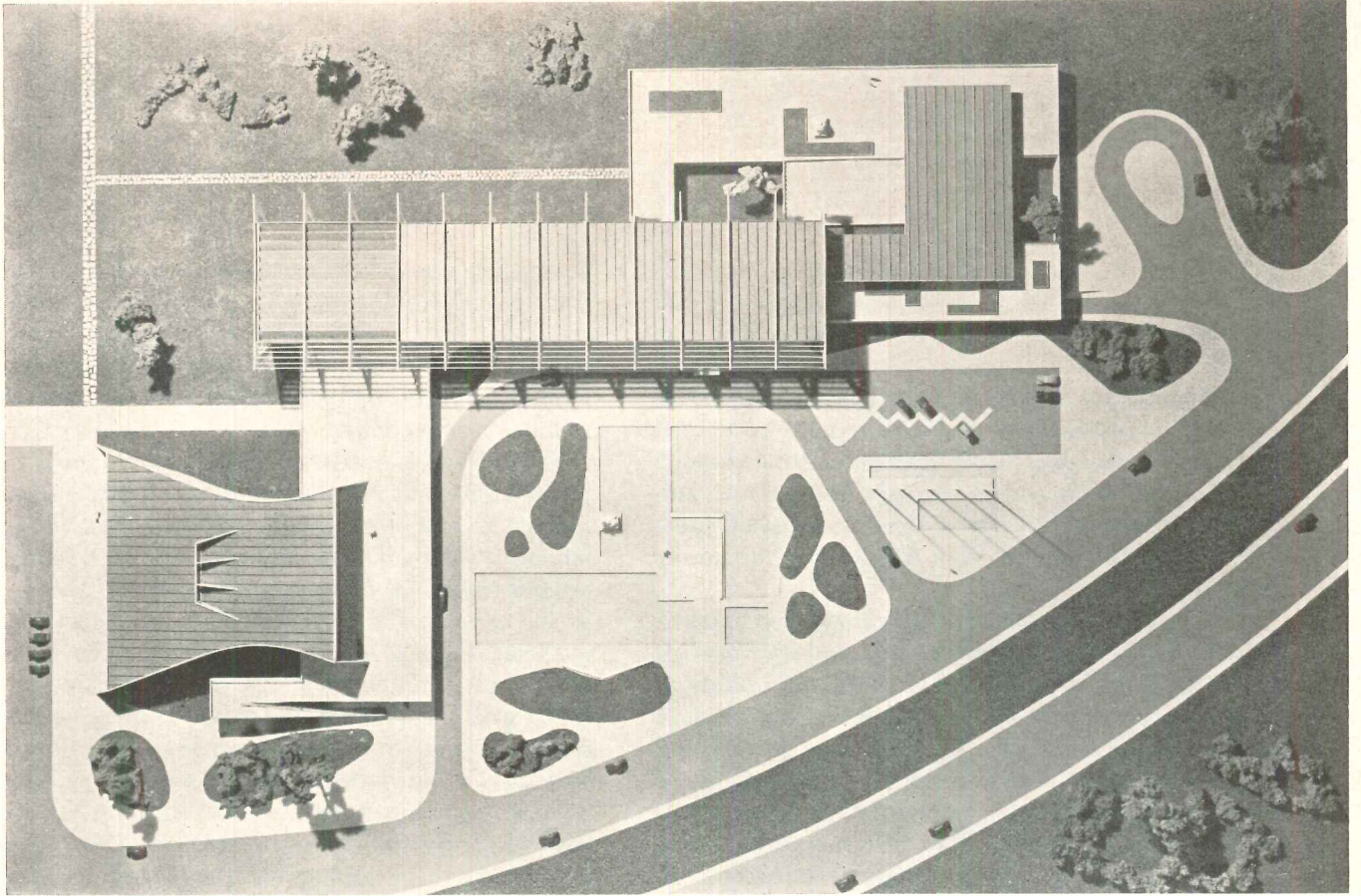
Though Nowicki's logic led him to his analysis, he was not, I think, altogether convinced by it; for I remember more than one discussion in which, after formulating these ideas, he would say: "But who knows? Perhaps the best way now would be to return to mid-Victorian functionalism and apply that logic to the designs which would take in psychological functions as well as physical ones." For he knew that the phrases functional exactitude and functional flexibility could be defined in a somewhat different fashion from that which he explored in this essay. He realized that the exact shaping of a building for all its functions, mechanical, biological, social, esthetic, resulted in an individual work of art that could not, without wholesale destruction of its organic unity of plan, be adapted to any other purpose. On the other hand, when one designed a building for flexibility — so that it might be made over completely from within, or used for different purposes without such remaking — it sacrificed its organic fitness and rightness: by almost meeting a dozen possible demands, it failed to meet completely any one of them. If one abandoned the notion of quick fabrication, easy adaptation to new functions, and early replacement, one also lessened the need for a kind of building based on functionally interchangeable parts.

Just as Nowicki had found that the classic and the romantic elements are present in all architecture, so, I think, he would have found, in the end, that functional exactitude and functional flexibility are necessary components of every building. There is in fact no either/or because both must be regarded. The problem of the architect in our time is to design buildings that can be made over, in each generation, so as to conform to new needs and new feelings and ideas. But that does not

mean that he must design a library so that it may become a supermarket, or build a court house so that it might become an office building. Indeed, the very quality of architecture as an art, its expressiveness, depends in no little degree upon its unique synthesis of its manifold human functions.

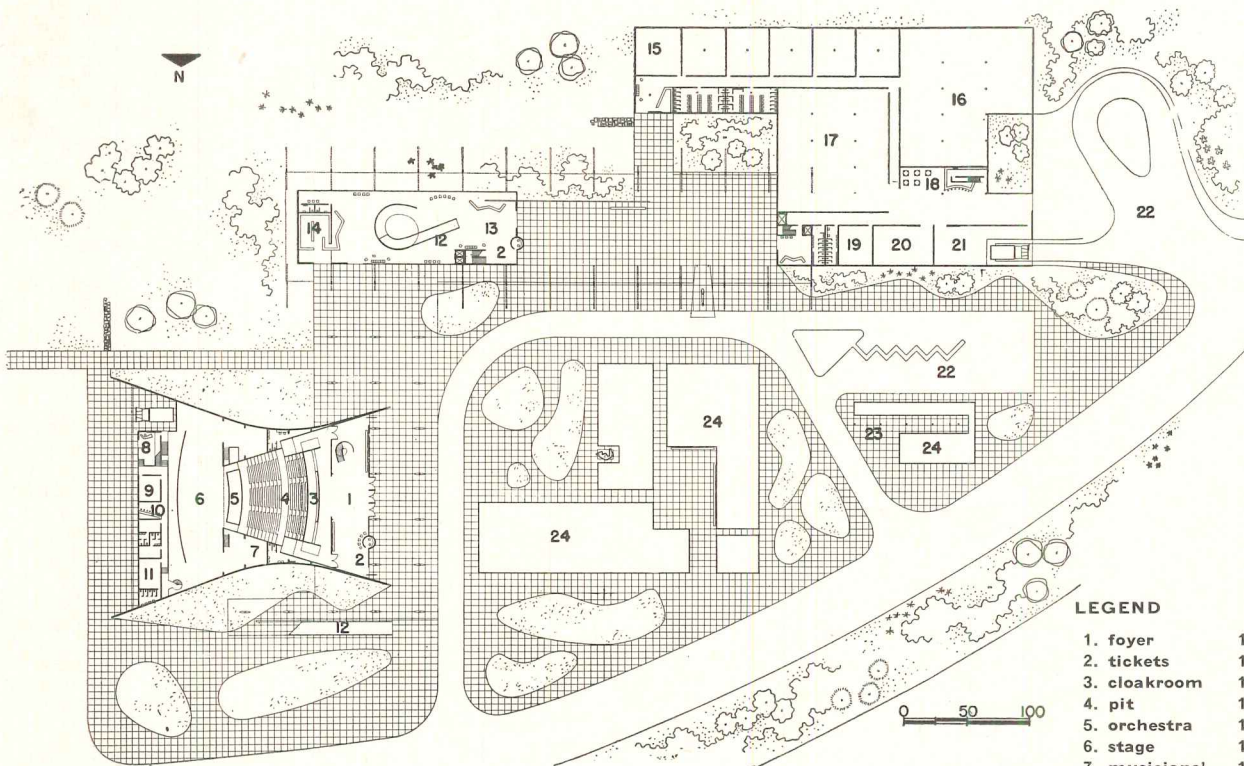
What Nowicki's two papers on modern architecture brought out, and what his work was to bring out even further, is that the ultimate arbiter of function is the human being that the building serves: his needs for an orderly world, for esthetic satisfactions, for a response in his environment to his feelings, his emotions, his interests. Perhaps the essence of Nowicki's contribution as an architect lay in the fact that he began and ended with the human being to whose purposes he gave structural order and symbolic expression. Not that he served those purposes blindly or passively: he felt it the duty of the architect not merely to carry out his clients' wishes but to clarify them, to enlighten them, to bring out the latent possibilities that he himself, as designer, commanded. When he observed that architecture was a "pedagogical art" he brought everyone concerned with building, from the immediate client to the ultimate spectator, into that common area: not forgetting the architect himself.

Perhaps the best example of his talents in this respect came out in his practice in North Carolina; particularly in the project which came to him in association with William Henley Deitrick in the design of the buildings and grounds of the State Fair at Raleigh. This opportunity to interpret the "spirit of the Fair" and to design a series of free-standing buildings, was very close to Nowicki's heart. Responding to the generous hospitality of his Southern neighbors, appreciating the genial simple ways he had found among them, he saw a chance to add to the gaiety as well as the dignity of their life by an architecture worthy of democracy: a new architecture such as Whitman had foretold. From the first, his relations with the Director of the Fair, Mr. J. S. Dorton, were warm. Though modern architecture was still almost an unknown quantity in North Carolina, Nowicki's enthusiasm, his friendliness and humanity, wakened confidence in it; and in his approach to the architectural problem of the Arena, he showed a boldness, he confessed to his wife, that America itself had brought out in him. He had escaped from the European cliché of post and beam, he realized: hence his great constructivist notion of enclosing the arena in two gigantic parabolic concrete arches, intersecting close to the ground, to support the roof and frame the grandstands. About the quality of Nowicki's creation there is no dispute; for here all his long discipline as architect, as structural engineer, as planner united to create, with an exquisite simplicity of means and high constructive audacity, a building that sings, as only great architecture can sing.



Jerry

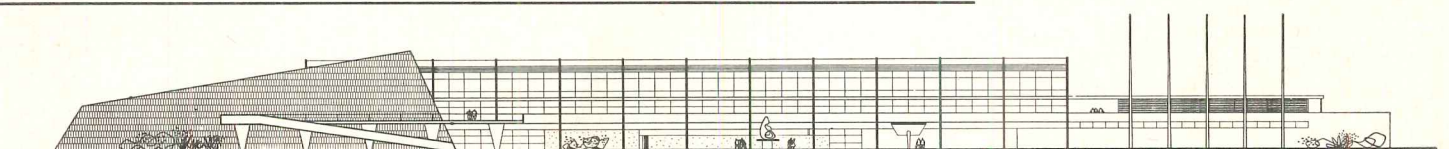
PLAN VIEW OF MODEL



GROUND FLOOR PLAN

**LEGEND**

- |                      |                        |
|----------------------|------------------------|
| 1. foyer             | 12. pedestrian ramp    |
| 2. tickets           | 13. museum hall        |
| 3. cloakroom         | 14. publications       |
| 4. pit               | 15. lecture rooms      |
| 5. orchestra         | 16. ceramics room      |
| 6. stage             | 17. store and workroom |
| 7. musicians' room   | 18. refreshments       |
| 8. artists' entrance | 19. office             |
| 9. secretary         | 20. staff cloakrooms   |
| 10. refreshments     | 21. warehouse          |
| 11. ladies' room     | 22. parking            |
|                      | 23. flagpoles          |
|                      | 24. pools              |



NORTH ELEVATION



The unusually favorable site looks out over Rio Bay to famed Sugar-loaf Mountain to the south (top) and is part of a large area reclaimed from the sea, which the city will devote to areas for parks, sports, and cultural activities. The Avenida Perimetral separates this area from the city proper. Santos Dumont airport can be seen in the foreground, bottom photo



## A NEW FINE ARTS CENTER FOR THE CITY OF RIO

*Museum of Modern Art, Rio de Janeiro, Brazil*

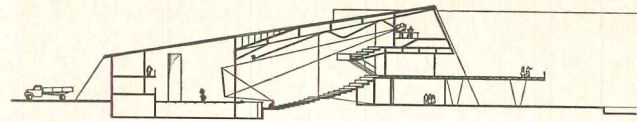
*Afonso Eduardo Reidy, Architect*

*Roberto Burle-Marx, Landscape Architect*

**M**ORE THAN merely a museum in the conventional sense, the new Museum of Modern Art in Rio might better be described as a fine arts center, for it is specifically designed to encompass in full the varied functions of the "living museum" concept. Thus, in addition to the normal museum requirements of housing, maintaining and displaying a collection and new acquisitions, this building will include extensive areas for teaching and creative work in the fine and applied arts. There will also be an 800 seat theater for plays, concerts, ballet, movies, and convention meetings.

Reference to the plan, left page, will reveal the broad divisions of the scheme; at far left, the theater, connected by walkways at ground and second floor level to the long, central exhibition gallery which is in turn connected at its other end to the low, spreading element at right which houses the ancillary workrooms, a restaurant, library, and administration offices.

The landscaping is notable for its play of precisely rectangular pools against the flowing free-forms of the flower beds. The bold colors of the buildings will reflect interestingly in the pools for further effect.

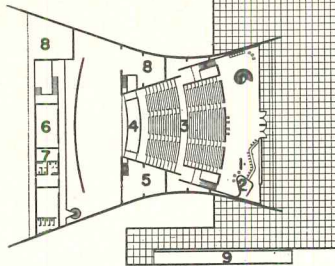
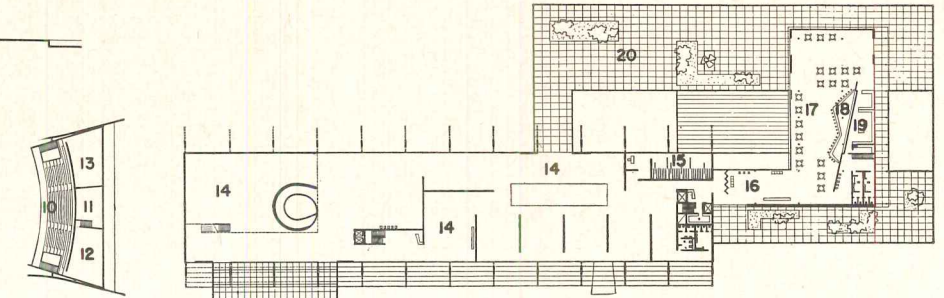


SECTION: THEATER

Principal focus for visitors lies at second floor level, where the central exhibition gallery — part of which is two stories high — is linked by roof gardens to the theater foyer and the restaurant-bar

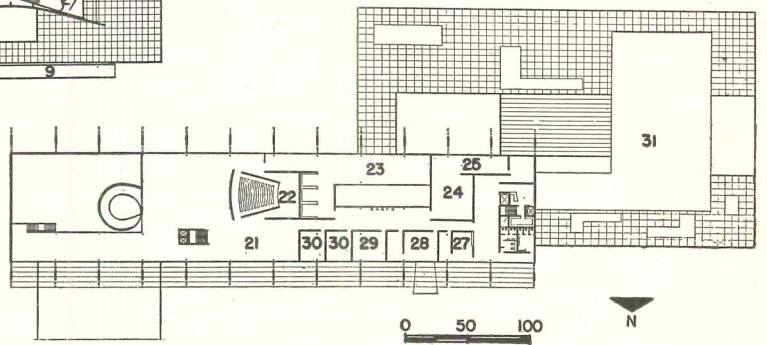
LEGEND

- |                       |                       |
|-----------------------|-----------------------|
| 1. bar                | 17. restaurant        |
| 2. store              | 18. bar               |
| 3. pit                | 19. kitchen           |
| 4. orchestra          | 20. terrace           |
| 5. wardrobe           | 21. hall              |
| 6. dressing room      | 22. conference room   |
| 7. men's room         | 23. library           |
| 8. void               | 24. president         |
| 9. pedestrian ramp    | 25. secretaries       |
| 10. balcony           | 26. direction         |
| 11. projection booth  | 27. accountant        |
| 12. film storage      | 28. secretary         |
| 13. apparatus storage | 29. cataloguing       |
| 14. exhibition space  | 30. directors         |
| 15. frame store       | 31. restaurant canopy |
| 16. lobby             |                       |



SECOND FLOOR PLAN

Third floor area, plan below, is devoted mainly to administration offices, the library, and a lecture hall seating 200. The remaining space is given over to exhibits — includes the two-story gallery



THIRD FLOOR PLAN

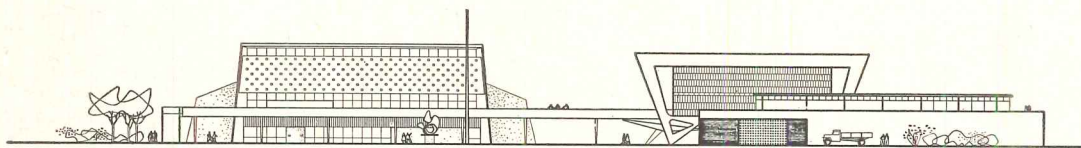
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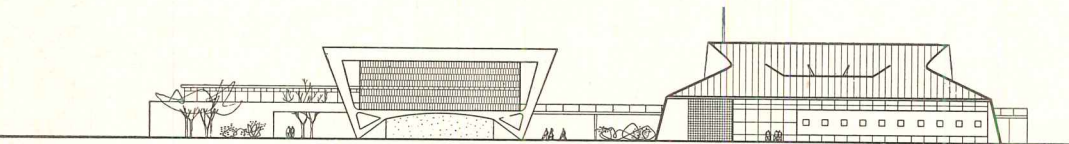
MUSEUM OF MODERN ART

RIO DE JANEIRO

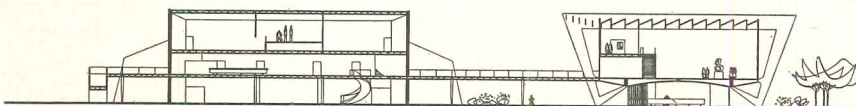
The elevations, below, reveal the interesting interplay of the varied forms used. Note particularly the two sections, bottom, which illustrate how the series of rigid bents, spaced at 33 ft, serve to carry the central gallery in such a manner that interior supports are completely eliminated. Sun baffles have also been readily accommodated by this system



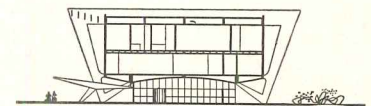
WEST ELEVATION



EAST ELEVATION

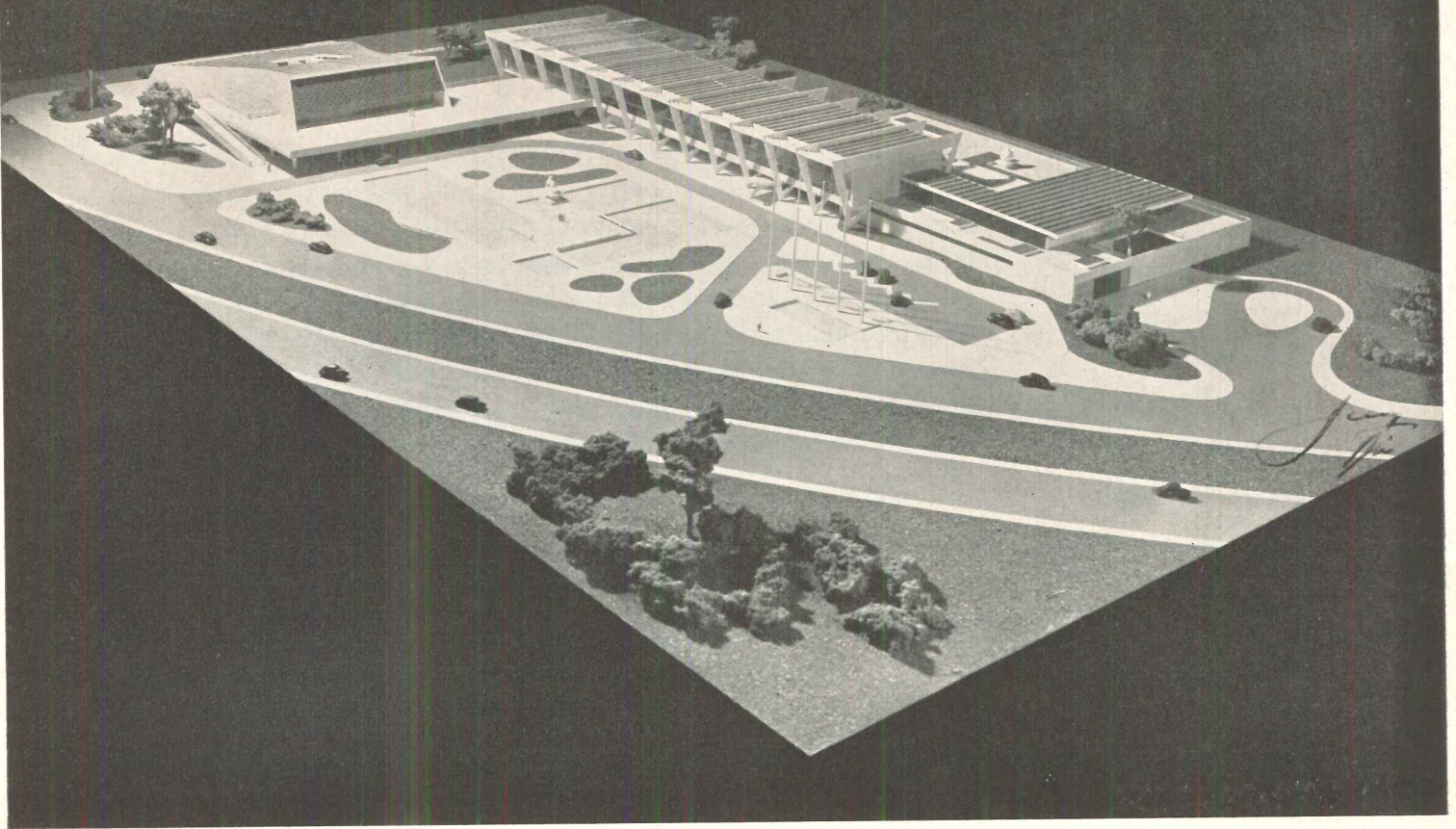


SECTION: THEATER FOYER & 2-STORY GALLERY

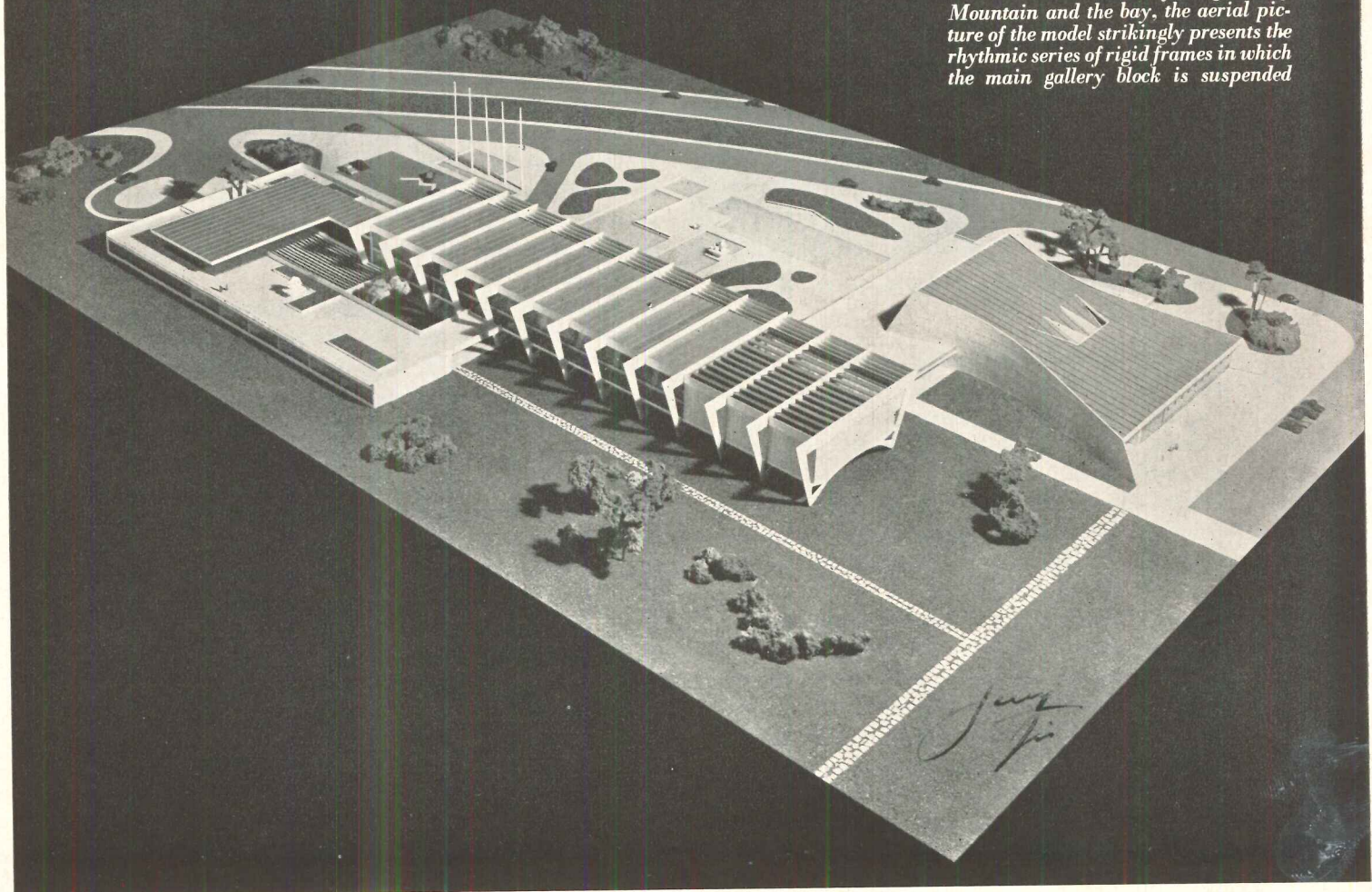


SECTION: TYPICAL GALLERY

*The contrast between the angular geometry of the buildings and the flowing curves of the flower beds is pictured in the aerial view of the model as seen from across the Avenida Perimetral*



*From the direction of Sugar-loaf Mountain and the bay, the aerial picture of the model strikingly presents the rhythmic series of rigid frames in which the main gallery block is suspended*



# "THE CHANGING PHILOSOPHY OF ARCHITECTURE"

*A.I.A. convention speakers herald a richer and more flexible vocabulary*

## BIBLIOGRAPHY OF "PHILOSOPHICAL" ARTICLES IN ARCHITECTURAL RECORD

- The Post Modern House*, Joseph V. Hudnut; May, 1945  
*The Architectural Life*, William Wurster; Jan. 1951  
*Architecture and Society*, Pietro Belluschi; Feb. 1951  
*Humanity, Our Client*, John Burchard; July 1951  
*The International Style 20 Years After*, Henry-Russell Hitchcock; Aug. 1951  
*Function and Expression in Architecture*, Lewis Mumford; Nov. 1951  
*The Humanization of Urban Life*, Sigfried Giedion; April 1952  
*Organic Architecture Looks at Modern Architecture*, Frank Lloyd Wright; May 1952  
*The Individual in Architecture*, Henry Hill; June 1952  
*The Architecture of Relativity*, Richard Bennett; July 1952  
"The End of the Modern Movement in Architecture," Osbert Lancaster; Sept. 1952  
*The Three Lamps of Modern Architecture*, Joseph V. Hudnut  
I. The Lamp of Progress; March 1953  
II. The Lamp of Nature; May 1953  
III. The Lamp of Democracy; July 1953  
*The Spirit of the New Architecture*, Pietro Belluschi; Oct. 1953  
*The State of Contemporary Architecture*, Sigfried Giedion  
I. The Regional Approach; Jan. 1954  
II. The Need for Imagination; Feb. 1954  
*The Life, the Teaching and the Architecture of Matthew Nowicki*, Lewis Mumford  
I. The Background of a European Modern; June 1954  
II. Matthew Nowicki as an Educator; July 1954  
III. Nowicki: His Architectural Achievement; Aug. 1954  
IV. Nowicki's Work in India; Sept. 1954

Best-attended and best-listened-to of all sessions at the recent national convention was the one on current changes in architectural thought. Assuming that architecture had shaken off the shackles of ancient clichés, the speakers tackled the modern clichés, and asserted freedom from the shallower interpretations of contemporary principles. In a larger sense, they were less concerned with argument than with showing how today's possibilities can be used to develop a "new vocabulary, rich and flexible," an architecture "of good proportions, serene and dignified." Assuming the risks of heavy condensation, we present the essential messages of the five speakers on the panel.



*By Paul Rudolph*

parts without regard to proportion, scale, composition, etc.

Secondly, we have the climate controlists with their extreme distortions of form in the name of the pseudo-scientific and their naïve contentions about orientation.

Thirdly, we have the structural exhibitionists. Exciting as Buckminster Fuller's domes may be, or the latest space frame, they are merely a means to an end and not architecture. Of course, such devices can certainly be used to produce great architecture.

Architectural space is related to a room and to a city. We need desperately to relearn the art of disposing buildings to create different kinds of space: the quiet, enclosed isolated shaded space; the hustling bustling space pungent with vitality; the paved, dignified, vast, sumptuous, even awe-inspiring space; the mysterious space, the transition space which defines, separates and yet joins juxtaposed spaces of contrasting character. We need sequence of spaces which arouse one's curiosity, give a sense of anticipation, which beckon and impel us to rush forward to find that releasing space which dominates, which climaxes and acts as a magnet and gives direction.

The lessons from Rome indicate that it is possible to design a building which is complete in itself but also related to its neighbors. Indeed we are coming to realize that our architecture is much more akin to Renaissance architecture than we formerly thought. The "skin and bones" concept let us see readily its relationship to Gothic architecture, although actually the "skin and bones" boys are turning more and more to symbols of construction rather than the actual structure. This principle is again beautifully illustrated by the Japanese house in the Museum of Modern Art's garden where the actual structure is hidden and we are presented with a system of symbols of structure. We tend to admire nowadays those buildings which have a single generating idea behind them, and even the centralized space, just as in the Renaissance. For instance one might characterize the house of the forties as one which tried to

MODERN architecture's range of expression is today from A to B. We build isolated buildings with no regard to the space between them, monotonous and endless streets, too many gold fish bowls, too few caves. We tend to build merely diagrams of buildings. The diagram consists of regularly spaced bays, with the long sides filled with glass and the end walls filled with some opaque material. If you raise it on pilotis you might even snare an important prize.

Modern architecture is tragically lacking in eloquent space concepts, partly because we are constantly bombarded with various specialists in architecture who do not relate their worthy findings to the whole. First on the list of specialists are the new functionalists, who apparently think of architecture as an assemblage of workable

express what went on behind each bay. Thus the living room bay could be filled with glass which went to the floor, but the bedroom bay had to have the glass stop at the two-foot-six-inch height to provide privacy (I never quite understood that one because we so seldom crawl in our bedrooms). The kitchen bay had an opening a few inches higher making a series of steps. Today we are more interested in the total expression and content.

An architect should be concerned with how a building looks in the rain, or on a summer's day, its profile on a misty day, the different treatment required for that which is close at hand versus that which is twenty stories removed, angles of vision, its symbolism and content. An architect is not merely a beautifier but our profession should and will die unless we produce that which reflects man's highest aspirations.

WHEN revolutionary changes occur there is a tendency to sweep the house clean, a spiritual urge to remove good and bad, to start a new life. Architecture has been going through this revolutionary housecleaning since the twenties and early thirties, and the renovating experiment has been a very exciting one. The functionalist doctrine seemed so clear and reasonable that this successful architectural revolution has made a round trip from North America and Western Europe to South America, Africa and Asia spanning five continents.

The radical and rapid liberation from historic styles and academic formulas has opened a tremendous new field for creative design. The availability of new building methods and new materials, and the transport facilities for those materials have speeded the changes. On the other hand, the social changes now under way make it difficult to forecast the new requirements of tomorrow. To summarize: changing spiritual, social, economic and technical factors are all shaping our architecture, and can help develop a contemporary style richer in forms with a more complete architectural vocabulary.

The new, thrilling experimental work may be often inclined to consider one or two of those factors and forget the others — the technical and economic is often overstressed, the spiritual forgotten. The changing, new factors also make us overlook the permanent ones, those tied to man and climate. In consequence, we lose unity and harmony, serenity and scale, and our communities are becoming more dehumanized.

It seems necessary to pause on this road of discovery, sit down on the curb and do a little thinking. Where is all this leading us? What are our communities going to look like in a few years if present trends continue? What, in more general terms, are we doing to our environment? Because we should not forget that the improvement of our physical environment is our main goal. This, of course, is not the task of the architect alone; he needs the help of economists, sociologists, city planners, engineers, educators, etc. But the architect's contribution should be one of the greatest, and he should be conscious of this fact *and claim the role that is his*.

Architects have only lately become more conscious that buildings are parts of cities, related to their environment; they have begun to consider the conditions of that environment in the development of their designs. . . The good, average architecture made beautiful cities in

By José Luis Sert



the past, and was in a way more important than the isolated, outstanding monuments.

This good, average architecture, worked out in some periods in the past, is what is most needed today. An architecture of good proportions, serene and dignified, where no house tries to outdo the neighbor's, where the whole street, square, neighborhood or town is balanced, harmonious, and beautiful. Balance should be our great concern; we need it in these troubled days.

Functionalism has been widely accepted as the guiding principle of all architectural work, but it has produced clichés of an appalling poverty. These clichés have replaced the old academic architectural vocabularies. Today we need a new vocabulary, rich and flexible. Functionalism alone does not satisfy our needs. The clean-up of the twenties was needed, the purist-functional period that followed was the natural result. But now we should have something more than mere practicality, which need not conflict with the functional but should add other elements to it.



By Eero Saarinen

THE PRINCIPLES of architecture seem to have remained constant, but each age that has produced an architecture has emphasized some principles and neglected others. The Renaissance was aware of and placed different emphasis on certain principles than the Gothic period did. In that sense we can speak about the changing philosophy of architecture. But, within our own time, it is more a matter of expansion than change. We should talk about the growing or expanding philosophy, not the changing philosophy.

The basic principles of modern architecture that seem the most important and essential to me are these:

1. Each age must create its own architecture out of its own technology, and one which is expressive of its own *Zeitgeist* — the spirit of the time.

2. Functional integrity. In the Twenties there was an over-emphasis on the principle of functionalism, that

is, the belief that form could be found by strict adherence to function. This is seldom true, and we soon learned that functionalism was not and could not be the whole story. But the principle of functional integrity seems to be one of the keystone principles of modern architecture.

3. The structural principle. From as far back as I can remember in modern architecture, structural integrity and structural clarity were basic principles.

4. Recognition of the importance of space as a primary architectural element; a new sense of space becomes more important than mass.

These principles are not, of course, in themselves architecture. They are the moral code behind architecture — and a very good moral code at that. They allow an infinite number of expressions and out of them we can create beauty. They also suggest an infinite number of expansions: they can sustain a rich and growing vocabulary.

The Renaissance was greatly concerned with the human response to proportions. Not long ago I would have said this was of lesser importance. Today I begin to see its profound importance. The proportions of our architecture will be different from the Renaissance. They will grow from our own principles — our own structure and form and space. I believe it is dangerous to try to codify them as Corbusier is doing, but their importance must not be minimized.

Any young movement easily goes overboard on certain practices. Therefore, continual re-evaluation is necessary. We must constantly question the validity of many of our practices. Have we gone overboard on too big windows, creating too many thermo-problems? Is the flat roof really the answer to all problems? Might a better relation to the sky be achieved by other means? These are some of the many embarrassing questions we must be allowed to ask ourselves without our friends yelling Benedict Arnold or a certain editor yelling Friend!

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By William W. Wurster

MANY CHANGES have occurred in the period between 1919 and 1954 in architecture and in the schools which give professional training. The greatest change of all is the acknowledgment of the total environment as compared to the care formerly lavished on the single structure without thought of all the buildings which surround it. So many of our speakers have already mentioned it, will mention it, and *must* mention it. Of all the things that come out of our experience, it seems to me, the total environment is the thing that touches architecture with the deepest query and the deepest challenge.

I think we should stress history more than we have. The time has come when we should treat it reverently and with complete knowledge. This does not mean that we return to the eclectic copying of former periods which we all know so well. Plagiarism of the living or the dead is equally bad.

Always the question of what is logic or what is beauty.

I think of the city planning approach which always states San Francisco streets should be on the contours — *logically*. The streets go straight over the hills, and in early days not a car could make them, just as in earlier days not a horse could make them. As the years have gone by motor cars have improved so it now makes sense, and all the time you see the water, and it is yours by token of its being at the end of the street — instead of being confused with houses like a sheep dog's hair over its eyes. Here we have gained something, and very few people have analyzed the logic of this beauty.

I wish we could think more, as we go over the countryside, of the total environment of open and closed, of green spaces and controlled spaces of houses, of different ages of houses, different ages of people who live in those houses and different types they were built for. I think we are seriously scarring our countryside with too much stress on conformity of cost and purpose.

Just because I am on my feet, and pulled on them very rapidly, I must tell you of Hong Kong, because I have just come from there. Somehow it has conquered and it has gained so much of the values in architecture — call them changing values or eternal values, things which we should recognize. It is a gala city, a harbor filled with the tumult of the Orient. The laundry of Hong Kong — the most beautiful of the whole world — goes all across the streets on poles. Things mildew in the closets, so they put them out of doors and when it rains they take them in and you have the constant floating of banners — and Chinese clothes are very beautiful. We in our housing projects treat this with shame, and I've never understood it and I just wonder what's the matter with us.

Perhaps the high light of my whole trip has to do with the changing philosophy of architecture, which is placing more and more acknowledgment on the importance of everyday things.



*By Ralph Walker*

PERHAPS, more than anything else, we now desperately need further change — one in which human ideas, in contrast to material ideas, will burgeon through the hard crust of prejudice into the possibilities definitely apparent within the richness inherent in the discoveries through scientific thought.

Today we are interested in discussing the vast number of changes as they may be reflected in the design of architecture. We will grant, without enumerating them, that there have been such changes; so perhaps we may now concern ourselves with the question whether the fundamentals of human needs and aspirations have been fully satisfied; or whether, as has been indicated, we are at the dead-end of a period of effort; and further, whether we may not look forward to and encourage, intelligently perhaps, more desirable changes.

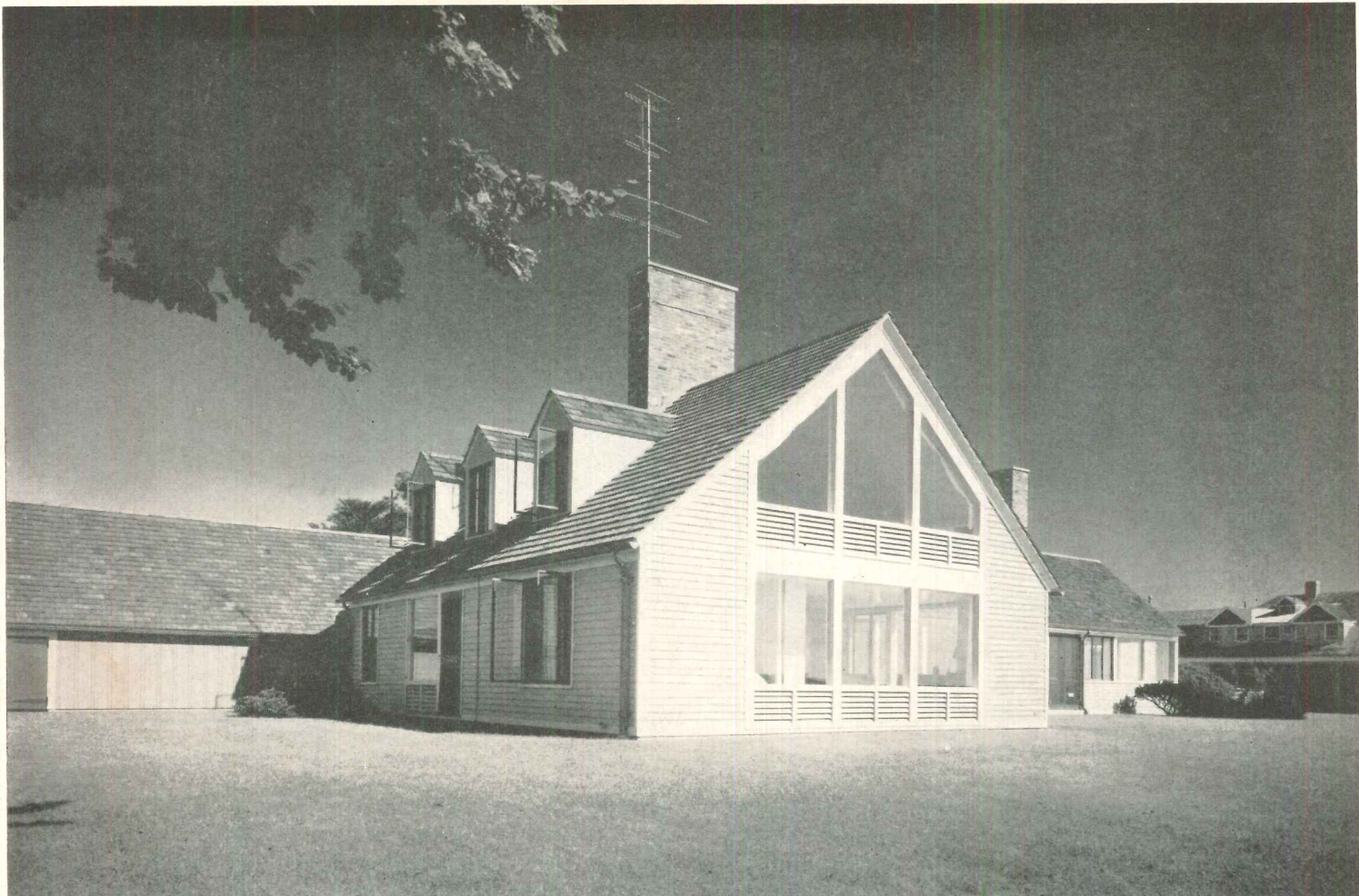
The idea of a continuous progressiveness concerns us because while we assert that architecture is ever a search for new forms, there is a lingering doubt whether the forms we have now developed are fully representative of our times: perhaps they are too purely geometrical and not sufficiently idealistic in a larger social sense. It is obvious that all our efforts combine increasingly to achieve the same results, one of which is so unquestionably materialistic as to indicate clearly a complete loss in spiritual values.

Our greatest mistake, though many of you may disagree with this premise, is to consciously design for our own times, for it is increasingly obvious that such design soon becomes affected, shallow and too often a copied stereotype. No Gothic architect, for example, ever said: "I am designing to express the middle ages or even for the fulfillment of the theory of the sexpartite vault." No, he designed as well as he could for the glory of God and, equally as important, for the entertainment and joy of man. We might say also that today's acclaimed

masterpieces, which too readily become shabby, will not be bettered by further refinements. The shallow and the mean will persist, unless we cease to be satisfied with mere surface neatness and seek beauty in emotional depth; unless we realize that gracious form is not achieved by structure alone, but through social and spiritual needs which indicate symbolically that man is man. The symbol we seek is that of human greatness, of the far searchings of the human intelligence, of the soul's aspirations toward hope, compassion and love; of humanity as a stirring ideal, its enhancement a possible goal.

The problem facing us as architects is how to produce a humanistic scale and order, difficult indeed in a world where constant change is thought desirable, and where at the same time each project is of such magnitude as to enforce standardization — and yet it must be done.



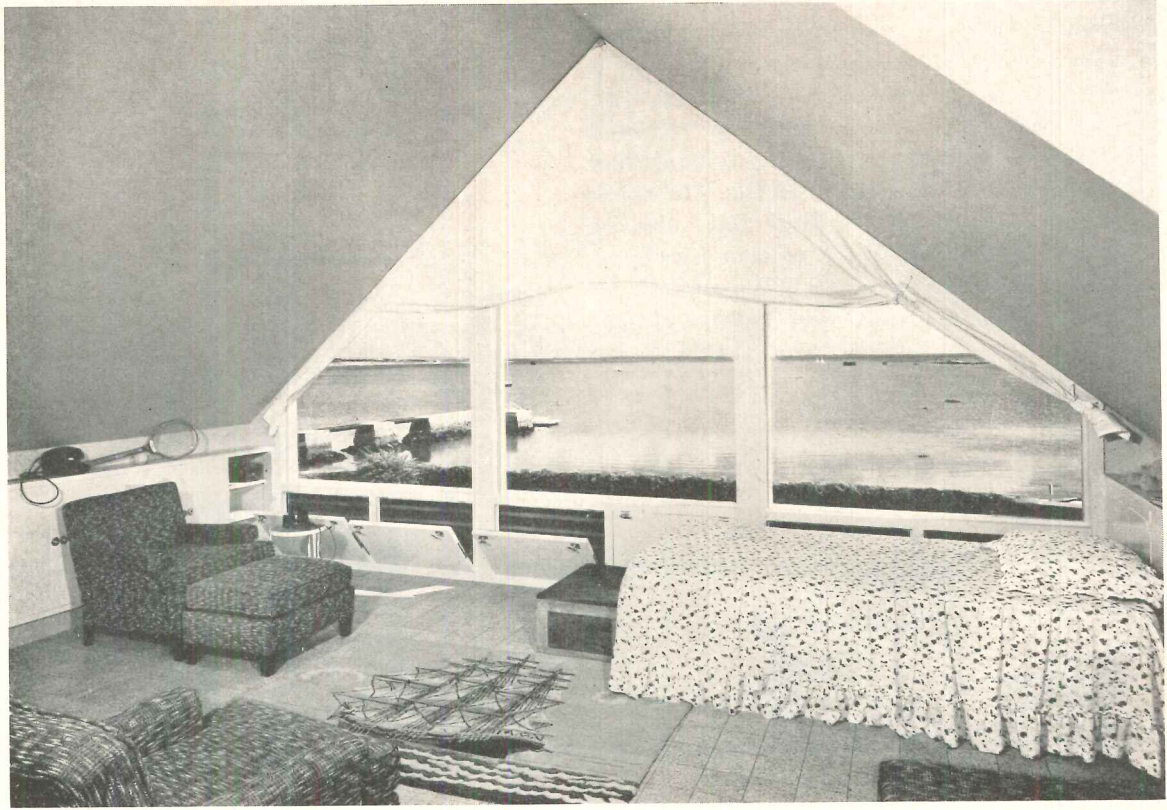


**AN AWARD WINNER, "A DIRECTION THAT MIGHT**

*J. Gordon Gibbs Residence, Marion, Mass.; George W. W. Brewster, Architect*







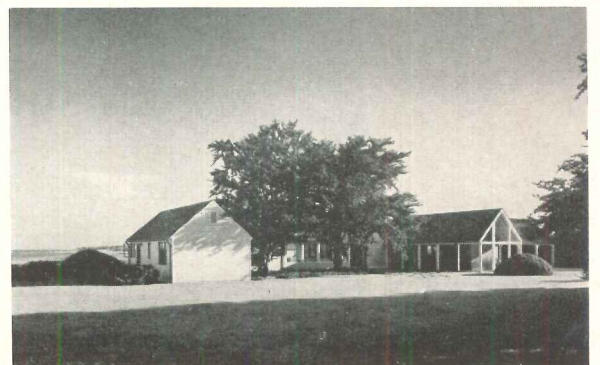
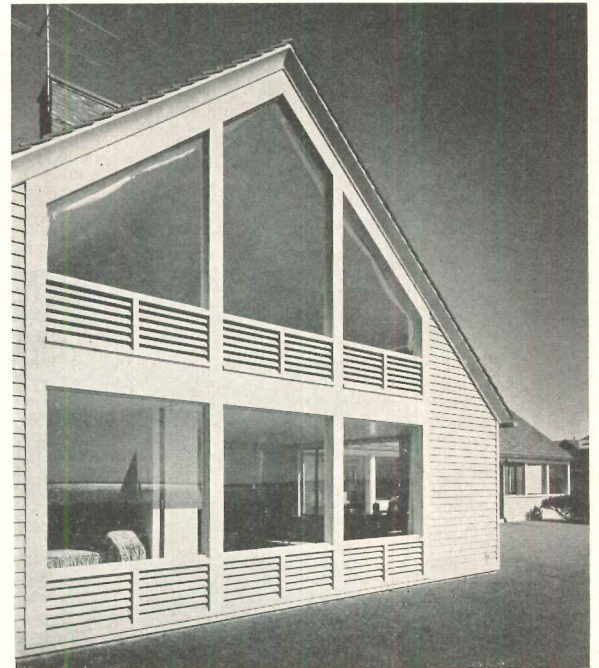
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## BE EXPLORED FURTHER”

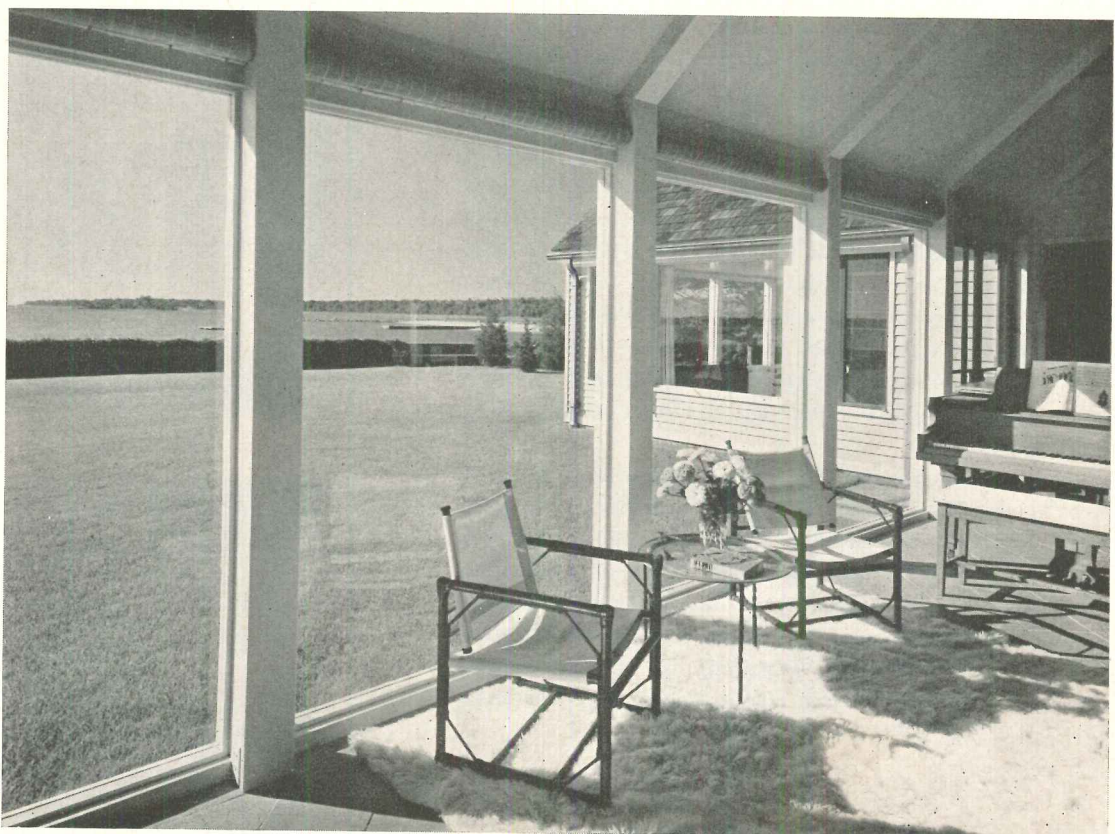
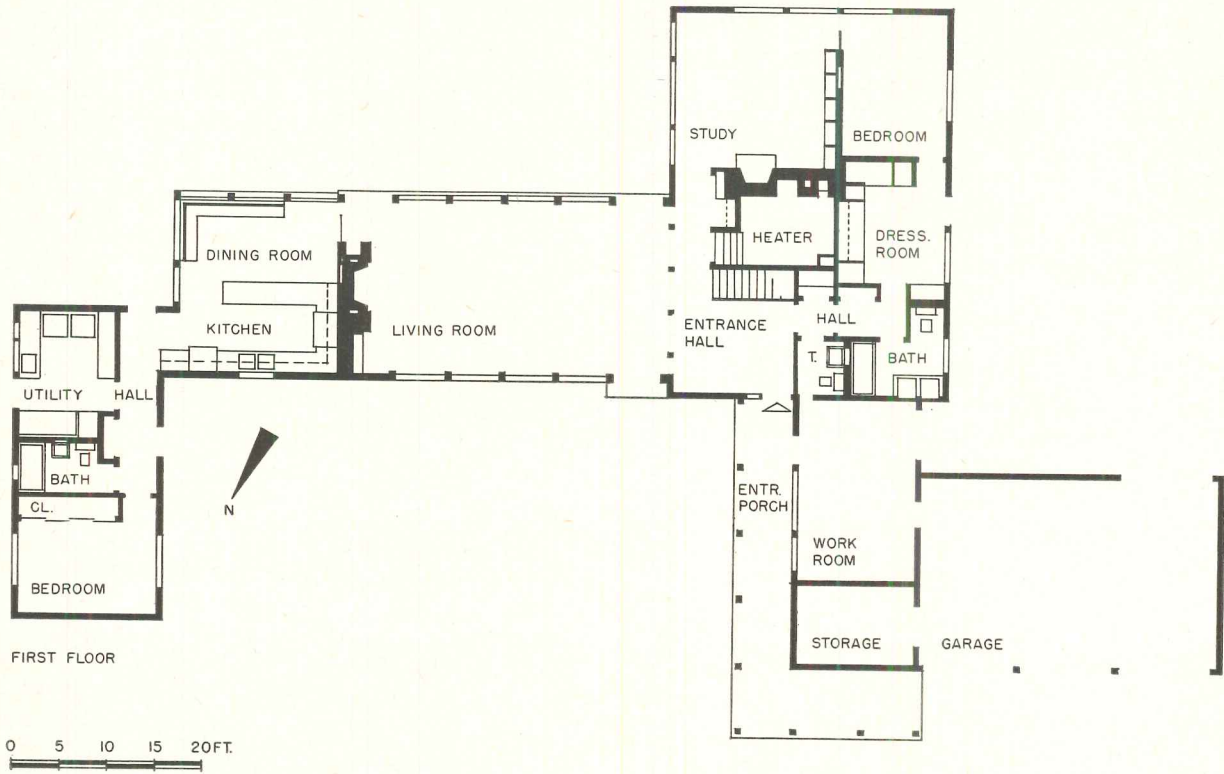
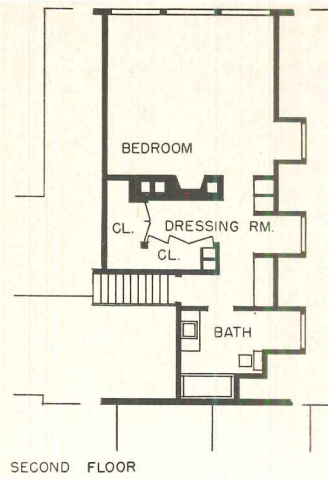
*Stanley Underhill, Landscape Architect*

WHEN this house won for its architect the 1954 Boston Arts Festival Architectural Award, it became the subject of much interested comment by architects gathered for the A.I.A. convention. Pressed for a jury report, the distinguished jurors — José Luis Sert, of Harvard; George Howe, of Yale; Burnham Kelly, of M.I.T. — mentioned that there was some confusion as to whether or not they had been asked to premiate a single design from among the submissions. But the jury agreed “that perhaps the most significant aspect of its decision was that a house like Brewster’s should have attracted its attention, and that if any contribution should be singled out for comment, this should be the one, for it had simplicity, repose, dignity and an indigenous character. In short, it represented a direction that might be explored further.”

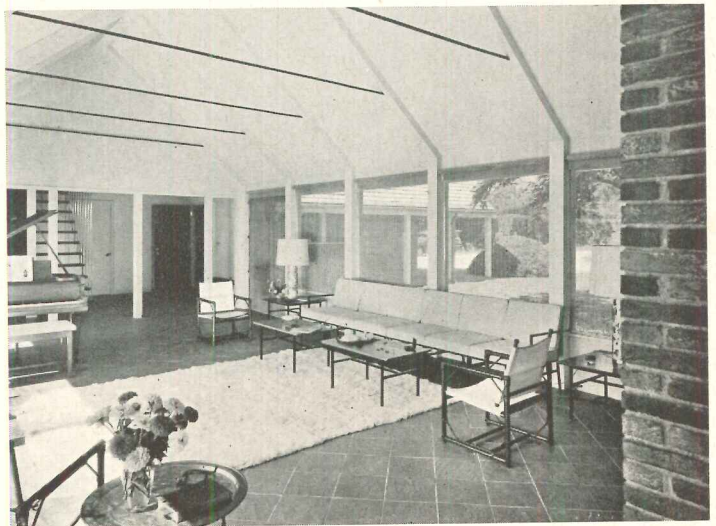
Mr. Brewster was content with an expression of his own objectives: “the site and the clients’ desires called for an expression of security and commitment. The coast line is low and sandy, without particular identity from rocks or trees. The house needed to establish character and permanence, and to be small-scale and unpretentious. The first choice was a beautiful roof, then fireplaces and stone floor, and an open plan with free spaces but contained in some adequately ordered arrangement, not formal, but solid and determined.”



The client's family consists of man and wife (the Gibbises of Katherine Gibbs schools) and two daughters in their teens. The parents travel a great deal, and wanted their house to be easily operated without servants. The kitchen-dining space, guest or servant's room, and the master-bedroom-dressing combination were all developments of their requirements. The house develops a long view down Buzzards Bay, directly south, and the wings were disposed to save a group of five copper beeches, and to leave part of the original site for possible sale. There is no basement, because of high water level.



© Ezra Stoller



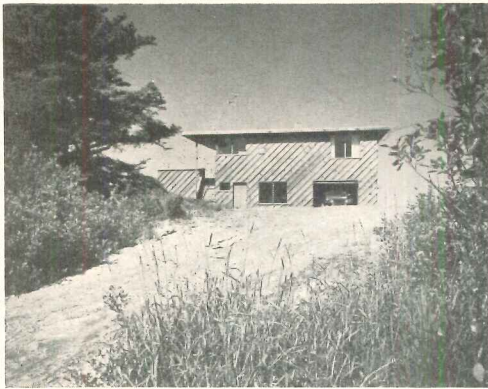
*Materials were chosen to contribute to the general aspect of informality but permanence, as well as to make maintenance as painless as possible. Roof is of tile shingles; many of the floors are of slate. Heating is by radiant panel forced hot water system*





## VACATION HOUSES

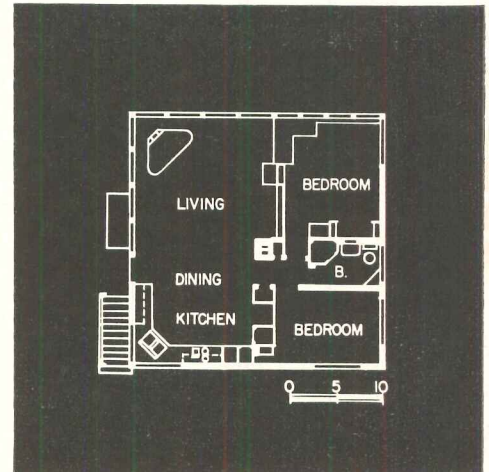




## BEACH HOUSE, *Neskowin, Ore.*

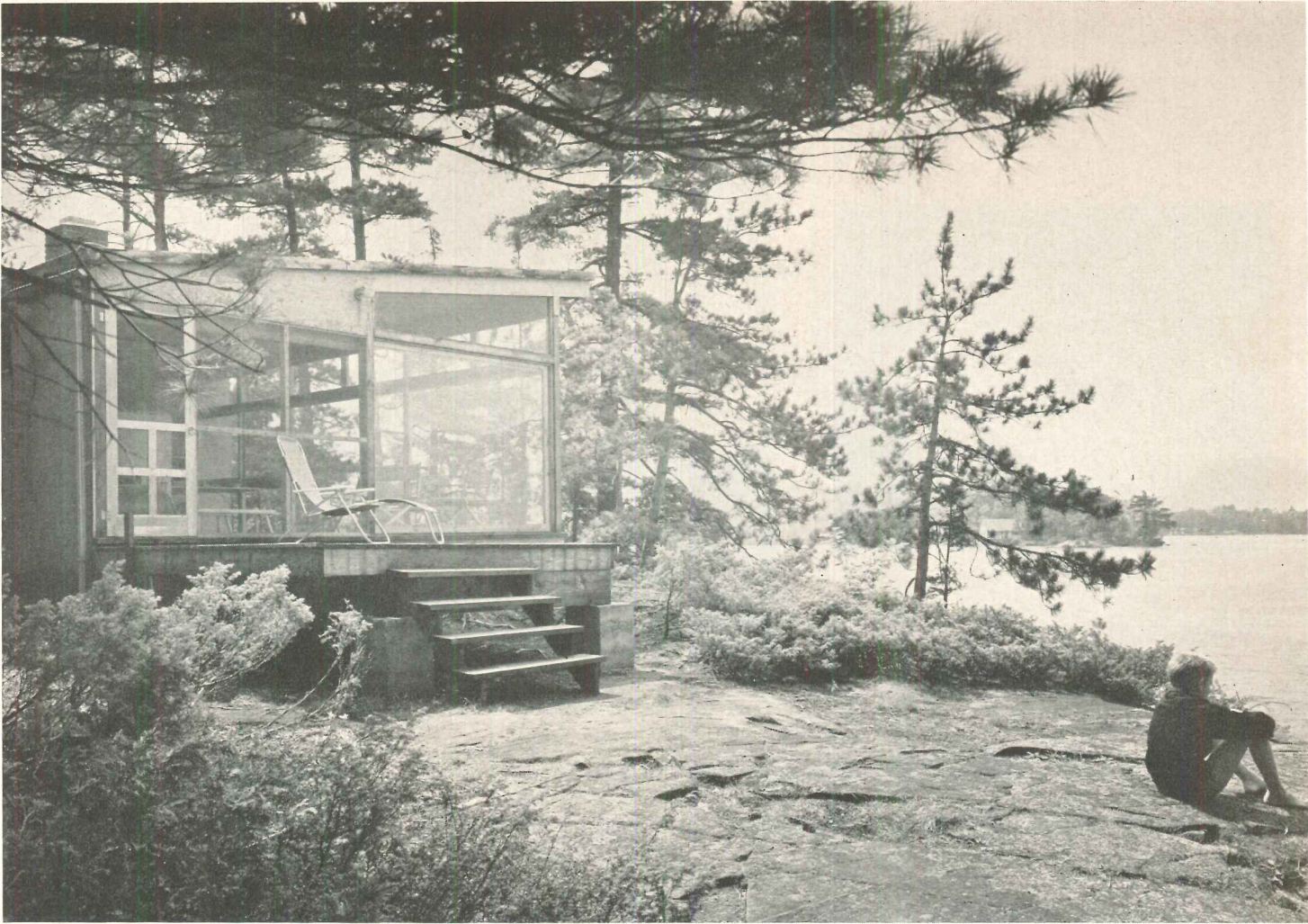
*Van Evera Bailey, Owner and Architect*

THERE IS A DELIGHTFUL sense of fun about this beach house despite the simplicity of its plan. The house is square, partly for reasons of economy but chiefly because only a square would fit what the architect-owner calls a "triangular roof." This roof, with diagonal corner-to-corner pitch, allows added height at the southwest corner where the view is. Mr. Bailey has found that in his latitude a house facing west must have about as much glass to the south as to the west to reduce glare; no amount of overhang can help, he says, because when the sun goes down the overhang only accentuates the contrast. In any event, the roofline and the diagonal siding increase the informality of the exterior.



*Laminated wood floor (2- by 4-in. hemlock) is placed diagonally to be consistent with roof. Walls are 1- by 1-in. rough sawed cedar, horizontal where roof is flat, on slope where roof is sloping. Owner thus achieved desired "tweedy" effect, admits it is "weird" in some places. Chimneyless fireplace is not just whimsy: its location in view corner saved much living area, and its lack of chimney saved the view; fireplace stands on pipe legs to basement floor, has double back through which smoke is sucked down and under floor to fan, then into chimney in center of house*



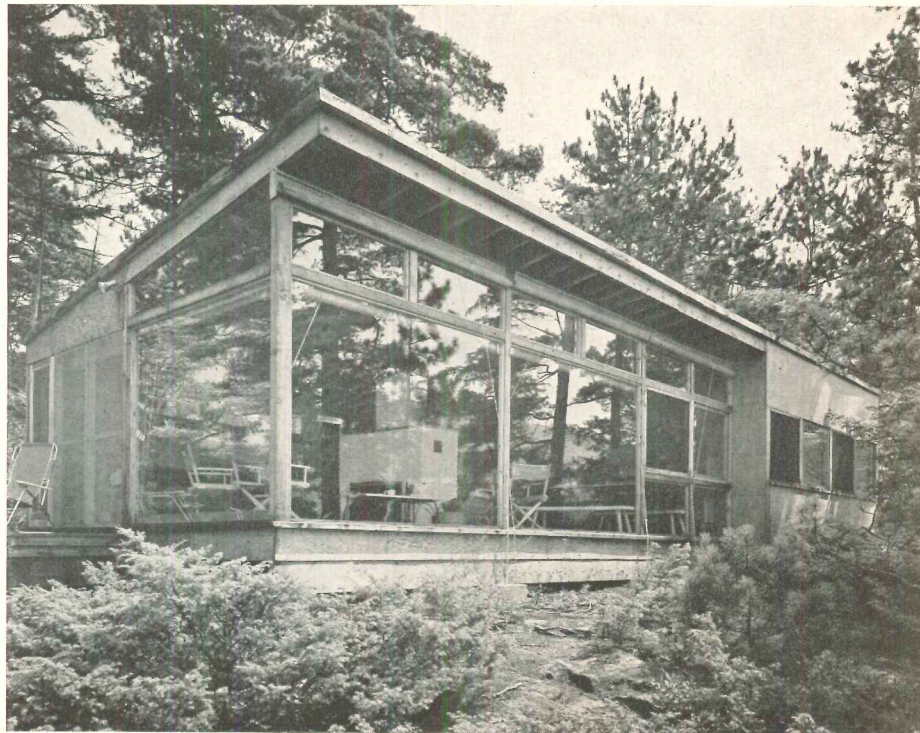


VACATION HOUSES

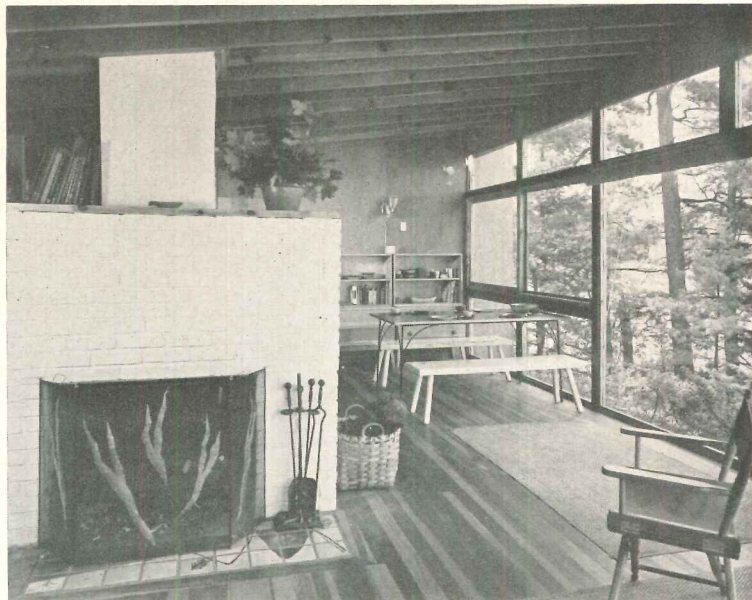
## LAKESIDE COTTAGE, *Lake George, N. Y.*

*Dr. and Mrs. Curtis M. Flory, Owners*

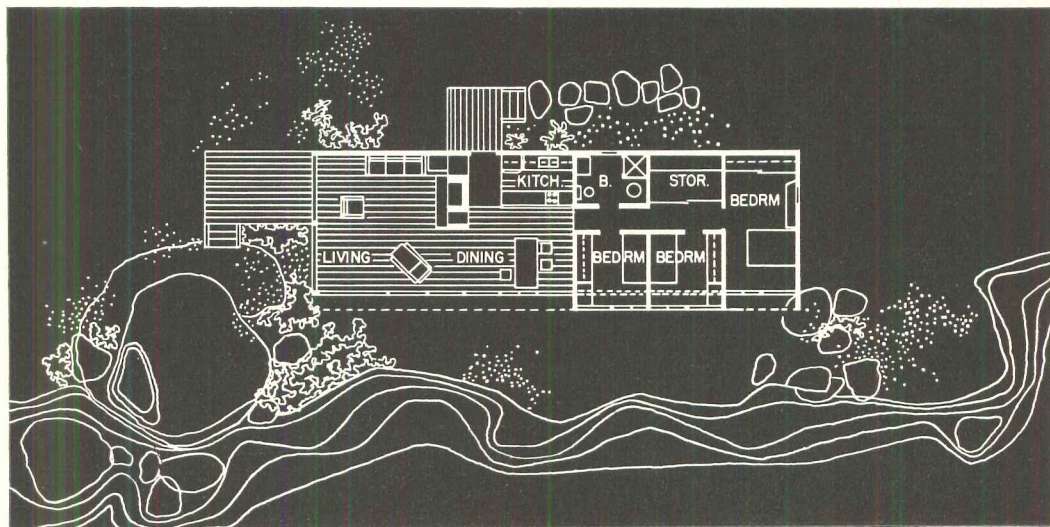
*Bernard Kessler, Architect*



Joseph W. Mellior

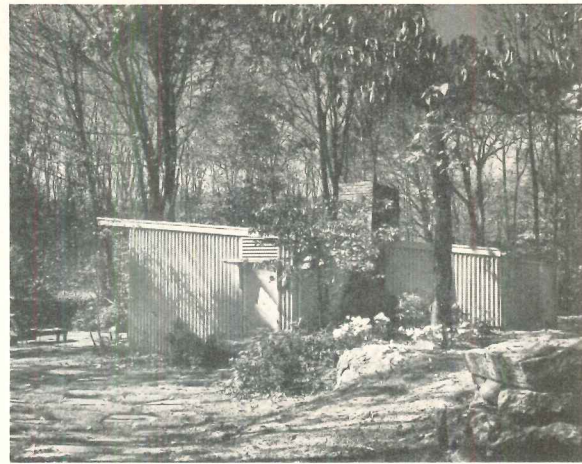
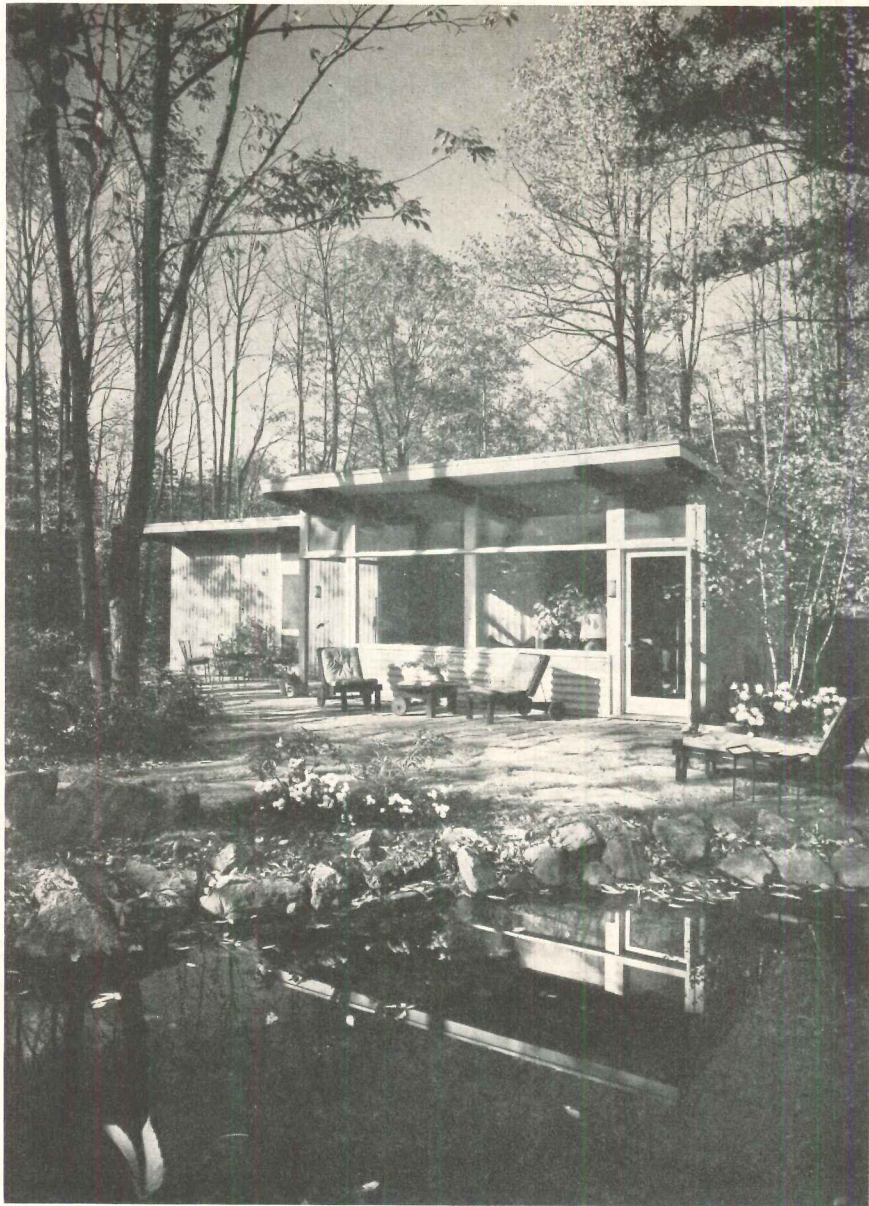


*Interior of Flory cottage is strictly utilitarian with easily maintained materials used throughout. Floors are pine board, walls plywood; exposed framing used on many interior walls. Furnishings are low-cost, designed for hard use. Brick fireplace wall separates kitchen and living area, provides convenient hanging space for boating accessories. Hearth is tile, designed and executed by David Gil*



**T**HIS COTTAGE, two hours by car from Bennington, Vt., where the owners live, is used every weekend from late spring to early fall, and continuously for a few weeks at vacation time. Its site is a rocky ledge approximately 300 by 125 ft, at the end of a small peninsula with Lake George to the west and a bay to the east. The lot is densely wooded to the water's edge.

The house itself is as natural as its surroundings. Of simple wood frame construction, it consists of one large open living area, two small bedrooms and bath. The large end bedroom called for in the original plan (above) was omitted, and two bunk beds were built into the boys' room across from the bath.

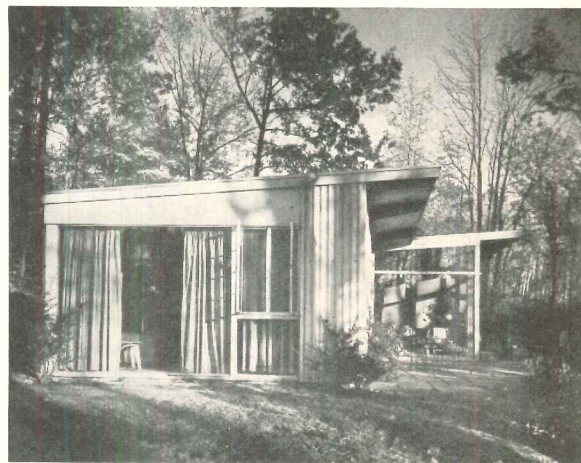
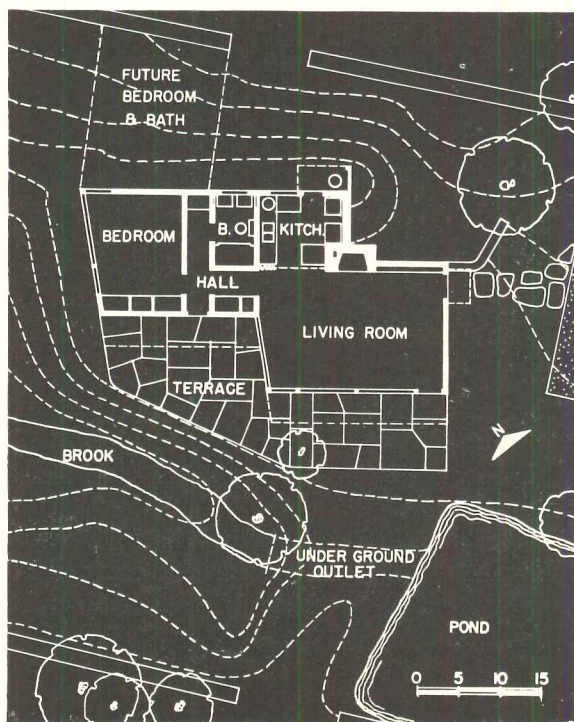


## EXPANDABLE VACATION

*Mr. and Mrs. V. Lada-MocarSKI, Owners*

*John Hancock Callender, Architect*

VACATION HOUSES







## COTTAGE, *Westchester County, N. Y.*

THIS HOUSE, in a remote section of Westchester County, N. Y., is at present used only for vacations and weekends, but was planned for conversion to a year-round residence when the owners retire. At that time a second bedroom and bath will be added to the north, a carport and storage shed to the east.

The owners' chief requirement was ease of maintenance: they wanted compact comfort and not one inch

of unnecessary floor area. So the house is really small — a mere 725 sq ft. The plan and the large areas of glass combine to give it a roominess all out of proportion to its size. Since the main view is toward the west, down the brook's valley, the walls on that side are canted and glass to the floor — perfectly feasible because of the many shade trees near by. Double-pane insulating glass insures comfort in cooler weather.

*Openness of living room makes it look much larger than its 14 by 22 ft. Fireplace wall is brick, with vents at top for release of warm air from heater in kitchen as well as from hearth. Floors are laminated wood block on concrete slab — easy to keep clean. Kitchen can be closed off by accordion door when not in use*



# WHO SHOULD STUDY ARCHITECTURE?

This is the first of three reports on problems of architectural education today based on a survey of leading educators and practitioners as summarized by

*John Knox Shear, Head*

*Department of Architecture, College of Fine Arts*

*Carnegie Institute of Technology*

**D**URING SEPTEMBER three thousand students will begin the study of architecture in 69 North American colleges and universities. If any two schools should undertake the instruction of these students in the same way a new record for coincidence will have been established. This is not likely to happen. The variables involved and the zeal with which they are exploited virtually rule out the possibility. The differences in our architectural curricula will continue to be demanded and determined by such things as the ages of entering students, their previous condition of scholastic servitude, methods of selection, the administrative organization of the parent institution, the location of the school, its sources of funds, faculty, philosophy, traditions, and the laws of the state.

## **The Uses of Diversity**

That differences are desirable is made clear in the replies of educators and practitioners to a questionnaire prepared by ARCHITECTURAL RECORD. Pietro Belluschi says: "The strength and vitality of America lies in its variety, and any effort toward conformity should be resisted."

Beyond general accord in this there was little agreement in the answers to the seven questions asked of one hundred persons in the United States and Canada particularly interested in the problems of architectural education. These questions were developed out of a

report by Professor Shlomo Sha'ag which was published in the February issue of ARCHITECTURAL RECORD (pp. 9 *et seq.*). Professor Sha'ag had visited last summer 23 North American architectural schools as part of a year's tour undertaken in preparation for organizing and directing the new architectural faculty at Techion, Israel Institute of Technology in Haifa. The variety of his reactions to the variety of our methods was illustrated in his report as he discussed measurement of aptitudes, the importance of architectural history, basic design, the integrated curriculum, copying contemporary styles, ideological confusion, and the relationship of the student to practice and the practitioner. It was to these problems that the questionnaire was addressed in an effort to collect "some testimony on architectural education which might contribute to a wider understanding of its aims and methods."

This is a modest statement of modest objective, but coming just prior to the publication of the two-volume Final Report of the American Institute of Architects' Survey Commission this questionnaire might have proved both optimistic and redundant had not the number and character of the responses assured its making a contribution. Over half of the school heads and a dozen distinguished practitioners and teachers answered freely, frankly and thoughtfully. Their answers reveal their individual philosophies and, taken together, the range of approach to architecture today.

## THE QUESTIONNAIRE

### Article One

1. Have you found a satisfactory method of determining the student's aptitude for the study of architecture? Of estimating whether his potential contribution to the practice of architecture justifies encouraging him to complete his studies?

### Article Two

2. How much knowledge of architectural history do you feel the curriculum should require and at what stage of the student's development do you feel it should be introduced?
3. "Basic Design" is one of the most important developments in the current architectural curriculum, according to Professor Sha'ag, who remarks that — at the University of Southern California, for example — it virtually combines "the elements of visual design, contemporary ideas about building materials, Fuller's 'atomic' constructions, the functional experience of Bauhaus architecture and Wright's romance." What are your views on the strengths and weaknesses of any of the various approaches to "Basic Design"?
4. What advantages and disadvantages do you see in the kind of "integrated" curriculum Professor Sha'ag describes at the University of Florida, where "they teach all architectural sciences simultaneously and combine them in the same exercise"?

### Article Three

5. Is a student tendency to "copy" dominant contemporary "styles" a serious problem and, if so, how do you cope with it?
6. Are you conscious of much "ideological confusion" among students and, if so, how can educators help to reduce it?
7. What suggestions would you make toward (a) easing the transition from education to practice and (b) strengthening the relationship between student and profession?

### As Mr. Wright Sees It

There was no answer more frank than that of Frank Lloyd Wright: "There is no certain road to becoming a great or even a good architect. It is my belief that the great Art of Architecture cannot be taught. Any design-consultant is naturally a propagandist. No less so, but most harmful, in Education. Only in actual day-to-day work-experience by apprenticeship to a chosen master is a youth likely to get the sense of the direction he needs when he needs it: get into the atmosphere as he breathes, that his nature requires. Only so is he likely to find his way to be a good architect. An apprenticeship of this nature in actual residence with his master's own work will open doors and windows of the spirit to him so he may look out upon the thing he loves and must learn to develop himself, as himself. To teach Art as a Science or a business is taught would be to commit the folly now practiced in the name of Education. Out of that practice we are not going to get even good architects — we will only continue to get furniture for the back-rooms of plan-factories, just as we do now. Call it 'team work'."

### But How Choose the Apprentice?

Even though the most casual follower of architecture will scarcely be ignorant of Mr. Wright's mistrust of "Education" and his abiding faith in the master-

apprentice way of life and learning, he will hardly have read a more concise or challenging statement of it. His closing reference to "team work" is a typically provoking fillip in a time when the techniques of sympathetic collaboration seem to be vitally important if we are to get a better general level of architecture. However, with the exception of this single, oblique phrase, Mr. Wright's words are clearly positive answers to six of the seven questions. He did not answer Question One:

*"Have you found a satisfactory method of determining the student's aptitude for the study of architecture? Of estimating whether his potential contribution to the practice of architecture justifies encouraging him to complete his studies?"*

There must be many, certainly most teachers, who will regret that Mr. Wright did not respond to this question. For though his philosophy of preparation for architecture seems to be the most removed from any theoretical common denominator, on this question, at least, he must share the problems of the schools. For surely from among the many young men and women who seek him as their master he must choose those who are to live with him and those who are not; and from the number who are chosen there must, for some, come a time before normal completion of the apprenticeship when Mr. Wright feels continuation unwise. And if there are none of these the importance and wisdom of his first choosing is further emphasized. Some indication from him about the basis for his choices would have made an interesting addition to the replies from the many others who have had to make these same decisions.

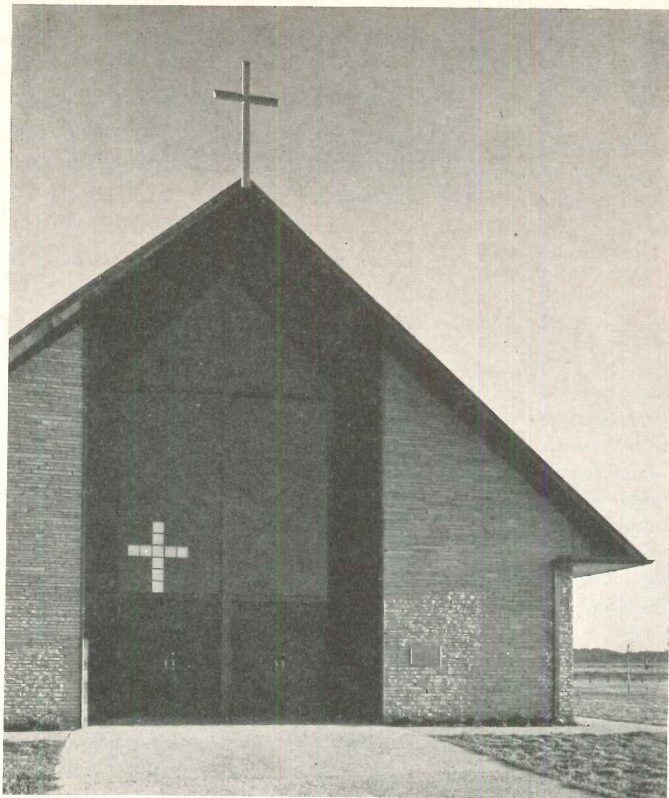
### The Consensus: No Easy Answer

These replies, with few exceptions, stated that there is no satisfactory method of determining the student's aptitude for the study of architecture or of estimating his potential contribution to the practice of architecture. This response was predictable. There must be few men who would claim such infallibility for themselves or for their tests. This is a suitably humble attitude for men of sensibility although it may come as a surprise to some of those who read further that men who are willing, if not eager, to make decisions in steel and stone affecting the activities and aspirations of millions of men are so reluctant to make decisions affecting, but hardly so irrevocably, a specific activity of some of those men. Although there was agreement on the general premise that there are no completely valid measures, there was a wide variety of feeling about what this should imply for those who must, nevertheless, make decisions about the admission and continuation of students in architectural study.

### Can "Aptitude" Be Measured?

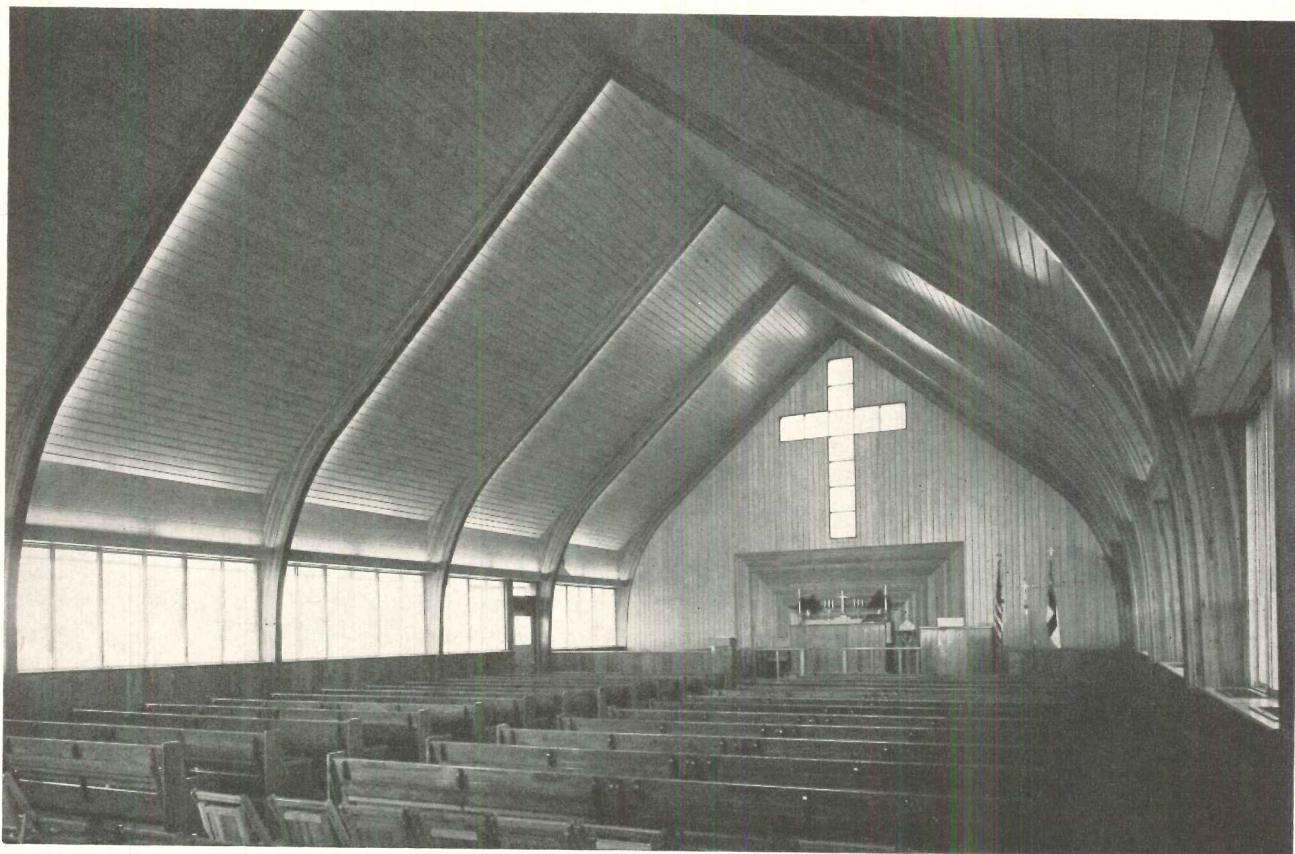
The replies may be divided into four groups. The first group did not go beyond the statement of what developed as the basic premise. Their responses neither confirmed nor denied hope of salvation for the teachers

*(Continued on page 300)*



*William S. Evans,  
Architect and Engineer*

**ST. PAUL'S EPISCOPAL PARISH HOUSE AND  
*Shreveport, La.***



*Joseph W. Mollitor*

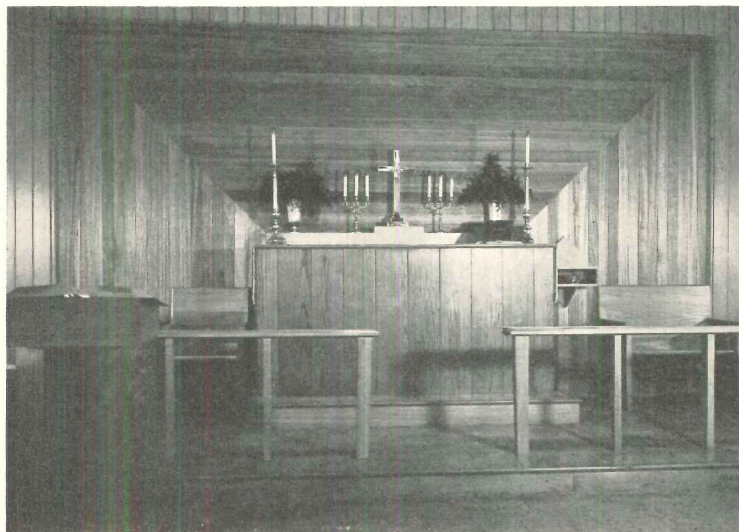
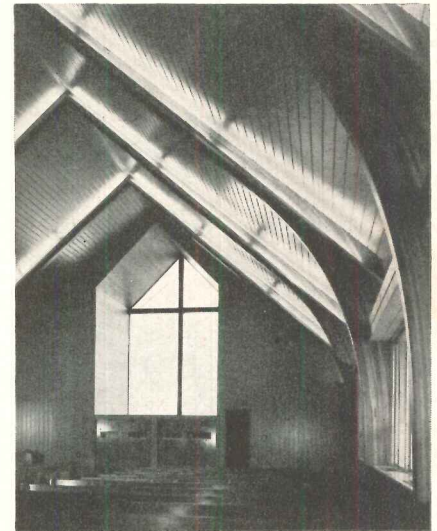
*Present church area will become assembly room once new church is built; pews and altar are removable. Cross over altar is blue-tinted frosted glass, illumined at night by exterior spotlight*



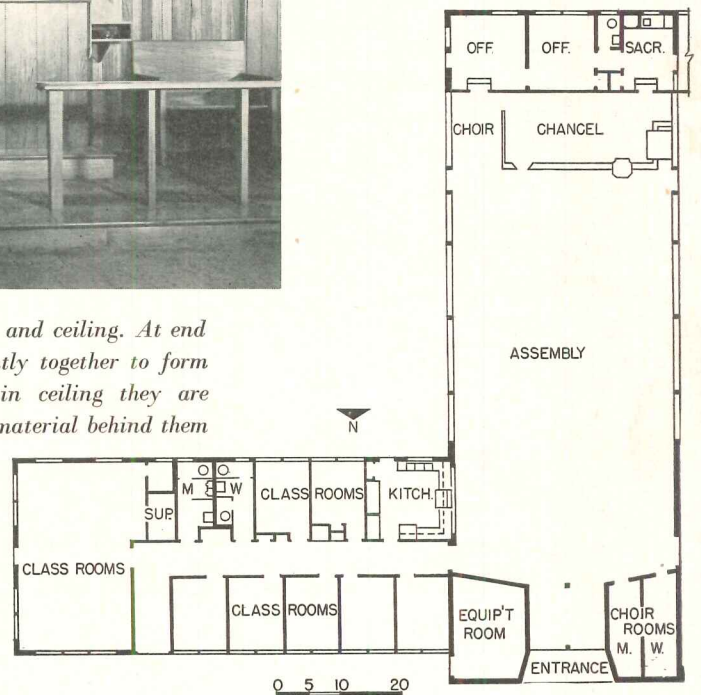
## SUNDAY SCHOOL

**T**HIS BUILDING, in a rapidly growing section of Shreveport, was started as a parish house for a new mission. Before preliminary plans were completed the seating capacity in the temporary church area was increased from 200 to 350, and while construction was under way a new Sunday School wing was added; now still another wing is in prospect in addition to the church proper.

All partitions in the Sunday School wing are movable; they can be arranged to form up to eight classrooms, or they can be pushed back against the exterior walls to form one large area for the children's Sunday services.

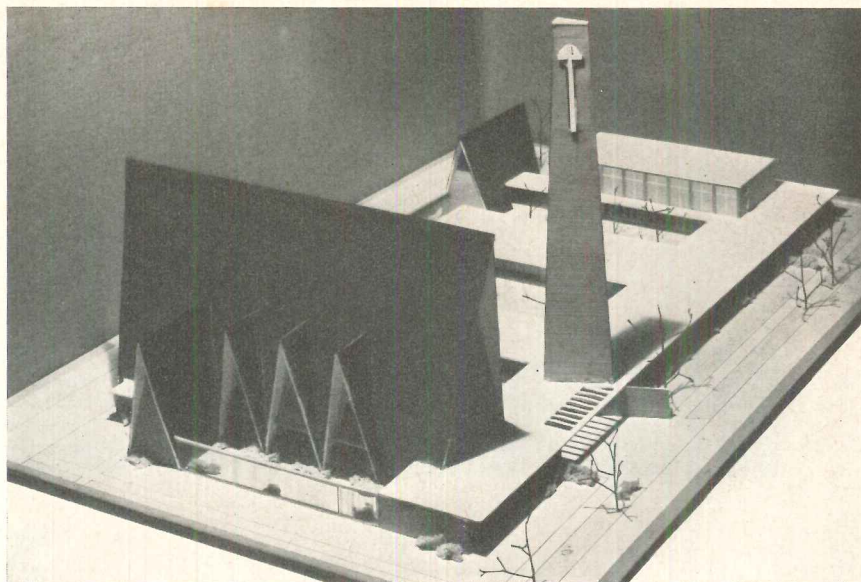


*Pine boards are used for both walls and ceiling. At end bay of chancel they are placed tightly together to form reverberation chamber for organ; in ceiling they are  $\frac{1}{4}$  in. apart, with sound-absorbing material behind them*

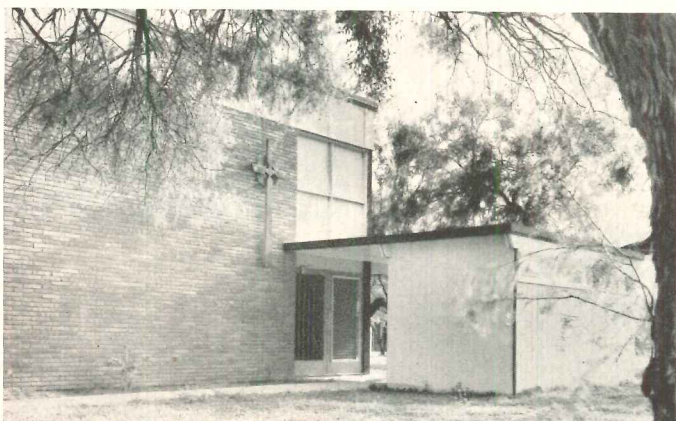


RELIGIOUS  
BUILDINGS

*Cocke Bowman & York,  
Architects*



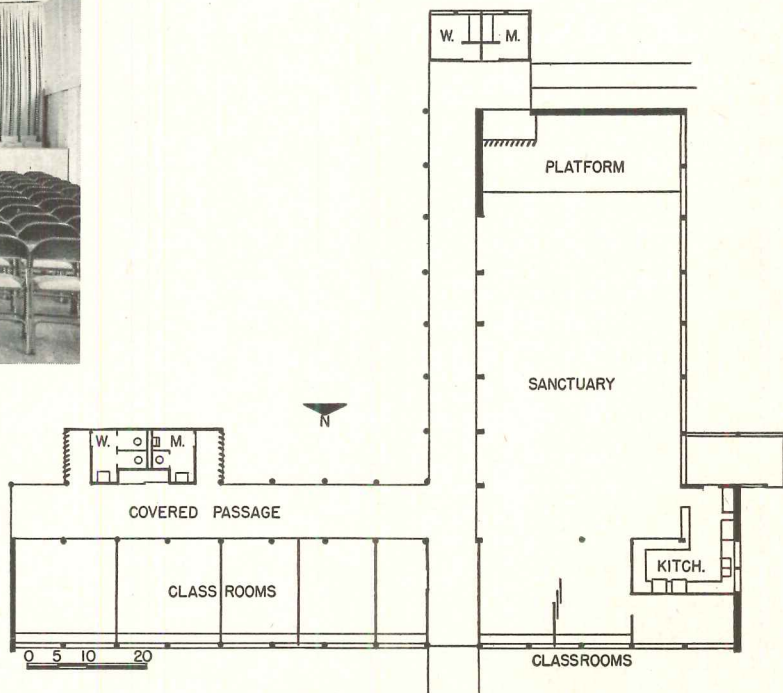
FIRST PRESBYTERIAN CHURCH *Edinburg, Texas*

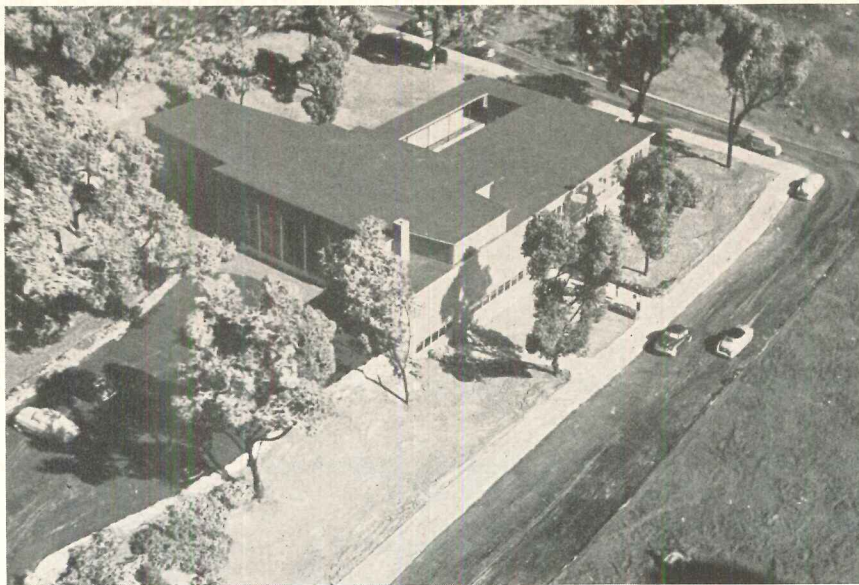


ONLY A SMALL PORTION of this church unit has been built to date, and services are now being held in what eventually will be the assembly hall. When the entire project has been completed it will consist of a church, a chapel, separate classroom areas for different age groups, offices and library, indoor and outdoor recreation areas. Adjustable partitions are planned for the classroom wings to accommodate departmental expansion and contraction. All rooms will have cross ventilation and wide roof overhangs on south and west; walks between wings will be covered.



*Assembly hall, which for time being serves as the church, opens along west wall to a covered terrace and patio. Chapel (photo of model, top of page) will be at rear of this wing, with direct access from street*



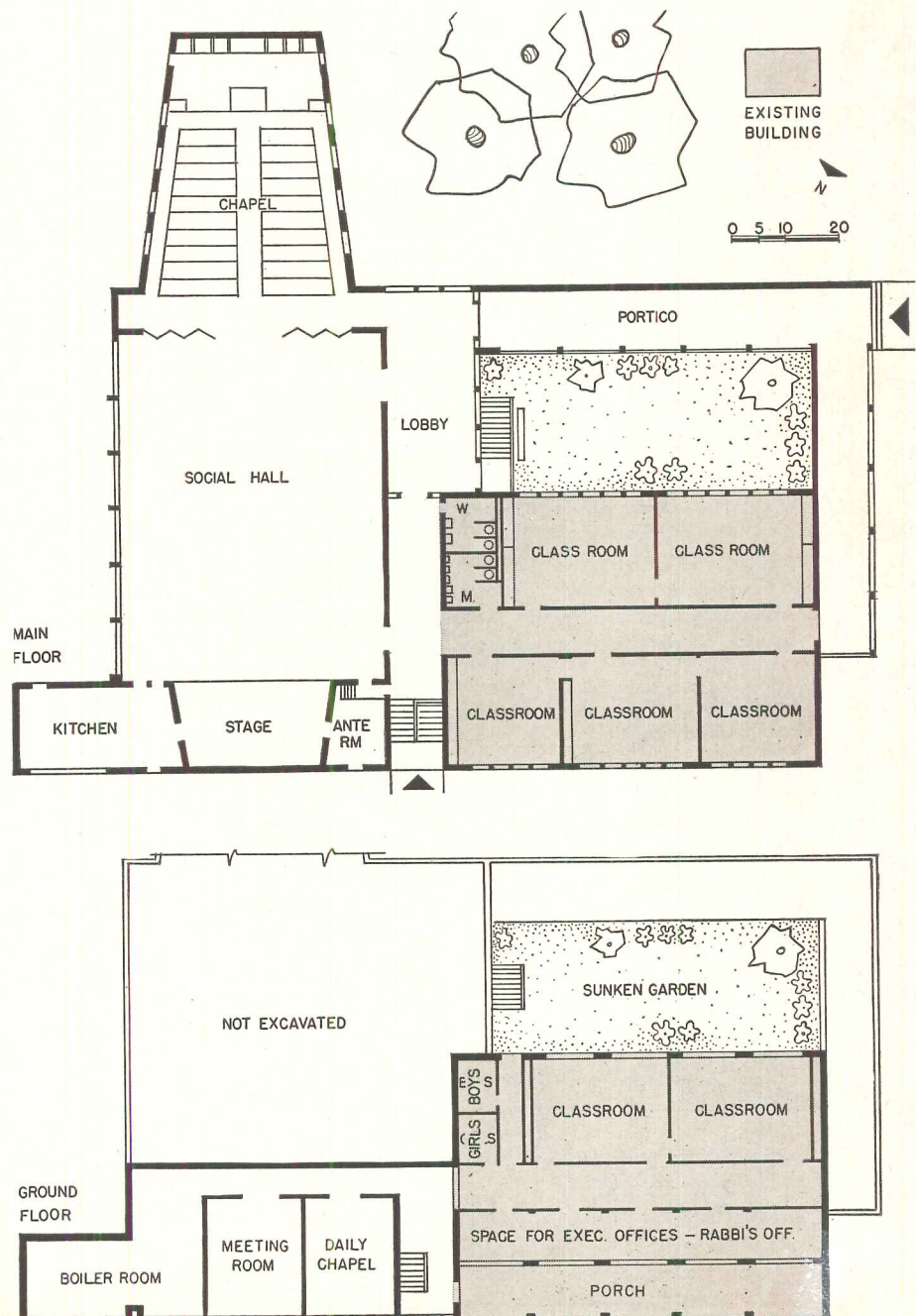


*Isidor Richmond and  
Carney Goldberg,  
Architects & Engineers*

## TEMPLE SHALOM, *Milton, Massachusetts*

WHEN THE PRESENT architects were called in to develop the final plan for Temple Shalom they found that they had to work around an existing semi-basement structure 40 by 72 ft in size situated at the foot of a sloping, thickly wooded and rocky site. First step was to convert the existing basement level into classrooms and offices and to construct a new auditorium above. Between this building and the future chapel and social hall a sunken garden court, made possible by the sloping site, will provide a secluded place for rest periods during the long special services.

*Religious, educational, social and administrative elements required for a Temple of this size are provided here in simple two-level plan. Movable partition between chapel and social hall will increase seating capacity from 154 to 669 for special services. Educational wing provides seven classrooms*



# BASIC ELEMENTS IN THE PLANNING OF ELECTRICAL SYSTEMS

By Felix B. Graham  
 Chief of Electrical Department  
 Syska & Hennessy, Inc.,  
 Consulting Engineers

ARTICLE 4: INDUSTRIAL BUILDINGS

This is the fourth in a series of six articles. Previous articles were: 1. General Principles, February. 2. Office Buildings, March. 3. Stores and Shopping Centers, May.

A MODERN industrial plant probably requires more electricity per unit area than any other type of building. The demand varies with the type of plant and ranges up to 30 watts per sq ft. The function of the distribution system is to receive energy in a large bulk at one point and to break it down reliably into small, safely usable quantities. Such a system must have certain characteristics stated in the following order of relative importance: (1) safety, (2) reliability, (3) flexibility, (4) expansibility, (5) durability, (6) low maintenance cost, (7) low initial cost, (8) small space requirements, (9) appearance.

Reliability in an industrial plant is next to safety in importance because interruption of the power supply is extremely costly due to lost time and production. In certain processes, an interruption spoils a partially completed product which must be removed from the processing equipment at great cost and disposed. Flexibility is important because the nature of many industrial plants requires constant changes and

relocation of equipment. Appearance promotes good housekeeping.

### Short Circuit Protection

Because of the size of load and requirements of reliability and flexibility, the distribution system of an industrial plant is complex and requires well-planned safeguards. The term *interrupting capacity* is a frequently used term, and it might be well to discuss its meaning briefly.

The arch-enemy of an electrical system is the short circuit. When two or three wires of different phases touch or one wire makes contact with ground, then there is a path of resistance smaller than through the equipment normally supplied. At that moment all power generated on the supply system as well as that back-fed from motors in the plant tends, theoretically, to rush to that point. This tendency is limited by the impedance (resistance) of the electrical system which is set up by the conductors and transformers. Impedance becomes smaller as (1) the conductor becomes larger, (2) the conductor becomes shorter, (3) the transformer becomes larger. And the smaller the impedance which is set up in the path of the current, the larger will be the current that flows. Where large

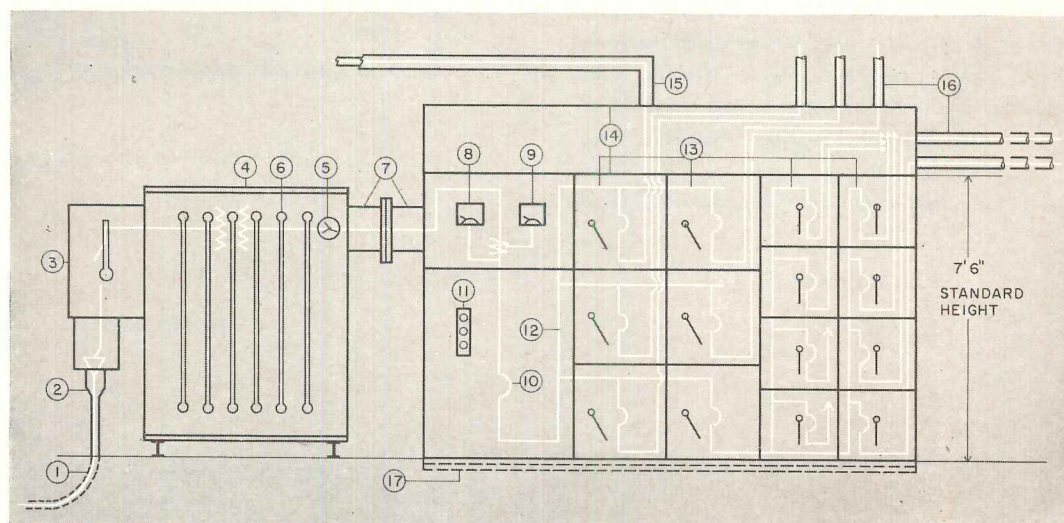
banks of transformers exist and a short circuit develops close to the supply point, the available short circuit current can be extremely large. This current must be interrupted by the opening of a circuit breaker, an operation which is accompanied by tremendous forces acting on the mechanical parts of the breaker. Yet, the breaker must be able to interrupt the current without damage to itself. This is the meaning of *interrupting capacity*. It follows that the breakers closest to the supply point must have the greatest interrupting capacity; those further away may get smaller and smaller.

### Transformers

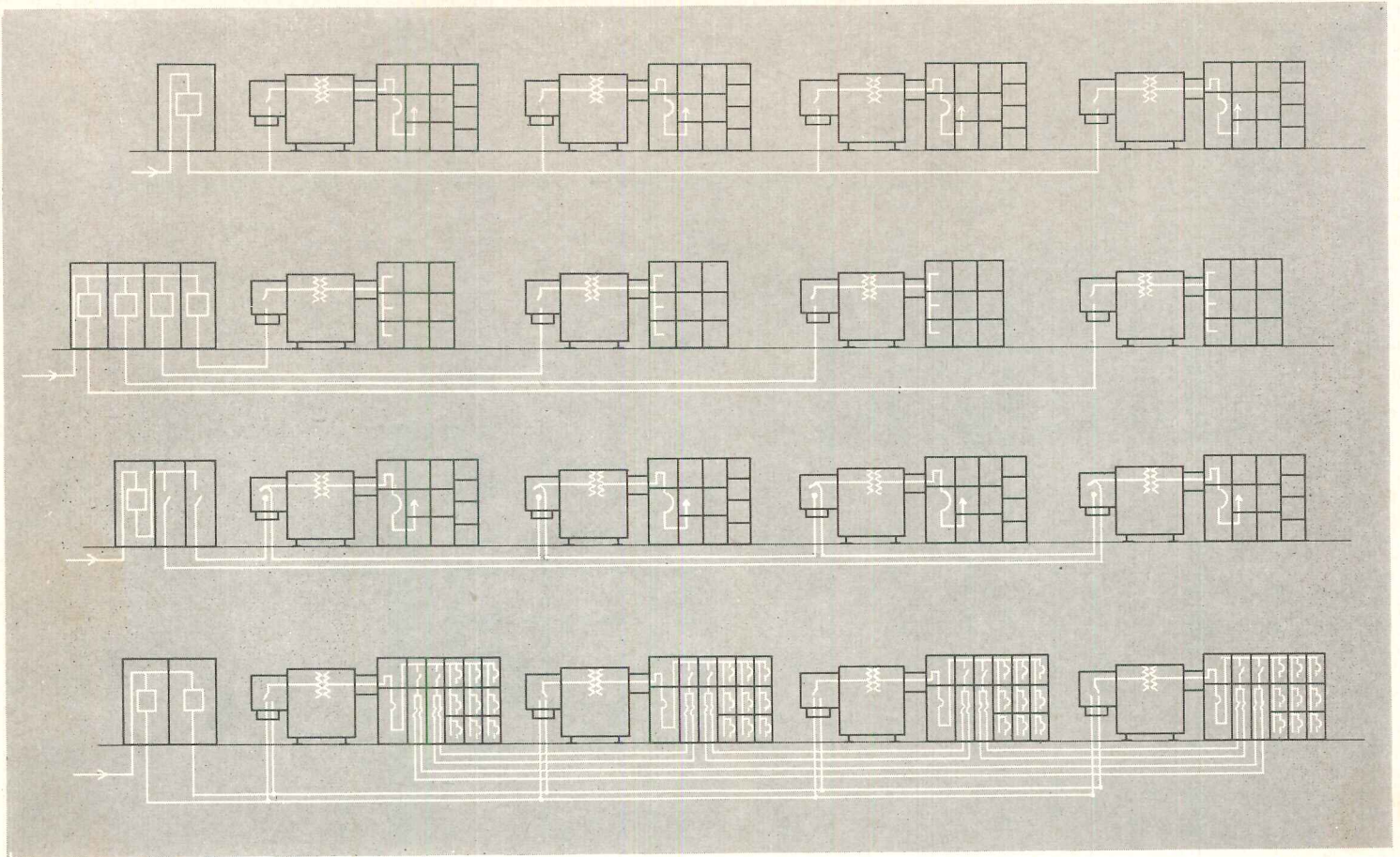
A transformer changes the magnitude of the voltage and, with it, that of the current. For instance, if the voltage is doubled, the current is halved. With the current halved, the wires need only be half the size. Since copper is the most expensive part of a long distribution system, the economy of high-voltage distribution is apparent. Considering a large plant, current is transmitted over the utility company's lines at very high voltage (from 22,000 to 115,000 v or more). The first bank of transformers steps this down to voltages which can be safely distributed through the plant

#### COMPONENTS OF A UNIT SUBSTATION

- 1 Incoming Primary Feeder
- 2 Pothead
- 3 Primary Disconnecting Switch
- 4 Transformer, Askarel Filled
- 5 Askarel Thermometer
- 6 Askarel Radiator Tubes
- 7 Connecting Throat
- 8 Voltmeter
- 9 Ammeter
- 10 Secondary Main Breaker
- 11 Operating Buttons
- 12 Main Bus
- 13 Feeder Breakers, Draw-out Type
- 14 Pull Box (Head Box or Crown Box)
- 15 Outgoing Feeder Bus Duct
- 16 Outgoing Feeder Conduit
- 17 Floor Channel







**PRINCIPAL DISTRIBUTION SYSTEMS:** 1. **Simple Radial** All unit substations connected to the same primary feeder. Least expensive. Feeder fault at any point makes entire plant inoperative. Still suitable for many plants. 2. **Modified Simple Radial** Each substation has a primary feeder. Secondary breaker is omitted (each primary feeder is protected by its own breaker). Feeder outage will affect only area of plant supplied by one substation. Cost exceeds 1 by about 20 per cent. 3. **Looped Primary**

Another way to limit feeder fault to one station. Cost exceeds 1 by 5 per cent. 4. **Primary Selective, Secondary Network** One of the most reliable systems. Since the secondaries of substations are connected in a network, the entire system works as one unit. If one transformer or primary cable is faulted, service to the affected station is maintained through the others. Voltage stability is good since all transformers work together. Plant expansion is handled with relative ease. Cost exceeds 1 by 50 to 70 per cent.

(2300 to 13,000 v). The transformers next in line which ideally should be located right in the utilization areas step voltage down further to that required by the equipment (120 to 480 v). We have, then, three voltages: (1) *transmission voltage*, (2) *distribution voltage*, (3) *utilization voltage*. Other voltages are usually also required for special applications.

There are basically three types of transformers; (1) *dry type*, (2) *askarel filled*, (3) *oil filled*. The difference is in the types of cooling medium.

The *dry type* depends on air for cooling. It has the advantages of light weight, safety, minimum maintenance and clean-cut appearance. Its disadvantages are: limited capacity to withstand lightning surges transmitted from the overhead system, and sensitivity to dusty atmosphere.

The *askarel filled* transformer uses a non-hazardous liquid for cooling. It is safe, stands up well to lightning surges and is not affected by wet, dusty or most of the corrosive atmospheres.

But it is heavy and requires some maintenance.

The *oil filled* transformer has characteristics similar to the *askarel* filled with the exception of safety. Since the cooling oil is flammable it must be installed in a fire-proof vault when used indoors. Its initial cost is lower than that of the other two. All transformers emit heat and work more efficiently when well ventilated.

### Switchgear

*Switchgear* is a collective name for the devices used for switching and protection of the main and feeder lines. *Primary switchgear* is on the high voltage side of the transformer and is used to select one of the two or more supply lines or to take the transformer off the line when work has to be done on it.

*Secondary switchgear* is on the low voltage side of the transformer and protects the feeders against short circuits and overloads.

Switchgear can consist of either *circuit breakers* or *fused switches*. In industrial

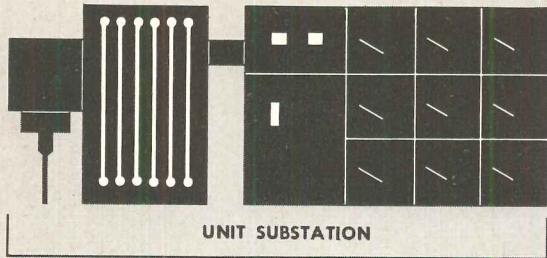
plants circuit breakers are desirable because they afford better protection to three-phase motors than fuses, and service can be more quickly restored. Modern switchgear is completely metal enclosed for safety, and is often arranged so that breakers can be drawn out or lifted out easily for inspection or maintenance.

### Voltage Regulation, Power Factor

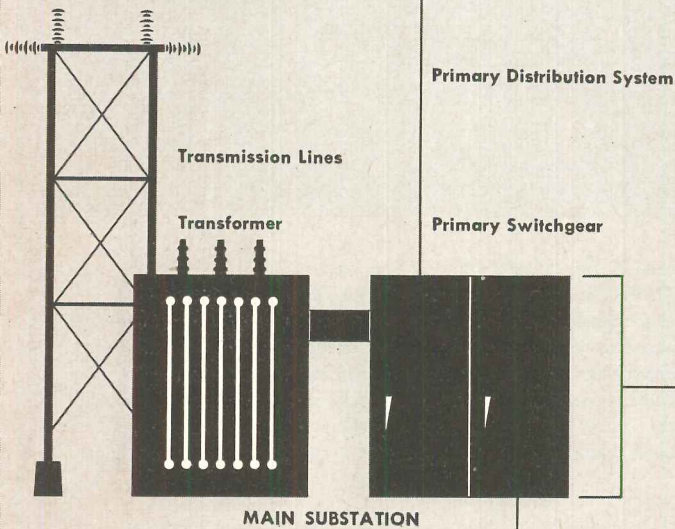
The voltage of an electrical system varies with the load; the greater the load the lower the voltage. Most motors and lighting operate satisfactorily within the complete voltage range normally encountered. However, there are certain types of equipment, notably electronic or test equipment, which require voltage without variation. *Voltage regulators* perform this task. They are best placed locally on the circuits requiring regulated voltage.

Many utility companies include in their rate schedule a power factor clause which may have one of two forms. Either a penalty is incurred for a poor

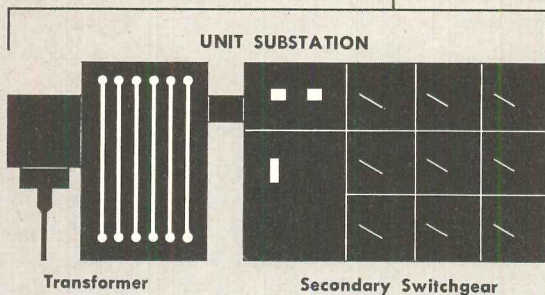
**ELECTRICAL REQUIREMENTS FOR AN INDUSTRIAL BUILDING**



**POWER SUPPLY AND DISTRIBUTION**



- Notes: (1) protective devices should include lightning arresters, grounded fence, safety grounding mat.  
(2) an access road should be provided for delivery and servicing of transformers.



Note: provide for power factor correction equipment



Note: provide throwover equipment for essential loads, spare transformer and cable.

**PLANT PROTECTION**

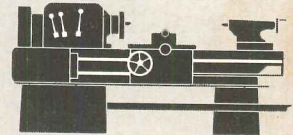
**Security:** Guard houses—telephone, electric heater, clock, remote gate control • Watch patrol system • Exit door alarm system  
Security lighting.

**Fire Safety:** Fire detection system • Fire alarm system • Fire pump • Sprinkler pump • Sprinkler Alarm.

**Emergency Lighting:**



**Secondary Distribution System**



**MANUFACTURING**

(Many machines of wide variety requiring a range of voltages, a-c and d-c, and even different frequencies of a-c)

**ASSEMBLY**

**Electrical Distribution:** Use industrial type underfloor duct or wireway • Provide flexible distribution; many small circuits.

**Power Supply:** 400 cycle current (special conversion and distribution) may be necessary for some equipment.

**Lighting:** High-level auxiliary lighting may be required.

**INSPECTION**

**Power Supply:** Regulated voltage for test equipment • 400 cycle current for some equipment.

**Lighting:** High-level illumination.

**HEAT TREATING**

Induction heaters • Infra-red heaters • Electric furnaces.

**PAINTING**

Spray booth compressors • Oven fans • Supply and exhaust fans  
Conveyors.

Note: observe code for hazardous locations.

**WELDING**

Correct for unbalanced current, pulsating current, low power factor.

## RESEARCH AND TEST FACILITIES

**Power Supply:** Provide a range of voltages, a-c and d-c for flexibility—(1) Alternating current outlets, 120-v and 208-220-v, single phase and three phase; sometimes regulated voltage required • (2) Direct current outlets with range of voltages from rectifiers, batteries and motor generators • (3) 400 cycle generation and distribution.

Provide for heavy power consumption in—(1) Experiments (some conducted without interruption for long periods) • (2) Pilot plants.

**Power Distribution:** Explosion-proof wiring where necessary  
Local circuit breaker panels for short-circuit protection.

**Equipment:** Laboratories—Hood exhaust fans, heaters, water baths, drying cabinets, centrifuges, climatic chambers, electronic analyzers • Dark room equipment • Industrial X-ray machines  
Machine shop equipment.

**Lighting:** Provide (1) High-level, glare-free illumination for engineering department • (2) High intensity illumination for photographic studio.

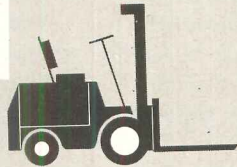


## MATERIALS HANDLING

**Equipment:** Hydraulic lifts for docks • Battery chargers for lift trucks • Conveyors • Cranes • Power-operated doors • Packaging machines.

**Lighting:** Lights for high storage bins • Lights for interiors of trucks or freight cars • Signal lights for lift trucks.

**Note:** Keep lights clear of overhead operating doors.



## MAINTENANCE EQUIPMENT

Traveling scaffold for lighting fixture maintenance • Lighting fixture cleaning tanks • Transformer liquid cleaning equipment • Circuit breaker lift trucks • Power outlets for maintenance shop • Power outlets for vacuum cleaners.



## CHEMICAL WASTE TREATMENT

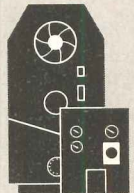
Pumps • Alarms • Recorders.



## BOILER PLANT AND REFRIGERATION PLANT

**Equipment:** Supply and exhaust fans • Unit heaters • Hot and cold water pumps • Air compressors • High and low water alarm • Deep well pumps • Sump and Ejector pumps • Sewage treating equipment (For further listing see article on office buildings, March, 1954).

**Lighting:** Overhead tank obstruction light.



## COMMUNICATIONS

Public telephone system • Telephone booths • Intercom systems • Public address system • TV monitoring • Music distribution.



## TIME SYSTEMS

Master clock and program control • Local clocks • Attendance recorders (provide time card racks) • Job recorders • Program bells and horns.



## EMPLOYEE FACILITIES

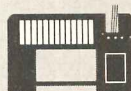
**Equipment:** Vending machines • Water coolers • Power for cafeteria equipment.

**Lighting:** Parking area illumination.



## ADMINISTRATION BUILDING

(See article on office buildings, March, 1954)



**PLANNING OF ELECTRICAL SYSTEMS: INDUSTRIAL BUILDINGS**

power factor or a bonus is given for a good power factor.

What is power factor? How can it be improved? If, in the alternating current cycle, maximum voltage and maximum current occur at exactly the same moment, then the power factor is equal to unity or 100 per cent. This happens only when the load is non-inductive, such as with heating or with incandescent lighting. As soon as an inductive load is placed in the circuit, such as transformers, motors or fluorescent lighting, the power factor drops. This means that maximum current will lag behind maximum voltage.

The effect is that for the same amount of work to be performed, greater current is required at low power factor than at unity power factor. For instance, if at unity power factor 100 amperes were required, then at 50 per cent power factor 200 amperes would be required for the same amount of work. The size of conductors and all other components would have to be doubled, which is an obvious burden to both the utility company and the plant owner.

Power factor can be improved by capacitors and/or synchronous motors. *Capacitors* are devices placed in the line which, without actually performing work, tend to make current and voltage coincide. *Synchronous motors* are large constant speed motors which operate with a leading power factor, meaning that the current peak precedes voltage peak. If such a motor is placed on a system in which the opposite is the case, the tendency is again to bring current and voltage peaks together.

### Unit Substations, Feeders

The various components described above, notably switchgear and transformers, are often combined in unit substations located at load concentrations throughout the plant. A *unit substation* — also frequently referred to as a *load center* — is a factory assembly of prefabricated, metal-enclosed, co-ordinated units. One simple type of unit substation is pictured here.

Feeders issuing from each of the several circuit breakers of the substation have specific assignments. Some supply production machinery, others the lighting system, still others the building utilities — but not directly.

The energy carried by the feeder is channelled into still smaller circuits, the branch circuits. This is done in so-called panelboards, or panels, for

short. Depending on the final use, panels either are lighting panels or power panels. The panels contain branch circuit breakers or branch fuses, each one sized accurately to protect the relatively small wires which supply the individual power or light outlets.

In large areas the circuit breakers of the lighting panels are also used to switch the lights on or off. The conduits from the substation to the panelboards are often carried overhead, attached to the structural steel. But modern plants more frequently utilize feeder conduits buried below the slab. This not only improves the appearance of the plant, but frequently reduces costs because the runs are shorter.

Since each panelboard is a tailor-made piece of equipment, and each connection from the panel to a machine is a permanent, laborious installation, this type of distribution is quite inflexible and therefore not well suited to the changing requirements of an active production area. Overhead busways are the answer in many cases for distribution to machines.

Busways are fabricated feeders available in several standard capacities in 10-ft lengths. These lengths are joined together to form the required run and are either suspended from the structure or supported on lally columns. Every 12 in. on the busway there is a plug-in opening into which may be connected a fused switch or circuit breaker to feed an individual machine. The flexibility of this system has made it the accepted standard of modern plants.

In assembly areas where row upon row of assembly benches occur, an industrial-type underfloor duct system is often advantageous. This type of underfloor duct is approximately 4 by 4 in. in cross-section, and care must be taken to thicken the slab under the runs.

### Lighting

Lighting plays an important, though not always recognized, role in the efficiency of a plant. The purpose of the lighting system is to provide illumination on the work of such intensity as to facilitate the seeing task of the worker, and to minimize shadows, glare and — very important — reflection from shiny metal. A good lighting system will also contribute to a pleasant environment which in turn will aid morale.

Lighting intensity ranges from 10 to 300 ft-c or more depending on the

severity and speed of the task. Here are a few typical examples:

Assembly, rough	20 ft-c
Assembly, fine	100
Assembly, extra-fine	300
Welding, general	30
Welding, supplementary	1000
Foundries	10-50
Steel fabrication	10
Storage and stock rooms	5-20

It is very often not possible for economic reasons or because of the shape of the equipment to provide recommended intensities by general lighting. In such cases, the less desirable alternatives of auxiliary local lights on the machines must be chosen.

Eyestrain can be reduced by keeping brightness contrasts low. This can be effectively aided by: (1) using open-top reflectors so that some light will go up to the ceiling, (2) keeping the floor in light colors, and (3) concealing the lamps by deep reflectors. Annoying reflections can be reduced by running fluorescent fixture rows in two directions to form a grid.

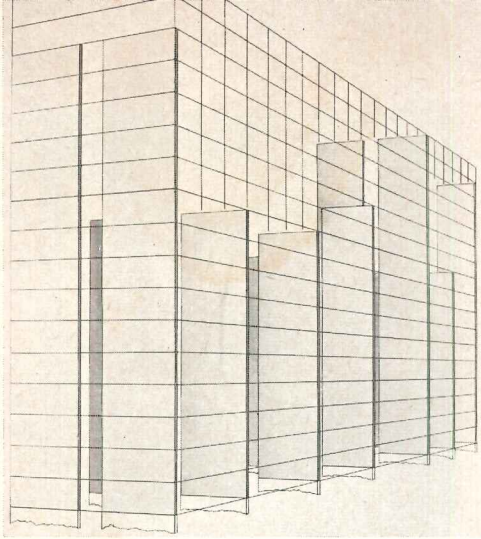
However, the above general statements cannot be applied everywhere due to the manifold seeing tasks involved in industry. For instance, some tasks are actually helped by the presence of shadows or reflections.

Lamp color is generally not of importance except where color itself is involved in the work, such as in textiles, printing, painting.

Each of the three major types of light sources — incandescent, fluorescent, mercury vapor — has a definite place in industry, depending on the type of work and height of area involved.

Large plants will find a scheduled lamp changing and fixture cleaning program economical. The oily atmosphere present in so many plants demands a more frequent cleaning schedule than other occupancies. It is also advisable to specify porcelain-enamelled reflecting surfaces in such areas, as baked-on finishes are more porous and tend to turn yellow faster.

Vibration-resistant lamp sockets or lamp holders are available and should be used in areas where vibration is pronounced. Heat, moisture, corrosive, dusty or explosive atmospheres — such conditions prevail in many plants or portions of plants. Careful planning can reduce ill effects on the electrical system.



This X-ray drawing details the shear walls rising to varying heights in the Chicago Dwellings Association apartment building

**Holabird & Root & Burgee, Architects**

**S**HEAR WALLS which resist forces that cause racking provide rigid bracing and yet leave a large degree of freedom for design variation in multi-story structures, according to Holabird & Root & Burgee, architects and engineers. Concerned about the sacrifice of proper bracing for design appearance in many modern buildings, this firm has incorporated shear walls as a practical and economical compromise in the Chicago Dwellings Association apartment building.

## SHEAR WALLS BRACE MULTI-STORY BUILDING

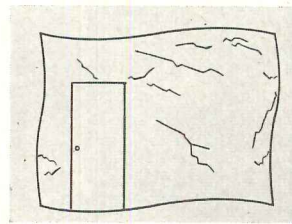
The firm's decision to erect shear walls resulted, in part, from a survey of several existing multi-story structures across the country made by various materials manufacturers. This survey pointed up the harmful effects of structural movement — whether the movement is caused by winds, earthquakes, contraction and expansion of materials due to temperature change, or dimensional change due to drying of cementitious materials taking place over a 12- to 18-month period. These movements do not necessarily indicate an unsafe structure, although they do produce unsightly cracks and hasten deterioration.

The architect-engineers point out that when a building moves from wind load (sway), each partition normally forming a rectangular shape becomes a parallelogram. True, it deflects into a parallelogram by only about 0.3 in. in a 20-story

building that moves 7 in. at the top, but that's enough racking to crack the partition. And if to sway is added the other normal movements which occur, such as those caused by temperature change or drying out of concrete, the degree of seriousness increases.

Damage from such partition racking may cost more for maintenance throughout the life of a building than would be saved through construction that did not embody proper bracing. Sufficient rigidity to reduce, if not completely eliminate, this damage is afforded in shear wall construction, according to Holabird & Root & Burgee. Properly reinforced and placed with proper thickness and spacing, shear walls act as solid plates stiffened by the floor systems.

In the Chicago Dwellings Association apartment building, the shear walls, varying in thickness from 6 to 10 in. and placed approximately 50 ft on centers, were poured one story at a time. The concrete was raised a few inches above each floor level and the steel reinforcing installed to extend beyond this, so that reinforcing steel overlapped at every floor level. At floor connections concrete was placed so that maximum strength was obtained.



## COMMUNICATION SYSTEM SPEEDS PARKING

**T**HE DOWNTOWN CHICAGO parking problem is going to be alleviated somewhat later this year by a parking garage under Grant Park in which car-handling will be simplified by mechanical and electrical systems. Consisting of two stories plus a mezzanine level, the 873,000 sq ft garage will accommodate approximately 2500 cars.

Based on an expected fast turnover of short-time parkers as well as a large volume of all-day business parkers, the traffic and communication systems within the garage are practical and efficient.

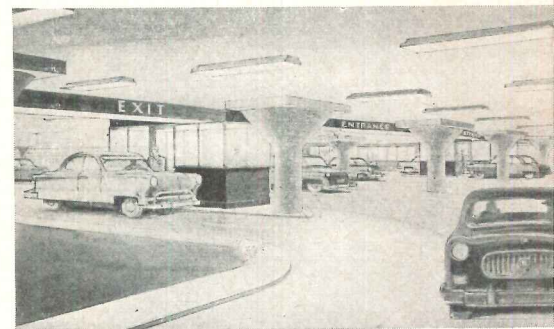
A customer who wishes to park his own car will receive a time-stamped ticket at the entrance and be directed to a parking place. When he returns, he will present his ticket with payment to any of three cashiers, collect a receipt, claim his car and surrender his receipt at the exit.

If he forgets where he parked his car, an Executone intercommunication system will provide a speedy method of

location. Four master stations — at the main office, the dispatcher's office, and two cashier stations — will control 35 reproducers strategically spotted throughout the building. The master stations can call any one or all of the 35 reproducers, and each one of the reproducers can originate calls to the main or dispatcher's office.

A customer who wishes to leave his car to be parked will enter the garage through a special lane and surrender the car. After the car is parked by a "hiker," the ticket will be marked to indicate location and returned by means of a pneumatic tube system to the main cashier, where the customer must claim and pay for the ticket when he returns. The ticket will then be sent by pneumatic tube either to the storage area for pickup or to the dispatcher, who will instruct a "hiker" over the communication system to bring the car.

The communication system will prove valuable not only for locating cars and "hikers" but also for fast handling of



Main entrance and exit of Grant Park Underground Garage, showing booths for handing out tickets and picking up receipts

**Designed by Ralph H. Burke, Inc.**

such minor repairs as flat tires and dead batteries and for calling roving personnel and customers who may be in the rest rooms or the main concourse area. It will be especially important in the event of fire or other emergency when it is necessary to issue instructions to all persons in the garage.

# PRODUCT REPORTS

Materials / Equipment / Furnishings / Services

## FOR INDUSTRY

*Industrial paging system* makes possible location of roving personnel in a matter of seconds. Any authorized person can step to the nearest station, press a paging button and speak into the handset. His voice is heard over all sound reproducers in the plant, even in high noise-level areas. The person paged picks up the handset nearest him and is automatically put in two-way voice contact with the originator of the call. Alarms and time signals are transmitted electronically over the same system. *Manufacturer: Executone, Inc., 415 Lexington Ave., New York 17, N. Y.*



## FOR BUSINESS



This gentleman is recording a message on an *automatic answering machine*. While he is away, telephone callers will be advised that he is out and where he can be reached if appropriate and will be invited to leave a message to be recorded for him. *Manufacturer: Bell Telephone Co. (furnished and maintained on a monthly rental basis by any local branch)*



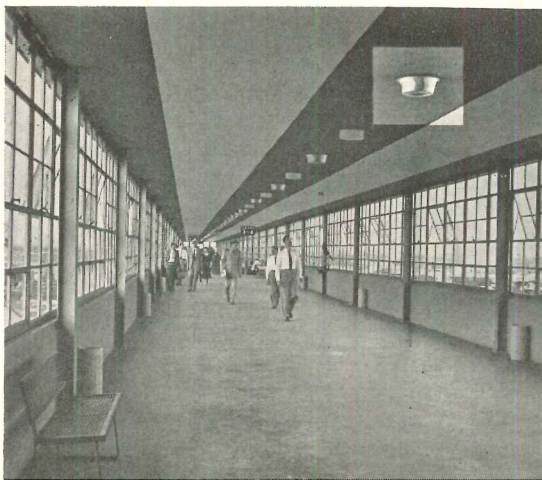
▲ This *TeleVoicewriter* makes possible uninterrupted dictation to a central control station. A talk switch in the handle starts and stops the disk at the control station; switch in cradle records length of dictation. Playback and correction button on the base provides "listen back" when used alone and records correction when used with the talk switch. *Manufacturer: Thomas A. Edison, Inc., West Orange, N. J.*

◀ *Direct-line telephone* offers the businessman 22 direct lines. If the phone at the other end is busy, either the person will be signaled when he hangs up or a signal can be sounded in the receiver announcing the priority call. *Manufacturer: International Automatic Electric Corp., 1033 Van Buren St., Chicago 7, Ill.*



## FOR PUBLIC ADDRESS

Transportation buildings must have an effective *public address system*. In the Fort Worth International Airport Building in Texas, baffles are located in the ceiling and are so spaced and adjusted that announcements, not only for departures and arrivals but also for fire and other emergencies, are heard easily in every public part of the building. Music is played over the system when announcements and directions are not being given. *Manufacturer: Lowell Mfg. Co., 3030 Laclede Station Rd., St. Louis 17, Mo.*



## A SURVEY OF COMMUNICATION EQUIPMENT

COMMUNICATIONS within buildings — which was limited not more than a decade ago to direct-line telephones and related systems — has become a significant factor in today's structures. As business and industry become more cognizant of the economic usefulness of a communication system, architects and engineers are finding that it is necessary to consider communications along with lighting and heating in plants, hospitals, schools and business.

Why this change in outlook? And what difference does it make to the architect?

Communications is increasingly important because business is realizing that the initial investment in a good system pays for itself over and over again in lower operating costs. In *plants* foremen and plant managers can talk with men in the shop and on the assembly line by means of a two-way intercommunication system, thus saving valuable on-the-job time. In *hospitals* a signaling system is essential in emergencies, and in daily routine saves the busy nurse and doctor many unnecessary and time-consuming trips. In *business* the savings potential is unlimited with the variety of systems available. Even in *schools*, the many announcements and

messages that tie up so much office time can be made in a matter of minutes over a centralized communication system.

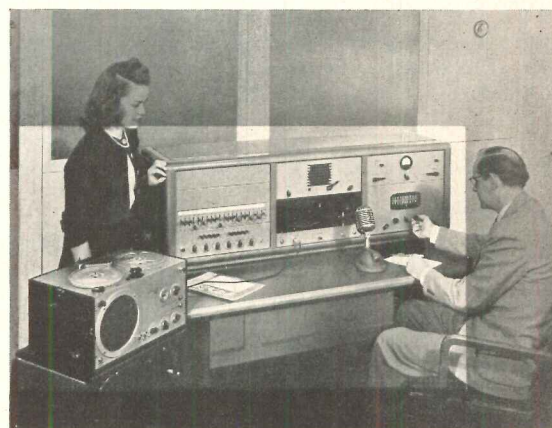
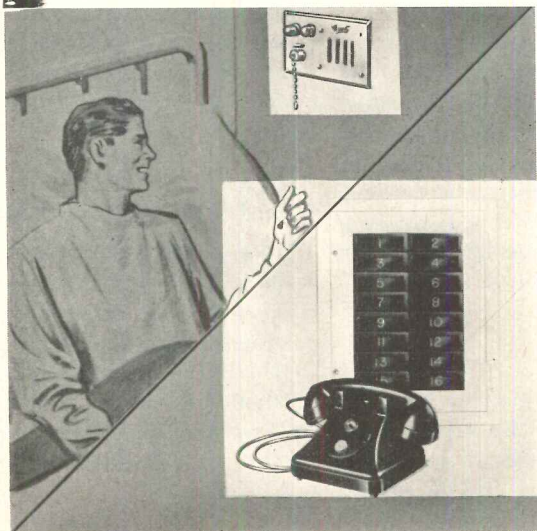
The architect finds that audio and audio-visual communication systems have a definite bearing on his building design. Not only do specifications have to be drawn up for the electrical system, but oftentimes the layout of a building is affected by whether or not an employee must leave his work to communicate with an associate or remain at his post. In schools and hospitals room design depends to some extent on location and frequency of use of the communication system.

Fire and air raid alarm systems and time signals are essential elements in many buildings. In many communication installations these components and others can be integrated into a single system. Music and program systems are gaining popularity in schools, stores, hospitals and industry, and are often operated in conjunction with other communication media.

On these and subsequent pages the RECORD presents a survey of some communication equipment which is being specified today in fields other than the specific areas of radio broadcasting and commercial television.

### FOR HOSPITALS

*Automatic two-way voice communication* is initiated from pull cord at patient's bedside, causing an audible signal to sound at master station and a visual signal to appear at duty stations and associated corridor lights. The nurse being called talks to the patient from nearest answering station. *Manufacturer: S. H. Couch Co., Inc., North Quincy 71, Mass.*



### FOR SCHOOLS

With this sound distribution system the entire school can be reached from the principal's office. This *two-channel sound system*, with radio and record player on one channel and plug sockets for live or recorded programs on another channel, provides for communication to any selected room or rooms up to 20. *Manufacturer: Webster Electric Company, Racine, Wis.*

(Continued on page 216)

## HOME ELECTRICAL APPLIANCES

• A guide to electrical appliances and equipment for home planning is being offered to architects in the *1954 Westinghouse File for Architects*. Divided into three sections — Electrical Living — Air Conditioning, Kitchen Planning and Equipment, and Laundry Planning and Equipment — the file-size folders contain specifications, dimensions, features and data for planning and installation of equipment. *Westinghouse Electric Corp., Electric Appliance Div., Mansfield, Ohio.\**

## STORE FRONTS

• *Store Front Details* contains, in a loose-leaf notebook, details of products normally included in a store front design. Tabbed sections include store front metal, doors and frames, doorways and structural glass. Additions, changes and deletions will be submitted as they occur to holders of the book. *Pittsburgh Plate Glass Co., Pittsburgh 22, Pa.\**

## HOME LIGHTING

• *15 Home Lighting Ideas* encloses data sheets showing the latest lighting techniques for a wide variety of home areas, such as window walls, built-in sofas, lavatories, remodeled kitchen and laundry. Photographs and sketches supplement construction and installation details and complete illumination data. \$1. *Illuminating Engineering Society, 1860 Broadway, New York 23, N. Y.*

## BUILDING PRODUCTS, METHODS

• *Quick Reference Guide* to products and methods used in the maintenance and construction of buildings and structures includes more than 50 photographs and drawings illustrating a wide range of such topics as flashing and coping repair, installation of mastic flooring, caulking and pointing, glazing and painting. 24 pp, illus. *The Tremco Mfg. Co., 8701 Kinsman Rd., Cleveland 4, Ohio.\**

## WATER COOLERS

• *Bulletin No. 153-I* outlines operating principles, applications and construction details of Frick "Instant" Water Coolers. 8 pp, illus. *Frick Co., Waynesboro, Pa.\**

\*Other product information in *Sweet's Architectural File, 1954.*

## FIRE TESTS

• In *Fire Demonstration & Test of Tectum Roof Decks* the Tectum Corp. outlines the purpose and scope of and presents a description and results of fire tests on two noncombustible roof decks. An appendix includes plan drawings, temperature-time charts and progress photographs of the tests. *Tectum Corp., 105 So. 6th St., Newark, Ohio.\**

• *Results of Two Fire Tests* records and analyzes results of two fire tests using both conventional and *Lexsuo* roof panels. Construction details and product data are also included. 16 pp, illus. *Lexsuo Inc., Cleveland 3, Ohio.*

## FOLDING WALLS

• *Fairhurst — What It Means in Folding Walls* defines Unitfold and Unitslide folding walls as opposed to movable partitions. Descriptions, features and photographs of installations point up the uses of these folding walls. 4 pp, illus. *John T. Fairhurst Co., Inc., 45 West 45th St., New York 36, N. Y.\**

## SCHOOL FURNITURE

• *Brunswick School Furniture* is presented in a 48-page catalog featuring stackable, nestable or groupable units with interchangeable parts and extra attachments. Illustrations of units and installations supplement the text. *The Brunswick-Balke-Collender Co., School Equipment Div., 623 S. Wabash Ave., Chicago 5, Ill.\**

## ARCHITECTURAL METALS

• The National Association of Architectural Metal Manufacturers has prepared an *Architectural Metal Handbook* of the uses of ornamental and architectural metals. Sections are included on the application of ornamental metal in staircases. *The National Association of Architectural Metal Manufacturers, 228 No. LaSalle St., Chicago 1, Ill.*

## BATHROOMS

• In *Bathroom Modernizing Ideas* 16 ideas are presented for transforming bathrooms to utilitarian as well as attractive rooms. 24 pp, illus. *Crane Co., 836 S. Michigan Ave., Chicago 5, Ill.\**

## KITCHENS

• *Kitchen Showbook* describes features for different areas of the kitchen: sink, dining, range, relaxation, refrigeration and laundry areas. The main section is prefaced by nine original kitchen ideas, with sketches and plans. 24 pp, illus, \$1. *Mulschler Bros. Co., Nappanee, Ind.\**

## FLOORS—MATERIALS, SETTING

• A full page of suggestions for using Embecco to set floor brick and tile is included in a 4-page brochure on the *Embecco Method for Setting Floor Brick*. Application information and specifications are also given. *The Master Builders Co., Cleveland 3, Ohio.\**

• *Which Floor Goes Where in Commercial Areas* is a guide to the smooth-surface flooring materials available for commercial installations. *Congoleum-Nairn Inc., 195 Belgrove Drive, Kearny, N. J.\**

## HARDWOODS

• *Appalachian Hardwoods* is profusely illustrated in color to show grain patterns and distinctive colors in line with the theme of the brochure: "The beauty of wood in the home is outstanding." 20 pp, illus. *Appalachian Hardwood Manufacturers, Inc., 414 Walnut St., Cincinnati 2, Ohio.*

## STAIRWAY CHANNELS

• *Junior Channels for Stairways* provides specifications for junior channels in stairway construction. The booklet is illustrated with pictures of some of the buildings in which the channels have been used as stair stringers. 12 pp, illus. *Jones & Laughlin Steel Corp., 3 Gateway Center, Pittsburgh 30, Pa.\**

## DRAPERY TRAVERSE EQUIPMENT

• *Beauty-Fold Catalog of Parts* gives required information for traverse equipment for all drapery installations: straight, curved, corners and bays. A table of carrier arrangements and installation and motor data are included. 24 pp, illus. *The Bradley Rotor Traverse Co., Inc., 442 Mosel Ave., Staten Island 4, N. Y.*

(Continued on page 268)



## NORTH AMERICAN BUILDING STONES—11

Presented through the cooperation of the International Cut Stone Contractors' and Quarrymen's Association

## INDEX OF 62 BUILDING STONES

## 33 KASOTA CREAM STONE

**Company Name:** The Babcock Co.  
**Quarry Location:** Kasota, Minn.  
**Geological Designation:** Dolomitic Limestone  
**Texture:** Fine-grained  
**Color:** Cream  
**Chemical Composition:** Calcium carbonate—48%; magnesium carbonate—39%; silica—13%  
**Physical Tests:** Specific gravity—2.53; absorption of moisture—3.9%; abrasive hardness—13.1  
**Strength:** Crushing strength—15,000 psf  
**Weight:** 157 pcf  
**Furnished As:** Dimensional, Splitface. Splitface heights—2¼", 5", 7¾", 10½". Lengths as required  
**Surface Coverage:** 40 sq ft per ton  
**Other Facts:** Splitface heights can be adjusted to modular dimensions

## 34 KASOTA PINK STONE

**Company Name:** The Babcock Co.  
**Quarry Location:** Kasota, Minn.  
**Geological Designation:** Dolomitic Limestone  
**Texture:** Fine-grained  
**Color:** Variegated pink  
**Chemical Composition:** Calcium carbonate—0.48%; magnesium carbonate—0.39%; silica—0.13%  
**Physical Tests:** Specific gravity—2.53; absorption of moisture—3.4%; abrasive hardness—0.12%  
**Strength:** Crushing Strength—21,300 psf  
**Weight:** 158 pcf  
**Furnished As:** Dimensional, Splitface. Splitface heights—2¼", 5", 7¾", 10½". Lengths as required  
**Surface Coverage:** 40 sq ft per ton  
**Other Facts:** Splitface heights can be adjusted to modular dimensions

## 35 LANNON STONE

**Company Name:** Acme Lannon Stone, Inc.  
**Quarry Location:** Lannon, Wis.  
**Geological Designation:** Dolomitic Limestone  
**Texture:** Fine-grained  
**Color:** Blue-gray, rust seams, varied colored beds  
**Chemical Composition:** Silicon dioxide—North: 7.04%, South: 5.06%, Deep: 6.98%; aluminum oxide—North: 0.39%, South: 0.34%, Deep: 0.30%; sodium oxide—North: 0.19%, South: 0.17%, Deep: 0.15%; potassium oxide—North: 0.12%, South: 0.14%, Deep: 0.12%; calcium oxide—North: 28.58%, South: 29.06%, Deep: 28.72%; magnesium oxide—North: 19.29%, South: 19.90%, Deep: 19.35%; iron oxide—North: 0.52%, South: 0.46%, Deep: 0.44%; carbon dioxide—North: 43.54%, South: 44.45%, Deep: 43.60%

**Physical Tests:** Absorption of moisture—less than 1%  
**Strength:** Crushing strength—approx 35,000 psi  
**Weight:** 170 pcf  
**Furnished As:** Dimensional heights—2"—15". Lengths—12"—72"  
**Surface Coverage:** 40 sq ft per ton

## 36 LANNON STONE

**Company Name:** O. Monacelli Lannon Stone Co.  
**Quarry Location:** Lannon, Wis.  
**Geological Designation:** Dolomitic Limestone  
**Texture:** Fine-grained  
**Color:** Gray, buff, cream and rust  
**Physical Tests:** Specific gravity—2.85; absorption of moisture—0.90%; abrasive hardness—deval test, 2.4%; weathering tests—no freeze-thaw failure in 8 cycles  
**Strength:** Crushing strength—175,000 psf parallel  
**Weight:** 170 pcf  
**Furnished As:** Dimensional, Splitface, Ledge stone, Bedface. Heights—2"—8" normal; 2"—24" if specified. Lengths—minimum 12", generally 2½–3 times height  
**Surface Coverage:** 40 sq ft per ton

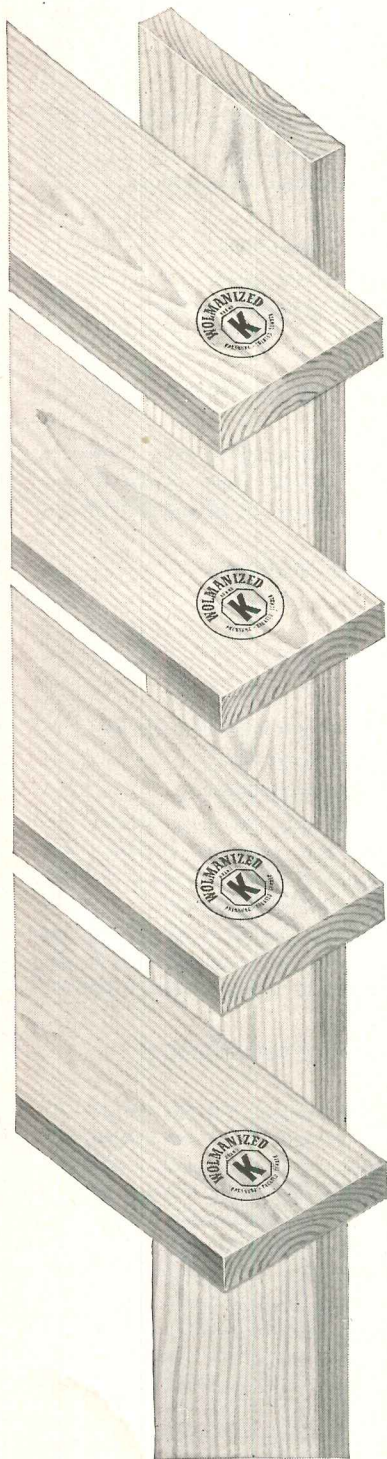
## 37 LENROC STONE

**Company Name:** Finger Lakes Stone Co., Inc.  
**Quarry Location:** Ithaca, N. Y.  
**Geological Designation:** Sandstone  
**Color:** Dimensional stone: bluestone. Seamface and Rockface: blue-gray weathering to deep blues, browns, tans and rust. Sawed bed: blue-gray, brown, rust. Flagstone: gray, tan, earth brown  
**Physical Tests:** Absorption of moisture—1.7%; withstands in excess of 100 cycles alternate freezing and thawing, 90° to 30° with thorough wetting at each cycle  
**Strength:** Crushing strength—27,500 psi  
**Weight:** 165 pcf  
**Furnished As:** Dimensional, Rockface: Heights—3"—15". Lengths—8"—24". Sawed bed: Heights—2½", 5", 7¾", 3½", 7½", 11½"; also in 4 unit Ashlars and other specified dimensions. Lengths—random or multiples of 4 in. Seamface: Heights—random, from 3"—15". Lengths—random, from 8"—48". Flagstone: Widths—1'–6'. Lengths—1'–6'. Thickness—1"—4"  
**Surface Coverage:** Rockface—20 sq ft per ton for solid 10" wall. Sawed bed—45 sq ft per ton of 3½"; 30 sq ft per ton of 5½". Seamface—15 sq ft per ton for solid 10" wall. One-inch flagstones—140 sq ft per ton

# W<sup>\*</sup>olmanized

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### 2 application versatility

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### 4 proved dependability

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Koppers Company, Inc., Wolman Preservative Department, Pittsburgh 19, Pennsylvania.

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## L U M B E R

## NORTH AMERICAN BUILDING STONES—12

Presented through the cooperation of the International Cut Stone Contractors' and Quarrymen's Association

## INDEX OF 62 BUILDING STONES

**38 LIBERTY HILL CREAM LIMESTONE****Company Name:** San-Tex Stone Quarry, Inc.**Quarry Location:** Liberty Hill, Tex.**Geological Designation:** Oolitic Limestone**Texture:** Smooth fine-grained**Color:** Cream**Chemical Composition:** Moisture—0.12%; silicon dioxide—1.46%; iron dioxide—0.30%; aluminum oxide—0.06%; calcium oxide—53.3%; magnesium oxide—0.60%**Physical Tests:** Specific gravity—2.35; absorption of moisture—11.5%; absorption of moisture after waterproofing—10.2%; average weight loss after 50 cycles freezing and thawing—0.15%; abrasive hardness—3%**Strength:** Compressive strengths parallel to rift, dry—2400 psi, wet—1200 psi; perpendicular to rift, dry—2300 psi, wet—1200 psi**Weight:** 124 pcf**Furnished As:** Dimensional, Splitface and Sawed Face. Heights—2¼"—10½". Lengths—6"—5'**Surface Coverage:** 40–65 sq ft per ton**39 LIBERTY HILL GOLDEN SHELL LIMESTONE****Company Name:** San-Tex Stone Quarry, Inc.**Quarry Location:** Liberty Hill, Tex.**Geological Designation:** Oolitic Limestone**Texture:** Open or rough shell impressions**Color:** Golden cream**Chemical Composition:** Silica—0.35%; iron oxide—0.26%; aluminum oxide—0.35%; magnesium oxide—0.02%; moisture at 105°C—0.07%; calcium carbonate—98.77%; magnesium carbonate—0.26%**Physical Tests:** Specific gravity—2.48; absorption of moisture—5.8%; abrasive hardness—3%; average weight loss after 50 cycles freezing and thawing—1.12%**Strength:** Compressive strengths parallel to bedding, dry—1817 psi, wet—1112 psi; perpendicular to bedding, dry—1070 psi, wet—1135 psi**Weight:** 119 pcf**Furnished As:** Dimensional, Splitface and Sawed Face. Heights—2¼"—10½". Lengths—6"—5'**Surface Coverage:** 40–65 sq ft per ton**40 MANKATO BUFF STONE****Company Name:** Mankato Stone Co.**Quarry Location:** Coughlan Quarry, Mankato, Minn.**Geological Designation:** Dolomitic Limestone**Texture:** Slightly travertine**Color:** Golden buff to gray-buff**Chemical Composition:** Silica—2.35%; alumina—4.51%; iron oxide—0.96%; titanium oxide—0.08%; calcium carbonate—53.26%; magnesium carbonate—38.78%; phosphorus oxide—0.06%**Physical Tests:** Specific gravity—2.52; absorption of moisture—3.63%**Strength:** Crushing strength—14,500 psi**Weight:** 157 pcf dry**Furnished As:** Dimensional: Heights—5' max. Lengths—up to 16'. Splitface: Heights—standard brick course. Lengths—approx 4' 6"**Surface Coverage:** Splitface—40 sq ft per ton**41 MANKATO CREAM STONE****Company Name:** Mankato Stone Co.**Quarry Location:** Coughlan Quarry, Mankato, Minn.**Geological Designation:** Dolomitic Limestone**Texture:** Slightly travertine to close-textured**Color:** Cream and tan**Chemical Composition:** Silica—2.35%; alumina—4.51%; iron oxide—0.96%; titanium oxide—0.08%; calcium carbonate—53.26%; magnesium carbonate—38.78%; phosphorus oxide—0.06%**Physical Tests:** Specific gravity—2.45; absorption of moisture—3.66%**Strength:** Crushing strength—13,500 psi**Weight:** 155 pcf dry**Furnished As:** Dimensional: Heights—3' 6" max. Lengths—up to 16'. Splitface: Heights—standard brick course. Lengths—4' 6"**Surface Coverage:** Splitface—40 sq ft per ton**42 MANKATO GRAY STONE****Company Name:** Mankato Stone Co.**Quarry Location:** Coughlan Quarry, Mankato, Minn.**Geological Designation:** Dolomitic Limestone**Texture:** Slightly travertine**Color:** Silver gray to gray-buff**Chemical Composition:** Silica—2.35%; alumina—4.51%; iron oxide—0.96%; titanium oxide—0.08%; calcium carbonate—53.26%; magnesium carbonate—38.78%; phosphorus oxide—0.06%**Physical Tests:** Specific gravity—2.55; absorption of moisture—3.4%**Strength:** Crushing strength—15,000 psi**Weight:** 159 pcf**Furnished As:** Dimensional: Heights—3' 2" max. Lengths—up to 16'. Splitface: Heights—standard brick course. Lengths—approx. 4' 6"**Surface Coverage:** Splitface—40 sq ft per ton



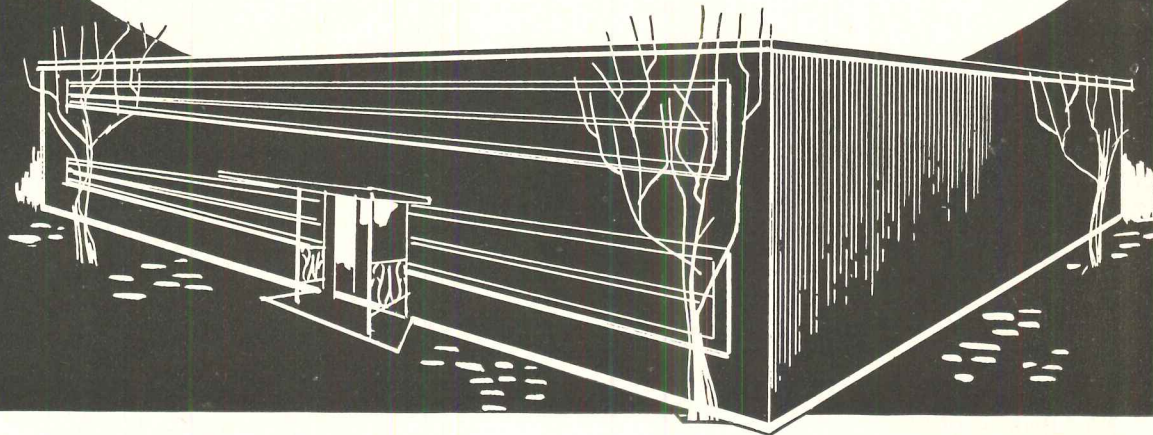
Wheeler Lighting Installation  
for Doelcam Corp., Boston, Mass.  
Lockwood Greene Engineers, Inc.

# Wheeler

## LIGHTING FIXTURES

**A BASIC PRODUCTION TOOL OF  
AMERICA'S LEADING INDUSTRIES!**

Where good lighting is a "must," you'll find Wheeler on the job! In industry after industry . . . where modern progressive thinking rules . . . Wheeler Lighting Fixtures are the logical choice for maximum lighting efficiency!



# Wheeler



**REFLECTOR  
COMPANY**

275 CONGRESS STREET, BOSTON 10, MASS.

Lighting Equipment Specialists Since 1881  
DISTRIBUTED EXCLUSIVELY THROUGH  
ELECTRICAL WHOLESALERS

## NORTH AMERICAN BUILDING STONES—13

Presented through the cooperation of the International Cut Stone Contractors' and Quarrymen's Association

## INDEX OF 62 BUILDING STONES — (To be continued in a later issue)

**43 MOUNTAIN-HUE STONE**

**Company Name:** Watson Natural Stone Co., Inc.  
**Quarry Location:** Cannonsville, N. Y.  
**Geological Designation:** Sandstone  
**Texture:** Hard, dense, stratified  
**Color:** Dark to light blue, blue-green, gray, lilac, buff  
**Chemical Composition:** No tests have ever been run on this stone. However, stone quarried from this area for the past 100 years has been recognized as a hard, durable stone  
**Furnished As:** Lifts in quarry begin at 1/2" thickness and build up to more than 36", furnishing Flagstone, Ashlar veneering and Dimensional stone

**44 NEW PARK MINING STONE**

**Company Name:** New Park Mining Co.  
**Quarry Location:** Near Park City, Utah  
**Geological Designation:** Quartzitic Sandstone  
**Texture:** Fine-grained  
**Color:** Buff to red  
**Chemical Composition:** Practically pure silicon dioxide  
**Physical Tests:** Specific gravity—2.47; absorption of moisture—1.4%  
**Strength:** Crushing strength—14,400 psi  
**Weight:** 154 pcf  
**Furnished As:** Heights—1/2"—12". Lengths—12"—48"  
**Surface Coverage:** 30–40 sq ft per ton

**45 ONEONTA STONE**

**Company Name:** Garner Stone Co.  
**Quarry Location:** Oneonta, Ala.  
**Geological Designation:** Quartzitic Sandstone  
**Texture:** Fine-grained  
**Color:** Predominantly pink, buff, gray and combinations  
**Chemical Composition:** Silica—93.83%; iron oxide—1.22%; aluminum oxide—4.09%; titanium oxide—trace; manganese oxide—trace; calcium oxide—trace; magnesium oxide—trace; loss on ignition—0.79%  
**Physical Tests:** Absorption of moisture—2.4%  
**Strength:** Crushing strength (against grain)—5228 psi  
**Weight:** 160 pcf  
**Furnished As:** Heights—1"—8". Lengths—6" up  
**Surface Coverage:** 40 sq ft per ton

**46 PEARL SANDSTONE**

**Company Name:** Pearl Sandstone Co.  
**Quarry Location:** Fresno, Ohio  
**Geological Designation:** Sandstone  
**Texture:** Fine-grained  
**Color:** Gray, gray and buff, buff, buff and gray, brown, pink

**Chemical Composition:** About 93% silica, some mica  
**Physical Tests:** Tests not completed  
**Strength:** Tests not completed  
**Weight:** Tests not completed  
**Furnished As:** Splitface: Heights—2 1/4", 5", 7 3/4", 10 1/2". Lengths—1'–3'  
**Surface Coverage:** 50 sq ft per ton

**47 PENN-KRESS FLAGSTONE**

**Company Name:** Penn-Kress Flagstone Co.  
**Quarry Location:** Potter County, Pa.  
**Geological Designation:** Sandstone  
**Texture:** Natural cleft  
**Color:** Gray, green, purple  
**Chemical Composition:** Tests not completed  
**Physical Tests:** Tests not completed  
**Strength:** Tests not completed  
**Furnished As:** Dimensional, Ledgestone, Splitface. Heights—1"—5". Lengths—1'–3' 6"  
**Surface Coverage:** 40 sq ft per ton  
**Other Facts:** This stone has a nonslip surface

**48 QUALITY LANNON STONE**

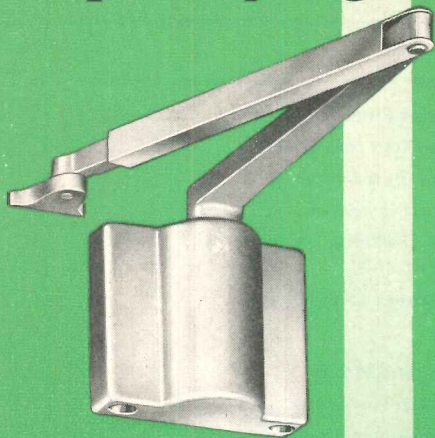
**Company Name:** Quality Limestone Products, Inc.  
**Quarry Location:** Sussex, Wis.  
**Geological Designation:** Dolomitic Limestone  
**Texture:** Fine, smooth, crystalline  
**Color:** Muted—white to gray, buff, rust, gray-blue overtones  
**Chemical Composition:** Magnesium carbonate—45.06%; calcium carbonate—53.57%; iron, aluminum, silica—1.22%  
**Physical Tests:** 20 cycle sodium sulphate test—2.6%  
**Strength:** Crushing strength—25,100 psi  
**Weight:** 165 pcf  
**Furnished As:** Dimensional, Splitface, Ledgestone. Heights—2"—8". Lengths—8"—30"  
**Surface Coverage:** 40 sq ft per ton

**49 ROCKRANGE STONE**

**Company Name:** Alabama Limestone Co.  
**Quarry Location:** Rockwood, Russellville, Ala.  
**Geological Designation:** Oolitic Limestone  
**Texture:** Extremely fine-grained  
**Color:** Two-color, buff and gray  
**Chemical Composition:** Calcium carbonate—98%  
**Physical Tests:** 4.4% in 25 hr  
**Strength:** Crushing strength—4553 psi  
**Weight:** 145 pcf  
**Furnished As:** Dimensional, Splitface  
**Surface Coverage:** Splitface—100 sq ft in 2.3 tons

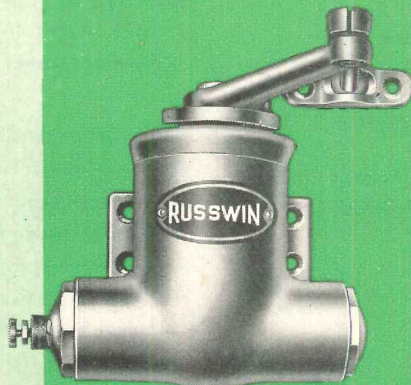
# Simplify "spec" writing by specifying **RUSSWIN**

A complete line of Builders' Hardware



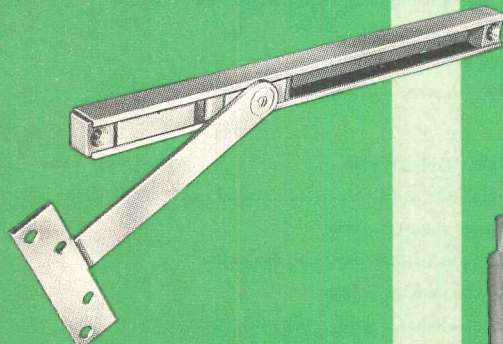
### RUSSWIN "400" Door Closer

Meet demands for an unobtrusive yet effective door closer with the RUSSWIN "400". Precision-built, it has no equal for strength, yet it's so compactly designed that the semi-concealed unit projects only 1 3/4" from door. The "400" features 4 speed control and silence adjustment.



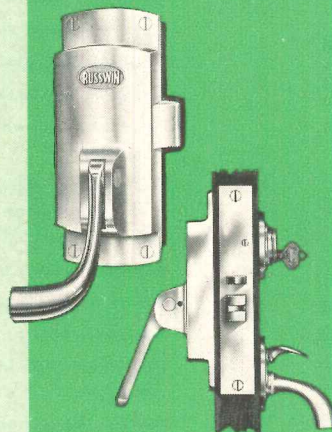
### RUSSWIN Surface Door Closer

This liquid type door closer equipped with 4-bearing crankshaft is designed to operate smoothly, dependably, under high frequency service for years. Brackets available for special mountings . . . also hold-open attachments and fusible links.



### RUSSWIN Triple-Grip Door Holders

The adjustable friction slide of the No. 600 has an exclusive triple-grip action which more than doubles friction area . . . lowers pressure needs, prolongs life. Other models available.



### RUSSWIN Exit Bolts

A complete line . . . includes heavy duty rim type, side latching; heavy duty, top and bottom, side latching. Equipped with bar locking devices and swing type top and bottom latch bolts.



### RUSSWIN Adjustable Anti-Friction Pivot Hinges

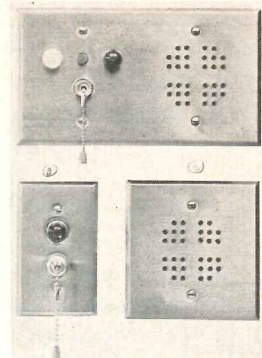
Exclusive construction floats heavy doors (up to 350 lbs.) easily and without strain. Roller bearings carry the radial load, ball bearings, the thrust load.

SINCE 1839  
**RUSSWIN**<sup>®</sup>  
DISTINCTIVE HARDWARE

Russell & Erwin Division  
The American Hardware Corporation  
New Britain, Conn.

## **A-E** PRODUCTS

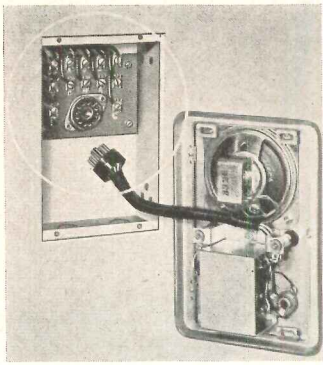
(Continued from page 207)



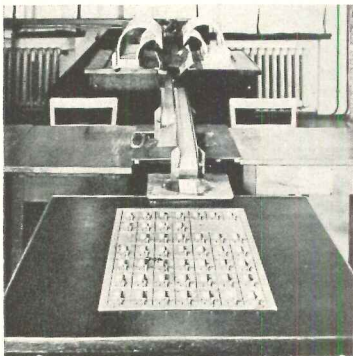
Bedside and emergency calling stations for patient-to-nurse communication system are produced in combined or separate units. Calling switch opens microphone-speaker circuit for direct communication between patient and nurse. Emergency switch, for use in bathrooms and other locations where a patient may have cause to need help (lower left), flashes indicating lamps at calling stations, nurses' stations, corridors, duty rooms, etc., until call is answered in person at calling station. Cancellation is possible only at that place. *Manufacturer: The Standard Electric Time Co., 89 Logan St., Springfield 2, Mass.*



Intercommunication by pneumatic tube speeds requisitions for medications from nursing stations to pharmacy in Euclid-Glenville Hospital in a suburb of Cleveland. Bottles up to 4 oz can be delivered in special containers. Pneumatic airtube system, handling up to 600 carriers per hour from 2 to 200 or more stations, can be used effectively in stores, plants, offices, garages, banks and post offices as well as in hospitals. *Manufacturer: The Lamson Corp., Syracuse 1, N. Y.,*



Plug and receptacle bedside calling stations can be installed in a matter of seconds by inexperienced help when a defective station is removed for repair. *Manufacturer: Auth Electric Co., Inc., 34-20 45th St., Long Island City 1, N. Y.*



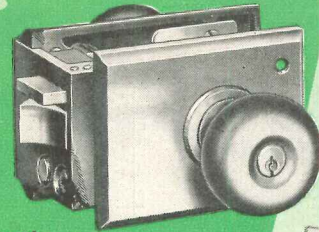
In the *ticket tube system*, short written messages are dropped into sending slots and carried through a pneumatic tube to their destination. Answers are returned immediately and received at the originating point. At the central desk shown above messages from the switchboard are classified and sent to any of 45 destinations and answers received through vacuum receivers in background. *Manufacturer: International Standard Trading Corp., 22 Thames St., New York 6, N. Y.*



The *TelAutograph telescriber* transmits handwritten communications from one point to another. The operator writes on the transmitter and presses the appropriate selector key or keys to contact any one or group of stations. *Manufacturer: TelAutograph Corp., 16 West 61st St., New York 23, N. Y.*

(More Communications on page 220)

# Which type of lock is most appropriate for your building project?



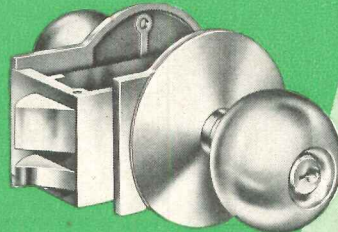
## RUSSWIN Unit Locks

Designed and manufactured to meet the most exacting specifications in building construction. Features heavy solid bronze castings and hard rolled wrought brass parts . . . pullman type, anti-friction latches . . . factory-assembled, positively-aligned parts . . . simplest installation. Available in all popular functions.



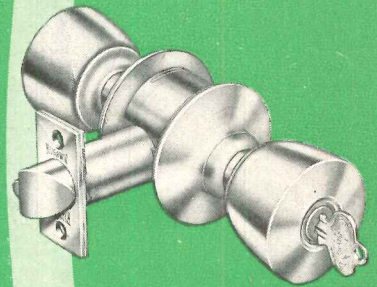
## RUSSWIN "Ten Strike" Locks

A heavy-duty mortise lock line of proven performance and security. One size case for 30 lock functions. Over 800 possible lock combinations. Features include: forged brass knob hub and brass front with armored scalp, heavy formed interior parts of rust-resisting steel. All locks reversible.



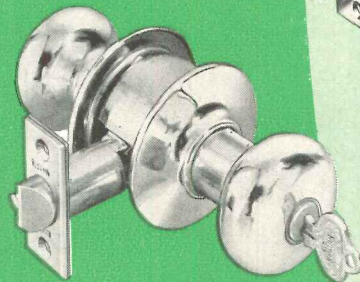
## The RUSWIN "Uniloc"

Designed for standard duty, the "Uniloc" embraces all the advantages and features of unit design and construction. Each lock and latchset pre-assembled at factory. Frames, knobs, escutcheons and bolts made of non-ferrous metal. Latch bolts are of the pivoted swing type. Available in all popular functions.



## RUSSWIN Cylindrical Type Locks The "Stilemaker"

Designed for heavy duty, the "Stilemaker" is available in all popular functions, four basic designs and a choice of standard or large size roses. Construction features include: 5/8" throw, seamless tubular knob shank, extra large steel knob bearing on brass bushing, minimum number of parts.



## The "Stilemanor"

A standard-duty counterpart of the "Stilemaker". Recommended for applications where normal frequency of operation is planned. Available in four designs and a choice of standard or large size roses. Twenty construction features include eight "exclusives" headed by a ball bearing latch retractor and self-aligning thrust bearing on spindle. All popular functions.

SINCE 1839  
**RUSSWIN**<sup>®</sup>  
DISTINCTIVE HARDWARE

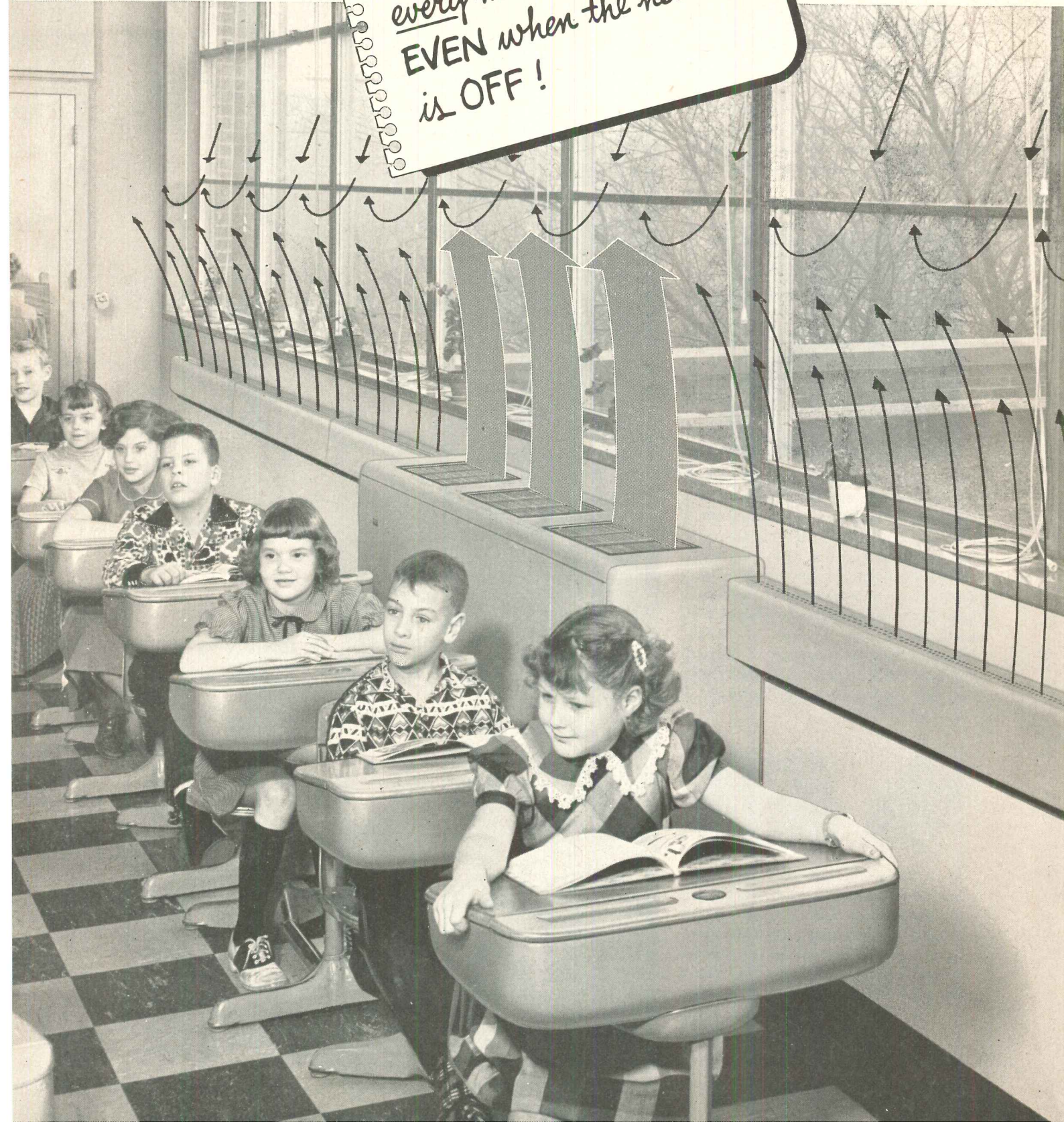
## PROBLEM...

Arrows show how TRANE Kinetic Barrier works—Central unit heats and blends room air and outside air in correct proportion. This tempered air, under constant pressure, is projected upward from the central unit (heavy arrows) and also from lateral extensions along the entire window or outside wall, as indicated by small arrows. Drafts are stopped before they start.

How to end  
classroom drafts—  
overheating—  
stagnant air—  
everywhere in the room  
every minute of the day  
**EVEN** when the heat  
is OFF!

## SOLUTION...

# Trane





# Unit Ventilators with Kinetic Barrier Action!

It's amazing, but even on a cold winter day, tests prove classrooms actually need *cooling* as much as 75% of the time to prevent serious overheating. *The reason:* Body heat from children, plus heat from lights, sun, other sources. The trouble is, when the room thermostat shuts off the heat, ordinary schoolroom heating-ventilating systems cannot fully protect the children against the chilly downdrafts that pour off cold window surfaces.

Every minute of the day TRANE Kinetic Barrier Action prevents cold window downdrafts — gently surrounds every pupil in the room with tempered-air comfort—even when the heat is off! A continuous, rising wall of tempered air

blocks downdraft—distributes comfort in a room-wide pattern that reaches into every nook and corner of the room.

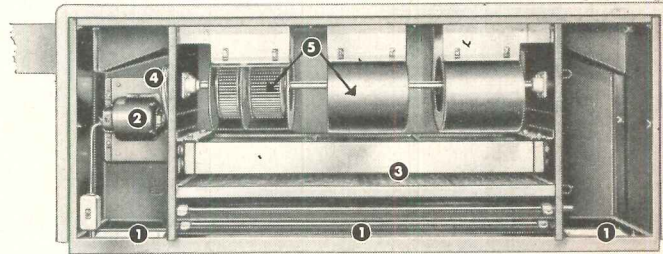
That's the kind of comfort that keeps pupils attentive and wide-awake—and ends forever such classroom hazards as chilly drafts off cold windows...over-heating that makes pupils drowsy (and wastes fuel)...stagnant air that multiplies odors. For healthful classroom heating and ventilation—for low maintenance—for beauty that matches your school—install TRANE Unit Ventilators with Kinetic Barrier Action!

For more information call your TRANE Sales Office or write TRANE, La Crosse, Wis., for illustrated booklet.

## CUTS MAINTENANCE AS MUCH AS 50%, RUNS QUIETER!

TRANE KB Unit Ventilators were designed for low maintenance. Check these points.

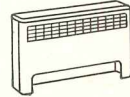
1. Interior easier to get at—three small panels quickly removed by one man. Ordinary units have one big panel that needs two men.
2. Motor is standard—constant-speed motor can be repaired or replaced by any electric shop. Motor is located in end pocket, outside of air stream, can be quickly, easily serviced.
3. Coils stay clean—all the air is filtered before it reaches the coil—coil stays clean, longer. Clean air cuts decorating bills, too. And filter is easy to change.
4. Unit runs whisper-quiet—motor floats in resilient mounting—belt drive is quieter—special fans move air silently—no whistle.
5. Easy to remove foreign objects from fan—fan scroll snaps off and on—buttons, pins, etc., can be removed in a jiffy.



**Volume Ventilator:** Ideal for auditoriums, gyms.



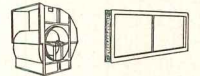
**Steam Specialties:** Full line of valves, traps, vents.



**Convectors:** Free-standing, wall-hung or recessed; flat or sloping top.



**Wall-Fin:** Fine under low windows, in long halls.



**Fans and Coils:** Famed for efficient TRANE design.

Matched TRANE products for all school heating and ventilating needs

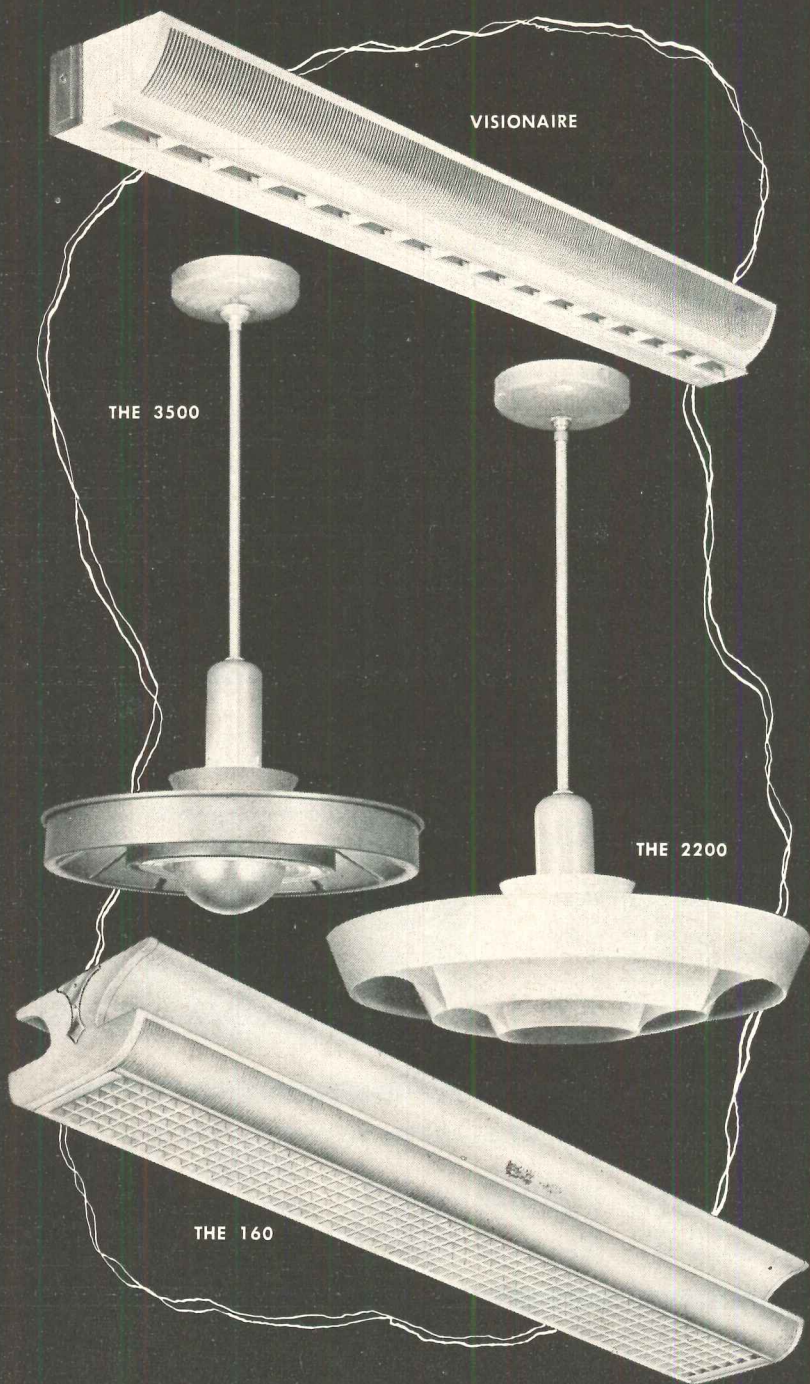
one source  
•  
one responsibility

# TRANE Unit Ventilators with Kinetic Barrier Action

MANUFACTURING ENGINEERS OF AIR CONDITIONING, HEATING, VENTILATING AND HEAT TRANSFER EQUIPMENT.  
The Trane Company, La Crosse, Wis. • East. Mfg. Div., Scranton, Penn. • Trane Co. of Canada, Ltd., Toronto  
90 U. S. and 14 Canadian Offices

# SILVRAY

## INCANDESCENT & FLUORESCENT LUMINAIRES FOR EVERY LIGHTING APPLICATION



DETAILED BULLETINS are available upon request. Just write the name of the unit(s) on a post card and mail to...

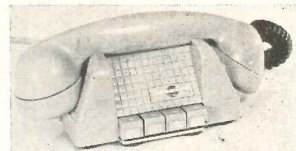
**Silvray LIGHTING, INC.**  
BOUND BROOK NEW JERSEY

### A-E PRODUCTS

(Continued from page 217)



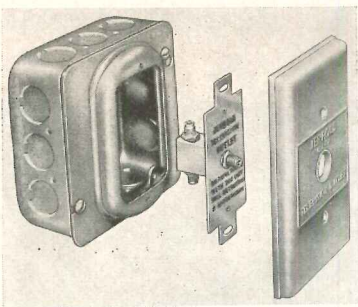
Audio-visual communication utilizes *industrial (closed circuit) television*. In the Riggs National Bank in Washington, D. C., banking information is transmitted instantly to officials located several blocks from the bookkeeping department. It has many applications, can be used where there is a need for constant observation, visual communication, piloting automatic machinery, ceaseless property protection, group visual training and accommodation of overflow crowds. *Manufacturer: Radio Corporation of America, Camden, N. J.*



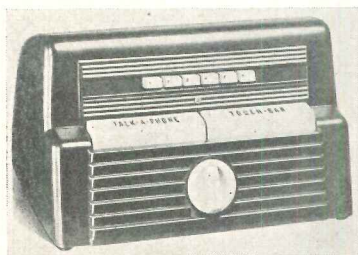
The *Direct-A-Call* is an interoffice telephone system for use in small offices. Available with as many as four push-buttons, the stations can be called separately or for conferences. *Manufacturer: Connecticut Telephone & Electric Corp., Meriden, Conn.*



In this *telephone dictation system* the user presses a button on the handle to dictate. The "listen" and "contact" buttons on the base permit listening back and corrections or instructions. The dictator is warned when he has reached the end of a disk by a clicking through the receiver. *Manufacturer: The Gray Mfg. Co., 521 Fifth Ave., New York, N. Y.*



A television master antenna system, with antenna outlets throughout the building, is replacing rooftop antenna clusters in many buildings. The manufacturer guarantees that each set performs as well as if it had its own outdoor antenna. *Manufacturer: Jerrold Electronics Corp., 26th and Dickinson Sts., Philadelphia 46, Pa.*



Wireless intercommunication system includes six-channel selector, which enables each unit in the system to transmit to any of the six separate channels and receive calls on any channel it selects to use. As many as three separate conversations can be carried on simultaneously, as well as conference calls and one-way transmission for dictation without continued manual operation. *Manufacturer: Talk-A-Phone Co., 1512 S. Pulaski, Chicago, Ill.*

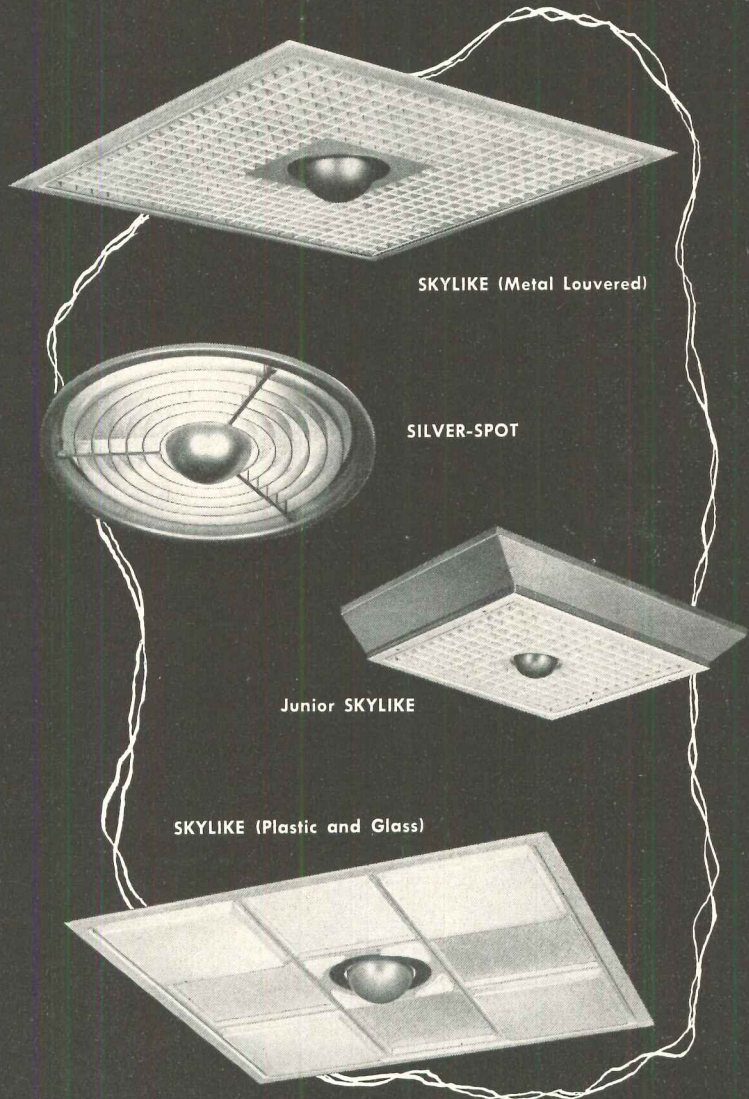


Wireless intercommunication system is used in homes as a substitute "baby-sitter" or for a direct line to sickroom, kitchen, etc. *Manufacturer: Webster Electric Co., Racine, Wis.*

(More Communications on page 224)

# SKYLIKE SILVERED BOWL INCANDESCENT LIGHTING SYSTEMS

For Recessed, Semi-recessed or Surface Mounted Installation In or On Any Ceiling Construction



DETAILED BULLETINS are available upon request. Just write the name of the unit(s) on a post card and mail to...

# Skylike LIGHTING, INC.

A SILVRAY ASSOCIATED COMPANY

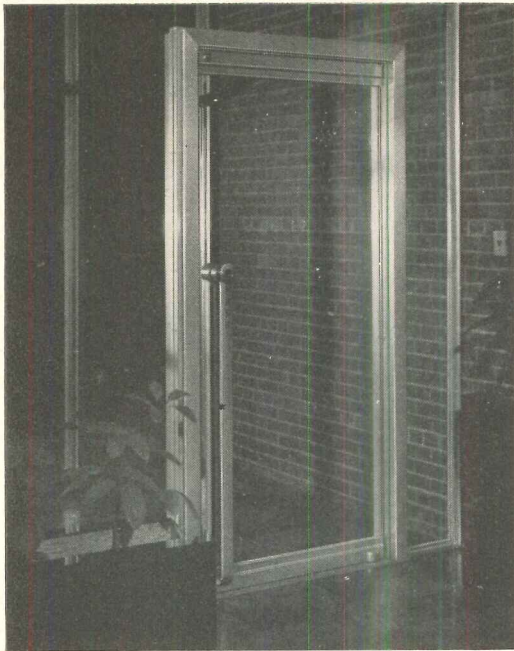
BOUND BROOK • NEW JERSEY

# PITTCOMATIC...*"the nation's*



**PITTCOMATIC** hinges operate the sturdy Herculite Doors which form the entrance to the aluminum-faced skyscraper office building of the Aluminum Company of America at Pittsburgh, Pa. The magic-like operation of the Pittcomatic is controlled by a 10-volt switch, concealed in the door handle. It is so sensitive that the instant the handle is touched, the door starts to open by hydraulic action, smoothly and silently, in either direction. A steady flow of traffic into and out of the building is thus permitted with the utmost efficiency. Each door operates independently, so that the operation of one door in a battery can be discontinued without disrupting the operation of the others. Architects: Harrison and Abramovitz, New York City; Associate Architects: Altenhof and Bown; Mitchell and Ritchey.

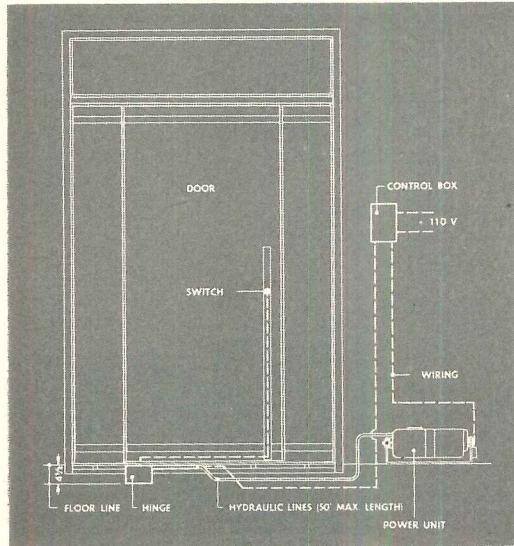
# *finest automatic door opener"*



**FOR ALL KINDS** of industrial and commercial buildings, leading American architects are specifying the Pittcomatic automatic door opener. This building in South Bend, Indiana, is an interesting example. Architects: Schwartz & West, South Bend, Indiana.



**BANK EXECUTIVES** are "sold" on the Pittcomatic. They state that their customers like the easy response of doors having this automatic opener; that these installations have actually attracted more customers. Architect: Wyatt C. Hedrick, Dallas, Texas.



**THE POWER UNIT** supplies hydraulic power to the hinge under the door through  $\frac{3}{8}$ " copper lines. The power unit is activated by a 10-volt circuit in the handle which passes through the control box. Oil lines are 3000-lb. test. The action of the door in all respects can be regulated by adjustments provided in the control box and the hinge. No power can build up. It is a safe door.



**IN RETAIL STORES**, like this automobile showroom in Toledo, Ohio, the Pittcomatic not only brings the practical advantages of its automatic operation, but, with Herculite Doors, adds to the over-all feeling of open-vision, which is such a proven sales stimulator. Architects: Sanzenbacher, Morris & Taylor, Toledo, Ohio.

*For complete information on the Pittcomatic, write to Pittsburgh Plate Glass Company, Room 4286, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.*



PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS

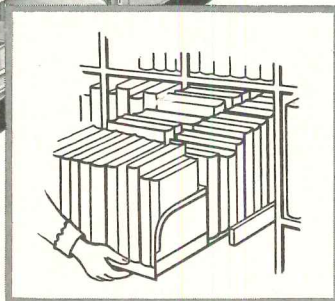
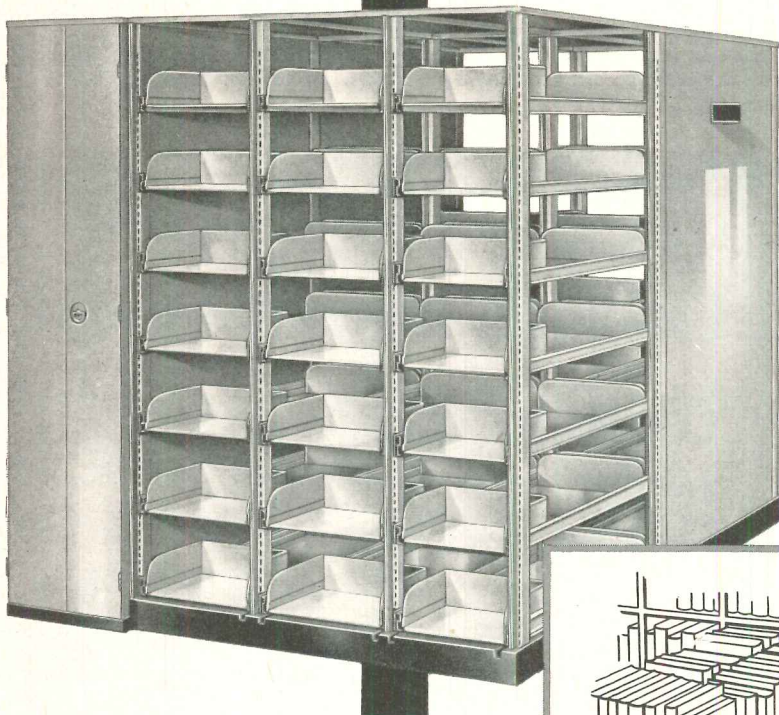
**PITTSBURGH PLATE GLASS COMPANY**

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

# Build

# IN

# their book space



Designing a new library or remodeling an old one, be sure first to get complete information on Hamilton stacks, from—

## Hamilton

### LIBRARY EQUIPMENT

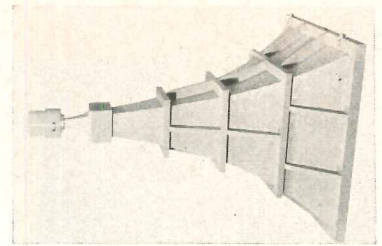
HAMILTON MANUFACTURING COMPANY • Two Rivers, Wisconsin

When library walls simply will not expand, you can actually build double-the-book-capacity right into existing space. The answer: Hamilton Compo stacks with sliding-out shelves—which permit a more open, inviting book area, even as many more books are added to the shelves. The more conventional Hamilton stacks are similarly efficient and attractive—all-steel, all equipped with the most modern functional features.

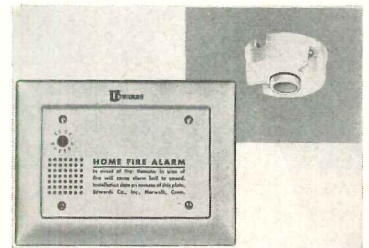
Note book arrangement on sliding Compo shelf—sides utilized as well as front. Also adjustable in height, as are all Hamilton shelves.

## AH PRODUCTS

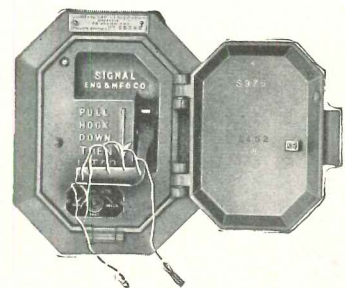
(Continued from page 221)



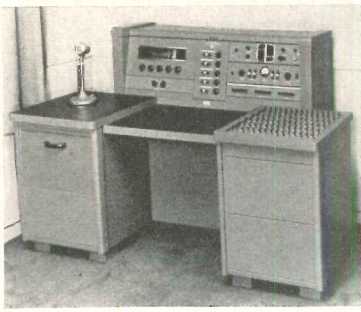
This loudspeaker for use in large areas is particularly useful for use in transmitting air raid alarms and for making other public announcements where extremely high sound level is required. *Manufacturer: Altec Lansing Corp., 161 Sixth Ave., New York 13, N. Y.*



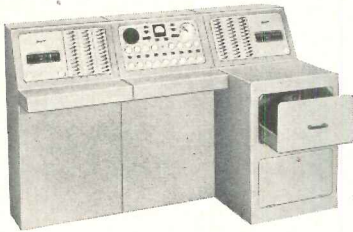
An automatic fire alarm system for homes sets off a bell in the wall of bedroom or hallway. Thermal detectors in furnace room, storage area or other "hazard" spot close the bell circuit when the temperature reaches 136 F. Since the unit is still operative after subjection to heat, it can be tested by holding a lighted match under it. *Manufacturer: Edwards Co., Norwalk, Conn.*



An adequate fire alarm system is a requirement in commercial and public buildings. With coded fire alarm system, the person at the nearest station pulls the lever on the fire alarm box, which sounds gong signals throughout the building or buildings according to the code of that station (for example, 4-2-1). *Manufacturer: Signal Engineering & Mfg. Co., 154 West 14th St., New York 11, N. Y.*



Console system provides radio, phonograph and direct voice communication for schools, plants, hospitals and stores. This deluxe model for larger institutions will serve up to 180 rooms. *Manufacturer: Dukane Corp., St. Charles, Ill.*

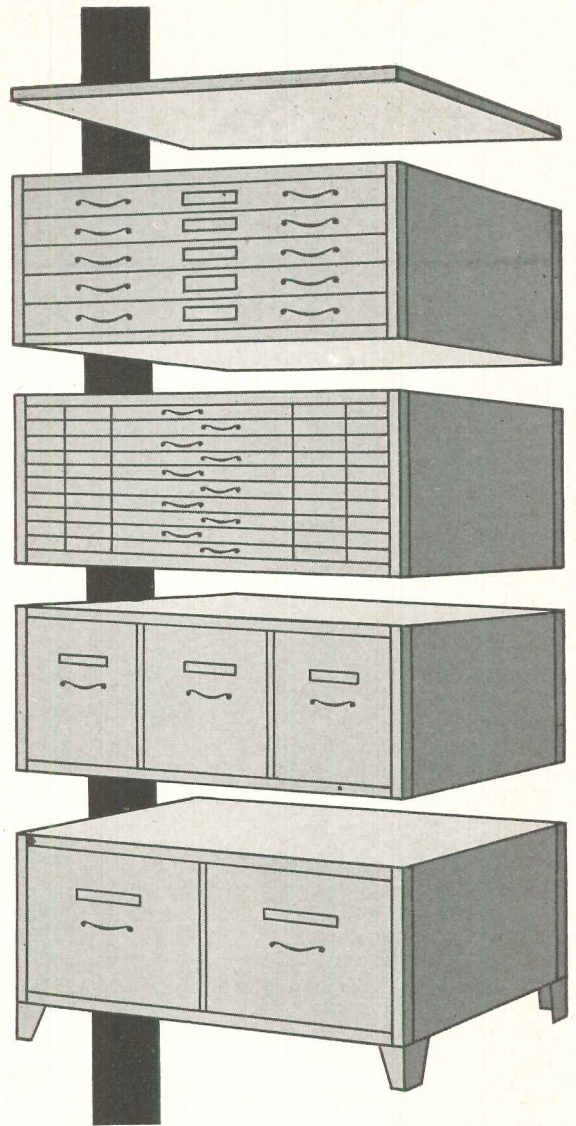
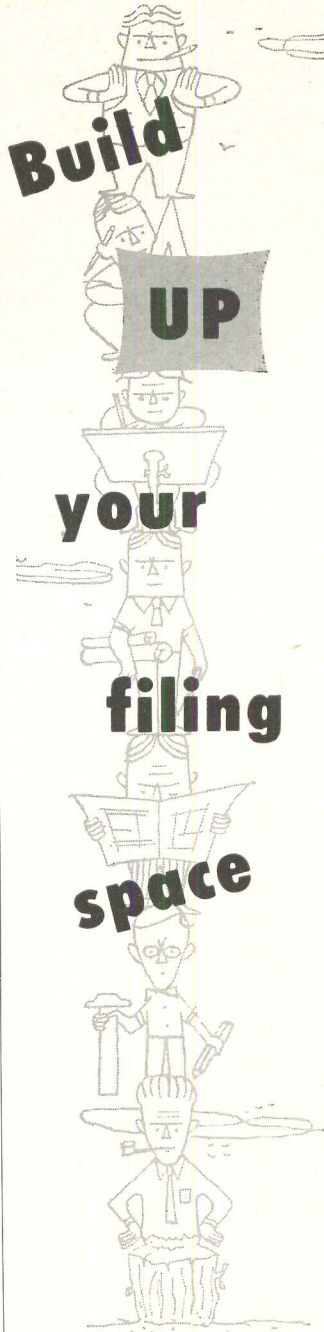


This console system transmits music and broadcast programs throughout a school or building and has a separate channel for intercommunication with rooms or departments. A school telephone system is available as an optional accessory to provide a means of private communication between two classrooms. *Manufacturer: David Bogen Co., Inc., 29 Ninth Ave., New York 14, N. Y.*



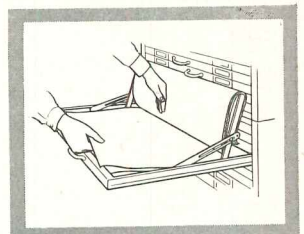
Stores offer many applications for intercommunication systems. In Hess Bros. Piggly Wiggly Super Market in Racine, Wis., an intercommunication system overlooking the floor of the market is used to make announcements, play music and also to talk directly with various departments. *Manufacturer: Webster Electric Co., Racine, Wis.*

(More Communications on page 228)



No need to search for more floor space just to add filing space. The Hamilton UnitSystem lets you build upward to file and keep more and more thousands of drawings—in perfect condition and readily accessible. 10-Drawer or 5-Drawer Units, 2 or 3-Drawer Vertical Units . . . each available separately, but all interlocking into a single compact UnitSystem. Ruggedly built of steel for prolonged service and extra safety.

For details on the complete Hamilton Filing unit line, write without obligation to—



Tracing Lifter—standard equipment on 10-Drawer unit—holds sheets absolutely flat, lets you find and remove any one instantly.



**HAMILTON MANUFACTURING COMPANY • Two Rivers, Wisconsin**



# REYNOLDS



## Equitable Life Building, San Francisco

**Architects:**

Loubet and Glynn, successors to W. D. Peugh, San Francisco

**Consulting Architect:**

Irwin Clavan, New York

**General Contractor:**

Dinwiddie Construction Company, San Francisco

**Architectural Metal:**

The Kawneer Company, Berkeley, Calif., and Nilcs, Mich.

**Windows:**

Reynolds Metals Company, Louisville

### ALUMINUM APPLICATIONS IN THIS BUILDING:

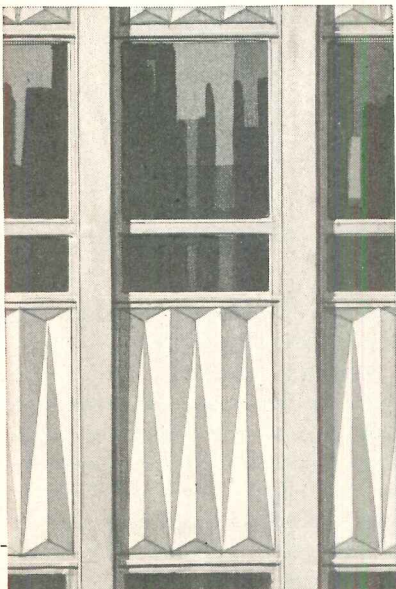
Spandrels, formed sheet

Framing members for exterior metal work

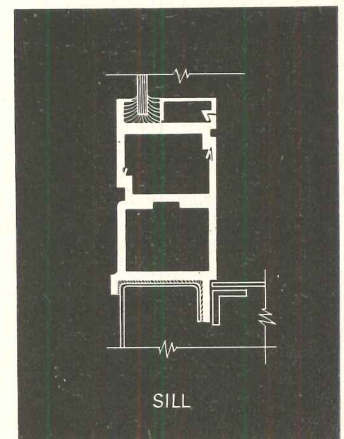
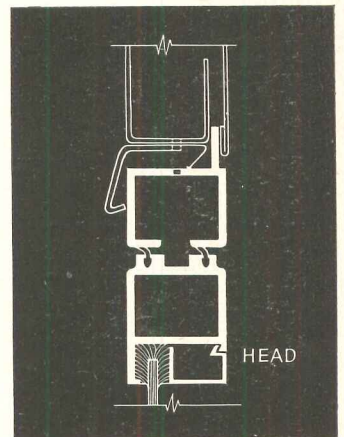
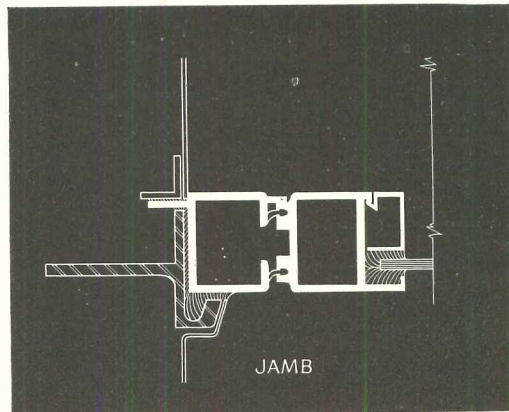
Reynolds Aluminum Windows, Series #100, Center Pivoted  
Vertically with Hopper Vent

### REYNOLDS ALUMINUM SERVICE TO ARCHITECTS

Reynolds Architect Service Representatives offer specialized assistance on aluminum design problems, on applications of standard aluminum mill products, and on the use of commercially fabricated aluminum building products. They can help to coordinate varied aluminum requirements for procurement efficiency and economy. Please address inquiries to . . . Architect Service, **Reynolds Metals Company**, Louisville 1, Kentucky.



Aluminum spandrel and window unit—one of about 1500 in the building. Assembly was tested under hurricane conditions simulating 12" rainfall with winds up to 70 mph.



SEE "MISTER PEEPERS," starring Wally Cox, Sundays, NBC-TV Network.



# ALUMINUM

(Continued from page 225)



A *memory circuit* on the Dial-X telephone system makes it unnecessary for a user of the system to repeat the dialing of a line that is busy. The system "remembers" the call, and when the party hangs up rings the line immediately. A right-of-way feature of this system permits qualified users to press a button to sound a warning signal on the busy line before cutting in to deliver an urgent message. *Manufacturer: Stromberg-Carlson Co., Rochester 3, N. Y.*



An *automatic private dial telephone exchange system*, self-contained and not much larger than a desk phone, can be located in a closet or desk drawer. The unit plugs into any convenient AC outlet; no cabling is required. The basic unit includes a dial tone and facilities for 10 phones. Optional features are: remote control for loudspeaker extensions and for paging, a busy line indicator, trunking facilities for connection to an external exchange and conference features. The smaller unit on the left is a portable unit designed for contractors on the job. *Manufacturer: Bliss Electronic Corp., Sussex 2, N. J.*

## IN THE ENTRANCES TO

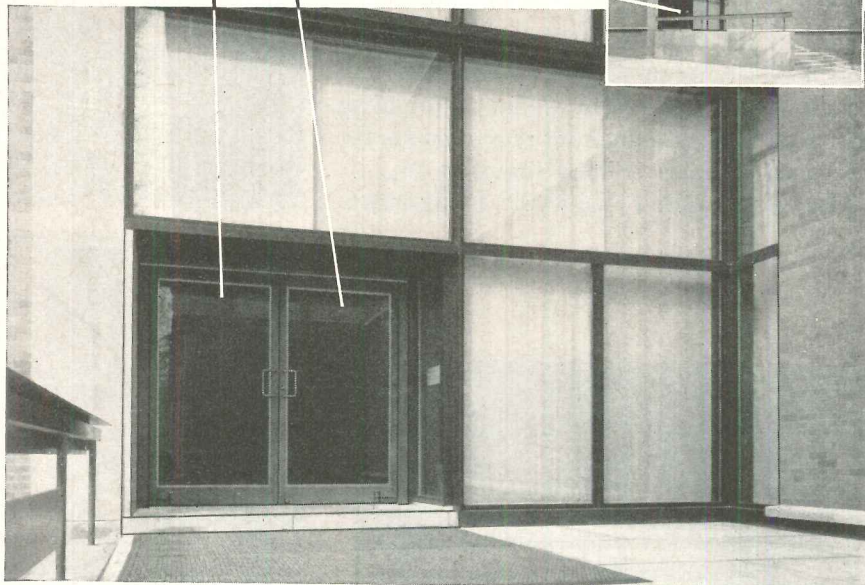
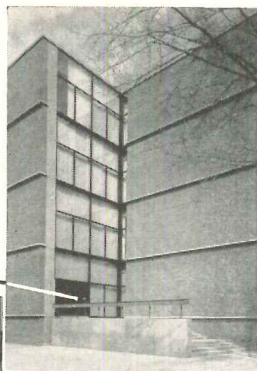
**YALE UNIVERSITY  
ART GALLERY DESIGN CENTER**



**New Haven, Conn.**

Douglas Orr — Louis I. Kahn  
Associated Architects

*Ellison*  
the BALANCED DOOR



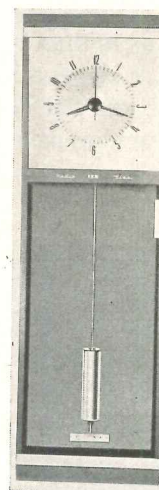
The Door that lets  
TRAFFIC through QUICKLY

ELLISON BRONZE CO.

Jamestown, New York

representatives in 78 principal cities  
in the United States and Canada

*Ellison*  
the BALANCED DOOR



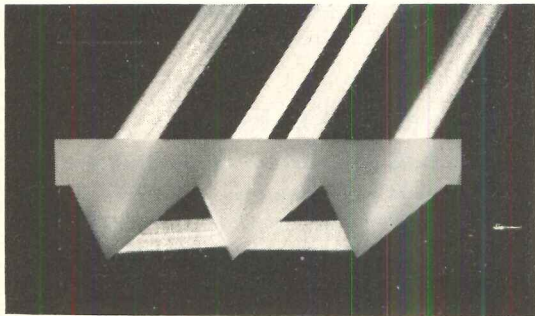
*Radio-supervised master clock* time control is coordinated with the U. S. Bureau of Standards broadcast time signals. Useful for industries and institutions which demand exact time, the master clock is automatically reset, if incorrect, once each hour. A short-wave radio receiver receives the time signals and corrects any time variation. The master clock provides uniform and accurate time in all clocks, time equipment and signaling devices in IBM electronic or electric self-regulating time systems. *Manufacturer: International Business Machines Corp., 590 Madison Ave., New York 22, N. Y.*

(More Communications on page 232)

# TOPLITE

TOPLITE ROOF PANELS permit daylighting of all building areas regardless of location or distance from exterior walls.

TOPLITE PANELS are flat, lay close to the roof and allow the architect complete freedom in exterior design.

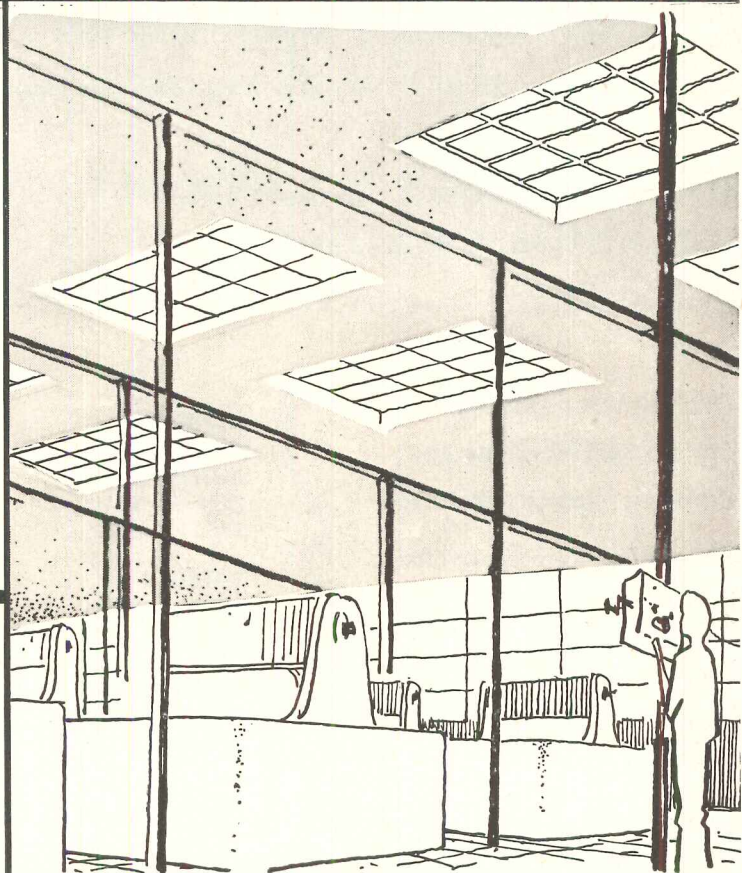


## Rejects Summer Sun

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

## spot them where you need daylight

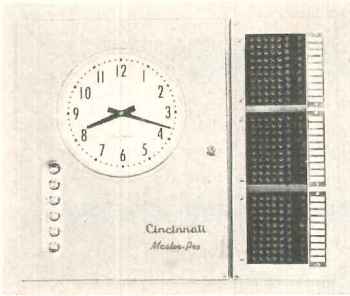
You can use Toplite to bring daylight in wherever it is needed without increasing cubage. Use a Toplite Panel as you do a lighting fixture. They may be installed in continuous strip, pattern, or in individual panels.



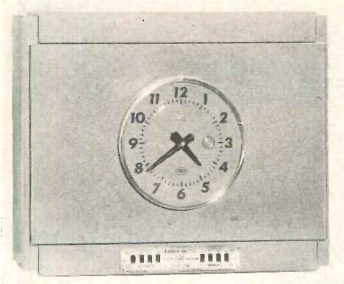
TOPLITE ROOF PANELS  
AN  PRODUCT

OWENS-ILLINOIS  
GENERAL OFFICES • TOLEDO 1, OHIO

(Continued from page 228)



Master time and indication program signals are automatically synchronized in *Master-Pro*. Signals can be set easily by inexperienced help, according to the manufacturer. This system is useful in schools, banks, plants and other locations where program signals are needed. Telephone intercommunication can be had by utilizing the bell wiring. *Manufacturer: The Cincinnati Time Recorder Co., 1733 Central Ave., Cincinnati 14, Ohio.*



This *master clock and program unit* has a program tape which can be changed in a few minutes without using tools. A calendar setting for silencing program signals on week ends, nights and holidays can be made. A bell control board has pushbutton arrangement which permits manual operation of any individual program signal. *Manufacturer: Sperti Faraday Inc., Adrian, Mich.*

**MORE PRODUCTS**

**COMBINATION LOCKS**

• *Master stainless steel combination locks* have been announced to replace the brass locks used by school systems. The manufacturer claims that the new case is 25 per cent stronger for rough school use, rust-resistant, and features a case-hardened locking latch. A control chart is furnished with each school installation. *Master Lock Co., Milwaukee 45, Wis.*

**FURNITURE**

• *Scope, a Valley line*, offers contemporary upholstered furniture featuring contrast in scale, texture and color. The line utilizes the "Conformo" cushion (by Goodyear Rubber Co.) and a rubber-back construction. *Valley Upholstery Corp., 428 W. 14 St., New York, N. Y.*

**ALUMINUM ROLL ROOFING**

• *Cross-corrugated aluminum roll roofing and siding* is now available. The 50-, 100- and 200-ft rolls, produced in various gauges, widths and lengths, lie flat when unrolled and, being one-third the weight of steel, can be cut and handled on the roof. Because the rolls can reach across the lengths of most buildings, side laps are eliminated and also the possibility of wind loosening sheets. *Quaker State Metals Co., Lancaster, Pa.*

(Continued on page 236)

**We invite you to use our**

*typical specs*  
(—over 50 of them— proved in field use!)

**on BITUMULS<sup>®</sup> & LAYKOLD<sup>®</sup> asphaltic emulsions**

**Can you use dependable typical specifications on asphaltic type construction?**

The combined experience of a national field force specializing in projects using Bitumuls and Laykold asphaltic emulsions and all types of asphalt is incorporated in these specifications.



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- Please have your man call.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_

**Prove to yourself** that the Westinghouse

Pay-Way Plan can guide you in specifying and locating water coolers. It is an ingenious formula that demonstrates how proper water cooler installations will more than pay for themselves through payroll savings.

**that** dollars can be saved has already been proved by many satisfied Westinghouse customers. Drop us a card for more details on how you, too, can specify to save management many valuable dollars.

## Westinghouse Water Coolers

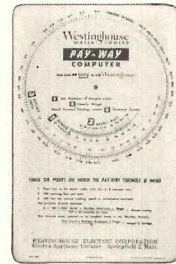
now have *dual electric control* . . . both finger-tip and toe-tip operation on the same cooler at no extra cost. Added features include: modern design and styling, stainless steel top, patented *Pre-Cooler*, *Super Sub-Cooler*, and automatic stream-height control.

**are** Westinghouse Water Coolers available for small establishments as well as for large factories? This question is often asked, and, of course, the answer is *yes*. Your client has a choice of 13 models with capacities of from 1 to 20 gallons in pressure, compartment, bottle and remote types.

**the most dependable** service for plenty of refreshing water at just the right temperature is assured by a sealed water circuit. This feature has no valve stem packing to leak, thus adding longer life through reduced wear and maintenance.

### SEE THE NEW PAY-WAY COMPUTER

Designed to save time in making calculations and to aid in specifying the number, type and location of water coolers for your clients. Check the yellow pages of the telephone directory for your nearest Westinghouse Water Cooler distributor . . . or drop us a line.



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

WESTINGHOUSE ELECTRIC CORPORATION

Electric Appliance Division • Springfield 2, Mass.

WW20B  
20-Gallon,  
Water Cooled



WSE8B  
8-Gallon,  
Static Air Cooled  
Explosion-Proof



WWE14B  
14-Gallon,  
Water Cooled  
Explosion-Proof



WAC2  
Compartment  
Pressure Cooler



WAP7A  
7-Gallon,  
Remote Cooler



WWP13  
13-Gallon,  
Remote Cooler



WBC1  
Compartment  
Bottle Cooler





*Terrazzo*

## makes school history

Classes come and go. Teachers retire. Textbooks change. But TERRAZZO goes on and on, making history by withstanding the erosion of use and time. Architects praise its versatility and faithfulness to their color-and-design planning. School builders and maintenance engineers like the smooth, jointless surface which cleans easily and minimizes repair.

Marble-hard and concrete-durable, TERRAZZO is the all-time favorite for schools, institutions and hospitals. Specify TERRAZZO — and forget!



Use coupon for free AIA Kit, the complete Terrazzo reference work.



### THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION, INC.

404 Sheraton Building      711 14th St., N. W.      Washington 5, D. C.

Send free AIA Kit, about Terrazzo, to

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Firm.....

Street Address.....

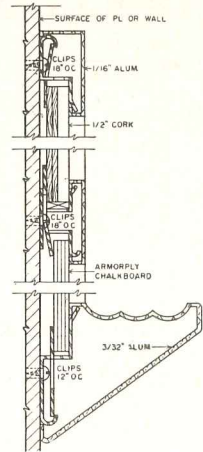
City..... Zone..... State.....

## A-E PRODUCTS

(Continued from page 232)

### CHALKBOARD INSTALLATION

• A new method of installing chalkboard and tackboard, known as the *Weldwood Aluminum Chalkboard Trim System*, has been developed by *U. S. Plywood Corp.*



Cross section shows how boards are fastened to wall by snap-on clips

Instead of being anchored to the wall by means of a continuous ground, the chalkboard or tackboard is fastened directly to the wall by a series of snap-on clips set at 12-in. intervals. The trim, chalk tray, etc., are then clipped to the chalkboard. The manufacturer claims lower installed costs result from elimination of the grounds and the fact that the whole installation can be accomplished in one trip. *U. S. Plywood Corp., 55 West 44th St., New York, N. Y.*

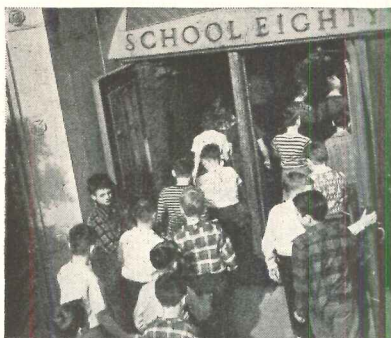
### PLASTIC-SURFACED PANEL

• *Harborite* is a new plastic-surfaced fir plywood building panel for use as both exterior and interior paneling in residential, commercial, school and office buildings. The phenolic-resin plastic face is bonded to the plywood panel (identical with that used in the company's Super-Harbord panels). The manufacturer claims that this "virtually writes off checking and grain raise" and that it makes the panel completely waterproof. Color is reddish tan and it can be used without finishing on interiors. Its face is grooved vertically, grooves occurring 4 to 12 in. apart. Random widths are available. Panels are 4 by 8 ft in size and come in several thicknesses. *Harbor Plywood Corporation, Aberdeen, Wash.*

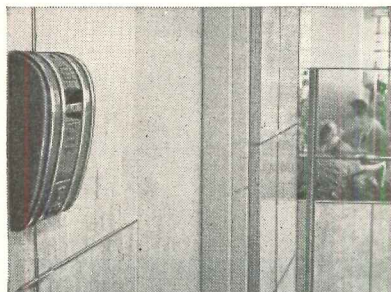
(Continued on page 241)

## Specify Edwards and Be Sure

America's schools run more smoothly  
 . . . America's school children are  
 better protected thanks to Edwards.



Edwards Automatic Clock and Program Control Systems, models of precision engineering, regulate school traffic with split-second accuracy. This ingenious system requires no master clock, no mercury pendulums, rectifiers, condensers or radio tubes. Built around the famous dual-motored Telechron movement, Edwards Clocks are synchronized to ever accurate incoming alternating current...one or a hundred timepieces keep perfect time together. Virtually error-free, they run for years without costly servicing.



### TRIM, MODERN, EFFICIENT:

Edwards Fire Alarm Systems are chosen by leading architects to protect America's schools, hospitals and important buildings. Write for Bulletin on Fire Alarm Systems.

# EDWARDS

protects... everywhere!



## AH PRODUCTS

(Continued from page 236)

### HARDBOARD PANELS

• *Kalabord* and *Kalalex* are two new wood paneling products for use on surfaces subject to hard usage. *Kalabord* is a hardboard surface bonded under pressure to a two-ply wood backing, with maximum thickness of  $\frac{3}{8}$  in. *Kalalex* is a solid hardboard paneling  $\frac{1}{4}$  in. thick. The panels, which are available in standard 4- by 8-ft size, are textured by a machine-cutting operation, with striations scored vertically on the hardboard face. *Columbia Plywood Co., Seattle, Wash.*

### PLASTIC SURFACING

• *Nevamar*, a prefinished plastic surfacing material, is now available in a bird's-eye maple pattern. Resistant to alcohol, alkalies, acids and boiling water, *Nevamar* is practical for bathrooms and kitchens. *National Plastic Products Co., Odenton, Md.*

### DOOR CHIME WITH VIEWER

• To protect residents of apartments and homes against unwanted callers, *Snapit* has developed the *Vu-All*, a double-tone, nonelectric door chime that permits residents to see who is calling without being seen. The door chime can be mounted on any wood or metal door  $\frac{3}{8}$  to  $1\frac{3}{4}$ -in. thick and incorporates a name card window, viewer lens and luminous push button. The wide angle lens brings a caller within view without having to raise a cover or lid. The caller cannot see in. *Cable Electric Products, Inc., 234 Daboll St., Providence 7, R. I.*

### ACOUSTICAL ROOF FORMBOARD

• *Hansolone perforated acoustical formboard* has been developed exclusively for use with poured-in-place gypsum roof decks. It combines high thermal insulation with sound absorption qualities to provide a permanent and rigid base for the gypsum concrete. Said to be protected against termites and mildew, the board is so designed that it will permit the proper curing of the monolithic roof structure. *Elof Hansson, Inc., 220 East 42nd St., New York 17, N. Y.*

(Continued on page 244)



## AMERICAN *Approved* PLAYGROUND EQUIPMENT Unsurpassed in Design, Safety and Performance

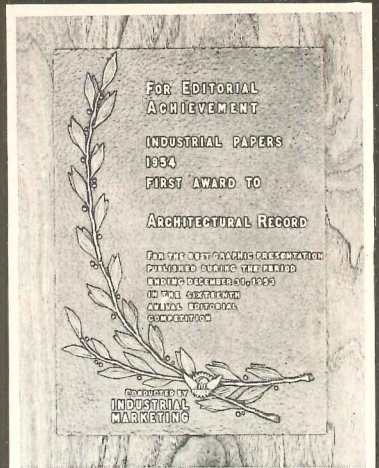
• It's the *plus* factor that makes American the most respected name in Playground Equipment... *Plus* in design—American leads the field. ... *Plus* in performance—*Approved* Equipment stronger, more ruggedly built to assure a lifetime of perfect repair-free service... *Plus* in safety—for American craftsmen are aware of their responsibility for the safety of your children. Thus, with American you receive far superior design and performance and unmatched safety.

WRITE FOR LITERATURE



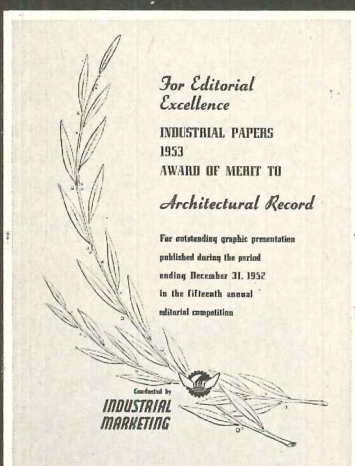
This is one reason  
why, year after year,  
**Architectural Record**  
leads the field in  
**Architect** circulation  
**Engineer** circulation  
**Advertising** volume\*

\* 1953: *Architectural Record*, 2,931 pages; second magazine, 1,824 pages. First five months 1954: *Architectural Record*, 1,179 pages; second magazine, 840 pages. Source *Industrial Marketing*

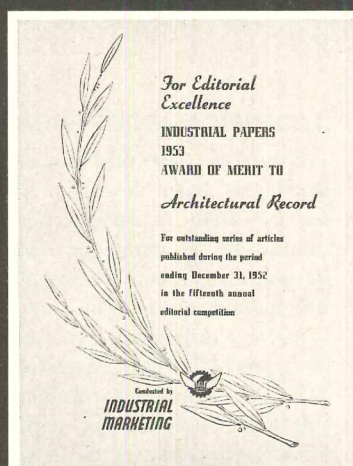


First Award 1954 — best graphic presentation — "Hotel Copan, Sao Paulo, Brazil." October 1953.

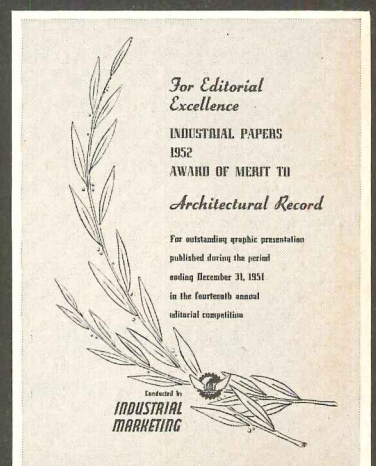
# 31 Awards



Award of Merit 1953—outstanding graphic presentation—"Building in the Tropics," August 1952.

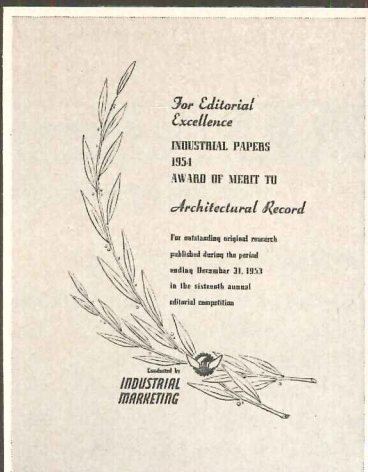


Award of Merit 1953—outstanding series of articles—"Philosophy of Architecture" (1952).

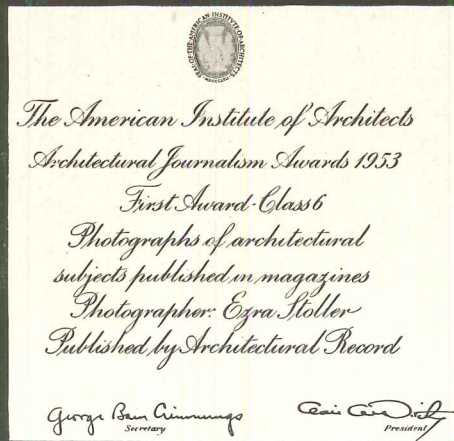


Award of Merit 1952—outstanding graphic presentation—"Vacation House in Oregon," July 1951.

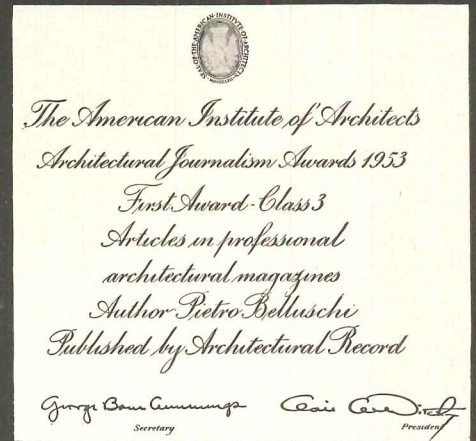




Award of Merit 1954—outstanding original research—"Guns and Butter and Babies," November 1953.



First Award 1954—"Best photograph of an architectural subject published in a magazine"—American Institute of Architects' Competition.



First Award 1954—"Best article in a professional architectural magazine"—American Institute of Architects' Competition.

# for Editorial Excellence

*confirm the judgment of readers and advertisers*

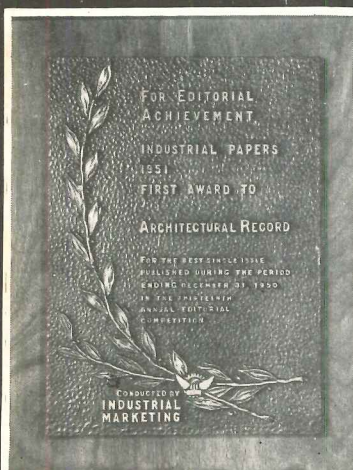
Eighteen of these 31 editorial awards have come to Architectural Record since 1951 (four of them this year), including thirteen awards in Industrial Marketing's Annual Business Paper Editorial Achievement Competition—a record unmatched by any other magazine.

Architectural Record is proud again to be honored this year by the judges of Industrial Marketing's editorial competition for best graphic presentation and outstanding original research—two aspects of editorial content of greatest importance to architects and engineers.

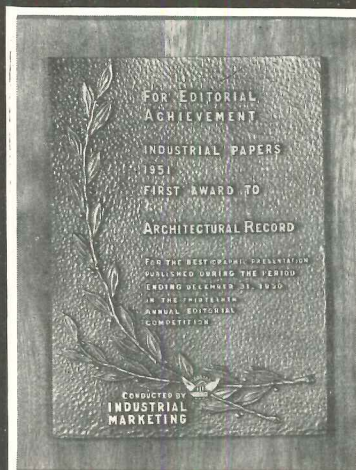
Architectural Record's many editorial awards strongly confirm the judgment of . . .

- Architects and engineers who have steadily voted Architectural Record their preferred magazine in 58 out of 65 readership studies SPONSORED BY BUILDING PRODUCT MANUFACTURERS AND ADVERTISING AGENCIES and . . .
- Advertisers who year after year place more pages of advertising in Architectural Record than in any other architectural magazine—40% more thus far in 1954!

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First Award 1951—best graphic presentation—"Architecture in Hawaii," October and November 1950.

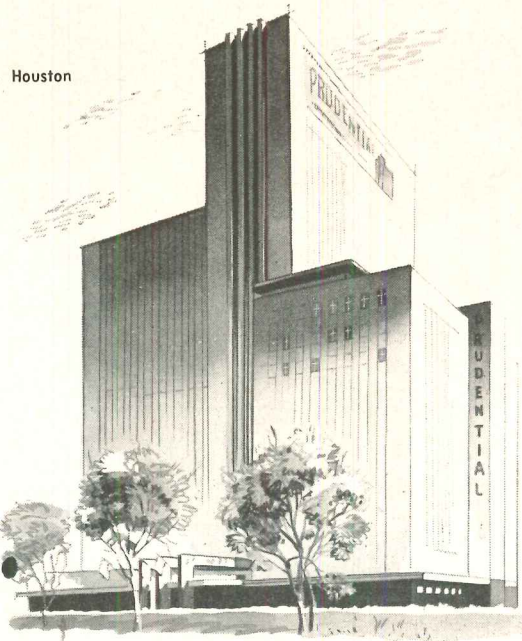
F. W. DODGE



119 West 40th Street  
New York 18, N. Y.  
OXford 5-3000

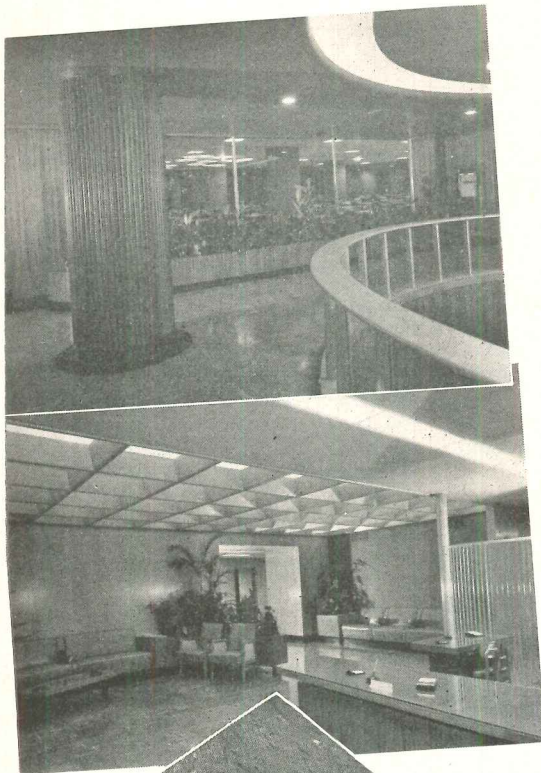
**Architectural Record** "workbook of the active architect and engineer"

Prudential Life Ins. Co. Bldg., Houston  
Kenneth Franzheim, Architect



Rugged  
Beauty...

why architects specify... **Wright Rubber Tile**



WRIGHTEX  
WRIGHTFLOR  
VINYL TILE  
ECONOTILE

see our catalog in  
**ARCHITECTURAL  
FILE**  
or write for copy

Wright answers MORE of the architect's problems. It is the only rubber tile in the world in two degrees of hardness—soft WRIGHTEX is especially quiet and resilient—hard WRIGHTFLOR is especially dense and durable. Both products—for nearly 35 years—have been characterized by long wear, brilliant colors and easy maintenance... good reason why leading architects the world over continue to specify Wright Rubber Tile.

**EASY-TO-MAINTAIN** Wright Rubber Tile was used in heavy-traffic areas at Prudential in Houston.

**QUIET, COMFORTABLE** Wright Rubber Tile was used in executive offices and board rooms.

**WRIGHT**

MANUFACTURING CO.

5205 Post Oak Rd., Houston, Texas

● Gentlemen: Please send me full information and specifications on Wrightex and Wrightflor.

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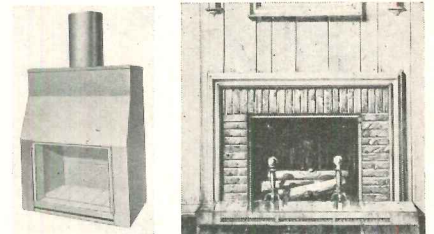
**A-E PRODUCTS**

(Continued from page 241)

**HEAT-SENSITIVE VENTILATOR**

• A roof unit for industrial buildings which opens quickly when excess interior heat occurs has been added by the ventilator division of the *Swartout Co.* Developed to meet the need for fast release of heat, gases and smoke in the event of fire, each *fire valve* provides 46 sq ft of free area opening when two large dampers are released by a fusible link device. Dampers can also be opened and closed by a loop chain. *The Swartout Co., Cleveland, Ohio.*

**PREFABRICATED CHIMNEY**



*Prefabricated insulated chimney can be finished in any decorative manner*

• A complete *Thulman fireplace and chimney* is available as a prefabricated unit. The basic unit consists of an inner, middle and outer casing. The inner casing contains the fire chamber with high-temperature ceramic-lined floor and sides. Because of the three casing insulation, the fireplace can be set on flooring of any material and will not, according to the manufacturer, interfere with the regular heat output or heat circulation of the home. The unit can be installed in a new or existing home and can be treated in any decorative manner. *The Majestic Co., Inc., Huntington, Ind.*

**PLASTIC FILM**

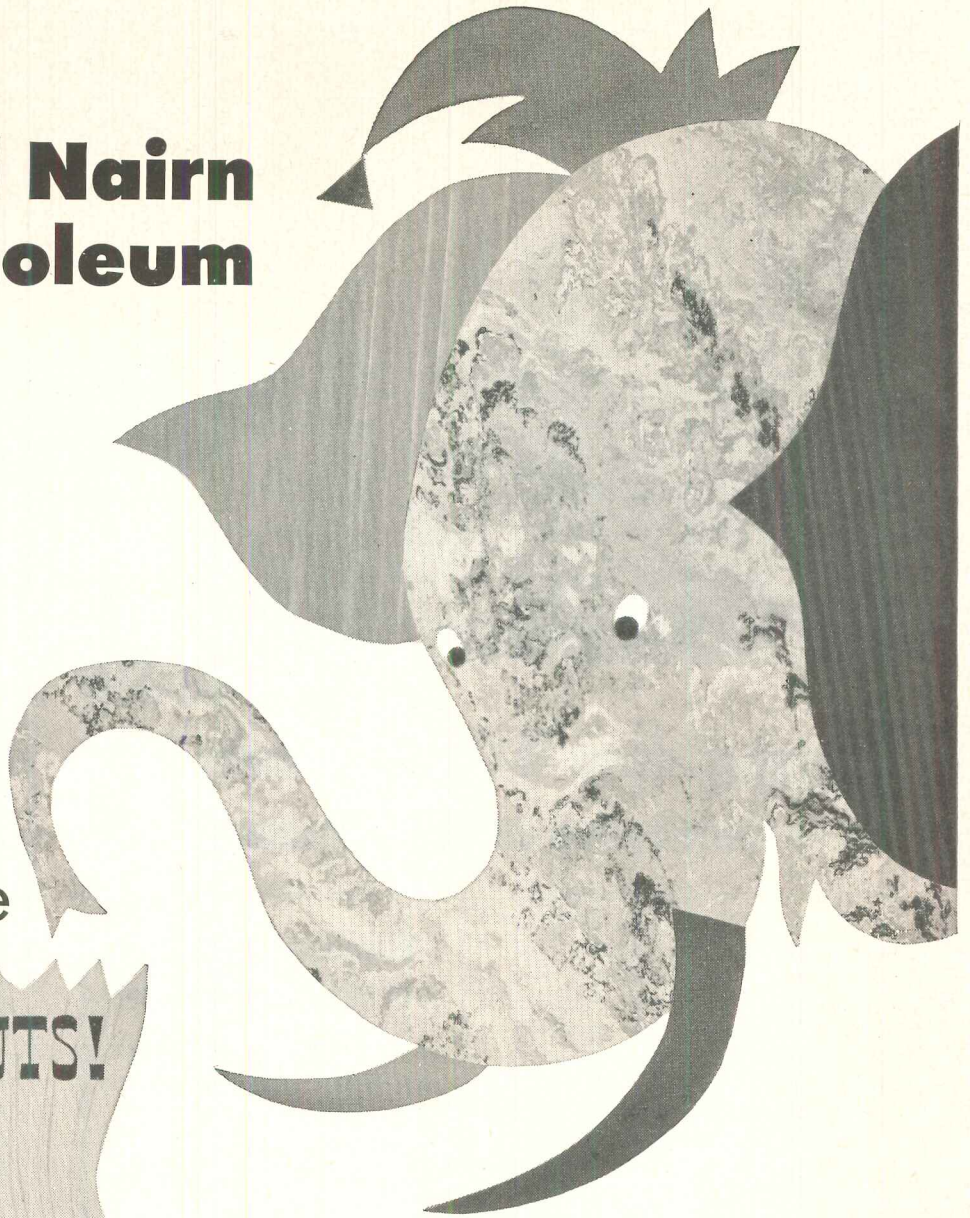
• *Du Pont* has developed a new polyester film — *Mylar* — which it claims is the strongest of all plastic films. Insensitive to moisture, resistant to solvent and chemical attack, having a high dielectric strength and wide range of thickness, and with an operating temperature range from 60°F to 150°F, *Mylar* has application in electrical insulation, laminations and all types of coverings. *E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.*

(Continued on page 248)

# Gold Seal Nairn Inlaid Linoleum

the  
maintenance  
cost  
is \_\_\_

**PEANUTS!**



**L**ook at these advantages that make Gold Seal Inlaid Linoleum *more economical* in the long run than almost any other floor covering! It's virtually *seamless smooth*. It has no criss-crossing seams to collect dirt. It's tough . . . so tough installations giving 30 years of service to heavy traffic are *still in business!* It has a remarkable blend of resilience and wear resistance. That means it can stand up under heavy furniture . . . give maximum comfort underfoot. "Veltone" in 21 patterns. "Jaspe" in 6 patterns. "Plain" and "Battleship" in 10 solid colors. 1/8" gauge (burlap back) for heavy traffic areas and standard gauge (felt back) for residential use. Available 6' by the yard or 9" x 9" tiles.

Write our Architects' Service Department for the free, illustrated booklet "Which Floor Goes Where in Commercial Areas."



**GOLD SEAL®** Floors and Walls

CONGOLEUM-NAIRN INC. Kearny, N. J. Copr. 1954

LINOLEUM • VINYL INLAIDS • CONGOWALL® • RANCHTILE® • LINOLEUM TILE • VINYL TILE • VINYLBEST TILE • CORK TILE • RUBBER TILE • ASPHALT TILE



## Ramset saves \$17,000 for Drake Hotel on modernization and maintenance work

In modernization and maintenance, as in new construction, RAMSET split-second fastening into steel and concrete pays big dividends. For instance, a \$100 investment in a RAMSET JOBMASTER has returned \$8,500 per year for two years, to the Drake Hotel, Chicago. Anchoring Tru-Set fasteners at a rate of better than 50 per hour, the JOBMASTER quickly installs air conditioning, lays carpet strips, hangs decorative cornices and makes many other major and minor repairs.

Its quietness as compared to other methods enables revenue-producing rooms to be kept open that might otherwise be closed. Its self-contained power prevents the annoyances prevalent in hotels or other commercial buildings where electric or air-driven tools are used.

In short, wherever there is fastening into steel or concrete for new construction or modernization, RAMSET SYSTEM pays dividends to owners, architects, contractors and others responsible for rapid, low-cost completion of the work. Ask your dealer for on-your-job demonstration or write for new *Specification Manual*.

### RAMSET PAYS OFF ON WORK LIKE THIS

• Check below types of work in which you are interested, and mail us the list for on-your-job proof of ease, speed and economy of RAMSET SYSTEM.

- Electrical services and equipment
- Carpeting and decorative work
- Sheet metal or composition walls or roofs
- Air conditioning equipment and ducts
- Soundproofing or insulation
- Exterior or interior framework
- Metal or wood partitions
- Door frames and window frames
- Heating, plumbing and water lines
- Sprinkler systems
- Security fences and barricades
- Tool cribs . . . light machinery
- Outdoor or indoor warning signs

**Ramset Fasteners, Inc.** RAMSET DIVISION  
OLIN INDUSTRIES INC.  
12147 BEREA ROAD • CLEVELAND 11, OHIO

FIRST IN POWDER-ACTUATED FASTENING



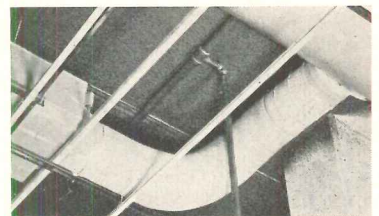
## AEI PRODUCTS

(Continued from page 244)

### TV ANTENNA SYSTEM

• A closed-circuit TV antenna system is, according to the manufacturer, self-servicing. If any tube in the amplifier fails, the performance on any channel is not disturbed. Buildings equipped with *Ampli-Vision* are serviced periodically for replacement of any tubes that may have failed. Replacements can be made without disturbing the service. *Ampli-Vision Div., International Telemeter Corp., 2000 Stoner Ave., Los Angeles 25, Calif.*

### FLEXIBLE DUCTING



*Thermaflex A bends around obstacles and connects rigid metallic outlets*

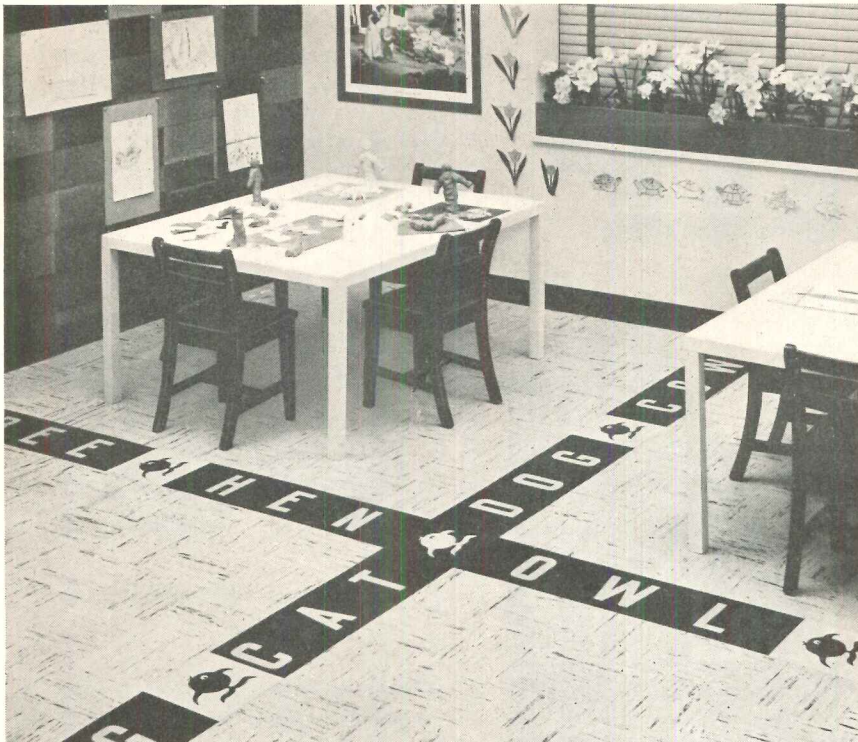
• *Thermaflex A* is a flexible ducting consisting of a continuous galvanized spring steel helix covered with a permanently bonded three-ply laminate of Fiberglas fabric sandwiched between two layers of aluminum sheeting. Available in 12-ft lengths and diameters of 2 to 10 in., the ducting, according to the manufacturer, is flame-proof, will withstand a hydrostatic pressure of 59 psi and will function within a temperature range of 0 to 250F. Designed specifically for high- and low-pressure air-conditioning systems, *Thermaflex A* can be installed rapidly and can be snaked around structural interferences. *Flexible Tubing Corp., Guilford, Conn.*

### LIQUID ETCHING FOR MASONRY

• *Rust-Oleum Surfa-Etch* is a new liquid etching product for preparing concrete and cement floors and masonry surfaces for sealing and refinishing. The liquid cleans, etches and neutralizes the surface in one application by cleaning the pores of oils, greases, dirt and accumulated soap film and neutralizing the alkalis. Fume-free, odor-free and noninflammable, no special clothes need be worn while applying *Surfa-Etch*. *Rust-Oleum Corp., 2799 Oakton St., Evanston, Ill.*

(Continued on page 252)

# Specify rugged, easy-to-clean **KENFLEX** vinyl tile flooring for school rooms and corridors



A. I. A. 23-G

Flooring in school rooms and corridors must be able to withstand the punishment of thousands of scuffing, scraping feet... must be easy to clean, economical to maintain. KenFlex Vinyl Tile meets these demands: It can't be harmed by greases, oils, acids, alkalis or alcohols... dirt, grit and grime can't be ground into its rugged, non-porous surface. The brilliant KenFlex colors go clear through the tile... can't fade, dim or wear off. KenFlex cleans easily and economically... seldom needs scrubbing, except for extra gloss. So, for your next school construction or remodelling job, be sure to specify KenFlex Vinyl Tile.

KenFlex Vinyl Tile can be installed anywhere... even below grade over concrete in contact with the earth. Wherever it is installed, it adds light, bright beauty... infinite design opportunities... the charm of decorative ThemeTile inserts as shown in the modern school room above.

## Specifications and Technical Data

**INSTALLATION:** Over any smooth, firm interior surface: wood, plywood, radiant heated concrete slab, concrete in contact with the earth—on or below grade.

**THICKNESSES:** Laboratory and in-use tests have proven the wear-resistance and durability of vinyl flooring. Consequently, Standard Gauge (1/16") is recommended for normal residential and commercial uses. Where traffic will be severe, 1/8" KenFlex is suggested.

**SIZES:** Standard tile size is 9" x 9"... also available are 9" x 9" decorative ThemeTile inserts, and 1" x 24" Feature Strip in four solid colors.

### Approximate Installed Prices (per sq. ft.)

	Standard (1/16") Gauge	1/8" Gauge
KENFLEX all colors	40¢	65¢

KenFlex is available in 15 co-ordinated colors, all of which are marbled. Costs shown are based on a minimum area of 1,000 sq. ft. over cement underfloor.

**Samples and Technical Literature available** on request from any of the Kentile, Inc. Offices listed below. Or, contact the nearest Kentile Flooring Contractor. He's listed under FLOORS in the Classified Telephone Directory.

**KENFLEX**  
VINYL TILE<sup>®</sup>



KenFlex is the floor your clients know and want...

**BACKED BY MORE FULL-COLOR ADVERTISING THAN ANY OTHER VINYL TILE FLOOR**

**KENTILE \* SPECIAL KENTILE \* KENCORK \* KENRUBBER \* KENFLEX \* KENFLOR**

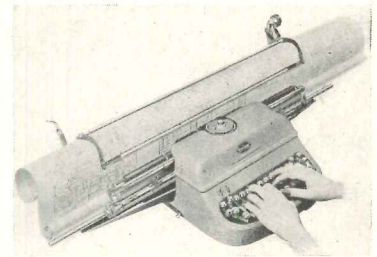
\*REG. U. S. PAT. OFF.

KENTILE, INC., 58 SECOND AVENUE, BROOKLYN 15, NEW YORK \* 350 FIFTH AVENUE, NEW YORK 1, NEW YORK \* 705 ARCHITECTS BUILDING, 17TH AND SANSON STREETS, PHILADELPHIA 3, PENNSYLVANIA \* 1211 NBC BUILDING, CLEVELAND 14, OHIO \* 900 PEACHTREE STREET N.E., ATLANTA 5, GEORGIA \* 2020 WALNUT STREET, KANSAS CITY 8, MISSOURI \* 4532 SO. KOLIN AVENUE, CHICAGO 32, ILLINOIS \* 4501 SANTA FE AVENUE, LOS ANGELES 58, CALIFORNIA

(Continued from page 248)

**OFFICE EQUIPMENT**

• *Colorama* is a new line of 50 colored pencils developed to suit the needs of artists, engineers, draftsmen, and businessmen. A new *mechanical marking pencil* has also been introduced which, the manufacturer claims, will write on any surface. *Eberhard Faber Pencil Co.*, 37 Greenpoint Ave., Brooklyn 22, N. Y.



*Vari-Typer can letter wide tracings*

• The *Vari-Typer Engineering Model* is designed to letter tracings of 12 ft or more in length as well as small, letter-head tracings. Types are instantly changeable in various styles and sizes, including sans serif drafting styles. *Ralph C. Coxhead Corp.*, 720 Frelinghuysen Ave., Newark 5, N. J.

**ACOUSTICAL TILE**

• *Owens-Corning Fiberglas Corp.* offers a perforated acoustical ceiling tile in an irregular scattered pattern. *Fiberglas Random Perforated Acoustical Tile* is available in 12 by 12 in. and 12 by 24 in. sizes. Its painted surface is washable and can be repainted as frequently as desired. The manufacturer states that in addition to its noise-reducing efficiency, the tile is firesafe, dimensionally stable and lightweight. *Owens-Corning Fiberglas Corp.*, Toledo, 1, Ohio.

• *Forestone Fissured Fiber Acoustical Tile* is said to have a sound absorption coefficient equal to mineral tile or perforated fiber tile. The tile has the appearance of travertine, and has a flame-resistant, washable finish. *Simpson Logging Co.*, 1010 White Bldg., Seattle 1, Wash.

(Continued on page 256)

**INSURANCE SAVINGS ALONE**  
 will pay for an  
**ALGRIP**  
**Safety Floor**



Slipping accidents end immediately and insurance costs are chopped when ALGRIP Abrasive Rolled Steel Floor Plate is installed in any plant.

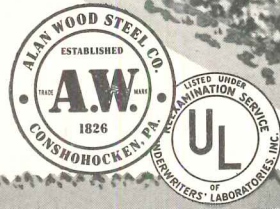
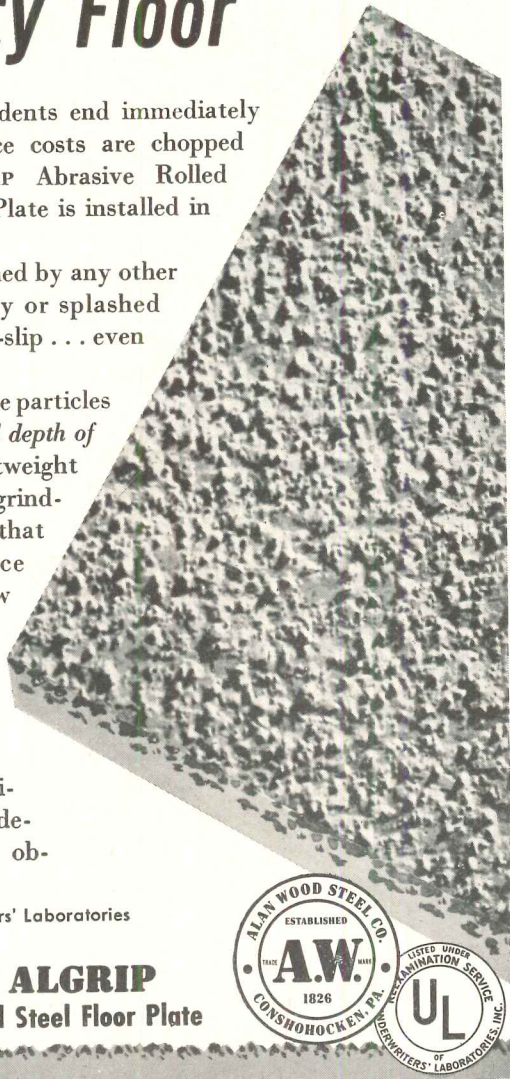
ALGRIP's safety is unmatched by any other material because wet, dry or splashed with oil, ALGRIP stays non-slip . . . even on steep inclines.

Hundreds of tiny abrasive particles impregnated to a controlled depth of penetration into tough, lightweight steel plate give ALGRIP a "grinding-wheel" grain surface that never wears smooth since hard use only exposes new gripping particles . . . an exclusive ALGRIP feature.

ALGRIP foot safety actually costs nothing, because it pays for itself in savings on insurance premiums. Write today for full details. There's no cost or obligation.

ALGRIP is Underwriters' Laboratories approved for safety.

**A.W. ALGRIP**  
 Abrasive Rolled Steel Floor Plate



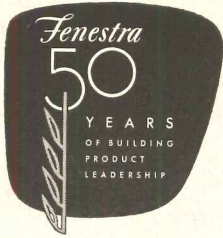
**ALAN WOOD STEEL COMPANY**  
 CONSHOHOCKEN, PA.

Please send Booklet AL-19 on how ALGRIP can cut costs and stop accidents.

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

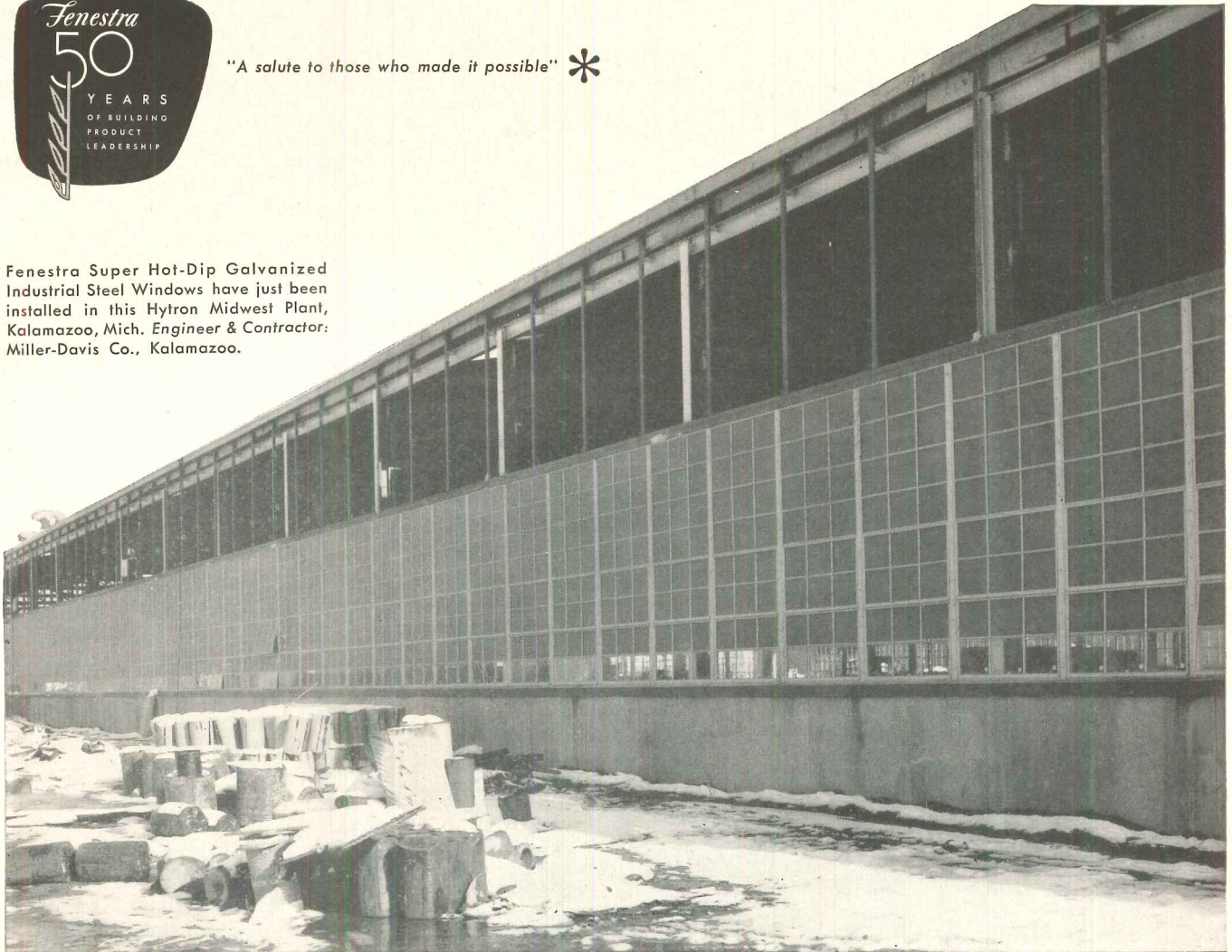
Address \_\_\_\_\_

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



"A salute to those who made it possible" \*

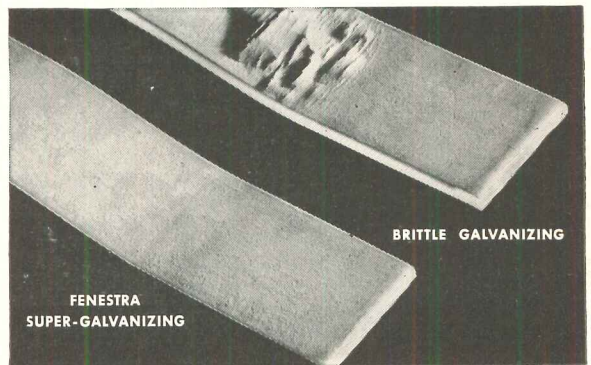
Fenestra Super Hot-Dip Galvanized Industrial Steel Windows have just been installed in this Hytron Midwest Plant, Kalamazoo, Mich. *Engineer & Contractor:* Miller-Davis Co., Kalamazoo.



## They've just finished installing an annual saving here

These Fenestra\* *Super* Hot-Dip Galvanized Industrial Steel Windows *cost no more than regular steel windows with two inside-outside field coats of paint!* And they will probably *never* need painting. That's a saving of thousands of dollars in paint and painting labor—every few years—for the life of the building.

Fenestra has the only plant and equipment in America especially designed for the highly specialized job of window galvanizing. For complete details on Fenestra Super Hot-Dip Galvanized Industrial Steel Windows, call your Fenestra representative—he's listed in the phone book yellow pages—or write the Detroit Steel Products Company, Dept. AR-8, 2252 East Grand Blvd., Detroit 11, Michigan. \*®



BEND TEST shows why Fenestra Steel Windows are called Super Hot-Dip Galvanized. When two pieces of galvanized steel are bent, then straightened, some types of galvanizing crack open, leaving the steel vulnerable. The Fenestra piece stays protected.

\* Your desire for windows of strong material that would resist rust, resulted in Fenestra Super Hot-Dip Galvanized Industrial Steel Windows—a great advancement in building products.

*Fenestra*

**SUPER HOT-DIP GALVANIZED INDUSTRIAL STEEL WINDOWS**

(Continued from page 252)

LIGHTING

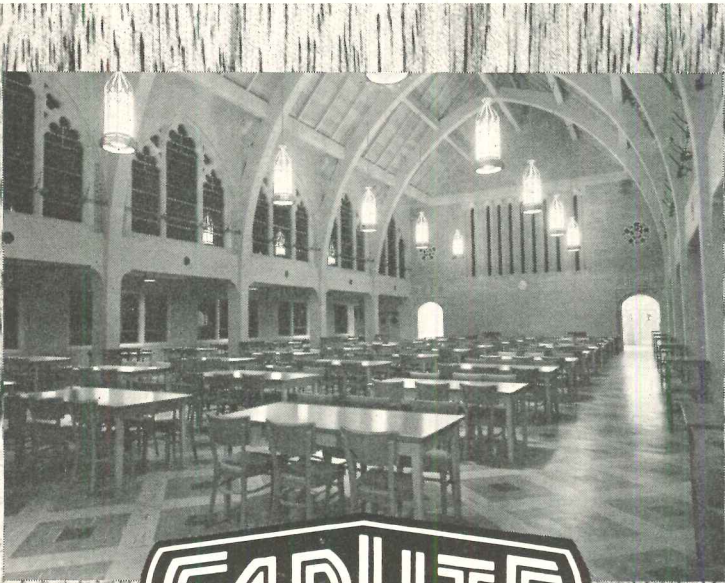
• The *LPI Arealux*, series 164 luminaire, for interiors where low brightness contrast is desired, can be either surface-mounted or suspended on hangars and can be mounted singly, in a continuous row or side to side. Three lengths are available: 4, 6, and 8 ft. The louvers are hinged in 4-ft sections and are finished in high gloss-white enamel. *Lighting Products Inc., Highland Park, Ill.*

• *Thinline* Luminaires are designed to provide glarefree illumination for offices, stores, schools and institutions. The manufacturer offers ultrashallow contour, "Evenglo" plastic sides and louvers which are reported to provide higher transmission of light combined with diffusion for lower surface brightness. Units may be suspended, mounted individually or in continuous rows and are available in eight 4-ft and two 8-ft luminaires, in two or four lamps. *Mitchell Manufacturing Co., 2525 Clybourn Ave., Chicago, Ill.*

• Prescolite Manufacturing Corp. recommends the new *Indirect Luminaire* for schools, stores, hospitals and offices. Available in either pendant or ceiling type units for use with 300 to 500 watt silvered bowl incandescent lamps, the pendant units come with patented "hang straight" assembly which allows a 52 deg latitude of swing for use on slope ceilings.

Color correct lighting is reported possible with Prescolite's new series of *Even-Glo* luminaires. Available in either pendant or ceiling type units, the fixture is designed to use 300 to 500 watt inside frosted incandescent lamps. It has 3/16-in. glassware annealed for strength and is available in 18-in. or 21-in. bowls. *Prescolite Manufacturing Corp., Berkeley, Calif.*

• Four new lighting fixtures have been introduced by *Silvray*. The *Silvray Visionaire* is a fluorescent fixture designed for wall mounting and has two types of front reflector panels. The "Giant" *Silver Dot* is a recessed downlight designed for pinpoint lighting through a precisely controlled beam of light. The *Duo-Color-Ring* is a fixture with two concentric rings and is available in two models: one providing a direct-indirect light distribution and the other a totally indirect light distribution. The *Sky-like 5300* is a general style which consists of several designs, all specifically to control and redirect the light distribution of the silvered bowl lamp. *Silvray Lighting, Inc., 100 West Main St., Bound Brook, N. J.*



ATTACHMENT OF A LITING OF MONEY  
Guaranteed by  
Good Housekeeping  
IF NOT AS ADVERTISED THEREIN

...the very best in high pressure  
**PLASTIC LAMINATES**

You — and your clients — will be better satisfied when you specify Farlite for table tops (as illustrated above) . . . for counter, desk, bar, and soda fountain tops . . . for partitions and paneling . . . for decorative interior treatments . . . for a host of other uses. Its glass-smooth, non-porous surface is sanitary, easy to clean, permanently beautiful . . . resists heat and burning cigarettes. . . . is



not affected by alcohol, grease, fruit acids, mild cleaning solutions . . . will not chip or fade. Available in a range of more than 50 Farlite colors and patterns, including attractive wood grains, in 1/16" thick sheets as well as complete 5-ply warp-resistant tops and panels 13/16" and 1-1/4" thick . . . can also be made up to your specifications. Write for folder, name of nearest distributor.

Section showing superior 5-ply construction of Farlite Tops. Core is staved lumber with hardwood cross banding. This construction, used in finest cabinet work and flush doors, is extremely warp-resistant and provides extra smooth, flat surfaces. Farlite surface and backing sheets are Resin Bonded to the core. Edges finished with either Farlite or metal.

PLASTICS DIVISION  
**FARLEY & LOETSCHER MFG. CO., DUBUQUE, IOWA**

TRUSSLESS BUILDING

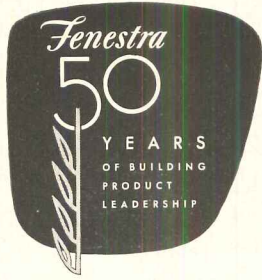


*Wonder Building, 40 ft wide, for storage at University of Illinois*

• A 100-ft-wide, 35-ft-high building that is a trussless, clear span arch has been erected by the *Wonder Building Corp.* Durability test results published by the manufacturer claim that the building will withstand all types of weather conditions. The firm has been marketing 20-, 30-, 40-, 50-, and 60-ft-wide buildings heretofore for a wide range of uses. *Wonder Building Corp. of America, 30 N. LaSalle St., Chicago, Ill.*

(Continued on page 260)

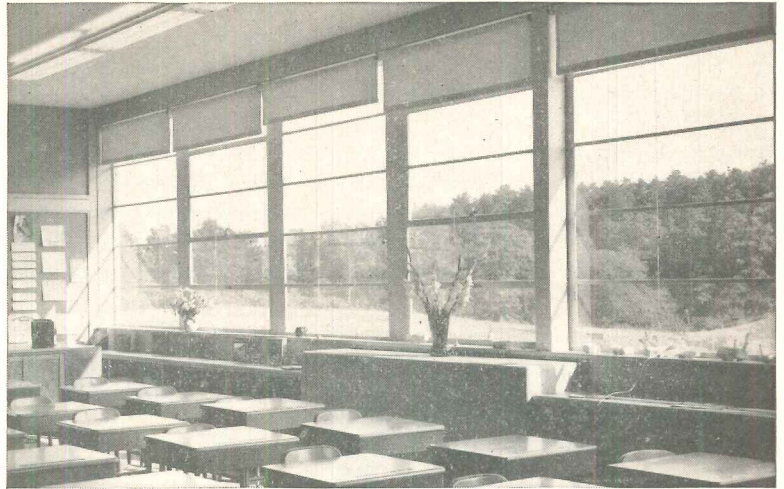




"A salute to those who made it possible" \*

## ► Better daylight for every student . . .

Look at the wonderful "learning atmosphere" here. Fenestra\* Intermediate Steel Windows fill this elementary school room with eye-easy daylight. They help create an open friendly feeling for students who study here. With Fenestra, you see, you get extra glass area per window, because the window frames are designed to be strong and rigid without being ponderous. And tilt-out vents give you controlled ventilation.

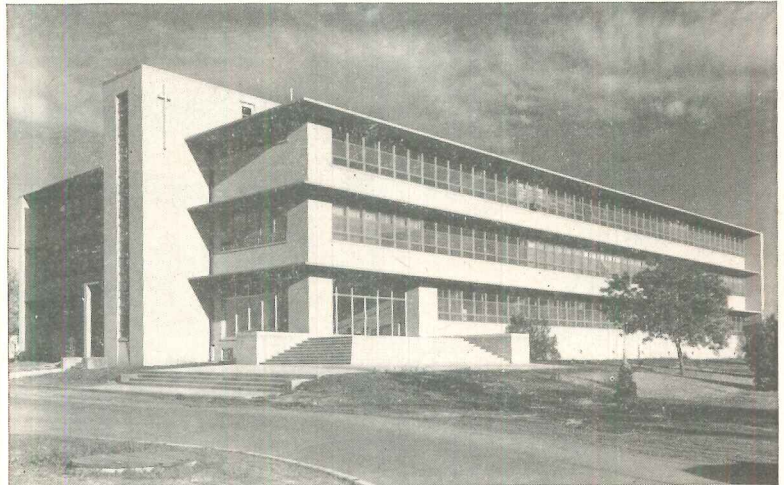


Elementary School at Kingston, Mass. Architects: Bogner & Richmond, Cambridge, Mass. Contractors: L. C. Blake Construction Co., Milton, Mass.

## ► More architectural beauty inside and out . . .

Notice the clean, modern, architectural lines of this university science building with its Fenestra Intermediate Steel Windows.

*Note: These windows will always look new and they will never need painting! They are Fenestra Super Hot-Dip Galvanized Steel Windows. They will save thousands of dollars in paint and painting labor and they cost no more than ordinary steel windows with two inside-outside field coats of paint!*



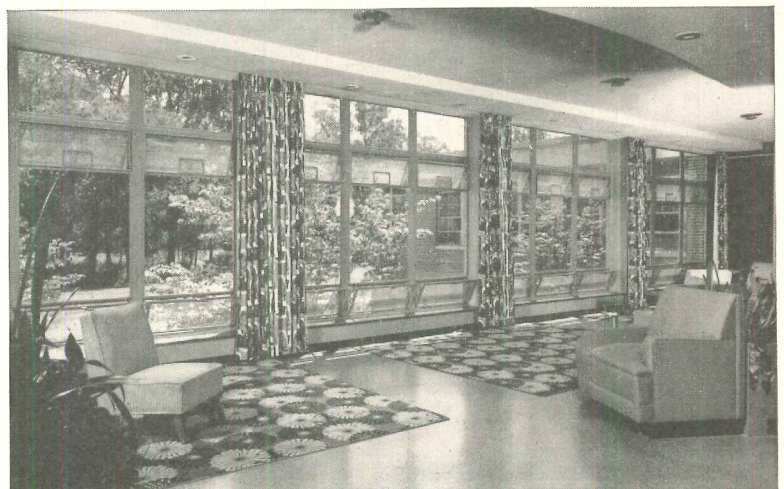
Science Hall at St. Mary's University, San Antonio. Architects: Julian & White—San Antonio. Contractors: Lynn & Morsey—San Antonio.

## ► For any size or style of school . . .

Here's an unusual Fenestra Window treatment in a college building.

Fenestra Intermediate Steel Windows offer architects amazing flexibility of design. They offer students a better atmosphere in which to learn. And they help make any school a proud part of its community.

*Check on Fenestra Today*—Call your Fenestra Representative, listed in the yellow pages of your phone book. Or write Detroit Steel Products Company, Dept. AR-8, 2252 East Grand Blvd., Detroit 11, Mich. And ask for your free copy of *Better Classroom Daylighting*.



Continuing Education Building, Michigan State College, East Lansing. Architect: Lewis J. Sarvis, Battle Creek. Contractor: Reniger Construction Company, Lansing.

\* Your need for windows that would give better school daylighting, protected ventilation and lower maintenance costs encouraged us to develop today's Fenestra Intermediate Steel Windows . . . a great advancement.

**Fenestra** | **INTERMEDIATE STEEL WINDOWS**

(Continued from page 256)

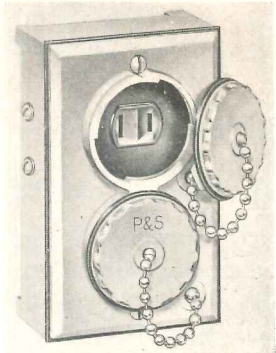
**AUTOMATIC GARAGE DOORS**

• The *Alliance Lift-A-Dor* opens and closes overhead type garage doors by means of a pushbutton on the car dash. A radio impulse transmitter installed under the hood of any automobile and tuned to a receiver installed in the garage activates a motor mechanism to raise or lower the door instantly. It also locks and unlocks the door and turns the light on or off automatically. *Alliance Manufacturing Co., Alliance, Ohio.*

• *Lectro Door Company's* automatic garage door can be operated by one of three methods: a pneumatic tube device which stretches across the driveway and responds to the pressure of car wheels; an electric key method which operates from a residence lamp post along the driveway; a separate unit within the automobile. Among the accessories included in all types, approved by Underwriter's Laboratories, is a safety light that automatically turns on as the garage door opens. *Lectro Door Co., 3709 W. Jefferson, Los Angeles, Calif.*

**ELECTRIC OUTLET**

• *P&S No. 4530* duplex weatherproof electric outlet designed for surface mounting has a cast aluminum box with plates and caps of aluminum alloy.



*Duplex weatherproof electric outlet in aluminum for surface mounting*

To install the device a hole is drilled through siding or wall into a basement or other accessible inside space. The cable is fed from inside the house through a rubber grommet into the box where it is held by a clamp. Provision is made for a third wire ground where desired. Cover and plate gaskets and rubber grommet seal outlet against the elements. *Pass and Seymour, Inc., Syracuse 9, N. Y.*

**KITCHEN CABINETS AND SINKS**

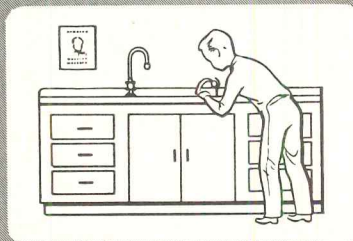
• The evolution of the kitchen as a "living room" has led to the introduction of a new concept in kitchen styling — cabinets and sinks combining the utility of steel and the beauty of wood. The wood doors are interchangeable with the steel doors of the company's standard line. The new styles also include a "Coppertone" finish on cabinet drawers and sink fronts to blend with either birch wood or traditional white doors. *American Kitchens Div., Arco Mfg. Corp., Connorsville, Ind.*

**HEAT-FLOW TESTER**

• The *Joist-Space Heat-Tester*, a new scientific apparatus for making comparative heat-flow tests of various thermal insulations, is being offered for 2 weeks' free use to members of the building industry interested in minimizing undesired heat loss in building structures in winter and heat gain in summer. The tester simulates actual joists and building spaces and employs all three methods of heat flow. *Infra Insulation, Inc., 525 Broadway, New York 12, N. Y.*

(Continued on page 264)

**In School**



**CLASSROOM · LABORATORY · SHOP**

**HAWS "Deck Type" Drinking Fountains**

**answer every demand**



**HAWS Model No. 2000 Series Pat. Applied for**

Accommodating all schoolroom Drinking Fountain demands, the HAWS No. 2000 Series "Deck Type" Receptor mounts practically any combination of HAWS bubbler-type, pantry or fill-glass faucets—with vandal-proof fittings. Finished in acid resisting white enamel, this utilitarian shaped, cast iron Receptor is all but indestructible. Also available in stainless steel.

A raised, sloped, stainless steel rim provides water-tight mounting and prevents water from running onto table or cabinet tops. Shown with two fixtures, Receptor is available with one... or a combination hot and cold water faucet.

*Write today for completely illustrated brochure.*

**HAWS DRINKING FAUCET CO.**  
1443 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA

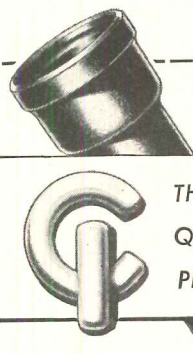


**Specify...install...use  
CAST IRON SOIL PIPE  
AND FITTINGS  
Best in the long run**

**JUST  
OFF  
THE  
PRESS!**

**FOR ARCHITECTS WHO  
RECOMMEND  
BETTER MATERIALS**

Here is a 12-page, 8½ by 11 booklet that shows in photographs and printed facts exactly how **Cast Iron Soil Pipe** contributes to lasting satisfaction when used for soil, waste and vent lines and for house sewers. What can happen to non-metallic materials is also shown in picture and authenticated captions. Here is printed salesmanship to back up the quality and permanence story you are constantly telling your clients. Use the coupon at the right to order your advance copy immediately.



**CAST IRON SOIL PIPE INSTITUTE**

Dept. AR-8, 1627 K Street, N. W.  
Washington 6, D. C.

- Send me an advance copy of your newest booklet, "Best in the long Run."
- Our local \_\_\_\_\_ Club wants to see your movie "Permanent Investment." Tell us how to arrange for showing.

Name \_\_\_\_\_

Address \_\_\_\_\_

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

**USE PERMANENT CAST IRON SOIL PIPE AND FITTINGS**

## MODERN SCHOOL REST ROOM DESIGN

*Gets Everything  
off the Floor...*



American-Standard Wall-type Toilets carry out the off-the-floor design of Weisart Ceiling-hung compartments. The Zurn System, used to install the toilets in this photo, simplifies rest room layout and opens the way to savings in the overall cost of building.

# WEISART COMPARTMENTS

- FOR SANITATION
- FOR FINE APPEARANCE
- FOR LOW COST MAINTENANCE

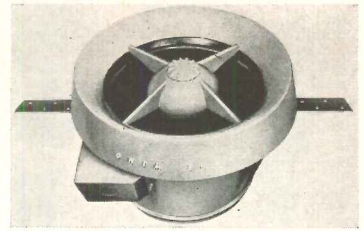
**P**ARTICULARLY in schools where appearance, sanitation and ability to stand hard usage are vital, Weisart compartments are the logical choice. They have triple protection of (1) flush steel construction with edges locked and sealed, galvanized surface "smooth as glass" (2) Bonderized for additional corrosion resistance and positive adhesion of enamel (3) synthetic primer and enamel separately baked combining a highly protective surface with lustrous beauty in your choice of 24 colors. Ceiling-hung Weisart compartments leave floors clear for cleaning... cut maintenance. For detailed information write

**HENRY WEIS MFG. CO., INC.**, 803 Weisart Bldg., Elkhart, Indiana

## ASH PRODUCTS

(Continued from page 260)

### HOME VENTILATOR



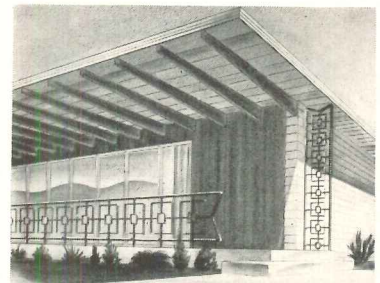
Home ventilator, 5½ in. high, can be installed in restricted joist spaces

- The new *Trade-Wind* home ventilator employs the axial flow principle of air movement which has been used extensively in industrial applications. Measuring only 5½ in. high, the ventilator can be installed in restricted joist spaces. Fully exposed conduit box simplifies electrical work. The ventilator develops 300 cfm. *Trade-Wind Motorfans, Inc.*, 7755 Paramount Blvd., Rivera, Calif.

### SELF-CAULKING TAPE

- *Mellok* bonding and self-caulking tape is reported to seal aluminum sheets together without the aid of nails and other fastening devices, and takes the place of adhesives and caulking compounds usually used to seal cracks between the sheets. Available in rolls from 1 to 50 in. wide, the tape is sandwiched between the sheets of aluminum to be joined. Heat is applied with a heating iron. *Mellok Division, Sound Electronics, Inc.*, 129 East 124th St., New York, N. Y.

### RAILINGS AND COLUMNS



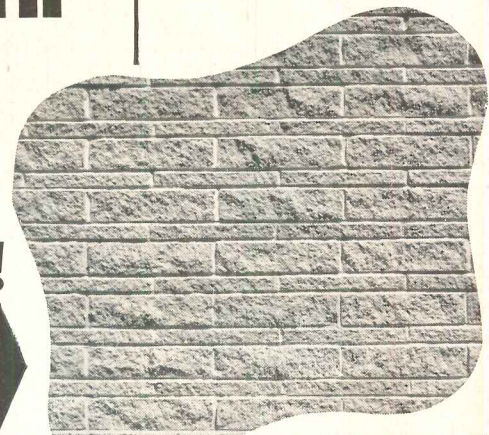
Railings, columns are prefabricated

- *Contemporary* railings and columns are furnished fabricated except for top and bottom railings, which must be drilled and cut. Rails may be embedded in cement or inserted in floor sockets which are screwed to floor. All elements are interchangeable. *Kleesons Inc.*, *Robertsville, Ohio.*

# To be sure...build with

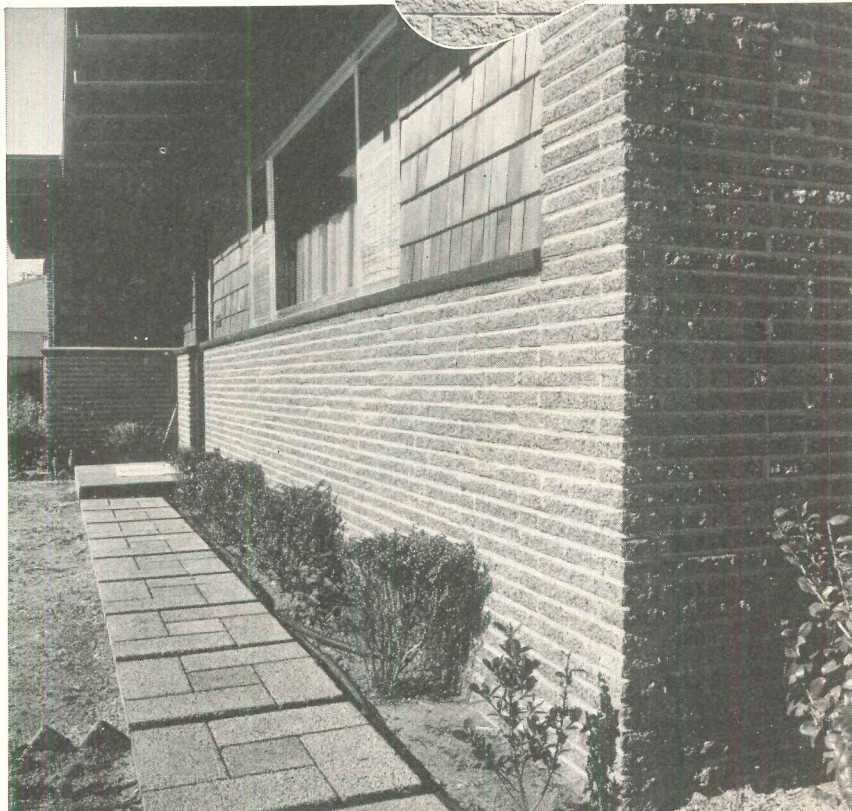
# BES-STONE

## ...the Split Block with Character!



**Its "QUARRIED STONE" CHARACTER  
Combines BEAUTY and  
PERMANENCE at Low Cost!**

To be sure, it pays to plan and build with BES-STONE Split Block. Pleasing, permanent colors . . . distinctive sizes for varieties of modular Ashler patterns satisfy the creative aims of architects, builders and owners. As veneer or solid masonry, they are RIGHT for homes and many other structures . . . commercial, public, industrial, institutional buildings . . . exteriors and interiors! You'll think of many more uses in terms of garden walls, planting-areas, fireplaces, barbecues. BES-STONE is fire-safe and storm-safe . . . makes a very attractive wall . . . is immune to vermin or rodent attack. And it's economical . . . requires no maintenance.



BES-STONE is the product of the BES-STONE Block Splitter. Contact your nearby Products Plant for literature, or write to the Besser Mfg. Co., Box 173, Alpena, Mich.



Architecturally and structurally simplified by MODULAR SIZES.



**BESSER**  
50<sup>th</sup> Anniversary  
1904-1954

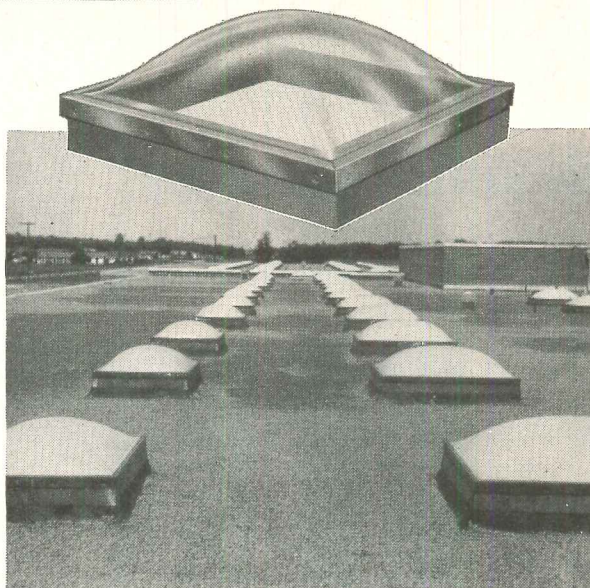
## ..a Half Century of Concrete Masonry Progress!

(Continued from page 208)

**THE ARISTOCRAT OF ALL PLEXIGLAS® DOMELITES**

the  
best in  
modern  
daylighting

most efficient  
low cost



COVINGTON ST. ELEMENTARY SCHOOL, LAURINBURG, N. C.

**NATURAL LIGHT EXCELS ALL OTHER LIGHT . . .**  
Why Not Pipe It Into Your School-Rooms,  
Your Hospitals, Your Factories — Through

**vanco**

*domelites*

Light up your corridors and your workrooms . . . Bring daylight into those interior rooms and dark corners — IT PAYS —

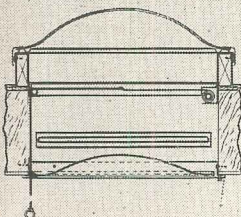
**Insist on VANCO domelites . . here is why —**

1. VANCO Domelites are designed and manufactured by E. Van Noorden Company, makers of the famous VANCO Skylights since 1873 — over 80 years of know-how experience are incorporated in their VANCO Domelite design.
2. VANCO spells excellence of workmanship and reliability — VANCO Domelites spell permanency.
3. PLEXIGLAS® dome and metal frame are factory assembled, packed and shipped as complete unit. No haphazard field assembly.
4. Each unit guaranteed weather-tight.

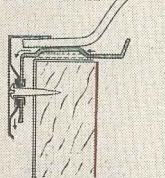
VANCO Ceilinglites, when used with Domelites, provide excellent insulation. Clear Plexiglas® Domelite and translucent Plexiglas® Ceilinglite make the best combination for diffusing light.

- DOME-AIR VENTILATING DOMELITE — OTHER VANCO PRODUCTS —
- UP-BLAST VENTILATORS
- CUPRAFACE AND CUPRATWEEN
- DURATITE SKYLIGHTS

Standard Details of VANCO Domelite — Ceilinglite, Skyshade and Fluorescent Light Combination



FRAME DETAIL



**E. VAN NOORDEN**  
*Company*

Skylight Designers  
and Constructors  
since 1873  
100 MAGAZINE STREET  
BOSTON 19, MASS.

Send for your copies of free literature. Avail yourself of VANCO's free Daylight Engineering Service.

**AIR CONDITIONING**

- Two folders are available describing Chrysler air-conditioning units:

*Chrysler Airtemp* shows different models for commercial and industrial installations. 6 pp, illus.

*Chrysler Airtemp "PowerFull"* gives specifications for window units for residential and commercial use. 6 pp, illus. *Chrysler Airtemp Div., Chrysler Corp., Dayton, Ohio.\**

- Cutaway drawings and installation sketches are featured in the Worthington brochure on its *Year-round Home Air Conditioner*. 8 pp, illus. *Worthington Corp., Harrison, N. J.\**

- Detailed specifications and a dimension table are included in a brochure describing the *Hayes Kool-Temp evaporative air coolers* for industrial and commercial installations. The basic operation and breakdown of parts are also included. *Hayes Furnace Mfg. & Supply Co., 2929 S. Fairfax Ave., Los Angeles 16, Calif.*

**COOLING TOWERS**

- *Commercial Cooling Towers* contains new material on air-conditioning cooling tower applications, specifications, selection and installation. Included are operating characteristics of 20 standard cooling towers, ranging in capacity from 5 through 60 tons, with several pages devoted to tables, drawings and graphs. 16 pp, illus. *Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.*

**DIFFUSERS—CEILING, BASEBOARD**

- Ceiling air diffusers for residential heating and cooling, described in *Bulletin KH-76*, are illustrated photographically and diagrammatically to show duct layouts and installation details. Selection charts, lighting fixture combinations and adaptations, and typical interior views are included. 16 pp, illus. *Connor Engineering Corp., Danbury, Conn.\**

- Performance data and specifications are presented in a new 4-page pamphlet on *Lima extended baseboard perimeter diffusers* for heating and cooling. Dimensions and installation drawings are also included. *Lima Register Co., Lima, Ohio.*

(Continued on page 270)



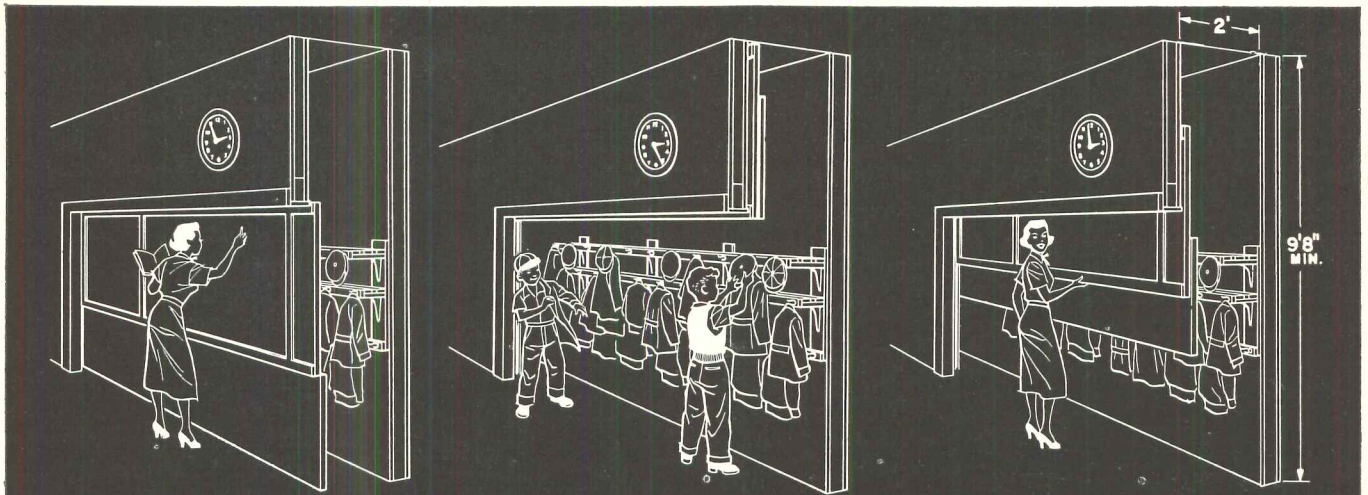
Barcol.

# WARDROBEdoor

**more flexible design for  
new or remodeled classrooms  
...more usable floors and walls!**

School officials and architects everywhere report that Barcol WARDROBEdoors provide more working wall space for chalkboard or tackboard . . . and more usable floor space. Full-view opening gives teacher control of "cloakroom rush." Maintenance is easier, because floor is completely clear of pivots or hinges.

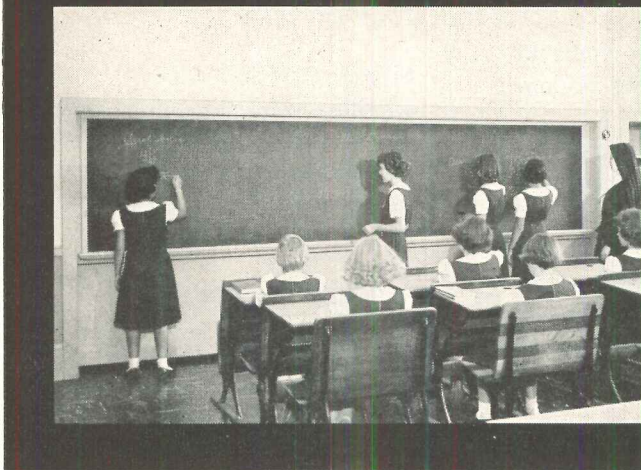
Barcol WARDROBEdoor dimensions are 10' or 12' wide and 6' high, requiring only 9' 8" ceilings (3' 8" above opening). Depth can be as little as 2'. Standard coat hooks and shelves or custom-built storage arrangements provided. Advertised in leading school publications. Ask your Barcol distributor.



**CLOSED** it's a chalkboard

**OPEN** it's a wardrobe

**ROLLS EASILY** up or down



**ST. AUGUSTINE SCHOOL**, Rochester, N. Y. finds large extra blackboard a valuable feature. Architect: Frank Quinlan.



**REMODELED HEUVELTON CENTRAL SCHOOL** demonstrates how modern space saving equipment increases usefulness of classroom floor and wall space. Architect: John C. Ehrlich.

**INSTALLATIONS EVERYWHERE** acclaim the practical advantages of WARDROBEdoor. For example, in the East there are installations in Marion, Somerset, Mass.; Hoboken, N. J.; Heuvelton, New Rochelle, Niskayuna, No. Tonawanda, Rochester, Romulus, Skaneateles, Snyder, Utica, N. Y.; Richmond, Va.; So. Charleston, W. Va.; in the South at LaGrange, Ga.; Louisville, Ky.; in the Midwest at Cantrall, Chicago, Fancy Prairie, Rockford, Streator, Yorktown, Illinois; Hobart, Ind.; Mt. Pleasant, Iowa; Benton Harbor, Dearborn, So. Haven, Wells, Mich.; Lakefield, New Prague, Watertown, Minn.; Lincoln, Nebraska; Minot, No. Dakota; Columbus, London, Ohio; Cudahy, Wisc.; in the West at San Bruno, Calif.; Missoula, Mont.; Forest Grove, Ore. Complete list of schools and architects on request.



Call your Barcol WARDROBEdoor distributor listed under "Doors" in telephone directory or write for WARDROBEdoor information.

**BARBER-COLMAN COMPANY, DEPT. P48, ROCKFORD, ILL.**  
OVERdoors and Operators • Automatic Controls • Industrial Instruments  
Air Distribution Products • Aircraft Controls • Small Motors • Molded Products • Metal Cutting Tools • Machine Tools • Textile Machinery

# 4 times faster than hand lettering!

...that's how this office typist can do the work of 4 DRAFTSMEN!



With skilled draftsmen as scarce as they are, it's an enormous waste of time and money to assign them to a chore that can be done faster and better...yes, better...by your office typist.

She'll do a neater, sharper, more legible job on the Vari-Typer Lettering Machine...and she'll do it 4 to 5 times faster than hand lettering by your skilled draftsmen.

Easy as ABC to operate. Universal keyboard, with hundreds of instantly changeable type faces and sizes make Vari-Typer useful and economical for other jobs, too...composing printer's style text matter for reproduction by any duplicating method...in literature, specification sheets, instruction manuals, etc.

## Vari-Typer LETTERING MACHINE

RALPH C. COXHEAD CORPORATION  
720 Frelinghuysen Ave., Newark 5, N.J.

Please send me Vari-Typer Booklet E-5

NAME.....

COMPANY.....

ADDRESS.....

CITY.....ZONE...STATE.....

Body copy produced on DSJ Model. Headlines photo-composed on the HEADLINER.

SEND COUPON FOR FREE LITERATURE.

## AEH LITERATURE

(Continued from page 268)

### HEATING

- *Selectotherm*, a high-vacuum steam-heating system which offers "single-dial" control of heat output for new or existing multiroom buildings, is described in a bulletin titled *Tune in with the Weather*. Complete description, performance and specification data on the system are included. 16 pp, illus. *Illinois Engineering Co., Chicago 8, Ill.*

- *Application of Gas Unit Heating* is a pocket-size booklet presenting hints on heater selection and installation, a schematic diagram explaining how a gas unit heater works, a heating survey outline, and instructions for estimating heat loss and computing gas line requirements. 20 pp, illus. *Reznor Mfg. Co., Mercer, Pa.\**

- Union Type MH packaged water tube steam generators are covered in *Bulletin MH 3-54*. Included are cutaway illustrations, installation photos, tube arrangement layouts, a photo-sequence story of actual shop assembly construction, auxiliary equipment available, and dimension tables for 13 standard sizes ranging in capacity from 10,000 to 40,000 lb of steam per hr. 14 pp, illus. *Union Iron Works, Erie, Pa.*

### STEAM GENERATORS

- Design and construction details, capacities, dimensions and weights of *Package Unit Steam Generators* are presented in *Bulletin PSG-1*. 12 pp, illus. *Henry Vogt Machine Co., Louisville, Ky.*

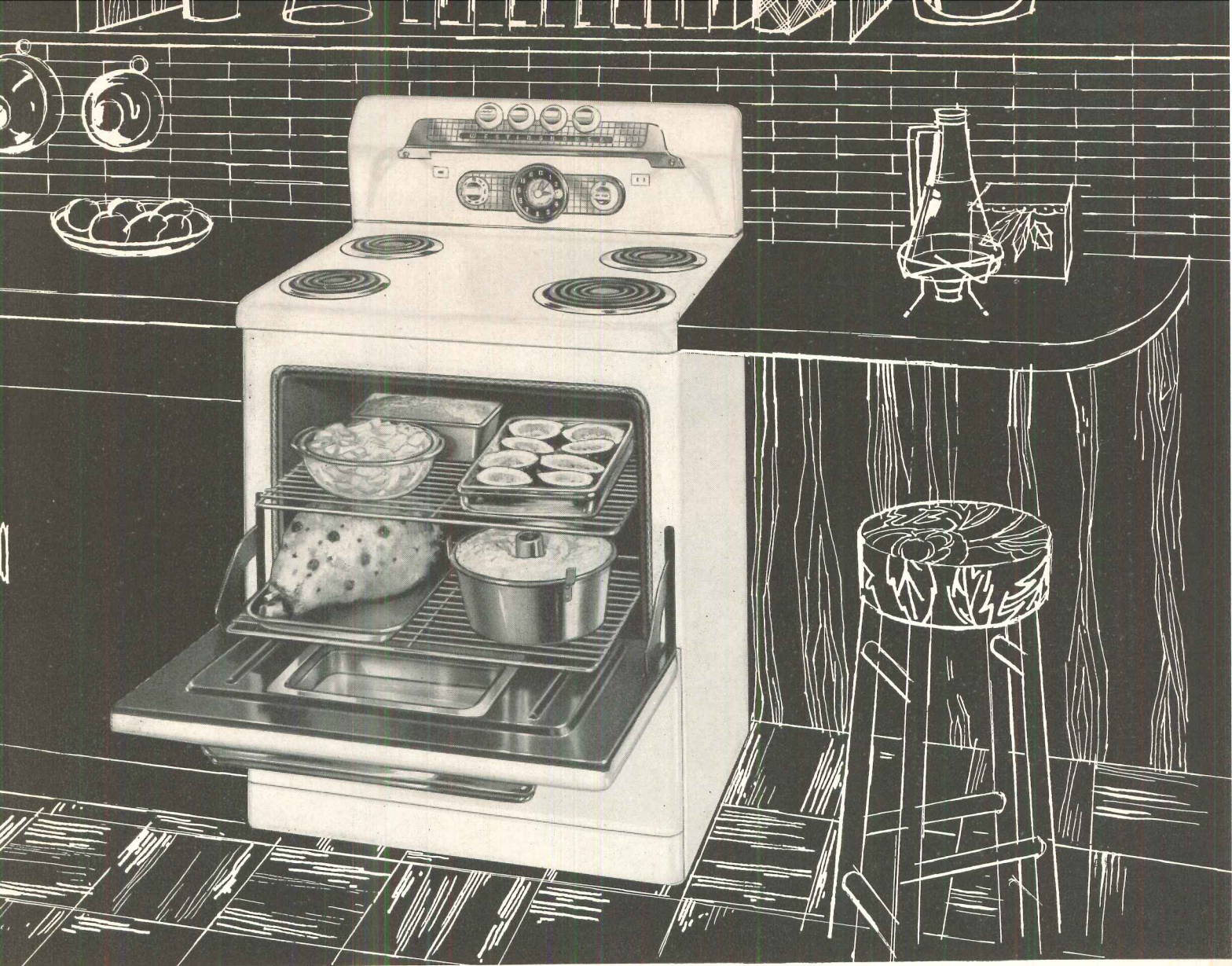
### STRUCTURAL PANELS

- Several pages of architectural drawings illustrating typical details of construction as well as general details and photographs of representative installations are included in a new 8-page brochure describing the new insulated and non-insulated *Porcel Panels*. *Ingram-Richardson Mfg. Co., Beaver Falls, Pa.\**

- *Structoglas* is described in an 8-page illustrated brochure giving technical fabrication and framing details. Photographs show recommended applications of the press-molded, polyester, glass-fiber panels. *Structoglas Div., International Molded Plastics, Inc., Cleveland 9, Ohio.\**

(Continued on page 274)





## Cue for Architects and Builders!

### 30-inch wide Westinghouse Electric Ranges have smashed all records in public demand

The sale and demand for these two new Westinghouse Ranges have been the most spectacular in many years.

And no wonder! They offer the largest ovens in the industry, regardless of range size . . . plus generous surface cooking capacity and many Westinghouse exclusives.

The Imperial 30 is a deluxe range that adds sparkle to your kitchens. The lower priced "Thirty" Model has exactly the same cooking capacity. Both are only 30 inches wide, facilitating efficient planning of kitchens.

Your prospects and clients have been reading about these speed-electric ranges in magazines and newspapers. They see them demonstrated by Betty Furness on television. They're pre-sold both on the appliances and on the Westinghouse brand name. Try one in the next house you build or plan. See how it makes your selling job easier.

Ask your Westinghouse Distributor for complete specifications, or write direct.

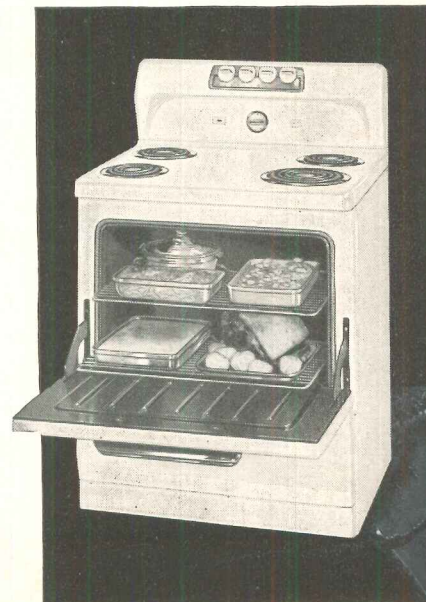
**WESTINGHOUSE ELECTRIC CORPORATION**  
Electric Appliance Division • Mansfield, Ohio

Makers of Refrigerators, Home Freezers, Ranges, Laundromats,  
Clothes Dryers, Dishwashers, Water Heaters, Vent Fans and  
Food Waste Disposers

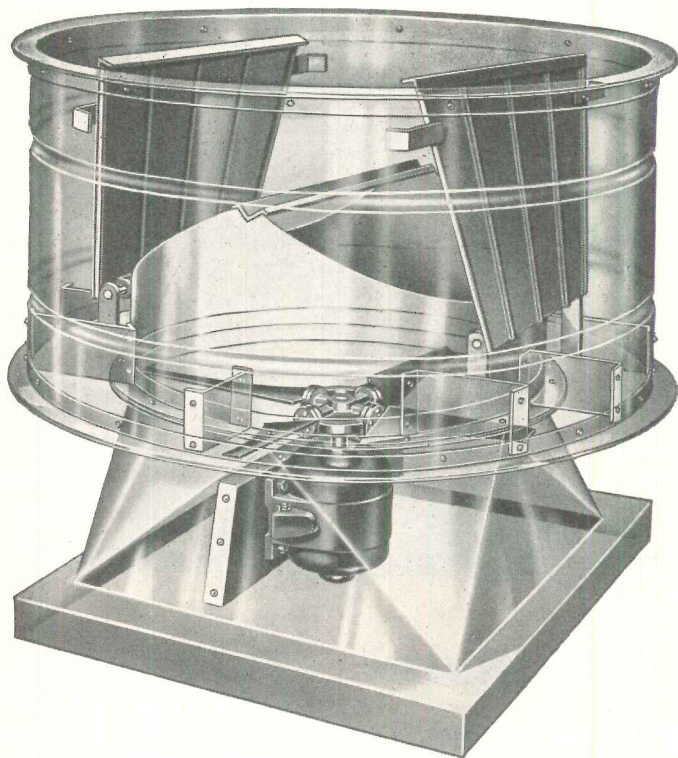
YOU CAN BE SURE ...IF IT'S **Westinghouse**

**IMPERIAL 30** features Look-in Door for its king sized Miracle Sealed Oven, Super Corox Unit that gets Red Hot in 30 seconds, Electric Clock, Automatic Oven Timer and Electric Minute Timer, fluorescent Platform Light.

**NEW "THIRTY"** has Miracle Sealed Oven, Tel-A-Glance Controls, Oven Signalite, Appliance Outlet, Single Dial Oven Control, 4 Corox Units, Broiling Pan and big Storage Drawer.



# FOR MAXIMUM EXHAUST



## INSTALL BURT F.E.F. POWER VENTILATORS

For fast, localized removal of high heat, smoke, fumes and dust, the Burt F.E.F. (Free Exhaust Fan) Ventilator does an outstanding job. Its absolute free opening channels air vertically upward at high velocity. Its specially designed Burt Axial Flow Fan provides a high volume of air delivery with efficiency and economy. Seven sizes and seventeen motors provide wide flexibility. See Sweet's for Burt F.E.F. data or write for Bulletin SPV-18.

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

# The Burt Manufacturing Company

48 East South Street, Akron 11, Ohio

MEMBER POWER FAN MANUFACTURERS ASSOCIATION

(Continued from page 270)

### INSULATING MATERIALS

- *85% Magnesia* tells how the material is produced, explains why it has high insulating value, points out where it can be used to advantage and goes into detail about special characteristics such as strength, water resistance and appearance. Both pipe and block insulation are covered, and data on physical and thermal properties are presented in tabular form. 12 pp, illus. *Johns-Manville, 22 East 40th St., New York 16, N. Y.\**

- Two new publications and three technical folders contain information about *vermiculite*:

*Versatile Vermiculite in Modern Industry* offers fundamental information on four sizes of vermiculite and lists a number of current uses in each category. 16 pp, illus.

*Vermiculite Loose-fill Building Insulation* describes the properties of vermiculite and how it is installed, with construction details and potential fuel savings data. 8 pp, illus.

*Poured-in-place Vermiculite Concrete over Vented Steel Roof Decks* describes a recent development that permits considerable flexibility in joist spacing and slab thickness. 4 pp, illus.

*Vermiculite Concrete Roof Decks over Paper-backed Wire Lath* is the title of two folders covering steel or concrete joist construction where the joist spacing does not exceed 32 in. on centers. One folder is an alternate designed for regions where temperatures are 50°F or above during the pouring and curing season. 4 pp, illus. *Vermiculite Institute, 208 S. LaSalle St., Chicago 4, Ill.*

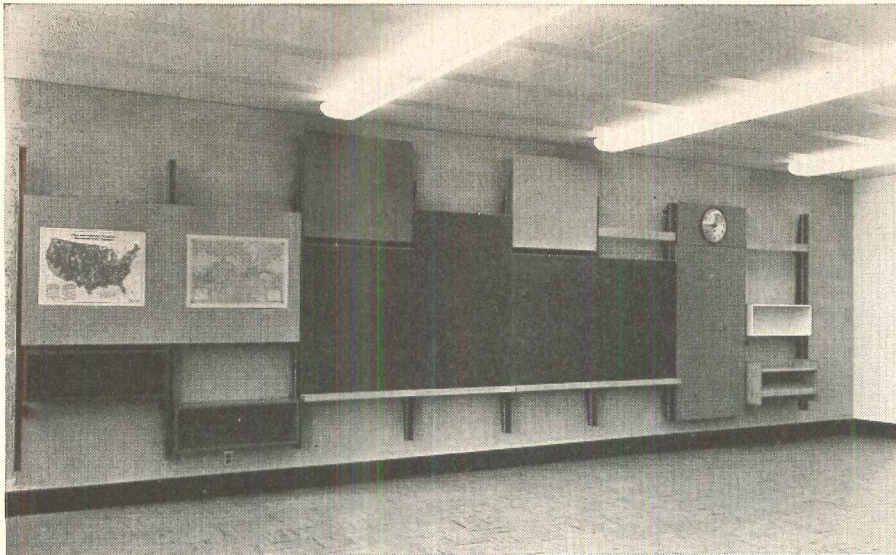
### AIR CLEANERS

- Construction features of *Electro-Air Electronic Air Cleaners* are supplemented in an 8-page brochure by specification tables, dimensional drawings and operation and testing diagrams. *Electro-Air Cleaner Co., 1285 Reedsdale St., Pittsburgh 33, Pa.*

### LITERATURE REQUESTED

H. A. Cepeda, Villa Ballester, Buenos Aires, Argentina, S. A.

Jaques Hellio, Architect, 212 rue Faider, Bruxelles, Belgium.



ARCHITECTS: KETCHUM, GINA & SHARP

## “Live Walls”—A great new teaching aid made possible by Armorply Chalkboard\*

Unique “Moduwall” installations in three new schools, Mineola School District, N. Y., feature new guaranteed-for-the-life-of-the-building Armorply Chalkboard.

The Moduwall Company of New York has developed a “live wall” treatment of the old school blackboard that is winning the praises of teachers and school heads alike. The kids think it’s great, too!

This new device makes it possible to adjust the height of the chalkboard to the height of the child without costly alterations. Any schoolroom can now be used for any age group of pupils in a matter of minutes.

Armorply Chalkboard was specified because it more than met all the exacting requirements for an installation of this type. Armorply Chalkboard has a tough porcelain-on-steel† face that is bonded to Weldwood plywood. It defies abrasion; can’t buckle, warp, chip or shatter. Its cool green surface takes chalk beautifully and is easier on young eyes. It’s a lot easier to clean and needs no maintenance.

**MAKES VISUAL AIDS POSSIBLE.** One of

the best features of Armorply Chalkboard is that small magnets are attracted to its steel face, making visual aid devices and *live* classroom demonstrations possible.

### AVAILABLE WITH AND WITHOUT TRIM FOR ANY TYPE OF INSTALLATION

Armorply Chalkboard is more economical to install because it requires no costly fixed grounds. It can be mounted on any wall with a minimum of effort. It takes only one trip to the job site to install both chalkboard and trim.

Armorply Chalkboard is available in standard stock size panels and in special sizes to order. Plan on using Armorply Chalkboard in your next installation. *Remember, it’s guaranteed for the life of the building!*

For further information consult with the Armorply Chalkboard Division of the United States Plywood Corporation, or mail coupon.

\*TRADE MARK

†FACES BY THE BETTINGER CORP., WALTHAM, MASS.

**Armorply**  
CHALKBOARD



a product of  
**UNITED STATES  
PLYWOOD CORPORATION**

UNITED STATES PLYWOOD CORPORATION  
55 West 44th Street AR-8-54  
New York 36, N. Y.

FREE:  Please send me free booklet on Armorply Chalkboard.

NAME.....

ADDRESS.....

CITY.....STATE.....

Contact the distributor nearest you for prompt and complete information on ARMORPLY CHALKBOARD or mail the coupon below.

**Bodine, Bryson and Rolling,**  
719 So. 20th St., Birmingham 5, Alabama  
**American School Supply Co.,**  
1514 Arapahoe St., Denver 2, Colorado

**Earl R. Smith Inc.,**  
659 Ferry Blvd., Stratford, Conn.

**Acousti Engineering Co. of Florida,**  
101 Copland St., Jacksonville, Florida

**Acousti Engineering Co. of Florida,**  
1012 Sligh Blvd., Orlando, Florida

**Acousti Engineering Co. of Florida,**  
1501 Second Ave., Tampa, Florida

**Acousti Engineering Co. of Miami, Ltd.,**  
3737 N.W. 53rd St., Miami 42, Florida

**Lawco Bldg. Material Co.,**  
145 Linden Ave., N.E., Atlanta, Ga.

**W. E. Raines Co.,**  
10—7th St., Augusta, Ga.

**School Equipment Co.,**  
185 North Wabash Ave., Chicago 1, Illinois

**Kumb Sales Co.,**  
550 West 46th St., Indianapolis 8, Indiana

**Oglesby Equipment Co.,**  
2163 North Meridian St., Indianapolis 2, Ind.

**Supply Service Inc.,**  
528 South Main St., Hutchinson, Kansas

**Ecoff & Co.,**  
1725 East Second St., Wichita, Kansas

**Metal Building Products Co.,**  
1937 Lafayette St., New Orleans, La.

**Builders Hardware Corp.,**  
7120 Hagar Lane, Bethesda 14, Maryland

**Charles Ingram & Co.,**  
521 North Charles St., Baltimore 2, Maryland

**J. L. Hammett Co.,**  
Kendall Square, Cambridge, Mass.

**McDonnell Bros., Inc.,**  
3930 Lonyo Road, Detroit 10, Michigan

**W. E. Neal Slate Co.,**  
1121 Dartmouth Ave., S.E., Minneapolis 14, Minn.

**Herbert Galtzman Co.,**  
4027 Forest Park Blvd., St. Louis 8, Mo.

**The Stokes Company,**  
2035 Washington St., Kansas City, Mo.

**Porter-Trustin Co.,**  
910 Saddle Creek Road, Omaha, Nebraska

**Atkins & Co., Inc.,**  
19 North Harrison St., East Orange, N. J.

**Hoddick and Taylor,**  
71 West Eagle Street, Buffalo, New York

**Kalflex Inc.,**  
101 Park Ave., New York 17, New York

**DiClemente and Volke**  
4 Elton St., Rochester 7, New York

**R. G. Ross Company,**  
415 Clement Ave., Charlotte, North Carolina

**Dubrow—Otte, Associates Inc.,**  
1426 Clay St., Cincinnati, Ohio

**Link Equipment Company,**  
1935 Euclid Ave., Cleveland 15, Ohio

**Tri-State Supply Co.,**  
1846 West Fifth Ave., Columbus 12, Ohio

**Dayton Builders Supply Company**  
800 East First Street, Dayton 2, Ohio

**Scovil & Sublett,**  
20 N.E. 27th St., Oklahoma City, Oklahoma

**A. M. Masters & Son**  
4 North 11th St., Philadelphia, Pa.

**A. M. Masters & Son,**  
300 West Penna. Ave., Pen Argyl, Pa.

**Engineered Materials Co.,**  
650 Washington Road, Pittsburgh 28, Pa.

**Tennessee Structural Products Corp.,**  
3601 Chapman Highway, Knoxville, Tenn.

**Kearney & Son**  
2026 Chestnut St., Dallas, Texas

**Bickley Bros.**  
2017 Preston Ave., Houston, Texas

**John A. Williamson Co.,**  
1727 Broadway, San Antonio 2, Texas

**American Paper & Supply Co.,**  
444 So. 2nd West St., Salt Lake City, Utah

**Flowers School Equipment Co.,**  
327 West Main Street, Richmond 20, Virginia

**Freyer-Knowles,**  
1718 Broadway, Seattle 22, Washington

**Milwaukee Equipment Co.,**  
4221 North 35th St., Milwaukee 16, Wis.

**WHAT'S YOUR I. Q.  
ON NATURAL, RED OR WHITE  
Birch?**



**HARDWOOD  
PRODUCTS  
Solid Core DOOR**

**VENEER DATA** helps you maintain  
**uniformity on all specifications**

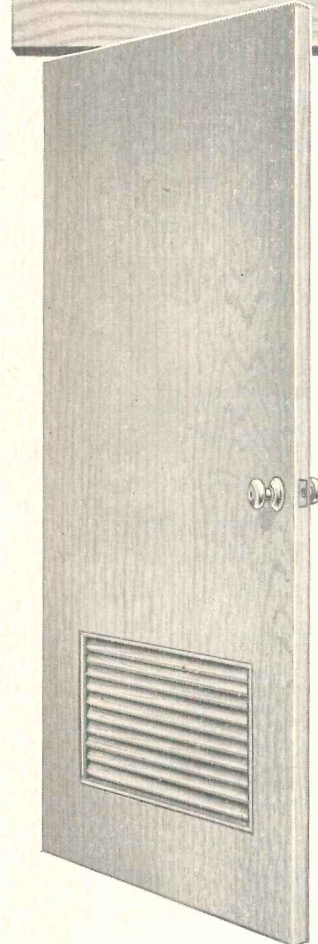
Do you know that most Birch veneer used in quality doors comes from one specie? Confusing as it may seem, Natural, Red and White Birch actually all come from the Yellow Birch tree! Regardless of type, however, HPC Birch Veneer doors are carefully matched for a pleasing decorative effect.

**NATURAL BIRCH** (sometimes referred to as unselected) is a mixture of heartwood (Red) and sapwood (White). Natural Birch is selected for quality but not for color. It is available on Hardwood Doors in 1/20" Rotary Cut, 1/20" Sliced, 1/8" and 1/4" Sawn veneers.

**RED BIRCH** is the heartwood of the Yellow Birch tree, and is selected for both color and quality. Selected Red Birch Veneer on Hardwood Doors comes in 1/20" rotary cut and 1/20" sliced.

**WHITE BIRCH** is the sapwood of the Yellow Birch tree and is selected for both color and quality. Selected White Birch Veneer on Hardwood Doors is available in 1/20" Rotary Cut and 1/20" Sliced.

Don't take chances with veneer species, color or grain when matching doors or surroundings. Consult us or refer to Sweet's <sup>15c</sup>/<sub>HA</sub> file for complete veneer data on Hardwood Solid Core doors — the quality door you'll surely specify when only the best will suffice.



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**A. I. A. CONVENTION**

(Continued from page 11)

Atlantic Monthly, was the convention's keynote speaker. Although his speech will probably be remembered longest for its wit (especially some very funny lyrics he quoted about our "House and Garden age") it was a deeply serious challenge to architects to meet their responsibilities in solving the problems of housing, of "the care and revival of cities" and, in an era of continuing growth and change, of building "a better country than we had."

**Wanted: More Architects**

The convention's opening session also included a panel discussion on architectural education at which Prof. Turpin C. Bannister, F.A.I.A., of the University of Illinois reported on completion of the two-volume report of the A.I.A.'s 1950 Survey of Education and Registration (see June, pages 44 *et seq.*). Professor Bannister, a member of the Commission which conducted the survey and author of Volume 1, emphasized the Commission's firm belief that (1) a 20 per cent increase in architectural student enroll-

(Continued on page 282)



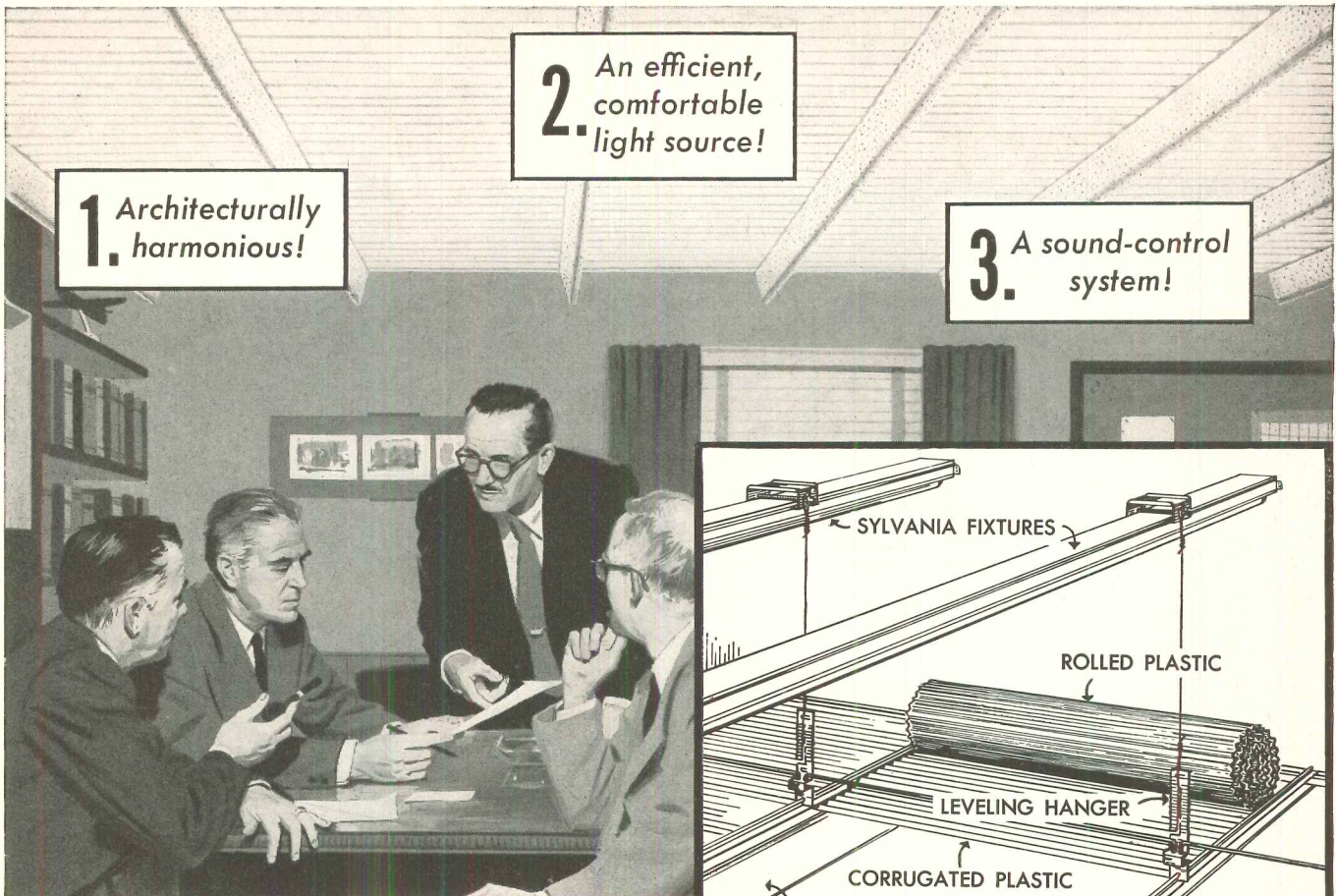
Above: Chairman of next year's A.I.A. annual convention in Minneapolis, G. Clair Armstrong, with Mrs. Armstrong and Lewis Storrs, Santa Barbara, Cal., A.I.A. president. Below: the Institute's only lady Fellow, Miss Lois Lilley Howe (second from right) of Cambridge, Mass., with (left to right) Eleanor Manning O'Connor, Boston; James F. Clapp Jr., Cambridge, and Helen Douglass French, San Francisco



# Another Sylvania Achievement

# SYLVAN-AIRE

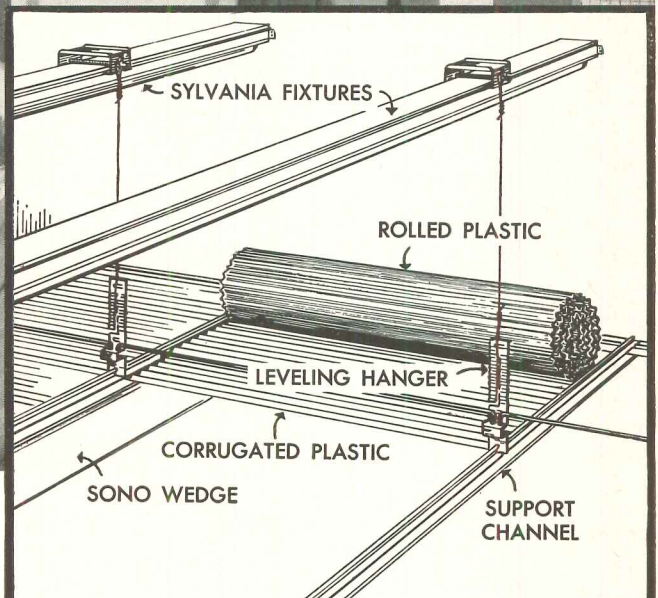
A three-way functional treatment of beauty — sight — sound



**1.** Architecturally harmonious!

**2.** An efficient, comfortable light source!

**3.** A sound-control system!



Showing details of Sylvania's new functional Sylvan-Aire. For ease and economy of installation, wire supports shown here are attached to lighting fixtures instead of structural ceiling.

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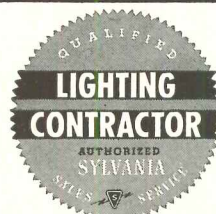
**2nd** ...it is a source of soft, eye-pleasing over-all lighting.

**3rd** ...its inconspicuous V-shaped "Sono-Wedges," lined with thick glass-fiber pads, deaden noise...reduce distracting sound to comfortable levels.

In addition, the corrugated form of the plastic permits air to circulate along the supporting channels. Thus *air-conditioning* also can be effectively introduced.

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# A.I.A. CONVENTION

(Continued from page 278)

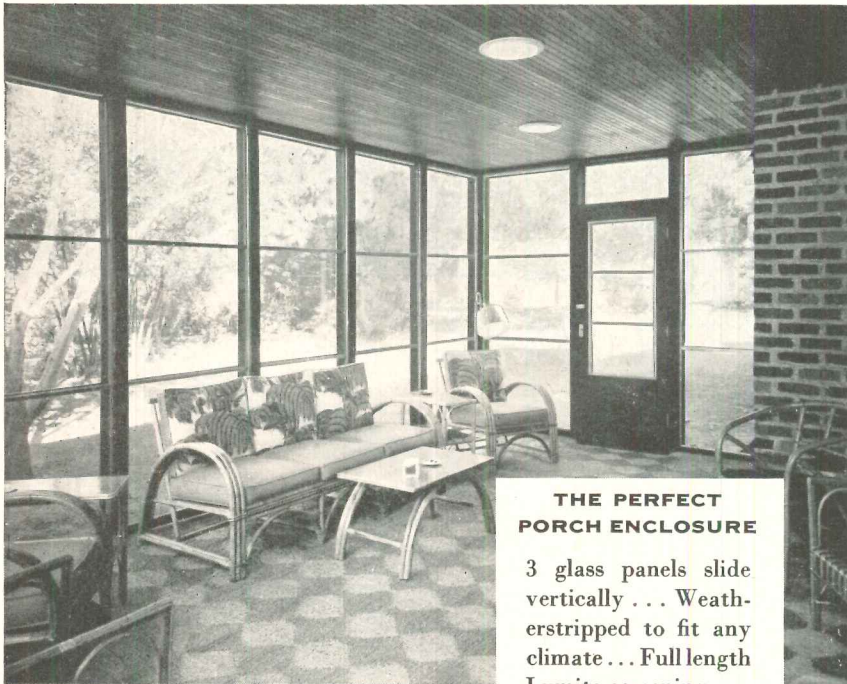
ment during the next decade is essential to keep the profession growing to meet its expanding opportunities; (2) all members must join a concerted campaign to increase professional competence; (3) programs for professional education and registration must be "intensified, systematized, refined, deepened and integrated" to meet the demand for increased competence.

## Tomorrow's Hospitals

In a seminar discussion of hospital design trends, a paper prepared by Vincent G. Kling, A.I.A., of Philadelphia and read for him by G. B. Roth, asserted that prepaid medical care plans have had more influence on recent hospital construction than any other single factor. Mr. Kling's paper also predicted that an increasing amount of space in



Dean Henry L. Kamphoefner (above) of North Carolina State College School of Design with Mrs. Walter Hook, Charlotte, N. C., and Mrs. Kamphoefner. Below: Dean Wells Bennett of the University of Michigan and Paul Weigel, Kansas State



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Columbia's Dean Leopold Arnaud with Juan Nakpil of the Philippines

tomorrow's hospitals will be devoted to keeping people well — more emphasis on community health facilities and health education facilities, doctors' offices, examining-treatment-diagnostic areas and out-patient facilities in general. In-patient facilities may be of three types, Mr. Kling suggested — the nursing unit as it is known today, to serve the acutely ill; a second area, almost like a hotel, for admissions and patients undergoing routine survey and not in need of intensive nursing care; and a third area, which will need even less nursing service, for the chronically ill and geriatric patient. Dr. Albert W. Snoko, director of the Grace-New Haven (Conn.) Community Hospital, predicted an increasing "regionalization" of hospital facilities and urged architects to focus on flexibil-

(Continued on page 286)

How *Thermopane*<sup>®</sup>  
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in just 4 years

in the Wyatt Building,  
Washington, D. C.



*Thermopane* insulating glass was specified for the Wyatt Building after careful calculation by Architect A. R. Clas and Consulting Engineers Karsunky, Weller and Gooch, both of Washington, D.C.

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The *Thermopane* (glass and installation) cost about \$18,000 more than would single plate glass for the same 441 windows.

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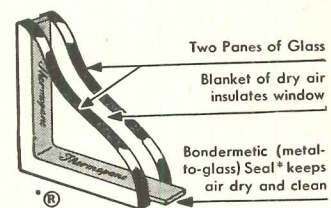
Result: *Thermopane* would pay for itself in four years —from then on it would return a profit.

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## A.I.A. CONVENTION

(Continued from page 282)

ity in the design of general hospitals so that "maternity" or "pediatrics" beds, say, can be utilized for other services when desirable. Dr. Snoko also noted that the increasing quantity and complexity of surgery is developing new requirements for hospital operating rooms. Richard J. Adams, A.I.A., of Sherlock, Smith and Adams, Montgomery, Ala., one of the three architectural firms for the United Mine Workers Welfare and Retirement Fund system of coordinated hospitals, described the planning of this prototype of "regional" hospital systems and enumerated some of the new ideas that came from it. Marshall Shaffer, chief architect of the U. S. Public Health Service, was the



Texas representation included (above) Past President Herbert Tatum of the Texas Society of Architects, Dallas; Donald Nelson, Dallas, the current president; and Walter Rolfe, Houston. Below: Texas' new regional director, Albert S. Golemon, Houston (right), and the Texas Society's executive director, John G. Flowers Jr. Bottom: another Texan, Karl Kamrath of Houston, with Arkansas' Howard Eichenbaum



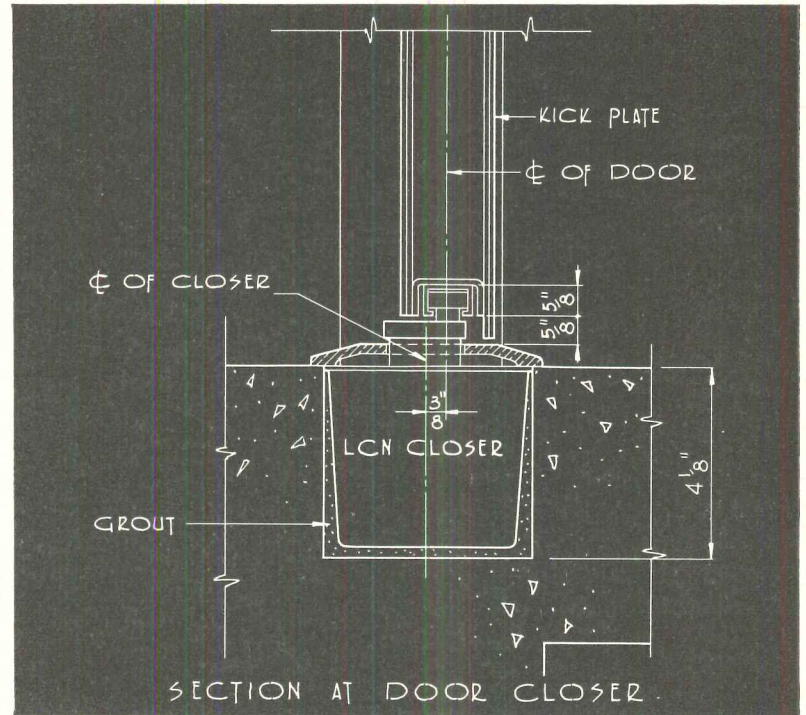
moderator for the hospital discussion.

### Schools for What Program?

Architects designing schools for a vastly changing society must in effect plan buildings for the unknown, Educator Charles D. Gibson acknowledged in his talk in the school design seminar. But Mr. Gibson, who is president of the National Council on Schoolhouse Construction and supervising field representative for school planning of the

California Department of Education, thought wise planning of school plants to serve the unknown educational program of the future could be achieved through (1) a detailed documentation of the *known* educational program and (2) a careful review of basic educational principles and their implications for school design. As aids to the first in the secondary school field he listed three publications: "Space Adequacy Sur-

(Continued on page 290)



### CONSTRUCTION DETAILS

for LCN Floor Type Door Closer Shown on Opposite Page

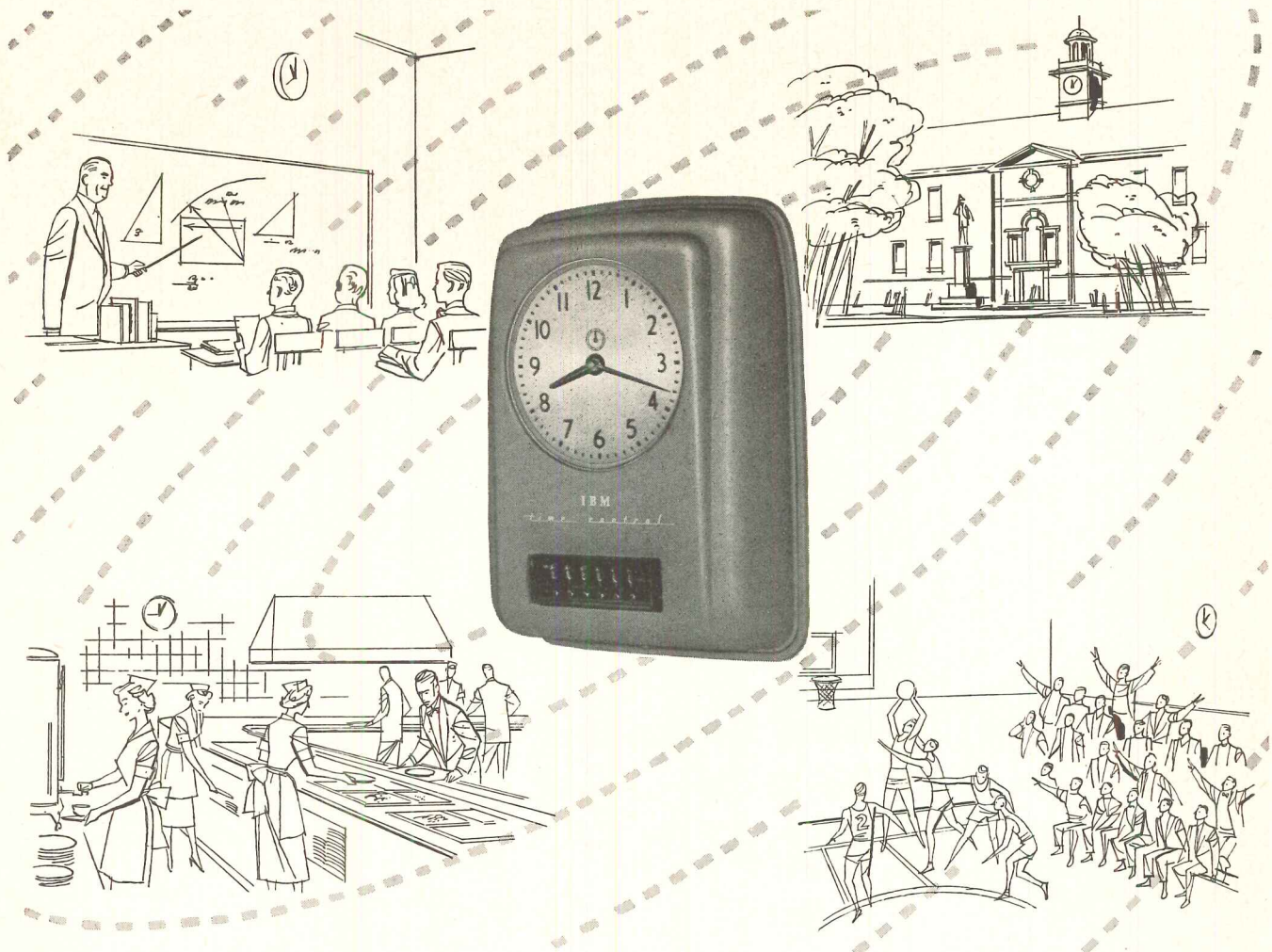
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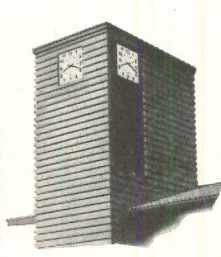
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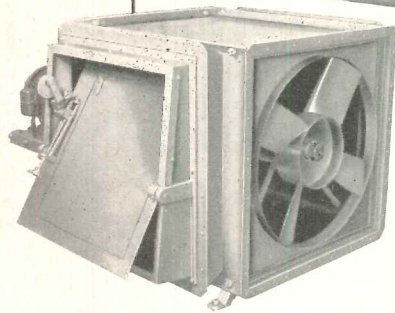
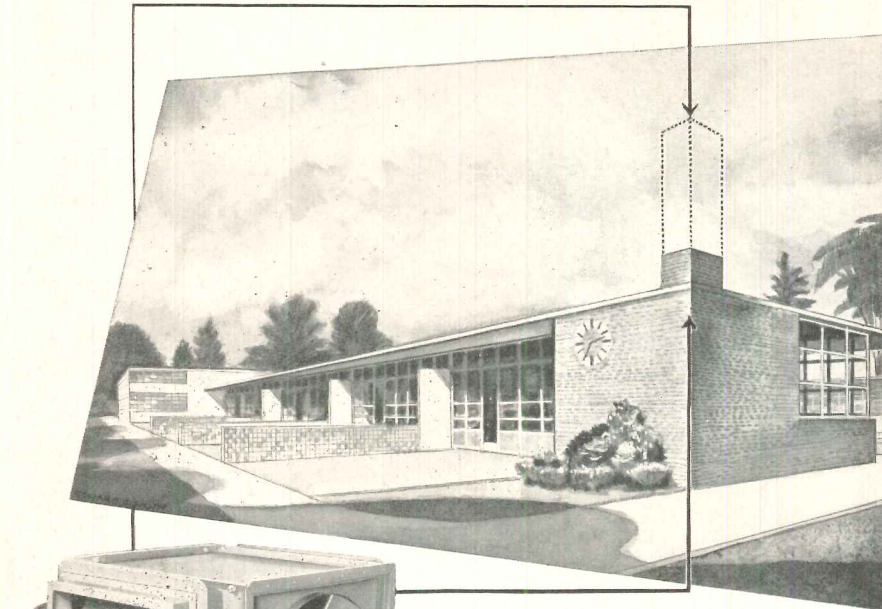
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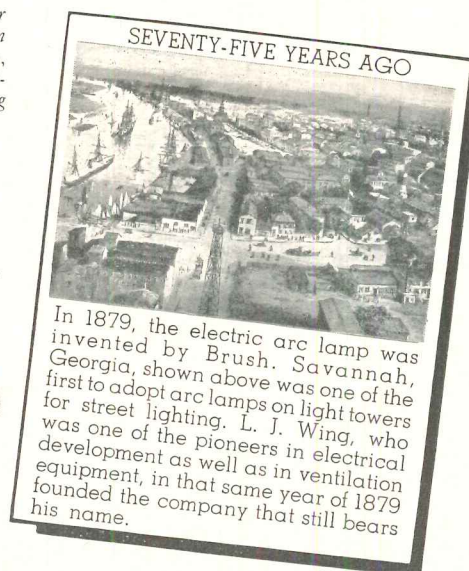
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## A. I. A. CONVENTION

(Continued from page 286)

vey," an analysis by Mr. Gibson and Dr. Charles Bursch which is a basic tool in the California school planning program and widely known elsewhere; "Castaldi Nomogram," a publication of the New England Development Council described by its author, Dr. Basil Castaldi, as "an aid for translating the curriculum of junior and senior high schools into the necessary number of instructional spaces or classrooms"; and "A Manual for Determining the Operating Capacity of Secondary School Buildings," developed by Dr. Marion Conrad of the Ohio State University College of Education staff. Stanley Sharp, of Ketchum, Gina and Sharp, New York architects, emphasized the need for close cooperation between the Board of Education, the architect and the citizens themselves; long-range community planning must come first, he noted, but architects must also understand the basic problems and needs of the community involved. Samuel E. Homsey, F.A.I.A., of Wilmington, was the final speaker on the panel and spoke very briefly because the session had run overtime. Moderator for the school panel was John W. McLeod of Washington, chairman of the A.I.A. Committee on School Buildings.

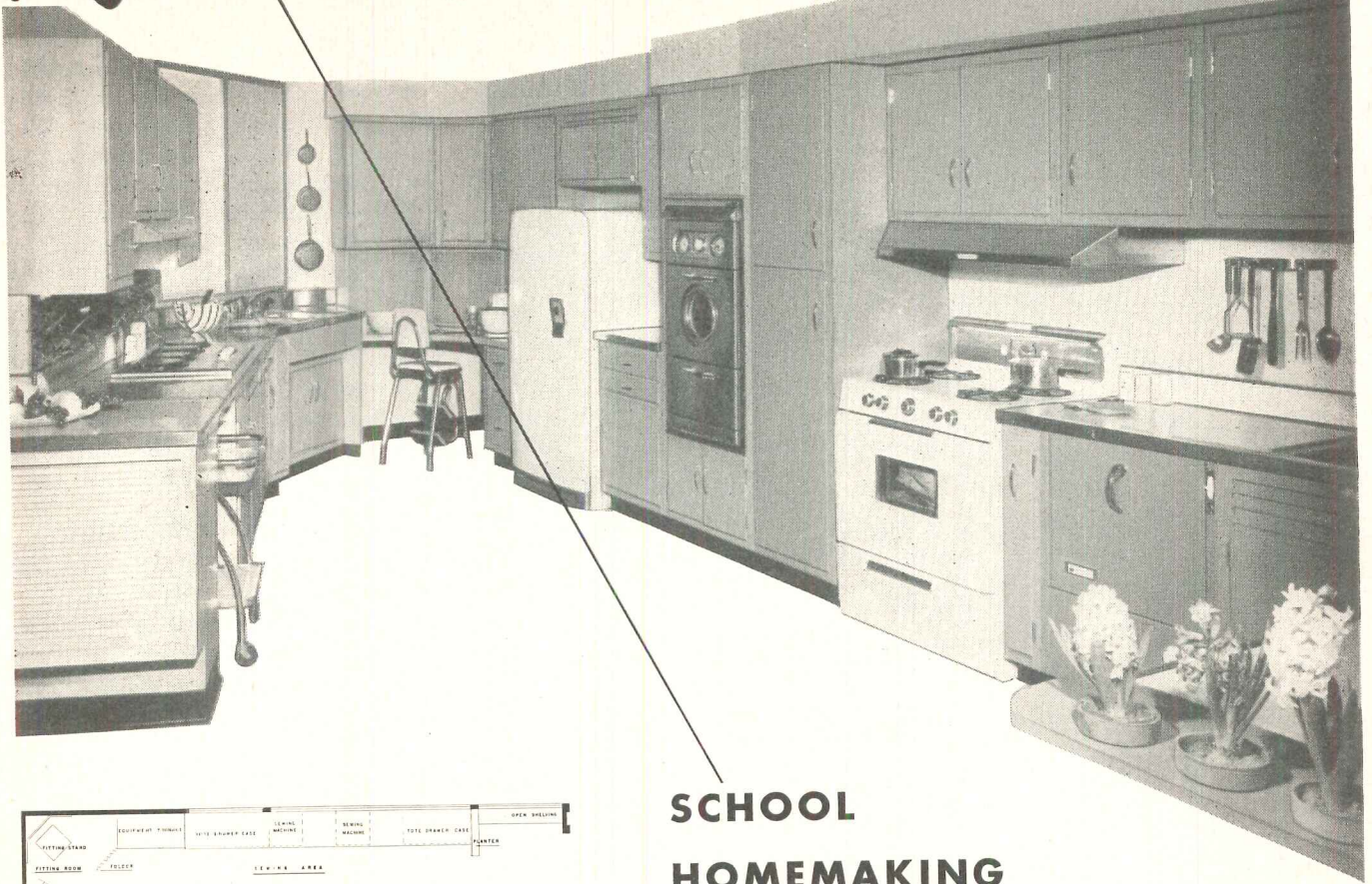
(Continued on page 292)



Californians Earl T. Heitschmidt, Los Angeles, the A.I.A.'s new first vice president, and Malcolm Reynolds, Oakland, president of the California Council of Architects and (below) George Vernon Russell and Mr. and Mrs. John Rex, Los Angeles

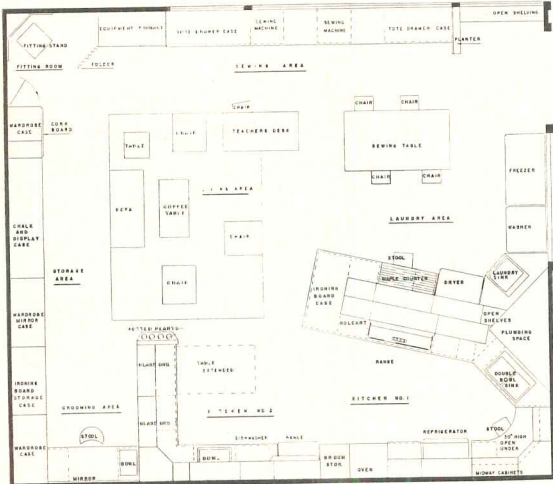


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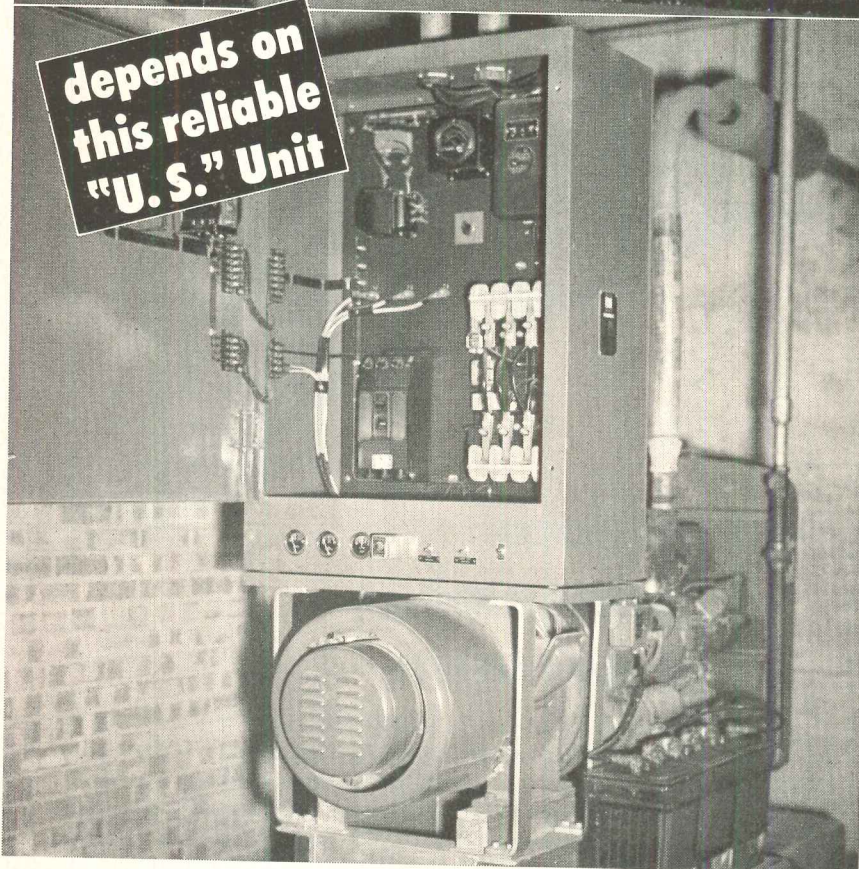
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## A. I. A. CONVENTION

*(Continued from page 290)*

### *Government vs. Architecture*

In an era when government is acquiring a "pervasive" influence in the shaping of architecture, architects must be on guard lest the inherent conservatism of government confine their profession by rigid dogmas, Economist Miles Colean, F.A.I.A., of Washington warned at a luncheon seminar on "The Impact of Government on Architecture." The other speaker on that seminar, Past President Michael Waterhouse of the Royal Institute of British Architects, gave his listeners some idea of how "pervasive" government influence can get when he estimated that in his country last year at least 80 per cent of all construction was controlled directly or indirectly by the government.

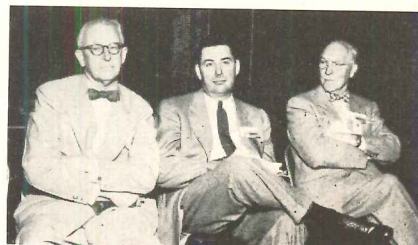
### *Technology for Architecture*

The single technical session at this year's convention — "What's New" — brought the architectural press a bouquet from Paul Weidinger, New York engineer, who suggested the architects in his audience were probably better informed than he on structural innovations, since, he said, the architectural press is quick to present such developments long before they "seep down" into the engineering magazines and es-

*(Continued on page 294)*



*Above: New York A.I.A. President Robert S. Hutchins; George Simonds, Oakland, Cal.; and Richard Koch, New Orleans. Below: A.I.A. Past President Glenn L. Stanton of Portland with former first vice president Kenneth E. Wischmeyer of St. Louis and New York Regional Director C. Storrs Barrows of Rochester*



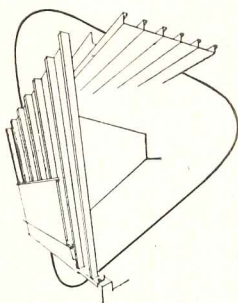
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## A.I.A. CONVENTION

(Continued from page 292)

pecially before they are discussed — “if ever” — in the journals and proceedings of the technical and engineering societies. In his discussion of structural developments, Mr. Weidlinger noted that interest in earthquake- and nuclear blast-resistant construction has speeded up research into the field of structural dynamics and predicted that structural design would benefit increasingly from



W. Alva Fry of Tulsa, Mrs. Arthur Prior, New York, Leon B. Senter, Tulsa and Joe M. Smay, Norman, Okla.

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Many other manufacturers of holder and leads have tried to overcome the problem of limited clutch-adaptability by making soft leads the same diameter as hard leads. KOH-I-NOOR, in line with its usual quality standards, persisted in making soft degrees in a correspondingly larger diameter, to give them the same high breaking strength as KOH-I-NOOR hard degrees. KOH-I-NOOR, in the past, featured therefore two holders for leads, one for leads from 9H to B, and another one for leads from 2B to 6B. NOW, THE NEW holder with the ADAPTO-CLUTCH takes LEADS OF ALL DEGREES AND ALL DIAMETERS!

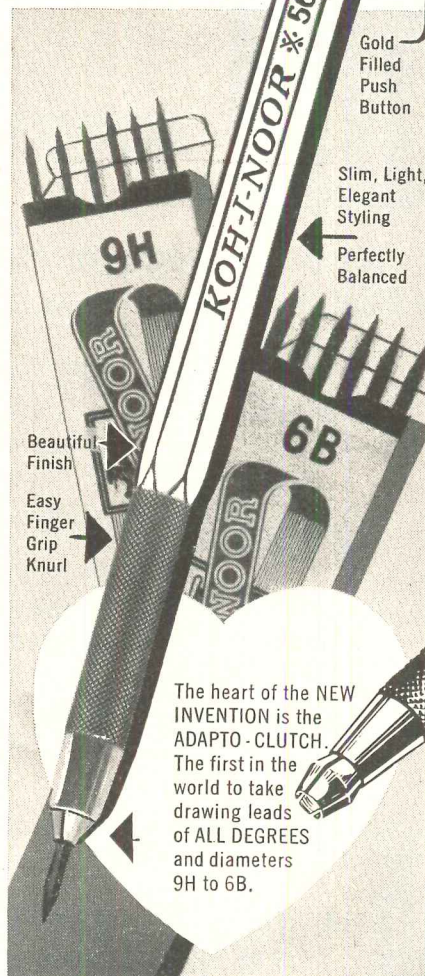
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attention to dynamic as well as static loads. Ben John Small of New York, whose topic was “Materials,” suggested “if you really want to know what’s new, let us now read Sweet’s Catalog together, shall we?” — commenting on the vast array of materials on which today’s architect must have information, Mr. Small noted the contrast between the Sweet’s File of his father’s day — “an emaciated one-volume affair” — and today’s, comprised of 1387 catalogs, issued by 1167 firms, spread over 11,988 pages, describing 555 broad designations of building products. Charles S. Leopold, Philadelphia engineer, discussed some recent air conditioning installations; and C. L. Crouch, technical director of the Illuminating Engineering Society, New York, described some current I.E.S. research projects; he suggested that subjective aspects of lighting functions ought to get more attention.

### A Plea for “Allied Arts”

The allied arts made the convention program by virtue of a panel discussion which was allowed to interrupt — briefly — a closing session which had a

(Continued on page 296)




Mr. and Mrs. Edgar H. Hunter Jr. of Hanover, N. H., with one of the convention’s most interesting guests — an “architectural” novelist in search of material: Edwin F. Gilbert of Greenwich, Conn.

# Look at this daylighting -from overhead!

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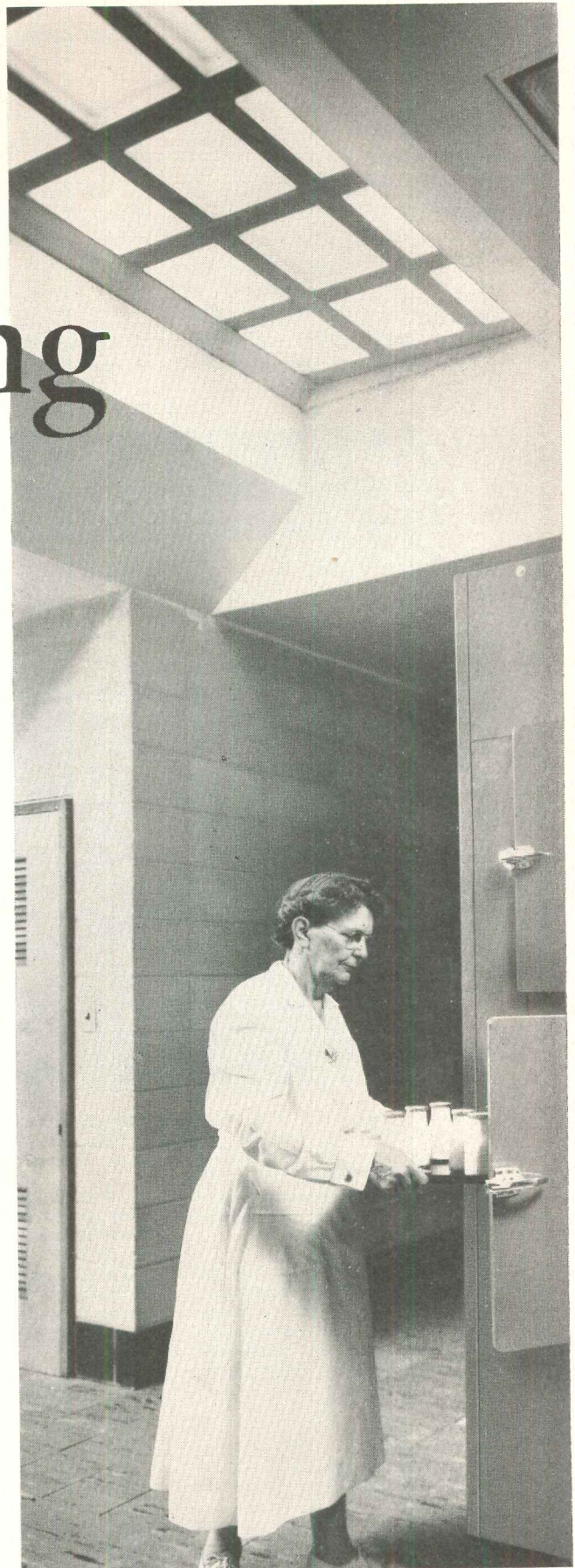


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Cafeteria, Mill Street School, Port Allegany, Pa. Architect: Raymond Viner Hall, A.I.A.

## A.I.A. CONVENTION

crowded business agenda. Architect Percival Goodman of New York, who arranged the panel, called upon architects to accept their responsibility for "humanization" of building — 90 per cent of commercial buildings today ignore the human element completely, he said — and for taking the lead in developing the kind of understanding between artist and architect which will return architecture and the allied arts

(Continued from page 294)

to their ancient partnership as one of the paths to humanization. Panel speakers included the Fine Arts Medallist, Julian Hoke Harris, and Lawrence Kupferman of Natick, a painter and assistant professor of art at Massachusetts Art School.

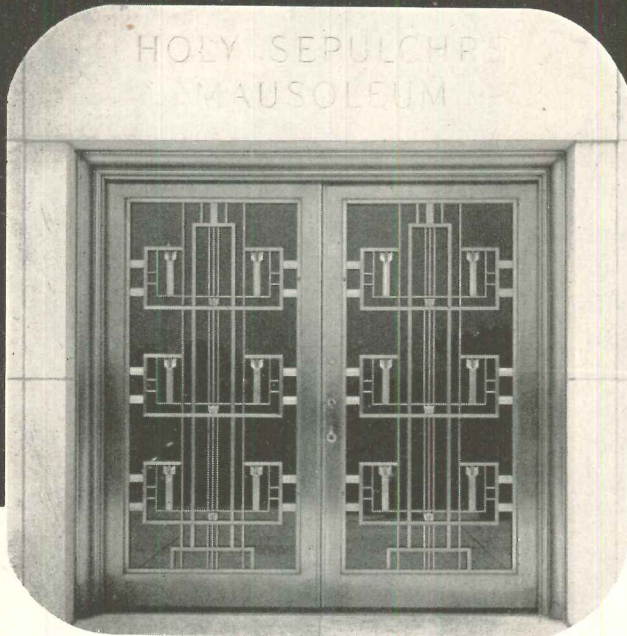
### Practice Standard Revised

In business sessions the convention accepted a revised version of its stand-



Father and son team — Lucius White and Edward C. White of Baltimore (above) with Abram Bastow of Sweet's, F. W. Dodge, New York, and Mrs. Bastow

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ards of Professional Practice (Document 330) long under study. Revisions were minor.

### By-law Changes

The convention approved a change in by-laws changing the "breaking point" for Institute dues from \$5000 to \$6000 and voted to table a proposed by-law change which would have required future Nominating Committees to present at least two candidates for every national Institute office. A later effort to remove the proposal from the table, led by Regional Directors Marcellus Wright Jr. of the Middle Atlantic District and Philip D. Creer of New England, was resoundingly defeated.

### Resolutions

Action on resolutions included approval of one which put the A.I.A. on record once again as opposed to any legislation (in this case H.R. 7185) which might lead to governmental control of the fine arts and refusal of another which would have required the Resolutions Committee to present all petitions (except in case of duplication) to the convention exactly as received and without its present privilege of recommending action.

### Organization Report

The Committee on Organization headed by Thomas C. Robinson III presented to the pre-convention meeting of the A.I.A. Board of Directors a detailed report of which copies were made available to delegates at the convention. The report recommended limiting the A.I.A. president's term to one year and cutting regional directors' terms from three to two years and proposed a number of changes in the administrative setup at the Octagon, which would have the general effect of strengthening the

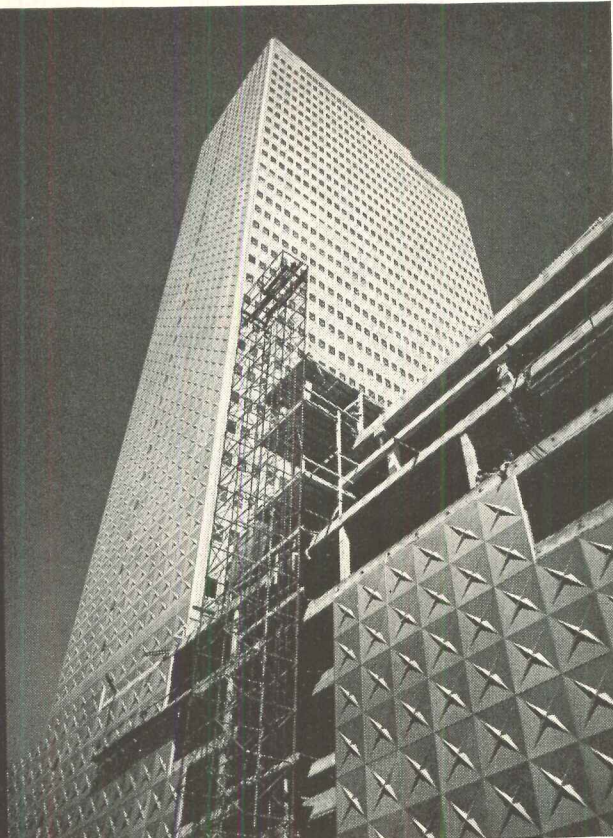
(Continued on page 298)



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## A.I.A. CONVENTION

(Continued from page 296)

position of the Executive Director. Revision of the A.I.A. publications program under a director of publications was also proposed. This convention was not asked to act on the report. The Board will consider and act on the various recommendations during the coming institute year; and by-law changes which may be required for implementing the Board's action will be submitted to the 87th convention next year.

### 69 Firms Display Products

Sixty-nine manufacturers of building products displayed their latest materials and equipment in a selective exhibit organized for the convention by the A.I.A. in cooperation with the Producers' Council.

### Building Award Winners

Major exhibit at the convention was, of course, provided by the Sixth Annual

A.I.A. Honor Awards Program. For the six Honor Award winners, see page 12. The Tech built House in Weston, Mass., designed by Karl Koch of Cambridge, received the "Best Development House" award. A list of the 32 winners of Merit Awards follows:

Blue Ribbon Tract, Roseda, Cal.—architects, Smith and Williams, Los Angeles; Sunshine Meadows, Santa Clara, Cal.—architects, Anshen and Allen, San Francisco; Sunshine Glen, Palo Alto, Cal.—architects, Anshen and Allen, San Francisco; Residence, Hollin Hills, Va.—architects, Charles M. Goodman, Associates, Wash. D. C.; Martin Residence, Seattle—architects, Bassetti and Morse, Seattle; J. J. Pike Residence, Los Angeles—architect, George V. Russell, Los Angeles; Mira Vista Elementary School, El Cerrito, Cal.—architect, John C. Warnecke, San Francisco.

Also White Oaks Elementary School Annex, San Carlos, Cal.—architect, John C. Warnecke, San Francisco; San Jose High School, San Jose, Cal.—architects, Ernest J. Kump, James D. Fessenden, Delp W. Johnson, San Francisco; Manor School, Fairfax, Marin County, Cal.—architect, John L. Reid, San Francisco; Double Oaks Elementary School, Charlotte, N. C.—architect, A. G. Odell, Jr., Charlotte, N. C.; Garfield School, Carmichael, Sacramento County, Cal.—architect, John L. Reid, San Francisco.

Also Saint Frances Xavier Cabrini School—architects, Curtis and Davis, New Orleans, Louisiana; Keokuk Senior High School and Community College, Keokuk, Iowa—architects, Perkins and Will, Chicago; Lakeview School, Mercer Island, Wash.—architects, Bassetti, Morse and Aitken, Seattle; Sawyer Biscuit Co. Plant, Melrose Park, Ill.—architects, Skidmore, Owings and Merrill, Chicago; Children's Chapel, Neighborhood Church, Pasadena, Cal.—architects, Smith and Williams, Pasadena, Cal.; First Church of Christ, Scientist, Victoria, Tex.—architect, Milton J. Ryan, San Antonio; Biochemistry and Virus Laboratory, Berkeley Campus, University of California—architect, Michael Goodman, Berkeley, Cal.

Also Business Education Building, Orange Coast College, Costa Mesa, Cal.—architects, Richard J. Neutra and Robert E. Alexander, Los Angeles; St. Vincent's Home (for the aged), Omaha—architects, Steele, Sandham and Steele, Omaha, Alex Weinstein, Associate; Peninsula Memorial Blood Bank, Burlingame, San Mateo County, Cal.—architects, Stone and Mulloy, San Francisco, Marraccini and Patterson, Partner Architects; CBS Television, City, Los Angeles—architects, Pereira and Luckman, Los Angeles; Refuse Incinerator, Town of Brookline, Mass.—architects, Isidor Richmond and Carney Goldberg, Boston, Metcalf and Eddy, Boston, Engineers; Northland Regional Shopping Center, Southfield Township, Wayne County, Mich.—architect, Victor Gruen, Hollywood, Cal.

Also Pi Kappa Alpha Fraternity House, Austin, Tex.—architects, Lundgren and Maurer, Minneapolis; National Bureau of Standards, Boulder Laboratories, Boulder, Colo.—architects, Pereira and Luckman and J. E. Stanton, Los Angeles; Apple Valley Inn, Apple Valley, Cal.—architect, G. A. Downs, San Francisco; Standard Federal Savings and Loan Association, Los Angeles—architects, Welton Becket and Associates, Los Angeles; First Federal Savings and Loan Association of Denver, Denver—architect, W. C. Muchow, Denver; Girl Scout Lodge, Camp Woodlands, near Annapolis, Md.—architects, Rogers and Taliaferro, Annapolis, Md.

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### The Carnegie Endowment International Center

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## How to air condition an 11-story building *that's only 10 stories tall*

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who must, however reluctantly, make these decisions. The second group of replies were amplified sufficiently to indicate serious doubt about the feasibility and the desirability of attempting such distinctions. The third group felt some means of measuring desirable but doubted their feasibility. The fourth group felt that measuring of aptitude and, to a large extent, potential contribution was desirable and feasible

within limits. It is probably superfluous to say that the limits varied widely.

#### Some Aids to Judgment

Lawrence Anderson of M.I.T. took this view: "To evaluate a student's aptitude for the study of architecture, educators have recourse to three kinds of data — evidence of intellectual ability as demonstrated in the previous academic performance record, subjective

testimony from the teachers under whom he has worked, and direct observation of the student's effectiveness and his eagerness to learn. Judgments as to his potential ability as an architect are handicapped by the lack of dependable methods of testing this ability before it has been demonstrated in professional course work." After describing the current interest of the Association of Collegiate Schools of Architecture in the design of valid testing procedures he concludes: "It is possible that ideas for testing the student's potentials in such matters could be developed, put to use, and over a period of time so correlated with subsequent performance as to become reliable measurements for the likelihood of success in the field." At Utah, Roger Bailey indicates that the basic design course in combination with freshman mathematics "serves as a very good screen." George Beal of Kansas says: "The question of student aptitude for architecture is a problem without an adequate answer." He feels that since some students do not show early promise the "teaching staff, in direct contact with the student, is the best answer we have." Aptitude tests are given only on student request.

#### Of Many Aptitudes, Which?

Pietro Belluschi of M.I.T. reports they have not found a satisfactory method of determining student aptitude for architecture and interprets that experience: "Architecture covers a wide field of activities and demands many aptitudes; of course the power to visualize and imagine is important but to be a good architect one must also possess good judgment, the power to analyze and to correlate, the skill to express and to convince, the passion and the courage to experiment and to dissent, and that restraint born of logic which is the mark of the true artist. It is difficult to predict which combination of aptitudes will produce a good architect; furthermore the rate of mental growth, the inclination to persevere and to absorb, the reaction to change and to other external stimuli vary greatly in different individuals making any stock system of prejudgment an unreliable one at best."

#### Wanting to DO as well as BE

Richard Bennett of Chicago answers: "The only important thing is wanting

(Continued on page 302)

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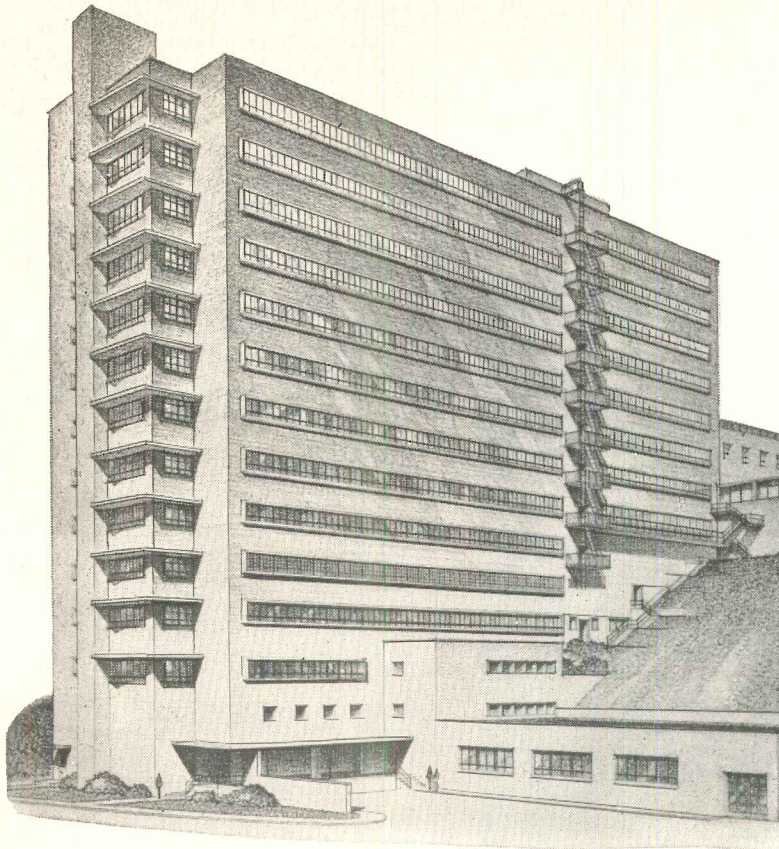
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# COFAR keeps pace with fast bolted frame construction in new Oregon Hospital

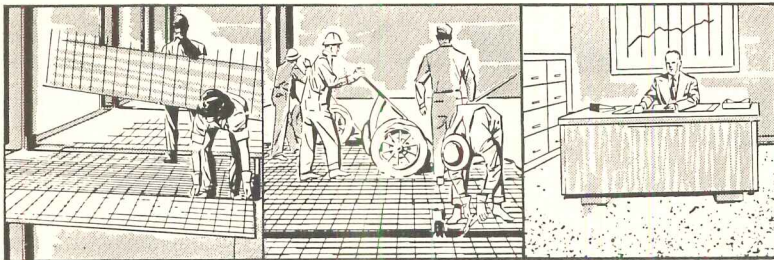


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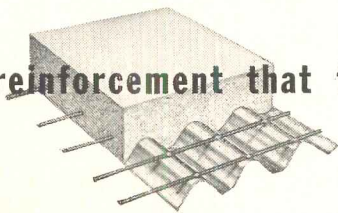


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to do architecture. Electing to be an architect is not enough, and I have seen too many good students become mediocre architects and a number of difficult students develop beautifully. Nature is bountiful, and wasteful, and that goes for teaching architecture." Wells Bennett of Michigan reports that in spite of nearly fifty years of experience that school has not found a satisfac-

tory method for determining aptitude. "I am doubtful that such a method can be found. We do our best through a review of the student's high school training, possible contacts with architects or the building industry, and personal characteristics. We have had some experience with freshman aptitude tests. The use of all these factors is helpful, but as yet we have found no

formula." John Burchard, Dean of Humanities and Social Studies at M.I.T., replies: "No. I think it is desirable that studies be made which might lead in time to some understanding of whether young men have space sense and visual sense, at least to the same degree that we now measure their mathematical aptitudes and verbal skills, but since I do not regard either of these measurements as entirely decisive I would also be skeptical of using the new measures as an exclusive device. However, I think it is certain that the skills we measure for ordinary college admission are not necessarily those which are most essential for the development of the best architects."

#### Is Basic Design a Test?

Harold Bush-Brown of Georgia Tech feels that one of the advantages of basic design work is that "it provides a testing ground in determining whether or not the student possesses the creative impulse and whether he has natural sensitivity to visual form or can develop some indication of it within the time lapse of the course." Clinton Cowgill of V.P.I. reviews some of the measuring procedures in common use and says this of the personal interview: "Interviews are expensive and the results are dependent upon the largely intuitive judgment of one or two persons." He feels that "there is probably a tendency to over-emphasize indications of taste and artistic skills to the neglect of consideration of general intelligence." At V.P.I. they use records of previous schooling, employment, and standard tests. Of these methods he ventures that "the tests now available are perhaps the safest guide, and with continued improvement and the development of new tests to indicate special abilities, a still more reliable guide may soon become available." At Stanford, Ray Faulkner points out that grades and interest shown in introductory courses taken during six quarters of pre-major work satisfactorily indicate aptitude. Thomas Fitz Patrick of Virginia says that aptitude for architecture has not yet been satisfactorily measured and that "no one has yet qualified accurately the exact nature of an architect in the current or future sense." After referring to the change in administrative organization at his school he concludes: "We will certainly consider one or two years of pre-architec-

(Continued on page 304)



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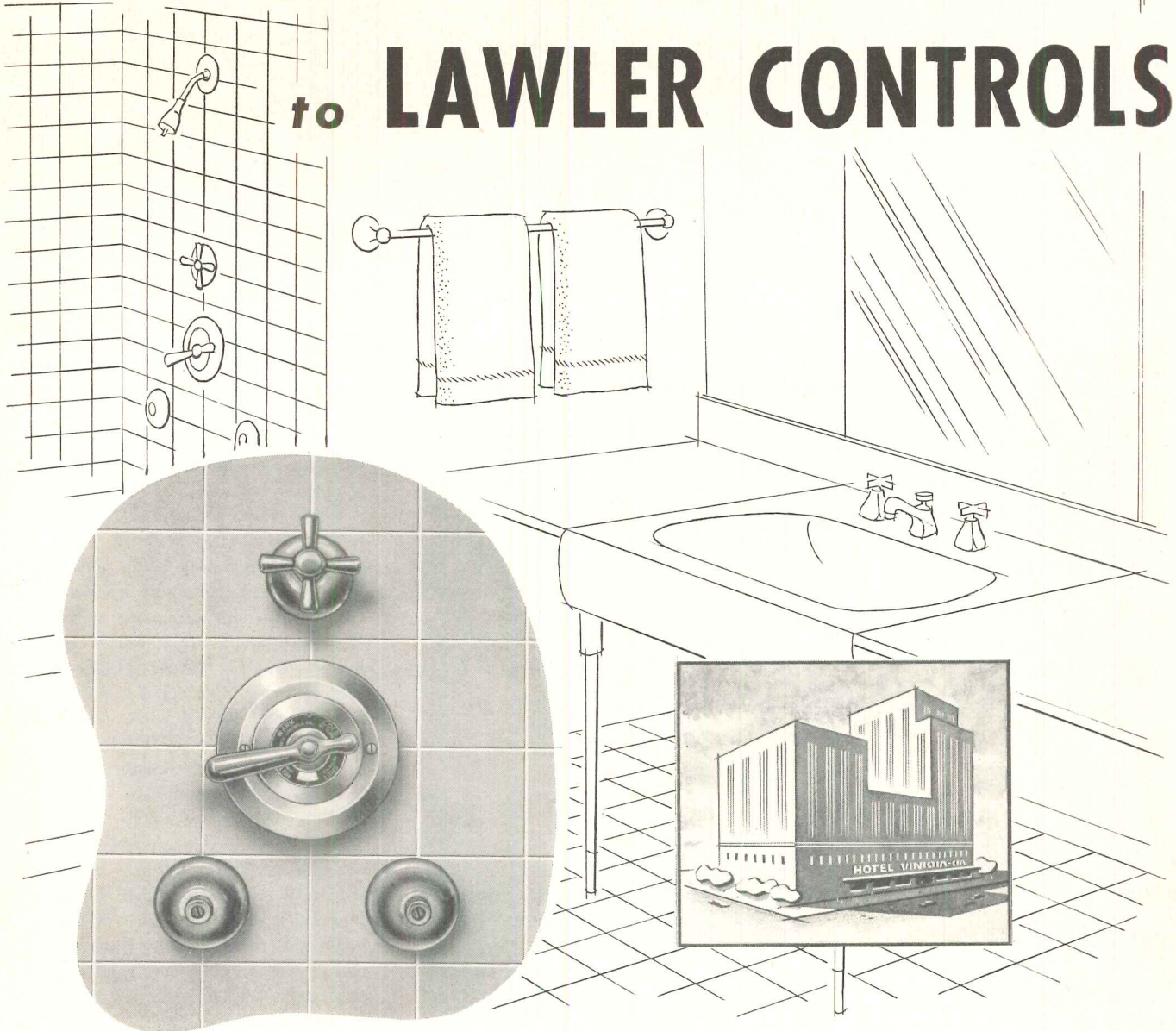
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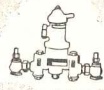

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tural curriculum prior to selection of candidates for continuation in the architectural program." Arthur Gallion of Southern California looks for potential in the student's first-year work in basic design, freehand drawing and graphics and "by the end of the second year we hope to fairly estimate this potential and encourage or discourage his continuing."

At Florida the student must complete his first two years in the college during which he takes some professional courses which are "oriented toward assisting the student in learning and in deciding for himself whether he has the necessary aptitudes." John Grand feels that this "self-determination" is their most effective method of judgment "if effectiveness is based upon the number

eliminated." He is concerned about the borderline cases and in concluding his answer says "we never forget that we can never tell whether a person will succeed until he has." Walter Gropius answers: "There is no satisfactory method of determining a student's aptitude for the study of architecture; it is unpredictable according to my practical experience. I think that the interest shown by a student should determine the decision to let him start. If it should turn out that he has made the wrong choice, he must be told later. I have come across cases where a student all of a sudden caught on after years of weak development." At Pratt, Olindo Grossi reports that they study a student's potential by examining his previous school records, giving standard tests, interviewing, and by asking the student "to complete an elementary home drawing examination for an indication of his motivation and to discover the amount of architectural training he has had." Harold Hauf reports that he never discovered a satisfactory method and that he does not believe that existing tests are reliable indices. "After a student has begun his studies, I believe that sooner or later it is possible to forecast with reasonable accuracy what his performance will be, but many times this is not apparent until about the third year. John Heimerich of New Mexico says: "Students and faculty should know by the end of a couple of years in an architectural school whether or not a student is a potential architect." Henry Hill of San Francisco believes "it is much too dangerous to say that one man should continue and that another should not. Who is there qualified to recognize the potential ability or feeling of a student before it has had time to be developed? I do not believe it is a teacher's responsibility to risk the destroying of a latent ability—it is a dangerous thing and highly personal."

Is "Creative Ability" Gaged?

Henry Kamphoefner at North Carolina State College reports having tried a variety of tests and having found none to be of "useful prophecy." Fred Lasserre of British Columbia employs the first year as a test of aptitude. Sidney Little of Oregon feels "that the best aptitude test for architecture is opportunity for the student to participate in the work offered and be a part of the evaluation

(Continued on page 306)

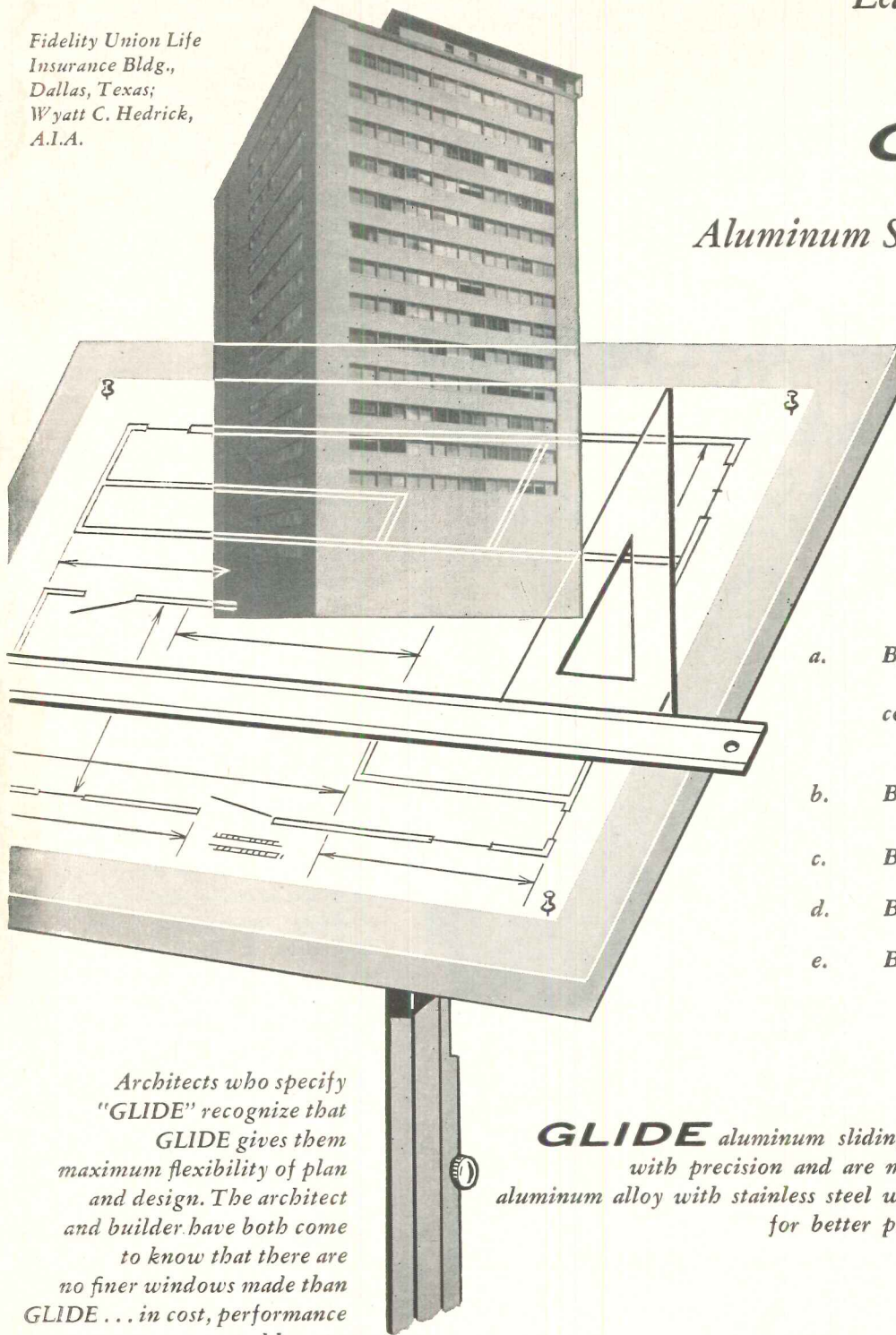


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of it as far as it relates to himself." Fred Markham of Utah, with years of experience as a member of N.C.A.R.B., finds the standard tests wanting in the task of discovering creative ability; notes that "work in basic design is emerging as one of the more reliable agencies of this purpose"; and urges "the preparation of a test designed specifically to pinpoint the qualities

characteristic of architects." At R.P.I. David Mochon indicates that admissions are handled by a central office; and that "weeding out" is performed by the faculty in the early years. Frank Montana of Notre Dame feels that a satisfactory determination of aptitude can be made through a personal interview and a very careful evaluation of high school work in the sciences, hu-

manities and "especially the Arts," with a re-evaluation at the end of the first year. Milton Osborne of Penn State has "about decided that it is quite a risk to say to any student that he will never become an architect." Theodore Pritchard of Idaho points out that state universities must enroll all who can meet the entrance requirements and says that: "Usually the process of natural selection works pretty well."

#### Basic Criteria Questioned

Paul Schweikher of Yale refers directly to Professor Sha'ag's report and asks "What is the promise of a good architect or a bad one? There are current universalities of judgment based on current work. Are they the criteria? Without some criteria for judgment and some definition of objective, what basis can there be for selection, for winnowing?" At Cooper Union Esmond Shaw reports that entrance is by competitive examination of scholastic aptitudes, spatial relations, pictorial design and architecture in addition to evaluation of high school records. A first-year foundation course serves as a further measure but they "are constantly trying to improve these methods."

At Carnegie the entering group is limited to 36 and the objective of pre-admission personal interviews and the academic and drawing tests is the modest one of choosing those 36 with whom the interviewing faculty feels it can work most effectively. A first-year curriculum balanced between the humanities and the sciences with a smaller portion of drawing and introduction to design serves as a generally final test of the ability to do college-level work and to undertake an architectural curriculum.

#### "Intelligence Is the Thing"

Linus Burr Smith of Nebraska wants applicants who have graduated in the top quarter of their class in an academic program and show motivation for architecture. It is his theory "that Shakespeare would have been just as good an architect as he was playwright if he had wanted to be and that intelligence is the principal thing." Robert Snyder of Cranbrook deals only with graduates of architectural schools. In selecting them he places great emphasis on the student's enthusiasm, craftsman-

(Continued on page 308)

Washington School, Evanston, Illinois. Architects Perkins and Will

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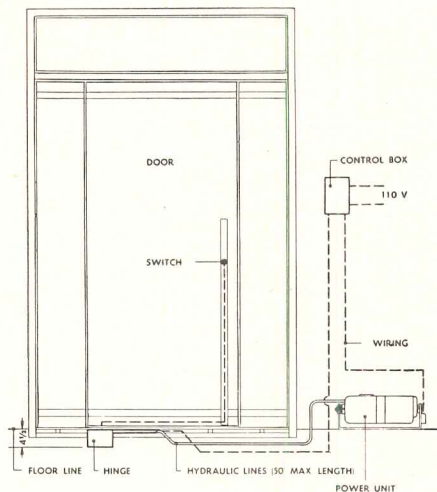
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ship and ability to communicate and express himself. "There is, to me, corollary between the ability to draw and the ability to create. It establishes confidence in the creative phases of architecture." At Miami Mike Stouland depends on the work of the early years and the faculty's evaluation of it. Elliot Whitaker of Ohio State reports that they review high school records,

insist on tests, interview each prospective student to determine his reasons for wanting to study architecture, and "suggest that he visit and talk with practicing architects in his own community." Ronald Whitely of Kansas State cites the state institution's commitment to those who meet scholastic entrance requirements and feels that any method of determining a student's

continuation "must be conditioned to the individual case." George Whittier of Portland, Ore., and the A.I.A. Committee on Education believes that the "student should decide whether he has the ability and the desire to become an Architect." He says that some "question whether the faculties have the ability to judge — an argument for better qualified faculty." And he concludes: "However, some requirements should be made to eliminate the students who take seven or eight years to complete a five-year course, the student who is afraid to get out and accept the responsibility."

**Summing Up the Testimony**

From all this testimony certain observations might be made, and if that were done those observations might be based on these principal, recurring themes:

1) There is no completely satisfactory method of determining the student's aptitude for the study of architecture or of estimating whether his potential contribution to the practice of architecture justifies encouraging him to complete his studies.

2) Despite the lack of a positive guide for both the admission and continuation of students and despite the seeming disclaimers of several of the educators most of the privately-funded and some of the tax-funded schools must and do make decisions both for and against admitting students to the study of architecture. Almost all the schools make decisions which lead to the voluntary or compulsory withdrawal of some students from the study of architecture.

3) Decisions bearing on a student's continuation of the study of architecture are almost always based on demonstration of ability in course work modified by demonstration of will and interest; are seldom based directly on prophecy of his future.

4) Decisions bearing on a student's admission to the study of architecture are based on one, several, or all of these: an evaluation of the secondary school record and the college record where it exists; the recommendations of employers and others; personal interviews particularly aimed at discovering motivation; tests of academic aptitude and achievement; tests of drawing and design abilities; and the test provided by the first and sometimes second year of the architectural curriculum.

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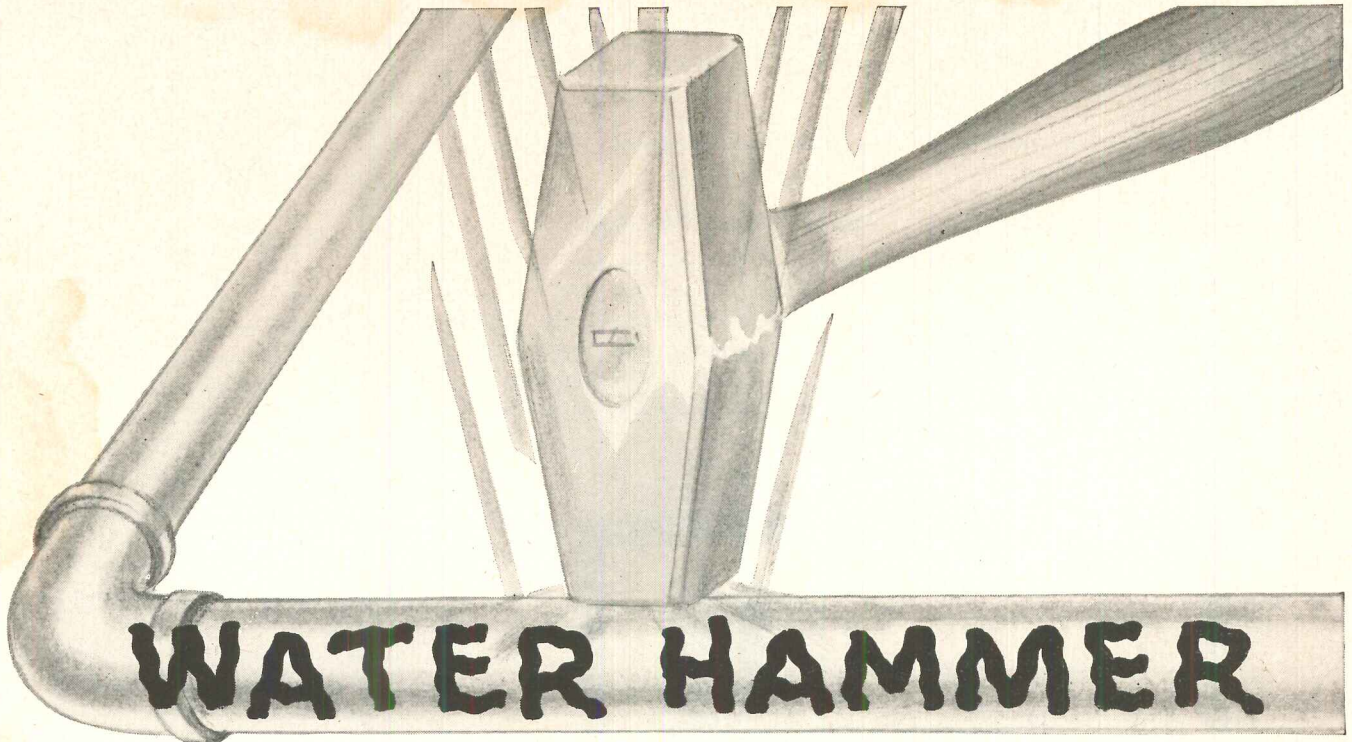
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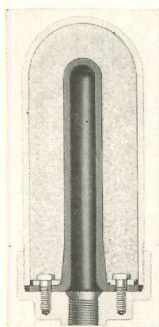
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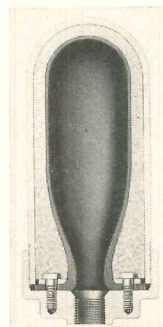
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## THE RECORD REPORTS

WASHINGTON (Cont. from page 38)

for optimum economy. Dormitory-type rooms may be provided under the following conditions:

"A. For top four grades of enlisted personnel.

"B. At service schools where advanced training requires substantial out-of-classroom study.

"C. Where the designated primary mission as determined by the Secretary

of the service in question, necessitates shift-type operations."

### Space Quotas "Unified"

The directive also provides that the gross barracks floor area per enlisted male shall not exceed an average of 125 sq ft on a planned-peacetime-capacity basis. The gross barracks floor area for housing enlisted women is set at a mini-

mum of 140 sq ft on a planned-peacetime-capacity basis.

In the interests of simplifying the criteria, detailed definitions of structural standards, fire resistance, maintenance, U-values, and the like, were eliminated; but the properties and installations division of the Defense Department favors the three-story concrete-block type with curtain walls, on the ground that the higher barracks housing means saving in roof and foundation costs.

The standards apply to all permanent-type new barracks construction at military establishments in the United States and its possessions. Also included are major alterations to existing facilities where these structures are being rehabilitated or converted into permanent-type barracks.

Compliance with the provisions of the instruction is mandatory, but Pentagon officials emphasized that these were issued only after complete consultation with all the services. The spirit of ready cooperation in the building programs of Army, Navy, and Air Force was stressed by those responsible for the new standards.

### Local Modifications Allowed

Notes at the end of the directive state:

"1. Other equally suitable materials or methods of construction may be utilized provided their use will not result in greater cost.

"2. Masonry construction for barracks less than three stories in height may be utilized where warranted by local conditions, as determined by the Secretary of the service.

"3. In areas where local experience has shown conclusively that any of the materials outlined above will not provide acceptable 25-year life construction, such modifications are authorized as may be necessary and still comply with the intent of these standards.

"4. Other features of construction not covered above will be comparable in quality and in keeping with the materials mentioned."

The directive (No. 4270.4) is signed by Franklin G. Floete, Assistant Secretary of Defense for Properties and Installations.

### DEFENSE STUDY LOOKS TO NEW AIRFIELD STANDARDS

Airfield design criteria and construction standards for all three services will be developed in a study just launched by the Defense Department.

(Continued on page 312)



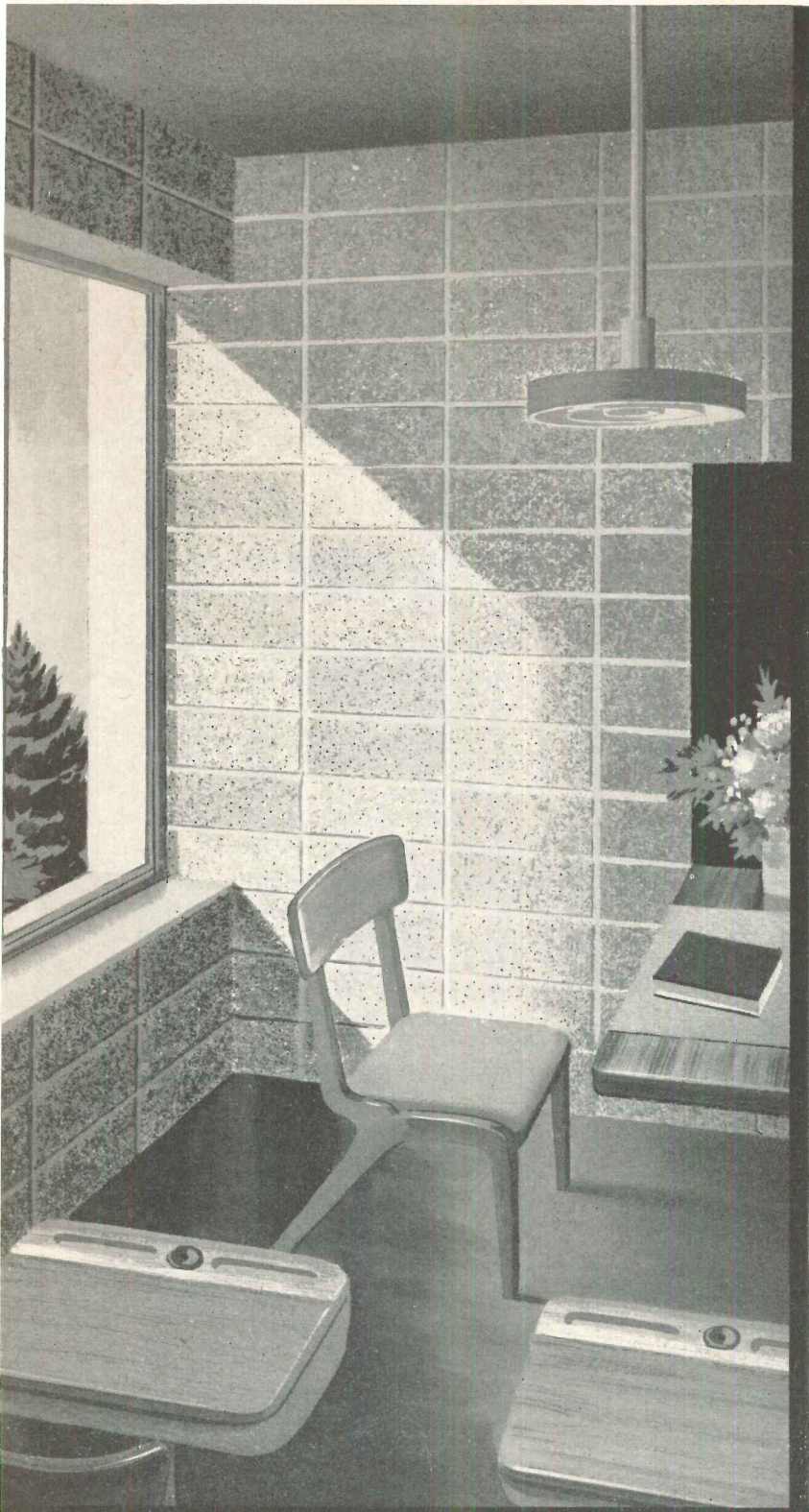
## Many farsighted Architects now plan with RCA sound

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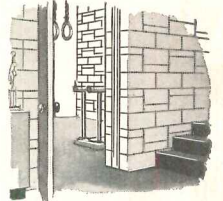
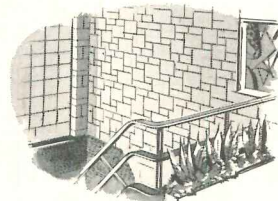
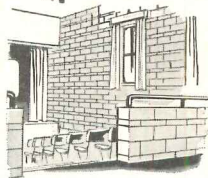
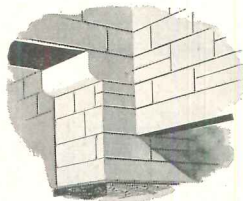
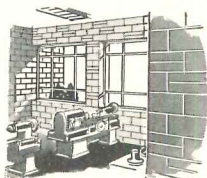
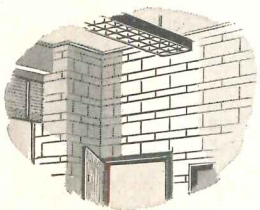
A large number of schools are being built these days of Waylite concrete masonry units.

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The new study is part of the broad technical program under the direct supervision of Admiral J. F. Jelley, USN, Director of Construction, Office of the Assistant Secretary of Defense (Properties and Installations), and Fred S. Poorman, Chief of the Technical Division.

The aims are economy in airfield construction and effective airfield utilization. The evaluation will cover facilities

### WASHINGTON (Cont. from page 310)

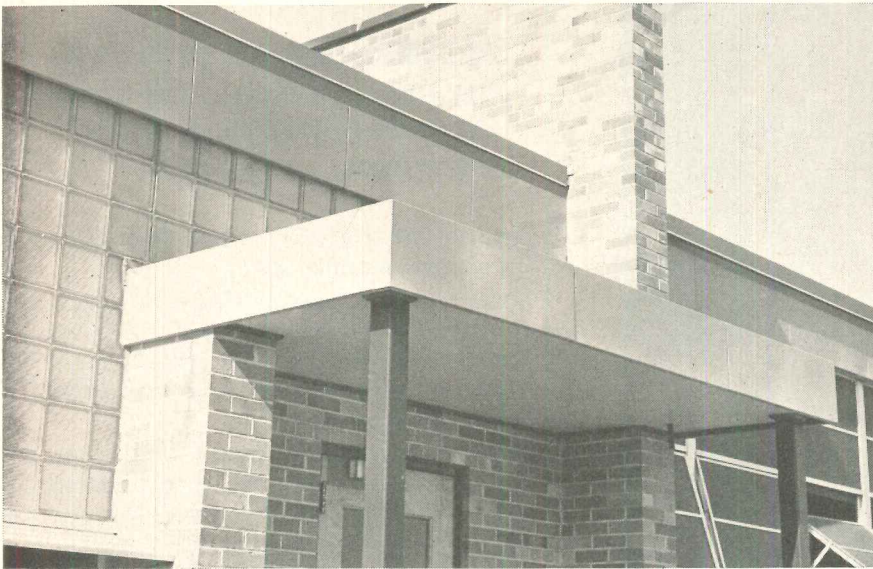
of the airfield proper and related repair, service, and operational facilities.

The engineering firm of Parsons, Brinckerhoff, Hall and Macdonald of New York has been selected to provide engineering assistance in connection with the study.

These advisory consultants have been selected to aid in establishing the scope of the work, to provide guidance during the progress of the survey, and to review

and comment on preliminary and final drafts of the report: Charles Froesch, vice president for engineering, Eastern Air Lines; William Littlewood, vice president for research, American Air Lines; Vice Admiral J. B. Moss, USN (Ret.); Major General John M. Weikert, USAF (Ret.); and Lieutenant General Ennis C. Whitehead, USAF (Ret.).

As it progresses, the effort will include consideration of the effect of trends in the development of weapons and equipment.



Ludington Junior High School,  
Ludington, Mich.  
Architect—Louis C. Kingscott & Associates

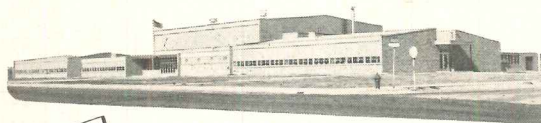
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## FHA AT 20 REDEDICATED TO THE PUBLIC SERVICE

The much-tried Federal Housing Administration began its third decade of service to the public on June 27.

In connection with the anniversary, Norman P. Mason, Acting Commissioner of the agency, made a public statement. He said his more than 5000 employes have a new concept of their responsibilities to consumers. (A lack of attention to consumer interest has been one of the chief criticisms of FHA during the recent and current investigation of irregularities.) Mr. Mason said FHA now is increasing its field of service to meet the new requirements of American families and listed these future plans:

1. "Orientation" of district directors in order that they may help the public, the builders, the lenders, the realtors, the building materials dealers and others to understand how FHA can help them.

2. An improvement and refinement in the administrative pattern of FHA to delineate authority more clearly and make it more "responsive."

3. Establishment of strong, active district offices in the field with close liaison with policy-making administrative departments in the central Washington office.

4. A "two-phased" inspection policy calling both for financial audits and for consultations with each employe to assure that he understands and is carrying out the policy as outlined by his district director.

5. Addition of an independent programming assistant in the Washington office to study FHA programs continually and to attempt to find more effective and less costly methods of operation.

6. Adoption of a program on minority housing education of FHA personnel so that they may give every assistance to those trying to make open-occupancy

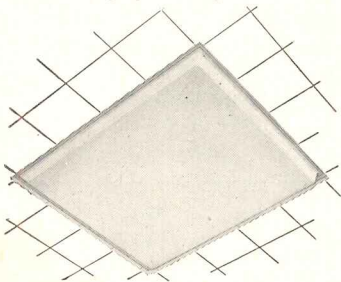
(Continued on page 314)



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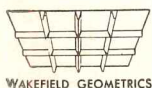
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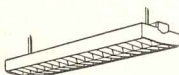
Conventional suspended fixtures cannot be used on the new 8 to 10 foot ceilings. Required is a luminaire like the Wakefield Beta-Plex, which mounts practically flush with the ceiling. Beta-Plex has a Plexiglas diffuser which distributes light evenly, without direct glare. And when unlit, because it has a special non-specular mat finish, the diffuser does not reflect an image of the brightly daylighted window.

School officials and architects planning schools with low classroom ceilings are invited to send for an illustrated folder on the Wakefield Beta-Plex luminaire. The F. W. Wakefield Brass Company, Vermilion, Ohio. In Canada: Wakefield Lighting Limited, London, Ontario.

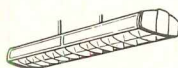
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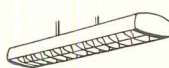
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## THE RECORD REPORTS

housing available and calling also for safeguards to insure that FHA programs are available to all without regard to race, creed, color or national origin.

### FHA Is "Streamlined"

There have been some important organizational changes in the FHA in recent weeks. Commissioner Mason acted to streamline its liaison with the 75

## WASHINGTON (Cont. from page 312)

field offices by replacing the five lines of direct operational command with one. He reassigned specialists employed in the field offices to establish staffs in each region which are virtually self-sufficient. Four assistant commissionerships were set up pending appropriations of funds by Congress to man them. One is for technical standards, one for programs, one for operations, and one for adminis-

tration. Mr. Mason was bent on hiring new material for a dozen high Washington offices.

### A Look at the Record

Since June 1934, FHA has helped some 4.5 million families obtain homes. It has insured mortgages in a total amount of \$26 billion and more than 17 million property improvement loans aggregating nearly \$8 billion. FHA likes to call attention to this as the achievement of an agency that "has not cost the taxpayers one penny."

The U. S. Chamber of Commerce joined in the numerous accolades directed at the FHA as it began its third decade. Martin W. Watson, chairman of the construction committee, commended the agency for its "20 years of remarkable service to home buyers." Pointing out that FHA has brought good homes to many families who could not otherwise have obtained them, he characterized the operation as the most important single factor in making the U. S. the best-housed nation in the world.

### SENATE'S PROBE OF FHA RESUMES: SCOPE WIDENS

The Senate Banking Committee investigations of "irregularities" in the administration of Federal government housing programs gave evidence of continuing throughout the summer and broadening as they went.

Field visits were being planned to nine or ten major cities to look into all sorts of alleged abuses ranging from Title I home loan insurance to military housing and slum clearance.

The revived public hearings in Washington had turned up more details of "mortgaging out" on Section 607 rental housing projects and brought from Chairman Homer E. Capehart (R-Ind.), the decision to call all the former Federal Housing Administration commissioners for questioning.

### FHA Moved Too

Simultaneously, Acting FHA Commissioner Norman P. Mason made some significant moves at the administrative level. He sent out over 7000 questionnaires which "required" builders of Section 608 projects to detail their operations to date. He cut the so-called "frill" improvements from the Title I program and said the 5000 people who work for

(Continued on page 316)

Ft. Worth International Airport



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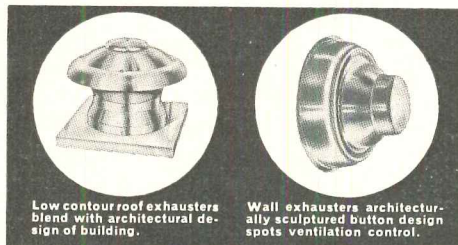
Low contour Jenn-Air Exhausters, made of ageless spun aluminum, are non-rusting—provide strength without weight. Next time consult Jenn-Air Ventilating Specialists on your ventilating problems.



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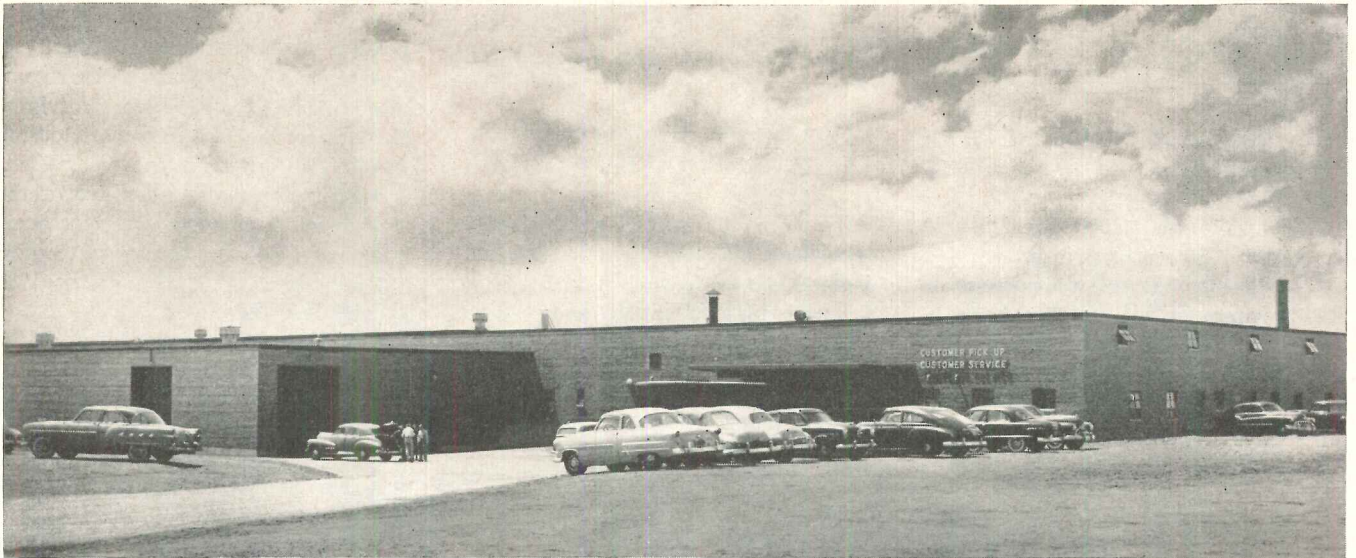
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Sears Roebuck Warehouse, Buffalo. Contractor: Santoro Construction Co. Steel Fabricator: Buffalo Structural Steel Co. Architect: G. Morton Wolfe, Buffalo.

## HOW OPEN-WEB STEEL JOISTS CUT COST OF ROOFING SEARS' WAREHOUSE IN BUFFALO

Typical of many warehouses in which Bethlehem Open-Web Steel Joists are being used to advantage is the new Sears Roebuck warehouse at 420 East Delaware Ave., Buffalo. This brick-and-concrete-block building, which supplies three retail outlets in the Buffalo area, measures 275 ft by 400 ft, with a railroad track along one 400 ft side. An attached garage houses a fleet of delivery trucks.

In the main building, 1800 Bethlehem Open-Web Steel Joists, 24 ft long, were used in the roof structure, providing storage space below separated by aisles 8 ft and 10 ft wide. The garage, measuring 60 ft by 150 ft, has a roof structure built with Bethlehem Longspan Joists, providing maximum column-free space where it is most needed.

Bethlehem Open-Web Steel Joists proved to be ideal in the construction of this building. They were simple to erect because they reached the job site completely fabricated, ready for placing. Pipes and conduits were run right through the open webs. Economies made possible by the use of open-web steel joists helped in keeping down the combined cost of the steel columns, all roof steel and the joists themselves, together with the finished roof, to a total of \$1.04 per sq ft.

In addition to the cost-saving, the use of Bethlehem Open-Web Steel Joists in this warehouse provided fire-safety. These joists, in combination with concrete floor and poured roof, provided a fire-resistance of from one to four hours.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation.  
Export Distributor: Bethlehem Steel Export Corporation



Main warehouse area has wide uncluttered aisles.



Garage has large areas of column-free space.

### BETHLEHEM OPEN-WEB STEEL JOISTS



## THE RECORD REPORTS

WASHINGTON (Cont. from page 314)

FHA were being indoctrinated with a "new responsibility-to-the-public attitude."

Meanwhile, the 55,000 dwelling unit applications for mortgage insurance filed in June hardly indicated a breakdown of the program. On the contrary, it represented the first year-to-year gain in any month since June 1953, with field office applications exceeding those of June a year ago by 20 per cent.

### COLE GETS BROAD POWERS IN APPROPRIATIONS BILL

The need for special reorganization legislation affecting the Housing and Home Finance Agency was removed by language inserted in the Independent Offices Appropriations Act of 1954 giving the housing agency broad new administrative powers.

One of the new provisions makes it

possible for Administrator Albert M. Cole to place in effect the specific recommendations of the President's Advisory Committee on Government Housing Policies and Programs.

Another important power involves the assignment of responsibilities for operating activities, vital because of the new duties assigned to HHFA in the 1954 housing bill. These are:

1. Review and approval of workable programs developed by localities for eliminating and preventing slums and urban blight and encouraging the rehabilitation of blighted areas and the clearance and redevelopment of slum areas.

2. Grants to localities to assist them in developing and testing improved techniques for preventing urban slums and blight.

3. Grants to state, metropolitan, and regional planning agencies for urban planning.

4. Advances to states, cities, and other municipalities for the preparation of plans for needed public facilities.

5. Loans for smoke abatement and air pollution prevention.

6. Loans to public bodies to finance the construction of public facilities.

Depending upon the interpretation of the appropriations law language, HHFA now could be enjoying more administrative freedom than it would have had under a new reorganization plan alone. Administrator Cole now has "full authority to assign and reassign functions, to reorganize and to make whatever changes, including the reallocation and transfer of administrative expense funds and authority where applicable, necessary to promote economy, efficiency, and fidelity in the operation of the HHFA."

### RETIRED PBS CHIEF SEES "NON-FUNCTIONAL" TREND

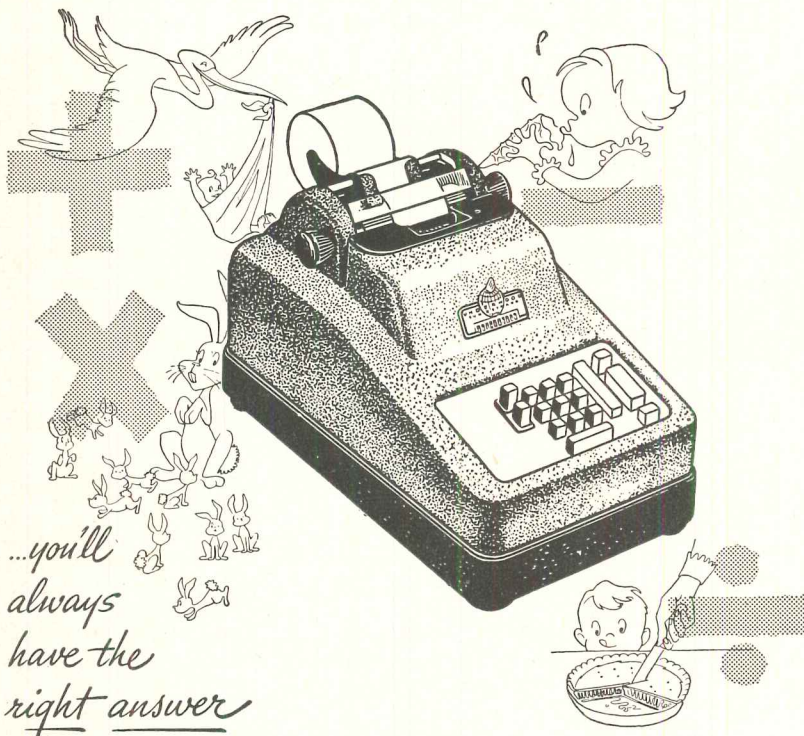
W. E. ("Bert") Reynolds, retiring as Public Buildings Commissioner, expressed the hope that the "dangerous trend" in "non-functional" architecture would not long continue. He said he meant the kind of design that does not utilize every available square foot of space.

At the same time, Mr. Reynolds urged "dignity" in the design of buildings; he said the object should be structures that are pleasing to the eye — *and* functional.

"When we commission an architect to do a public building," he com-

(Continued on page 318)

No matter how you  
**FIGURE** it:



with this new quiet Multi-Flex

**UNDERWOOD SUNDSTRAND**

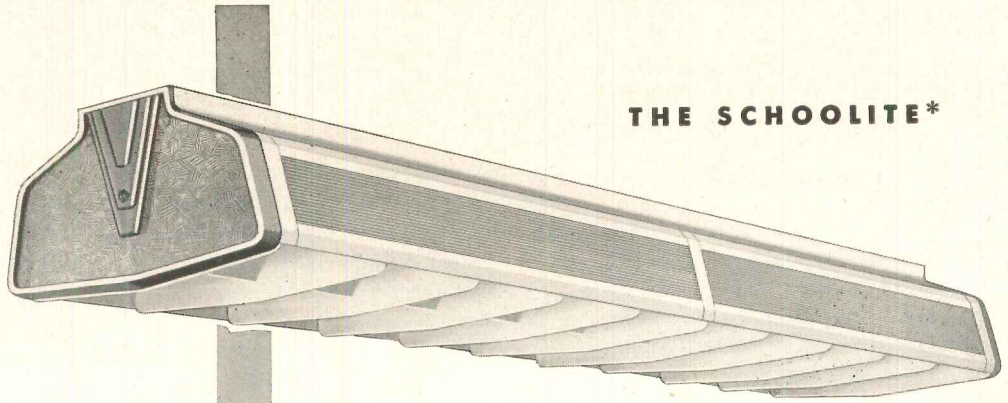
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MOST ARCHITECTS**

Specifying lighting can be a paradox!

It can be one of the *least* important or one of the *most* important requirements of a job.

It is entirely up to the architect because he is charged with the proper selection of lighting.

He can, if he wishes, easily select lighting fixtures from a catalog—fixtures that will meet his requirements serviceably enough.

Or, he realizes that lighting is not mechanical, but is a very important requirement of living. He thinks not of lighting for buildings, but knows that the comfort and well-being of people using his buildings depend upon having the right kind of lighting fixtures.

It is this kind of architect with whom KAYLINE works best—with those who feel as we do about lighting—that it is not like other products, but is one of the most *important* needs of any building.

It is upon this policy that KAYLINE has built its reputation for quality. Our entire organization is geared to give each order the special attention and accurate handling that lighting deserves.

KAYLINE is not a big firm offering a tremendous volume of production at popular prices. We at KAYLINE consider ourselves craftsmen—artisans in the field of lighting fixtures. We value human eyesight. We build to protect it.

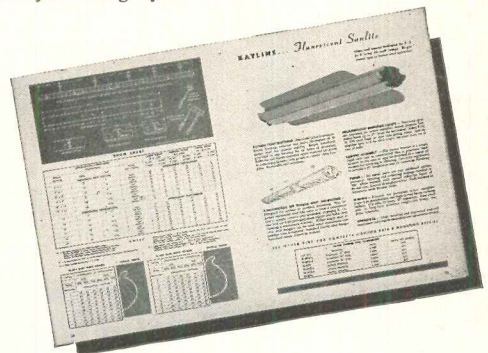
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\* In it is described one of our widely used fixtures—the SCHOOLITE—a KAYLINE fixture created to aid the young eyes of the students for whom you design your schools.

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## THE RECORD REPORTS

mented, "the first thing we stress is dignity and usefulness."

During his 20 years of public service, Bert Reynolds saw many changes in public buildings design. He saw the disappearance of long flights of steps, elimination of roof parapets, and the simplification of corridor layout.

Looking ahead, Mr. Reynolds said he would like to see more attention given to

## WASHINGTON (Cont. from page 316)

the exterior surfaces. Cleaning is costly maintenance and can be eliminated with the use of proper materials, he believes. He also has recommended rounded corners in buildings to prevent scraping and chipping.

Mr. Reynolds was succeeded when he retired June 30 by Peter A. Strobel, Denmark-born New York consulting engineer.

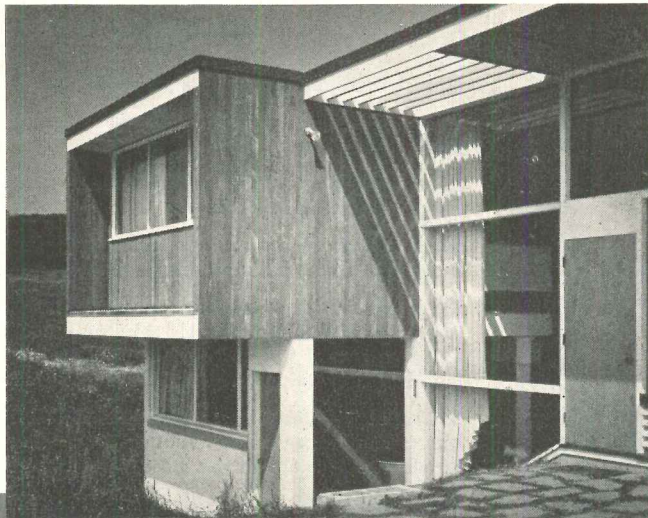
## FCDA TAKES OWN ADVICE AND "DISPERSES" OFFICE

The Federal Civil Defense Administration was preparing to move its national headquarters office from Washington, D. C. to Percy-Jones Army General Hospital at Battle Creek, Mich., by September 1.

It was decided that as long as the agency was preaching the protection of life and property by dispersion it was time it moved itself out of one of the nation's prime target areas. At Battle Creek, FCDA will occupy a substantial, roomy building with plenty of space for expansion. The Army has abandoned the installation there.

A good share of the 496 employees in Washington will be uprooted, but the Administration will maintain an office and sizeable staff in the Capital to maintain liaison with other Federal agencies. Approximately 25 FCDA officials will remain in Washington.

The move had been under consideration for some time with other sites in view before the Michigan location was chosen. FCDA had had its eye on Indiantown Gap, Pa.; Grand Island, Neb.; and Camp Atterbury, Ind.



Architects: E. H. and M. K. Hunter, Hanover, N. H.

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## ADDENDA

- The Air Force said more than 260 architectural and engineering firms had expressed an interest in the new Air Force Academy which will be constructed near Colorado Springs, Col. This number of firms either inquired about how to get more information on the proposed development, or submitted brochures in connection with it. The selection was to have been made around the end of July.

- Robert B. Murray, Jr., Under Secretary of Commerce for Transportation, has estimated that 760 airports throughout the country would be eligible for Federal aid for construction of facilities under terms of the revised program. The Commerce Department recommended to Congress that the act be changed to (1) exclude terminal building from Federal assistance; (2) increase from 25 to 50 per cent the amount of available funds which can be distributed on a discretionary basis without regard to a fixed apportionment formula; and (3) provide Federal aid only to those airports with "sufficient national importance."

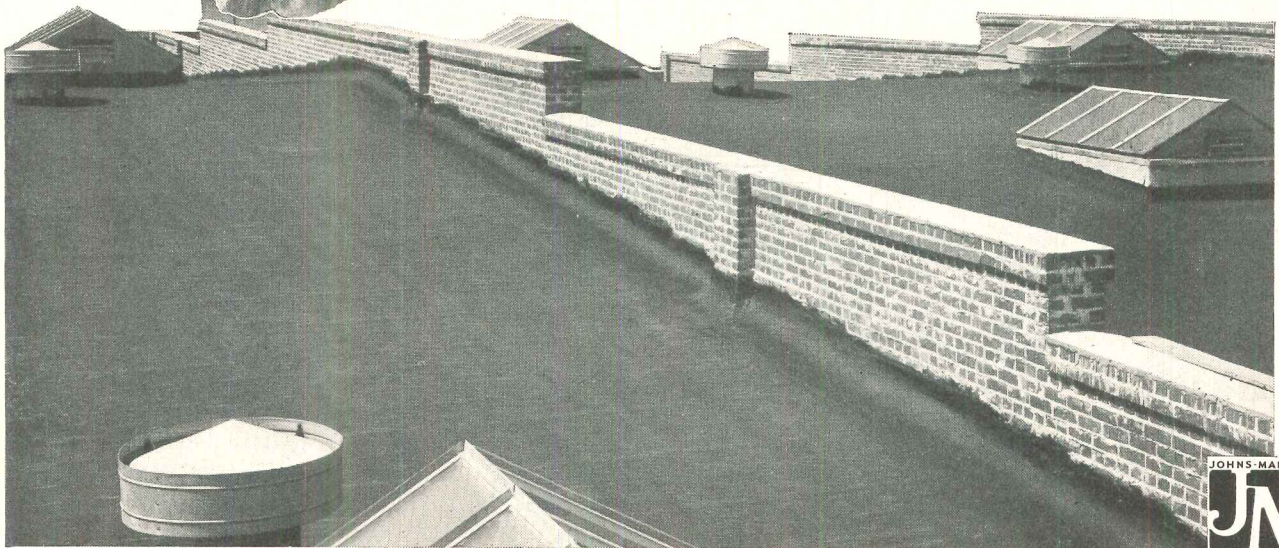
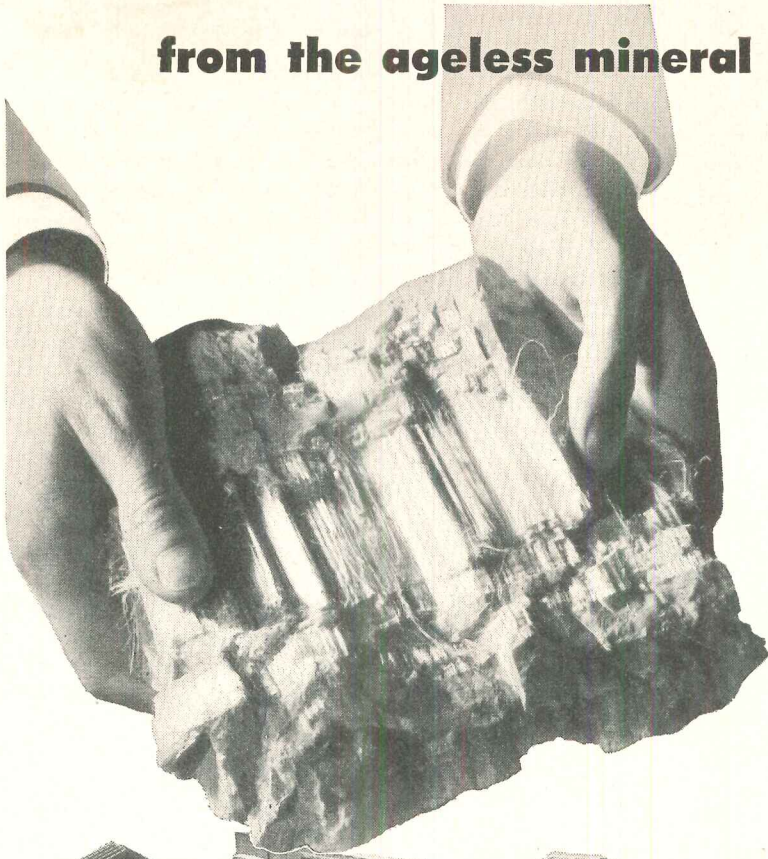
(More news on page 320)

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ough water tightness and effective treatment for critical roof areas, see your Approved Johns-Manville Contractor. He's listed in the Classified Section of the telephone directory. Or send for folder BU-51A. Write Johns-Manville, Box 158, New York 16, N. Y. In Canada, write 199 Bay St., Toronto 1, Ont.

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## THE RECORD REPORTS

(Continued from page 318)

### ON THE CALENDAR

#### August

- 4-6 Conference on new developments in engineering design — Virginia Polytechnic Institute, Blacksburg, Va.  
 13-14 International Institute on Child Psychiatry — University of Toronto, Toronto, Ont.  
 14-21 Fifth International Congress on

Mental Health — University of Toronto, Toronto, Ont.

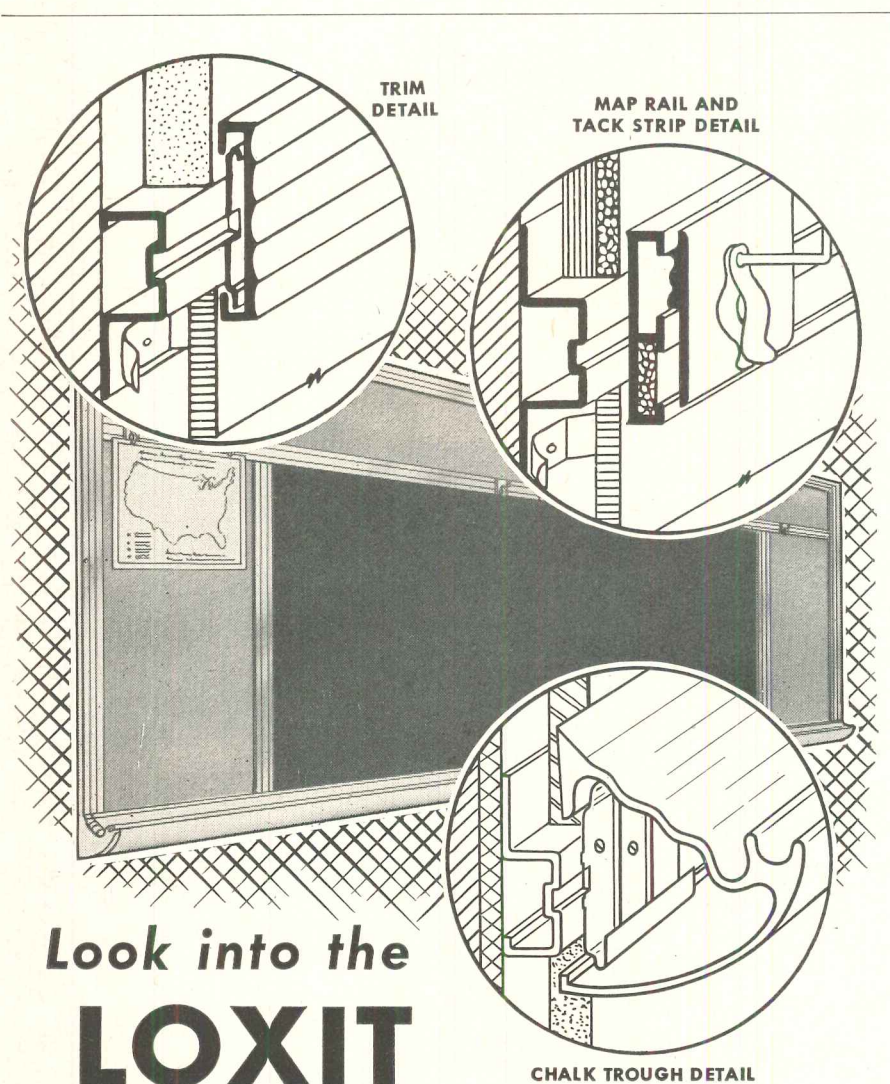
- 17-19 Fire Protection Engineering, a conference jointly sponsored by the School of Architecture and City Planning, the School of Engineering and the School of Industrial Management — Massachusetts Institute of Technology, Cambridge, Mass.  
 17ff The Modern Movement in Italy:

Architecture and Design; a circulating exhibition; through Sept. 6 — Museum of Modern Art, 11 W. 53rd St., New York City

- 19-21 Northwest Regional Conference, American Institute of Architects — Eugene, Ore.  
 23ff 16th Annual Summer Program in City and Regional Planning arranged in the School of Architecture and Planning; through Sept. 3 — Massachusetts Institute of Technology, Cambridge  
 25ff Tenth Triennale di Milano; an international exhibition of architecture and the allied arts and industrial design; through Nov. 15 — Milan, Italy. For information on participation, address: Triennale di Milano, Palazzo dell'Arte al Parco, Milano

#### September

- 1-6 Golden Jubilee Meetings, International Electrotechnical Commission — University of Pennsylvania, Philadelphia  
 4ff Fall Architects Trek to Spain, Italy, Greece, Egypt and France, under the leadership of Edmund Purves, F.A.I.A.; through Oct. 7  
 9-19 Sixth Annual National Home-furnishings Show — 71st Regiment Armory, 34th St. at Park Ave., New York City  
 13-14 The 33rd Annual Fall Meeting, The Producers' Council — Hotel Commodore, New York City  
 13-16 Annual convention and architectural exhibit of hospitals, American Hospital Association — Navy Pier, Chicago  
 13-17 National Technical Conference, Illuminating Engineering Society — Chalfonte-Haddon Hall, Atlantic City, N. J.  
 15 Chapter Presidents' Conference, The Producers' Council — Hotel Biltmore, New York City  
 19-26 National Home Week: a nationwide observance sponsored by the National Association of Home Builders  
 26-28 Regional Conference, Gulf States District, American Institute of Architects — Little Rock, Ark.  
 27-30 Annual Meeting, Institute of Traffic Engineers — Hotel Muehlbach, Kansas City, Mo.  
 28ff 1954 Iron and Steel Exposition,  
 (Continued on page 322)



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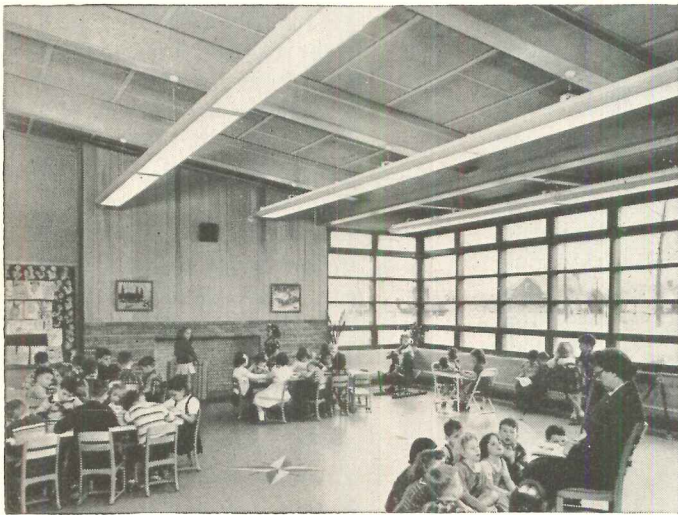
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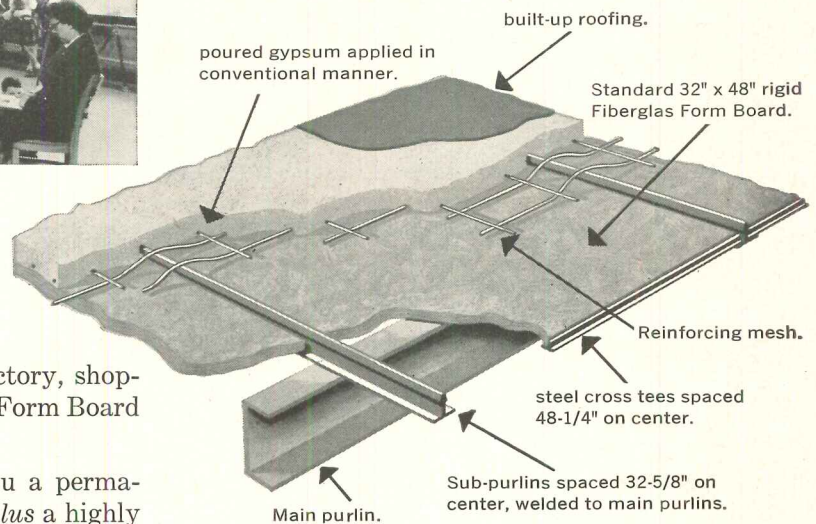
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## THE RECORD REPORTS

(Continued from page 320)

sponsored by Association of Iron and Steel Engineers; through Oct. 1 — Public Auditorium, Cleveland, Ohio

29ff Annual Meeting, Porcelain Enamel Institute; through Oct. 1 — The Greenbrier, White Sulphur Springs, W. Va.

30ff Annual Convention, California Council of Architects; through Oct. 2 — Hoberg's Lake County

### October

- 2-10 "Better Homes for a Better America": an exposition sponsored by the National Retail Lumber Dealers Association — Kingsbridge Armory, New York City
- 5-7 The 57th Annual Convention, National Hardwood Lumber Association — Houston, Tex.
- 11-14 21st Annual Conference and Building and Maintenance Ex-

hibit — Bellevue-Stratford Hotel, Philadelphia

11-15 Fall General Meeting, American Institute of Electrical Engineers — Morrison Hotel, Chicago

14-15 Annual Meeting, American Council on Education — Chicago

14-16 Annual Convention, Architects' Society of Ohio — Biltmore Hotel, Dayton

15-16 Second Annual Convention, Architectural Woodwork Institute — LaSalle Hotel, Chicago

17-22 Semiannual Meeting, Society of Motion Picture and Television Engineers — Ambassador Hotel, Los Angeles

18-22 The 42nd National Safety Congress and Exposition — Hotels Conrad Hilton, Morrison and LaSalle, Chicago. For information: R. L. Forney, General Secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

21-23 Annual Convention, New York State Association of Architects — Lake Placid Club, Lake Placid

21-23 Central States Regional Conference, American Institute of Architects — Wichita, Kans.

27-28 The Uses of Plastics in Building: a conference sponsored by the Building Research Institute, with the Manufacturing Chemists' Association, the Society of the Plastics Industry and the Building Research Advisory Board — National Academy of Sciences, Washington, D. C.

28-30 Annual Meeting, Minnesota Society of Architects — Rochester, Minn.

28-30 North Central Regional Conference, American Institute of Architects — Kahler Hotel, Rochester, Minn.

31ff National Association for Mental Health; through Nov. 2 — Hotel Carter, Cleveland

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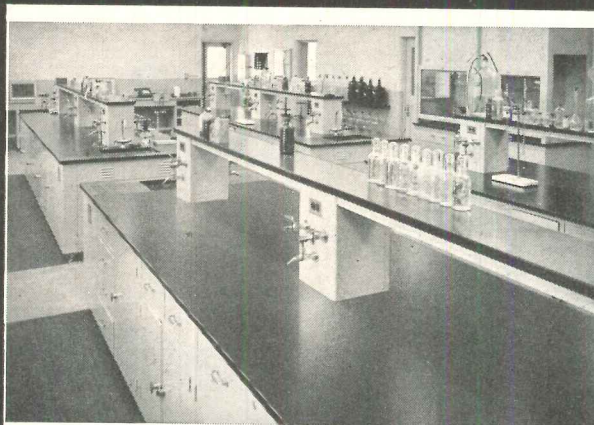
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## OFFICE NOTES

### Offices Opened

• Eason, Anthony, McKinnie & Cox, Incorporated, Architects, have opened new offices at 1391 Madison Avenue, Memphis, Tenn.

(Continued on page 326)

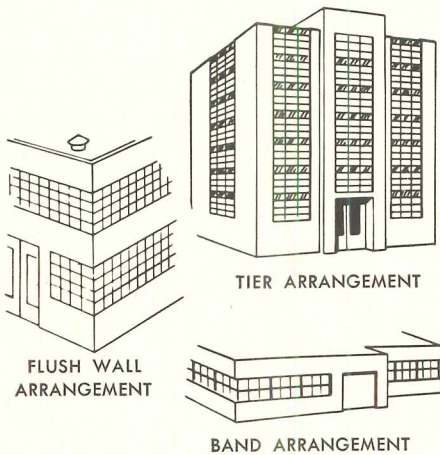
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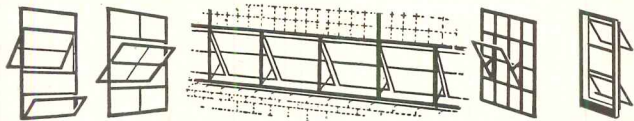
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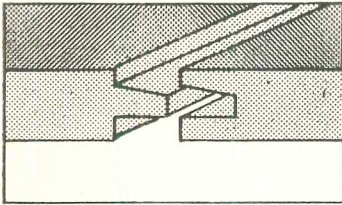
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New York 17

Washington 16

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## THE RECORD REPORTS

(Continued from page 322)

- Raymond C. Giedraitis, Architect, has announced the opening of an office at 340 East 44th St., New York 17, N. Y.

- Cliff May, of Cliff May-Chris Choate, Designers and Consultants for Low Cost Housing, has announced the formation of a new firm, "Cliff May Associates, Custom Houses for Modern Living." The firm is under the direction of Jack Lester, Architect, and is located at 13151 Sunset Blvd., Los Angeles.

- Harris A. Sanders, Architect, recently announced the opening of an office. The address is 36 State St., Albany 7, N. Y.

### Firm Changes

- William S. Dowis Jr., Architect, has become an associate of Rufus D. Lewis Jr., Architect, the firm to be known henceforth as Rufus D. Lewis Jr., Architect — Wm. S. Dowis Jr., Associate. The firm's address is P. O. Box 811, Florence, S. C.

- Donald H. Newman, A.I.A., has become an associate in the Larchmont, N. Y., firm of McCoy & Blair, Architects, it was recently announced by partners Robert S. McCoy and G. Norman Blair.

- Charles A. Pearson Jr., Architect, of Radford, Va., has announced that Frank H. Hill Jr. and George L. Sullivan Jr., formerly his associates, have been admitted to the firm as partners. The firm will assume the title Pearson, Hill & Sullivan, Architects.

- Arnold H. Vollmer has joined the firm of Brown & Blauvelt, consulting engineers, as a general partner. Mr. Vollmer has been Manager of Technical Operating for the firm since 1951. Offices are located at 468 Fourth Ave., New York City.

### New Addresses

Rene F. Gelpi, Architect, 302 Maple Ridge Drive, Metairie 20, New Orleans, La.

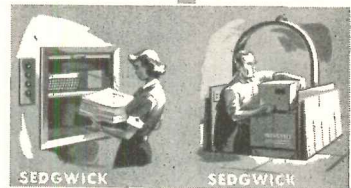
Sanford B. Wells, Architect, 118 E. 36th St., New York City.

Wilson and Christie, Associated Architects, 403 Washington Ave., Towson 4, Md.

(More news on page 330)

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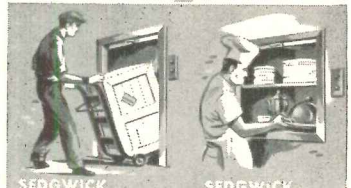
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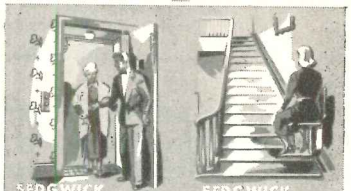
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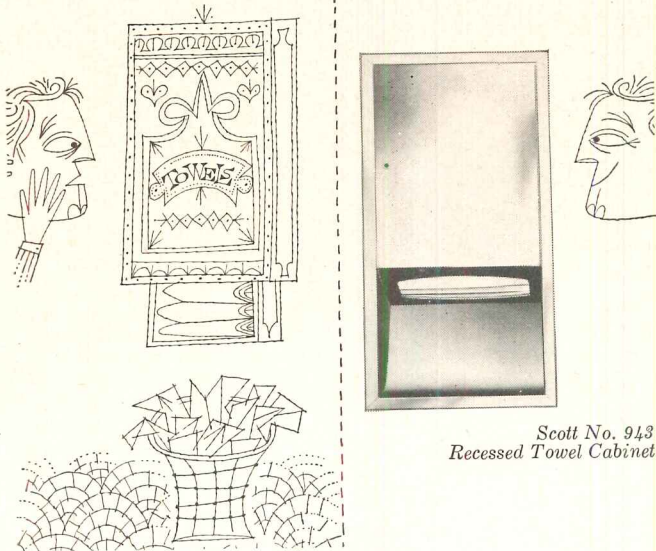
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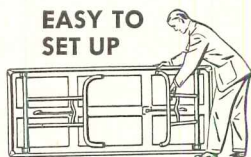
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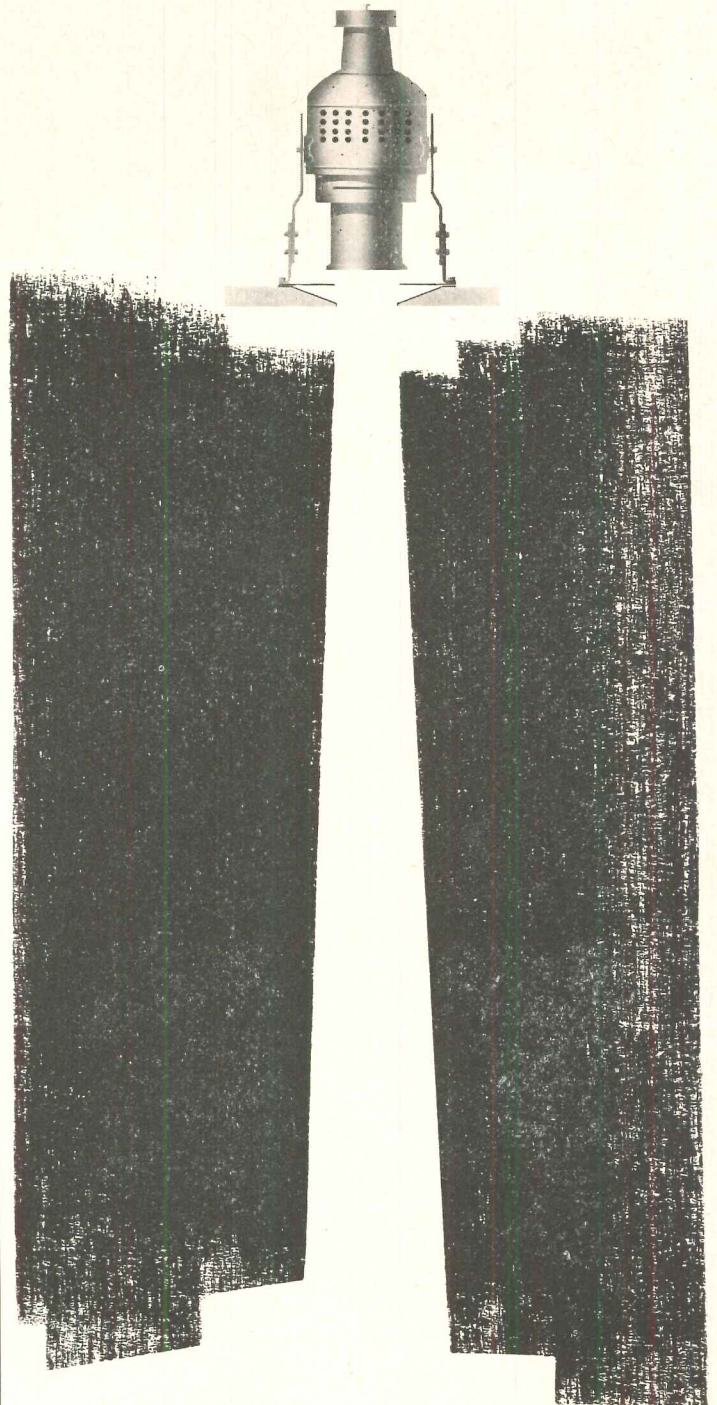


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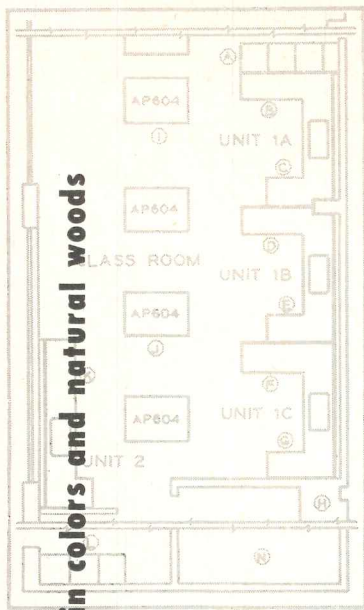


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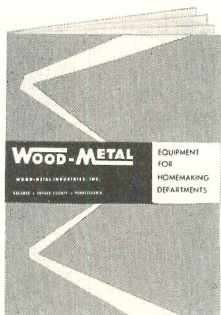
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## THE RECORD REPORTS

(Continued from page 326)

### ENGINEERS GATHER FOR MILWAUKEE CONVENTION

The National Society of Professional Engineers recently met in Milwaukee for a four-day annual meeting.

Subject of much discussion at the convention was the question of engineers and professionalism. Speaking of current attempts to unionize engineers in industry, guest speaker Harry A. Winne, a vice president of General Electric Co., said that an engineer who joins a labor union automatically gives up his right to call himself a professional man. The engineer, said Mr. Winne, should be regarded as part of management.

A resolution was adopted by the body directing the organization to implement a program to "inform engineers and their employers of their joint responsibility in preserving the integrity of the engineering profession."

The engineers also resolved to cooperate more closely with the American Institute of Architects and with architects on the state and local levels.

The formation of a board composed of civilian and military personnel was recommended to set up a policy for selective service which would see that the armed services would not divert essential personnel from industry.

The society's 1954 award for meritorious achievement was presented to Mr. Winne "because of his extraordinary achievements in the fields of invention, design, development and production, as well as his professionalism."

*New officers of the N.S.P.E.: F. L. Frazza, vice president; Virgil Gunlock, vice president; M. F. Wooten Jr., vice president; Clarence Shoch, president; O. C. Mayer, vice president; R. J. Rhinehart, vice president; R. B. Allen, treasurer. Not shown: John B. Jardine, vice president*

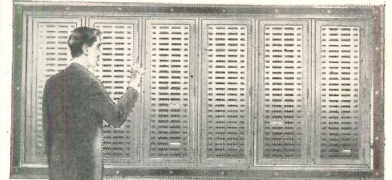


(More news on page 334)

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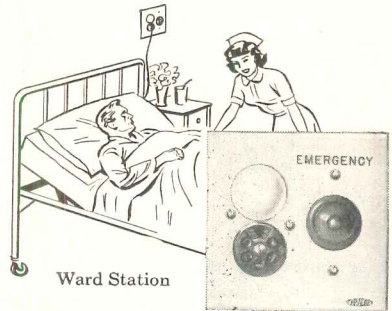


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In thousands of modern hospitals, Faraday systems are continuously at work. They flash silent messages—sound emergency calls—save endless numbers of steps and hours of time in handling routine calls. They have proven their day-in, day-out dependability.

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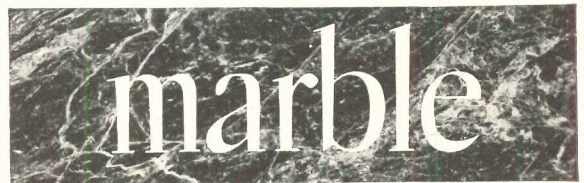


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**INCOMBUSTIBLE** — Perlite concrete cannot burn or spread fire.

**NO VAPOR SEAL** needed between insulation and metal deck.\* This eliminates fire hazard of bitumen on exposed steel.

**MONOLITHIC** — Continuous slab means no multiple cracks to leak heat or molten roofing materials.

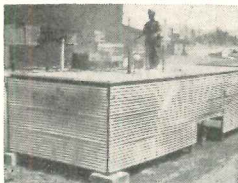
**STURDY** — Mesh-reinforced perlite concrete stiffens deck, shields roofing from flames even after metal deck is buckled by fire.

**PERMANENT**—Perlite concrete won't "give" under ordinary traffic, can't rot or decay.

## PROVEN FIRE RESISTANCE

200°F ON ROOF

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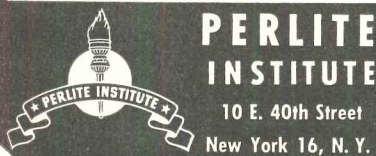


Flames failed to penetrate a metal deck insulated with perlite concrete in a 45-minute fire test. Final average temperatures are shown above. Write for complete test data.

### U-VALUES FOR PERLITE CONCRETE (1:6 MIX) ON METAL DECK WITH ROOFING:

Thickness	2"	2½"	3"	4"
U-value	.222	.186	.160	.126

\*FOR TECHNICAL DATA write for 48-page report: "Vapor Diffusion and Moisture Migration through Perlite Concrete," by Prof. C. E. Lund. \$1.00 per copy. Sorry, cannot bill — please send cash or check with order.



**PERLITE INSTITUTE**

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New York 16, N. Y.

## REQUIRED READING

(Continued from page 48)

characteristics and requirements of an effective program. Stating that audio-visual materials are a means to the end rather than ends themselves, to be used in combination with standard methods as integral parts of the lesson, the editors have included chapters on vitalizing the curriculum; the initiation and administration of an audio-visual center; provision of audio-visual materials, equipment and building facilities; school production of audio-visual materials; the selection and education of audio-visual personnel; the distribution and circulation of audio-visual materials and an evaluation of the audio-visual program.

### BIBLIOGRAPHY

A list of conferences, booklets and news releases of use in the study of school planning.

### BROCHURES

*Jewish School Building Manual.* By Isadore H. Braun. The Board of Jewish Education (Chicago, Ill.) 1954. 6 by 9 in., 32 pp, illus., \$1.00

This booklet gives information on the ideas and considerations, as well as construction specifications, pertaining to the goals and methods in Jewish education.

*Planning a Junior High School.* By the Staff Committee, Board of Education (Scarsdale, N. Y.) 1953. 8½ by 11 in., 42 pp, \$2.00

A fairly thorough progress report and guide compiled by this community's Board of Education to stimulate further study by the school staff, architects and citizens of the issue of one versus two junior high schools. The booklet includes background studies of school planning, relation with the community, pupils, curriculum, and spaces for learning. It will be of especial interest to other communities planning to build secondary schools.

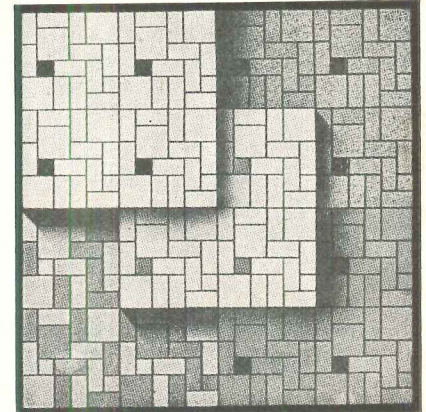
### SUMMARIES OF CONFERENCES HELD ON EDUCATION

*Integrated School Construction. Conferences on a research program to provide maximum school facilities at low cost.* Sponsored by Building Research Laboratories of the Southwest Research Institute, Pittsburgh, Pa., Feb. 1954 and March 1954.

Follow up of conference held in November, when this group concluded that further research should be done on theme that the various component elements entering into construction of school classroom units be prefabricated and that the many manufacturers of such parts cooperate in the development of a standard modular system for their use.

(Continued on page 342)

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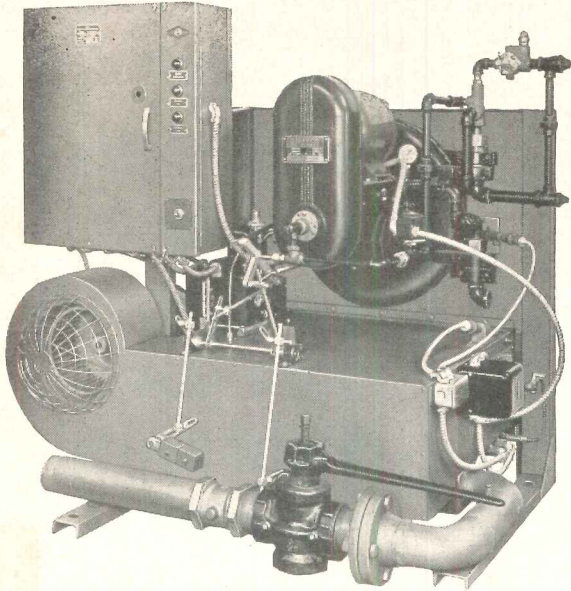


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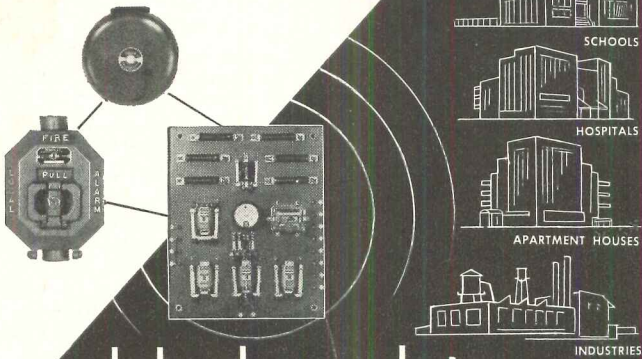
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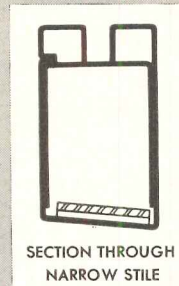
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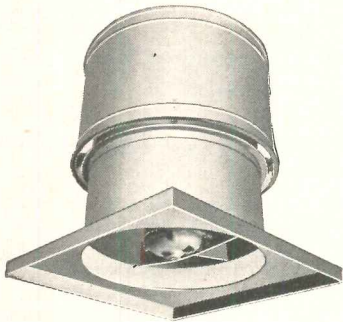
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See Sweet's Architectural File, Section 20b or write for catalog.



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## REQUIRED READING

(Continued from page 338)

*Planning the Program and Facilities for Secondary Education. A report of the conference held in New York, October 16 and 17, 1953 under the sponsorship of Engelhardt, Engelhardt and Leggett. 26 pp*

Some of the topics the members of this conference discussed were the organization of secondary schools; how much time students should spend in secondary schools; how much secondary schools will satisfy the need for general education; the trend in regard to the larger facilities of the school (gym, auditorium and cafeteria); how school staff participates in school planning; the place of music in secondary school and the facilities for science instruction.

*Planning Our Schools More Comprehensively. Talk by Frederick Gutheim to Conference on School and Community Planning sponsored by School of Architecture and Planning, M.I.T., Cambridge, Mass., August, 1953. 12 pp*

The speaker emphasizes planning factors rather than design in school building when economy is a major objective. He discusses relationship of schools and communities; site acquisition and planning and financing the program. Mr. Gutheim summarized "The best way to obtain good schools is to locate and design them, to time their construction and financing, in such a way that economy is not attained at the sacrifice of emotional values."

*Proceedings of Short Course for Architects in Programming and Planning the Public School Building. Conducted by the Department of Architecture, University of Illinois, Urbana, Illinois, 1953*

The three day conference, participated in by school administrators, architects and technical specialists, covered an analysis of elementary and high school plans; site planning; choice of structural systems; construction details; heating and ventilating the school building; acoustical factors; techniques of writing and psychology of colors.

*The Progress of Public Education in the United States of America, 1952-1953. Summary report of the Office of Education, U. S. Department of Health, Education and Welfare to the Sixteenth International Bureau Of Education and the UNESCO, Geneva, Switzerland, July 1953. 12 pp*

The report, which summarizes education in the U.S., includes overall statistics on public elementary and secondary schools; school administration and organization; changes in curricular; development in teaching methods and

(Continued on page 346)

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see catalog <sup>31a</sup>/<sub>Bo</sub>  
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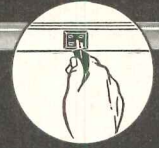
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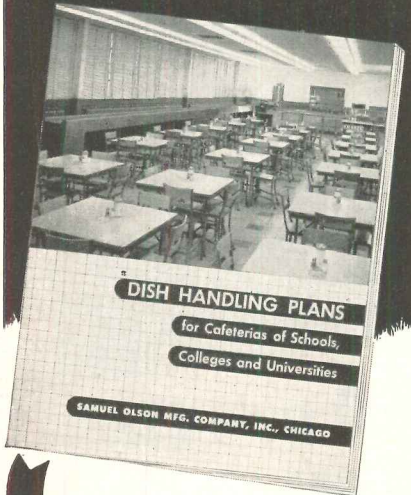
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## REQUIRED READING

(Continued from page 342)

materials; the use of new techniques in the U.S.; teaching staffs; auxiliary and out of school services and other developments including racial differences.

*School Building Costs. A report of the working conference sponsored by the American Institute of Architects, the Chamber of Commerce of the United States and the U.S. Office of Education, conducted by the Building Research Advisory Board, Washington, D. C., Dec., 1953. 83 pp*

The aim of this conference was to stimulate study and investigation on the following topics: use of corridors as instructional space; classrooms of varying size; reduced number of partitions; decreased size of auditoriums; character and placement of equipment; central kitchens; organizational and operational changes.

*Symposium on School Planning. American Institute of Architects, Dallas, Texas, April, 1953*

Speakers were John Lyon Reid, Donald Barthelme and William Caudill.

*The Relations Between Architects and Boards of Education. A.I.A., Dallas, Texas, April, 1953*

Mr. Eldon Busby, assistant superintendent of schools, in charge of programming school construction discussed planning problems with Architects Stayton Nunn and Preston M. Geren.

*Texas Conference on School Costs, Design and Construction. Sponsored by Southwest Research Institute, Texas State Association of School Administrators, Texas State Association of School Boards and Trinity University. San Antonio, Texas, Nov. 1-2-3, 1953*

The participants of this conference concluded that there are three primary areas of research developed by this conference which have not been adequately explored in the past: (1) The need to coordinate the efforts of materials and equipment producers on making new products available for school construction by assisting them in the design and engineering of such products so that they are more readily usable by school architects and can be adopted easily into school buildings. (2) The need for the initiation of coordinated planning in metropolitan areas. (3) The coordination of research into various aspects of school design, construction technology and school building economics.

#### MAGAZINE ARTICLE

*Directions In School Library Service Today. American Library Bulletin, Feb., 1954. pp 66-71*

(Continued on page 350)

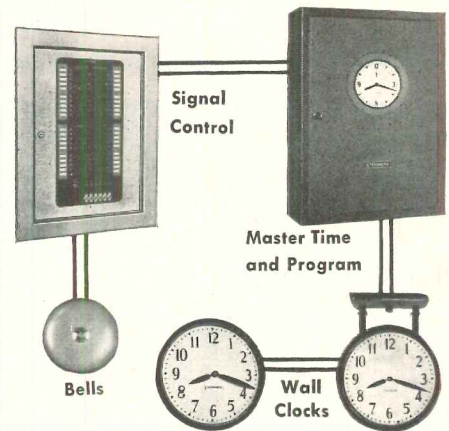


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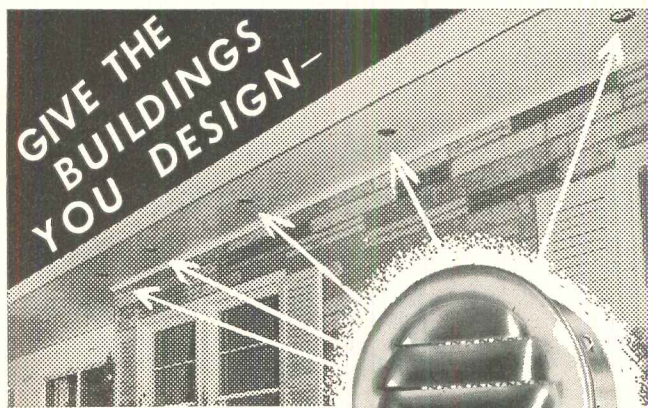
Unique design permits sections to be nested and lapped quickly and easily. Sheets may be welded or anchored with clips.

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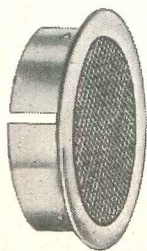
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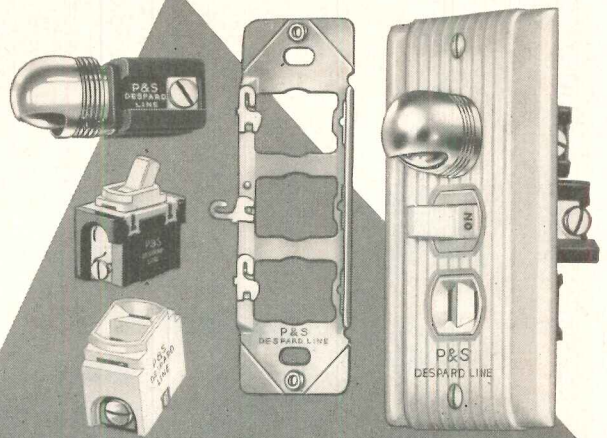


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## REQUIRED READING

(Continued from page 346)

Topics discussed in three articles by a high school superintendent, a supervisor of libraries and an assistant superintendent of public schools, include the question of the relation of the school to the main library as materials center; the locating, planning and equipping of the school library for maximum efficiency by the architect and administrators; and the question of the library as logical point of learning for the entire school system.

### BOOK

*Planning Elementary School Buildings.* By N. L. Engelhardt, N. L. Engelhardt, Jr. and Stanton Leggett. F. W. Dodge Corp. (New York, N. Y.) 1953. 8½ by 11½ in., 268 pp., illus.

Book covers classrooms; specialized educational spaces; vision, light and color; auxiliary rooms; organization and site; service elements; and trends in space provisions.

### "MODERN" HOME FOR FAMILY OF FORTY-FIVE

*Roofs for the Family.* By Eva Burmeister. Columbia University Press (New York, N. Y.) 1954. 5½ by 8 in. 203 pp., illus. \$3.25

The author, director of the Lakeside Home for Children, Milwaukee, relates how moving into three up-to-date-cottages from a Victorian mansion changed the lives of these children of broken homes. She gives psychologically sound reasons for preferring cottages to life in a congregate building and for electing to place together children of same age.

### OTHER BOOKS RECEIVED

*Principles of Real Estate.* By Arthur M. Weimer and Homer Hoyt. The Ronald Press Co. (15 E. 26 St., New York, N. Y.) 1954. 6 by 9½ in., 618 pp., \$6.50

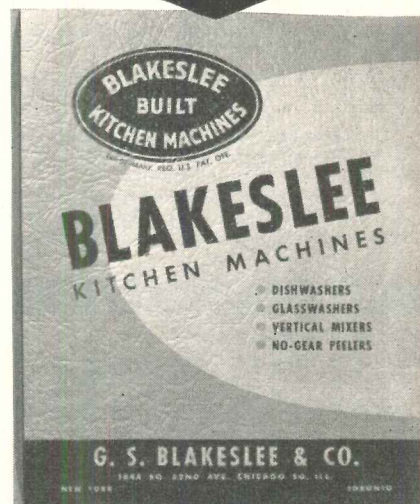
An introduction to the field of real estate and land economics written primarily as a textbook for college and university students.

*A.I.A. Standard Contract Forms and the Law.* By William Stanley Parker, F.A.I.A. and Faneuil Adams, LL.B. Little, Brown & Co., (Boston, Mass.) 1954. 8½ by 11 in., 148 pp., \$7.50

Discussion covers the perennial points of dispute—drawings and specifications, permits, inspection and supervision, delays, correction of work-damages, sub-contractors, and others.

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