PROGRESSIVE ARCHITECTURE

newsletter

July 1950

lished monthly by REINHOLD LISHING CORPORATION, 330 t 42nd Street, New York 18, Y., U. S. A. Ralph W. Reinhold, irman of the Board; Philip H. bard, President; H. Burton e, Executive Vice President and asurer; Fred P. Peters, Vice ident and Secretary; Francis Turner, William P. Winsor, G. Belcher, Gilbert E. Coch- Vice Presidents. Executive and orial offices: 330 W. 42nd St., York 18, N. Y. Subscriptions able in advance. Subscription es to those who, by title, are *itects, engineers, specification ers, designers, or draftsmen,* to government departments, e associations, college libraries, ents, publishers, advertisers, pective advertisers and their loyes—$4.00 for one year, $6.00 two years, $8.00 for three s; to all others—$10.00 per in U.S., U.S. Possessions, ada, and Philippine Republic. n America—$10.00 for one , $16.00 for two years, $20.00 three years. All other foreign criptions—$15.00 for one year, 00 for two years, $30.00 for e years. Single copy—$1.00. ted by Lotus Press, Inc., 508 t 26th Street, New York 1, Y. Re-entered as nd class matter, January 22, , at the Post Office at New , N. Y., under the Act of ch 3, 1879. Volume XXXI, No. uly 1950. Indexed in Art Index.

- Connecticut's Governor Chester Bowles has called for a national conference of leaders of building materials supply industry to set up allocation system and step-up of production for short items to hold rising prices without government control. "The current building boom can continue to mean plenty of jobs, plenty of profits...," said Bowles, "unless rising prices of materials choke off the market."

- Those traveling abroad this summer might want to take in conference on Swedish Decorative Art and Architecture to be held in Stockholm at the Swedish State School of Arts and Crafts August 7-19. Nils Ahrbom, Bengt Gate, Sven Markelius, Swen Silow are among the architects who will lecture.

- Only Guggenheim Fellowships related to architecture this year are to Albert William Christ-Janner for a study of modern American church art and architecture, and to Christopher Tunnard, for a study of American tradition in city planning.

- International Congress for Housing and Town Planning will be held in Amsterdam, Netherlands, August 27 to September 2. Many prominent architects and planners are expected to take part in interesting sessions scheduled.

- Unusual opportunity for full study of hospital programming has developed in New Jersey, where Hunterdon Medical Center, having chosen Vincent Kling as architect of its new plant, disclosed that the Commonwealth Fund has granted $25,000 to study coordination of services of the hospital with those of general practitioners in the area, with existing public health services, and with the educational work of the N.Y.U.-Bellevue Medical Center.

- New Hampshire State Office Building closed competition, recently concluded, resulted in the job going to Nichols and Butterfield, James F. Russell and Bruce C. Graham Associated, of West Hartford. Second prize was won by Margaret and Edward Hunter, of Hanover; third prize went to Aaron N. Kiff of York and Sawyer, New York.

- Products Literature Competition run this year by A.I.A. and P.C. resulted in Certificates of Merit to 59 pieces of manufacturers literature in three categories (emphasis on problem, emphasis on product, emphasis on promotion) but only two Certificates of Exceptional Merit, which went to Acoustical Materials Ass'n. for their pamphlet "Sound Absorption Coefficients of Architectural Acoustical Materials" and to American Institute of Steel Construction for the "Manual of Steel Construction."

- New York's Museum of Modern Art is conducting competition for design of table and floor lamps, in co-operation with Heifitz Co. Entries must be postmarked before August 24. Winners will get prizes, royalties, and promotion in ten co-sponsoring department stores.

(Continued on page 2)

newsletter

- International Congress of Architects scheduled for this September in Poland will not take place, because parent body (Union Internationale des Architectes) refuses to comply with three conditions imposed by Polish group. Earlier, A.I.A. had refused to participate because of the unsolved disappearance of Hermann Field, Cleveland architect and planner. Polish architects wanted Union to subscribe to peace resolution, to withdraw "offensive" request for assurance that all delegates would leave safely, and to refuse participation to Yugoslav delegation.

- John W. H. Evans announces establishment of a Store Modernization Center in New York, to house permanent exhibits of materials and equipment useful in this field. In addition to exhibit, monthly clinics and forums will be held at the Center and weekly field trips will be made to suburban stores. Center is outgrowth of previous Store Modernization Shows which will continue as regional activities beginning with one in Chicago in March, 1951.

- Construction records appear to be toppling still, as "boom" continues. More dire predictions appear on possible price rises, some of them "feelers," some based on realistic shortages which begin to develop. A few tentative increases (such as ½¢ a pound for aluminum pig and ingot) have already come. Manpower also may be short in some construction categories before year is over.

- University of Cincinnati College of Applied Arts (which includes the Dept. of Architecture) is celebrating 25th anniversary. This school uses co-operative work system, combining classroom attendance with equal periods (seven weeks) of practical training.

- Purdue University is elevating architectural department to "school" status. Prof. Buford Pickens becomes director.

- Unusual supply service for those furnishing interiors is offered by International Allied Companies of 114 E. 32 St., N.Y., N.Y. This firm imports and sells African sculpture--masks, funerary pieces, statues, etc., in wood, ivory, bronze, at most reasonable prices.

- A "Universal Basilica of Peace and Forgiveness" will be erected at Magdal, Israel. Le Corbusier will be architect and Picasso, Roualt, Lipschitz, Leger, Braque, Matisse, and Laurenz will collaborate on decoration.

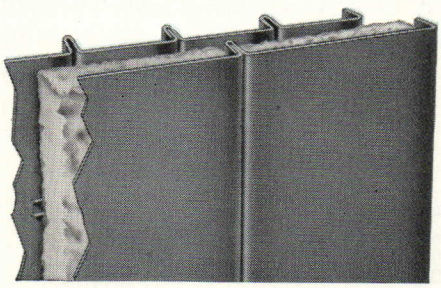
- M.I.T. announces its 12th annual Conference on City and Regional Planning, to be held September 5 through Sept. 15. Applications should be made to Prof. Frederick J. Adams, who will direct the all-day seminars. Registration fee is $50.

- New booklet on Planning the Home for Occupancy, issued by Committee on Hygiene of Housing of American Public Health Ass'n. studies basic functional space needs. Chairman Dr. C. E. A. Winslow says "there is a reason but not a valid excuse" for present substandard space acceptance. Minimum total floor areas adopted by committee are: for one person, 400 sq. ft.; for two, 750; for three, 1000; for four, 1150; for five, 1400; for six, 1550.

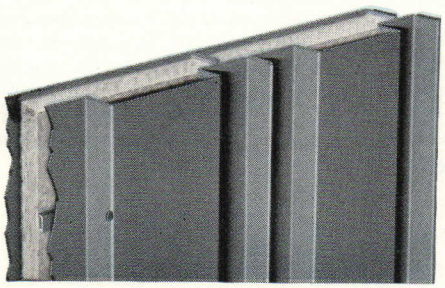
- Fritz Gutheim, author, critic, editor, will join A.I.A. staff soon in capacity of "editorial director." Duties have not yet been clarified, but all friends of the Institute will rejoice at this move.

STEEL DECK . . .

INSULATED METAL WALLS



INSIDE VIEW OF WALL
Ribbed Exterior Plates — Ribs 6" C-C



OUTSIDE VIEW OF WALL
Fluted Exterior Plates — Interlock 12" C-C

Mahon Insulated Metal Wall Plates are available in several designs — two are illustrated above. Plates can be furnished in any length up to 55 ft. Heat Transmission Coefficient "U" rating 0.15 with two inches of Fiberglas Insulation.

Another New Industrial Building Roofed with 600,000 Sq. Ft. of Mahon Steel Deck!

Steel Deck continues to gain favor throughout the country as the ideal roof construction for industrial and commercial buildings. Comparison of weight, insulation required to produce specific thermal properties, and total roof cost per sq. ft., will reveal that steel deck is the most economical permanent, firesafe roof obtainable today. Mahon Steel Deck, due to its basic design with narrow vertical-leg stiffening ribs, lends itself to a broad range of uses in modern construction . . . alert designers and builders are finding Mahon Steel Deck ideally suitable for curtain walls, partitions, ceilings, and permanent concrete floor forms. See Mahon's Steel Deck Insert and Mahon's Insulated Metal Curtain Wall Insert in Sweet's Files for complete information, construction details and specifications, or write for Catalogs B-49-A and B.

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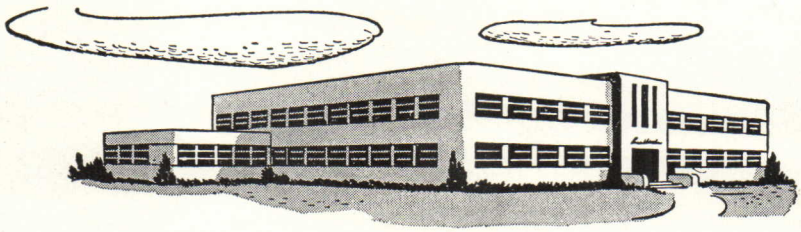
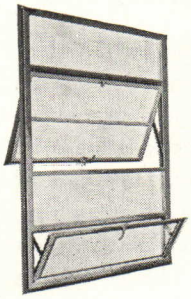
PLAY SAFE WITH TRUSCON STEEL BUILDING PRODUCTS FOR SCHOOLS



● You can meet the safety requirements of school buildings with Truscon's complete line of steel building products. They are fire-resistant and their load carrying ability provides an extra margin of safety. They also afford you an unlimited opportunity to create beautiful buildings that are in pace with modern teaching methods.

Every Truscon building product is scientifically designed and factory produced. That's why they reach your job accurate, complete, ready to be installed easily and quickly.

An experienced Truscon engineer in your community will be glad to assist you in adapting Truscon Steel Building Products to your particular requirements.



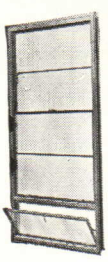
ARCHITECTURAL PROJECTED WINDOWS

Attractive in appearance and convenient to operate. Provide maximum daylight, ventilation and freedom from drafts. Heavy one piece casement type sections in ventilator assures rigidity. Hardware is solid bronze. Screens and underscreen operating hardware are available for all ventilators.

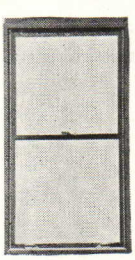
DOUBLE-HUNG WINDOWS

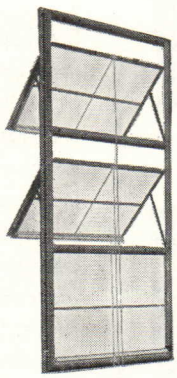
in Two Types—Series 138 and Series 46

Series 138 Windows are equipped with positive action motor-spring type balances and completely weatherstripped with stainless steel. Made from electro-galvanized strip, these fabricated windows are bonderized and finished with a baked-on prime coat of paint. Available in single units or in integrally built twin, triple and panoramic window units. All are available with or without sill ventilators.



Series 46 windows are of the counter-weighted or spring balance design. Single or twin units may be had in either standard or special sizes and are available with or without sill ventilators. Made from new billet steel, electro-galvanized. Windows are Bonderized and finished with a baked-on prime coat of paint.

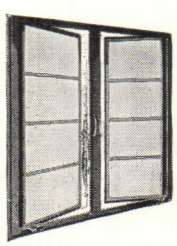




DONOVAN AWNING TYPE WINDOWS

These windows are basically practical in the correct admission of light and proper ventilation without drafts. Sturdily built of unusually heavy special casement sections, they are positively and easily operated. Assure a high quality product incorporating features not available in any other window design.

INTERMEDIATE CASEMENT WINDOWS



Constructed of specially designed one-piece sections throughout. Accurate weathering is assured through the final cold-rolling of sections to produce positive contacts between weathering surfaces. Hardware is solid bronze furnished in medium statuary finish.

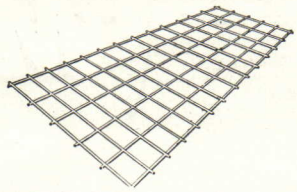
INTERMEDIATE CLASSROOM WINDOWS

Offer: (1) increased light effectiveness, (2) marked economy in original cost, (3) superior maintenance in window washing and glass replacement. Can be secured with bottom vent only opening, or both vents opening.

CURB BARS

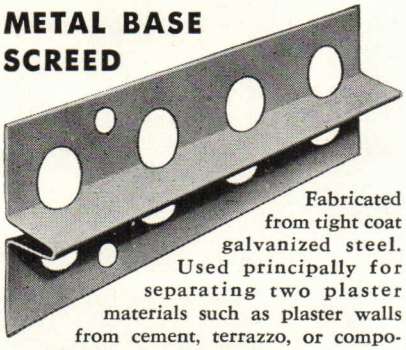
Protect exposed corners of concrete curbs, walls, steps, etc. Designed to give positive anchorage into the concrete. Plate surrounds and protects the corner without splitting concrete into two portions.

WELDED WIRE FABRIC



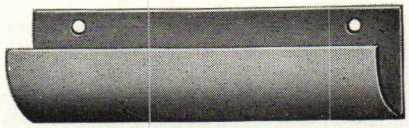
Truscon Welded Wire Fabric is made in various sizes for concrete reinforcing in all types of structures. Each joint is electrically welded for permanence.

METAL BASE SCREED



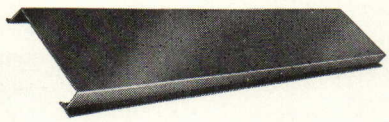
Fabricated from tight coat galvanized steel. Used principally for separating two plaster materials such as plaster walls from cement, terrazzo, or composition base, and separating a cement wainscot from ordinary plaster. Another function is to give a permanent straight edge to which both trades work.

METAL CASINGS



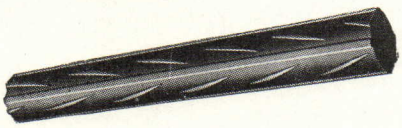
Meet a definite demand for an artistic, sanitary method of trimming around doors and windows. Afford many architectural effects. Metal casings are fire-resistant, vermin proof, easy to maintain and do not shrink or warp.

FERROBORD STEELDECK ROOFS



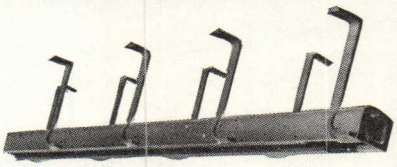
Truscon Ferrobord provides a fire-resistant, economical roof deck for all new construction or replacements. Covered with insulation and waterproofing, it weighs approximately 5 pounds per square foot.

CONCRETE REINFORCING BARS



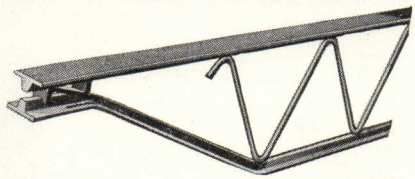
A special rolled section of high grade steel, with a series of longitudinal and diagonal ribs, so designed to provide the maximum bond with the enclosing concrete.

PRESSED STEEL INSERTS



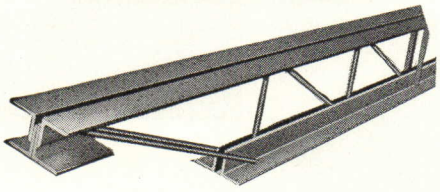
Truscon Slotted Inserts are attached to the forms and are completely imbedded in the concrete. Bolt can be moved along slot to any location, allowing wide variation in position. Used in ceilings, slabs, beams or columns.

OPEN TRUSS STEEL JOISTS



Truscon developed the open truss steel joist to meet the demand for economical, light weight, fire-resistant floors in schools, and other light-occupancy buildings. They are easy to install. Completely shop fabricated, they reach the job ready for placing.

CLERESPAN JOISTS



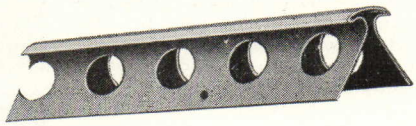
Truscon "Clerespan" Joists meet all clear span requirements up to 80 feet. They eliminate undesirable columns and provide greater unobstructed floor areas, in gymnasiums and auditoriums.

METAL LATH

There is a Truscon Metal Lath for every plastering requirement. Flat laths for ceilings and sidewalls; rib

laths to reinforce concrete floors or plaster ceilings; expanded laths for stucco reinforcement; Corner Beads and Cornerite, to protect outside and inside corners.

CORNER BEADS



Recommended as an exposed corner reinforcement. The round nose is strongly reinforced by a deep groove which holds the plaster flush for a perfect bond. It can be wired, stapled or nailed to any kind of wall construction without the use of clips.

TRUSCON STEEL COMPANY

Reg. U. S. Pat. Off.

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Manufacturers of a Complete Line of Steel Windows and Mechanical Operators... Steel Joists... Metal Lath ... Steeldeck Roofs... Reinforcing Steel... Industrial and Hangar Steel Doors... Bank Vault Reinforcing... Radio Towers... Bridge Floors.

MAKE THE MOST

AT THE CARLE PLACE SCHOOL, Carle Place, New York, Architects Knappe & Johnson of New York City, used PC Soft-Lite* Prism B Glass Blocks on sun exposures to assure adequate and softly diffused daylight for classroom seeing tasks. To "share the light" between classrooms and corridors, interior panels of decorative PC Glass Blocks were used.

IN ANY TYPE of building, there is a place for PC Glass Blocks. They are adaptable to all styles of architecture. Here is an interesting use of decorative PC Glass Blocks in The Homestead Gardens apartments, LaGrange, Illinois. PC Glass Blocks admit plenty of daylight, make buildings more cheerful, offer improved insulating value, are easy to clean, cut maintenance costs, assure privacy. Architects: Howard T. Fisher & Associates, Inc., Chicago.

PITTSBURGH ® PC CORNING

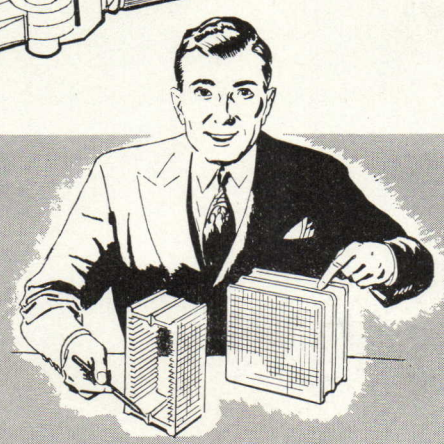
GLASS BLOCKS

DISTRIBUTED BY PITTSBURGH PLATE GLASS COMPANY,

OF DAYLIGHT...

with PC Glass Blocks

"The Mark of a Modern Building"



SOFT-LITE* Edge Treatment (opal glass fused into the block junction during manufacture)—is exclusive with PC **functional** Glass Blocks. It permits just enough diffused light transmission around block perimeter to create "eye-ease" panel appearance.

Made of two pieces of formed glass, fused together, enclosing a partial vacuum, each block is a hollow insulating unit. Various outer patterns and inner contours enable single cavity blocks to admit plenty of daylight; to direct, divert or diffuse light to areas remote from openings. Double cavity blocks, in which a fibrous glass screen is inserted and permanently sealed between the halves of the block, assure additional light diffusion and insulation. Because of their architectural adaptability . . . because they "make the most of daylight" . . . PC Glass Blocks are specified by America's leading architects.

*T.M. Reg. applied for.

THE NEW YORK CITY Fire Department Repair Shop at Long Island City, N. Y., employs an abundance of PC Glass Blocks to obtain plenty of light for the shop interior. Note how vision and ventilating openings of standard sash can be inserted in PC Glass Block panels. Designed and constructed under the supervision of the Department of Public Works, City of New York, Frederick H. Zurmuhlen, Commissioner.

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Without obligation on my part, please send me your FREE booklets on the use of PC Glass Blocks for all kinds of construction.

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The mark of a modern building

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Every Kwikset box carries the statement "Unconditionally Guaranteed Against Defects in Materials and Workmanship." What does this unconditional guarantee mean to you, the architect who specifies Kwikset locks?

FIRST, IT GUARANTEES QUALITY MATERIALS

No manufacturer can afford to make an unconditional guarantee unless highest quality materials are used in his products. Kwikset adheres strictly to this policy of using only the highest quality materials scientifically selected for the particular service to which they are put.

SECOND, IT GUARANTEES FINE WORKMANSHIP

The finest of materials are useless unless they are processed into the final product with care and precision. Kwikset's simple design and advanced facilities make possible cost-saving precision manufacture. Tolerances are held to .001-inch... equivalent to ⅛ the thickness of a human hair! Kwikset's gleaming finishes are permanently protected by a specially compounded plastic.

THIRD, IT GUARANTEES CUSTOMER SATISFACTION

Every one of the millions of Kwikset locks now in use is its own best testimonial. When you specify Kwikset, you are backed by Kwikset's unconditional guarantee. Kwikset challenges comparison on beauty, quality, ease of installation and low price... no other lock combines all of these desirable qualities so well!

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Look to Kwikset to be First and Foremost with Top Quality Residential Hardware

p/a VIEWS

WHAT IS AN ARCHITECT?

Dear Editor: I pass this controversial item on to you for what it is worth. As one who has been associated with the architectural-engineering profession for many years in all its phases, I speak from experience. To quote, "The architect, like the doctor and the lawyer, has a code of ethics which prevents his telling the public what he is and does." *(The enclosed photostat speaks for itself.)* Is the public entitled to know the facts?

What is an architect?

Is the misconception, that the architect is the maker of plans, to continue indefinitely, or will the public be informed that the making of plans is perhaps the smallest and most insignificant part of the architect's work?

Architecture is a learned profession and diversified as is no other professional activity. To practice, one must have the essential qualifications. He must have a general cultural and liberal arts background, an instinctive feeling for design, a highly developed technical skill in construction, a broad familiarity with materials that range from the delicacy of fine fabrics to the rugged strength of stone, steel, concrete, he must know color selection as for exterior and interior finish, and, in addition to all this, he must be a business man familiar with the varied contractual and legal relationships occurring in the complex business of building. He must keep abreast of the changing scenes, as the best contemporary building methods. He must know intimately the intricacies of structure, strength, and durabilities of materials, electricity, landscaping, surveying, and many other branches of science and engineering. It is obvious that such equipment demands a long and arduous period of study and training.

What is an architect?

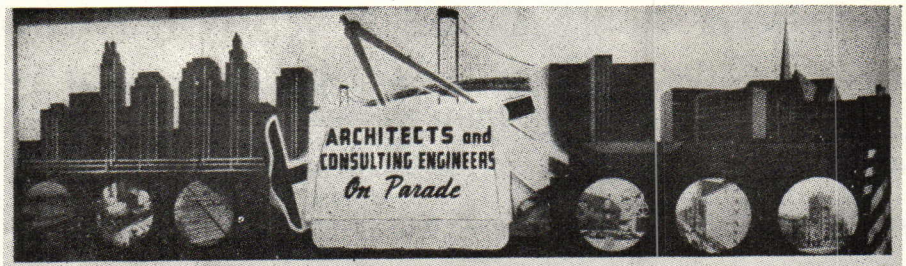
Will the architect lose out eventually as the professional adviser, and advocate, of the client, paid by the owner to look out for his interests in an operation far more technical and complex than the average case in court? Will the building contractor and real estate developed be the contact man, the salesman? We have only to visualize the number of engineering firms engaged in package sales and services, that have their publicity and public relations setup, that have their own architectural-engineering staffs as well as their own subsidiary construction companies. It is far reaching. Of course, to some extent, as a steel mill, hydro-electric works, an oil-cracking plant, and like heavy industries, specialization makes such a procedure, one that is taken for granted, but where will it stop?

What is an architect?

Public opinion of a person, a firm, an industry or profession is good or bad depending upon the effectiveness of effort toward enlightenment on the value of services rendered. Must public relations be instituted within architectural circles for architects with the hope that the efforts, if well-directed as a by-product, will result in a more favorable acceptance of the architects in their communities? Public relations to show prospective clients the full meaning of an architectural service and how the architect can help them is a must at this time. What better way than by means of television?

What is an architect?

Martin Mahler
Chief Designer, Supervisor of Construction, Irvington, N. J.



"Here's what we do for you"

Kansas City's businessmen learned about the contributions of architects and engineers over lunch recently.

Their instruction came from members of these professions, through a number of college students, by way of an advertising agency.

It all started when these professions were asked to present a lunchtime show for Kansas City's Chamber of Commerce, the 32nd such presentation in a monthly series which acquaints the Chamber's membership with various industries contributing to the city's economic life.

In an effort to sell the professions they represent, Chamber members who are in private practice as architects and engineers raised $1,800 among themselves, then took their problem to an advertising agency. Out of it came a script which dramatizes the contributions of these professions, and a striking presentation.

A professional actor delivered the script's introduction. Then, advanced speech students of William Jewell College portrayed the engineers and architects, all anonymous, who expounded their contributions. The room was darkened for the presentation, with illustrative pictures flashed on the central screen. On either side, covering the speakers through which voices were heard, were backlighted photographs of representative projects.

The presentation was done entirely without mention of individuals or specific projects.

112 February 23, 1950 • ENGINEERING NEWS-RECORD

ENJOYED GIVE-AND-TAKE

Dear Editor: May I commend you and your staff for the excellent presentation of the "608" Housing Round-Robin Critique in your May issue. This is progress!—especially when architects may have the privilege of reviewing and criticizing each other's work in the open and not be offended. I hope the other architects got as much fun out of it as I did. Thanks again for the opportunity of participating.

Don Hershey
Rochester, N. Y.

CHARACTER OF THE ARCHITECT

Dear Editor: Aside from your excellent, as usual, architectural presentations, I wish to comment on the great interest which has been given your "608 Housing" article by its "round-robin" treatment.

As a former employe, I was particularly delighted by Talbott Wilson's comments, and I wish to compliment the magazine on its exceptional achievement in so subtly presenting the character of the architect as opposed to the dilettante or the business man—two types which we run across so frequently.

Herbert W. Linnstaedter
H.G.S.D.
Cambridge, Mass.

FUNCTIONAL COVER

Dear Editor: I have been wanting to congratulate you for a long time on the cover of your April, 1950 issue. I think the combination of a photograph and index is a most happy thought. The layout is clear and concise, and expertly composed on the sheet. The photograph tells me at a glance whether I have seen the issue before or not, and the index is a sure-fire way of finding information.

J. S. Reisner
Reisner & Urban, Architects
660 Madison Ave.
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SONG BY THE FIRE

Dear Editor: It was with great interest that I read the article on fireplaces in May P/A by F. James Swit and was on the point of expressing myself when I read your comments. As far as fireplaces and T.V. are concerned, I heartily agree with you and I feel sorry for Mr. Swit, who apparently has missed a great deal if he cannot enjoy what a good wood fire has to offer.

In my many years of designing large and small homes I have encountered only two clients who did not want a fireplace—poor souls!

Wm. G. Distin
Saranac Lake, N. Y.

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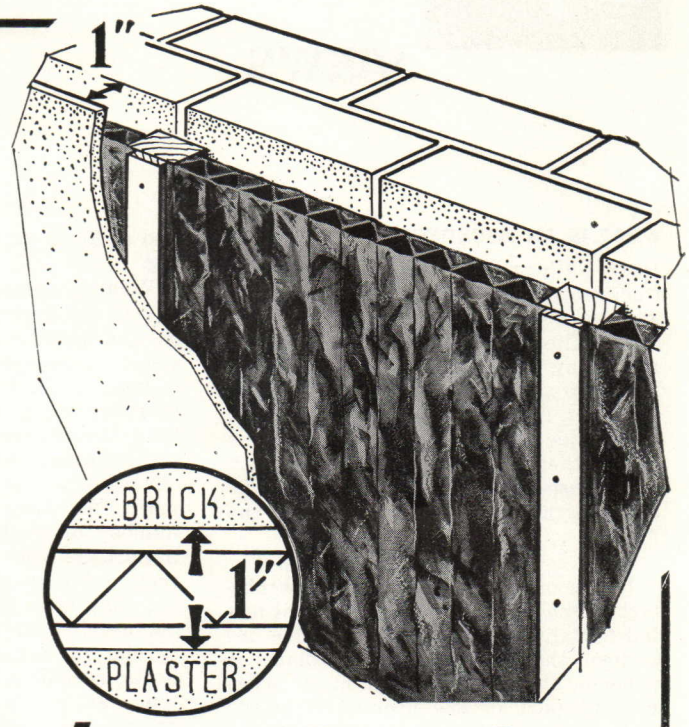

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PROGRESS REPORT

The 82nd Convention of the American Institute of Architects was held successfully in Washington, D.C., during the week of May 10, 1950. The largest group ever to attend an Institute Convention (over 2000) crowded into many of the Capital's hotels, but spent their days milling about the lobby of the Mayflower, where most of the sessions were held. Since the Association of Collegiate Schools of Architecture and the National Council of Architectural Registration Boards, as well as the Producer's Council, held earlier meetings which ended just as the main Convention conclaves began—and the National Citizen's Conference on Planning also picked up as the A.I.A. completed its meetings—there was a long continuous session for a number of the delegates.

The controversy and the contests for major officerships which marked last year's Convention in Houston were lacking, although the healthy result of that first constructive opposition to cut-and-dried procedures was evident in stern debates on the methods of election, also in the appearance of several candidates for some regional and national offices. Ralph Walker (Voorhees, Walker, Foley & Smith, New York, N. Y.) was re-elected president without opposition, as were Glenn Stanton, Portland, Ore., first vice-president; Kenneth Wischmeyer, St. Louis, Mo., second vice-president; and Clair Ditchy, Detroit, Mich., secretary. Charles Cellarius of Cincinnati, Ohio, was again named treasurer, defeating Maurice Sullivan of Houston for that thankless job. Cyrus E. Silling of Charleston, W. Va., won over Alfred duPont as regional director from the Middle Atlantic district; Howard Eichenbaum of Little Rock, Ark., defeated N. W. Overstreet, from Jackson, Miss., for the regional directorship of the Gulf States District. Also elected as directors were John Noble Richards, of Toledo, Ohio, Great Lakes District; M. H. Starkweather, Tucson, Arizona, Western Mountain District; Irving G. Smith, Portland, Ore., Northwest District; Thomas D. Broad, Dallas, Texas District.

●

Almost all of the director's and treasurer's reports were accepted without opposition, including the provision increasing the membership of the board of directors by two, through the creation of two new districts—Northwest and Texas. The proposal to make the vice-president, upon his election, the president-elect, to assume that office (for one year) the year following his election, was defeated. A resolution which would reduce the term of office of regional directors from three years to two, was tabled but will apparently be further pushed by its proponents.

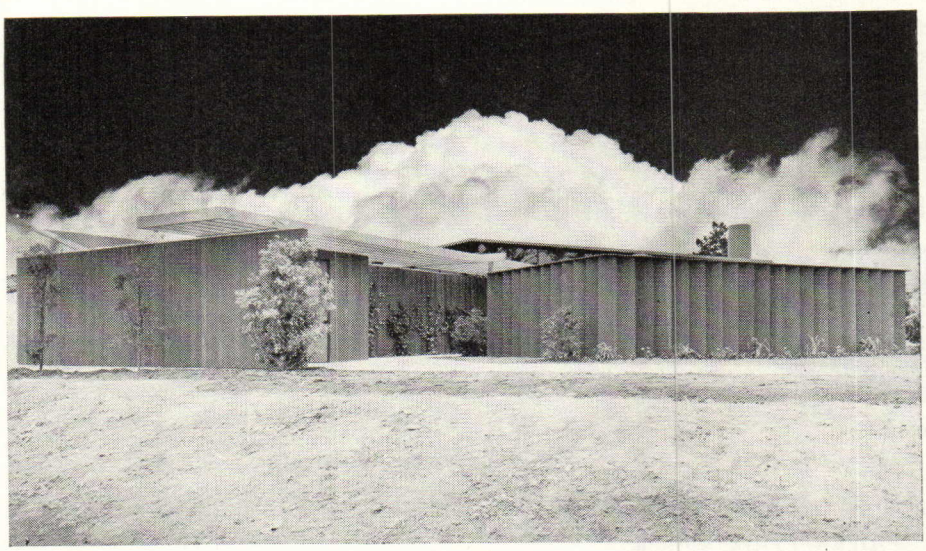
When the time came for the introduction of new resolutions, the delegates began to perk up. A proposal from the New York Chapter for "the President of the Institute to have the Committee on Contract Documents review the Institute Owner-Architect Agreement forms in their entirety on a nationwide use basis, and to report to the membership the result of such review, together with the Committee's recommendation for altering, replacing, and/or supplementing the forms" was carried without vocal opposition.

The Convention called on the President of the United States and the Congress "to take the necessary steps to insure the removal of the temporary buildings which now mar the plan of the City of Washington." An *Edward D. Kemper Award* was instituted, for "services to the Institute." A reorganization of the Washington, D.C. Planning Commission was called for.

●

The most controversial proposals, however, were two signed by petition of some 93 delegates to the Convention from 36 Chapters and all regions, urging the Board to study and report to the next Convention two possible amendments to the By-Laws; one, to have regional directors elected by votes of the members in their own areas, rather than, as at present, by vote of all delegates to a national convention; and, two, to allow all national officers to be elected by secret, mailed ballots sent to the total Institute membership, instead of by Convention delegates.

The first proposal carried despite an attempt by the chair to rule it "illegal," as being contrary to the present corporation set-up. (Some delegates offered the "hospitality" of their state laws for a new incorporation.) The second resolution did not pass, despite arguments that it was a democratic procedure now being followed by many professional societies and that in the case of the



Winner of the A.I.A. Award this year in the Residential Class was this "builder house" designed by A. Quincy Jones, Los Angeles.
Photo: Robert C. Cleveland

Commercial Class Award was won by Davison's Store, Augusta, Ga., by Harold M. Heatley, Atlanta, and Ketchum, Giná & Sharp, New York.
Photo: Hedrich-Blessing

p/a

PROGRESS REPORT

(Continued from page 11)

Institute all too often delegates are chosen not as elected representatives, but because of their ability to attend the Conventions. At the last meeting of the week, however, Robert Alexander, Los Angeles, introduced a motion calling for a poll of the Institute membership on this resolution, which carried. Thus the rank and file membership throughout the country will have an opportunity to decide for itself how it wants to elect its national officers.

●

Seminar subjects this year were: Lighting (covered by such speakers as Kenneth Welch, C. L. Crouch, Willard C. Brown, R. L. Biesele, Jr., Howard M. Sharp, and Stanley McCandless); and Planning (talks and discussion by Albert Meyer, Helmut Landsberg, Paul Windels, and Lewis Mumford); with side excursions into a number of other topics—accounting, student affairs, chapter affairs, etc. Some of the symposia were well attended and roundly applauded; at others the social affairs seemed to have worn down the delegates to a point where few of them could find their way at the right time to the meeting rooms.

●

The Institute's second Honor Awards Judgment was not too successful. For one reason or another only a handful of entries were submitted, and the jury for ecclesiastical work decided that no submitted work in that field deserved an Award, or even Awards of Merit. Some of those who had entered work disagreed rather strongly. In the residential category, where the entries were most numerous and of generally high caliber, top Honor Award went to A. Q. Jones, Los Angeles, for his low-cost builder house (February 1950 P/A). Awards of Merit went to Mario Corbett, San Francisco; Hugh Stubbins, Lexington, Mass.; and Twitchell & Rudolph, Sarasota, Fla. In the field of commercial buildings the jury found Davison's Department Store in Augusta, Ga., designed by Harold M. Heatley, Atlanta, Ga., and Ketchum, Giná & Sharp, New York, worthy of the Honor Award. Awards of Merit were given in this branch of design to Ketchum, Giná & Sharp, again (a Wallach's store in New York); to Weldon Becket, Los Angeles, Calif. (Bullock's, Pasadena); to Maynard Lyndon, Los Angeles (Santa Fe Ticket Office); and to Kenneth Franzheim, Houston, Texas (Foley's Department Store).

●

The meetings of the Association of Collegiate Schools of Architecture were well attended and apparently fruitful. Dr. Edwin Burdell reported on the work of the special committee studying architectural education at President Walker's request (see the OUT OF SCHOOL column in this issue of P/A) and the final banquet of this group was addressed by Walter Gropius, who emphasized the need for practical knowledge on the part of graduating students. The Producer's Council also had a successful session, discussing matters that ranged from purely technical considerations, through public relations and publications to the business aspects of "the modernization market." P/A's studies on *How Building Products Get Into Buildings* came in for favorable mention on several occasions, as an instance of the serious, research-minded approach to the relation between the architect and the producer that should be emphasized.

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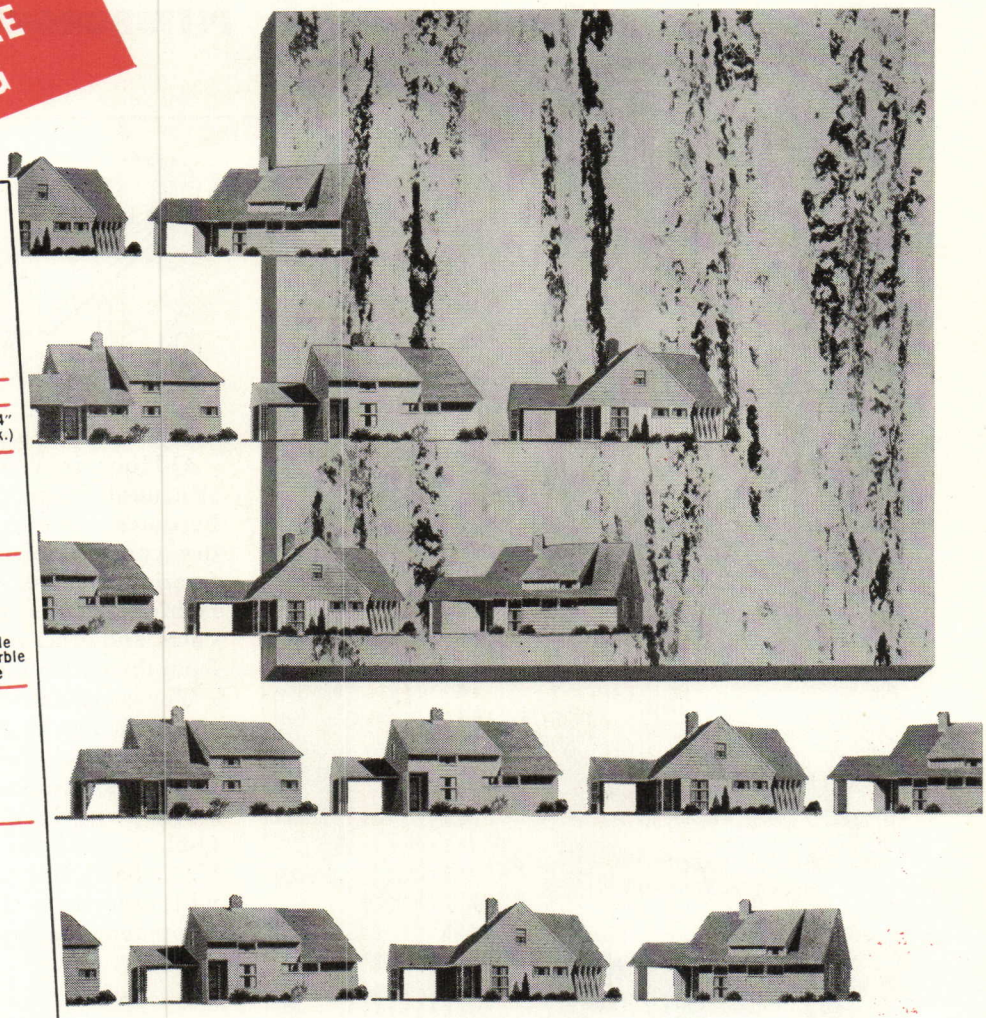

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	B 405	Brittany Red with White and Red Marble
	B 406	Brittany Red with White and Gold Marble
Group C Marbleized	C 420	Red with Gold and White Marble
	C 422	Grey with White; Black Marble
	C 423	Beige with White; Brittany Red Marble
	C 424	Green with White Marble
	C 425	Tan with White and Brittany Red Marble
	C 426	Mocha with Brittany Red and White Marble
	C 427	Battleship Grey with Black and White Marble
	C 428	Light Green with Green and White Marble
Group D Marbleized	D 100	Ivory with Red and Gold Marble
	D 101	Light Blue with White Marble
	D 102	White with Green Marble
	D 103	White with Black Marble
	D 104	White with Blue Marble
	D 105	Yellow with Tan and White Marble
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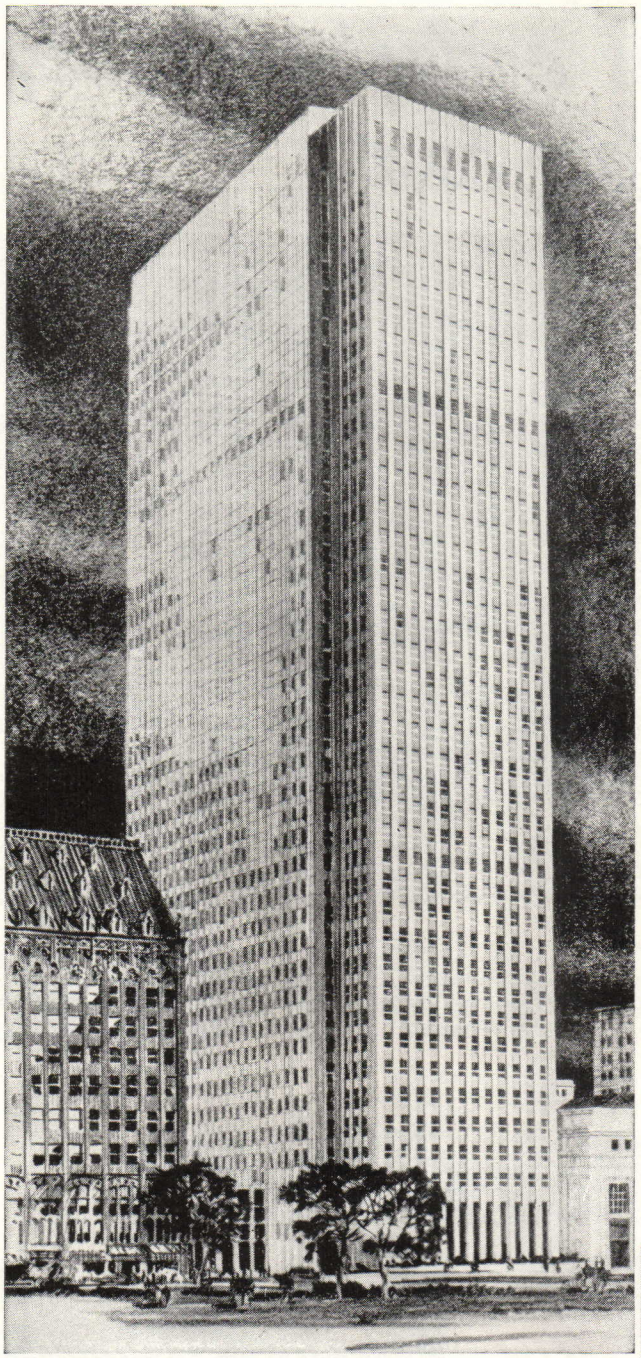

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HARRISON & ABRAMOVITZ, Architects
WILLIAM YORK COCKEN, Associate Architect
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ROBERTSON Q-FLOOR

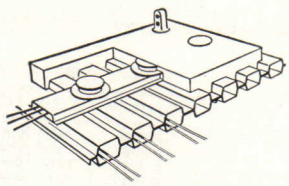
will be used in

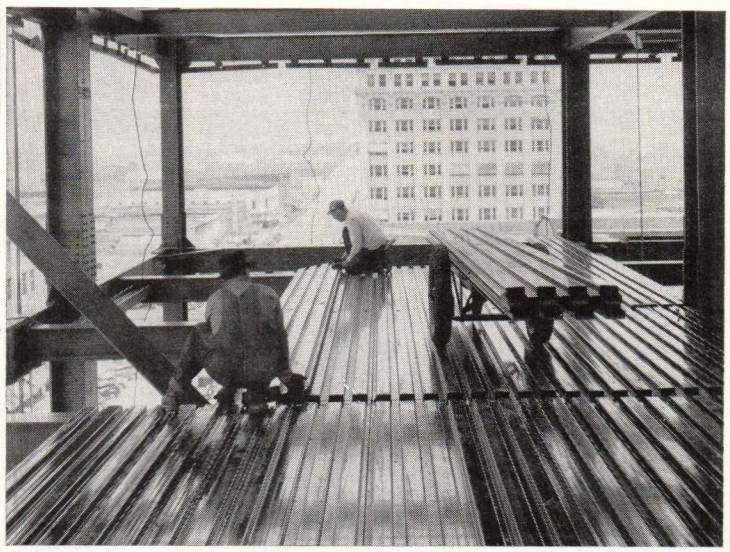
PITTSBURGH'S NEWEST SKYSCRAPER

Soon to rise above Pittsburgh's Golden Triangle is the new Mellon-U. S. Steel Building. The owners are building wisely for they have insisted on Robertson Q-Floor, an element in the structure that will contribute most to keeping the building electrically modern, and free from Office-Building-Old-Age.

Q-Floor is a steel cellular sub-floor welded to the structural frame. It goes in quickly and immediately becomes a working platform for all trades. The clean, dry construction results in continuous work even in freezing weather and eliminates delays due to older-fashioned construction methods. Suspended ceiling, ducts, and other mechanical features of the building hang from the underside of the Q-Floor.

The steel cells of Robertson Q-Floor function as a super-efficient underfloor electrical duct system. Outlets for all services are available exactly where needed. Desks, partitions, business machines can be located and relocated with complete freedom. Q-Floor will keep the Mellon-U. S. Steel Building in step with every new electrical development the future brings.





RIGHT. At the Commercial National Bank in Shreveport, La., (McKim, Mead & White, architects; S. G. Wiener, Asso. Archt.) Q-Floor is installed. It is welded directly to the beams over which light-weight concrete fill is placed to provide a level surface. The cells are available for the distribution of electrical and telephone wiring. Changes can be made quickly.

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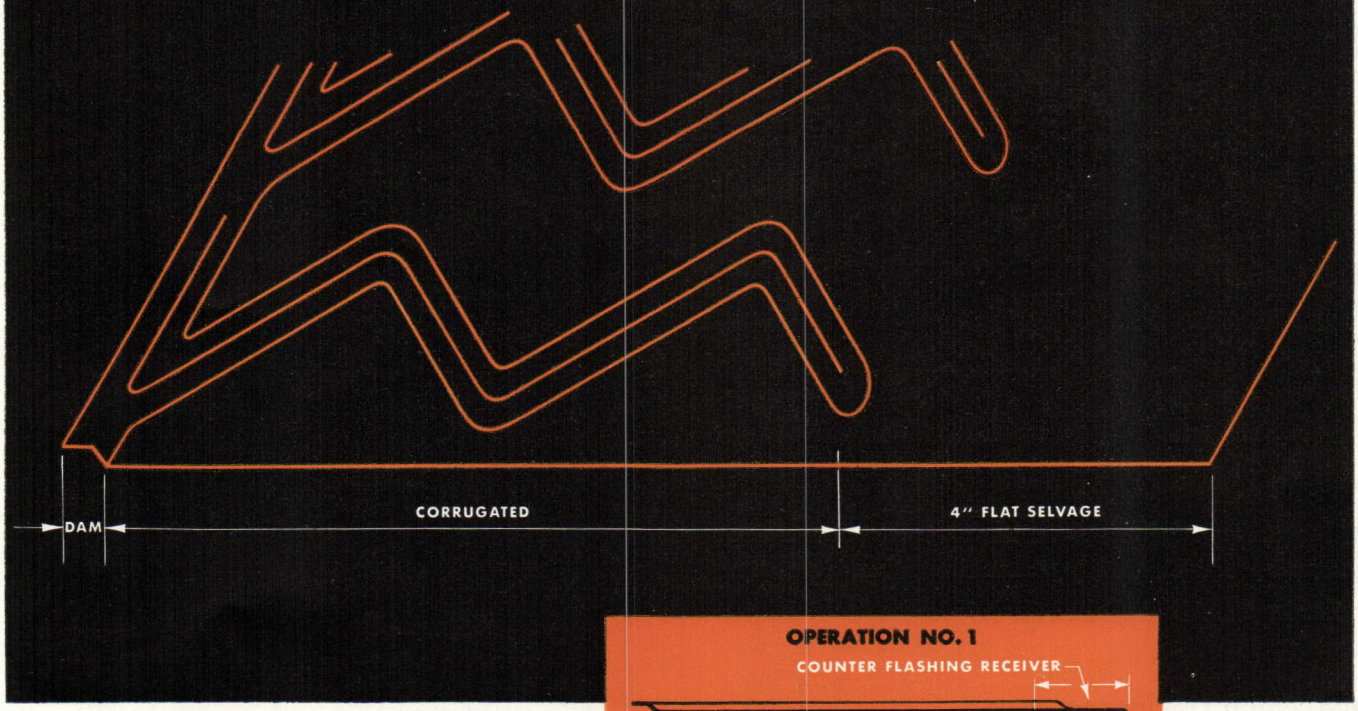
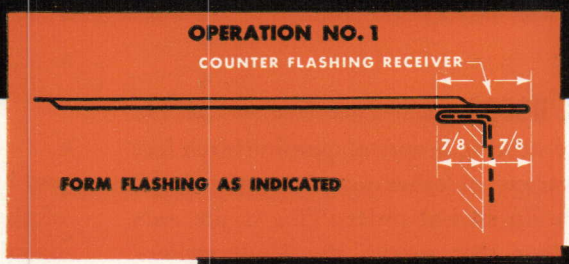
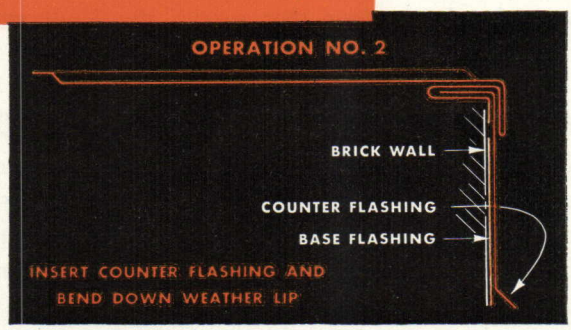


with ANACONDA Through-Wall Flashing





Heretofore, the usual practice has been to tuck metal counter flashing into the mortar joints of a parapet wall and raise the exposed portion of the counter flashing in order to install the base flashing, then bend it down again to make the job storm-tight.

That's outmoded. Outdated. And needlessly expensive. Besides, you simply can't get a neat job that way. The metal, when bent down and up, cannot be made to lie snugly against the wall.

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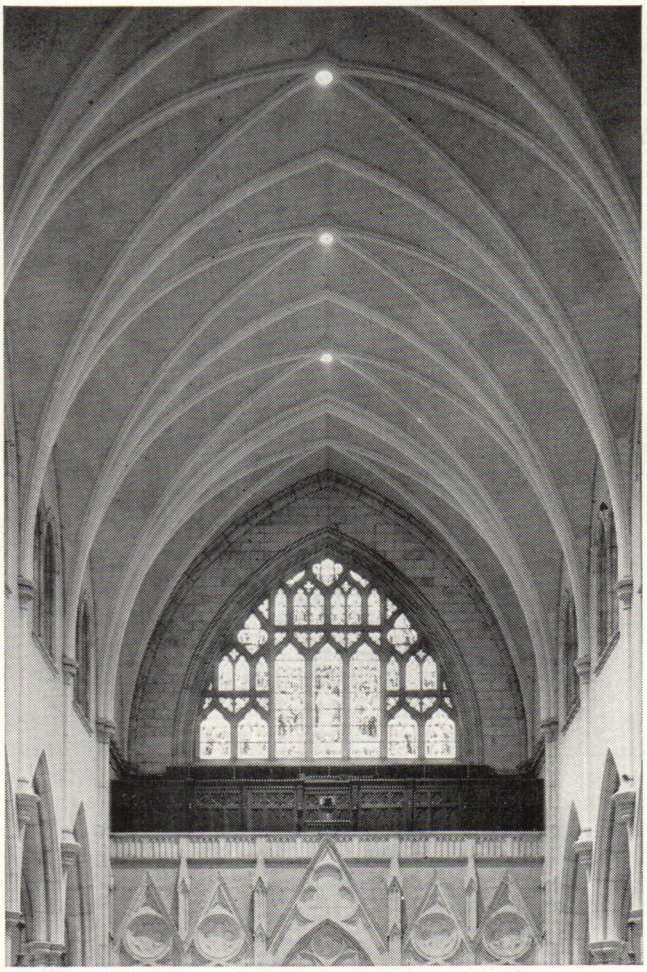

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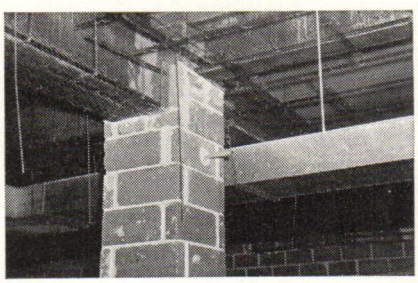

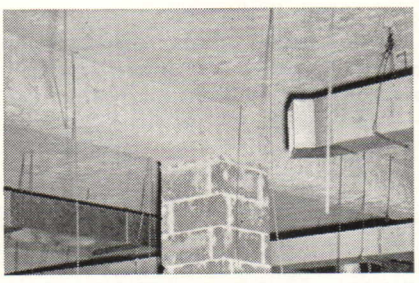

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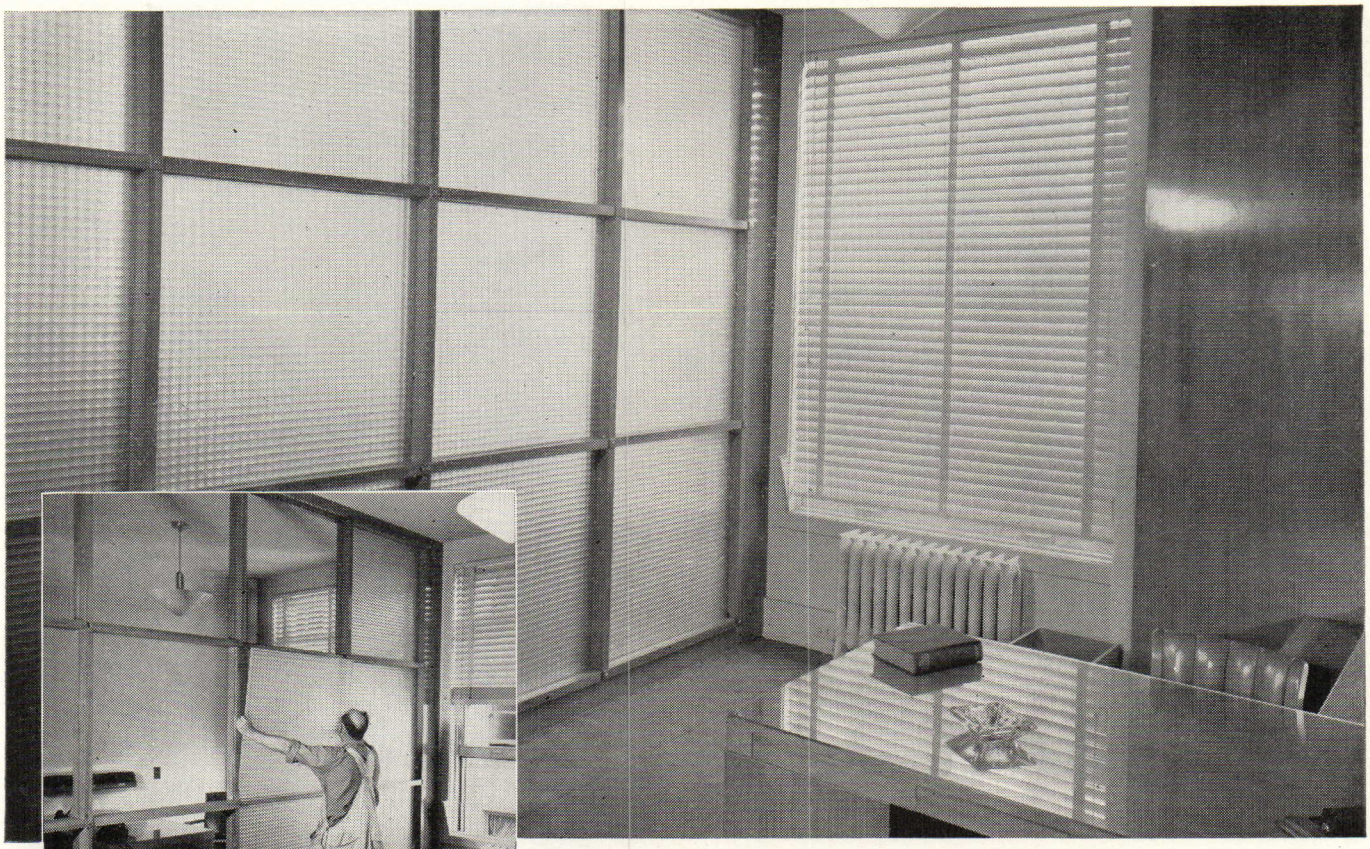

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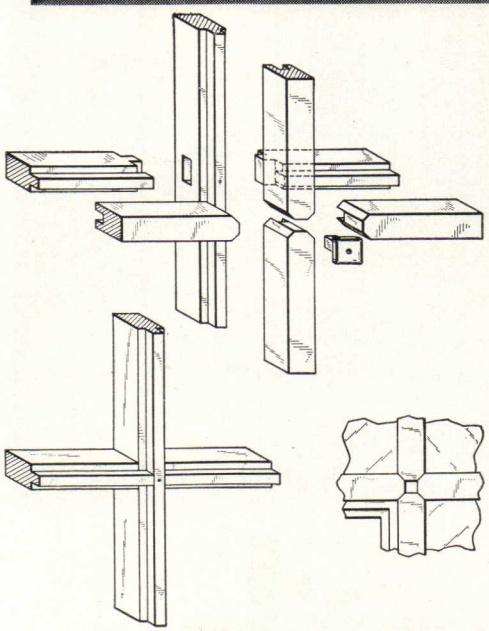

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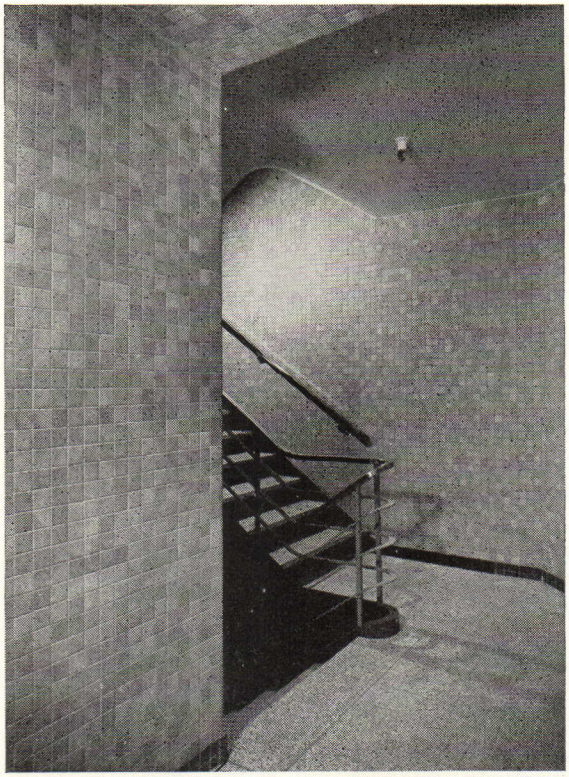
in the new John Hancock Building



Boston is very proud of the new home of the John Hancock Mutual Life Insurance Company.

Here the most modern, scientific methods of building and the finest of materials have been incorporated in one of the major architectural achievements of this decade.

In stairwells and hallways you will find thousands of feet of Suntile Camargos, noted for their toughness, strength and subtle colors. In washrooms you will see Suntile ceramic floor tile and glazed wall tile, noted for their beauty, durability and economy.

Today Suntile is the ideal choice for the interiors of many modern buildings. It's *color-balanced* to permit wide freedom in the selection of pleasing, harmonious color blends. Made of *real clay,* Suntile is highly resistant to marring, chipping and cracking.

Year after year Suntile helps reduce maintenance costs. It's impervious to dirt and grease, is so easy to clean and keep clean, never needs painting or redecorating.

Rely on your Authorized Suntile Dealer for competent tile counsel and expert installation. He can show you real clay Suntile in 22 glaze colors, impervious unglazed ceramic mosaic Suntile in 27 colors, Suntile Camargos in 10 colors—in modular sizes.

Write us, Dept. PA-7, for literature and the name and address of your Suntile dealer. Please see our Sweet's Catalog. The Cambridge Tile Manufacturing Co., Cincinnati 15, Ohio.

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Color Balanced **Suntile**

Bright with color · Right for life

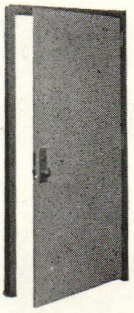
SUNTILE OFFERS YOU BOTH: BETTER TILE--BETTER INSTALLATION

RICHMOND

Flush kalamein door

Richmond flush kalamein doors are built in accordance with the method approved by the Underwriters' laboratory and are eligible to bear labels for class B, C, D and E installations.

Steel reinforced and asbestos lined, with metal coverings glued to cores under enormous pressure, these doors are not only sturdy, fire resistant and corrosion resistant, they are smooth and rich in appearance and decidedly modern.



the last word in fire door protection . . .

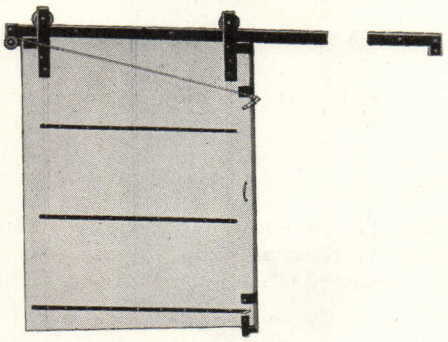
. . . . . and good architecturally.

RICHMOND

Fyrgard door

The Richmond Fyrgard Door is covered both sides with 24-gauge galvanized metal which is twice the thickness of the 30-gauge metal used on standard tinclad doors. This increased ruggedness provides a double barrier against fire which may mean the saving of valuable property and perhaps of human lives.

With its flat surface relieved by the vertical finishing strips, the Fyrgard Door is decidedly goodlooking and modern in appearance.



It is important that details and specifications of Richmond fireproof doors be in the hands of architects who have large projects on the boards. This is true because Richmond doors satisfy city codes as to fire protection and yet are designed and fashioned to meet modern standards of beauty. Moreover, because of production advantages, any Richmond door is one of industry's "best buys".

the **Richmond fire proof door company**

use this coupon

Gentlemen: Please send service sheets R1 and R5 containing complete information and specication, Richmond flush kalamein doors and Richmond Fyrgard Doors.

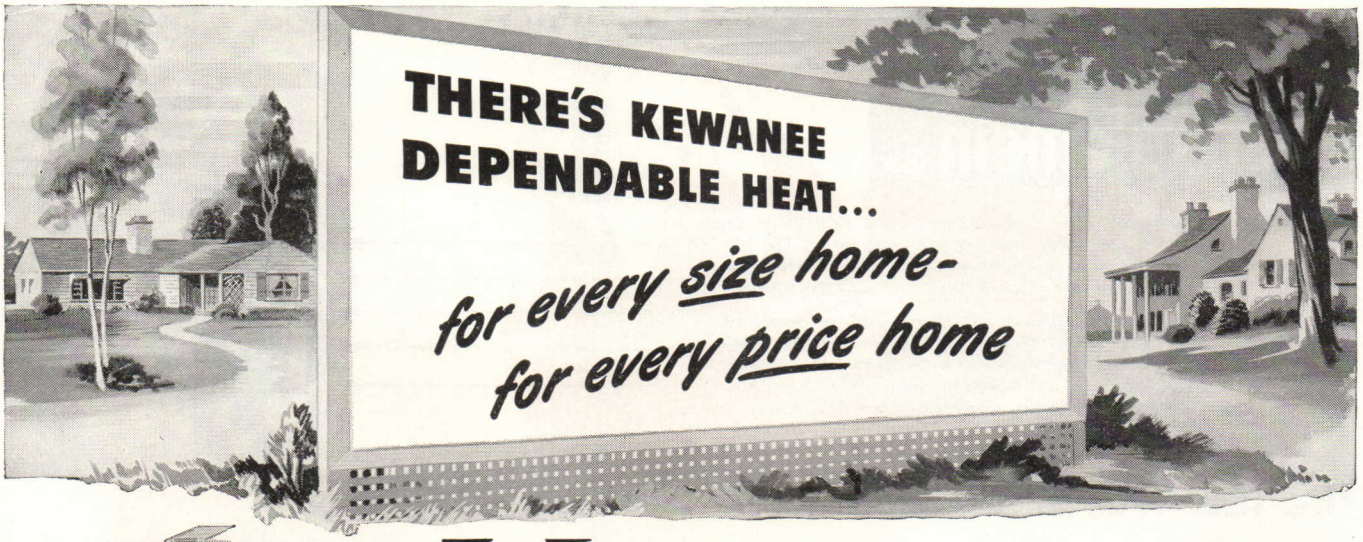
NAME_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

THE RICHMOND FIREPROOF DOOR CO.
Richmond, Indiana



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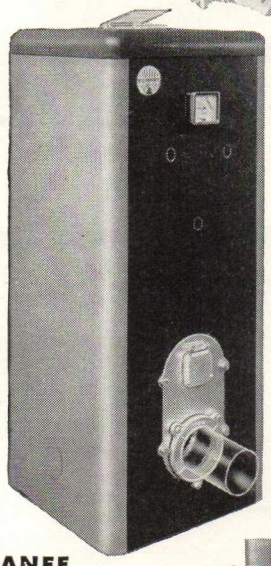
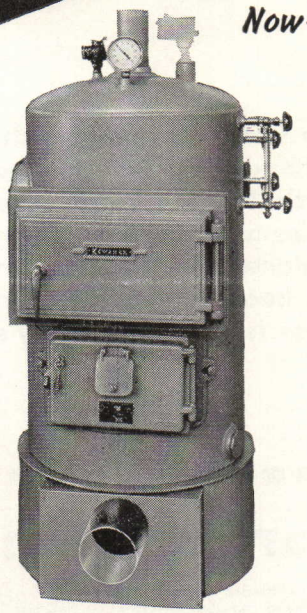
Whether heated with conventional radiators, wall, floor or ceiling panels, or radiant baseboard . . . with oil, gas or coal (hand or stoker fired) . . . there is a Kewanee Steel Boiler just right for the purpose. And each size and type provides that extra dependability with economy of fuel which has made Kewanee Boilers famous for more than 80 years.



KEWANEE
Cottage Boiler
Vertical Tubestyle for hot water heat in small homes.

Now— for the budget home there is the new Kewanee Cottage Boiler; a sturdy steel vertical tube unit in a smart two-tone green, insulated jacket. Rated to produce 77,000 Btu, this Kewanee is capable of producing enough extra heat to take care of overloads of 50% and more.

As an additional feature, a built-in copper coil water heater provides an abundance of hot water for kitchen, bath and laundry. Yet, with all of these "big boiler" characteristics, the Cottage Boiler is so priced that it comes well within the limits of the modest budget.



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330 to 900-sq. ft. steam radiation. Jacketed or unjacketed.

For Large Homes and Medium Size Buildings

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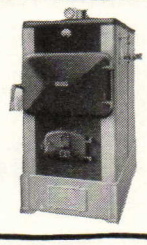

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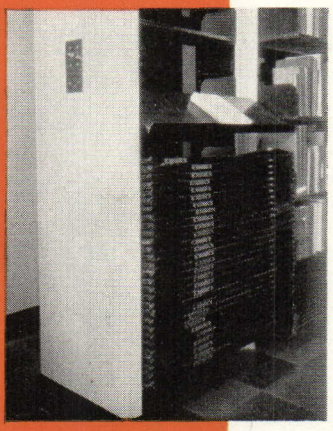
Bracket Stack with Hinged Open Bar Shelves and Wide Ends. Stack Aisle Light Reflectors and Stack Tier Conveyor Station. Howard University Library, Washington, D. C.

The designing of library bookstacks and bookstack equipment *must* be done by experts who know every advantage to be gained . . . every dollar to be saved. VMP's library engineers are at your service, without obligation.

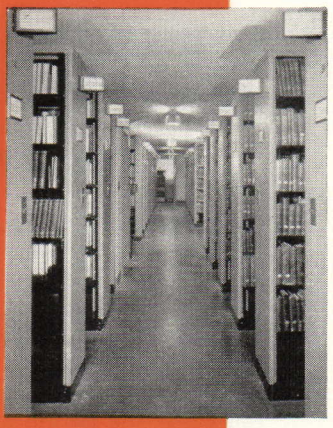
The equipment and shelving that libraries need today *must* be streamlined, have ease of erection and movability, and save on overall installation costs. VMP has made a point, in the past 100 years, of keeping ahead of the times . . . at below the costs.

Libraries today *must* look to a name that's proven itself in the past. VMP's outstanding library bookstack installations such as the Library of Congress, Dartmouth College Library and University of Notre Dame Library are the finest examples of workmanship you could ask for. Names of Architects sent on request.



Steel Column Bracket Stack. — Open Bar Hinged Bracket Shelves Folded and Stored in Stack Room. South Hall—Columbia University.

Multi-Tier Stacks for the Joint University Libraries, Nashville, Tennessee.



Sheet Steel Standard Stacks with Concrete Deck Floors. E. L. Doheny Memorial Library, University of Southern California, Los Angeles, Calif.

Bracket Stack with Hinged Open Bar Shelves and Wide Ends. Showing Typical Relation of Stair, Elevator and Conveyor, Howard University Library, Washington, D. C.

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a simply written presentation on daylight control

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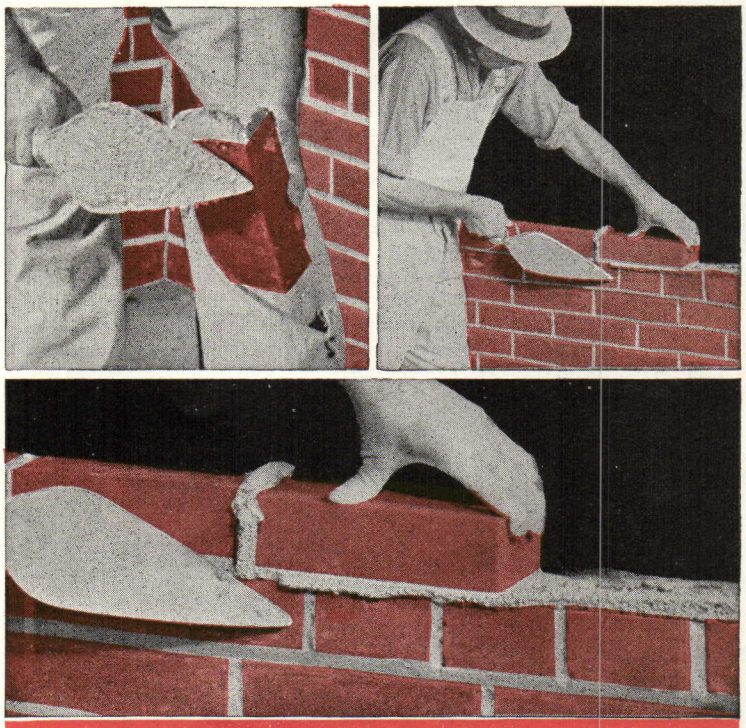
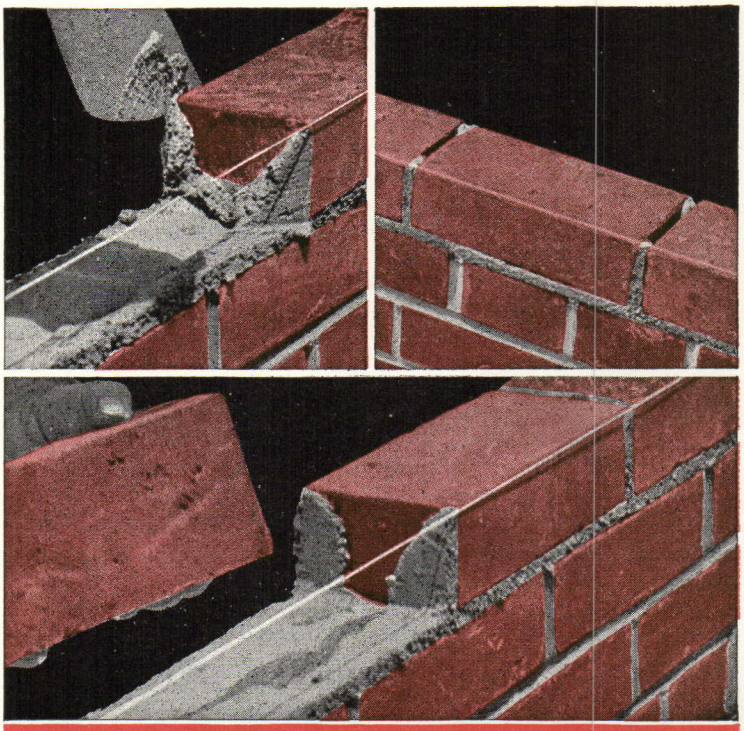
GOOD BRICKWORK = GOOD DESIGN + GOOD WORKMANSHIP + GOOD MATERIALS



GOOD WORKMANSHIP

Plenty of mortar should be thrown on the end of the brick to be placed. The brick should then be pushed into place, so that mortar oozes out of the head joint.



POOR WORKMANSHIP

When dabs of mortar are spotted on the corners of the brick, the mortar does not completely fill the head joint, and voids are still left.

FULL HEAD JOINTS, WITH BRIXMENT, HELP PREVENT LEAKY WALLS

WE SUGGEST THAT—

All head joints in both face brick and back-up work should be completely filled with mortar. If head joints are not completely filled, water may penetrate to the inside of the wall through openings in the joints. *Dabs of mortar spotted on the corners of the brick are not nearly enough to fill the joints.*

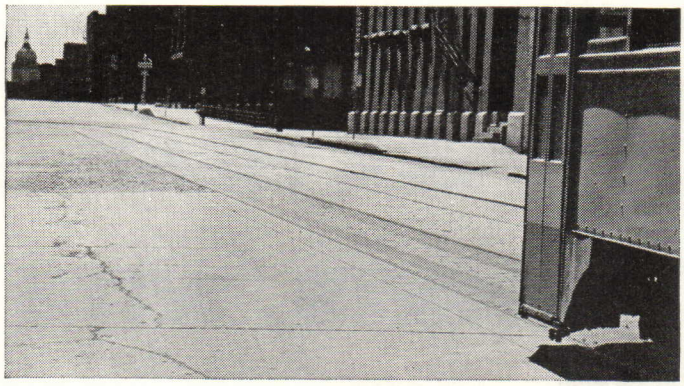
Take a look at the two examples shown at the left, and you'll instantly see why full head joints are an essential part of *good workmanship* in bricklaying.

No mortar material alone, not even Brixment, can make watertight masonry walls, so long as open crevices and pockets are left in the mortar joints.

Brixment mortar makes it far easier for the bricklayer to do good work. It is smooth and plastic — so soft and workable that the bricklayer can use enough mortar to fill the joint, and still "place" the brick easily and accurately to the line.

Brixment mortar has greater plasticity, higher water-retaining capacity and bonding quality, greater resistance to freezing and thawing, and freedom from efflorescence. Because of this *combination* of advantages, Brixment is the leading masonry cement on the market.

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

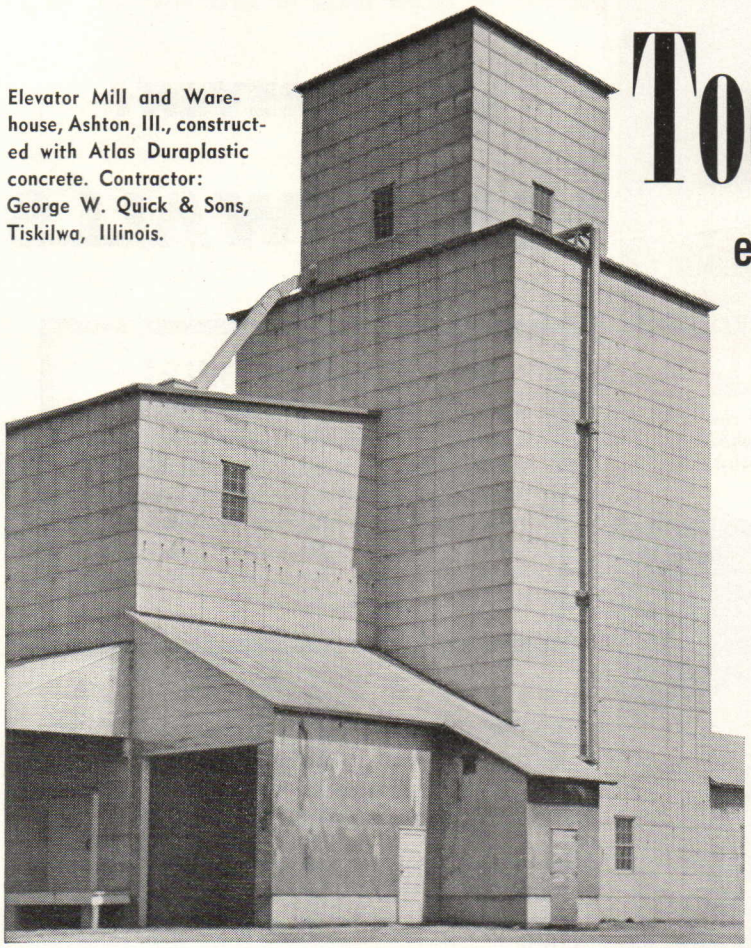


Ten Years Ago...

A Decade of ATLAS DURAPLASTIC AIR-ENTRAINING PORTLAND CEMENT

in August, 1939, this concrete test paving was laid in Second Avenue North, Minneapolis. The badly scaled section of roadway in the background was made with regular portland cement. The foreground section, *laid at the same time*, was made with Atlas Duraplastic—the first commercial use of the air-entraining portland cement originated and developed by Universal Atlas.

Both sections, subjected to the severity of ten Minneapolis winters and to heavy applications of de-icing salts, are shown just as they appeared in July, 1949—convincing proof of the characteristic durability of Duraplastic concrete, of its high resistance to freezing-thawing weather and the scaling action of de-icing salts. Longitudinal structural crack shows some ravelling. Note perfect transverse joint.



Elevator Mill and Warehouse, Ashton, Ill., constructed with Atlas Duraplastic concrete. Contractor: George W. Quick & Sons, Tiskilwa, Illinois.

Today... more plastic, easy-to-place structural concrete with DURAPLASTIC*

During the past decade, the advantages of Atlas Duraplastic air-entraining cement for paving concrete have been increasingly applied to structural and mass concrete—for foundations, walls, columns and floors; for slip-form work, gunite, stucco and other uses.

Particularly, has the increased plasticity of Duraplastic concrete been of benefit in structural work. For example, on this elevator mill and warehouse, the contractor reported, "Use of Duraplastic saved about 12 man-hours of labor per day while running concrete walls. First job on which we have used Duraplastic, and were more than satisfied with the results. Will use it in the future."

As it does for paving concrete, Duraplastic for structural and mass concrete permits the use of less mixing water for a given slump. The resulting mix is more plastic, more workable, more uniform and more cohesive. It's easy to place and finish. Water-gain and segregation are reduced. Surface appearance is improved and exhibits higher resistance to the effects of weather-exposure.

Duraplastic provides the precise amount of air-entraining agent interground with the cement for satisfactory field performance. It complies with ASTM and Federal specifications, sells at the same price as regular cement and calls for no unusual changes in procedure.

Send for new free booklet, *"A Decade of Duraplastic Air-Entraining Cement." Write to Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Bldg., New York 17, N. Y.*

OFFICES: Albany, Birmingham, Boston, Chicago, Dayton, Kansas City, Minneapolis, New York, Philadelphia, Pittsburgh, St. Louis, Waco.

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

PA-D-100

ATLAS DURAPLASTIC

TRADE MARK REG. U. A. C. CO.

AIR-ENTRAINING PORTLAND CEMENT

MAKES BETTER CONCRETE AT NO EXTRA COST

A UNIVERSAL ATLAS PRODUCT

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Kaylo material of structural density is composed of 20% inorganic solids and 80% microscopic voids, giving it exceptional resistance to heat flow. In addition to high insulating value, Kaylo material is incombustible, rot-proof, vermin-proof and insoluble in water.

Kaylo material is lightweight—only 20 lbs. pcf—yet it is amply strong for all applications for which Kaylo building products are designed.

Kaylo products offer the architect and builder many unique advantages. Mail the coupon below for literature.

KAYLO INSULATING ROOF TILE

Kaylo Insulating Roof Tile are high in insulating value, lightweight, structurally strong and incombustible. The 23-lb. tile (18″x36″) are laid quickly and easily on steel sub-purlins or nailed to wood joists, spaced 36″ on centers, forming a strong, long-lasting roof deck over which standard roofing materials are applied.

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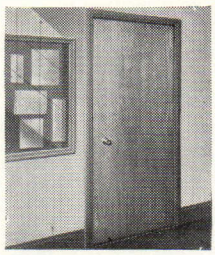
Kaylo Laminated Panels, formed of Kaylo core material with cement-asbestos facings, give better insulating value than 16″ of concrete. The Kaylo core is incombustible, insoluble in water and rot-proof. Kaylo Laminated Panels are lightweight (6 lbs. psf), easy to erect and form complete exterior curtainwalls or interior partitions.



KAYLO FIREDOORS

Kaylo Firedoors are the only type of wood-faced door with Underwriters' 1-hour fire rating. They offer the beauty of natural wood, together with fire protection, insulating value and dimensional stability. Kaylo Firedoors do not warp, swell or shrink —tests of 2,000,000 closings produced no breakdown.

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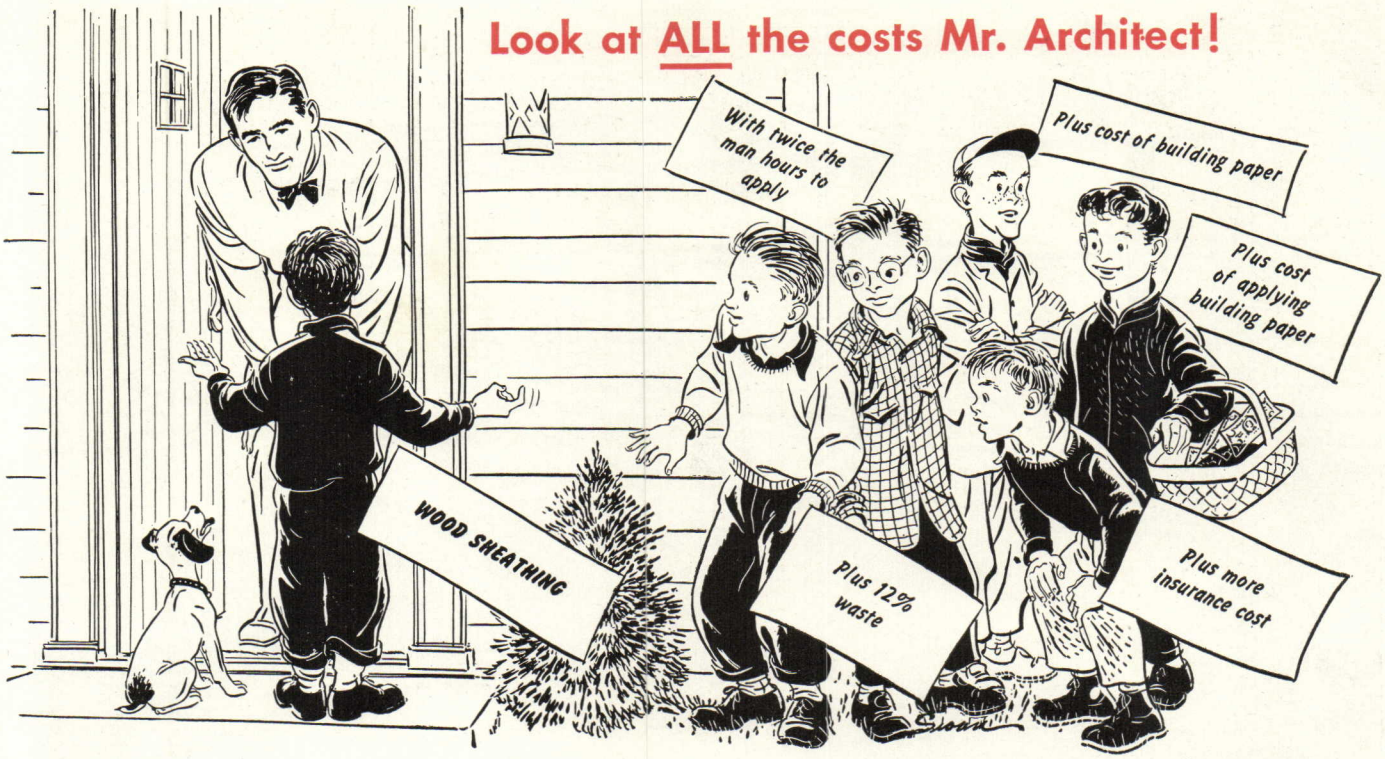
CITY..... STATE.....



When you figure the total applied cost of sheathing, your best buy is *BILDRITE**

You only see *part* of the picture when you look at the cost of materials alone. To get the *real* story about sheathing costs, you have to figure the *total applied costs.* Remember: It's the applied cost that determines the cost of the house—and price to the client.

So let's see what happens: It takes about half the time to apply BILDRITE compared with wood. That's a big saving. There's no waste with BILDRITE as against 12% waste with wood. That's a saving—and there are plenty of others. See for yourself—fill in the forms at the right.

AND in addition you get the *plus* value of 2½ times the insulating value and twice the bracing strength of wood sheathing horizontally applied! You can't get around the facts. The best buy in sheathing today is INSULITE (BILDRITE) Sheathing!

Figure it Yourself

WOOD SHEATHING 1000 SQ. FT. WALL AREA

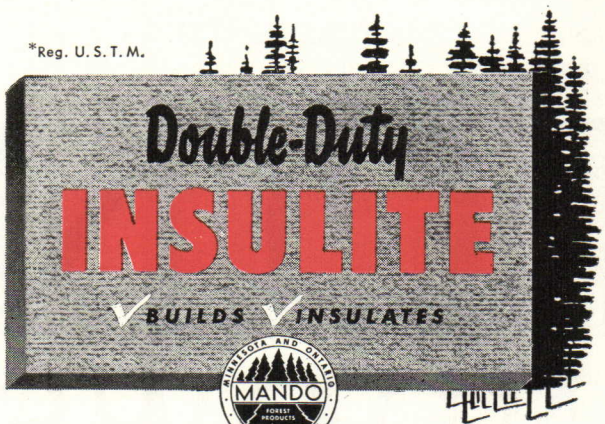
ITEM AND QUANTITY	RATE	TOTAL
1,000 sq. ft. 8" wood sheathing (horizontal)		
Waste, 12% (120 sq. ft.)		
Carpenter labor, 15 hours		
Insurance, 10% of carpenter costs		
2.8 rolls building paper		
Carpenter helper to apply paper		
Insurance, 10% of helper costs		
TOTAL APPLIED COST, WOOD SHEATHING		

BILDRITE SHEATHING 1000 SQ. FT. WALL AREA

ITEM AND QUANTITY	RATE	TOTAL
1,000 sq. ft. Bildrite Sheathing		
Waste (Practically none. Less than 1%)		0
Carpenter labor, 8 hours		
Insurance, 10% of carpenter costs		
Building paper (None needed)		0
Helper to apply paper (None)		0
Insurance on helper (None)		0
TOTAL APPLIED COST, BILDRITE SHEATHING		

Refer to Sweet's File, Architectural Section 10a/8

*Reg. U. S. T. M.



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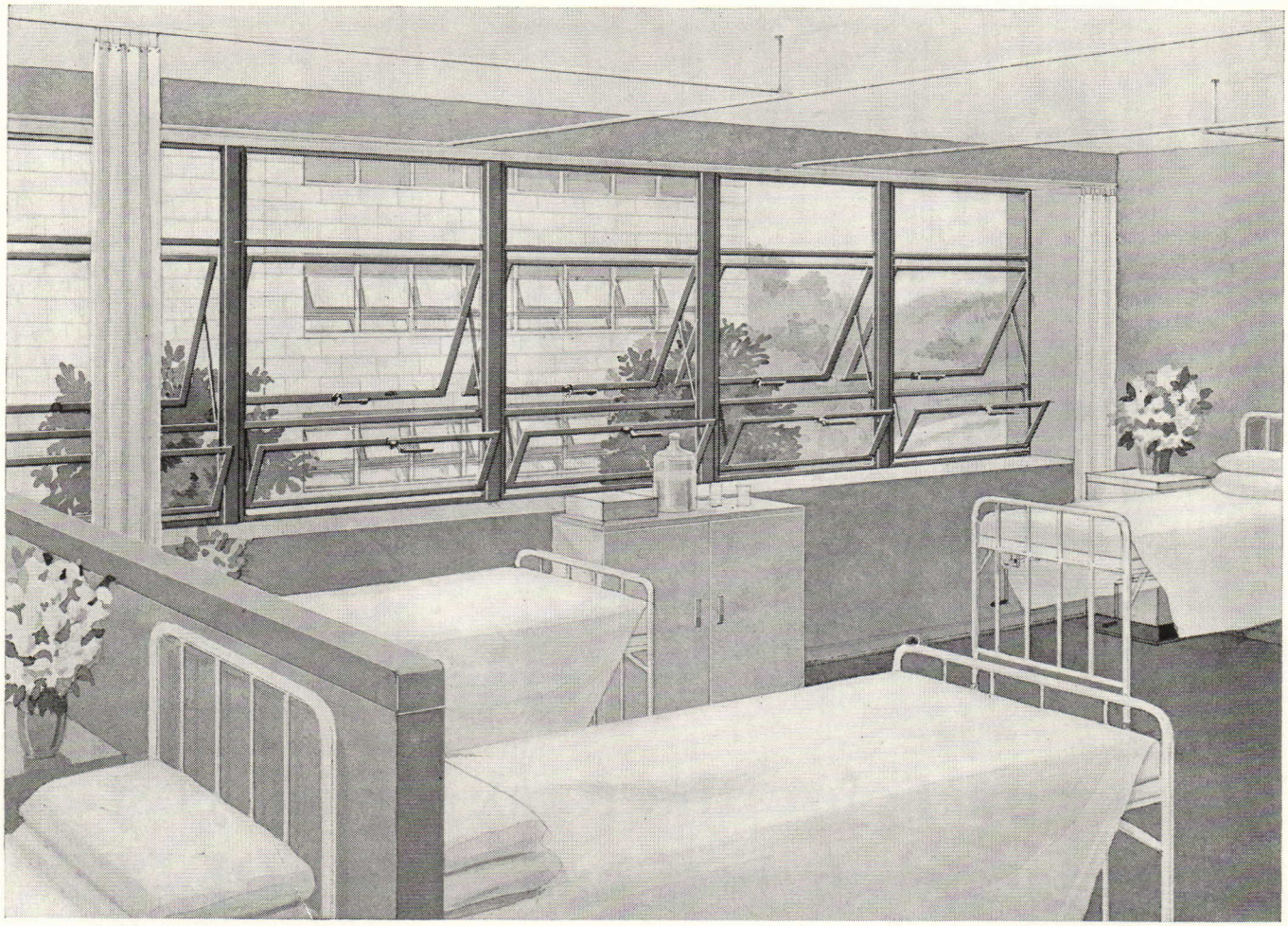

Let's visit this cheerful hospital ward . . . See how large, sun-inviting Lupton Metal Windows make rooms seem larger, less confining. Narrow metal frames increase glass area; make interiors brighter, more cheerful. Air flow is easily controlled to provide natural, draft-free ventilation at all times. Close fitting, all-metal insect screens are available. Fixed metal frames can be supplied for glazing with single or double glass where air conditioning is installed. Lupton Metal Windows are precision-built at every point . . . cannot warp, swell, shrink or rattle. Sturdy steel frames are Bonderized to increase the effective life of finish paint. Also available with hot-dip galvanized finish for locations subject to acid fumes and extreme moisture. For full details, get in touch with your Lupton Representative. Or write for General Catalog.

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LUPTON METAL WINDOWS

DARTFORD MOTOR COURT, Green Lake, Wisconsin.
Architects: Auler, Irion & Wertsch, Inc., Oshkosh, Wisconsin.

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for low-cost floors of character and beauty

Wherever cost is a first consideration . . . in motor court, residence or large-scale housing project . . . the "economy grades" of Northern Hard Maple offer recognized advantages. Durability and ease-of-maintenance you take for granted. But here's real beauty, too! The interesting blendings of varying warmer tones are a unique and highly attractive characteristic of "Thrifty Third" and Second Grade Maple and Birch!

Says Mr. Theodore Irion, architect for the Dartford Motor Court: "I like Maple floors for any type of building . . . for hard service in a motor court no floor could be more practical and attractive. Third Grade Maple, in my opinion, is beautiful and characterful when properly laid and finished . . . the delicate grain formation and deep colorations seem just right for these floors."

When MFMA Second and Third Grades are specified there is important economy *at no sacrifice of intrinsic quality*. Thus the money savings are real and enduring. For maximum thrift, and even subtler shade blendings, the narrower, tighter-laying 1½" face is now available.

SEE SWEET'S...

Architects' 13g-7; Engineers' 4j-21 for full data and standard specifications, both strip and patterned designs.

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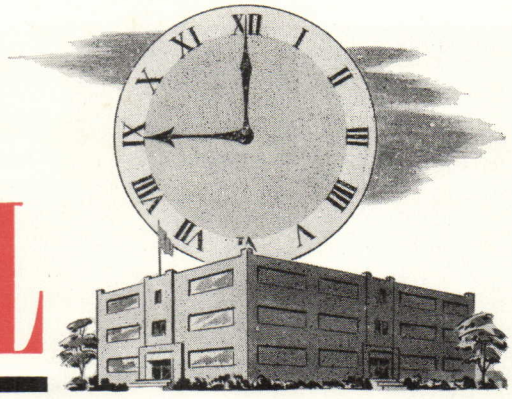
FLOOR WITH *NORTHERN* HARD MAPLE
BEECH AND BIRCH

AUTH SYSTEMS FOR THE SCHOOL



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FIRE ALARM • INTERIOR TELEPHONE • MISCELLANEOUS SIGNAL

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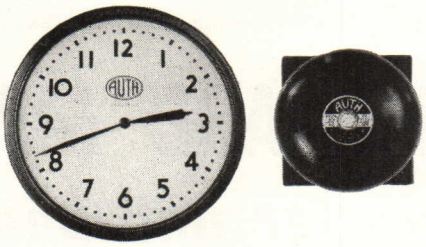
Auth Fire Alarm Systems are approved by the Underwriters' Laboratories whose requirements generally form the basis for local regulations.

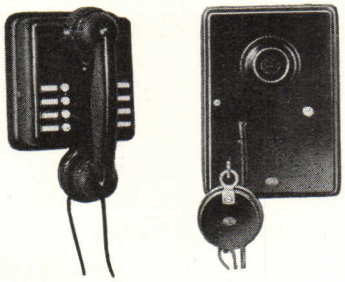
Auth Interior Telephone Systems provide the same kind of quick and reliable communication as the public telephone system.

For many years the Boards of Education of the City of New York and numerous other municipalities have installed Auth systems. *Dependability is the reason.*

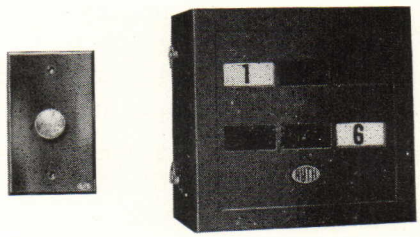


Centrally Controlled Synchronous Clock and Program Bell Systems, Motored by Telechron.

Closed Circuit, Supervised Fire Alarm Systems Approved by Underwriters' Laboratories. Also Open Circuit Systems.



Intercommunicating Telephone Systems permitting one or a number of conversations simultaneously.



Miscellaneous Signaling Systems such as Stage to Projection Booth, Entrance Doors to Custodian, etc.

Literature is available describing these and other Auth products and systems.

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MANUFACTURERS OF

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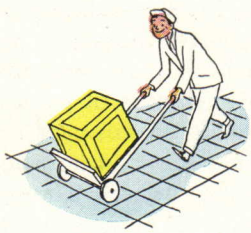
34-20 45TH ST., LONG ISLAND CITY 1, NEW YORK.

Choose this Factory Floor FOR A Capital Investment!



You'll get many, many years of service from a Flexachrome* Plastic-Asbestos floor like this . . . service that renders it one of the soundest investments management can make. Let's look at the qualifications.

Flexachrome is greaseproof. Use it in machining areas, compounding departments, in-plant kitchens and dining rooms . . . anywhere grease abuse is a problem.

Maintenance is simple and economical. Flexachrome floors stay at their brilliant best merely with: daily sweeping to remove loose dirt, periodic washing, water-waxing (if desired).

Service life is extraordinary. The exceptional built-in wear resistance of Flexachrome floors brings cost-per-square-foot-per-year down to a figure that makes plant operating executives smile.

And appearance is superb! Here is a real aristocrat among flooring materials.

Because Flexachrome is laid in individual tiles, you get unmatched versatility. Use it as a single color floor (above) . . . or in any of almost unlimited variety of patterns. Your floor design can be merely decorative, or it can be used functionally . . . to identify departments and bays, or direct traffic.

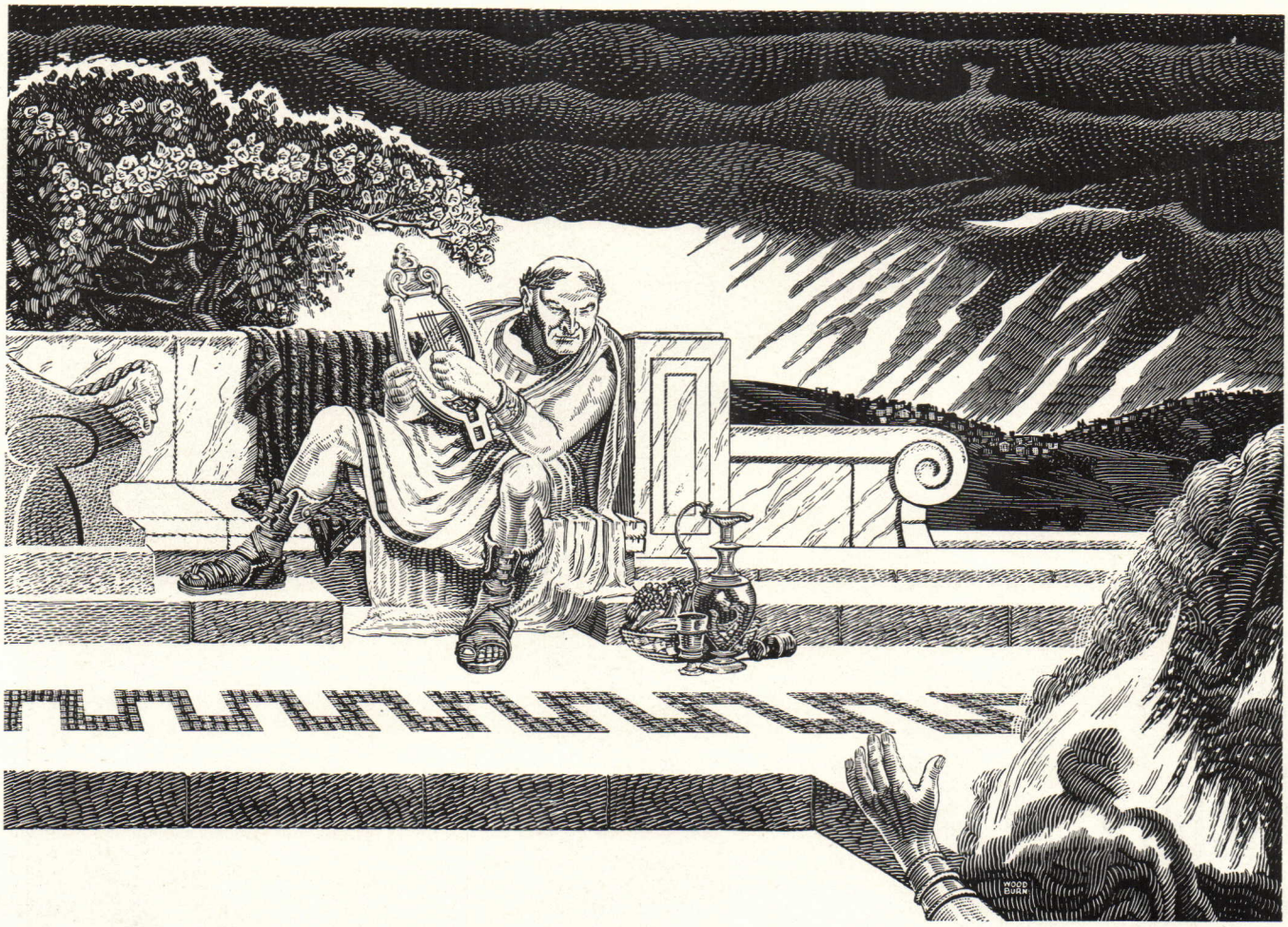
Now consider color. 33 sharp, brilliant colors from white to black . . . primary to pastel . . . give you a veritable rainbow to meet any decorative requirements. *And color is taking on increasing importance in industrial design* especially where light reflectance is important.

Tile-Tex
PLASTIC-ASBESTOS
FLOORS AND WALLS

Write us for detailed information. THE TILE-TEX DIVISION, The Flintkote Company, Dept. F, 1234 McKinley Street, Chicago Heights, Illinois.

Other Tile-Tex Flooring Products include: Mura-Tex Plastic-Asbestos Wall Tile; Tuff-Tex* Heavy Duty Greaseproof Industrial Tile; Tile-Tex*... the Quality Asphalt Tile.*

*REGISTERED TRADEMARK, THE FLINTKOTE COMPANY



It's no time to fiddle!

HEADLINES warn us of the menace of spies and subversive agents. But in every community there is a hazard, largely unrecognized, which may become ready tinder for the ravaging flames of socialism and communism. This is the misconception of everyday economic facts that exist among our young people.

For example, a recent poll among high school seniors shows that the majority of them believe that the owners of business take out for themselves a larger share of the income than is paid to employees. They think the stockholders' average return is 24% of the sales dollar. The truth is that stockholders average less than 3%, whereas over 30% of the income dollar is paid out as wages, pensions and other benefits.

Our young people do not seem to realize that paying dividends is only one function of profits. Far more important today is the need for profit to keep business competitive, and to pay for new buildings, machinery, and other necessary equipment and to provide new and more jobs. Ignorance of this fundamental concept breeds contempt for the system of enterprise that built our country and keeps it strong.

The facts of business must be given to our boys and girls to protect their future. Only business men can supply the facts. As a business leader in your community, it is your responsibility to help clear up such misconceptions. The old story that Nero fiddled while Rome burned must not have a counterpart in America.

THE YOUNGSTOWN SHEET & TUBE CO. 1900 YOUNGSTOWN 1950 50 YEARS OF SERVICE

The Youngstown Sheet and Tube Company

General Offices--Youngstown 1, Ohio
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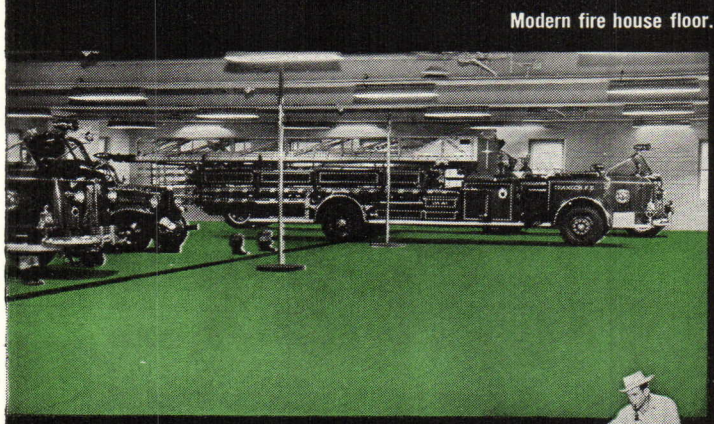
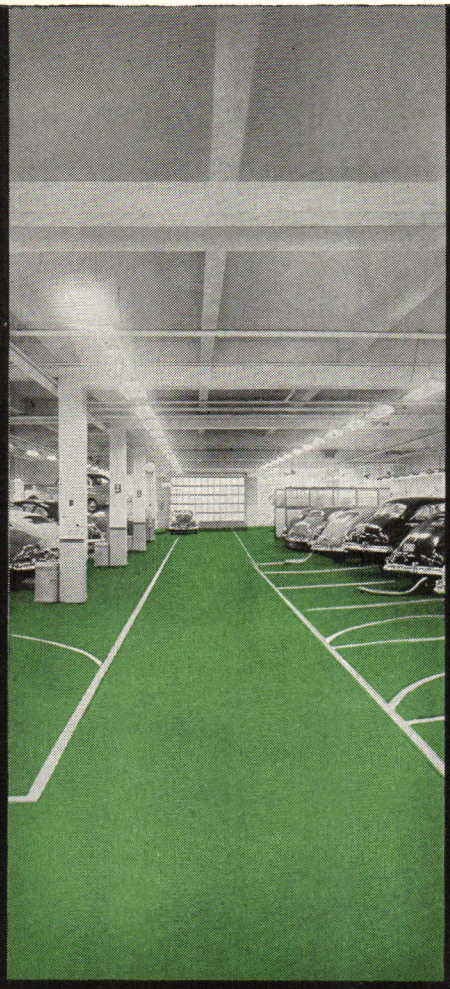
MANUFACTURERS OF CARBON ALLOY AND YOLOY STEELS

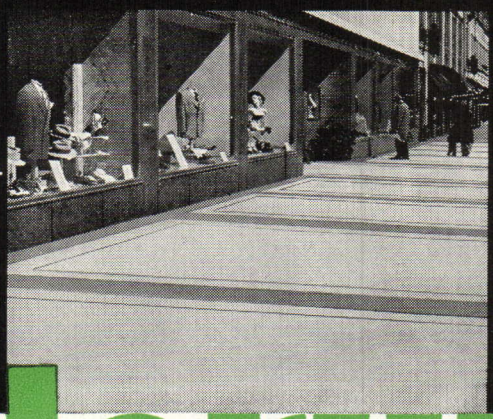
RAILROAD TRACK SPIKES - CONDUIT - HOT AND COLD FINISHED CARBON AND ALLOY BARS - PIPE AND TUBULAR PRODUCTS - WIRE - ELECTROLYTIC TIN PLATE - COKE TIN PLATE - RODS - SHEETS - PLATES.



Modern fire house floor.



modern building design calls for colored concrete floors & sidewalks



Modern shop sidewalk.

Modern garage floor.

colorundum

For colored concrete floors or sidewalks of real beauty and durability specify the use of Colorundum. For interiors or exteriors of hotels, banks, stores, hospitals, show rooms, service stations and factories you get bright, colorful surfaces with a wear-resistant topping of long life—at practically the average cost of ordinary concrete. Colors are red, brown, green, French grey and black.

Colorundum is a dry powder, composed of coloring mediums, fused aggregates, water-repellent and hardening elements, plus cementitious binders. Colorundum is used as a dust-coat which is floated and trowelled into the topping. The non-slip, dense surface makes it an ideal flooring on new concrete or when replacing old concrete floors or sidewalks.

A. C. HORN COMPANY, INC.

Manufacturers of materials for building maintenance and construction—established in 1897
10th Street & 44th Avenue, Long Island City 1, N. Y.
Los Angeles • San Francisco • Houston • Chicago • Toronto
SUBSIDIARY OF SUN CHEMICAL CORPORATION

HORN PRODUCT

PA

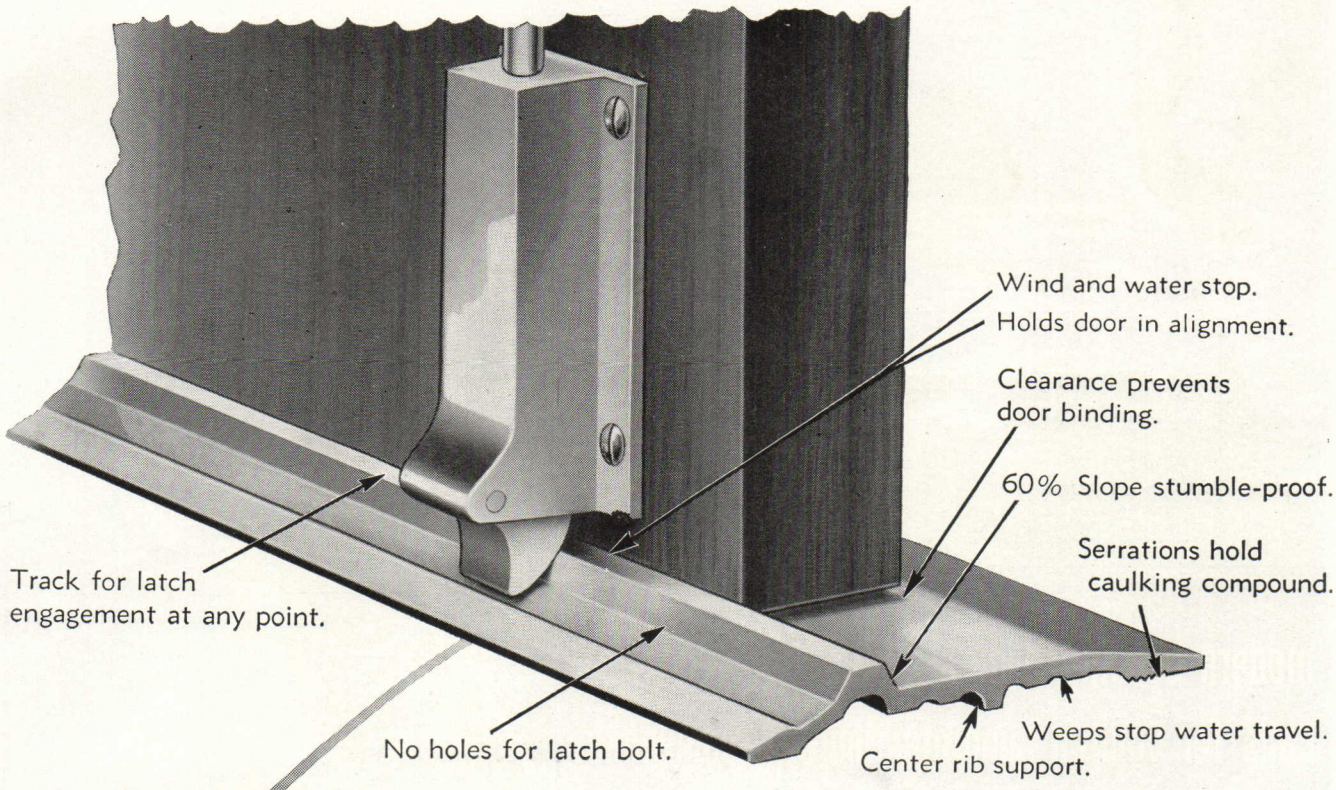
GENTLEMEN:
Please send complete data on COLORUNDUM.

NAME_____ TITLE_____

COMPANY_____

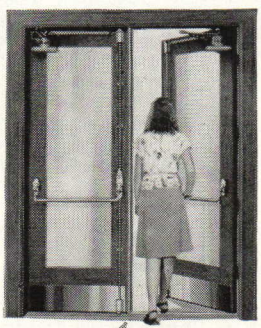
ADDRESS_____

CITY_____ STATE_____



LATCH TRACK THRESHOLD

A THRESHOLD WHICH SAVES YOU TIME AND TROUBLE



Thresholds have been a source of trouble as long as you can remember.

But now the new LATCH TRACK threshold by Von Duprin actually saves time, trouble and expense. It assures perfect coordination between the panic exit device and the threshold.

LATCH TRACK is a true All-Weather threshold, yet it has a gentle, stumble-proof slope, ample clearance to prevent binding, plus the great advantage of latch bolt engagement at any point. It completely eliminates the need for locating latch bolt holes and for altering them when doors shrink or swell.

Investigate! Use LATCH TRACK on your next installation.

VON DUPRIN DIVISION, VONNEGUT HARDWARE CO., INDIANAPOLIS 9, INDIANA

Von Duprin

A single sheet of PLEXIGLAS forms this seven-foot-diameter dome

Dome Skylight at Princeton University

This 7-foot-diameter dome, formed from a single .375"-thick sheet of clear PLEXIGLAS, is installed as a skylight on the new Architectural Laboratory. It permits the day-long study of shadows, textures, and colors on models designed and built by architectural students. Simple clamps on the circular coaming, over the flange of the acrylic bubble, hold it securely in place. Fabrication by Steiner Plastics Manufacturing Company, Long Island City, N. Y.

Architects *expect* the unusual of PLEXIGLAS. But the really unusual feature of this acrylic plastic is its usefulness in *everyday* applications. PLEXIGLAS is just as practical in shatter-resistant skylights and windows, walls and partitions, as it is in optically-clear domes for observatories and weather stations, or in luminous ceilings, building facades and store fronts.

The fact is that PLEXIGLAS can be as dramatic—or as functional—as you wish. Use it for gleaming brilliance and beauty in your most modern designs. Or put it to work in "high-breakage" areas, where durability is essential. PLEXIGLAS is a true *outdoor plastic* and a glamour material as well.

You can form PLEXIGLAS easily to virtually any shape—erect it with fewer, lighter supports. Its resistance to age, weather and breakage cuts maintenance costs to a minimum. And because it's available in the world's largest cast plastic sheets, PLEXIGLAS meets architectural requirements impossible with many other materials. Write for full information.

FREE—SEND FOR OUR LATEST BOOKLET about PLEXIGLAS as an architectural material. It's a mine of architectural data and suggestions.

PLEXIGLAS *is a trade-mark, Reg. U.S. Pat. Off. and in principal foreign countries.*

Canadian Distributor:
Crystal Glass & Plastics, Ltd., 282 St. Helens Avenue, Toronto, Ont.

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

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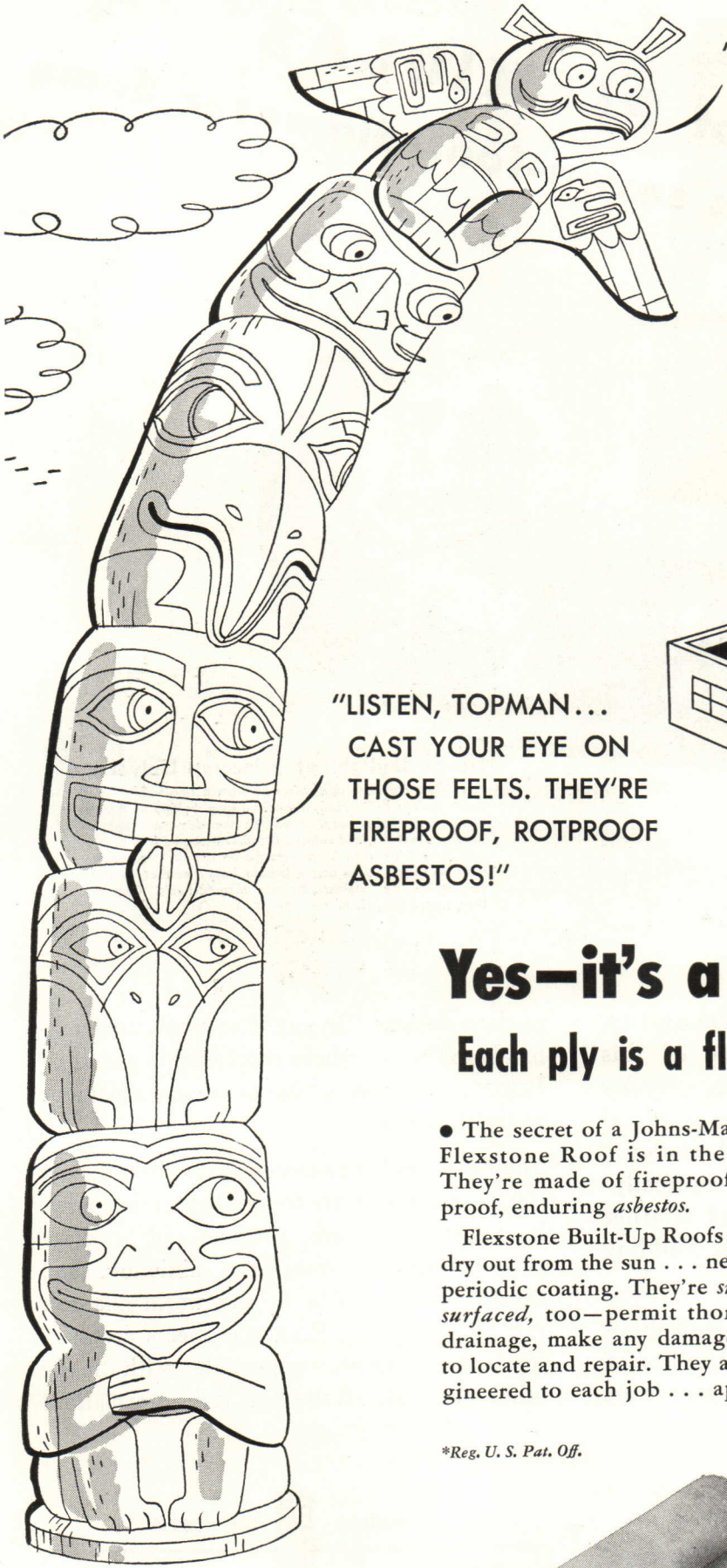

"LOOK AT THAT! A BUILT-UP ROOF THAT'S SMOOTH-SURFACED. NO SLAG! NO GRAVEL!"

"YEH, YOU SAID IT! AND IT'S GOT ASBESTILE* FLASHING FOR ADDED PROTECTION."

"LISTEN, TOPMAN... CAST YOUR EYE ON THOSE FELTS. THEY'RE FIREPROOF, ROTPROOF ASBESTOS!"

Yes—it's a Flexstone* Roof

Each ply is a flexible covering of stone!

● The secret of a Johns-Manville Flexstone Roof is in the *felts.* They're made of fireproof, rotproof, enduring *asbestos.*

Flexstone Built-Up Roofs won't dry out from the sun . . . need no periodic coating. They're *smooth-surfaced,* too—permit thorough drainage, make any damage easy to locate and repair. They are engineered to each job . . . applied only by *J-M Approved Roofers.* J-M Asbestos felts are perforated to make application easier, give a smoother job, conform better to roof decks.

Send for brochure BU-51A. Contains complete specifications for Flexstone Roofs and Asbestile* Flashing. Johns-Manville, Box 290, New York 16, New York.

JOHNS-MANVILLE JM PRODUCTS

Reg. U. S. Pat. Off.

Johns-Manville FLEXSTONE* Built-Up Roofs

CORRUGATED TRANSITE* ● ACOUSTICAL CEILINGS ● DECORATIVE FLOORS ● *TRANSITE WALLS ● ETC.

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Don't be a FIXTURE PICKER!

They'll never find a "bargain in lighting" by "picking fixtures". Yet you meet hundreds like this every day. And so do we.

No *one* fixture will solve all lighting problems.

There are, in fact, literally thousands of luminaires engineered to do specific jobs. One may be the right answer—or it may take two or three.

Good lighting combined with practical economics takes the services of a qualified lighting engineer.

Whether you plan lighting, buy lighting or install lighting, the services of a Westinghouse lighting engineer are available to you. J-04280

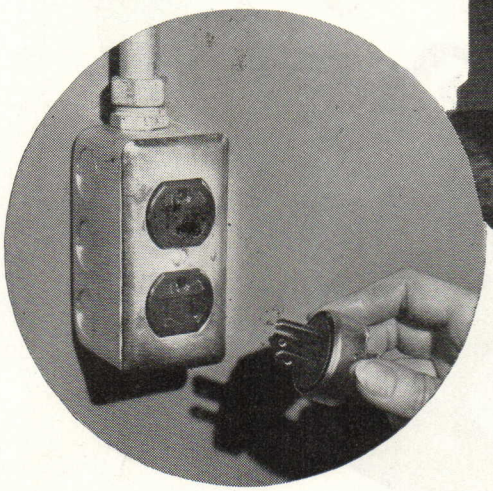
WESTINGHOUSE

Westinghouse

PLANNED LIGHTING PAYS

NOW...added safety for every home

The combination of three prong plugs and receptacles, and ELECTRUNITE E.M.T.'s strong rigid steel walls provide grounded protection for life and property plus the value of a "pull-in pull-out" wiring system.



. . . with grounded raceways of rigid steel

ELECTRUNITE E.M.T. (Electrical Metallic Tubing)

In the home, as in the factory, the advantages of grounded rigid steel wiring raceways are unquestionable. Freedom from injurious stray current . . . protection against fires caused by short circuits . . . flexibility of "pull-in pull-out" wiring circuits . . . *all* mean greater value and safety to your clients.

Now, easy-to-install Republic ELECTRUNITE E.M.T. and appropriate outlets make it practical for you to specify *grounded rigid steel raceways* for *every* home regardless of size or cost.

Because lightweight, galvanized, threadless ELECTRUNITE E.M.T. eliminates old-fashioned thread-cutting, reduces worker fatigue, and is easier to install, it is setting new raceway cost standards for the electrical industry. For the complete story about this modern rigid steel raceway, write, wire or phone today!

REPUBLIC STEEL CORPORATION
STEEL AND TUBES DIVISION • CLEVELAND 8, OHIO
Export Department: Chrysler Building, New York 17, N.Y.

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or write us for detailed information on these Republic Steel Building Products:

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Taylor Roofing Ternes
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Republic
REPUBLIC STEEL
ELECTRUNITE E.M.T.

LIGHTWEIGHT THREADLESS RIGID STEEL RACEWAY

Holabird & Root & Burgee, *Architects*

MODERN DOOR CONTROL BY *LCN* · CLOSER CONCEALED IN DOOR

STANDARD OIL COMPANY (INDIANA), ADMINISTRATION AND ENGINEERING BUILDING, WHITING, INDIANA, REFINERY

LCN CATALOG 11-E ON REQUEST OR SEE SWEET'S • LCN CLOSERS, INC., PRINCETON, ILLINOIS

For your clients THE ULTIMATE

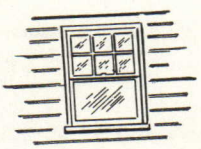
HOW YOU CAN OFFSET THE COST OF *All-Year* AIR CONDITIONING

Many conventional features of a house no longer have functional value when you design it around Servel *All-Year* Air Conditioning. You can leave out porches, fireplaces, screens, double-hung windows, etc., in your preliminary plans. Generally, you'll save enough to make up the cost of the Servel system. And you'll find clients feel they're making a wonderful exchange. For the things they give up provide pleasure only part of the time. Servel brings them comfort 365 days of the year!

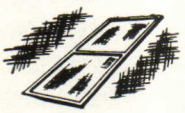
NO FIREPLACE

NO PORCH

NO ATTIC FAN



LOWER-COST WINDOW CONSTRUCTION



NO SCREENS

ROBERT H. WACHENDORF, builder and developer, is cooperating with Servel, Inc., and The Cincinnati Gas and Electric Company in the construction of the Meadow Ridge Year Around Model Home in Amberly Village, Cincinnati, shown below.

IN ALL-YEAR AIR CONDITIONING ...AT LITTLE OR NO EXTRA COST!

For little more than the cost of a quality heating plant, you can now offer your new home clients the all-year comforts of Servel *All-Year* Air Conditioning.

You can offer them homes which will always be ideally comfortable, no matter how hot or cold, how wet or dry, the weather outdoors.

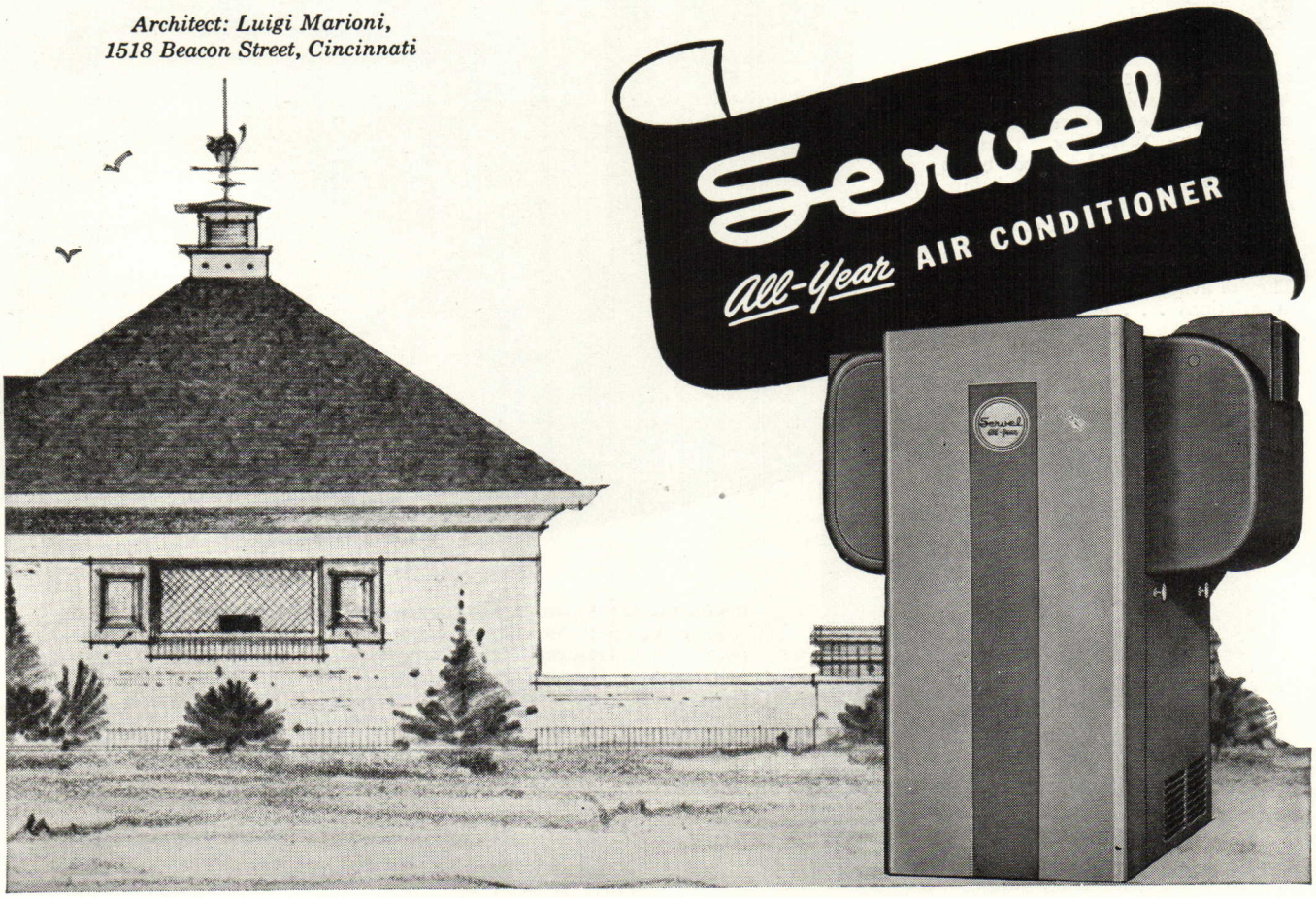
The new Servel *All-Year* Air Conditioner cools the air or heats it. It squeezes out wilting humidity in summer, adds just enough moisture to the air for comfort in winter. It filters out dust and irritating pollen, circulates air evenly, without drafts through every room in the house.

The whole operation is automatic. Your client just sets the Servel Selectrol—and forgets it. From then on, the Servel unit switches automatically from cooling to heating and back again, as needed, to maintain the chosen temperature.

A Servel air conditioned home needs no porch, no fireplace, no attic fan. Outside doors and windows may be kept closed. Glass may be fixed, permitting use of a simple wood frame. Screens are not necessary. If you plan your homes around Servel *All-Year* Air Conditioning, you'll find that these and other possible savings permit you to include the Servel unit for little or no extra cost.

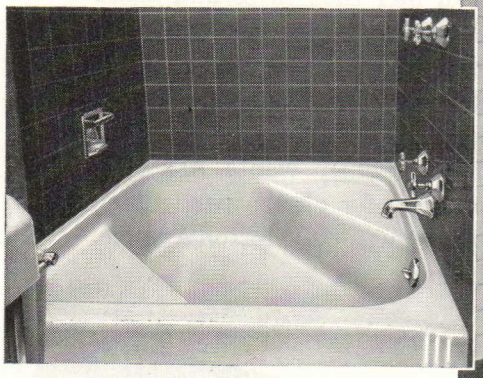
The Servel *All-Year* Air Conditioner can be easily adapted to any size, style, type, or shape of home your client wants. Ask your local Gas Company for all the particulars, or write to Servel, Inc., 4007 Morton Avenue, Evansville, Indiana.

Architect: Luigi Marioni,
1518 Beacon Street, Cincinnati

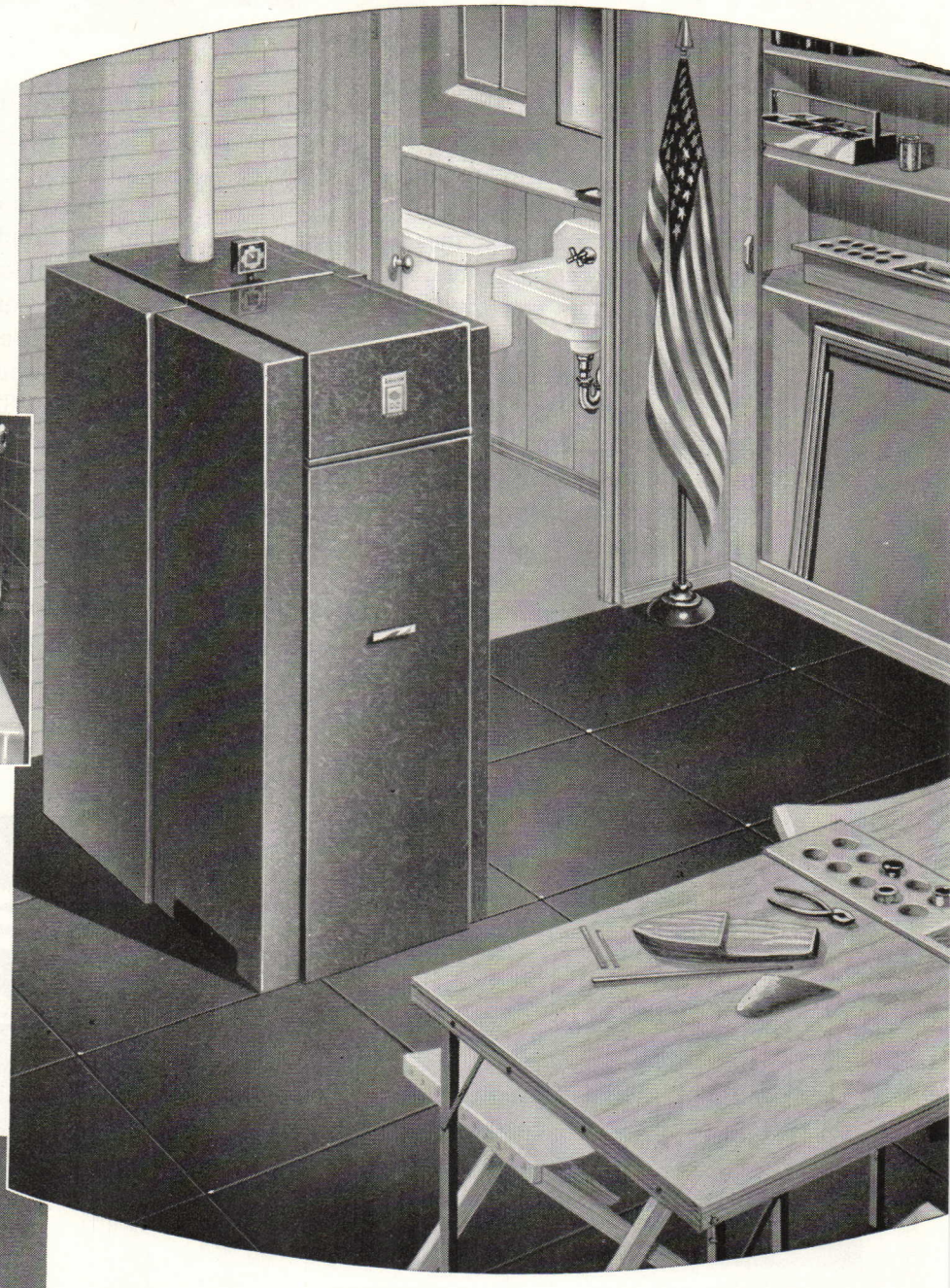


Smartly styled, expertly engineered,
AMERICAN-Standard Heating

THE TRIM, COMPACT ARCOLINER WET BASE BOILER actually adds to the appearance of this room while it furnishes clean, fully-automatic heating for the entire house. The Arcoliner's handsome Forge Red jacket, with smart hammered effect, will blend with the color scheme of almost any room. The jacket is easy to clean, safely cool to the touch. Jacket extension conceals all controls. Note handy basement wash-up room with its genuine vitreous china Marledge Lavatory and Cadet Water Closet.



COLORFUL, HANDSOMELY DESIGNED NEO-ANGLE BATHS maintain the luxurious atmosphere of the new Guest Ranch Hotel of Cheyenne, Wyoming. These durably constructed, rigid cast iron baths are heavily coated with acid-resisting enamel that will retain its luster permanently, make cleaning easy. Neo-Angle Baths are roomier than most, yet they occupy space only about four feet square. They're available for recess and corner installations . . . in white and many colors.



HERE'S THE SANISTAND, A NEW URINAL FOR WOMEN'S REST ROOMS. It offers women the same convenience and sanitation the standing urinal does for men . . . makes rest rooms cleaner, neater and more pleasant . . . reduces the cost and time of rest room maintenance. Test installations prove that the Sanistand is popular with women. Out of 5,029 questionnaires filled in by users, nearly 90% show prompt acceptance of this new fixture. It is as easy to install as a water closet and can be placed in a regular rest room compartment. For complete information about the Sanistand, write for our Better Rest Room Guide.

sturdily constructed

Equipment and Plumbing Fixtures...

the right products for any job

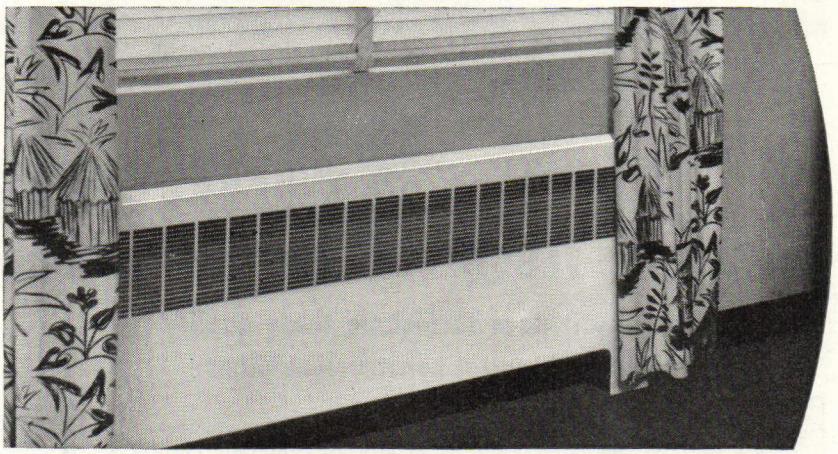
■ The variety of products in the American-Standard line offers the widest flexibility in designing and styling . . . whether you're designing houses, hotels, schools, hospitals, or large industrial buildings. There are plumbing fixtures to fit every architectural plan or decorative scheme. And there's a wide variety of equipment for radiator heating, warm air heating and winter air conditioning —for every kind of fuel.

As for *quality,* American-Standard products are second to none. The flawless performance and operating economy of these handsome products will delight your clients.

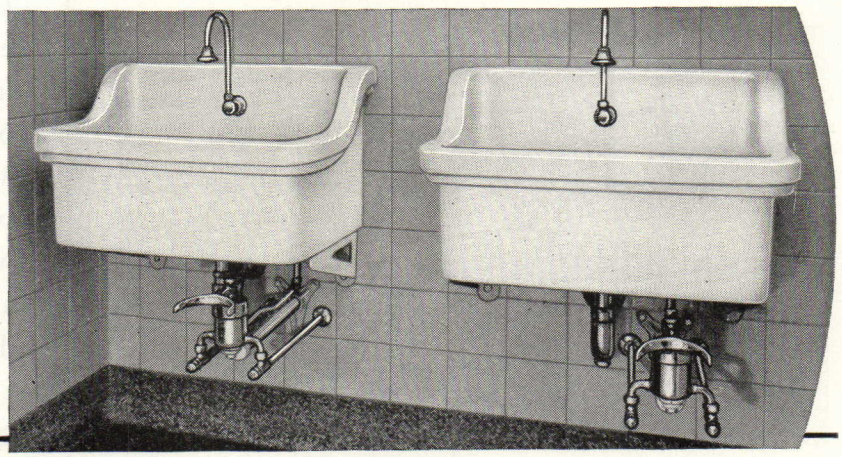
No wonder American-Standard Heating Equipment and Plumbing Fixtures are being used on today's finest construction jobs!

Ask your Heating and Plumbing Contractor for details about the complete American-Standard line. He'll gladly help you select the products best suited to your needs. **American Radiator & Standard Sanitary Corporation,** P. O. Box 1226, Pittsburgh 30, Pennsylvania.

Look for this AMERICAN-Standard HEATING · PLUMBING *Mark of Merit*



THE MODERN FURNISHINGS of the tastefully decorated bedrooms of Queens Court, St. Simon's Island, Ga., are complemented by handsome American-Standard Convectors and Enclosures. These heating outlets are attractive additions to any room, and they assure even and abundant heat. They're available in a wide range of heights and widths to fit any requirement.



THE GENUINE VITREOUS CHINA CONSTRUCTION of these Surgeons' Scrub-up Sinks in the St. Clare Hospital of Schenectady, N. Y., means a smooth, non-absorbent surface which is easy to keep clean, will withstand hard service. The sinks are equipped with knee-action mixing valves. All fittings are non-tarnishing Chromard. York and Sawyer, Architects, New York City.

AMERICAN-Standard

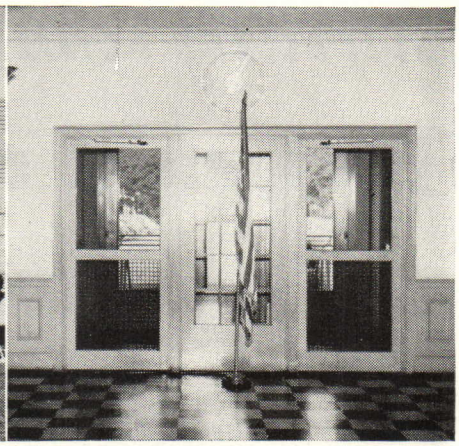
First in heating . . . first in plumbing

Serving home and industry

AMERICAN-STANDARD · AMERICAN BLOWER · CHURCH SEATS · DETROIT LUBRICATOR · KEWANEE BOILERS · ROSS HEATER · TONAWANDA IRON

A total of 2200 Roddiscraft Solid-Core Flush Veneered Doors are in use at the United States Navy Medical Center in Bethesda, Maryland.

Roddiscraft Solid-Core Flush Veneered Doors are included in the permanent equipment of the modern Mercy Hospital in Rockville Centre, New York.



The new building of the Nassau Hospital, Mineola, New York, has Roddiscraft Solid-Core Flush Veneered Doors throughout.

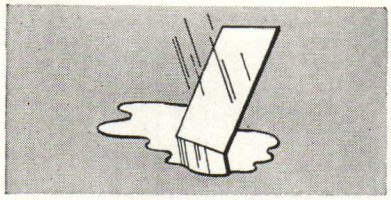
Roddiscraft

SOLID-CORE FLUSH VENEERED DOORS PROVED IN HOSPITAL SERVICE

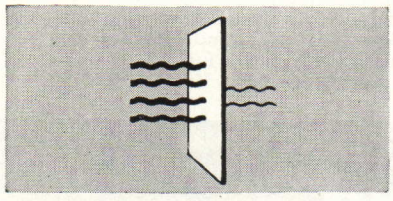
5 reasons why it pays to include these quality doors in your hospital construction plans

Identification and Guarantee—All Roddiscraft Solid-Core Flush Veneered Doors are guaranteed without qualification as to workmanship and materials. Inserted in the hinge rail of every door is a red, white, and blue dowel which permanently identifies the door.

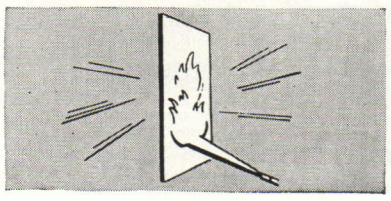
Resistance to Abuse—Roddiscraft Solid-Core Flush Veneered Doors easily withstand the punishment of heavy hospital duty. The entire door assembly is welded into a solid unit—permanently puncture-proof, waterproof, and resistant to decay.



Standard Thickness Face Veneers—Roddiscraft Standard Construction is a feature which adds to the durability of these Flush Veneered Doors. The Roddiscraft method utilizes Standard Thickness Face Veneers—as opposed to ⅛" and thicker veneers. Less moisture penetration — greater durability.



Sound Resistance—The high resistance of Roddiscraft solid-core construction to the passage of sound has been established by independently conducted laboratory tests. The standard 1¾" Roddiscraft Solid-Core Flush Veneered Door develops an average sound transmission loss of 30.9 decibels.



Fire Resistance—One reason why Roddiscraft Solid-Core Flush Veneered Doors are ideal for hospitals is their exceptional resistance to fire. This fact has been established by independent laboratories, where standard Roddiscraft doors exceeded the 40-minute fire test.

Both from the standpoint of utility and safety, Roddiscraft Solid-Core Flush Veneered Doors measure up to the stringent requirements of hospital planners. The service record of these exceptional doors stands as proof in itself. Every day—in new hospitals and old — Roddiscraft Solid-Core Flush Veneered Doors are providing dependable, satisfactory service. It's no wonder that more and more hospitals are turning to Roddiscraft for their doors.

Write for book —"An Open and Shut Case for the Finest Flush Doors" —giving complete details and specifications of the Roddiscraft Door line.

Roddiscraft

RODDIS PLYWOOD CORPORATION

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San Francisco, Calif.

where **Reliability** counts the most depend on National Electric

Approved under specification L-824

These National Electric Style RR Flexlay Cables are CAA approved. After rigorous tests, they are now included on the "List of Approved Lighting Equipment" as covered by Civil Aeronautics Authority Specification L-824 "Underground Electrical Cables for Airport Lighting Circuits."

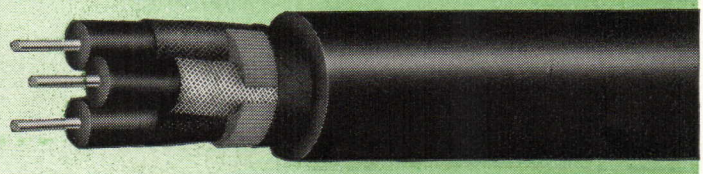
NE Flexlay Cables are *dependable* for the continuous service conditions required by airports. With plenty of built-in "abuse resistance," they are ideally suited for underground installation—either direct burial in the earth or pulled in conduits.

National Electric CAA-approved cables are recommended for airport lighting and signal circuits, as well as for street and highway lighting, municipal, power and other installations where *maximum dependability* is desired for underground wiring. The tough, specially-compounded Neoprene sheath affords complete protection against the destructive forces below the earth's surface, and gives outstanding protection when exposed to the sun and weather.

Specify National Electric CAA-approved cables for safe, reliable operations in your next airport installation.

TYPE "A" PERFORMANCE CABLE

Flexlay, Style RR, Airport Lighting Cable, 600 Volt Rating, AWG Sizes 4 through 16. (Single and Multiple conductor available)



TYPE "B" OZONE RESISTANT CABLE

Flexlay, Style RR, Airport Lighting Cable, 3000 Volt Rating, AWG Sizes 4 through 10. (Single and Multiple conductor available)

TYPE "B" OZONE RESISTANT CABLE

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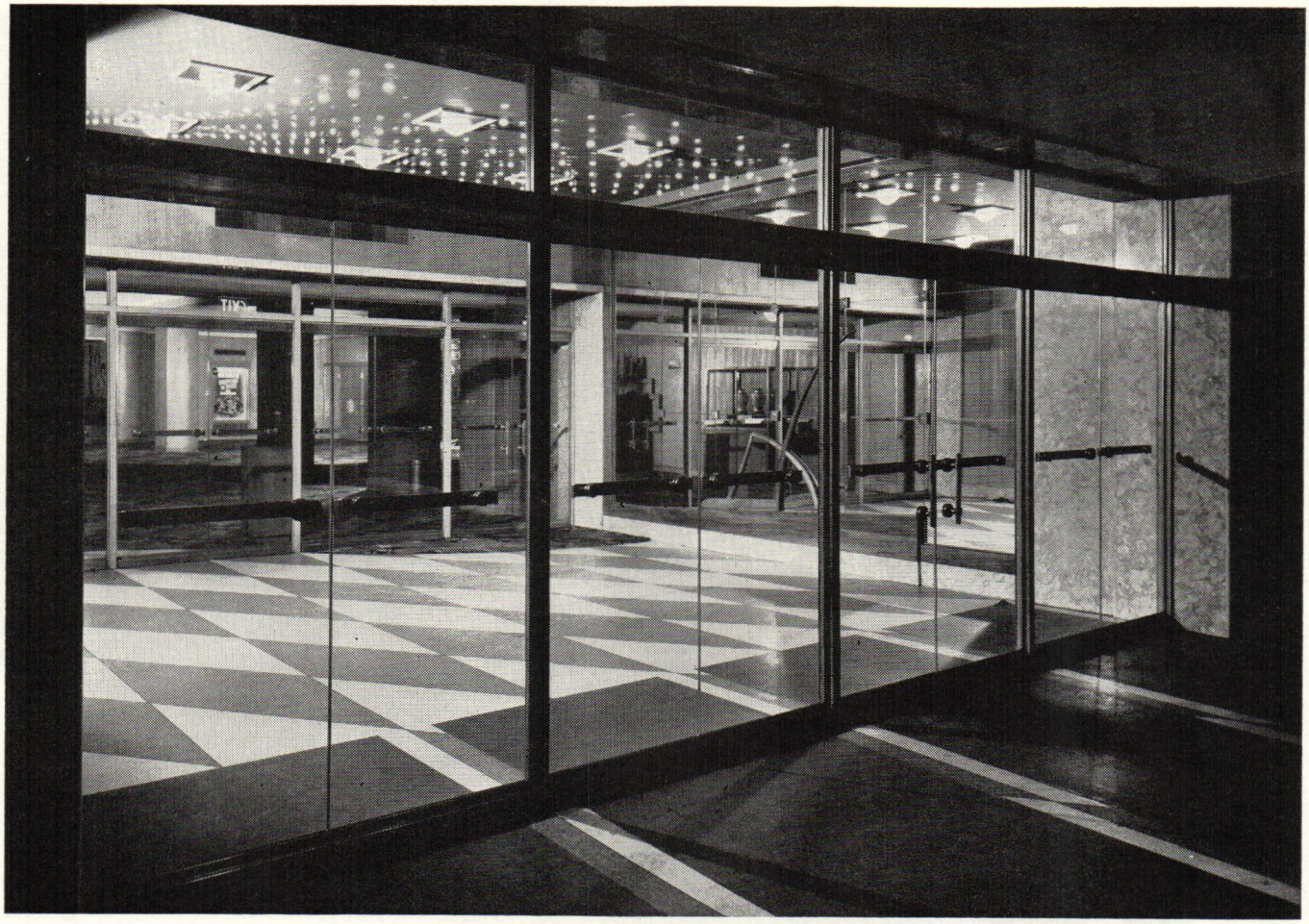

Valentine Theater in Toledo, Ohio. *Architects:* Rapp and Rapp, Chicago.

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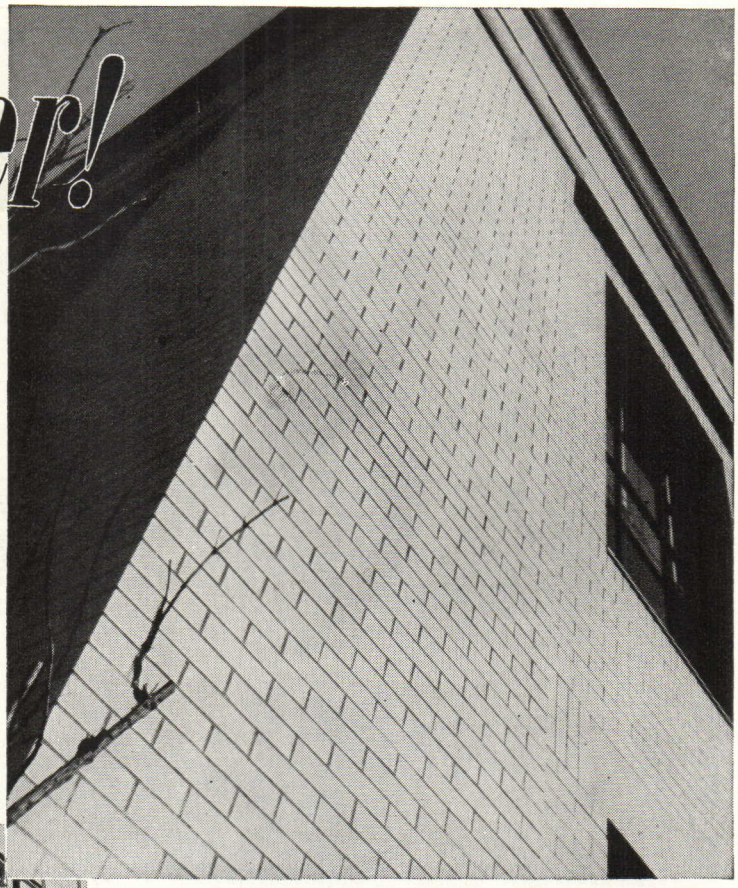
SYLVANIA ELECTRIC BUILDING MERITS TOP AWARD



● Public appreciation of this Physics Laboratory of Sylvania Electric Products, Inc., in Bayside, L. I., was expressed by a Prize Award from the Chamber of Commerce of the Borough of Queens for excellence of design and construction.

Two stories and penthouse high, the building is non-industrial in appearance—it would look at home on any modern college campus. And the substance is as sound as the form is pleasing. For it is Lone Star throughout—Lone Star Portland Cement in foundations and structure...Lone Star Masonry Cement in attractive exterior walls and beautifully tiled interior.

The clean lines of the white-glazed-brick exterior are pleasantly punctuated by clean-cut joints, which speak of the artisan working with quality materials. And what doesn't meet the eye is equally important —for high-quality mortar like this means as much to the owner in low-maintenance service as it does to the mason whose work it expedites.

SYLVANIA ELECTRIC PRODUCTS, INC.—PHYSICS LABORATORY
Bayside, L. I.
Architect: **AYMAR EMBURY 2nd**
Ready-Mix Lone Star Concrete: **COLONIAL SAND & STONE CO., INC.**
Lone Star Masonry Cement: **ACE BUILDERS SUPPLY CO., INC.**
General Contractor: **JOHN H. EISELE COMPANY, INC.**
—all of New York City

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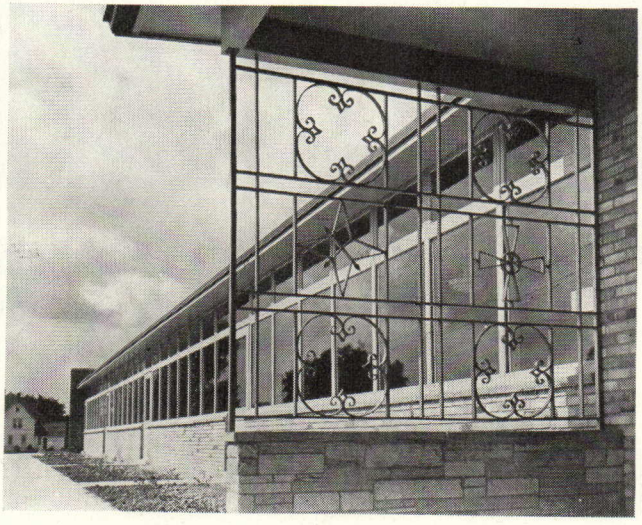
p/a critique

2



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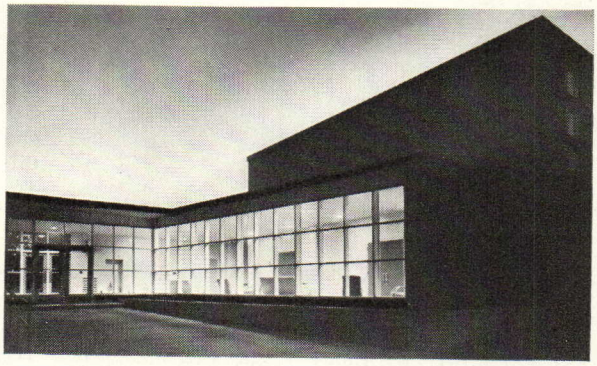


4

elementary schools

1. Richfield, Minnesota: Long & Thorshov, Inc., Architects. 2. Silver Spring, Maryland: Ronald S. Senseman, Architect. 3. Farmington, Michigan: Charles D. Hannan, Architect. 4. Peterborough, Ontario: John B. Parkin & Associates, Architects.

Architectural progress is dependent on the designer's ability and wish to keep an open mind. Nowhere is this more important than in the design of school buildings—environments where the youngest go for *their* first formal experiences in mind-opening. Where the design problem has urgency about it—as in the case of providing school buildings for expanding postwar communities with their avalanche of new young citizens—the best buildings will come from those offices that command the latest techniques.

These generalizations could hardly be better illustrated than by the four elementary schools included in this critique. All were built since the war; all had to be built to accommodate rocketing communities; all were designed by architects whose intent was to do the very best school possible within the budget and the techniques and knowledge of the time. Yet they represent quite disparate design approaches and none of the architects—and most of them emphasized this in their descriptive comments—would do that school again just as he did. What each had learned from experience and what had been reported in the professional press was incorporated in these jobs at the time they were designed. Yet the speed with which technological and pedagogical developments are made these days produces an inevitable time lag between scientific knowledge and architectural expression. More recent findings, and knowledge acquired through the very building of these schools and studying their use, have caused these architects to investigate other ways of doing the things they want to accomplish. We are fortunate in having the architects' own evaluation, in most cases, of the various techniques which were tried.

Thus, though these four schools are all contemporary, completed within the last two years or so, one finds a variety of decisions as to lighting techniques, classroom size and arrangement, and relation of indoors to out. There is one school that employs the projecting classroom scheme, a project alcove and daylighting from two sides, via corner windows; two of the schools make use of bilateral-lighting principles, with full side walls of windows balanced by high clerestories on the opposite walls; and the fourth, in order to provide maximum floor area at lowest cost, has employed light sources from two sides and at three points in a trilateral scheme. Light control, similarly, covers a wide range of contemporary theories—clear glass shielded by operable blinds; draw curtains; ribbed-glass upper portions of windows to kill sky glare; roof overhangs to keep out unwanted direct sunlight. Yet one of the architects reports that, in his current schoolbuilding, he handles the main window-wall detail with directional glass block panels above clear-glass lower sash.

Happily, inflexible standards cannot be made to apply. What would serve the northwest well might be a poor choice for Florida; and hence derives architecture's endless variety and challenge. We are presenting four first-rate elementary schools, granted the time and place in which they were built.

1. Richfield, Minnesota

LONG & THORSHOV, INC. ARCHITECTS, RALPH D. THOMAS & ASSOCIATES, INC., ENGINEERS

program An elementary school for 600 children, from kindergarten through the sixth grade. One of several new schools the firm is doing for this fast-growing suburban (Minneapolis) community.

site Northeast corner of a flat, 20-acre site, centrally located. Another portion of the property to be used for a new high school.

solution One-story, basementless building, with 16 classrooms, a kindergarten suite, and a library, arranged in three wings extending eastward from the main entrance corridor along the western side of which are administrative offices, health facilities, and the gym-auditorium. Full sidewall windows of classrooms face south; the roof slopes up toward the north to provide a continuous north-light clerestory (above toilet-corridor space) for bilateral lighting. Roof projection above southern windows is such that direct sun enters only the lower area of the windows; to cope with the latter, window-shade pockets (for upward shade adjustment) are built into the sill; for general light control, the school board requested Venetian blinds in addition (not installed at the time the interior pictures were made). Heating is managed through a split system, with direct warm air forced by fan along an underground trench (south wall) and so up, through continuous floor slits, into each room. Supplementing this is a system of fin radiation concealed under the clerestory windows behind the indirect lighting cove.

materials and methods CONSTRUCTION: *Foundations:* poured concrete footings; concrete-block foundation walls. *Frame:* structural steel. *Walls:* 10″ brick cavity bearing walls in classroom wings; 12″ brick and tile in gym; exterior—brick or (under windows) waterproof plywood; interior—brick, plaster; glazed tile in gym. *Floors:* poured concrete over heat tunnels; asphalt tile and (gym) wood. *Roof:* bar joists, steel deck; pitch and gravel roofing. *Insulation:* acoustical—sprayed-on type on metal lath; thermal—bituminous-impregnated board to 2′-0″ below grade at all exterior walls; 1½″ roof insulation. *Partitions:* exposed brick (4″); clay tile, plastered; metal toilet partitions. *Fenestration:* top-hinged, outswinging wood sash; DSA glass; plate glass in doors and sidelights.

EQUIPMENT: *Heating:* combined warm-air and low-pressure steam system, served by oil-fired furnace; fin tube radiation; controls. *Electrical:* fuse switch; distribution panels; rubber-covered and asbestos wiring devices;

Thorshov

Cerny

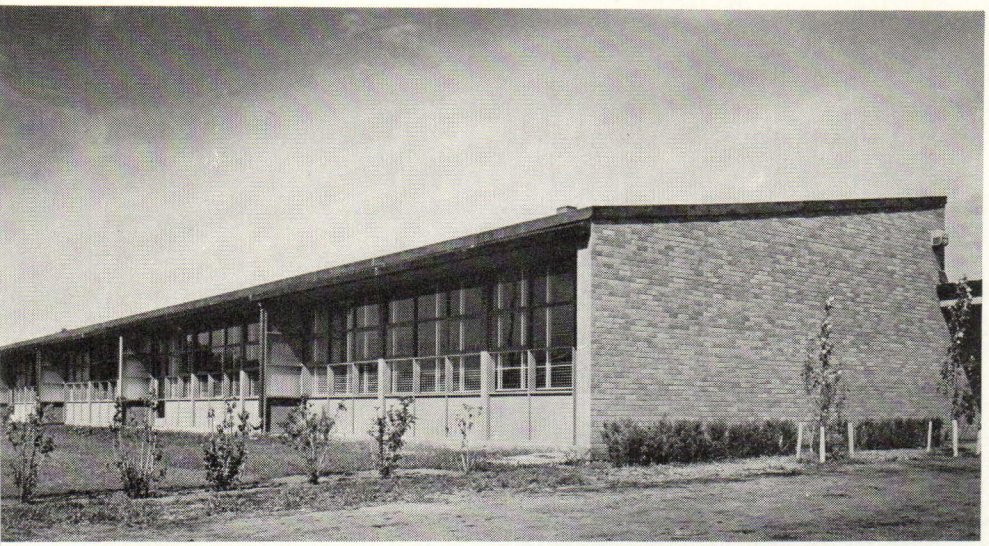
Shotwell

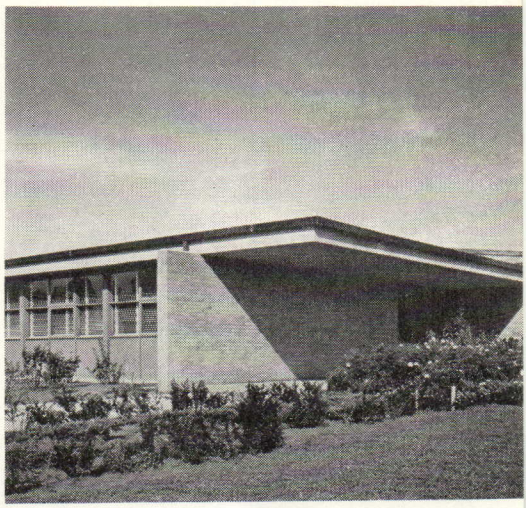
rigid conduit; incandescent cove light (including germicidal units as well as spots and floods); recessed incandescent.

See data about the firm page 47, March 1948 P/A.

the architects critique

In general, this forthright school building seems to be progressive in all major respects. It is only in a few details, and the architects concur, that further findings suggest some refinements—refinements that will be incorporated in subsequent work that they do. One of these is the exit door from each classroom to its own garden area. Thorshov says that in actual experience there the doors are practically useless, "because there is such a short time during the school year in which use can be made of the gardens." Also, in light control in the southern windows, the original provision was simply for up-rolling shades to cover the lower sash where direct sunlight strikes. Full Venetian blinds, subsequently installed at the Board's request, have, according to the architects, proved satisfactory. But it is only with such relatively minor items that one might quarrel. All seem agreed that the job worked out very well as a whole and, from an objective viewpoint of seeking progress in design, the editors concur.



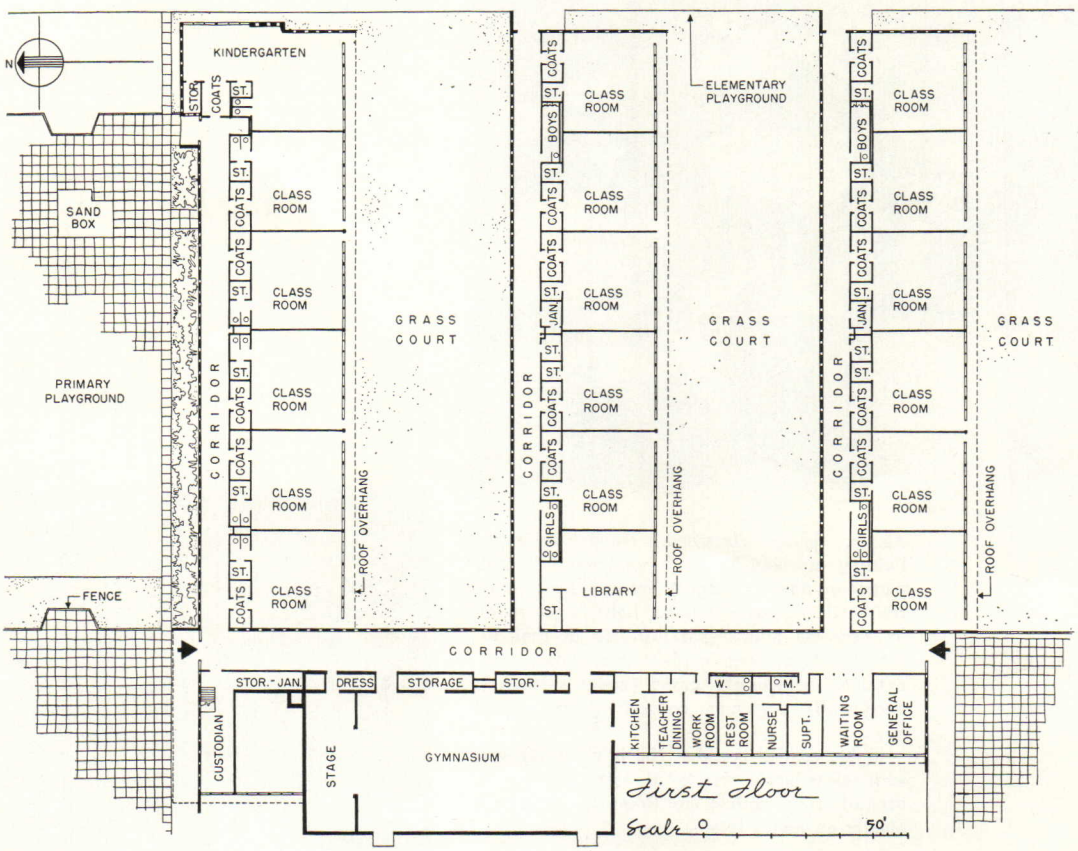


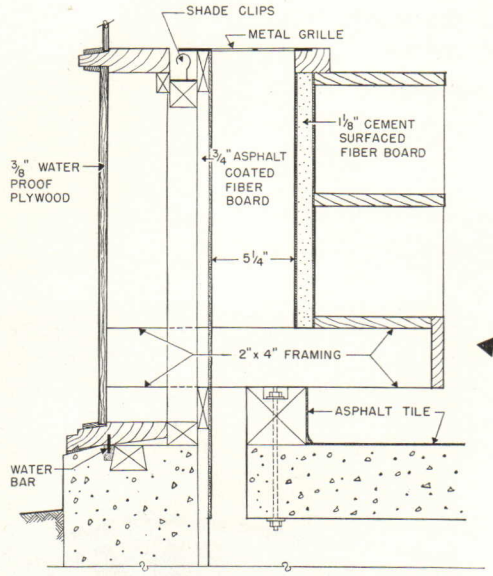
Across-page: general view from southwest; administrative-assembly wing, left; classroom wings, right.

Above: detail of main entrance.

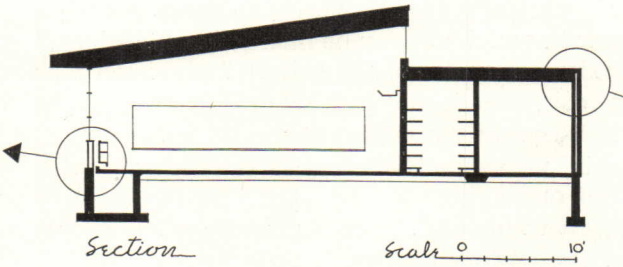
Left: south wall of typical classroom wing; prefabricated panels are set between the steel columns; direct sunlight strikes only the lower sash.

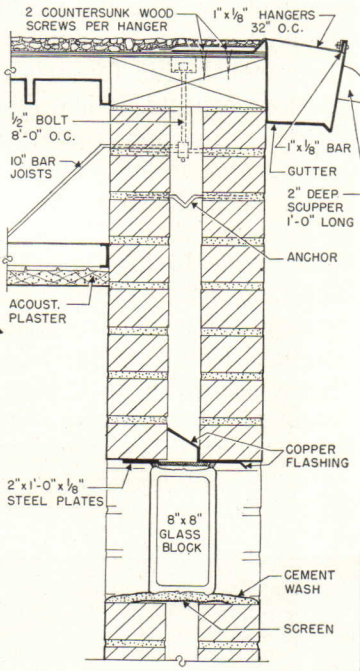
Photos: Photography Inc.



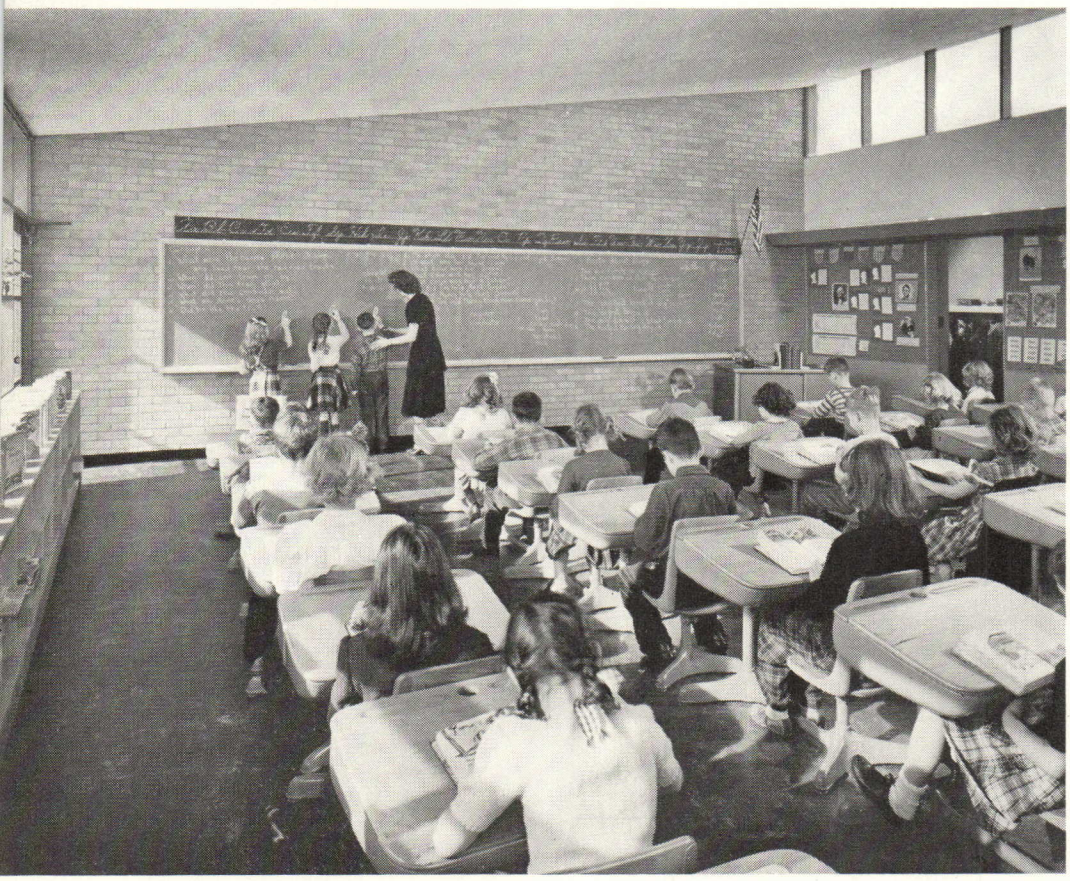


Window Wall Section



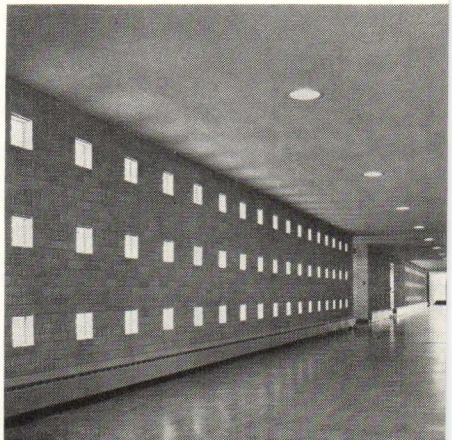


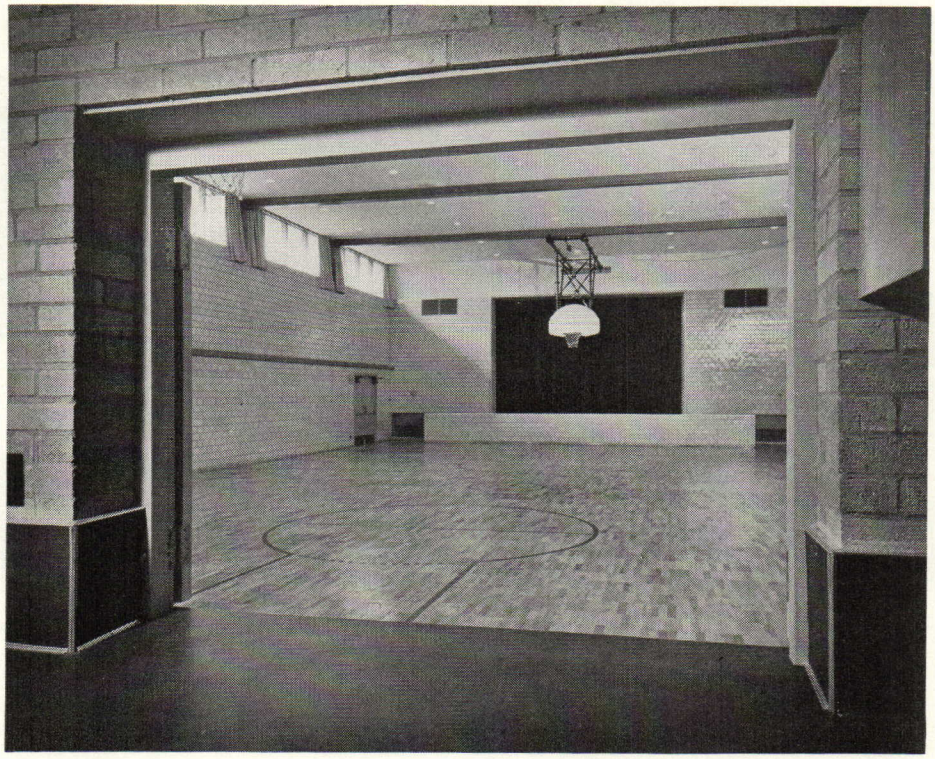
Cavity Wall Section



Above: typical classroom, showing bilateral lighting provided by south windows (left) and clerestory above storage-toilet-corridor area on the north. Excessive natural light is controlled by Venetian blinds (not installed at time interior pictures were made). Continuous, inexpensive, metal light coves (under clerestory, north wall) supplement natural lighting on dull days.

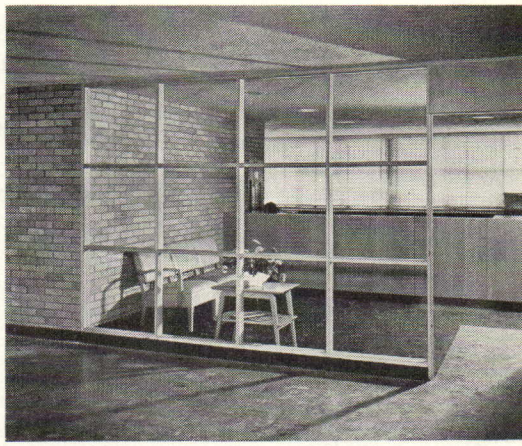
Right: central corridor, the brick cavity wall with glass-block inserts at left. Flooring is asphalt tile; ceiling is fireproof acoustical plaster on metal lath.

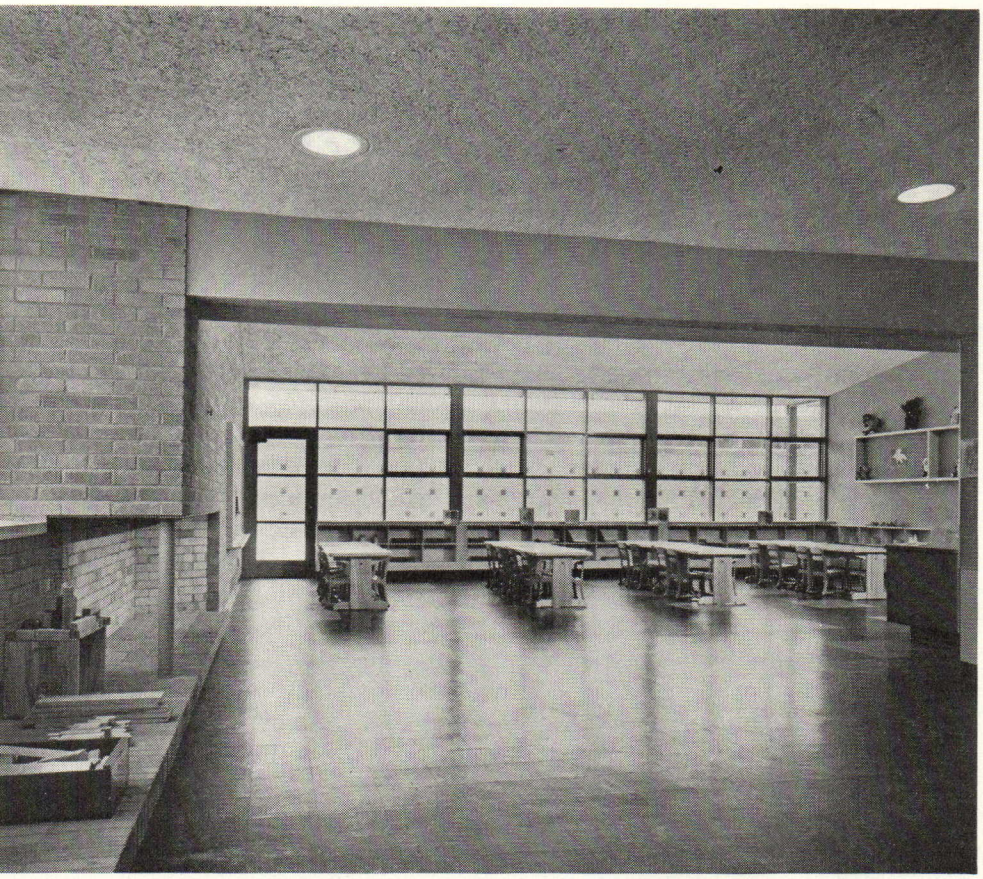




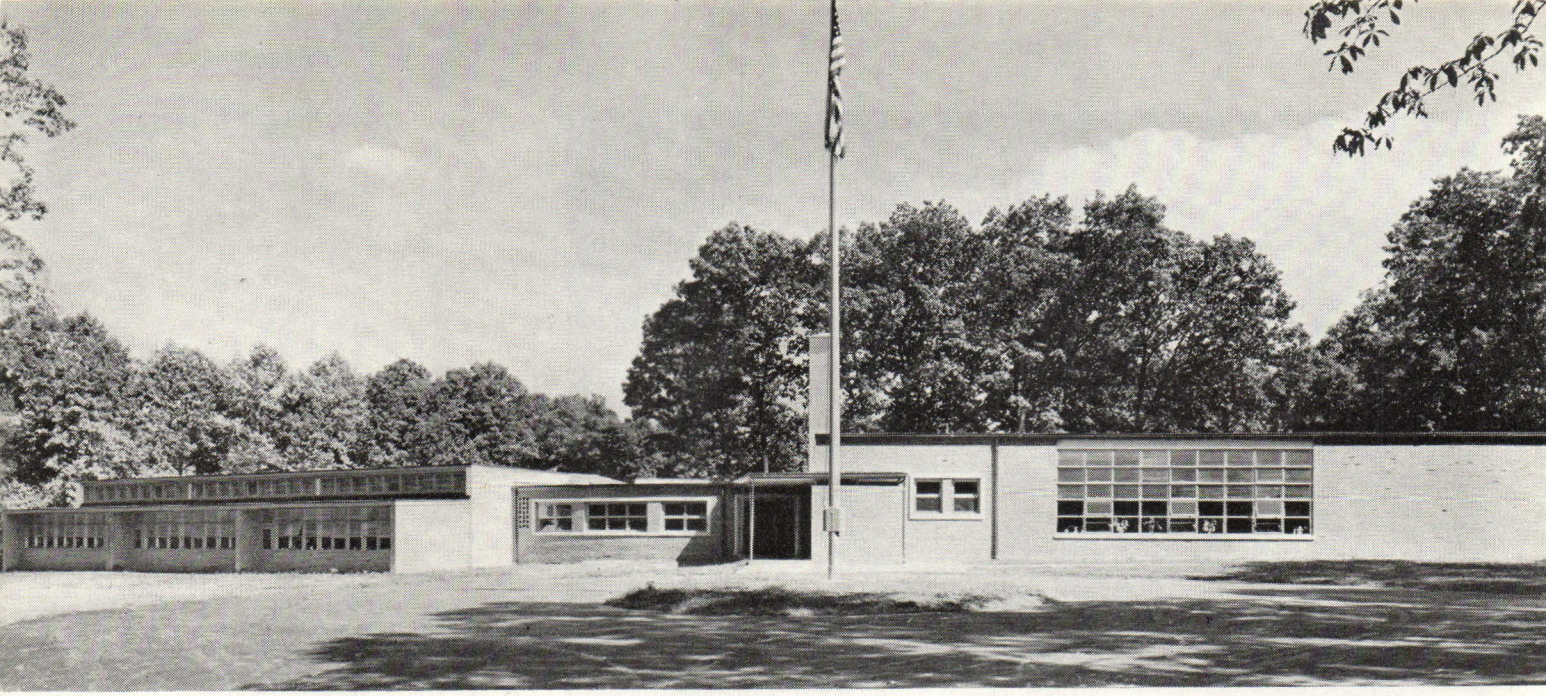
The gym-auditorium (left) is used for assembly, elementary activity periods, and indoor lunches, as well as for usual gymnasium purposes. Materials — hardwood flooring; glazed tile walls—were chosen for durability and easy maintenance.

Below: the reception desk at the entrance to the administrative unit is separated from the corridor by a glazed screen.





Above: the kindergarten, at end of primary wing, the most northerly of the three. This room, complete with fireplace, is currently used as an additional classroom—a situation to be relieved by completion of a second elementary school (by the same architects) that will be ready for occupancy next fall.



2. Silver Spring, Maryland

RONALD S. SENSEMAN, ARCHITECT, DR. N. L. ENGELHARDT, EDUCATIONAL CONSULTANT

program The "maximum usable classroom space at minimum cost"; east-west orientation for classrooms; provision for future expansion.

site Wooded site with practically no level ground, sloping irregularly downward from south to north; limited roadway access on eastern boundary.

solution The combined problem of land contour, need to utilize the one access road for all services and approaches, and consideration of future expansion produced the two-part plan, with one wing swung around in a northeasterly direction. This was necessary, first, to provide proper drainage for the southern (kindergarten-primary) wing; second, to offer a broader space at the approach, in which to combine the main entrance, kitchen service, the coal chute, and ash-removal hoist (the latter serving the basement, which occurs only under this pie-shaped area). To keep costs down, a deep, squarish classroom unit was developed, being least costly per square foot of floor area. This, in turn, presented a daylighting problem that was solved by a trilateral lighting scheme in each classroom (see section, page 58) that utilizes monitors with clerestories providing light from both sides. According to the architect, "this gives almost perfect uniformity of light value curves at desk level." To cut down sky glare, ribbed glass is used in the upper portions of side-wall windows. The building is heated with floor panel type of radiant heat with gravity ventilation, the clerestory sash making possible a positive method of ventilation—air traveling from hoppers in the bottom sash of side wall windows across the room and out the clerestory. The corridor is ramped down to the northern wing, following the slope of the site. Future expansion of the building will consist of extension of this north wing.

materials and methods CONSTRUCTION: Concrete foundations. *Frame:* wood frame in clerestory areas; load-bearing masonry (sand-finish brick exterior, cinder block backup) for major walls; steel beam across wide window of all-purpose room. *Exterior walls:* brick and cement asbestos board; interior—painted cinder block, or plaster on portions of corridor; tile in toilets. *Floors:* asphalt tile or quarry tile over concrete slab. *Roof:* both wood frame and bar joist construction; metal deck; built-up roofing. *Insulation:* acoustical —fiber tile; thermal—impregnated fiber board (edge of slab) and 12" under slab; wool type batts. *Partitions:* cinder block and (separating the stage and all-purpose room) a birch-veneer, folding wall.

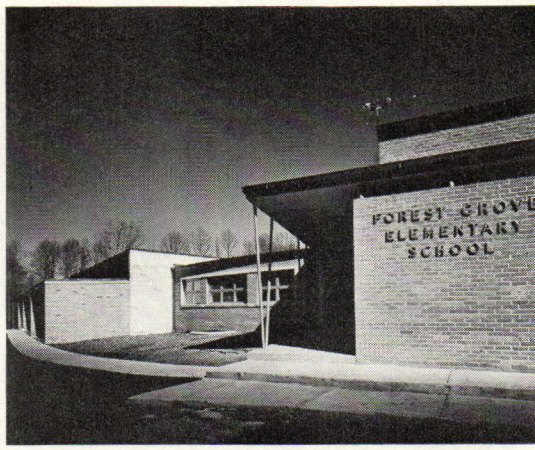
EQUIPMENT: *Heating:* stoker-equipped, coal-fired, circulating hot water system serving four zones; wrought iron pipe in the concrete slab. *Electrical:* hung, continuous fluorescent fixtures, except in corridors where ceiling-mounted incandescent units are used.

Ronald S. Senseman: Washington Missionary College and Catholic U. In private practice as principal since 1934.

This school is an unusually good illustration of the essentially plastic quality of architectural design—and the inter-relationship of all factors, from land contours to the comfort of those who use the building. The land slope affected the shape of the entire plan; the nearly square classroom was the architect's solution to a problem in economics; these, in turn, posed a daylighting problem, the answer to which came from architecture plus engineering, and the finished design is an amalgam of all these things and much else besides. The project is also a good argument for the adaptability of progressive design. The stylized Georgian school, formal and symmetrical, would have found poor harbor on this site.

the architect

critique



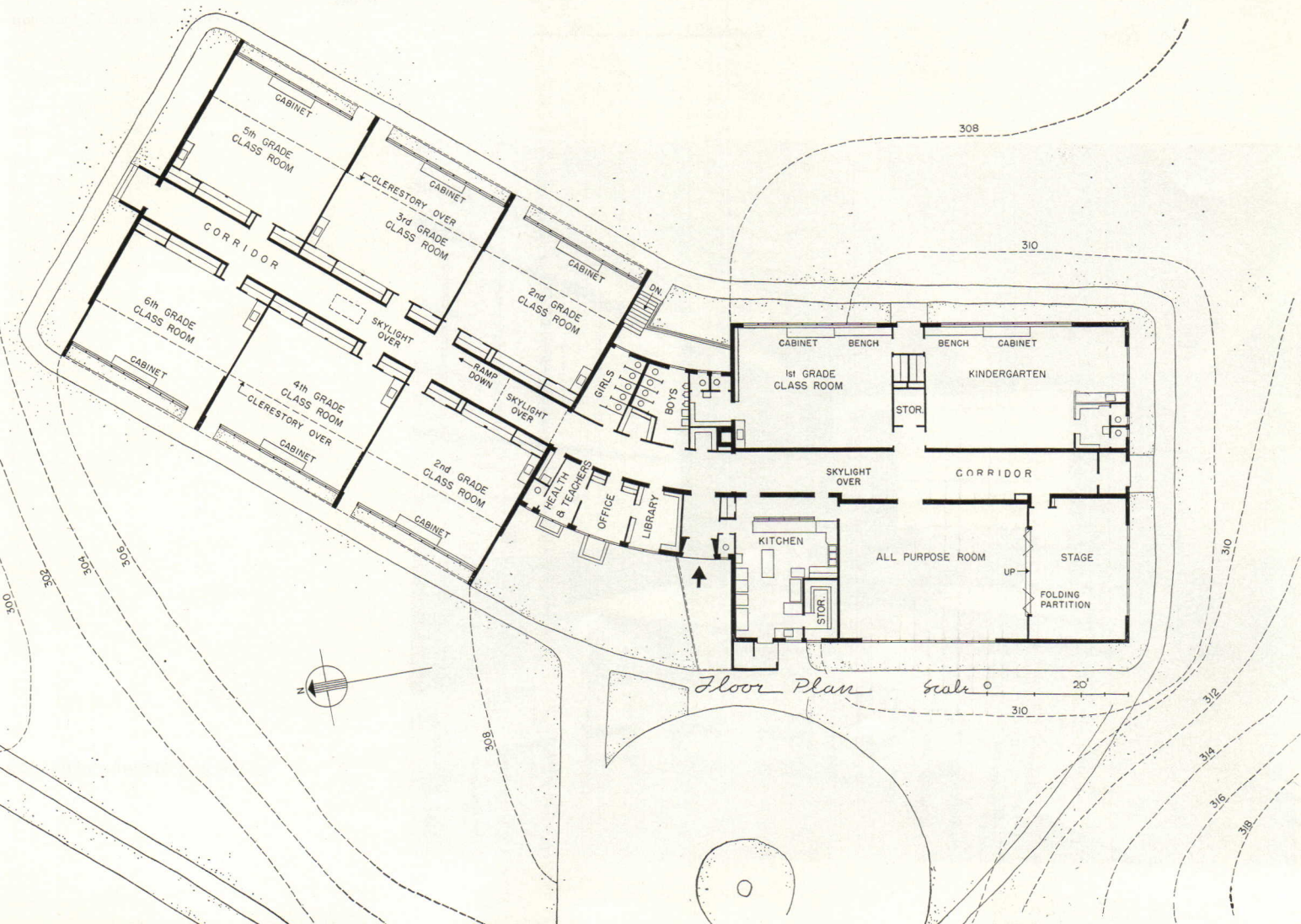
Across-page: general view from short approach drive; primary wing, right; elementary classroom wing, left.

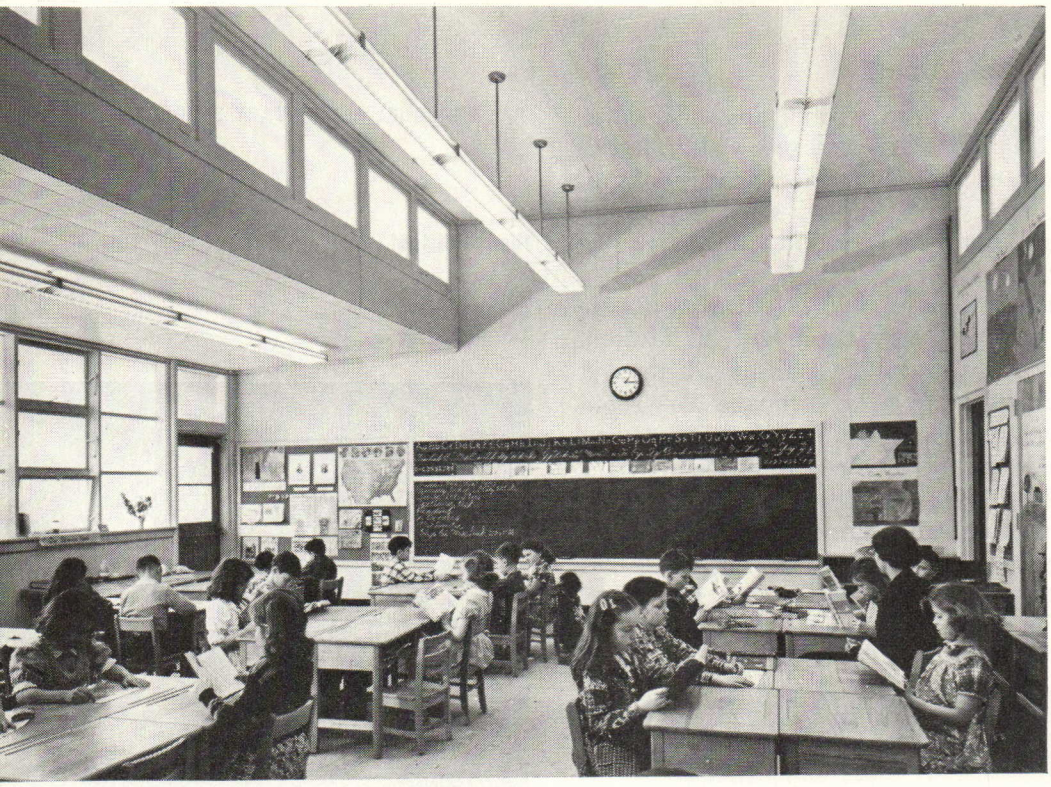
Photo: Leet Brothers

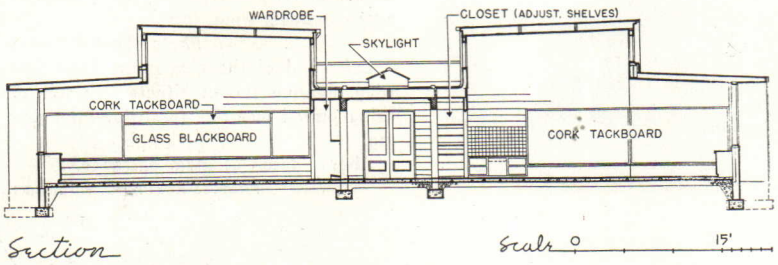
Left: end of the elementary classroom wing showing the architectural result of using paired monitors for trilateral lighting.

Above: detail of main entrance.

Photos: Robert C. Lautman



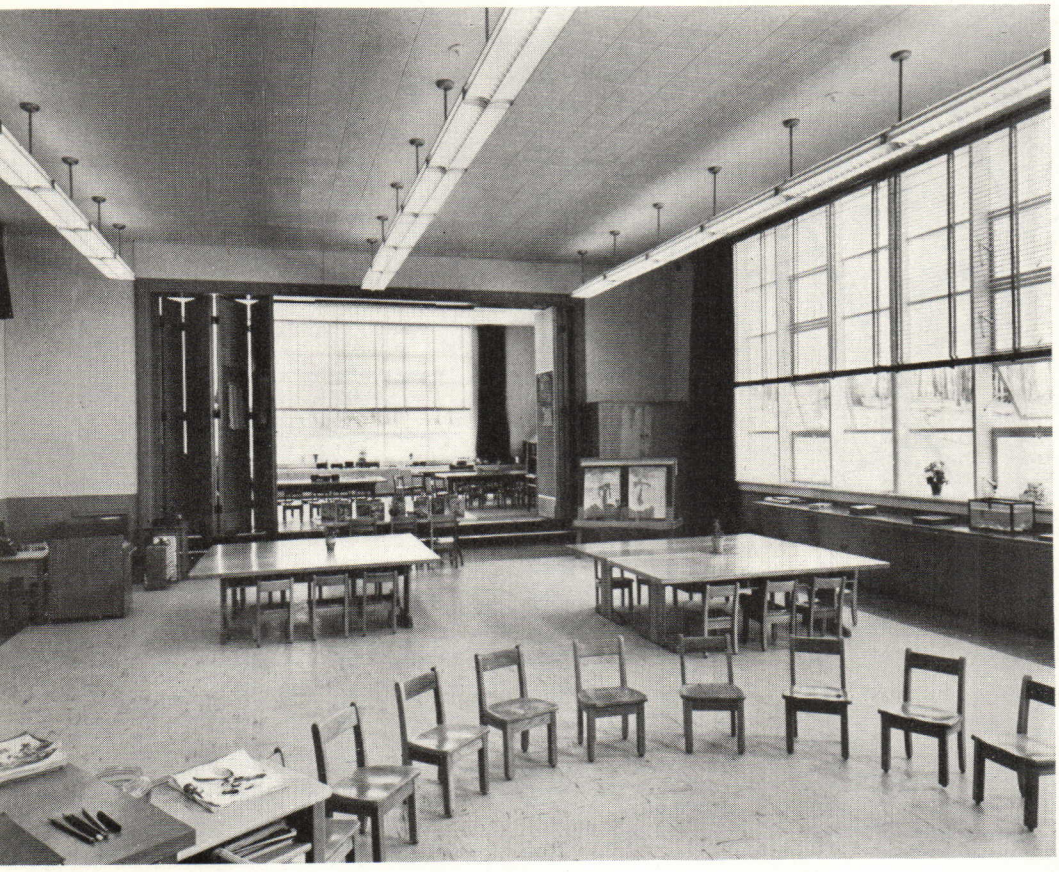




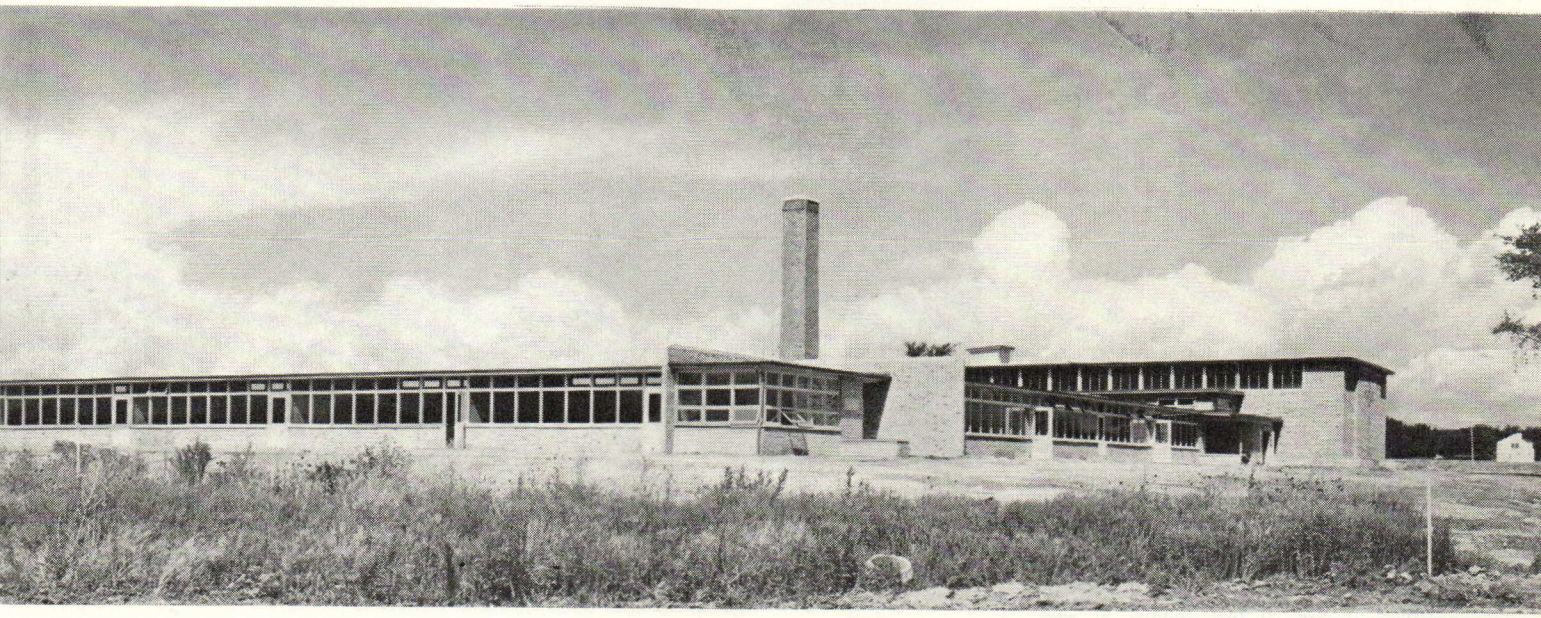
Section at left indicates the lighting scheme of the typical east-west oriented classroom (left, above); upper portions of side-wall windows are of ribbed glass, to cut down sky glare.

Left, below: the all-purpose room, with folding partition setting off stage area. Until future extension of school, either or both of these spaces can be used as temporary classrooms.

Photos: Robert C. Lautman

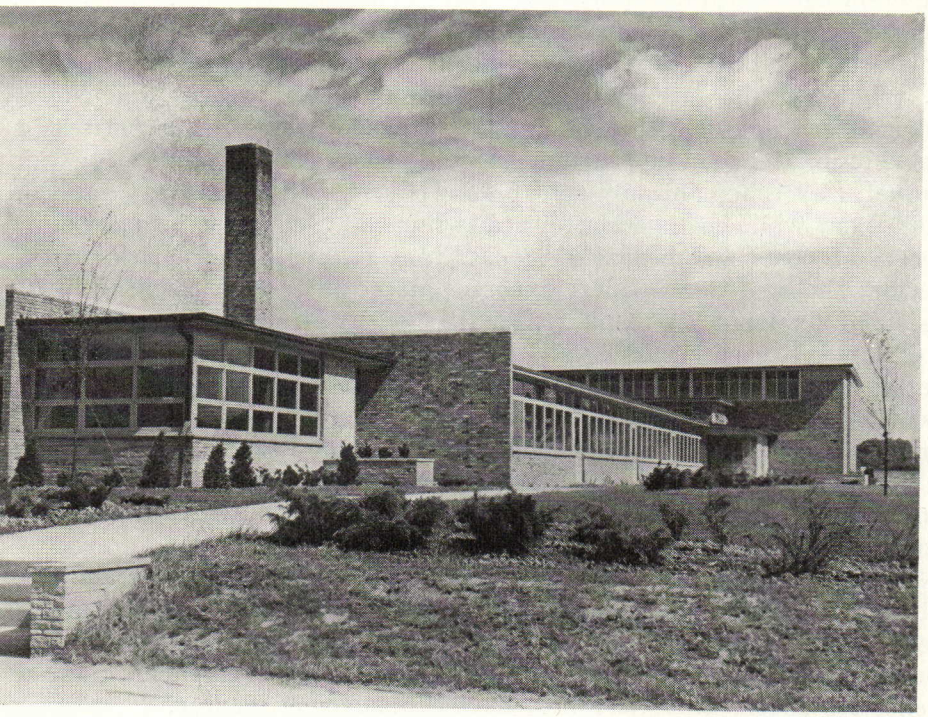


2. SILVER SPRING, MARYLAND



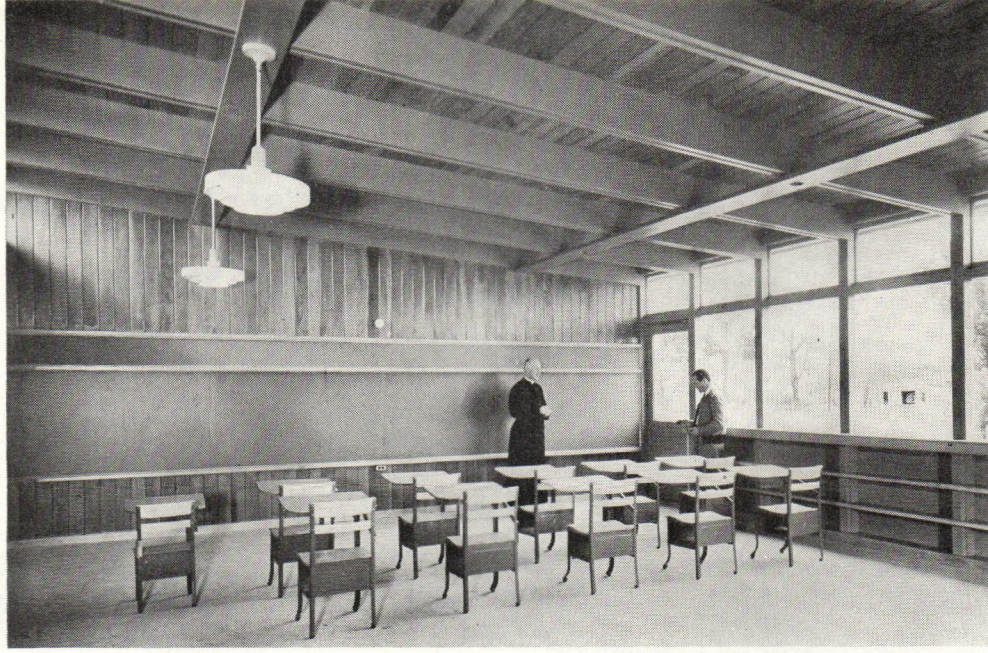
3. Farmington, Michigan

CHARLES D. HANNAN, ARCHITECT

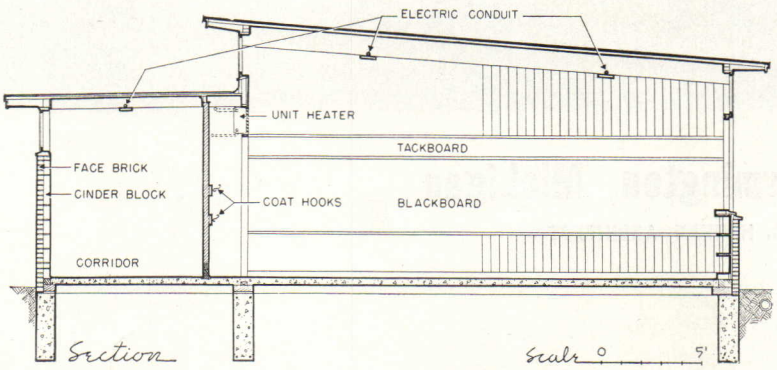


This spread-out parochial school consists at present of eight classrooms and a gym-auditorium (temporarily used as a church). Future development will add four more classrooms, including a kindergarten. This entire grade school is but one unit of an ambitious master plan, to be realized in time, that will include a high school, a church, and a convent.

Photos: Top—John S. Coburn
Above—Harry Schneider
Left—Edward Satory



The section and photo at right indicate the bilateral daylighting scheme. Boards at right angles to the roof beams conceal the lighting conduit (fixtures at right, in photo, yet to be installed). Light tests show darkest part of the all-wood finish room receive 60 foot candles at work height; in the lightest part, the reading is 100-plus. Depth of the wood post framing is utilized for classroom shelving. The chalk board is green; brown chalk is used. *Photos: John S. Coburn*



program Grade school for 400 pupils, plus a much needed temporary church; limited budget.

site A 19-acre hilltop in a fast-growing Detroit suburb. Relatively level immediate site; space to the north for future high school; space to the south (on actual hilltop) for future church and convent.

solution Budgetary considerations quickly led to the contemporary design approach, minus frills or stylistic elaborations. Simple, L-shape plan scheme, with all classrooms bilaterally lighted by means of a clerestory above the corridor. Window walls face either south (for the lower grades and future kindergarten) or east. Since funds did not permit immediate construction of a church, the gym-auditorium (though specifically designed for this eventual use) is temporarily set up as a church, with sanctuary interior detail of dry-wall construction for ready removal. Economical construction consists of posts and beams 4′-0″ o.c., veneered with face brick on the exterior; the roof decking left exposed on the interior, as ceiling finish consists of 2 x 6 fir t & g planking. Partitions between classrooms are t & g 2 x 6 planking, used vertically and left exposed. Heating is a notable combination of a radiant floor panel, to supply 60 percent of the requirement (also the amount needed over weekends and at night), supplemented by a unit ventilating heater in each room to step up the heat to daytime needs and comfort, thus providing quick control and a balanced system. Classroom ventilating is handled naturally by means of operable panels in the sash.

materials and methods CONSTRUCTION: Concrete foundations. *Frame:* fir. *Walls:* brick and cinderblock; ledge rock detail. *Floors:* slab incorporating heating coils, surfaced with asphalt tile. *Roof:* planking; tar and gravel; copper gutter and downspouts. *Insulation:* acoustical—rigid board; sisal-fiber paper; thermal —reflective sheet; acoustical tile; double, insulating glazing. *Partitions:* vertical planking; painted cinder block; marble toilet partitions. *Fenes-*

tration: wood sash; DSA and double-insulating glass.

EQUIPMENT: *Heating:* radiant panel floors, using copper piping, served by a coal-fired boiler; individual room heaters. *Electrical:* chiefly incandescent (fluorescent in lobby)—3-ring concentric fixtures in classrooms; special concentric fixtures in auditorium.

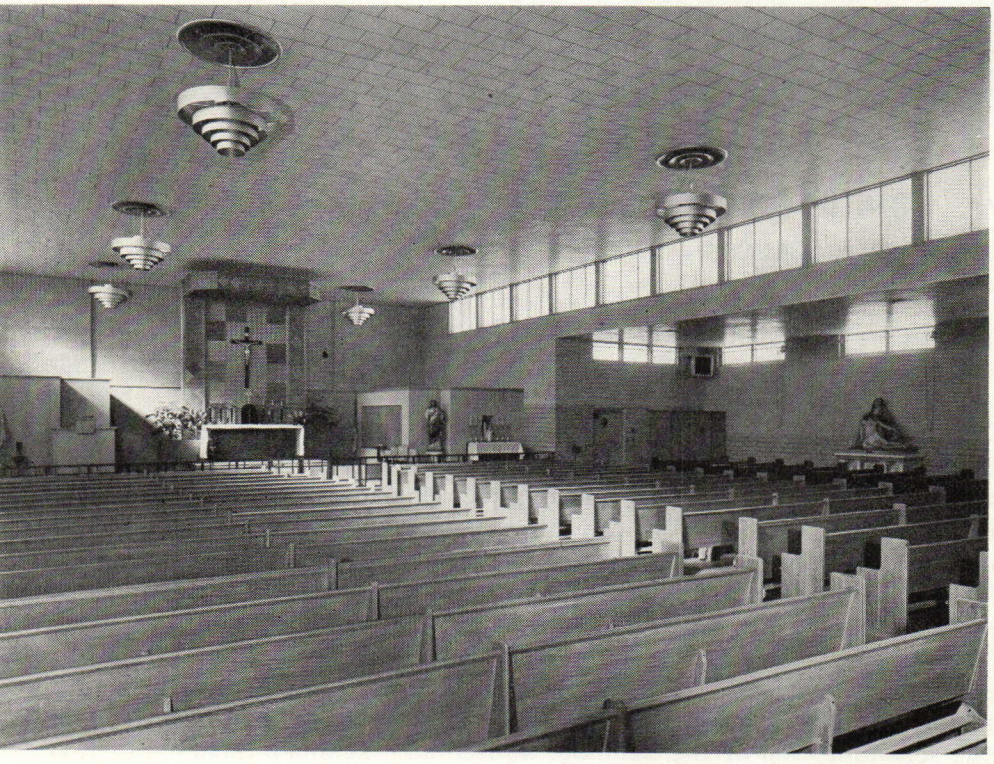
Charles D. Hannan: Schooling in Cleveland and Detroit; engineering studies, U. of Detroit. Office boy with Albert Kahn; work with various Detroit offices; opened own office in 1945.

the architect

Since this is strictly a budget job (coming out at $10.21 a square foot, or about $12,000 a classroom), a special accolade should go to the various plan and structural devices that accomplished this in that area. The temporary use of the gym as a chapel is a good case in point, since the plan will accommodate a regulation basketball court and what are now the church transepts are designed for standard bleacher seating. The exposed structural members, and simple direct use of wood framing and plank partitioning are other elements carefully chosen in line with economies. The split system of room heating eliminates excessive waste and provides precise and quick control—of fuel as well as of creature comfort.

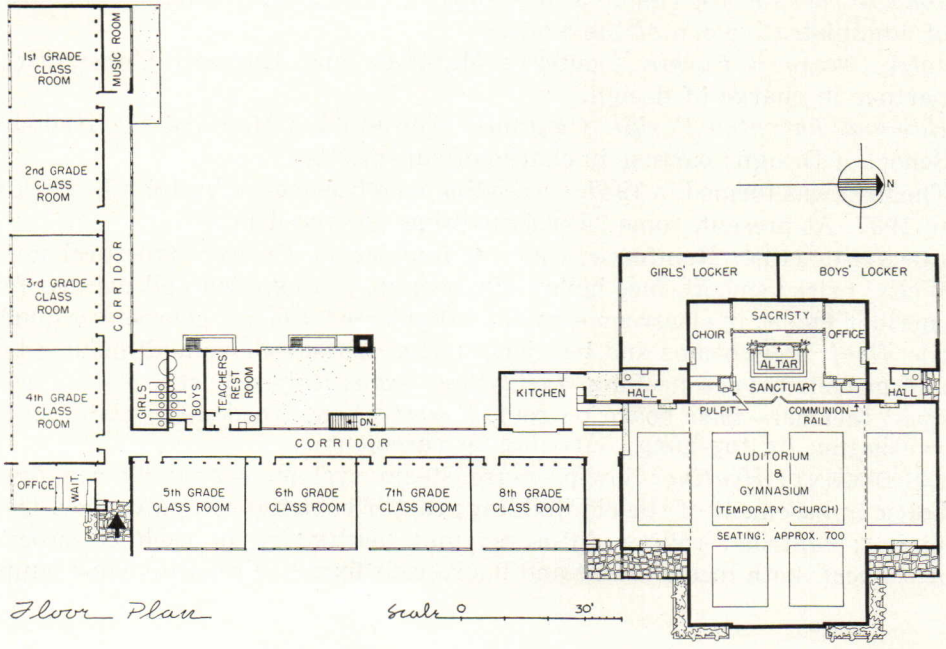
critique

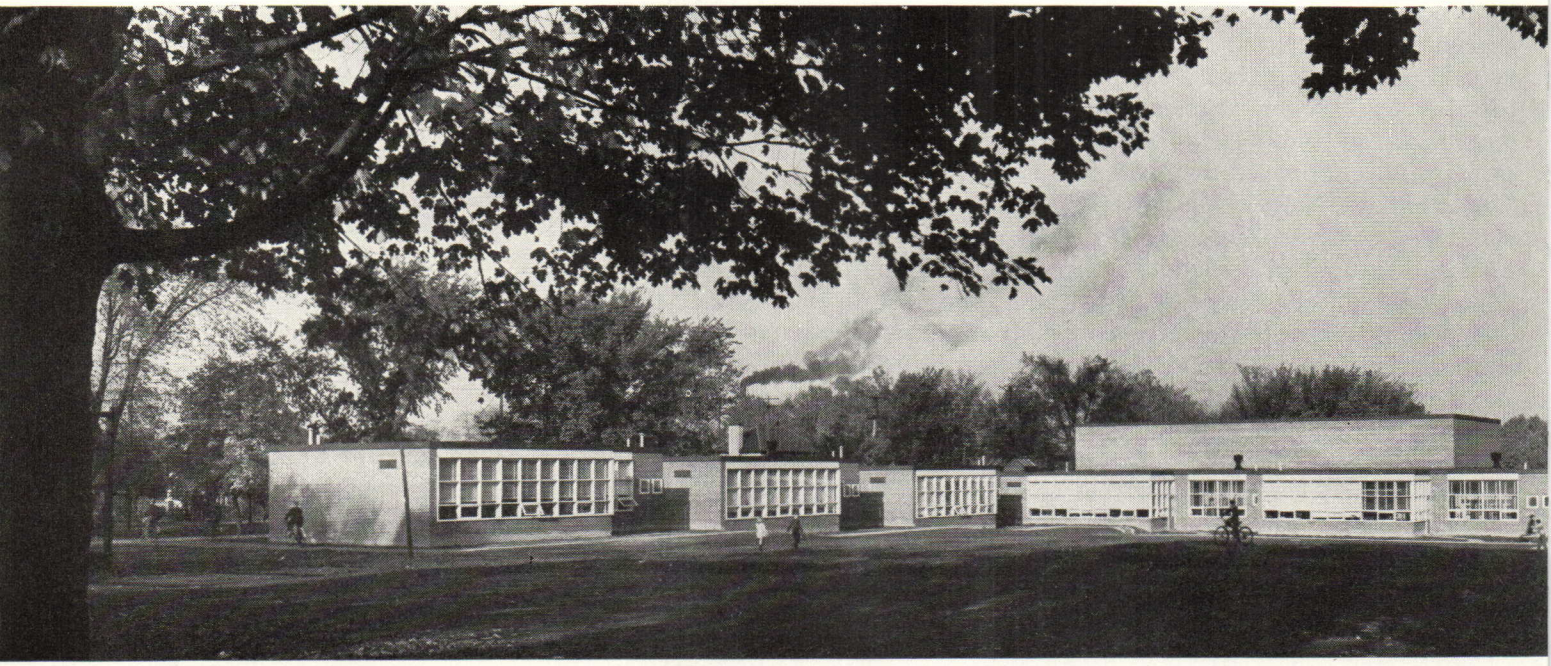
3. FARMINGTON, MICHIGAN



The acoustic-ceiled gym, temporarily fitted as a church. Lights in the clerestory are of corrugated glass; walls are painted cinder block above a ceramic-tile wainscot. In this room, incorporated with each light fixture, is a ventilating grill through which air is drawn into the space between the ceiling and the roof, exhausted by an electrical ventilating fan.

Photo: Harry Schneider





4. Peterborough, Ontario

JOHN B. PARKIN ASSOCIATES, ARCHITECTS

program A five-classroom and kindergarten, one-story addition to an old two-story school; an auditorium to seat approximately 400, that could be used independently; southern light in every classroom.

site North side of a gently sloping (upward from east to west), parklike property, with the old school structure immediately south.

solution An L-shaped plan, with the shorter leg (including the auditorium and kindergarten, as well as two classrooms) joined to the old school by means of a glass-walled lobby and a narrow vestibule with doors opening out to both the front (east) and to the play yard. The longer leg of the L is made up of three more classrooms, each with its alcove project room and toilets. To accommodate the upslope of the site, the corridor of this wing consists of a ramp, with each of the classrooms at a somewhat higher level than its neighbor to the east. The auditorium, situated so that it can be locked from the school portion of the building, is used as a summer theater.

the architects *John Burnet Parkin* (photo at left, top) : U. of Toronto; partner in charge of administrative end of the work.

John Cresswell Parkin (center) : Manitoba and Harvard Universities; partner in charge of design.

Edmund Thornton Parkin (bottom) : Toronto U.; Harvard U. Graduate School of Design; partner in charge of supervision.

The firm was formed in 1947, succeeding an office opened by John B. Parkin in 1937. At present, some 35 persons work for the firm.

materials and methods CONSTRUCTION: Reinforced concrete foundation. *Frame:* structural steel. *Walls:* brick; smooth-face hollow-tile backup, left exposed and painted for corridor finish; in classrooms, metal lath, plaster. *Floors:* concrete; asphalt tile. *Roof:* steel beams and bar joists; steel trusses above auditorium; tar and gravel; copper flashing. *Insulation:* acoustical—acoustic plaster ceilings; thermal—fiber board on roof. *Fenestration:* wood sash; plate glass; ventilation by top-hung, outswinging casements.

EQUIPMENT: *Heating:* low-pressure steam system, served by coal-fired boiler in basement of the old building; cast-iron radiators; galvanized iron piping; controls; ceiling diffusers; unit ventilators in each classroom. *Electrical:* both incandescent and fluorescent fixtures; reflector flood lamps

in stage area. *Special equipment:* glass chalkboards; fiber-board tackboards. *Piping:* water—galvanized iron; drainage—cast iron.

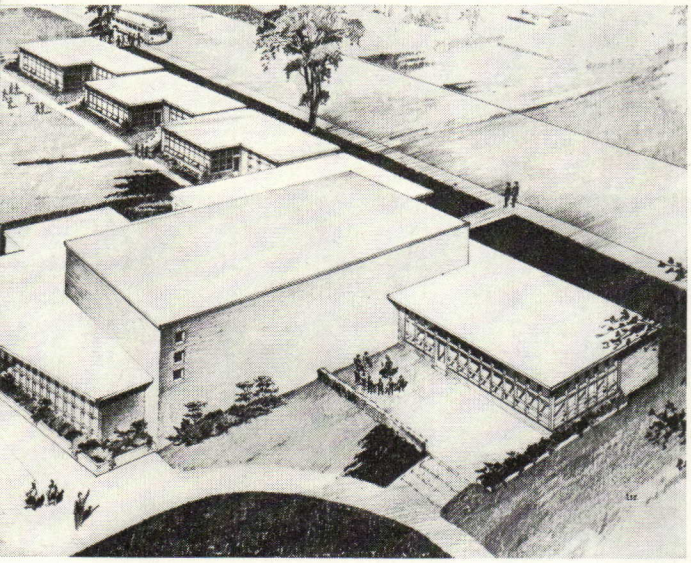
critique

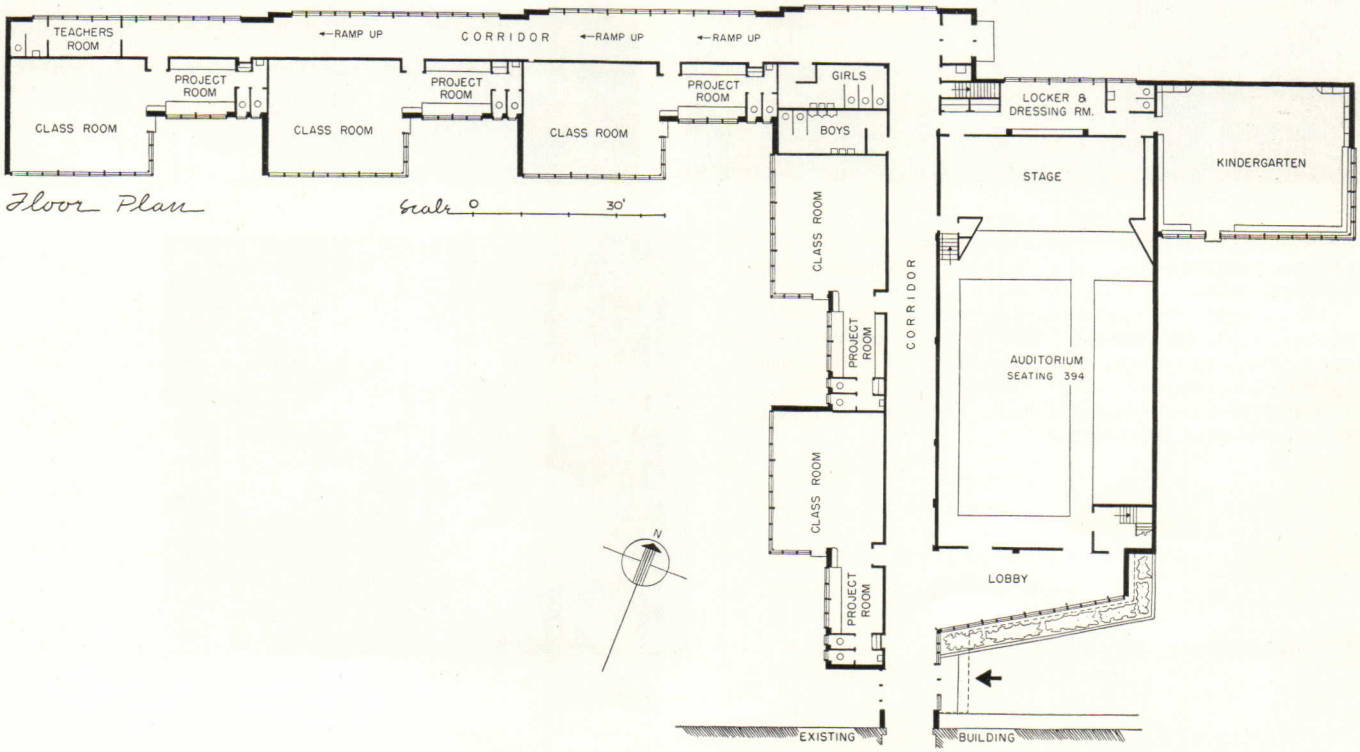
Since this school was completed in 1948, it almost provides its own critique. As the architects are the first to point out, although it "represents the best research we were able to conclude at the time," it reflects a now dated design approach. They point particularly to the cost of the broken wall line formed by the projecting classrooms and the alcove-like project rooms; in the schools they are building today, this parti has been abandoned almost entirely in favor of a project space across the rear of the classrooms, which not only simplifies the foundation line and reduces corridor length but provides the teacher with a complete view of this work area. Another refinement that contemporary practice allows, which the architects now employ, is the use of directional glass block above aluminum double-hung sash in the window walls, in preference to the clear plate glass with Venetian blinds used here. Of particular note is the economical use of hollow tile, painted, as both wall structure and finish in the corridors. "We have no hesitation in recommending its use in schools where a problem of finish and economy must be considered," the architects say. Another admirable element is the neat, nearly flush detailing of cabinet work.

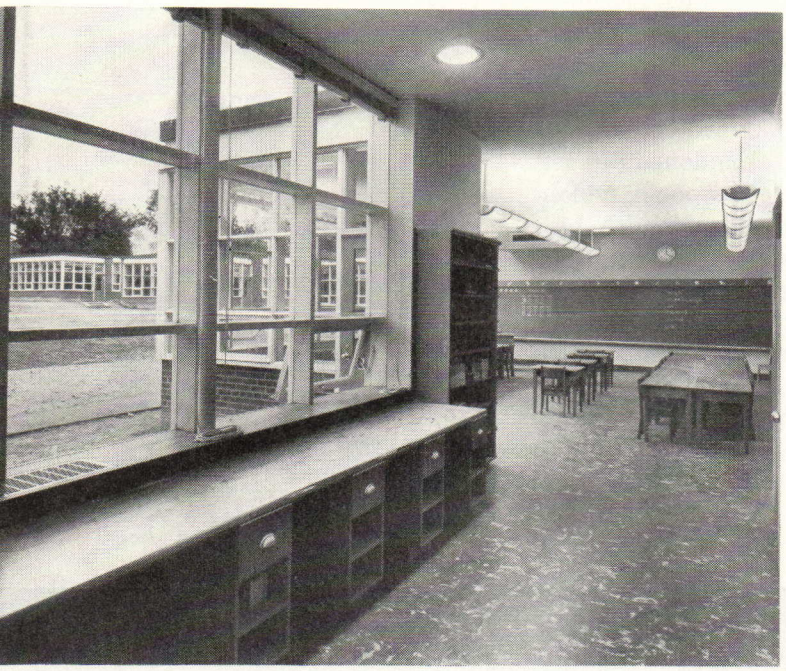
Across-page: general view from southwest; corner of old school at extreme right of photo.

Below, left: bird's-eye rendering, showing the L-shaped scheme that automatically forms a protected play yard.

Below, right: approach, from east; lobby and auditorium at left; kindergarten unit at right, entirely separate from other classrooms. *Photos: Panda*

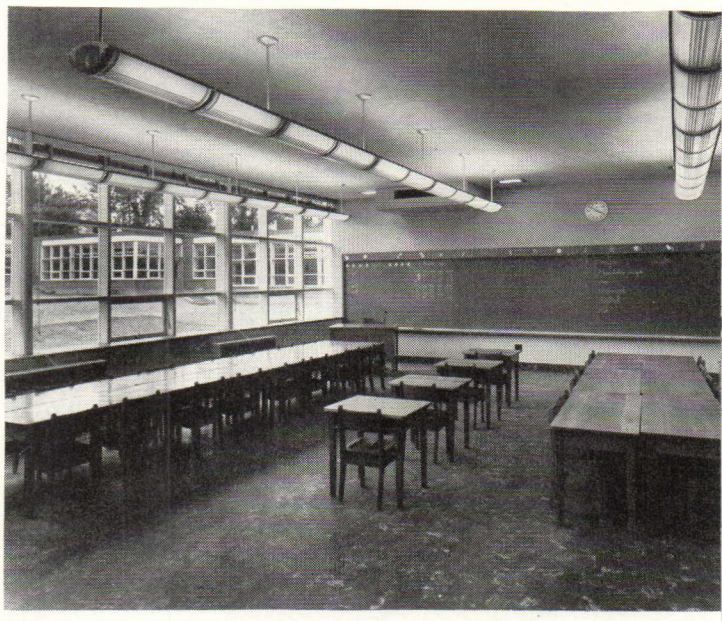


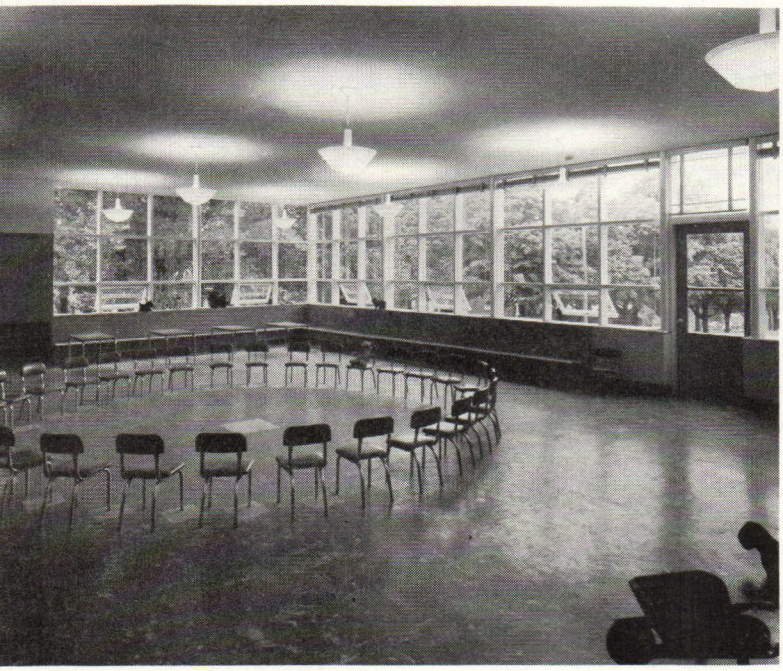


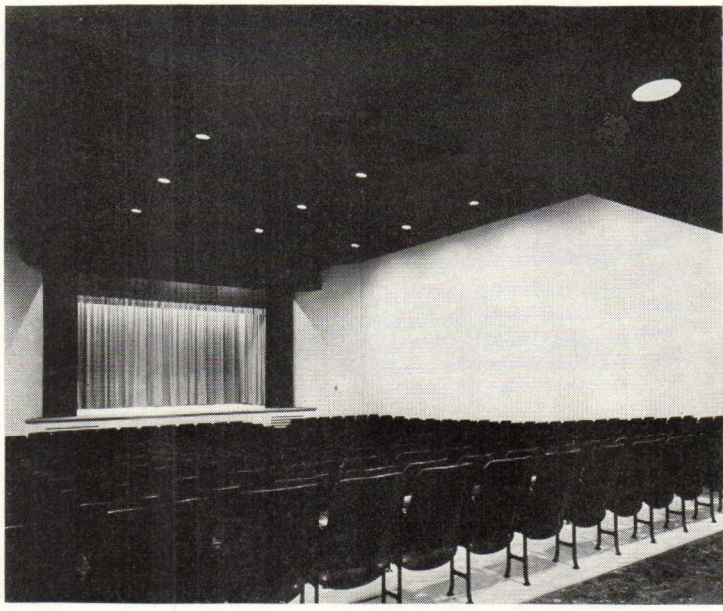


Left: detail of typical classroom project area. Outswinging casements for ventilation; Venetian blinds to control light; pipe columns (inside windows) for framing. Note uncluttered cabinet work of project counter.

Below: the typical classroom. Chalkboards of light green glass, with map rail above; continuous indirect-direct fluorescent lighting troffers.



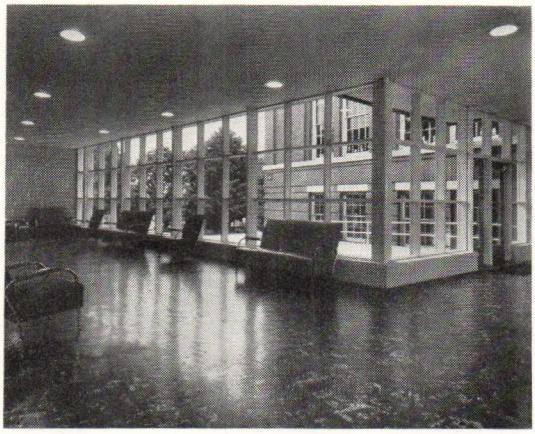




Above, left: the kindergarten, which has southeast orientation and generous cupboard storage space; built-in under-window seating; acoustical ceiling.

Above, right: the auditorium, with fixed seating of molded plywood. Walls are light-gray smooth plaster; acoustic-plaster ceiling is painted midnight blue. In the ceiling are flush pinpoint lights and air diffusers.

Right: the big windows of the main entrance lobby look across the entrance court to the old building.



What Kind of Accounts Do You Keep?

By IRA J. MEYER*

A system of accounts can be designed to fulfill all reasonable objectives of the owner with respect to information on his finances. I believe you readers have had some experience with owners. You may permit me, for the purpose of this article, to turn the tables on you and say that you are the owner and I am the architect.

In order that you may fully understand what I require from you to do my job well we should have a brief interlude of generalities:

From the accounting point-of-view, owners range from those who are completely happy with a precise, up-to-the-minute record of how much money is in the bank, to those whose appetites for statements of financial condition and operating results, for statistics and cost analyses are insatiable.

Too frequently, professional men strive for the simplest means of providing that minimum record of their financial transactions which will satisfy the requirements of tax and other laws, federal, state and local, without understanding that such compliance with the requirements of law should be a by-product of books of account, not the primary reason for their existence. The basic function of accounts is to supply the owner with financial information which is necessary for the management of his affairs from day to day, for the appropriate planning of his operations from month to month. This function is accomplished by recording the flow of all money values through the enterprise, from the original investment of capital to the determination and disposition of the profit earned. The record should be made in accordance with a carefully prepared plan.

Over the years, the profession of architecture has developed some special financial problems for its members:

First and foremost, the history of the profession clearly reflects cycles of activity in which fluctuations on both sides of the academic norm are sharp and wide. This condition demands financial planning.

Secondly, it often happens that an architect accepts a single commission under the terms of a very specific agreement which requires of him disbursements far in excess of his capital and the performance of which may extend over a period of years. That such a project should ultimately yield a profit to the architect is more than important, it is imperative. The fact that the agreement provides for partial payment of the architect's fee as the work progresses does not alter this statement. It merely explains how it is possible for him even to contemplate undertaking the assignment. I am not suggesting to you that a good system of accounts can convert a loss on such a job into a profit. I do emphatically submit, however, that it may warn you of impending financial disaster in sufficient time to take remedial action, or that at least it will scream at you when the job finally turns sour. With an accurate record of the facts in your possession you should be in a far better position to safeguard yourself against the recurrence of so costly an event.

Recently, we have observed a movement toward the calculation of the architect's fee by multiplying the direct technical staff salary cost of his work by a factor intended to return to him that cost plus overhead plus profit. I am an advocate of this method of fee computation. I believe, however, that its acceptance by the client imposes a new responsibility upon the architect. He now owes the client, as well as himself, the duty of maintaining a reliable set of books, a system of accounts that should promote confidence in the job cost data drawn therefrom.

Finally, and partially as a result of the points already made, it has become necessary for the architect to know the profit or loss result of each job done, as well as the over-all profit or loss result of his practice as a whole.

In order to design a system of accounts for you, I require a statement of your objectives. I have given you some general information which may be helpful in formulating an answer to my question: what do you want your accounts to tell you?

I shall assume that your accounts are to be maintained on the cash basis, which means that a fee is not income until received and that costs and expenses are not taken into account until paid. This is the procedure generally adopted by architects and the one I have found to be most satisfactory in the great majority of cases. However, even though not formally recorded in the accounts, uncollected income and unpaid expenses must be controlled and should be tabulated at least once a month.

In my opinion, regardless of the size of your practice, you require a system of accounts that will make readily available to you the following information:

I. The amount of money originally invested by you in cash and other property and the date of such investment; a record of the dates and amounts of subsequent contributions of capital, if any; a record of the annual net earnings of the enterprise since

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** Mr. Meyer is a partner in the firm of Meyer and Berman, Certified Public Accountants, New York, N. Y. He has had much experience in developing accounting systems for architectural firms. This article is adapted from a talk made to the N. Y. Chapter, A.I.A.*

its inception; a record of the sums withdrawn by you from the enterprise annually.

II. A description of all property used by you in your business today, real estate and other property, the dates of acquisition and the cost thereof.

III. A reasonably short time after the close of each calendar month there should be developed from your accounts:

A. A balance sheet showing your assets, your liabilities, your capital.

B. A cumulative statement of income received and costs and expenses paid for the current fiscal year to date showing the percentage of General Overhead to direct technical staff salaries.

C. A columnar tabulation, drawn from a job ledger, of all fees received and all costs paid in the current fiscal year to date showing with respect to each job worked on:

Fees received
Total costs paid
Direct salaries:
Principal or partners
Technical staff
Engineering and related fees paid
Blueprints, etc.
Travel
Miscellaneous direct costs
General overhead

The grand total of each of these several columns must be tied-in with summary controls provided for in the system of accounts to prove that every fee dollar collected and every cost dollar spent have been accounted for.

D. A similar tabulation of Jobs in Work as at the close of the particular calendar month showing the following information with respect to each such job from its inception to date:

Total fee scheduled to be received
Total fee collections to date
Total costs paid in current month
Total costs paid to date
Direct salaries:
Principal or partners
Technical staff
Engineering and related fees scheduled to be paid
Engineering and related fees paid to date
Blueprints, etc.
Travel
Miscellaneous direct costs
General overhead

This tabulation is invaluable in guiding the management on billing to clients, in studying the backlog of work in the office, in comparing the scheduled fee on a particular job with the costs paid to date and estimating the adequacy of that fee in the light of the principal's understanding of what it will cost to complete the job.

E. Finally, a tabulation similar to that outlined in "C" above except that it will show information only with respect to those jobs completed in the current fiscal year and will reflect the final total of fees received and substantially the final total of costs paid on each such job. I say substantially final because in the systems I employ General Overhead is formally entered in the job ledger only at the end of the fiscal year and all interim calculations of General Overhead are tentative.

Let us go a little deeper into this vital subject of General Overhead. It is quite settled that in an architectural office General Overhead is the sum of all costs and expenses paid by the architect (except charitable contributions and certain interest cost) which cannot be appropriately charged directly to a particular job for either one of two reasons:

1. The expense has no direct application to any one job but all jobs receive its benefits, for example: rent, light, general office salaries, vacation pay to technical staff personnel, depreciation of furniture and fixtures, etc.

2. The expense can be charged to particular jobs but the cost of so doing would be disproportionate to the accomplishment in view of the simpler and almost equally satisfactory procedure of allocating the total of such expense to all jobs as a part of General Overhead, for example: local telephone calls with respect to particular jobs, drafting room supplies and certain taxes.

It is also quite settled that an architect must know that for each dollar of technical staff salary cost he shall incur on a particular job, his General Overhead on that job will be, let's say, sixty cents. It follows then that the ratio of General Overhead to direct salary costs should be carefully reviewed from month to month and the fluctuations of this ratio must be analyzed, understood and, where possible, controlled.

Unfortunately, the best method of allocating General Overhead to the several jobs worked on during a fiscal year is not quite so well settled. The technical controversies on this issue are not very serious. The method to be employed in a particular architectural office depends, to some extent, upon the size of the office, the complexity of its problems and the quality and quantity of its bookkeeping personnel.

Designing a system of accounts for an architect is something akin to an architect's designing a residence for a client. There is almost no end to how far you can go in providing refinements, niceties, and embellishments to satisfy the owner's desires. One factor causes us both to pause: the cost.

Many architects may feel that the recommendations in this article are too complex and too costly and represent only the dream ideal of a professional accountant. They are on the contrary based upon actual experiences in the field. The information I have advised you to get from your accounts is essential to the intelligent study of your financial affairs, is in fact simple to obtain and the cost of so doing can be engineered into modest proportion to the value of the available studies. I know you can afford the cost. I think you cannot afford to be without the information.

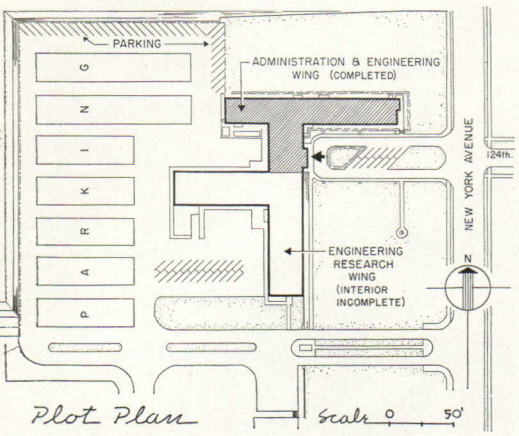
Administration and Engineering Building: Standard Oil Company (Indiana), Hammond, Indiana

HOLABIRD & ROOT & BURGEE AND ASSOCIATES, ARCHITECTS

The key unit of a group of buildings for Standard Oil of Indiana this latest structure consists of two elements—the multi-story Administration and Engineering Building (right of photo) and the Engineering Research Laboratories (low mass at left). Since the latter is unfinished, this study deals exclusively with the former. The main entrance, where the two buildings meet, incorporates utility facilities that will serve both buildings.

Photos: Hedrich-Blessing Studio

Right: north facade of the Administration and Engineering Building. As the plot plan shows, the main entrance faces east onto a landscaped mall. Future expansion will occur to the west in the space now allotted to general car parking.



program An Administration and Engineering Building (with wing provided for a future engineering research laboratory to be headquarters of the entire development of Standard Oil (Indiana). A predetermined factor was need for about 10,000 feet of floor area. Maximum plan flexibility was also desirable both to accommodate offices and rooms of various sizes and shapes required by several departments and to provide for future shifts in emphasis. To facilitate inter-departmental operations, a compact, multi-story scheme seemed indicated. Certain facilities—main entrance, library, blueprint room, etc.—to be used by both the administrative and engineering personnel and by those who will eventually work in the engineering research laboratory. The building, as planned, can be expanded indefinitely.

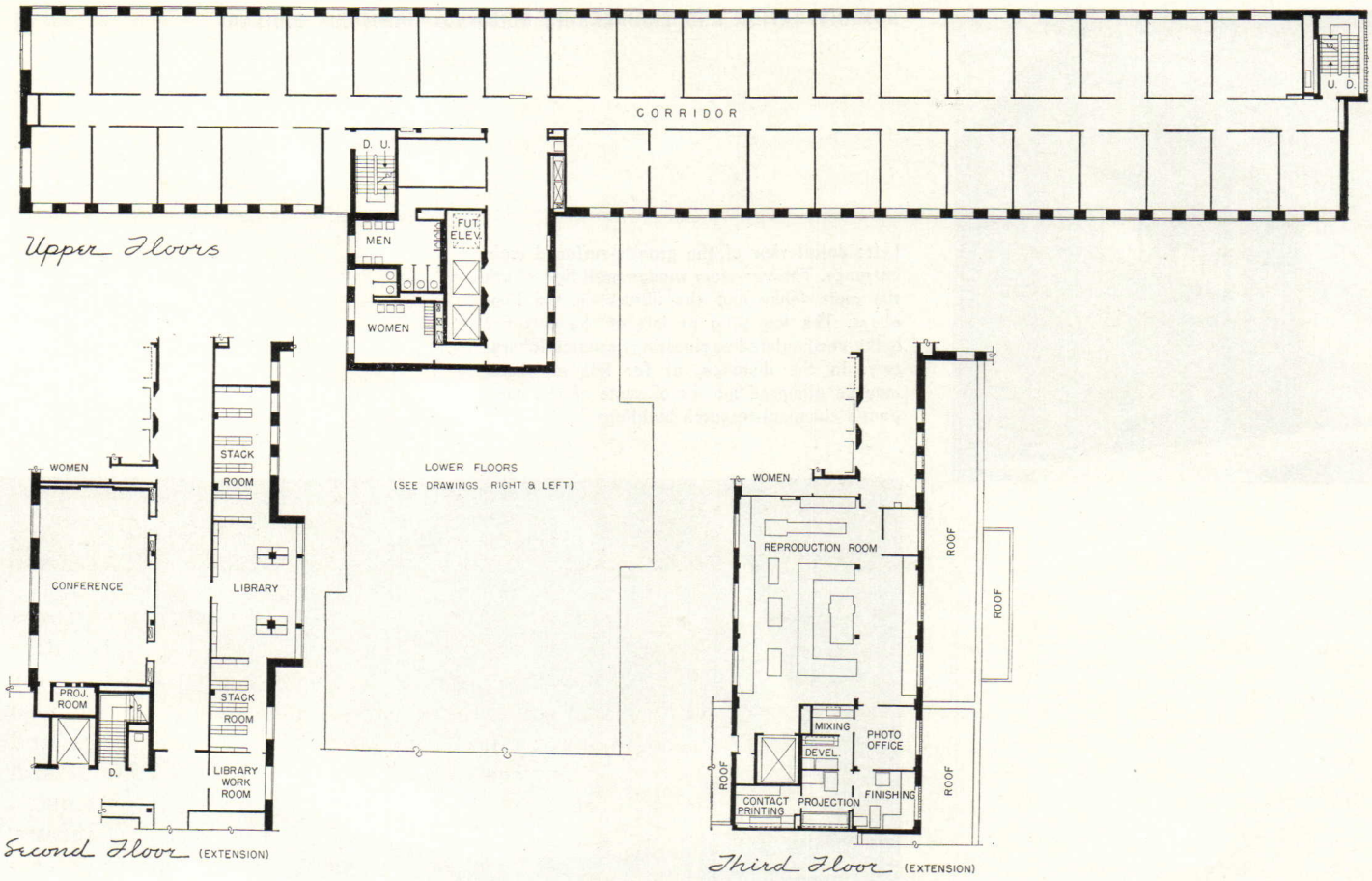
site The northeast corner of the entire development. Actual site of the Administration and Engineering Building was a partial swamp that required filling with sand and compacting.

solution A six-story rectangular building block, with partial seventh floor (sun terrace and recreation room). All vertical transportation and utilities removed from the main body of the building into an adjunct mechanical-core tower. Steel framing, with columns spaced 13′-6″ o. c. along the length of the building, spans 40 feet without internal columns. Thus, a completely uninterrupted floor area is achieved, accommodating with equal ease a small private office or a large room, such as the timekeeper, material, and labor accounting offices on the first floor. All interior partitioning (tile and plaster) can be moved without affecting structure or mechanical installations.

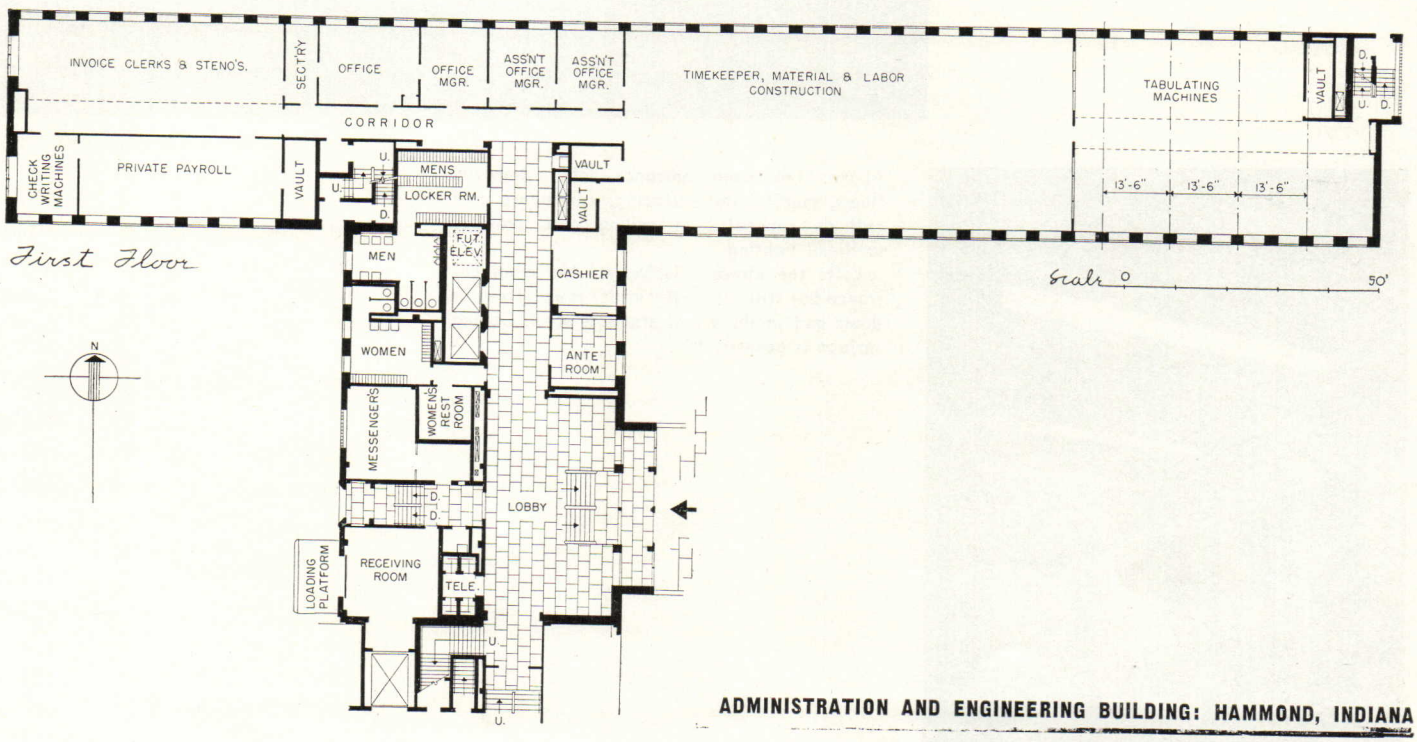
Natural lighting is provided by special windows (two in each 13′-6″ bay), equally spaced throughout the entire building, that open only for cleaning as the entire building is year-round air-conditioned, with individual room control. Upper halves of the windows consist of directional glass block, while lower portions are glazed with double-strength A glass. Artificial light consists of fluorescent troffers.

materials and methods CONSTRUCTION: Reinforced concrete foundations. *Frame:* Steel. *Walls:* exterior—brick with some stone and granite; interior—plaster, face brick, and glazed tile in utility areas and staircases; marble (entrance lobby only). *Floors:* concrete, surfaced with asphalt tile; ceramic tile in toilets; art marble and terrazzo on stairs only. *Roof:* 20-year bond, over concrete. *Insulation:* acoustical—tile. *Partitioning:* tile and plaster; metal (two rooms only). *Fenestration:* aluminum sash; double-strength A glass; glass block. *Doors:* mostly wood, natural finish; hollow metal; steel; glass and metal.

EQUIPMENT: *Heating and air conditioning:* complete, year-round system with individual room control; electrostatic air cleaner. *Electrical:* fluorescent troffers.

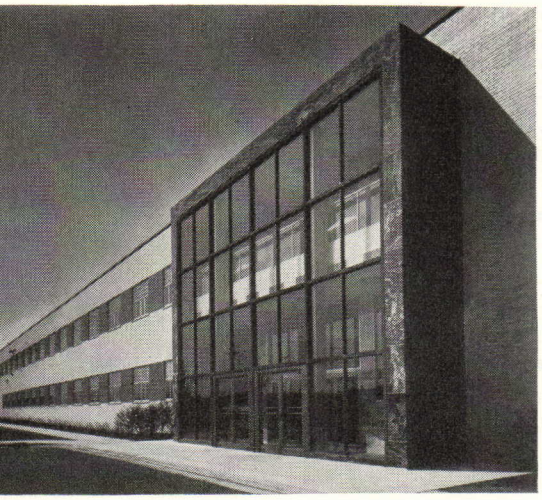


Combined with the main entrance are the elevator lobby, a library and conference room on the second floor and, above that, a blueprint room—accessible to all departments of both the multi-story building and the engineering research laboratory wing that is yet to be completed. Notice how placement of the vertical transportation facilities, toilet rooms, etc., in the utility tower (plus the lack of internal columns) frees the main floor area for flexible floor arrangements—from the average-size office up to large rooms.



ADMINISTRATION AND ENGINEERING BUILDING: HAMMOND, INDIANA

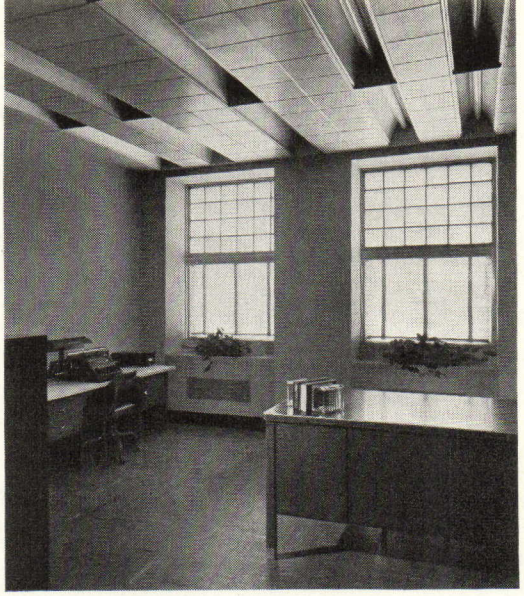
ADMINISTRATION AND ENGINEERING BUILDING: HAMMOND, INDIANA

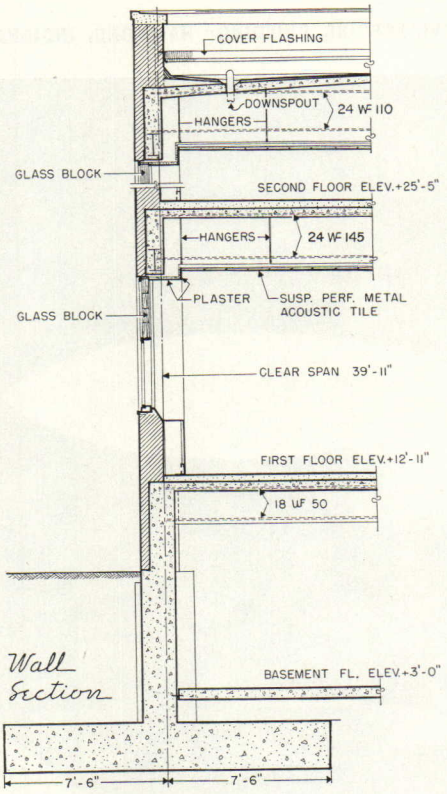


Left: detail view of the granite-surfaced main entrance. The two-story window wall lights both the main lobby and the library on the floor above. The low wing at left of the entrance is the uncompleted engineering-research laboratory. In the distance, at far left of photo, may be glimpsed masses of some of the company's chemical-research buildings.

Above: the main entrance lobby—terrazzo floors, marble wall surfacing; continuous cold cathode concealed in ceiling cove provides artificial lighting.

Left: the elevator lobby, off the main entrance but still within the utility tower. Elevator doors and jambs are of stainless steel. Ceiling surface is acoustic tile.

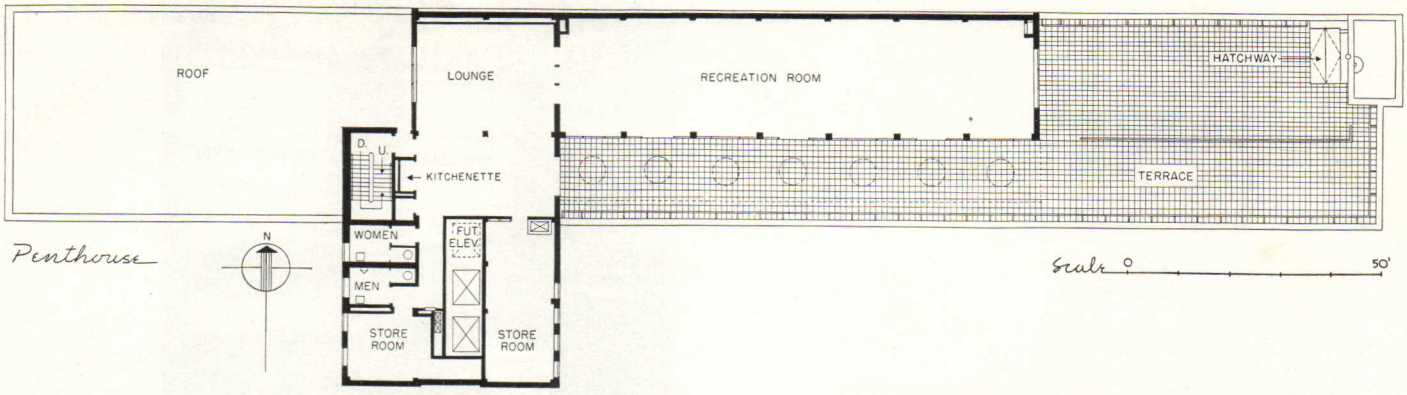




Top, right: typical office space, occupying one of the 13'-6" modular bays, with two window units. Open troffers supply artificial lighting; flooring is asphalt tile.

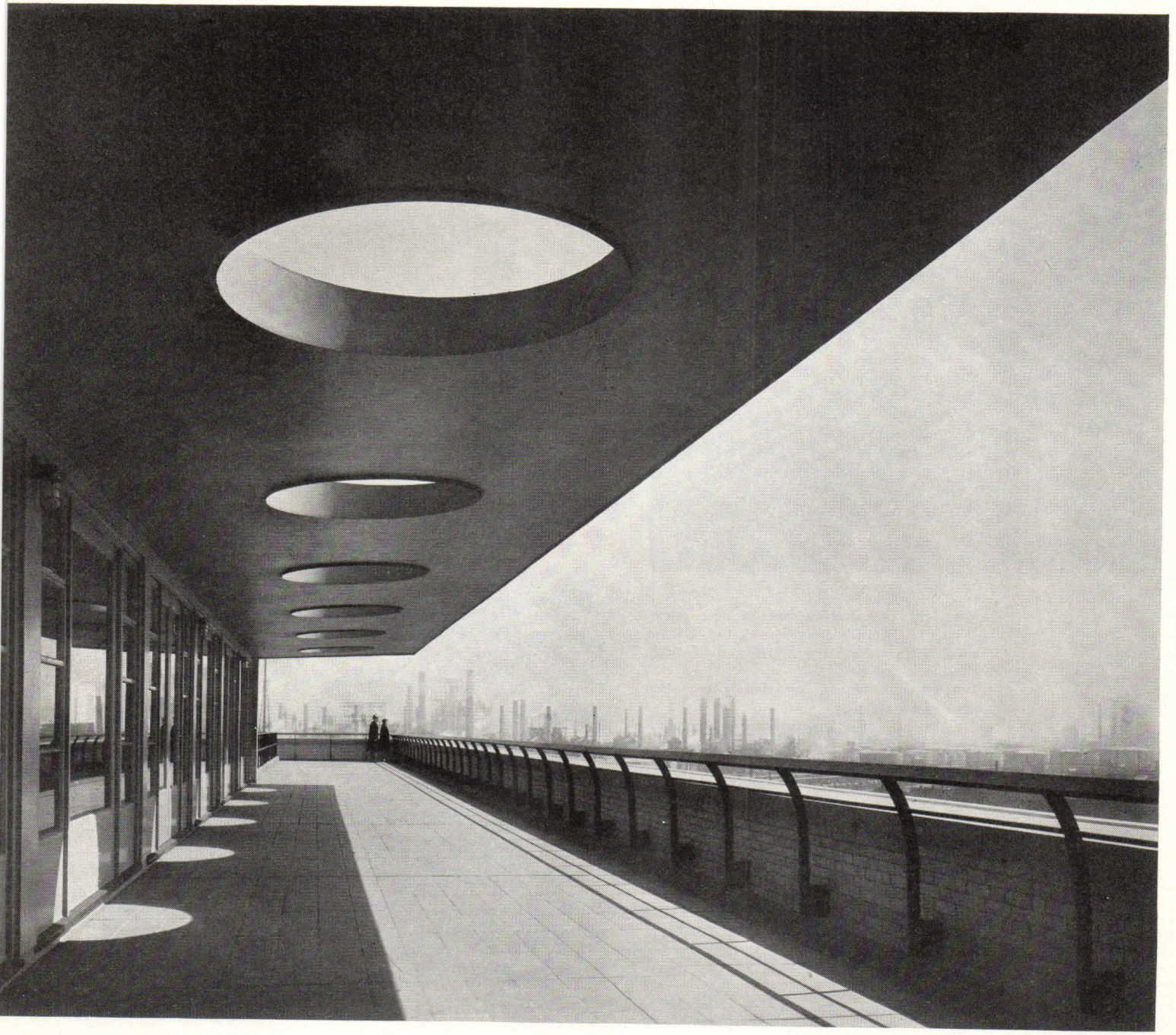
Above: the library, immediately over the main entrance lobby.

Right: half of a large office area that has totally uninterrupted space between windowed walls. Section, above right, indicates the clear-span framing that allows such openness.



The partial seventh floor, in addition to service rooms, consists of a handsome lounge-recreation room-terrace space for employes. At one side of the lounge is a small kitchen. The terrace (photo below, outside recreation room) is surfaced with 12" x 12" quarry tile.

ADMINISTRATION AND ENGINEERING BUILDING: HAMMOND, INDIANA



the speculative house

About a million dwelling units will be built in the United States this year, most of them by speculative builders. Here is a large volume of design work, representing at the same time an important social problem. Is it a reasonable field of practice for the serious architect? Should he get into this work? Can he? Does it pay? **P/A** has asked these questions of a large number of experienced architects, and herewith presents a resume of their replies.

The architect must work in this field, they all agree. He cannot ignore it and say, "This is not architecture."

It is possible to obtain speculative house work, in almost any community, if the architect wants it enough.

Among architects who are experienced in work with speculative builders, all but a very few have found it profitable. The practice must be carefully studied, but from their own experiences many architects report that they can make a reasonable profit from it.

The greatest handicap to the architect who wants to do a thoughtful job for fair pay in this field is the fellow architect who proudly claims to be able to "turn out a set of plans" in one day for somewhere around $100. FHA advice to builders on architects' fees has been influenced by this type of practitioner.

Most firms doing this work prefer a form of royalty payment (so much per house built) over and above a flat fee or an hourly cost fee. A few (including those most experienced) use the cost-plus-overhead-plus-profit system.

Some architects believe that they can save the builder money in his operations. All testify that the *well-designed* architect-inspired house sells more rapidly than the stock-plan product. There are too many *poorly-designed* houses by architects on the market to make any general statement about the value of professional services.

There is little if any resistance to the contemporary house, as such, on the part of the buying public. But, builders, sensing the market, often place the sales prices of such houses unfairly high.

Providing plans without specifications is dangerous. However, limited or partial supervision can be arranged safely, some say.

Architects practicing in this field are evenly split on the controversial matter of the architect himself becoming the entrepreneur-builder. Half feel it is the only way the architect can control the operation; half think it reduces the architect's product to the level of the builder's.

Architects who have studied the subject objectively feel that the profession must make a careful analysis, for the benefit of the consumer, of (1) the present constitution of the speculative home building industry and (2) the potentials of industrialization or partial industrialization of this industry, to achieve for the small home owner better planning, better construction, and much lower costs.

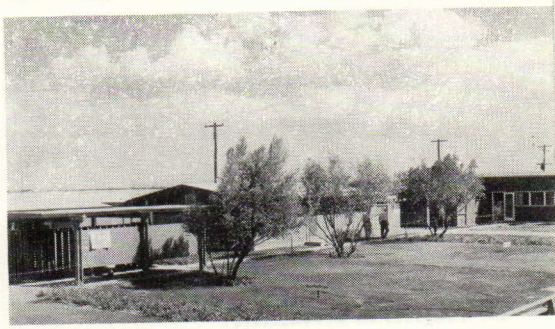
As instances of the advances that can be made by the slow process of individual activity, the four development houses that follow are presented.

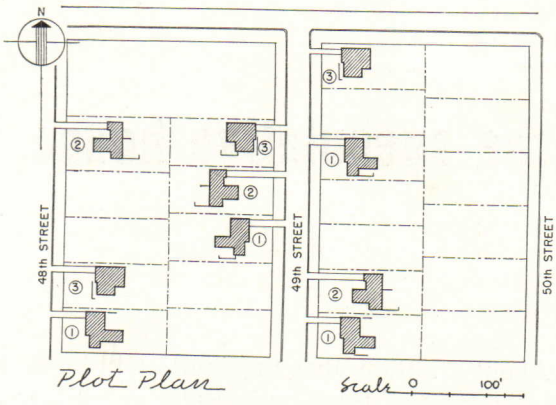
Two photos below: top—development in Lincoln, Nebraska (Clark & Enersen, Architects): Three basic plans, built to sell from $9500-$11,000.

Below—McLean, Virginia (Harry Ormston, Architect): 26 houses from one plan type, selling for an average of $10,434.

Two photos below: top—a project in Denver, Colorado (Eugene Sternberg, Architect): 1255 dwellings eventually; sponsored by the Revere Quality House Division of the Southwest Research Institute.

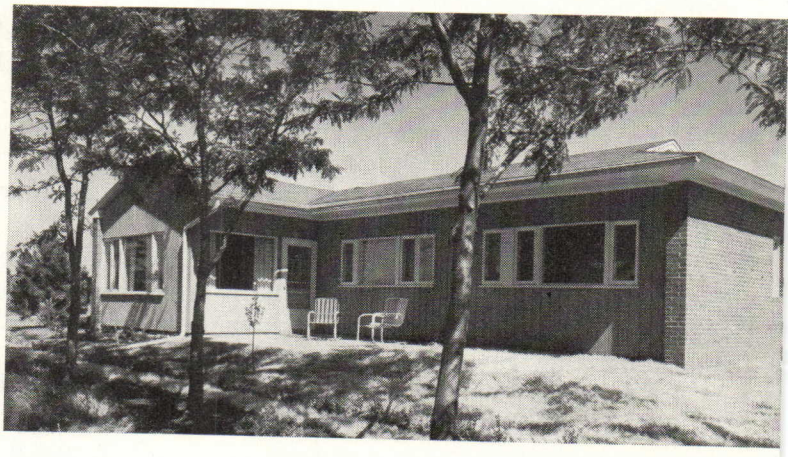
Below—Tucson, Arizona (Paul R. Williams & A. Quincy Jones, Jr., Architects): initial project, 700 houses; eventual development, 3000.

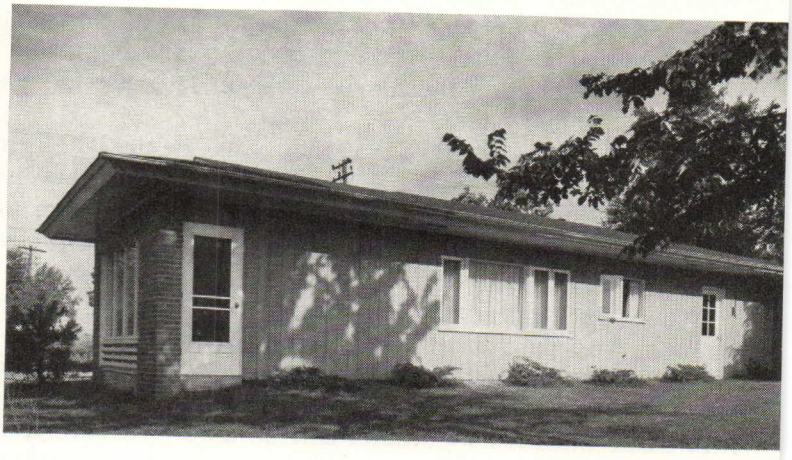


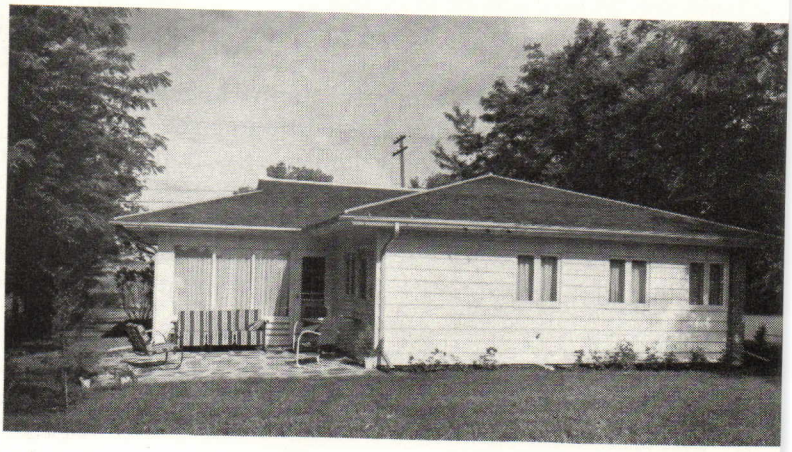


1. Lindale: Lincoln, Nebraska

CLARK & ENERSEN, ARCHITECTS





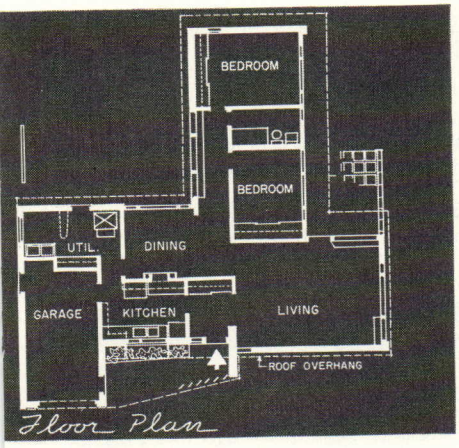


The problem here was to design a group of houses to sell in the $9500-$11,000 range, in a growing residential area. A small city park adjacent to the property, and plans for future schools and a shopping center nearby, made the location desirable. Three basic plans were developed, with variations in location of principal rooms (exposure to south or to east) making it possible to obtain privacy on lots 50 to 70 feet wide.

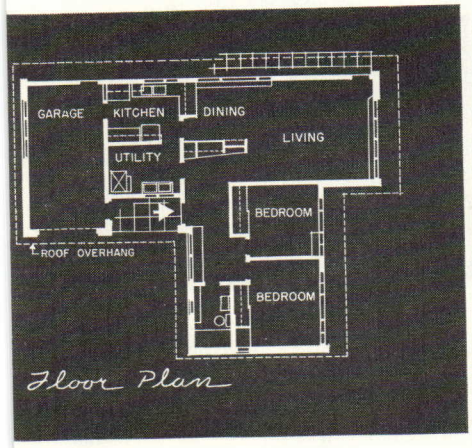
Houses are wood frame, insulated, with asphalt tile floors, asphalt strip shingle roofing, wood casement windows. Heating system is gas-fired forced hot air.

The architects were called in early enough to control subdivision planning. Relations with the builder were good, although lack of supervision resulted in builder-inspired changes which the architects would not have approved. Fees were on a percentage basis and proved adequate. However the architects now feel that "a flat fee basis would be preferable."

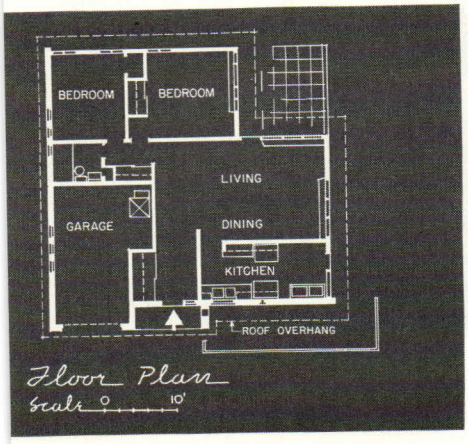
The houses attracted considerable attention because of the freedom of their design. Sales were slow in starting, but once they began to move all houses sold quickly. Although architects generally "ain't appreciated" by speculative builders in this area, and there is tough competition from plan services, this particular experience was apparently a worthwhile and profitable one for both architect and builder.



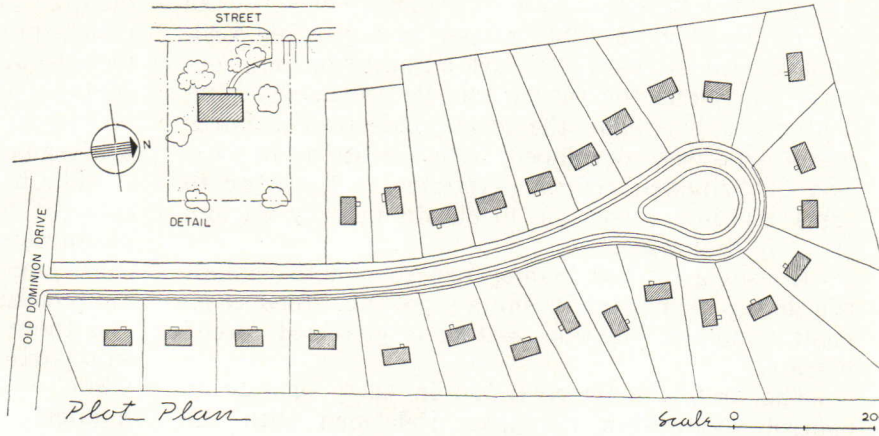
1. Four of the ten houses were built from this plan, or the same plan in reverse. Reading from left to right (starting extreme left of facing page): General view from living-room corner, with bedroom wing at right. Bedroom wing and living-room projection border a sheltered terrace. The plan, and—at right—looking from living room toward entrance alcove (left) and dining room (right). *Photos: Fred Gund*



2. Three houses follow this scheme, or its reverse. At far left: front view: immediately across page: rear of house, with door from living room (left), from kitchen (right). Note that no major room faces the street.



3. This scheme accounts for the remaining three houses in the 10-house development. Photo on facing page shows the rear view, with the sheltered away-from-the-street sitting terrace formed by the joining of the living room and bedroom wings. The plan keeps traffic lanes to one side of rooms and provides privacy at the entrance.



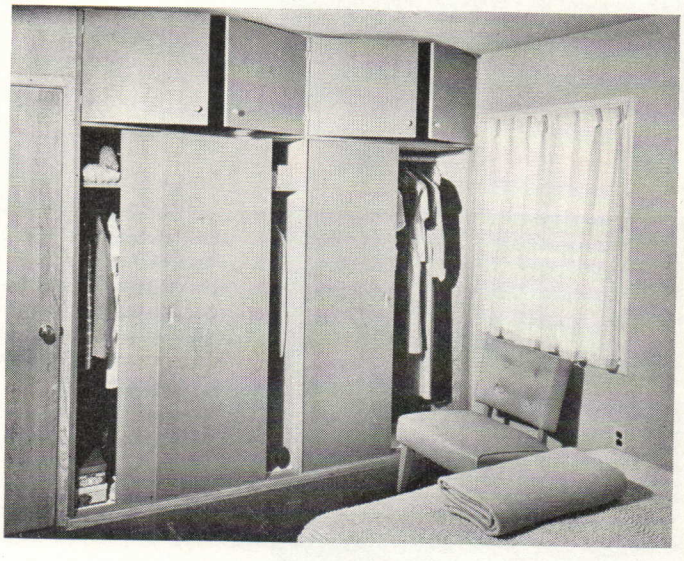
2. Providence Forest: McLean, Virginia

HARRY E. ORMSTON, ARCHITECT

Photos below: at left, top—back of house, with large window and adjacent door indicating the living-room wall. Bottom—front of house. The through-house living room made possible use of the same plan on sites with different orientations.

At right, top: living area looking toward main entrance door. Bottom—organized storage space in rear bedroom; use of sliding panels makes maximum use of limited floor space.

Photos: Richard Garrison

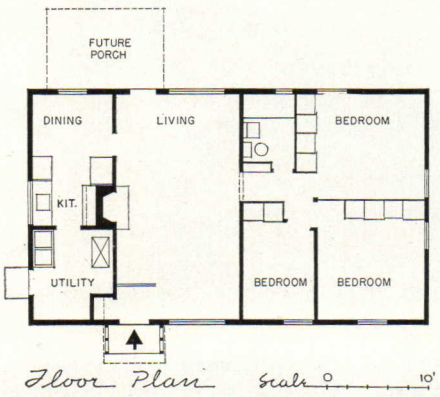


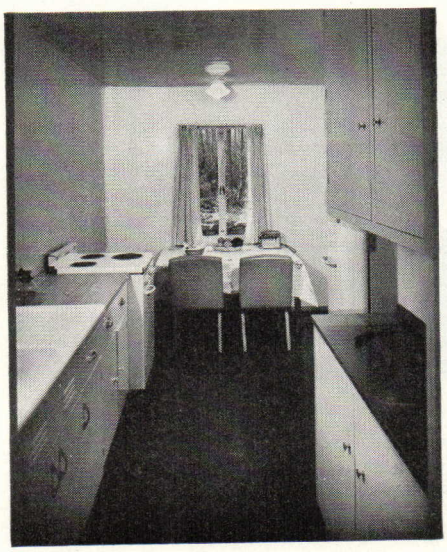
The architect of this development was consulted early enough to help in the selection of the land as well as in the site planning. Twenty-six houses were built on 11½ acres of thickly wooded land, with a curving cul-de-sac road following the topography and preserving most trees. One house plan was used, schemed so that a through-house living-dining space, windowed at both ends, made it possible to vary orientation. Diversity was also gained by color schemes and some variety in exterior finish materials.

Construction is dry-wall, using wood siding on the outside and rigid wall board on the inside of an insulated wood frame. Roofing is asphalt shingle, windows are steel casement. A hot-water radiant floor panel system provides heat.

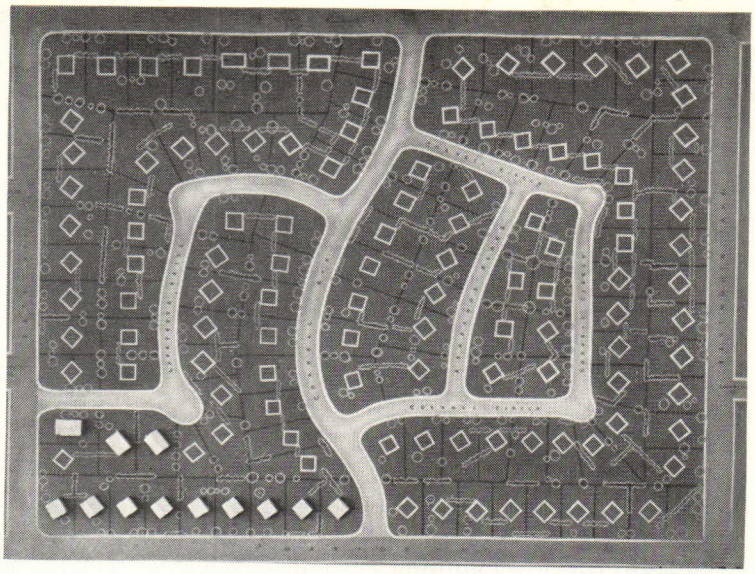
The builder was happy with the architectural result and the fact that all houses sold quickly without advertising—buyers "found" the houses on their own. However, the sad fact is that VA appraisal (the houses were insurance-company financed under the GI program) set ceilings on the sales prices that were too low to allow a profit. The architect explains this as a refusal by VA to recognize the quality of the houses and the amount of usable floor area within the cubage. Houses sold for an average of $10,434.

The architect is enthusiastic about the careful job that the builder carried through, with no change in the quality of the materials specified or in any of the details that were drawn.





The plan shows an extremely simple layout organized within an economical rectangle. Photo below, left: space at the end of the kitchen provides a compact dining area.

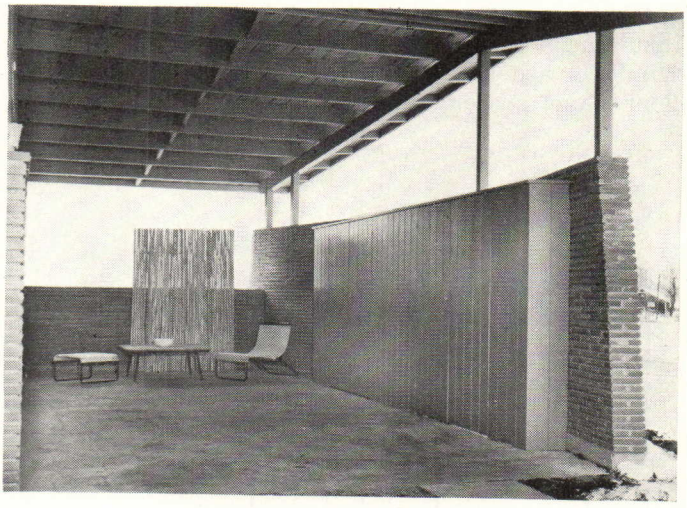


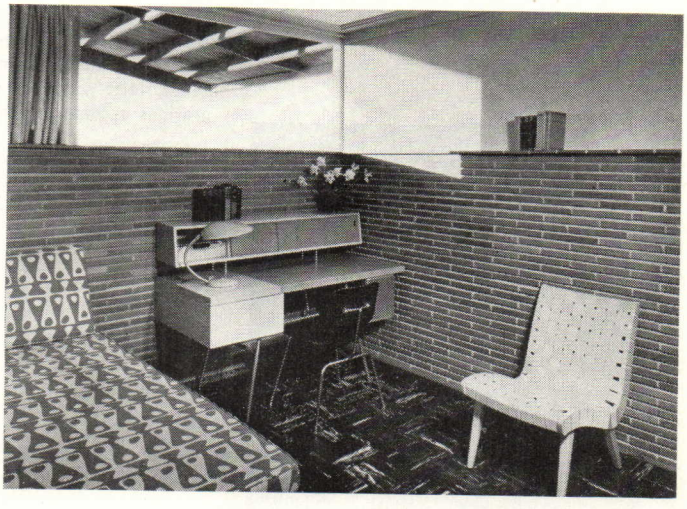
3. Arapahoe Acres: Denver, Colorado

EUGENE D. STERNBERG, ARCHITECT

Above: site plan. The nine houses at left along lower border of property are the first units built. Variety comes from different roof types; position of carport; position and character of main entrance; fireplace design, and color and finishes.

Top photos below: left—general view; right—carport detail, showing storage wall at right. *Photos: Guy Burgess*





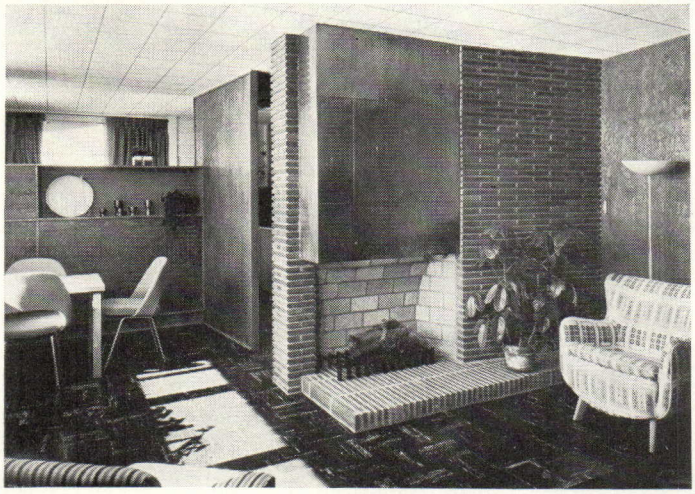
Immediately above: left—bedroom detail, showing exposed brick of inner wythe of cavity wall. Right—the bedroom adjoining the carport.

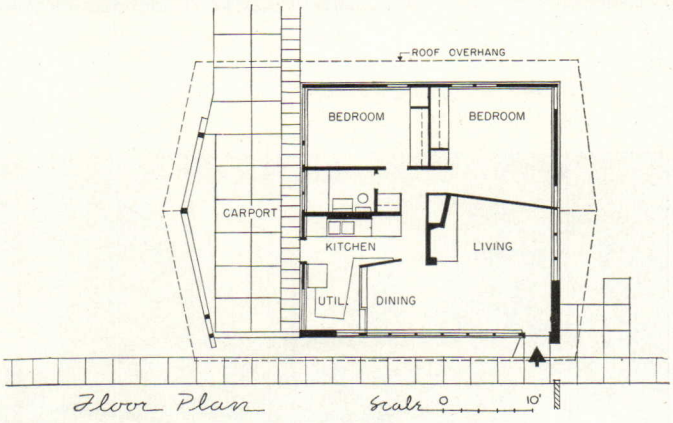
The program of the Revere Quality House Division of Southwest Research Institute has been an effective instrument in many communities in promoting better architect-builder relations and the general improvement of the quality of speculatively built houses.

In Denver, the Quality House program appealed to a builder who had already been talking to Eugene Sternberg about experimenting with uncommon construction methods. Site planning for 1255 houses, which the architect considers of prime importance, was intended to keep the amount of land used by roads to a minimum, to utilize southern exposure for solar heat and at the same time gain a view of the Rockies to the west, and to group the houses for privacy. Nine houses have been built, selling for $11,500.

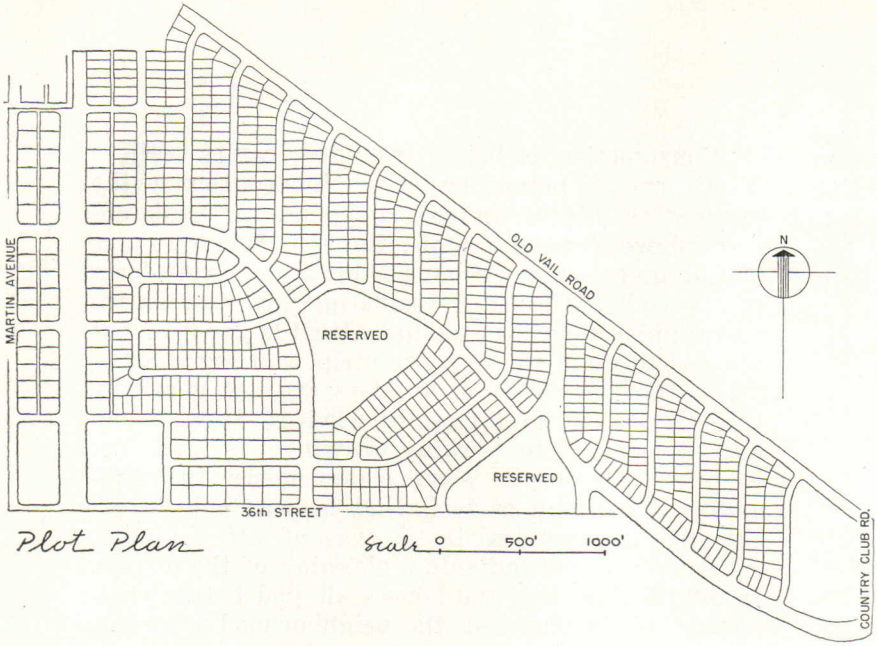
Construction is brick, insulated, cavity wall to a uniform sill height (with the inner brick wythe exposed as interior finish), and glass or insulated-core plywood panels above the sill. Windows are aluminum casement; roofing is tar and gravel; flooring is asphalt tile; fiber insulating tile with an integral finish forms the ceilings. Heat is gas-fired hot air, fed through tile ducts to strip wall registers.

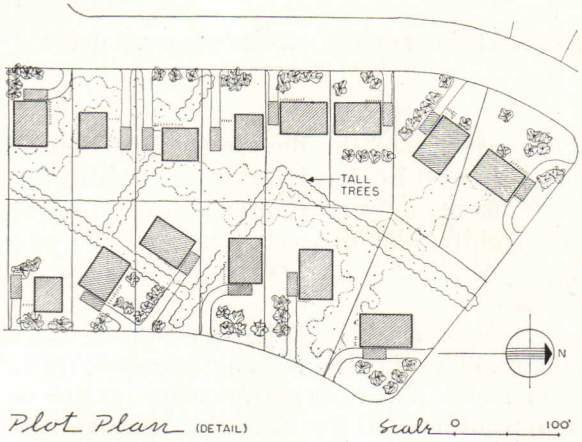
In the Denver area, builders are not generally receptive to full architectural services. Supervision, and even complete working drawings, is rare. Yet in this case, despite some compromises and difficulties, the architect feels that he was able to accomplish a great deal in the way of site planning, construction, and individual planning of the houses. In addition to that, the houses all sold before completion, while others in the neighborhood were not selling.





Photos, left: above—living room window, showing flat-roofed adjoining house built on same plan. Below—the copper-hooded fireplace. Photo above plan: looking back into the sitting area.

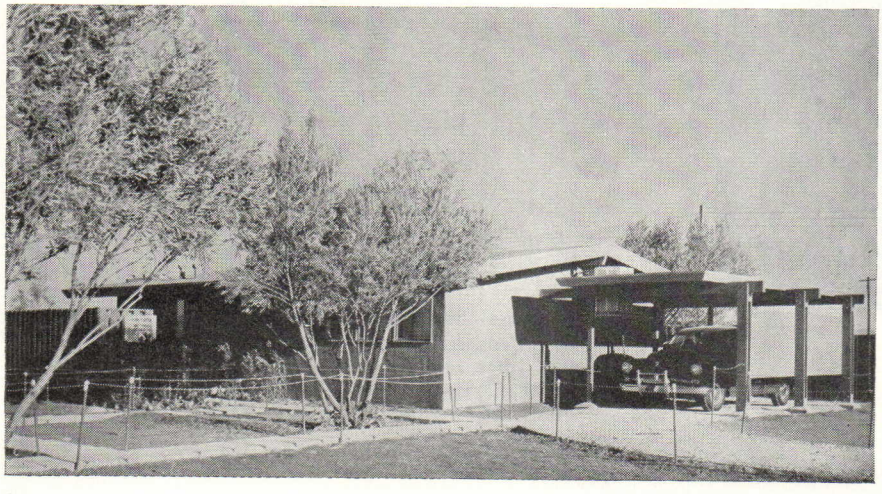


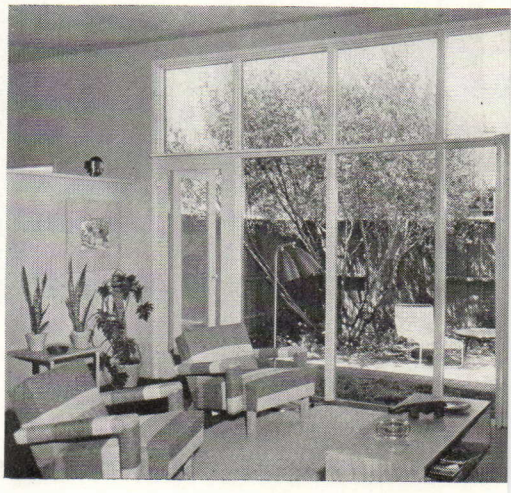


The site plan (left) was predetermined, but the architects developed the planting plan (detail, above). Each plot has from 100 to 150 square feet of flower beds, medium-height trees, and tall trees. The pattern is designed for wind-breaking and light control as well as for esthetic delight.

4. Pueblo Gardens: Tucson, Arizona

A. QUINCY JONES, JR.; PAUL R. WILLIAMS, ASSOCIATE ARCHITECTS



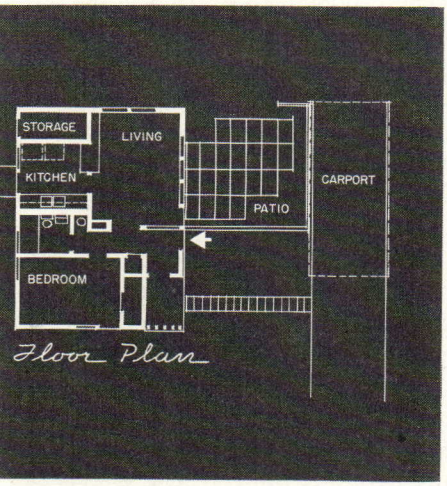


When the construction company first approached the architects on this vast project (700 initial units; an eventual scheme for 3000), the site planning was already adopted and FHA had approved houses that the developers planned to build from stock plans. As Mr. Jones explains, he was called in simply "to discuss doing a shopping center" at the entrance to the project. At his request, however, he was permitted to submit alternative designs for the houses, on the theory not only that a total community correlated in design would be more satisfactory but that, by employing contemporary principles, he could simplify house design and construction methods, thus reducing costs, at the same time providing more livability per unit. The effort was a success; the company liked the new schemes; FHA approved, and within 30 days the architects completed drawings for the first 100 houses.

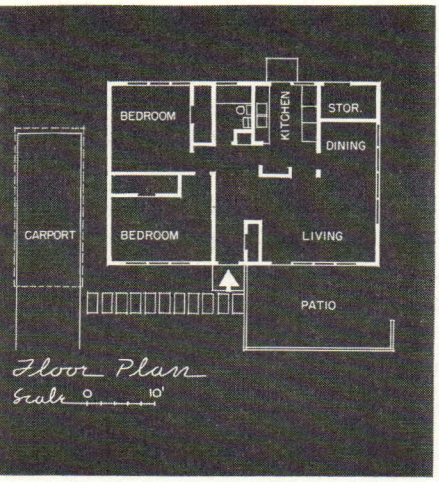
The house types range from a one-bedroom unit selling for $4975 to a three-bedroom house priced at $7975. Intermediate are two-bedroom houses, one that sells for $5975, and a larger version at $6975. While there is much repetition of plan types (including their use in reverse), surprising variety in appearance comes from placement of houses at different setbacks and from use of several different types of fencing to enclose the landscaped patios outside living-room window walls that are part of each house design.

The houses are one-story, wood frame on concrete slab. Gypsum board with aluminum-foil surfacing insulates the walls; the roof contains double-barrier, wool-batt insulation that reflects heat as well as providing usual insulative properties. Exterior walls are redwood or plaster; interior, gypsum board; roofing is tar and gravel; sash are of steel. In-wall automatic heaters provide from 38,000 to 55,000 Btu; evaporative coolers provide summer comfort.

The architects feel that they had extraordinary co-operation from the builder-developer. In regard to the planting plan, for instance, Mr. Jones states: "The scheme was based on a showing some five years away; most developers would have said 'to hell with five years from now; give us a quick showing (at the front entrance) and let the owners worry about five years from now' . . . I felt it was pretty wonderful. This long-range viewpoint was considered throughout."

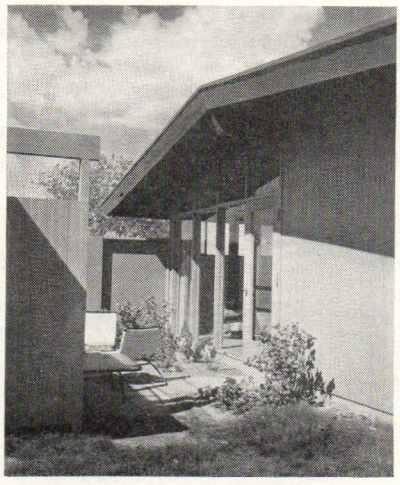


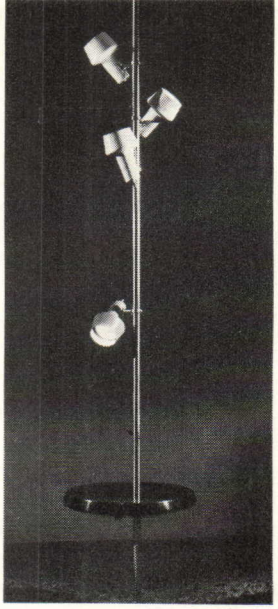
Photographs and plan in this row (left) show the one-bedroom, $4975 unit. Far left: rear view, showing patio and carport (left of photo). Immediately across-page: looking from kitchen across breakfast bar, through living room into fenced patio.

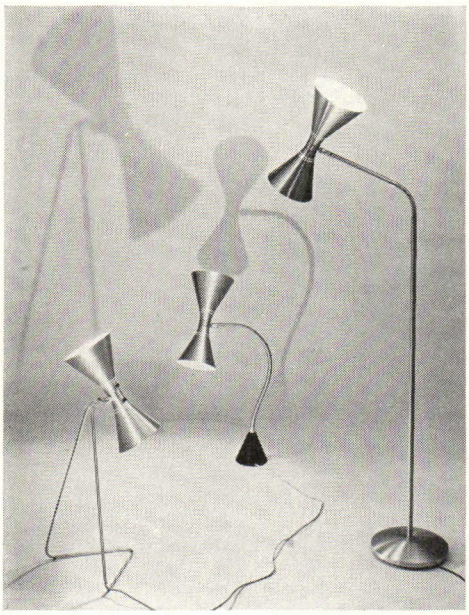


In this row (at left) are details of the larger two-bedroom house, selling for $6975. Far left: one of the units with cement stucco used for exterior finish. Photo immediately across page: view through living-room window wall into landscaped patio. The plan (left) shows an alternate (reverse) scheme.

Photo at right: patio detail of one of the $5975 two-bedroom houses. Exterior finish of this particular house is combed plywood.







The Wurster floor lamp (top) with one rigid stem and one flexible stem, well expresses the dual function of giving two kinds of light at once.

The Rapson lamps (above) have an attractively formed two-way reflector that can be twisted or switched to give light in either or both directions. Each of the reflectors takes a three-way bulb, providing intensity control.

Current Trends in Lamp Design

By DOROTHY Q. NOYES*

We tend to take electrical illumination for granted, forgetting how new it is. But the science of lighting is still young and we are just beginning to explore its potentials although theories of lighting have progressed with development of the design of buildings and interiors.

One of the methods of artificial illumination most widely used is by the detached fixture with cord, switch, and plug—commonly called lamps whether resting on some surface or lightly attached. There can be no disagreement about the primary purpose of a lamp, which is to give light. But some architects are currently expressing dissatisfaction with the products of lamp manufacturers. This is healthy because it means that the architects are awakening to their responsibility in this long-neglected aspect of furnishing the home.

The lighting engineers, in collaboration with architects and designers, have made great strides in the development of more efficient and more attractive lighting of commercial and public areas. This pioneering has had some influence on residential lighting—principally in the kitchens and bathrooms—but the problem of lighting the living, dining, and sleeping areas has been left largely to the ingenuity of individuals and competitive manufacturers, both being influenced by the experts to a gratifying extent.

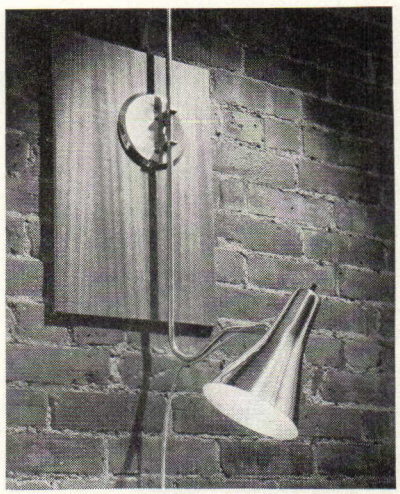
In order to select the best lighting fixtures for residential use, we must first decide what type of lighting is wanted in the various areas for activities or relaxation. We are aware that the lighting can tremendously influence the atmosphere of a room and the mood of the people in it. It is my experience that some shadow is essential in a room where the occupants are relaxing: high strong light will make them tense and uneasy, whereas high subdued light may be eerily depressing or just boring. Variety and some contrast are stimulating and yet favor relaxation. Remembering that each pool of light is a focal point in space, we can design to achieve many effects, even altering the apparent size and shape of an area.

Where a few people are sitting, there may be a pool of light on a coffee table, or on a book. In the immediate area, a sense of coziness is maintained by shadows that "hold the walls in." A vista may be created by a distant light reflected from a wall, from behind a blind or curtain. Higher illumination—pools of light on walls, ceiling, works of art, plants, etc.—will give a greater sense of space and create dramatic effects for a large gathering. But high bright light is desirable only when a room is being cleaned.

*President and Head Designer of New Design, Inc., New York, N. Y.

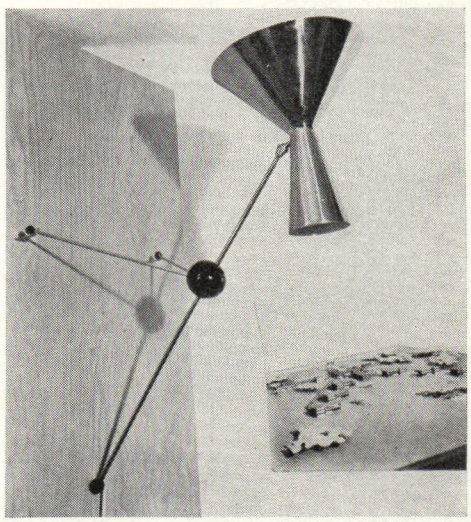
Miller designed the "Light Tree" page (left) as an architectural en- space; a continuous outlet along highly mobile reflectors can be and fixed.

Italian lamp across-page (right) is dously flexible, with its three dif- colored reflectors offering infinite g possibilities. It is also fine mobile re.



The brass wall lamp (right) by Bruno Beer is well related to the wall surface. The reflector can be swiveled in all directions and the height of the lamp can be adjusted by means of the sliding arm. The cord is neatly handled.

Otto Kolb designed the ingenious and sculptural wall lamp (right, below) with double reflector on swivel. The arm can be extended by moving the small weight up the wall.



For dressing areas, high even light directed on the occupant is a necessity. For the sleeping area a low, easily controlled light should be provided around the bed.

In the dining area, a pool of light on the table and a pool of light on any serving surface are desirable. A supplementary distant reflected light may be provided for use when only candles are wanted on the table.

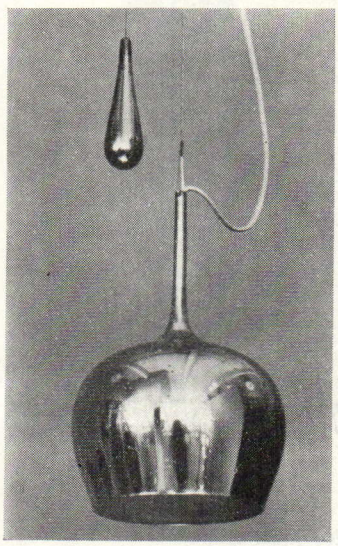
With these needs in mind, we can select lamps that perform best on all counts, offering mobility and ready control of the direction and intensity of illumination. It is evident that the design standards we apply to other selections will influence choice of lamps. No one would deny that a lamp must be a beautiful object—but the definition of beauty brings on acute controversy.

While most of the lamps being manufactured today are still of the monumental type, with their function disguised and impeded by shapes imitative of other objects, it is encouraging that some manufacturers have in recent months offered more honest solutions for this lighting problem. A lamp must have the quality of sculpture and express its purpose as clearly, simply, and cleanly as possible. The lamp should be conceived as an entity in the total architectural space, as well as in relation to the surface to which it is related.

Some defects of the familiar lamp types currently used in homes are apparent on examination. Lamps with translucent shades, whether monumental or small, prevent flexibility and controlled focusing of light because they are a spot of light in themselves and eliminate shadows. The glare and misplaced emphasis of recessed lights located at random can be a lasting mistake. The eerie glow or the harsh glare from cove lighting will destroy residential character. The gooseneck and reflector types of fixtures for walls, floors, and desks go far toward flexibility, focus, and simple forms that we seek—but in the hands of amateurs have so often been incredibly ugly that there is prejudice against them.

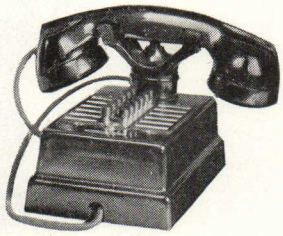
Some day, the ideal lighting emanating from numerous invisible sources, yet readily controllable in intensity and direction, may be feasible for homes and apartments. With the present complex of bulbs, cables, cords, etc., it is too costly to be practicable. In the meantime, lamps and exposed fixtures are necessary. The present tendency toward long stiff arms with swivels, use of structural members to which reflectors can be attached, and acceptance of the cord as an element of lamp design, may be seen in the five examples illustrated here.

Paavo Tynell's Finnish lamp (below) with counterweight, can be raised to increase the light area or lowered to increase light intensity. It is ideal for lighting a table.



Intercommunication Systems for Commercial Buildings

By O. L. ANGEVINE, JR.*



Above: this telephone master station may be used in a selective-ringing selective-talking system, or as a master in a school or auto court system. By turning handset cradle around, it can be wall mounted.

Below: available in desk and wall models, this telephone sub-station can also be used in a common-talking code ringing system.

Above: telephone for common-talking selective-ringing system. *All photos in this column: courtesy of Stromberg-Carlson Company*

Efficient intercommunication for commercial buildings may be provided today by any one of several methods represented by the products of at least 30 manufacturers in this country alone. There are telephone systems, amplified voice systems, various combinations of both, and occasionally intercommunication is incorporated in sound systems which also carry wired music and voice paging. Business organizations are just beginning to realize the many advantages of these tools, and as they will undoubtedly be used with increasing frequency in the future, it will be well to examine the different methods which have been developed so that the occupant may be provided with the most practical system for his particular needs. In the planning stages of commercial structures, architects must provide the necessary conduits, raceways, and feeders for installation during construction so that later defacing of interiors, exposed wiring, and high cost of future changes will be eliminated.

telephone systems

Basically, the telephone type of intercommunication is simply a private telephone system. The kind of equipment employed depends upon the number of stations, or, in telephone parlance, the number of "lines" involved. Large systems, containing more than 50 stations, are operated in a manner similar to that of a telephone company exchange. Some business houses buy their own equipment rather than leasing these facilities from the telephone company. In these circumstances, telephones on a private exchange cannot be connected to the telephone company's lines, and offices requiring outside communication must be provided with two phones. This type of system must have its own power supply; it frequently will consist of a battery and charging equipment which can provide power for service even if commercial power fails. A single pair of wires connects each telephone to the switchboard.

A more usual size of telephone intercommunicating system is one consisting of less than 25 stations; several systems of this type are available and all necessary equipment, except for the cable and power supply, is contained in the telephones themselves. Power may be supplied by dry cell batteries or a rectifilter operating from 110-volt a-c mains. The life expectancy of batteries in such service is well over a year.

The most flexible of the small systems is the full "selective-ringing selective-talking" type in which each telephone is provided with a number of push-buttons for station selection. When a button is pushed, it rings the designated station; when released, it stays partially depressed thereby operating a switch that connects the two stations for a private conversation. When the handset is restored to the cradle, the button automatically springs up and disconnects the line. More than one button may be pushed to set up a conference call; at the same time, however, other conversations may be going on between other stations. A multipair cable containing one pair of wires for each telephone in the system (and usually two additional pairs) must be run to each telephone. It is obvious that wiring, labor, and cable costs would quickly become excessive if such a system were to be used for a large number of stations. It is an economical system, however, for 16 to 20 lines, or less.

In many cases, such systems may be pyramided. In an industrial plant, for example, the production manager might have his system, the sales manager his system, the chief engineer his system, and so on. Likewise, from each of the executive's telephones a line can be run to other executives' offices. Sometimes a secretary's extension telephone may be provided with only one push-button—she can answer any call, but can ring only her boss.

* *Chief Engineer, Sound Equipment Division, Stromberg-Carlson Company.*

In this article, the author deals principally with privately owned intercommunication systems and does not include a discussion of the many internal communication facilities provided by the telephone companies.

Above: this system is made for ultimate capacity of 30 to 50 lines. Any phone may call or be called by any other phone. As it is completely automatic, no operator is needed; simple dial eliminates digit dialing.

Photo: courtesy S. H. Couch Company, Inc.

If a cheaper system is necessary, and there is no objection to restricting the number of conversations to one at a time, a "common-talking selective-ringing" system may be used. In this system, anyone who lifts his receiver may hear any conversation that is going on. Ringing is made selective, however, by providing a number of push buttons, each of which rings one station.

Since multiple conversations occur less frequently than might be supposed on a small system, this method works very satisfactorily except when people sensitive to eavesdropping are concerned. Cabling is reduced to one wire for each telephone plus three common wires.

A still cheaper system employs a single push-button per phone for code ringing. For example, the head of a company might be called by one ring, the sales manager by two rings, the bookkeeper by one long and one short ring, and so on. Only four wires are required in the cable.

Another type of system, suitable for small schools, provides one master station with a number of buttons for selective ringing. Each of the other stations, however, has only one button which will ring the master. In order that one remote station may call another, it is necessary to call the master station and request that it ring the second station; however, this is not a disadvantage for schools where most calls are between office (master station) and classroom (remote station). This principle is also used in apartment house telephones where the master station is frequently incorporated into the design of the mailboxes. In this case cabling consists of one wire from the master to each telephone plus three common wires interconnecting all telephones. A variation of this system providing "selective-talking" and eliminating the party-line atmosphere meets the needs of small hotels and auto courts. An annunciator is added to the master station to indicate which station was called. This variation requires three wires to each telephone plus one common wire.

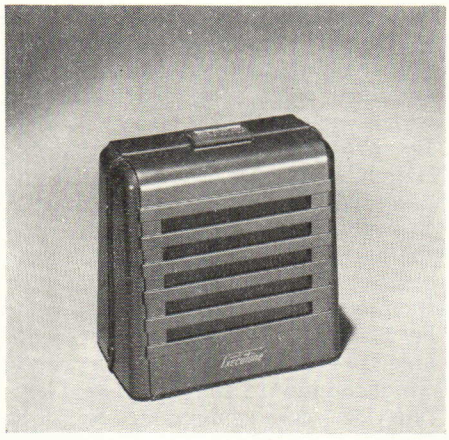
Sixteen to 50 line operations are handled by a special type of system. A central equipment similar to the 100 line dial switchboard is employed; however, with a fewer number of stations, it is possible to use a much smaller and simpler switchboard. In this scheme only two or three wires run from each telephone to the central equipment; the multipair cable required by the push button system is not necessary. Although some prefer the push button type system and are willing to pay a little more, the point at which the central equipment system becomes cheaper than the push button system is about 16 to 20 stations. This, of course, does not apply to a system where there is a large number of stations as a result of pyramiding small systems, since the cabling in a pyramided system does not require a pair running from each phone to every other phone in the system.

Telephone systems offer simplicity in wiring, reliability with little maintenance, and privacy in conversations. Although common-talking systems can have conversations interrupted by a third party coming in on the line, a click always announces that such an interruption has been made. Telephones are especially suited to offices, where it is desirable that visitors are not able to hear what is coming over the line.

electronic intercommunication systems

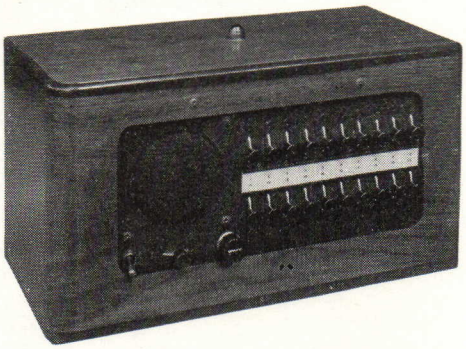
The electronic intercommunication industry has grown remarkably during the last decade and its systems are now available for many functions and in a wide variety of styles. Two special advantages of electronic intercommunication are: 1) the ability to contact one or several parties instantly without waiting for the lifting of a hookswitch; 2) the ability to receive a message at whatever volume is required to exceed the background noise level or to be heard at a distance. These characteristics are of prime importance in controlling industrial processes such as the handling of materials, the operation of a shipping department, or prevent-

Below: executive stations for direct two-way conversation come with selective features for contacting up to 80 stations. Confidential earphone or handset can be provided for optional use. Individual volume controls can be regulated from a whisper to the requirements of the voice level.



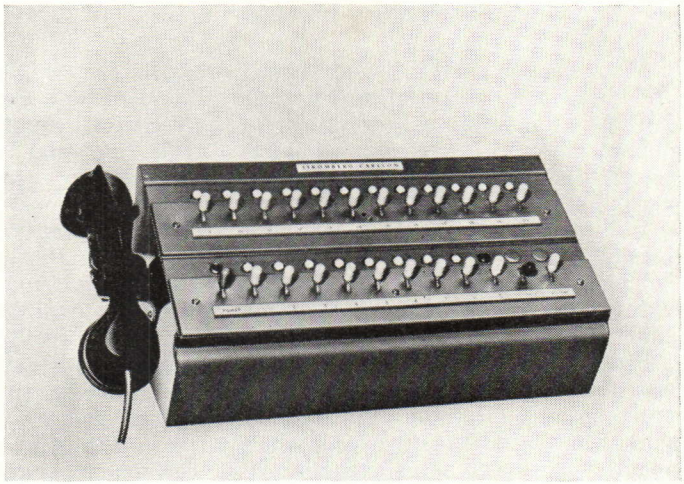
Above: this staff station provides natural voice reproduction; "across the room reply" can be made without approaching the unit. Privacy and call-origination are also provided.

Both photos: courtesy of Executone Incorporated



Above: an advantage of this model is that it need not require the use of a talk-listen key. A special, high fidelity microphone can be mounted on top of the cabinet; to converse with an individual at any other station, one flips the station selector key and talks back and forth without further use of keys.
Photo: courtesy of Bell Sound Systems, Incorporated

Below: 20-station nurses-call master station. The switchboard lamps come on when a button is pressed at the sub-station. By operating a switch under the light, they go out when the call is answered. A similar unit can be added to increase station capacity.
Photo: courtesy of Stromberg-Carlson Company



ing operational failures which could shut down an entire plant. At low volume, amplified voice systems are in common use in general and private offices, often using bell or light signalling plus earphone or telephone type handsets. A thorough knowledge of these systems is necessary so that the client may be provided with the one best suited to his needs.

In the basic amplified voice system, each master station contains a loudspeaker—which also serves as a microphone—station selection switches to call a number of other stations, and a vacuum tube amplifier. The equivalent of the selective-ringing selective-talking telephone system in amplified voice equipment is one in which each unit is a master station. By pressing a talk-listen bar or switch, the first party can speak and be heard by a second party. In order to reply, most systems require that the called party operate a switch to connect him with the caller; he must then operate his talk-listen key when he wishes to talk. Systems are available for use at low volume, however, which eliminate the talk-listen key; likewise, some systems are wired so that the called station is operated like a sub-station.

Sub-stations (remote or staff stations) can be used with any combination of masters or other sub-stations. These stations, however, can call only the master to which they are connected. Once a conversation is established, the person at the sub-station does not have to use a talk-listen key and may even answer a call from another part of the room provided that his voice will be louder at the station than any other noise in the room. As a master can listen in on a sub-station, where privacy is desired a switch can be provided at the sub-station. Some manufacturers provide a warning light on the sub-station showing when the line is open, thus retaining the advantage of across-the-room reply.

Usually it is possible to interconnect other master stations or sub-stations to one master, although some manufacturers' equipment, designed only for master-to-master use, does not allow mixing. When one sub-station is similarly connected to two masters, it is necessary to use a sub-station with a cut-off key (interruption bar) so that one master station can be disconnected when the sub-station is engaged in conversation with the other master; thus the possibility of double amplification is prevented. With additional wiring, the interruption bar can be a relay in the sub-station controlled by the station selector switch at either master, thereby retaining the sub-stations ability to receive a reply from across the room.

One system is available which combines the talk-listen switch with the station selector key and uses only one amplifier for a six station system, yet each station is a master station and can call every other station.

Cabling required for master-to-master operation is one pair of conductors for each station in the system. The cabling needed from the master to the sub-station is one pair of conductors plus an additional shield which is used as the third conductor. Shielding means that a metallic braid is woven over the wires of a pair of conductors. An additional wire is used when a warning light is employed at the sub-station.

As in the telephone system, it is possible to pyramid a number of few-station systems into one large network. Cabling costs can be reduced by using a common-talking wiring in which all stations hear any conversation conducted on the system. This method is undesirable for office use, however, but is sometimes demanded in intercommunication systems for controlling machine operations so that everyone may know what orders are being given. Sometimes paging systems are adapted to this purpose, as, for example, in controlling the operations of a rolling mill where several stations may have to advise all operators simul-

taneously on the progress of a roll. Such systems are high-powered.

It is possible to connect either amplified voice or selective-talking interior telephone intercommunication systems to a voice paging system. In this case, one of the buttons is marked paging, and operating it will permit paging of an entire plant from one station. The called person may go to the nearest sub-station and call the station originating the page in the normal manner for placing a private call. Sometimes this procedure is not desirable as it allows a large number of people to page without control and without choosing the best voices for paging. It is usually better to provide a separate paging system with a microphone designed for high-level paging and with a selected operator.

mixed systems

The foregoing paragraph suggests that it should be possible to mix amplified voice and telephone type systems. In some cases, the amplified voice system achieves telephone privacy by providing a telephone receiver which can be lifted up at the user's option so that the incoming message is brought quietly to his ear rather than coming over the loudspeaker.

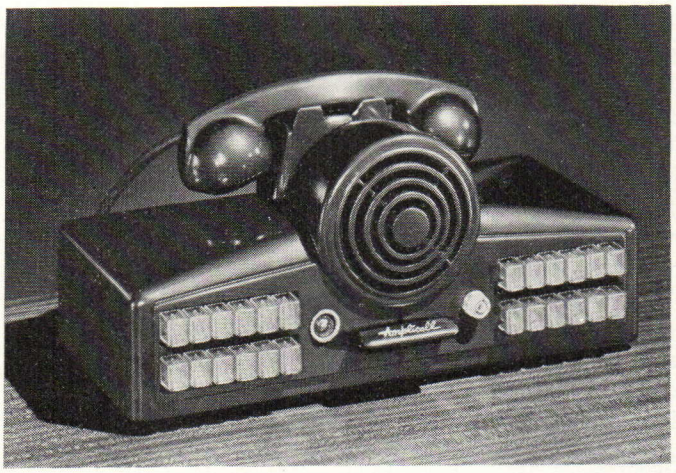
A better marriage of the two systems is the scheme which employs the telephone type handset for an office end of an intercommunicating system and provides electronic amplification for stock rooms, warehouses, and so forth. Such systems give privacy at the office end yet deliver a high volume for a large stock room. If, in addition, the stock room and production areas are wired as sub-stations, it is not necessary for the stock clerk to operate a talk-listen key and he can answer from any point in the room.

Similar systems designed for use in garages, or in hospitals for nurses call, may be given names which suggest their application. The nurses call system is tied into the familiar push-button at the patient's bedside, corridor lights over the patient's door, and at the nurses' stations. With an intercommunicating system, however, the nurse need not go to the patient's room to answer, but carries on a two-way conversation with the patient. A telephone handset is provided at the nurses station and a quiet loudspeaker in the patient's bedroom.

School sound systems which are used to distribute radio or phonograph programs to selected classrooms are often equipped with an intercommunication channel. This makes it possible to hold two-way conversations between the classroom and the central equipment, which is usually located somewhere near the school office. Many schools use such a system in place of telephones in the classrooms. Other schools use a common-talking or selective-talking telephone intercom to their classrooms instead of leasing phones from the telephone company connected to the school switchboard. In such cases, it is frequently possible to use the wiring of the school sound system for the telephones. It is desirable to plan this procedure at the time the wiring is installed, as it may require somewhat different wiring than would be installed for the school sound system alone.

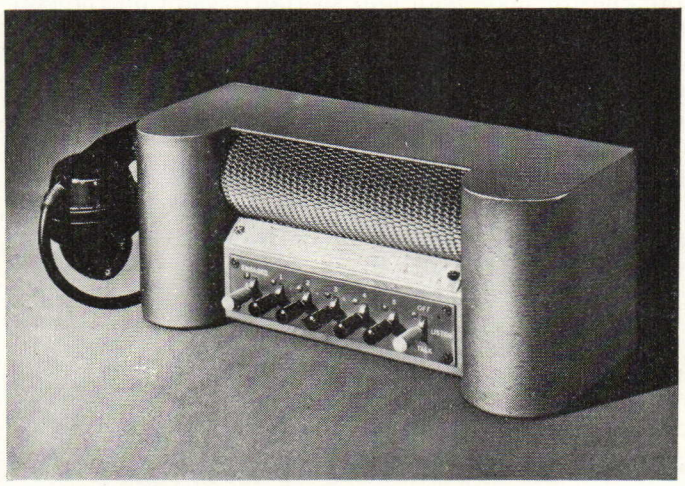
survey and maintenance

To provide the client adequately and at the same time insure his not being overloaded with unnecessary masters or sub-stations, it is recommended that a communication survey chart be prepared to determine his intercom needs. Manufacturers providing complete service for their clients are able to prepare these surveys with competence. Another important consideration in the selection of any intercommunication equipment is to ascertain how it will be serviced when a breakdown occurs. Some manufacturers require the equipment to be returned to the factory for repair, while others provide on premises service.



Left: this 24-circuit master station has an optional handset for privacy of incoming conversations; no operation of controls is required; busy signal insures uninterrupted conversations.
Photo: courtesy of Rauland-Borg Corporation

Below: this sub-unit is wired back to a central automatic exchange. Up to 20 points can have instant contact with each other with a simple flick of a switch; talking can be done by loudspeaker or telephone instrument at any point. Conversations can take place at distances up to 30 feet from unit.
Photo: courtesy of Hadley Sound Equipments



In approaching the problem of selecting floor or ceiling radiant heating for this small office building in Tennessee, the architect and engineer first considered its use, orientation, and surrounding topography. Where ground is relatively level and a concrete slab can be easily installed, these authors lean toward floor heat—especially in small office buildings, commercial buildings, churches or other structures with excessively high ceilings. Based on the findings of this case study, it is apparent that radiant low voltage electric heating operates quite satisfactorily and economically where the power rate is low and the installation is not too large.

Radiant Low Voltage Electric Heat

By ALFRED H. ABERNETHY* and DAVID R. SHEARER**

A new type of low voltage radiant electric heat has been installed in the offices of Architect Alfred H. Abernethy, at Johnson City, Tennessee. Before the system was finally installed, Electrical Engineer David R. Shearer, who originated this method, collaborated with the architect for many weeks performing elaborate tests with both No. 9 and No. 12 steel wires in concrete and plaster panels to determine the correct spacing, pick-up, impedance, temperature curves, and other data for proper design. As there is no temperature drop through the coil itself, and as the coil reactance varies with the spacing and size of the wire as much as it does from ohmic resistance due to length, it was found that the calculations involved in the design were far more difficult than those for a water system. Ordinary tables of steel wire resistance could not be used for alternating current in steel coils of this type.

The system eventually developed consists of eleven coils of bare annealed steel wires embedded in the floor slab in the same way that pipes are used in a hot water radiant heating installation (see sketches of floor plan and section). Data on the coil schedule follows:

Drafting room (322 sq. ft.) : four coils at 130 ft. each; 520 lin. ft. of No. 9 (157Ø) steel wire; 17 watts per sq. ft.; 5.4 kw.

Office (184 sq. ft.) : two coils at 130 ft. each; 260 lin. ft. of No. 9 steel wire; 13 watts per sq. ft.; 2.4 kw.

Reception and storage (336 sq. ft.) : three coils at 130 ft. each; 390 lin. ft. of No. 9 steel wire; 12 watts per sq. ft.; 4.1 kw.

Conference (183 sq. ft.) : two coils at 130 ft. each; 260 lin. ft. of No. 9 steel wire; 15 watts per sq. ft.; 2.3 kw.

The coils, which also serve as reinforcement for the slab, are connected by brazed joints to bare copper feeders from the control board. Room temperatures are controlled by thermostats operating magnetic on-and-off switches connected to the circuits; voltage modulation is achieved by three interlocking, outdoor thermostats controlling three corresponding taps on a specially built dry type transformer. When the outside temperature reaches 72F, the current is automatically shut off. At temperatures ranging from 71 to 45F, the available voltage is 20 volts; from 45 to 20F, the tap is 30 volts; below 20F the tap is increased to 40 volts. A 15 kva transformer is served at 230 volts. Although the heating coils operate at a temperature of 130F, a test temperature of 200F was run through the coils without ill effect when the system was first installed. Temperatures of the concrete floor surfaces are maintained at 80F or less during operation. Transformer and control equipment demand little space in this building and are located in the storage room. The slab containing the heating coils is only 1½″ thick and rests on a 2½″ bed of vermiculite insulating concrete with standard edge insulation. The highest voltage used in the floor is only 40 volts, so there is no possibility of shock or burn, and as these coils are completely incased in concrete there is no deterioration. Tests have shown that there is a slight leakage between the runs of the embedded coils; however, as this also goes to heat, there is no loss.

* *Architect, Johnson City, Tennessee*
** *Electrical Engineer, Johnson City, Tennessee*

The present kilowatt rate for TVA power available in Johnson City is:

Residential: first 50 kw, $0.03; 150 kw, $0.02; 200 kw, $0.01; 1000 kw, $0.004; and over 1000 kw, $0.0075.

Commercial: first 150 kw, $0.03; 350 kw, $0.02; 1250 kw, $0.01; and over 1250 kw, $0.008.

There are no demand charges for residential installations; however, for over 10 kw, small commercial consumers pay $1 per kw; medium and maximum consumers pay $1 from the start. In addition, there is a 10 percent surcharge for all commercial installations.

During the heating season, the electric bill for this building has averaged $32 per month. As approximately one-third of the current was consumed in lighting and blueprinting, a net cost of $22 was required to heat the 1200 sq. ft. area. The capital investment, compared with an oil fired hot water radiant job, is about one-third, since the chimney, additional space for boiler, and so on, were eliminated. As there is no demand rate for non-commercial property, the monthly consumption for a house of this floor area would be considerably less.

after installation observations

1. Due to the variations in steel wires of the same nominal size, it is recommended that actual ampere tests of the coils be made before pouring concrete or placing in plaster. If adjustments in current are required, slight changes in coil length can easily be made. The transformer ordered on the job should be used.

2. Based upon experience of last fall and winter, outdoor temperature modulation of voltage appears to save about 10 percent of the operating costs when compared with unmodulated electric heat; in addition it prevents overrun of temperature in mild weather.

3. Last winter, the high voltage (40 volts) was infrequently used; during the fall season the 20 volt tap was in use much of the time. Apparently, the 30 volt tap will be used about 50 percent of the heating season.

4. In his next installation, the architect will probably introduce about 100 cfm of tempered air per room through small high velocity tubes for ventilation and slight pressurization to keep out dust. This appears desirable for any type of radiant heating where many people assemble or considerable smoking is done.

5. In this locality, there are eight other systems of this type now operating in a satisfactory and economical manner. Both flooring and ceiling panels are in actual use. So far, all installations have been either 15 or 20 kva capacity, although one 30 volt is being planned. Most of the installations use type RA-H & H contactors in sizes 1, 2, and 3, and in multi-polar units with the poles cut in parallel. Through their use, as many as six coils can be placed on one thermostat. Two types of room thermostats have been used: the standard line duty 115 volt and the sensitive 24 volt. Both have worked in a satisfactory manner but the 24 volt responds to smaller room temperature changes. Two or three types of outdoor tap changing thermostats have been used but the M-H T691A S.P.D.T. is the most flexible.

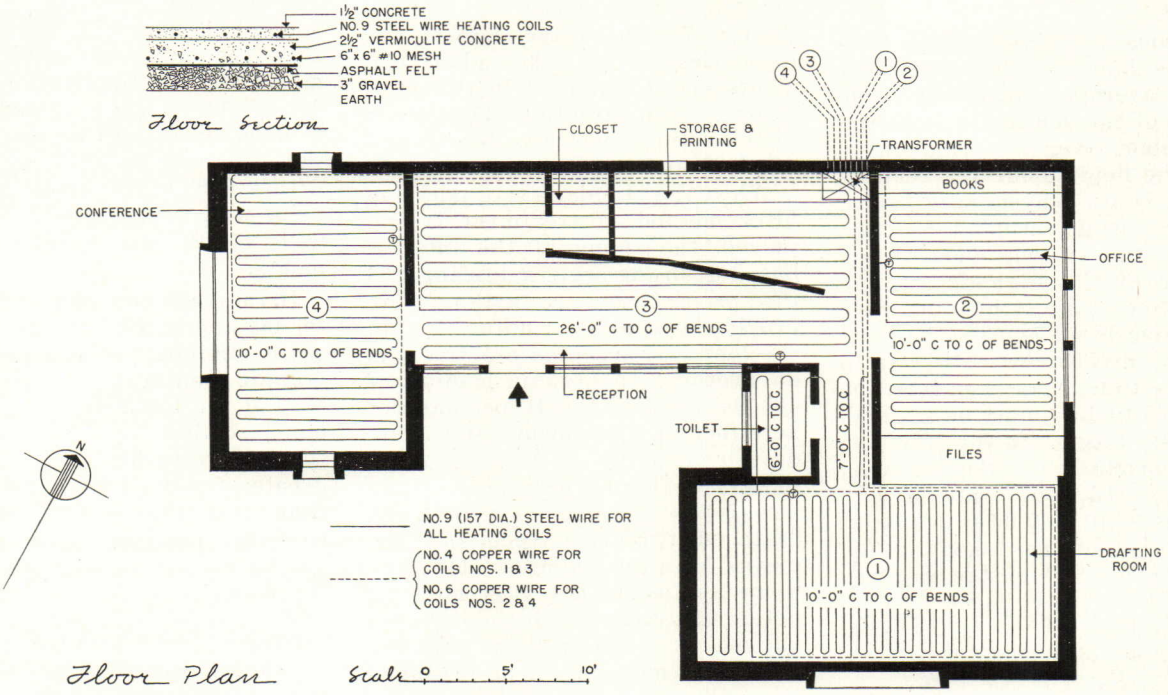


TABLE 1

AVERAGE OVERALL PLANT REDUCTION

Type of Treatment	Classification	Percent Reduction
Septic Tank	Not Acceptable	
Imhoff Tank (only)	Primary	33%
Plain Sedimentation	"	30-40%
Chem. Precip.	"	40-50%
Trickling Filter (Low Rate)	Complete	75-85%
Trickling Filter (High Cap.)	"	75-85%
Activated Sludge	"	90-95%

Sewage Treatment for Institutions in Rural Areas: PART 2

By ROBERT C. GLOPPEN*

design principles

In the development of rural districts, there are comparatively few localities so situated as to permit the use of primary sewage treatment; therefore, in this study, consideration will be given only to the method of complete treatment.

The first step in the design of such a plant is the determination of the quantity and strength of the sewage to be handled. The total daily sewage flow is based upon the design population and the expected sewage flow in terms of gallons per capita daily (gpcd). In every community, there are occasional peak and low flow periods; the daily flow is not discharged to the plant at a uniform rate throughout the 24 hours.

Numerous recordings of daily sewage flows have demonstrated that in the average community the majority of the sewage is delivered to the plant over a period of 16 hours; the flow during the remaining eight hours is average or below. Therefore, it is accepted practice to design the various elements on the basis of the 16 hour average rate of flow. The 24 hour average rate in gpm is, of course, the total daily flow divided by 1440, but to obtain the 16 hour average rate, the factor 1.25 to 1.50 must be applied, using the larger factor for the smaller communities. For example, the design (16 hour) rate of flow for a community of 9000 people at 100 gpcd would be taken at 782 gpm; whereas, the design rate for a community of only 900 people would be taken at 94 gpm.

With the design rate of flow and the pollutional load in terms of pounds B.O.D.** daily thus determined, the next step is the sizing of the various structures required. In this respect Table 2 indicates the average requirements for the units of the different methods of treatment.

Determining the capacity of the individual units is merely a function of the design rate of flow and the required detention period except in the case of the digestion tank. For example, the volume of the primary sedimentation tank for a standard rate filter plant to serve a population of 800 people would be 1335 cu. ft. and could be provided by a rectangular tank 8′ x 24′ with a 7′ side water depth. The capacities of the other plant elements are determined in the same manner, with attention being given to the ratio of width to length and depth to surface areas of all units.

When the standard rate trickling filter method of treatment is employed, the sizing of the filter is based upon the organic loading and the proportions are arranged to provide hydraulic loading within the limits of accepted practice. As an average, an organic loading of 400 lbs. applied B.O.D. per day per acre-foot of filter media and a hydraulic loading of two to three million gallons per acre daily (mgad) is recommended by most State Health Departments. This means that the quantity of B.O.D. to be applied to the filter must be determined to arrive at the required volume of filter media, and the volume of media must be arranged in a filter bed of suitable proportions to satisfy the hydraulic loading requirements.

For example, to size a standard trickling filter bed to accommodate a population of 2500 persons with a sewage flow of 100 gpcd and a sewage strength of 200 ppm 5-day B.O.D., we would first determine the total daily B.O.D. in the raw sewage by multiplying the population by the per capita sewage flow; dividing by one million; and multiplying this result by the weight of a gallon of water multiplied by the sewage strength in ppm B.O.D.:

$$\frac{2500 \times 100}{1{,}000{,}000} \times 8.34 \times 200 = 417 \text{ lbs. B.O.D. daily}$$

Table 1 indicates that 35 percent of the organic load is removed by primary sedimentation; therefore, only 65 percent or 271 lbs. B.O.D. will be applied to the filter. If the 400 lbs. per acre-foot loading is used, 271 lbs. will require 0.677 acre-feet or 29,490 cubic feet of media. If an application rate of 2.5 MGAD is used, a surface area of 4356 sq. ft. will be required and the filter will be 58′-6″ in diameter with a 6′-9″ media depth. This will be a well proportioned filter that will satisfy all loading requirements.

If the high capacity trickling filter method is used the procedure is quite similar, but the permissible organic loading is far greater than that of the low rate, resulting in a much smaller filter bed. Likewise, the hydraulic loading is decidedly greater for the high capacity filter than that of the low rate filter. Generally accepted practice is to use an organic loading of 3000 lbs. B.O.D. per acre-foot of filter media and a hydraulic loading ranging between 10 and 30 MGAD or more, depending upon the type and quantity of recirculation employed.

At this point, it should be noted that there are three accepted meth-

*Sanitary Engineer, Chicago, Illinois. Part 1 of this article began on page 76, December 1949 P/A.

**Biochemical Oxygen Demand (the quantity of oxygen required for biochemical oxidation in a given time at a given temperature, the determinations usually being for 5 days at 20C). Method of determining pollution load outlined in Part 1.

TABLE 2

AVERAGE REQUIREMENTS FOR VARIOUS TREATMENT UNITS

Type of Unit		TYPE OF TREATMENT			
		Primary	Std. Rate Trickling Filter	High-Capacity Trickling Filter	Activated Sludge
Primary Sedimentation*		2.0 hours detention	2.0 hours detention	2.0 hours detention	1.25 hours detention
Filter		—	See Note #1	See Note #1	—
Aeration Tank*		—	—	—	6.0 hours aeration See Note #2
Final Sedimentation*		—	1.5 hours detention	2.0 hours detention	2.0 hours detention
Sludge Digestion**	Heated	2-3 cu. ft./capita	3-4 cu. ft./capita	4-5 cu. ft./capita	4-6 cu. ft./capita
	Unheated	4-6 "	6-8 "	8-10 "	8-12 "
Sludge Drying**	Open	1.0 sq. ft./capita	1.25 sq. ft./capita	1.5 sq. ft./capita	1.75 sq. ft./capita
	Covered	0.75 "	1.0 "	1.25 "	1.25 "

* Based on the 16 hr. average rate of flow.
** Based on average State Health Dept. requirements. See text discussion.
Note #1—Filter capacity based upon applied B.O.D. loading. See text discussion.
Note #2—In some cases the air requirement and tank volume is based upon applied B.O.D. load. See text discussion.

ods of high-capacity filtration all of which will produce approximately comparable results.

Method A utilizes a four arm rotary distributor and is based upon heavy recirculation of unsettled filter effluent back to the surface of the filter. It claims as an advantage, that this method of recirculation places active bacterial life which has been developed within the body of the filter, back on the surface of the filter enhancing the growth and development of biological life within the filter, and thereby increasing its efficiency.

Method B utilizes a two or four arm rotary distributor and is based upon heavy recirculation of final clarifier effluent back to the filter surface, and unsettled filter effluent back to the primary tank influent. It claims as advantages more uniform flow through the primary tank and increased solids removal due to flocculating effect of the filter effluent solids introduced. It also claims filter efficiencies based upon dilution of the sewage applied to the filter with the final clarifier effluent.

Method C utilizes a four, six, or eight arm rotary distributor and differs in the method of applying the sewage to the bed. For normal sewage, no recirculation is required; but if necessary for hydraulic operation of the distributor, final clarifier effluent is cycled back to the filter influent during periods of low night flows. Filter efficiency is based upon the application of a very thin film of sewage to a maximum of filter area at the same moment. This method claims the lowest operating cost, the lowest construction cost, and equal or better filter efficiencies.

It will be observed that large quantities of sewage are recirculated in Methods A and B as opposed to little or no recirculation in Method C. Recirculation requires pumps, and the cost of pumps and current for operation must be considered in a cost comparison. In Method A there is some question regarding the permissible organic loading.

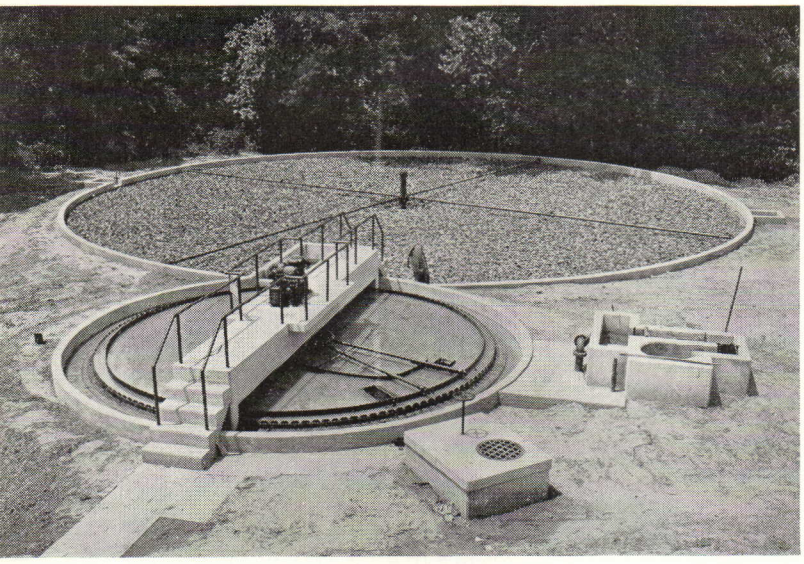
If a high-capacity filter to serve 2500 population was to be sized, as in the previous example, the same primary tank efficiency would apply and the applied organic load would be 271 lbs. At 3000 lbs. per acre-foot loading, only 2935 cu. ft. of filter media will be required and this media must be arranged in a bed having sufficient surface area to satisfy the hydraulic loading requirement. On the basis of a sewage flow of 100 gpcd, a daily total of 0.25 MGD will be distributed over the bed. Using the average application rate of 20 MGAD, the surface area required to satisfy this condition will be $\frac{0.25 \times 43560}{20} = 545$ sq. ft. The diameter of a filter bed having this surface area would be 26′-0″ and the media depth would be 5′-6″.

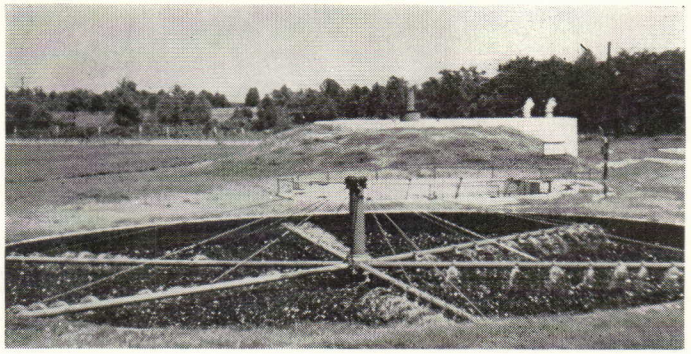
If recirculation of final effluent for dilution purposes is to be practiced, the final clarifier design must be based upon the average rate of sewage flow plus the quantity of recirculation proposed. If recirculation is to be employed only to maintain hydraulic operation of distributor, as in Method C, the final clarifier need not be enlarged.

In the activated sludge process the settling tanks would be sized to provide detention periods indicated in Table 2. If mechanical aeration is proposed, the aeration tank would also be sized to provide the aeration period noted in Table 2 and the aerator would be selected in accordance with the manufacturer's recommendations as to quantity and strength sewage to be handled. Aeration tanks in mechanical activated sludge plants are usually square with a minimum liquid depth of about 12 feet. While hopper bottoms are used in some cases, the tanks generally have flat bottoms with about a three foot fillet in the bottom corners. As previously stated, operation of the activated sludge process requires the return of a portion of the active sludge from the final settling tank to the aeration tank. This return is in the magnitude of 25 percent of the average daily sewage flow and the aeration tank capacity must be adjusted to accommodate the return activated sludge without decreasing the actual aeration period for the settled sewage.

An exception to this rule, however, is the "package" type activated sludge plant. Since these plants utilize a combined aeration and final settling tank, the return activated sludge is not actually drawn from one tank and discharged to another and, therefore, has no effect on the aeration period.

In the conventional activated sludge plant, the sludge is pumped from the final settling tank to a division box usually located at the inlet side of the aeration tanks. This box is arranged with weirs and dividing plates so that the proper quantity of sludge required for solids concentration can be controlled with reasonable accuracy. It is advisable to use duplicate sludge return pumps, at least one of which is equipped with a variable speed drive for further accuracy in the control of the quantity of sludge return.





Left: aerial view of standard rate trickling filter plant. In the foreground is a circular primary clarifier with surface skimming devices; background contains standard rate trickling filter with reaction type rotary distributor. Note that there are only four distributor arms and the large diameter of the bed.

Above: high capacity trickling filter plant. Foreground shows a reaction type rotary distributor on high capacity filter bed. Observe the multiple distributor arms with numerous adjustable nozzles and the small diameter of bed.

If diffused air aeration is to be used, the aeration tank capacity again will be based upon the required aeration period and diffuser medium selected with a view to ease of installation, effective diffusion of air through the tank, and ease of cleaning maintenance and replacement.

The tanks usually are rectangular with the depth about equal to the width, and the length in proportion to the available space. The aeration tanks also can be sized on the basis of approximately 30 cu. ft. of tank capacity per pound B.O.D. applied and air compressing equipment or blower equipment selected to supply 1.0 cfm of air per gpm of sewage flow at the average daily rate. Duplicate blowers are advisable to guard against possible failure of one unit.

Provision should be made for suitable laboratory facilities for control of the operation of an activated sludge plant. The sludge storage capacity figures in Table 2 are for average conditions and may be considered "rule of thumb" figures. They will meet the requirements of most State Health Departments.

Sludge drying beds generally are enclosed by concrete walls, the natural earth within the walls shaped to form ridge and furrow. A tile underdrain spaced not to exceed 20 feet on center is placed in each furrow and a layer of gravel or crushed stone, about six inches deep at the ridge, is placed over the underdrains, followed by smaller stone or pea gravel, then coarse sand and finally a layer of fine sand.

mechanical equipment

Though little or no mention has been made of the mechanical equipment necessary for the successful operation of the sewage treatment plant, its importance is obvious.

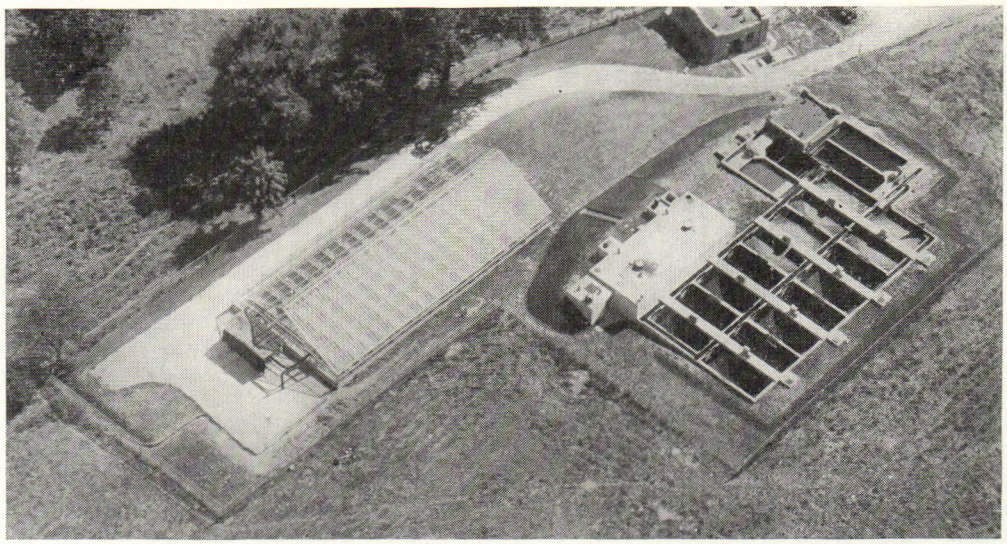
Equipment for screening the raw sewage includes: a mechanical rake for cleaning a bar screen set in a concrete channel; a rotating screen equipped with cutters which is also installed in the influent channel; a pneumatic ejector which discharges the screenings accumulated on a bar rack directly to the digester; and a revolving fine screen equipped with a screw conveyor for removal of the screened material.

For the settling tanks, there is an assortment of sludge concentrating and scum removing devices. For rectangular tanks, the sludge conveyor mechanism is most popular and is marketed by a number of reliable manufacturers. The device consists of a driving unit operating two endless strands of heavy chain over shafts and sprockets. Wooden flights the width of the tank are attached to the collector chain at intervals of approximately 10 feet and these flights travel slowly along the tank bottom scraping the settled sludge to a hopper located at the inlet end of the tank. In rectangular primary tanks, the flights travel along the liquid surface on the return trip, drawing the accumulated scum to a skimming pipe or trough located near the outlet end of the tank. In secondary tanks, scum removal is not necessary and the flights are not arranged to skim the surface of the tank.

For circular settling tanks, there are several good clarifier mechanisms all of which are worthy of consideration. There is the more or less conventional type consisting of a driving unit supported by a bridge of structural members spanning the tank, a vertical driving shaft to which is fixed a light truss equipped with sludge scraping blades. As the unit rotates, the settling of the blades draws the settled sludge to a centrally located sludge-well to which the sludge pumping unit is connected. The sewage enters the tank through a pipe connected to a centrally located stilling well and diffuses radially to the effluent weir at the tank periphery. Most of the circular clarifier mechanisms follow the above general principle except those employing the rim drive feature in which the driving unit is located at the rim of the tank and rotates the sludge by means of a chain drive or traction wheels.

Another type that has become very popular utilizes the conventional sludge scraping method, but introduces the sewage at the tank wall, behind an aluminum baffle or skirt suspended within the tank a short distance from the wall and extending all the way around. The effluent weir is located in the center of the tank and the weir length is equal to the length of the baffle or skirt. By this means, the sewage must travel circularly around the tank and at the same time, downward under the skirt, then upward to the weir.

For the trickling filter bed, the rotary distributor is universally accepted. This device consists of from two to sixteen distribution arms attached to a center rotating



Aerial view of an activated sludge plant with mechanical aeration. At left are glass covered sludge drying beds; the center structure with surrounding berm is the sludge digestion tank; in right foreground are eight aeration tanks, three of which are in operation; above aeration tanks, primary and final settling tanks are located.

Photos: courtesy of Yeomans Brothers

column by flanges and supporting guy rods or cables. Each distribution arm is equipped with spray nozzles, orifices, or spreader plates arranged to provide maximum bed coverage. The rotating column is carried through bearings on a stationary center column which in turn is pedestal mounted on a concrete pier at the bottom of the bed. There is a seal (usually mercury) between the stationary and rotating columns and the entire assembly is rotated by the reactive force of the sewage discharged from the spray nozzles. There are several variations of the rotary distributor including one which is rotated by means of an electric motor and speed reducing unit. Some have mechanical seals, others have oil seals and still others have double compartment arms for handling severe fluctuations in sewage flow. An interesting variation (recommended for small plants) is the distributor which is driven through a set of gears by a small water wheel. It has the advantage of distributing even the smallest sewage flow at a low head without the necessity of a dosing tank and siphon to build up the head required for the reaction type machine.

For the activated sludge plant, there are a number of good mechanical aerators and air diffusion systems.

Under the heading of mechanical aeration, there are at least five machines marketed by reliable manufacturers. Three of these machines utilize the updraft principle in which the mixed liquor is drawn up through a draft tube from the bottom of the aeration tank. Two of the machines have a revolving cone assembly at the liquor surface, which is fitted with vanes so arranged as to throw the liquid outward over the surface of the tank in two or more distinct layers or sheets, producing a raindrop effect and providing maximum contact of the liquid particles with the air.

The other machine of the updraft type has a propeller located about halfway down the tube which operates at a rather high speed, forcing the liquid upward against an inverted cone located above the liquid surface.

The two machines using the downdraft principle have propellers located about halfway down the tube operating in opposite directions. The sewage is forced down the tube at a greater rate than the capacity of the ports provided for admitting liquid at the tank surface. They have a pipe leading from a point above the propeller to the atmosphere and aeration is provided by means of the air drawn into the liquid by the action of the propeller.

Under the heading of diffused air aeration, there is a wide selection of diffuser plates and tubes on the market. All utilize a porous material located near the tank bottom to which compressed air is supplied through various types of headers and channels by blowers or compressors. The air emerges from the plates or tubes in millions of tiny bubbles which mix with the liquid and provide the oxygen necessary for operation of the process. At the same time, the rising bubbles cause a rotation of the tank contents providing the agitation necessary to prevent deposition of solid matter.

For the sludge digestion tank, good mechanical equipment is offered in two general classifications, known as the fixed cover (or roof) type and the floating cover type. The fixed cover type utilizes the concrete digester roof to support a driving unit which slowly rotates a sludge stirring assembly at the bottom of the tank and scum breaking arms located immediately under the roof of the tank. The sludge stirring assembly is very similar to the sludge scraper in a circular settling tank and the scum breaker has stationary fingers set in the concrete roof and rotating arms with fingers spaced to pass through those set in the roof. In this way, the scum is constantly mixed with the digester liquid and large accumulations of scum are prevented.

The floating cover type consists of a welded steel dome-like roof built up of trusses and steel plate. It floats on the surface of the digesting material and depends upon submergence for the prevention of scum formation. It has no sludge stirring mechanism and the cover rises and falls with the level of the material in the tank.

All types of pumping equipment are available, including sludge pumps, centrifugal sewage pumps, pneumatic sewage ejectors, and all manner of clear water pumps. There are also chemical feeders and mixers, flow meters, gas protective devices, laboratory equipment, and all of the appurtenances that are usually considered incidental to the sewage treatment plant.

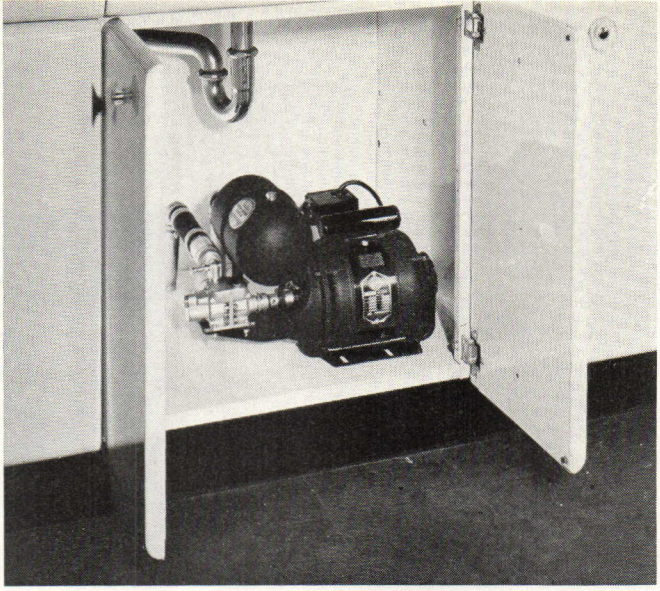
p/a products

develops double acting power hinge for heavy glass doors

The first double-acting automatic power hinge to open and close heavy glass doors has been developed by the Pittsburgh Plate Glass Company. Operation is controlled by a hidden micro-switch so sensitive that the moment the door handle is touched, even lightly, the door begins to open by hydraulic action. The opening may be actuated with either a slight push or pull on the handle. If the door has only partially closed before another person starts through, it will open again just as soon as the push bar is touched. Because it operates in both directions and functions slowly and smoothly, it can be used on an entrance having a single door. In the event of a power failure, the door may be opened manually.

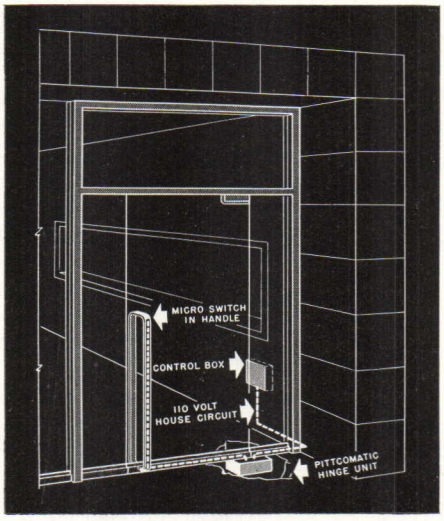
A small electric-hydraulic apparatus controls 250-pound Herculite doors with ease. This invisible doorman does not require excessive space, major structural changes, or air compressors for operation. A one-third horsepower motor completely mechanizes the whole process.

Known as the Pittcomatic unit, this device is reported to cost only a fraction as much as electric-eye openers to install; power requirements are no more than for a small home refrigerator. The control panel, no larger than a home fuse box, provides finger tip control for speed and an almost unlimited range of operational variations to meet specific needs of individual installations. Pittsburgh Plate Glass Company, 632 Duquesne Way, Pittsburgh 22, Pa.



system pumps water direct to faucets; eliminates storage tank

A new shallow well water system, designed for rural and suburban use, has been announced by the Fadden Pump Company. This method eliminates the conventional water storage tank and permits direct drawing of fresh water from wells. Operating on a new patented pumping principle, this system has a rated capacity of 250 gallons per hour at 25 ft. suction lift and 20 lbs. pressure.



Self priming and completely automatic, it provides a steady flow of fresh water with the opening of one or more taps. Rubber impellers, actuated by stainless steel eccentrics on a rotating shaft, provide the pumping action. They do not rotate, but oscillate against the sides of the pump casing. An automatic by-pass regulator permits a variable flow of water from the taps under constant pressure. Lubrication is supplied by the water that is pumped. Because of the small operating parts, resilient rubber mounting, and slow operating speed (1750 rpm), unusually quiet operation is claimed for this system. Powered by a ¼ horsepower heavy duty AC motor with flexible drive coupling to the pump, the unit weighs only 36 lbs. and measures 17″ x 11″ x 9½″. Fadden Pump Company, 740 N. Washington Avenue, Minneapolis, Minn.

low cost flooring material

Roc-Wood is a low cost flooring material that goes on with a trowel. Resembling cork in appearance, this material is said to be as comfortable to walk on as wood and to be as durable as long-wearing rock. The product is made of hardwood fibres chemically treated and bonded together with an indestructible plastic binder. Roc-Wood hardens by chemical action and not by evaporation.

This flooring material may be placed anywhere that conventional materials can be laid and in addition may be placed where others are unsatisfactory. It goes over rough, uneven surfaces without underlayments. The floor sets in about four hours and after 24, is ready for unlimited use. Floors of this material are said to be: resilient, skid-proof, flameproof, termite and rot proof, acid and chemical resistant. Roc-Wood Flooring, 364 East 23 Street, Chicago 16, Ill.

this month's products

air and temperature control

Model 365 Floor Furnace: gas-fired unit designed for suspension at floor level, with choice of manual or fully automatic controls; over-all depth only 25"; available in 35,000, 50,000, and 65,000 Btu. Bryant Heater Co., 17825 St. Clair Ave., Cleveland 10, Ohio.

Mor-Sun Gas Conversion Burner: equipped with single port, nonclog type burner, simple demountable pilot assembly with electric shutoff valve, accurate gas pressure regulator, adjustable air shutters, and thermostat. Available for natural, mixed, or manufactured gas, with 75,000 to 150,000 Btu per hr. inputs. Morrison Steel Products, Inc., 601 Amherst, Buffalo, N. Y.

Radivector: vented gas heater combining advantages of floor furnace and wall heater, providing delivery of radiated and convected heat through uniquely constructed heating element. Approved by A.G.A. for second-floor installation; also easy to install in concrete slab construction. Available only in 45,000 Btu at present. Radivector, Inc., 5341 San Fernando Rd. West, Los Angeles 39, Calif.

Gas Fired Warm Air Units: two units—gravity furnace and winter air conditioner—have heavy gage steel heat exchangers and are finished with green baked enamel steel jackets. Gravity furnace comes in two sizes: 70,000 and 90,000 Btu/hour; forced warm air unit also produced in two sizes: 85,000 and 110,000 Btu/hour. Both units designed for low cost, competitive homes and housing developments. Richmond Radiator Co., 19 E. 47 St., N. Y.

Wall-Fin Radiation: flexible, low-cost system of wall-fin radiation for industrial and commercial applications. Easily installed cabinets in standard unit lengths that lock together with push-in rivets; hangers ride with expansion and contraction of heating element, preventing damage from buckling, loosened supports, and other stresses. The Trane Co., La Crosse, Wis.

Utility Ventilating Set: completely redesigned model for ventilation of schools, apartments, offices, hotels, and other buildings. Newly designed control permits easy adjustment of air volume over large area while maintaining efficiency. Sizes range from 800 cfm to 18,000 cfm at various speeds and pressures. U. S. Air Conditioning Corp., Como Ave., S.E. & 33 St., Minneapolis, Minn.

construction

Acrominum: lightweight aluminum alloy scaffold clamp and pipe, with load capacity equal to steel; scaffolding erection costs claimed to be reduced by 30%, transportation costs by 65.2%. Entirely rustless, no maintenance costs. Acrow, Inc., 420 Lexington Ave., New York, N. Y.

Aluma-Life Roof: lightweight roofing material utilizing aluminum foil between cotton gum base layers and finished with coating of marble or granite chips. "A" fire rating, F.H.A. approved; economical, easily applied; all metal flashing on chimneys and valleys eliminated. Aluminum Building Products, Inc., Route 1, Atlantic Blvd., Jacksonville, Fla.

Flexicore Split System of Warm-Air Panel Heating: heating system utilizing hollow core, precast concrete floor slabs that serve as both warm air ducts and panel heating unit. Slabs manufactured in 6" x 12" cross section; lengths may be specified in inch variations up to 22'-6". System can be used in homes, apartments, and almost any other type of building. Flexicore Co., Inc., 1932 E. Monument Ave., Dayton 1, Ohio.

Screwlock: fireproof metal furring channel for all types of suspended ceiling construction and for fastening materials with screws. Channel is wide enough (2¾") to meet requirements for joining acoustical tile or other material end to end or side by side; hanger clip attaches channel to wood, steel, or masonry supporting members; coupling joins channel lengths. Sanymetal Products Co., Inc., Nailock Steel Div., 1698 Urbana Rd., Cleveland, Ohio.

doors and windows

"Silent" Sliding Door Hardware: two new series, both featuring nylon outer race ball-bearing rollers; no noisy metal-to-metal contact between stationary and moving hanger parts. Series No. 1600 (single track) for vanishing interior doors and bi-parting closet and wardrobe doors up to 1⅜" thickness; No. 1700 series (double track) recommended for bi-passing doors. Grant Pulley & Hardware Co., Broadway at 57 St., Woodside, N. Y.

Ra-Tox Flexible Door: accordion type door made of strong basswood splints woven together vertically with tough seine net twine; designed for walk-in closets, room partitions, and similar applications. Suspends from ordinary traverse channel, reducing installation time to minimum. Available in range of 11 lacquer enamel colors, including natural wood finish. Hough Shade Corp., Janesville, Wis.

Mecco Grille: rolling grille for use in restricted or locked-off areas in all types of stores, public and commercial buildings, entrances of parks, docks, etc. Grillwork of special design shuts out traffic without disturbing air flow or cutting off light and vision. Available in specified sizes, with manual chain and gear hand crank or motor operation. Moeschl-Edwards Corrugating Co., Covington, Ky.

Kaylo Fire Door: flush-type wood-faced door with one-hour fire rating provided by core of lightweight inorganic insulation; resistant to moisture, rot, termites. Designed principally for schools, hotels, and other public structures; may also be used in residences as door connecting garage to home. Owens-Illinois Glass Co., Kaylo Div., Ohio Bank Bldg., Toledo 1, Ohio.

Steel Lintel: new stock item added to large line of steel building materials. Corrugated for extra strength, available in sizes of 6" multiples for easy ordering. Steelcraft Mfg. Co., Rossmoyne, Ohio.

electrical equipment, lighting

Adapt-A-Unit: new line of display fixtures for accent lighting. Completely interchangeable basic parts, affording full selection in any desired lighting arrangement. Double-ball swivel provides 360° horizontal and 170° vertical focus. Satin-aluminum finish protected by lacquer to prevent discoloration of blistering from operational heat. Amplex Corp., 111 Water St., Brooklyn, N. Y.

Fluorescent Lighting Fixtures: four commercial type, instant-start, slimline units, primarily for lighting merchandise in grocery, drug, and department stores. In both 4' and 8' lengths with either 2 or 4 fluorescent lamps. Can be mounted in continuous rows to form unbroken lines of light. Sylvania Electric Products, Inc., 500 Fifth Ave., New York, N. Y.

finishers and protectors

Plasterbond: dampproof, liquid asphalt compound, for coating interior of masonry walls above grade; forms elastic film that permits plastering after 24 hours. Another dampproofing material, **Foundation Coating,** resists seepage of underground moisture through exterior masonry or concrete walls below grade. Both products ready to use, easily applied by brush or compressed air spray. Philip Carey Mfg. Co., Lockland Station, Cincinnati 15, Ohio.

Binderseal and Granules: spray-applied plastic adhesive seal coat followed by colored mineral granule application for weatherproofing and restoring unsightly, leaky masonry walls, roofs, tanks, etc. Flintkote Co., 30 Rockefeller Plaza, New York 20, N. Y.

Cocoon: vinyl plastic waterproofing coat, applied by spraying, particularly suitable for weatherproofing and repairing old roofs without necessity of removing old roof coating. R. M. Hollingshead Corp., 840 Cooper St., Camden 2, N. J.

insulation

Rock Wool Mat-Thick Sealed Blanket: said to be lightest rock wool insulating blanket on market, permitting easier, faster installation. Designed to meet, over widest possible area, F.H.A. requirements and Building Code standards for vapor control and fire-resistance. Produced in 15" widths and 8' lengths; larger dimensions available on special order. National Gypsum Co., 325 Delaware Ave., Buffalo 2, N. Y.

interior furnishings

Streamotife: line of drawer and cabinet door pulls of modern design, fabricated of solid die-cast metal, finished in chrome plate. Available in two companion models, identical in contour, but differing in size. Burkard Mfg. Co., 7356 Ten Mile Rd., Centerline, Mich.

5000 Series Desks: new, improved units for office use; linoleum desk tops in mist green color developed by lighting authorities; center drawer built into deep roll of top, providing more vertical knee space, important factor in new low desk height of 29". Republic Steel Corp., Berger Mfg. Div., 3100 E. 45 St., Cleveland 27, Ohio.

sanitary equipment, water supply, drainage

Triomatic: automatic, residential gas incinerator for wall installation in new and existing homes; consumes garbage, sweepings, etc., with automatic auxiliary gas burner providing flame necessary for burning exceptionally wet loads. Constructed with cast iron grates and high temperature insulation. Incinerator Products Co., 667 Post Ave. S., Detroit 17, Mich.

specialized equipment

Radio and Sound Distribution Systems: especially designed for hotel installations; employs up to six program channels, with latest electronic equipment for entertainment, administration, and public address uses. System built up around standard tuner kit which includes FM and AM radio reception, antenna, amplifier unit, cabinet, speaker, and microphone; designed for either revenue or non-revenue operation. Radio Corp. of America, Camden, N. J.

No. 5650 Bobtail: newly improved soda fountain, constructed of stainless steel; separate refrigeration units, instantaneous water cooler, bottle storage and syrup rail with concealed refrigeration coils, one-piece heavy gage stainless steel top with corrugated area and individual drain for waste liquids. Stanley Knight Corp., 3430 N. Pulaski Rd., Chicago 41, Ill.

surfacing materials

Cork Flooring: new 3/16" cork tile flooring now available in mass market price range for first time; resilient under foot, insulating, and fire resistant. Comes in random shades, ranging from light oak to dark walnut. Available in standard sizes of 6" x 6", 12" x 12", and 6" x 12", in waxed or natural finish. David E. Kennedy, Inc., 58 Second Ave., Brooklyn 15, N. Y.

Two New Hardboards: ¼" **Panelwood,** developed for permanent wall and ceiling installations; supplements 3/16" Panelwood for quality open stud applications. Available in 4' x 8', 4' x 10', and 4' x 12' lengths. Also ¼" **Underlayment,** for application beneath linoleum, asphalt tile, and other floor coverings; durable, easily applied, bridges any irregularities in sub-floor. In two sizes: 3' x 4' and 4' x 4'. Masonite Corp., 111 W. Washington St., Chicago 2, Ill.

Micarta: high pressure plastic, bonded to plywood, now available in new sizes which virtually eliminate all waste. Sizes include: 48" x 96" for walls, wainscots, and general use; 30" x 96" for counterfronts, wide counter tops, sink tops with back splashes; 30" x 60" for table and built-in dinette tops; and 24" x 96" for counter tops. U. S. Plywood Corp., 55 W. 44 St., New York 18, N. Y.

p/a

MANUFACTURERS' LITERATURE

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

AIR AND TEMPERATURE CONTROL

1-33. Electromaze (EMC-250), 8-p. illus. catalog describing two-stage electrostatic precipitator, designed to remove 90% or more air-borne dust, soot, smoke, and other particle impurities; diffuser, ionizing section, and collector plate section built into single unit using single high voltage, making each cell complete filter in itself. Operation, advantages, isometric view, technical data, capacities, dimensions, weight. Air-Maze Corp.

1-34. Chelsea Fan and Blower Catalog, 22-p. illus. catalog on fans, blowers, and louvers for every requirement. Types, dimensions, specifications, diagrams, price list. Chelsea Fan & Blower Co., Inc.

1-35. Transite Flue Pipe, AIA 30-D-4 (Tr-84A), 4-p. illus. bulletin on rustproof flue pipe, made of nonmetallic material, for venting domestic gas-burning appliances. Complete details of sizes, dimensions, and weights of round and oval pipe and fittings. Johns-Manville Corp.

★ **1-36. Standards, Definitions, Terms, and Test Codes for Centrifugal, Axial, and Propeller Fans** (110), 32-p. bulletin giving classification of air-moving equipment, terms, and definitions used by fan industry, standard codes for air and sound measurements, tables of standard sizes, illustrations. National Association of Fan Mfrs., Inc.

1-37. Unit Ventilator That Sets a New Standard of Classroom Comfort (261—Section A), 16-p. illus. booklet describing Syncretizer unit ventilator with built-in comfort control which automatically adjusts minimum air-stream temperature in relation to outdoor temperatures, providing proper thermal environment in room. Classroom heating requirements, advantages, operation, drawings, types, sizes. John J. Nesbitt, Inc.

1-38. Cooling and Heating Load Estimate Sheet (Form 389-A), Sheets printed on 8½" x 11" transparent bond to conserve file space, and to permit ready blueprint and black line reproduction; punched for ring binding. Trane Co. (Pads of 50 priced at 50 cents per pad; make check or money order payable to Trane Co.)

CONSTRUCTION

3-22. Colprovia Groundseal, 6-p. illus. folder describing prepared asphalt composition material, for use as insulation against ground dampness; applied directly on earth of building site, over which any type floor may be built. Description, advantages, application photos. Colprovia Roads, Inc.

3-23. Estimating Guide for Kaiser Aluminum Roofing (CR111), figuring sheet and accessory requirements for corrugated aluminum roofing and siding. Diagrams show measurements required in estimating for all types of roofs, rafter length table. Kaiser Aluminum & Chemical Sales, Inc.

3-24. Kalman Floors, 8-p. illus. bulletin on special method of installing granolithic cement flooring producing uniformly hard, wear-resistant surface. Procedure, advantages, maintenance, general data. Kalman Floor Co., Inc.

3-25. Concrete Form Presdwood, AIA 4-D, 11-p. booklet describing grainless, all-wood fiber board for use on practically all types of concrete structures. Physical characteristics, advantages, specifications, typical applications, deflection chart. Masonite Corp.

3-26. Reynolds Architectural Aluminum, AIA 15, 53-p. portfolio covering extruded shapes, embossed sheet, perforated sheet, plain sheet and plate, tubing, pipe, and other aluminum products for architectural use. Assembly drawings, details, three indexes. Reynolds Metals Co.

3-27. School Buildings Your Tax Dollars Can Afford, 22-p. illus. booklet outlining advantages of wood frame construction for one-story schools. Comparative costs, safety factors, decay and termite prevention methods, modern timber construction, typical truss designs, photos. Timber Engineering Co.

3-28. The Lightweight Concrete Aggregate, 8-p. illus. brochure on lightweight cellular aggregate; when used in concrete creates low-cost building material having flexural and bond strength, high fire resistance, increased thermal insulation and sound absorption. Characteristics, design factors and mix data table, physical properties of concrete masonry units, floor and roof fill specifications, description of acoustical ceiling units. Waylite Co.

DOORS AND WINDOWS

4-38. Introducing the Outstanding 1950 Line of Steel Doors, 4-p. illus. folder describing all steel or aluminum garage doors for 16′ openings; riveted and welded, with extra rivets at all stress points; will not sag or warp. Construction details, shipping data. Aluminum Products Corp.

4-38a. Exquisite Beauty for Generations, AIA 19 E, 8-p. illus. booklet presenting complete line of hollow and solid core flush doors, finished in varieties of wood veneers. General features, examples of wood in color, dimensions. General Plywood Corp.

Folder on combination sash-balance and weatherstrip; unit eliminates box-frame cords, weights, pulleys, is easy to install. Frame details, window sections. Other folder gives instructions for installation of sash-balance. Photos, millwork information. Master Metal Strip Service, Inc.:

4-39. Master No-Draft Sash Balance
4-40. Instructions for Installing the Master No-Draft Sash Balance

4-41. Coolite. AIA 25A-3-5-6, 14-p. illus. booklet on heat absorbing and glare reducing glass of cool blue-green color, for use in commercial and industrial buildings. Properties, specification data, general information, typical installation photos. Mississippi Glass Co.

4-42. Architectural Metal Products, AIA 16A, 16B, 8-p. brochure illustrating combination metal door frames, jambs, trim, Kalamein doors, tin clad fire doors. Construction details, suggested specifications. Overly Mfg. Co.

4-43. Jalousies, 4-p. illus. folder and two drawings (Nos. 7 and 111a), illustrating weathertight wood jalousies for windows and doors; adjustable louvers may be moved at any angle or locked securely in closed position. Description, general data, specifications, details, sizes, photos. Pro-Tect-U Jalousies Corp.

Four folders describing four types of overhead doors: two industrial and commercial, other two, residential garage doors. Construction, features, details, installation requirements, general specifications, available sizes. Rowe Mfg. Co.:

4-44. Extension Spring Overhead Type Doors (D281)
4-45. Twin Torsion Spring Overhead Type Doors (D-282)
4-46. For the Modern Home Garage (D-280)
4-47. Over-All Headroom! (293)

ELECTRICAL EQUIPMENT, LIGHTING

5-24. Plexoline (DB-28), 12-p. illus. booklet describing complete lighting system composed of fluorescent and incandescent fixtures; when used in combination, wide range of patterns including curves, circles, and any angular arrangement may be achieved. Typical combinations, sizes and dimensions of individual units, advantages, maintenance. Day-Brite Lighting, Inc.

★ **5-25. How to Lay Out and Estimate G-E Fiberduct Raceways** (18-120 UF), 12-p. manual containing data on where and how to use new type of electrical raceway system. Step-by-step procedures for estimating

and figuring materials, short specifications, diagrams, photos, General Electric Co.

5-26. Lite-Blox, AIA 31-F-23 (869), 20-p. illus. bulletin on line of recessed troffers, designed for modular co-ordination; may be used as individual units, in continuous rows, or in patterns. Types, construction, accessories, coefficients, specifying tables, optional features, installation details. Edwin F. Guth Co.

Three folders on commercial and industrial fluorescent lighting fixtures. Types, suggested mounting arrangements, coefficients, drawings. Also, 12-p. booklet on five types of classroom fluorescent fixtures. Advantages, materials, dimensions. Smithcraft Lighting Division:

5-27. Louverlite Slimline
5-28. Architectural Lighting
5-29. Introducing the Director (500A)
5-30. School Lighting (460A)

5-31. Lighting Transformers (FL-135), 30-p. illus. bulletin on lighting transformers for hot and cold cathode lamps, thinline lamps, and mercury vapor lamps. Lighting fundamentals, operation, lighting calculations, coefficients, recommended foot-candle levels, dimensional data. Sola Electric Co.

FINISHERS AND PROTECTORS

6-8. Dupont Color Conditioning (A-9624), 32-p. illus. booklet on scientific application of color in work areas, both commercial and industrial, for improved human efficiency and morale. Typical color applications, color suggestions for safety precautions. E. I. du Pont de Nemours & Co.

INSULATION (THERMAL, ACOUSTIC)

9-23. Acousti-Line (5104), 8-p. illus. brochure describing new type of suspended acoustical ceiling construction, allowing instant accessibility through any point in ceiling, adaptable to all modern lighting systems and fixtures. Advantages, details, specifications, typical installations. Celotex Corp.

9-24. Seal-Foil, pamphlet describing insulating rock wool batt with pure aluminum foil backing, available at reduced prices. Advantages, economy factor, installation data. Sealtite Insulation Mfg. Corp.

INTERIOR FURNISHINGS

9-25. As the Twig is Bent, 4-p. folder presenting line of adjustable desk-chair units in natural finish woods and metal parts, for classrooms, lecture halls, etc. Description and illustrations of eight models, required floor space, functional accessories available. Bargen-Built Industries, Inc.

SANITATION, WATER SUPPLY, DRAINAGE

19-36. Murco Grease Traps (GT-350), 12-p. illus. booklet. Cast iron grease traps, simplified construction, achieving over 90% efficiency in grease retention; patented vent prevents siphoning of grease, permits escape of accumulated gases from trap to vent stack. Types, construction, capacity tables, installation diagram, selection table. D. J. Murray Mfg. Co.

19-37. Richmond Plumbing Fixtures (SF-50-P), 8-p. catalog presenting line of plumbing fixtures, including baths, lavatories, water closets, urinals, sinks, and trays, in enameled cast iron and vitreous china. Dimensional data, illustrations. Richmond Radiator Co.

SPECIALIZED EQUIPMENT

19-38. P-A-X Interior Telephone Systems (1703), 4-p. circular describing unit consisting of central automatic switchboard, operating from direct current supplied by battery eliminator or storage battery and charger, required number of automatic dial-type phones, and wiring between telephones and switchboard; smaller systems may be replaced by larger systems without disturbing phones and wiring. Advantages, installation data, capacities, special services. Automatic Electric Sales Corp.

19-39. When Fire Strikes, 32-p. illus. booklet on different types of fire protection equipment for all types of buildings. Devices for fire detection, local alarms, operation of other safeguards such as fire doors, damper controls, fan motor switches, etc.; protection of fire hazard areas, dry-type automatic sprinkler systems; installations. Grinnell Co., Inc.

19-40. Select-O-Phone (816), 8-p. illus. bulletin describing private automatic telephone system for executive and key personnel use; eliminates tieup of private exchange switchboard with inside calls; for any business requiring intercommunication between 5 to 36 desks. Advantages, apparatus, model layout. Kellogg Switchboard & Supply Co.

19-41. Program Master (4507-H187), 4-p. illus. folder outlining features of complete central sound control system for schools, hospitals, stores, hotels, factories, etc.; operates through loudspeaker outlets for distribution of sound to various selected rooms or areas. Models, optional services. Operadio Mfg. Co.

19-42. Sound Products (218), 84-p. illus. catalog describing line of microphones, amplifiers, speakers, program control cabinets and consoles, and sound specialty products. Uses, advantages, specifications, directional characteristics, accessories, index. Radio Corp. of America. (50 cents per copy; make check or money order payable to Radio Corp. of America.)

19-43. Vocatron, 4-p. illus. folder on compact, inexpensive, two-way wireless intercommunicator for residences, restaurants, factories, offices, etc.; plugs into any existing electric light circuit, immediately ready for speaking or listening to any other set within reasonable radius (under some circumstances, one mile). Uses, operation, general data. Vocaline Co. of America, Inc.

SURFACING MATERIALS

19-44. Something New in Oak Floors (Key 95), 6-p. illus. folder in color, illustrating random length oak flooring with beveled edges, baked surface finish that will not scratch, chip, or wear away, and walnut pegs, glued-in and also prefinished. Typical room installations, technical data. E. L. Bruce Co.

19-45. Floors of Achievement, 16-p. catalog on various types of plastic and asphalt tile, composition flooring, stair tread and nosing, shuffle board patterns and other specialties. Color charts, dimensional data, maintenance materials, typical installations. Thos. J. Moulding Floor Mfg. Co.

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I should like a copy of each piece of Manufacturers' Literature circled below.
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4-40	4-41	4-42	4-43	4-44	4-45	4-46	4-47
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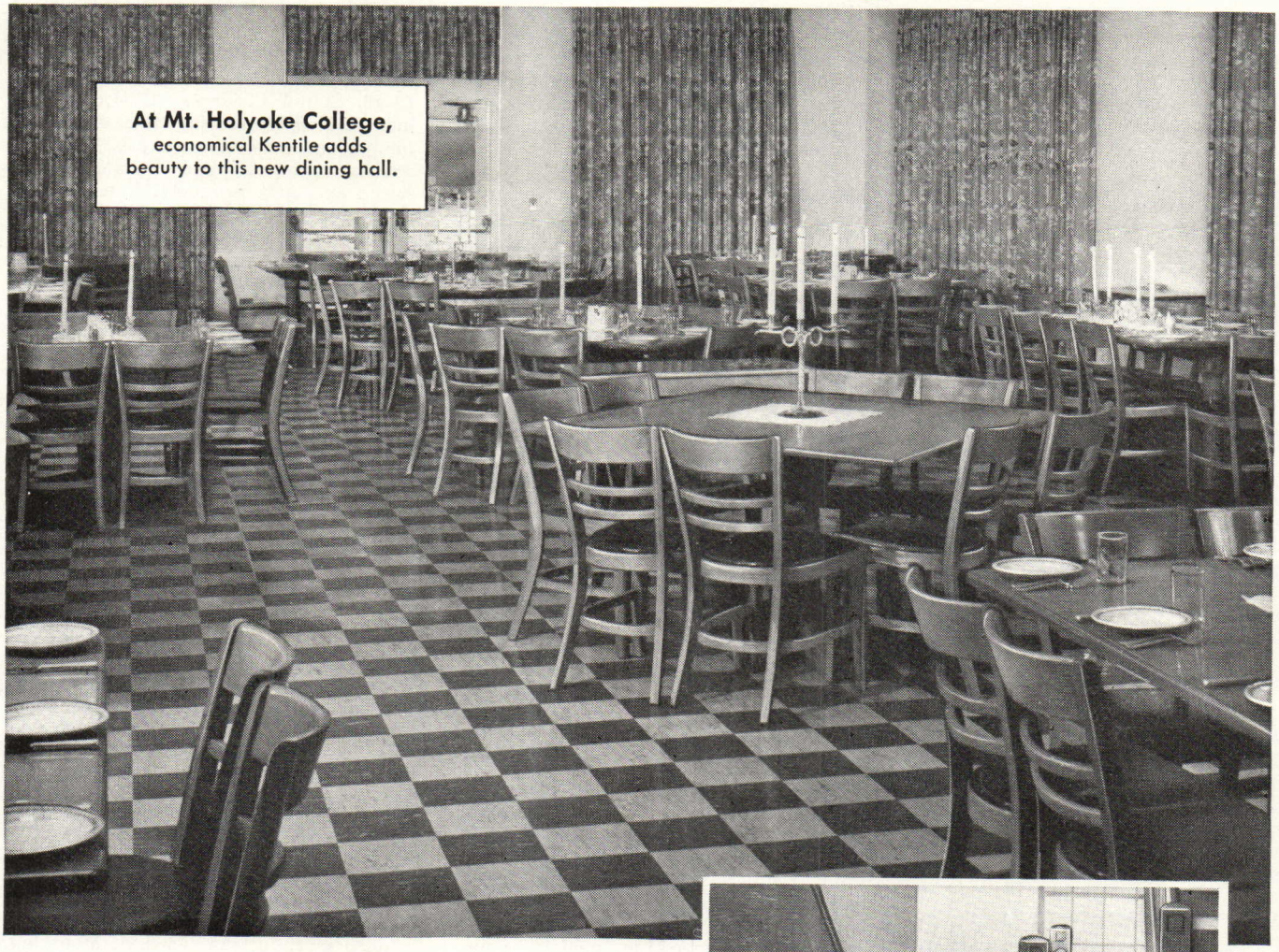
New beauty for school and college installations at lower cost—with KENTILE



6 Reasons Why Leading Architects Specify KENTILE

LOW COST Inexpensive to buy...to install...to maintain.

BEAUTY Colorful Kentile floors can be designed in a wide variety of rich colors.

DURABILITY Colors can't wear off. They go clear through to the back of each tile.

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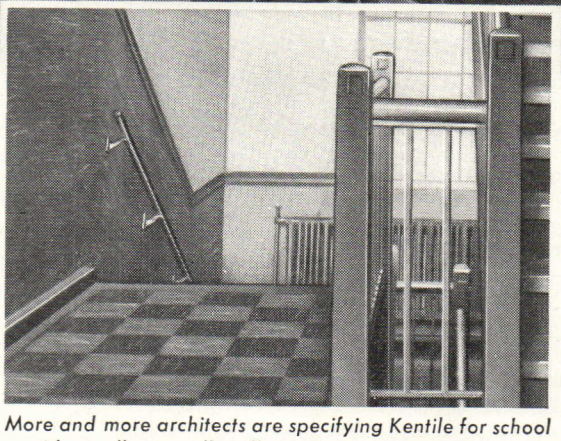
QUIET Kentile is a resilient material that cuts down noise and clatter of footsteps.

EASY TO CLEAN Mild soap and water keeps Kentile clean...occasional no-rub waxings keep it gleaming.



More and more architects are specifying Kentile for school corridor walls, as well as floors.

• For institutions, and for private homes, Kentile offers unique advantages that are quickly appreciated by your clients.

Kentile can be installed on concrete in direct contact with the ground. It can be laid over double T&G floors, or directly over plywood...and is also ideally suited for installation on radiant heated concrete slabs.

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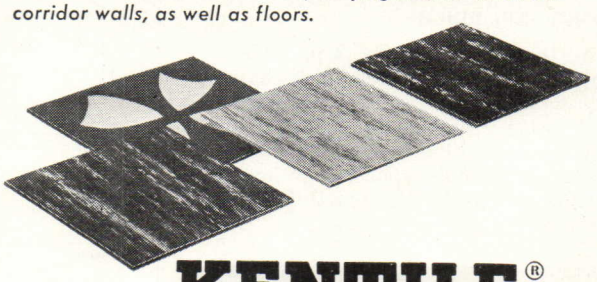

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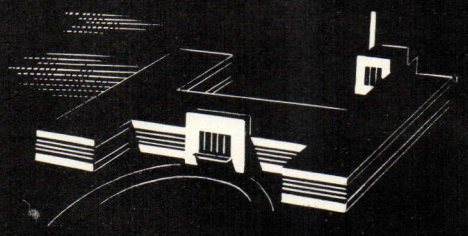

Will your new school be obsolete?

There's danger that half the schools being built this year will not be provided with adequate ventilation systems. What a waste! Fresh, clean air makes young minds alert to learning. Individual classroom ventilation is not only economical—it is the only way to make certain of fresh air at constant, automatically controlled temperature. Because only one system offers the highest performance standards ever engineered, your children's schools should have

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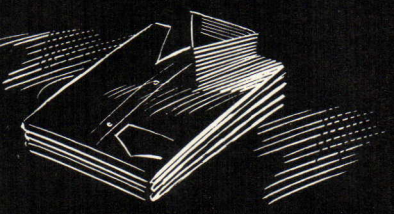

How many shirts should a store give away? . . .

he men's furnishing department is no lace for a dirty shirt! What happens? hirts soiled by dust in the air sell at ⅓ to ½ off—lose money for the store owner. One great department store says that avings on markdowns alone paid for an merican Air Filtering system the first year.

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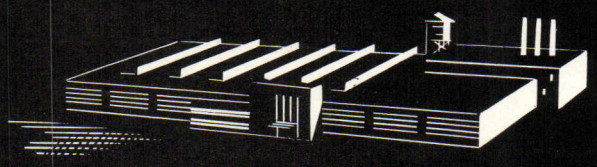

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or your air problem, see how American Air Filter equipment can solve it—and save! (To American ir Filter's facilities have recently been added the ating and heating products of the Herman Nelson Division, widely respected in schools, industry and other fields.) When you can see or smell air — when you are air conscious, remember — TODAY'S BEST BUY IS BETTER AIR!

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In America no school building should be obsolete the day its front doors op

HERMAN NELSON DIVISION
AMERICAN AIR FILTER CO., INC.
MOLINE, ILLINOIS

IF a schoolroom is without adequate ventilating equipment, it is obsolete—no matter if it were built yesterday or in 1900. Consider this, please.

If the average businessman were to spend only a few hours in the average American school, he'd soon be on his feet shouting, "Let's have some fresh air in here."

If the average mother were to spend the same time there, by the end of the day she'd have organized a committee with other mothers to do something about it.

Architects realize this, but many people don't. And in the desire to keep building budgets at a minimum, too often the best way of heating and ventilating must give way to a system inadequate and obsolete.

To give what assistance it can to the architect and school official, the makers of the Herman Nelson Unit Ventilator are publicizing this danger to the parents of school children all over America. They are widely distributing a booklet, "Plain Talk About School Ventilation". They are presenting the facts in opinion-molding national magazines.

We are, for instance, telling why each classroom needs its *own* ventilating system; how thirty or more school children arrive in a schoolroom where the temperature is 70°. How each child is an individual radiator of 20 square feet—thus totalling 600 feet of radiation at 97°F. How little eyes get sleepy, how pungency offends the nostrils, how small heads start to nod, how the teacher's words begin to fall on dull ears and listless brains.

We have seen how, when school is out, students just naturally "come to life" the minute they hit the outdoor, fresh air. The Herman Nelson Division of the American Air Filter Company is trying to help children, school officials, the school teacher and the heating and ventilating industry by making the facts known.

very new
lass room
hould be
modern

Good
entilation
is a
odern aid
to better
learning

an architect says:

"With modern knowledge of air treatment in schools, there is *no reason* why a classroom should be overheated or underheated, or the air foul. Unit ventilation is the answer."

a school superintendent says:

"My job requires me to pay more visits to the schoolroom than the average parent. I know that if more parents did visit schools, school ventilation would be better."

a teacher says:

"I just wish all parents could endure for one day what the children and I put up with almost every day. It's no wonder children become listless and dull when the ventilation is inadequate."

a P.T.A. committee chairman says:

"There isn't a better project for parent-teacher groups to take up than proper ventilation in schools. Not until every classroom in the entire system is provided with fresh air of the proper temperature is our job done."

a mother says:

"We've spent a lot of money, time and thought to make the childrens' and our home bright, sunshiny and healthful to live in. How then, can we fail to think of the same things about the school they spend almost every day in."

a child says:

"I like to run and play outdoors. But our schoolroom makes me feel sleepy."

a school board president says:

"School is a training place for mind and body. It strikes me as an incongruity that the same board members who are willing to spend thousands on a gymnasium, could, by penny-pinching, not allow for the best kind of ventilation."

a school nurse says:

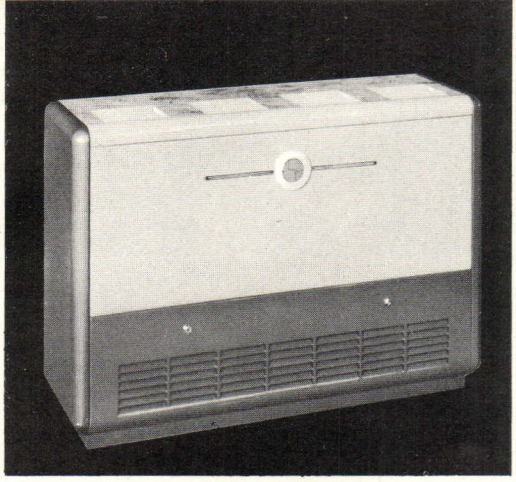
"I'm sure children would have fewer colds if the air in schoolrooms were kept at a more constant temperature. First it's comfortable, then it's overheated, then the windows fly open and it's too cold—then the whole process is repeated. Cruelty to children, I call it."

a psychologist says:

"You can't expect children to learn things when they are undergoing physical discomfort. A mucky, stagnant classroom is not the place to make young minds bright, alert and eager to learn."

a father says:

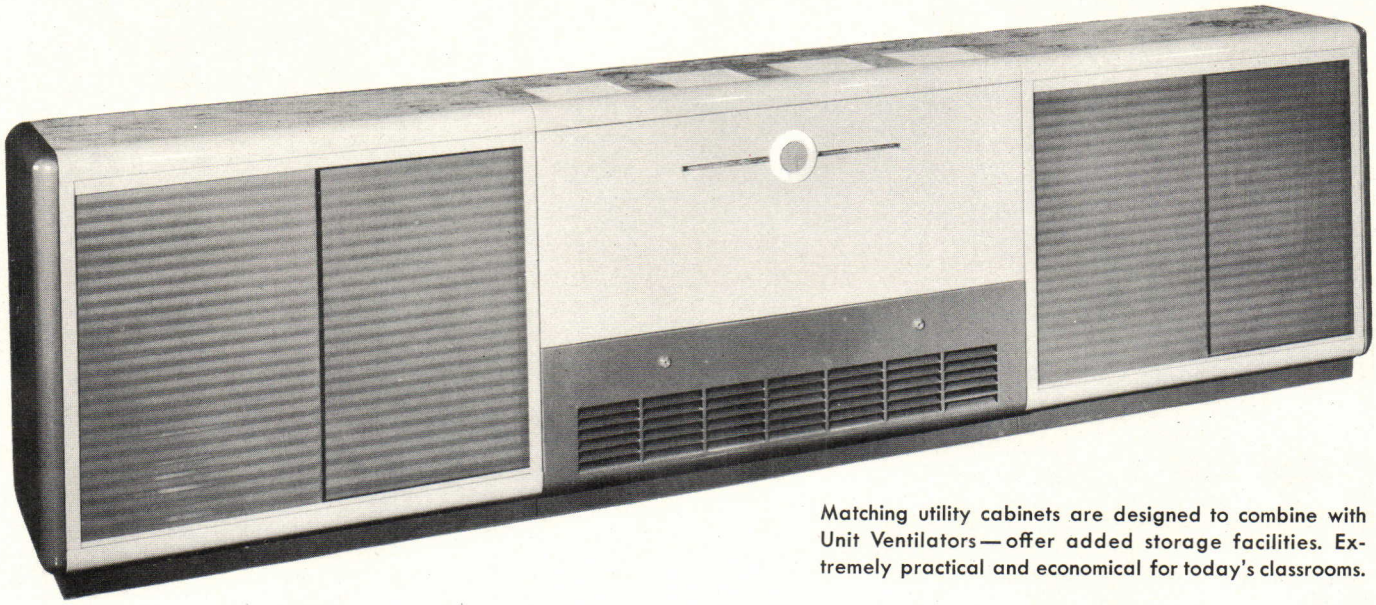
"If my office lacked decent ventilation the way my little girl's school does, I'd raise the roof."



The Herman Nelson Ventilator has a pleasing design with positive safety features. It can be serviced simply by quick removal of access grille.

Herman Nelson

UNIT VENTILATORS FOR SCHOOLS



Matching utility cabinets are designed to combine with Unit Ventilators—offer added storage facilities. Extremely practical and economical for today's classrooms.

THIS is the Unit Ventilator that makes the right air for the room . . . right in the room itself.

Room air is drawn through the grille in the front of the cabinet into a mixing chamber at the bottom. Outdoor air for ventilation and for cooling is drawn through the rear of the cabinets. Air from both sources passes the control dampers on its way to the mixing chamber. The admission of the recirculated air and outdoor air in variable quantities is automatically controlled, depending upon the method of heating, and according to the thermal requirements of the room.

After being mixed in the lower portion of the cabinet, the air passes through a superior type of AAF filter. It is then drawn through the heating unit where it is uniformly warmed to the desired outlet temperature before entering the fans. There, the air is completely mixed before being discharged at the proper velocity through the outlet grille for uniform distribution.

The ventilation goes on silently, efficiently, economically and automatically.

The unit is constructed to be trouble free and durable, requiring a minimum of attention and maintenance. Thermostatically controlled, the entire unit is tamper-proof and completely safe.

Pleasing lines in smart colors come from true functional design. The top of the cabinet is covered with linoleum. The cabinet itself is finished in smooth baked enamel. Matching utility cabinets may be installed at any time to form an attractive, useful ensemble.

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for this latest description of modern unit ventilation. Read the facts. Know why 37 Points of Engineering and Functional Superiority make Herman Nelson Unit Ventilation first and best. Send requests to: Dept. H-165

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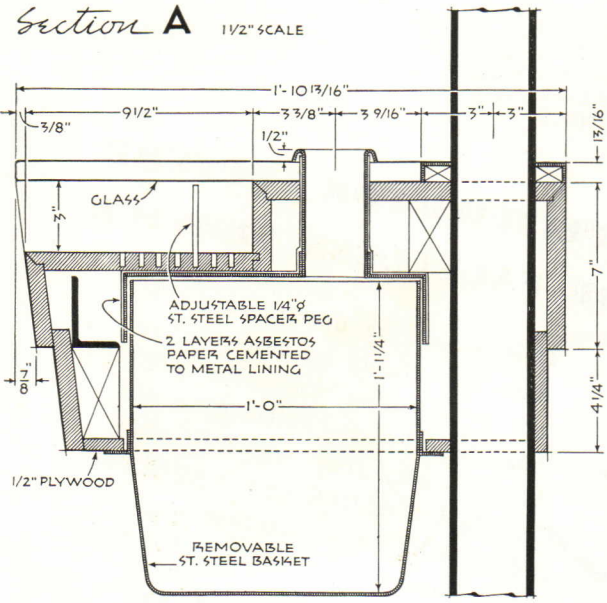
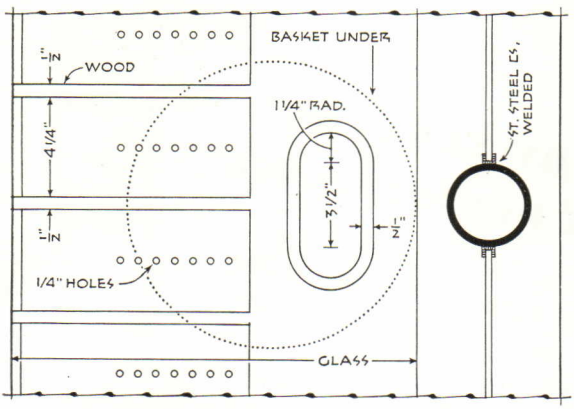
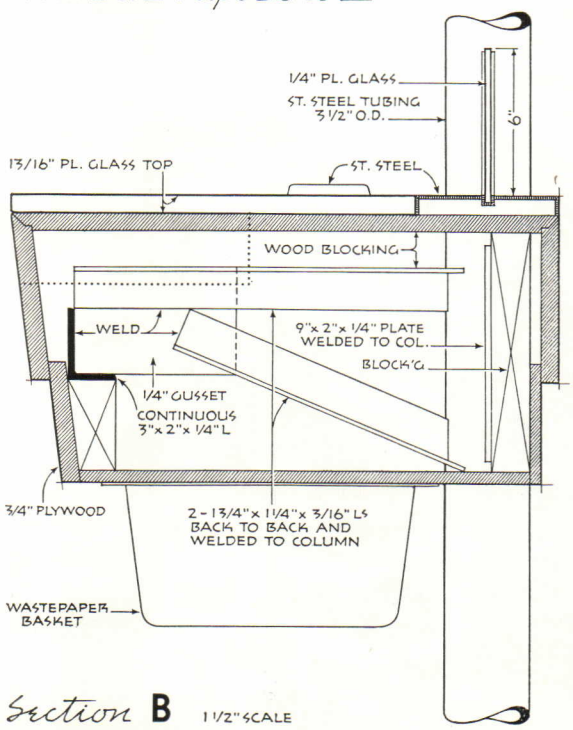




Plan at Paper Slot



Section B 1½" SCALE

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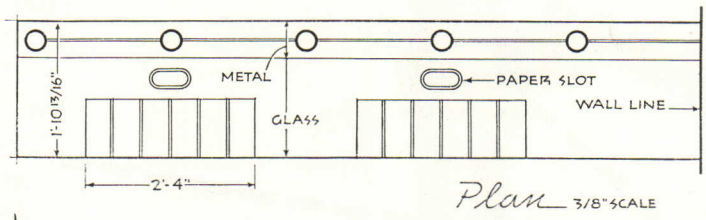
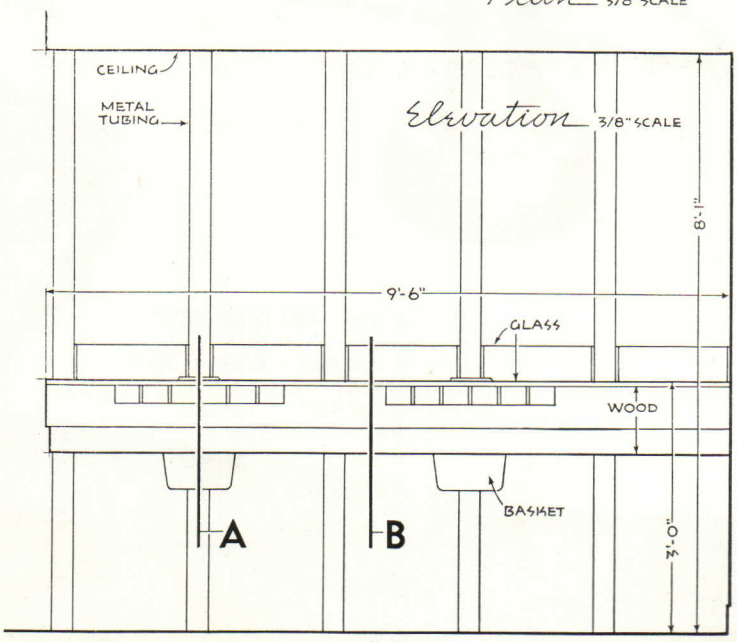


Plan 3/8" SCALE



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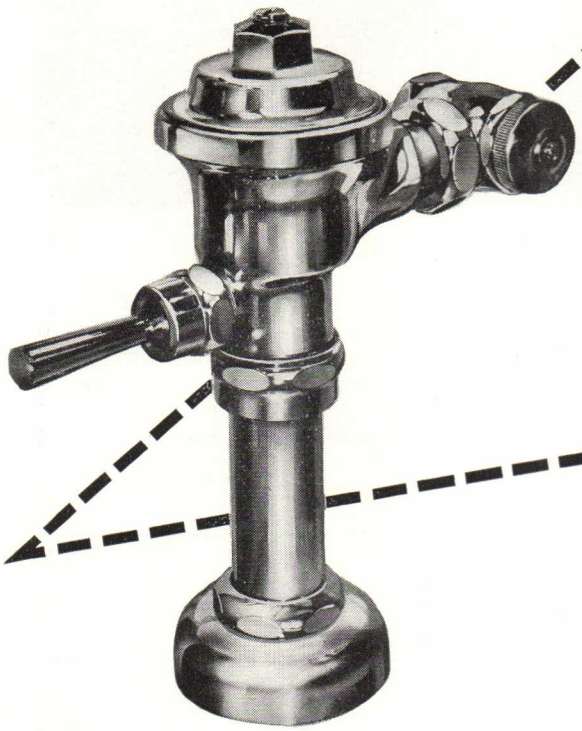

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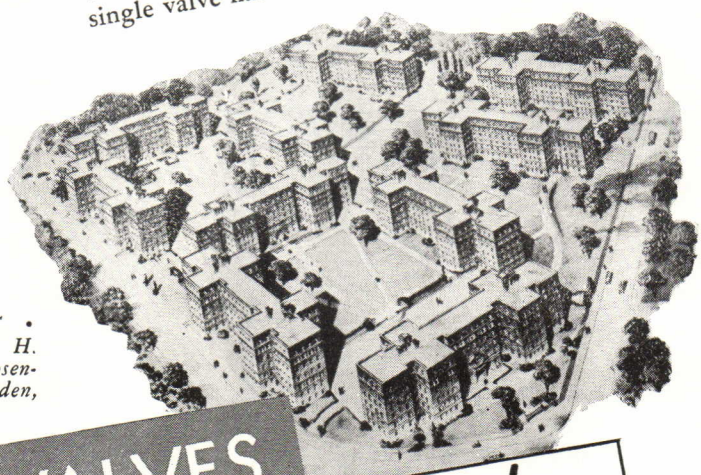

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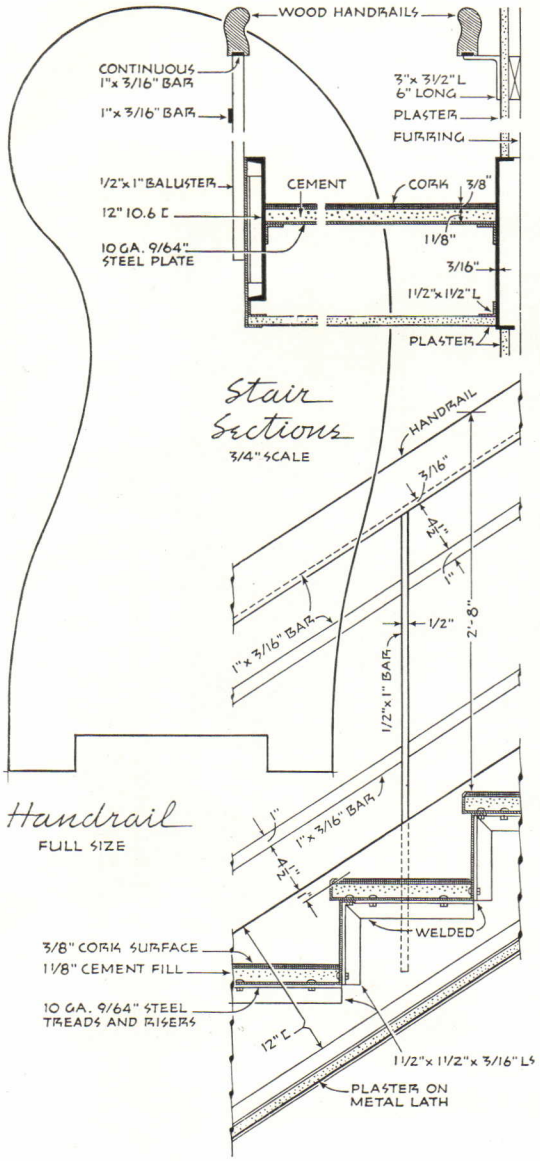
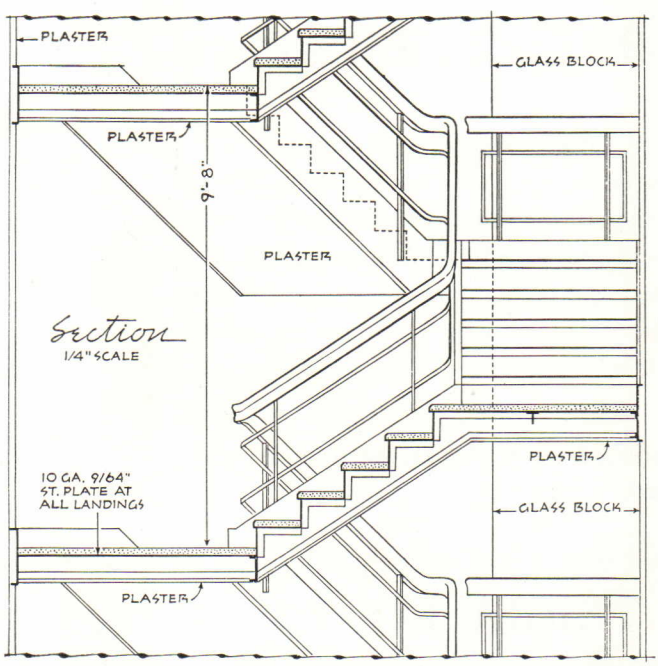
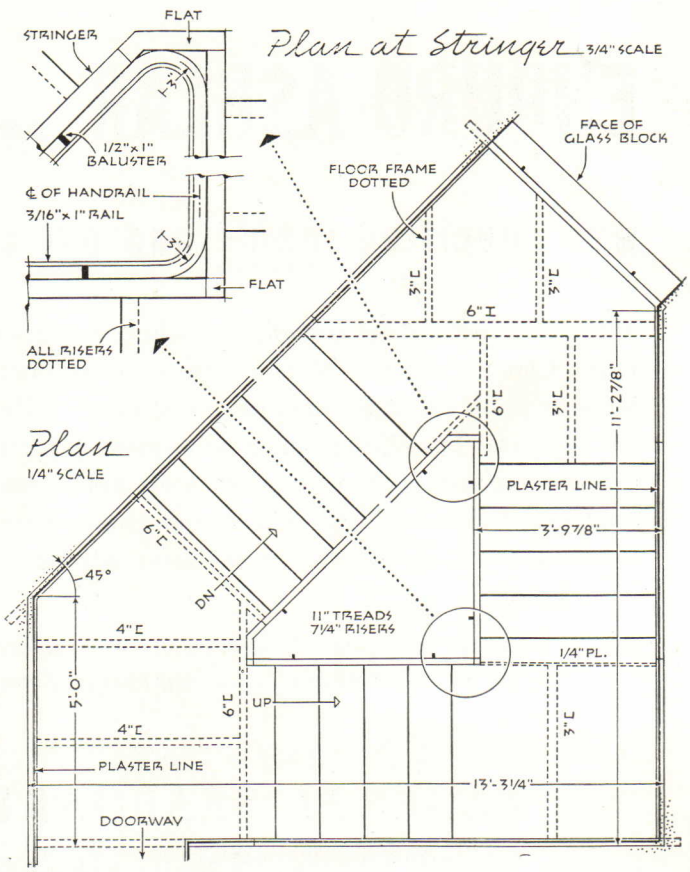


EZRA STOLLER : PICTOR





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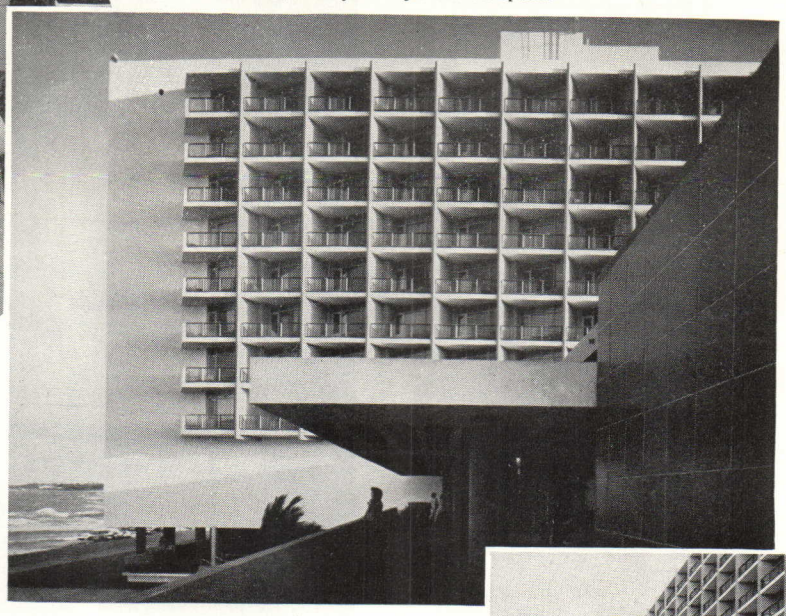

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Construction detail, data, color samples, estimates, advice on preliminary sketches, will be furnished promptly without charge. Send your inquiry today.

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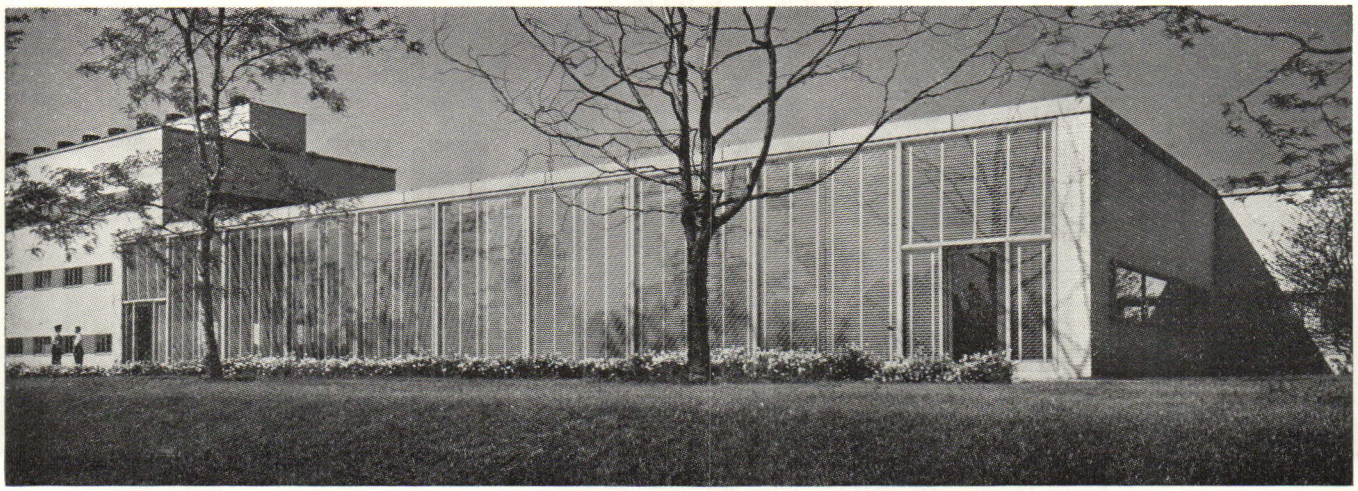

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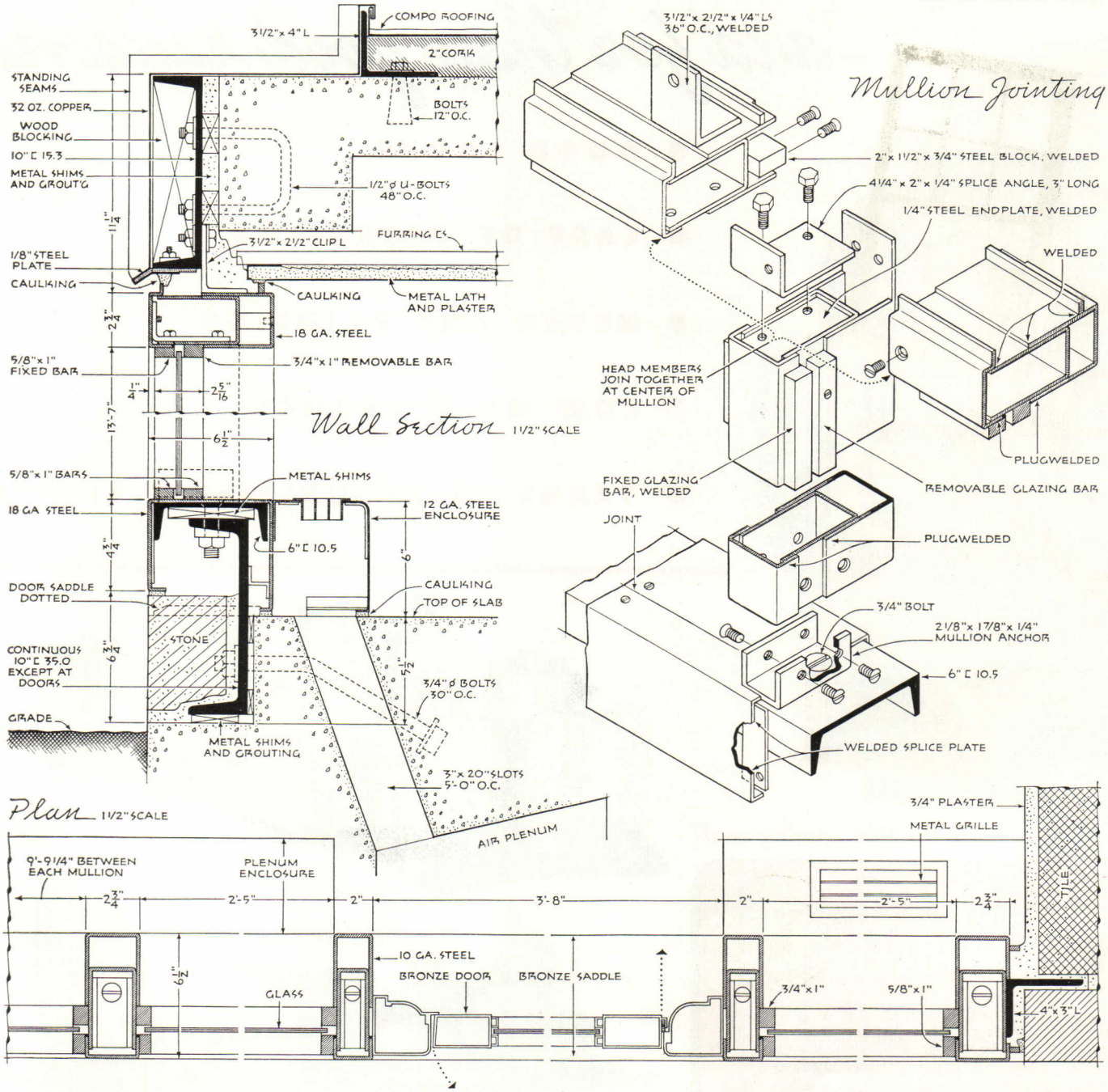

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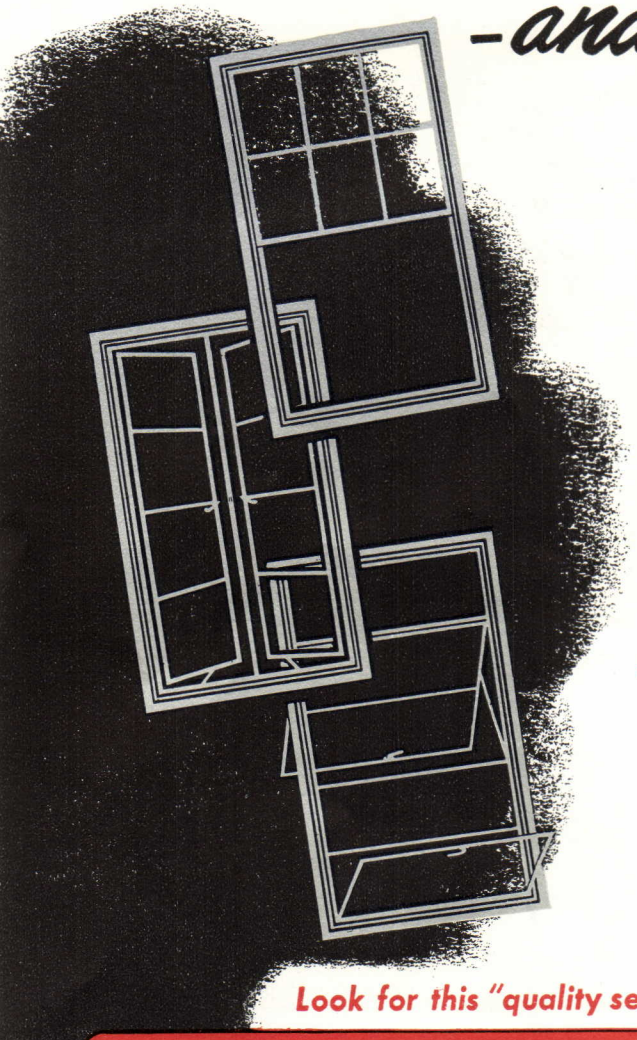
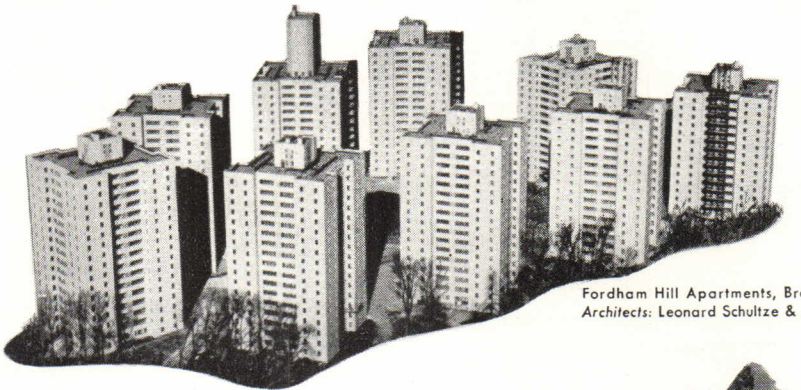
ALUMINUM

-and for these good reasons



- GOOD LOOKS
- EASE OF OPERATION
- NEVER ANY PAINTING
- LOW MAINTENANCE
- YEARS OF TROUBLE-FREE SERVIC



Fordham Hill Apartments, Bronx,
Architects: Leonard Schultze & Assoc

Typical single family residence
using aluminum windows

Look for this "quality seal"

QUALITY APPROVED

(TYPE)

A.W.M.A. Quality Specifications—Materials, Construction, Strength of sections and Air infiltration requirements—confirmed by PITTSBURGH TESTING LABORATORY.

MEMBER—ALUMINUM WINDOW MANUFACTURERS ASSOCIATION

Aluminum Window Manufacturers Association

74 TRINITY PLACE, NEW YORK 6, N. Y.

demand for "quality-approved"

WINDOWS!

—for hospitals, schools, hotels—commercial, public and monumental buildings —and for residences large and small

the past few months, more and more architects
e singled out aluminum windows as their choice
homes and for larger buildings.

eir reasons are shown on the opposite page—
od, substantial, *proved* reasons!

u can continue to make sure of client satisfaction
specifying only aluminum windows bearing the
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is seal assures you of aluminum windows that
nform to rigid specifications and meet the highest
ndards for quality materials, strength of sections,
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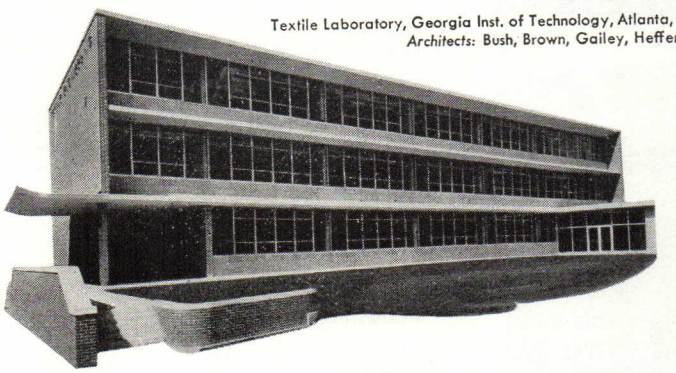
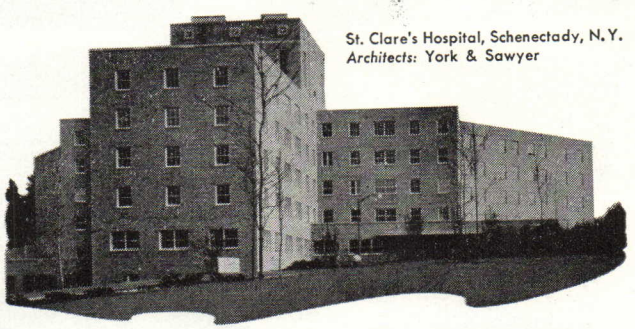
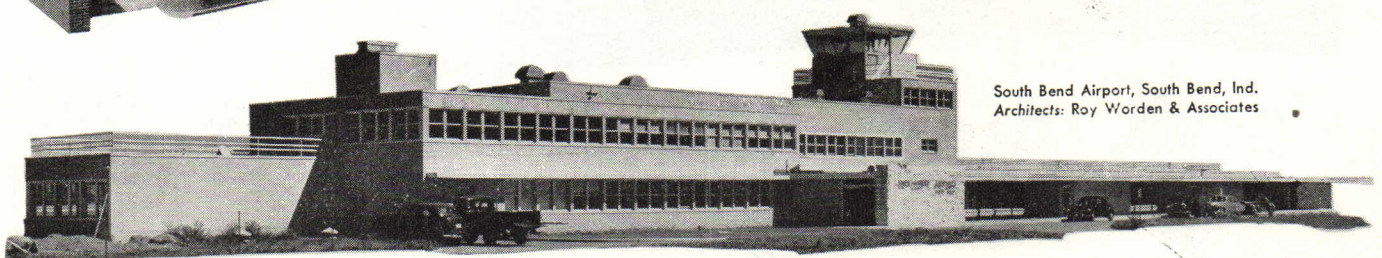
dress Dept. P.



Textile Laboratory, Georgia Inst. of Technology, Atlanta, Ga.
Architects: Bush, Brown, Gailey, Heffernan



St. Clare's Hospital, Schenectady, N.Y.
Architects: York & Sawyer



South Bend Airport, South Bend, Ind.
Architects: Roy Worden & Associates

members : **A. B. C. Steel Equipment Co., Inc., Tampa, Fla. ★ The Adams & Westlake Company, Elkhart, Ind.**
The William Bayley Company, Springfield, Ohio ★ Cupples Products Corporation, St. Louis, Missouri
General Bronze Corporation *(and its subsidiary The Aluminum Window Corporation)*, Garden City, New York
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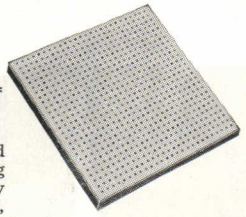
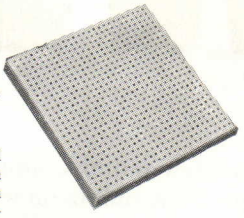


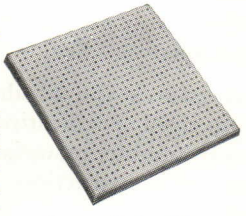
ACOUSTI-CELOTEX* CANE FIBRE TILE

A lightweight, rigid unit, combining acoustical efficiency with a durable, smooth surface. Perforations (to within ⅛" of the back) assure repeated paintability and ease of maintenance. Available in a variety of sound-absorbent ratings. Rot proof and vermin proof (patented Ferox process).



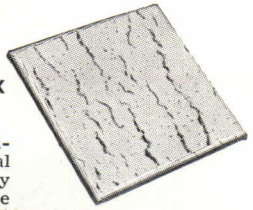
ACOUSTI-CELOTEX* MINERAL TILE

Made of mineral fibre, felted with a binder to form a rigid tile with a universal rating of incombustibility. Perforated with small holes extending almost to the back of the tile, high acoustical absorption is provided together with unrestricted paintability by either brush or spray method.



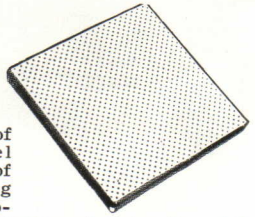
ACOUSTI-CELOTEX* FLAME-RESISTANT SURFACED TILE

A cane fibre tile with a flame-resistant surface. This tile meets *Slow Burning* rating contained in Federal Specifications SS-A-118a. It may be washed with any commonly used solution satisfactory for good quality oil-base paint finishes without impairing its flame-resistant surface characteristics and without loss of sound-absorbing capacity. Repainting with Duo-Tex flame-retarding paint will maintain peak efficiency. Supplied in all sizes and thicknesses of regular cane tile.



ACOUSTI-CELOTEX FISSURETONE*

A totally new mineral fibre acoustical tile. Attractively styled to simulate travertine, it beautifies any interior and effectively controls sound reverberation. Lightweight, rigid and incombustible, it is factory-finished in a soft, flat white of high light-reflection rating.

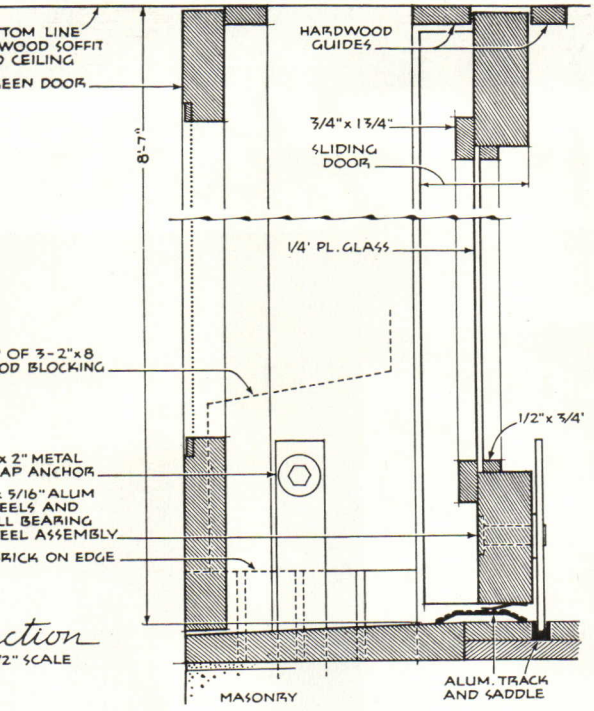


ACOUSTEEL*

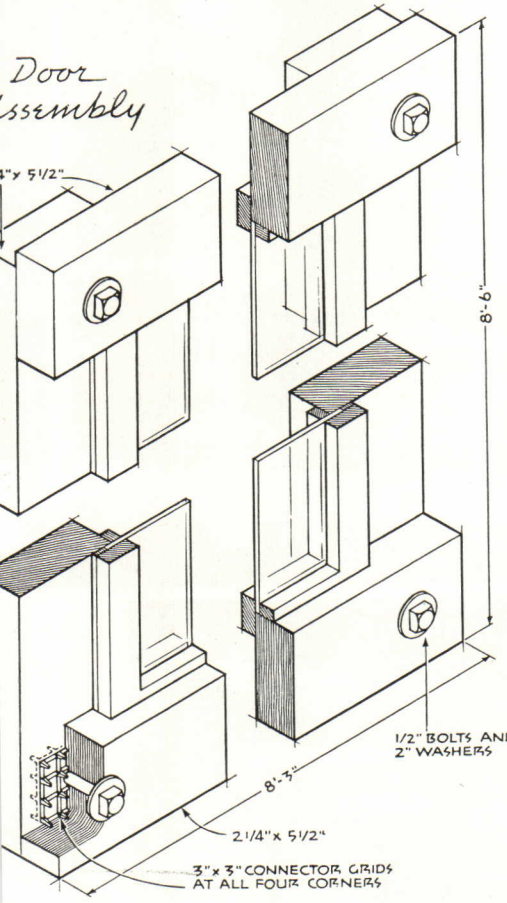
Combines a face of perforated steel with a rigid pad of sound absorbing Rock Wool to provide excellent sound absorption, together with attractive appearance, durability and incombustibility. The exposed surface of perforated steel is finished in baked-on enamel. Acousteel is paintable, washable, cleanable.

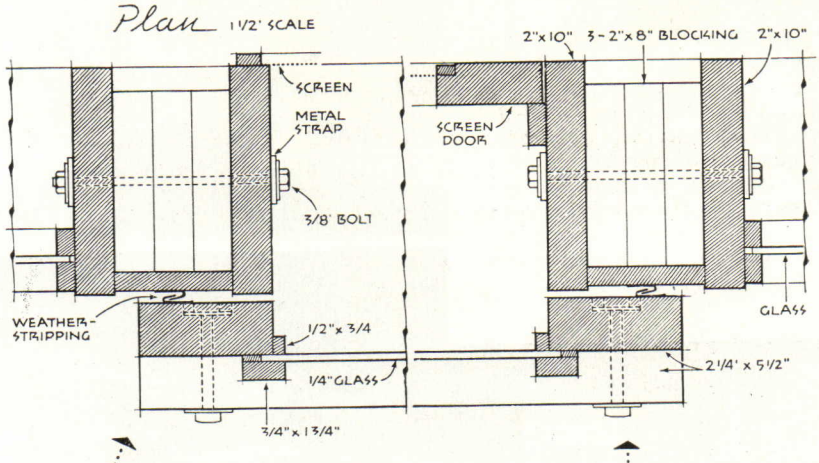
**The Celotex Corporation, Dept. C-7, 120 S. LaSalle St., Chicago 3, Ill. • Dominion Sound Equipments, Ltd., Montreal, Quebec, Canada*

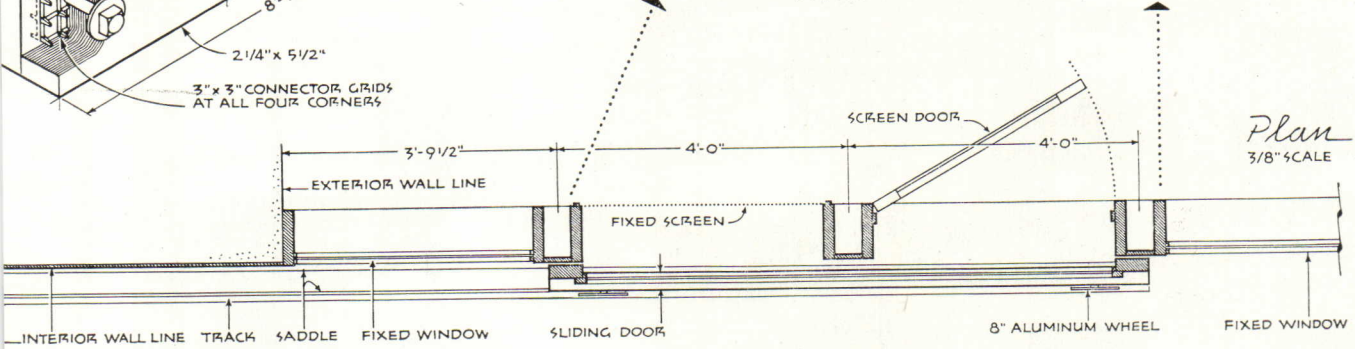
**Trade Marks Reg. U. S. Pat. Off.*



RADA PHOTOGRAPHY







. E. HOUCK RESIDENCE, Coral Gables, Florida

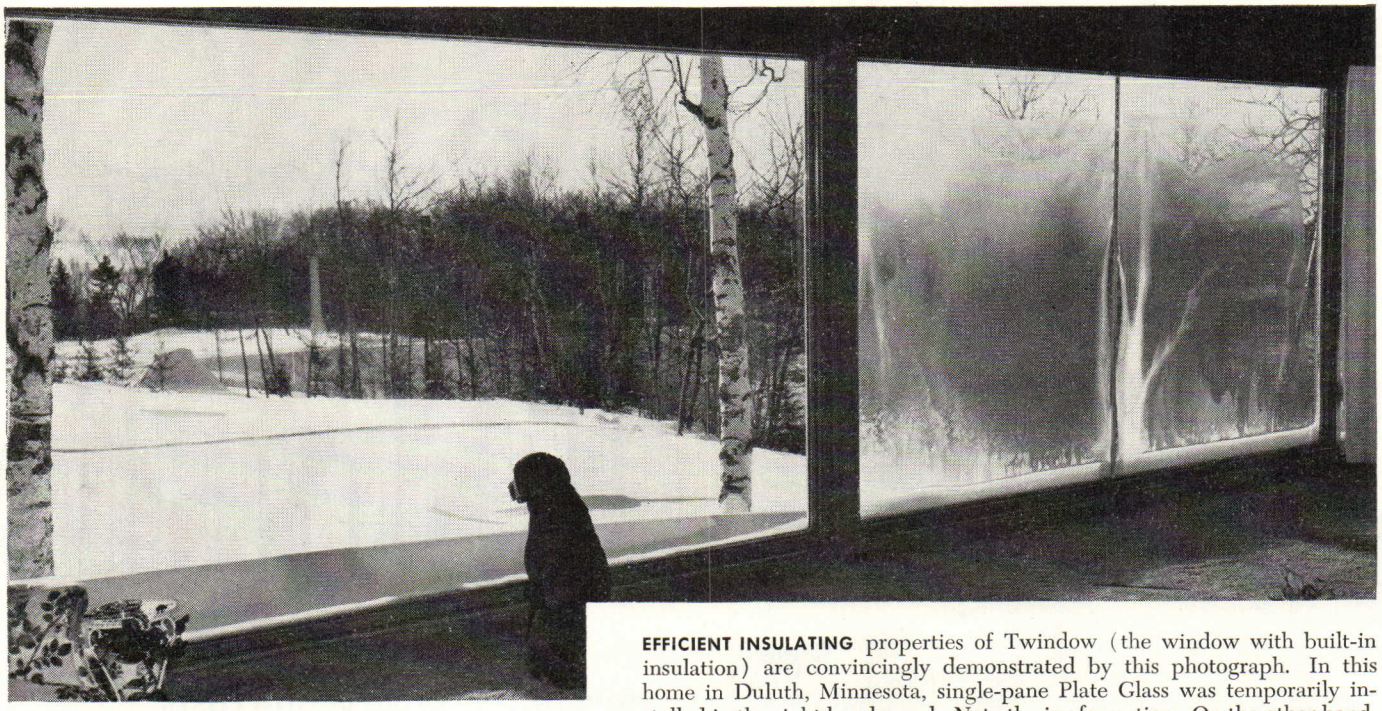
IGOR B. POLEVITZKY, ARCHITECT

Effective uses of Glass

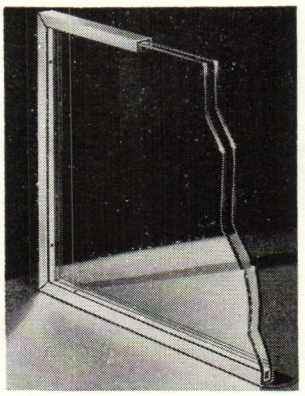
MAGNIFICENT 18-story, 1100-room Shamrock Hotel of Houston, Texas, is an architectural triumph. Here, Pittsburgh Products contributed importantly. For in its construction were used 11,000 panes of Pennvernon, the quality window glass; forty-four Herculite doors; 6,000 square feet of clear Polished Plate Glass for the exterior of the first floor; large quantities of Plate Glass for vanity and furniture tops; approximately 10,000 square feet of quality mirrors on vanities and doors, Alumilited Pittco De Luxe store front metal, and 1,550 gallons of Pittsburgh Wallhide and Waterspar paints. Architect: Wyatt C. Hedrick, Houston, Texas.

PROFIT-WISE merchants insist upon "open vision" store fronts. They know that is the way to show off their merchandise to the best advantage. This showroom in Sherman Oaks, California, is a representative example of how a large expanse of Pittsburgh Polished Plate Glass can help the architect achieve a design of distinction – eye-catching and sales-winning. Architects: Conklin & Coleman, North Hollywood, Calif.

in contemporary architecture



EFFICIENT INSULATING properties of Twindow (the window with built-in insulation) are convincingly demonstrated by this photograph. In this home in Duluth, Minnesota, single-pane Plate Glass was temporarily installed in the right hand panel. Note the icy formation. On the other hand, the Twindow unit, installed at left, is clear, without condensation. Shortly after this picture was taken, a second Twindow unit was used to replace the single-pane window. Architect: H. S. Starin, Duluth, Minn.



THIS CUTAWAY shows the construction of a Twindow unit with two panes of Pittsburgh Plate Glass. The hermetically-sealed air space between the panes provides effective insulation which minimizes downdrafts, cuts heat losses through windows, reduces condensation. Insulation is even more efficient when three or more panes are used. There are forty-five standard sizes available, adaptable either for wood or steel sash.

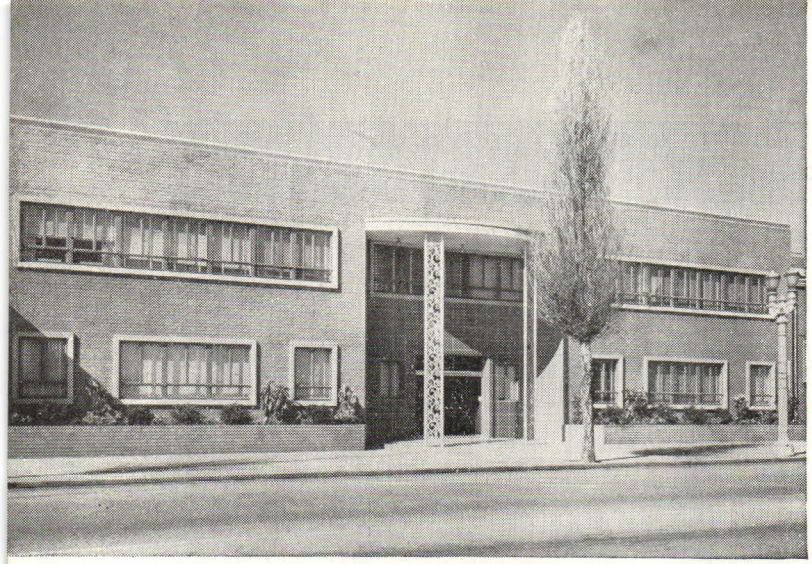
HOME INTERIORS assume greater charm, when you design them with large expanses of Plate Glass structural mirrors. Around the fireplace in the living room, as shown here, is a popular application. Why not give your homes the magic of mirrors? Pittsburgh mirrors are available in clear plate, blue, green or flesh tint, with gold, silver or gun-metal backing. Photographed at the Manor House, New York.

DESIGN IT BETTER WITH— *Pittsburgh Glass*

Your Sweet's Catalog File contains a complete listing and descriptions of Pittsburgh Plate Glass Company products.

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY



211 S. BEVERLY DRIVE, Beverly Hills, Calif.
Architect: Douglas McLellan & Associates
Contractors: Howard Hastings, Inc.
Elevator installed by Elevator Maintenance Co., Ltd.

DOCTORS' HOSPITAL, Coral Gables, Fla.
Architects: Stewart & Skinner
Contractors: Fred Howland, Inc.
Elevator installed by Miami Elevator Co.

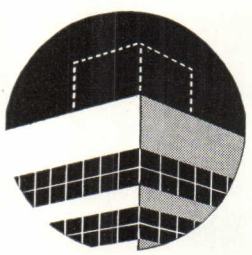
AMERICAN RED CROSS, Dallas, Texas
Architect: George L. Dahl Co.
Contractors: Meers Construction Co.
Elevator installed by Hunter-Hayes Co.

The modern elevator fo

Rotary Oildraulic

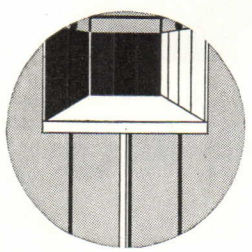
How to cut construction costs with the "elevator that's pushed up"

You can simplify building designs and reduce construction costs with Rotary Oildraulic Elevators. Owners report savings up to 25% on installed elevator costs.



No costly, unsightly penthouse

Because it's pushed from below, not pulled from above, an Oildraulic Elevator requires no penthouse. This permits a substantial saving in building costs.



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Rotary's powerful Oildraulic jack supports the car and load —there's no need for heavy, load-bearing columns and footings.

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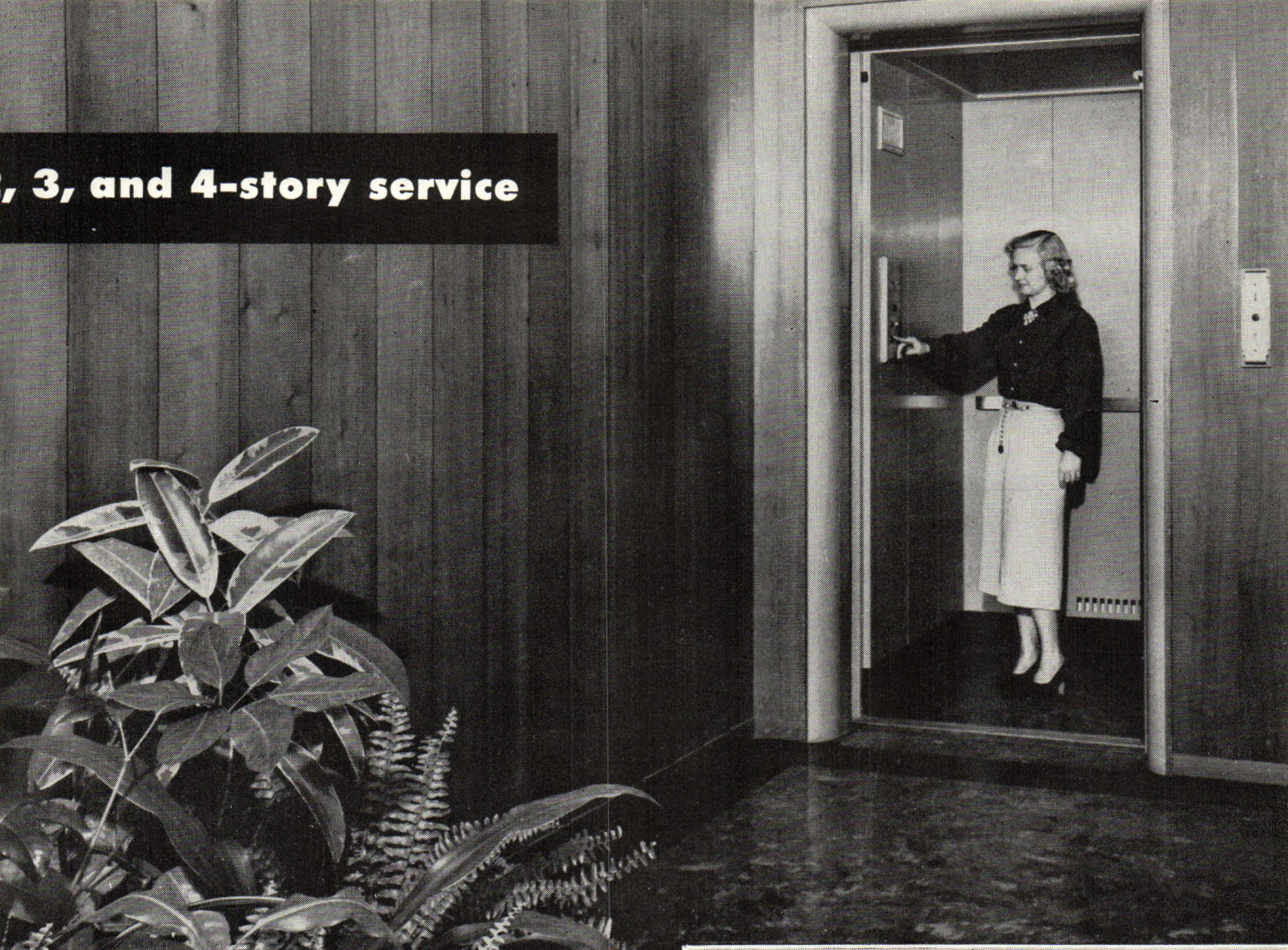
Rotary's compact power unit can be located at any convenient spot on any landing and on any side of hatchway—under a stairway, in a closet or basement.



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For smoother, quieter, lower-cost service

Rota-Flow, revolutionary new hydraulic power transmission system, moves Rotary Oildraulic Elevators on a continuous, pulsation-free column of oil. Rota-Flow eliminates vibration and "pumping" noise, and operates with greater efficiency than any other hydraulic power unit. Automatic floor leveling within ¼" guaranteed, regardless of load or rate of speed.

Over 50,000 Rotary Oildraulic elevators and lifts are now serving major companies and building owners throughout the nation. Our coast-to-coast organization offers the most complete engineering and maintenance service in this field.

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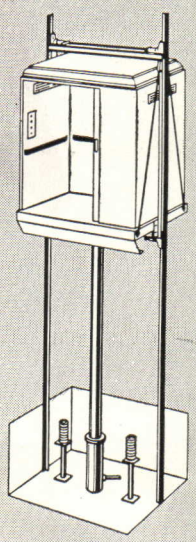

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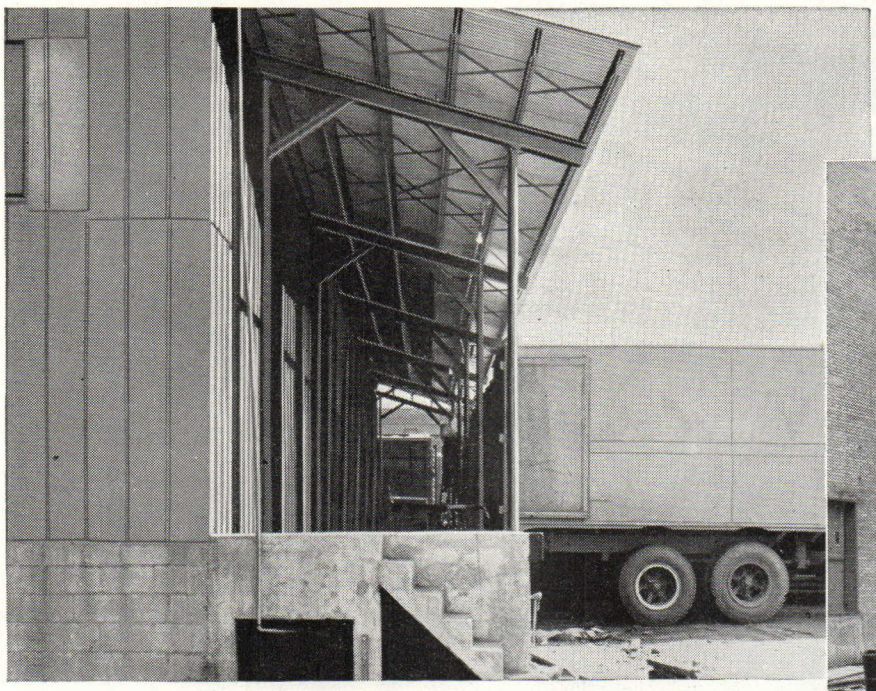
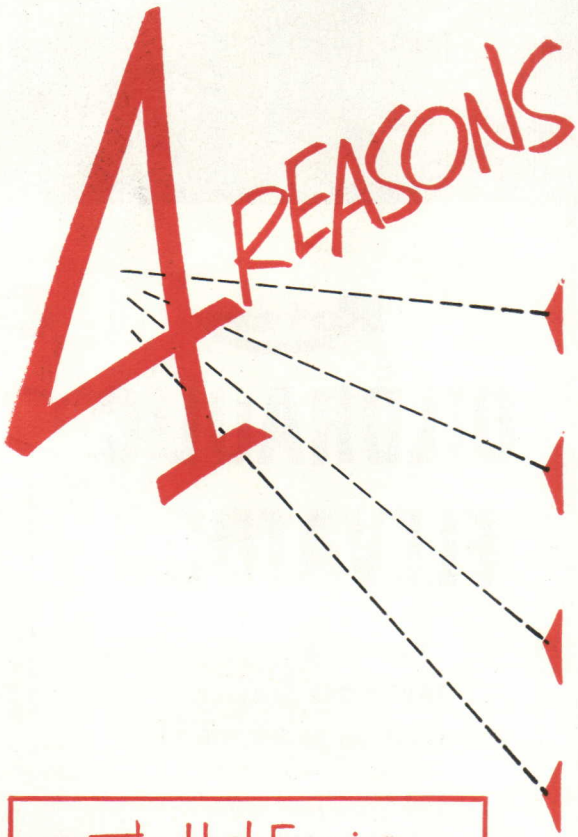


LOADING DOCK (LEFT) AND CAR PORT (BELOW) UTILIZING STRAN-STEEL NAILABLE FRAMING.

WHY IT PAYS TO STOCK-PILE

STRAN-STEEL FRAMING



In any industrial operation there are times when additional buildings and plant alterations of a temporary or permanent nature are required. At such times a stock pile of Stran-Steel framing members pays off handsomely.

MULTI-PURPOSE. Stran-Steel framing can be used on any enclosed building or shelter-type structure such as garage, shed, warehouse, lean-to or canopy . . . also for permanent and movable incombustible partitions.

NAILABLE. All joists, studs, rafters and purlins have patented nailing groove, permitting the application of collateral material, inside and outside, with ordinary tools and nails.

RE-USEABLE. Framing members are of light, tough, high-quality steel . . . they are incombustible and virtually indestructible . . . can be used over and over. In storage they will not shrink or lose their usefulness.

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Stran-Steel framing is flexible for modern design, and its use results in buildings of great rigidity. The nailable feature provides speed of erection for application of all types of wall and ceiling finishes. In stock-pile storage there is no deterioration, no shrinkage, no loss.

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technical press

By JOHN RANNELLS

light and vision

The architects of the A.I.A. Convention in Washington, May 10-13, were given a resume of current thinking in the illuminating engineering field. Present practice is not so concerned with watts and foot-candles as it is with the human eye, functioning under various conditions. The importance of light and sight is bound up with the process of seeing and knowing, through which we accumulate experience and judgment on the basis of which we can go on with new creative work. It is not for nothing that our word "vision" has deeper meaning than mere "looking."

The illuminating engineers have been dealing, properly, with things they can measure—starting with "foot-candles" and culminating recently with the "science of seeing." The architects, on the whole, have followed at a distance but now that the illuminating engineers (with some outside help) have arrived at "visual environment" as the basis and goal of their design the architects should feel right at home.

R. L. Biesele, Jr., who has done much work in this field, gave a paper on "Daylighting." It is a complex matter which the illuminating engineers have been leaving pretty much to the architects, although the architects can't do much good without the help of the illuminating engineers. As Biesele puts it, the admission of light to the interior is the architectural problem and the control of the light and window brightness is the illuminating engineering problem. Of course the roles of the collaborators cannot be divided quite so simply. The paper goes on to describe the many factors which have to be integrated. The widely scattered literature on the subject was brought together only recently in the bibliography attached to the I.E.S. "Recommended Practice of Daylighting," published in the February 1950 issue of *Illuminating Engineering*.

Another paper, "Basic Factors of Vision," by C. L. Crouch, I.E.S. technical director, describes the eye and its operation and the influence of surroundings. Understanding of these things is the foundation of present-day school and workshop design and can open up wonderful possibilities in designing luminous environments. "Now is the time for every designer to become increasingly conscious of being an *architect of light*. We are dealing with the most powerful, dynamic, and dramatic medium of the universe. We can sway the reactions of the multitudes. We can set the mood of every interior—we can thrill with the dramatic; we can set up a brisk, efficient interior for work; or we can warm and relax the occupants in a sense of well-being." This may leave you cold at the thought "who'll pay"? But you must admit that the lighting people are showing us new concepts of our function as designers. (Crouch was formerly with Holophane).

Other papers were concerned with the applications: light sources, distribution patterns, reflection of surfaces, dramatic uses of light, whether in theater or show window. ("Developments in Light Sources," a demonstration-lecture by Willard C. Brown of G-E, "Visual Effect of Basic Light Distribution Patterns," by Howard Sharp, consulting engineer, former president of I.E.S., and "Dramatic Uses of Light," by Stanley McCandless, Professor of Lighting at Yale.)

Perhaps the most impressive thing about the lighting people is the fact that they have hammered out procedures and nomenclature which all of

(Continued on page 118)

technical press

(Continued from page 117)

them can use in their work and through which outsiders concerned with lighting can achieve sufficient understanding without too much confusion. One of their best procedures is the publication, with each paper read before their technical sessions, of critical comments by other men specializing in the author's field. It will be a long time before the architects arrive at anything like a mutual understanding of terms, but isn't it time we begun? Our feelings make it possible for Alan Dunn, in his cartoons, to be the most cogent critic of architects and architecture today. Isn't it time for a new Dictionary for Architecture? A lot has happened since Viollet-le-Duc's day. We can humbly take lessons from the engineering professions. Keeping up to date is a continuing process with them. With us it's convulsive—at long intervals.

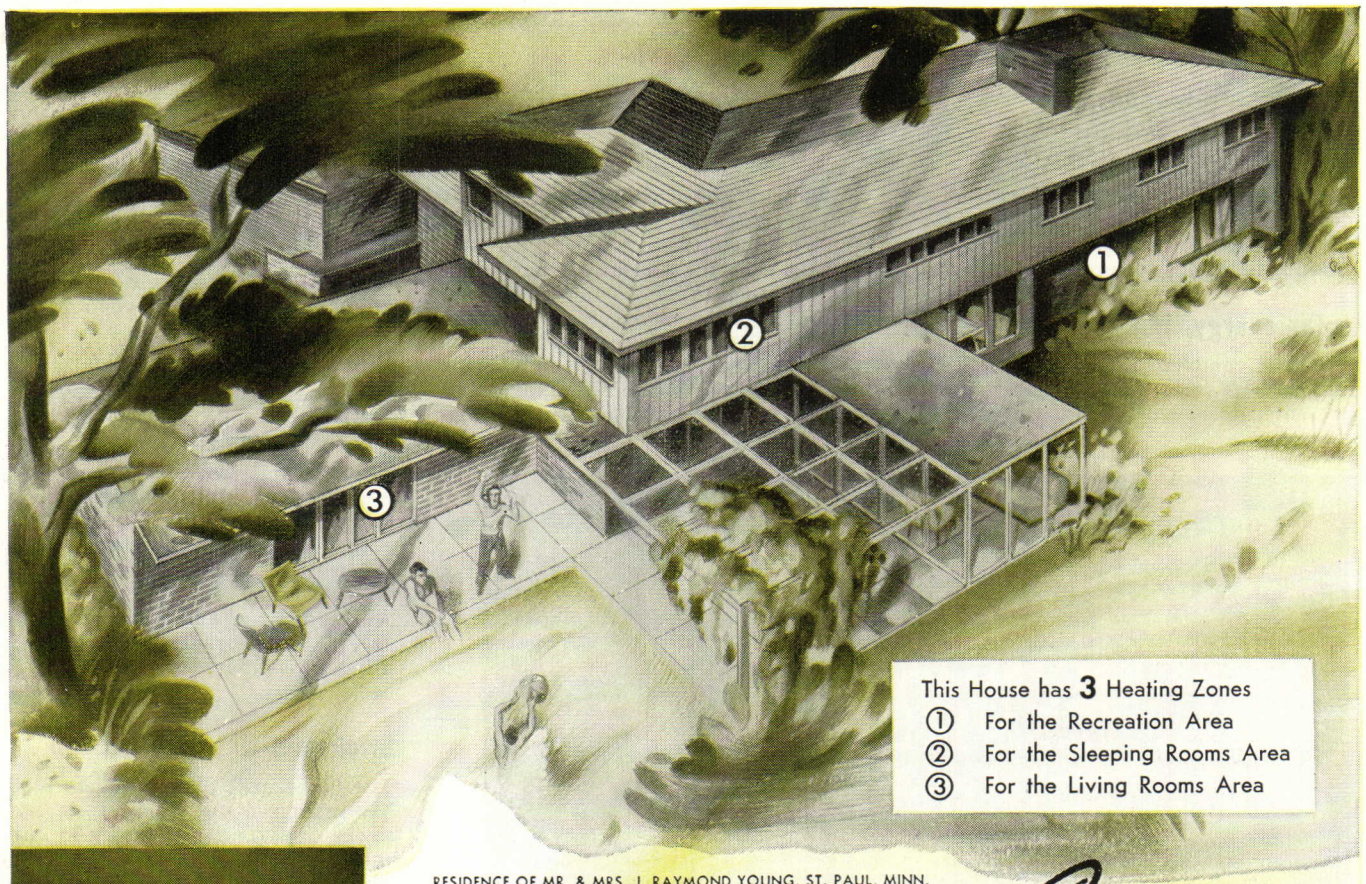
our biggest market

Here's another lesson from the engineers, contained in an address before the Dealer Session of the 27 Annual Convention, Oil-Heat Institute of America, in Philadelphia on April 27. Arnold Michelson, vice-president of Minneapolis-Honeywell, gives some house-building figures which affect his business and perhaps ours as well. More than half of the million dwelling units started last year had automatically fired central heating systems. Out of the entire 42 million houses in the country more than half are over 30 years old. The plumbing and heating and kitchen equipment is old, too. And yet a great many of them have 1950 cars in their garages. John Jones will go in hock to keep his car up to date by turning it in every two years. Most old houses could be brought up to date by sensible remodeling, which would result in more house for the money than could be had in a new one. "If the housewives of America," says Mr. Michelson, "ever find this out and one or two in the bridge club begin telling what *they did*, we're going to have an epidemic that will send our sales curve shooting off at the top of the chart."

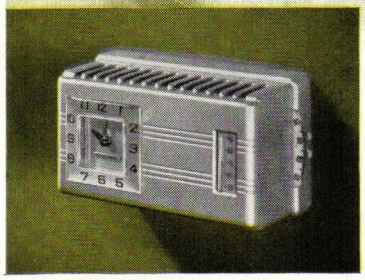
It's a matter of what we're willing to spend money for. The manufacturers of autos, appliances, and television have taken in most of the loose money, yet about 6 billion was spent last year for additions and repairs to present homes. "There is a lot more business modernizing 43,000,000 existing homes than there is in building 900,000 new ones."

Minneapolis-Honeywell is selling the idea of modernization in order to sell new control equipment. If people begin to get sensible about spending their money on real values they'll want the modernization to include the kind of

(Continued on page 120)



RESIDENCE OF MR. & MRS. J. RAYMOND YOUNG, ST. PAUL, MINN.



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Automatically lowered night temperatures may be provided for each zone, for additional convenience and fuel economy.

CUSTOM BUILT FOR *Comfort* WITH 3 THERMOSTATS

THE heating and cooling systems for larger homes can be "custom built" to give maximum comfort, just as you would design the lighting system. And Mr. Young certainly didn't skimp on his heating and cooling plants. His home is air-conditioned throughout, with summer cooling. And he divided his heating system into three main zones as indicated.

When the sun comes through the picture window of his living room, the thermostat cuts down the amount of heat, then increases it as evening comes on. He can maintain lower temperatures in his bedrooms for greater sleeping comfort and fuel economy. When his recreation room is not in use, he can lower the temperature without affecting the rest of the house.

In the same way you can custom-build your client's heating systems to fit any set of conditions—to maintain the same comfort temperature throughout the house or to provide selected temperatures for different areas according to usage.

Honeywell's national advertising in House Beautiful, House & Garden, Newsweek and Time is urging home builders to consult you about the proper controls and control areas. If you would like additional information, contact the Honeywell office in or nearest your city, or mail the coupon for free booklet on "zone control," A.I.A. File No. 30E.

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technical press

(Continued from page 118)

living they could get in a new house designed for them. There's a big field for architects in the conversion of sound existing buildings for present-day needs.

solar energy, M.I.T.

The first complete report on operation of the M.I.T. solar-heated house will be presented to members of a course-symposium on "Space Heating with Solar Energy" at the Massachusetts Institute of Technology from August 21 to 26. By that time the house will have been studied through a complete heating season. Together with present results, based on the last three months of the 1948-49 heating season, the indications are that "a 10 percent-auxiliary-fuel-burning house is possible without ultra-high construction cost" in the Boston area. In an area with an average winter temperature about 10F warmer than Boston, such a house could be heated efficiently with solar energy alone, although some auxiliary equipment would be needed to carry over long periods of cloudiness.

This house has a flat plate collector on the roof connected to a storage reservoir from which water is circulated through ceiling panels. Electric boosters are used to add heat when necessary.

lighting for industry

Handsome reprints are now available of thorough reports and recommendations by Illuminating Engineering Society committees on lighting for canneries, wool mills, flour mills, and machining small metal parts. The reprints can be secured from the Society's publications office, 51 Madison Ave., New York 10, N.Y., at 50 cents each. All reports are now produced at 8½" x 11", a considerable improvement for filing as compared with the old "handbook" size.

brick and tile construction

The Structural Clay Products Institute has increased the scope of its services to the construction industry by inaugurating a monthly information service. The first three issues (January, February, March 1950, four pages each) indicate that it will be a very useful series of leaflets on sound masonry construction techniques. Each is limited to one subject, handled concisely, so they will build up into a valued file without dead wood.

The first three subjects covered are Cold Weather Masonry Construction, Efflorescence, and Watertight Masonry Walls. The first is largely concerned with specification requirements with notes on know-how from the field which give more understanding of the recommendations. The others are lucid discussions on these vexing subjects, with very clear illustrations. As you might expect, they don't think much of colorless waterproofing materials for correction of badly leaking walls.

Projection Drawing for Architects. *William Wirt Turner. The Ronald Press Co., 15 E. 26 St., New York, 1950. 107 pp., $3*

Here is a well-intentioned text with an excellent purpose: to cover the fundamentals of projection drawing (including descriptive geometry) in one small book. It is designed for teaching freshman architects, with a suitably elementary approach and sufficient scope to solve the everyday problems. Its illustrations of the typical descriptive solutions, by the method of successive auxiliary views, are especially explicit. It is unfortunate that the author did not prune down the theoretical basis as well as he did the "type" problems. There are too many hangovers, in a "direct method" text, of the classic "four quadrant" approach.

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p/a REVIEWS

BOOKS

HANDBOOK AND TEXT

Acoustical Designing in Architecture. *Vern O. Knudsen and Cyril M. Harris. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y., 1950., 457 pp., illus. $7.50*

Purpose and Scope. Since the publication in 1932 of Dr. Knudsen's monumental *Architectural Acoustics*, which has been the Bible in its field these many years, many changes have taken place. Acoustical knowledge has grown both in scope and in detail. The public consciousness of acoustics has become general. The complexity of the architect's task has increased. In view of all these changes a new book is in order. This is it. It is a must for every architect's library.

Proceeding from the premise that the architect has shed his classic concern with fenestration and has become the project designer, the integrater of many specialties, this book provides: (a) the information the architect needs to define the problem and to be sure that his specialists have not missed anything; (b) the detailed information which is necessary in the case where he must himself take over actual acoustic design. In the first instance, the architect can refer to the book for the statement of problems and the approaches to their solution and skip over detailed design information without loss of continuity. He can also pursue, if he must, with the aid of the material included in the book, almost any detail to the point of satisfactory solution.

The book is, thus, at once a handbook and a text. It is comprehensive in the sense that it gives both design criteria and complete up-to-date design data. For example, the latest listings of the characteristics of acoustical materials are given, and an extensive set of tables of sound insulation ratings for partitions is presented in an appendix.

What's New. The geometrical approach to acoustics, which studied the action sound by optical analogy, has been superseded by physical or wave acoustics. Physical acoustics has taught us much about sound, including the areas in which geometric solutions to architectural acoustic problems are not completely reliable. However, most problems in architectural acoustics are still to be solved by the conventional, and now better understood geometrical formulae.

The proportion of our people who have impaired hearing and the nature and extent of those losses are now well known largely as a result of the hearing tests made at the San Francisco and New York world's fairs of 1939-40.

The propagation of sound in the open air is now understood largely as a result of research connected with the war effort.

The control of sound by electronic means has been improved and simplified in the last ten years. It makes possible optimum hearing conditions irrespective of audience size.

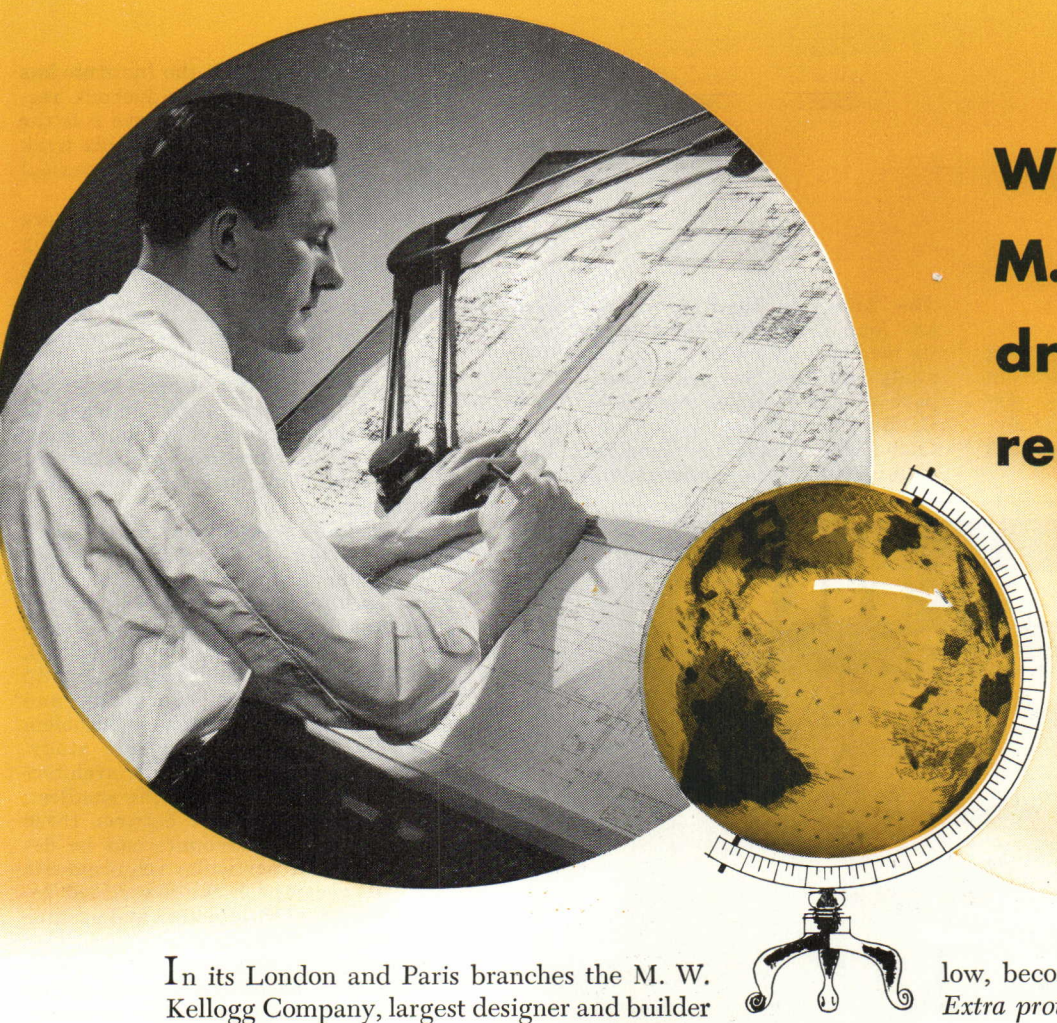
Sound absorbent building materials have increased immensely in number and variety.

Liveness in pick-up for radio, TV, and recording contrast to the nonreverberant pick-up practice of prewar days is now becoming standard.

This and other new material which has a bearing on architecture is all presented for the first time between two covers in *Acoustical Designing in Architecture.*

HAROLD BURRIS-MEYER

(Continued on page 124)



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(Continued from page 122)

COSTS AND PROFITS

Instructions, Standardized Accounting for Architects. *A.I.A. Committee on Standard Accounting Methods for Architects. The American Institute of Architects, Washington, D.C., 1950, 162 pp., $5.00*

The American Institute of Architects has long recognized the importance to its members of sound accounting. Much study and over two years' work on the part of a committee headed by David C. Baer, with the advice of Harvey Casbarian, C.P.A., as consultant, have culminated in the recent publication of this text. Along with it the Institute has available for sale various journal, record, and ledger forms. I believe it is the goal of the Institute to have this work reach, through its members, the clerical staffs of architectural offices.

The publication will surely be more widely read by accountants than by architects. Every architect should read this book of instructions, but for one untrained in accounting it will require more than casual reading; it will require study. While architects may not be willing to devote the necessary time to the job, each one should at least insist that the person in charge of record-keeping in his office read and study it. It is a good contribution to accounting literature.

It should be pointed out that the word "standard" is almost as difficult to apply to a system of accounts as it is to apply to an architectural design. The client's objectives must be considered. Clients and their objectives are not standard. Flexibility is essential. Modifications to meet the size, scope, complexity and peculiarities of a particular problem obviously require individual study. Whether yours is the largest architectural office in the country, the smallest, or one that is anywhere between these two, a system of accounts can be designed for your particular requirements that will accomplish the prescribed results with equal satisfaction and greater simplicity.

Nevertheless, this reviewer is satisfied that the basic system outlined by the A.I.A. in this book can be generally used in the profession with excellent results.

IRA J. MEYER
Meyer & Berman,
Certified Public Accountants

ARTERIES OF TRAVEL

Highways in Our National Life. *A symposium edited by Jean Labatut and Wheaton J. Lane. Princeton University Press, Princeton, N. J., 1950. 501 pp., illus. $7.50*

Many architects and planners are coming to realize that the highway problem—remote as it may seem at times from the individual design problem—cannot be separated from all the other factors that impinge on the creation of buildings, groups of buildings and towns and cities. Those modern descendants of the old trade routes and Indian trails—the throughway, the freeway, the limited-access highway—are going to influence, more and more, the location and the function of structures in the towns they serve (or bypass). It is useful to find that through the sponsorship of Princeton University's Bureau of Urban Research, this symposium on the history, the significance, the function, the design, and the operation of highways, draws into one volume a great deal of the basic understanding of the highway problem which is available at this point.

(Continued on page 126)

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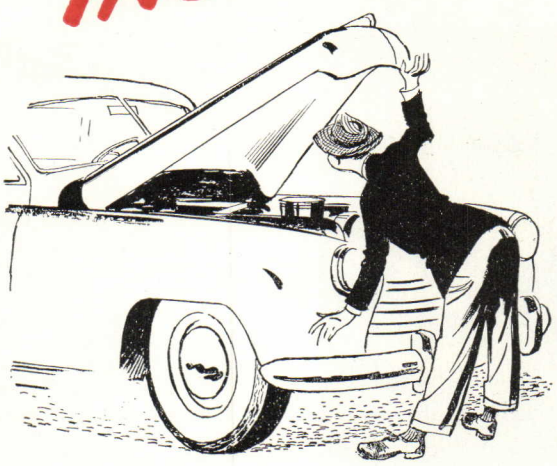

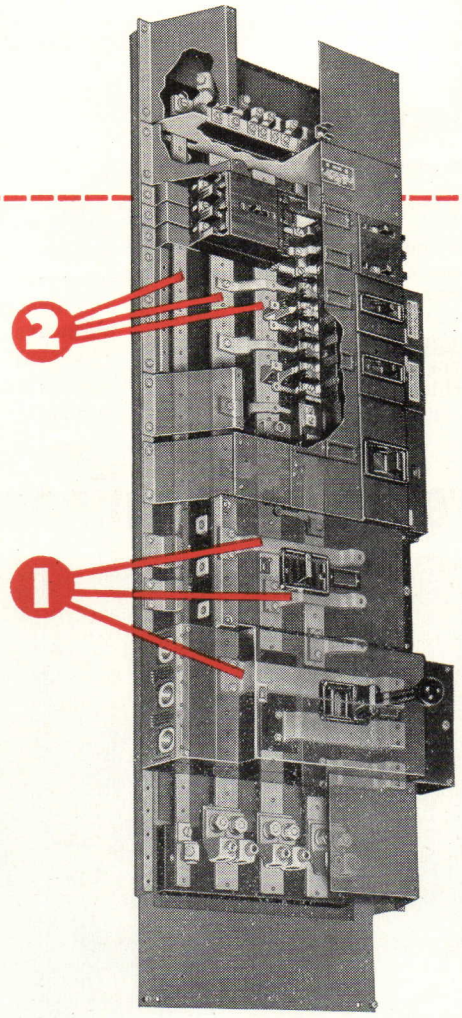

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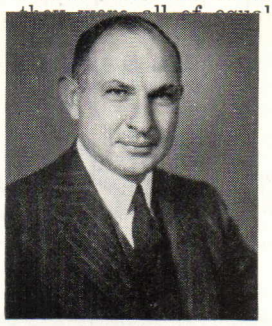
By EDWIN S. BURDELL*

Carl Feiss, whose column regularly occupies this space, was so impressed by the merit of the first report of studies of the A.I.A. Commission to Survey Architectural Education and Registration submitted by Chairman Burdell at a joint session of A.C.S.A. and N.C.A.R.B., just before the recent A.I.A. Convention in Washington, D. C., that he promptly arranged for this "guest column." The Commission was created pursuant to a resolution offered by the Chicago Chapter, A.I.A., at the Houston Convention last year and started its work in December under a "four-point chapter" to investigate: (1) the preparation, extent, and character of the professional education of the architect; (2) the pre-registration education for examinations, also the nature, the time, and methods of accomplishment; (3) the character, extent, and quality of professional examinations and the time required for examinations; and (4) the number and quality of professional and technical schools. The Commission's work is financed from a fund previously donated to the A.I.A. by The Carnegie Foundation. The studies resulted from previous discussions that were summarized by Ralph Walker, A.I.A. president, in five major questions: whether present architectural education is adequate and properly co-ordinated; whether students are sufficiently mature when they undertake professional studies; whether the period of internship between graduation and registration examinations is well-enough guided; whether license examinations are fair and if there is a tendency to limit the number of practitioners; and whether we have too many architectural schools and if there might better be two kinds—professional and technical.



There are some 45 papers in the book, and it would be too much to hope that

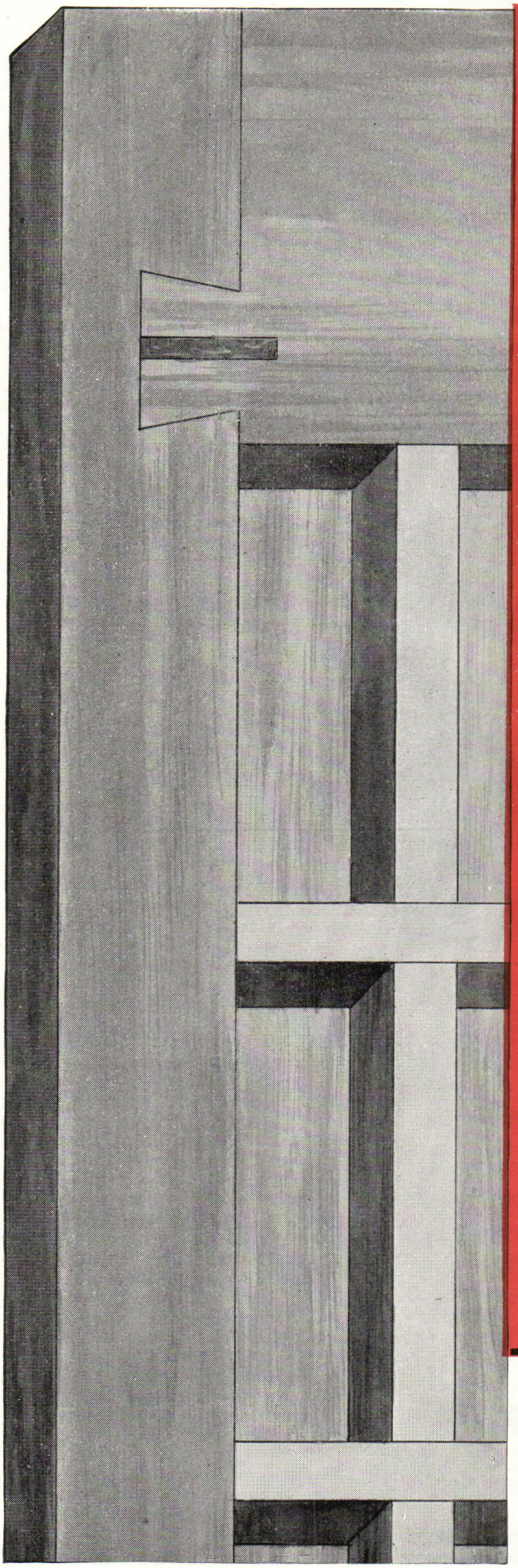
The five questions which Mr. Walker raises suggest a sort of "cradle to the grave" study and I see no reason why a comprehensive survey of such an important profession should set itself any less ambitious a goal. The present members of the architectural profession have reason to be concerned with the adequacy of the educational and training programs which alone are providing the personnel of the future. Professional education generally is becoming more complex and more expensive both to the student and to the college. Most of you are aware of the degree of specialization that has developed in the medical profession and of the number of years of unremunerative internship which such specialization involves. Preparation for the legal profession remains at two or three years beyond the bachelor's degree. In the field of engineering, the requirement of advanced degrees is clearly defining itself. For instance, in chemical engineering, the doctorate is now a customary degree. Of this trend toward more and more theoretical educational requirements, the architectural profession should be aware and its leaders should assess the tendencies in their own field.

●

The shift from a four to a five-year undergraduate course has in effect

(Continued on page 130)

*Director of Cooper Union for the Advancement of Art and Science, New York, N. Y.



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out of school

(Continued from page 128)

added more hours, and more subject matter but awards only the same academic recognition as the shorter four-year course. If graduate work is to be superimposed upon this, the candidate has to postpone still further his professional matriculation which I assume is considered to take place only when he has passed his registration examinations.

Is this postponement desirable sociologically and professionally? Should some thought be given to the effect this has on deferment of marriage and on the opportunity to put one's roots down in a community? The G.I's solved this problem by getting married and presenting themselves at the college gates with wife and with or without child.

Within this same area of consideration is found the problem of internship. The educators insist they are preparing their graduates for life-long professional careers and not for their first jobs in architectural offices. On the other hand, the practitioners object to the lack of skills with which the recent graduates enter their offices. Some of them insist they cannot afford to rotate, to supervise, to guide these neophytes for two or three years. They say they have a right to expect the young draftsmen or assistant clerks of the works to earn their way. This leads to the consideration of Mr. Walker's fifth question as to the possibility of two kinds of schools—one for the gifted designer, and one for the skillful, painstaking technician.

Finally, the objectives and the character of the licensing process are subject to investigation and review. Should the safety and health of the public be the sole consideration of the state? What right has the state to evaluate a candidate's design sense, his artistic and esthetic appreciation?

Well, all this may seem to some of you to be beside the point when it comes to a discussion of the details of the study, which is my function on this program, but I offer them as merely some aspects of the broad and fundamental approach which Mr. Walker and the Commission have in mind.

●

In the first place, you may want to know who are the Commission and how we operate. I am sure you will agree that the following members of the Institute represent a fair cross-section geographically and professionally. As I understand it, however, the general intent was to have three educators, three practitioners, three state board men, and one representative of the Accrediting Boards; but as architects are versatile people, we find several of them "doubling in brass."

Among the school men, we find **Roy Jones,** head of the Department of Architecture at the University of Minnesota, who also represents the Accrediting Boards; **Turpin Bannister,** head of the Department at the University of Illinois; **Sidney Little,** head of the Department at the University of Oregon; **Kenneth Johnstone,** head of the Department at Carnegie Institute of Technology; and **Clinton H. Cowgill,** head of the Department at Virginia Polytechnic Institute and also a state board man.

Among the practicing professionals, we find **Walter Rolfe,** Houston, Texas; **George Cummings,** Binghamton, New York; **Fred Markham,** Provo, Utah; (both Cummings and Markham are also state board men) and **Walter Kilham** of New York City. **Ralph Walker** and **Walter Taylor,** whom you all know, are members ex officio. The full Commission has met twice: the first time at the University of Illinois in December and the second time in Hot Springs, Virginia in March. There is a small executive committee, composed of Cowgill, Cummings, Johnstone, Jones, Tay-

(Continued on page 132)

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(Continued from page 130)

lor, and myself, which has met once a month.

●

At our first meeting in December, the aims and scope and the basic procedural approach were agreed upon by the Commission. The investigation seemed to fall logically into five categories. The *first* one is the nature and scope of architecture in which an attempt will be made to define the field of architecture in terms of human needs, to define the building process and the building industry, to estimate the building needs of the nation, and to define the function and place of the architect. This last objective is one of the principal concerns of the Commission and, therefore, might be elaborated as follows: the architect's professional status; the kinds of services he performs; and his obligations for leadership in the profession, in industry, and in the community. An inventory or census of architectural personnel will be made as well as an estimate of future needs and employment opportunities for architects.

The objectives of the *second* category or area of study will be an effort to define the several kinds of architectural practice and to determine the principal characteristics and skills necessary to perform them effectively, this whole inquiry being aimed at discovering ways and means of improving the quality of professional services in the public interest. In order to discover what skills are necessary, we shall have to ask the architect to tell us in some detail what he does, in what kinds and sizes of offices he practices, and the degree of specialization which the profession seems currently to require. We also want to know from architects their ideas as to trends in character of practice; from architects their opinions of the services of engineers, builders, and clients their opinions of the services of the architect. Involved here also are special problems such as the architect's legal responsibilities, fees, and consultants, and unionization of architects. Most of these data will be sought for by a questionnaire, but certain standing committees of the A.I.A. such as those on Contract Documents, Judiciary, School Buildings, Hospitals, and Fees will be consulted.

The *third* area of investigation revolves about the problem of registration and that period of training between graduation and taking the licensing examination. Consideration will be given to pre-registration with state boards or N.C.A.R.B., or both at the beginning of the internship, to improving contacts between the practicing professionals and the internees during that period, and to the recording of their experiences by some such means as log books. It is felt that the local chapters and the Committee on Education of the A.I.A. will be of especially great assistance in this particular avenue of inquiry.

A complete study of examinations is contemplated, including such aspects as the contrasting percentage of failures between architectural school graduates and non-graduates, and the feasibility of greater uniformity of examinations being offered by the state boards. Possibilities will be considered of using outside-the-profession facilities such as those available at the Educational Testing Services at Princeton, of having the schools conduct the examination, of recognizing school work toward satisfying the exams, and of inaugurating two- and three-phase exams. The Commission will look into the ways and means of strengthening state boards by improving membership, methods of appointment, and terms of office. It is hoped that recommendations can be made for making more uniform the registration and licensing proce-

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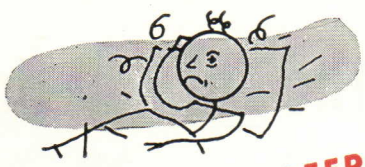

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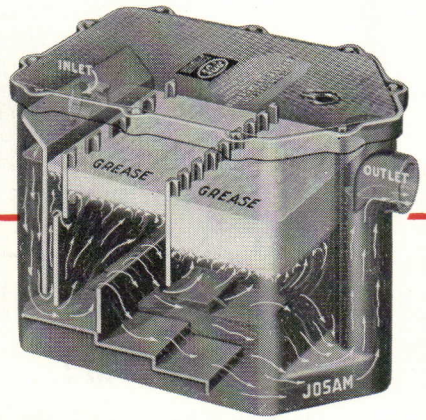

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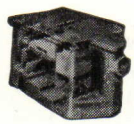

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out of school

(Continued from page 132)

dures throughout the United States. Obviously, this investigation involves a very detailed study of existing laws and regulations and we have the assurance of full co-operation from the N.C.A.R.B. One interesting possibility comes to mind in connection with our discussion of this phase of the problem and that is a professional nation-wide control under federal law to restrict the use of the term "architect."

The *fourth* main subdivision of the study is the educational facilities which serve the profession. In this connection, every effort will be made to avoid duplication of effort by taking into consideration previous studies such as those made by Bosworth and Jones in 1930, the investigations of the Joint Committee on Preparation for the Practice of Architecture (1933-38), and the Goldsmith-Young study of 1939.

As to pre-professional training, such questions as the following will be raised: what constitutes sufficient and adequate general education to enable a student to absorb the professional education offered by the schools? Is the equivalent of one year taken before or along with their professional studies sufficient? If more is desired, what about the prolongation of the educational process and its sociological implications as alluded to at the opening of this paper?

In this connection, I would like to draw upon my experience in engineering education and point out that most of my colleagues believe that adequate general education, and by that I mean the equivalent of one year of humanities running concurrently with science and engineering courses, can be integrated into a four-year undergraduate program as against your presently prevailing five-year undergraduate architectural program. You ask how we can do it? The answer is, by doing a better job of teaching, by concentrating upon the basic sciences and fundamentals of engineering, and by shifting the burden of training in advanced technologies to the graduate years and to in-service training in industry. Ten years ago, industry balked at this, but I believe industry is not only accepting but cultivating the idea of doing its own advanced training. Perhaps the architectural profession can be induced to accept more responsibility than hitherto thought possible or desirable.

Of course, a comparative study and analysis of school curricula will be made and the N.A.A.B. has promised to be most helpful. The danger of regimentation by the accrediting process on subject matter and course content will be weighed. The New York State Department of Education, for instance, has indicated that certain definite criteria should be established, but the

(Continued on page 136)

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it's the law

By BERNARD TOMSON

Is your contractor incorporated in another state? If so, has he "qualified" his corporation to do business in the state in which the project is to be built? His failure to comply strictly with the laws concerning "qualification" may result in illegal, void, or unenforceable contracts or even criminal prosecution. This could not only be disastrous to him but would also seriously affect the performance of his work.

The problem of doing business in a "foreign" state without qualifying is to be distinguished from that of engaging in general contracting without securing a contractor's license as required by state law. Only a limited number of states require those who engage in contracting to procure an occupational license; but virtually every state demands that a "foreign" corporation secure the proper authorization. A "foreign" corporation is one whose charter was issued in another state.

Criminal prosecutions are infrequently instituted against corporations for failure to qualify. But they are available and states have resorted to them upon occasion. For example, a few years ago Arkansas imposed a $1000 penalty on an unlicensed Mississippi corporation found to be engaged in extensive construction work in Arkansas. The construction company fought the action up to United States Supreme Court, where its appeal was dismissed.

A more serious detriment to the noncomplying foreign corporation stems from the invalidation of its construction contracts performed within the state. In various states, a contract for construction entered into without complying with local conditions of doing business is rendered void either by the express terms of the statute or by statutory interpretation. In other states statutes, while not making the contract void, expressly prohibit the maintenance of an action on it. In either case, the result is the same—the corporation is barred from presenting its case for determination to the courts, however meritorious its claim may be.

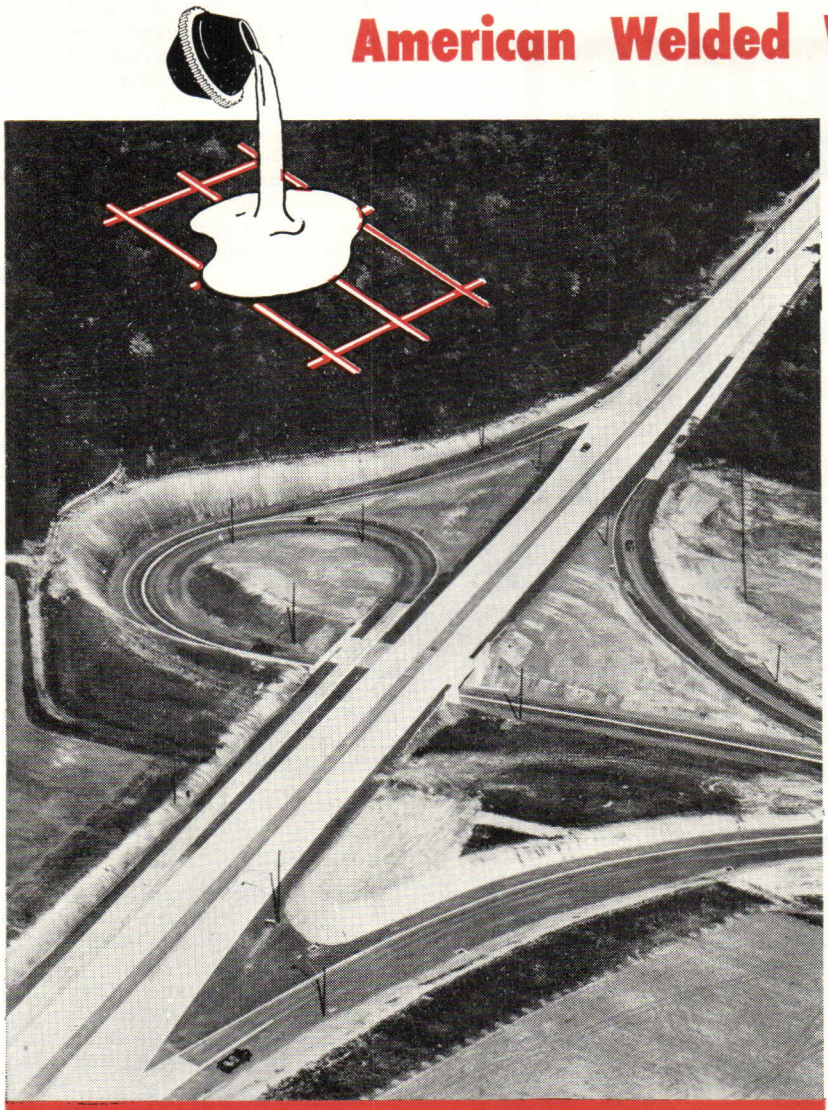
●

It may develop that a contract is valid in the state in which it is made but invalid and unenforceable in another state in which it is to be performed. In a Texas case, a construction company made a contract in New York to do certain work on a bridge in Texas. The company took no steps to perform the contract but brought an action in a Texas court to have the contract canceled on the ground that the defendant had misrepresented the facts and concealed the real nature of the work in inducing the company to take the job. Again, because the company had not secured a permit to do business in Texas, the court refused to consider the merits of the case. The Texas law

(Continued on page 142)

On the Pennsylvania Turnpike

American Welded Wire Fabric



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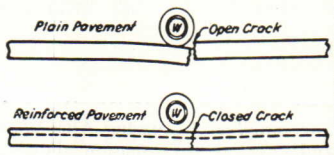

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it's the law

(Continued from page 140)

prevents a corporation from maintaining a suit on any demand unless it complies with the requirements for doing business. The court construed the words "any demand" as broad enough to cover a request to cancel the contract and, therefore, dismissed the case.

It has been held that a contract made by a corporation which has not qualified remains void and unenforceable although the corporation does so during the performance of the contract. In a Mississippi case, a construction company which had a contract with the state to work on a highway project secured a permit to do business after eight months and approximately two-thirds of the working days allowed for the completion of the contract had elapsed. When the project was completed, the state refused to pay for extra work which it had required under the contract, and the company sued to recover such compensation. The court held that the contract was wholly void and the company could not enforce it. Compliance with the statute, the court said, cannot be made to relate back to the date when the contract was executed. "The contract was either enforceable on the date of its execution or unenforceable."

●

In another case, a Colorado corporation entered into a "cost plus" contract with a canal company in Colorado to construct and enlarge a canal in Wyoming. During the performance of the contract, a dispute arose between the parties regarding the work, and the canal company terminated the contract. The construction company was not permitted to recover even for the money it had expended in transporting its machinery into the state to do the work.

The court held that the claim arose out of an unlawful performance of the contract. The corporation had complied with the statute for doing business after the contract was terminated and before it brought suit. A subsequent compliance, the court stated, was of no effect. It pointed out that the rule is different where only the right of action is suspended during the period of noncompliance.

Another category of states permits a corporation to sue on its contracts provided it qualifies before bringing the suit. Some of these states, in addition, require the corporation to pay a penalty before it may apply to the courts.

In those states making contracts of corporations which have not qualified absolutely unenforceable, it is immaterial what form of relief is sought.

(Continued on page 144)

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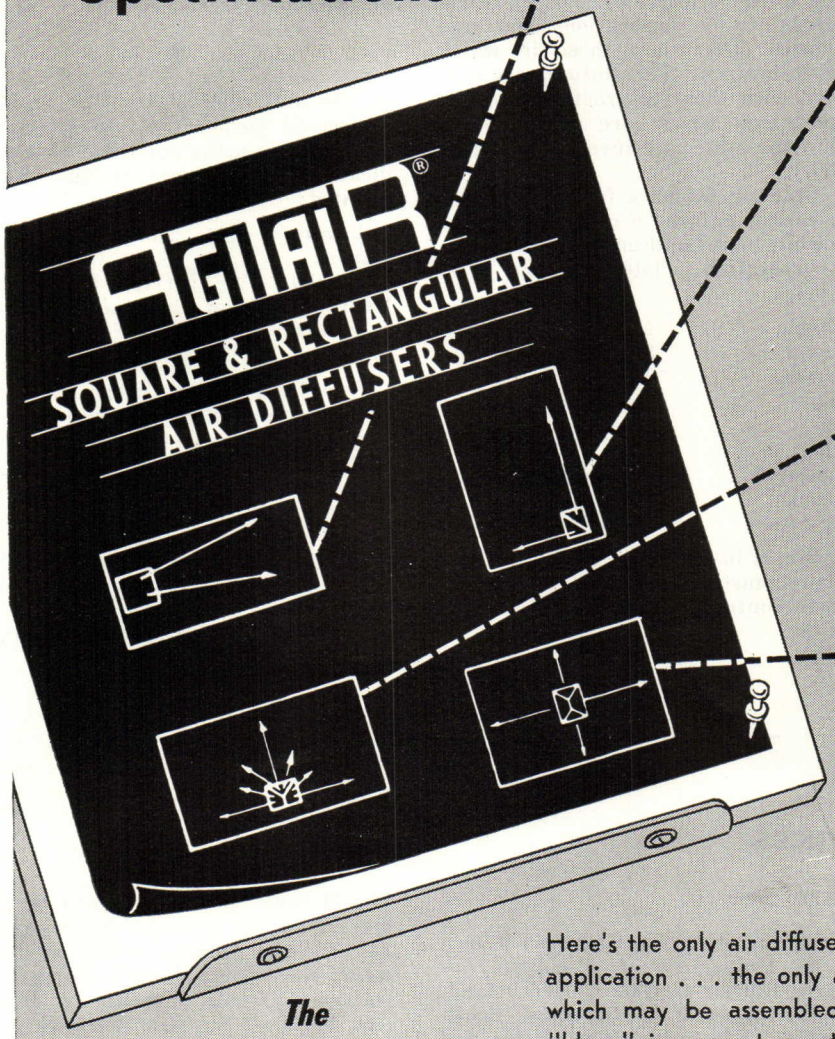
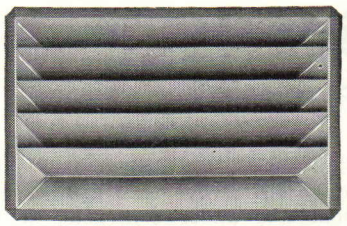
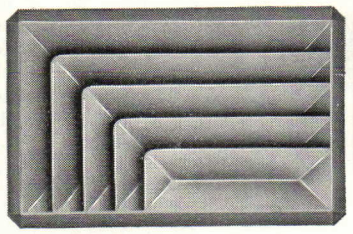




1 WAY BLOW



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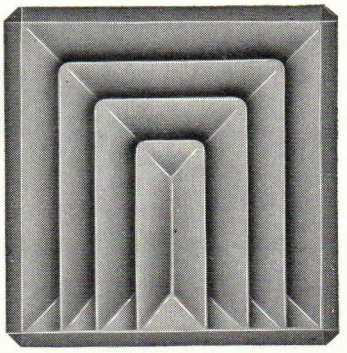

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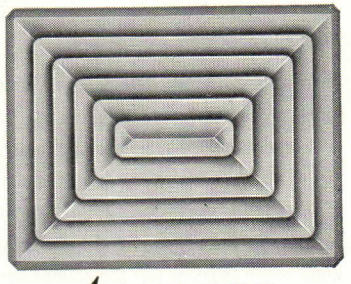

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it's the law

(Continued from page 142)

Thus, courts have refused to entertain actions to recover the balance of payment due under contracts, actions to enforce mechanic's liens, actions to recover for "extras" incurred in the performance of the work, actions to foreclose chattel mortgages on machinery sold, actions to rescind contracts induced by fraudulent misrepresentations —all by reason of the corporation's failure to secure recognition.

●

Listed below are the three categories of states which have enacted laws relating to the enforceability of contracts entered into by corporations chartered in states other than those in which they do business. The statutes are concerned with those contracts of foreign corporations which are entered into within the state and involve intrastate activity.

1. States in which a foreign corporation cannot enforce a contract entered into while it was unlicensed, even though the corporation is later qualified to do business:

Alabama	New York
Arizona	South Dakota
Arkansas	Tennessee
Idaho	(*by court decision*)
Iowa	Texas
Michigan	Utah
Mississippi	Vermont
Missouri	Wisconsin
New Jersey	Wyoming

2. States in which an unlicensed corporation must first qualify before it can enforce contracts made prior to qualification:

Colorado	New Jersey
Indiana	New Mexico
Louisiana	North Dakota
Maine	Oklahoma
Massachusetts	Oregon
Minnesota	Rhode Island
Montana	Virginia
Nevada	Washington
New Hampshire	West Virginia

3. States in which an unlicensed corporation must first qualify and pay a penalty before it can enforce contracts made prior to qualification:

California ($250)	Maryland ($200)
Connecticut ($250)	Ohio ($250 *and*
Florida ($250)	15% *of fees*)
Illinois (10%	Pennsylvania
of taxes and fees)	($250)

●

In the following states, the right of unlicensed corporations to sue is not covered by statute but the decisions indicate that the right to sue will be granted:

Delaware	North Carolina
Kansas	South Carolina
Kentucky	(*right to sue suspended until corporation qualifies*)
Nebraska (*latest case denies right to sue*)	

New Jersey merits a special note of its own. Generally, unlicensed foreign corporations may sue on contracts made in New Jersey if they first qualify to do business. However, by virtue of a retaliatory statute, corporations organized in states under Group 1 above may not enforce contracts made in New Jersey even though they subsequently qualify.

(*To be continued in August* P/A)

NOTICES

AWARD

The College of Architecture and Design of the University of Michigan announces ROBERT C. GAEDE of Cleveland, Ohio, as winner of the George G. Booth Traveling Fellowship Competition for 1950. Mr. Gaede plans to travel in England and Europe.

COMPETITION

A competition in the design of table and floor lamps, with prizes totaling $2600 plus royalties, will open May 5 under the sponsorship of the Museum of Modern Art in co-operation with The Heifetz Co. Entries must be postmarked not later than midnight, August 24, 1950. For program and entry blanks write Miss Greta Daniel, Lamp Competition Director, Museum of Modern Art, 11 W. 53 St., New York, N. Y.

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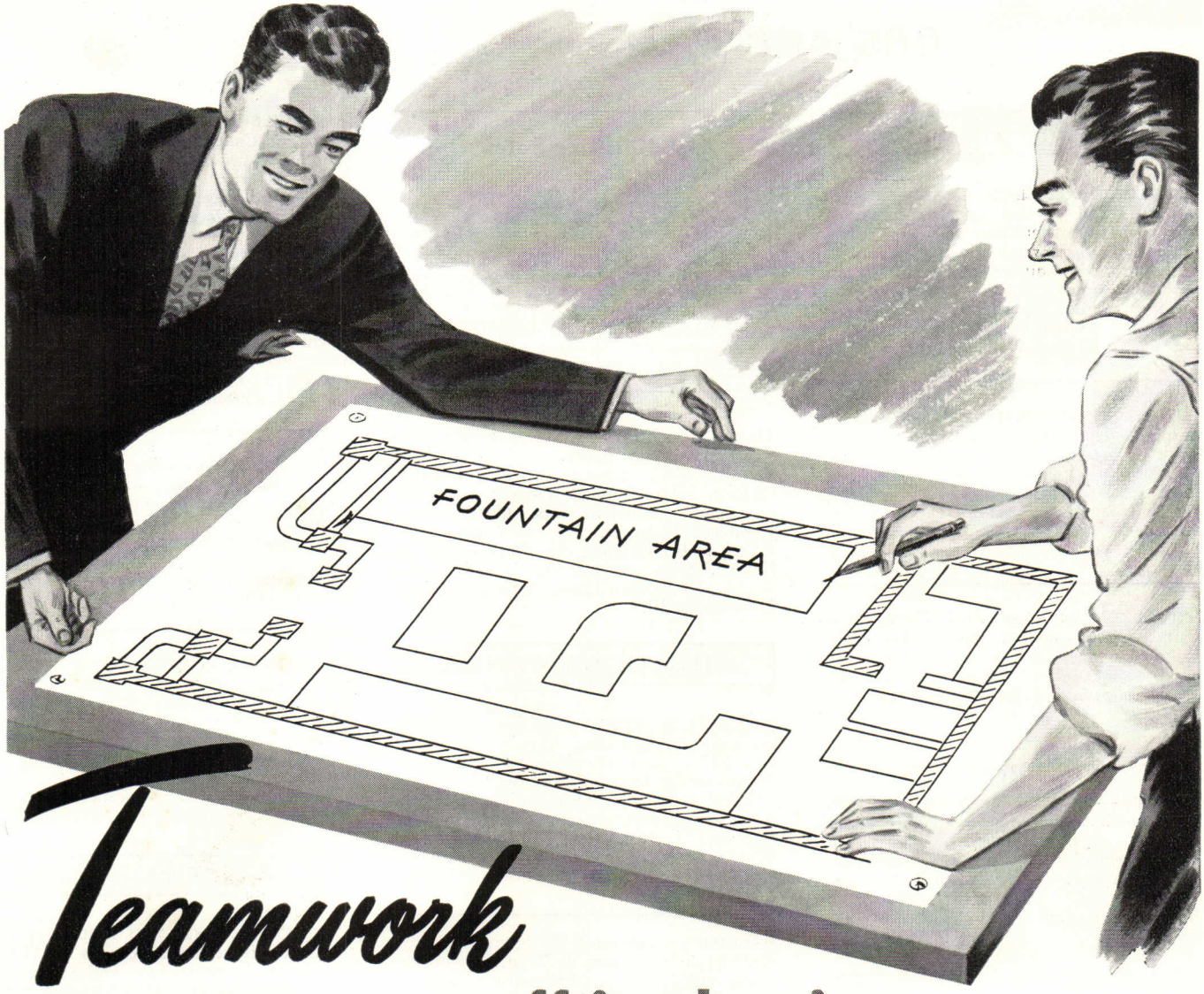

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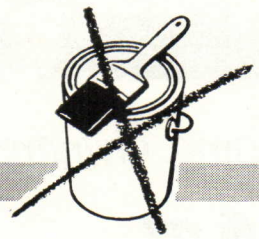

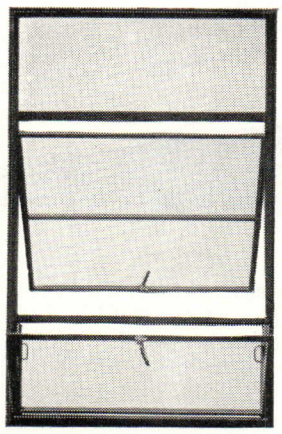

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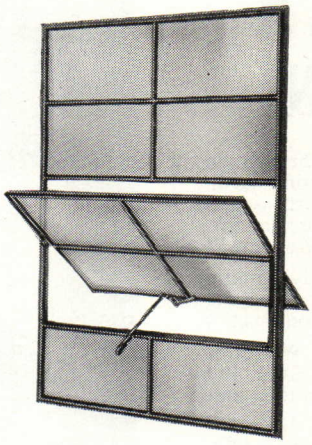

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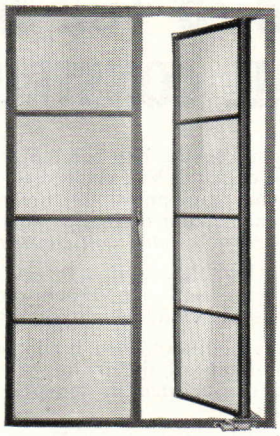

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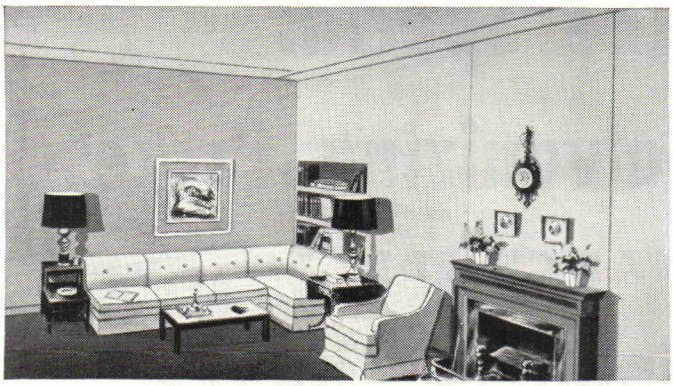

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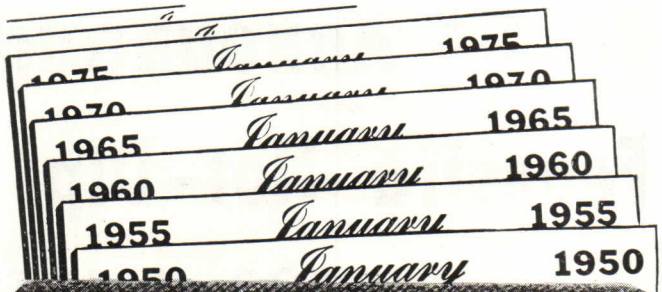

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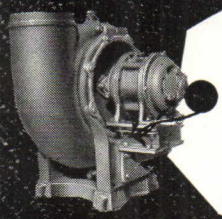

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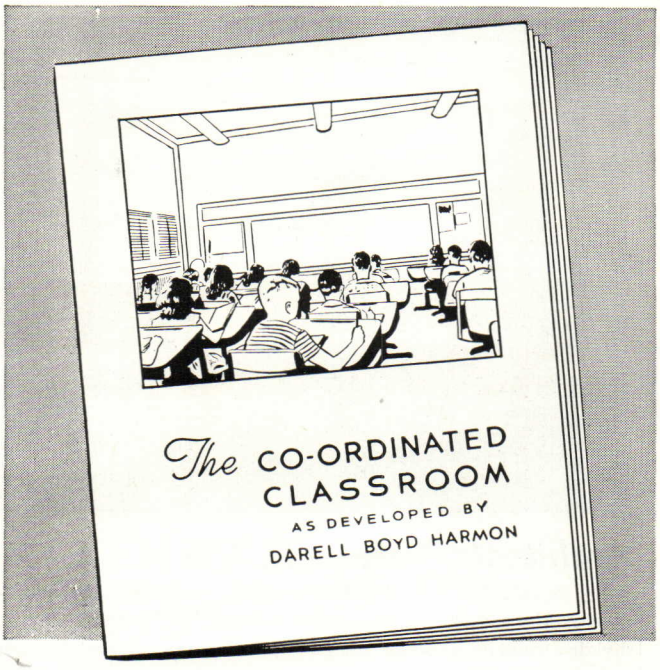

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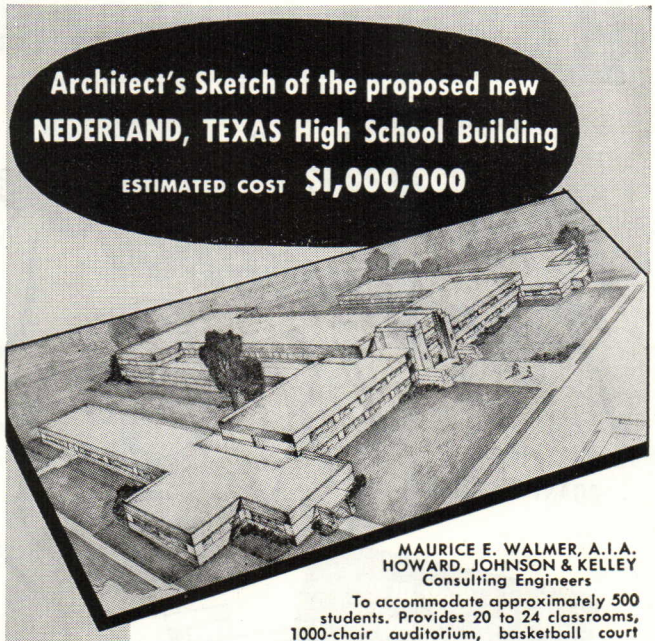

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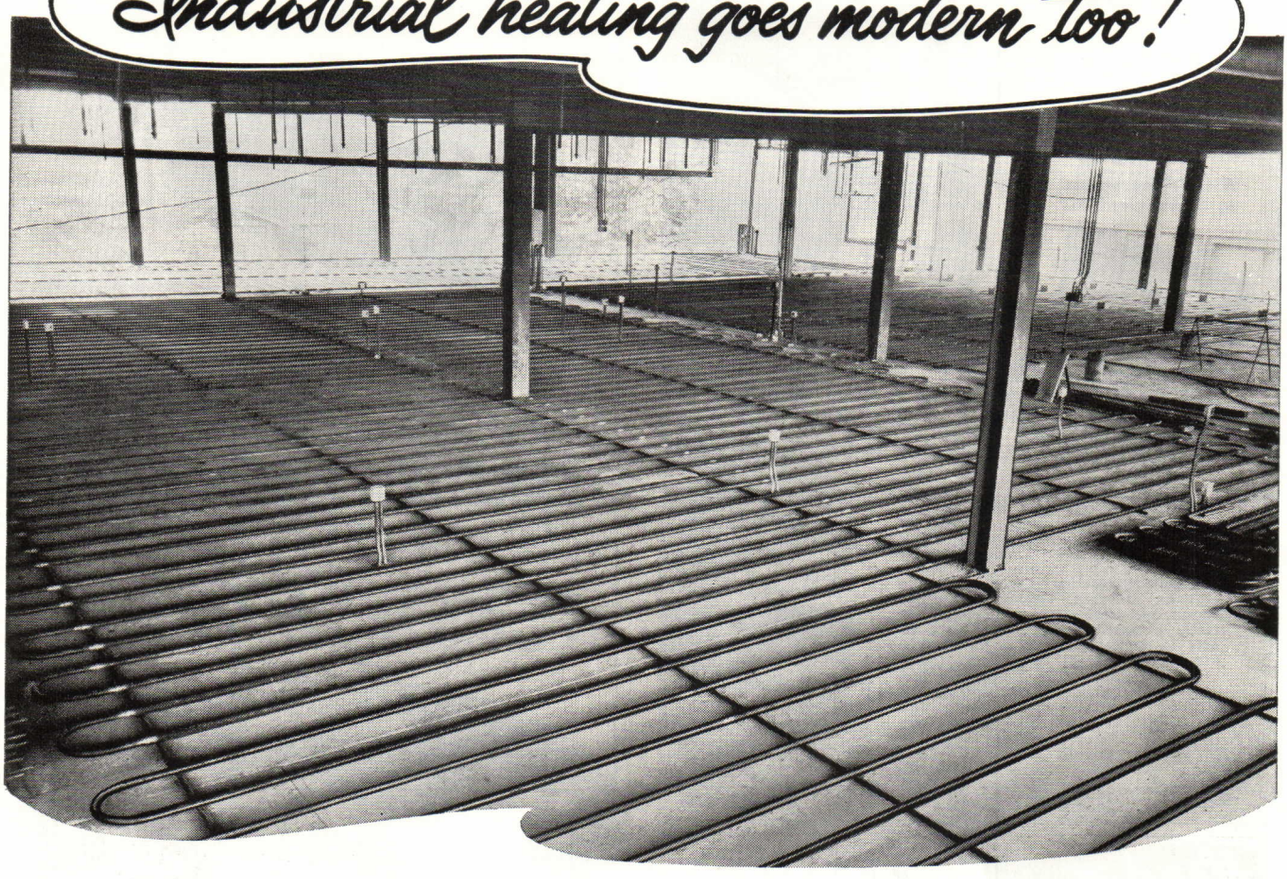

Steel pipe is first choice for radiant heating advantages

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Radiant heating has often proved the successful solution to such heating problems, and steel pipe, of course, is the logical choice for successful radiant heating systems.

There are many good reasons why. For one, steel pipe has more than 60 years of proved performance behind it in conventional hot water and steam heating systems. It has become almost standard material for this use. Then, too, steel pipe is economical, easy to form and weld, durable, and its expansion and contraction in concrete or plaster for all practical purposes may be considered the same.

Yes, steel pipe is first choice for radiant heating in modern industrial buildings, public buildings, schools, churches and homes.

This modern warehouse and operating building of The Peoples Natural Gas Company, Pittsburgh, Pa. incorporates a steel pipe radiant heating system for warmth, protection of delicate instruments and even for snow removal.

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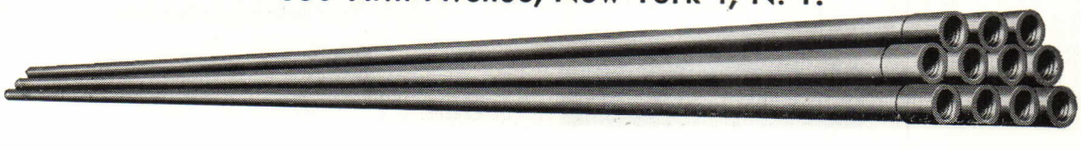

SELECTED PRODUCERS' BULLETINS

● Concrete floor slab should never be constructed on wet ground, if a basementless house is to be heated successfully. This warning is issued by the National Warm Air Heating and Air Conditioning Association, whose field research investigations prove that the operating cost of any "in slab" heating system depends entirely on the location and preparation of the slab.

"If it is installed in a house on a wet site with standing water near the foundation a good part of the heating season, heat plant operation costs will be entirely out of line," states the Association. According to them, the slab should be laid on a well drained site where the drainage is *away* from the slab, and where there is no standing water at any time of the year.

A suitable porous fill and waterproof membrane serving as moisture barrier beneath the slab are required by F.H.A. with slab construction, and highly necessary with a warm air perimeter heating system.

Insulation must also be placed between the edge of the slab and the foundation and extend completely around the slab to reduce heat losses from the slab edge. Two-inch thick insulation is recommended for good construction, though one inch is acceptable, and it should extend downward a minimum of 14 to 18 inches. The insulating material used must be completely waterproof and termite proof, and of a permanent type which will not disintegrate after a few years.

● Members of the University of California's engineering faculty recently conducted a series of tests on the new Paraline drafting instrument, manufactured by Loomis Industries, 516 Park Way, Piedmont, Calif. The tests, which were in the nature of motion economy studies, were designed to rate this versatile device in performance and speed against conventional drafting equipment. Conclusions reached by the researchers point to considerable savings in time, effort, and expense through use of Paraline. Its advantages are attributable to the fact that it combines the functions of T-square, straightedge, triangle, protractor, scale, and parallel rules.

● Completion of a modern water treatment plant to purify waste water from steel mills along Pennsylvania's Schuylkill River, is announced by the president of the Alan Wood Steel Co., of Conshohocken, Pa. The new installation enables the steel company to comply with that state's stream pollution abatement program by eliminating the discharge of contaminating waste products from their mills to the river. River water is drawn only to make up for normal operating capacity. Water from the steel mills is diverted to the river losses and to keep the system up to only when the ready supply exceeds demands and the water returned to the river is purified. Construction costs of the plant were estimated to be somewhat over $775,000.

● Ten national manufacturers of fireplace equipment recently met in Cleveland, Ohio, and formed the Fireplace Equipment Institute. One of its principal objectives will be the expansion of the market for fireplace equipment, through closer co-operation between manufacturer and the retail outlet. An educational program is also under way on the care and use of fireplace equipment, the proper way to build and light a fire, etc., which should create a desire on the part of more home owners to build, equip, and use fireplaces in their homes, and enjoy the comfort of an open fire.

p/a

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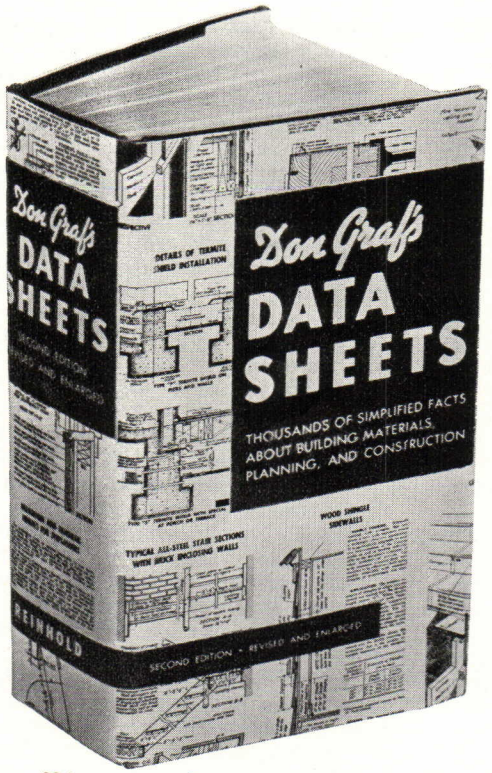

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THIS 834 page book is crammed full of useful facts for the professional architect and builder. Its importance and value first became known to architects, designers, draftsmen and builders when they began to appear regularly in the magazine Progressive Architecture (formerly Pencil Points). So great was the demand for the DATA SHEETS that they were at first sold separately in loose-leaf form and later made into a book which quickly became a standard reference work the world over.

Now, in the new, second, revised and enlarged edition all data have been brought up to date and hundreds of new drawings added which never before appeared in print. A section of the book on common building materials gives you dimensions, grades, and construction information on wood, glass, masonry, etc. Another section contains complete information on indoor and outdoor game areas such as shooting ranges, table tennis, wading pools, croquet courts, horseshoe courts, tennis courts, billiard rooms, etc. If you are going to build cabinets for kitchenware or liquor glasses, you will find sizes of these items.

Among hundreds of items in this book that are hard to locate elsewhere are the construction of coal bins, septic tanks, closets, darkrooms, movie theatres, spring houses, foundations, roofing, flooring, fireplaces, window boxes, railings, log cabins, stairways, breakfast nooks, outdoor cooking grills, sundials, lily pools, gardens, brick, flagstone and concrete walks, driveways, garages, etc. Covered in detail is information about such problems as insulation, heating systems, ventilation and air conditioning, dampproofing, noise reduction, lighting, wiring, painting, termite protection, uses of concrete, etc.

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P.S.

LET'S SEE, NOW, WHERE WERE WE? I reported on Havana and Miami—next, I guess, is Washington. The A.I.A. Convention was such a big thing and so many people were there that it's a hard job to try to extract a little gossip and dredge up some off-hand comment. The usual pleasurable recognition of old friends in the lobbies and restaurants, the usual gatherings in crowded hotel rooms in the evenings, with some one pouring entirely too many drinks, the usual painful meetings at breakfast the next morning, with the guilty realization that one was going to miss a session that should by all means be attended. Ernie Kump telling the same old stories so boisterously that they were laughed at all over again; MacKie and Kamrath and Ham Brown (who also can tell stories) and the rest of the Texas delegation putting on a campaign for Sullivan for treasurer, which engendered enthusiasm but few votes; Walker and Wurster lunching together; petitions circulating for resolutions on questions which became most important; tut-tutting on the part of some who were shocked at the idea of petitions being circulated or even of questions becoming important; the same old convention atmosphere over again in a different setting and on a larger scale. Fun and some profit and the chance to see many good people.

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POST SCRIPT ON MIAMI: Bob Little is his own worst client. After having designed his own house he is starting on a major alteration as soon as he has moved in. It's a good house now and it should be better, but the life a poor architect leads when he has a client as unreasonable as that! Bob Weed's office is one of the busiest spots I've seen, with a group of able associates working to produce fast and well. Igor Polevitzky has much recent work to show and be proud of—work done with imagination and competence and a sure knowledge of materials. Rufus Nimms is most proud of a house with a simple concrete structure and a curving outside concrete stair. Love and kisses also to Archie Manley, Al Parker, Wahl Snyder and his beautiful wife.

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NEXT, DETROIT. The annual meeting of the Detroit A.I.A. Chapter was attended not only by a goodly number of architect members, but by an impressively large number of student associates as well. Awards were made to seniors from three architectural schools in the area, and then your editor held forth for probably too many minutes. The discussion afterward was almost entirely on the subject which seems to be an increasingly favorite one with the profession—architectural criticism: the reasons why there should be more of it (provided it is the other fellow's work); the reasons why it is almost impossible without the full collaboration of the architect whose work is being analyzed. It seems to me, prejudiced as I am, that our Round-Robin Critiques have been the closest approach yet to analytical, no-punches-pulled criticism. Too much of the criticism attempted *without* full knowledge of the architect's problem—his reasons for having done certain things, which are not always evident on the surface—has been superficial and glib and sometimes amusing and readable, but not always constructive. The Round-Robins, giving the designer a chance to reply and explain, and then giving the reader an opportunity to evaluate and judge, seem to be a procedure that can be developed with profit, not only in the pages of the magazine, but as well in professional meetings and discussion groups. In New York and in Minneapolis, to my knowledge, successful meetings have been held on this basis. Incidentally, we have a good Round-Robin coming up next month on a group of houses by top-flight designers. They aren't easy with one another, but I don't think anyone gets hurt.

I had the opportunity, while I was in Detroit, to visit Cranbrook at the most beautiful time of the year. There was an exhibition of student work in the Museum, which was most impressive, but the thing I enjoyed most was going through the Institute of Science building, which I had not visited before. The permanent exhibition there of minerals and metals is astonishing in its scope and its beauty. It was Pipsan Swanson's comment that the forms and the colors in natural formations are so much better designed than any work of students or professionals in the formal design professions that man is put to shame. It wasn't fair to the Cranbrook students to go there after having seen their show.

I can report that both the Saarinen and the Swanson offices are busy, side by side. In fact everyone in town seemed to be busy. I had wanted to see the Wayne University development (a long range urban university plan being carried out step by step) and Suren Pilafian and Frank Montana were good enough to take me out there. We plan to publish the first of the completed buildings as soon as the photographer can find a way to get pictures in and around the remaining old buildings and residences that will continue to crowd the "campus" until more new ones are finished. It's an interesting problem of step-by-step growth that many city schools and their architects are facing.

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I ALWAYS FEEL GUILTY taking up the time of a busy architect when I call on him in his own habitat. And yet when the out of town visitors come to New York I'm glad to drop the things that had up to then seemed important, in order to talk and learn and gossip. Paul Thiry, who dropped in last week, noted that it was remarkable that no one in New York ever seemed to be doing any work; always ready to have drinks and visit. That's only when you're around, Paul. And then we work overtime to catch up. But don't let that keep you away, please.

Often we have a visitor who has been a stranger to us up to that time, and the results of such anonymous calls are unpredictable. In fact we have had several frightening experiences recently. One gentleman came in to see me about a new theory he had evolved, which would relate all of the arts to a mathematical formula. He assured me, with gestures and grimaces, his hat pulled far over his ears and frayed cuffs protruding from an overcoat several sizes too small, that Einstein himself was impressed. I tried to get from him a statement of the basis of the theory, but he indicated that it would be much too difficult for me to understand. He had with him a sheaf of wrinkled and soiled sheets of typewriter paper on which he had made paintings according to his formula—pathetic daubs which were embarrassing to look at. These were shown reluctantly and quickly pulled back. His only reason for calling, it seemed, was to let me know that he *had* such a theory, not to tell me what it was.

Then yesterday George Sanderson entertained another mysterious gentleman (who also kept his hat on; this seems to be a symbol of some obscure sort) who, according to George, breathed down his neck a mysterious story of basic design elements which he had discovered. He wanted first to know what we'd charge to publish them, and then when he was assured that we publish on merit and not for a price, and would have to *see* the discoveries before we could commit ourselves, he became suspicious that we would want to steal them. "If they are published, then everyone will know them," he reminded himself sadly. So he departed leaving us as ignorant as we had been before his visit.

Crackpots? Geniuses? I don't know. When the next phone call comes telling us mysteriously that the voice on the other end belongs to the holder of a momentous design theory, we'll probably again invite him up.

Thomas H. Creighton