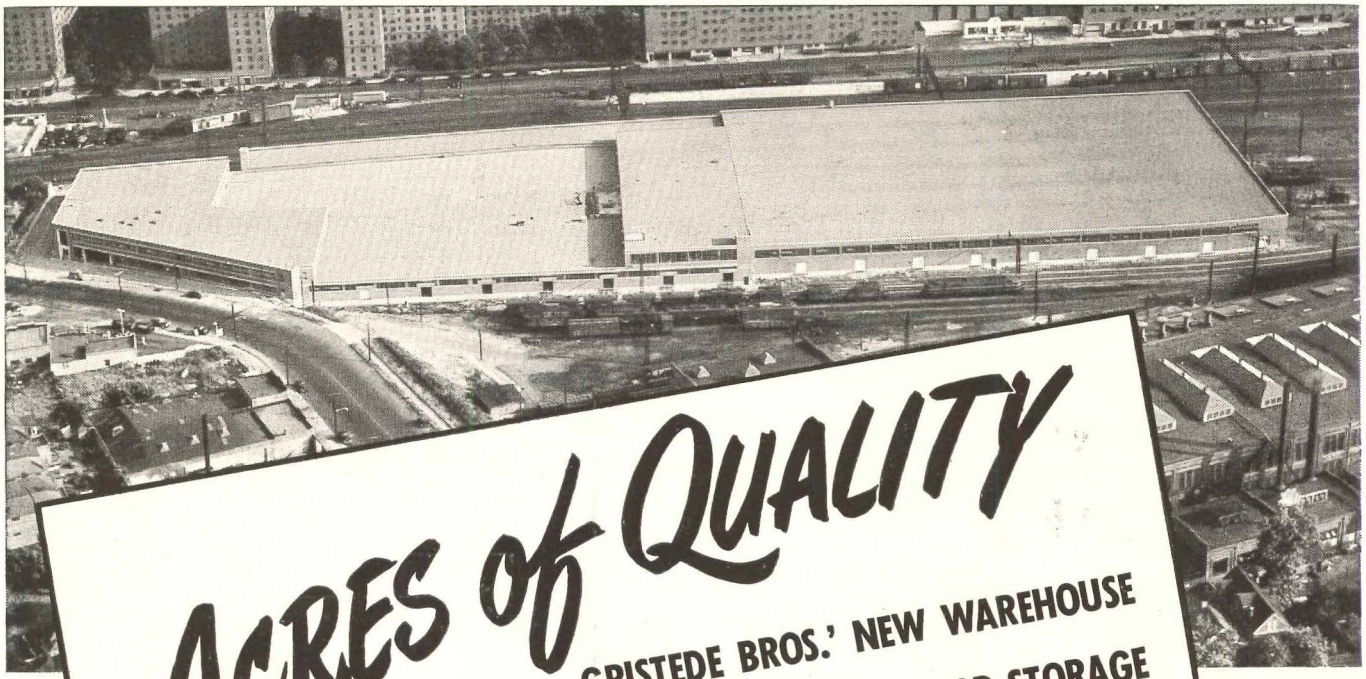
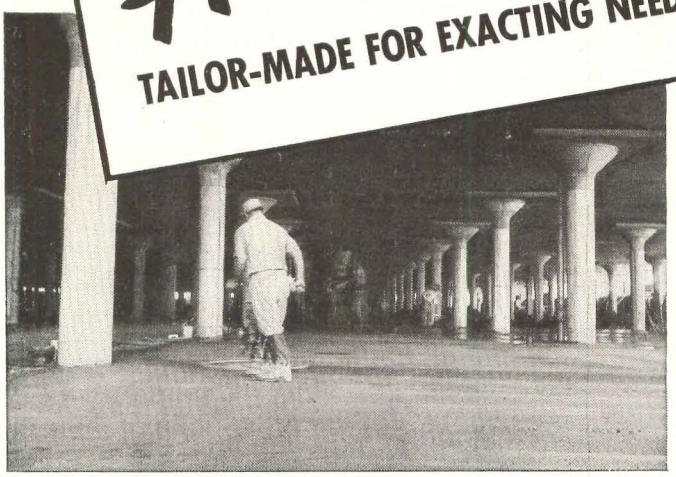
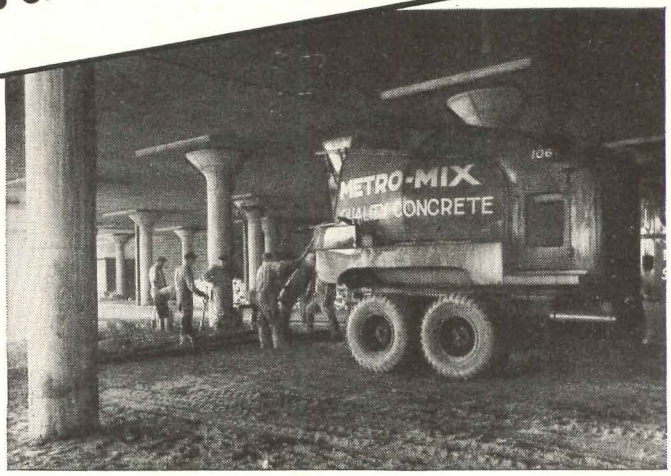


# ACRES of QUALITY

## GRISTEDE BROS.' NEW WAREHOUSE

## TAILOR-MADE FOR EXACTING NEEDS OF QUALITY FOOD STORAGE





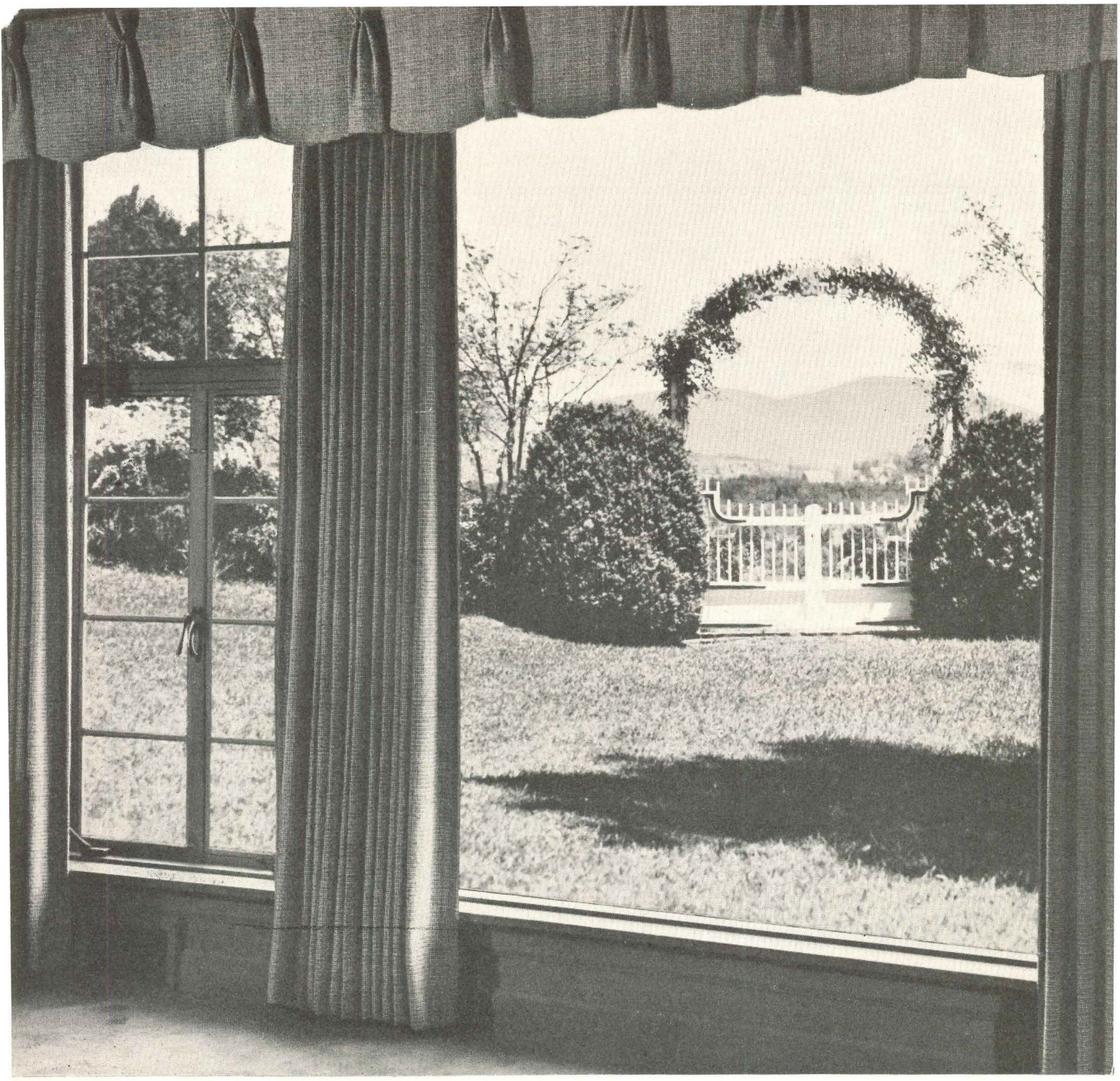

● Gristede Bros. Inc. have 140 stores in and around New York City. Each store carries 5,000 items, twice as many as average food stores. Assemble and distribute that many items, provide special storage conditions of temperature and moisture . . . load and unload . . . handle and convey . . . stack and unstack —and you need a lot more than just four walls and a roof! Gristede's new warehouse—355,000 sq. ft. floor area, all heavy-duty concrete construction—is tailor-made to meet these multiple problems. Specialized know-how in design and construction, including concreting throughout with Lone Star Cement, 26,000 bbls., invests this new warehouse with the same "Quality and Service" attributes which have distinguished Gristede operations for the past 59 years.

**GRISTEDE BROS. INC.:** Warehouse and Offices
Bronxdale near Tremont Ave., Bronx, N.Y.C.
Architect: **OFFICE OF DAVID LEVY,** New York
Contractor:
**CARISTO CONSTRUCTION CORP.,** Brooklyn, N.Y.
Ready-Mix Lone Star Concrete:
**METROPOLITAN SAND & GRAVEL CORP.,** New York


# LONE STAR CEMENT CORPORATION

*Offices:* ALBANY • BETHLEHEM, PA. • BIRMINGHAM • BOSTON • CHICAGO • DALLAS • HOUSTON • INDIANAPOLIS • JACKSON, MISS. KANSAS CITY, MO. • NEW ORLEANS • NEW YORK • NORFOLK • PHILADELPHIA • ST. LOUIS • WASHINGTON, D. C.

LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 15 MODERN MILLS, 27,500,000 BARRELS ANNUAL CAPACITY

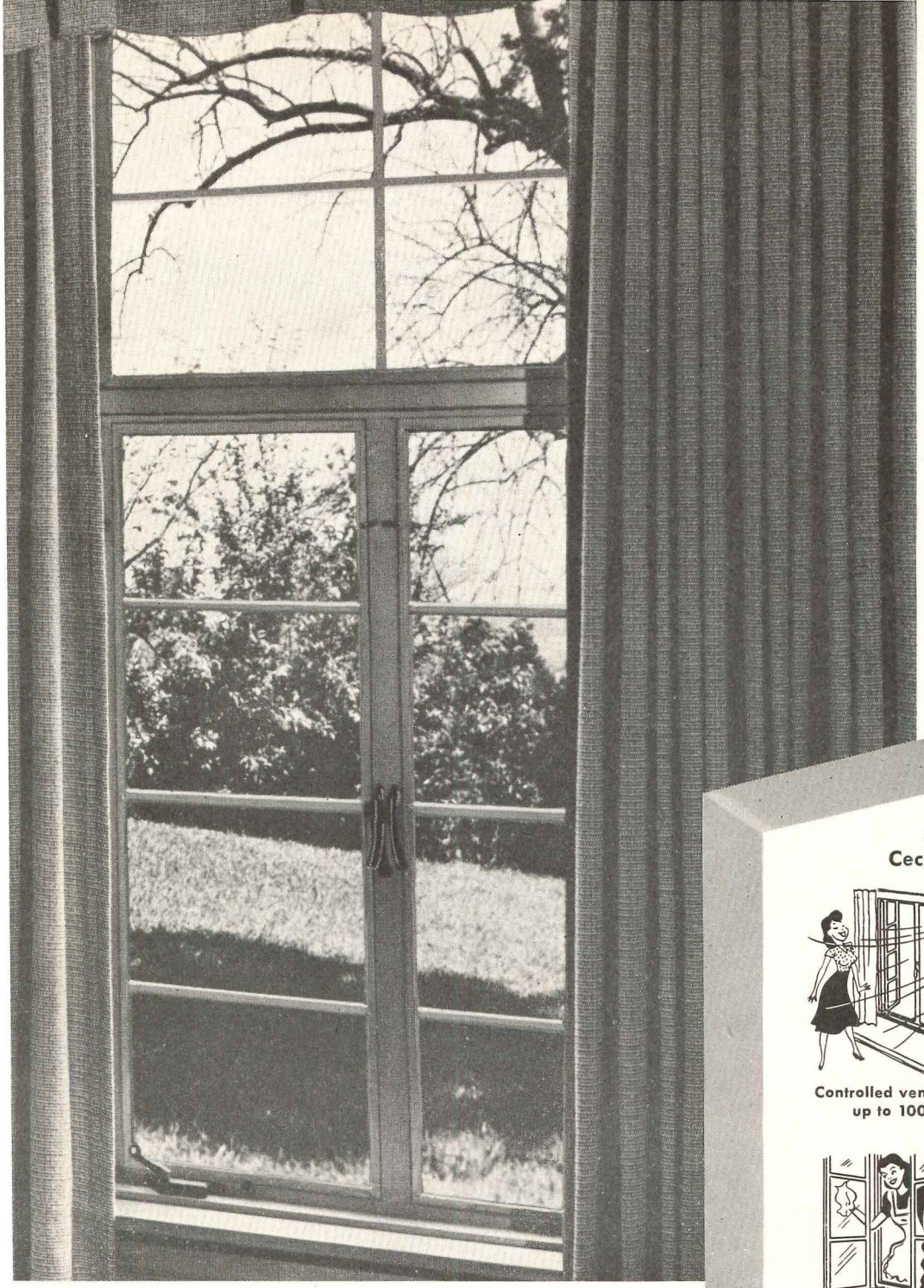


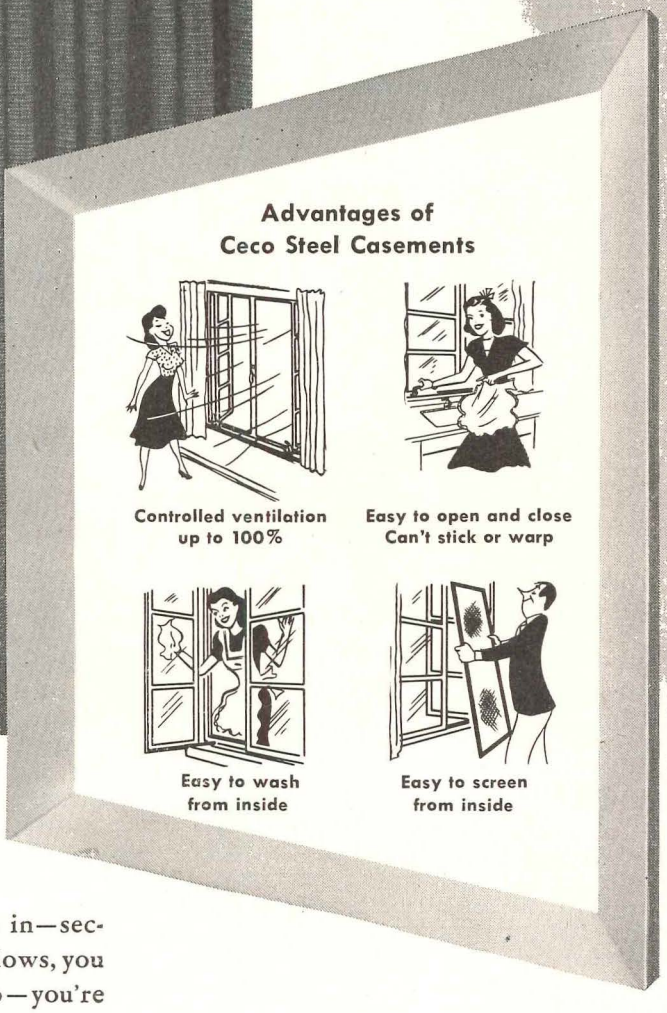
# How to Make a Home

It's easy to bring nature right into the home with Ceco Picture Windows of Steel to make each room truly live. There's movement in the murals of the vibrant outdoors framed by these handsome window creations. Distant views, ever changing with the mood of the hours, bring relaxing thoughts and a sense of better living. All this is possible because there's less interruption of vision. The eye is drawn easily to the outside world of motion—barriers are minimized due to slender frames and muntins. And to have Ceco Steel Windows is to know truly sound value. They're engineered to

CECO STEEL®

*In construction products* **CECO ENGINEERING**






# *Come Alive . . .*

provide the tightest weatherseal ever—with extra strength built in—sections are 1 1/16 inches deep. Yes, when you specify Ceco Steel Windows, you know you've chosen the very best—you're sure of economy too—you're modern as tomorrow.

**CECO STEEL PRODUCTS CORPORATION**

General Offices: 5601 West 26th Street, Chicago 50, Illinois

Offices, warehouses and fabricating plants in principal cities

*makes the big difference*

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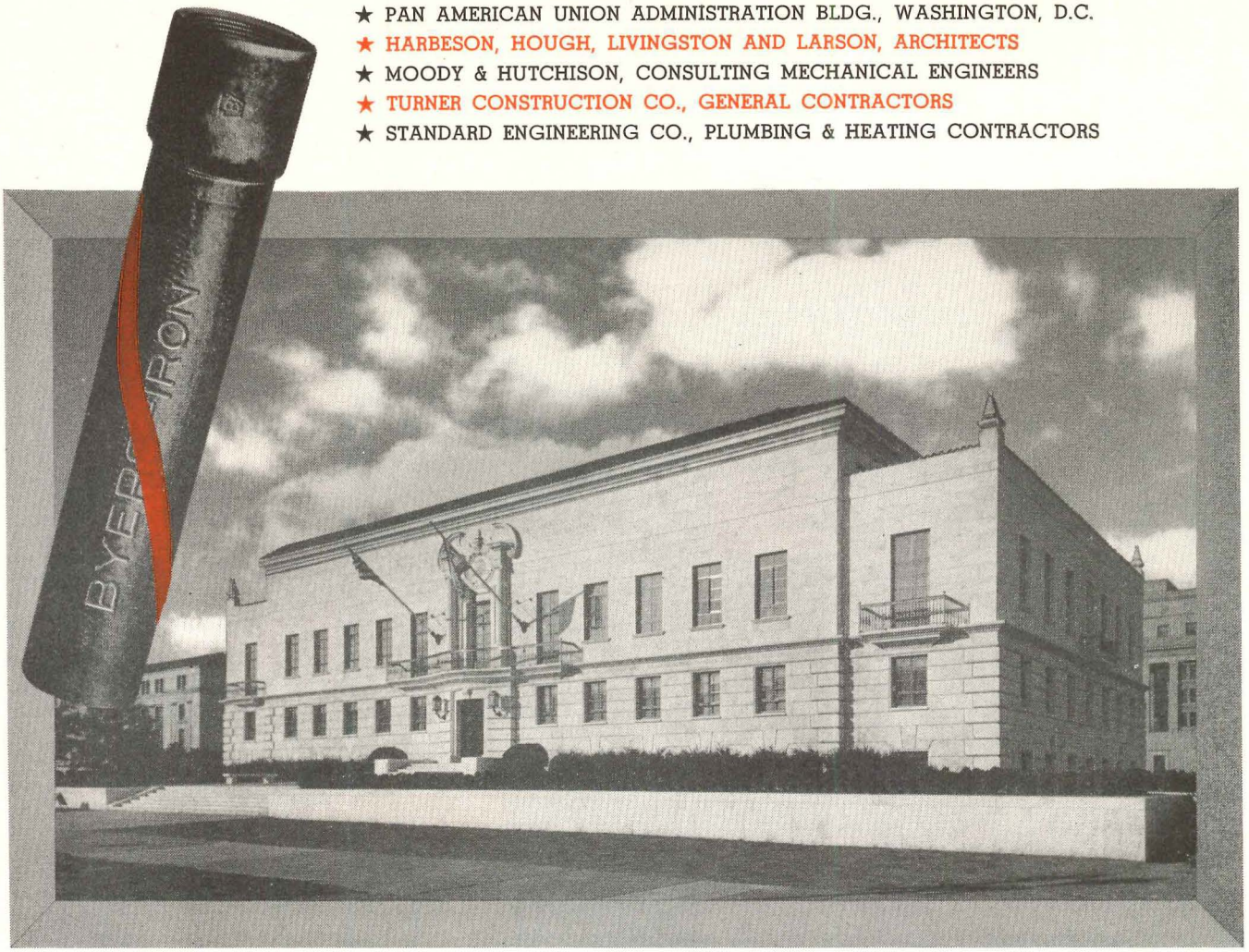
★ TURNER CONSTRUCTION CO., GENERAL CONTRACTORS
★ STANDARD ENGINEERING CO., PLUMBING & HEATING CONTRACTORS



## *In 6 important positions on this "All American" Team . . .*

# BYERS WROUGHT IRON PIPE

The culmination of over 15 years of study and planning, this new Pan American Union Building has recently been completed. Architectural appeal is linked with pocket-book protection, by top emphasis on durability and dependability in every structural part. The steam return and drip lines, the soil, waste and vent lines 2-in. and smaller, and the rain leaders, were all specified "Wrought iron." Byers Wrought Iron pipe was used.

The corrosion threat in all these services is too well known to require comment. Wrought iron has proven its ability to resist the attack by continuous, trouble-free service over long periods. In some areas, wrought iron lines have been reported as still serving after 40 to 50 years on the job, while vulnerable materials have become unserviceable in a fraction of this time.

It is no accident that Byers Wrought Iron pipe serves so long and so well in these punishing applications. The tiny fibers of glass-like silicate slag, threaded through the body of high-purity iron, halt and disperse corrosive attack, and so discourage pitting and rapid penetration. The fibers also help to anchor the initial protective scale, which shields the underlying metal. When galvanizing is used, the naturally rougher surface of wrought iron takes and holds a heavier coat.

You will find some helpful information on piping problems and their practical solution in our bulletin, WROUGHT IRON FOR PIPING SERVICES. We will be very glad to send you a copy on request. A representative will answer any specific questions you may have in connection with any particular service you have in mind, if you will contact the nearest office.

May we remind you that when you specify wrought iron for piping, the use of *wrought iron nipples* should also be specified? This will eliminate any chance of weak-links in your corrosion-resistant piping system.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, Salt Lake City, San Francisco. Export Division: New York, N. Y.

CORROSION COSTS YOU MORE THAN WROUGHT IRON

**BYERS**
**GENUINE WROUGHT IRON**
**TUBULAR AND HOT ROLLED PRODUCTS**
ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

*Vol. 107 · No. 6* *June 1950*

# ARCHITECTURAL RECORD

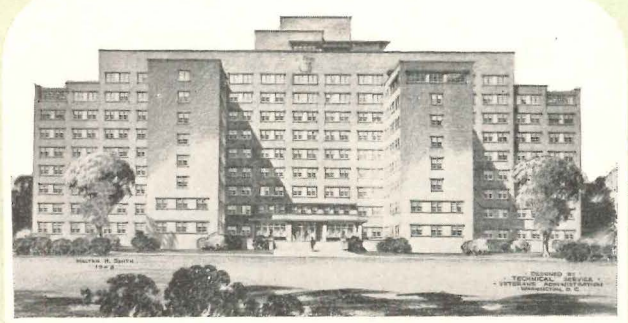


Architectural Record (combined with American Architect and Architecture) is published monthly by F. W. Dodge Corporation, 10 Ferry St., Concord, N. H., with Editorial and Executive Offices at 119 West 40th Street, New York, N. Y. Western Editorial Office, 2813 Channing Way, Berkeley, Calif. Thomas S. Holden, Pres.; Howard J. Barringer, Vice-Pres. and Treas.; Irving W. Hadsell, Vice-Pres.; Chauncey L. Williams, Vice-Pres.; Sanford D. Stockton, Jr., Secy.; Walter F. De Saix, Asst. Treas.; Edwin H. Freed, Asst. Treas.; Irving B. Satin, Asst. Treas. Member Audit Bureau of Circulation and Associated Business Papers Inc. Architectural Record is indexed in Reader's Guide, Art Index, Industrial Arts Index and Engineering Index. Subscription rates: United States and Possessions, Canada, Cuba, Mexico, Central and South America, and Spain, $4.50 the year, $7.50 for two years, $9 for three years; elsewhere, $6.50 the year, $11.50 for two years, $15 for three years. Single copy $1. Circulation Manager: Marshall T. Ginn. Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage. Other Dodge Services: Real Estate Record & Builders' Guide, Sweet's Files, Home Owners' Catalog, Dodge Reports & Dodge Statistical Research Service.

**COVER:**
**Mt. Holyoke College, South Hadley, Mass. Air view by Weitner Aerophoto Service; color photo of Lakeside Dormitory by Joseph W. Molitor.**

# FORTY MILLION DOLLARS

Below: Veterans Administration Hospital being erected on the campus of Syracuse University. A similar unit is also under construction at Cincinnati, Ohio.

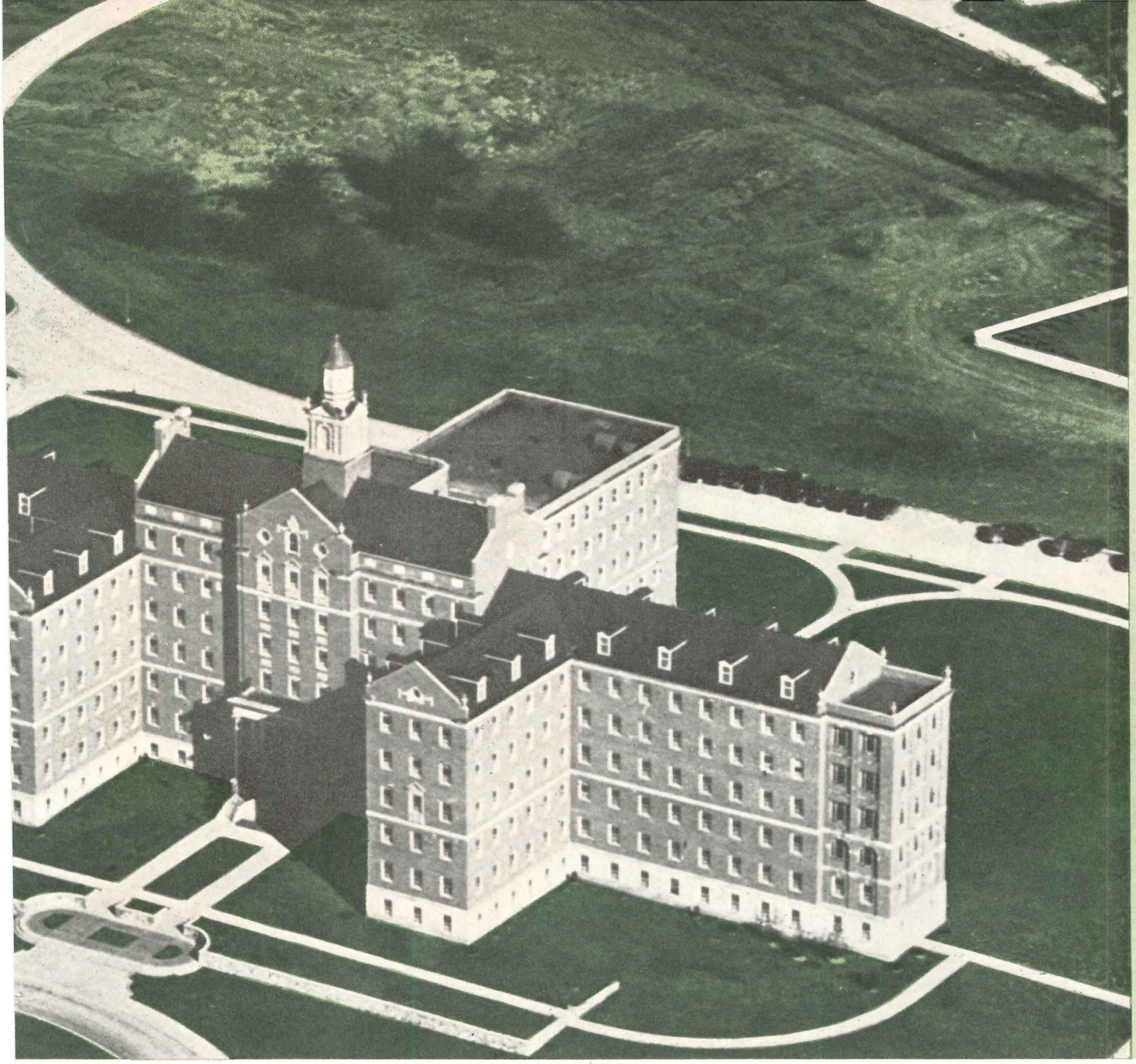


The Veterans Administration has established, as ec
nomic policy, the designing of the most modern and efficie
hospital structures possible. These highly-developed, mc
ern, functional hospitals not only afford the greate
measure of service to Veterans, but, because of radic
departures from usual methods, these finer hospital bui
ings actually cost less.

This effective method of achieving hospitals of maximu
excellence at a cost that is definitely lower, marks anotl
milestone in the progress of advanced, large-scale planni
for economical construction.

Under this program John A. Johnson & Sons, Inc. are nc
erecting the largest structure of any kind in the 125 yec
history of the City of Syracuse, N. Y. and another Vetera
Hospital of equal importance in Cincinnati, Ohio.

John A. Johnson & Sons, Inc. were privileged to constr
the even larger Veterans Administration Hospital group



# 'OR VETERANS HOSPITALS

ldings, illustrated above, at Lebanon, Pa. A number of ded buildings (approximately 16 not shown above) com- te this $15,000,000.00 hospital group, of which about 30 ldings of various sizes are now serving veterans.

When the Syracuse and Cincinnati hospitals are com- ted, this important new group of three major hospital ts will represent an investment in construction of thirty lion dollars, and in veterans' service and welfare a total ıpproximately forty millions.

ıdustrial plants, housing, public buildings, educational l other institutions, in which fields the Johnson organiza- ı is widely experienced, can also benefit from the eco- nic policy and type of planning which the Veterans ninistration has so successfully inaugurated.

*you are planning construction, we will be pleased to send a hure covering your particular problem.*

Above: some of the larger units of the thirty structures forming the Veterans Administration Hospital group at Lebanon, Pa. Designed by Construction Service, Veterans Administration.

**John A. Johnson & Sons Inc.**

BUILDING CONSTRUCTION . . . "A FIRM FOUNDATION SINCE 1896"

NEW YORK • BROOKLYN • PEMBERTON • WASHINGTON
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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!


**KWIKSET LOCKS, INC.**
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*Look to Kwikset to be First and Foremost with Top Quality Residential Hardware*

## A.I.A. CONVENTION ATTRACTS OVER 2000 DELEGATES AND MEMBERS TO WASHINGTON

*All Officers Reelected; Two New Districts Created: Northwest and Texas*

MORE ARCHITECTS got together in Washington last month than ever had been assembled at one spot. Over 2000 delegates and members took part in the four-day program of the 82nd annual Convention of The American Institute of Architects May 10–13 with a harmony — at least on the surface — that made last year's spirited contest at Houston seem as distant as the much-decorated interiors of the Shamrock from the elegant decorum of the Mayflower.

The "progressives" were still around, but the only ripples they made on the surface of official convention deliberations came on resolutions debates.

### *Officers Reelected*

All the officers were reelected and all but one ran unopposed. Thus A.I.A. officers for the coming year will be: Ralph Walker, New York, president; Glenn Stanton, Portland, Ore., first vice president; Kenneth E. Wischmeyer, St. Louis, second vice president; Clair W. Ditchy, Detroit, secretary; and Charles F. Cellarius, Cincinnati, treasurer.

By-laws were amended to increase membership of the Board of Directors from 15 to 17, and two new districts were created — the Northwest District and the Texas District. Irving G. Smith of Portland was elected as the first director for the Northwest District and Thomas D. Broad of Dallas as the first director from the Texas district.

Other new directors, elected for three-year terms, are: John Noble Richards, Toledo, Ohio, Great Lakes District; C. E. Silling, Charleston, W. Va., Middle Atlantic District; M. H. Starkweather, Tucson, Ariz., Western Mountain District; Howard M. Eichenbaum, Little Rock, Ark., Gulf States District.

Two general amendments to A.I.A. by-laws submitted by the Board of Directors were turned down by the convention. The first would have provided for election each year of a "first vice president and president-elect," who would automatically become president after a year as first vice-president. The other would have required United States citizenship as a future qualification for membership in the Institute.

Also rejected was a proposal from some field chapters of the A.I.A. that a study be made of the advisability of electing the Institute president annually by general vote of all members rather than by chapter delegates.

The only real flurry of contention arose over a proposal to study the question of naming regional directors by vote of membership within the region rather than by delegate vote at the annual meetings. There was some spirited discussion on this one, with President Walker, in the chair, advising that such a plan conflicted with A.I.A. by-laws. The convention decided to go ahead with the study anyway.

Another resolution approved by the delegates sanctioned A.I.A. participation in the activities of the Federation of Panamerican Association of Architects as a founder member and named Julian Clarence Levi as delegate and Harold R. Sleeper as alternate. Both are New Yorkers.

### *Awards Presented*

Even at a convention which seemed to be more seriously concerned than usual with its major "theme" — urban planning and redevelopment — the announcement and presentation of the

*Below left: Harold Davis of New Haven Conn., one of 27 new A.I.A. Fellows, with President Ralph Walker, F.A.I.A., and John W. Root, F.A.I.A., of Chicago; at right, Sir Patrick Abercrombie, M.A., F.R.B.A. contemplates the Gold Medal which has just been presented to him by President Walker as the climax of the annual dinner, held this year in the ballroom of the Hotel Mayflower*

annual awards remained the highlight of the meeting.

Sir Patrick Abercrombie, M.A., Fellow of the Royal Institute of British Architects, received the Gold Medal of the A.I.A. for his "distinguished contribution to the profession of architecture and regional planning." The presentation was made at the annual dinner, at which Sir Patrick's response was the principal address. Sir Patrick, sixth foreign architect to receive the Institute's highest honor, was the Royal Gold Medallist in 1946.

Also honored at the annual dinner were 27 distinguished American architects who were advanced to Fellowship in the A.I.A. in recognition of their notable contributions to the advancement of the profession in original design, education and public service.

The new Fellows are: Harry Inge Johnstone, Mobile, Ala.; Jack Bass Smith, Birmingham, Ala.; Alfred S. Nibecker Jr., Pasadena, Calif.; Eldridge Ted Spencer, San Francisco, Calif.; J. Warren Armistead Jr., Atlanta, Ga.; Harold Heath Davis, New Haven, Conn.; John Ogden Merrill, Chicago, Ill.; Samuel G. Wiener, Shreveport, La.; Harold Buckley Willis, Boston, Mass.; John Gaw Meem, Santa Fe, N. M.; Leopold Arnaud, Hugh Ferriss, Talbot Faulkner Hamlin, Frederic Rhinelander King, Perry Coke Smith, Harvey Stevenson and Frederick James Woodbridge, all of New York City.

Also Ralph Edward Winslow, Troy, N. Y.; Lincoln Fechheimer, Cincinnati, Ohio; William Pope Barney and Joseph Patterson Sims, both Philadelphia, Pa.; Henry Y. Shaub, Lancaster, Pa.; James Chillman Jr. and John Thomas Rather Jr., both Houston, Tex.; Arthur Elliott Thomas, Dallas, Tex.; Clinton H. Cowgill, Blacksburg, Va.; and George Gove, Tacoma, Wash.

### *A.I.A. Honor Awards*

Winners of the A.I.A.'s Second Honor Awards for Architecture, announced on the opening day of the convention, were on exhibition in the promenade of the Mayflower.

In the residential category, the First Honor Award went to the house of H. C. Hvistendahl in California, designed by A. Quincy Jones Jr., A.I.A., Los Angeles. Awards of Merit were given for the William Crocker house in Jausilito, designed by Mario Corbett, San Francisco; the home of Mrs. Harold Adams in Concord, Mass., designed by Hugh Stubbins Jr., Lexington, Mass.; and the Roberta Finney house in Sarasota, Fla., designed by Twitchell and Rudolph, Architects, Sarasota, Fla.

The Davison Department Store, Augusta, Ga., designed by Harold M. Heatley and Ketchum, Giná and Sharp, Architects, New York, received the First Honor Award for commercial architecture. Awards of Merit in this classification were given for Wallach's Clothing Store, Jamaica, N. Y., designed by Ketchum, Giná and Sharp; the H. A. Bercu Pipe Shop, Los Angeles, designed by Welton D. Becket, A.I.A., Los Angeles; Bullock's Pasadena, designed by Welton D. Becket; Santa Fe Ticket Office, Los Angeles, designed by Maynard Lyndon, Los Angeles; and Foley Department Store, Houston, designed by Kenneth Franzheim, F.A.I.A., Houston.

After careful study of the submissions in the field of ecclesiastical architecture, it was decided that no award should be made this year in that field.

Albert Heino of Chicago was chairman of the Committee on Honor Awards for Current Work. Juries for the three categories were as follows:

Residential — Miss Elizabeth Gordon, editor, *House Beautiful*, New York; Pietro Belluschi, F.A.I.A., Portland, Ore.; Thomas H. Creighton, A.I.A., editor, *Progressive Architecture*, New York; George M. Martin, F.A.I.A., Cincinnati; and James T. Lendrum, A.I.A., Small Homes Council, University of Illinois, Urbana.

Commercial — Walter O. Bode, gen-

(*Continued on page 234*)

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*Pictured above and across-page as they were seen at the convention are (left to right): 1—President Harry Prince, New York Chapter; George Bain Cummings, F.A.I.A., Binghamton, N. Y.; William Lescaze, New York City. 2—Howard Eichenbaum, Little Rock, Ark., new regional director, Gulf States District, and Carl Feiss, Washington, D. C. 3—Dean Henry Kamphoefner, North Carolina State College School of Design; Douglas Haskell, Architectural Forum; Hugh Stubbins Jr., Lexington, Mass. 4—A.I.A. First Vice President Glenn Stanton, F.A.I.A., Portland, Ore.; Frank Lopez, ARCHITECTURAL RECORD; Thomas S. Holden, president, F. W. Dodge Corp.; New York Regional Director Arthur Holden, F.A.I.A., New York City. 5—A.I.A. Past President Raymond Ashton, F.A.I.A., Salt Lake City. 6—Walter Bogner, Harvard University, Cambridge, Mass.; Miles Colean, F.A.I.A., housing consultant, Washington, D. C.*

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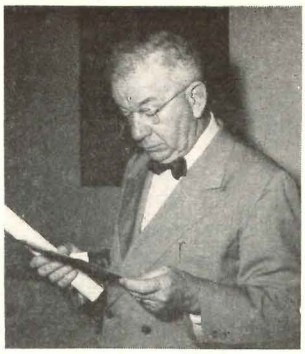

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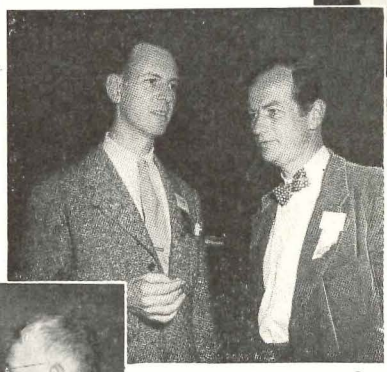

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*7—Slocum Kingsbury, Washington, D. C.; Harvey Stevenson, new F.A.I.A., Geoffrey Platt, and Frederick Woodbridge, new F.A.I.A., and Walter H. Kilham Jr., all of New York City. 8—Philip Will Jr., Chicago; Robert Alexander, Los Angeles. 9—Emerson Goble,* ARCHITECTURAL RECORD; *Mrs. Thomas S. Holden; "Veep" Glenn Stanton; Mr. Holden; H. Judd Payne, F. W. Dodge Corp. 10—John J. White Jr., A.I.A.'s acting director of Public and Professional Relations, Washington, D. C.; C. E. Silling, Charleston, W. Va., new regional director, Middle Atlantic District; Central States Regional Director Lorentz Schmidt, Wichita, Kas.; Alan H. Neal, Pittsburgh. 11—Carl Feiss; Morris Ketchum Jr., New York City. 12—A.I.A. Past President Douglas Orr, F.A.I.A., New Haven, Conn.; A.I.A. Executive Director Edmund Purves, F.A.I.A., Washington. 13—Harold D. Hauf,* ARCHITECTURAL RECORD, *and Mrs. Hauf*

## 19 STORIES HELD TO ONE FOURTH OF SITE TO ACHIEVE LIGHT AND AIR FOR 280,000 SQ FT WITHOUT SETBACKS

LEVER HOUSE will rise 21 stories from its site on New York's Park Avenue between 53rd and 54th streets; but its main structure will be a 19-story tower of glass and stainless steel occupying only a fourth of the site. Without setbacks, the 280,000-sq-ft-home of Lever Brothers will have light, view and air whatever its future neighbors are like.

Architects Skidmore, Owings and Merrill consider the building, in its freedom from bulk and closed-in patterns, an answer to city planning problems.

An arcade open to the street on three sides, with a garden and pool in the center, will occupy the entire site at ground level. An auditorium and a glassed-in lobby leading to elevators will be the only enclosures on the first floor.

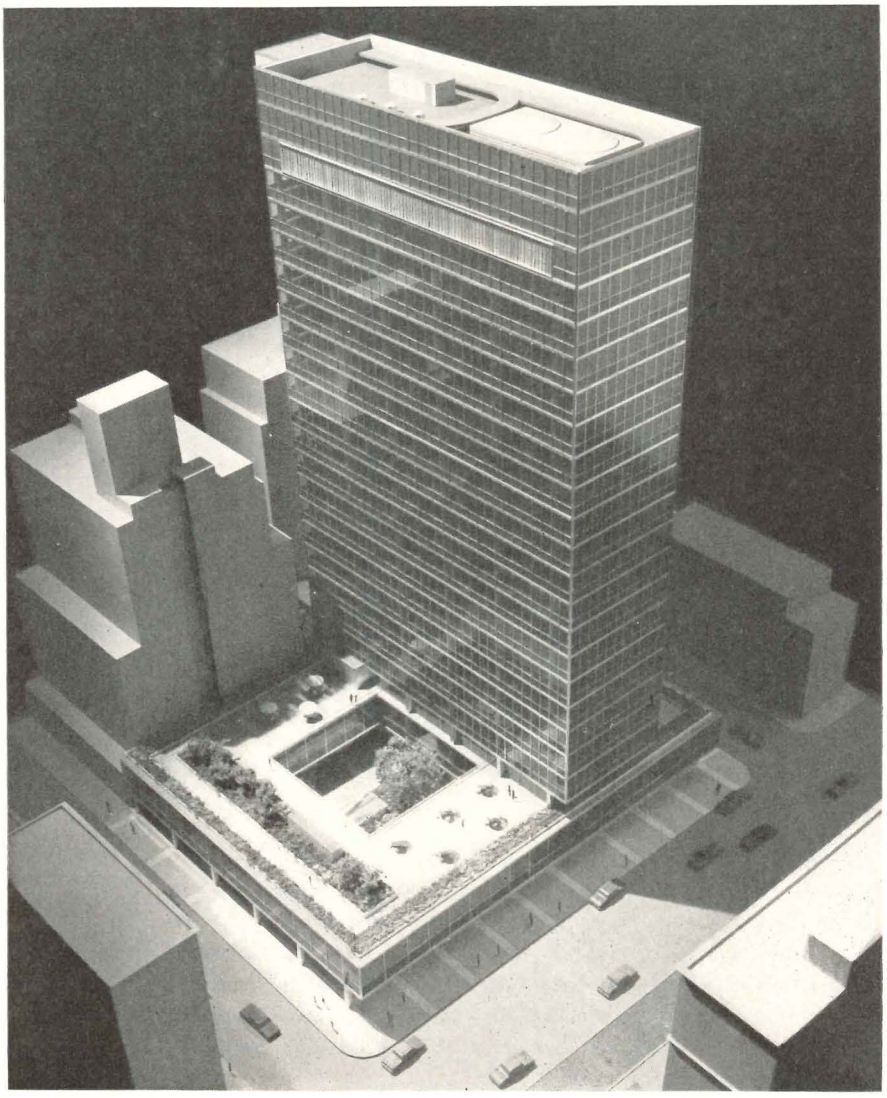
The second floor, also covering the entire plot, will have an open court directly over the ground floor garden and will be surmounted by a landscaped terrace.

An employee restaurant and recreation room will be contained in the third story, where the main structure begins. This floor will open on the terrace.

The main tower, near the north end of the site, provides additional space above the 21st floor, equivalent to three floors, to house a water cooling tower, elevator and air conditioning equipment. All mechanical facilities, including elevators, electric lines, stairways and ducts for complete air conditioning, have been designed for efficiency into a mechanical, vertical core on the west side.

Underground parking is provided for 80 tenant cars. Truck loadings and deliveries will be offstreet.

Heat-resistant glass and stainless steel will be used for the entire exterior skin of the steel and concrete structure. The glass, which has a blue tinge from outside though it will appear colorless from inside, will filter out 30 per cent of the sun's radiant heat.



## APRIL CONSTRUCTION SETS ANOTHER ALL-TIME RECORD

CONSTRUCTION RECORDS were broken for the second consecutive month as F. W. Dodge Corp. figures showed contracts awarded in April totaled $1,350,496,000, or more than $50 million above the all-time high recorded in March.

Figures for the first four months of this year also set an all-time record at $4,161,082,000, up 58 per cent over the corresponding period last year and $1,300,264,000 over the previous record, made in 1948.

The April figure, covering contracts which provided for 128,457,000 sq ft of building space, topped March by 4 per cent and April 1949 by 60 per cent. Residential awards of $674,836,000 accounted for almost half of the month's total operations and showed a 17 per cent increase over March, 122 per cent over the April 1949 aggregate. Nonresidential projects were off 10 per cent from the March 1950 figure but increased 42 per cent from April 1949.

For the first four months of 1950, residential awards totaled $1,954,470,000, more than double the figure for the same period last year. Nonresidential construction, at $1,450,138,000, showed a 33 per cent rise over the first four months of 1949.

## $23,600,000 PROGRAM FOR PLANT IMPROVEMENT VOTED

ALLEGHENY LUDLUM Steel Corp. directors have approved a new $23,600,000 plant improvement program to be completed within the next three years.

This program is in addition to a five-year program costing $30,000,000 started immediately after the war and now in the final stages of completion.

Manufacturing improvements include a new hot strip mill and additional cold rolling facilities at the Brackenridge, Pa., plant and additional cold rolling equipment at the neighboring plant at West Leechburg, Pa.

The new program also includes a project calling for the erection near Brackenridge of a research laboratory to be built of stainless curtain-walls instead of the more conventional building materials. The laboratory, which will overlook the company's Brackenridge plant, will provide the latest facilities for all phases of metallurgical research into high alloy and other specialty steels.

Undertaken to integrate more fully operations of Allegheny Ludlum, the new improvements supplement the current program.


"The Air Force crash entry suit consists of multiple layers of metallic foils and high-temperature-resisting conductive insulation, and is designed to provide adequate protection up to an exterior temperature of 2000°F."

**From a letter by**
**COL. E. J. KENDRICKS, Medical Corps (USAF), Chief, Aero-Medical Laboratory, Engineering Division.**

**U. S. AIR FORCE CRASH FIRE FIGHTERS DEMONSTRATE:**

## *Radiation dominates heat flow in air spaces (in buildings)*

## *Conduction and Convection are minor*

## *Multiple layers of low-emissive aluminum do not absorb nor emit appreciable heat*

Infra-red heat rays travel through space, including icy-cold air, in every direction, up, down, sideways, from warm to cold. They engender no temperature until absorbed by a surface.

A news release from Wright Patterson Air Force base says of the accompanying photograph: *"In the center the 'bunkin' suit, now in use by airplane crash fire-fighters, has become too hot for its wearer and is being wet down. The aluminum foil laminate suit at the left, developed by AMC's Aero-Medical Laboratory, was found to give its wearer the greatest comfort and protection and suffered least damage during the test. The foil reflects the extreme heat and helps the wearer retain a relatively low body temperature while fighting airplane crash fires."*

Multiple layers of accordion aluminum permanently compartmented with cellular reflective spaces, reject 97% heat rays and emit only 3% on opposite side. This structure, available commercially, is technically called Infra Accordion Aluminum Insulation. Installed between wood joists in new construction, material and labor, Type 4 Infra costs less than 7½¢, Type 6 less than 9¢ sq. ft.

**Details of how multiple accordion aluminum with reflective air cells stops waste of heat or its unwanted intrusion, including heat by convection and conduction, in residential, commercial, and industrial buildings; and prevents vapor flow and condensation, sent on request.**

**Get *Valuable Free Copy* of new, revised "Simplified Physics of Thermal Insulation," authoritative, simply-written, 44-page manual on heat and vapor flow, condensation, radiant heating, etc. Tells about Radiation, Convection and Conduction. Just off the press. Master Chart gives *k*, C, R, and U factors of all insulations, of all thicknesses, weights, densities.**

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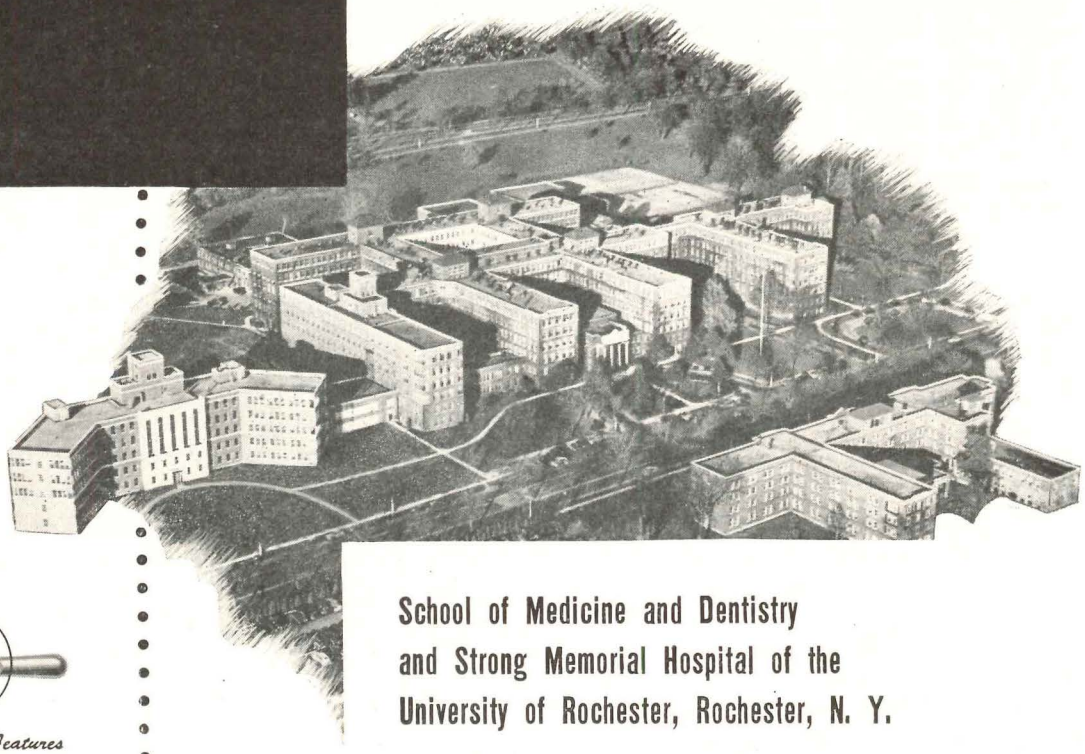

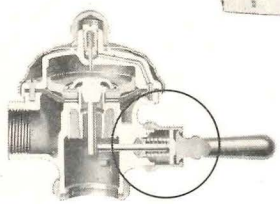

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Shown at left in this aerial view is New Psychiatric Clinic. This outstanding Medical Center is typical of the many fine buildings in which Watrous Flush Valves are installed.

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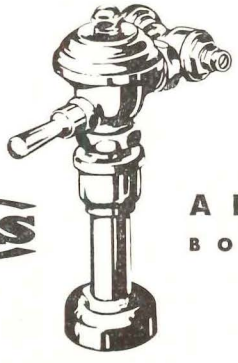

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## WASHINGTON NEWS *by Ernest Mickel*

***Housing Front Relaxes as 1950 Act Becomes Law — Restriction On Military Housing Fees Displeases A.I.A.; HHFA College Loan Program Ready to Go; VA Can Now Enforce Minimum Standards; National Hospital Program Approved Projects Total at 1145***

WASHINGTON has settled back to a more even gait after the flurry of fighting over housing issues that had embroiled Capitol Hill since the first of the year. With the signing of the Housing Act of 1950 by the President, the federal housing agencies took steps to effect its immediate administration. The new bill to revamp the military housing program under the Wherry Act also became law and paved the way for lifting the ban against applications for this Armed Services housing which had throttled the program since last December 16.

The Bureau of Labor Statistics announced that March set new records in the volume of new housing started — 110,000 non-farm dwelling units, 38 per cent above February and 59 per cent above March a year ago. Private home contractors, through their National Association of Home Builders, made much of this record with justifiable pride. They brought it directly to the attention of Congress in testimony given the select House committee probing all lobbying activities. Well over a quarter of a million new dwelling units were started during the first quarter of 1950, the Bureau reported. The total approximated 270,000, greater by 59 per cent than the first quarter volume for 1949. Then B.L.S. gave builders credit with this statement: "For the past nine months, house builders have surpassed, by an ever-widening margin, their volume for the same month in the previous year."

### *Influence of Other Factors*

Not to dampen this enthusiasm over the recent great gains in volume, but to put all segments of the industry in true perspective, a spokesman for General Services Administration said construction is proceeding at a pace which is satisfactory, though not phenomenal. He was James W. Follin, assistant to the GSA administrator. New housing starts in 1949, it is now conceded, were well above a million family units to establish an all-time full year record. This was some 10 per cent better than the previous high in 1925. But Follin makes the point that this nation's population has increased in the interim by about 30 million people, or roughly 25 per cent. We are operating on a national income now far above that of 1925, and the needs of our economy are vastly greater, he believes.

His arguments build up as follows:

Housing and public works are interrelated. New housing creates a demand for community facilities of all types, new streets, new sewer and water facilities, new fire and police stations, new schools, new hospitals and other facilities paramount to community welfare. Conversely, the existence of these community facilities is an invitation to additional housing. New programs — public housing, slum clearance and urban redevelopment — have further tied housing and public works more firmly together. They will have a vital influence on the housing market of the future.

The creation and use of shelter becomes the predominant business of the construction industry as Follin outlines it. Public construction represents about one third of total new construction volume, housing represents a second one third; the two together comprise a substantial majority of all new building. Even if the public works volume is stripped of those items not dependent upon housing construction, the resulting total of housing and community facilities (those necessary to the use of housing) comprises more than half the total construction volume. From this he concludes that the prosperity of the industry is more dependent upon housing than on any other single field of construction.

Again, the future needs of America for public works facilities have been listed by GSA. In simple terms they are given as:

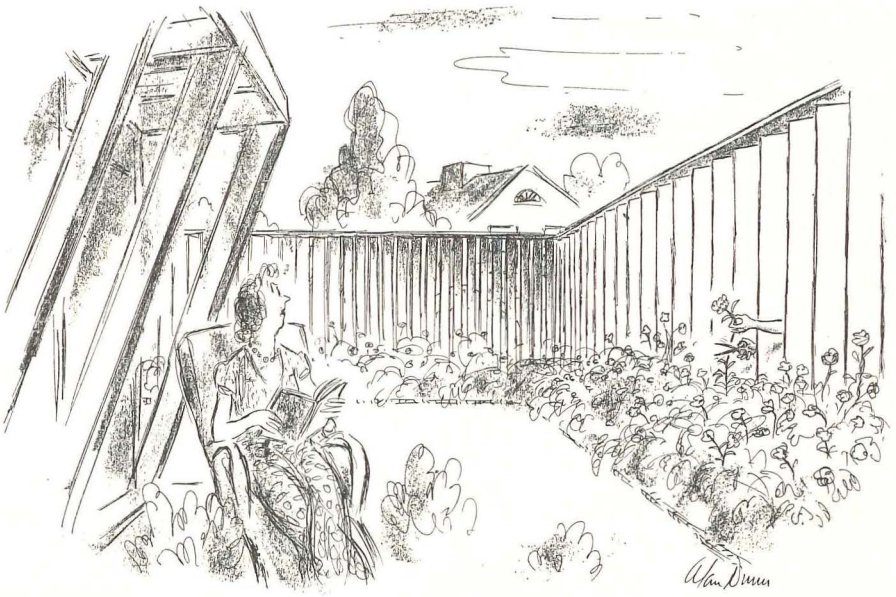
1. A $100 billion backlog of all accumulated requirements.

2. Highway needs alone amount to $41 billion, measured in current costs.

3. School plant needs are $1 billion a year for at least 10 years, probably longer in view of continuing population increases.

4. Sanitation needs are placed at $10 billion by the U.S. Public Health Service. This includes pollution control and water conservation.

In the face of these and other requirements as measured by the best opinion, the present construction rate of about $6 billion seems "so grossly inadequate" to Follin. He observed that



—Drawn for the RECORD by Alan Dunn

## THE RECORD REPORTS

### WASHINGTON

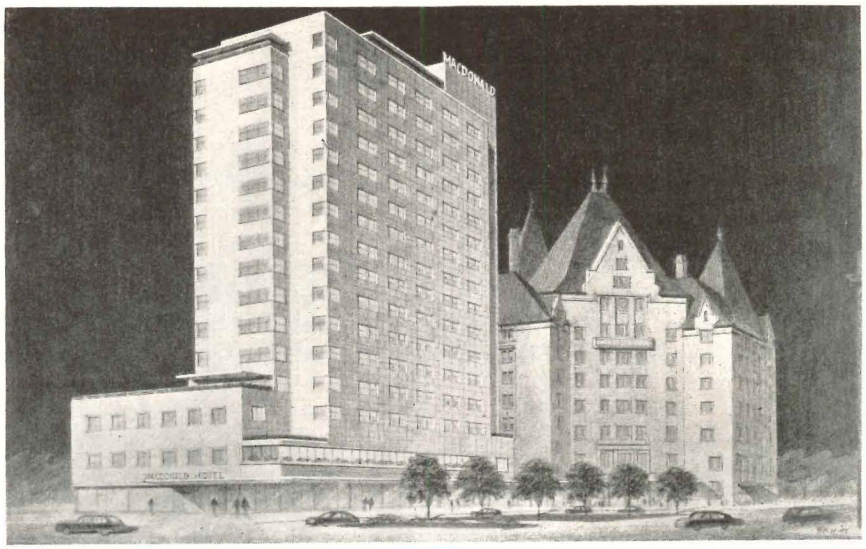
(*Continued from page 15*)

necessary public construction can stimulate the construction industry for some years; and housing construction can do likewise, if the industry can plan ahead as well as it can establish building records.

If the housing industry is to duplicate or better its 1949 record over the next several years, it must look far ahead; well beyond immediate prospects. As Follin views this:

"Industry has a definite obligation to look ahead for markets and for means to harness the full energies of housing and other construction. It also has an obligation to fulfill completely our national needs. The objectives of these obligations are the same. The satisfaction of the nation's needs can serve to employ the construction industry at full speed. Correct diagnosis of the opportunities in the housing market, both as to total volume and as to kind or type of housing or housing work, is important to every element in the housing industry. There must be adequate production of a vast array of building materials and equipment, the exact make-up of which will determine additional investment in manufacturing plant and equipment. Distribution facilities must be adequate to supply materials where needed, and here again the kind and types of housing

(*Continued on page 18*)




### NEWS FROM CANADA *By John Caulfield Smith*

## MODERN MEETS TRADITIONAL: ALBERTA HOTEL EXPANDS

THE NEW AND THE OLD meet head on in the architects' conception of an extension for the Canadian National Railways Macdonald Hotel at Edmonton, Alberta (see photo of rendering above).

The new 16-story wing, which the architects have treated as the main mass, will contain 300 bedrooms, banquet room, cafeteria, tavern and shops. The old building contains 185 bedrooms.

G. F. Drummond, chief architect for C.N.R., explains that various compromises were studied and discarded as unsatisfactory before the decision was made to adopt a frankly contemporary solution. John W. Root, of Holabird, Root and Burgee, Chicago, is consulting architect.

The admixture of the French Chateau style of the old Macdonald with the cleancut functional lines of the extension "should add a great deal of interest and character to the ensemble," Mr. Drummond suggests, expressing the hope that the building when complete will "combine the honesty of expression of contemporary design with a touch of Old World romanticism and in this respect give Edmonton something unusual and unique amongst hotels on the North American continent."

(*Continued on page 220*)

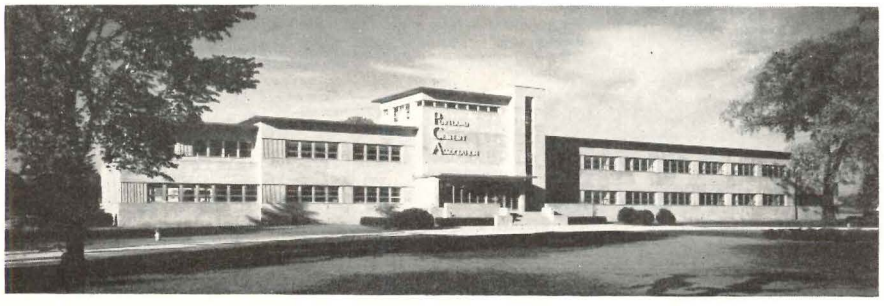

## P.C.A. OPENS NEW RESEARCH LABORATORIES

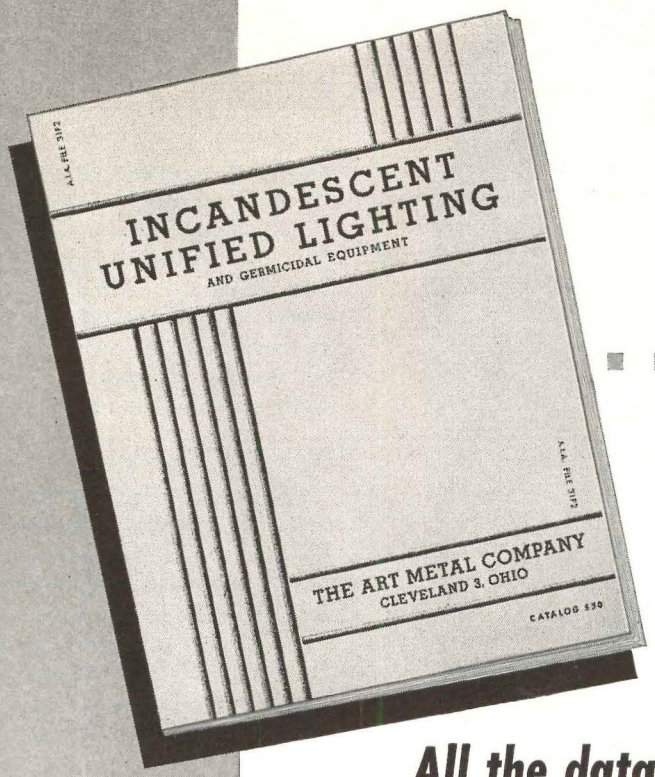
THE $3 MILLION Research and Development Laboratories of the Portland Cement Association at Skokie, Ill., are being dedicated this month as the largest and most completely equipped laboratories in the world devoted exclusively to research on cement and concrete.

Designed by Carr and Wright, architects, the laboratory group consists of two architectural concrete buildings joined by a covered walkway. They provide some 98,000 sq ft of usable floor space, three times the amount available in the Association's former research facilities at its general headquarters building in Chicago.

The main laboratory building, an E-shaped two-story structure with penthouse and basement, contains 80,000 sq ft of floor space; to the rear, the auxiliary laboratory has 18,000 sq ft in a one-story rectangular building without basement.

The main building is designed for offices and laboratories and their related temperature, humidity, chemical and physical testing rooms. The auxiliary building provides space for storage and for processing operations.



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## THE RECORD REPORTS

### WASHINGTON

(*Continued from page 16*)

work and geographical concentrations are important considerations.

"Architects, engineers, home builders, financing companies and many others are intimately concerned with the trends for the future. All must be pointing to substantially the same markets if the housing industry is to continue active and prosperous."

### *Title VIII Changes*

The Congress finally finished its work on a bill amending the Wherry Act, which provides for construction of rental housing by private builders on the Federal Housing Administration loan insurance plan at military installations. This apparently cleared the way for resumption of this important program, almost dormant since last mid-December.

The new law opens the way for wide use of prefabricated housing for such military building, if the secretaries of the armed services so designate. The Senate Banking Committee had considered placing a percentage ceiling on the amount of prefabricated housing that could be used in the entire program, but in the final decision left this matter up to the services themselves. Committee members indicated they preferred to rely on the assurance from the officials in the Defense Department that full use would be made of factory-made housing or parts wherever feasible. The Senate amendment on this point, as accepted by the House and later enacted into law, reads: "That such plans, drawings and specifications (for military rental housing) may include the use on any project to be constructed under this Title of alternate materials or alternate types of construction including prefabrication, that provide substantially equal value and conform to standards established by the Federal Housing Administration."

While prefab manufacturers gained through this move, the architects were far from satisfied with other changes which force the application of the public housing fee schedule for architectural services to this type of housing. Again, the House, after passing its own bill without any such limitation on architects' fees, adopted the Senate's version,

(*Continued on page 20*)

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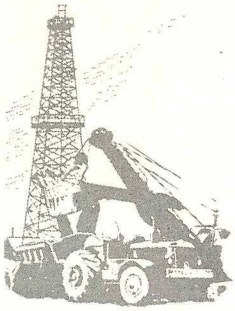

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### WASHINGTON


(*Continued from page 18*)


permitting the change to stand. The new Act specifies no stipulated amount but directs that "an expense not in excess of that permissible under the schedule of fees allowed from time to time by the Public Housing Administration" should be paid to architects for designing the military shelter. This automatically applies the new fee schedule drawn last fall for public housing to the planning of military mental units.

The American Institute of Architects was not pleased with this restriction, as it implies the repetitious use of plans. It was pointed out that actually the architect designing military housing for construction in or near military bases runs into complex problems of utility connections, site planning, etc., especially where the location is far removed from any city. The Institute said it would prefer to have the agreement on a dwelling unit basis, a simpler and more competitive arrangement.

After a conference of A.I.A., PHA and National Association of Housing Officials representatives last fall, a public housing fee schedule was announced which would compensate architects on the basis of a selective formula — either through a lump sum contract, or alternate local reimbursable agreements. The architect has the choice of entering a lump sum contract worked out with PHA, or he may select an alternate plan which provides:

1. A fixed fee of 40 per cent total compensation under a lump sum contract.

2. An amount equal to the architect's production costs, limited to technical salaries on a time card basis.

3. Allowance of overhead equal to 50 per cent of technical production costs.

The sum of the three parts cannot, however, exceed the maximum amount under the agreed-on schedule, which is somewhat higher than that for the straight lump sum fee. If the sum of the three parts is less than this, the architect receives an additional amount equal to 25 per cent of the savings under the maximum. There was general agreement that use of the reimbursable contract would work out better for all concerned; the alternate lump sum arrangement was made available, however. The schedules are under scrutiny and open for revision at any time. Under the

above fee schedule, the architects' compensation works out this way, PHA said:

| Estimated Cost of Project | Lump Sum Fee | Reimbursable Contract Fee |
|---|---|---|
| $ 500,000 | $ 17,500 | $ 22,500 |
| 1,000,000 | 28,000 | 37,800 |
| 2,000,000 | 44,000 | 55,000 |
| 4,000,000 | 68,800 | 80,300 |
| 6,000,000 | 91,200 | 102,500 |
| 10,000,000 | 124,000 | 133,000 |
| 14,000,000 | 144,500 | 147,500 |

As of May 1, President Truman had approved preliminary planning loans for public housing under the Act of 1949 in the total amount of $47,926,800. This covered the planning of 265,216 units by local housing authorities in 431 localities. The agency promised it would enter into loan contracts with the authorities concerned as quickly as possible so the work can proceed. These current Presidential approvals cover low-rent public housing projects to be built within the next two years. They are a part of the six-year program authorized in the Housing Act of 1949. These early loans are intended to cover all expenses local housing authorities incur for preliminary surveys, site selection studies, appraisals, all architectural and engineering plans except final working drawings and the making of definite cost estimates. Definitive financial aid contracts follow.

### *HHFA and College Loans*

The Housing and Home Finance Agency has embarked on an entirely new program of housing loan assistance to public or private non-profit institutions of higher learning. Authority is given in the Housing Act of 1950 signed by the President April 20. In brief, this gives the HHFA Administrator's office direction to make loans to colleges at the going federal rate of interest plus a charge of one fourth of one per cent a year to be repaid in 40 years and secured and repaid in such manner as the Administrator shall determine.

Congress voted $300 million for this purpose; that is, to provide funds for the loans, the Administrator may issue and have outstanding at any one time obligations for purchase by the U.S. Treasury in an amount not to exceed $300 million. Spokesmen said conceivably this could become a revolving fund in time and continue to serve its purpose without replenishing.

It is believed that many public and private non-profit schools that have been using surplus war housing on their

(*Continued on page 180*)

# SOME OBSERVATIONS ON THE CONSTRUCTION OUTLOOK

*By Thomas S. Holden, President, F. W. Dodge Corporation*

EXCELLENT long-range construction prospects, inherent in our postwar economy, can be realized if current national problems are resolved; the present government-supported construction boom will taper off some day, but underlying demand factors are very strong indeed.

## I — ECONOMIC GROWTH FACTORS

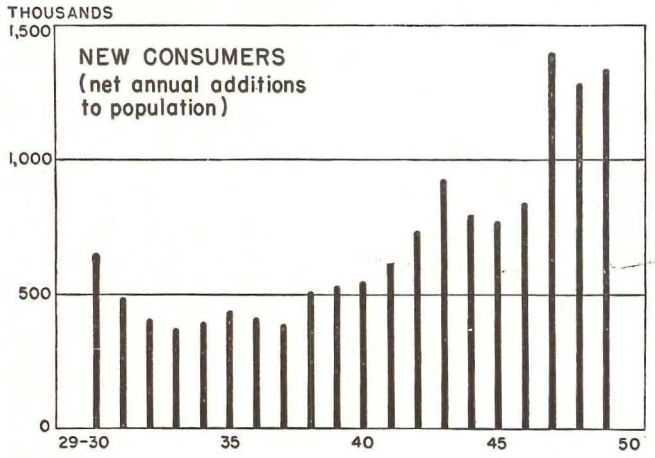
The factors of economic growth are the principal sources of demand for new construction. The construction industry prospers when there are needs for new facilities for production, trade, transportation, education, public health, religion, recreation, community development and family living.

Factors tending toward economic growth are present in the American economy today, perhaps in greater measure than ever before.

Let us examine some of them.

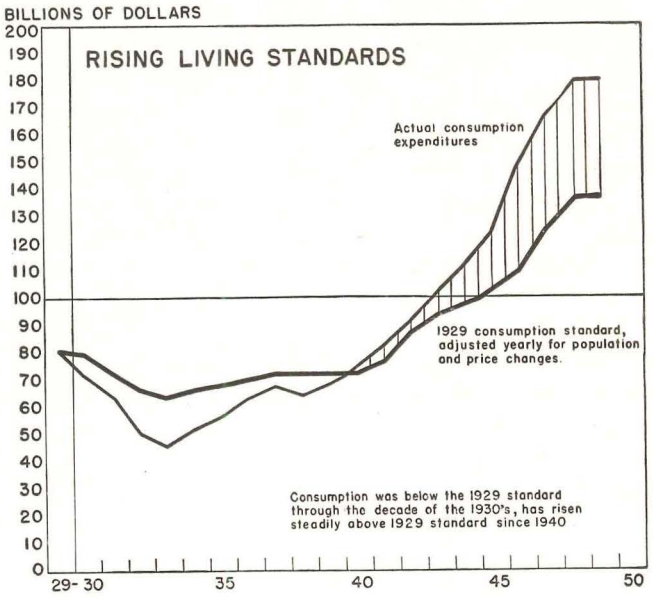
### *1. New Consumers*

The population census now being taken is expected to show an increase of 19,000,000 persons over 1940. This compares with a 17,000,000 population increase in the highly prosperous 1920's and with a 9,000,000 increase in the depressed 1930's.




### *2. More Goods and Services*

In the year 1948 and again in the year 1949, consumer purchases of goods and services amounted to $179,000,000,000.




This compares with a little over $80,000,000,000 in the highly prosperous year 1929. If the increase over 1929 had merely taken care of the increased population and higher prices, with no improvement in per capita consumption standards, the 1948 and 1949 consumption requirements would have been $136,000,000,000. The difference between this figure and the actual amounts spent in 1948 and 1949 was $43,000,000,000; this figure represents more and better goods and services, a higher standard of living.

The $43,000,000,000 improvement of 1948 over 1929 included the following items:

| | |
|---|---|
| Better diet | $15,300,000,000 |
| More liquor, tobacco, amusements | 7,000,000,000 |
| Services of various kinds | 6,500,000,000 |
| More non-durable goods (other than food, clothing, tobacco, liquor) | 4,700,000,000 |
| Better shelter (rental basis) | 4,500,000,000 |
| More durable goods | 4,000,000,000 |
| More and/or better clothing and shoes | 1,000,000,000 |
| Total | $43,000,000,000 |

The year 1949 would show some variations in detail from 1948, but the same total figure for improved standards.

All the goods and services bought by consumers were, obviously, produced and sold.

### *3. More Industrial Production*

To serve the country's increased population and improved living standards, increased industrial production has been necessary. The story is sketched in the following record:

**PHYSICAL VOLUME OF PRODUCTION**

(Index numbers, Board of Governors of the Federal Reserve System, 1935–39 = 100)

| | *1929* | *1940* | *1949* | *Peak* |
|---|---|---|---|---|
| Manufactures | | | | |
| Durable | 132 | 139 | 202 | 360 (1943) |
| Non-durable | 93 | 115 | 168 | 177 (1948) |
| Total | 110 | 126 | 183 | 258 (1943) |
| Minerals | 107 | 117 | 135 | 149 (1947) |
| Total industrial | 110 | 125 | 176 | 239 (1943) |

Wartime peak production, accomplished by two- and three-shift operations in many industries, not only produced sufficient war material to overwhelm the enemy but also maintained a continuous rise in many lines of consumption. It also wore out and made obsolete much production equipment, which will need early replacement. It developed new ideas of plant design conducive to greater productive efficiency.

Between 1939 and 1947 the number of manufacturing establishments increased from 173,802 to 240,881; estimated sales of manufactured goods increased from $61,340,000,000 to $215,525,000,000.

### *4. Savings Available for Investment*

Total individual savings increased fourfold between 1929 and 1948; threefold between 1940 and 1948. The Securities and Exchange Commission reported the following figures for the close of 1949:

SAVINGS OF INDIVIDUALS

| | |
|---|---|
| Cash and bank deposits | $128,000,000,000 |
| Government securities | 71,000,000,000 |
| Equities in savings and loan societies | 12,000,000,000 |
| Equity securities and private insurance | 58,000,000,000 |
| Government insurance and pensions | 38,000,000,000 |
| Total | $307,000,000,000 |

Presumably the first two items represent funds that could be drawn upon in considerable measure for investment in enterprise, and the third item can be drawn upon for housing investment. In 1949 individuals increased their holdings of non-government securities by $1,400,000,000.

In addition to these individual savings, there are many billions of dollars of corporate savings. Undistributed corporate profits amounted to $2,400,000,000 in 1940; $13,200,000,000 in 1948.

Private capital funds for expansion are plentiful.

### *5. High Productivity*

Many factors have combined to produce today's high living standards for the people of the United States. To review them in detail would require an inventory of natural resources and an historical survey of our political, social and economic institutions and an appraisal of the spiritual values in American life.

Outstanding, and in many ways unique, has been our spectacular increase in output per man-hour of labor engaged in production. While this has not been steady and continuous, it is generally considered to have increased at an average annual rate of 2 per cent.

Certain economists have pointed out that this rate of productivity increase has resulted from an average 3 per cent increase in capital investment. In 1946 investment per employed worker in all manufacturing was $7113.

Improved productivity has taken place in the factories, in the mines and on the farms. Output per farm worker increased 50 per cent between 1909 and 1939; 30 per cent from 1939 to 1948. Seventy-five per cent of the nation's farms were electrified in 1948.

Paralleling increased productivity has been constant progress in improving efficiency and cutting costs of transportation, power, distribution services and construction. These things have been achieved by mechanization, applied chemistry and improved organizational and management techniques. All have involved enormous capital investment.

### *6. More Capital Facilities Required*

Capital facilities wear out, become obsolete. This is true of machines, factories, warehouses, highways, railway roadbeds and every other physical facility.

Merely to provide today's living standards for the 1960 population will require enormous investment in new facilities of every kind. To improve output and raise living standards will require much more. Some economists think our annual rate of capital investment will have to increase over past rates.

Stahrl Edmunds, economic analyst, Northwestern Life Insurance Company, writing on "Financial Capital Formation" in the January 1950 issue of *Harvard Business Review*, states that it has taken an annual increase of 3 per cent in equipment to make a 2 per cent increase in productivity possible, and that a future stepping up of the rate of productivity increase may require average annual increase in net capital formation of more than 4 per cent.

This is more than a matter of machinery. It is also a matter of modern factories, warehouses, stores, highways, power plants, community facilities and every kind of building and engineering structure that makes for a more efficient and a more productive economy.

Potential requirements for improved facilities are much more concrete than any fanciful "pie in the sky" dreams. The *Engineering News-Record* has been running a statistical series on the construction backlog. As of December 31, 1949, it included $4,423,000,000 for contemplated industrial buildings, and $5,780,000,000 for contemplated commercial buildings. These figures compare with 1949 government estimates of industrial building totaling $974,000,000 and $1,001,001,000

for commercial buildings. While construction backlog statistics do not give immediate indications of trends, they furnish strong evidence of potential demand.

### 7. *Postwar Construction Investment Relatively Low*

In spite of record dollar volumes of construction in 1948 and 1949, total new construction investment in those years was low relative to national income, approximately 9 per cent each year. In 1925, 1926 and 1927, years of high prosperity and great economic expansion, new construction investment ran to 15 per cent of national income. Total physical volume of new construction in 1948 and 1949 was less than that of the war year 1942 and the peak years of the late 1920's; this is true in spite of the fact that the number of new dwelling units started in 1949 surpassed all previous records.

This does not, however, prove that new construction investment must necessarily again reach 15 per cent of national income. It does highlight the fact that the large volumes of recent years have consisted in minor degree of new construction facilities of a productive character to take care of future needs of an expanding economy.

These facts suggest that when the American economy enters a general expansion phase, total construction investment is apt to be even larger than it was in 1949. If you are bullish about the future of the United States of America, you have to be bullish about construction.

## II — IS THE AMERICAN ECONOMY READY FOR EXPANSION?

This question cannot be answered with assurance until a growth trend is unmistakably established.

The construction upsurge of the second half of 1949 and first quarter of 1950 might conceivably be the beginning of such a growth trend, but such an interpretation of 1950 business conditions would be incorrect, according to the analysis of current trends which appears in Section III of this statement.

A very important and essential growth factor is missing at the present time.

The missing factor is a set of overall governmental policies which will command the hearty support of a clear majority of the American people. In all previous eras of rapid and sustained expansion there has been a far greater degree of unanimity than now exists.

The President of the United States was elected in 1948 by approximately one-half the voters, and those who actually voted numbered little more than half of those eligible to vote. The President has a program, some important parts of which are not supported by his own party. Congressmen talk economy, talk tax reduction, deplore deficit spending and inflation, vote pork barrel bills and increased spending. Some government officials talk encouragingly about business, others attack it. Officials talk more about the need of industrial expansion than they do about investment incentives. The opposition party has developed no unity of program or policy. In view of this confused situation, it is little wonder that investment confidence is today not very strong.

The American people have not declared in unmistakeable terms whether their preference is for maintaining a dynamic free-enterprise economy or for proceeding further with experimentation along the lines of the welfare-state philosophy. The elections of 1950 and 1952 will not solve all our problems; it is to be hoped they will define the direction along which the national economy will move hereafter.

The people will do well to remember that the vast expansion of the past and the high prosperity of the present time have resulted from substantial teamwork on the part of all the essential factors of the economy, including government, and not by government action alone. They will do well to realize that America's high productivity has resulted from continually increasing output per man hour of labor engaged in industry, agriculture and distribution rather than from any kind of private or public money magic.

## III. — THE GOVERNMENT-SUPPORTED CONSTRUCTION BOOM

For purposes of the present analysis, it is convenient to separate recent construction contract figures into the following three categories:

Public building and engineering projects;

Private residential building;

Private non-residential building and engineering projects.

Recent trends of these three broad groups of construction projects are shown in the accompanying charts (see page 25).

The charts clearly show that the upsurge of contract activity which started in September 1949 and continued through the first quarter of 1950 was due in considerable part to increased public building and engineering contracts and in much greater degree to rising volume of private residential building. The trend of private non-residential building and engineering contracts has been practically horizontal.

The uptrend of public building and engineering work has been considerably stimulated by federal grants-in-aid to the states for highways, hospitals and other purposes; it has included sizable direct expenditures by the federal government.

Private residential building has been greatly stimulated by liberal mortgage-insurance measures and by government purchases of insured mortgages through the Federal National Mortgage Association (Fannie May). The 1949 upturn followed almost immediately after acts of Congress providing new authorizations for liberal home financing. This coincided with a change in public psychology which during the preceding twelve months had been in mild revolt against high building costs. At some stage government stimulation of residential building, if continued at the current rate, will produce a housing surplus.

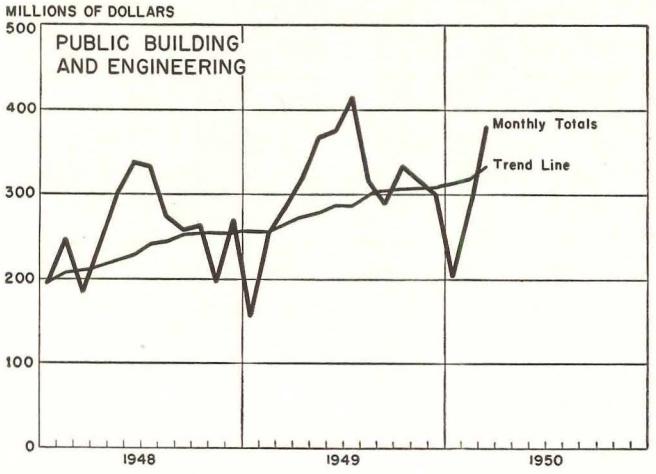
When and if a housing surplus is produced it will obviously appear at different times in different localities.

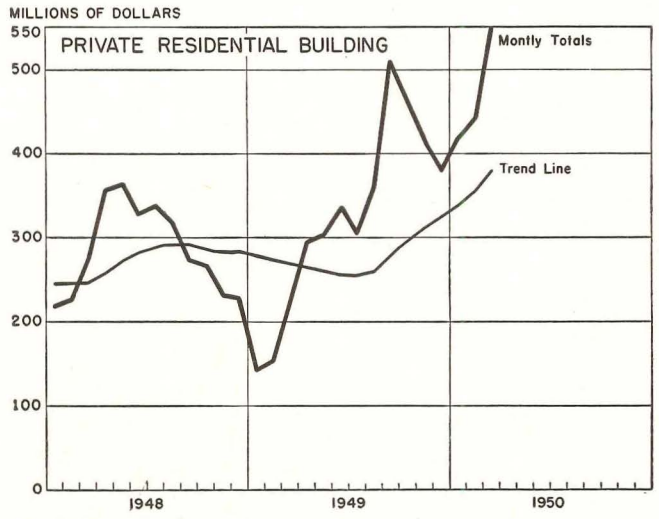
A recent survey of 470 cities by the National Association of Real Estate Boards brought out the following facts:

1. Production has caught up with demand for new houses priced at $8,000 and over in 65 per cent of the reporting cities.

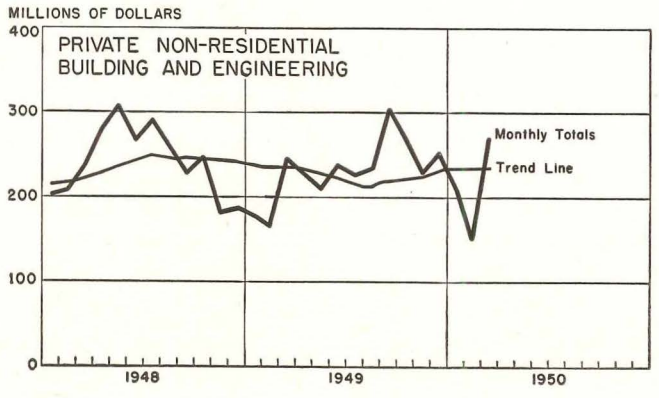
2. As for houses selling (with lots) below $8,000, 25 per cent of the reporting cities indicated a sufficient supply to meet all demands, and over-supplies were indicated for 3 per cent of the cities.

3. Rental housing in the higher priced brackets was reported in over-supply in 19 per cent of the cities. As for medium-priced apartments, 2 per cent of all reporting cities and 13 per cent of the largest cities reported over-supply. More supply than demand in low rental brackets was reported by 3 per cent of the cities. In the opinion of this writer rental housing occupancy is likely to ease considerably if federal rent control expires June 30th.




CONSTRUCTION CONTRACTS — 37 EASTERN STATES




A vital background factor in potential housing demand is the current downtrend in new family formations, following the all-time peak number of marriages in 1946. A study in the March 1950 issue of *Survey of Current Business* estimated that the number of married couples increased at the rate of 959,000 a year from April 1947 to April 1949, and will probably increase at an average annual rate of 568,000 a year in 1950, 1951 and 1952. This is a strong indication that demand for new housing facilities will tend to slacken at some time, that housing production at the rate of more than a million new non-farm dwelling units a year will not continue indefinitely.

In fact, the advance estimates for 1950 construction activity put out by F. W. Dodge Corporation and by the government (Department of Commerce and Department of Labor) presupposed a downturn sometime this year. The Dodge estimates indicated a slight decrease in total contract volume for 1950, as compared with 1949; the government economists estimated the same total dollar volume of "work put in place" for the two years. If these estimates (which are not inconsistent with each other) are approximately realized there would necessarily be declining volume in the latter part of the year to offset the big first-quarter rise. It now appears possible that the present mood of the public favoring large expenditures for new housing, supported by the latest legislation extending liberal financing, may carry the housing boom through the rest of 1950.

However, even a government-supported boom is apt to run its course, just like any other kind of boom.

This analysis of the 1950 situation does not indicate that the current boom is actually the beginning of an era of broad economic expansion and continually mounting construction volume.

The underlying strength of the American economy is very great; its growth momentum is very strong. It is very doubtful whether the construction industry really needs artificial stimulation.

The prospect of getting past the feverish phase of the current boom, of getting rid of artificial stimulation, and of setting about the business of building a better and a sounder America should not engender any fears on the part of the construction industry. If the price to be paid

is a mild recession in construction activity (and only a mild one seems likely) it will be amply justified. There is no present indication that the current construction boom will end in a serious bust.

## IV. — THE NEAR-TERM OUTLOOK

For the long range construction outlook, bullish factors far outweigh bearish ones, barring the possibility of shooting war.

In the opinion of this writer stimulation by the federal government is currently being overdone, and could be markedly reduced in the interest of a sound, sustained program of providing the new facilities our growing economy will need.

When there is a decline from current peak activity in residential building, it will not likely be drastic but rather in the nature of an adjustment to a normal type of postwar market which will have progressed beyond the shortage stage into the stage of growth and improvement of living standards.

Some general observations on the outlook for particular classes of construction activity follow.

COMMERCIAL BUILDINGS — Demand should hold reasonably steady, particularly for neighborhood stores and shopping centers in outlying and suburban locations and store modernization in central areas. Office building space continued in tight supply in a number of cities; with continued high levels of business activity demand for new office buildings should rise at some stage. Increased business activity, plus the need for cutting distribution costs, will create demand for modern warehouse facilities.

MANUFACTURING BUILDINGS — The postwar peak was in 1946, since which time new construction in this classification has tapered off. The upturn which appeared in the March 1950 statistical record was due to inclusion of a large atomic energy project of the federal government and was not indicative of a change in trend of private industrial building. As indicated in Section I of this statement, a major upturn in this classification is likely at some stage although there is no present indication as to when this will occur. Dodge contract statistics cover buildings only, omitting processing equipment, which usually involves expenditures several times as large as the outlays for new construction.

EDUCATIONAL BUILDINGS — School-age population is increasing rapidly and is due to continue increasing for some years to come, indicating a mounting demand for new school buildings. This demand will be met, with or without federal aid.

HOSPITALS AND INSTITUTIONS — This program continues to mount, partly through direct federal expenditures and partly through federal aid to the states; likely to taper off at some time, though possibly not this year; continuing public demand for improved health services will require continued large-scale hospital building after the peak of federal hospital spending is over.

PUBLIC BUILDINGS — Expenditures have mounted each year since the war; off somewhat in the first quarter of 1950. This classification has been of relatively minor importance in the postwar period.

RELIGIOUS BUILDINGS — The volume has mounted continuously since the war. No present indication of let-up.

SOCIAL AND RECREATIONAL PROJECTS — There was a moderate drop in 1949, a further drop in the first quarter of 1950. No present indications of any change in trend.

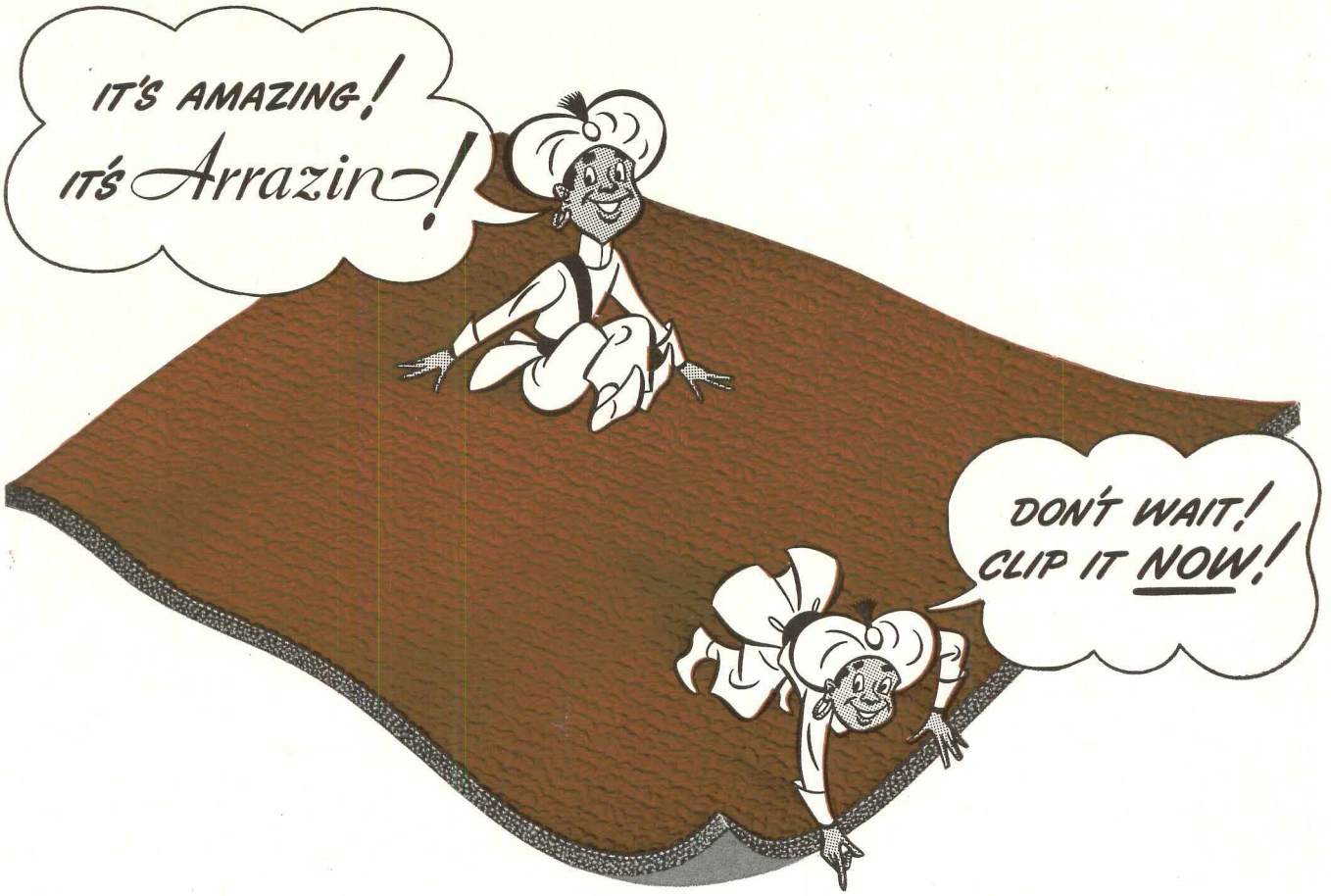
MISCELLANEOUS NON-RESIDENTIAL BUILDING — At some stage there will be increased demand for new and enlarged bus terminals, terminal buildings at airports and the like; no important development indicated for this year.

RESIDENTIAL BUILDINGS — As indicated in Section III, residential activity will at some stage recede from current peak levels. New housing legislation recently passed by Congress further liberalizes housing finance and will tend to maintain a very high level of activity until market surpluses appear; just when this will happen is at the moment uncertain. Current demand for new rental housing may be reduced somewhat upon termination of rent control, which may take place June 30, 1950.

Recession from peak housing activity is not at all likely to mean a serious slump. Even the currently reduced rate of new family formations remains over 500,000 a year. At this moment there is a continuing demand for new houses in the lowest price brackets; later, as families grow larger and children grow older, needs for enlarged accommodations will arise. Continued prosperity will stimulate demands for quality housing, in terms of larger room sizes, better designs, more amenities for pleasant living, and the like. Houses built on owners' orders for owners' occupancy have been increasing, will increase further with continued prosperity. The number of projects in this consumer-dominated custom-built housing market skyrocketed 73 per cent during the first two months of 1950, compared with the like period of 1949. The housing market will become more selective, more competitive. Apartment building should continue at satisfactory (if something less than peak) rates. More dormitories will be needed. At some stage (probably after 1950) there will likely be an upsurge of hotel building, which has been long in abeyance.

PUBLIC WORKS — Needs continue very great, federal aid continues to flow generously. No setback now in sight.

PUBLIC UTILITIES — The long range outlook is bullish; increased prosperity will call for expansion of power plants, new pipe lines, extension of water supply systems, and the like. New construction in this class increased in 1949, also in first quarter 1950; no indication of any change in this upward trend.

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# CONSTRUCTION COST INDEXES

## Labor and Materials

**United States average 1926–1929 = 100**

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

**NEW YORK**

| Period | Residential Brick | Residential Frame | Apts., Hotels Office Bldgs. Brick and Concr. | Commercial and Factory Bldgs. Brick and Concr. | Commercial and Factory Bldgs. Brick and Steel |
|---|---|---|---|---|---|
| 1925 | 121.5 | 122.8 | 111.4 | 113.3 | 110.3 |
| 1930 | 127.0 | 126.7 | 124.1 | 128.0 | 123.6 |
| 1935 | 93.8 | 91.3 | 104.7 | 108.5 | 105.5 |
| 1939 | 123.5 | 122.4 | 130.7 | 133.4 | 130.1 |
| 1940 | 126.3 | 125.1 | 132.2 | 135.1 | 131.4 |
| 1945 | 160.5 | 161.7 | 156.3 | 158.0 | 155.4 |
| 1946 | 181.8 | 182.4 | 177.2 | 179.0 | 174.8 |
| 1947 | 219.3 | 222.0 | 207.6 | 207.5 | 203.8 |
| 1948 | 250.1 | 251.6 | 239.4 | 242.2 | 235.6 |
| 1949 | 243.7 | 240.8 | 242.8 | 246.4 | 240.0 |
| Jan. 1950 | 242.8 | 239.4 | 242.3 | 245.2 | 241.2 |
| Feb. 1950 | 244.1 | 240.9 | 243.2 | 245.9 | 242.0 |
| Mar. 1950 | 244.9 | 242.0 | 243.4 | 246.0 | 242.2 |
| | *% increase over 1939* | | | | |
| **Mar. 1950** | **98.3** | **97.7** | **86.2** | **84.4** | **86.2** |

**ATLANTA**

| Period | Residential Brick | Residential Frame | Apts., Hotels Office Bldgs. Brick and Concr. | Commercial and Factory Bldgs. Brick and Concr. | Commercial and Factory Bldgs. Brick and Steel |
|---|---|---|---|---|---|
| 1925 | 86.4 | 85.0 | 88.6 | 92.5 | 83.4 |
| 1930 | 82.1 | 80.9 | 84.5 | 86.1 | 83.6 |
| 1935 | 72.3 | 67.9 | 84.0 | 87.1 | 85.1 |
| 1939 | 86.3 | 83.1 | 95.1 | 97.4 | 94.7 |
| 1940 | 91.0 | 89.0 | 96.9 | 98.5 | 97.5 |
| 1945 | 132.1 | 133.9 | 123.2 | 122.8 | 123.3 |
| 1946 | 148.1 | 149.2 | 136.8 | 136.4 | 135.1 |
| 1947 | 180.4 | 184.0 | 158.1 | 157.1 | 158.0 |
| 1948 | 199.2 | 202.5 | 178.8 | 178.8 | 178.8 |
| 1949 | 189.3 | 189.9 | 180.6 | 180.8 | 177.5 |
| Jan. 1950 | 184.5 | 185.5 | 179.2 | 178.6 | 177.7 |
| Feb. 1950 | 185.8 | 187.0 | 180.1 | 179.3 | 178.5 |
| Mar. 1950 | 186.9 | 188.4 | 180.3 | 179.4 | 178.8 |
| | *% increase over 1939* | | | | |
| **Mar. 1950** | **116.6** | **126.7** | **89.6** | **84.2** | **88.8** |

**ST. LOUIS**

| | | | | | |
|---|---|---|---|---|---|
| 1925 | 118.6 | 118.4 | 116.3 | 118.1 | 114.4 |
| 1930 | 108.9 | 108.3 | 112.4 | 115.3 | 111.3 |
| 1935 | 95.1 | 90.1 | 104.1 | 108.3 | 105.4 |
| 1939 | 110.2 | 107.0 | 118.7 | 119.8 | 119.0 |
| 1940 | 112.6 | 110.1 | 119.3 | 120.3 | 119.4 |
| 1945 | 152.8 | 152.3 | 146.2 | 148.5 | 145.6 |
| 1946 | 167.1 | 167.4 | 159.1 | 161.1 | 158.1 |
| 1947 | 202.4 | 203.8 | 183.9 | 184.2 | 184.0 |
| 1948 | 227.9 | 231.2 | 207.7 | 210.0 | 208.1 |
| 1949 | 221.4 | 220.7 | 212.8 | 215.7 | 213.6 |
| Jan. 1950 | 220.3 | 218.4 | 214.7 | 218.4 | 216.5 |
| Feb. 1950 | 222.7 | 221.3 | 215.6 | 219.0 | 217.4 |
| Mar. 1950 | 222.8 | 221.2 | 215.8 | 219.1 | 217.6 |
| | *% increase over 1939* | | | | |
| **Mar. 1950** | **102.2** | **106.7** | **81.8** | **82.9** | **82.9** |

**SAN FRANCISCO**

| | | | | | |
|---|---|---|---|---|---|
| 1925 | 91.0 | 86.5 | 99.5 | 102.1 | 98.0 |
| 1930 | 90.8 | 86.8 | 100.4 | 104.9 | 100.4 |
| 1935 | 89.5 | 84.5 | 96.4 | 103.7 | 99.7 |
| 1939 | 105.6 | 99.3 | 117.4 | 121.9 | 116.5 |
| 1940 | 106.4 | 101.2 | 116.3 | 120.1 | 115.5 |
| 1945 | 146.2 | 144.3 | 144.5 | 146.8 | 147.9 |
| 1946 | 159.7 | 157.5 | 157.9 | 159.3 | 160.0 |
| 1947 | 193.1 | 191.6 | 183.7 | 186.8 | 186.9 |
| 1948 | 218.9 | 216.6 | 208.3 | 214.7 | 211.1 |
| 1949 | 213.0 | 207.1 | 214.0 | 219.8 | 216.1 |
| Jan. 1950 | 213.3 | 207.0 | 216.7 | 220.6 | 216.9 |
| Feb. 1950 | 215.3 | 209.2 | 217.8 | 221.4 | 217.9 |
| Mar. 1950 | 216.7 | 211.0 | 218.1 | 221.6 | 218.3 |
| | *% increase over 1939* | | | | |
| **Mar. 1950** | **105.2** | **112.5** | **85.8** | **81.8** | **87.4** |

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

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

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

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

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

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

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

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

These index numbers will appear whenever changes are significant.

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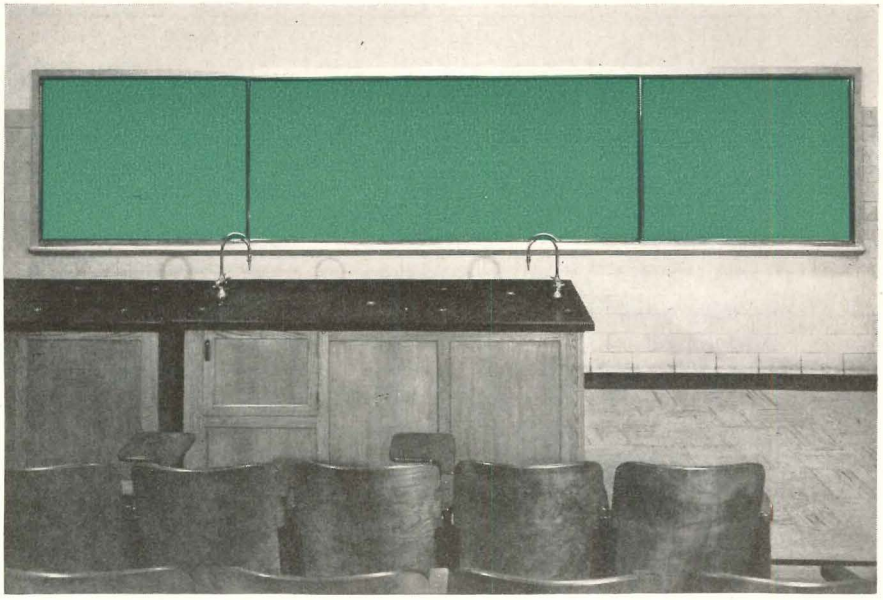
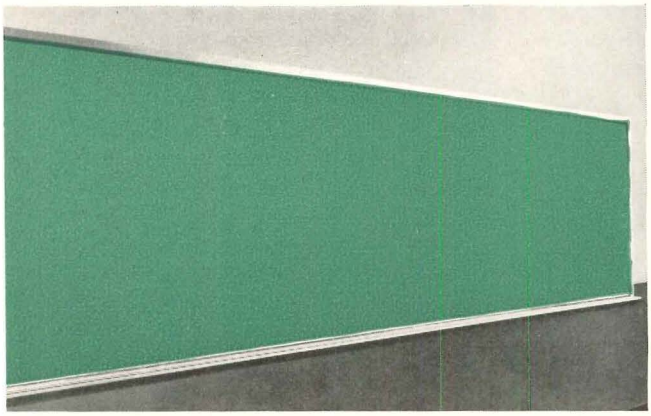
Some installations have been in for more than twelve years—and today they are as good as when installed. Ezy-Rase Nucite is guaranteed for a period of twenty ears against fading out or becoming slick or shiny under normal classroom usage.

Also manufacturers of Crest Cork Bulle-tin Boards and Roco Cork Bulletin Boards in tan and green, portable chalkboards and bulletin boards, and Bayer safety metal wardrobes.

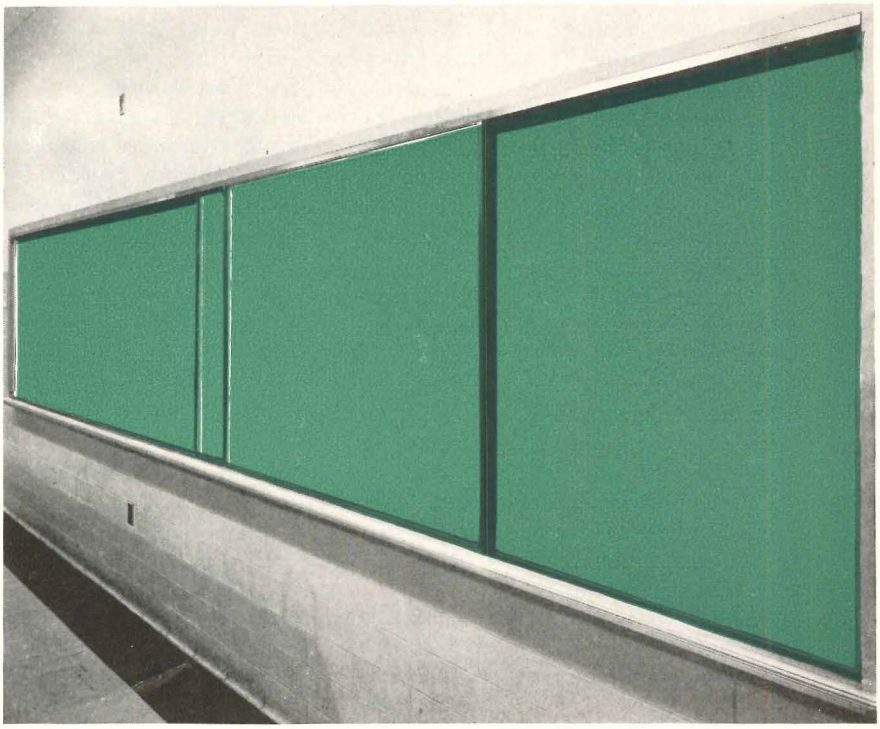


Horizontal green Nucite sliding chalkboard in aluminum framing on ball running strips. It consists of fixed chalkboard in rear, with two sliding panels in front on separate tracks. The sliding panels can be moved to any position for the entire length of the board. Variations of same can be made by having fixed panels in cork, or sliding panels in cork. Above view shows sliding panels at fully extended position.

photographs show an installation laboratory at the University of port. Charles Wellington Walker, ıct. O. F. Burghart, General Con-. All chalkboards designed, built stalled by New York Silicate Book Company, Inc.



ase Nucite Glass Chalkboard in fixed position in "Neat- aluminum framing, with galvanized steel grounds.



Same installation but with sliding panels at center.

see our CATALOG in SWEET'S FILE ARCHITECTURAL

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# REQUIRED READING

## THE PROFESSIONAL PLAN

*Contracting as a Profession. By Frederic W. Lord. Richard R. Smith (120 East 39th St., New York 16, N. Y.) 1949. 6¼ by 9½ in. 83 pp. $2.00.*

Here is another attempt to counter the indiscriminate competition often apparent in the construction industry. Its crux is the "Professional Plan" which is said to guarantee efficiency, facility and economy in building. It is a method which the author seems to feel would release the construction industry from a competitive clutch and simultaneously give credence to its professional standing.

Mr. Lord indicates obsolescence in the usual bidding systems. The competitive bidding system, cost-plus contracts and labor-only contracts are not only unfair, he implies, but precipitate perhaps small, perhaps large, but nevertheless insidious injustices and dishonesties. The author analyzes and criticizes the three approaches, states their shortcomings.

Selective bidding, paid estimates and selection of a contractor on the basis of experience, efficiency and integrity are advocated by Mr. Lord. This, then, is his plan. The essentials include the following (in condensation):

1) selection of honest, efficient contractors. This can be ascertained in general by use of questionnaires;

2) the contractor selected is to submit an outside lump-sum detailed estimate, the excess of cost in the final work to be paid by him;

3) mutual agreement upon reasonable profit in terms of a percentage of cost;

4) contractor's books to be audited before final payment;

5) 100 per cent credit due to owner on all savings on the outside price.

A suggested contract form to be used by and between the owner and contractor is included.

All the above occupies the first five chapters of *Contracting as a Profession.* How Mr. Lord's plan affects contingent forces is treated in the 11 brief chapters that follow. Dealt with individually are the architect, consulting engineer; general, sub- and small contractor; manufacturer, banker, organized labor, government, and finally the Sherman Act.

For the main part, Mr. Lord's is no new idea, and his cry may be overrated. But it is encouraging to witness an earnest appeal to remedy injustices no matter how small.

## WORLD HOUSING

*Housing and Town and Country Planning. Department of Social Affairs. United Nations Bulletin No. 3. Sales No: 1949. IV. 8. United Nations Publications, Lake Success, N. Y. Columbia University Press (2960 Broadway, New York 27, N. Y.), sales agent. 8½ by 11 in. 118 pp. illus. $1.00.*

The third United Nations Housing and Town and Country Planning Bulletins further elaborates the research of U.N. working groups (see ARCHITECTURAL RECORD, Apr., 1949, p. 28) which are gathering world-wide information on housing — information which will be of use and interest to planners and architects, economic, social and political administrators.

Housing projects discussed in this bulletin include current developments from New Zealand, Panama, South Africa, the United Kingdom, India. Low Cost housing in tropical areas, housing in trust and non-self governing territories are considered. Housing standards, rent controls, problems of construction and construction techniques, etc., are also cited.

There is a section on the International Labor Organization and Housing; and the Institute for Urban Land Use and Housing Studies. A 49 page bibliography supplies selected references from periodicals published during 1948.

## PUBLIC LIBRARIES

*Buildings for Small Public Libraries. Remodeled and adapted including new designs for branches. Prepared for the A.L.A. Committee on Library Architecture and Building Planning. By Ernest I. Miller, Chairman. American Library Association (Chicago, Ill.) 1950. 8½ by 11 in. 39 pp., illus. $1.25.*

There has been a lapse of ten years since the American Library Association has published material on small libraries equal to that contained in this volume, a collection of photographs and plans for small libraries, branch libraries and converted libraries. Eighteen structures are illustrated, on spreads and single pages. Each includes a critical text, photograph or rendering and plan.

The book does not claim to provide all the answers. Says the A.L.A., ". . . it is not the purpose of this publication to add to the 'how' of building planning. Its object is to present a few examples of the end result of planning." Simplification of design, the greatest possible floor space at minimum cost are two aims. The buildings analyzed apparently attain these aims, satisfy stringent librarian requirements.

As for buildings adapted for library purposes, conversions have been made from churches, banks, stores, even a carriage shop — to demonstrate that a workable plan *can* be achieved. They are structures which, according to A.L.A. standards, may be considered good risks for library use.

As suggestions of what can be done simply and relatively inexpensively, the book warrants at least a look-in by one concerned with library design or redesign.

## CAPITAL PUNISHMENT

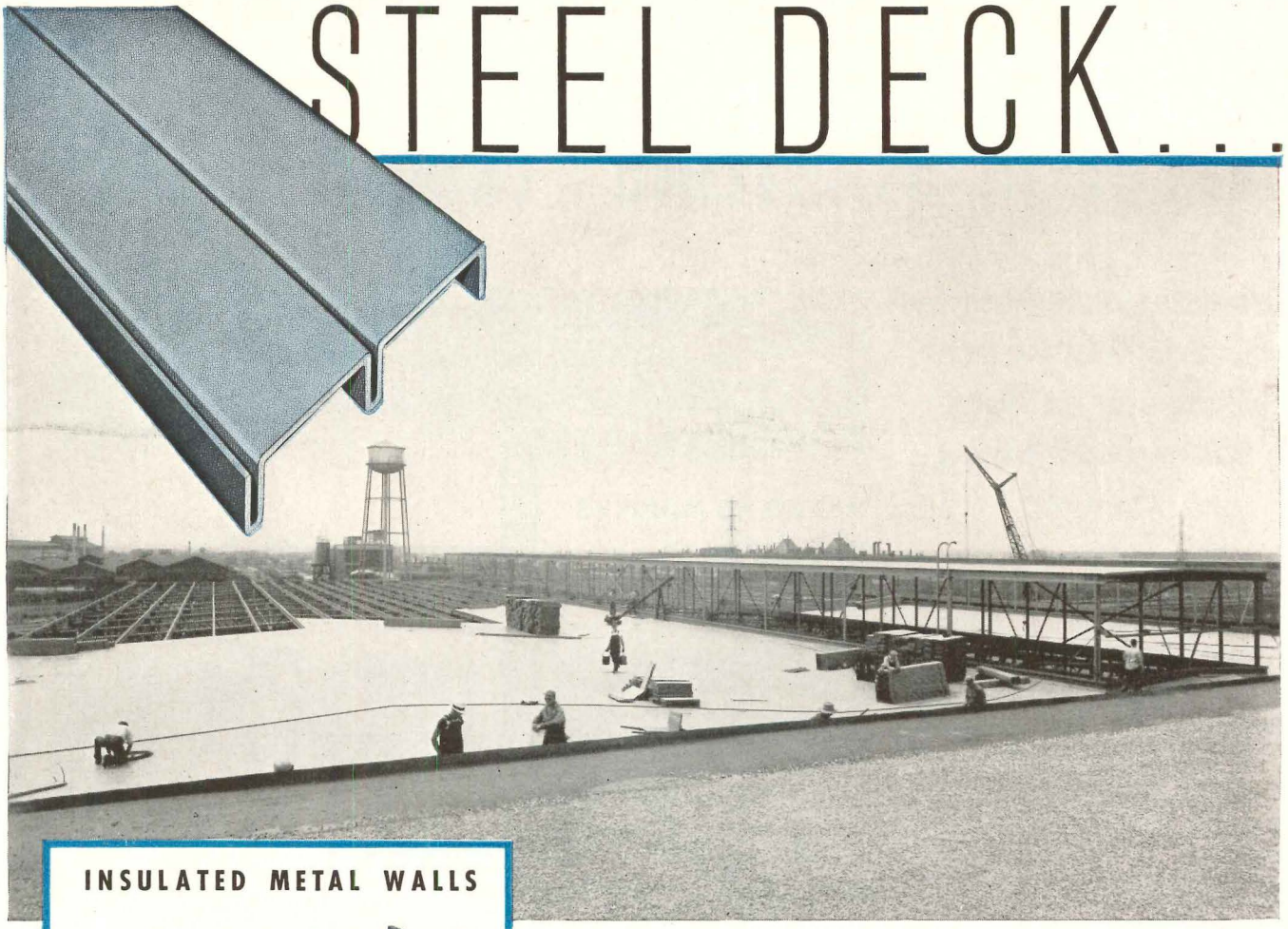
*Of Plans and People. Planning the City of Washington for its people as a worthy symbol of a great nation. A study of the plan of Washington, prepared by the Washington-Metropolitan Chapter of the American Institute of Architects (Washington, D. C.) 1950. 8 by 10½ in. 64 pp. illus. $.50.*

In the vein of city planning, Washington's A.I.A. has used the occasion of the capital's sesquicentennial to venture pretty severe criticism of the layout and structures of l'Enfant's old town. The lag of creative effort, the new monuments and buildings no longer convincingly tied to the past in comparison with other capital cities succinctly is indicated. We look at Santiago, Caracas, Lima and see developing mature, new urban life, says Metropolitan-Washington A.I.A. before making specific proposals for the Capital's redevelopment.

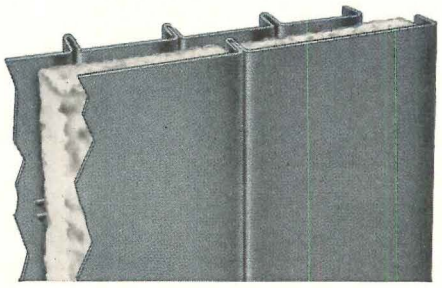
"We must look at Washington both as a capital and a city. Because it lacks the richness inherent in a more functionally varied city, it will need more imaginative planning than any other city. This can not be done by men who are afraid to dream. As a capital and as a city, Washington must become a worthy symbol of United States democratic culture. . . . White temples and green gardens along the Potomac aren't enough."

The present need for inspired thinking, integrated planning can be fulfilled. Success depends on the timing of improvements with the requirements and available resources, warns the study.

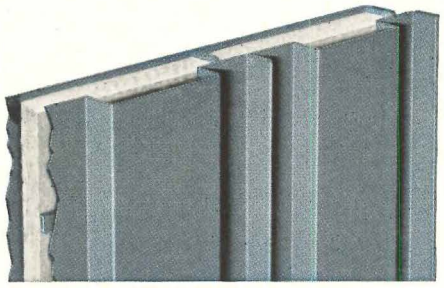
# STEEL DECK . . .



## 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!

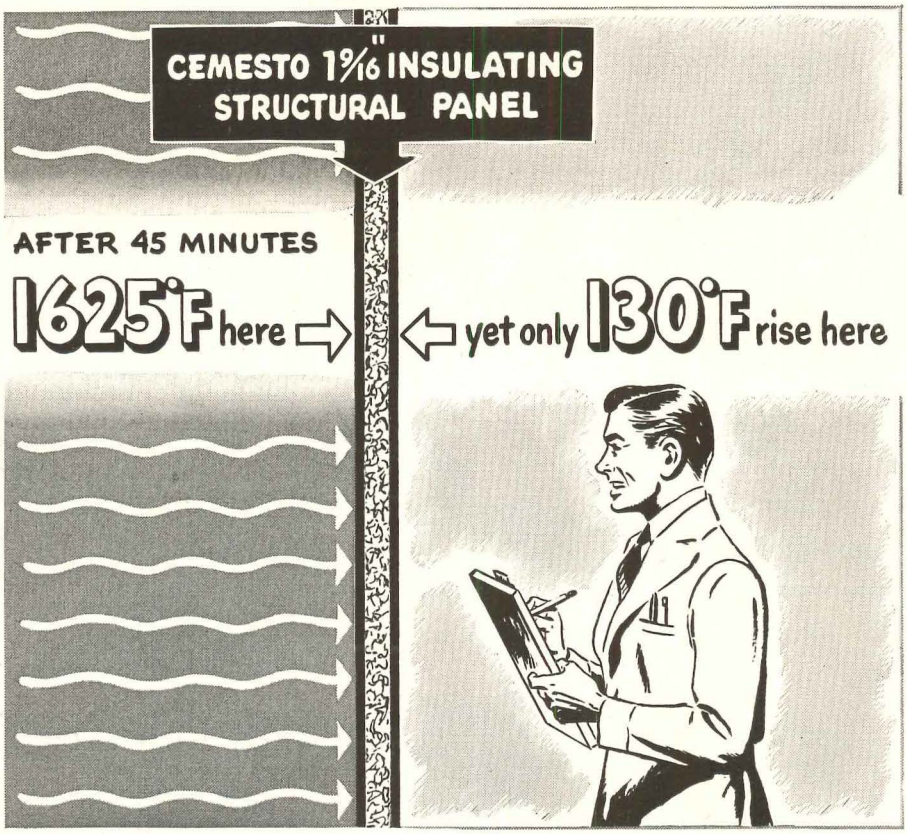
Steel Deck continues to gain favor throughout the country as the ideal roof construction for industrial and commercial buildings. Comparison of weight, insulation required to produce specific thermal properties, and total roof cost per sq. ft., will reveal that steel deck is the most economical permanent, 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.

**THE R. C. MAHON COMPANY**
DETROIT 11, MICHIGAN • CHICAGO 4, ILLINOIS
***Representatives in all Principal Cities***
Manufacturers of Steel Deck for Roofs, Partitions, Ceilings and Floors; Insulated Metal Curtain Walls of Aluminum, Stainless or Galvanized Steel; Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.

# MAHON

# CEMESTO* PROVES AMAZING INSULATION VALUE IN STARTLING "TRIAL BY HEAT"

**Dramatic tests demonstrate the remarkable insulating efficiency of the World's Most Versatile Building Material!**




In recent tests made by an independent research laboratory, panels of Cemesto were put through a rigorous "trial by heat." Each panel was first set up as an enclosing wall of a special testing oven. One side of the Cemesto Panel faced the inside of the oven, and the other side faced out (see drawing). The enclosed side was then subjected to intense heat for a period of 45 minutes.

At the end of this time, when the temperature on the side exposed to heat had reached a torrid 1625°F., *the other side registered a heat rise of only 130°F.!* Dramatic proof, indeed, of the unusual insulation value of Cemesto Insulating Structural Panels!

### Cemesto Panels offer many unique advantages

What do these tests mean to you? They mean that when you build with Cemesto Panels, you do more than save time and money on the construction of permanent roof decks, curtain walls and partitions. *You also insulate effectively without materially increasing the cost!* The result—buildings that are cooler and more economical to air condition in summer, warmer and thriftier to heat in winter... more pleasant, more healthful working conditions for occupants . . . greater production and fewer accidents through improved employee efficiency . . . increased client satisfaction!

### The secrets of Cemesto's versatility

Strong, rigid, pre-formed Cemesto Panels are made of Celotex cane fibre insulation board to which cement-asbestos facing is bonded on both sides by a moistureproof bituminous adhesive. They are lighter than most building materials, yet have remarkable structural strength. Can be worked with ordinary hand or power tools on the job, or pre-cut to specifications at the mill for faster application. Quickly and easily applied to either wood or metal framing.

Cemesto Panels resist fire, weather and wear—*they are a "life-of-the-building" material!* Their smooth, hard, noncombustible, stone-grey surface has good light reflection value, and provides both exterior and interior finish. Unless required for decorative purposes, Cemesto Panels never need painting or maintenance. And their cane fibre core is protected against fungus, dry rot and termites by the exclusive patented Ferox* Process.

### Cemesto gives your ingenuity free rein

Adaptable for buildings of all types from modest homes to giant industrial plants, Cemesto Panels offer many interesting possibilities for important economies in design, construction and maintenance. Their stability and permanence have been proved by almost 20 years of varied use in all climates, all over the world. Discover how this modern marvel of building materials can help *you* build better, faster and at lower cost. Write today for new technical data booklet, which includes latest design and application recommendations. The Celotex Corporation, Chicago 3, Illinois.

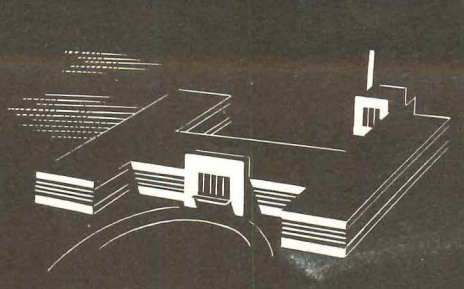
*REG. U.S. PAT. OFF.

**CEMESTO**
REG. U.S. PAT. OFF.
**INSULATING STRUCTURAL PANELS**

THE CELOTEX CORPORATION • CHICAGO 3, ILLINOIS

nted from TIME Magazine,
*· in a series of messages on the*
*ance of Modern Air Treatment*

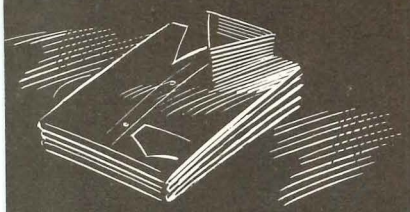
# today's best buy is better air!



**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

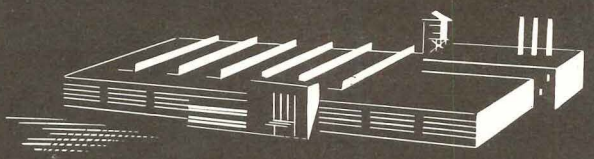
*Herman Nelson Unit Ventilation*



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

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

*AAF Air Filters and Electronic Precipitators*



**Industrial "Dust Storms" Must Be Stopped**

Dust produced by industrial processes presents a serious handicap to efficient and economical operation. There is hardly an industry, today, that does not employ one or more of the many types of AAF Roto-Clone Dust Control Equipment to protect workmen, materials and machinery. It pays off in good will, good health and great savings.

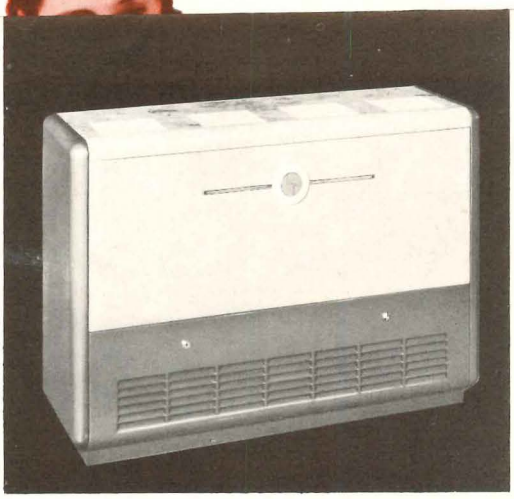
*Roto-Clone and Cycoil*

Bad air costs too much! It's expensive! It causes merchandise losses in stores—fatigue in schools—impurities in chemicals—rejects in factories—iness in church. It need not be. In fact, it costs ess to get rid of bad air than to suffer its damage.

or your air problem, see how American Air Filter equipment can solve it—and save! (To American r Filter's facilities have recently been added the ting 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!

**AMERICAN AIR FILTER CO., INC.**
AND THE
**HERMAN NELSON DIVISION**
LOUISVILLE, KENTUCKY MOLINE, ILLINOIS

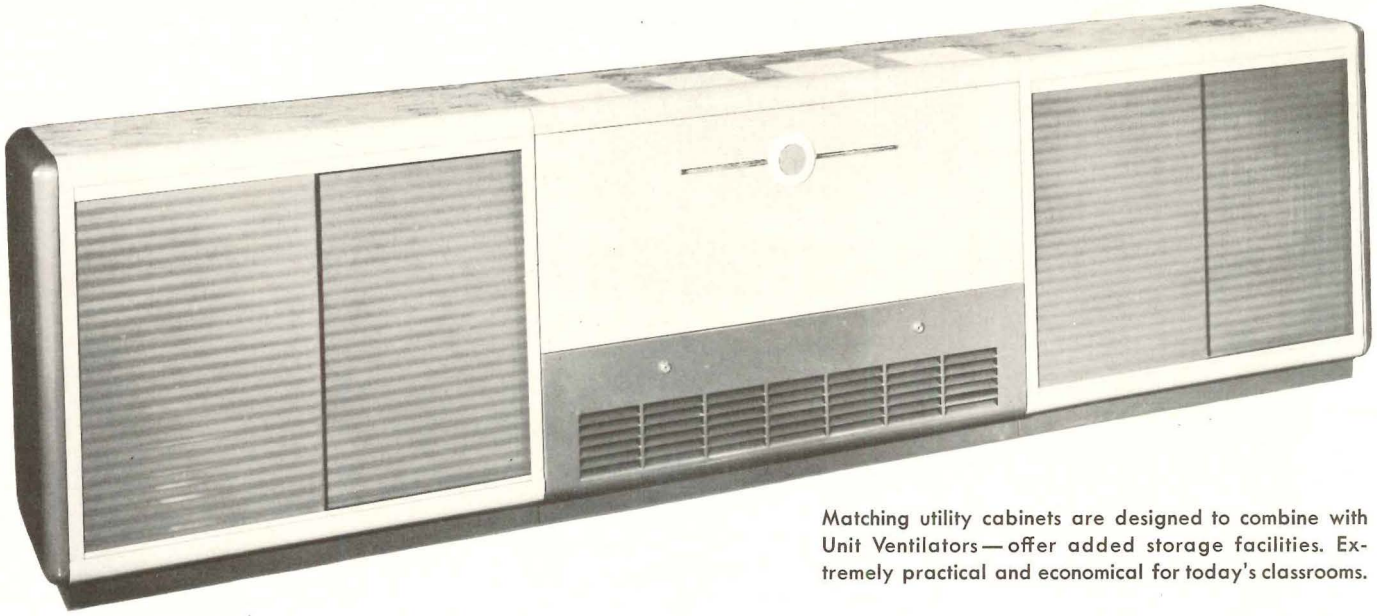
Filters • Electronic Precipitators • Roto-Clone Dust Control Equipment • Unit Ventilators • Unit Heaters • Unit Blowers • Propeller and Centrifugal Fans • Portable Heaters and Portable Ventilators



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.

**WRITE NOW**

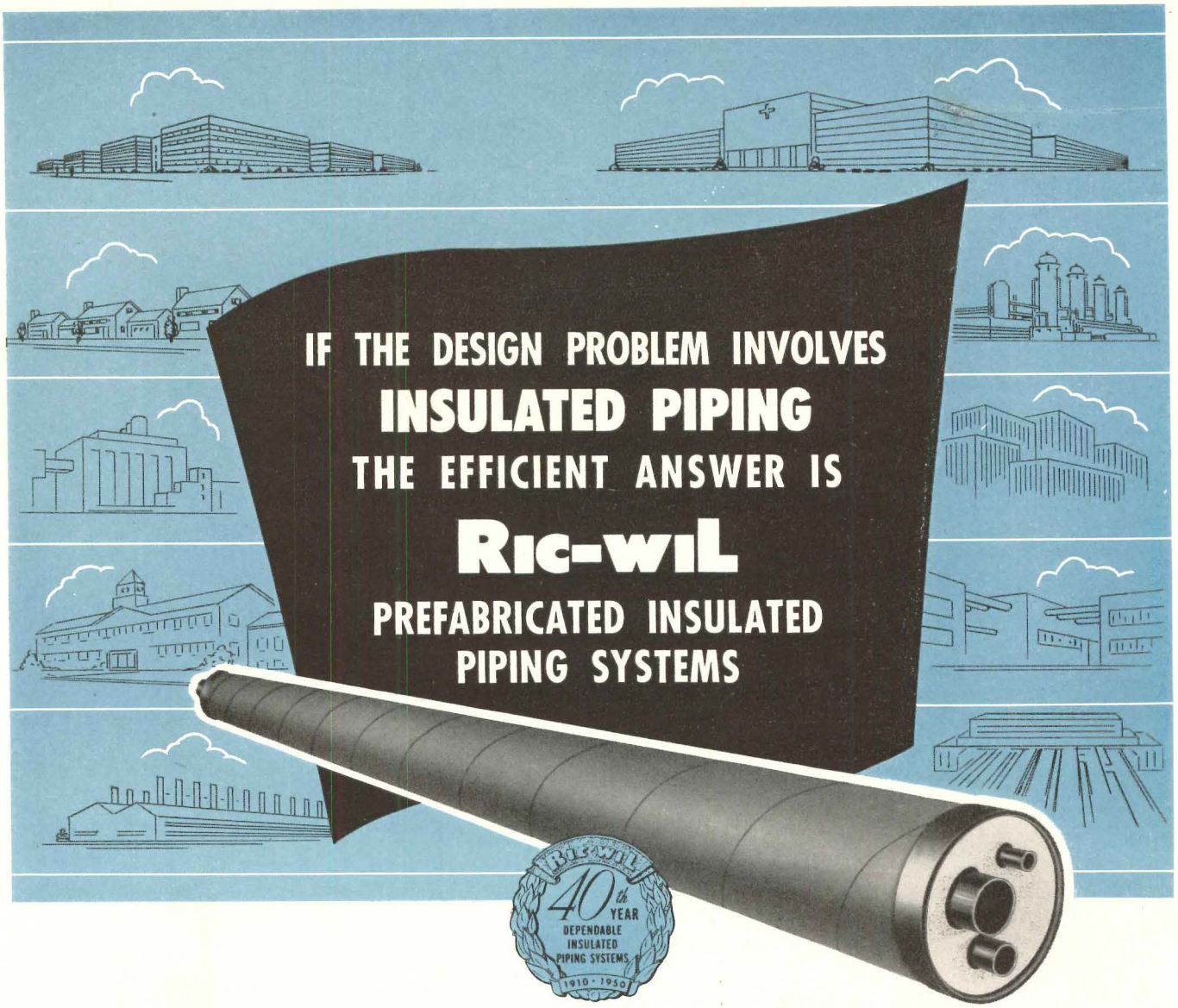
for this latest description of modern unit ventilation. Read the facts. Know why 37 Points of Engineering and Functional Superiority make Herman Nelson Unit Ventilation first and best. Send requests to: Dept. H-1650 N 1

AAF herman nelson moline illinois

**HERMAN NELSON DIVISION**

AMERICAN AIR FILTER CO., INC.

MOLINE, ILLINOIS




Architects, engineers and contractors have long recognized the factors that make Ric-wiL "the Greatest Name in Insulated Piping".

First, there is the product. Ric-wiL Prefabricated Insulated Piping, with all accessories furnished to make a complete distribution system, is carefully built of the finest known protective and insulating materials to insure long and efficient operating life. The accurate prefabrication of Ric-wiL units speeds up installation and provides system flexibility possible only with Ric-wiL.

The product is backed by forty years of experience spent exclusively in the designing and production of top-efficiency insulated piping systems. Constant research and development of Ric-wiL products have kept pace with all modern design and construction practices.

The specialized Ric-wiL Engineering Service provides full technical data, detailed working drawings, and a complete analysis of piping layouts. This assures users of Ric-wiL products and services of more efficient systems and consequent substantial savings in installation and final project costs.

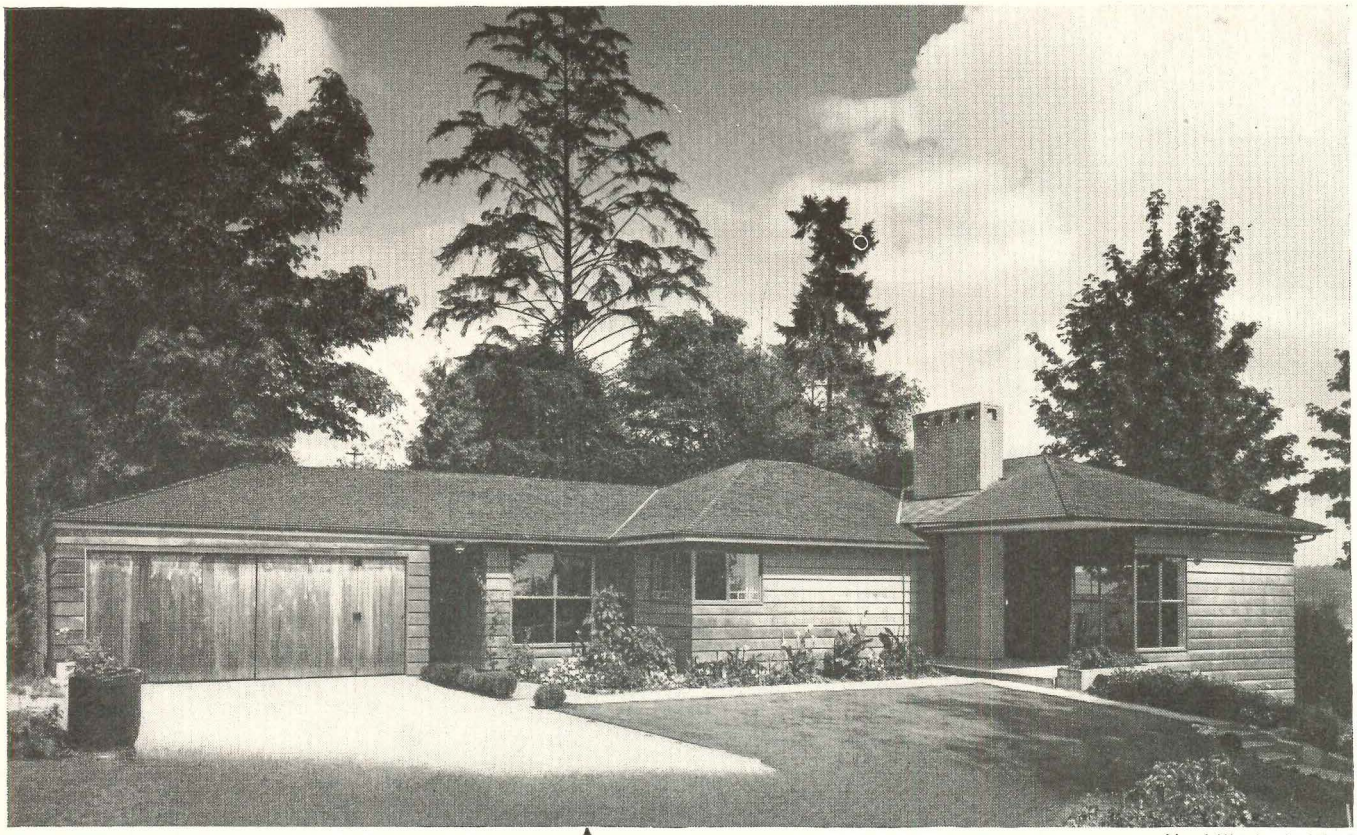
When you have a design problem involving insulated piping, contact your nearest Ric-wiL representative for the most efficient answer.

For full technical information on Ric-wiL Insulated Piping Systems, call or write the Ric-wiL office nearest you or Dept. 9-AA in Cleveland, Ohio.

**RIC-WIL**
INSULATED PIPING SYSTEMS
THE RIC-WIL COMPANY · CLEVELAND, O.

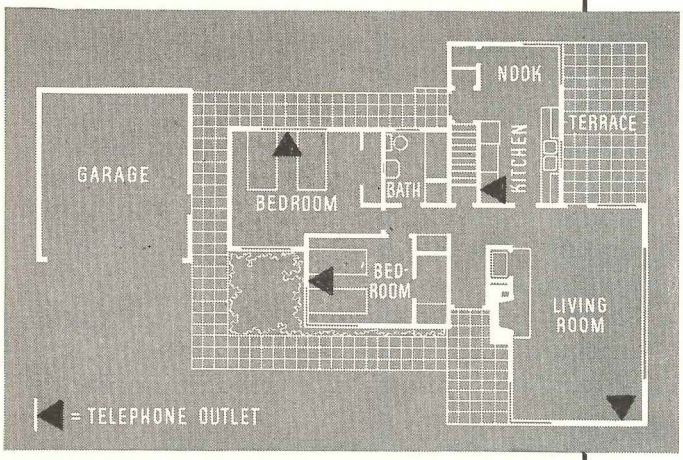
OVERHEAD • UNDERGROUND

FOR FORTY YEARS THE GREATEST NAME IN INSULATED PIPING SYSTEMS



Lloyd Ulrich, *Architect*

# THE BEST LAID PLANS INCLUDE TELEPHONE RACEWAYS




Concealed telephone wiring is one detail today's home buyers inquire about—and appreciate.

Built-in telephone facilities involve little work, little cost. Just mark locations for telephone outlets on your plans. Then, during construction, a few lengths of pipe or tubing can be built into the walls to carry telephone wires to the outlets.

Your Bell Telephone Company will be glad to help you in planning telephone wiring facilities. Simply call your nearest Telephone Business Office and ask for "Architects and Builders Service."

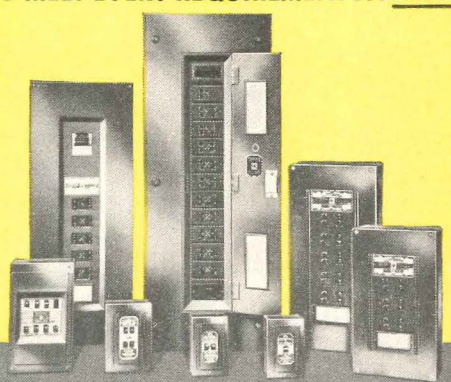
BELL TELEPHONE SYSTEM


# SQUARE D CIRCUIT BREAKERS MAKE SENSE IN ANY SET OF "SPECS"

Circuit breakers eliminate fuses. They provide *repeat* protection. There is nothing to burn out . . . nothing to replace. Anyone can quickly restore service after the fault is eliminated. They offer the most in *convenience*, *safety*, *compactness*, and *appearance*. Equally important, more circuits can be added easily when required. Yet circuit breakers cost little more than fusible equipment.

Square D Circuit Breakers are THERMAL-(*Coilless*) MAGNETIC. *Thermal* element deflects in proportion to temperature of wire insulation resulting from both surrounding air and losses within the conductor. *Magnetic* element responds instantly to heavy overloads or shorts. *BOTH ARE NEEDED FOR COMPLETE PROTECTION!*

**THERE IS A SQUARE D CIRCUIT BREAKER TO MEET EVERY REQUIREMENT... EXACTLY**



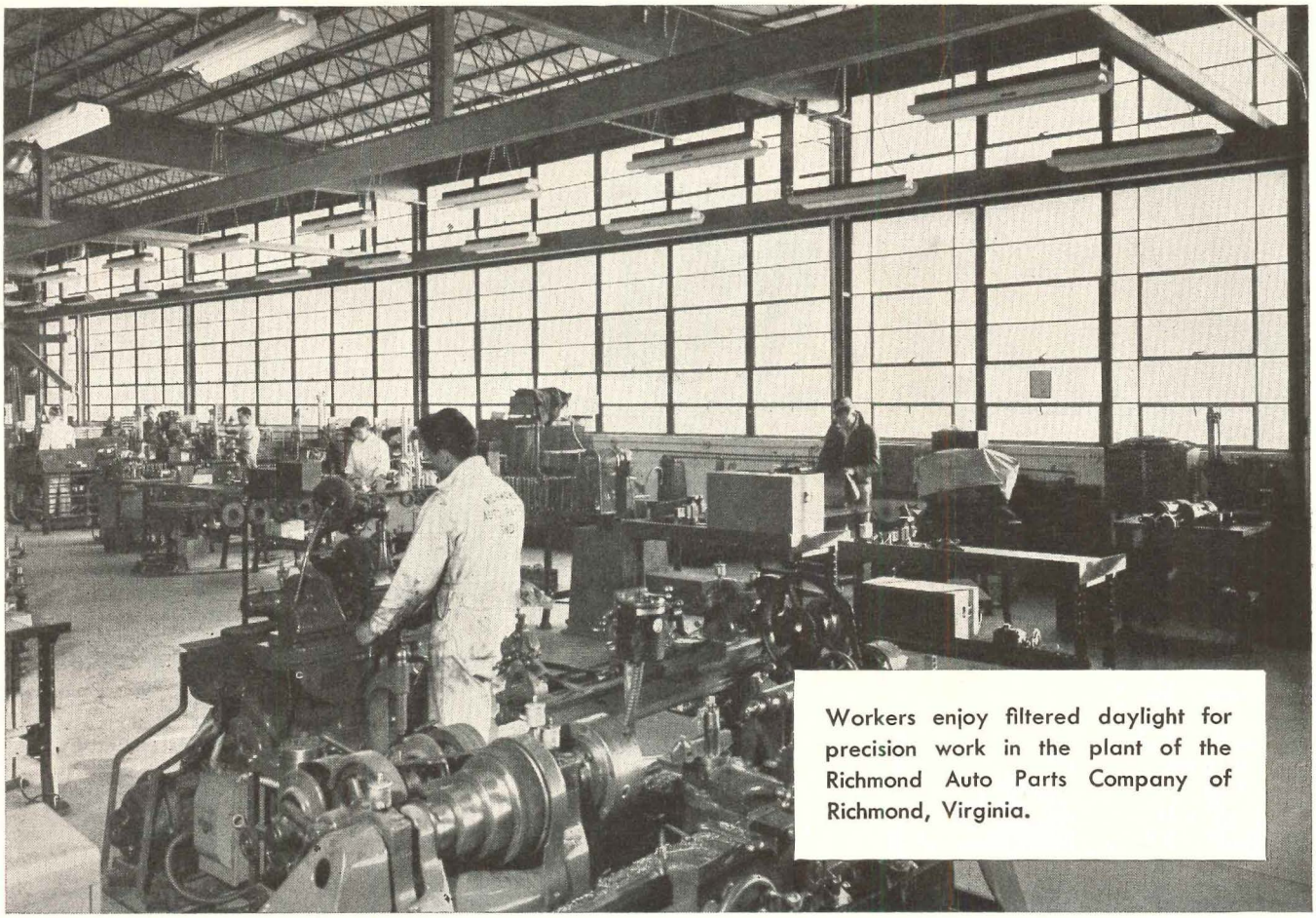
ALSO INDUSTRIAL BREAKERS, PANELBOARDS, SWITCHBOARDS AND DUCT

*Write for Bulletins SA 590 and SA 583, Square D Company, 6060 Rivard Street, Detroit 11, Michigan*

**SQUARE D COMPANY**

DETROIT • MILWAUKEE • LOS ANGELES

SQUARE D COMPANY CANADA LTD., TORONTO • SQUARE D de MEXICO, S.A., MEXICO CITY, D.F.



Workers enjoy filtered daylight for precision work in the plant of the Richmond Auto Parts Company of Richmond, Virginia.

# FILTERED DAYLIGHT

## . . . for reduction of glare and sun heat

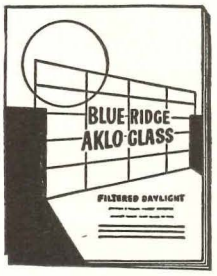
Better workmanship and reduction of accidents are logical results of better seeing. That's why so many plant owners glaze their buildings—old and new—with Frosted *Aklo** Glass. This blue-green glass reduces glare—provides filtered daylight that means less eye fatigue.

*Aklo* Glass keeps building interiors cooler in summer. It absorbs infrared rays of the sun, re-radiating much of this heat back outdoors. *Aklo* excludes two and one-half times as much radiated sun heat as does regular glass. Thus, it adds to comfort of workers, aids in temperature control and reduces load on air conditioning.

*Aklo* Glass is manufactured by the Blue Ridge Glass Corporation of Kingsport, Tennessee, and sold through Libbey·Owens·Ford Glass Distributors. To see for yourself how Frosted *Aklo* Glass reduces glare and sun heat, ask your distributor for a Radiometer demonstration. *®

***Free Book on Reduction of Sun Glare and Heat***

Write to Blue Ridge Sales Division, Libbey · Owens · Ford Glass Company, 9065 Nicholas Building, Toledo 3, Ohio.




**BLUE RIDGE AKLO GLASS**

***Heat Absorbing • Glare Reducing • Figured and Wire Glass***

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

Westinghouse


*Rice Hotel, Houston, Texas*
*Architect: Kenneth Franzheim, Houston*
*Mechanical Engineer: Reg. F. Taylor, Houston*
*Electrical Contractor: Fischbach & Moore of Texas, Inc., Houston*
*Load: 3,000 kva for power and lighting to serve 1,000 guest rooms, ballrooms, banquet rooms, dining rooms*

# Rice Hotel *REMODELS and SAVES* with Low Impedance Bus Duct

While the basic advantage of using bus duct is to secure more adequate secondary power distribution, the choice of bus duct should not stop there.

Take the case of the installation limitations at the Rice Hotel, Houston. The problem: to completely remodel and air condition from basement to penthouse—and without interruption of "business as usual".

The answer: Westinghouse Low Impedance Bus Duct. Its compact design and freedom from protruding members permitted passage in places where dimensions were critical. Limited space, because of pipe and air duct systems, ruled out ordinary wiring, as well as other makes of bus duct.

Ask your nearby Westinghouse representative to tell you all the advantages of Westinghouse Bus Duct, available in four popular types. Or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-30012

Westinghouse BUS DUCT

DESIGN TESTED AND VERIFIED IN THE Westinghouse HIGH POWER LABORATORY

# How to save money for your clients on ROOFING and SHEET METAL WORK

This chart is designed as a time-saver for you, a money-saver for your clients. You can determine at a glance the suggested gauges of Monel® Roofing Sheet for principal sheet metal building applications.

| APPLICATION | U.S.S. GAUGE | THICKNESS IN INCHES |
|---|---|---|
| **Flat Seam Roofing** | 25 | .021″ |
| **Standing Seam Roofing** | | |
| Pans (20″ Wide)[1] | 26 | .018″ |
| (24″ Wide)[1] | 25 | .021″ |
| Valleys | 26 | .018″ |
| Eaves | 24 | .025″ |
| **Batten Seam Roofing** | | |
| Pans (20″ Wide)[1] | 26 | .018″ |
| (24″ Wide)[1] | 25 | .021″ |
| Cover Strips | 26 | .018″ |
| Valleys | 26 | .018″ |
| Eaves | 24 | .025″ |
| **Cleats** | 26 | .018″ |

[1] *Indicates width of Sheets not width of Pans.*

| | | |
|---|---|---|
| **Thru Wall Flashings[2]** | | |
| Flashings | 26 | .018″ |
| **Counter, Base and Cap Flashings** | | |
| Counter Flashings | 26 | .018″ |
| Cap Flashings | 26 | .018″ |
| Base, over 10″ width | 25 | .021″ |
| Base, 10″ and under | 26 | .018″ |
| **Gutters[3]** | | |
| Gutter Linings | | |
| 36″ Girth and smaller | 25 | .021″ min. |
| 36″ to 48″ Girth | 24 | .025″ min. |
| 48″ Girth and larger | 22 | .031″ min. |
| Molded Gutters | 25 | .021″ |
| Hung Gutters | 26 | .018″ |
| Gutter Expansion Joints | 26 | .018″ |

[2] *A patented, interlocking thru-wall flashing is available from Keystone Flashing Co., Philadelphia, Pa.*

[3] *Thicknesses suggested are minimum and heavier gauges may be indicated depending upon design and proposed method of installation.*

*(NOTE: For replacemen. work where expansion joints and downspouts are more than 40 feet apart, 22 ga. (.031″) Monel should be considered.)*

| | | |
|---|---|---|
| **Leaders** | | |
| Downspouts | 26 | .018″ |
| Heads | 26 | .018″ |
| Straps | 26 | .018″ |

| APPLICATION | U.S.S. GAUGE | THICKNESS IN INCHES |
|---|---|---|
| **Valley Flashings** | | |
| With Wood or Asphalt Shingles | 26 | .018″ |
| With Slate or Tile Roofing | 24 | .025″ |
| **Expansion Joints** | | |
| Exterior Walls | 26 | .018″ |
| Roof Curbs | 25 | .021″ |
| 'V' Cover and Floors | 26 | .018″ |
| **Eaves Flashings** | 26 | .018″ |
| **Louvers (Stationary)[4]** | | |
| Frame Covering | 26 | .018″ min. |
| Louver Slats (under 6 ft.) | 25 | .021″ min. |
| (over 6 ft.) | 24 | .025″ min. |
| Vertical Strips | 24 | .025″ min. |
| **Gravel Stops** | | |
| Stops | 25 | .021″ |
| Edge Strips | 24 | .025″ |
| **Coping Cover** | | |
| Edge Strips on Wood Copings | 24 | .025″ |
| Edge Strips on Stone Copings | 22 | .031″ |
| Standing Seam | 26 | .018″ |
| Flat Sheet Coping | 25 | .021″ |
| **Cornices and Belt Courses** | | |
| Edge Strip on Wood Cornices | 24 | .025″ |
| Edge Strip on Stone Cornices | 22 | .031″ |
| Belt Courses | 22 | .031″ |
| Flat Covering | 25 | .021″ |

[4] *Gauges recommended are minimum and heavier gauges might be indicated depending upon design, number of structural supports and method of joining called for.*

| | | |
|---|---|---|
| **Skylights** | | |
| Caps | 25 | .021″ |
| Condensation Gutter | 26 | .018″ |
| **Sidings (Bulkheads—Elevator, Penthouse and Staircase Shafts)** | | |
| Flat Sheets | 25 | .021″ |
| Crimped, Keyed and/or Corrugated | 26 | .018″ |

**Keep this chart for ready reference**

**These gauges,** you'll note, are somewhat lighter than you might ordinarily specify. But service records prove that relatively light gauge Monel can safely be used—even under such severe conditions as are often found in many coastal cities and industrial areas.

**Among the important reasons** for this are the high corrosion-resistance and mechanical properties of Monel. This dependable Nickel Alloy withstands attack by smoke, rain and chemical fumes. It endures heat and cold with less buckling and no cracking. It has the strength to stand snow, ice and tearing winds. It takes years of flexing without showing signs of fatigue.

**Keep Monel in mind**—not only for entire roofs—but also for drainage systems, flashings, ventilators, louvers, skylight frames, siding, expansion joints, coping, gutters and downspouts. Its initial cost is low, its maintenance expense negligible.

### *When you need help*

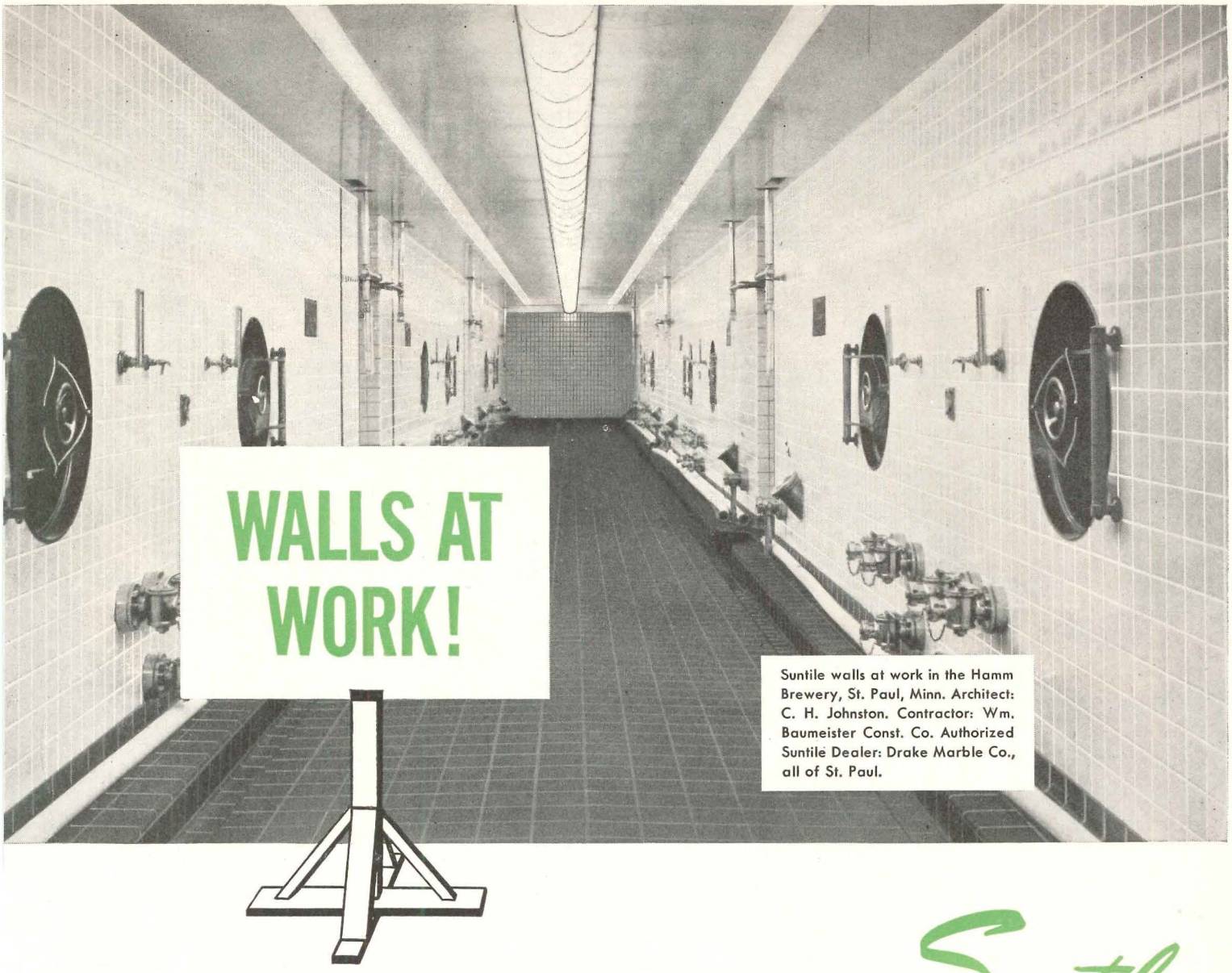
On request, The International Nickel Company will send you detailed information on the use of Monel Roofing Sheet. There is no charge or obligation for this service. If you want samples of Monel Roofing Sheet, or profusely illustrated booklets for your clients, you need only ask for them.

The particularly useful bulletin, *Monel Roofing Sheet — Basic Application Data,* from which the above chart was adapted, contains a full review of the properties and characteristics of Monel, a discussion of installation procedures, and a sample specification wording. A copy deserves a place in your file. May we send it to you?

**MONEL... *for the life of the building***

EMBLEM OF SERVICE INCO TRADE MARK

**THE INTERNATIONAL NICKEL COMPANY, INC.**
*67 Wall Street, New York 5, N. Y.*




Suntile walls at work in the Hamm Brewery, St. Paul, Minn. Architect: C. H. Johnston. Contractor: Wm. Baumeister Const. Co. Authorized Suntile Dealer: Drake Marble Co., all of St. Paul.

# It's easy-to-clean, hard-wearing, real clay Suntile

You won't actually see the sign—but where you see Suntile in an industrial interior, you'll know the walls (and floors) are hard at work.

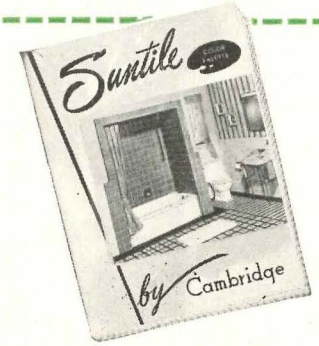
Day-in, day-out, these tough, trouble-resistant surfaces keep busy cutting down plant overhead. Routine maintenance costs next to nothing—and long run expenses, refinishing, redecorating and repairs, cost even less! An occasional plain water washing is all the attention Suntile ever needs. This means real savings for your client.

Product processing gets valuable help from Suntile, too. That's because of Suntile's *impervious* surface. It washes clean, *really clean.* Dirt, grease, moisture, many acids or bacteria cannot penetrate Suntile's hard, fired-in finish. They stay on the surface where they can be thoroughly washed away.

And what a beautiful job Suntile does brightening up a working place! The colors *stay* lustrous and unfaded. Suntile's Color-Balance gives you practically unlimited color combinations to choose from, makes it easy to provide a cheerful, morale-building setting for any kind of production.

Put this versatile, real clay tile to work in the next interior you plan. Your Authorized Suntile Dealer can give you valuable help in this. He knows tile and he knows how to give you the finest installation. Every job carries his guarantee. See your classified telephone directory for his name, or write us.

**Ideal for: schools**
**hospitals • stores**
**public buildings**
**industrial plants**
**residences**




## NEW COLOR FOLDER AVAILABLE

Created under the direction of Faber Birren, leading color authority. 22 attractive wall colors, 27 beautiful shades of unglazed ceramic mosaic tile, 10 unique Suntile Camargo colors. All selected to give you a wide range of effective color treatments for walls and floors. Write today for your FREE copy, or see our Sweet's Catalog. Dept. AR-6, The Cambridge Tile Mfg. Co., Cincinnati 15, Ohio.

**WAREHOUSES**

The Cambridge Tile Mfg. Co.
470 Alabama Street
San Francisco 10, California

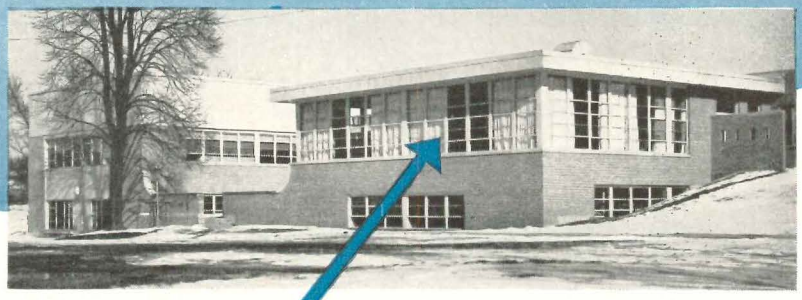
The Cambridge Tile Mfg. Co.
941 N. Citrus Avenue
Los Angeles 38, California


SUNTILE OFFERS YOU BOTH • BETTER TILE • BETTER INSTALLATION

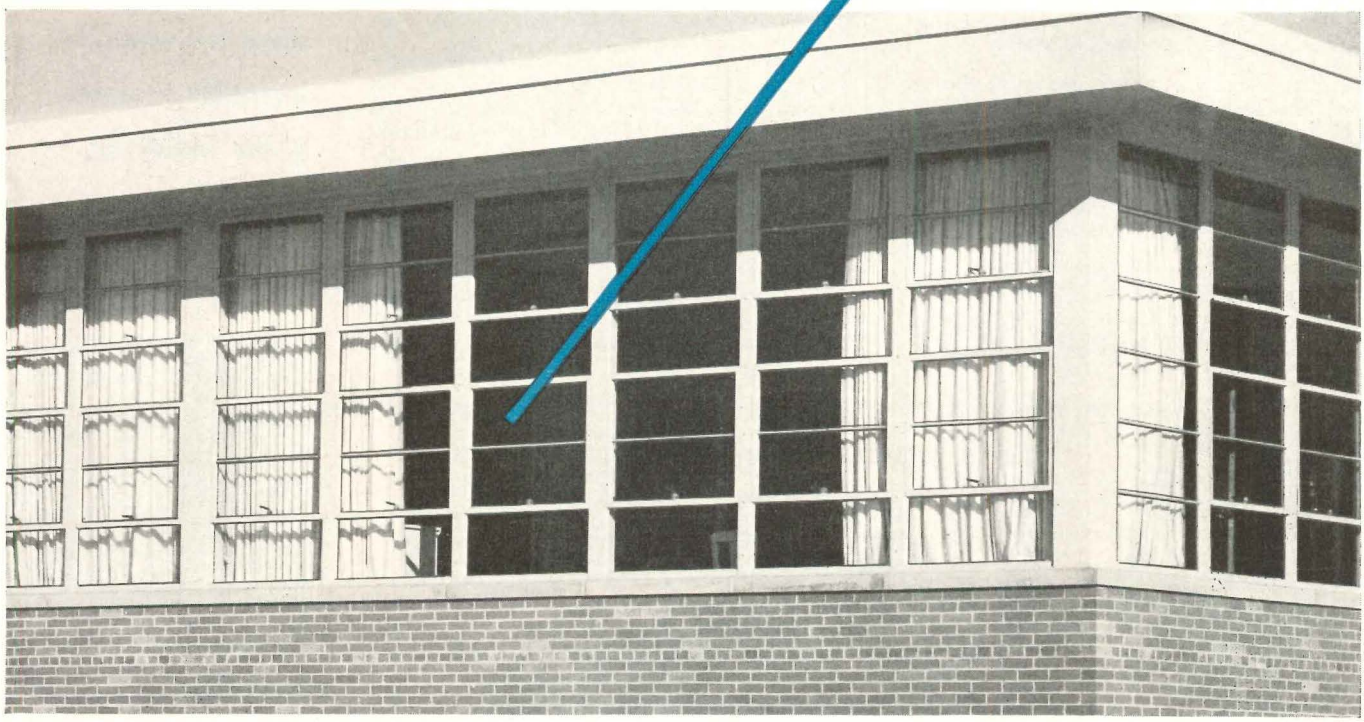
# Mesker

## STEEL WINDOWS . . . KNOWN FOR THEIR

# Strength

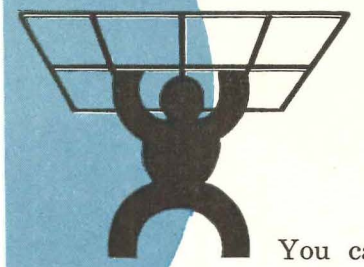


SUNNYSLOPE SANATORIUM • OTTUMWA, IOWA
*Architect:* Morgan-Gellatt and Associates • Burlington, Iowa
*Contractor:* Kucharo Construction Company • Des Moines, Iowa
*Mesker Sales Engineers:* Berkley-Pinkerton Company • Waterloo, Iowa



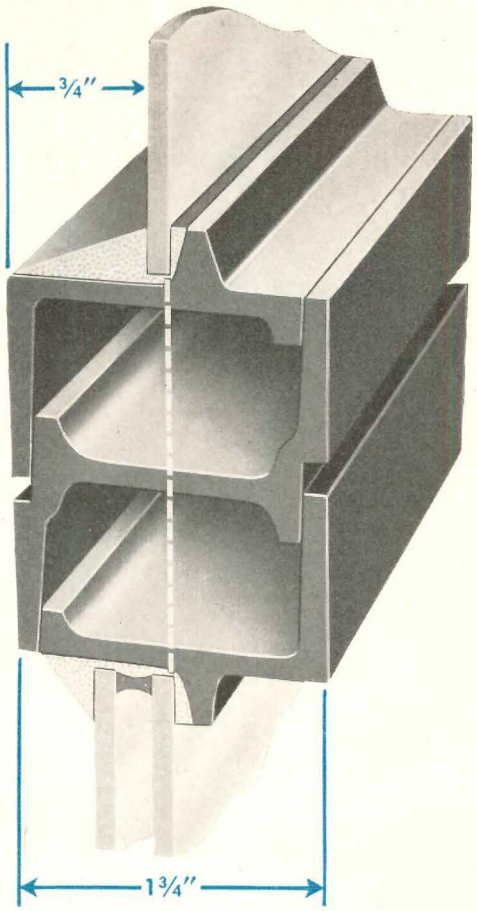
FOR MONUMENTAL BUILDINGS, FOR COMMERCIAL BUILDINGS

# Go dramatic . . . safely . . . with Mesker STEEL "window walls"!



You can do a better design job, create more effective window treatments, and get safer wall structure with Mesker STEEL Windows . . . *the strongest windows made!* Next time you're scratching around on your drawing board . . . searching for an idea that's both striking and practical . . . try a Mesker "wall of windows". *Stronger* Mesker windows let you design larger window areas. Your buildings have *more* inside light, and up to 100 per cent ventilation . . . perfectly, completely controlled fresh air at a touch of the hand. A noteworthy example is the Iowa sanatorium addition shown here, featuring long runs of Mesker "window walls". Here's a square foot of windows for every 1.76 square feet of floor space! Remember, too, the initial cost of Mesker windows is remarkably low compared to any other type of window or wall construction. Upkeep is practically *nil.*

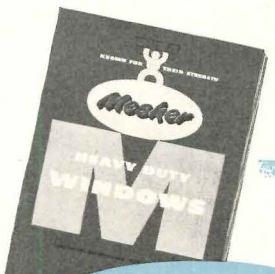
When you're ready to design a dramatic structure that has plenty of architectural feeling plus greater safety, get in touch with your Mesker sales engineer . . . the man who sells *the strongest windows made.*




## 33% MORE STRENGTH

That's the difference—the Mesker *extra*—that means greater safety—higher resistance to wind shock and rough treatment. Mesker's Intermediate Ventilator member is up to 33%* stronger because of its greater depth. This is *the deepest section made!* This means you, and every architect, can think in bigger terms—design larger, more impressive window areas without concerning yourself about window strength. So regardless of the type of architecture you favor, choose a stronger, more beautiful Mesker steel window. Be certain of the best, the safest, and the strongest! Specify MESKER, *the strongest windows made!*

**Based on the comparative section modulus of similar hot rolled steel members 1⅜" deep versus steel members 1⅝" deep.*




***Available now and FREE to architects!***

*It's here—new 1950 Catalog of Mesker "Heavy Duty" Windows! An organized reference book that covers every aspect of steel window designing, engineering and specifying. Order your copy today by mailing the coupon below!*

**Mesker BROTHERS**

**FOR SCHOOLS, FOR HOSPITALS**

**MESKER BROTHERS**
**4338 GERALDINE, ST. LOUIS 15, MO.**

*Gentlemen: I want to know more about the added advantages of Mesker Heavy Duty Steel Windows. Please send me (free) your 1950 Catalog.*

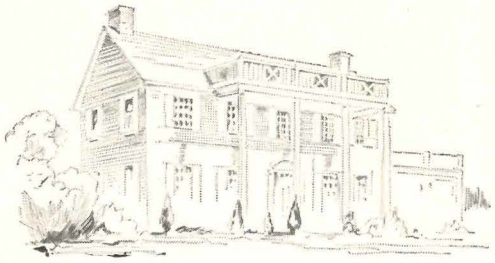
Name_____

Address_____

City and State_____

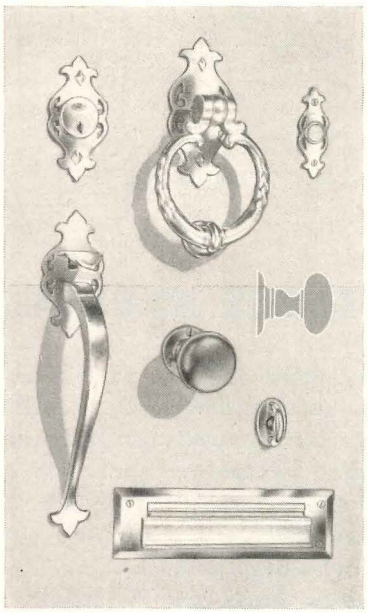
AR60

# Choose CORBIN

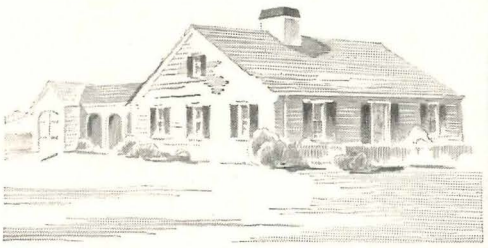


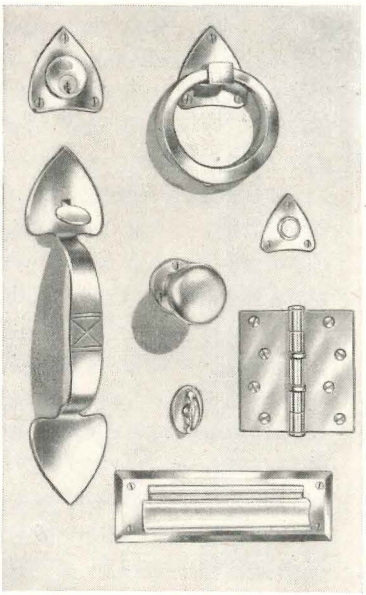
## FOR FRONT DOOR HARDWARE

The charm and individual character of Corbin design relate the door, handle, knocker and push button to the architectural style of the house.

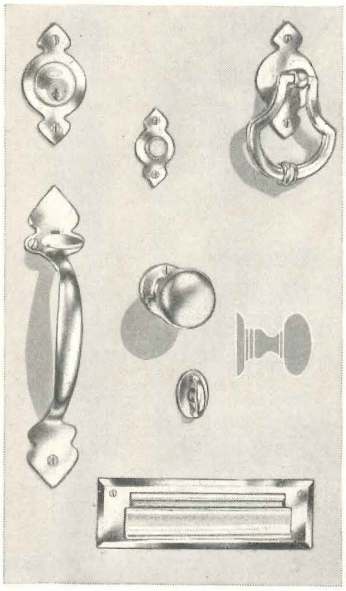


← Somerset design exemplifies the beauty and tradition of Southern Colonial architecture.





↑ The Cape Cod or New England Colonial doors call for the substantial beauty of "Plymouth" design in solid cast brass.



→ The Corbin "Concord" design is particularly adaptable to the current American Farm and the popular Ranch Type homes.

**Good Buildings Deserve Good Hardware**

CORBIN

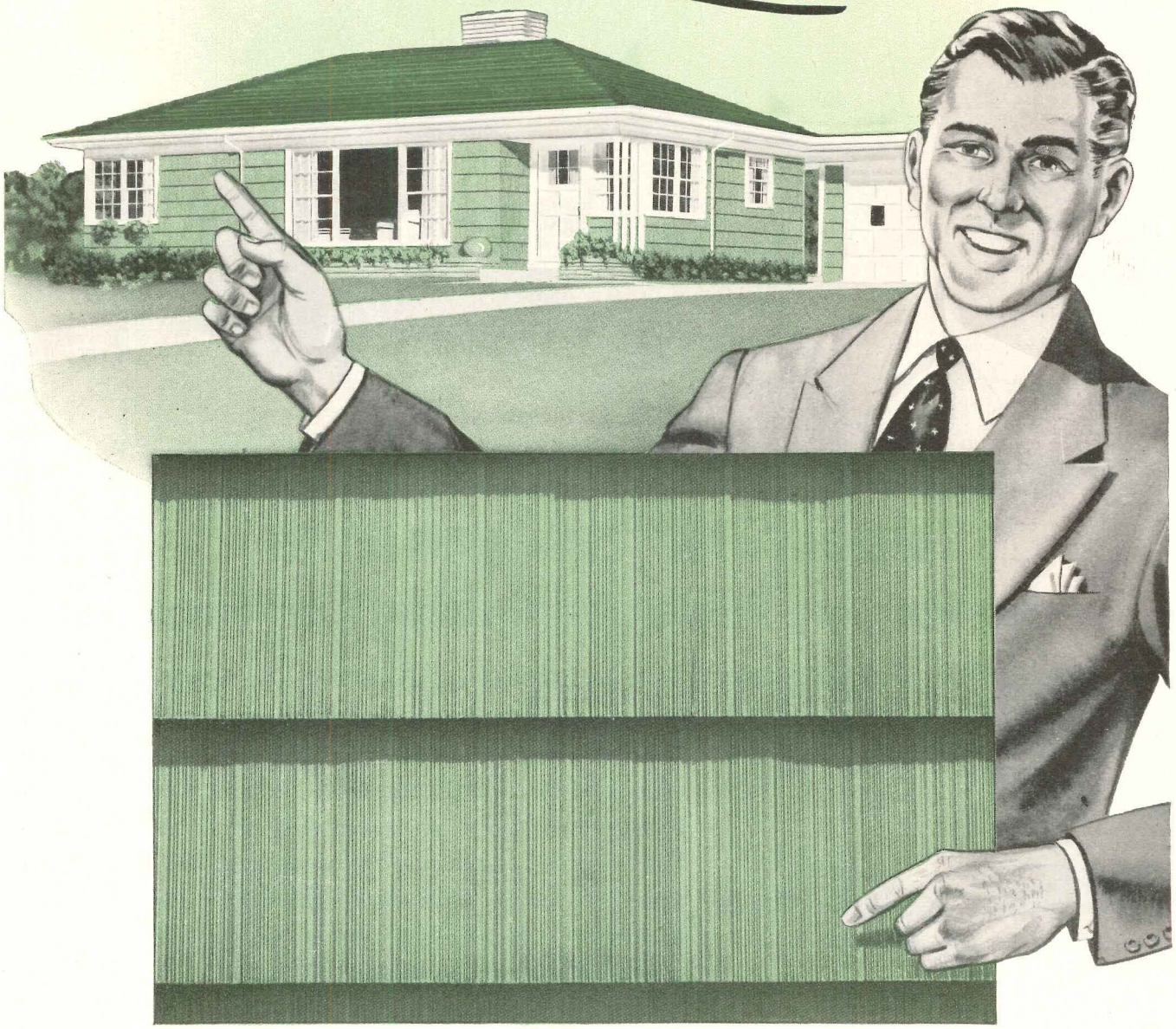
**P. & F. Corbin**

Division

The American Hardware Corporation

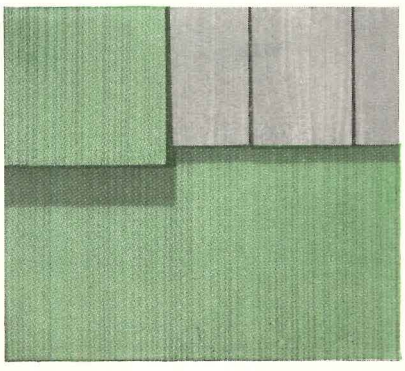
New Britain, Connecticut

# Home buyers go for pre-stained shakes!



## for colorful, economical walls

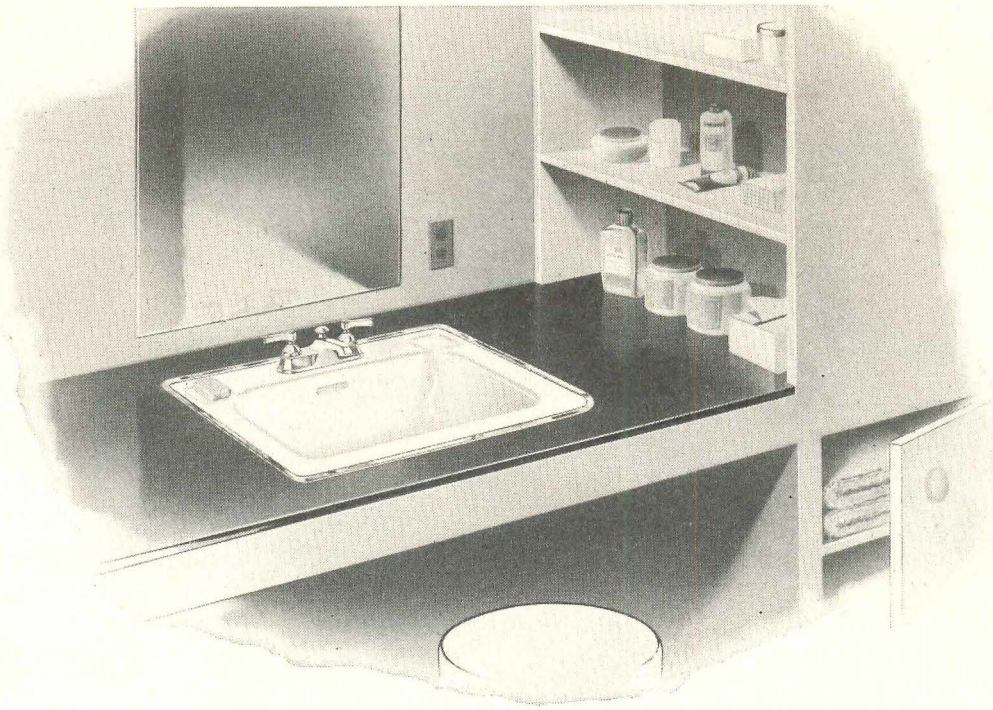
No wonder it's easy to sell pre-stained cedar shakes! Where else can your customers find the proven qualities of long life, insulation, rot-proof construction assured with double-coursed cedar shake walls? Where else can they obtain quality wood siding with weather exposures as wide and modern as 16″—and at a cost that is well within the budget of virtually all home buyers? Everywhere in America Architects, Builders and Lumber Dealers are finding that home owners like to choose from the wide variety of shake colors available. They like the double-coursing method because it makes use of inexpensive, low-grade cedar shingles for the concealed under courses. And they like the finished job, the rich appearance of combed cedar, penetrated with colorful stains. Take advantage of this popularity.



***Build better homes with pre-stained cedar shakes***

STAINED SHINGLE & SHAKE ASSOCIATION

**STAINED SHINGLE & SHAKE ASSOCIATION • SEATTLE, WASH.**



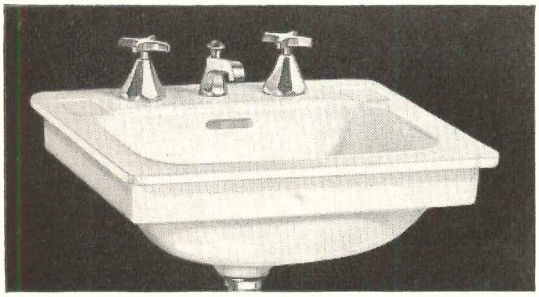
**Arrowhead K-1890-C,** vitreous china lavatory built into a dressing table. Size: 20x18″. Basin: 15x10¾″. Centra fitting with Synchro drain.

*New!*

# KOHLER Vitreous China and Enameled Iron

# *BUILT-IN LAVATORIES*

## for Dressing Table and Cabinet Combinations



**Arrowhead K-1892-F,** vitreous china, 20x18″. Combination fitting with Synchro drain.

**Tahoe K-2818-C,** enameled iron, 20x18″. Centra fitting with Synchro drain. (This lavatory also available with combination fitting. Specify K-2819-F).

These new Kohler lavatories, with flat rim for building-in, open fresh opportunities for you among home-planners who wish to follow a new and increasingly popular trend in bathroom installations, or to modernize old bathrooms. They provide a basis for many attractive dressing table and lavatory combinations that join smartness with convenience. This makes them ideal, also, for any small space suitable for converting into a washroom—and many will welcome the idea of installing them in bedrooms or dressing rooms.

Like all Kohler lavatories, these combine beauty of design, fine materials and unexcelled workmanship. The vitreous china Arrowhead is made of carefully selected imported and domestic clays. The enameled iron Tahoe is protected against cracking and crazing because the Kohler enamel is fused to a base of non-flexing iron, cast for rigidity. The glass-hard surfaces of all Kohler lavatories are exceptionally easy to keep clean and lustrous. Chromium-plated brass fittings are engineered to Kohler high standards of efficiency and durability. Kohler Co., Dept. 12-P, Kohler, Wisconsin.

# KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS • AIR-COOLED ENGINES

Note the strong horizontal rib resulting from the corrugated mesh. It provides greater rigidity and reinforces the plaster similar to reinforced concrete.

## You eliminate worry and cut costs when you specify

# Steeltex Lath for Plaster

You eliminate worry when you specify *Pittsburgh Steeltex* because you can be sure that the combination of strong, rigid, deeply embedded steel mesh and tough, absorbent backing will give you the best plaster wall you can possibly build.

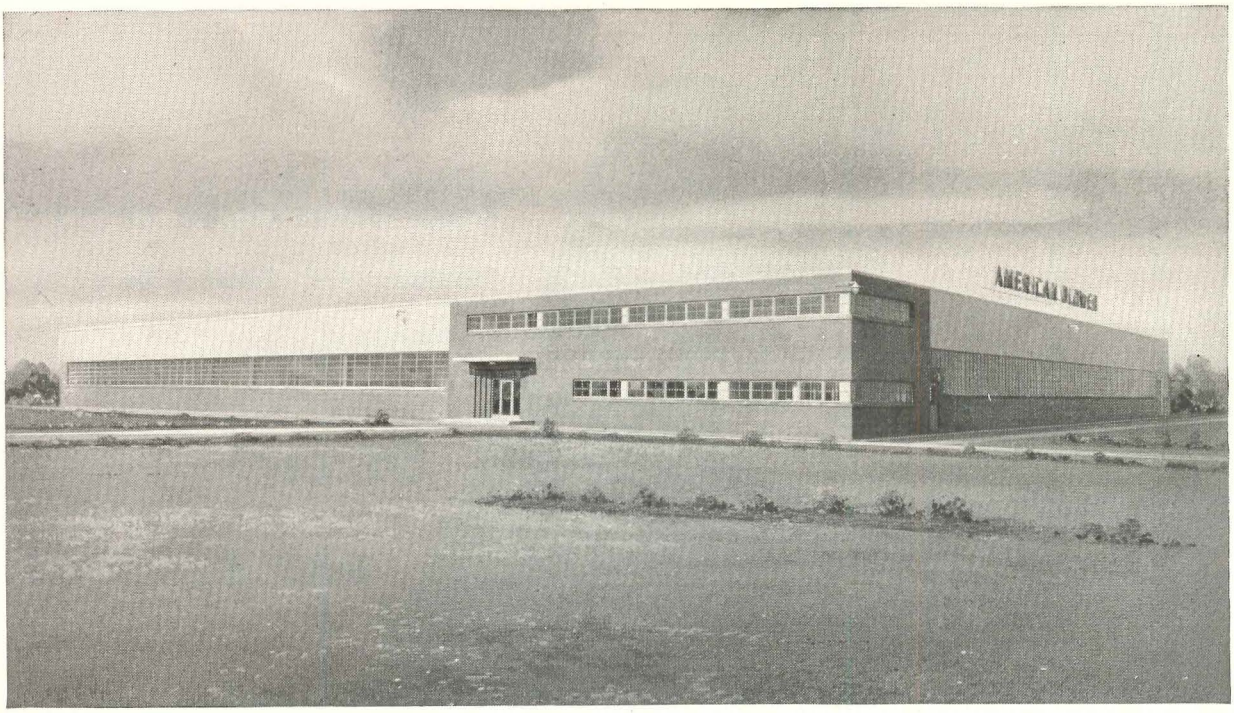
You actually cut costs because you don't waste plaster and you reduce eventual maintenance. For detailed reasons for writing *Steeltex* into your specifications, see our catalog in Sweet's or write for catalog D. S. 130, Dept. AR, Pittsburgh Steel Products Co., Grant Building, Pittsburgh 30, Penna.

**Pittsburgh Steel Products Company**

**A Subsidiary of Pittsburgh Steel Company**

**Pittsburgh 30, Pa.**

## American Blower—a time-honored name in air handling




*Newest American Blower plant, located in San Leandro, California*

# OPEN for BUSINESS!

## American Blower's New West Coast Plant

To better serve our customers on the Pacific Coast and western section of the United States, American Blower has just completed its modern, new plant, strategically located in San Leandro, California.

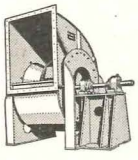
American Blower is universally recognized as one of the foremost manufacturers of air handling and conditioning equipment for heating, cooling, drying, ventilating, dust collecting and air conditioning for industrial and commercial applications . . . as well as kitchen and attic fans for homes and Gýrol Fluid Drives for smooth power transmission in industry.

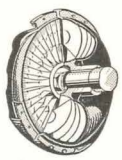
For complete product data contact your nearest American Blower Branch Office.

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO
Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

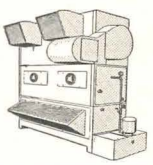

Unit Heaters


Ventura Fans


Industrial Fans


Gyrol Fluid Drives


Ventilating Fans


Air Conditioning Equipment


Dust Collectors

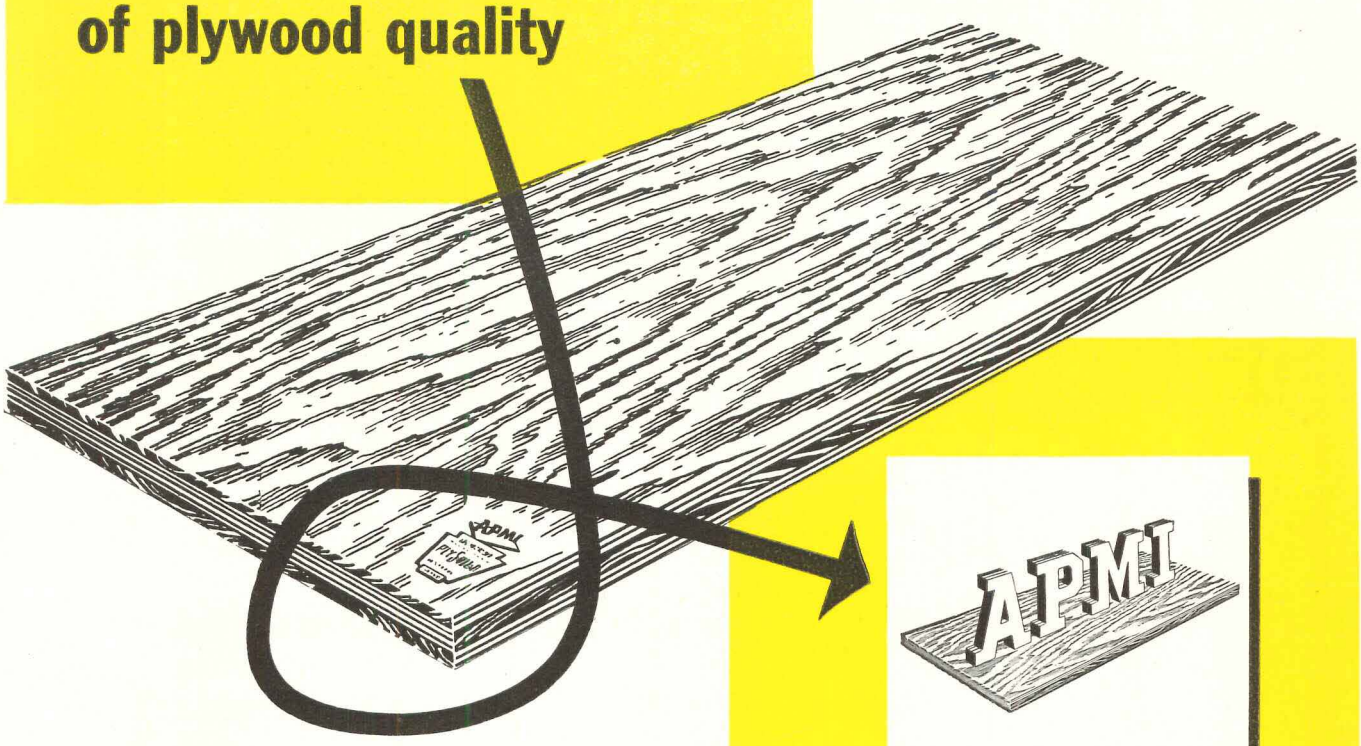
YOUR BEST BUY **AMERICAN BLOWER** AIR HANDLING EQUIPMENT

*Serving home and industry*

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

# TRADEMARKED

## as well as grademarked ...your double guarantee of plywood quality






Something has been added in the labeling of plywood produced at Associated Plywood Mills, Inc. It is the APMI trademark, and you'll find it together with the DFPA grademark on both exterior-type and interior-type panels manufactured by this company.

This combination of trademark and grademark is your assurance that regardless of where you buy APMI plywood, you get the guaranteed products of a pioneer mill in the industry... And you can purchase APMI plywood at any one of 12 centrally located sales warehouses from coast to coast, from experienced plywood men who are eager to serve you.

**Panels up to 60 inches in width and up to 144 inches in length.**

*Plywood plants at Eugene and Willamina, Oregon*

**APMI SALES WAREHOUSES**

Eugene and Willamina, Oregon
San Francisco, 925 Toland St., 24
Dallas, 4814 Bengal St., 9
St. Louis, 4268 Utah St., 16

**OTHER SALES WAREHOUSES**

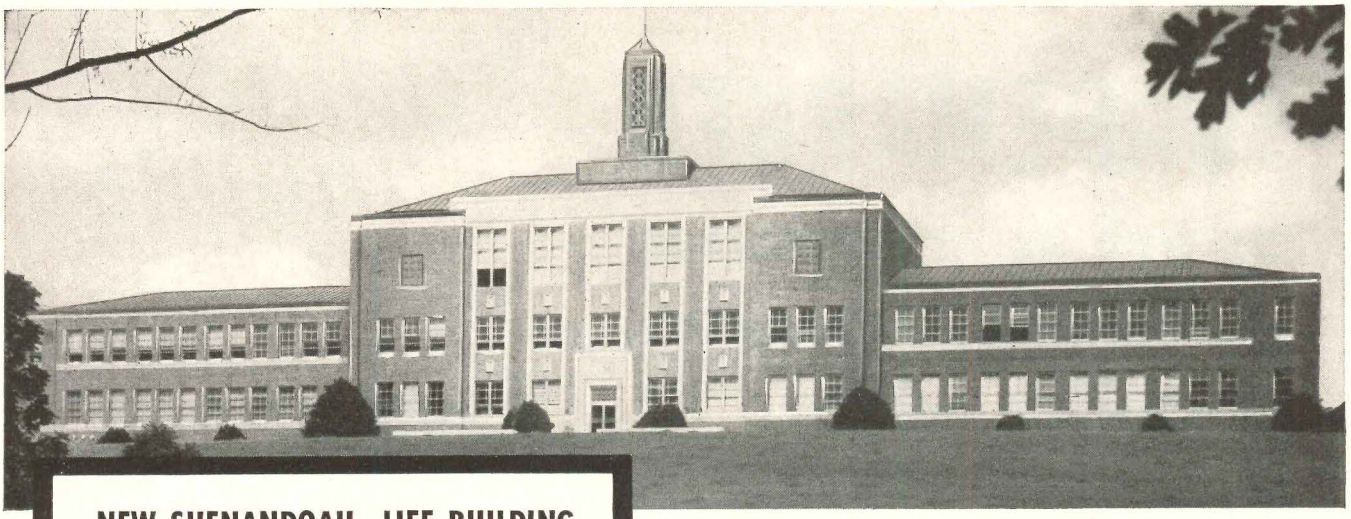
**BESSONETTE & ECKSTROM**
LOS ANGELES 11, CALIFORNIA

**PACIFIC MUTUAL DOOR CO.**
TACOMA 2, WASHINGTON
BALTIMORE 31, MARYLAND
GARWOOD, NEW JERSEY
KANSAS CITY 3, KANSAS
ST. PAUL 4, MINNESOTA

# ASSOCIATED

## PLYWOOD MILLS, INC.

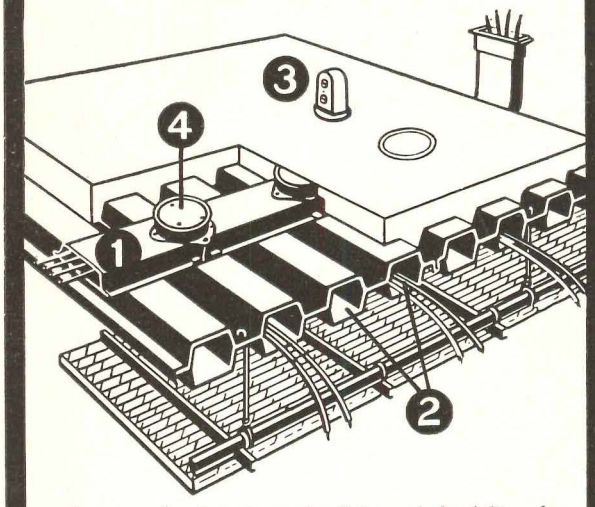
***General Offices: Eugene, Oregon***



**NEW SHENANDOAH LIFE BUILDING**

# *Assured of electrical adequacy*

## with GENERAL ELECTRIC Q-FLOOR WIRING




Cutaway drawing shows simplicity and flexibility of G-E Q-Floor wiring system. (1) Header duct—at right angles to Q-Floor—carries wire from load center to cells. (2) Cells serve as raceways for power, signal, and telephone systems. (3) Floor outlets are installed by tapping Q-Floor cells at any point. (4) Junction units in header duct permit easy access to wiring at any time.

The new home office of the Shenandoah Life Insurance Co., Roanoke, Virginia. Constructed along modernized Georgian lines, it represents a combination of architectural beauty with functional design. More than 40,000 square feet of Q-Floor duct throughout the building provides for future electrical expansion.

*Architects: Smithey and Boynton, Roanoke, Va.*
*General Contractors: B. F. Parrott and Co., Inc., Roanoke, Va.*
*Consulting Engineers: William A. Brown, Washington, D. C.*
*Electrical Contractors: Richardson-Wayland Electrical Corporation, Roanoke, Va.*

Typical of the foresight and long-range planning evidenced by today's insurance companies is this recently completed, modern home office of the Shenandoah Life Insurance Co., Roanoke, Virginia.

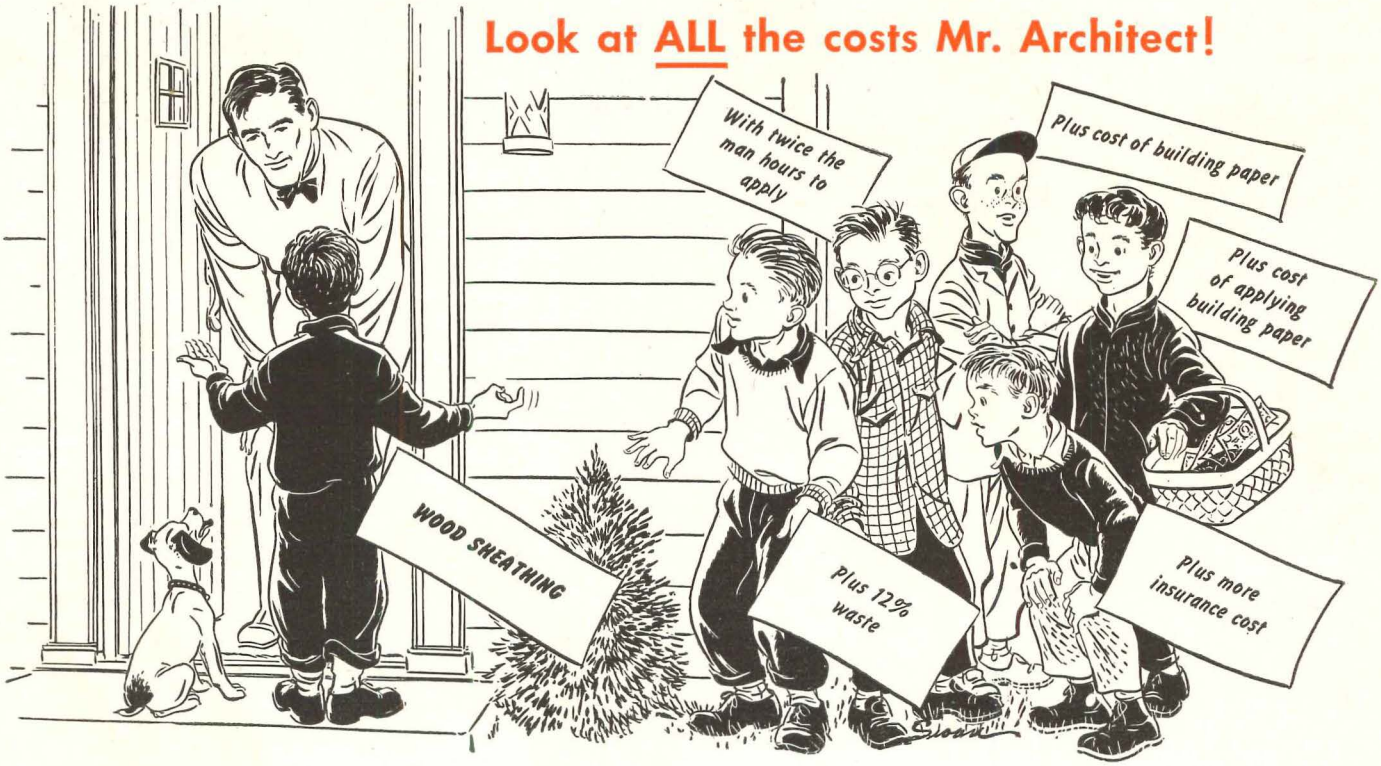
During the building's planning stage, two important factors were emphasized: 1. The necessity of designing a structure that could keep pace with the projected growth of the company. 2. The desire to assure continuing operating efficiency through the utilization of modern business equipment.

It was natural, with these considerations in mind, that a comprehensive G-E Q-Floor wiring system be installed. This built-in raceway system will provide 100 per-cent electrical availability throughout the entire building . . . for the entire life of the building.

Investigate G-E Q-Floor wiring *yourself*—you'll be amazed at the versatility it provides. For complete information on Q-Floor wiring, contact any General Electric Construction Materials general office—or write for a copy of the Q-Floor Wiring Data Manual. Section C5-65, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

*You can put your confidence in—*

**GENERAL ELECTRIC**




# 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*

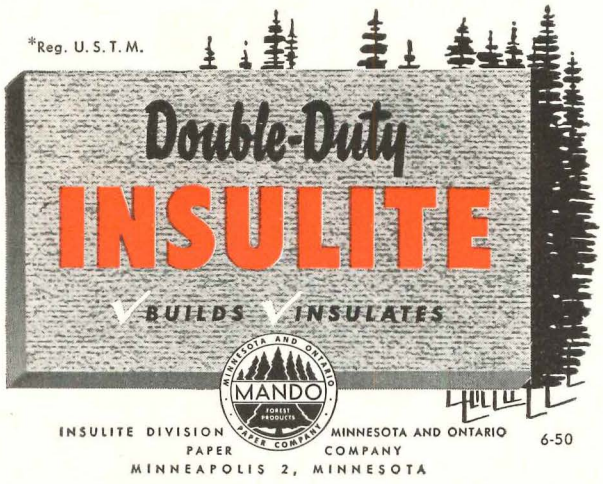
**WOOD SHEATHING 1000 SQ. FT. WALL AREA**

| 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** | | |

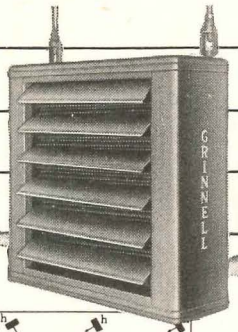
**BILDRITE SHEATHING 1000 SQ. FT. WALL AREA**

| 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



# Consider the advantages of UNIT HEATING



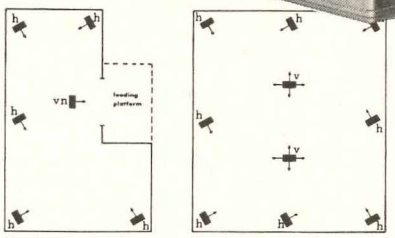

*Heating comfort* Unit heaters provide quick heating from a cold start. Desired temperatures are easily maintained within a close range. Heat is uniformly distributed in the working zone by forced air circulation. It is a very flexible system because different or changing heating requirements are easily satisfied by means of different models, a range of capacities, single- or two-speed motors and individual thermostatic controls.

*Low first cost* Unit heaters are so efficient and so compact that their heating capacity is often equivalent to the capacity of cast iron radiation or pipe coils of twice the cost. Additional savings are effected because the system requires a proportionately smaller amount of pipe, fittings and accessories.

*Economy of operation* Heat is forced down to the working level . . . not banked uselessly at the ceiling level. Heat is turned on and off merely by throwing a switch either manually or automatically by simple thermostatic controls. The rapid response means that heat is furnished only when and where it is wanted . . . no heat is wasted.

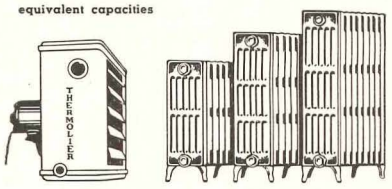
*Adaptability to equipment and floor layout* Unit heating is widely used in industrial plants and warehouses, garages, stores and public buildings. The units and the simple piping are overhead where they do not interfere with arrangement of operating machinery or equipment and do not take up valuable floor or wall space. Units are easily relocated at any time to meet changes in layout.

*Thermolier unit heaters have important construction advantages* The design of Thermolier unit heaters is the product of Grinnell Company's ninety-nine years of heating experience. Those responsible for heating like Thermolier's durability, freedom from maintenance troubles and dependable operation. Typical of its construction features is the patented internal cooling leg which permits the use of a plain thermostatic trap, the simplest, least expensive kind of trap. Other features are built-in drainage, continuous rated capacity and provision for expansion of U-tubes.



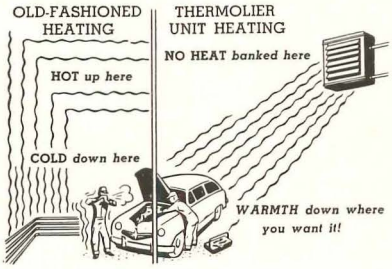

H = horizontal delivery
VN = velocity nozzle

H = horizontal delivery
V = vertical delivery




weight 200 lb

weight 4000 lb





100th ANNIVERSARY
WHENEVER PIPING IS INVOLVED

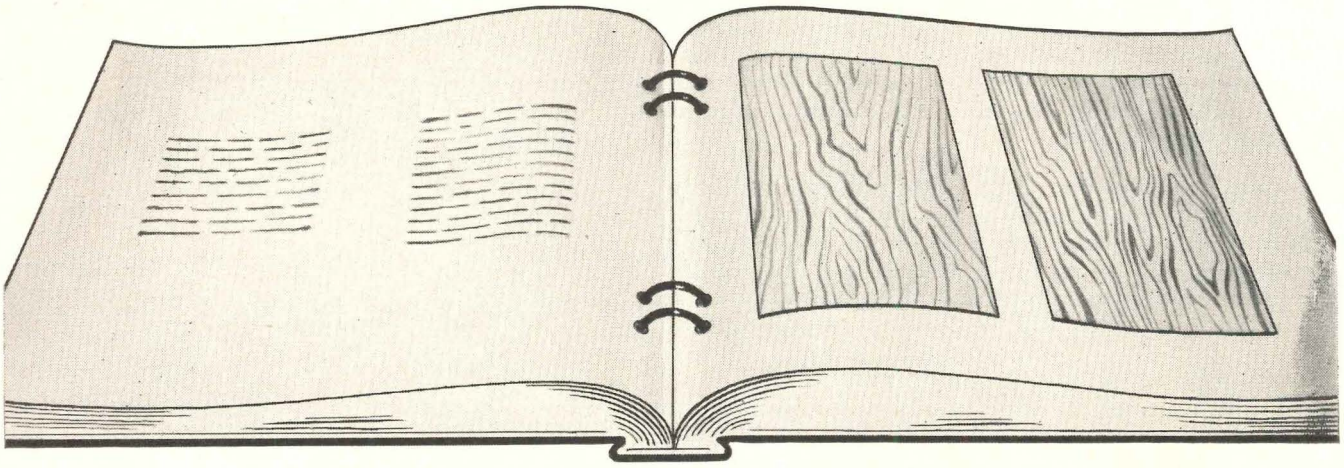
# GRINNELL

## Thermolier unit heaters

Grinnell Company, Inc., Providence 1, R. I. Warehouses: Atlanta • Buffalo • Charlotte • Chicago • Cleveland • Cranston • Fresno • Kansas City • Houston • Long Beach Los Angeles • Milwaukee • Minneapolis • New York • Oakland • Philadelphia • Pocatello • Sacramento • St. Louis • St. Paul • San Francisco • Seattle • Spokane

# FROM A SH TO Z EBRAWOOD . . .

# Roddiscraft VENEER SAMPLE BOOK



## 51 Actual Veneer Samples

Here's another Roddiscraft Service for architects —the new Roddiscraft Veneer Sample Book with 51 different species of wood in 5″ x 7″ veneer samples, with information about each one — available for the use of architects from your nearest Roddiscraft representative.

This handsomely bound volume will enable you to show your clients colors, grain and other characteristics of 51 woods, from Ash to Zebrawood.

The Roddiscraft Veneer Sample Book helps take the guesswork out of veneer selection. Your client can see for himself how each wood actually looks. It will save you time when it comes to making decisions prior to the approval of actual flitch samples.

Write to your nearest Roddiscraft warehouse for a preview of the Veneer Sample Book — you'll want one of your own when you see it!

**Roddiscraft**

**RODDIS PLYWOOD CORPORATION**
MARSHFIELD, WISCONSIN

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Cincinnati 2, Ohio . . . 457 E. Sixth St. Milwaukee 8, Wis. . . 4601 W. State St.
Dallas 10, Texas . . . . . 2800 Medill St. New York 55, N. Y. . . 920 E. 149th St.
Detroit 14, Mich. . 11855 E. Jefferson St. Port Newark 5, N. J. . . . 103 Marsh St.
Houston 10, Texas . . . 2425 Sabine St. Philadelphia, Pa., Pier 5, N. Delaware Ave.
Kansas City 3, Kan. 35-53 Southwest Blvd. St. Louis, Mo. . . 3344 Morganford Road
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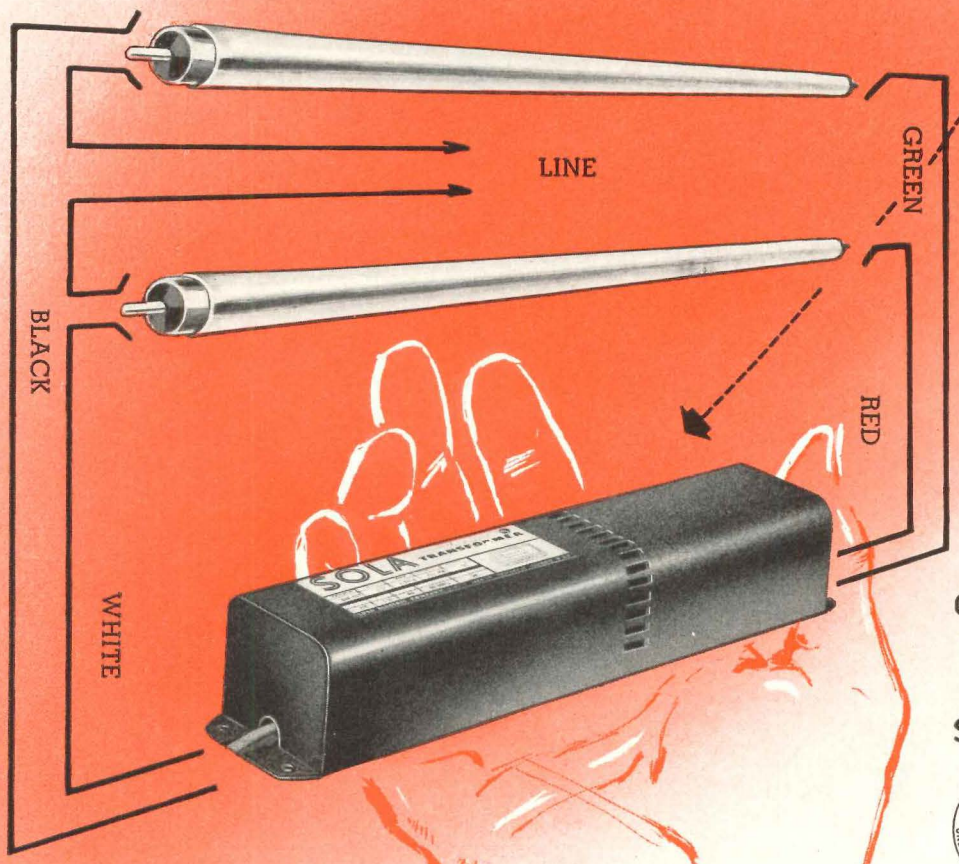
San Francisco 24, Cal. 345 Williams Ave.

The **NEW DESIGN** principle

**of the SOLA 75-Watt "SEQUENSTART" BALLAST makes possible these significant advantages***

- Small size permits installation in standard slimline channels
- 47%-52% less watt loss
- 12%-14% more lumens/watt
- 42%-52% lighter
- 12%-24% cooler
- 11.9%-13.0% more efficient
- 22% better light output regulation

*Tests made October 1949 on competitive instant start products.




Made under one or more of the following patent Nos. 2,143,745, 2,212,198, 2,346,621, and Patents Pending.

CERTIFIED E·T·L SPEC.NO.6

LISTED UNDER REEXAMINATION SERVICE UL OF UNDERWRITERS' LABORATORIES, INC.

SOLA "SEQUENSTART" Ballasts do *not* require starter switches! Lamps are started in two rapid stages, partial light being delivered at the instant the switch is closed. The second lamp in the series starts within a second or two. You can have the superior fluorescent lighting performance that these SOLA "SEQUENSTART" Ballast advantages will bring at a *substantial saving in cost* over the conventional instant-start type ballast. The SOLA 75-Watt "SEQUENSTART" Ballast is made for 2-96T12 and 1-96T12 lamp applications. *Other sizes* for additional lamps *are also available.*

Write for complete specifications, a roster of fixture manufacturers who build SOLA Fluorescent Ballasts into their products, and the address of the nearest SOLA Sales Engineer who will be happy to give you complete information on any specific application you are planning. Address: Dept. T, Sola Electric Co., 4633 W. 16th St., Chicago 50.

# SOLA "sequenstart" *Constant Wattage* BALLASTS

**Transformers for:** Constant Voltage · Cold Cathode Lighting · Airport Lighting · Series Lighting · Fluorescent Lighting · Luminous Tube Signs Oil Burner Ignition · X-Ray · Power · Controls · Signal System · etc. · **SOLA ELECTRIC COMPANY, 4633 W. 16th Street, Chicago 50, Illinois**

*Specify the* **BIG** *range....that's only 30" wide!*

# The New FRIGIDAIRE "THRIFTY-30" Electric Range

*The new model RM-30 electric range*

*Model RM-35 (with Cook-Master and Utensil Drawer)*

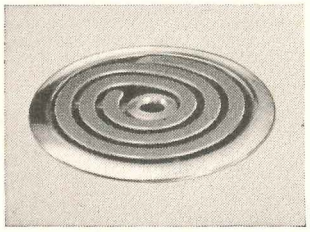
**A completely new idea** in electric ranges, the Frigidaire "Thrifty-30" is perfectly sized to meet the particular demands of today's smaller kitchens. Only 30" wide, 43" high (without Cook-Master) and 27⅜" deep, it requires a minimum of kitchen space—yet has many of the desirable "big" cooking features of much more costly ranges. One of its chief appeals to home-makers and property owners is its amazingly low price!

**Thrifty Giant Oven**—biggest oven ever built in any household range! 6200 cubic inches of baking area—enough for 6 pies or a big holiday dinner. Extremely economical, it cooks more food with no more current. Oven stretches clear across the range—provides more space up front where things are easy to reach. One-piece oven—porcelain rust-proof finish inside and out. Sliding shelves adjust to 5 positions. Counter-balanced shelf-type door.

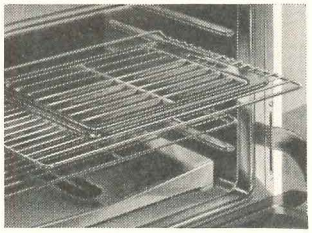
**For complete, quick facts** about this and other fine Frigidaire products for apartment kitchens and laundries, call your Frigidaire District Office or Dealer. Look for his name in Classified Phone Directory. Or write Frigidaire Division of General Motors, Dayton 1, Ohio. In Canada, Leaside 12, Ontario.

# FRIGIDAIRE

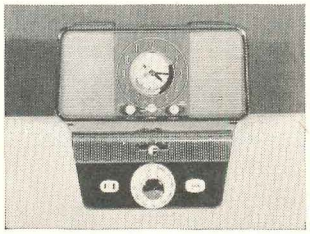
*Makes a good building better!*



**New 5-Speed Radiantube** Cooking Units cook faster—use less current. 4 standard-size units—including an extra-big one. Tip up for easy cleaning.



**New High-Speed, Waist-High Broiler** gets steaks just right. Unit recessed in oven top—out of way. Porcelain broiling pan—easy to clean.



**New Cook-Master** (on Model RM-35) combines controls for automatic oven cooking, cooking top lamp, and kitchen clock. Gleaming chromium trim.

## Ask for facts on these other Apartment Products by Frigidaire

Complete, quick facts about the compact, low cost Frigidaire products shown below are yours for the asking. Get in touch with your Frigidaire Dealer.

**Model AM-60 Refrigerator.** Low-priced, compact. 6 cu. ft. capacity with 11.7 sq. ft. of shelf area.

**Model RK-3 Electric Range.** 21 inches wide — yet has all basic cooking facilities.

**Model RM-27 Electric Range.** 40 in. wide, has many deluxe features—yet costs little.

**Frigidaire Water Heaters.** 30- to 80-gallon capacity. Round and table-top models.

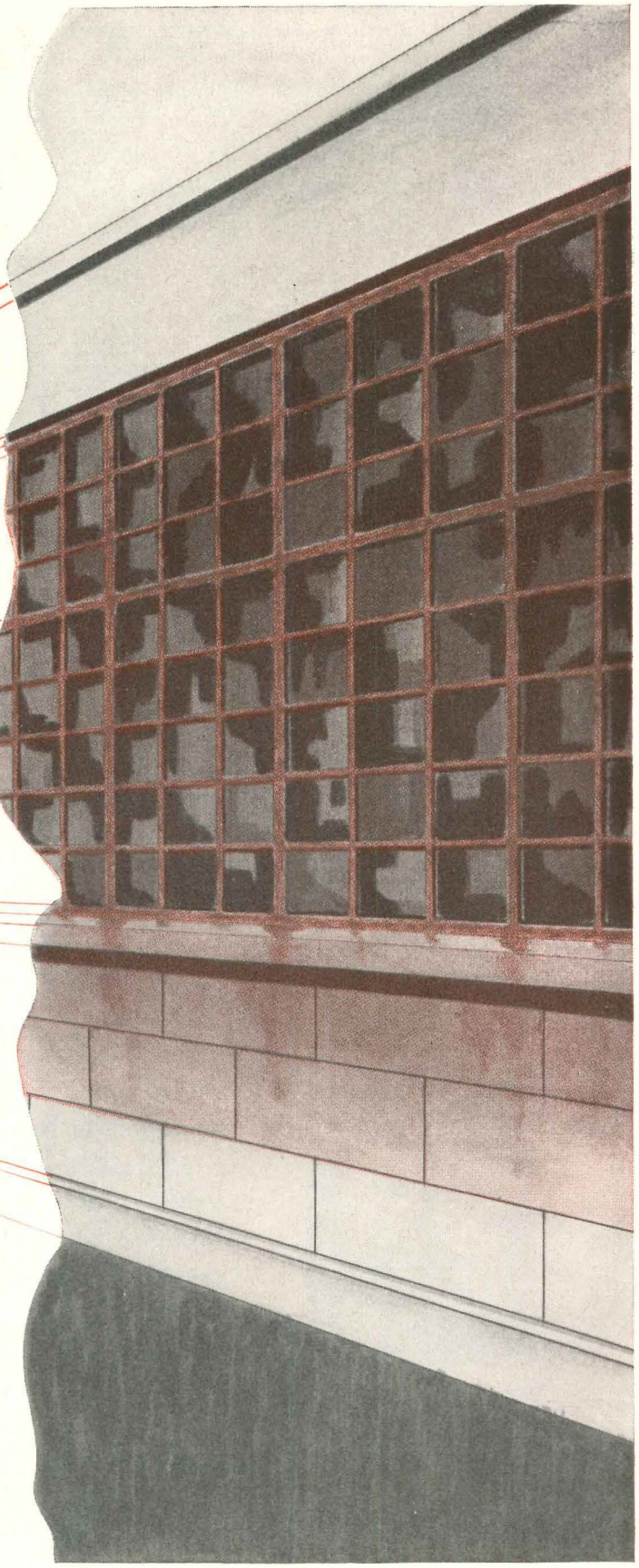
**Frigidaire Kitchen Cabinets.** Variety of types and sizes. Individual units—yet they give kitchens a custom-built look.

**Frigidaire Kitchen Sinks.** Single, double sink styles. Plenty of organized storage space.

**Frigidaire Electric Dehumidifier.** Removes moisture from air automatically. Dozens of uses. Powered by Meter-Miser.

**Frigidaire Automatic Washer.** Has exclusive Live-Water Action. Frigidaire Ironer and Electric Clothes Dryer are also available.

# DON'T BLAME YOUR PAINTING CONTRACTOR



You've often seen unsightly rust stains from metal sash on the adjacent brick and stone surfaces. You need never blame your painting contractor for unsightly stains caused by rust! You can *prevent* rust . . . and at no extra cost . . . simply by specifying RUST-OLEUM as the *shop coat, primer and finish coat* on all metal rust can attack.

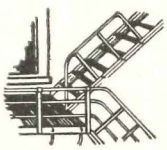
But, specify Rust-Oleum in the *first stages* . . . when design, engineering and contracting take form . . . before actual delivery of material for the job. Rust-Oleum costs no more than quality material you may now be using . . . and is easy to apply at no added expense.

Rust-Oleum is tested and proved by a host of nationally known users. Rust-Oleum *stops* and *prevents* rust! RUST-OLEUM protects metal from rust with a tough, pliable film that dries to a firm finish. Rust-Oleum defies sun, rain, snow, salt air, smoke, fumes and other rust-producing conditions . . . and adds longer life wherever it is used. Girders, plates, stacks, gutters, roofs, tanks . . . every metal surface can be protected surely, safely and *economically* with RUST-OLEUM.

Rust-Oleum *beautifies as it protects* because it is available in many attractive colors including aluminum and white. Rust-Oleum can be applied to already rusted surfaces with minimum preparation . . . *it is not necessary to remove every appearance of rust!*

So, take the sure way to stop rust. Specify Rust-Oleum on all rustable metal, inside or out. It costs less ALL WAYS to do the job right.

Rust-Oleum is stocked and sold by leading industrial distributors in all principal cities of the United States and Canada. See Sweets for complete catalog and nearest source of supply, or write us direct for complete information.



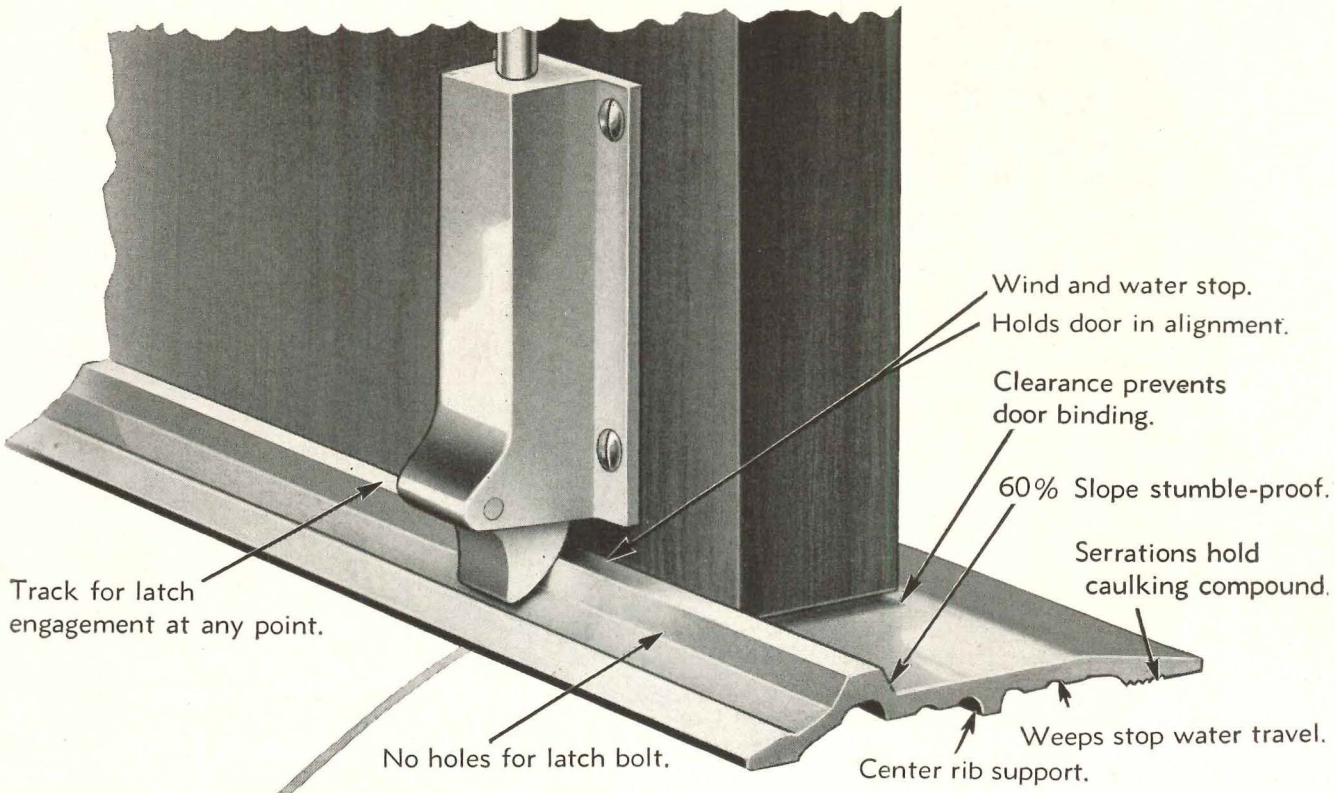
**Architects, Engineers, Builders**

If you have a client with a rust problem, and would like a free survey and recommendations, send his name and address on your business stationery. A qualified Factory Representative will arrange this FREE Service, and it includes a trial size of Rust-Oleum for specific test purposes. These's no obligation on your part. Write today.

**Names on request*

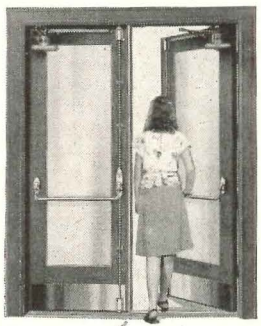

**RUST-OLEUM CORPORATION**

**2513 Oakton Street • Evanston, Illinois**




LATCH TRACK THRESHOLD

# A THRESHOLD WHICH SAVES YOU TIME AND TROUBLE



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

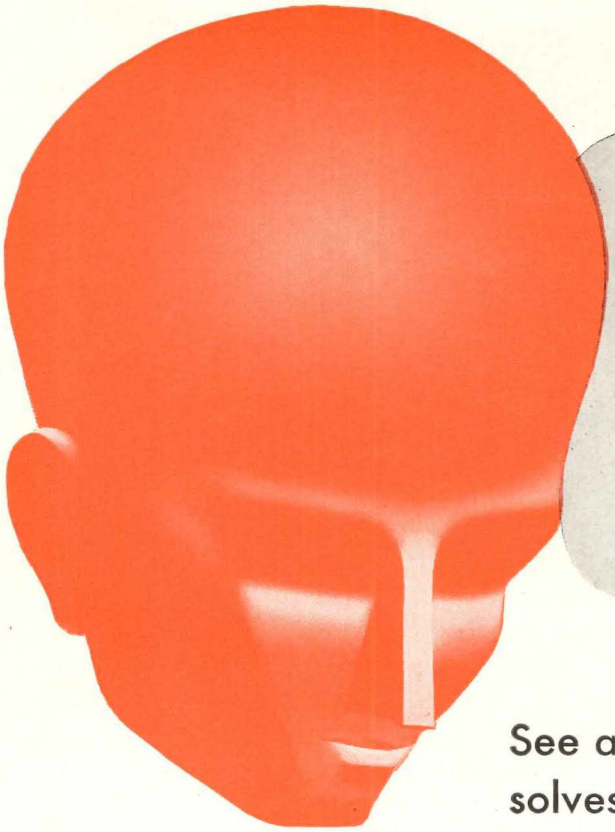
But now the new LATCH TRACK threshold by Von Duprin actually saves time, trouble and expense. It assures perfect coordination between the panic exit device and the threshold.

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



# NEW SOUND MOTION PICTURE TELLS COMPLETE STORY OF THE NEW ERA FOR ELEVATORS

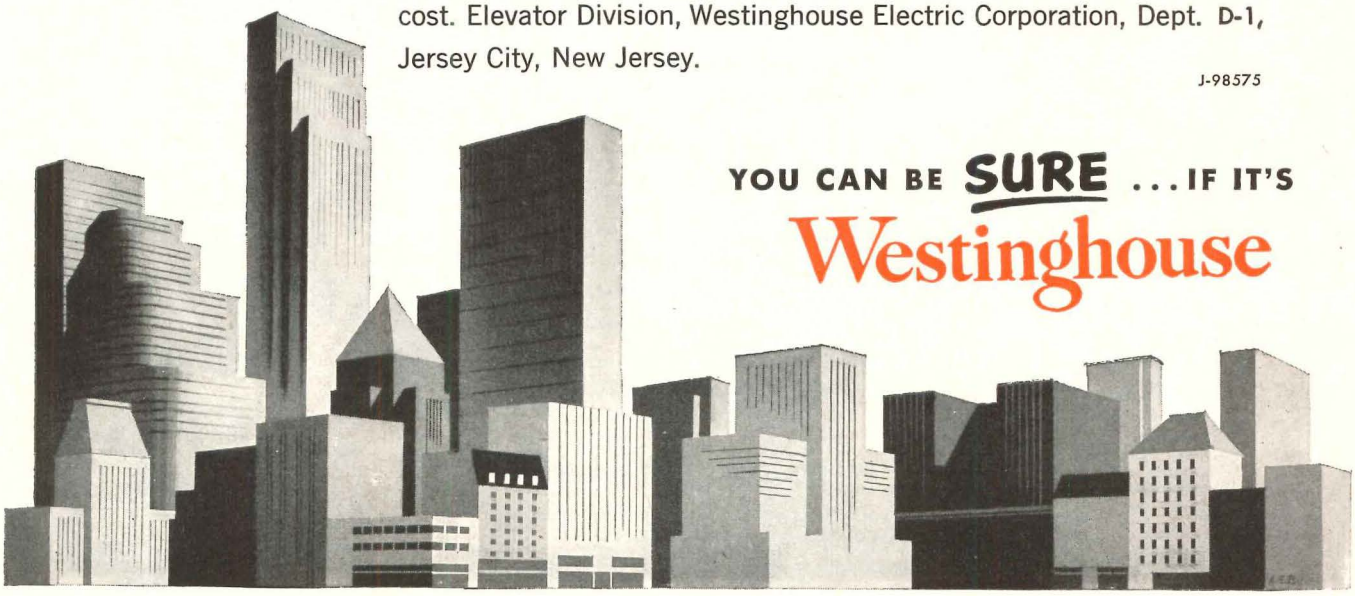
## See and hear how SELECTOMATIC solves any elevator traffic problem instantly and automatically . . .

What kind of an elevator traffic condition gives you the most trouble? Incoming rushes? . . . outgoing surges? . . . intermittent traffic demand in either direction? . . . or a combination of all three? Whatever it is, Westinghouse Selectomatic will solve it instantly and automatically. Selectomatic is the unique "electrical brain" that matches calls, cars, and floors under all traffic conditions and reduces waiting time in some cases as much as 50%.

But, even a series of advertisements cannot illustrate all the benefits of Selectomatic. To dramatize the complete story of this ingenious electrical brain, Westinghouse has produced the 26-minute sound motion picture "Speeding Vertical Transportation with Selectomatic Elevators." See and hear the complete story of Westinghouse Selectomatic.

Write on your letterhead and we will gladly arrange a showing at your convenience at no cost. Elevator Division, Westinghouse Electric Corporation, Dept. D-1, Jersey City, New Jersey.

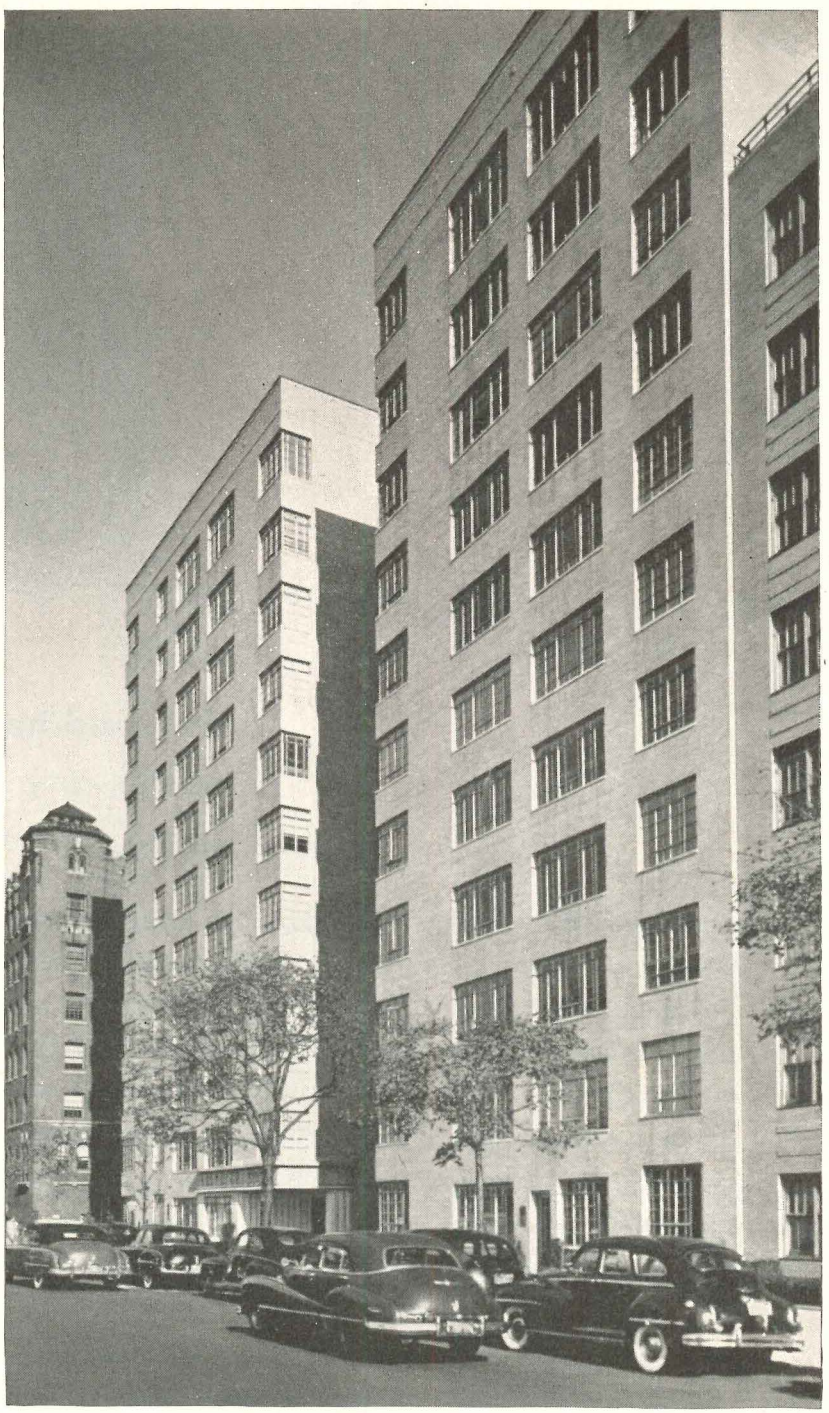
J-98575



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

**Westinghouse**

# *On the Concourse*



*Architect:*
H. Herbert Lilien, New York
*Engineer:*
S. Frieman, New York
*Steel Fabricator and Erector:*
Grand Iron Works, Inc., New York

Located at 930 Grand Concourse, in upper New York City, this recently erected structure is known as the Ashley Apartments. Its three 11-story buildings contain 114 apartment units, varying in size from 2 to 5½ rooms. The structure includes spacious roof gardens and terraces, and dropped living rooms, and has steel-framed windows throughout. Its lower floors are devoted almost wholly to doctors' apartments.

Beneath the cream-color exterior of the Ashley Apartments stands an 800-ton steel framework of Bethlehem Structural Shapes.

*Bethlehem*
**STRUCTURAL SHAPES**

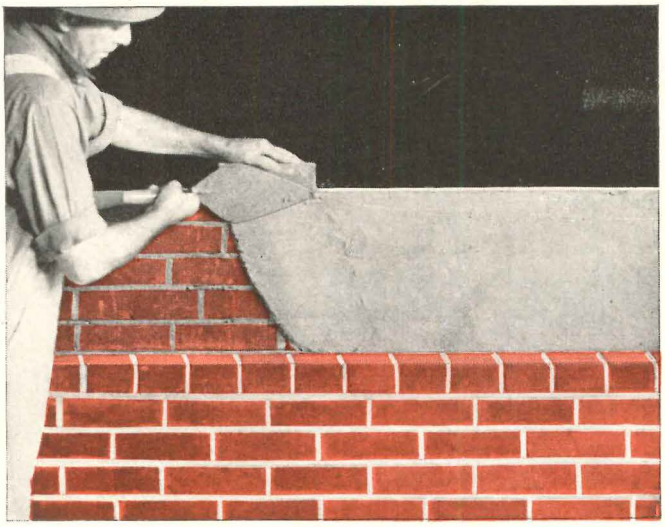
BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

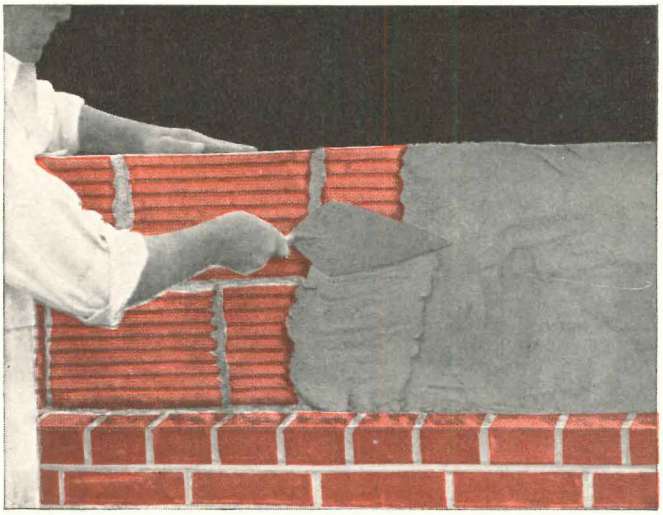
On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation

*Export Distributor:* Bethlehem Steel Export Corporation

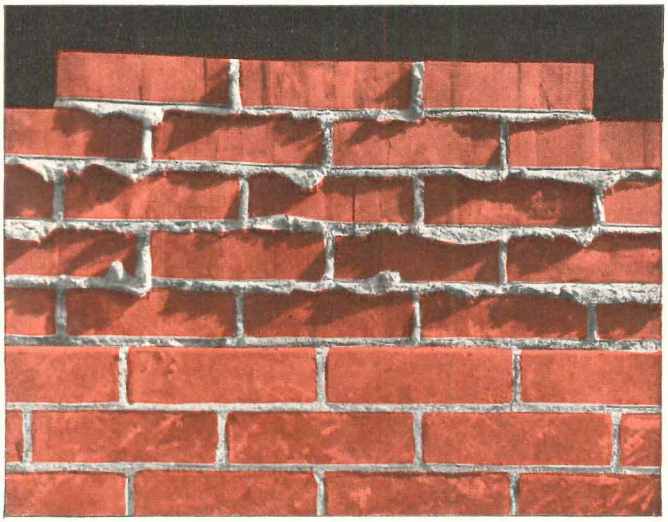
**GOOD BRICKWORK = GOOD DESIGN + GOOD WORKMANSHIP + GOOD MATERIALS**



*The face brick should be backplastered.*



*If the back-up units are laid first, the front of the back-up units should be plastered.*



*Backplastering should not be attempted over protruding mortar joints.*

# PARGING

## WITH

# BRIXMENT

## HELPS ASSURE

# DRY WALLS

**WE SUGGEST THAT—**

**The face brick should be backplastered with not less than 3/8 of an inch of mortar before the back-up units are laid.**

**Or, if the back-up units are laid first, the front of the back-up units should be plastered with not less than 3/8 of an inch of mortar before the face brick are laid.**

Heavy rains don't make brick walls leak — they merely reveal the fact that the walls contain voids or passages through which the water may penetrate.

Dry brick walls are primarily the result of good design and good workmanship. Good materials are important, but still secondary. The more *plastic* the mortar used, the easier it is for the bricklayer to deliver good workmanship.

The photos at the left show some points of *good workmanship.*

*Brixment mortar has greater plasticity, higher water-retaining capacity and better bonding quality.* Because of this *combination* of advantages, architects, contractors and dealers all over America have for thirty years made Brixment the largest-selling mortar material on the market. Why not try it yourself?

**LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY**

# They love us in New Orleans

Little wonder — considering how comfortable Carrier air conditioning keeps them. In sixteen of New Orleans' most important buildings, Carrier Centrifugal Refrigerating Machines furnish refrigeration for air conditioning.

Carrier Centrifugals are compact and light in weight. They are virtually vibrationless. In a city built on piling with almost no basement space, these advantages are of primary importance.

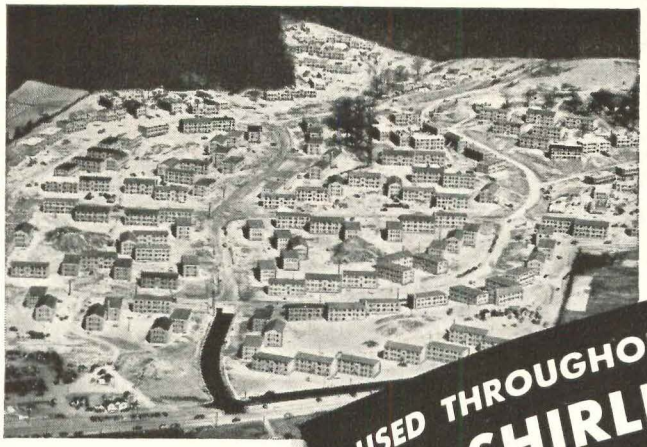
Your next project may have other requirements. Whatever they are, we are sure that Carrier equipment and Carrier experience can fill them with credit to you. You'll find a local Carrier office in the classified telephone directory. Carrier Corporation, Syracuse, New York.

**Carrier** AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING

American Bank Building • Beverly Country Club • Canal Bank Building • Ear, Eye, Nose and Throat Hospital • Hibernia Building
Federal Land Bank Building • D. H. Holmes Company • International House • Maison Blanche Company • Municipal Auditorium
New Orleans Public Service • Orpheum Theatre • Roosevelt Hotel • St. Charles Hotel • Sears, Roebuck & Co. • Whitney Bank Building

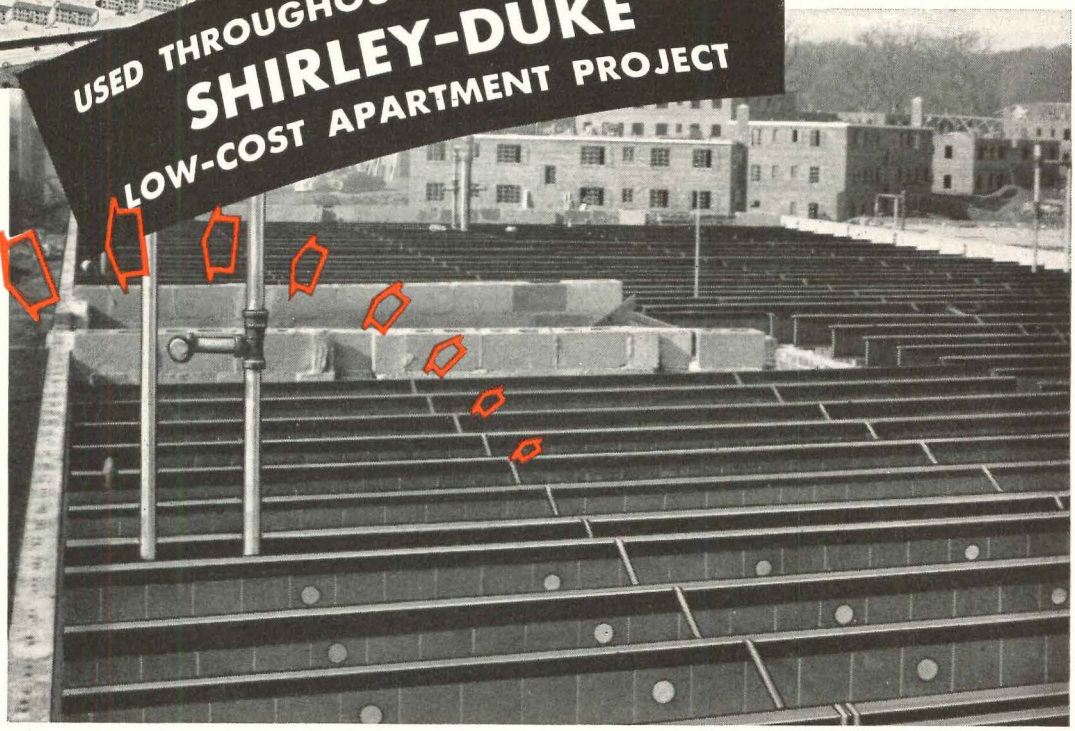
## *Again the choice for faster, easier, low-cost erection...*

# STRAN-STEEL NAILABLE FLOOR JOISTS



The 83-acre Shirley-Duke project is the largest post-war apartment development near the nation's capital. Credit for its conception and pre-planning goes to Mr. Don A. Loftus, who arranged for land purchase, financing and builders.

**USED THROUGHOUT HUGE 2106-UNIT SHIRLEY-DUKE LOW-COST APARTMENT PROJECT**



Builders of the large, low-cost Shirley-Duke 200-building project specified Stran-Steel Nailable Floor Joists *throughout* for quicker erection, quicker occupancy—lower costs. Rents start at $59.75, go to $72.50 for two-bedroom unit.

Use of Stran-Steel nailable floor joists throughout suburban Washington's 2106-unit Shirley-Duke apartment project speeded erection time . . . permitted quicker occupancy . . . helped bring in rents faster.

Cost of installation was less than usual because no special construction personnel was needed. This saving in manpower and time was further augmented by the patented *nailing groove* found in Stran-Steel framing members, and because of its sag-proof, rot-proof and *fire-proof* qualities—advantages which allow low insurance rates and assure minimum maintenance costs.

Stran-Steel nailable floor joists bring to the Shirley-Duke project *proved* quality, strength and durability . . . keep expenses down, help make possible the low rentals which feature this development.

If you are planning a similar multi-unit garden-type apartment project, or any other new residential, commercial or industrial construction, it will pay you to investigate the proved advantages and economies of Stran-Steel nailable floor joists.

**Joist depths and gauges available for normal span and load requirements.**

YOU NAIL TO STRAN-STEEL FRAMING

REG. U. S. PAT. OFF.

## GREAT LAKES STEEL CORPORATION

**STRAN-STEEL DIVISION • ECORSE, DETROIT 29, MICHIGAN**
**UNIT OF NATIONAL STEEL CORPORATION**

**The new executive offices** of the United States National Bank of Portland. The carpet is Bigelow's #9969 Gropoint. Installation by Meier and Frank, Portland, Oregon.

# Bigelow Carpets—
# they bank on them here

SINCE 1825
BIGELOW
Rugs – Carpets

These distinguished offices were recently designed by Pietro Belluschi, for the executives of the United States National Bank of Portland.

To harmonize with the wall panelling of rare Oregon myrtle, he selected a soft green carpet, Bigelow's #9969 Gropoint weave. As many architects, designers, and businessmen know, this fine carpet is one of the sturdiest ever woven.

So many designers, like Mr. Belluschi, work with the Bigelow Carpet Counsel when planning important interiors. The counsel will advise of weaves, patterns, colors, costs, and all installation problems.

Why don't *you* accept the free services of this board of carpet experts?

**There are 26 Carpet Counsel offices.** If you have any carpet problems to solve . . . either great or small, take advantage of their born-of-experience advice. Call on the one nearest you, or write: Bigelow Carpet Counsel, 140 Madison Avenue, New York, N. Y.

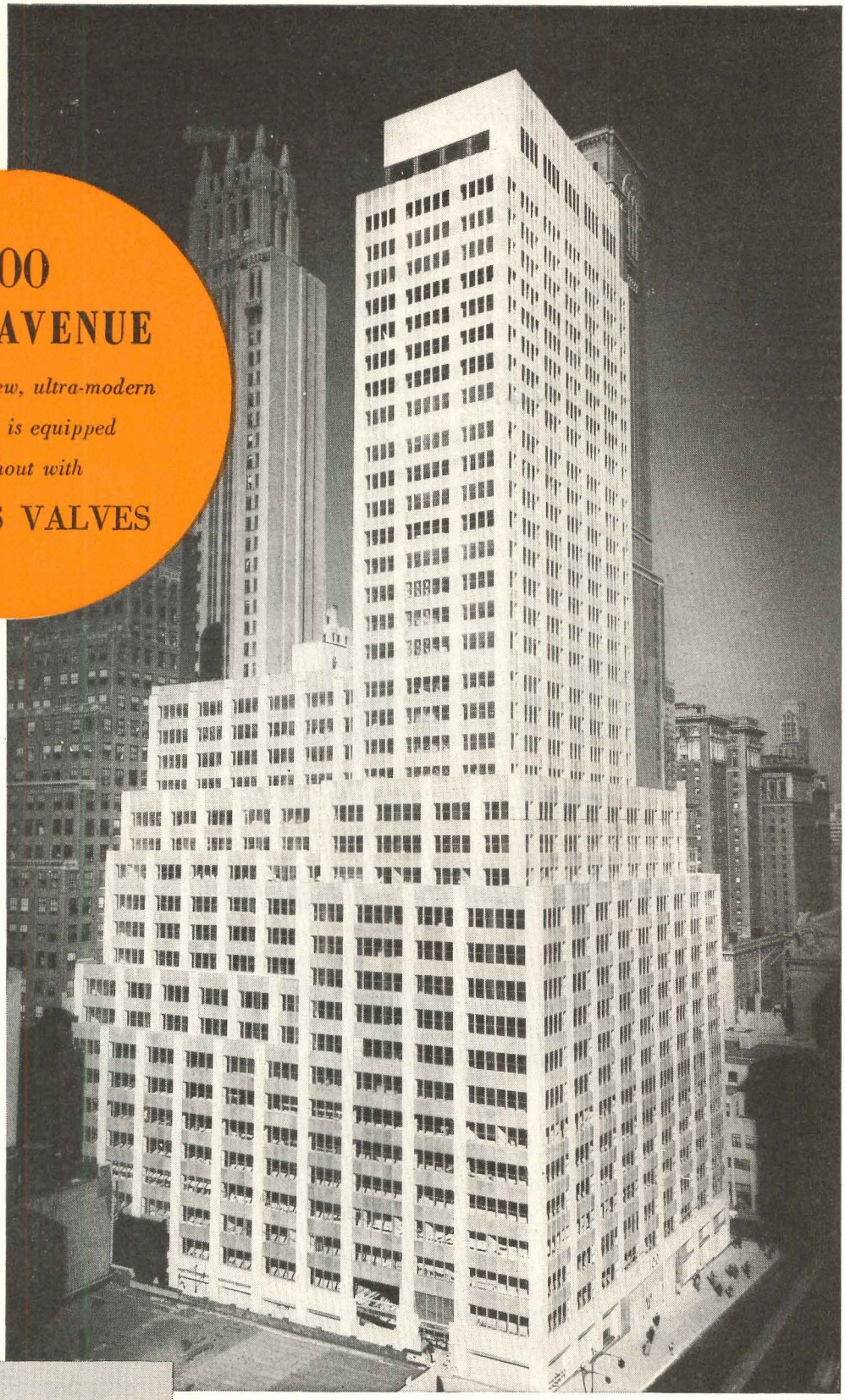
## BIGELOW Rugs and Carpets

***Beauty you can see . . . quality you can trust . . . since 1825***

# 100 PARK AVENUE

*New York's new, ultra-modern skyscraper is equipped throughout with*

## JENKINS VALVES



KAHN & JACOBS
Architects

GEORGE A. FULLER CO.
General Contractor

JAROS, BAUM & BOLLES
Mechanical Engineers

KERBY SAUNDERS, INC.
Heating, Ventilating and Air Conditioning Contractors

JARCHO BROS.
Plumbing Contractor

JENKINS VALVES

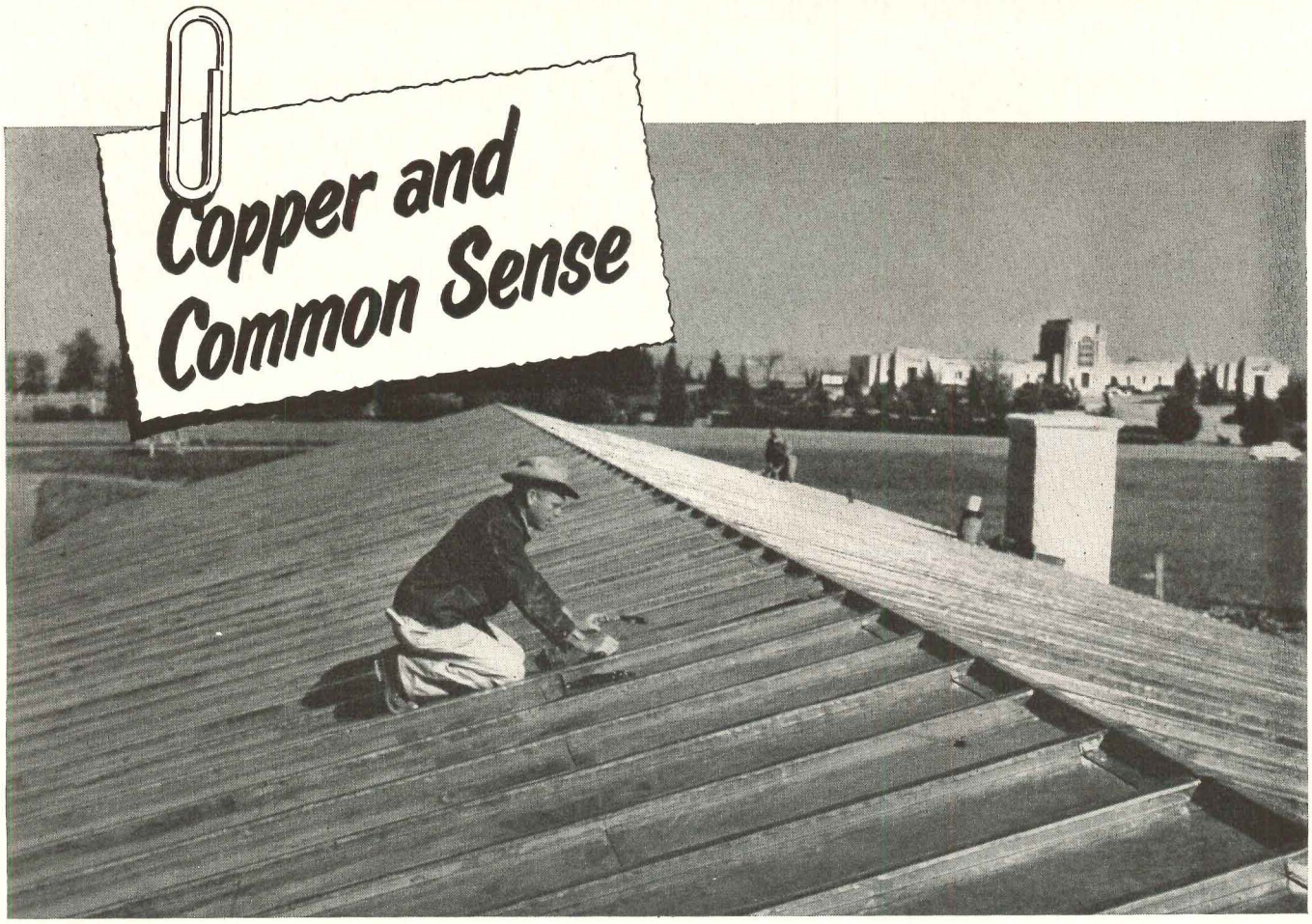
LOOK FOR THE DIAMOND MARK

SINCE 1864

REG. U.S. PAT. OFF. TRADE JENKINS MARK

Jenkins Bros

4715 JENKINS VALVES! At 100 Park Avenue, as in all large buildings and plants, the many valves required represent a major investment. Obviously, maintenance costs would become excessive if valves proved inferior. That is why, today, when low-cost operation is a controlling factor in construction and modernization plans, so many builders take the long view of valve economy. They choose Jenkins Valves, for proved endurance. Despite their extra value, you pay no more for Jenkins Valves. *Sold through leading Industrial Distributors everywhere.* Jenkins Bros., 80 White Street, New York 16; Jenkins Bros., Ltd., Montreal.




*For low cost per year of service, you can't beat a copper roof like this one on the* Northway Christian Church, *Dallas, Texas. Architect:* Tatum & Quade; *General Contractor:* Miller & Norton; *Sheet Metal Contractor:* Mustang Sheet Metal & Mfg. Co.; *Revere Distributor:* Moncrief-Lenoir Mfg. Co.—*All of Dallas, Texas.*

## Dollar for Dollar, There Is No Substitute for a

# Copper Roof!

● Whenever you want lasting sheet metal construction, *there is no substitute for copper.* Because copper—beyond any other material commonly used for roofing, gutters and flashing—has proved its ability to give longer service per dollar of cost when properly designed and installed.

These statements are backed by facts and figures developed by intensive research and by case histories of well-known buildings. No other sheet metal construction material can support so strong a claim.

To make certain of correct design and take advantage of proved installation techniques, it will pay you to use the new design and installation data developed by the Revere Research Laboratories. You'll find these data in Revere's book, "Copper and Common Sense," an authoritative manual of sheet copper construction that has been widely distributed to architects and sheet metal contractors. There is probably a copy in your files. Be sure to refer to it as your guide to finer and more durable sheet copper construction.

Revere sheet and roll copper and other Revere quality materials are available from leading distributors throughout the United States. A Revere Technical Adviser will always be glad to consult with you without obligation.

**REVERE**

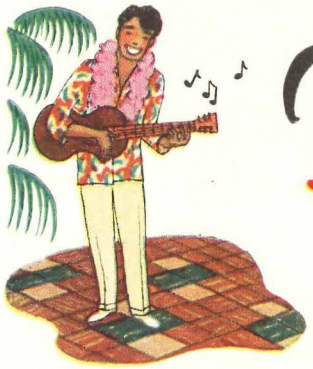
**COPPER AND BRASS INCORPORATED**

*Founded by Paul Revere in 1801*

230 Park Avenue, New York 17, New York

• • •

*Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.—Sales Offices in Principal Cities. Distributors Everywhere.*



# Match YOUR Mood IN Decoration

## ...WITH VERSATILE TILE-TEX FLOORS

There's no reason at all why floors shouldn't carry out . . . even enhance decorative schemes. Especially when you're working with Tile-Tex* Asphalt Tile. For here's versatility that's hard to beat.

Tile-at-a-time installation gives you almost unlimited pattern possibilities. Checkerboard, plaid, basket weave . . . it's almost a matter of "name it, and you can have it." You can even design custom-cut inserts which are fabricated to your specifications.

An unusually wide range of color adds even more mood-matching versatility. Take your choice from 33 sharp, rich colors in the Tile-Tex line, to get just the decorative effect you need . . . bright or subdued; carefree or dignified.

And with all that decorative versatility you get these extremely important *material* advantages.

*Exceptional durability.* Tile-Tex floors have been in service for many years . . . without visible signs of wear.

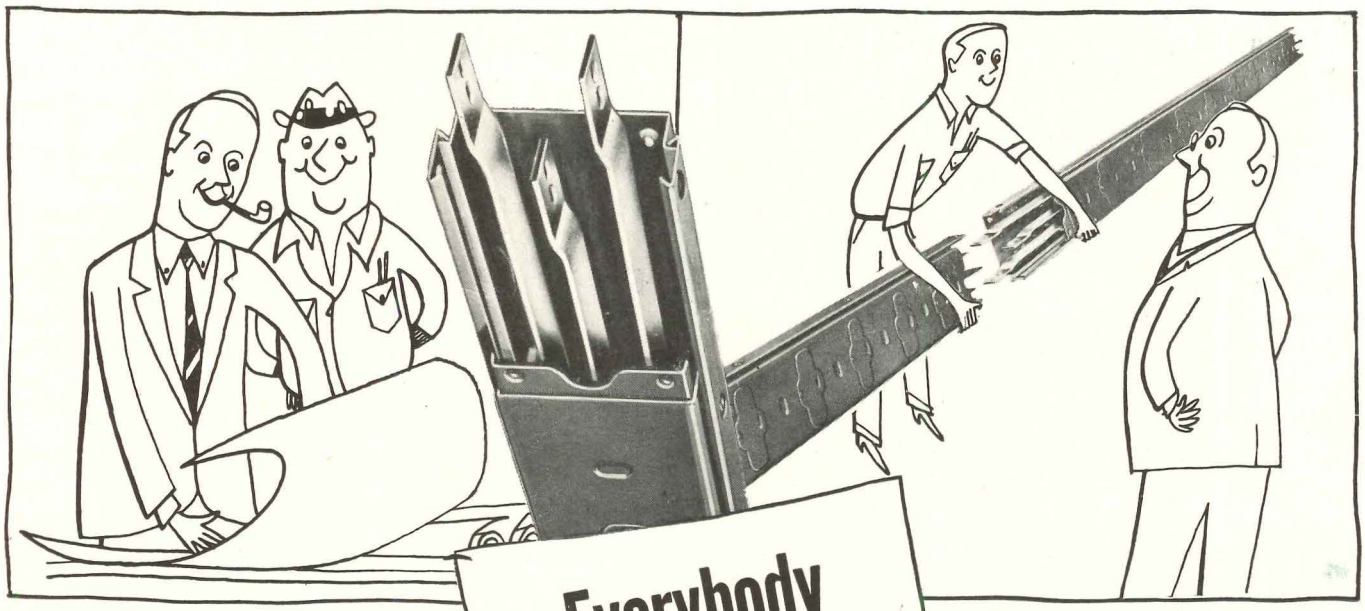
*Minimized maintenance.* Just follow this simple formula: daily sweeping to remove loose dirt, periodic washing, water-waxing (if desired).

*Maximum economy.* Low material cost . . . fast, economical installation . . . and, long service life combine to give you astonishingly low cost-per-square-foot-per-year. Add the trim attractive appearance of Tile-Tex Asphalt Tile, and the result is maximum flooring value at minimum cost.

Plan on Tile Tex for *your* flooring needs. Comprehensive literature and specifications are yours for the asking. Just write: THE TILE-TEX DIVISION, The Flintkote Company, Dept. HA, 1234 McKinley Street, Chicago Heights, Illinois.

Tile-Tex
ASPHALT
FLOORS AND WALLS

*REGISTERED TRADEMARK, THE FLINTKOTE COMPANY



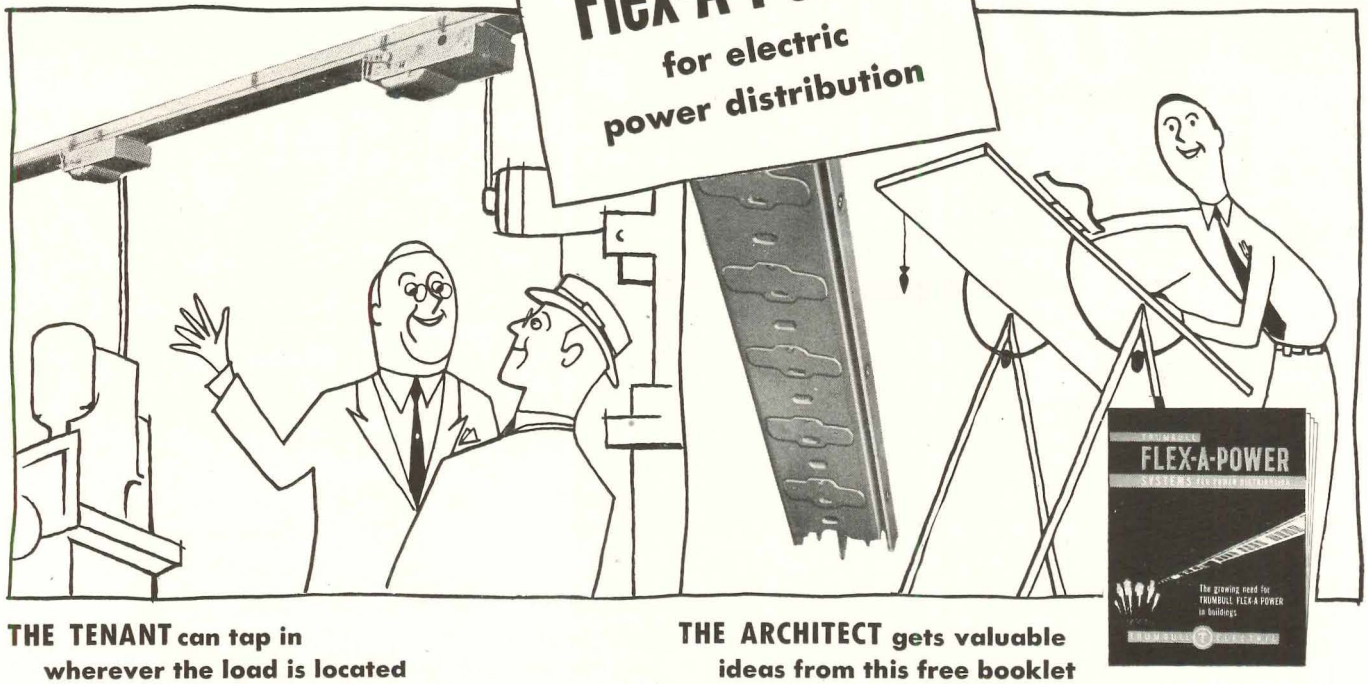
# Everybody saves money when you pick Flex-A-Power* for electric power distribution

**THE BUILDER finds it easier to install than wire and conduit**

Pre-fabricated busway sections are easily connected in any arrangement and in runs of any length. LVD (low voltage drop) for main feeders and risers (600-4000 amp, 600 v), FVK for secondary feeders (225-1000 amp, 600 v), LTG for light-duty services (50 amp, 300 v).

**THE OWNER gets flexibility without extra investment**

With FLEX-A-POWER there's no costly investment to anticipate future needs. Sections can be added, subtracted, rearranged or even dismantled and relocated—easily, quickly.




**THE TENANT can tap in wherever the load is located**

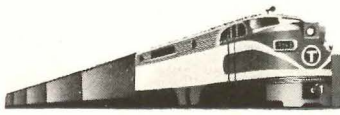
No need to locate loads near fixed outlets or to use long extension wires. FLEX-A-POWER provides outlets along its entire length—15 for every 10-ft section of FVK . . . and LTG can be tapped by plug or trolley at *any* point.

*Reg. Trade Mark

**THE ARCHITECT gets valuable ideas from this free booklet**

Write for it. It gives the reasons why Trumbull FLEX-A-POWER was selected for such modern buildings as Hotel Roosevelt, New Orleans; Rike-Kumler's department store, Dayton; Hartford Fire Insurance Co.; University of Washington Medical School. Write for Bulletin TEM-1. THE TRUMBULL ELECTRIC MANUFACTURING COMPANY, Plainville, Conn.

TRUMBULL (T) ELECTRIC

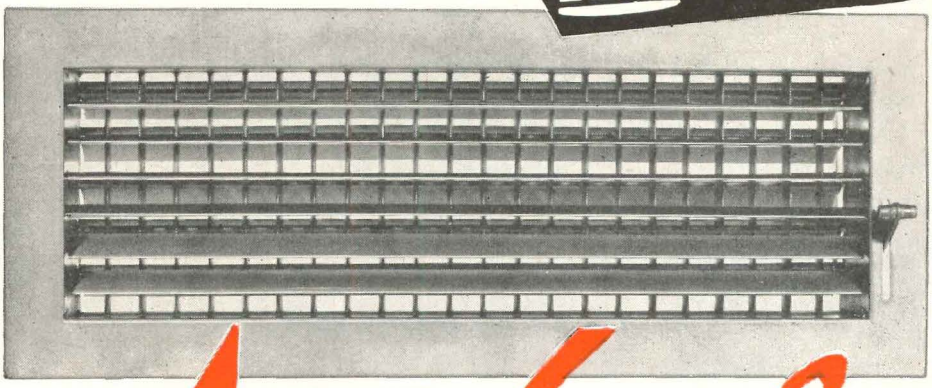


TRUMBULL'S TRAINLOAD OF NEW PRODUCTS

# MAKES ANY AIR CONDITIONING SYSTEM A BETTER AIR CONDITIONING SYSTEM

**Yet it COSTS LESS.....**

● *Illustrated below—* #276 4-way multi-shutter register . . . features front louvers and rear damper blades parallel to long dimension . . . second row louvers parallel to short dimension.



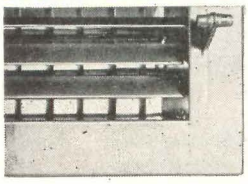
# Air Foil

## 4-WAY MULTI-SHUTTER REGISTER

**SOLID-SECTION AIRFOIL LOUVER**

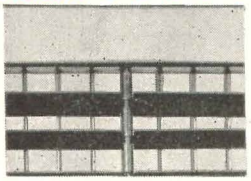
● Louver knifes air in wind tunnel tests. Turbulence has been almost eliminated giving noiseless control of air.

**LEVER CONTROL**



● Inconspicuous lever in face of frame controls dampers for complete shut-off.

**EXTRA-STRENGTH FRAME . . . . .**



● New, exclusive Titus *concealed support* eliminates unsightly mullions and butted construction.

The smartly designed #276 combines *4-way #270 grille* with the *multi-shutter damper* to assure maximum directional control with positive volume control and shut-off. Damper blades interlock for complete shut-off.

The two front sets of louvers are individually adjustable with blades on ¾ inch centers.

Dampers are controlled from face of grille by inconspicuous lever. Removable lever furnished at no extra cost.

### EXTRA STRENGTH—LONGER LIFE

Sound, inspired know-how engineering gives the #276 superb simplicity of design with no unnecessary parts—no clumsy bulk. A special patented, *concealed support* eliminates unsightly mullions and butted construction permitting superior strength with no added weight.

### EASY TO INSTALL

#276 grilles are light in weight—easy to carry—easy to fit—easy to put in place. *Save much costly time and labor.*

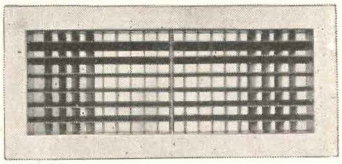
### EXTRA VALUE AT LOWER COST

AIRFOIL grilles are priced down to give you more value—more performance—more efficiency—at less cost.

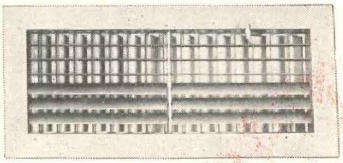
### NOTE THESE OUTSTANDING AIRFOIL FEATURES . . .

- Smooth-as-glass AIRFOIL louvers.
- Extra-heavy frames.
- Airtight rubber gasket.
- Positive shut-off.
- Individual louver adjustment.
- Removable lever.

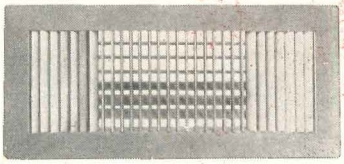
**LOOK TO AIRFOIL FOR THE FINEST**



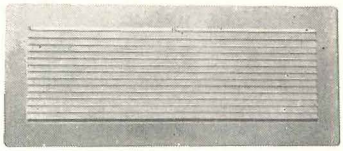
**L-270** 4-way directional grille for complete control of air stream.



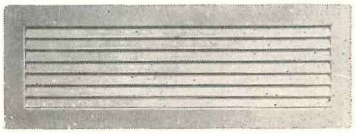
**L-274** Double directional grille with multi-shutter damper.



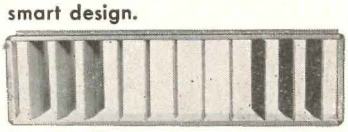
**S-8** 4-way grille with louvers on ½" spaced front.



**RL-21** Return air grille of fixed deflection type with closely spaced louvers.



**RL-230** Return air grille incorporates rugged construction and smart design.



**AG-25** Volume controller designed to fit behind grille.

**CHECK TYPE OF GRILLE ON WHICH INFORMATION IS DESIRED**

- ☐ Air conditioning outlets
- ☐ Return air grilles and registers
- ☐ Volume controllers
- ☐ Perforated metal and ornamental grilles
- ☐ Door ventilators
- ☐ Special made-to-order grilles

**TITUS MANUFACTURING CORP., WATERLOO, IOWA**
113 East 8th St.

_____Rush information on #276.
_____Send complete catalog.
_____Send literature on above checked items.

NAME_____

ADDRESS_____

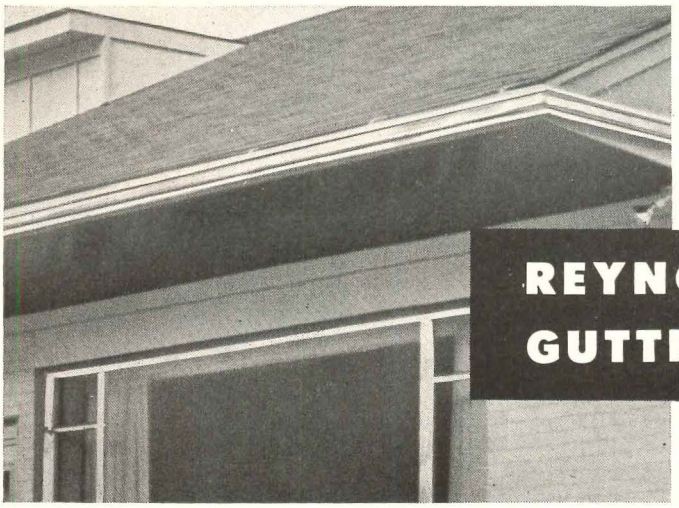
CITY_____STATE_____

# How to put Sales Appeal in Gutter and Downspout Specifications...

Beauty, Performance and Economy are the three points upon which any architect or builder must satisfy his client. If he also presents something new, modern—not merely repeating specifications of fifty years ago—it is an additional advantage.

Reynolds *Lifetime* Aluminum Gutters meet all these requirements. They have beauty of design, plus the softly gleaming neutral tone that goes with any concept. They are rustproof, need no painting, cannot produce rust-streaks or stain. And their cost is about half that of other rustproof materials—with added economies in installation, since the lightweight lengths are put up with simple slip joints: no soldering.

Shown at the left are Reynolds *Lifetime* Aluminum Gutters, Ogee style, on the House of Charm, Detroit. Below are details of two residential and one industrial style. For folder in A.I.A. file form, please address **Reynolds Metals Company,** Building Products Section, 2015 So. Ninth St., Louisville 1, Ky. Offices in 32 principal cities.

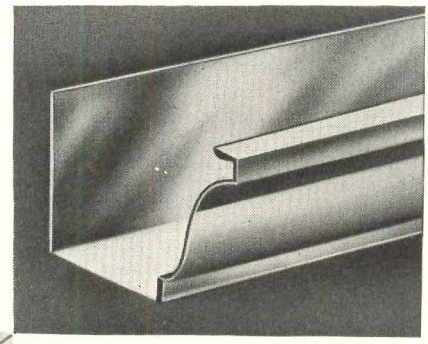


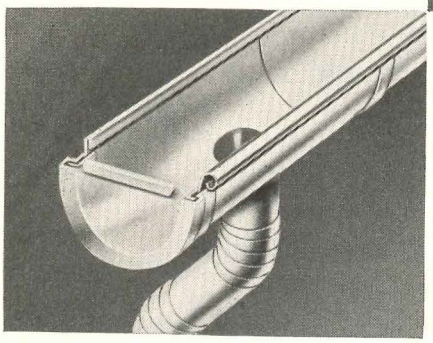
## REYNOLDS *Lifetime* ALUMINUM GUTTERS AND DOWNSPOUTS

IF YOU SEE RUST YOU KNOW IT'S NOT ALUMINUM — REYNOLDS *Lifetime* ALUMINUM BUILDING PRODUCTS

**RESIDENTIAL CASEMENT WINDOWS (also Fixed and Picture)**
**REFLECTIVE INSULATION**
**ARCHITECTURAL SHAPES**
**5-V CRIMP and CORRUGATED ROOFING AND SIDING**
**WEATHERBOARD SIDING**
**INDUSTRIAL CORRUGATED**
**BUILT-UP ROOFING**
**NAILS**
**FLASHING**
**ROOFING ACCESSORIES**

Profile of 5" Ogee style Gutter, supplied with 3" square Downspouts, both in 10' lengths. Allow one downspout for each 700 sq. ft. roof area. Fittings include Slip Connectors, End Caps, Sections with Outlet, Outside and Inside Mitres, Strap Hangers, 60° and 75° Elbows, Pipe Bands, Strainer, Aluminum Nails. *Available in either smooth or stipple-embossed finish.*





Reynolds 5" Half-Round Gutter, supplied with 3" Downspouts either plain round or corrugated. Allow one round downspout for each 700 sq. ft. roof area, one corrugated for each 600 sq. ft. Matched fittings as for Ogee. *Available in either smooth or stipple-embossed finish.*

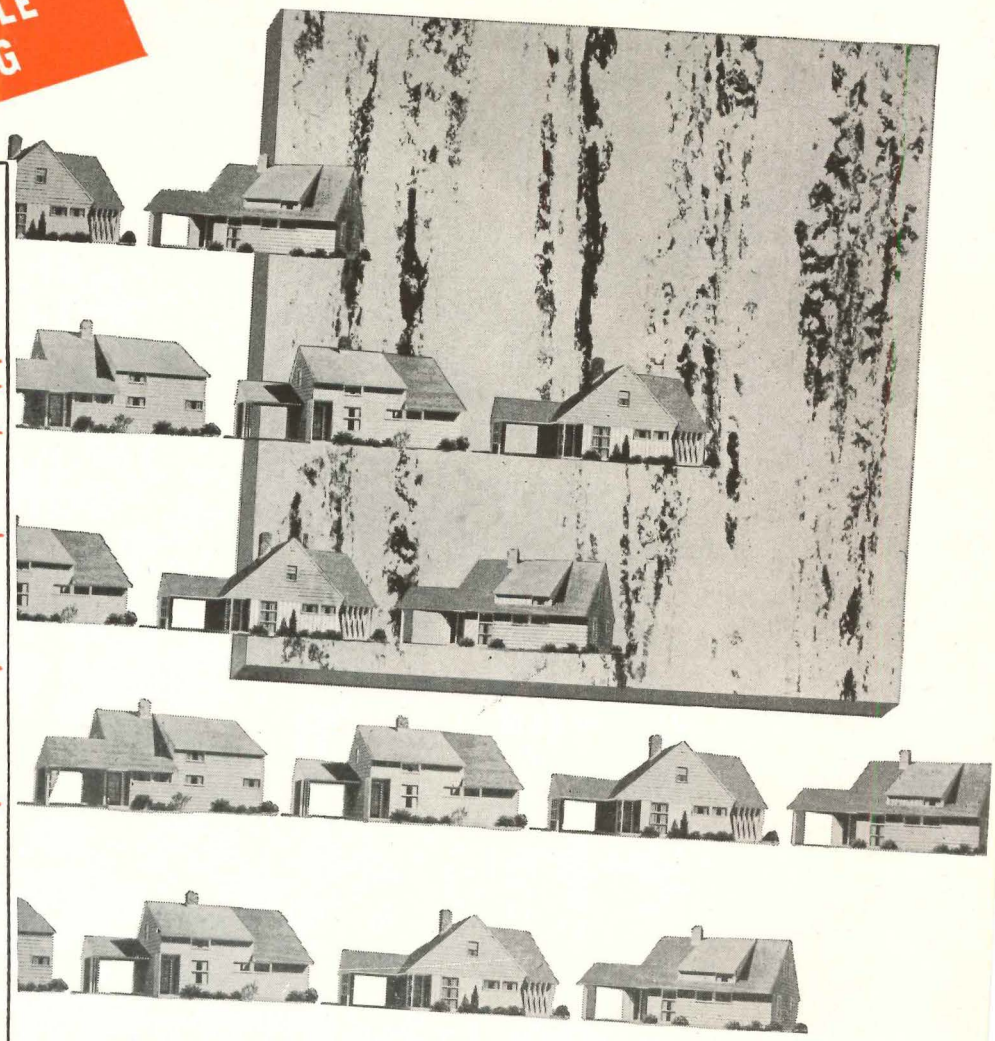
ALSO 6" HALF-ROUND INDUSTRIAL GUTTERS, stipple-embossed only, with 4" downspouts to drain 2,000 square feet of roof area.

# REYNOLDS ALUMINUM

QUALITY CONTROLLED

# MA-TI-CO®
## ASPHALT TILE FLOORING

*assures enduring beauty at low cost*



## MA·TI·CO SPECIFICATIONS

### COLORS—STANDARD ASPHALT TILE

Full Cartons Only  9" x 9" Sizes  1/8", 3/16" Gauges

| STYLE | COLOR NO. | COLOR DESCRIPTION |
|---|---|---|
| Group A | A 501 | Black (Both available in 18" x 24" |
| | A 503 | Brittany Red Borderstock.) |
| Group B Marbleized | B 401 | Black with White Marble |
| | B 402 | Black with White and Green Marble |
| | B 403 | Black with White and Red Marble |
| | B 404 | Brittany Red with Gold and Red Marble |
| | 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 |
| | D 106 | Bright Red with White Marble |
| | D 107 | Yellow |

### COLORS—PETAL TONES

| COLOR NO. | COLOR DESCRIPTION |
|---|---|
| P 201 | Petal Tone Yellow |
| P 202 | Petal Tone Rose |
| P 203 | Petal Tone Blue |
| P 204 | Petal Tone Green |
| P 205 | Petal Tone Paisley |

### GREASEPROOF TILE

Manufactured in all B group and C420, C423, C424. Full cartons only. 9" x 9" sizes. 1/8", 3/16" gauges.

### PACKING DATA

For Standard and Greaseproof Tile

| Size | 1/8" Pieces Per Carton | 1/8" Sq. Ft. Per Carton | 3/16" Pieces Per Carton | 3/16" Sq. Ft. Per Carton | Weight Per Carton |
|---|---|---|---|---|---|
| 9 x 9 | 80 | 45 | 54 | 30.375 | 55 lbs. |
| 12 x 12 | 45 | 45 | 30 | 30 | 55 lbs. |
| 18 x 24 | 18 | 54 | 12 | 36 | 65 lbs. |
| 1 x 18 | 216 | 27 | 144 | 18 | 33 lbs. |
| 1½ x 18 | 144 | 27 | 96 | 18 | 33 lbs. |
| 2 x 18 | 96 | 24 | 64 | 16.3 | 33 lbs. |

**Wire or write for complete details and Matico sample color chart, if there is no Matico distributor near you.**

**GET TO KNOW MA-TI-CO!**

Write today for Ma-Ti-Co literature and sample color chart!

REPLACEMENT OR A REFUND OF MONEY
Guaranteed by Good Housekeeping
IF NOT AS ADVERTISED THEREIN

*that's why* Levitt and Sons INCORPORATED

# specify 3½ MILLION Sq. FEET of MA·TI·CO in 1950

Levitt selects Ma-Ti-Co for the flooring of every room in 4428 luxury and economy-type homes in Levittown and Roslyn, Long Island — additional proof of Ma-Ti-Co's high quality.

A special Ma-Ti-Co formulation helps reduce costs through fast, easy, quick-seating installation . . . assures greater resistance to time and wear . . . permits a complete line of rich, clear colors — in solid tones and marbleized patterns — including 5 new pastel "Petal Tones." Precision testing maintains a constant high quality that meets Federal specifications for flexure, indentation, curling and impact.

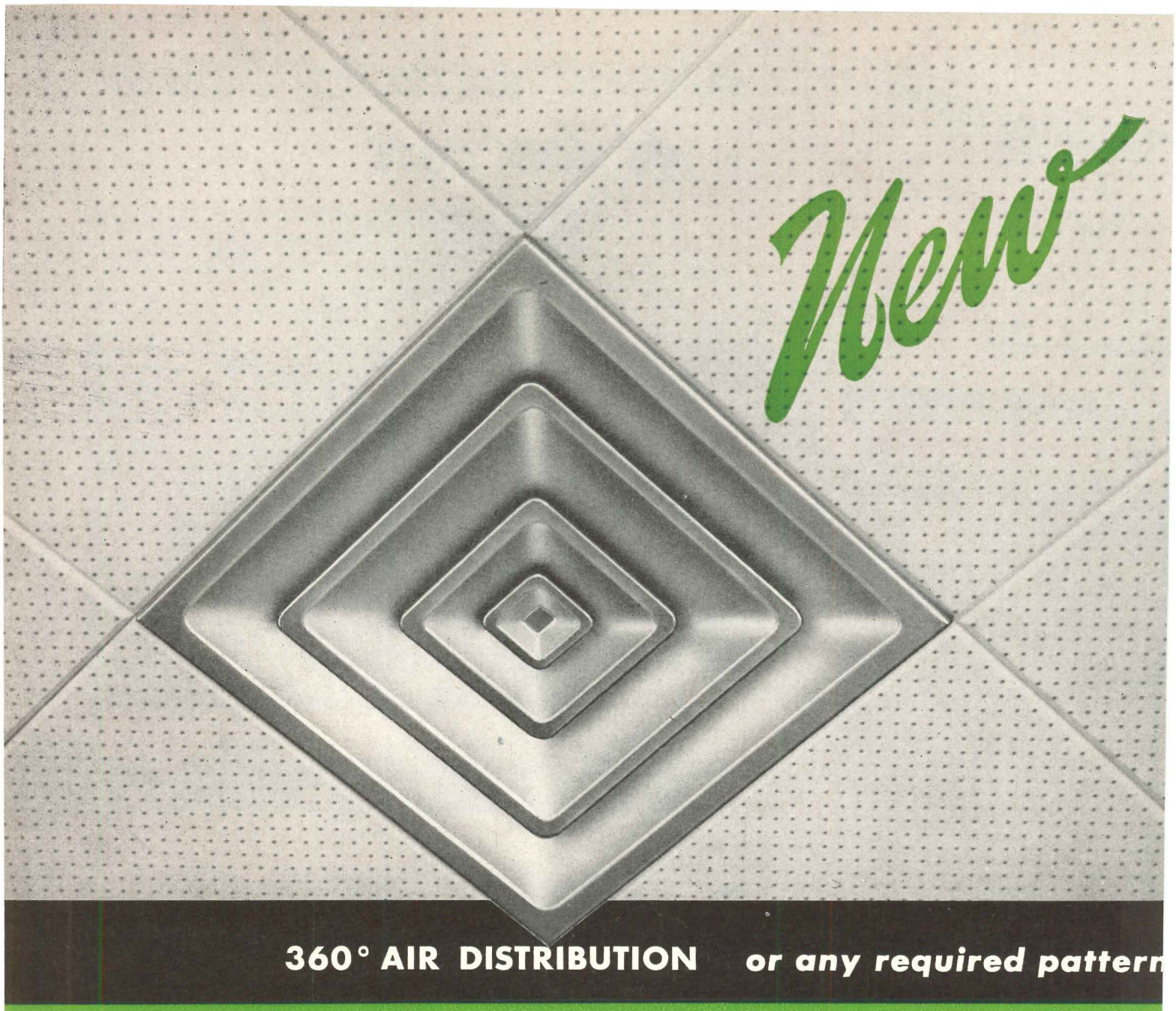
Whatever your flooring problems — large commercial or institutional installations, apartments or homes — specify MA-TI-CO's proven quality for best results.

*For details, consult our insert in Sweet's File Architectural Section 13*

*Department 86*

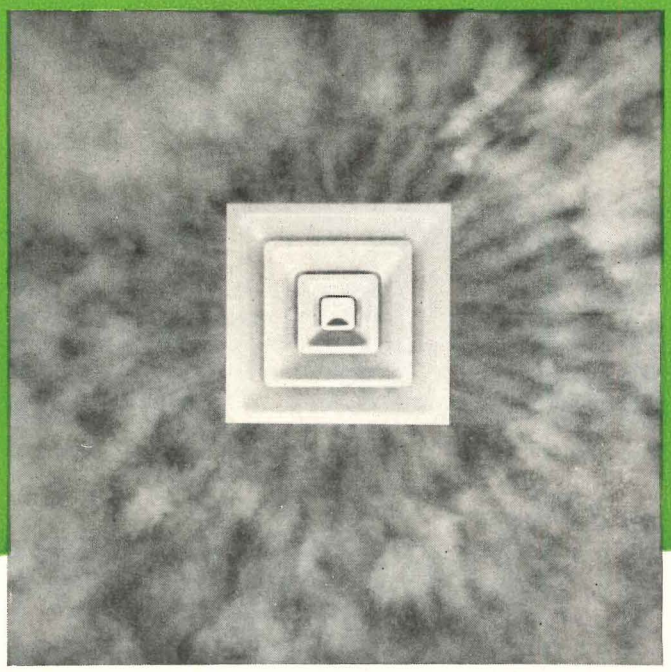
**MASTIC TILE CORPORATION OF AMERICA**

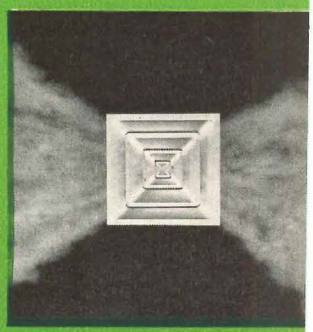
**Factories: Newburgh, N. Y. • Long Beach, Calif.**

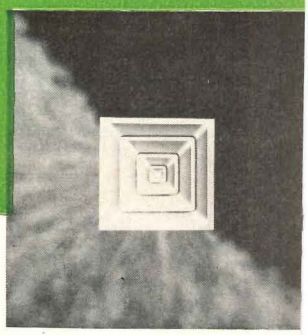



## 360° AIR DISTRIBUTION *or any required pattern*

Photographs of actual smoke tests showing various air patterns obtainable with the Type D Diffuser.







# Aerofuse TYPE D
## SQUARE DIFFUSER

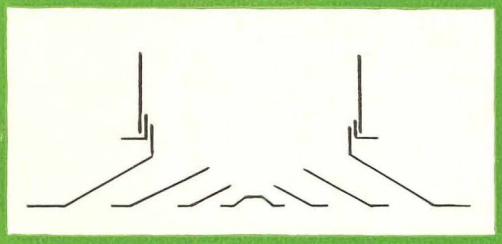
An important addition to the extensive Aerofuse line, the new Type D, is an efficient, smartly styled diffuser developed to answer the increasing demands from engineers and architects for a square outlet that will deliver supply air in a 360° pattern . . . and, in appearance, harmonize with modern building interiors.

Engineered to the highest standards of operating performance, the Type D Aerofuse provides complete flexibility of air pattern. To meet specific job requirements where circular distribution is not practical, baffles may be used to blank-off portions of the diffuser and direct air stream in a variety of patterns. Thus the Type D can be installed near walls, supporting columns and other obstructions without creating drafty conditions.

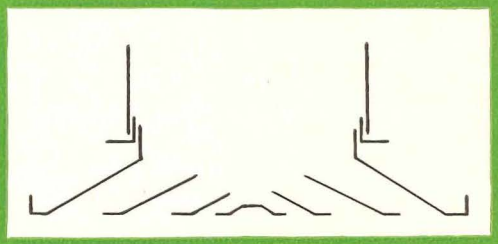
***t the vital point of air delivery***

Two types are available . . . Type DF, for flush mounting in standard acoustical tile ceilings . . . Type DE, for installation on plaster ceilings. Both types are listed in four sizes (12" x 12", 16" x 16", 20" x 20", 24" x 24", 30" x 30") with neck diameters from 6" to 15"

**TYPE DE**



**TYPE DF**



For complete details, size selection information, and engineering data, write for a copy of Catalog 103.


TUTTLE & BAILEY inc

NEW BRITAIN, CONNECTICUT

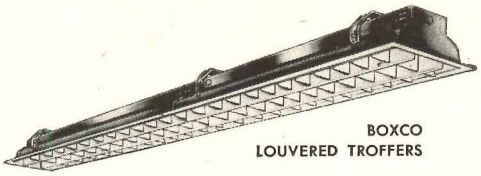
# WHY TROFFERS? WHY DAY-BRITE?

There's this to say about troffer lighting: *good taste and good light!* The smart, modern appearance of recessed troffers . . . the smooth, unbroken surface of the ceiling . . . the endless variety of lighting patterns . . . all contribute an atmosphere of elegance and discrimination.

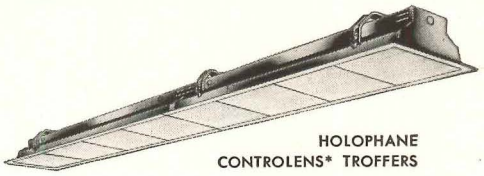
And when interiors deserve top-quality troffer lighting, there's no equal for Day-Brite troffers . . . in appearance, in quality, in true economy. Day-Brite quality is especially important, for troffer installations are permanent . . . *you must be sure of long-term, trouble-free performance before you buy!*

Six basic groups to choose from . . . each available in 96″ Slimline and 48″ Standard Fluorescent . . . each available in snap-in and flange types . . . each adaptable for countless geometric patterns or for unit or continuous installations. Fine lighting equipment? Yes . . . and fine lighting *value:* value that *only* famous Day-Brite quality can produce.

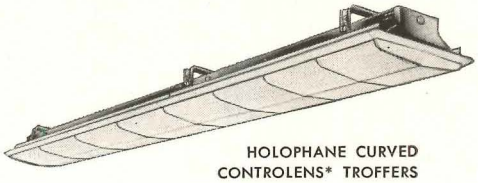
**A COMPLETE TROFFER LINE**



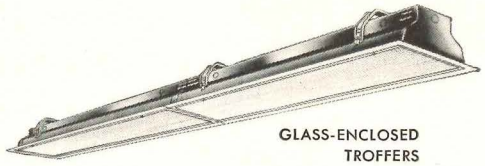
BOXCO
LOUVERED TROFFERS



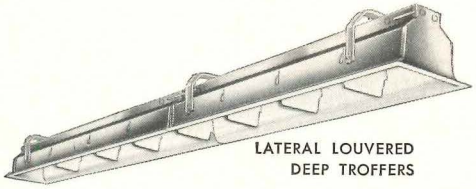
HOLOPHANE
CONTROLENS* TROFFERS



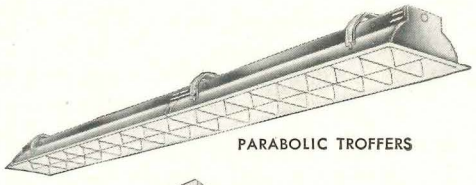
HOLOPHANE CURVED
CONTROLENS* TROFFERS



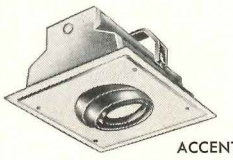
GLASS-ENCLOSED
TROFFERS



LATERAL LOUVERED
DEEP TROFFERS



PARABOLIC TROFFERS



ACCENT UNITS—
FIXED AND ADJUSTABLE

*® HOLOPHANE CO.

**DISTRIBUTED NATIONALLY BY LEADING ELECTRICAL WHOLESALERS**

Day-Brite Lighting, Inc., 5465 Bulwer Ave., St. Louis 7, Mo.
In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ontario

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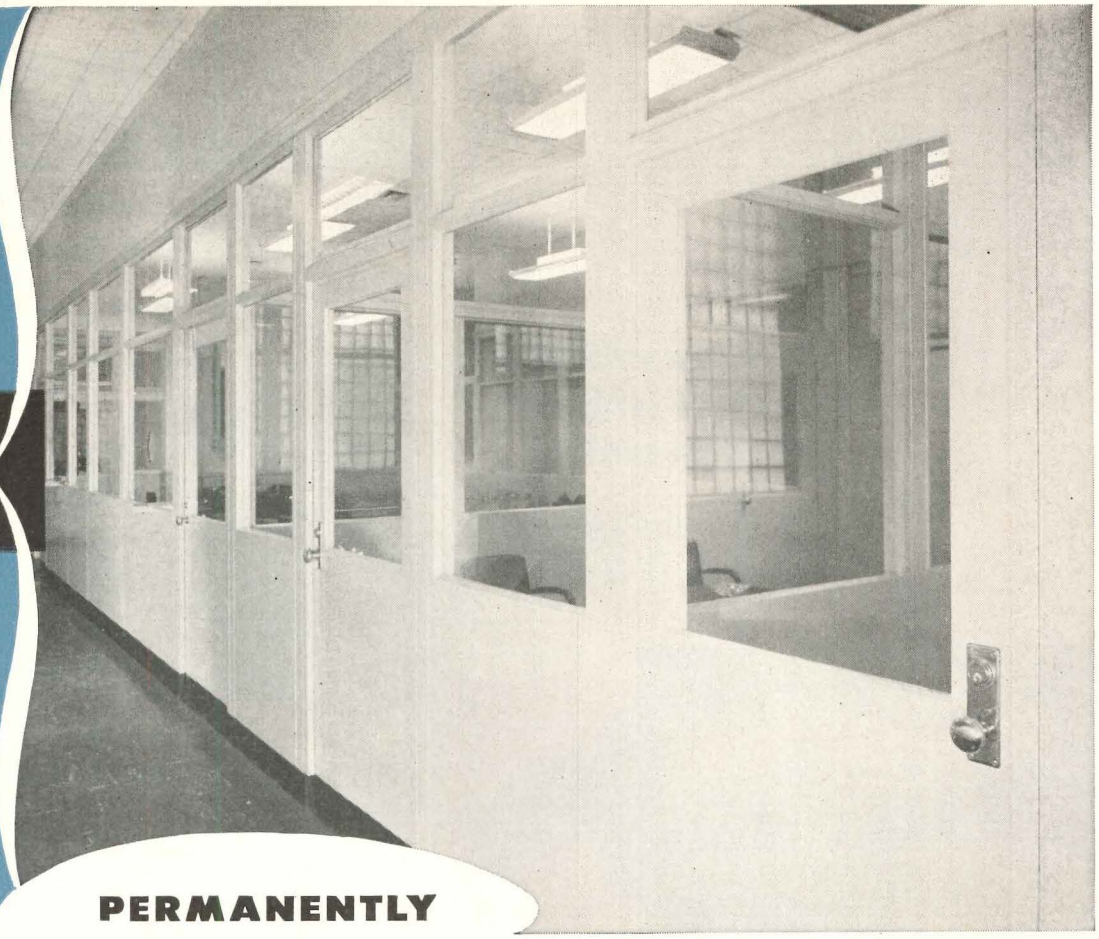
***ONLY QUALITY IS ECONOMICAL***

"DECIDEDLY BETTER"
**DAY-BRITE**
*Lighting Fixtures*

# MILLS *Movable* METAL WALLS



*Bulldog Electric Products Co., Detroit, Michigan*
*Architects: Jahr & Lyman*

## PERMANENTLY DISTINCTIVE

*...yet easily adapted to changing needs*

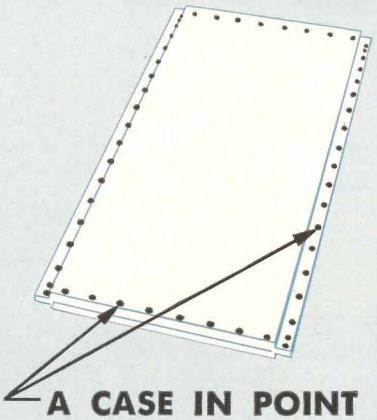
TODAY'S BUSINESS INTERIOR must reflect solidity and permanence, refinement and good taste—and at the same time be easily adapted to changes in space requirements. Mills Movable Metal Walls are designed to meet this need.

Solidity and permanence are achieved by exclusive Mills features like all-welded panel construction and sound-deadened panel surfaces. They are insulated and sound-proofed, and correctly engineered for structural stability. Of refined architectural design they are available in a wide range of attractive colors in baked-on finishes specially treated to eliminate harsh light reflection.

As space needs change Mills Movable Metal Walls may be re-arranged to fit the new layout—quickly, easily, and at low cost. The entire change can often be made overnight or during a week end.

*We'll be glad to send you a 48 page easy-to-read booklet that will give you full details. Just ask for Mills Catalog No. 50.*

**THE MILLS COMPANY • 961 Wayside Road • Cleveland 10, Ohio**



## A CASE IN POINT

**Mills panel sheets are welded to panel frames—an exclusive construction feature for which there is no quality substitute.**

## SPECIFY MILLS FOR

**All-Welded Panels • Sound Dead Surfaces Glareless Finishes • Scientific Sound-proofing • Easy Erection • Maximum Mobility Superior Architectural Design**



★ MILLS *Movable* METAL WALLS ★

# Now homes in all price ranges can have pegged oak floors

For years, pegged oak floors laid in random-widths have meant luxury and quality to style-conscious home owners. But the high cost of installation has limited their use to higher priced homes.

Now Bruce has developed the new Ranch Plank Floor that is moderate in cost because it's pegged and completely finished at the factory and is installed exactly like strip flooring. The alternate 2¼″ and 3¼″ strips give the beautiful decorative effect of a random-width plank floor. But Ranch Planks have none of the installation problems and expansion hazards of wide oak planks.

Architects and interior decorators praise the new Ranch Plank Floor for all types of homes and apartments. Owners say it's one of the most admired features of their homes.

Give *your* homes this plus value that lifts them out of the ordinary class. See our catalog in Sweet's 1950 File. For complete data and new booklet with color photographs of Ranch Plank Floors, write: E. L. BRUCE CO., MEMPHIS 1, TENN.

## Bruce Ranch Plank Floor

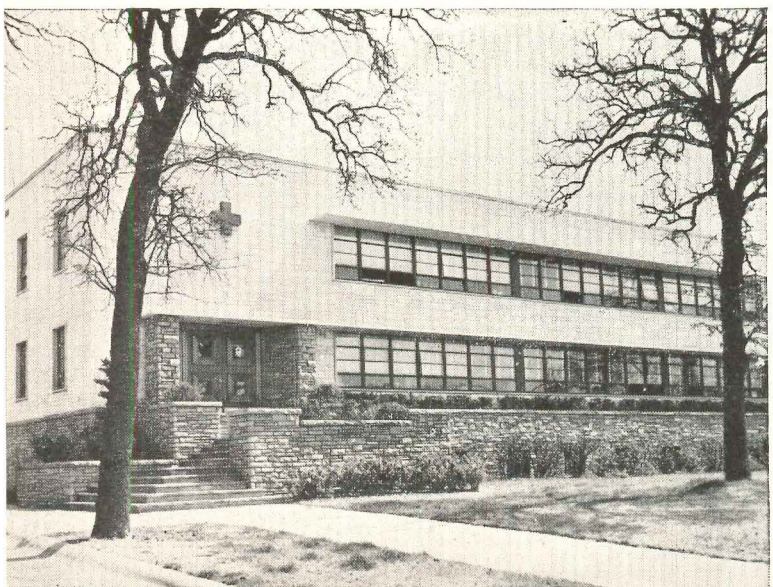
BRUCE

*IT'S PEGGED AND FINISHED AT THE FACTORY*

*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.*

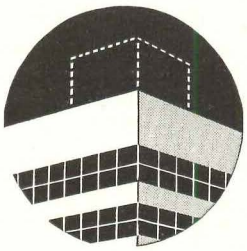


**The modern elevator for**

# Rotary Oildraulic

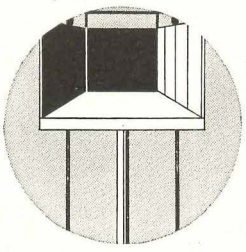
## *How to cut construction costs with the "elevator that's pushed up"*

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.



### Lighter shaftway structure

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

### No special machine room

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.


## Only Rotary gives you
# ROTA-FLOW

***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.

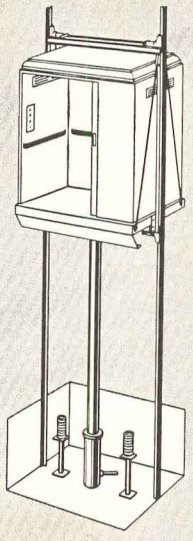
Over 50,000 Rotary Oildraulic elevators and lifts are now serving major companies and building owners throughout the nation. Our coast-to-coast organization offers the most complete engineering and maintenance service in this field.

**ROTARY LIFT CO., MEMPHIS, TENN.**

***SEE OUR CATALOG IN SWEET'S***

Rotary

# OILDRAULIC ELEVATORS



***FOR FREIGHT OR PASSENGER SERVICE***

**Capacities up to 80,000 lbs.**

*Engineered and built by Rotary Lift Co., Memphis, Tenn. Oldest and largest maker of oil hydraulic elevators.*

***MAIL FOR AIA FILE***

ROTARY LIFT CO.,
1106 Kentucky, Memphis 2, Tenn.

Send complete architectural data on Rotary Oildraulic Elevators to:

*Name*.....

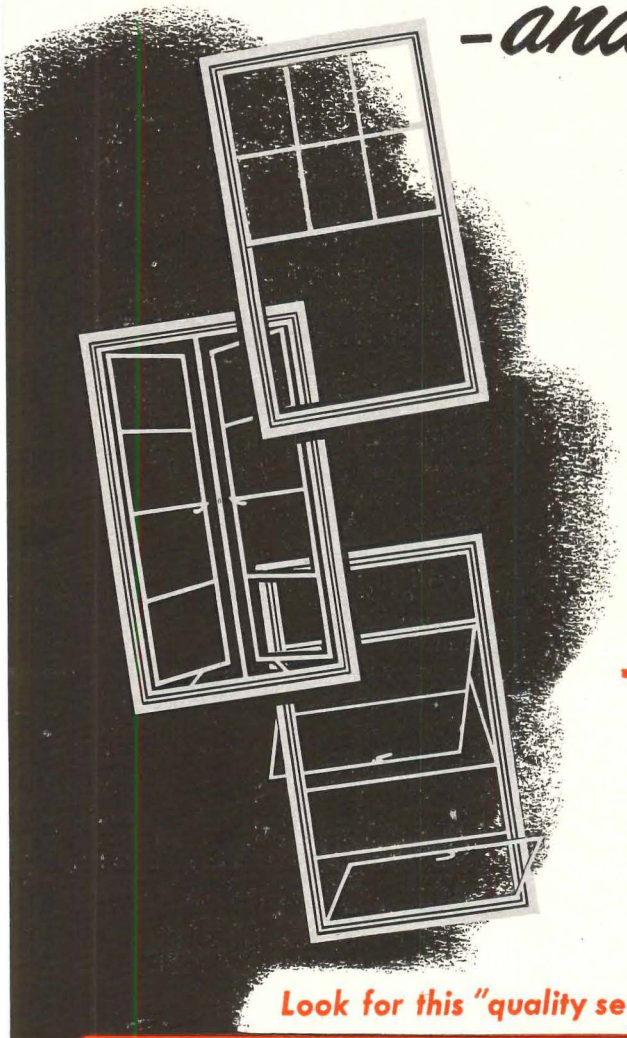
*Address*.....

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

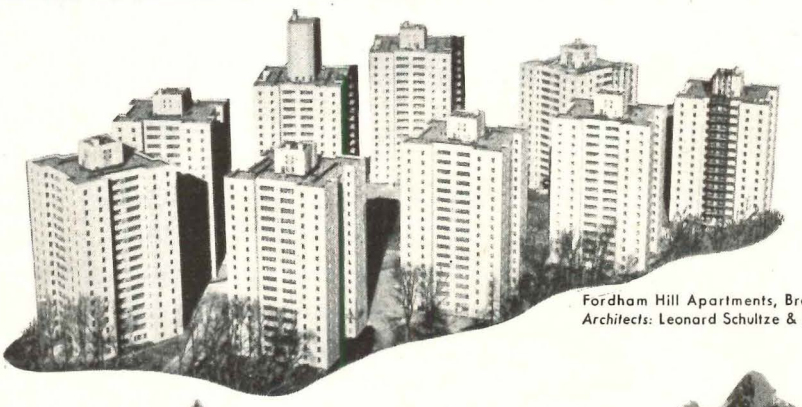
# The trend has become

# ALUMINUM

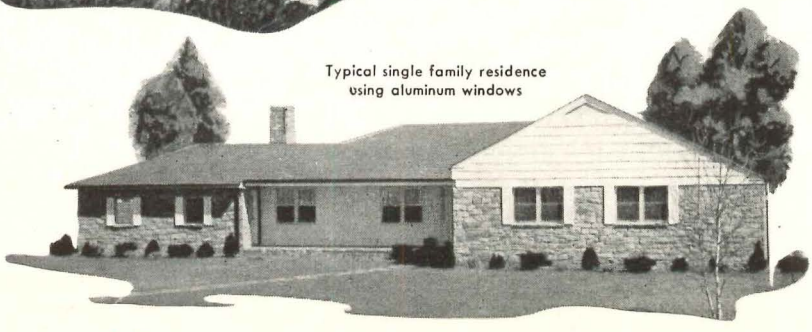
## -and for these good reasons



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



Fordham Hill Apartments, Bronx, N
*Architects:* Leonard Schultze & Associc



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.

# a demand for "quality-approved"

# WINDOWS!

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

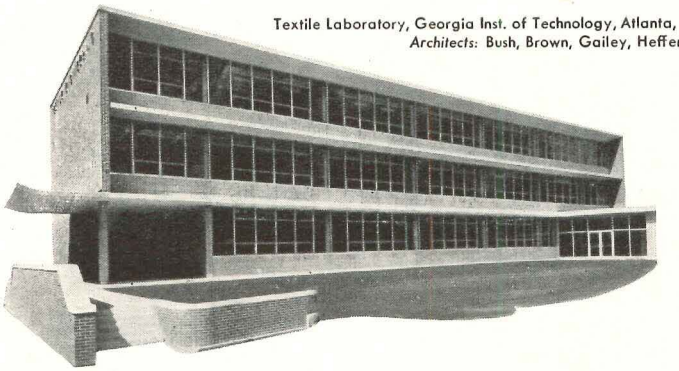
the past few months, more and more architects 've singled out aluminum windows as their choice homes and for larger buildings.

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

u can continue to make sure of client satisfaction specifying only aluminum windows bearing the uality-Approved" Seal.

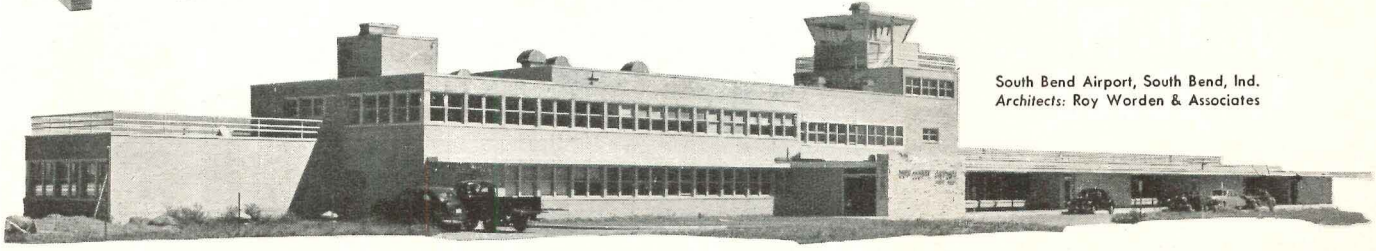
is seal assures you of aluminum windows that ıform to rigid specifications and meet the highest ıdards for quality materials, strength of sections, ndness of construction, and minimum air in- ·ation.

ect only windows bearing the "Quality-Ap- ıved" Seal. Consult Sweet's (Section 17a/4a) or te for complete specifications and names of nufacturers whose windows qualify for the seal. dress Dept. R.



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 Sterling Windows, Inc. New York City, N. Y. ★ Windalume Corporation, West New York, New Jersey**


*Modern Trane Convectors keep coeds cozy in the new residence building at Mt. Holyoke College, South Hadley, Massachusetts. Architect: Douglas Orr, New Haven, Conn. Contractor: C. H. Cronin, Inc., Boston, Mass.*

# Convectors – cum laude

When it comes to selecting the valedictorian of the convector class, leading architects, engineers and builders are nominating Trane Convectors for this coveted award.

Trane Convectors have long been proclaimed a leader in the school heating field because they can really be depended upon to deliver the utmost in comfortable, cleaner, controlled heat—efficiently and economically.

They're economical to operate because Trane Convectors waste no heat. Quick response, when heat is needed, assures efficient regulation. With quick-acting convector controls, heat output can be instantly regulated to exactly suit individual desires.

Sturdily built of heavy furniture steel, Trane Convectors are designed to withstand the most rugged abuse. Their graceful lines enhance the beauty of every room. Can be painted to blend with any scheme of decoration. They fit any steam or hot water system.

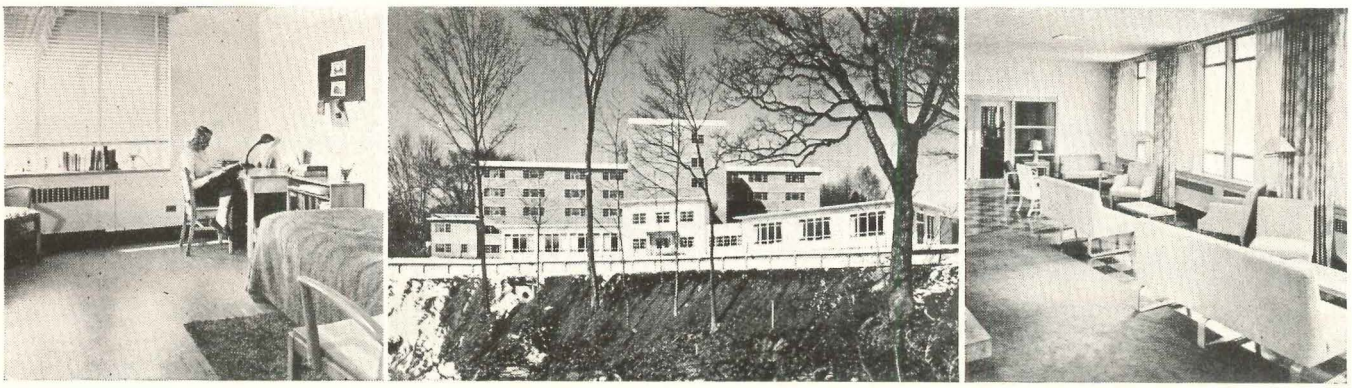
Ask the Trane Sales Engineer in your area to show you how the many types and sizes of Trane Convectors—free standing, wall hung, semi-recessed, fully recessed or picture window—will fill every application perfectly.

**THE TRANE COMPANY...LA CROSSE, WIS.**

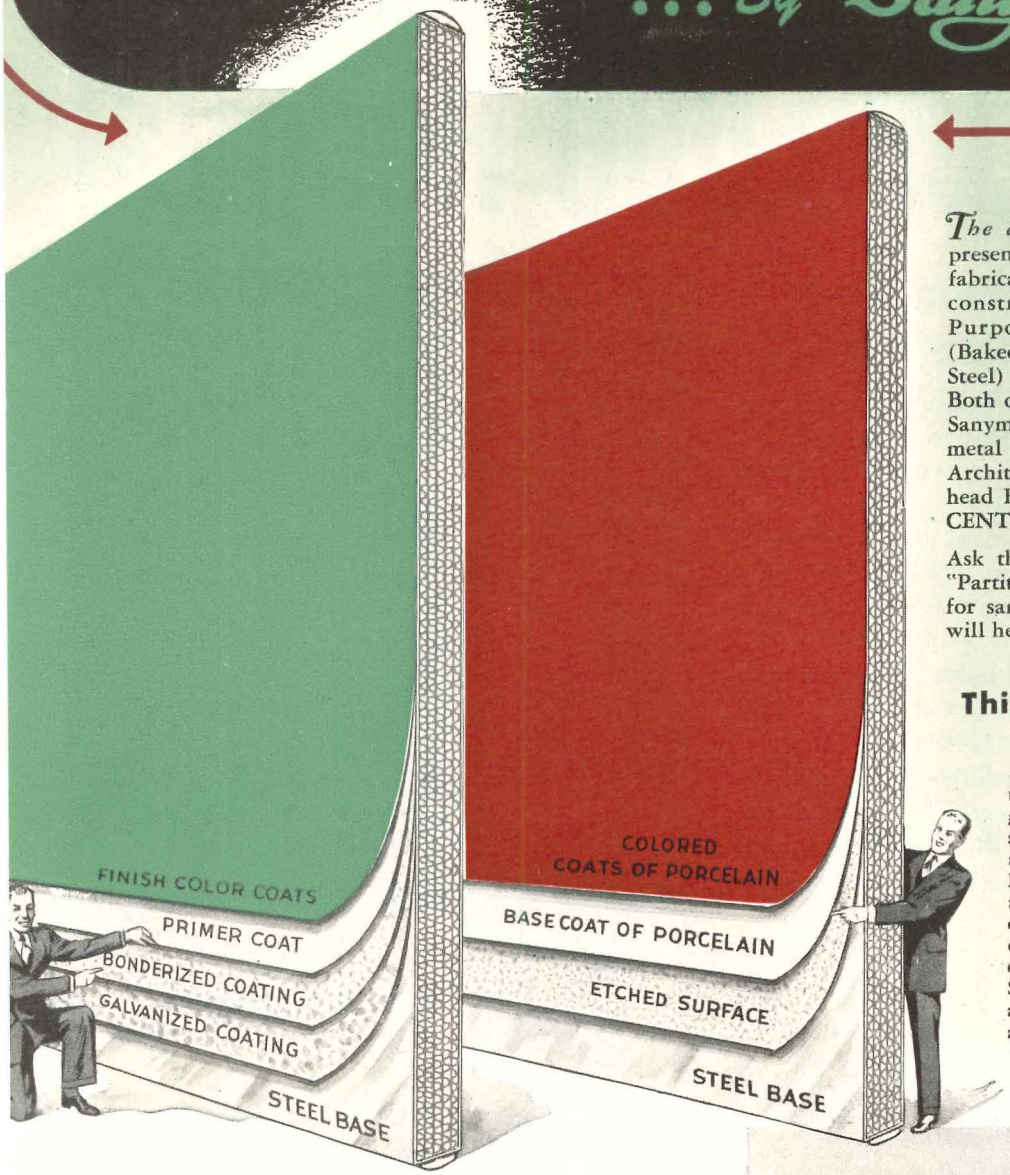
EASTERN MANUFACTURING DIVISION, SCRANTON, PA.

Manufacturing Engineers of Heating, Ventilating and Air Conditioning Equipment—Unit Heaters, Convector-radiators, Heating and Cooling Coils, Fans, Compressors, Air Conditioners, Unit Ventilators, Special Heat Exchange Equipment, Steam and Hot Water Heating Specialties ... IN CANADA, TRANE COMPANY OF CANADA, LTD., TORONTO.

**Trane Convectors hide away in the walls under windows at Mt. Holyoke College, permitting complete freedom of room decoration while providing an abundance of heating comfort.**



# Two full purpose materials for Toilet Compartments ... By Sanymetal




*The development* of highly corrosion-resistant steels presented Sanymetal engineers with the basic metal for fabricating Two Full Purpose Materials especially for the construction of toilet compartments. These Two Full Purpose Materials are known as Sanymetal "Tenac" (Baked-On Paint Enamel over Galvanized, Bonderized* Steel) and Sanymetal "Porcena" (Porcelain on Steel). Both of these Two Full Purpose Materials are utilized by Sanymetal in manufacturing these three types of Sanymetal Toilet Compartments (see Catalog $\frac{22b}{6}$ in Sweet's Architectural File for 1950): ACADEMY TYPE (Overhead Braced); NORMANDIE TYPE (Floor Supported); CENTURY TYPE (Ceiling Hung) illustrated.

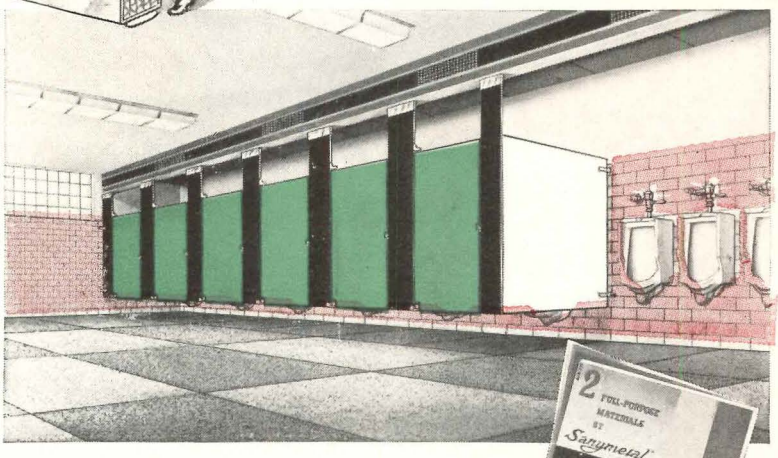
Ask the Sanymetal representative in your vicinity (see "Partitions" in your phone book for local representative) for samples of these Two Full Purpose Materials. They will help you to simplify toilet compartment specification.

## This is Sanymetal "PORCENA"
**(Porcelain on Steel)**

Sanymetal "Porcena" (Porcelain on Steel) is impervious to moisture, odors, cleaning and uric acids, oils and grease. It is rust proof. The flint-hard, glass-smooth surface is resistant to scratching, scouring, scrubbing and scribbling or defacement. It is an ageless and fadeless material that greatly reduces the cost of cleaning and maintenance. It has no equal for strength and durability. This Full Purpose Material presents a correct combination of the desirable qualities of the hardness of glass and the natural structural strength of steel. Sanymetal "Porcena" (Porcelain on Steel) is incomparable with any other finish or metal base material. It is available in 21 different colors.

## This is Sanymetal "TENAC"
**(Baked-On Paint Enamel over Galvanized, Bonderized* Steel)**

This Full Purpose Material is notable for the positive adhesion of the baked-on paint enamel to the metal and its resistance to corrosion. The basic metal or sheet of steel is first given the protection of a galvanized coating. Then it is treated with Bonderite* which provides a protective coating that grips the paint enamel finish. Then this galvanized, Bonderized* steel is given a primer coat of paint enamel which helps to assure smooth finish and adds more protection. The final finishing coat of baked-on paint enamel gives a perfectly smooth, lustrous, protective finish. Available in 21 different colors. This material offers colorful attractiveness, combined with low maintenance cost and long-lasting newness.



*Sanymetal CENTURY Type Ceiling Hung Toilet Compartments offer the utmost in sanitation and provide modern, distinctive toilet room environments for schools, institutions, terminals and all other public buildings.*


**OILET COMPARTMENTS, SHOWER 'ALLS AND DRESSING ROOMS BY**

# Sanymetal*

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

*Treated with "Bonderite", a product of Parker Rust Proof Co.

This booklet on "2 Full Purpose Materials for Toilet Compartments by Sanymetal" illustrates and describes completely these materials and their exclusive advantages. Attach coupon to your letterhead.

**THE SANYMETAL PRODUCTS COMPANY, INC.**
**1689 URBANA ROAD • CLEVELAND 12, OHIO**

Please send copy of booklet entitled "2 Full Purpose Materials for Toilet Compartments by Sanymetal".

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# Guarding the "Lifelines" of a $20,000,000 Hospital

## Choice of Edwards' Equipment Insures Against Costly Communications Breakdown!

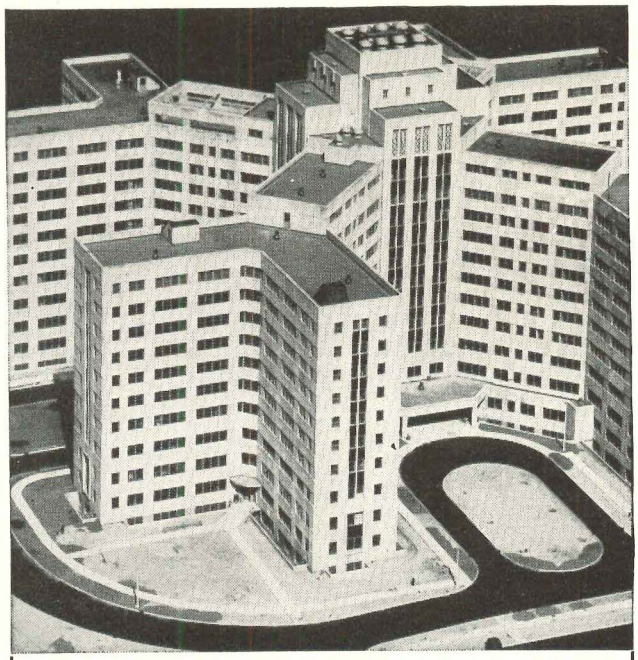
• The larger the hospital, the greater the need for *absolutely,* dependable signal, communication and protection systems. How these vital "nerve centers" perform is literally a matter of life and death.

You can be sure no effort was spared insuring Buffalo's gigantic new $20,000,000 Veterans' Administration Hospital against breakdowns in these crucial services. You can be sure—because the contract went to EDWARDS!

Nurses' call systems . . . night lights . . . doctors' paging systems . . . clocks . . . operating-room timers . . . fire alarm stations . . . all awarded to EDWARDS!

Thus another Edwards equipped hospital is added to the ever-lengthening list . . . another record of unmatched, trouble-free service in the making!

Write for illustrated bulletin on Edwards' Hospital Signal Systems.

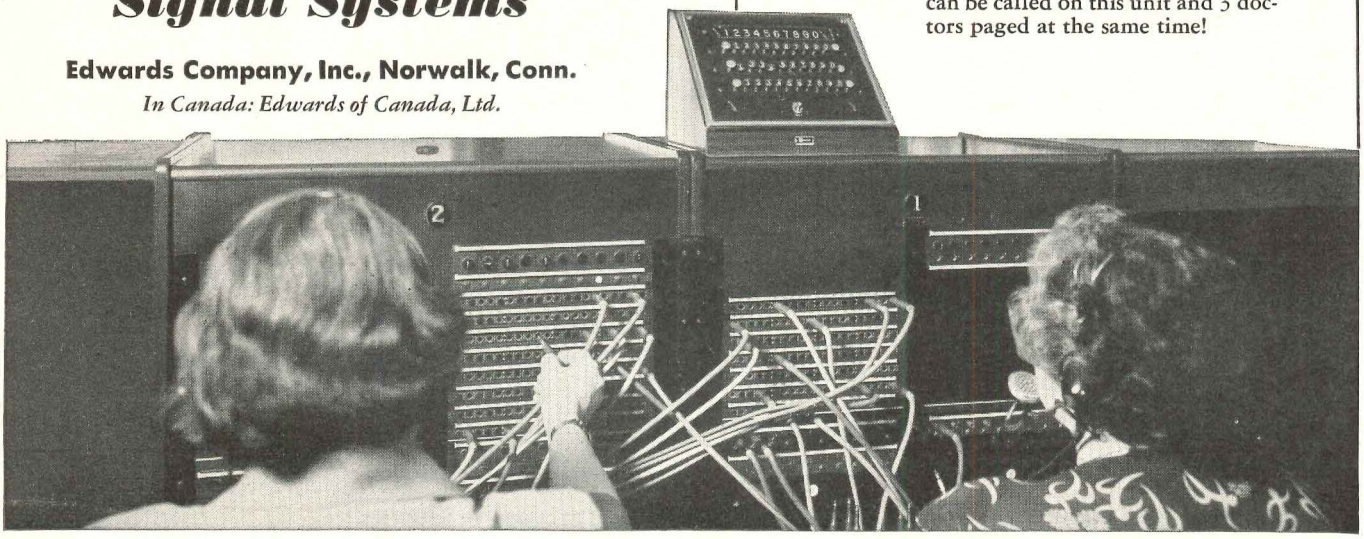


BUILT ON A 16½ ACRE TRACT, donated by the city, Buffalo's new V.A. Hospital is an outstanding example of modern, functional design. The structure is 14 stories high, contains 2,328 rooms, has a capacity of 1,000 beds.

**KEYBOARD SELECTOR**
of the Edwards' Doctors Paging System is so compact that it actually takes up little more room than telephone directory! 120 doctors can be called on this unit and 3 doctors paged at the same time!

**EDWARDS**
**HOSPITAL**
***Signal Systems***

**Edwards Company, Inc., Norwalk, Conn.**
*In Canada: Edwards of Canada, Ltd.*



*One of many full color illustrations in The Color Book of Tile. Complete tile specifications are given for each installation.*

# *QUICK Easy way to Specify* TILE

## See it... PICTURE it in COLOR

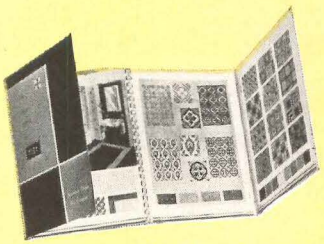
## in THE New COLOR BOOK OF TILE

For big homes and little homes, for country homes and city apartments . . . specifying tile is quick and easy with American-Olean's new Color Book of Tile.

You select and specify glazed and unglazed tile, patterns, strips, inserts and accessories from full color illustrations of tiled bath, kitchen, powder and game rooms . . . see side-by-side comparisons of alternate colors and patterns.

You save time, and assure exact follow-through, with ready-to-copy, 42-word specifications for each installation.

Satisfy yourself and satisfy your clients by specifying tile this amazingly quick, sure way from the American-Olean Color Book of Tile.



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*Color Book of Tile*

The most complete, most helpful tile book ever produced. 100 pages, including 30 of typical installations in full colors; plus color charts of wall and floor tile, trim, and hand decorated inserts. Full architectural data and ready-to-use specifications. If you have not yet received your copy, or if you need another, write today.

**American-Olean Tile Company**
*Executive Offices*
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**IT'S REAL CLAY TILE**


# Guard against lighting failure in the buildings you design

All buildings where crowds gather indoors at night require protection from the dangers of lighting failure. Storms, floods, fires, collisions and accidents beyond the control of ever-vigilant light and power companies can interrupt normal current supply and be a serious menace to life and property.

But the *lights need not fail* in the buildings you design. Exide Emergency Lighting provides safe, sure, modern protection. When other sources fail, it takes over any part or all of the lighting load, instantly and automatically. Units and systems can be supplied to meet any requirement from a few lights to many . . . from a single building to a large group.

THE ELECTRIC STORAGE BATTERY COMPANY
Philadelphia 32
*Exide Batteries of Canada, Limited, Toronto*

**Exide**

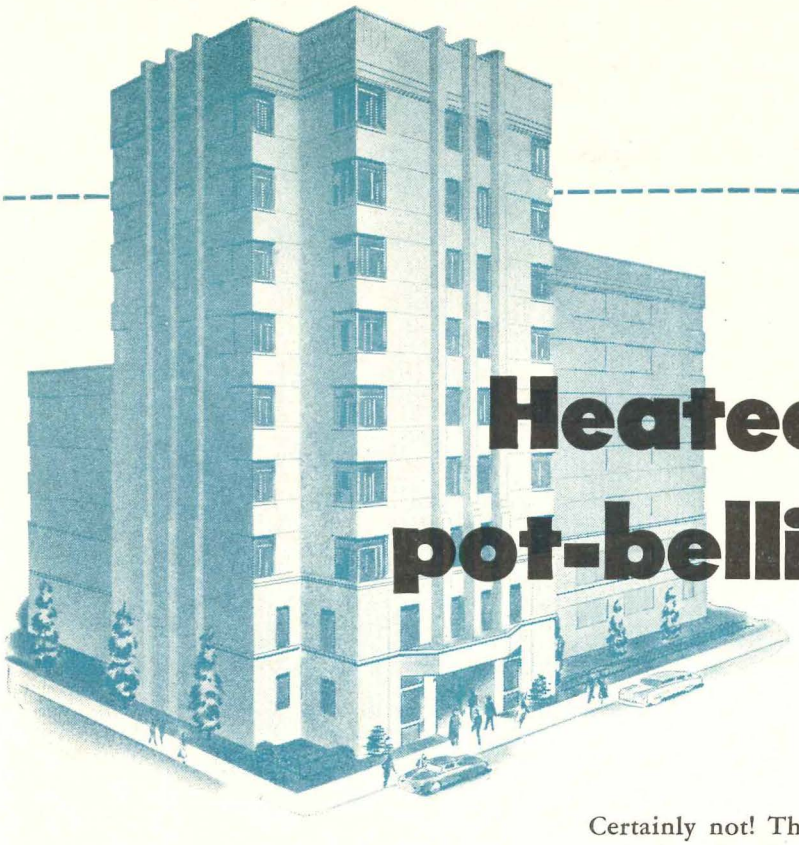
**EMERGENCY LIGHTING**

"Exide" *Reg. Trade-mark U. S. Pat. Off.*

***1888 . . . DEPENDABLE BATTERIES FOR 62 YEARS . . . 1950***

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

Westinghouse



# Heated by pot-bellied stoves?

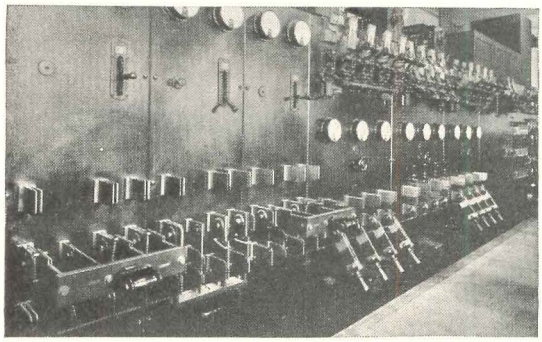
Certainly not! This modern new building will naturally have a modern heating system, too. Yet . . . *electrical equipment—nearly as old-fashioned as the pot-bellied stove—is often specified, purchased, and installed in buildings under construction today.*

We refer to electrical control equipment . . . the all-important nerve center of any modern building. This is where the power supply is controlled and distributed to the many facilities which depend upon electricity. Here, you must be *sure* . . . for the protection of costly equipment, the safety of personnel, and operation of vital services are at stake.

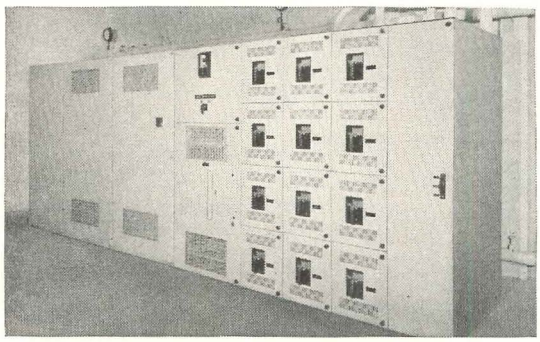
Westinghouse Low-Voltage, Metal-Enclosed Switchgear offers the kind of dependability you need for this critical application. This is the modern way . . . the way that assures adequate interrupting capacity . . . that eliminates fire hazard. All breakers and associated equipment are completely enclosed in convenient, self-supporting "Unitized" structures to assure safety, flexibility, reliability. Contrast this with the old-fashioned installation shown at left, above—a type which is still being specified—and ask yourself this question:

*Which type of installation will best fit the buildings I design?*

For complete information on Westinghouse Low-Voltage Switchgear, send for Booklet B-2296-D. Address: Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pa. J-60733



**THE OLD WAY** . . . live front, with fuses, knife switches and air circuit breakers—a disorderly arrangement of equipment that introduces problems of safety, flexibility and service continuity.

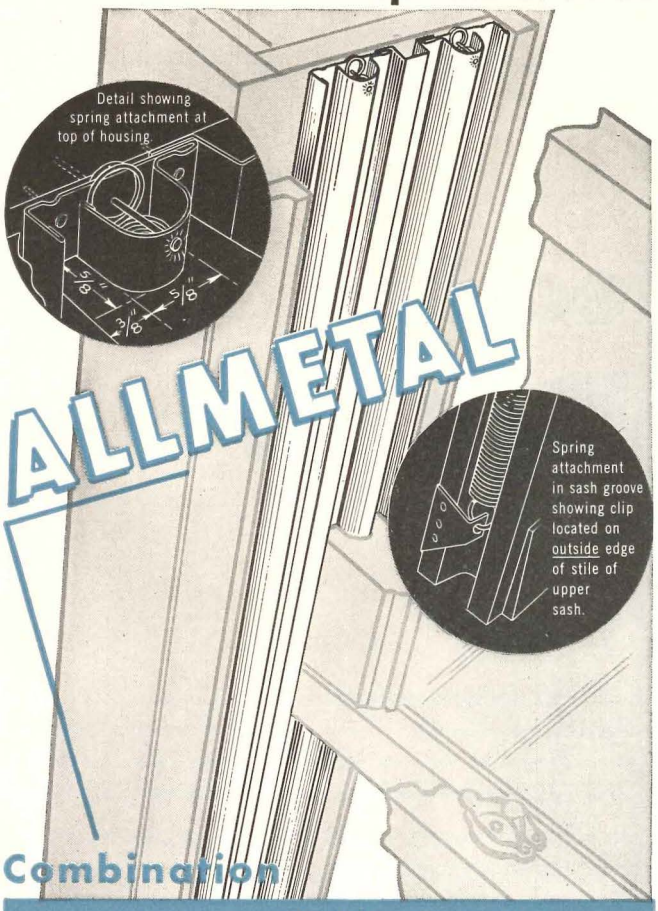


**THE MODERN WAY** . . . Westinghouse "Unitized" Low-Voltage Switchgear. Metal-enclosed air circuit breakers speed servicing . . . are interlocked to assure safety of personnel. All operations accomplished without exposing live parts.

Westinghouse

LOW-VOLTAGE SWITCHGEAR

# This is the way to balance windows . . . and weatherstrip them too!




## Combination SASH BALANCE AND WEATHERSTRIP UNIT

**Do two jobs at once on *any* double-hung window. Here is an installation on an economy frame giving an *all* metal sash run. Or simply "cap" old or new wood parting beads. Allmetal Sash Balance give *stable* sash — provides finger-tip control — cuts labor and material costs and provides better windows by weatherstripping as well as balancing. Send for complete information now.**

See Our Catalog in Sweet's File 18A / Architectural 1

**ALLMETAL WEATHERSTRIP CO.**
2239 North Knox Avenue, Chicago 39, Illinois

Gentlemen: Please send me complete information and prices.

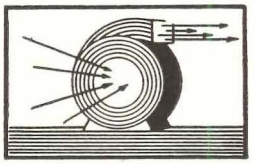
Name

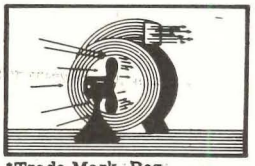
Address

City Zone State


## ONLY Blo-Fan* HAS THIS PATENTED BLADE . . .

. . . which combines both fan and blower principles. Its exclusive design gives Blo-Fan the volume of a fan plus the power of a blower in order to move more air—quickly, quietly with greater efficiency.





### HERE'S WHY!

*Seventy-five per cent of the air moved by a breeze fan is thrown from the blade tips. The center is weak when it meets resistance. A fan delivers volume, but lacks power.*

*A blower draws a smaller amount of air into the vortex, discharging it with great power, thus overcoming resistance. A blower delivers power, but lacks volume.*

*The Blo-Fan blade is designed so that the fan element feeds the blower element keeping the vanes fully loaded at all times. That's why Blo-Fan delivers more air with more power.*

*Trade Mark. Reg.

**SPOT VENTILATION AT THE POINT OF AIR POLLUTION**
**In kitchen, bath, game room and laundry**

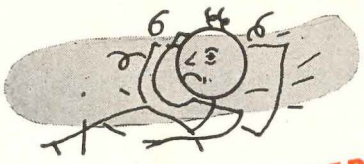
**FACTORIES:** Pomona, California; Newark, New Jersey
**WAREHOUSES:** Los Angeles, San Francisco, Chicago
Stocked by 500 wholesalers in more than 350 cities.

**PRYNE & CO., INC.**
Box R-6, Pomona, California

**A postcard will bring you complete Blo-Fan information and the name of your nearest distributor. See Sweet's File 29b-7.**

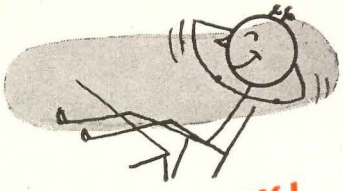
25th Anniversary Year

*Manufacturers of Pry-Lites . . . the modern recessed lighting fixtures with snap-on fronts.*



DON'T LOSE SLEEP!

DON'T LOSE TIME!

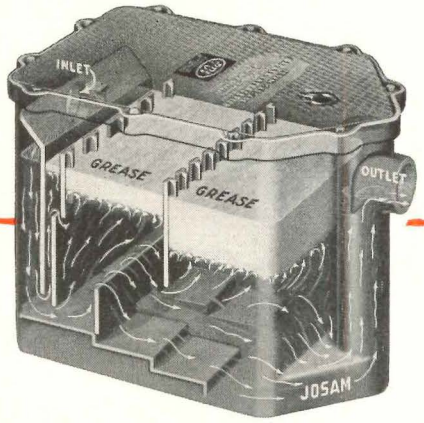


JUST RELAX!

# ALL YOU NEED TO KNOW IS THESE

# 2 FACTS

# to solve any PLUMBING DRAINAGE PROBLEM

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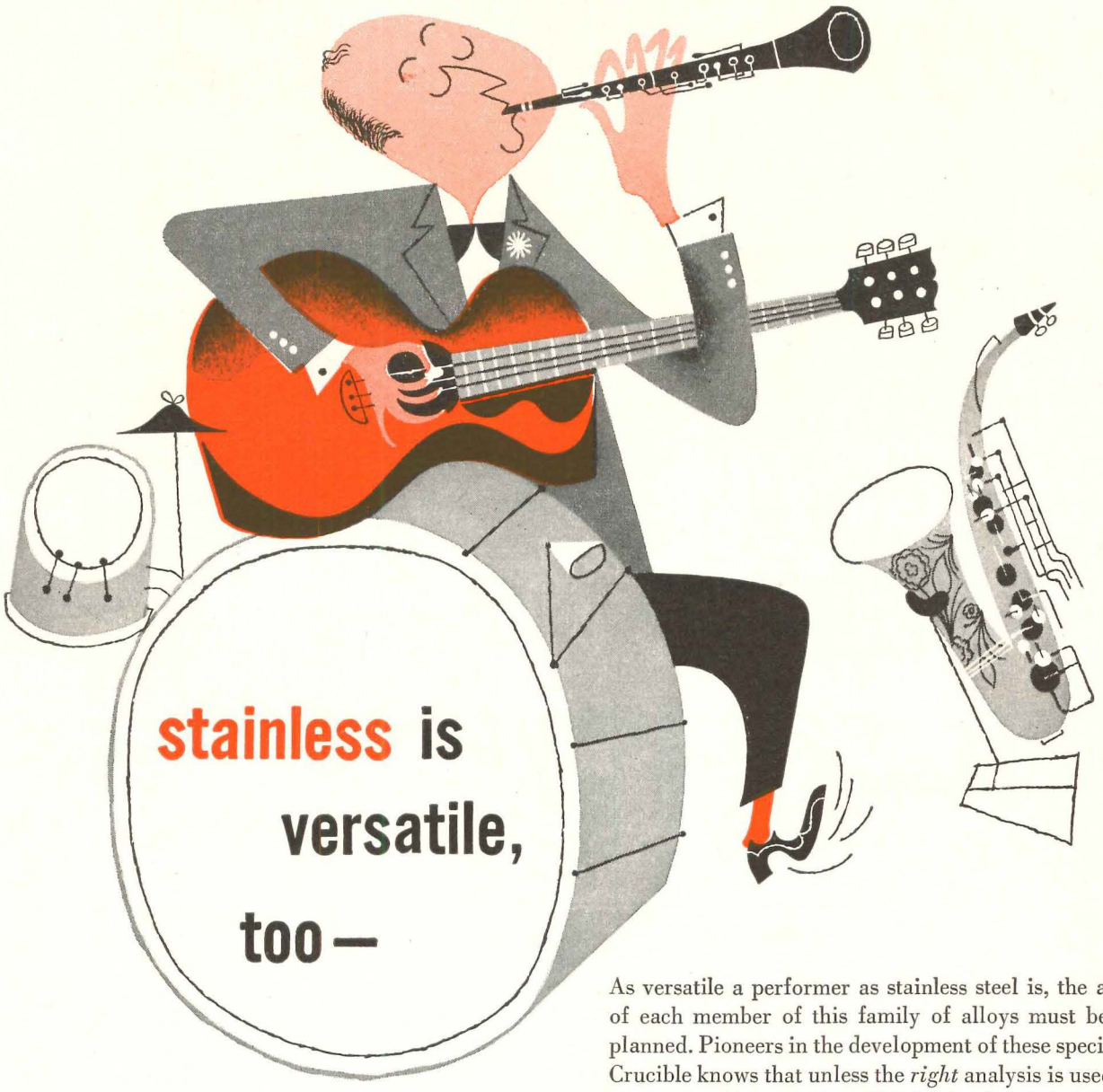


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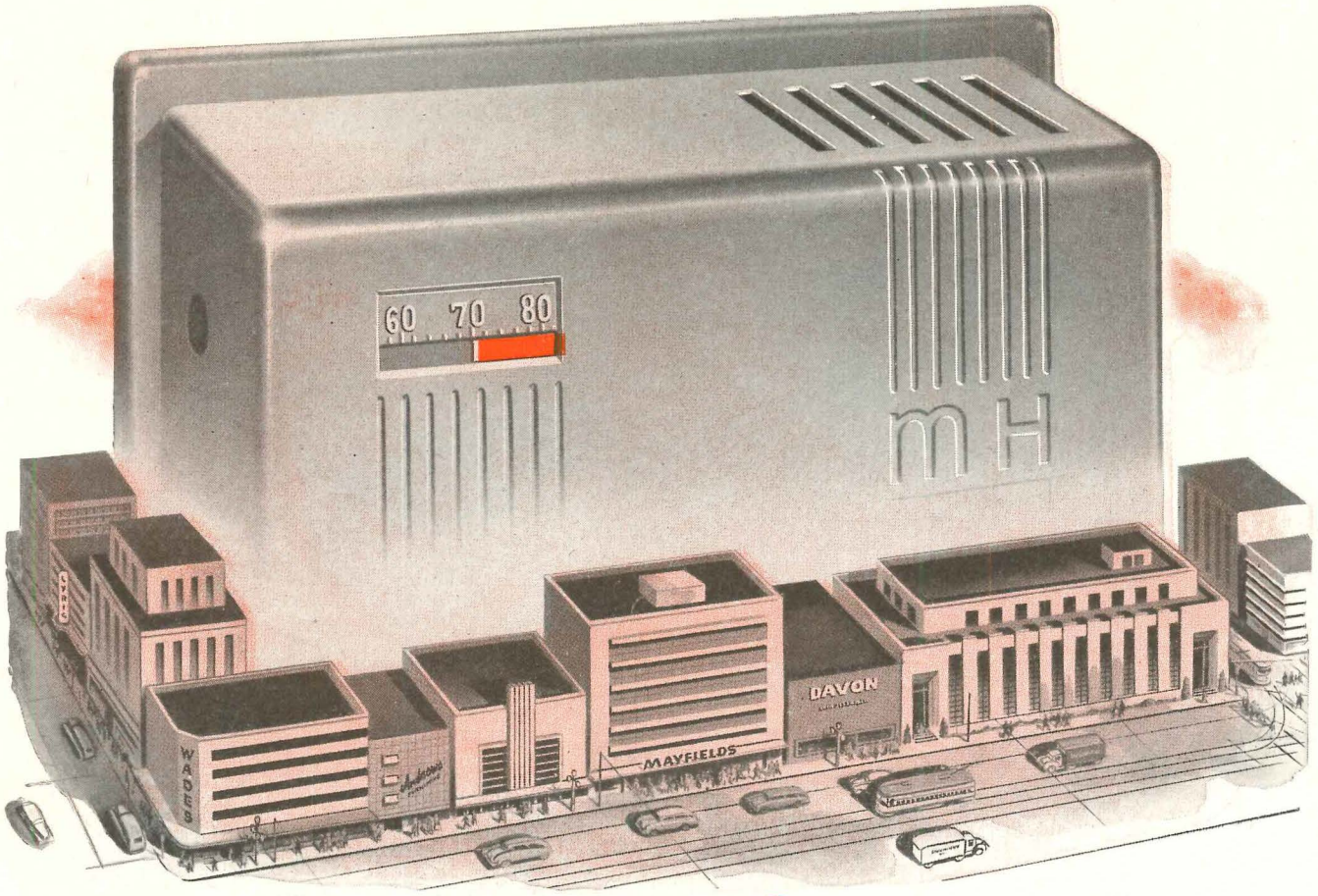


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77 BRANCHES FROM COAST TO COAST WITH SUBSIDIARY COMPANIES IN: TORONTO • LONDON • STOCKHOLM • AMSTERDAM • BRUSSELS • ZURICH • MEXICO CITY

# TOWARD MODERN ARCHITECTURE ON THE CAMPUS

IN THE STUDY that follows, we present several recent college buildings which evidence increasing acceptance of more advanced concepts for the design of campus facilities.

The current boom in college building programs has brought the question of "architectural character" squarely before Boards of Trustees and Regents throughout the country. It is a matter of prime significance, transcending the mere selection of a style to conform with or complement existing buildings. It must be resolved primarily on the issue of whether a college building is a background for educational activity or an instrument of education. This is not a question of glorifying the functional aspects and creating a machine for education; rather it is an underlining of the colleges' responsibility for educating the whole man.

Our colleges and universities are charged with a dual assignment — the dissemination of knowledge and the advancement of human thought. This thesis is as valid in the field of the arts of design as it is in the sciences, humanities and social sciences. The history and philosophy of architecture, properly interpreted, deserve an important place in the curriculum; but above this there is every reason for the college, through the buildings it erects, to demonstrate the development of architecture which must, of necessity, form such an important component of man's environment.

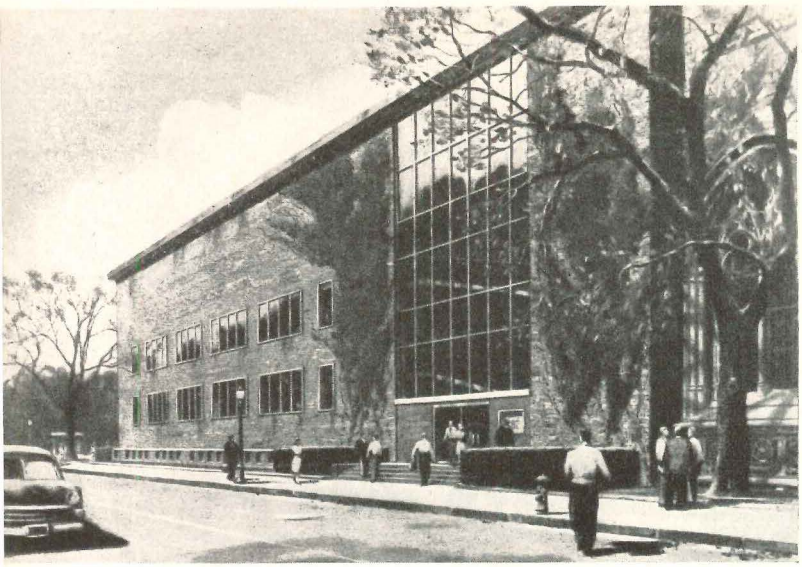
The problem faced by college authorities in guiding campus development must not be minimized. There are always the thousands of alumni who may have strong opinions one way or the other, and occasionally the donor who insists that his new engineering research laboratory be clothed in gothic or colonial garb, in order to harmonize with existing buildings.

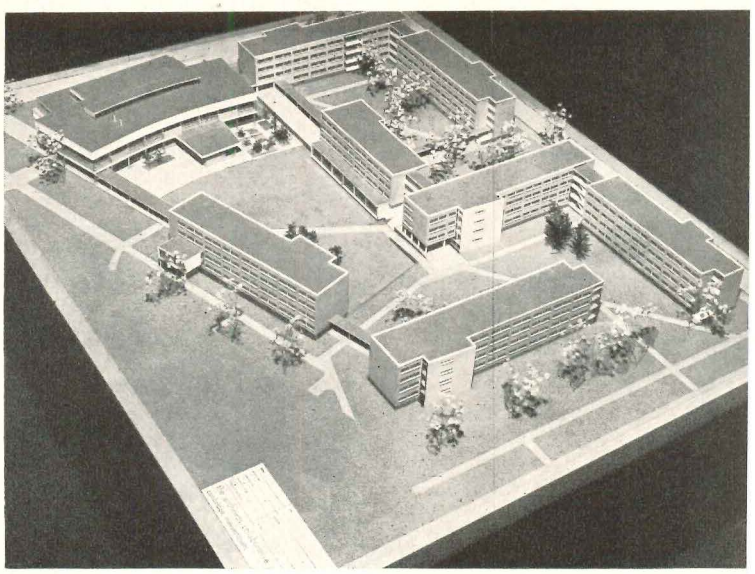
It is worth the effort, however, to press the point that harmony among the campus buildings is not a matter of repetition of existing forms and details, but may be achieved by skillful handling of materials, texture, color, and siting. Furthermore, the borderline between harmony and monotony is a very fine one. Contrast can be an asset to many a dull campus — particularly when the ivy sheds its leaves.

On many campuses where modern architecture has already taken root, the new buildings have been received enthusiastically by the people who use them most — students and faculty. This apparent ease of acceptance on the part of the academic population augurs well for the future. If at times the pace of architectural progress on the campus seems painfully slow, encouragement may be had from the thought that today's college students are the donors, trustees, alumni, and clients of tomorrow.

We predict, however, that long before today's students become tomorrow's donors, evidence of sound progress toward appropriate contemporary college building design will be visible on an ever-increasing number of American campuses.

Editor-in-chief





*Left, proposed addition to Yale University's Art Gallery; Philip L. Goodwin, architect. Right, Harvard's Graduate Center, now under construction; The Architects Collaborative*

*Architectural Record's Building Types Study Number 162*

# COLLEGE BUILDINGS

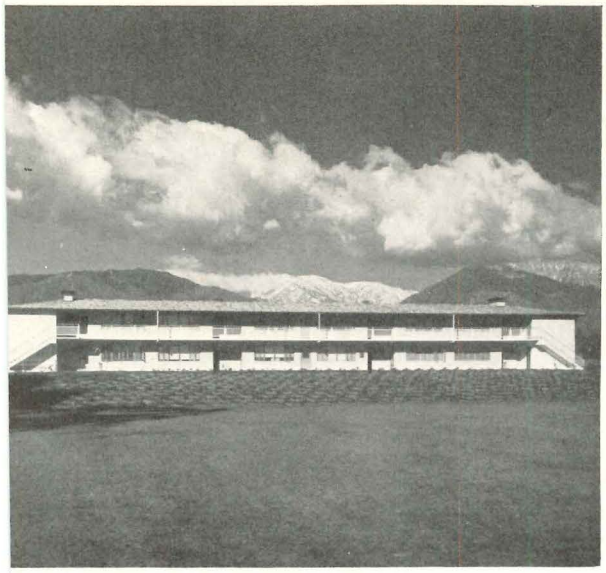
***The problem of college building design is not one, but several. A college or university requires classrooms, laboratories, dining halls, dormitories, stadiums, even stores and factories. It may be in a cold, hot, wet or dry region. It may be well established or brand new. Yet there is a common denominator, we believe, as this study indicates. The problems have recently been seriously complicated not only by the wave of post-war GI students, which is now subsiding; the country's general economic level being high, colleges are experiencing steady increases in enrollment which are expected to continue. One serious matter is a shortage of housing of all types. It is heartening, then, that the National Housing Act of 1950, just passed and signed by the President, contains in Title IV a provision for making loans to educational institutions for housing. Title IV is unusual. Under it, for the first time, HHFA is empowered to make direct loans (not merely to insure mortgages) for this specific purpose. The term for such loans is long — 40 years. The interest rate is very low. What constitutes "housing" is not determined by the Act, except that it must provide housing for students or faculty; it might include dining and other facilities; it might consist of single-family houses or huge dormitories. The total funds issuable at one time amount to only $300 million, which, though not a large sum, is expected to become a revolving fund. The only specific limitations require that construction be economical, that no "elaborate or extravagant design or materials" be used. HHFA is now hurriedly setting up machinery to cope with Title IV.***

## *Whence Come These Modern Buildings?*

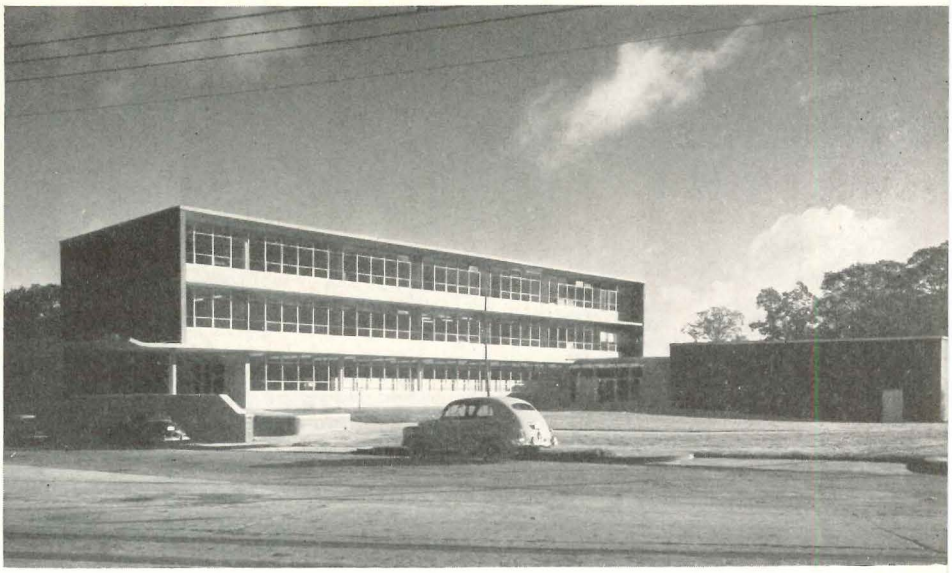
It is not so long since the first modern building on an American college campus caused a cyclone of controversy. It is barely a longer time since colleges and universities were concentrating on building stadiums, vast structures chiefly utilitarian, whose "architecture" was mere surface adornment. It is really very little time since the typical college building had to be a Georgian, Colonial, Collegiate Gothic, or possibly a Romanesque structure; and whatever its style, one was earnestly informed that the particular building under consideration was the true expression of collegiate spirit.

Look briefly through the illustrations here and on succeeding pages. Among the examples are some which are reminiscent of a campus or regional style, it is true; but none is the faithful stylistic copy of a few years ago; and many, possessed of that intrinsic style which comes only when a gifted architect labors faithfully to get the utmost out of the needs his building must meet and the materials he can employ, look like nothing ever

Robert Frampton Photo



Joseph Molitor Photo



*Left, dormitory, Claremont Men's College; Allison & Rible, architects. Right, Textile Engineering Building, Georgia Institute of Technology; Bush-Brown, Gailey & Heffernan, architects*

seen before on a campus. The buildings are various in purpose, in the degree of satisfaction with which they function, and in esthetic quality. Far from being isolated examples, they are merely a few representatives of many more now being designed or under construction on campuses all over the nation. Of course there are also many being built to conform to established stylistic concepts as well; but compare the quantity of non-stylistic college buildings now with that of a few short years ago.

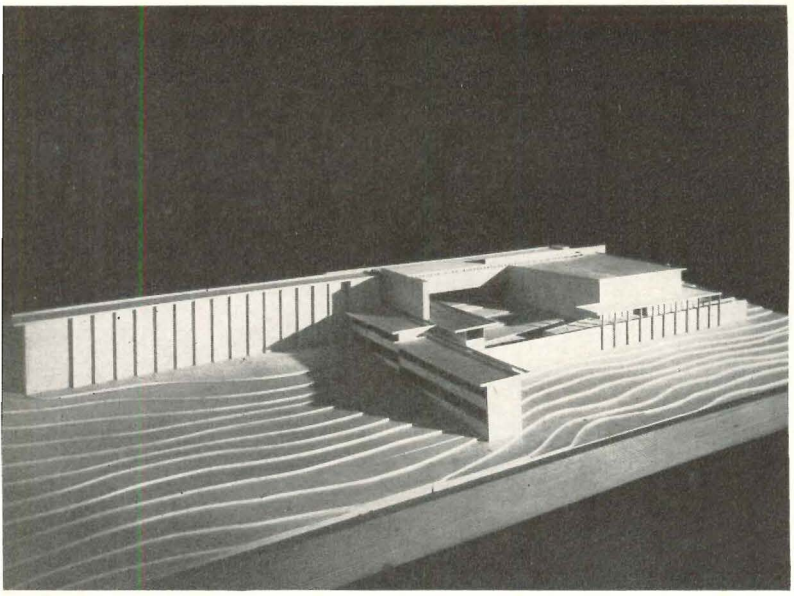
Well, what has caused this change in attitude?

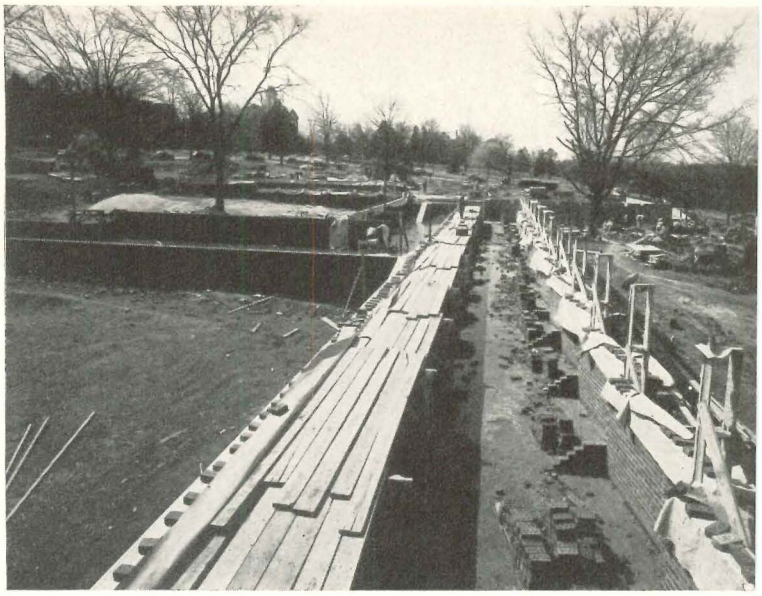
Superficially, there appear to be as many reasons as there are examples. In one case, economy may be paramount; costs of construction, equipment and maintenance have risen for college buildings as much as for any other type. A building lacking the complex surface adornment of Collegiate Gothic costs relatively less to build. That is obvious. Yet costs vary widely, and the reason for this variance must lie elsewhere than in architectural treatment. In a survey of 1949 building costs conducted by the magazine *College and University Business*, published in its January 1950 issue, dormitory construction costs ranged from $.52 to $1.62 per cu ft, laboratories from $.80 to $1.89; for several buildings, all on the same campus but for differing purposes, the range went from $.44 to $1.43. Geographical location, purpose, size and many other factors besides architectural design influence cost. Presumably the buildings all on the same campus had some architectural similarity. No, blind faith in one or another style of architecture as the most economical is faith misplaced; although it should go without saying that any good architect strives mightily to get his client a full dollar's worth of building.

Another favorite argument for contemporary design appeals to the pragmatist. It is functional, we hear; on the practical levels of convenience of layout, of furthering the business of teaching, contemporary buildings function well. So they do, the good ones. Remember also, however — and this at the risk of committing mental heresy — that the buildings at Oxford in England also function, and for their purpose function well. There, principles and often methods have continued unchanged for many more years than the life of the oldest American college. Tradition there has a function too, a function which, despite our protestations, can hardly be emulated by an American institution. The very atmosphere of education is different here. Should we continue to bolster our academic egos by copying an older country's physical institutions? It was natural once for us to follow. Should we now lead architecturally, as our forefathers pioneered in exploration, in commerce, in exploiting the machine? (And incidentally, how many of us know that Eton, another British school of strong tradition, possesses buildings designed by Marcel Breuer?) Yes, function has several meanings, not all of them pragmatic, and to function well is not the prerogative solely of the "modern" building.

One cannot deny the force of public opinion, of popular acceptance. Quite probably one true answer to our question is to be found here. Public familiarity with modern stores, office buildings, factories, hospitals and houses of course increases rapidly day by day, as more are built. What was a *cause célèbre* yesterday scarcely causes a raised eyebrow today, particularly since the war. Familiarity breeds acceptance. We find the Boards of Trustees of two institutions so widely separated as Vassar and the University of Arkansas each deliberately selecting an architect for his ability to design a good modern building.

Often enough to be disturbing, we must admit, such acceptance has the appearance of being nothing more than a nod in the direction of a current mode. Tuckasaug's new dorm is modern, so Tuskaroe's must be. Another cautious approach is evident in the determination to proceed half a step at a time, blending the



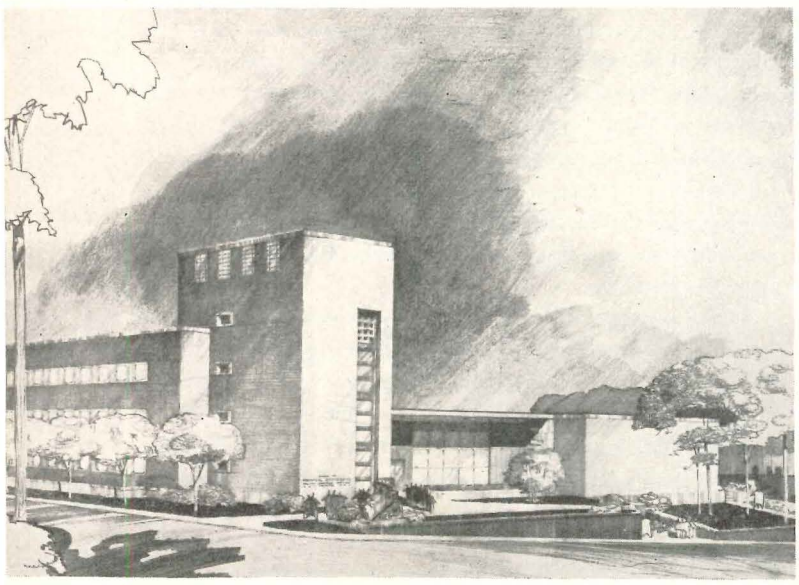


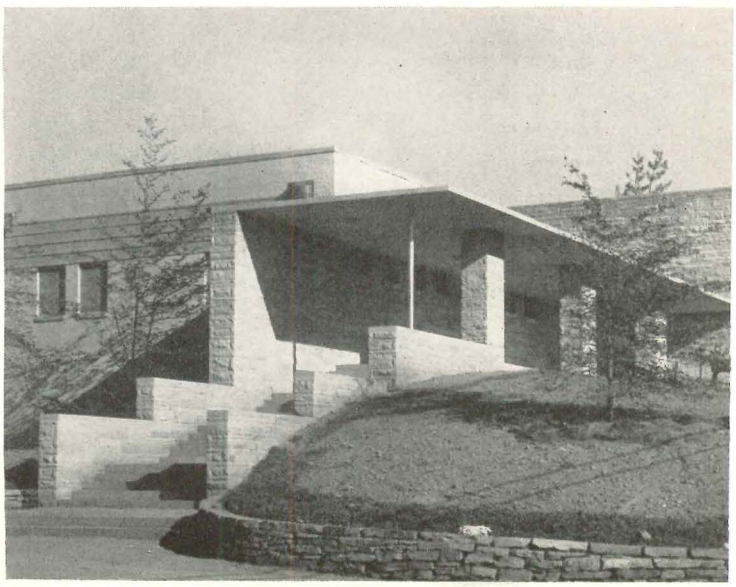
*Left, model; right, construction; Maryville College (Tenn.) Fine Arts Center; Schwiekher & Elting, architects*

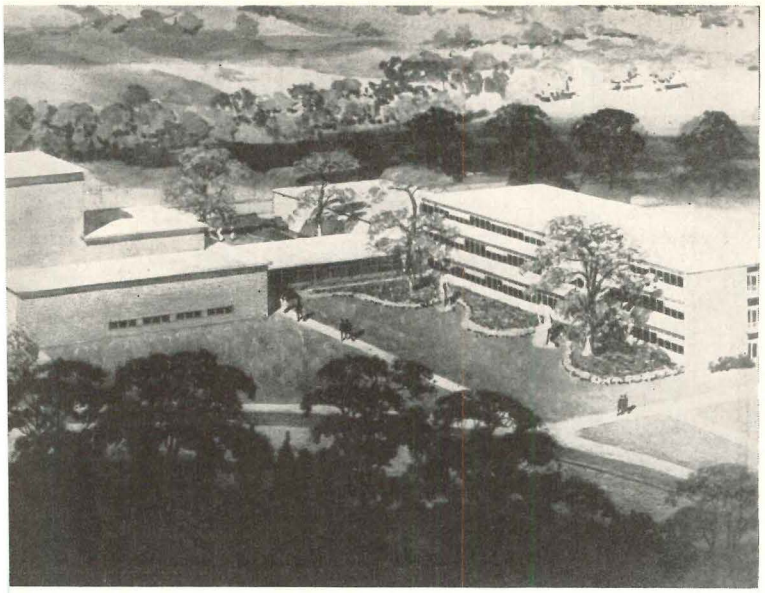
new "style" so imperceptibly into the old forms of existing buildings that an unappetizing architectural sawdust, much like unseasoned, crumbly hash, results. This is possibly the toughest architectural form the campus problem can take, but it can be licked. To make good hash one must season with both vigor and compassion. The architects of Claremont Men's College, shown in this issue, faced it in slightly different form. They had a campus virtually bare, encumbered only by a few minor structures destined for removal anyway, to embellish; but they had also a mandate to create in architectural harmony with a local Spanish-Italianate-Mediterranean inclination. Deprecatingly the architects have told us that other work of theirs is more vigorously modern; but they need not apologize. The Claremont buildings have ample strength of design; the bow to tradition does not hurt them; it is accomplished with a rare, complete understanding of the gorgeous site, the times, materials and the College's aims.

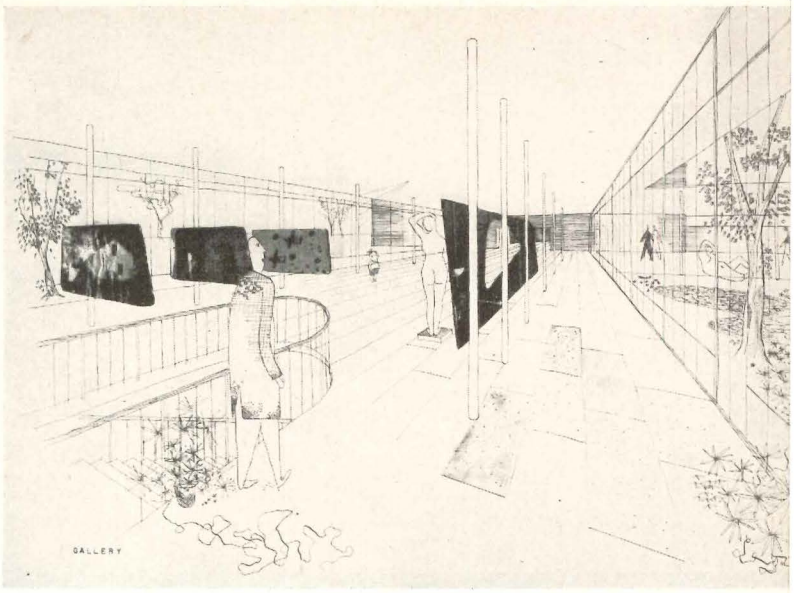
One wonders if the Board of Trustees and the donor who limit an architect unduly in such matters realize how close is their attitude to that of a political dictator who, unsure of himself esthetically, decrees that all building under his jurisdiction — which is *all* building, to his people — shall conform to a certain style. This has happened at least three times within recent years, in Italy, in Germany, in Soviet Russia. What is wrong about such a practice, in American college buildings as in the other countries named, is not so much the dead, level, heavy sameness of the results, nor even their

*Left, School of Industrial Administration, Wm. L. Mellon, Founder, Carnegie Institute of Technology; Marlier & Johnstone, architects. Right, Dining Hall, Rogers (dormitory) Center, Indiana University; Edward D. James, architect*










*Left, rendering; right, perspective of Gallery; Fine Arts Center, University of Arkansas; Edw. D. Stone and Haralson & Mott, assoc. architects*

architectural inappropriateness. It is the fear of advance, the denial of inquisitiveness, which they express.

And here we come at last, though deviously, to the heart of the matter. The only true scholar or scientist or researcher — or teacher — is the man possessed of an eternally inquiring mind. The thirst for knowledge is no idle phrase. If the student should be inquisitive, then should not the buildings which surround him, at least during the formal period of education, stimulate inquisitiveness as well as appreciation? We have yet to hear of a good modern college building which is not acclaimed by the students and faculty who use it, or who have seen proposed designs. Its substance is a challenge to their imaginations. Familiarity breeds not only acceptance but understanding as well, understanding that unless a college building expresses in its architecture the advancement of thought and dissemination of knowledge which are the college's reasons for existence, that building has in some degree failed to achieve its purpose. However well it may perform mechanically and physically, it fails to function philosophically or even spiritually. In a machine age this is a very real danger.

— *Frank G. Lopez*

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*Reprints of this study are being forwarded to the heads of approximately 300 colleges and universities, and to others concerned in the architecture of buildings for higher education, to acquaint them with a point of view which has been vehemently and repeatedly expressed by qualified members of the architectural profession.*

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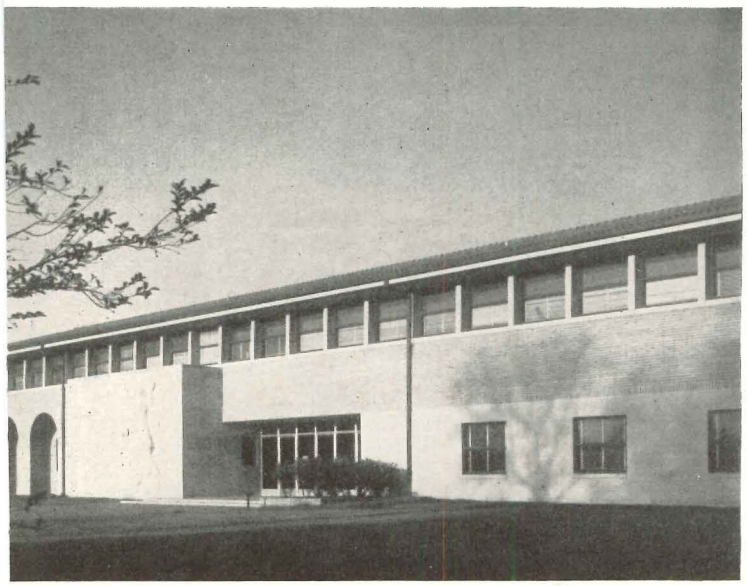
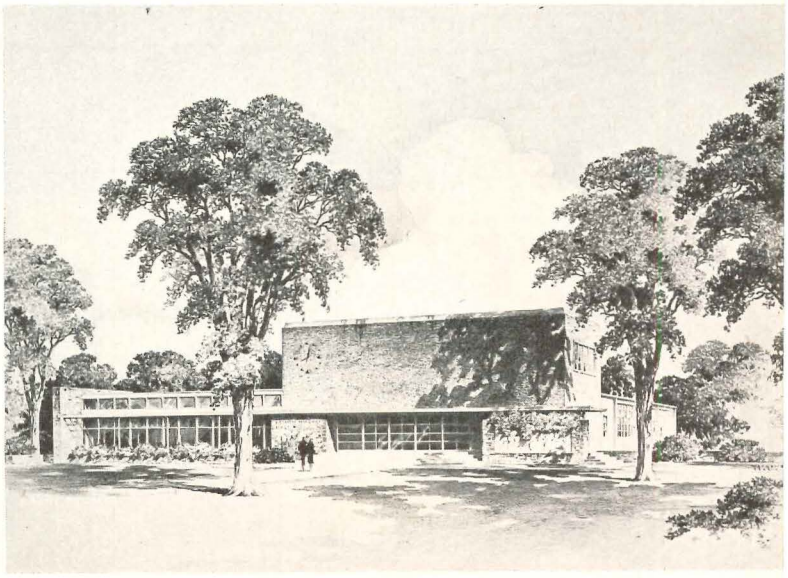
*Left, juncture between old and new Engineering Buildings, The Rice Institute; Staub & Rather, architects.*
*Right, new classroom building, Mt. Hermon School, Northfield, Mass.; James A. Britton, architect*





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# PLANNED FOR UTMOST CONVENIENCE

COLLEGE BUILDINGS

*Lakeside Dormitory*

*Mt. Holyoke College*

*South Hadley, Mass.*

*Office of Douglas Orr*

*Architect*

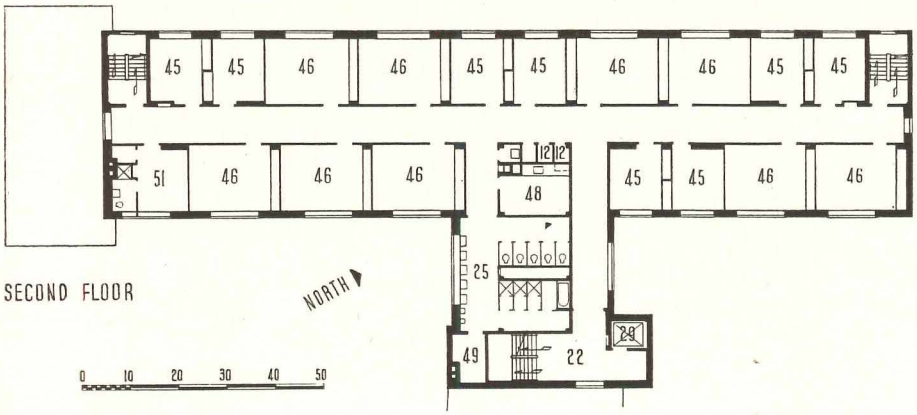
Joseph Molitor Photo

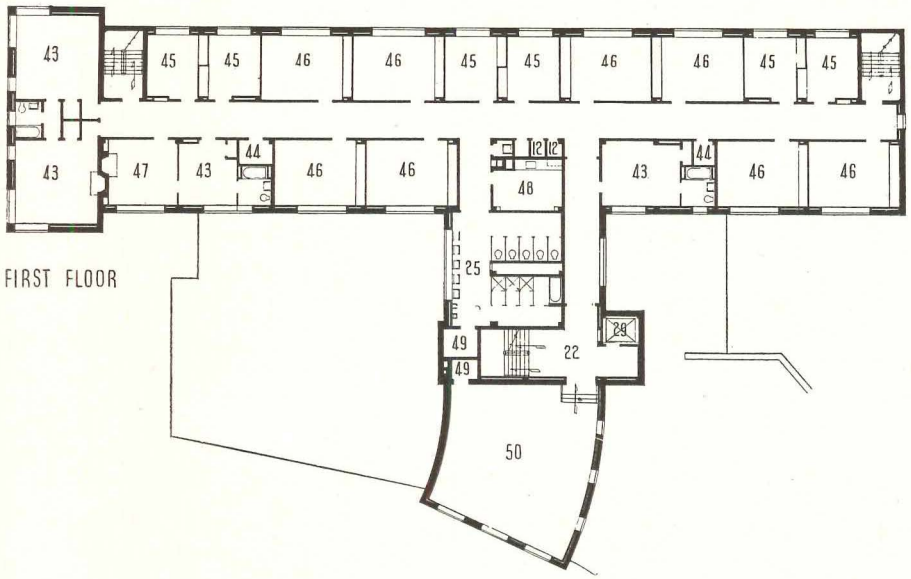
*Planned in every detail for the convenience of the girls who occupy it, Lakeside Dormitory was also economical to build. It consists of three units — four-story dormitory block, equally tall washroom unit which contains principal mechanical services, and low lounge-lobby-dining group in foreground. This permitted concentrating expensive mechanical installations and simplified structural design*

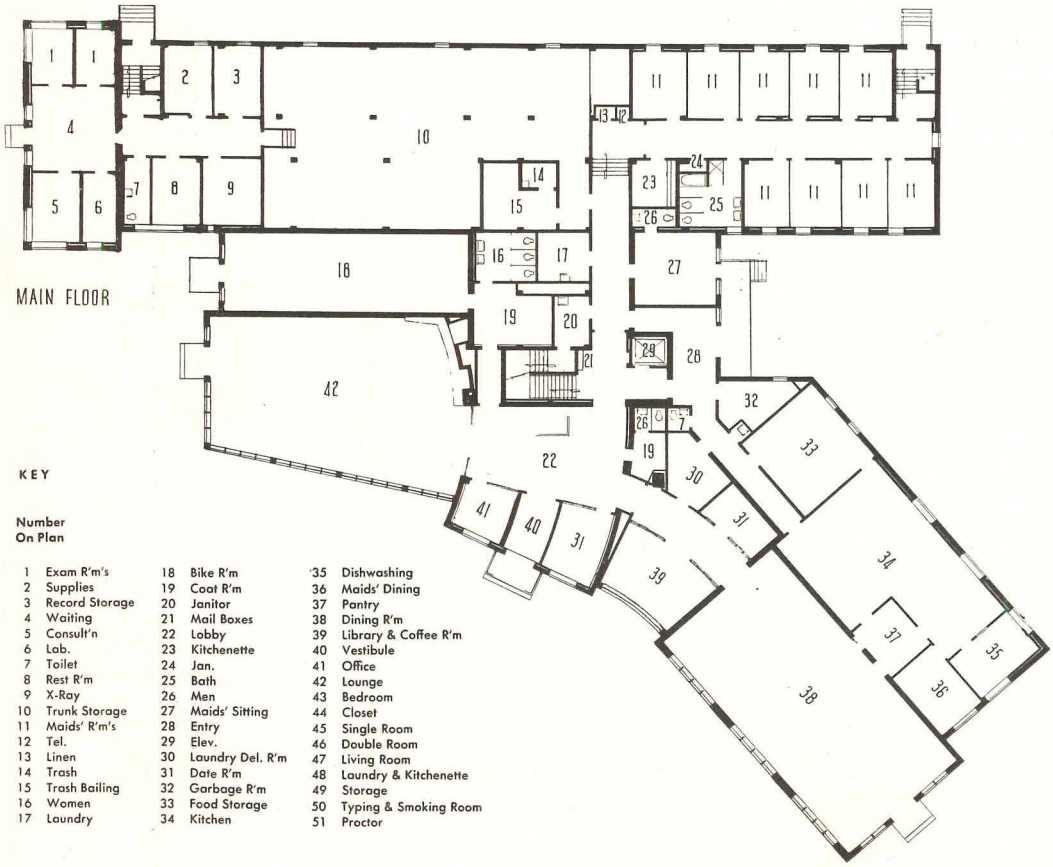
Joseph Molitor Photo

Weitner Aerophoto Service

*Lakeside, overlooking a small lake and waterfall, contrasts strongly with other Mt. Holyoke campus buildings*



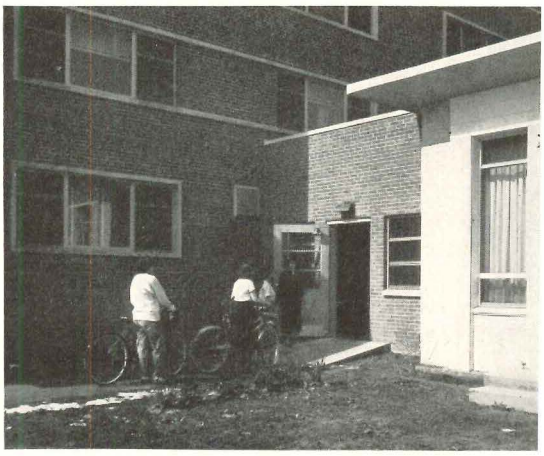




KEY

Number On Plan

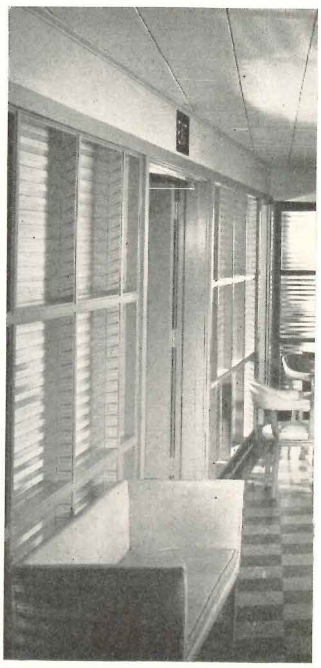
| | | | | | |
|---|---|---|---|---|---|
| 1 | Exam R'm's | 18 | Bike R'm | 35 | Dishwashing |
| 2 | Supplies | 19 | Coat R'm | 36 | Maids' Dining |
| 3 | Record Storage | 20 | Janitor | 37 | Pantry |
| 4 | Waiting | 21 | Mail Boxes | 38 | Dining R'm |
| 5 | Consult'n | 22 | Lobby | 39 | Library & Coffee R'm |
| 6 | Lab. | 23 | Kitchenette | 40 | Vestibule |
| 7 | Toilet | 24 | Jan. | 41 | Office |
| 8 | Rest R'm | 25 | Bath | 42 | Lounge |
| 9 | X-Ray | 26 | Men | 43 | Bedroom |
| 10 | Trunk Storage | 27 | Maids' Sitting | 44 | Closet |
| 11 | Maids' R'm's | 28 | Entry | 45 | Single Room |
| 12 | Tel. | 29 | Elev. | 46 | Double Room |
| 13 | Linen | 30 | Laundry Del. R'm | 47 | Living Room |
| 14 | Trash | 31 | Date R'm | 48 | Laundry & Kitchenette |
| 15 | Trash Bailing | 32 | Garbage R'm | 49 | Storage |
| 16 | Women | 33 | Food Storage | 50 | Typing & Smoking Room |
| 17 | Laundry | 34 | Kitchen | 51 | Proctor |

*Upper floor plans show sanitary facilities pulled forward of dormitory block, which permitted using repetitive concrete framing and slabs for four-story portions, thus cutting cost; it also keeps bathroom noise out of bedrooms. One-story area is steel-framed. Suites at ends of dormitory floors are for guests. On first floor, Entry (28) handles all services: trunks to and from elevator, food to and garbage from kitchen, girls' laundry and dry cleaning, baled trash and paper. At south end of first floor is a special health unit; building help's rooms are at north end. Wilcox, Erickson and Pfisterer were structural engineers*



*Bike entrance handles much traffic*

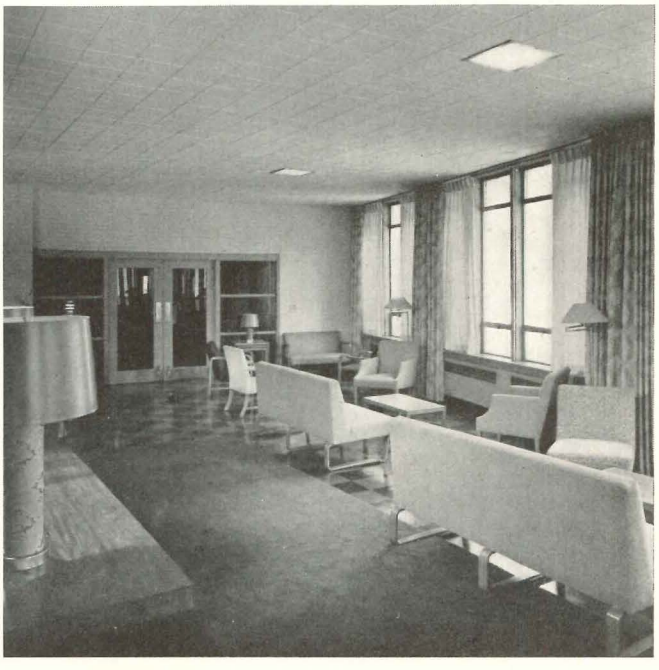
*Lobby*



*Fireplace end of Lounge*

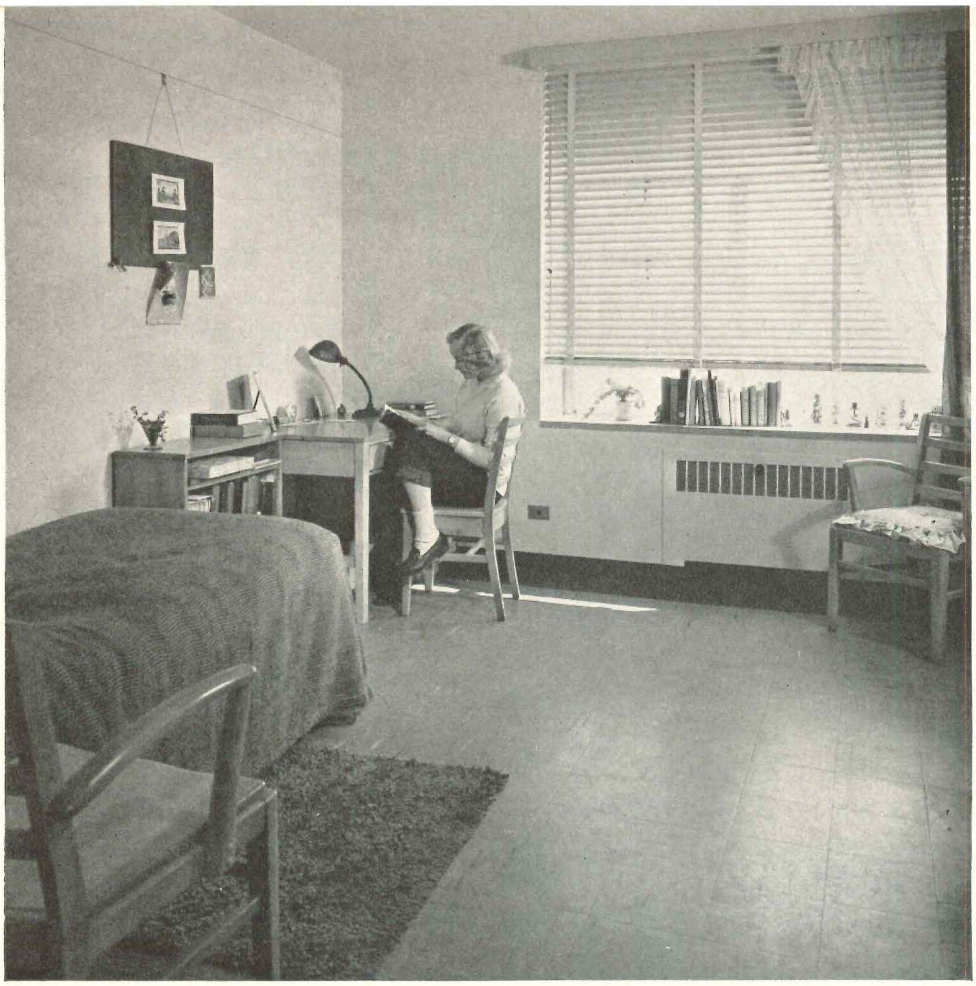
Joseph Molitor Photos

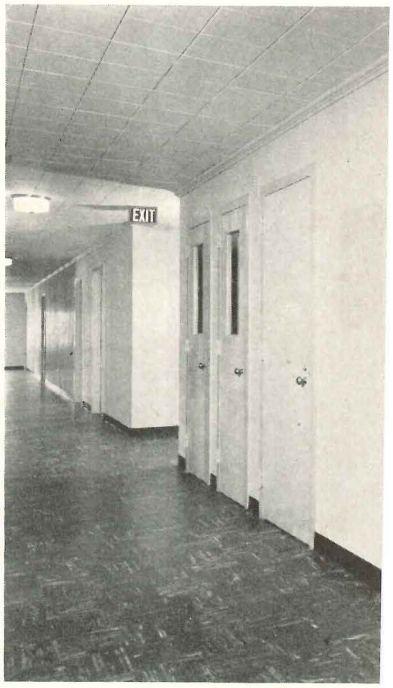
*Lounge, looking toward Lobby*

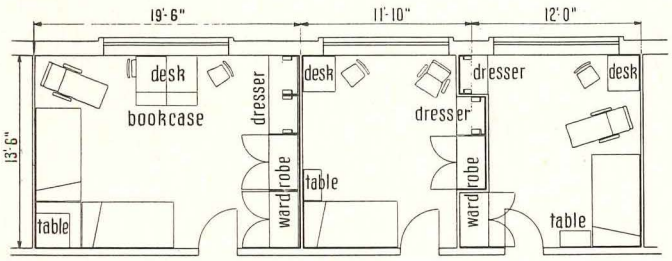


## LAKESIDE DORMITORY

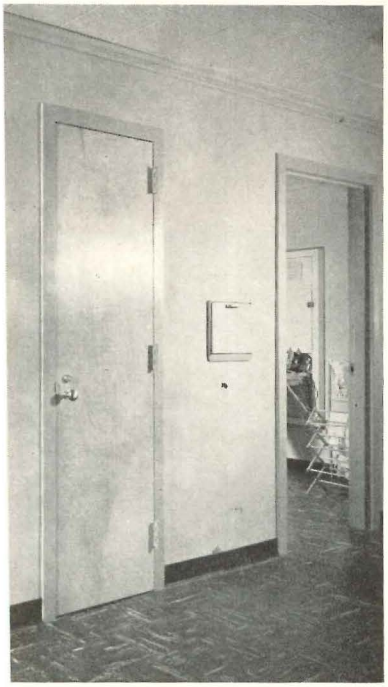
Joseph Molitor Photos

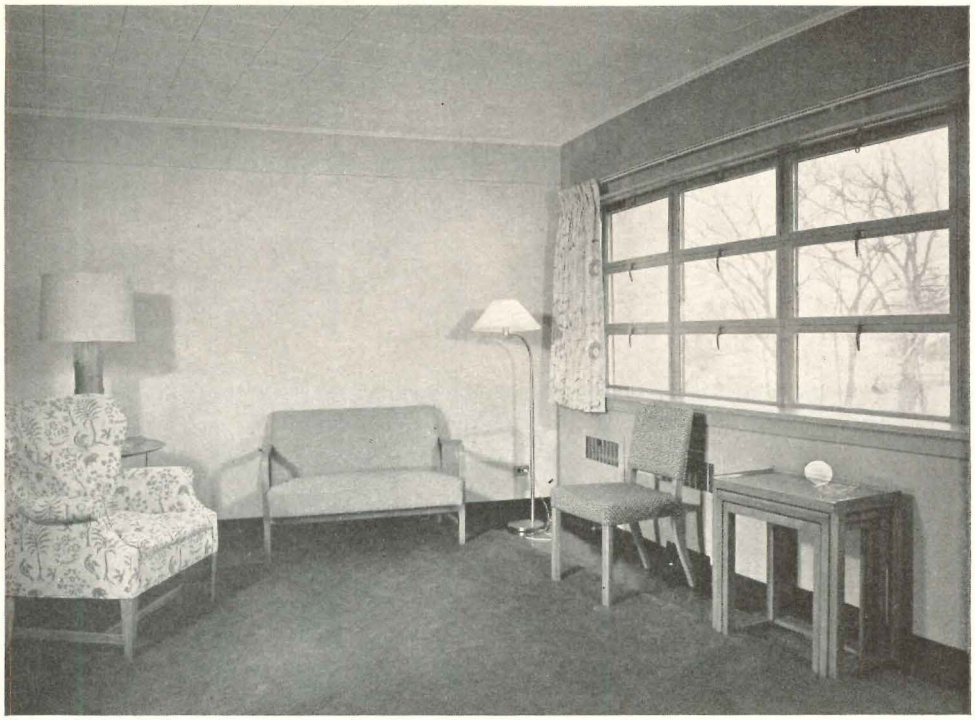




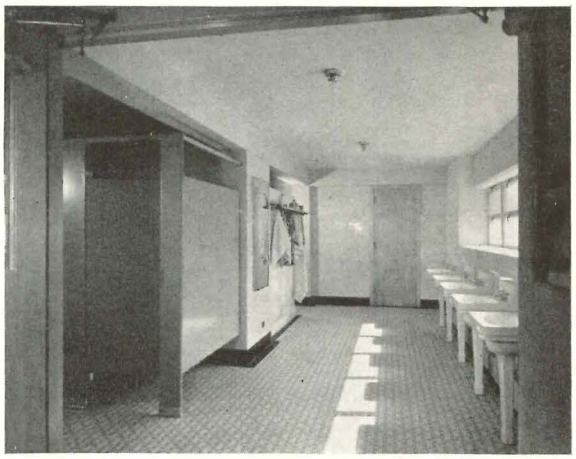

*Use of built-in wardrobes between dormitory rooms cut down amount of partitioning, saved on over-all length of structure and on plastering. Typical room and dormitory corridor are shown above: floors are asphalt tile, walls plaster, ceilings concrete, rubbed and painted. Below, left, is Dining Room, from which there is a pleasant view over the lake. Center, second-floor Smoking and Typing Room*





*In Library and Coffee Room groups gather on way to meals*

*Walls of the building are select common brick backed up with cinder block; metal work is lead-coated copper; roof is built up; insulation is glass fiber. Lounge walls are finished in birch panelling and brick; other walls are painted plaster. Windows are steel. Floors are terrazzo in lobby and kitchen, rubber tile in public area; kitchen walls are tiled. Service yard has radiant heat for snow melting*



*Typical washroom serves each dormitory floor*

*Food comes to the kitchen from the college Commissary*

PREP SCHOOL BUILDING

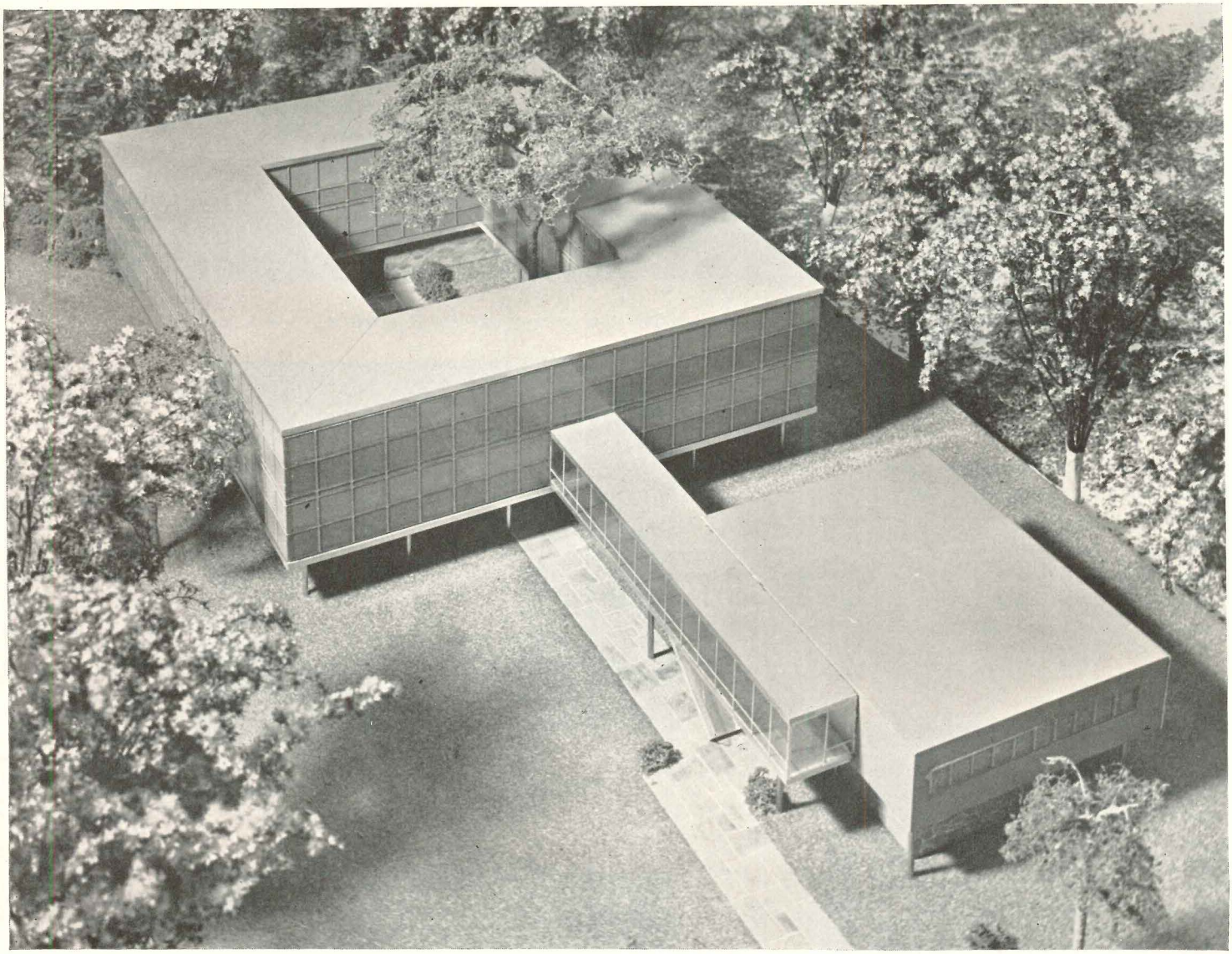
# DORMITORY CONTAINS TWO-ROOM APARTMENTS

*Kiskiminetas Springs School*

*Saltsburg, Pa.*

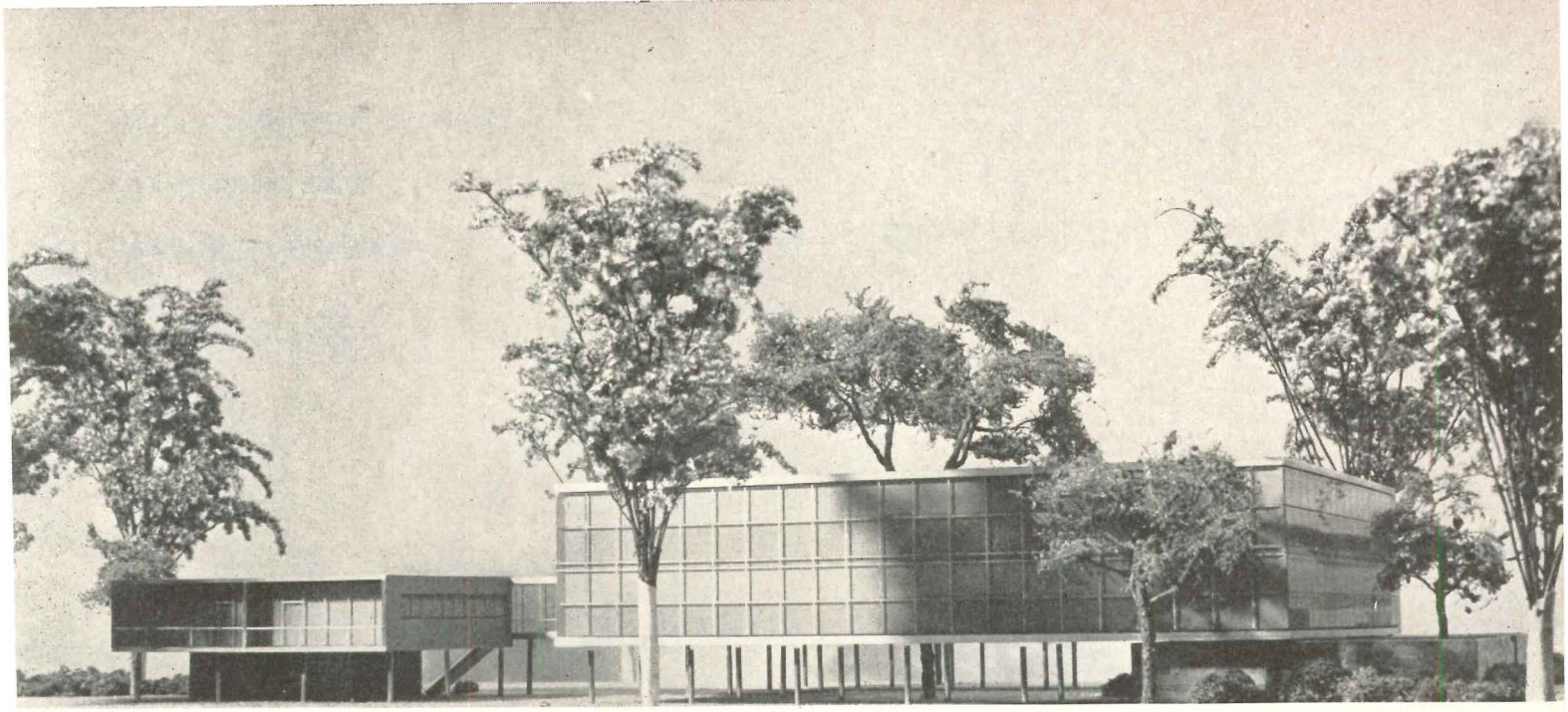
*Hunter, Caldwell & Campbell*

*Architects*

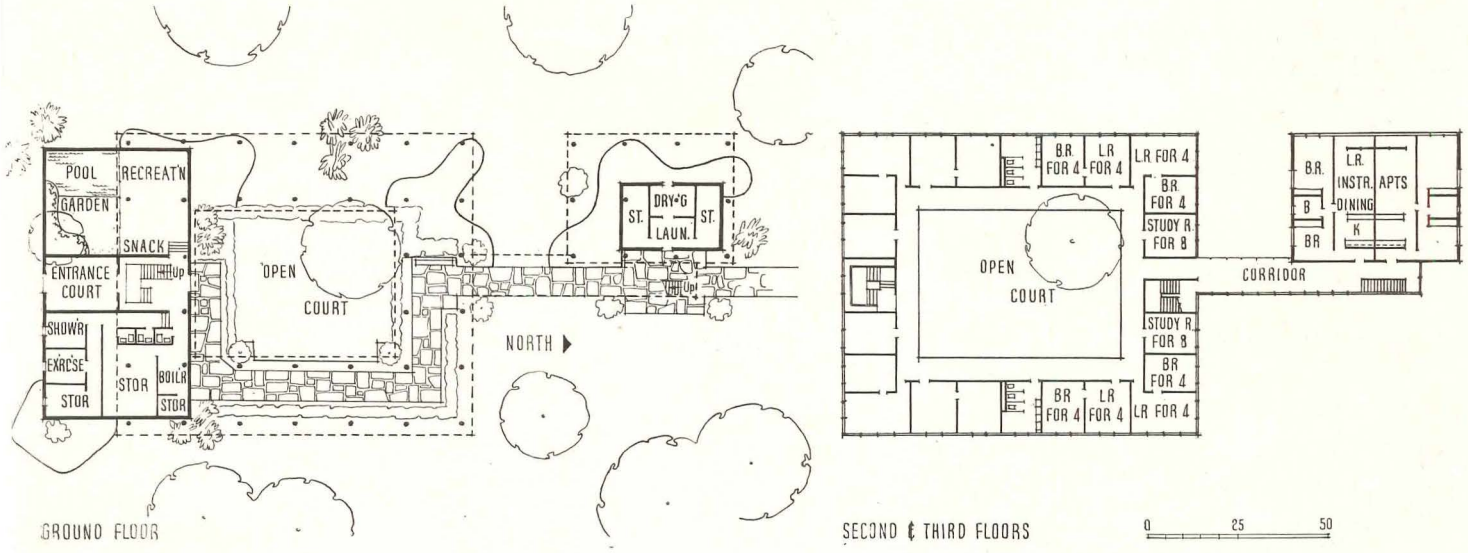


Model by Conrad; photos, Don Metz

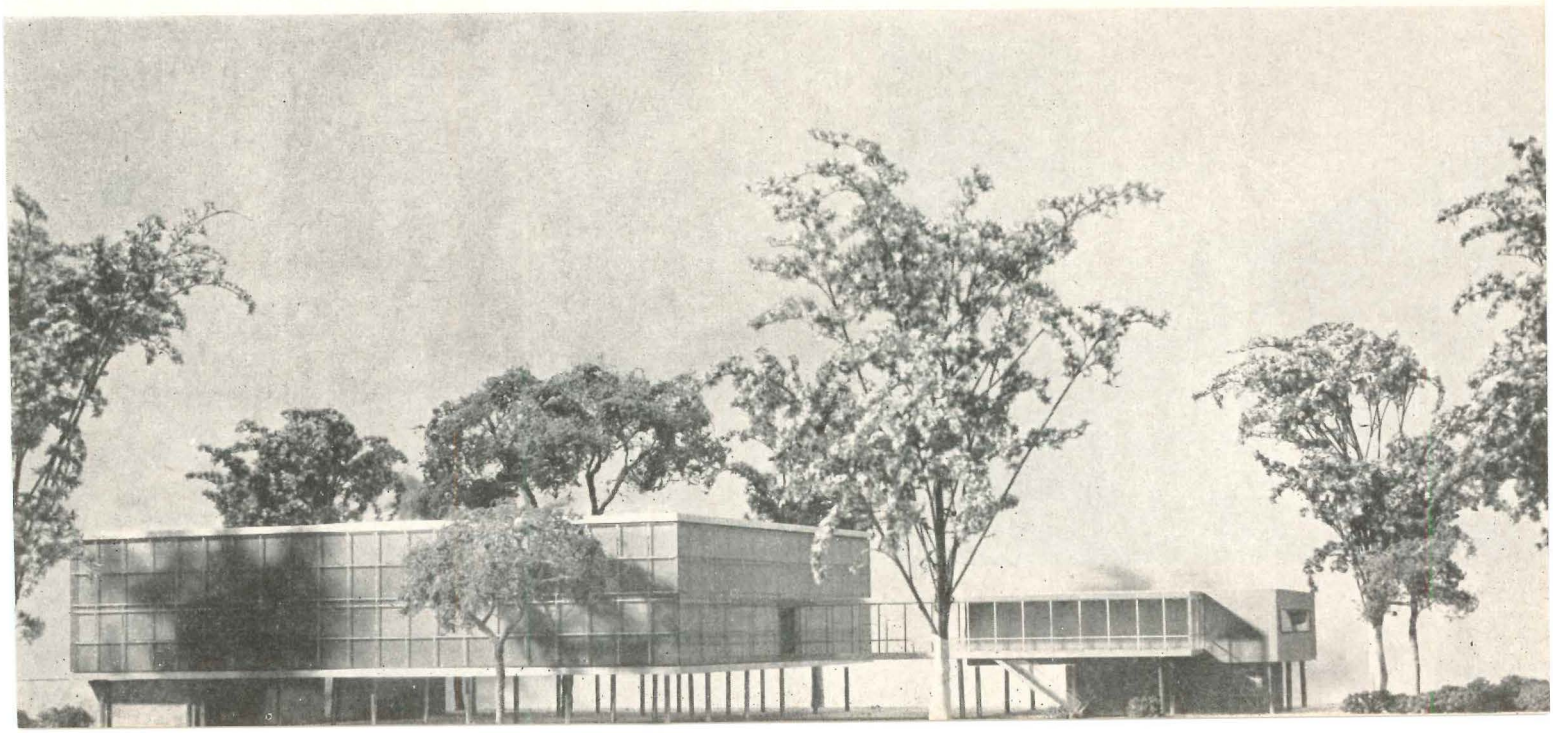
ALTHOUGH this is a dormitory for a preparatory school, so well does its architecture reflect the school's teaching methods that it has much to contribute to this study. In Kiski only one subject is taught at a time, with a review period in spring. "Homework" is done during study hours. Under construction, this is the first of six dormitories; the campus will also have a new field house, chapel, dining hall. Each dorm has apartments for 64 boys, and for two married and two bachelor teachers.



Construction: light steel frame, radiant-heated concrete floors, exterior walls all glass




Design, to exploit fully the beautiful site, necessitated extensive study of spandrel wall construction



# POSTWAR DORMITORY GROUP

*COLLEGE BUILDINGS*

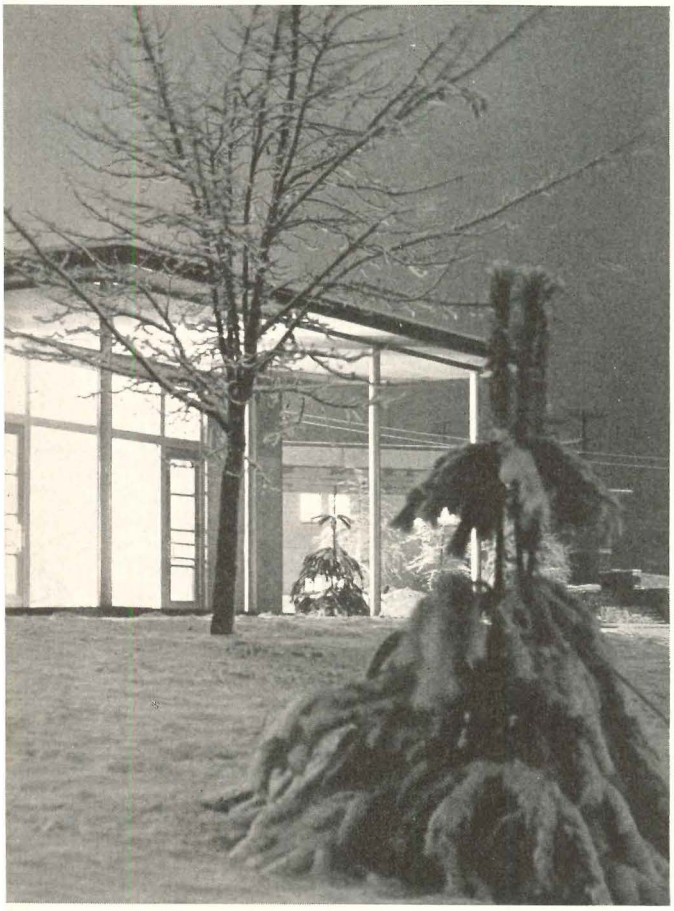
***Rogers Center Residence Halls***

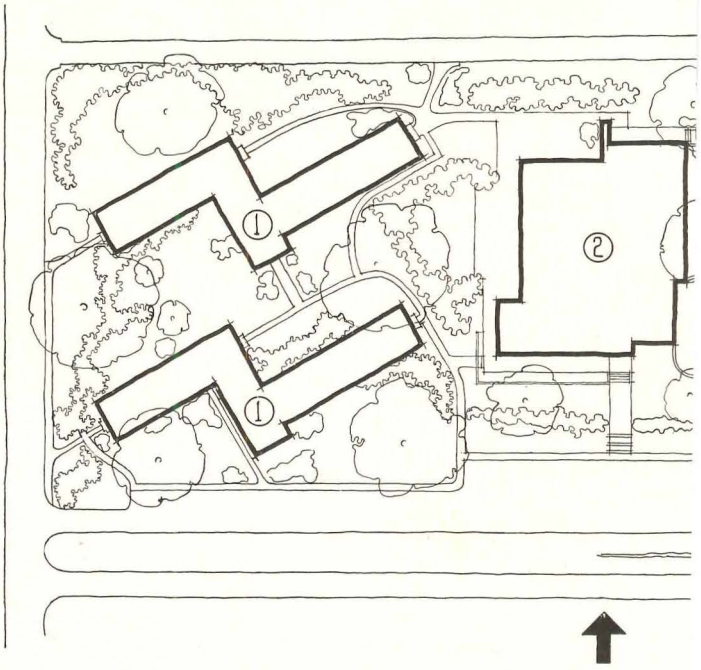
***Indiana University***

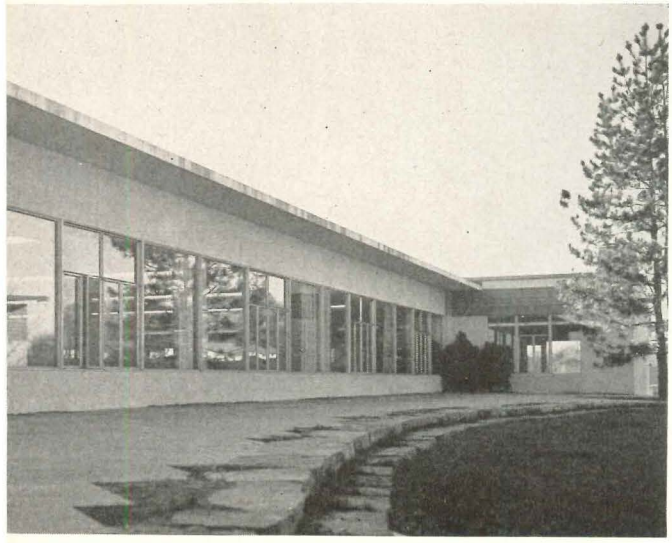
***Bloomington, Indiana***

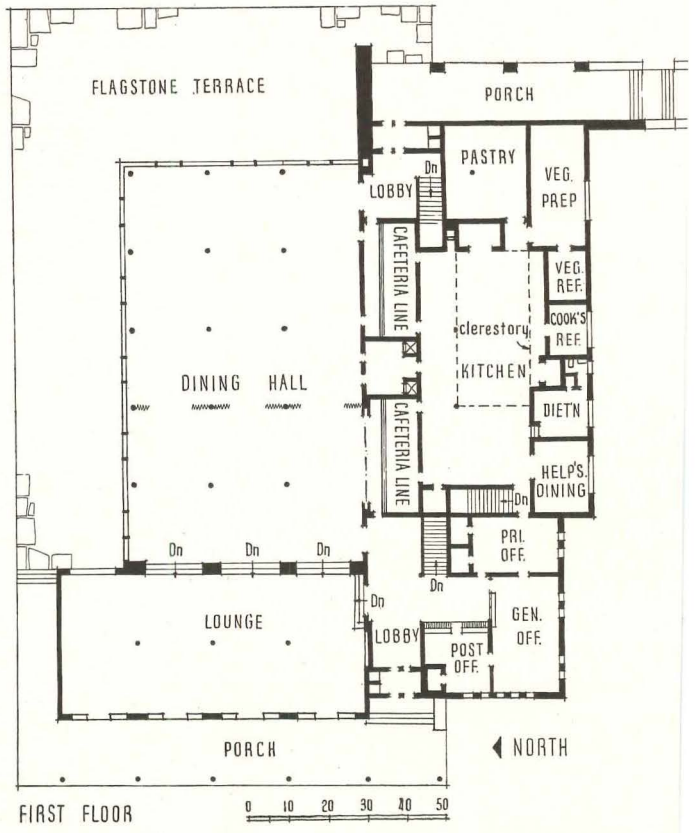
***Edward D. James***

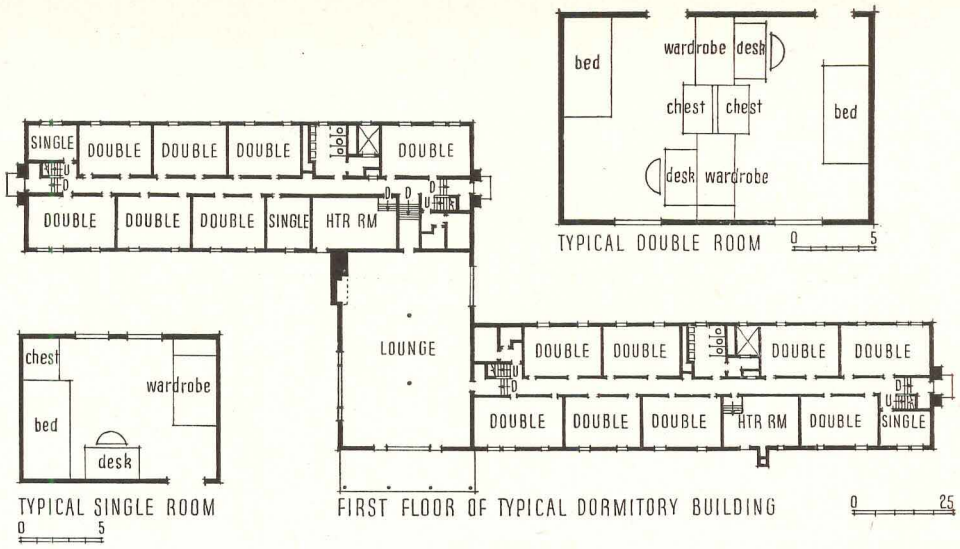
***Architect***

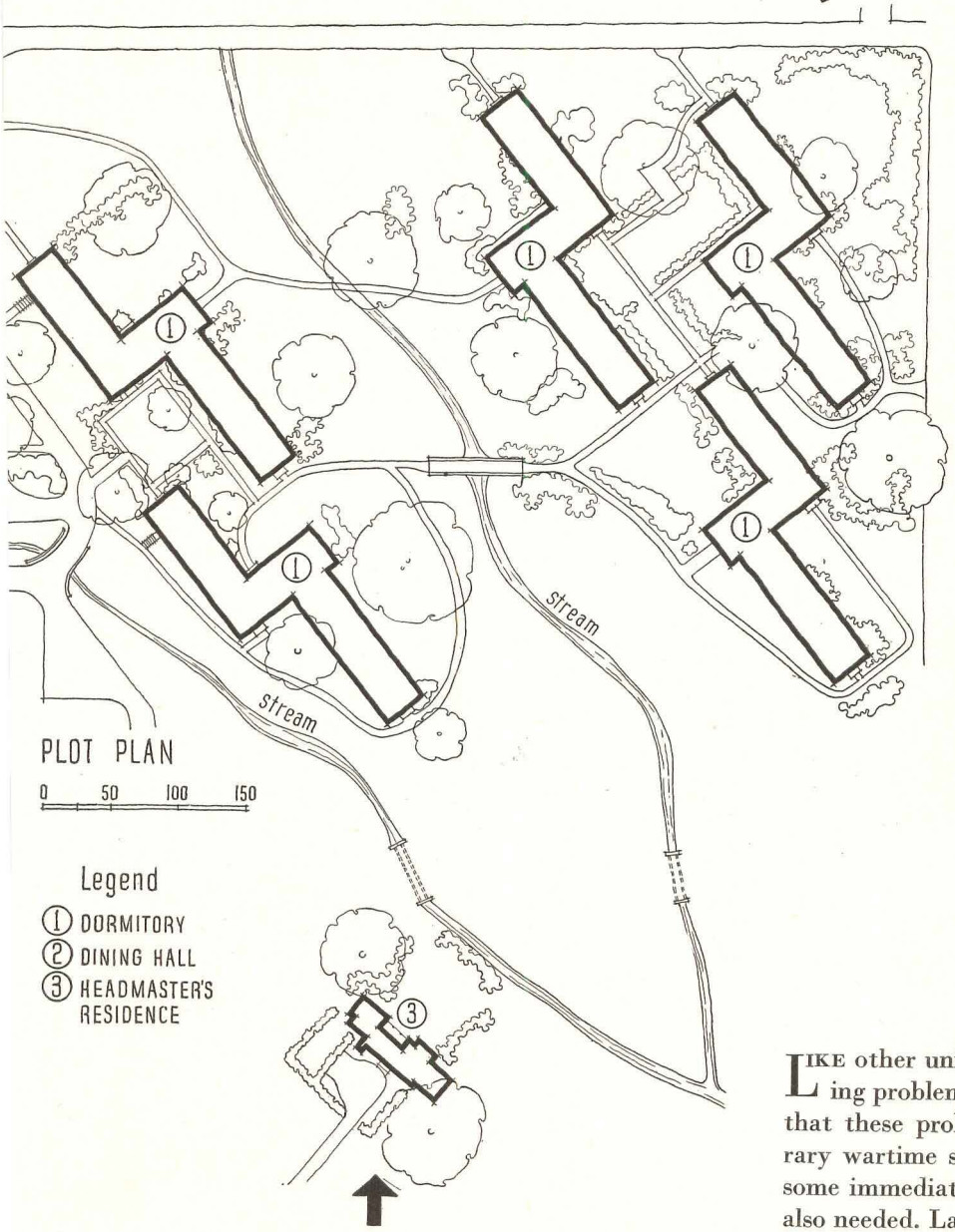




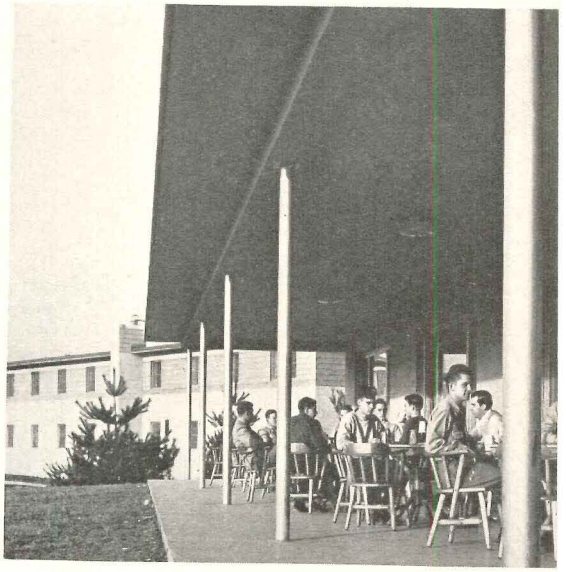



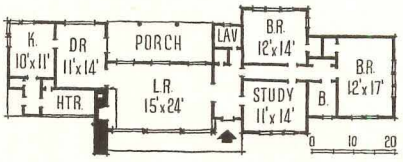




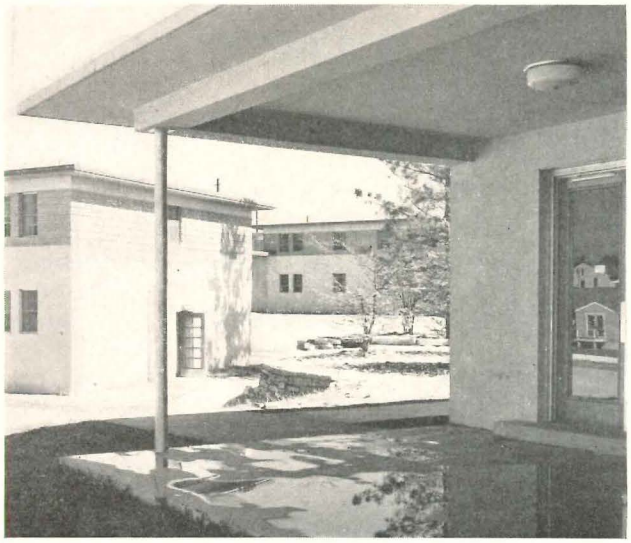

*Typical hall (above): two-story wings, one-story lounge between. Doubled up, Center has housed 980 men students; central dining hall (facing page) has fed 1700 per meal*

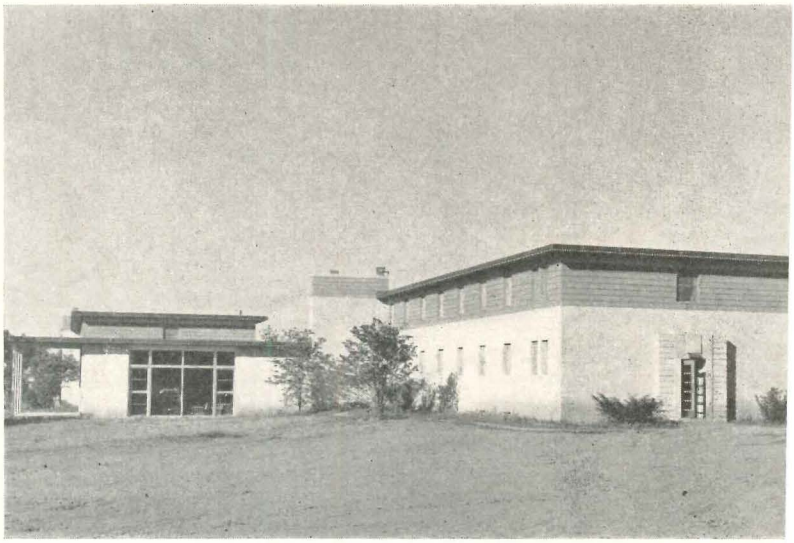


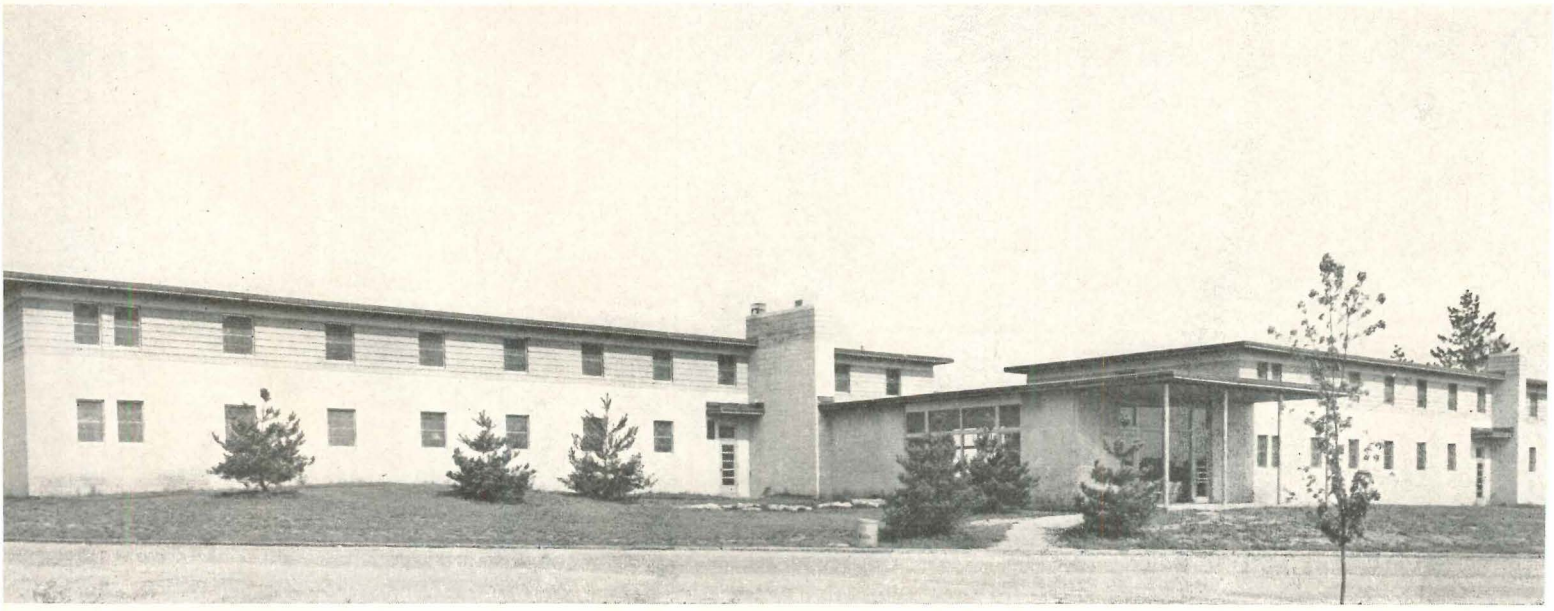



LIKE other universities, Indiana had tremendous housing problems after World War II, and it was realized that these problems would change. Converted temporary wartime structures and a trailer village answered some immediate demands, but permanent housing was also needed. Large, more conventional dormitories were started; yet these took time. A graduate center would be needed soon. Hence Rogers was built for use at double capacity during the postwar peak; it is now in process of conversion to graduate student housing. The first three units of Rogers Center were occupied seven months after design started.

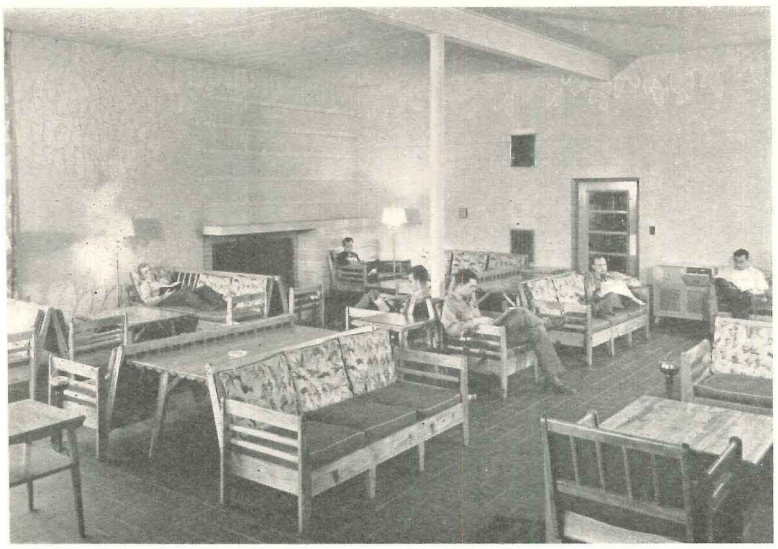
## ROGERS CENTER, INDIANA UNIVERSITY







The halls' roofs and floors are precast concrete; walls are cement block painted warm buff with second stories cement brick, painted terra cotta. Interiors are exposed cement block painted in various colors; floors, asphalt tile and quarry tile; ceilings in general areas, acoustic tile. Lights are fluorescent; air for heating is warmed by steam from the University plant. Cost was low: including furnishings and at doubled capacity, $1500 per student. E. P. Bardwell represented the University as postwar planning coordinator; Frits Loonsten was landscape architect; Ammerman, Davis & Stout were mechanical engineers.



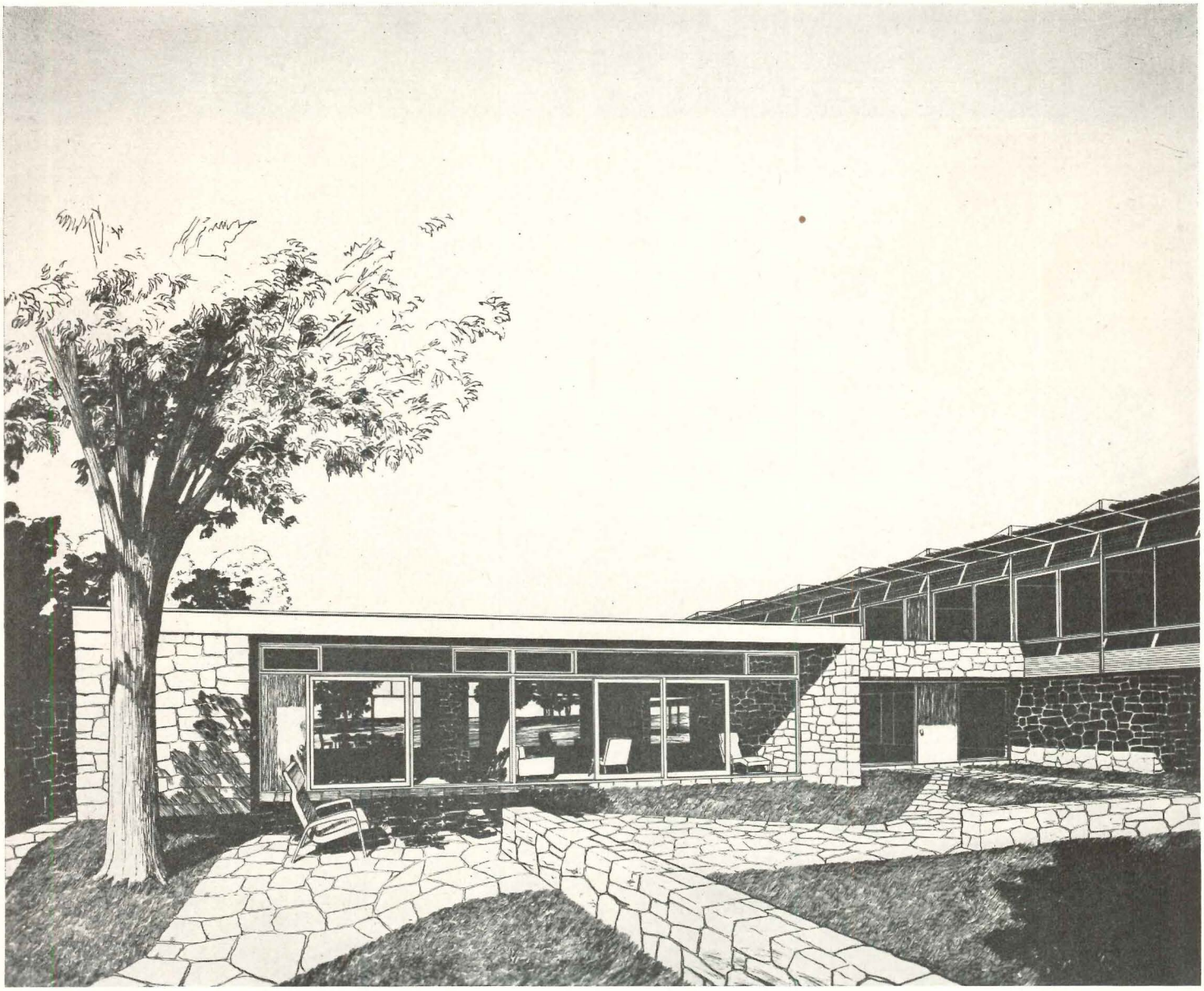
*Above, facing page, two dormitories seen from dining hall terrace; exterior, typical residence hall. This page, interiors, residence lounge. Below, central dining room, on two levels with folding partition so lower level can become lounge. The small, basementless buildings have proved very comfortable and efficient as well as economical and quick to build*

# FOR PRACTICE IN HOUSEKEEPING

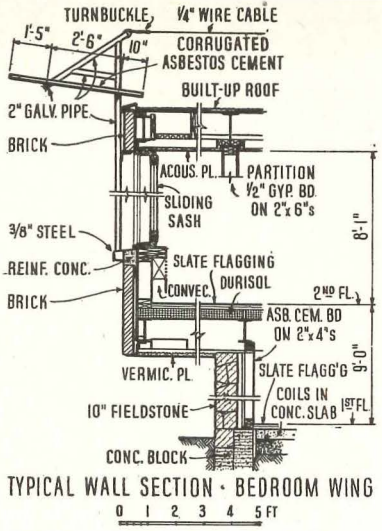
*COLLEGE BUILDINGS*

*Cooperative Dormitory*
*Vassar College*
*Poughkeepsie, N. Y.*

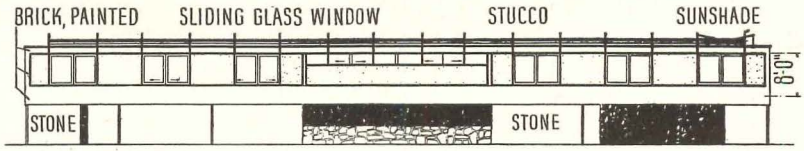
*Marcel Breuer*
*Architect*



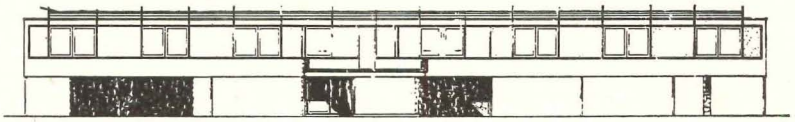
VASSAR, of high reputation as a women's college, has little place in its curriculum for the domestic arts. Its Cooperative Dormitory has been fulfilling that function for some time; residents literally run their own household, ordering, cooking, cleaning, washing, etc. The Co-op is extremely popular, but until recently it was housed in an old converted building, somewhat isolated, so that Co-op girls felt somewhat out of things. To integrate the Co-op more completely with the college, its new building is being started for occupancy next fall.



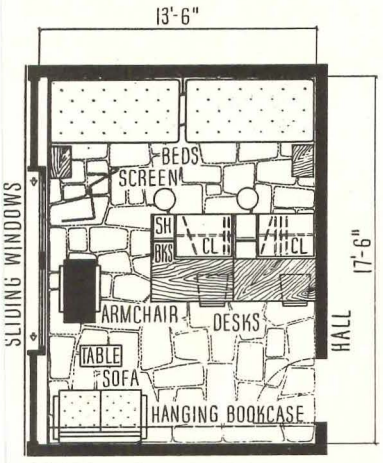

TYPICAL WALL SECTION · BEDROOM WING



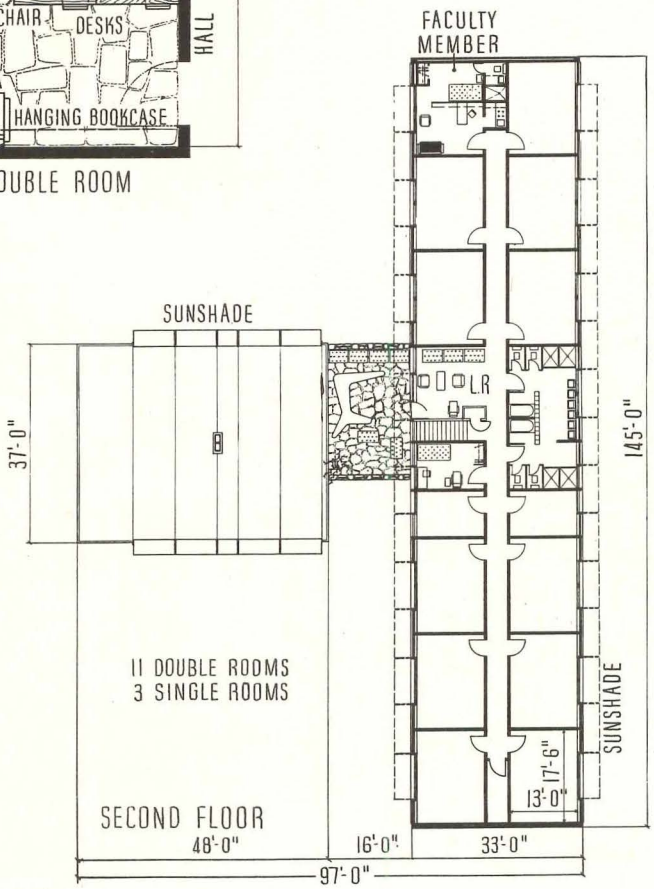

EAST ELEVATION

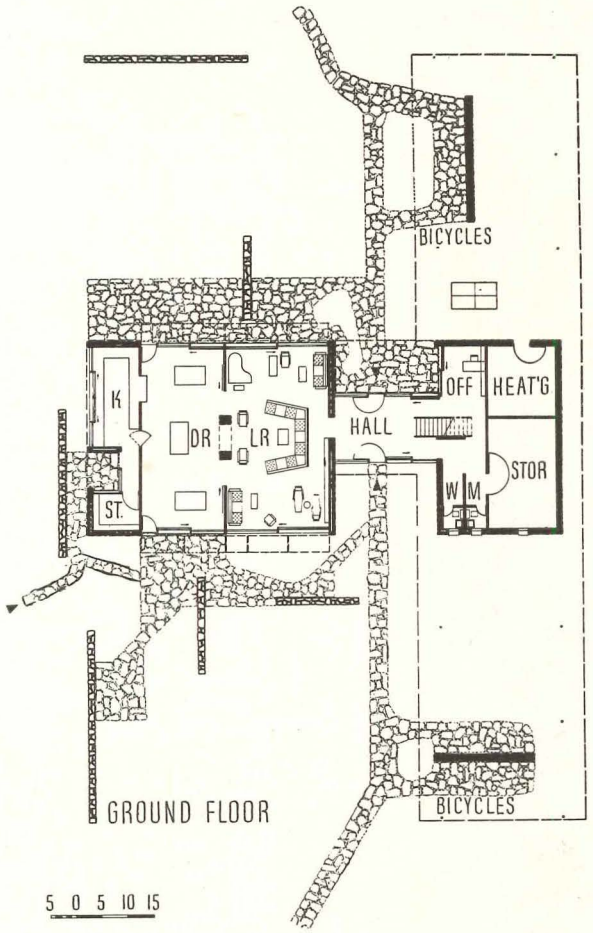


WEST ELEVATION

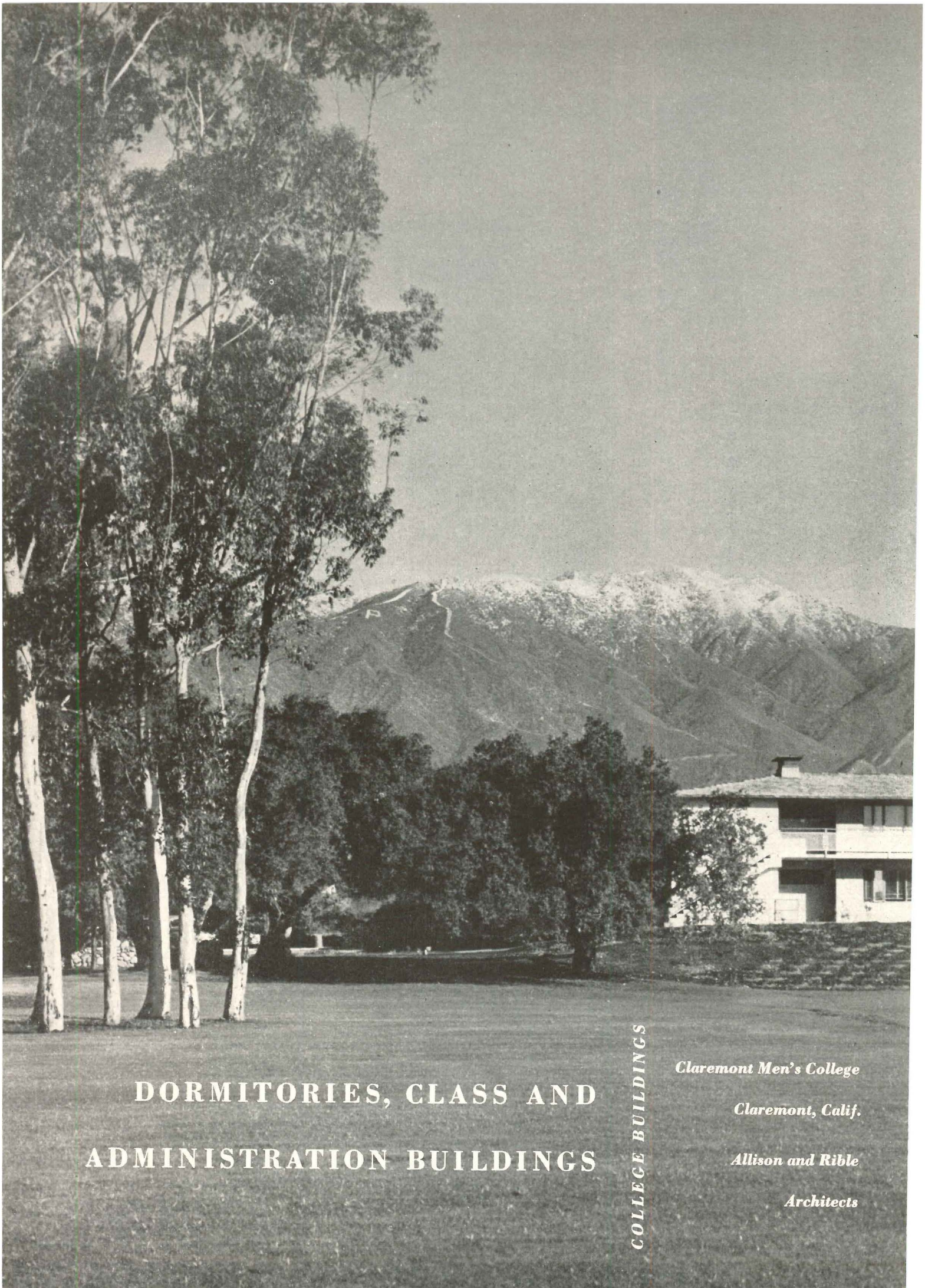



TYPICAL DOUBLE ROOM




*Construction, as the details indicate, is quite simple. The dormitory proper is elevated to preserve excellent views across the campus at ground level, and to reduce foundation costs. The decision to employ contemporary architecture was made by college authorities and the donor; it was handed to the architect as a prerequisite. The preliminary drawings have excited much favorable comment among faculty and students, despite the fact that almost all the rest of the campus is solidly traditional*



# DORMITORIES, CLASS AND ADMINISTRATION BUILDINGS

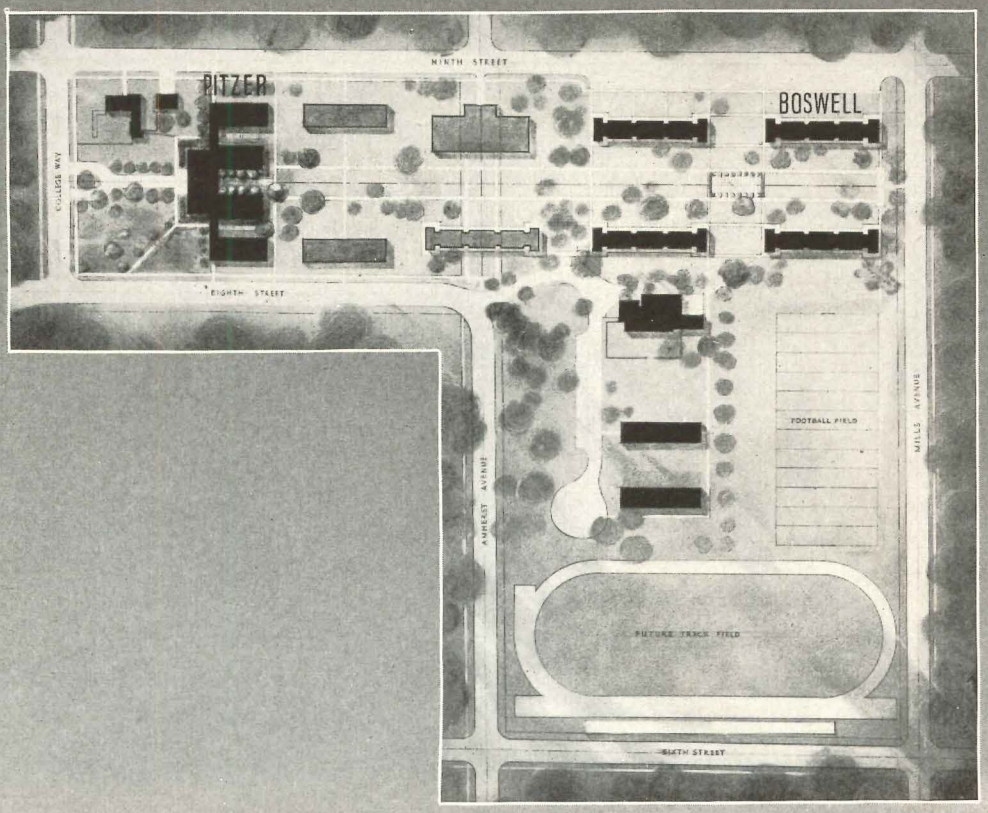
COLLEGE BUILDINGS

*Claremont Men's College*

*Claremont, Calif.*

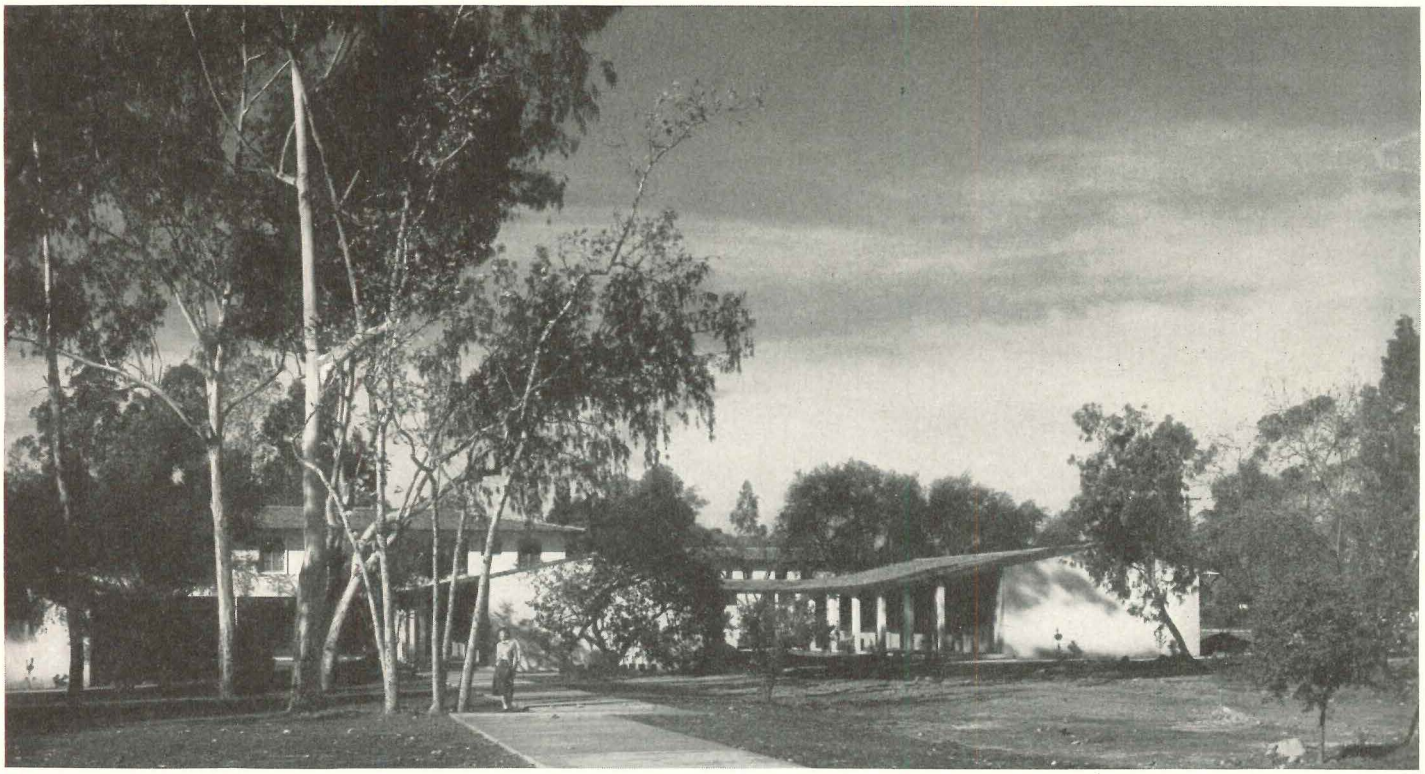
*Allison and Rible*

*Architects*

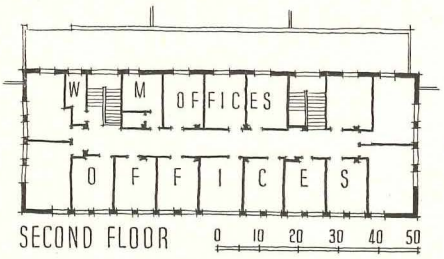


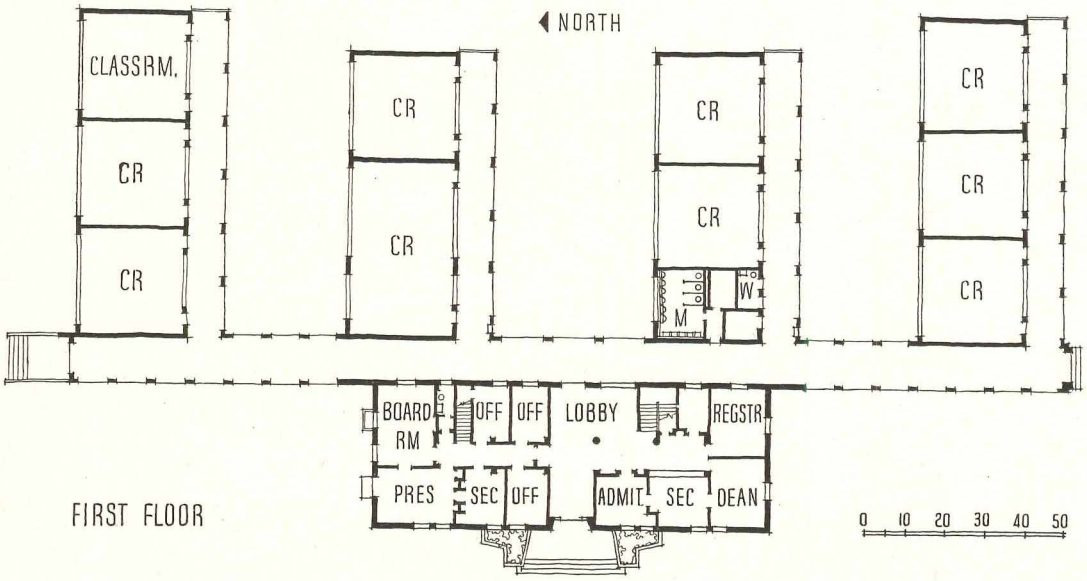

***Dormitory: Boswell Hall***

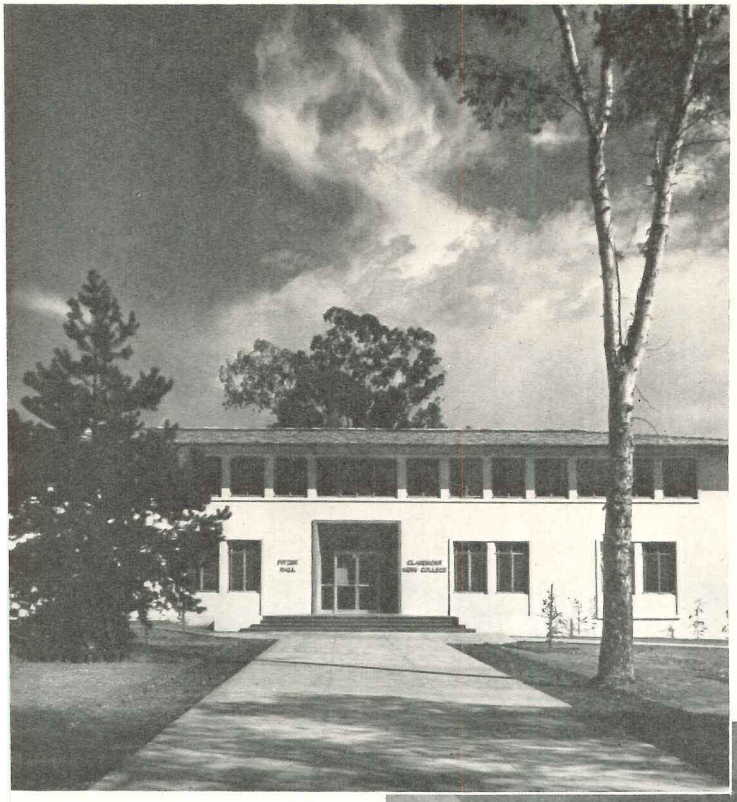
Photo by Robert C. Frampton



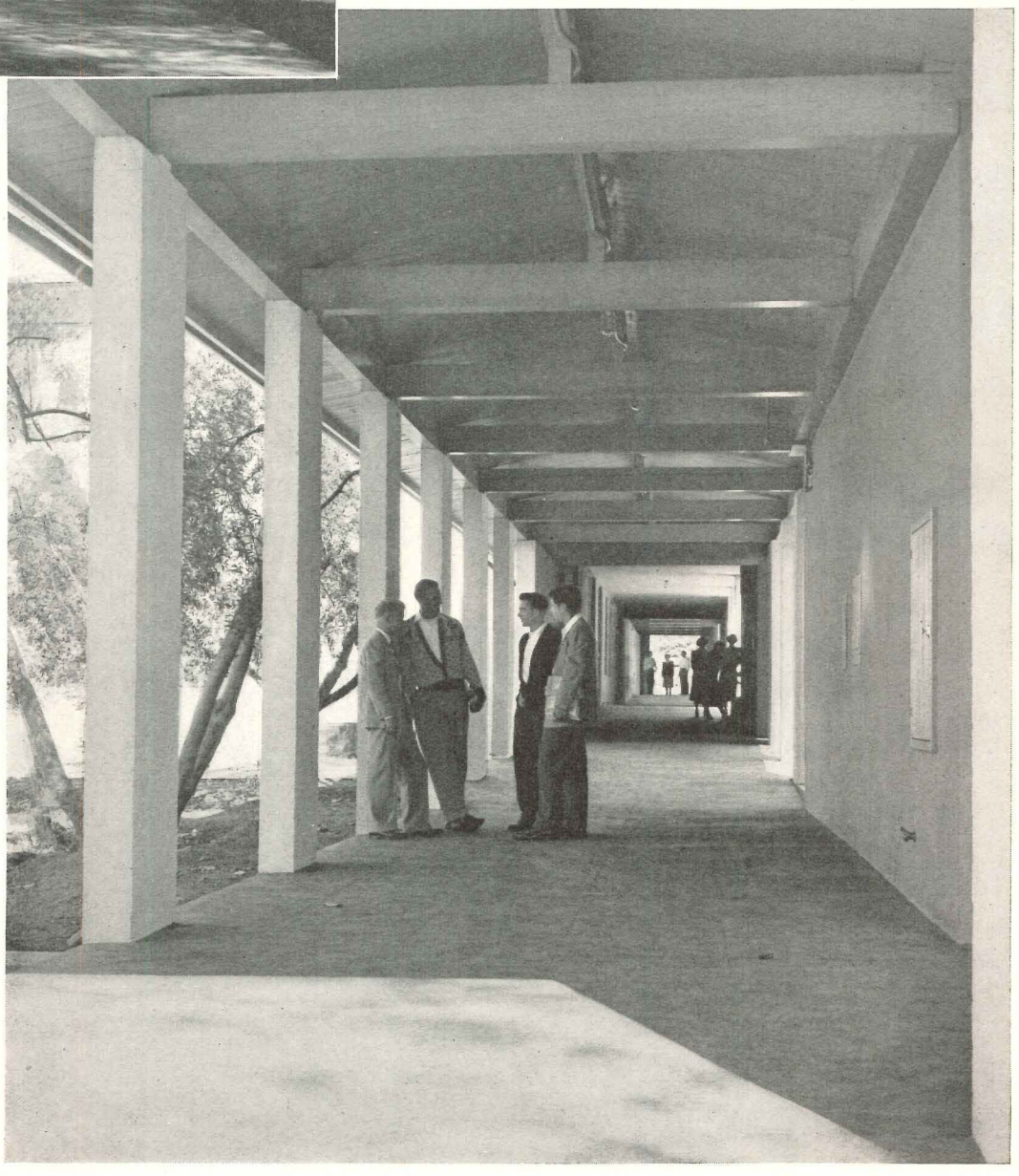
**PITZER HALL, CLAREMONT MEN'S COLLEGE**





*Claremont Men's College is one of the Associated Colleges of Claremont, Calif.; it is young; enrollment is limited purposely. Its buildings are economical (reinforced concrete painted warm tones) yet of high quality; they are reminiscent of the local architectural vocabulary, but not copies; above all they are unpretentious, devoid of mannerisms and clichés — all of which reflects Claremont's aims: to retain a small college's advantages while making available, through the Association, a university's facilities. Pitzer Hall, shown here, is a classroom and administration building*



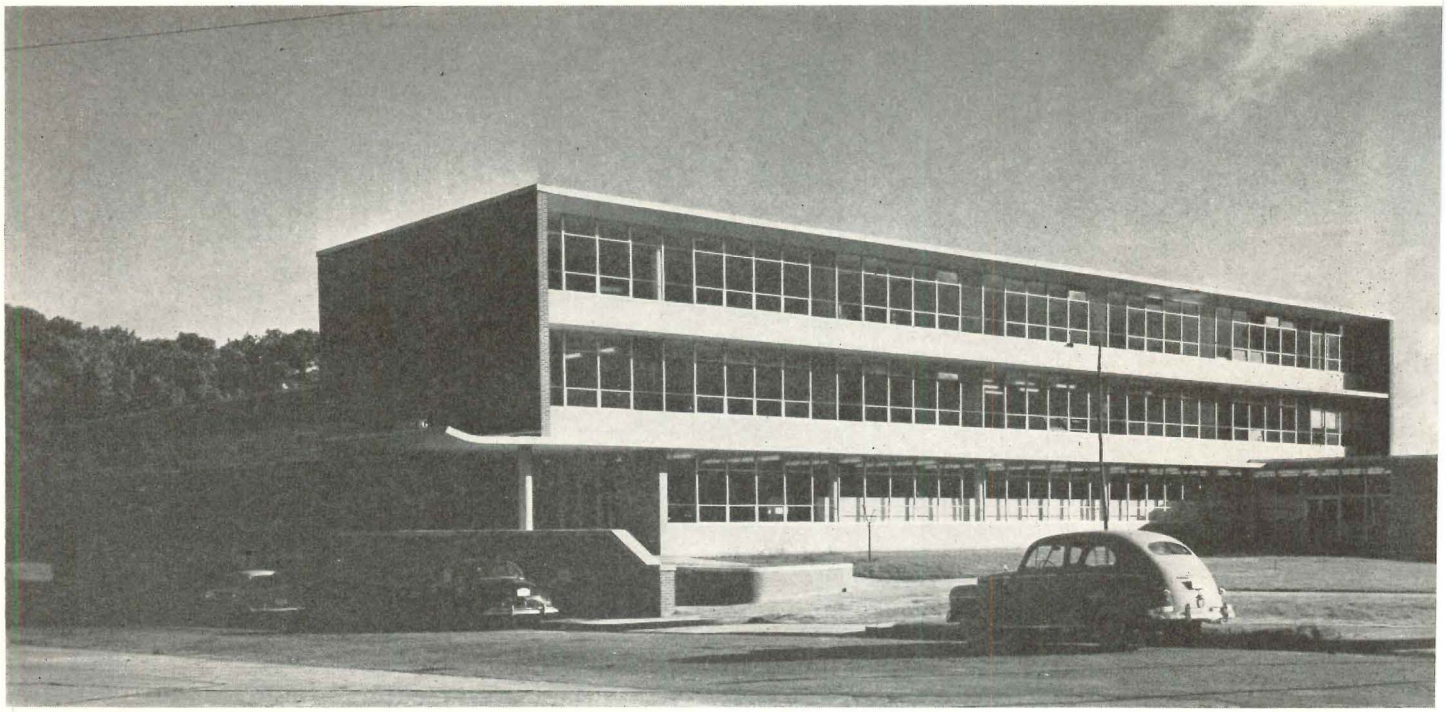
Robert C. Frampton Photos

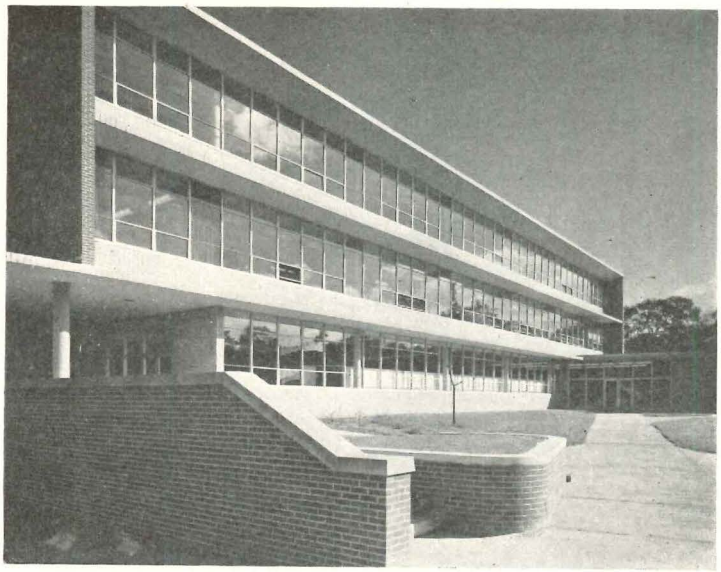
# HARRISON HIGHTOWER TEXTILE ENGINEERING BUILDING

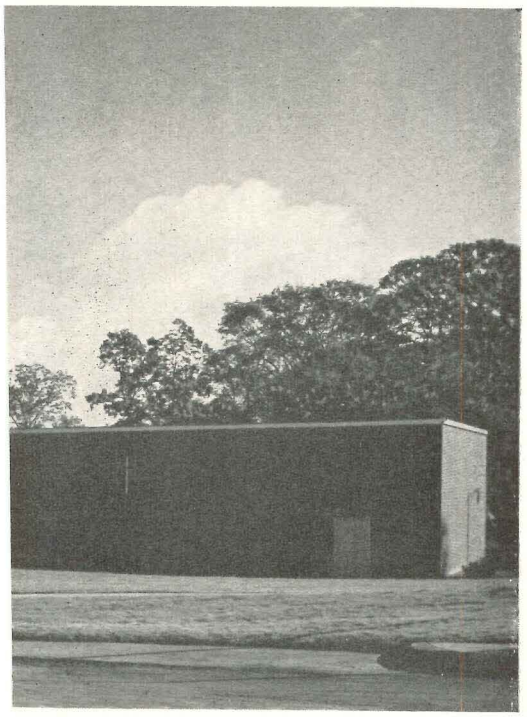
*Georgia Institute of Technology*
*Atlanta, Ga.*

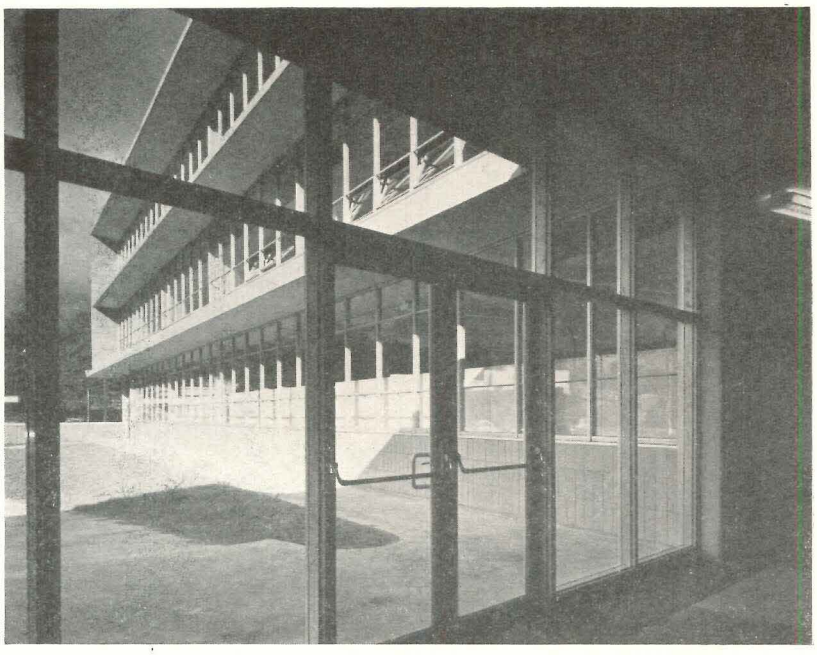
*Bush-Brown Gailey & Heffernan Architects*

Joseph Molitor Photos



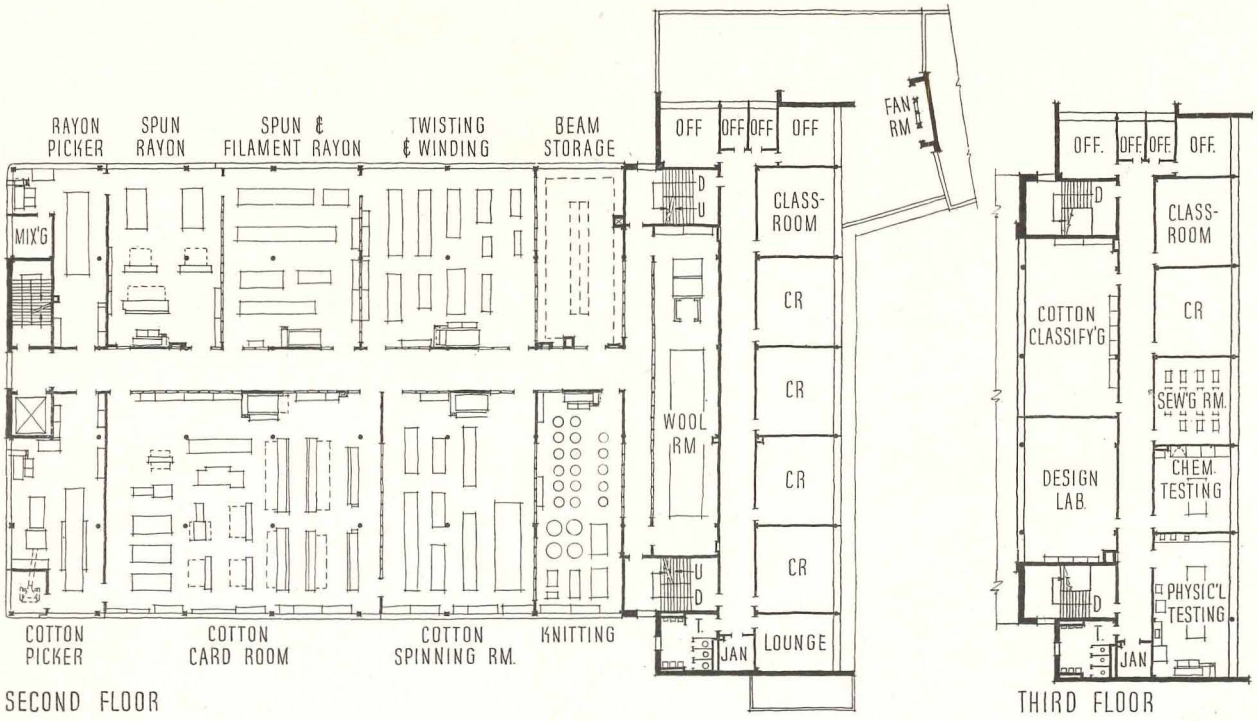






*Georgia Tech's new textile engineering building, designed for 400 occupants, provides facilities for instruction and research. It has three distinct units: an auditorium seating about 300 (foreground, above); a three-story classroom unit (classrooms, offices, laboratories, toilets, exhibition gallery) which dominates the mass; behind this, a two-story mill area in which are carried on most of the textile operations in use in the industry today*

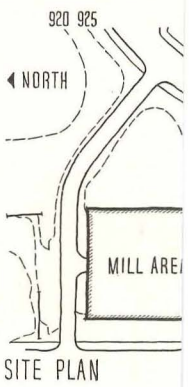
*Photos on these pages all show the dominance of the simple concrete and brick classroom building. Consulting engineers were: James J. Pollard (structural); Newcomb & Boyd (plumbing and electrical); C. T. Baker (heating, ventilating, air conditioning). General contractor was the Ray M. Lee Co.*

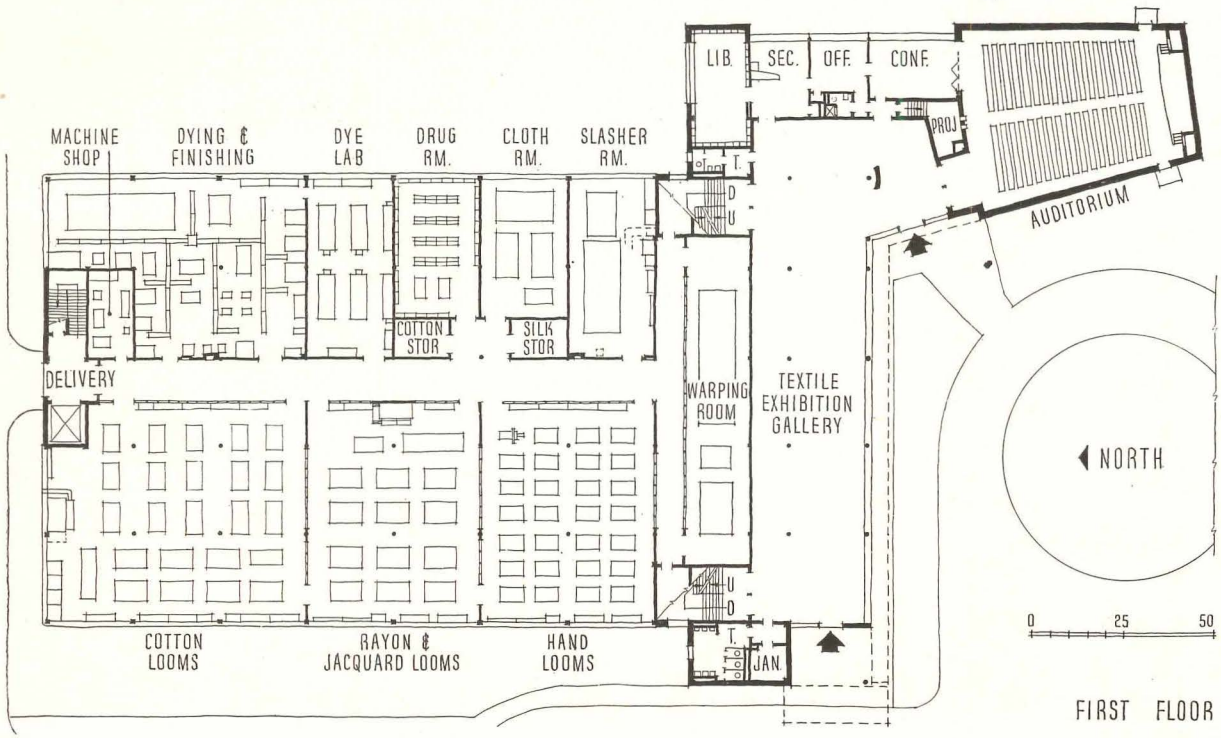



## TEXTILE ENGINEERING BUILDING

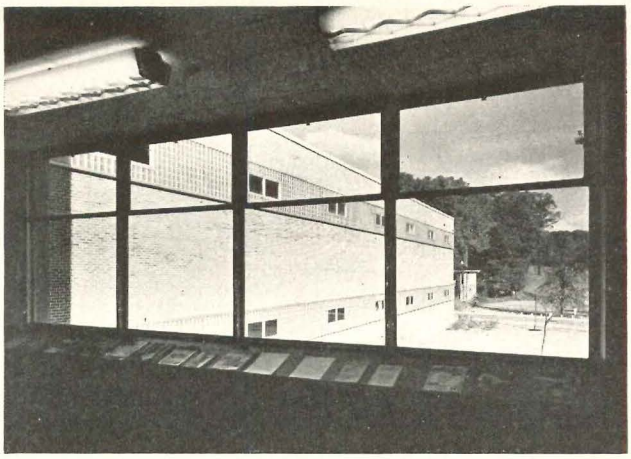
## GEORGIA INSTITUTE OF TECHNOLOGY

Construction is reinforced concrete frame and floor slabs, with 8 in. structural clay back-up tile and brick walls; some spandrels are faced with glazed structural facing tile. Partitions are clay tile, with some wood and glass in mill area. The entire building rests on cast-in-place concrete piles, required by poor soil. Windows are aluminum, projected type. The building is completely air conditioned and has fluorescent lighting throughout.

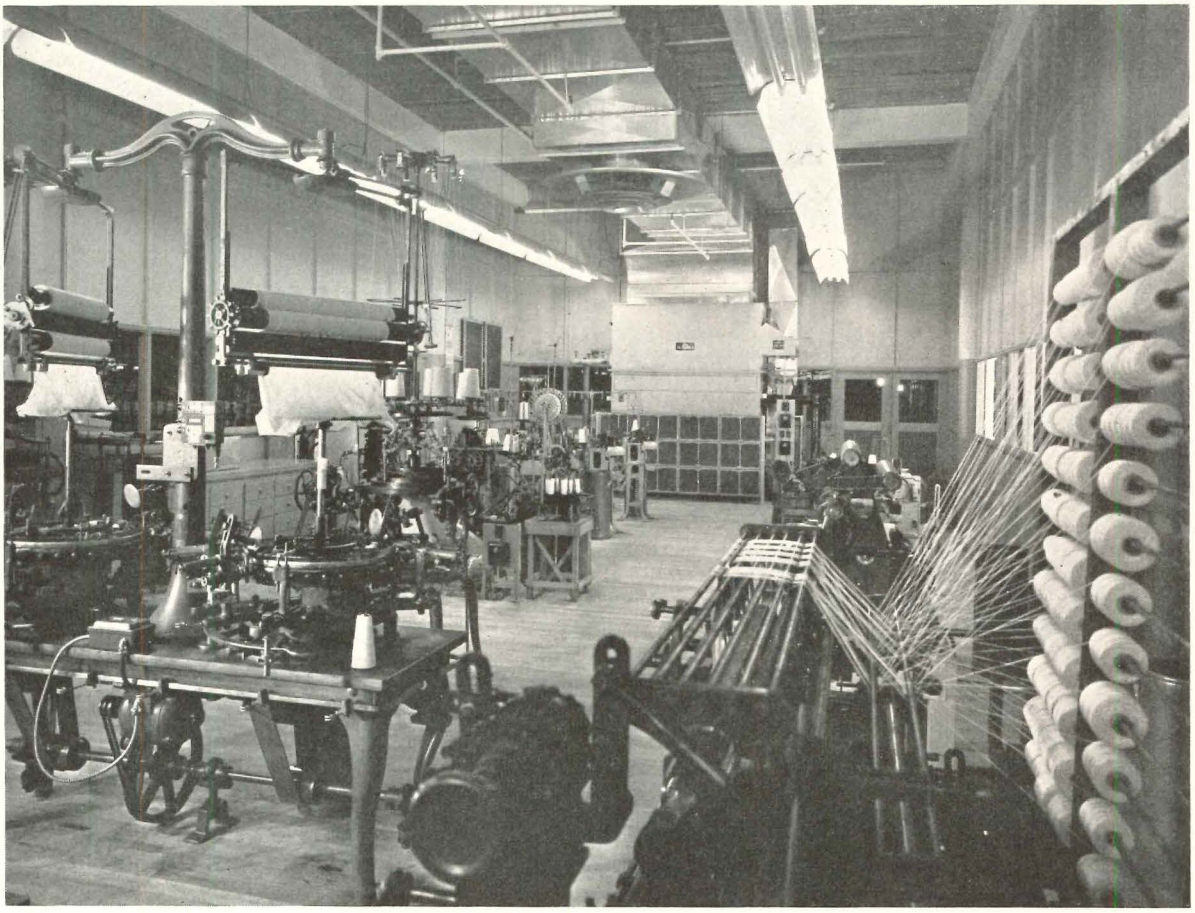


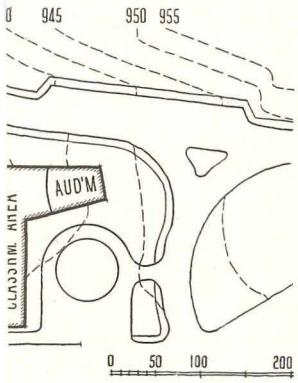



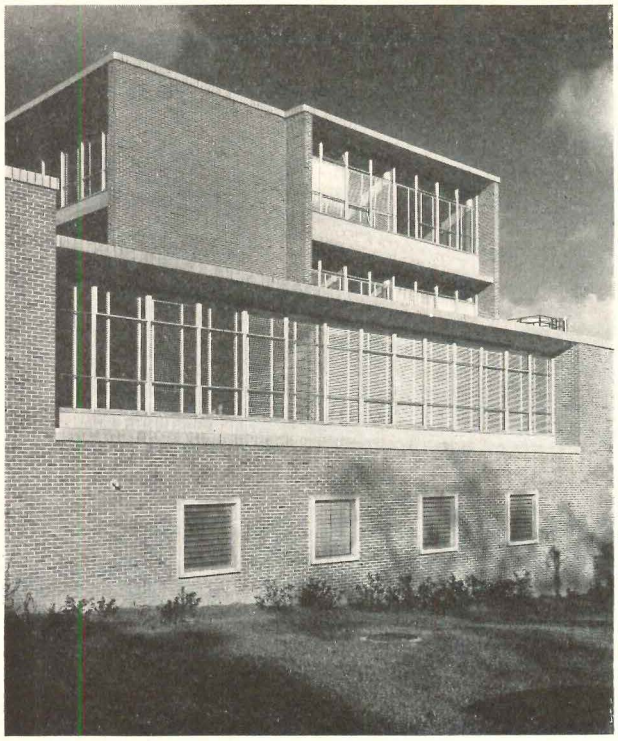
*Mill area, seen at right from library window, has insulating glass block light strip in which are set ventilating sash; the area is air conditioned by individual units, one in each room, to permit maintaining optimum humidity and temperature characteristics required by the different manufacturing operations. Lighting here is from continuous fluorescent troffers. Floors are cement in some rooms, hard maple on sleepers in others. Stairs are located between mill and classroom units because floor levels and story heights differ in the two portions of the building*

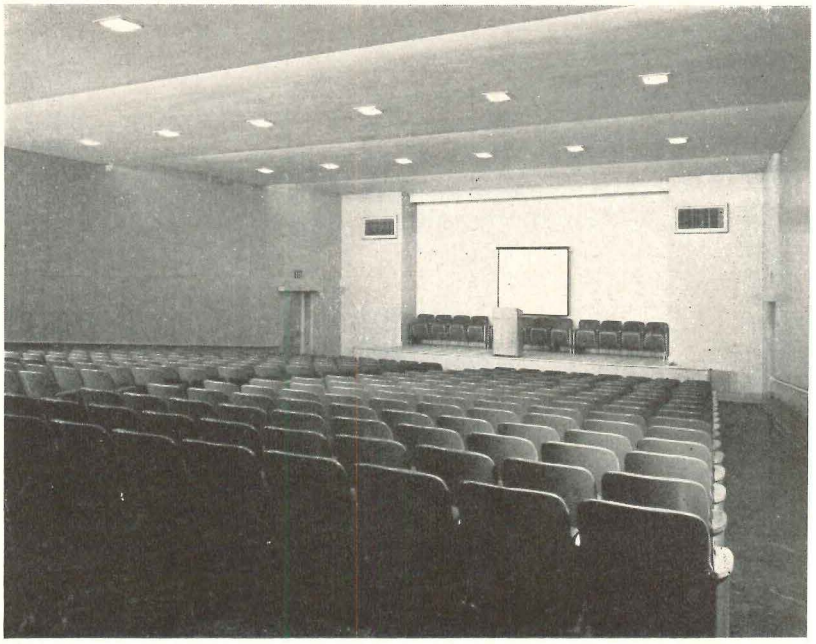


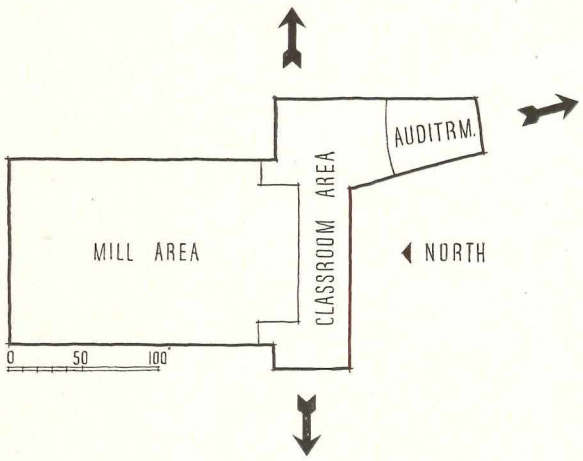
Joseph Molitor Photos



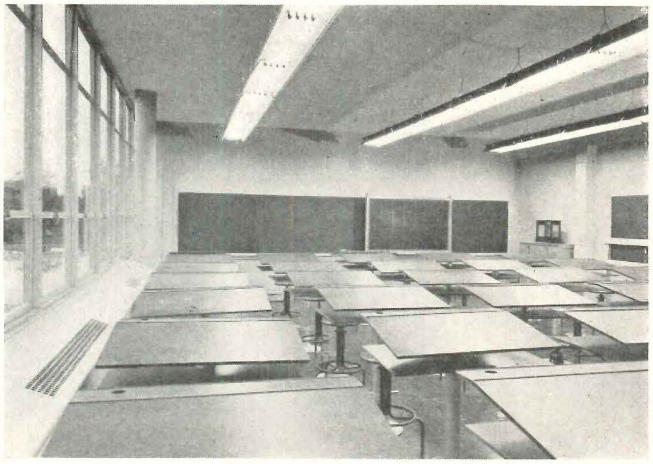


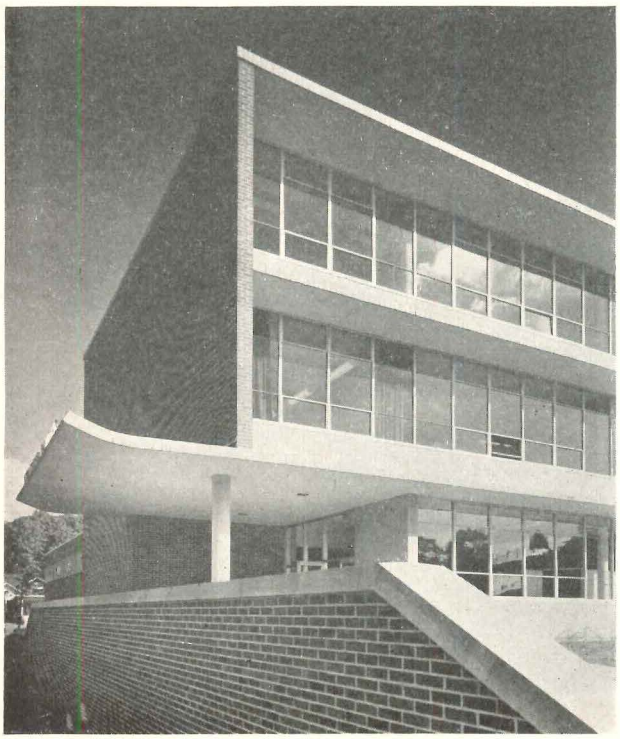



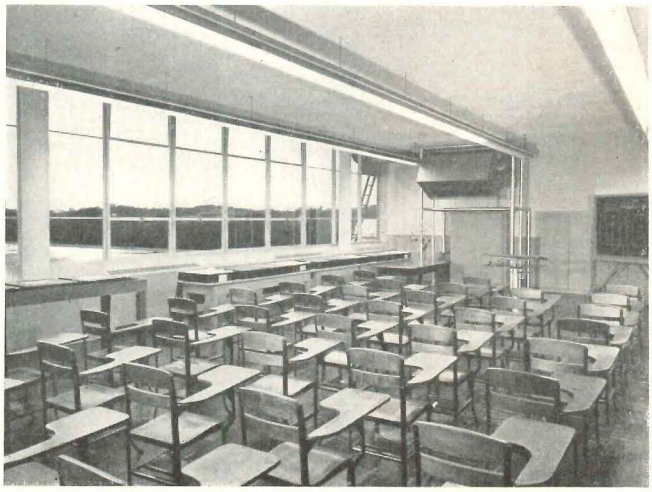


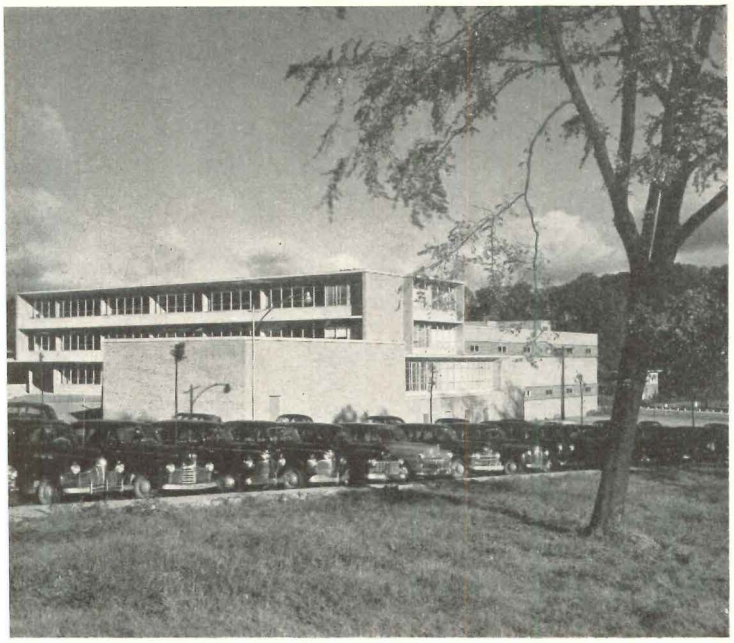



*Interiors: above, auditorium; below, classrooms*

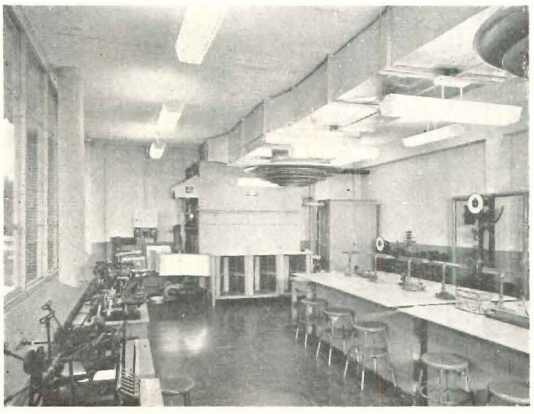




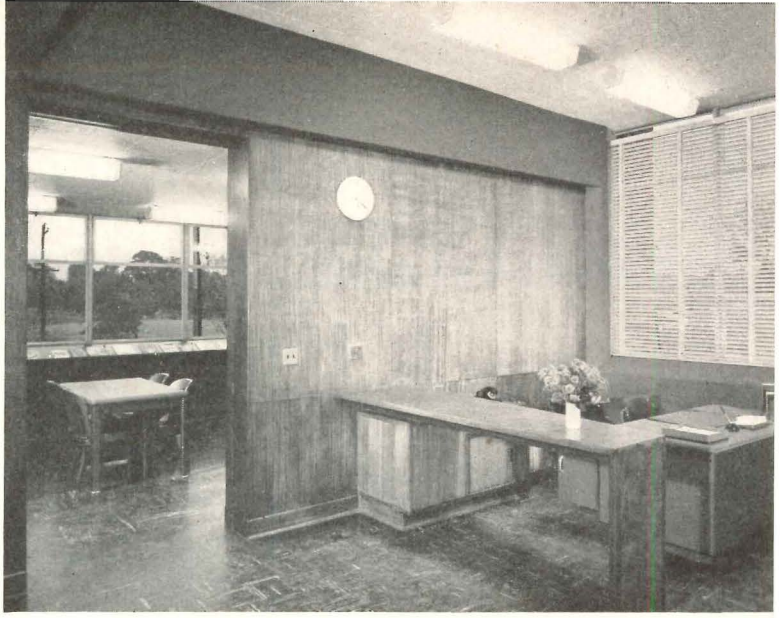




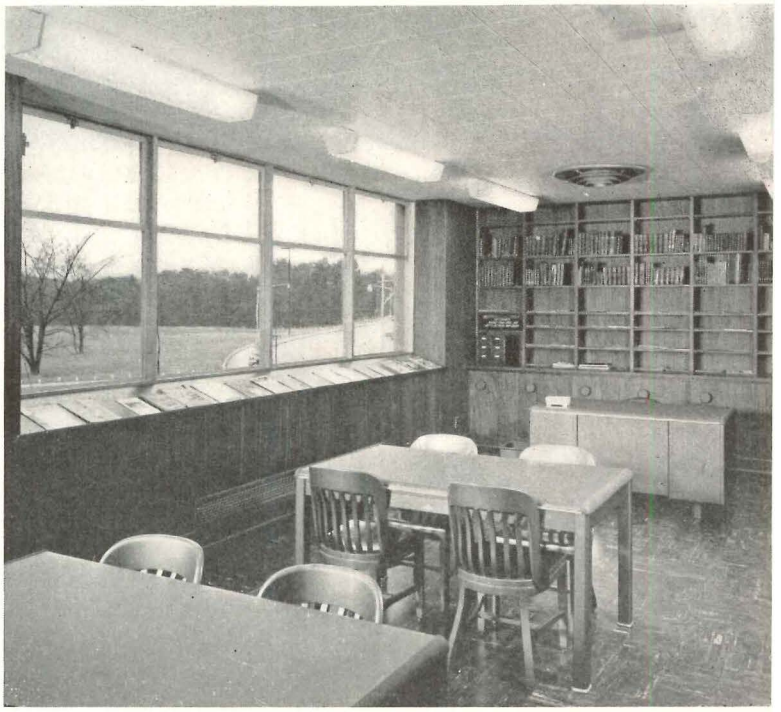
*Seen from any point of view, the components of the textile engineering building are distinct: the windowless auditorium block, the glass-walled, sun-shaded classroom block, the mill looking like exactly what it is, an industrial building. For actual construction the cost was approximately $959,600; including steam and electric supplies, fees, landscaping, seating, cost was $1,100,000. This did not include textile machinery and equipment, office furnishings, etc. Cost per sq ft was $11.70 on the first basis, $13.55 on the second; per cu ft, $.74 or $.85*



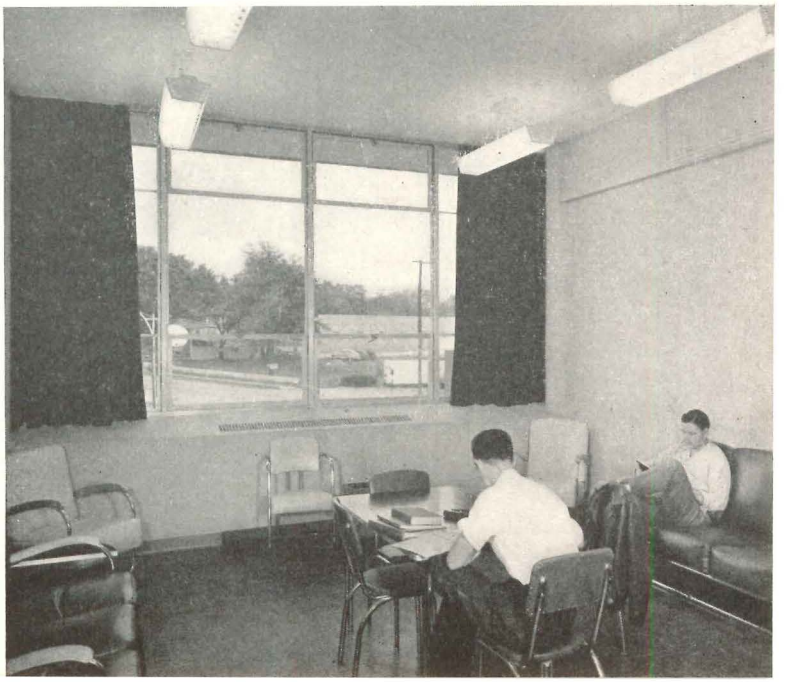
*Laboratory also requires air conditioning*



*Above, secretary's office, looking through to library*



*Library (above), offices, conference rooms have acoustic ceilings*

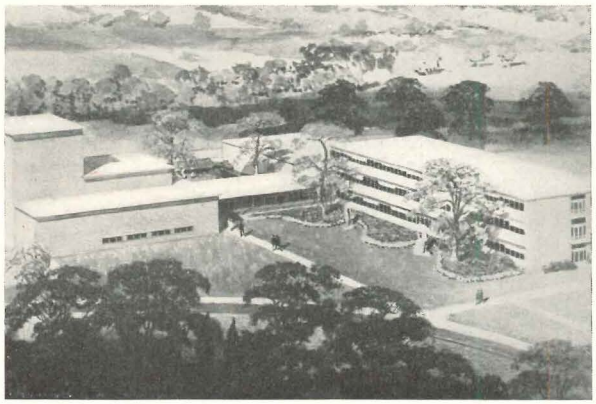


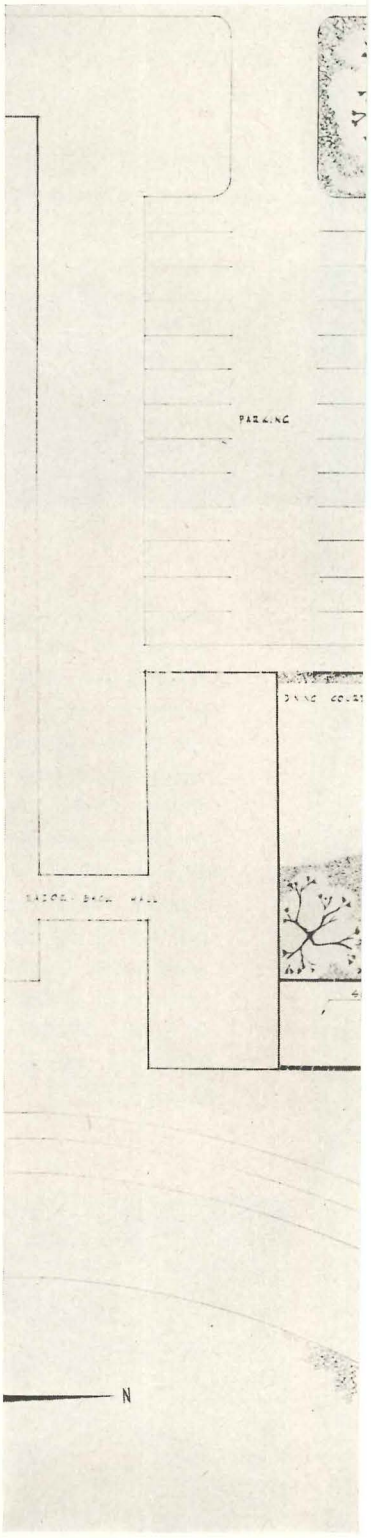
# ART CENTER EMPHASIZES TEACHING

***Fine Arts Center***

***University of Arkansas, Fayetteville, Ark.***

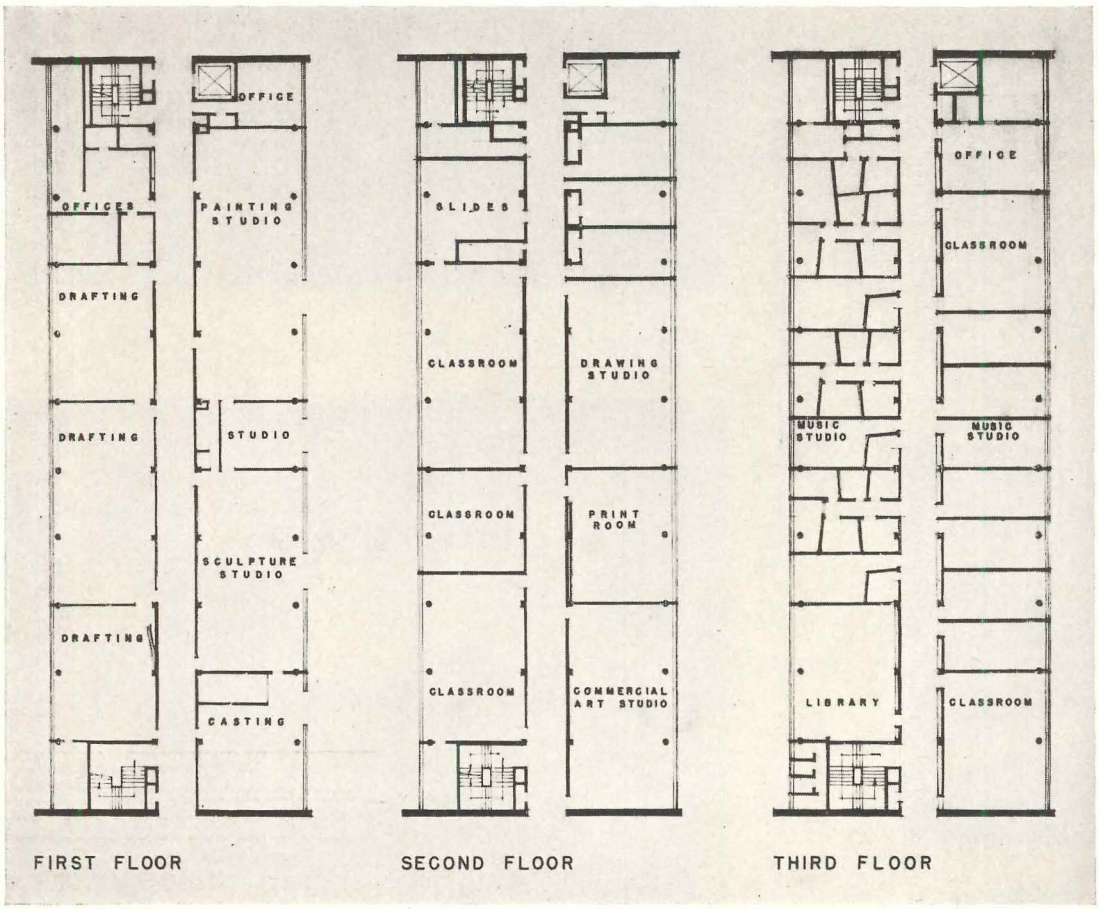
***Edward D. Stone; Haralson & Mott Associated Architects***



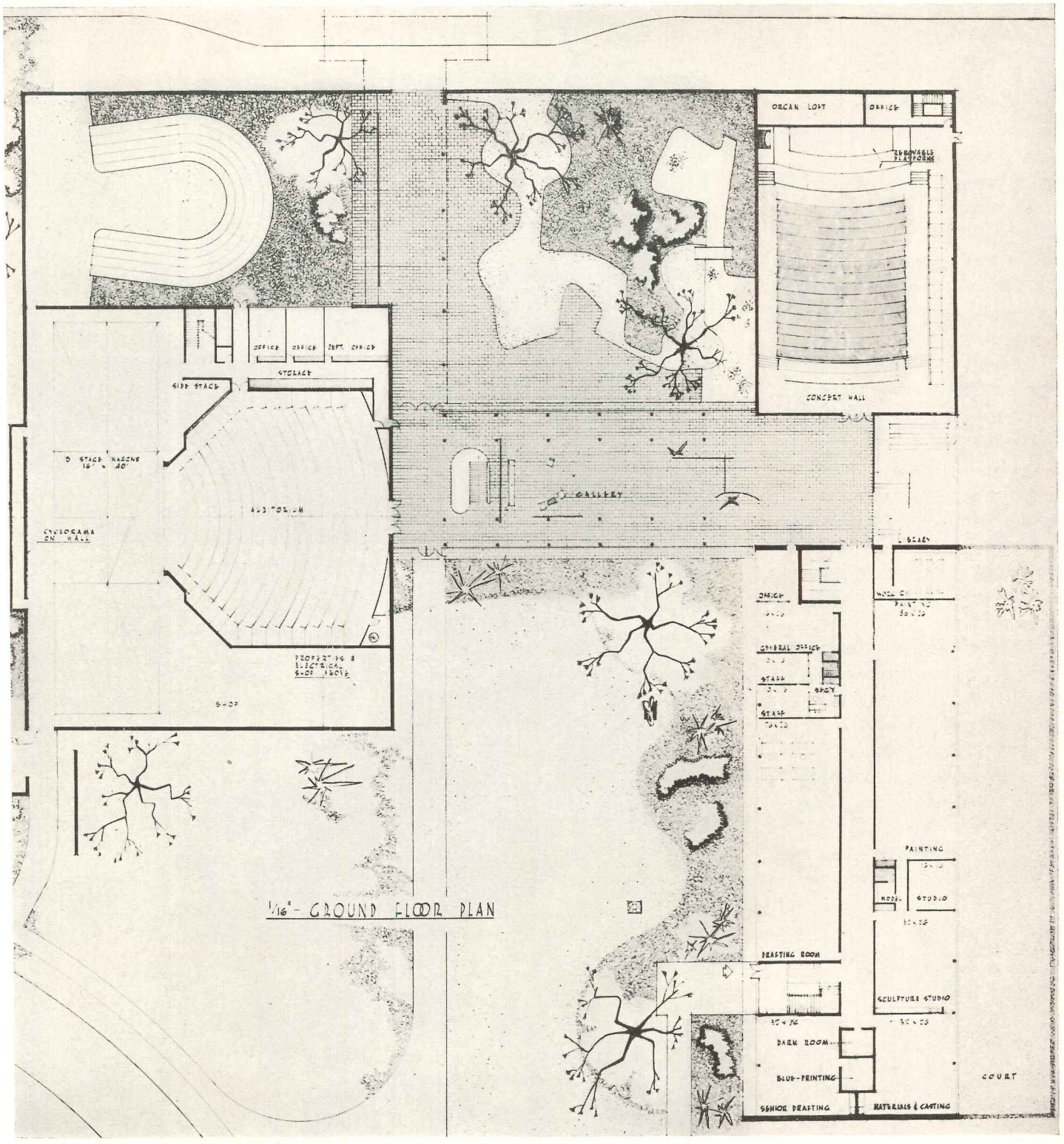



*A group of three related buildings—theater, concert hall and classroom unit—with connecting gallery and courts, comprises Arkansas' new Arts Center. All are visible in the rendering at right above; construction photo, left above, shows status of classroom building, March, 1950. Throughout design, teaching requirements are emphasized*

*Classroom Building plans*



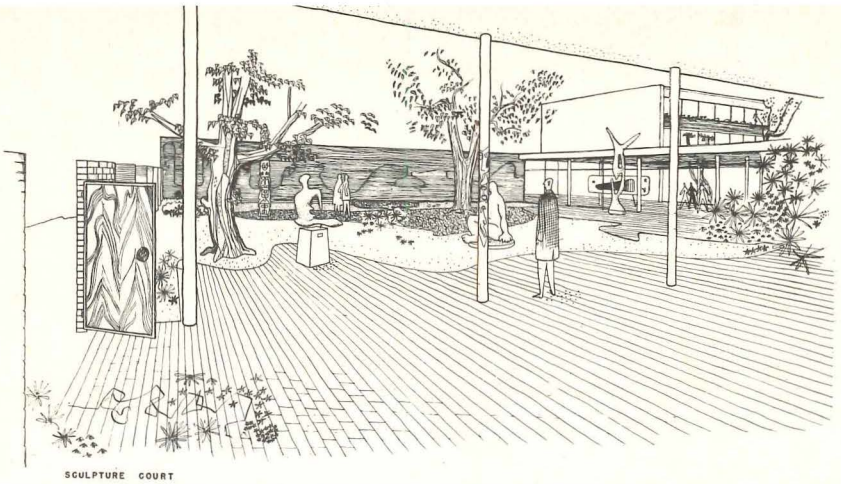
*Although Arkansas badly needed an auditorium, there were not enough funds to built both it and an Arts Center, or to incorporate into the Center a University auditorium and also provide all the space and equipment needed for complete facilities for teaching dramatics. It was decided to build the Center for teaching and wait for an auditorium*




*Library, between Concert Hall and Classroom Building, has been restudied; see next page. Court north of classrooms is for outdoor work. Final classroom building plans are on facing page*

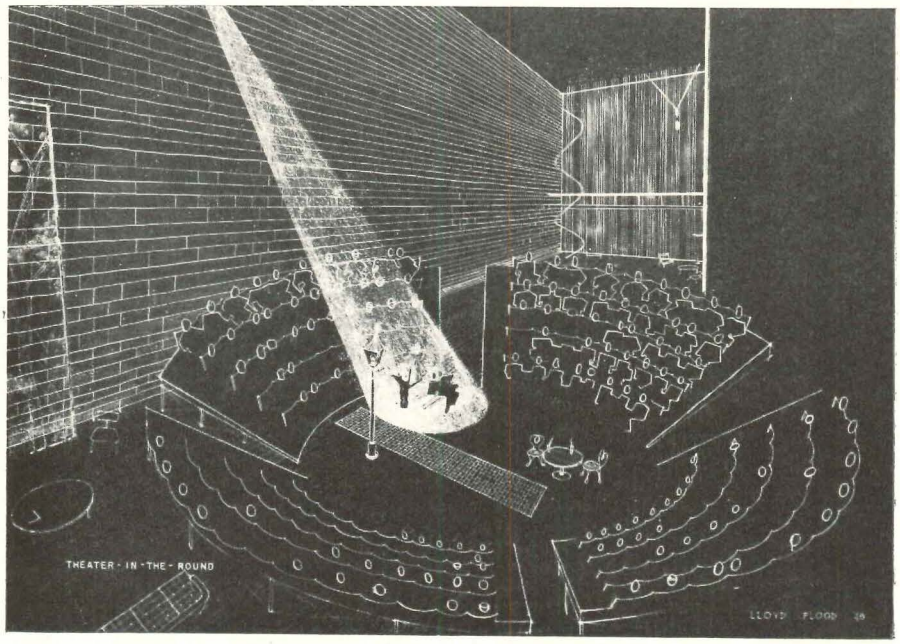
## FINE ARTS CENTER

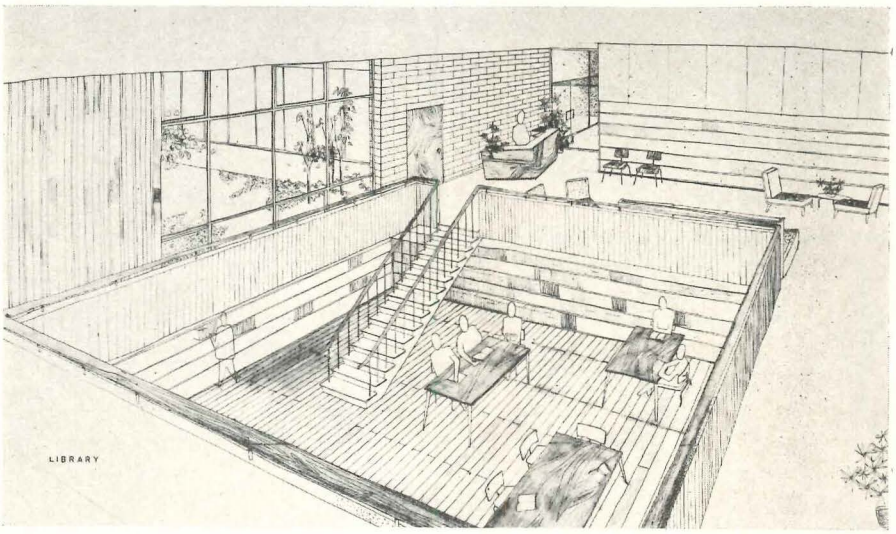
## UNIVERSITY OF ARKANSAS

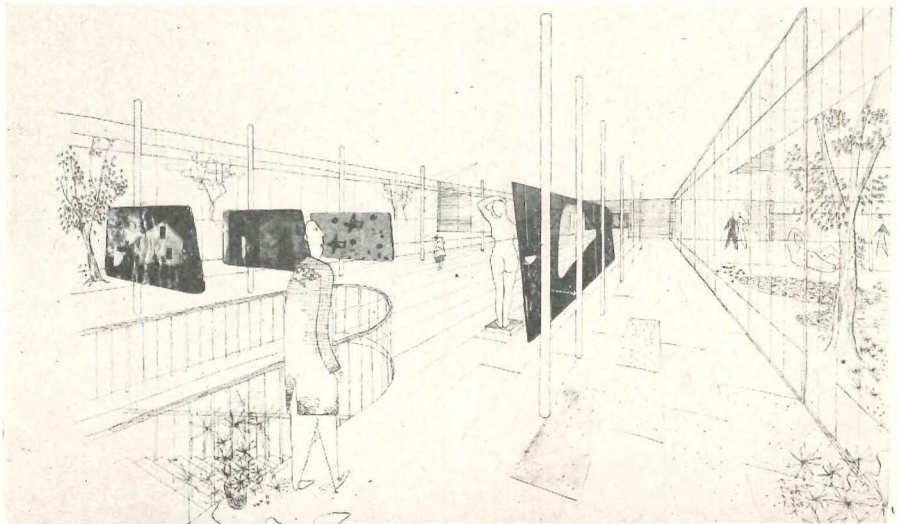


SCULPTURE COURT

*Since 1873, shortly after the University opened, Arkansas has offered instruction in some of the fine arts. Starting with a Department of Music, courses in other arts have been added at intervals, the latest being a full architectural course. In the early 40's it was decided to set up a Division of Fine and Applied Arts, which will move to this Center when construction is completed. The Center is intended not only to facilitate close coordination of the arts themselves but also to offer all students, whatever their field of study, a chance at the cultural growth which study of the arts affords. The existing Arkansas buildings are of various architectural styles, none of them particularly compatible with that burning curiosity which accompanies pursuit of a creative art. The new Center is designed to stimulate experimentation. In the theater, seating and stage can be changed from conventional proscenium type to theater-in-the-round; there are ample shops, dressing rooms, wing space. The gallery (bottom rendering) connecting the buildings — for use as reception hall, art gallery, etc. — has walls of glass through which one can see on one side the Ozarks, on the other, a sculpture court for student or loan exhibits*



COLLEGE BUILDINGS

# FINE ARTS, WITH EMPHASIS ON MUSIC

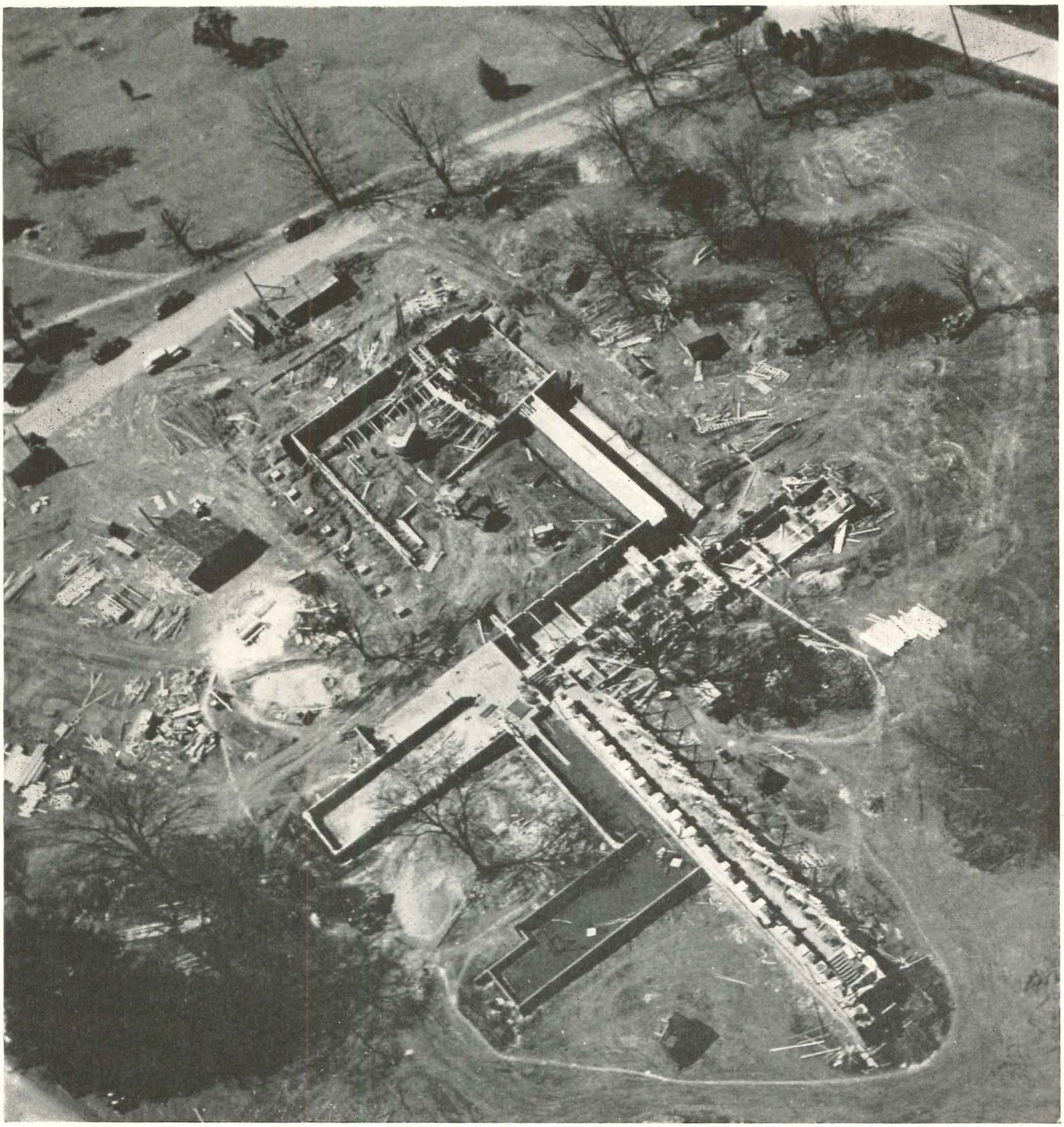
*Fine Arts Center*

*Maryville College*

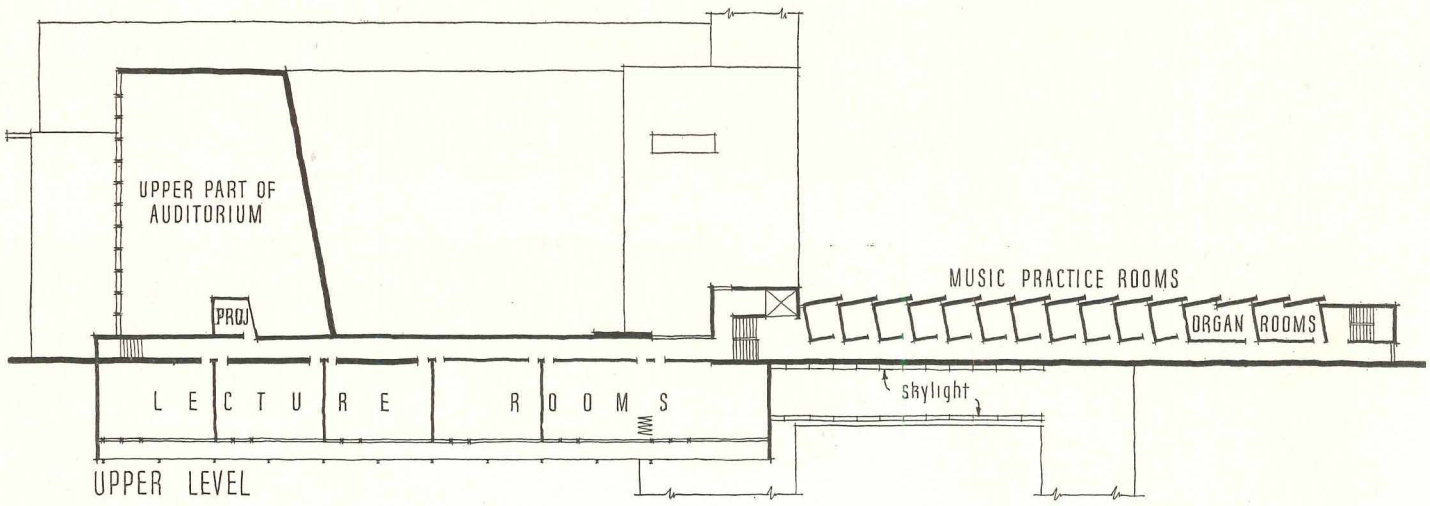
*Maryville, Tenn.*

*Schweikher & Elting*

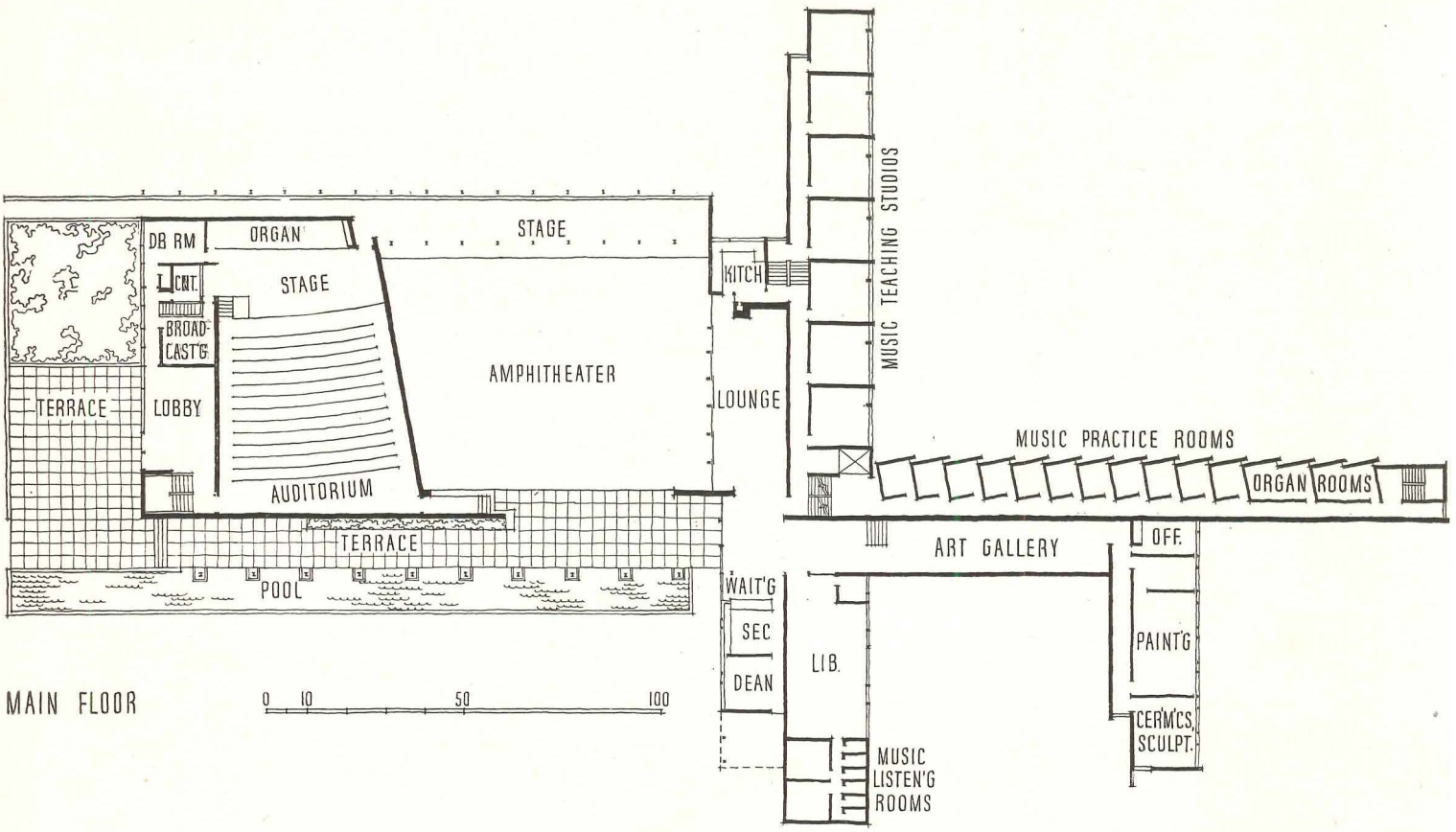
*Architects*

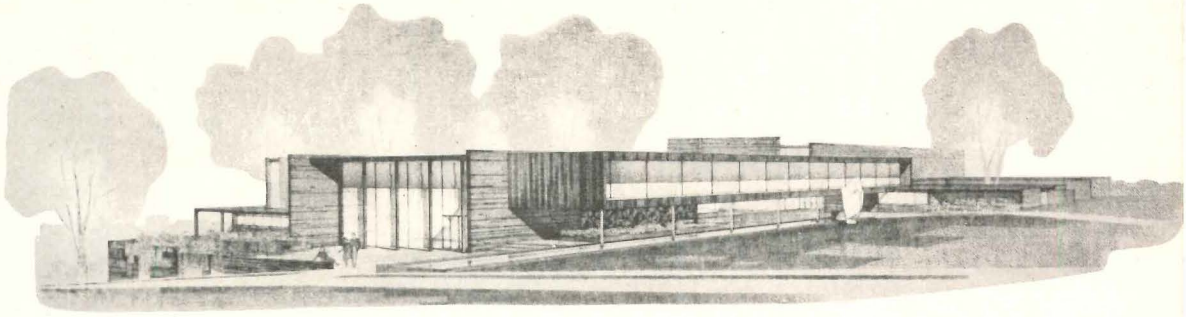


*Maryville's reputation in music is high; nearly two thirds of its students take one or more music courses. Practice rooms occupy entire wing (lower right in air view). Painting and sculpture departments (cross wing in center) can expand independently of rest of Center*



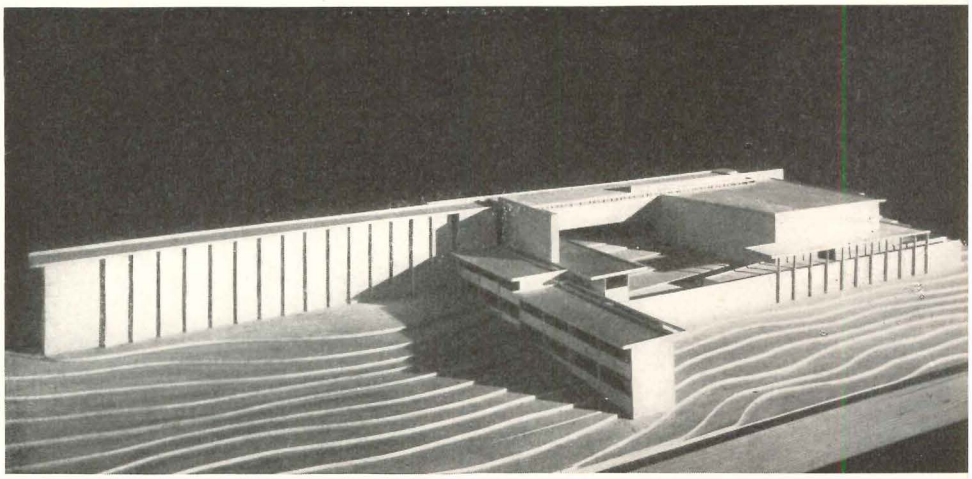

**FINE ARTS CENTER, MARYVILLE COLLEGE**

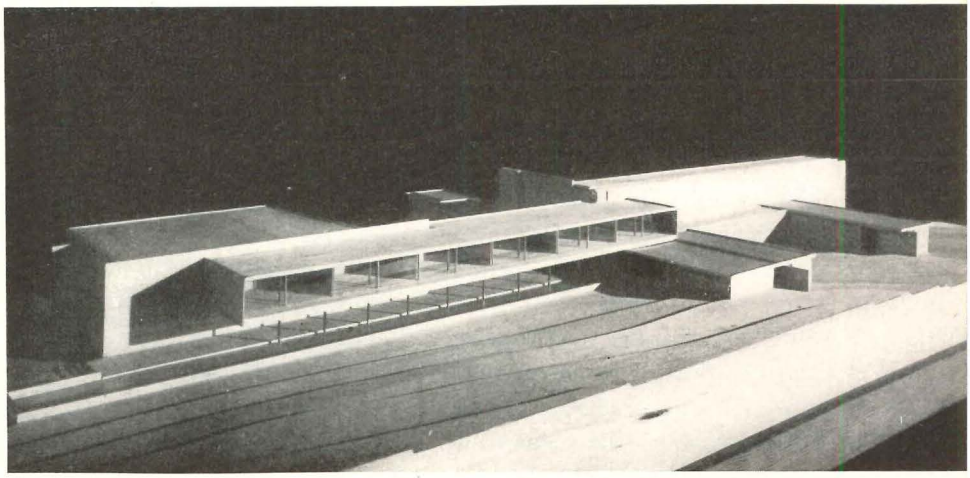


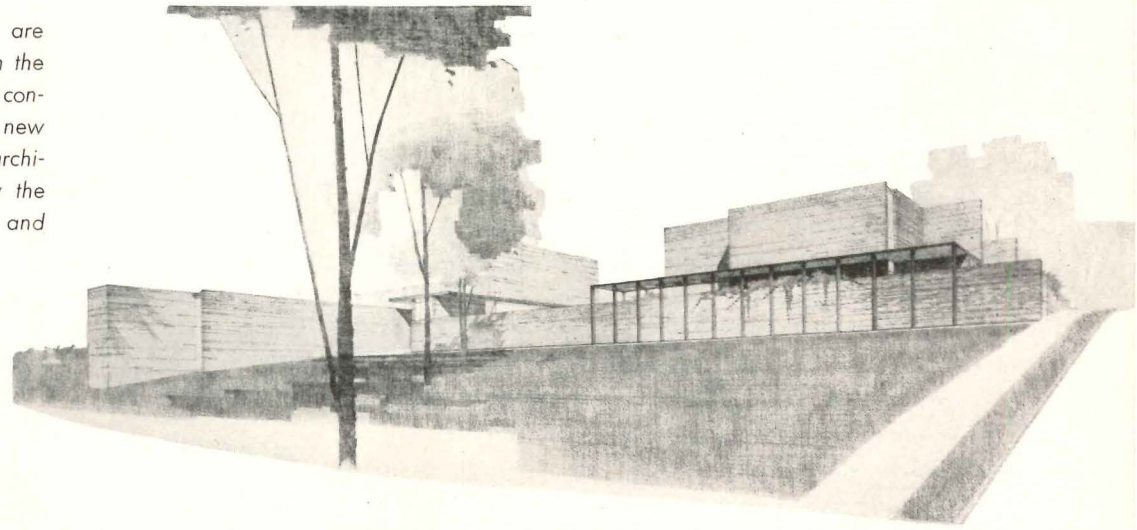


*Maryville's Fine Arts Center, now under construction, is planned so any element or department can be expanded without seriously modifying the others. Its music hall is isolated so daytime functions will not interfere with other activities; its outdoor, lawn-terraced amphitheater is to be used for musicals and other gatherings. The main part of the Maryville campus lies to the southeast; organ practice and music teaching rooms open away from it. It was desired to have music practice rooms face northeast as well; to set them in a wing having this exposure would have blocked expansion and increased corridor lengths; hence the saw-tooth wall in the wing as built, with narrow vertical windows. Incorporated in the building is Maryville's broadcasting station. Construction: red brick walls, exposed inside and out; concrete floor slabs (upper stories precast), exposed except for the wood classroom flooring; operating sash and doors redwood; structural steel exposed and painted gray. All mechanical equipment, piping, conduit, cast-iron finned radiators, etc., are to be left exposed. This entails considerable care in mechanical installations, but the extra labor has not raised costs because all work is in the open.*

*Maryville's other buildings are Georgian in derivation, built from the 1850's on; red brick is the only conscious tie between these and the new Center. The courage to build in architectural tune with the times, say the architects, ''. . . is the College's and the donor's''*







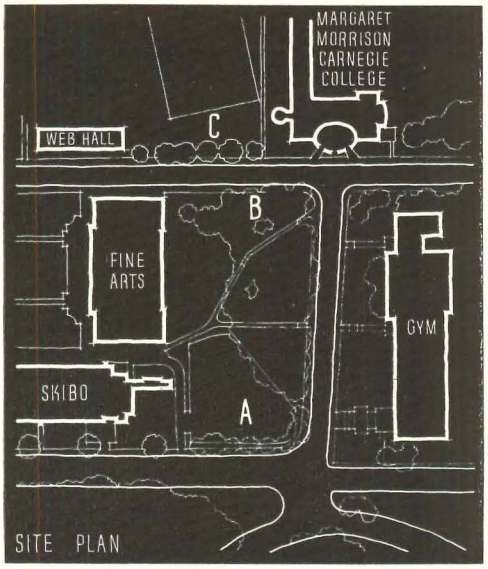
COLLEGE BUILDINGS

# SCHOOL OF INDUSTRIAL ADMINISTRATION

*Carnegie Institute of Technology*

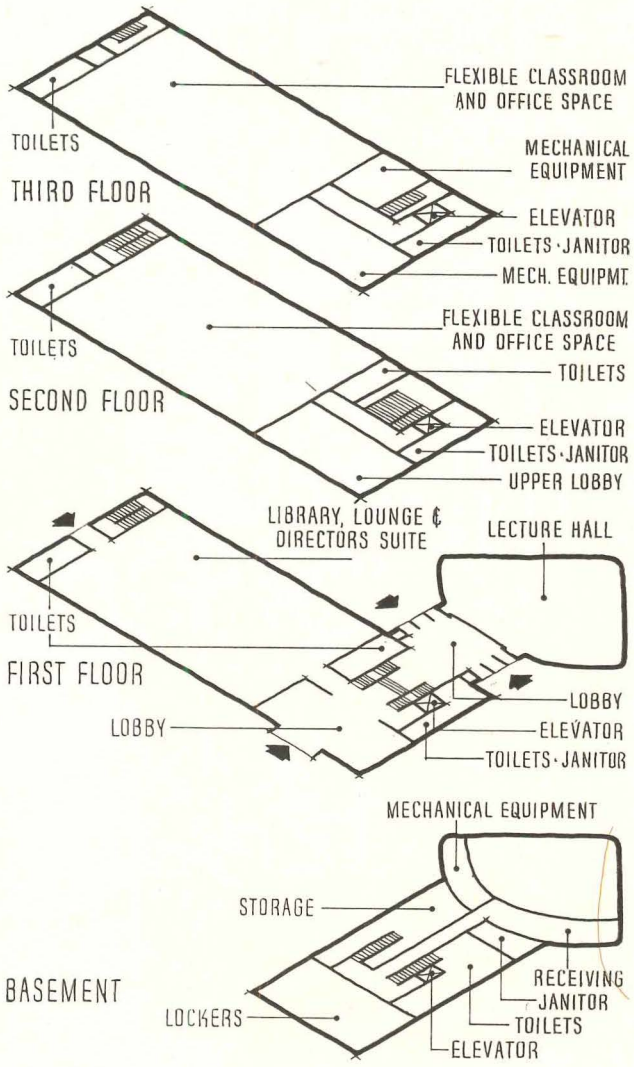
*Pittsburgh, Pa.*

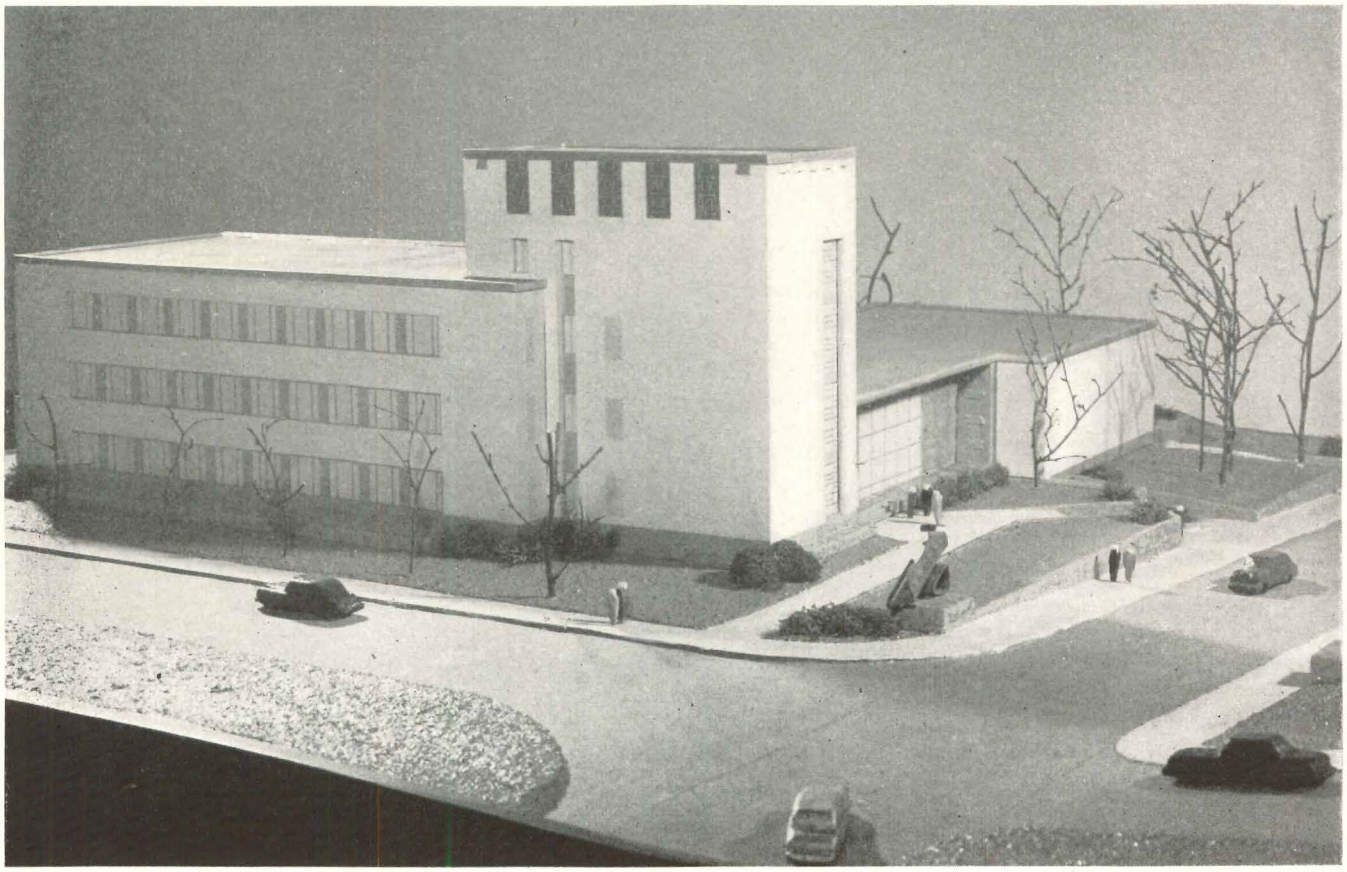
*Marlier & Johnstone Architects*




THE School of Industrial Administration, William Larimer Mellon, Founder, was designed for Carnegie Institute of Technology with full understanding (to quote the architects) that ". . . the physical form and character of space and equipment serving education influence the quality of the product" and that "education . . . must undergo constant development. Flexibility should be the keynote of instructional space." On these considerations the design was based.

Three sites were available: A, B and C on the plot plan above. Buildings were roughed out for all three so an honest comparison could be made; that known as "Site A, Scheme 1" (sketch plans at right) was adopted, partly because its topography was suitable, which meant lower building costs. In relation to other buildings, present and future, to student and public approach, orientation, etc., there were undeniable advantages. The plans show the building's elements, which fall into five groups: entrance, lobby; classrooms, library, offices; Dean's suite; lecture hall; vertical circulation and services. The classroom wing was laid out in structural bays roughly 19½ by 23 ft, a module based on required furniture and door sizes; it is designed for movable partitioning, for changing spaces economically as educational needs change.





*Rendering below shows final design, on which working drawings are well under way. Compare with photo of model, above, showing an earlier stage. Accepted scheme was developed for site A (see plot plan) after thorough investigation. Estimated cost: $1,200,000*

# CONSULTATION AMONG INSTITUTIONS PRECEDES LIBRARY DESIGN

COLLEGE BUILDINGS

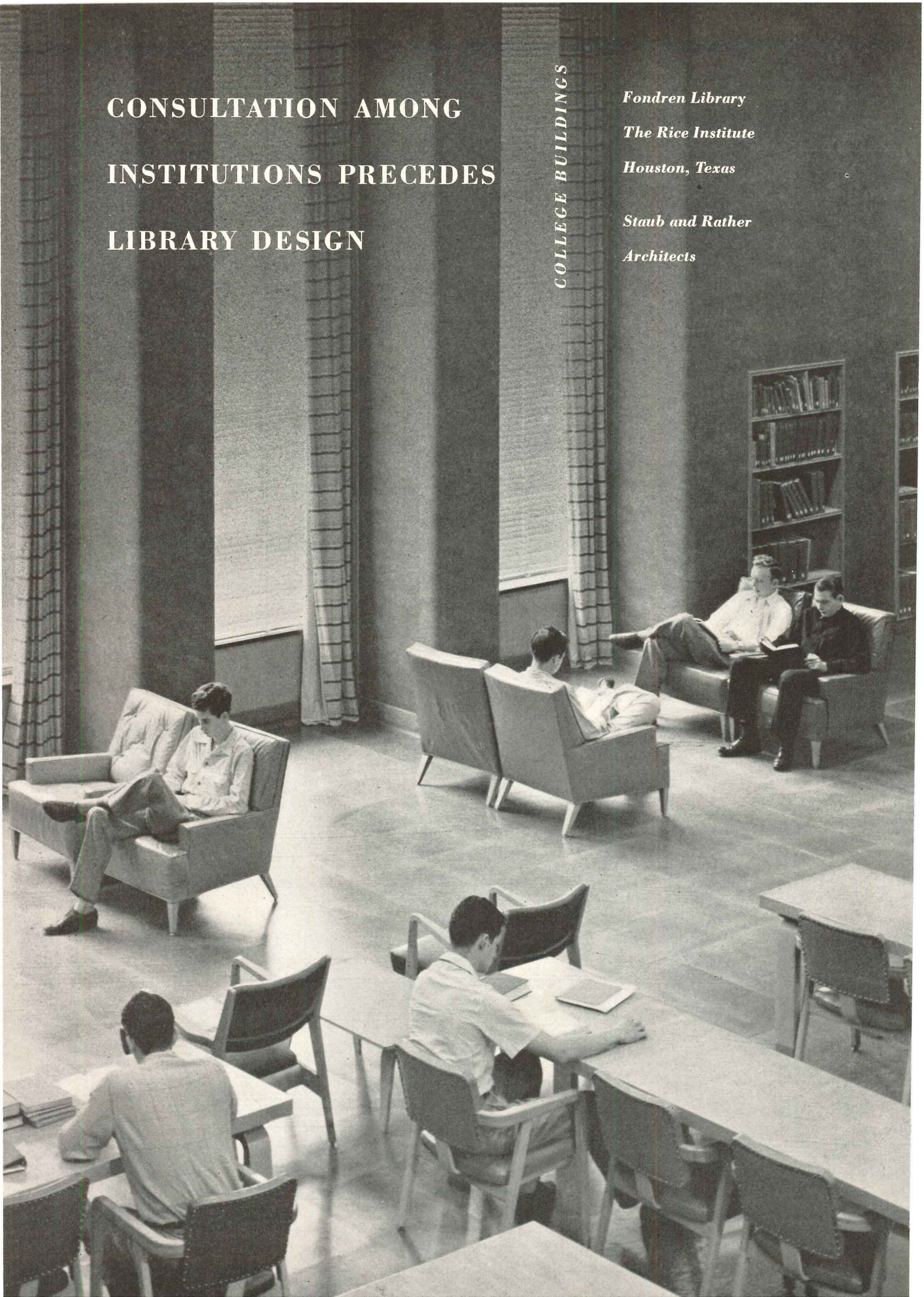
*Fondren Library*

*The Rice Institute*

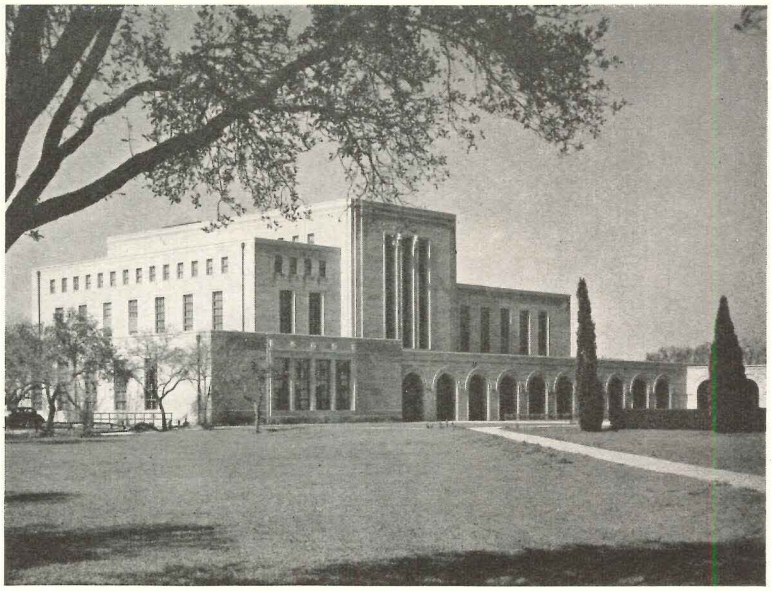
*Houston, Texas*

*Staub and Rather*

*Architects*



WHEN the Fondren Library was being planned, a dozen institutions all over the USA were likewise planning libraries. Rice joined with the others in collaborative research and planning discussions, sending representatives to a succession of meetings at which each institution's plans were presented and openly criticised. Revisions and re-revisions were made and criticised in turn, and in addition the Fondren Library studies were subjected to searching analysis by John E. Burchard of Massachusetts Institute of Technology, and his findings were thoroughly reviewed by Rice Institute.



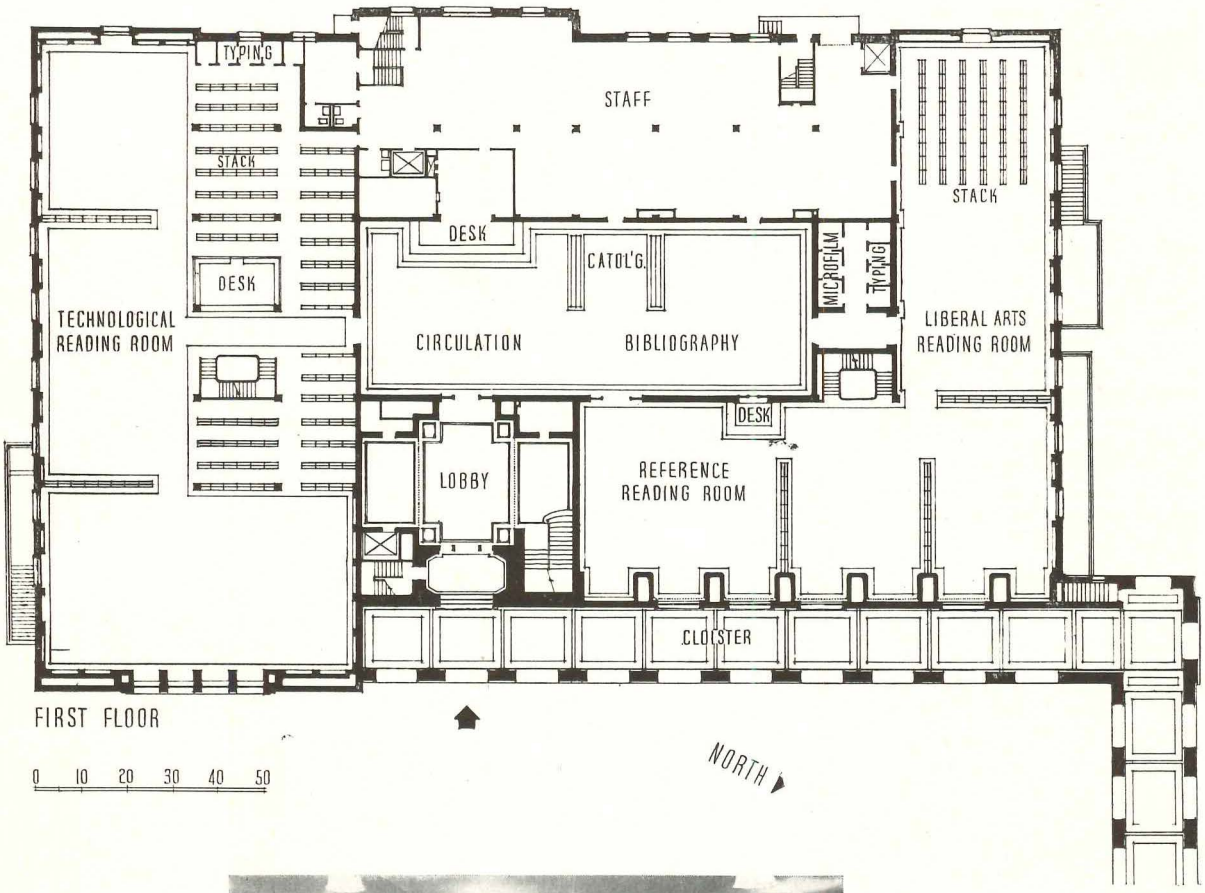
***William Ward Watkin***
***Consulting Architect***

***Jane Kidder, Designer, Interiors***

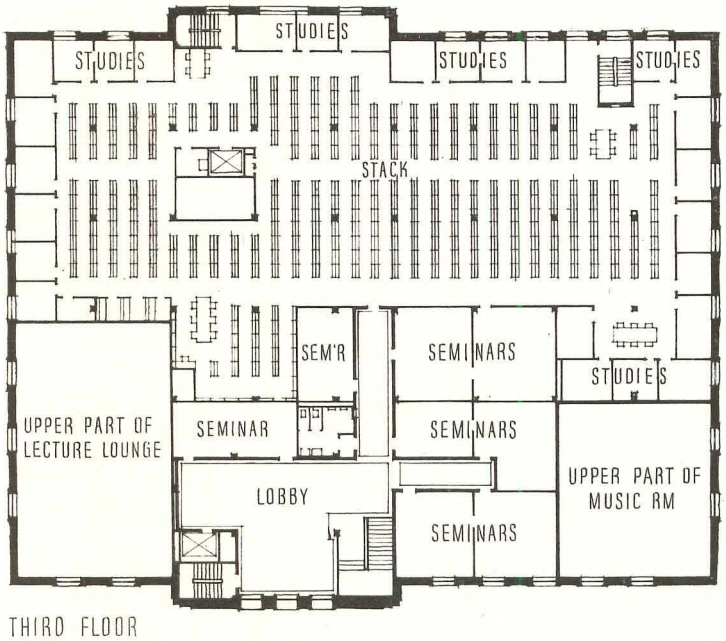
*Rice Institute's buildings have remarkably uniform architectural handling; Mediterranean influence strongly affected library's design. Facing page: technological reading room; below, toward liberal arts room*

Burt Moritz Photos

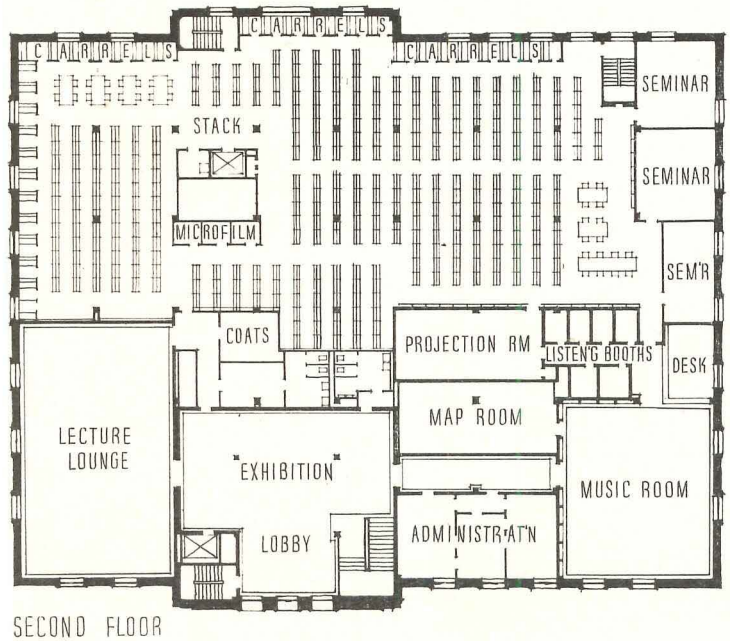
FONDREN
LIBRARY
RICE
INSTITUTE




Burt Moritz Photos




THIRD FLOOR

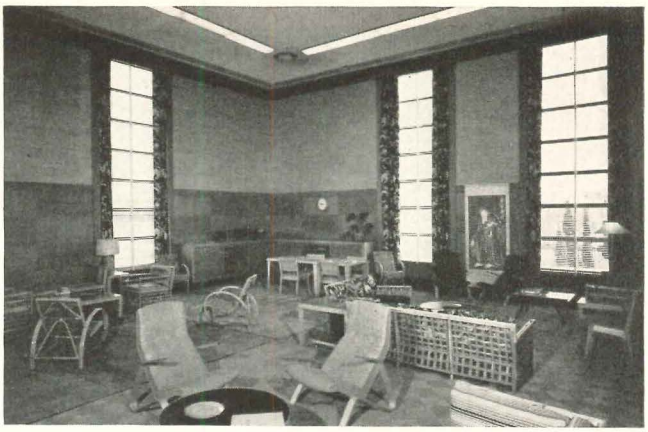



SECOND FLOOR

Fondren Library at Rice Institute is both a liberal arts and a technical institution in which the need for cross-referencing, often from one field to another, and integration of research with teaching, are well provided for. Books and materials come into the basement, are processed there and in first-floor workrooms, and proceed to the stacks; here they are readily accessible to special rooms (scientific, technical, general arts, music, maps, microfilm, etc.) and to study alcoves (carrels). For flexibility, reading and stack spaces interpenetrate; space can be allotted as circumstances require.

*Facing page: top, main circulation desk; bottom, carrels. Above: music reading room*

## FONDREN LIBRARY, RICE INSTITUTE



*Photos: right, music and fine arts room; below, lecture lounge showing rearrangement. Building is air conditioned; construction is concrete frame, brick and tile exterior walls, marble trim. Interior has extensive acoustic treatment; reading, circulation rooms have cork floors*

Burt Moritz Photos

# RESEARCH DATA POOLED IN CENTRAL LIBRARY

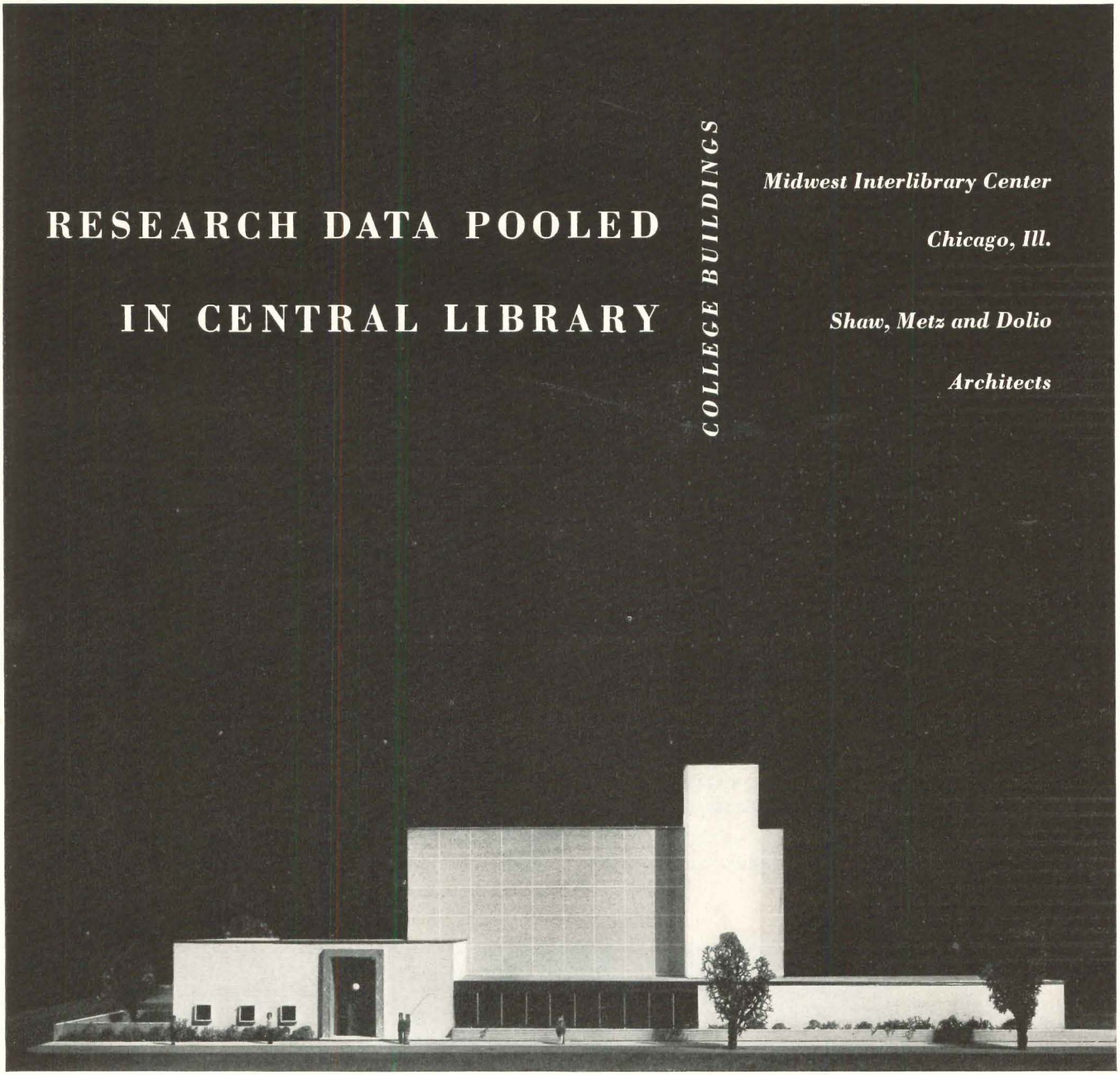
COLLEGE BUILDINGS

*Midwest Interlibrary Center*

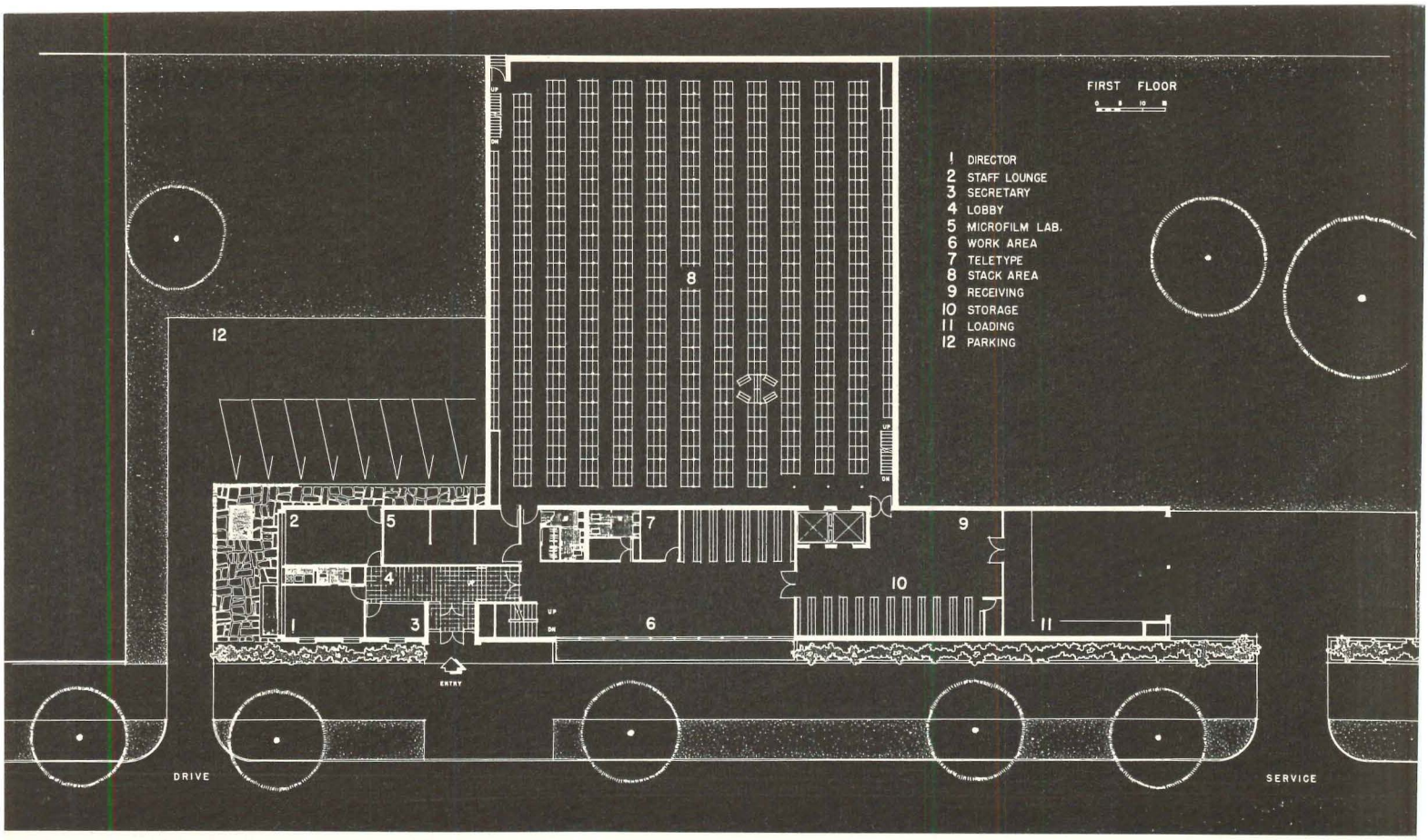
*Chicago, Ill.*

*Shaw, Metz and Dolio*

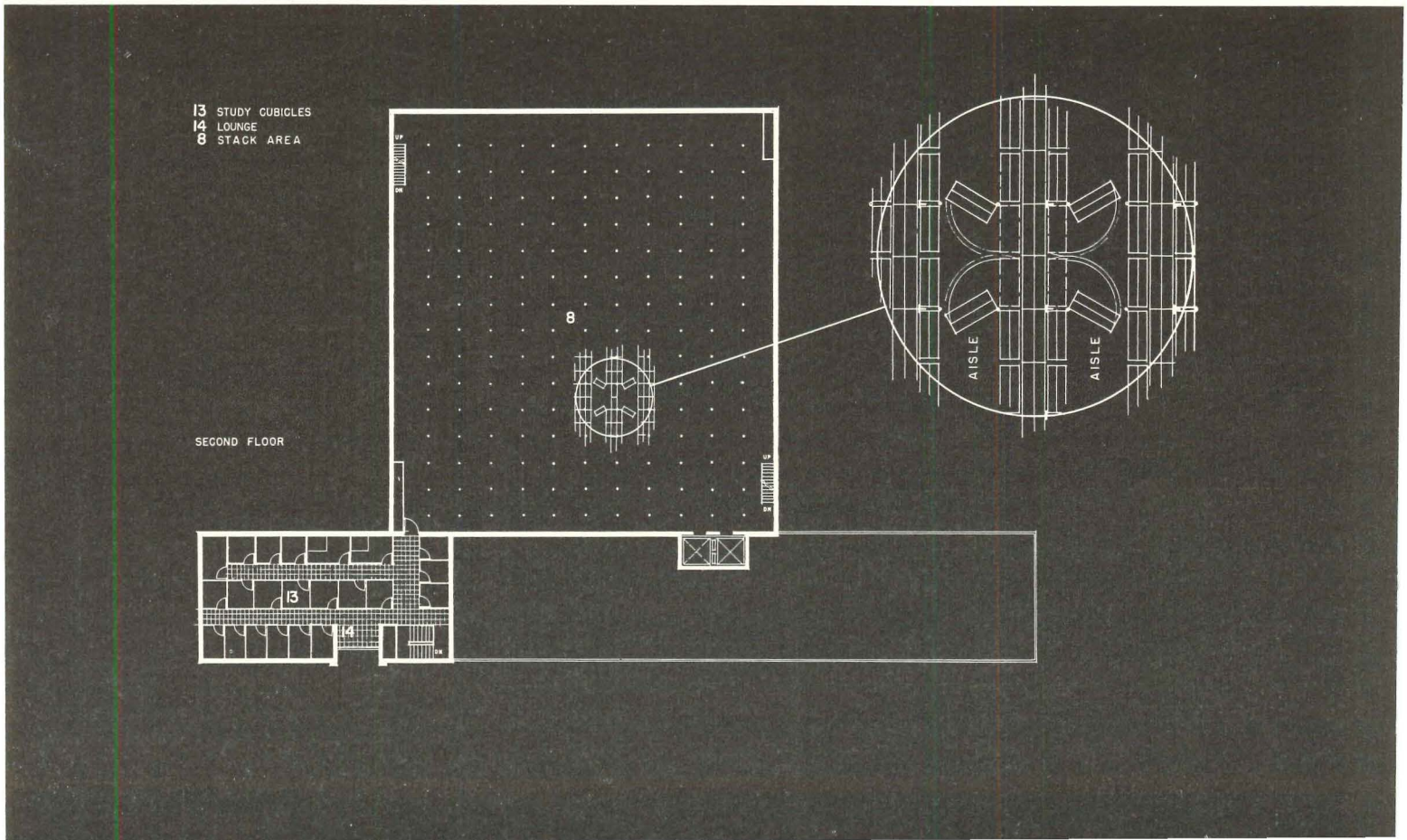
*Architects*

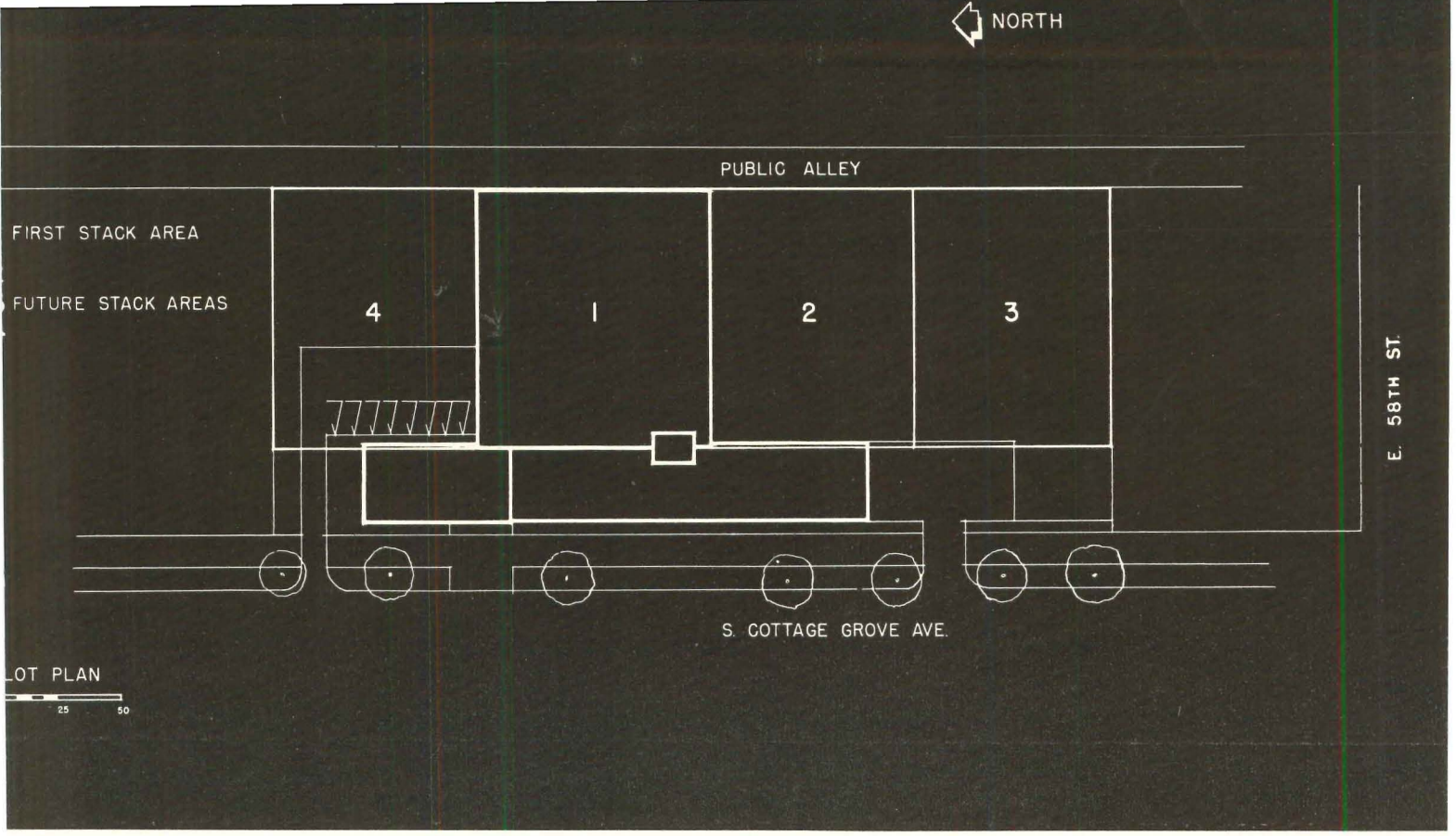


MIDWESTERN universities have been accumulating materials for research for years. However, it has become apparent that not enough copies of all data are available for all libraries; that costs of assembly are prohibitive; that much data are relatively little used. In October 1949 a group of (at present, 11) midwest colleges and universities formed the Midwest Interlibrary Association, which established the Midwest Interlibrary Center; Ralph T. Esterquest is the Center's Director. To quote Mr. Esterquest, the Association believes that ". . . now is the time to reexamine library policies . . . to take a bold stand against unconditional acceptance of traditional practices." The Association seeks to prevent ". . . duplication, confusion and fragmentary service . . ."

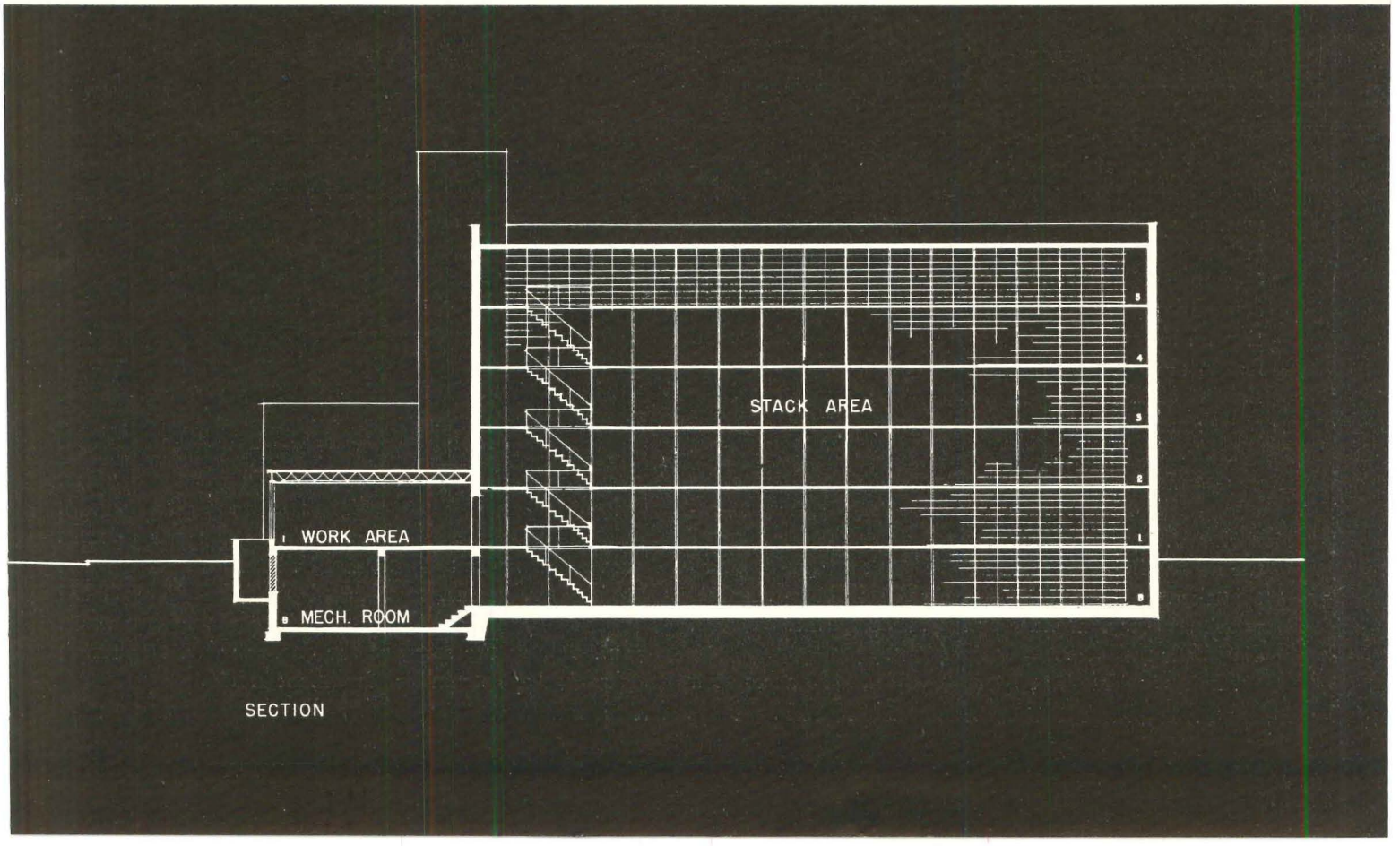



The first structure for Midwest Interlibrary Center is to be built on land donated by the University of Chicago, on whose campus the infant organization is now housed. Among its projects are a complete collection of publications of the 48 states, textbook collections, foreign dissertations, house organs, college catalogs, microfilm newspaper collection, and a joint-acquisitions proposal for purchasing expensive research items not now in any member library. The first stack unit (above and below) is to house 2¼ million volumes in triple rows of double-faced, pivoted stacks, with wide (3 ft 4 in.) aisles to facilitate truck passage.






Above is the Center's scheme for eventual expansion to accommodate nearly 10 million volumes or their equivalent. Important in the whole concept are provision of sufficient convenient carrels (cubicles) for visiting scholars, and servicing by teletype and truck transport for incoming and outgoing books for member universities. Although some researchers are concerned at having even infrequently-used materials some distance from the home campus, the Center's plans have been favorably received when it has been pointed out that otherwise data might not be available at all, and that items will usually be available on 24-hour service.




# FIRST OF THE HILL-BURTON HOSPITALS

*George H. Lanier Memorial Hospital, Langdale, Ala.*

While this hospital was the first one approved under the Hill-Burton Act program, it is perhaps more interesting as an example of planning a hospital for a special need. It is a 90-bed general hospital, planned for considerable expansion, planned also for specific requirements of an area badly in need of health facilities as well as hospital beds. It is planned, further, to fit into the coordinated hospital program, and thus to logically supplement other hospital facilities, most of them yet to be built. It is characterized as a "district" or "intermediate" hospital in the coordinated scheme.

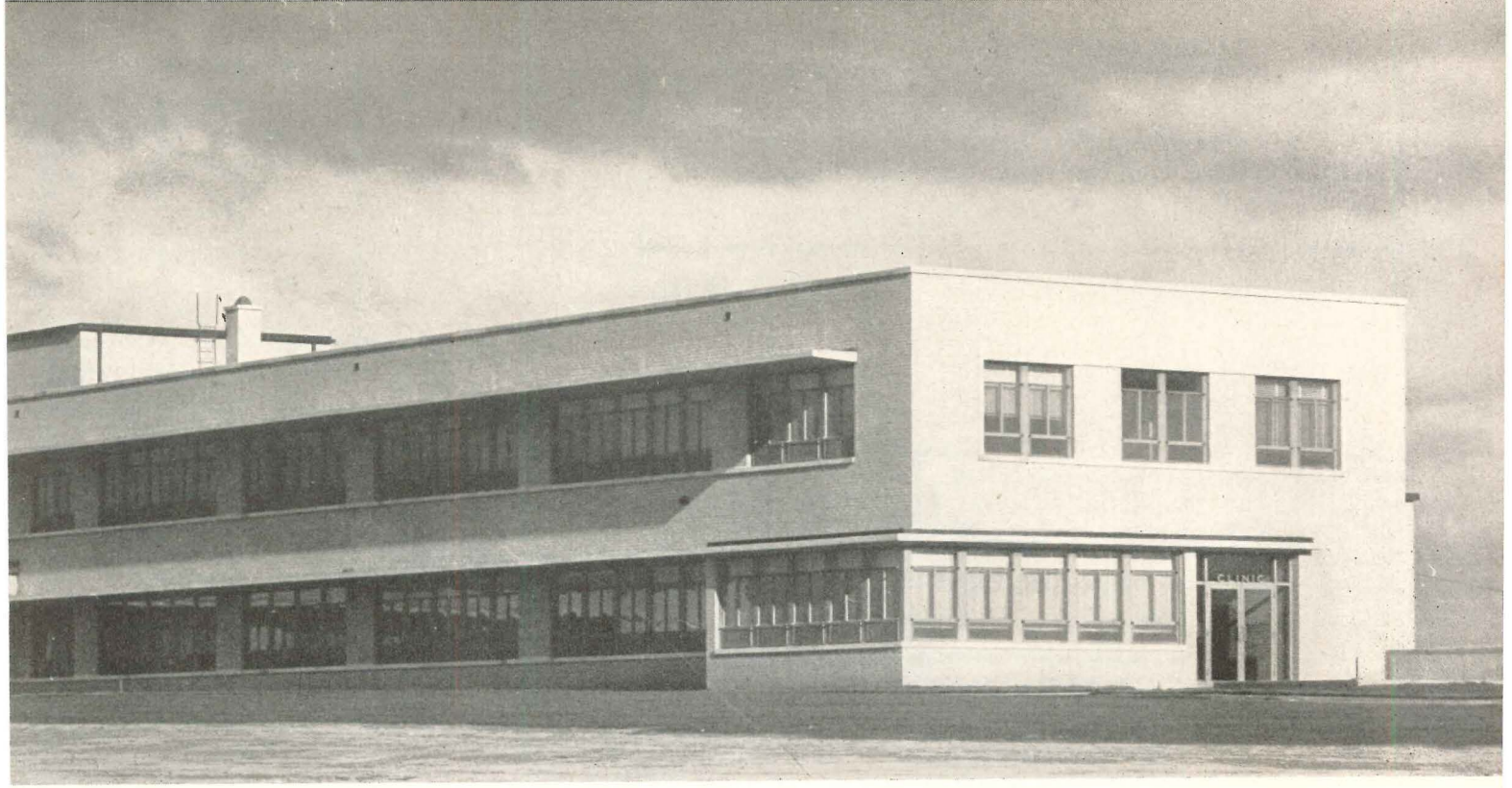
The federal aid brought to fruition a voluntary campaign begun many years ago and interrupted by the war. The Chattahoochee Valley area, with 38,000 population, was virtually without hospital facilities, and George H. Lanier and other industrialists began the campaign; employees and citizens added their contributions. This genesis led to one of the hospital's special features — health facilities for the periodic examination of all industrial workers in the area (first floor plan, south wing).

Under the circumstances, the basic design objective was flexibility for expanding needs. The plan as developed may be expanded to about twice the bed capacity without much disturbance to the operation of the first unit. The basic fundamentals are provided so that there will be ample space for general stores, central supply, surgery, kitchen, laundry, administrative offices, diagnostic facilities and boiler plant.

The site selected, at Langdale, Ala., is 23 acres on a beautiful bluff overlooking the alliterative Chattahoochee River. Aside from the consideration of rural peace and quiet, the site is roughly in the center of the area served. The hillside location has the advantage of providing full window height for the river side of both basement and sub-basement. Still lower on the hill, the boiler plant does not block the view from patients' rooms, and prevailing breezes take stack gases away from the hospital building.

The river view was a factor also in the disposition of patients' rooms, which face east and west, in the large north and south wings of the cruciform plan. And this type of plan works well in achieving the desired flexibility. The major adjunct facilities are in the east wing, and will keep their central position even if other wings are expanded. In fact virtually any of these facilities could be expanded themselves, without changing other layouts. This is an extra precaution, as they are already sized for approximately double the present bed capacity.

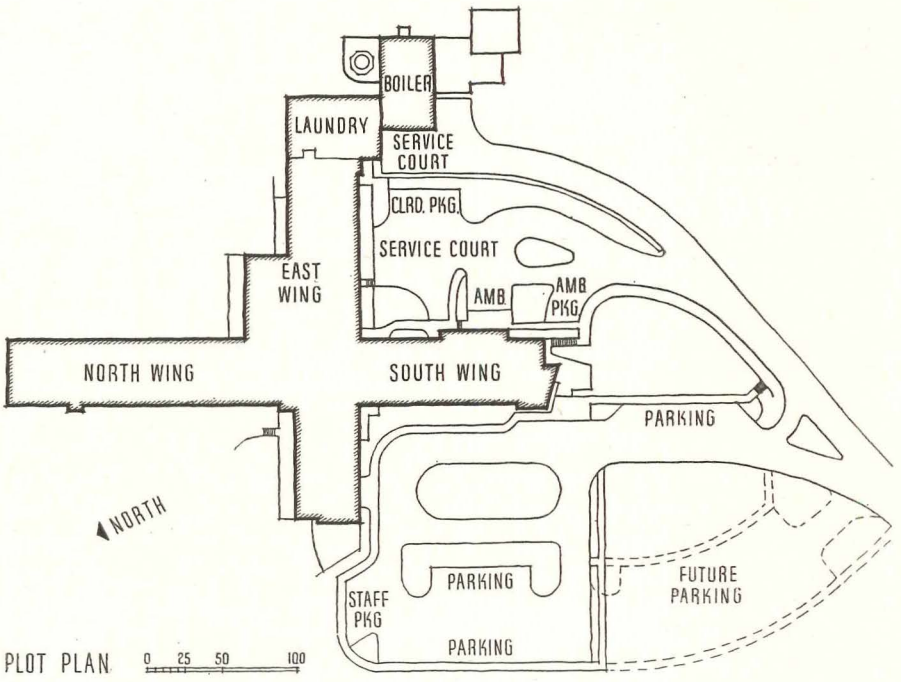
The building has reinforced concrete frame with a warm gray face brick and clay tile exterior wall. Interior walls are tile, with "institutional" finishes chosen for easy maintenance, with ceramic tile walls where cleanliness is a factor, asphalt tile floors, plaster walls. Color schemes and decorations, on the other hand, are anything but "institutional." Patients' rooms use soft blues, greens, cream, and peach colors, with the wall at the head of the bed lighter than other walls, and ceilings the same as the darker walls, to prevent glare and eye strain for the patient in bed.



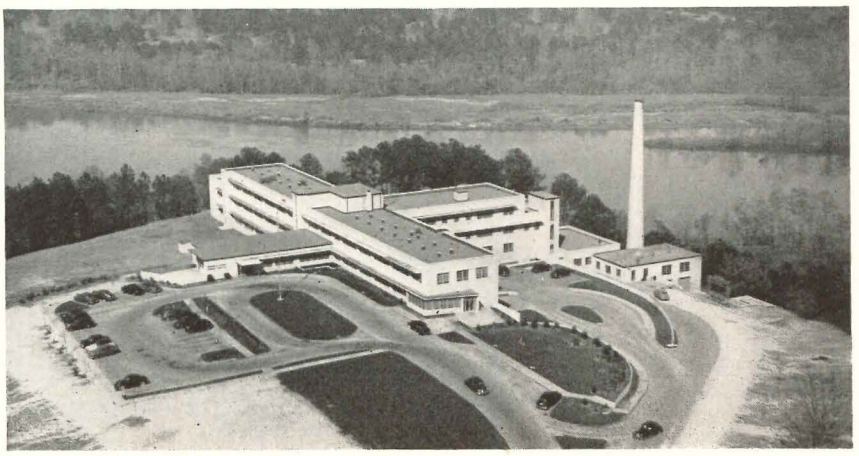
***Robert and Company Associates***

***Architects and Engineers;***

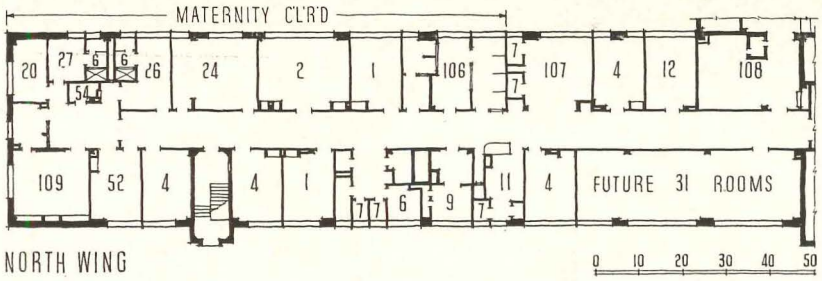
***Jesse M. Shelton, Associate Architect***



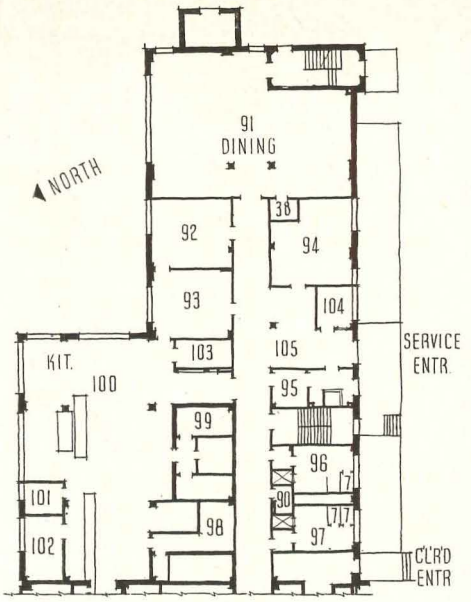

*Traffic around the hospital is carefully segregated and controlled by the rather complicated scheme shown in the site plan and the aerial photograph below. Main patient and visitor traffic comes to the high level, to outpatient entrance and main entrance in the administrative wing, with a parking area for staff cars and a larger one for visitors. In the court at the next lower level are the main service entrance and the ambulance (emergency) entrance, with special parking space for ambulances. At the still lower level there is another service entrance for laundry and boiler room*



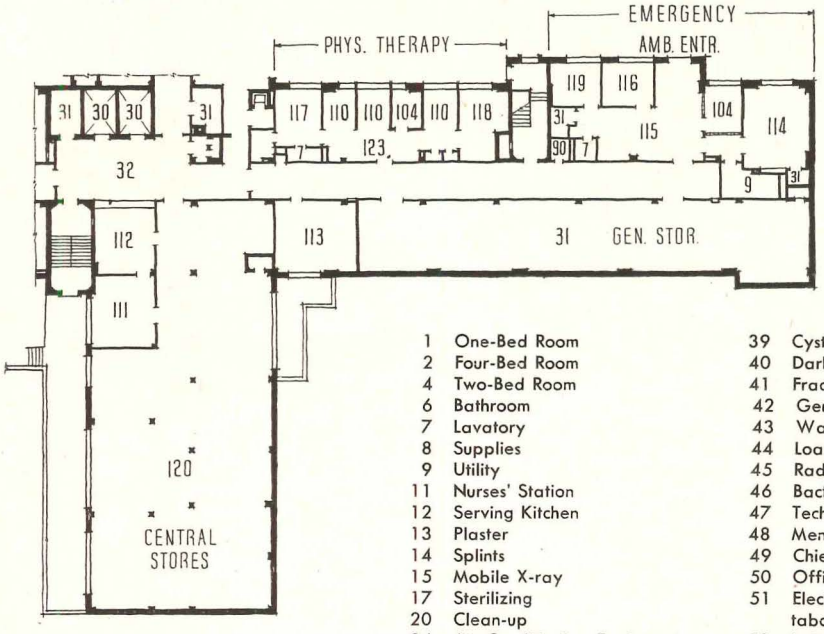
Gabriel Benzur Photos




NORTH WING




EAST WING



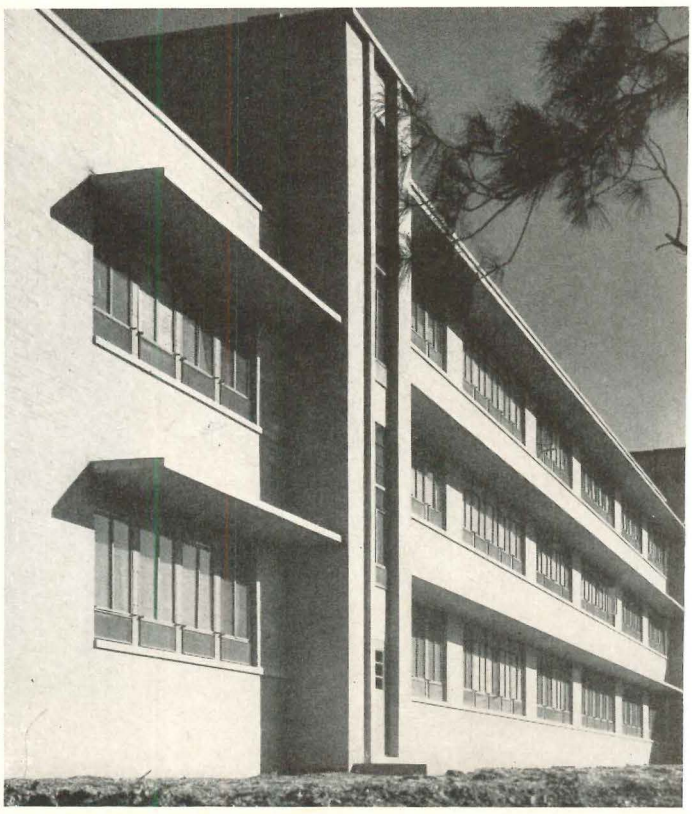

BASEMENT - SOUTH WING

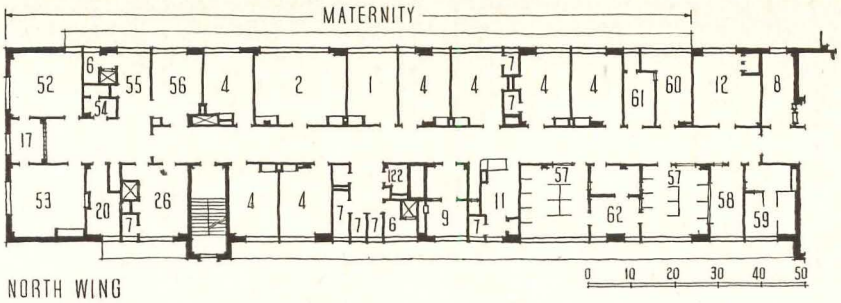
**LEGEND**

1 One-Bed Room
2 Four-Bed Room
4 Two-Bed Room
6 Bathroom
7 Lavatory
8 Supplies
9 Utility
11 Nurses' Station
12 Serving Kitchen
13 Plaster
14 Splints
15 Mobile X-ray
17 Sterilizing
20 Clean-up
24 Air Conditioning Equipment
26 Doctors' Lockers
27 Nurses' Lockers
30 Elevator
31 Storage
32 Lobby
33 Therapy
34 Control
35 Examination & Rest Room
36 Patients' Waiting
37 Dressing Room
38 Linen
39 Cystoscopy
40 Dark Room
41 Fracture
42 General Laboratory
43 Washing & Sterilizing
44 Loading
45 Radiography & Fluoroscopy
46 Bacteriology Serology
47 Technician's Office
48 Men
49 Chief's Office
50 Office Film Viewing & Filing
51 Electrocardiograph & Basal Metabolism
52 Labor Room
53 White Delivery
54 Sterile Supplies
55 Nurses
56 Labor or Patient's Room
57 Nursery
58 Premature Nursery
59 Suspect Nursery
60 Formula Room
61 Bottle Washing
62 Examination & Work Room
63 Women
64 Admitting Office
65 Business Office
66 Retiring
67 Director of Nursing
68 Secretary
69 Administrators Office
70 Coats
71 Staff Conference
72 Clinic Lobby
73 Social Service
74 Examination
75 Doctor
76 Surgical Dressing
77 General Clinic — Sub-Waiting
78 Maternal Clinic — Sub-Waiting
79 Demonstration
80 Chief Nurse
81 Health Officer
82 Library
83 Medical Records
84 Pharmacy
85 Dental
86 Ear, Nose & Throat
87 Laboratory
88 Recovery
89 Sanitary Engineer

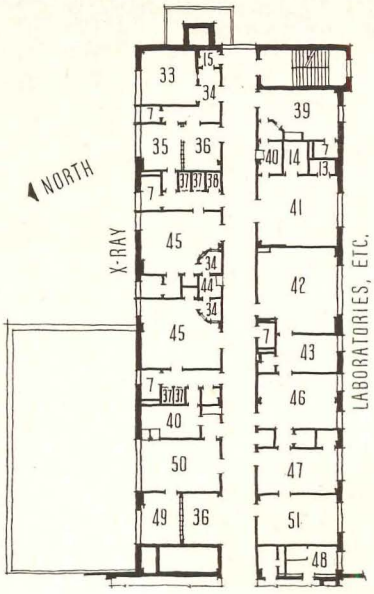
*Basement floor, most of which is above grade, makes a good location for emergency suite, physical therapy department and central supplies, with a huge space for general storage. In the north wing the entire basement level is above ground, and can be used for bedroom space, nursery and delivery suite for segregated patients. In the east wing the basement is high above ground, suitable for main kitchen and dining rooms. Patients are served from main kitchen by the tray system, trays being transported by "trayveyors"*

*First floor (opposite page) separates nicely in the cruciform scheme into the overgrown health clinic and outpatient department in the south wing, administrative area in west wing, X-ray and laboratories in the east wing. The more isolated north section becomes maternity nursing unit, with delivery rooms at far end. Most bedrooms face the river, nurseries across corridor*

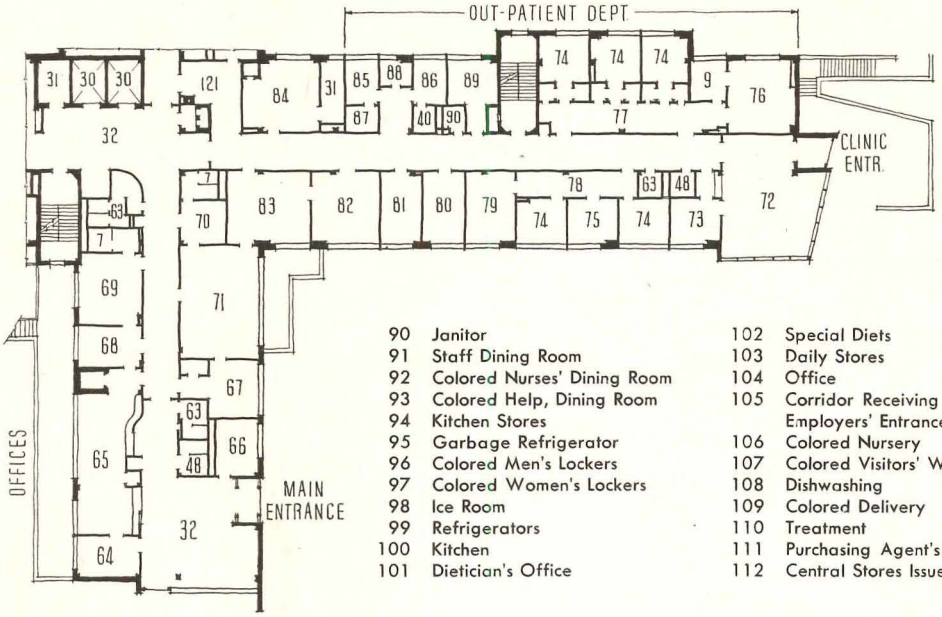





NORTH WING



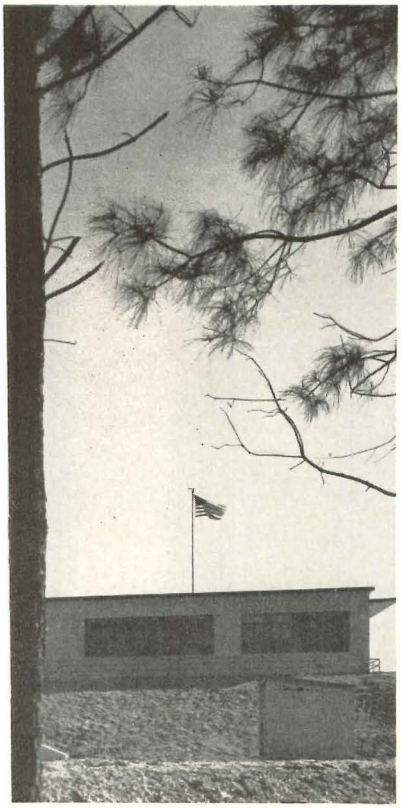

EAST WING

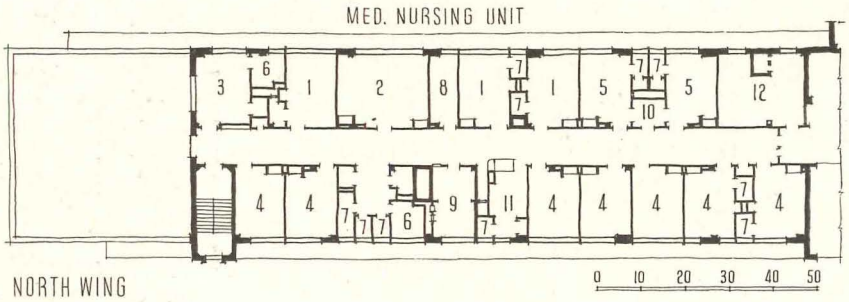


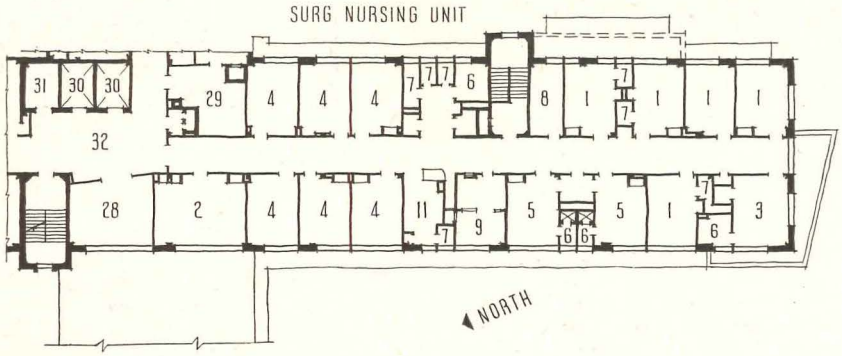

FIRST FLOOR - SOUTH WING

| | | | | | |
|---|---|---|---|---|---|
| 90 | Janitor | 102 | Special Diets | 113 | Medical Record Storage |
| 91 | Staff Dining Room | 103 | Daily Stores | 114 | Emergency Operation |
| 92 | Colored Nurses' Dining Room | 104 | Office | 115 | Emergency Waiting |
| 93 | Colored Help, Dining Room | 105 | Corridor Receiving & Employers' Entrance | 116 | Observation |
| 94 | Kitchen Stores | | | 117 | Hydrotherapy |
| 95 | Garbage Refrigerator | 106 | Colored Nursery | 118 | Exercise |
| 96 | Colored Men's Lockers | 107 | Colored Visitors' Waiting | 119 | Security Observation |
| 97 | Colored Women's Lockers | 108 | Dishwashing | 120 | Central Stores — General & Bulk Supplies |
| 98 | Ice Room | 109 | Colored Delivery | | |
| 99 | Refrigerators | 110 | Treatment | 121 | Passage |
| 100 | Kitchen | 111 | Purchasing Agent's Office | 122 | Flowers |
| 101 | Dietician's Office | 112 | Central Stores Issue | 123 | Physical Therapy Waiting |

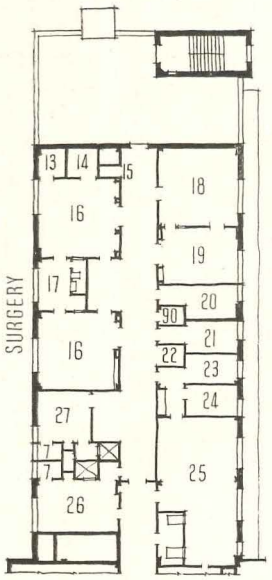
Gabriel Benzur Photos






SECOND FLOOR · SOUTH WING



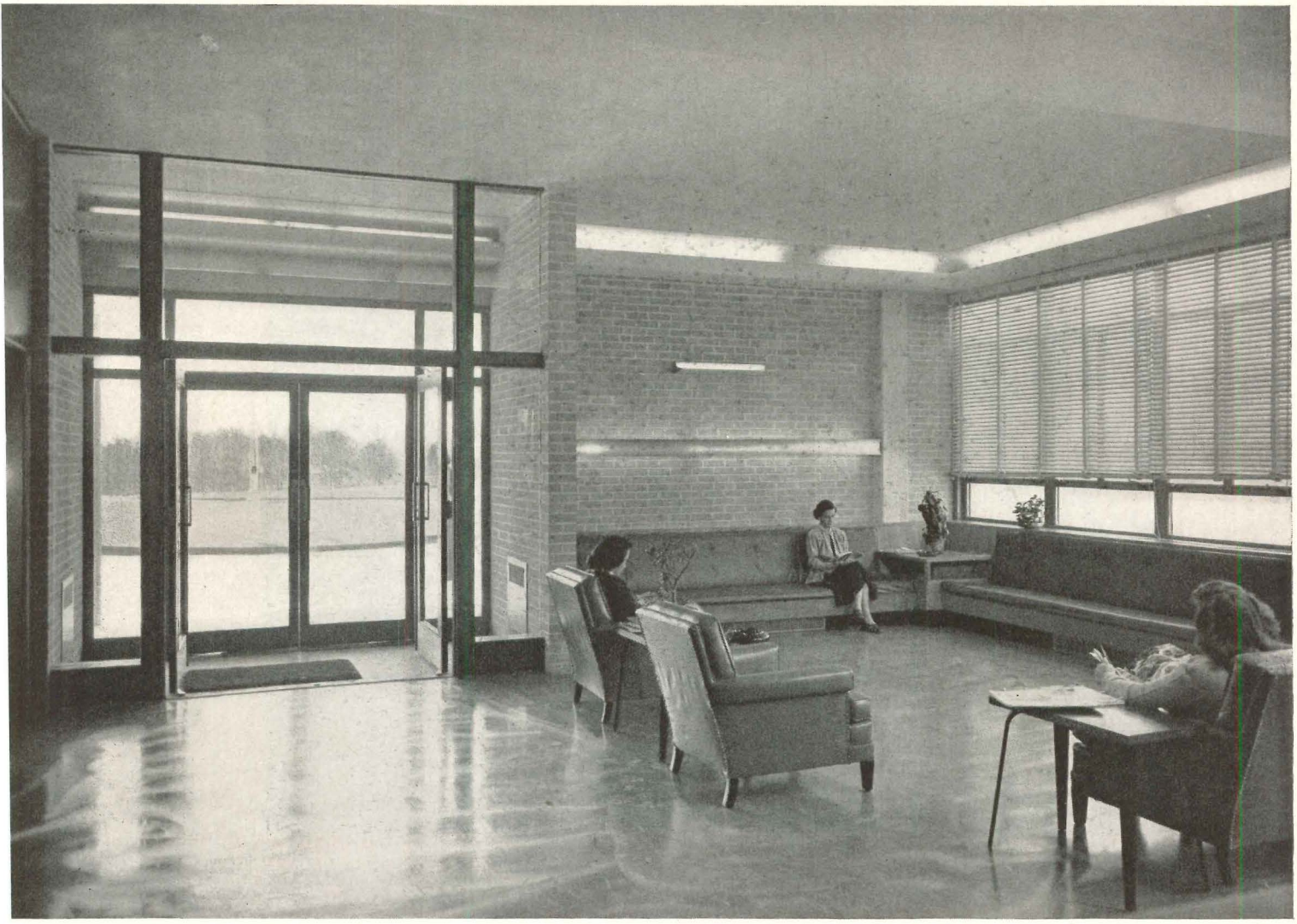

EAST WING

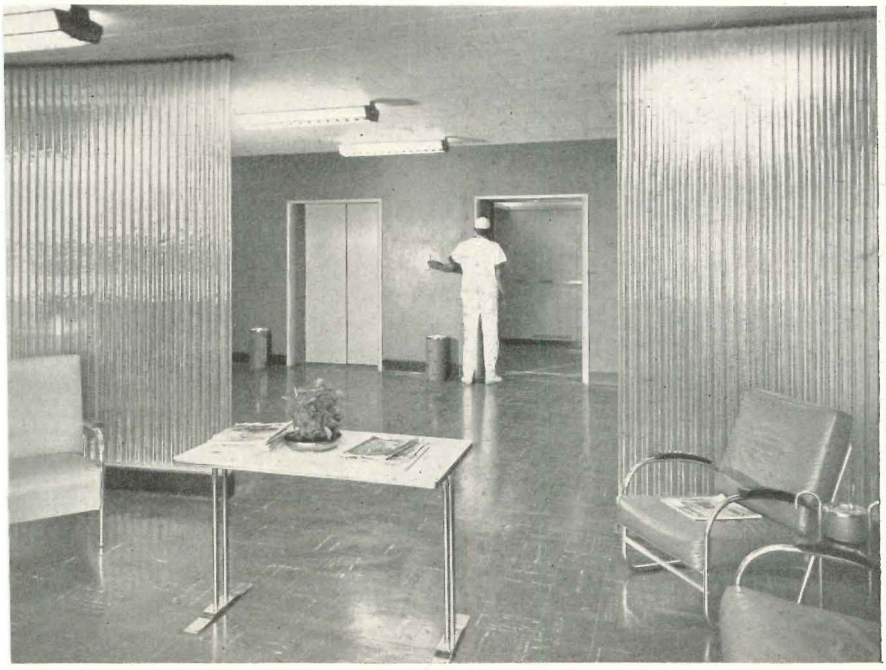
**LEGEND**

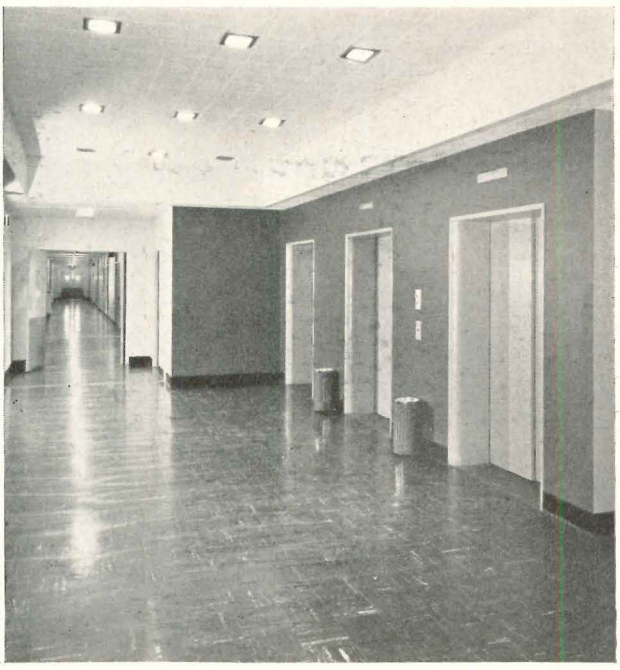
1 One-Bed Room
2 Four-Bed Room
3 Private Room
4 Two-Bed Room
5 Isolation Room
6 Bathroom
7 Lavatory
8 Supplies
9 Utility
10 Sub-Utility
11 Nurses' Station
12 Serving Kitchen
13 Plaster
14 Splints
15 Mobile X-ray
16 Operating
17 Sterilizing
18 Future Scrub-Up, Sterilizing
19 Minor Operating
20 Clean-Up
21 Anesthesia Storage
22 Stretchers
23 Non-Sterile Supplies
24 Air Conditioning Equipment
25 Central Supply Sterilizing
26 Doctors' Lockers
27 Nurses' Lockers
28 Visitors' Waiting
29 Central Supply Issue
30 Elevator
31 Storage
32 Lobby
90 Janitor

Gabrie Benzur Photos

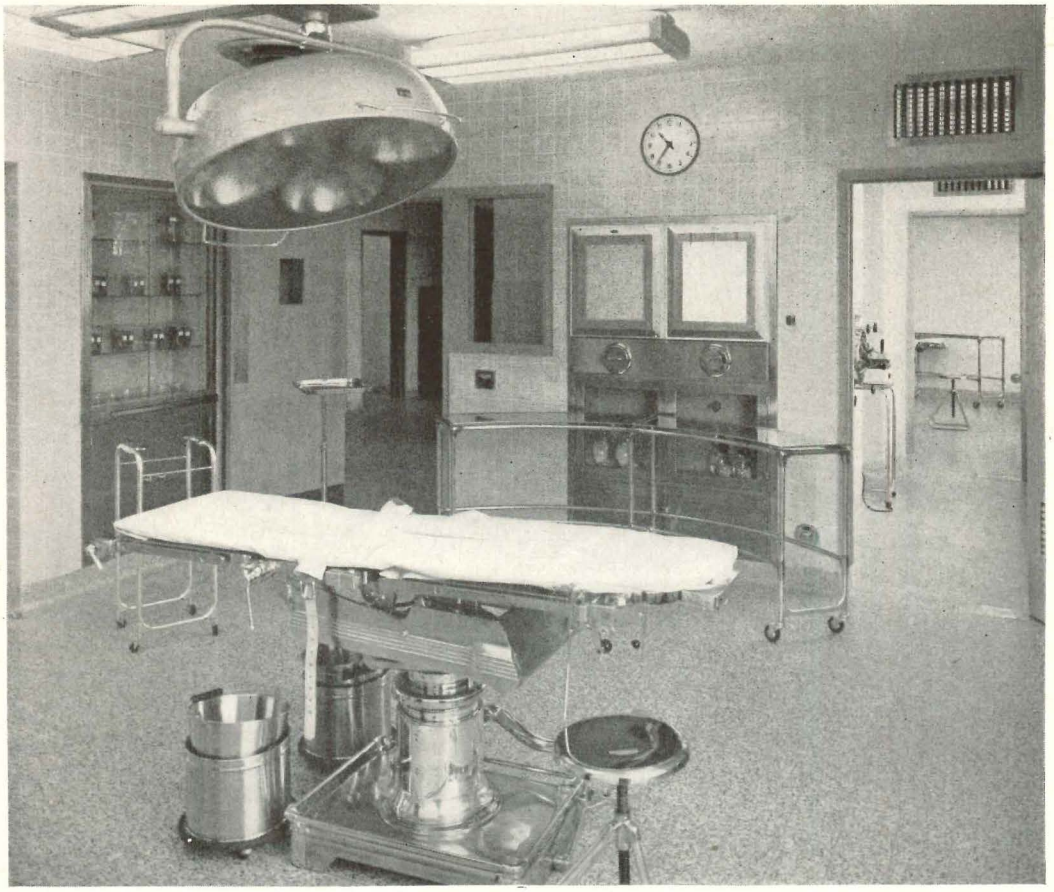
*Second floor has two nursing units, for surgical and medical patients, with the surgical department in the east wing, leading off from the center of the building. Should additional stories be added, this floor would remain the surgical section, a third floor would take medical patients, and there might even be a fourth floor, for pediatrics, which is about as far as future planning can be carried in medicine*







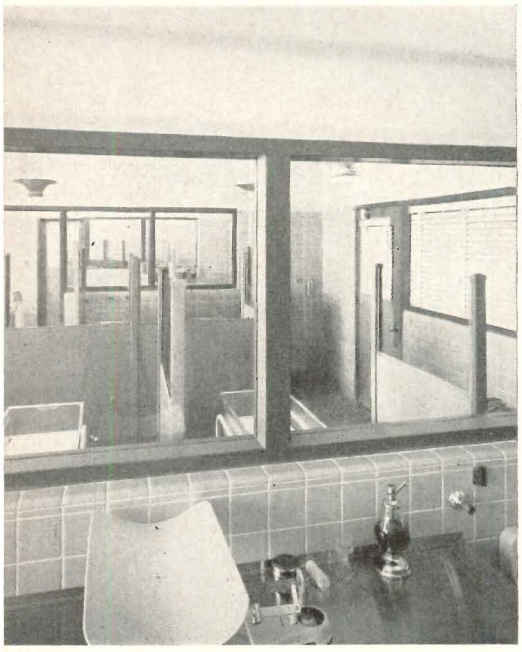
Gabriel Benzur Photos



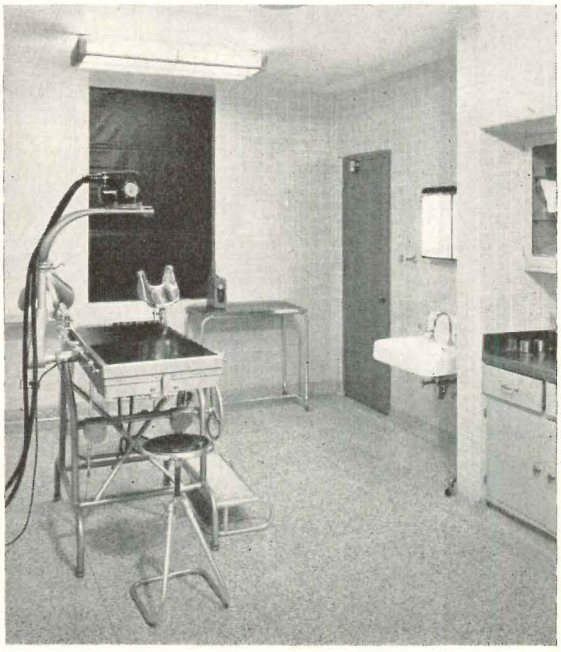
*Major operating room, second floor, east wing*

*Opposite page, delivery room first floor, north wing*

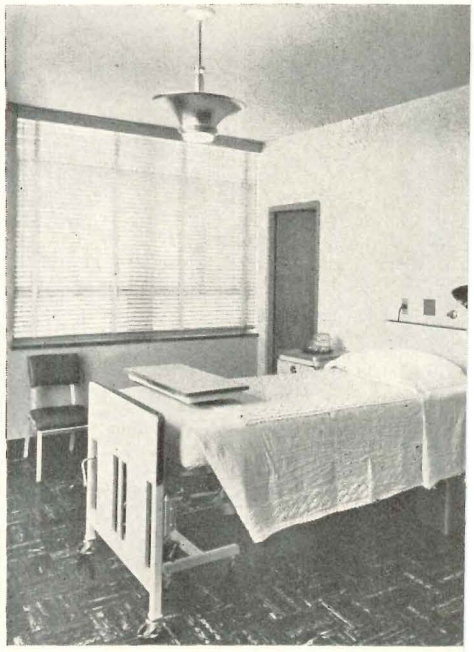
*Nursery, first floor*



*Cystoscopy room, first floor*



*Typical patient's bedroom*

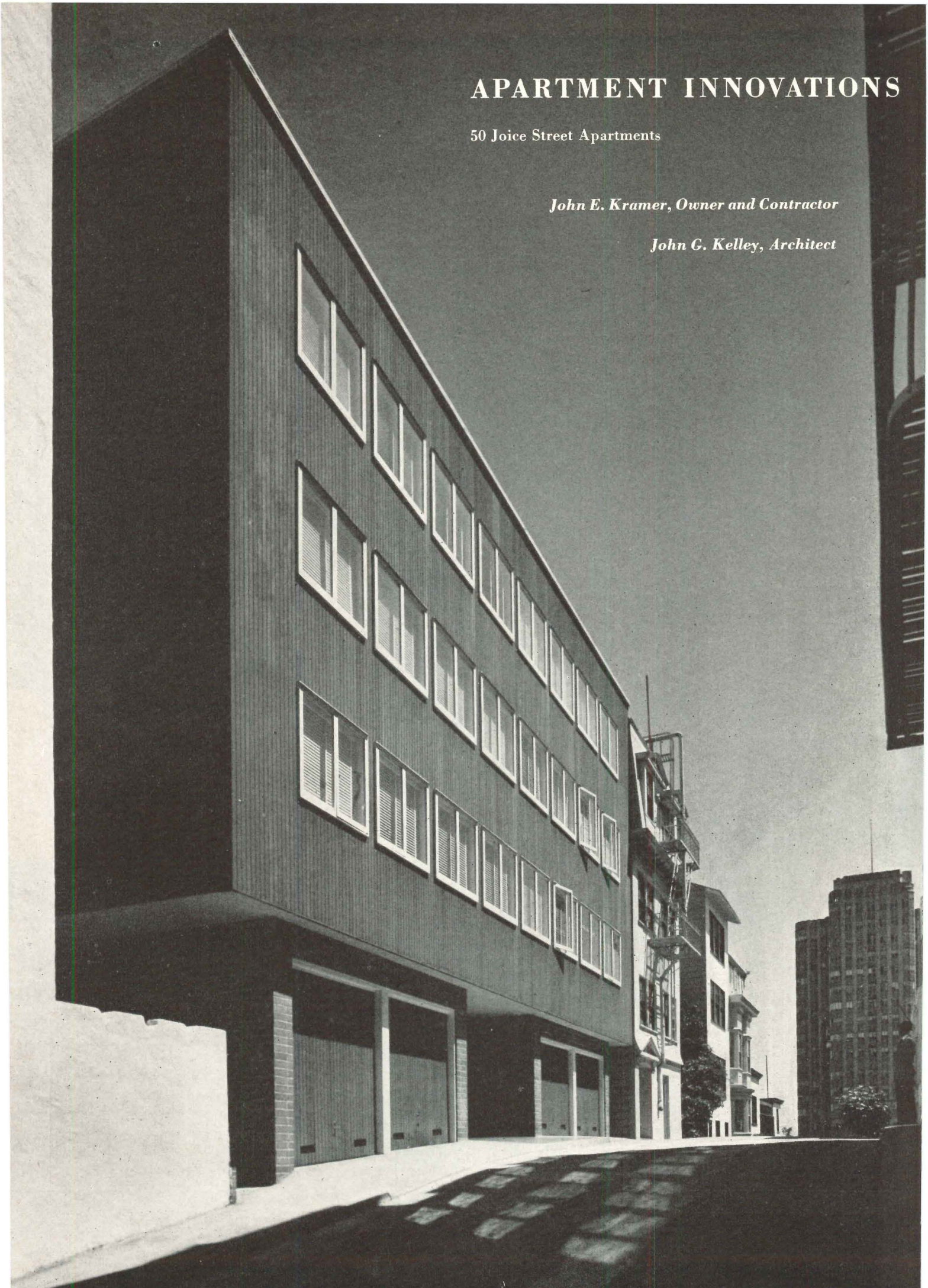


# APARTMENT INNOVATIONS

50 Joice Street Apartments

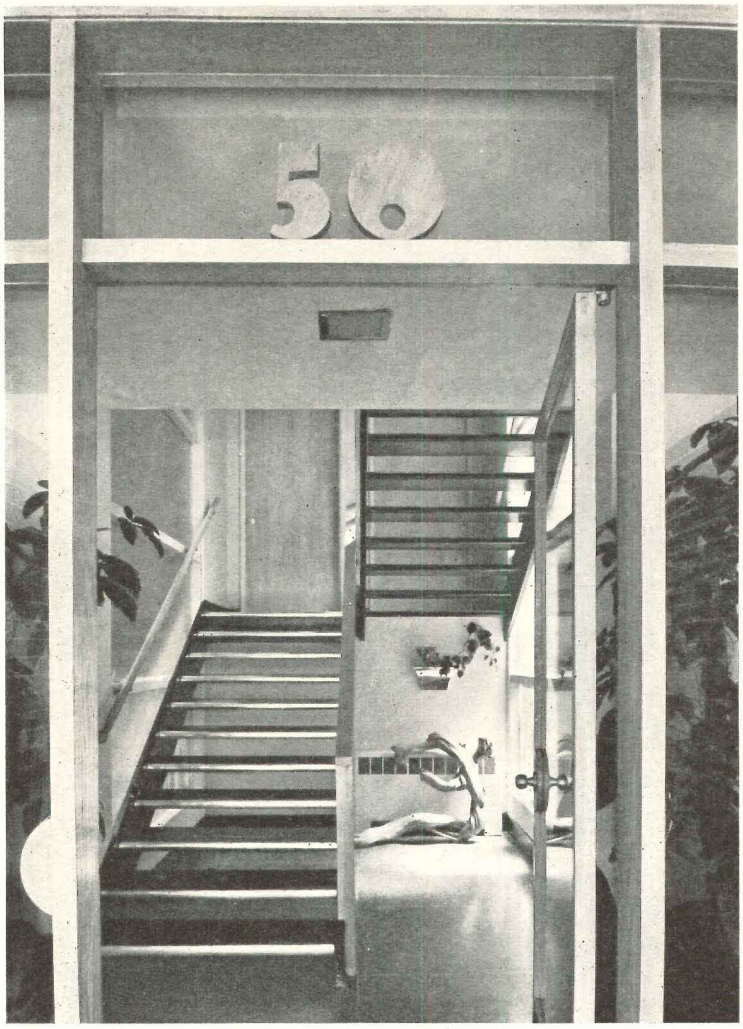
*John E. Kramer, Owner and Contractor*

*John G. Kelley, Architect*



# FOR SAN FRANCISCO

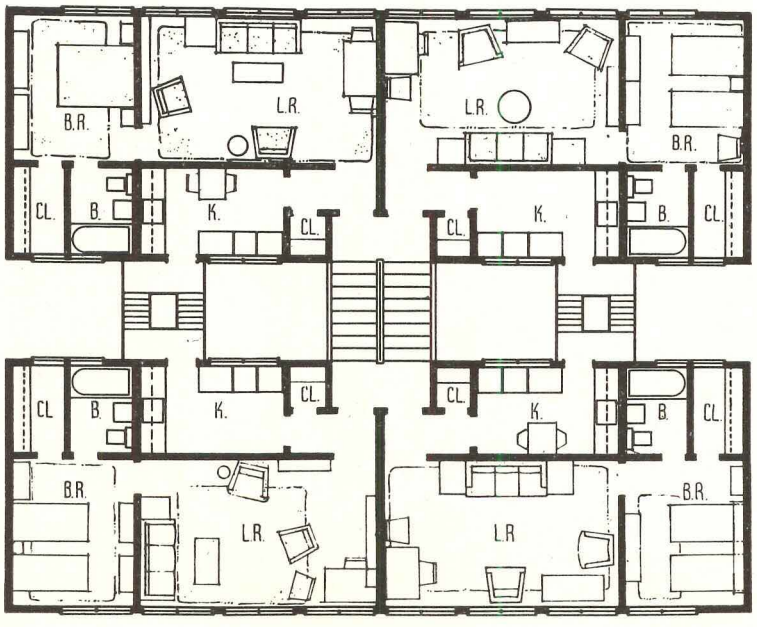
Roger Sturtevant Photos

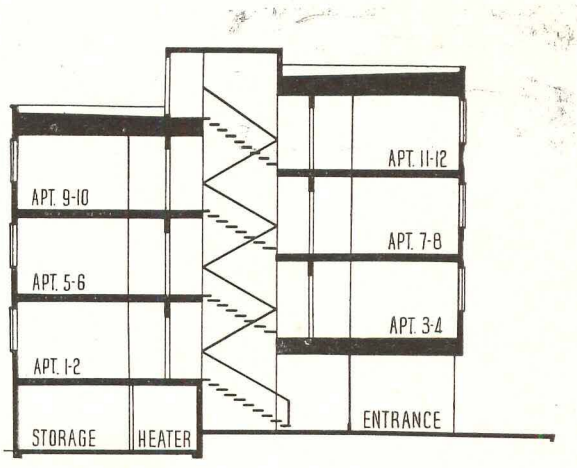


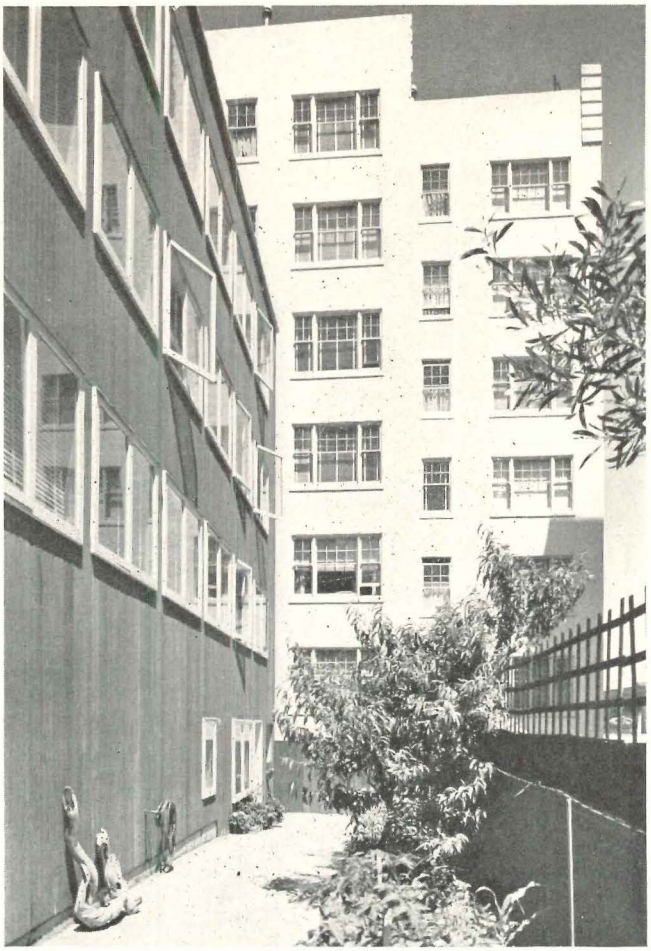

A NARROW San Francisco street tests the ingenuity of an architect fairly severely, but by the same token it becomes a good place to demonstrate that quality. The photograph on the opposite page has a before and after suggestion, with the clean, uncluttered simplicity of modern design together with the efforts of an earlier era. Plan and section below illustrate the ingenuity with which fire escapes were kept inside.

The confines of the site coupled with the financial requirements of the project resulted in several innovations. Separation of the building into two units, each 20 by 60 ft, simplified the construction and provided an interior court for vertical circulation and light. Staggering the floor levels of the two units allowed the stairs to span from one to the other in an economical arrangement. The narrow shape of the units puts the long side of the living room and the bedroom on the open side, with kitchens and baths grouped (for economical plumbing) on the court side. Fire escapes are kept off the front of the building, and serve also for the service entrances.

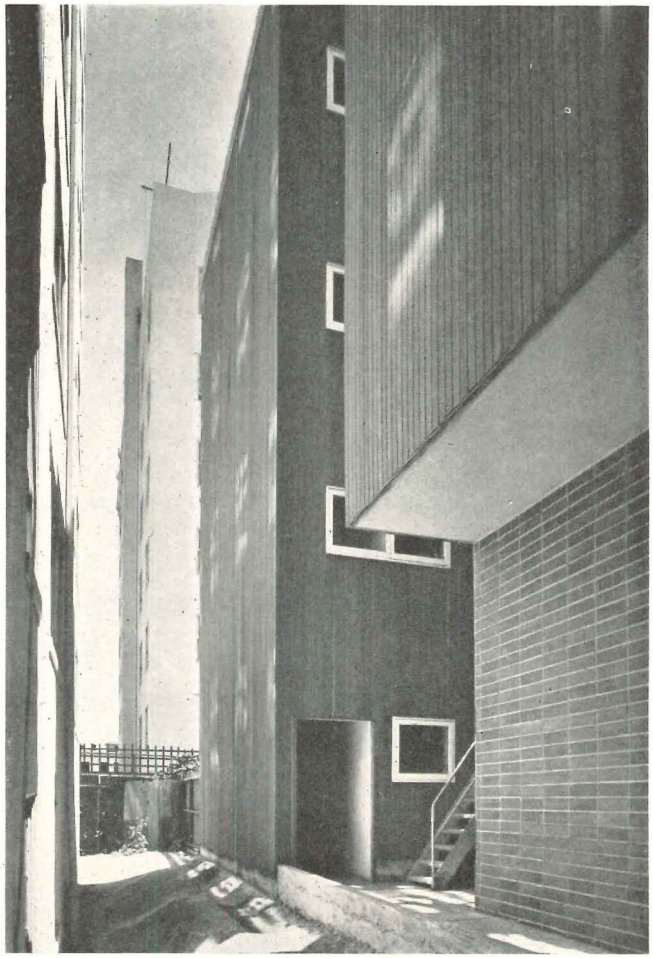
There is perhaps some incongruity between the message of the photographs and that of the floor plans. The apartments are quite small, due partly to the owner's desire to get in the maximum allowable number of rental units, and partly to the location of the property. Joice Street is close to downtown San Francisco, and has a sort of gentle Bohemian character which makes it a logical place for the junior executive or the career girl. Nobody imagines the building appealing to families with children, or even with any accumulation of bulky possessions. In other words the logical tenants find in this building a combination of visual appeal and compact convenience which should make this project pay out rather nicely.



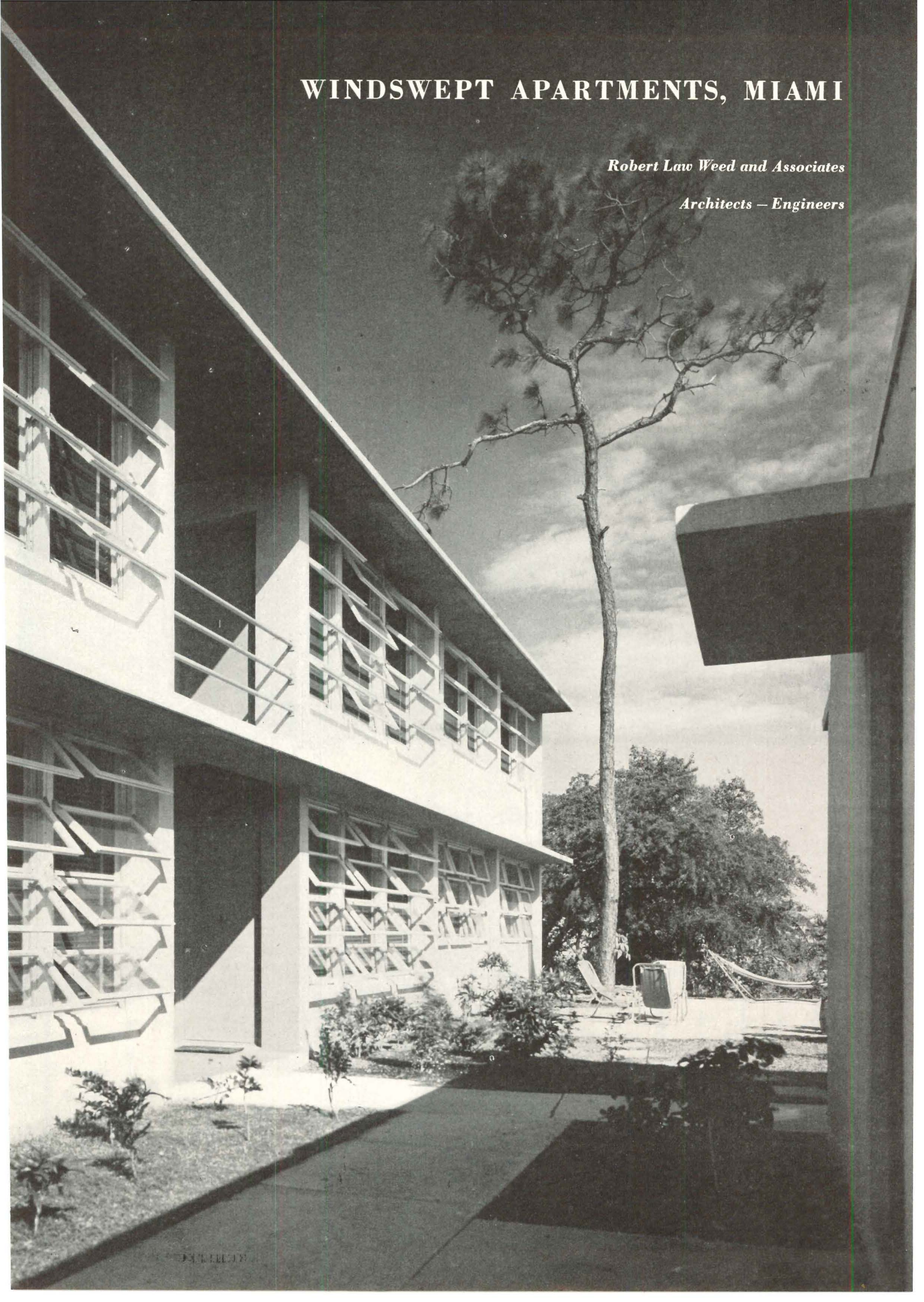





*The 50 Joice Street Apartments are of wood frame construction, with stained redwood exterior. Interior walls are of integral color plaster. Windows, both fixed and casement, are of wood. Walls between apartments are double, with acoustic insulation between*



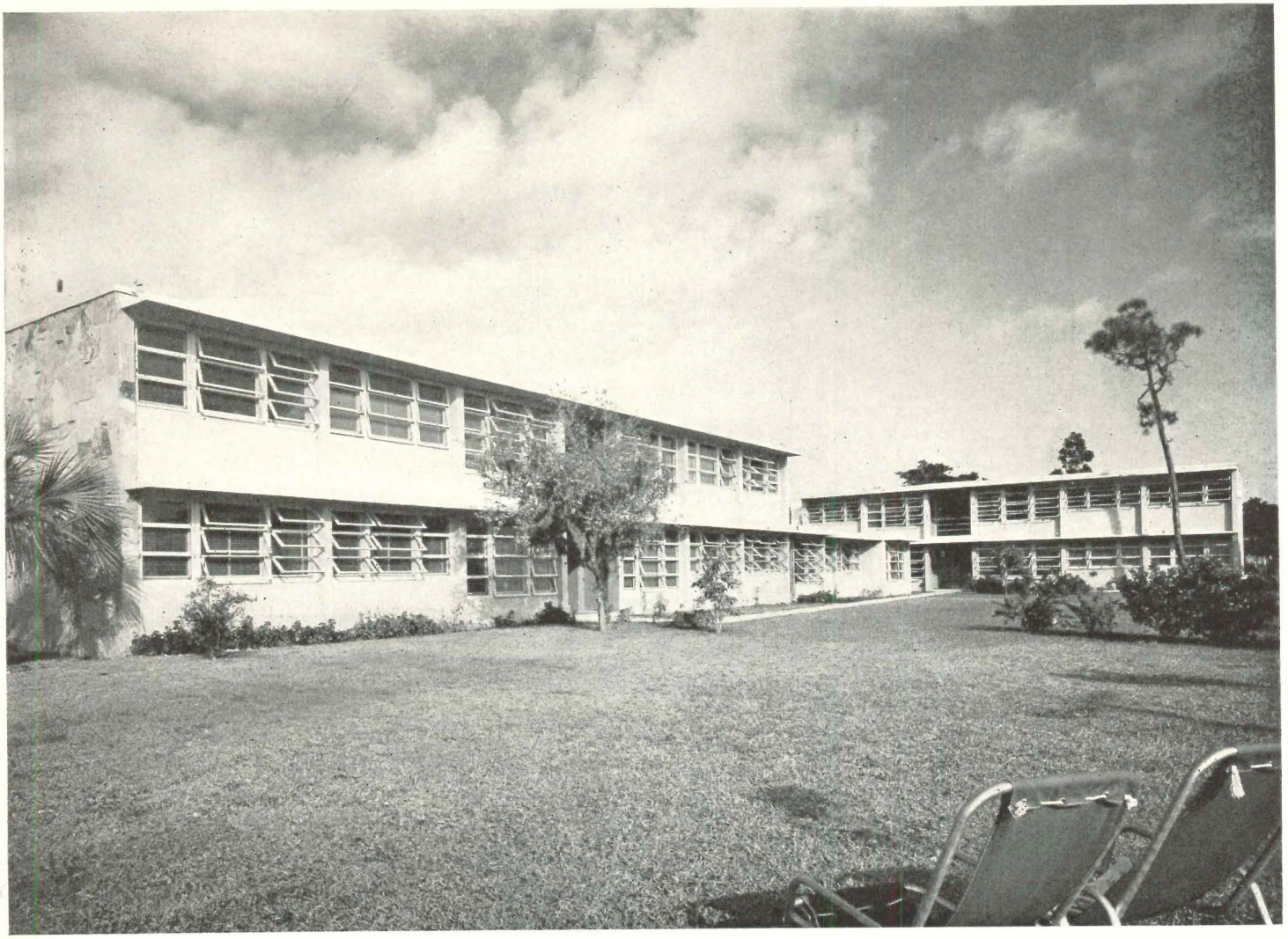
Photos this page Roger Sturtevant; opposite, Ezra Stoller: Pictor



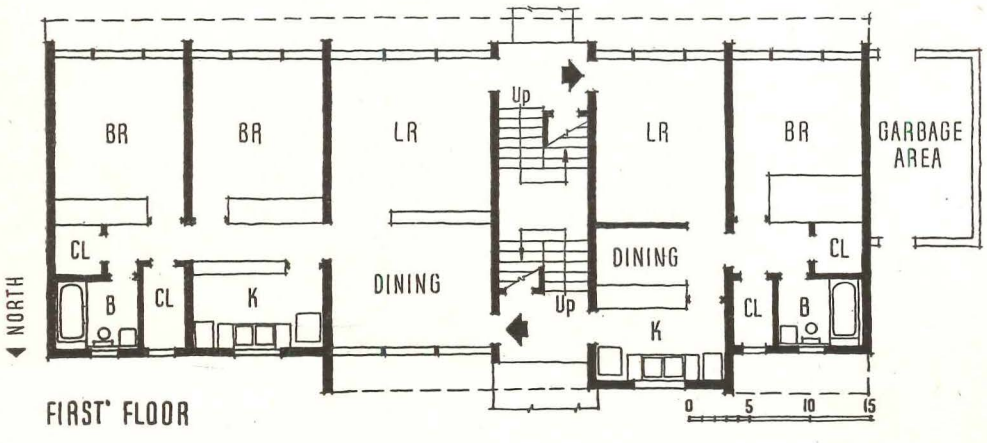
# WINDSWEPT APARTMENTS, MIAMI

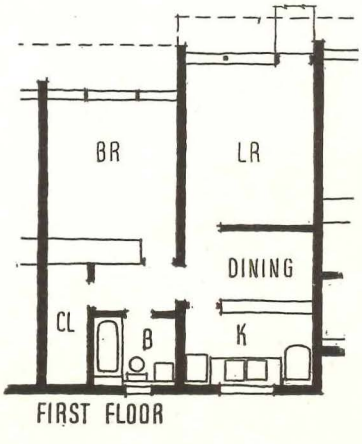
*Robert Law Weed and Associates*

*Architects — Engineers*



*Windswept Apartments, Miami (cont.)*



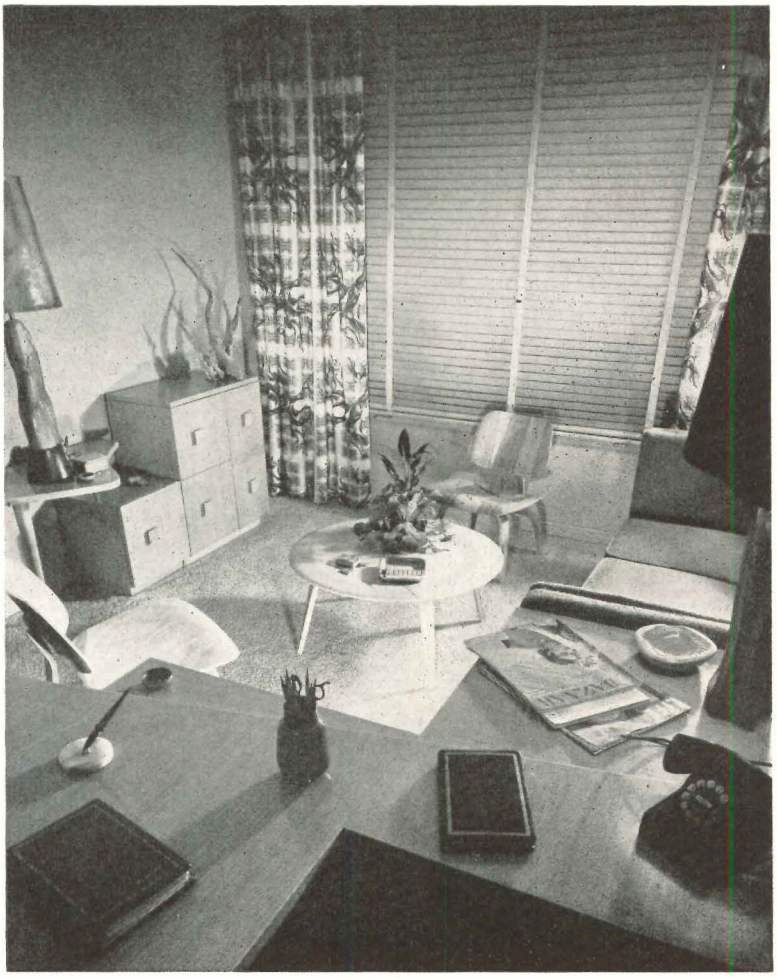



HERE is another of the many current apartment buildings which gave the architects some problems in making something attractive in small room sizes. If you consider these rooms quite small — and the architects do — they are still "somewhat larger than permitted under the then existing FHA criteria." Nevertheless this building has strong appeal for its intended tenants, young business people who want a near-downtown location rather than extensive housekeeping. Moreover, the apartments were furnished by the owner (George Farkas designed the interiors), so it was possible to control the scale of the rooms.

Perhaps the nicest feature — and the one which gives the buildings their character — is the provision for cross ventilation. The large awning-type windows make the rooms truly "windswept" and the projected overhangs above protect the windows not only from sun but also from the sudden downpours which the Miami chamber of commerce doesn't deny. Thus people who are away all day may leave windows open without too much concern for the rain.

Good storage space is another feature worthy of note. This may be, as the architects suggest, an especial need in Florida, but even in the cold north tenants seem to appreciate huge closets for extra things, and full-wall cabinets to bedrooms.

Buildings are of reinforced concrete column and beam construction. First floor is a slab on fill, second floor a light slab on precast concrete joists. Exterior walls are of concrete block with painted concrete surfacing. Interior walls are of sand finish plaster. Windows are wood, with inside screens and Venetian blinds.



Ezra Stoller: Pictor

# MODULAR COORDINATION

## *. . . It means economy now*

It's been estimated that over 30,000 individual parts, materials and pieces of equipment must be assembled in building the average house. In order to put together the components of houses, as well as all buildings, more efficiently, the building industry is turning more and more to principles and methods used by production-line manufacturers: factory-built units, sub-assemblies and, probably most important, dimensional standardization (modular coordination).

Modular coordination has a thorough background of study, research and development. Its backbone has been the standardization project sponsored jointly by A.I.A. and The Producers' Council, Inc., and under the auspices of the American Standards Association.

As a result of this project, the principles are well established, and an increasing number of manufacturers are standardizing on a modular basis.

The Housing and Home Finance Agency has undertaken a program directed toward getting a wider understanding of what modular coordination means and promoting its application by architects and builders.

Their first educational effort was a booklet directed to both the layman and the building industry. Now in preparation are "how to do it" manuals, one for the architect and one for the builder.

As further evidence of progress, the A.I.A. and The Producers' Council announced the appointment of William Demarest Jr., architect, as Secretary for Modular Coordination in the Dept. of Education and Research of A.I.A.

Mr. Demarest will act as secretary of the American Standards project; will keep in touch with government activities in this field; and will contact architectural and industrial groups as part of a technical education program.

Modular coordination simply means relating the dimensions of building materials and equipment to each other and to plans so that they fit with a minimum of cutting and fitting.

Modular coordination translated into economics means savings through reduction in field cutting and waste, greater use of standard products and simplification in laying out and detailing buildings.

The first step in coordinating building components is the standardization of product dimensions. It's vitally important that the dimensions of companion as well as competing building materials follow the same standard. For instance, if masonry units came in one set of standard sizes and window frames in another, the masonry would still have to be cut to fit.

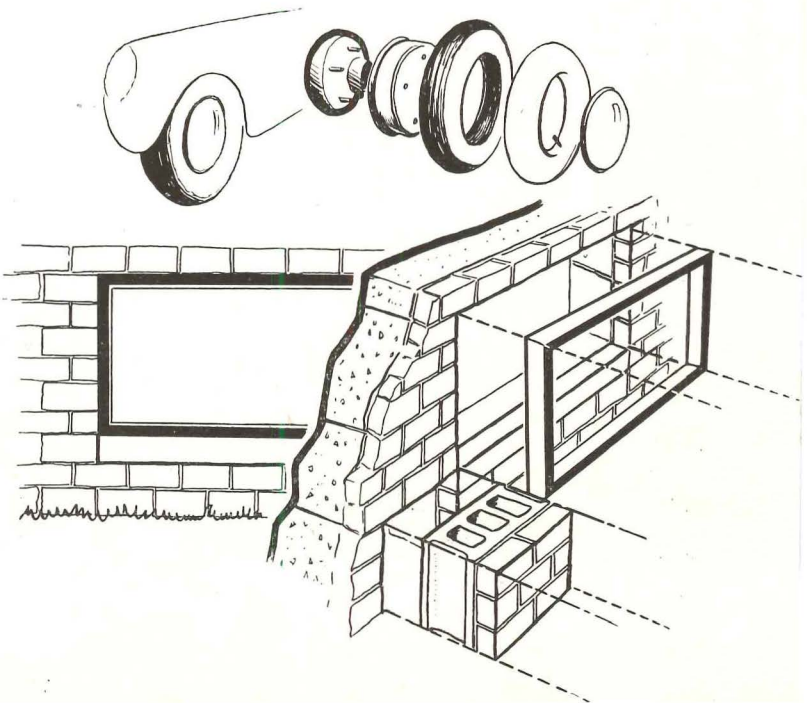
Brick, wood and steel window frames, wood doors, glass block, structural tile, concrete block and flue linings are now available based on a 4-in. standard or module.

This standard was chosen as most logical by committees widely representing the building industry because: (1) it is small enough for ample freedom in architectural design and for flexibility; (2) it is large enough for manufacturers to reduce the number of stock sizes and still satisfy demand; (3) it coincides with the dimensions of many building materials already standardized.

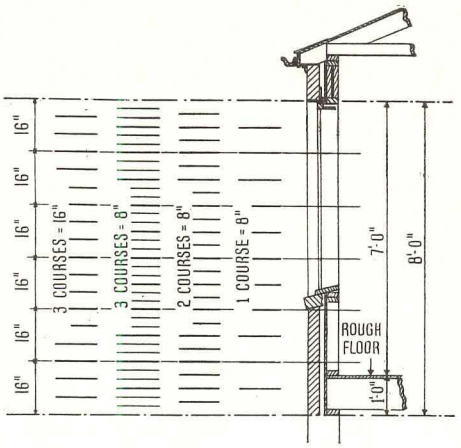
Modular coordination encompasses three interrelated activities: (1) production of all types of building parts on the uniform system of dimensioning;

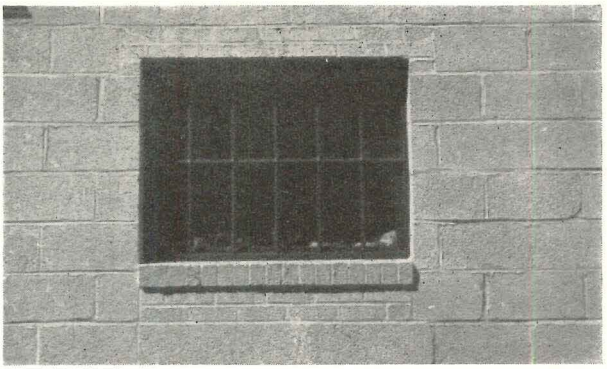
*In modular coordination, the building industry is applying one of the principles common to other industries—dimensional standardization. Automobile wheel parts designed on this principle, but made by different manufacturers, fit exactly. Modular products made by building material manufacturers fit in the same way. With non-modular design and materials, parts often must be fitted on the site*

Sol Ehrlich



*The drawing shows how modular sizes of masonry permit interchangeability in the Industry Engineered House. In the photo notice what a struggle it was to make the concrete blocks work in this non-modular design*



(2) use of coordinated assembly details which fit the uniform sizes parts into into the building; and (3) preparation of building plans and working drawings in accordance with the same uniform system of dimensioning and coordinated assembly details.

The key to proper use of modular coordination is the assembly detail. And it's here that some confusion exists about the sizes of modular parts. The size of a modular product need not be in even multiples of four inches. In fact, a dimension might end up with a fraction of an inch.

First of all, parts are coordinated into a detail so that there is no need for field cutting and fitting, for instance, a window frame into a masonry wall. Then this window frame, although its dimensions might be in fractions, should have alternate sizes in multiples of four inches. Thus the same detail, except for dimensioning on plans, works for all sizes if the masonry is also modular.

The modular system lends itself to interchangeability in design. Specifications or materials can be changed without requiring the layout to be changed. At most, a different assembly detail may be substituted.

Although actual dimensions may be fractional, the architect can eliminate these on his plans by using nominal dimensions. This will be taken up in a future article.

Modular coordination works equally well with small and large buildings.

An example of utilizing the modular principle and other engineering methods in the design and erection of small houses is the Industry Engineered House program. Comparative time studies on some of these houses at the University of Illinois, based on the premise of small builder operation, showed that man-hour savings can be 25 per cent or more.

Modular coordination has been highly successful in large building developments such as the Bellevue Hospital Nurses' Home in New York, the administration building of the University of California, L. A., Army base theaters and the 15-acre Postal Concentration Center, Long Island City, N. Y.

Plans for the postal center building, designed by Alfred Hopkins Associates, were completed in 29 working days and the entire construction in 72 working days.

Modular coordination has advantages for each part of the construction industry:

*Advantages to the Architect.* Simplifies making building layout; fractions and odd sizes can practically be eliminated. Makes possible a change in specifications or substitution of alternate materials without necessitating a redrawn layout. Eliminates the designing and repetitive redrawing of assembly details. Standardization of materials simplifies specifications. Freedom of design is still maintained.

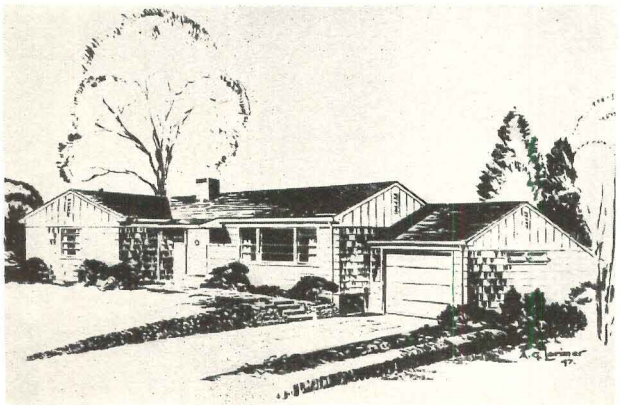
*Advantages to the Builder.* Coordinated assembly details can be clearer, more accurate. Field erection cost is cut by the reduction of cutting and fitting.

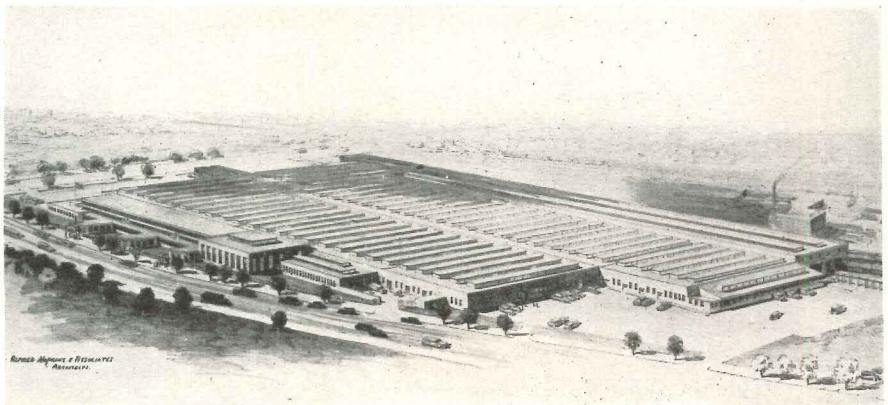
*Advantages to the Manufacturer.* Standardizing dimensions eliminates many odd sizes, lowering inventories and simplifying manufacturing processes.

*Advantages to the Materials Dealers.* Smaller inventories, speedier service.

All these add up to better buildings at a lower cost for the owner.

*Modular coordination works just as well for either small or large buildings. On the left is one of the Industry Engineered Houses, in which 25 per cent savings in man-hours over usual methods were reported through use of modular design and other engineering principles. At right is the Postal Concentration Center at Long Island City, designed in 29 days and erected in 72 days*



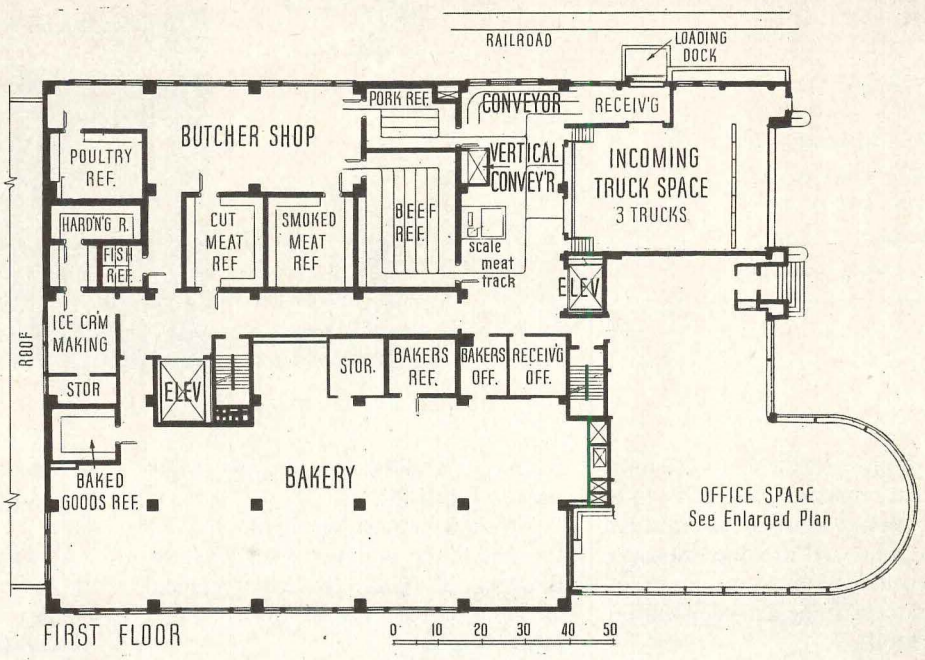


RECEIVING
FOOD PROCESSING
STORAGE

Bakery makes daily
2,000 loaves of bread
1,000 dozen rolls
8,000 servings of pastry

Meat refrigerators hold
15,000 lb pork
40,000 beef
15,000 smoked meat
15,000 poultry
2,000 fish
12,000 cut meat

Ice cream unit makes yearly
80,000 gallons




# FOOD CENTER SERVES COLLEGE KITCHENS

***Food Service Building, University of Michigan, Ann Arbor***

CONCENTRATED in the Food Service Building at the University of Michigan are sufficient food storage facilities, a bakery and butcher shop to provide 30,000 meals daily.

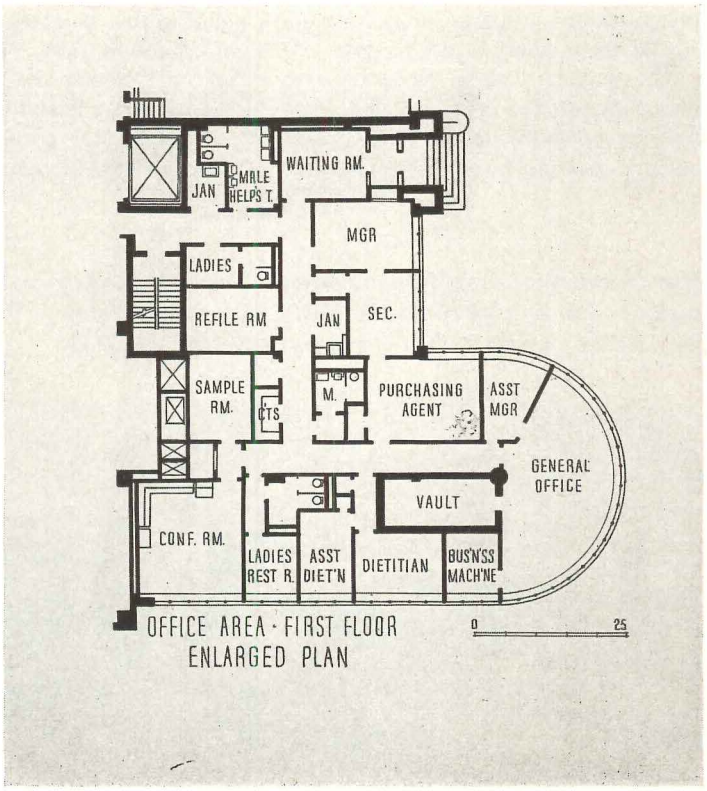
Approximately $1,500,000 worth of food will be distributed annually to the kitchens of the residence halls, 1000-bed University Hospital, social activity buildings, health service, University elementary and high schools.

Operation of this food center will effect savings in three main ways:

(1) adequate storage facilities permit buying in large lots directly from the manufacturer or the produce market;

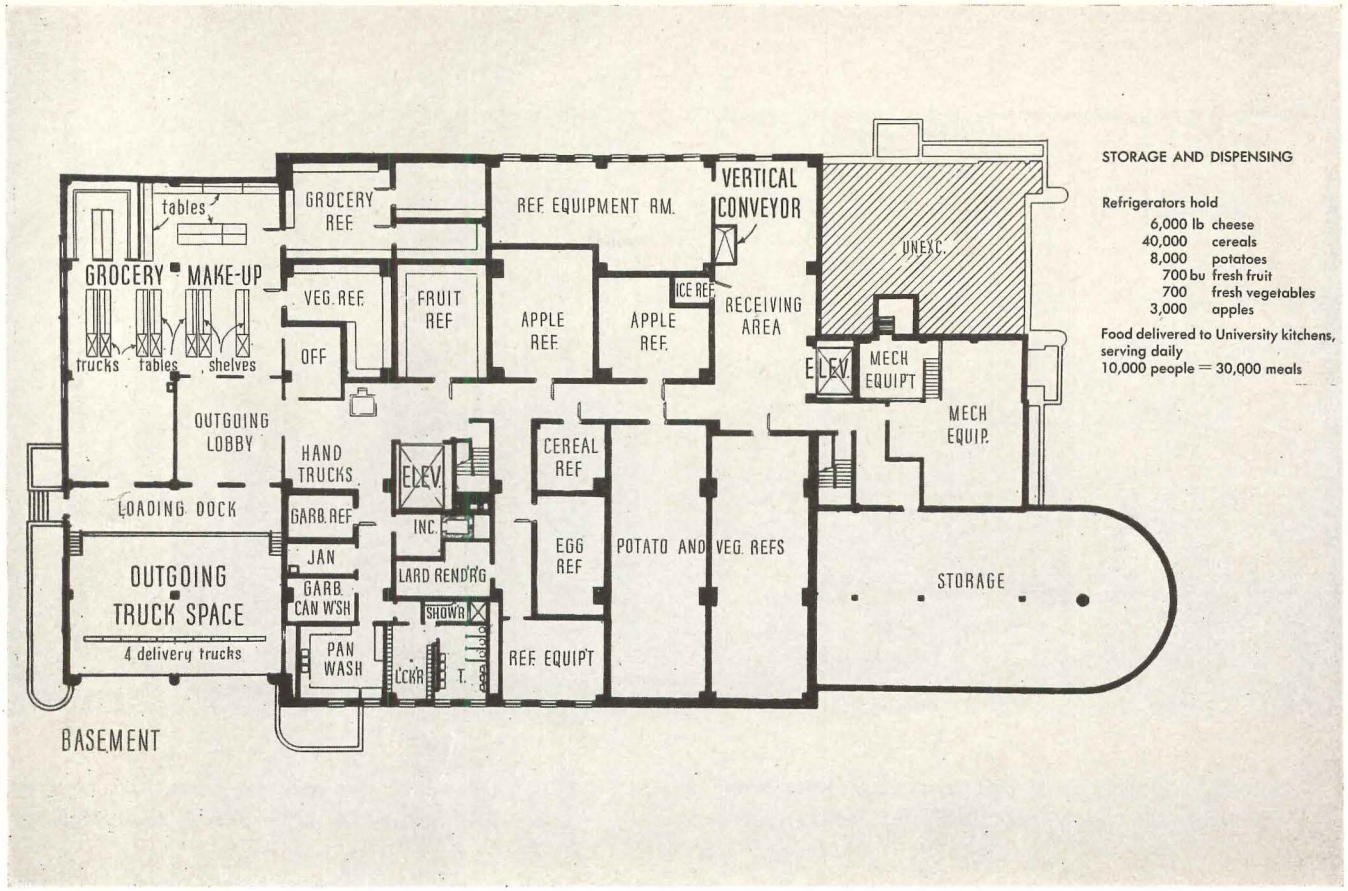
(2) consolidation of activities of food preparation personnel economizes on manpower — the centralized meat plant eliminates the necessity for meat cutters at each of the kitchens;

(3) baked goods and ice cream made here replace outside buying of finished products at higher prices.




### *First Floor*

This particular floor houses much of




***Louis C. Kingscott & Associates, Architects***

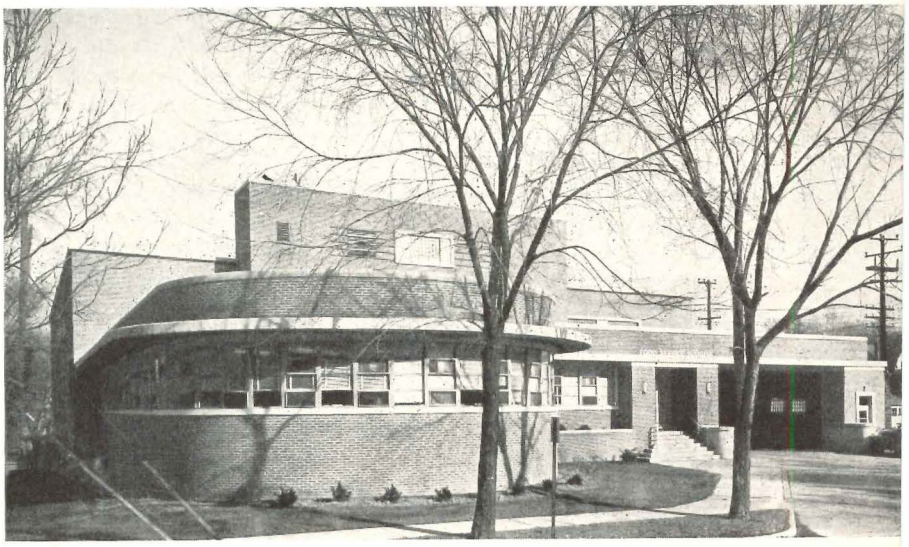
***Lynn W. Fry, Supervising Architect, University of Michigan***

***J. E. Stephens Associates, Consulting Engineers***

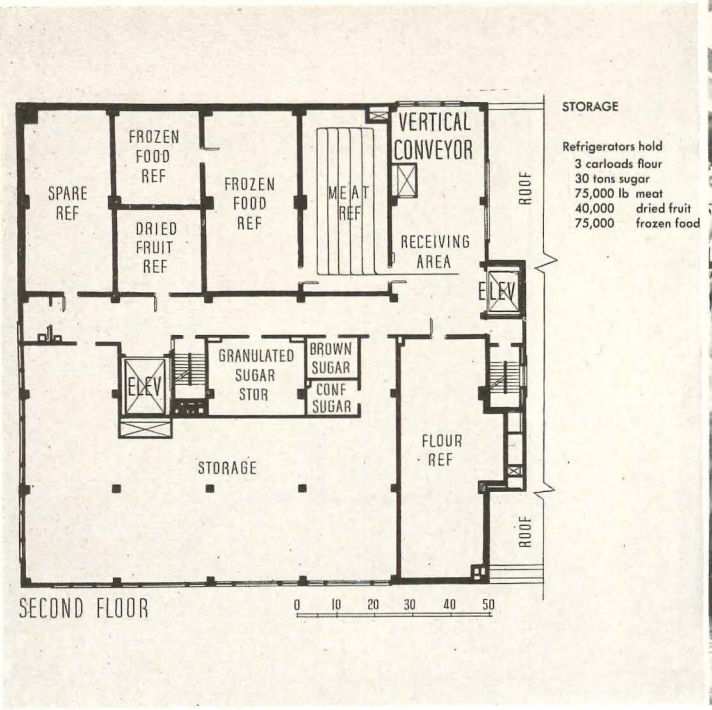
the activity of the building, as it contains the administrative offices, the receiving department, bakery, meat department and ice cream room. (See plans facing page.)

*Receiving Department.* With the one exception of fresh fruits and vegetables, which are unloaded at the shipping dock for convenience in storing them nearby, all incoming merchandise is delivered to the receiving dock. Merchandise is carefully checked in and weighed, when necessary. There is a platform scale for miscellaneous use as well as an overhead scale for weighing meat. The enclosed loading area is large enough to accommodate three tractor-trailers simultaneously. An electrically-operated overhead door can be closed during inclement weather and periods when the building is not in operation.

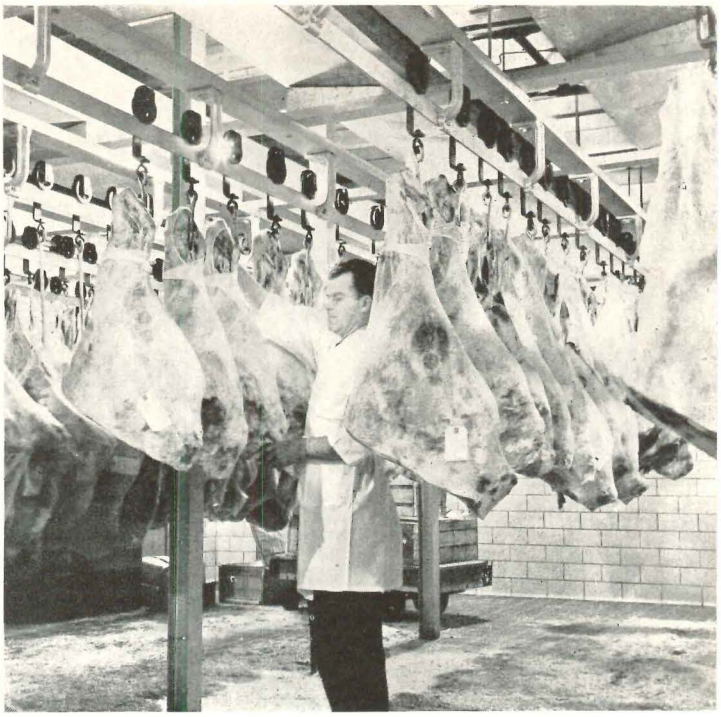
From a freight car siding, merchandise is unloaded directly into the building with a portable conveyor. A belt conveyor leading from both the trucking entrance and freight car dock brings in merchandise so that it can be distributed



*Food stored and processed here is distributed to all kitchens of the University. Merchandise arrives by truck and rail at a receiving dock on the first floor. (Truck entrance can be seen at right; railroad siding is adjacent.) Conveyors take the food from the dock to its storage place on one of the three floors. Orders leave from the shipping dock located in the basement*




Second (top) floor is devoted to storage. Flour travels from refrigerator through chutes to bakery machinery below



After being unloaded at receiving areas, meat is placed on hooks and moved on tracks directly into refrigerators

to all three floors. The movement of this conveyor is reversible.

Overhead tracks also lead into the building from the receiving dock and freight car entrance. Meat is placed on hooks at the time of unloading, and moved on these tracks directly into refrigerators near the receiving area.

As merchandise is unloaded, it is stacked, when feasible, directly on pallets which can be picked up, transported, and set down with small hydraulic trucks in any location in the building. Three of these hydraulic trucks save considerable rehandling of such items as cases of canned goods, sugar, potatoes and flour. Two heavy duty freight elevators, one at each end of the building, facilitate the movement of merchandise between the three floors.

*Administrative Offices.* These offices are occupied by the general manager and his secretary, the business manager, the representative of the University Purchasing Department, the general office staff, and the chief dietitian of the residence halls and her assistant.

Adjacent to the administrative offices is a completely-equipped experimental kitchen where new recipes are tried, and food samples are tested.

*Tube and Intercommunication Systems.* The building is equipped with a pneumatic tube system with a central station in the main office. There is also an intercommunication system that includes twelve different stations.

*Bakery.* This unit has an area of about 9000 sq ft and contains two refrigerated store rooms for supplies and for retaining dough temporarily. It is equipped with the latest equipment and is designed on a production line basis so that the dough is prepared and mixed at one end, and the products come out of the ovens at the opposite end.

*Meat Department.* Directly across the corridor from the bakery is the meat department. It covers an area of about 4000 sq ft and includes a well-equipped modern butcher shop surrounded on three sides by six refrigerators, occupying more than half the area.

*Ice Cream Room.* A small area at the end of the corridor between the meat department and bakery provides space for the ice cream room. This unit of about 600 sq ft includes a storage space for ice cream of various flavors, the main room in which the freezer is located, and two refrigerated rooms. One of these stores ice cream mix, and the other is a hardening room which is maintained at a temperature of –8 to –10 F.

### *Basement Floor*

This floor has storage facilitates for both staples and fresh fruits and vegetables. It also contains two compressor rooms, the mechanical equipment room and the shipping department. There are, in all, 12 refrigerated rooms on this floor, occupying nearly one-third of its entire space. A large basement room of approximately 2500 sq ft is devoted entirely to the storage of canned goods. Several of the refrigerators are used for butter, cheese, oleomargarine and other more perishable foods.

The shipping department contains space for preparation of orders, an area for completed orders awaiting delivery, and a shipping dock which will accommodate four trucks at a time. The entire area is enclosed, and two electrically operated doors can be closed during inclement weather and non-operating periods. This enclosure serves as a garage for the four delivery trucks.

After an order is prepared and checked, the merchandise is placed in a suitable container, on a small platform truck, or on a pallet, next to the shipping dock where it is picked up by one of the delivery trucks.

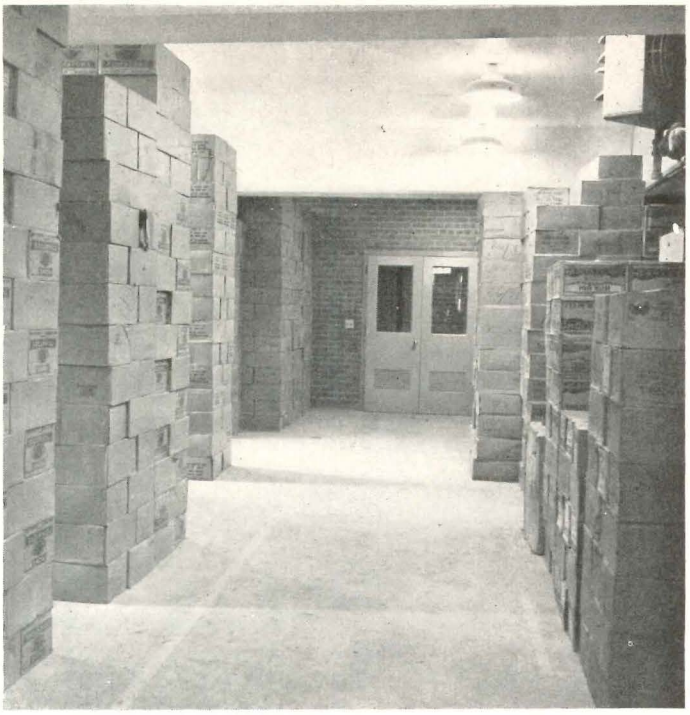
The platform trucks can be wheeled directly into the delivery truck and taken to the ordering unit. After the platform truck has been emptied it is returned to Food Service by a later delivery truck.

Merchandise placed on pallets is carried by a hydraulic truck into the delivery truck. The same hydraulic truck is used to set the loaded pallet on the receiving dock of the unit which ordered the merchandise.

### *Top Floor*

The top, or second, floor is entirely storage. The largest area, about 4500 sq ft, provides space for many of the canned fruits and vegetables. Immediately adjacent are three smaller rooms for

*The butcher shop, located in the center of six refrigerators which open into it, processes meat ready for cooking*



*Large rooms in the basement and second floor, totaling 7000 sq ft, were designed for storage of canned goods*

sugar. There is also a large refrigerator for frozen foods covering an area of 1125 sq ft.

Another refrigerator of equal size, presently being used for canned goods, is designed for the storage of meat suspended from overhead tracks. Two other areas being used for canned goods and cereals, each equal in size to the frozen foods refrigerator, eventually will be converted to refrigerators.

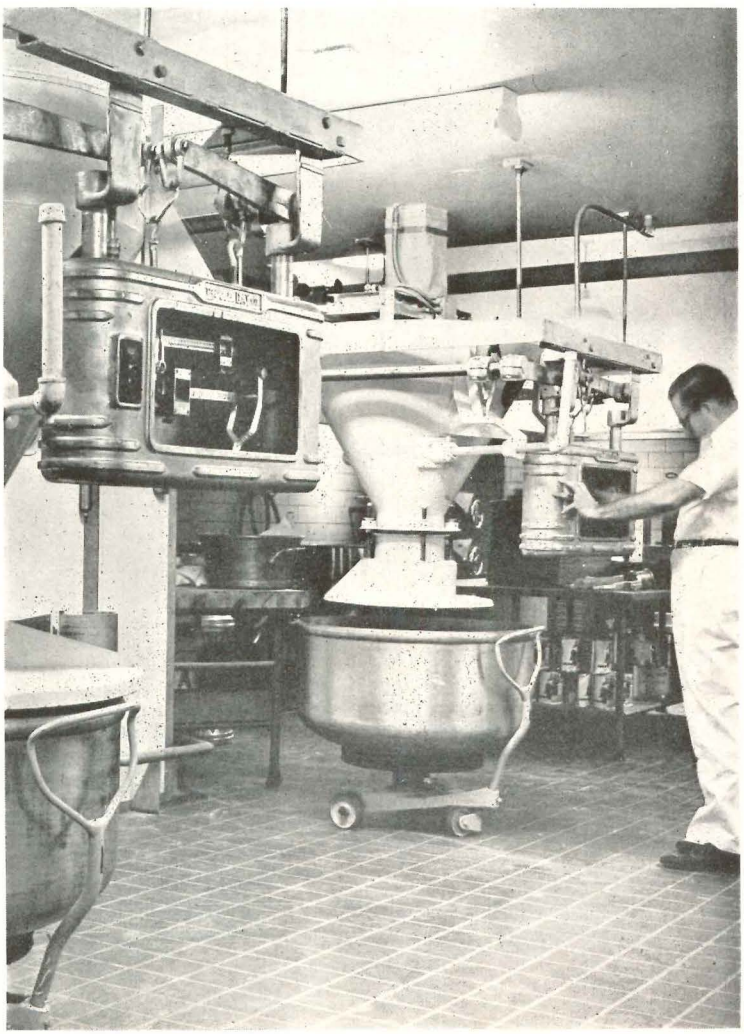
The flour room is also on the top floor. It covers an area of 1320 sq ft and is refrigerated so that an even temperature may be maintained at all times. It also contains flour handling equipment into which as many as one hundred sixty sacks of flour may be dumped at one time for sifting, blending, and aerating. As the flour is required, it is released through chutes to the bakery on the floor directly below. Large scales at the base of these chutes make it possible to weigh the flour to suit the recipes.

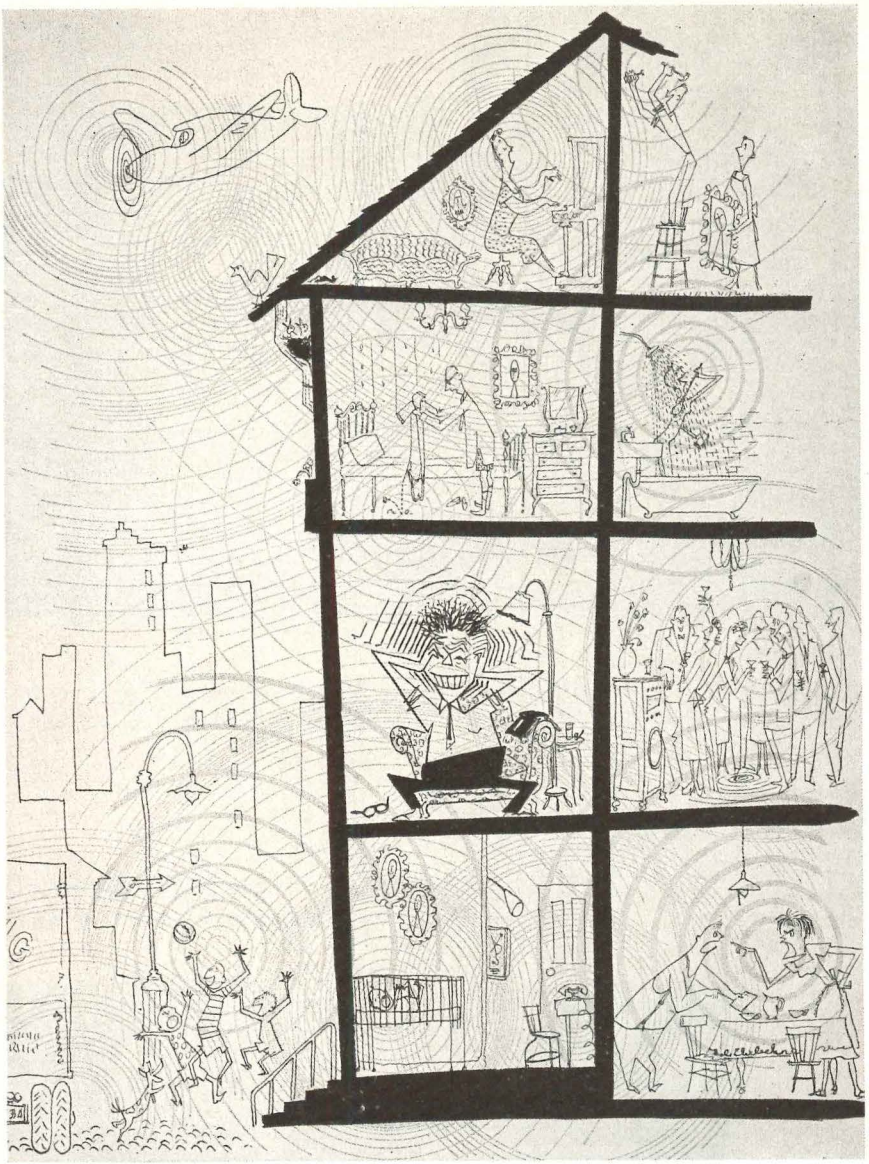
### *Construction*

The building is of reinforced concrete construction with brick and stone exterior. Interior partitions are glazed building tile. In all the food storage areas, the floors are quarry tile laid in acidproof cement. The floor covering in the office section of the building is asphalt tile.

Heating is from the University's central heating plant. Small areas of the building are heated by convector radiators and large areas by unit heaters.

*Flour is weighed in hoppers before being emptied into mixing bowls. Water passes through meter and into same tank*





Sketch by Sol Ehrlich from Physics Today

# ARCHITECTURAL ACOUSTICS

***Article 2: Noise Control in Buildings***

***By Richard H. Bolt and Robert B. Newman***

### *Effects of noise on people*

Noise control is meaningful only in its relation to people. Sound, together with heat and light, is one of the basic physical phenomena that determines the environment in which we live.

As we study the influences of these environmental factors, we are reminded many times that a human being has remarkable properties of adaptation. He can, if he wants to, explore the arctic at 50 degrees below zero, or change a tire in the desert at 130 degrees in the sun. He can glean knowledge from a book by candlelight, or follow a pitcher's curve ball illuminated with a million candle power. He can detect the rustling of blades of grass at a few decibels (db) of sound intensity level, or summon maximum concentration amidst a battlefield roar of 120 db — a million-million times as intense.

The question, then, is not how much noise, or other stimulation, can we *stand*, but rather how much should we be expected to tolerate or find normally acceptable under a particular circumstance. Given adequate motivation, we can tolerate almost anything, within very wide limits. But beyond some reasonable limit we must exert excessive compensatory effort which will take its toll. It is not possible yet to make a precise statement of tolerance limits and effects of excessive noise; but extensive efforts of medical scientists, psychologists and physiologists have laid a solid groundwork of essential principles.

Briefly, the effects of noise on people can be divided into three general classes: (a) physiological effects, (b) damage, and (c) psychological effects. Even these three are not completely independent of each other.

In the range above 70 or 80 db the body responds to noise by a number of measurable physiological influences on pulse rate, breathing, stomach contractions and other processes. These effects in turn may give rise to fatigue, digestive difficulties or other evidences of an unhealthy environment.

As we increase the noise levels above about 130 db, damage to our hearing mechanism occurs. At first this damage may be only temporary, but prolonged high levels bring on permanent deafness.

Psychological influences may occur at any level of sound. Annoyance and discomfort can arise from excessive stimulation of the nervous system by loud or startling noises: a siren breaking the still of night, a banging door or the intermittent blow of a steam pile driver. Noises that take us by surprise or that are out of the ordinary are usually disturbing. We expect heavy truck noises in a business district, but not on a quiet residential street. Music may be pleasant in the cafeteria, but it will be unwelcome in the executive's office during a conference.

One of the commonest psychological influences of noise is the intrusion of privacy that is associated with hearing sounds from other people. This can work in reverse also: if we are living in fear that our normal sounds are being heard by others and perhaps bothering them, we are inhibited against living in a normal way. Even faint sounds coming

through the wall from a neighbor's apartment may be embarrassing or annoying. As long as the sounds can be heard in such a way that they convey undesired information, they constitute a potential annoyance.

In the case of speech it may be necessary only to reduce the loudness to that point at which we can no longer understand what is being said. Then, at least, we do not overhear information not intended for us. In other cases, such as plumbing noise, screams from children, or even walking noises, it may be necessary to reduce the noise almost to inaudibility before it ceases to inform us of its origin or associations.

Another annoying situation is the inability to carry on normal conversation because of excessive interfering noise. Often we can regain some degree of communication by speaking very close to the ear and by raising our voice or shouting. But after a time this effort wears us down.

Thus we see that noises are potentially annoying if they convey undesired information, if they interfere with normal conversation or if they are unexpected or startling. Usually the likelihood of annoyance increases as the sound level (or loudness, which is related but is not the same quantity) is increased.

In addition to the magnitude of the sound, its frequency characteristics (related to tone quality) and its dynamic manner of varying with time may influence the degree of disturbance. Obviously, then, we must consider some of these characteristics of noises encountered in buildings before we can design rationally for noise control.

### *Characteristics of noise sources*

A noise may be described in many ways. We can, for example, compare it with some other noise. "That ventilating system sounds like Niagara Falls" (actual quotation!) would convey a vivid, though perhaps not completely accurate, picture of the noise condition. Sounds may be described as high pitched or low pitched, as jarring or soothing; but such descriptions give only a qualitative and disputable evaluation. In order to describe a noise precisely we must use numbers and rigorously defined physical quantities.

The most useful single quantity is the (total) sound level, in decibels, as read on a sound level meter in accordance with standardized procedures. This number gives a measure of the total sound intensity over the whole range of frequencies of importance to the ear. Before discussing further refinements that are sometimes needed, let us look at some commonly encountered values of sound levels.

Fig. 1 shows the average sound levels from several typical sources of noise under a variety of conditions. Each item spans a range of decibel values as indicated by the elongated arrows. Unlike a man's body temperature which is almost always just 98.6 F, the sound he generates in talking, singing or shouting varies over wide limits. Noise from traffic depends on the speed and type of vehicle and on the surface of the road; noise from machinery varies with power, speed, type of mechanism, mounting, and even the state of repair.

In fact, most noise sources we encounter must be viewed statistically — we must deal with average sound levels covering a range which represents the usual variation among individual sources of a given class. Furthermore, the sound level at any particular point in space depends strongly on the distance from the source, and on the properties of the room if the source is inside.

The variants are included in an approximate fashion in Fig. 1. Some noises commonly experienced in enclosures are bracketed in the upper group. The given range of sound level would be experienced, on the average, throughout the enclosure except very near a specific noise source. Each listing implies a "usual" situation. This would exclude, for example, inside the automobile when not in motion, or in a normally quiet residence when the vacuum cleaner is used.

The middle group in Fig. 1 gives noise levels at a distance of 3 ft from some sources that are more or less localized. In general, the sound level would diminish about 6 db each time the distance is doubled if the source is out of doors or in a very large space. The lower group describes some common exterior noises. Notice the very wide spread from a quiet residential street (where passenger cars pass occasionally) to a noisy street (which is busy with heavy commercial vehicles). The latter situation is noisier both because the individual sources are noisier and because there is a greater density of them.

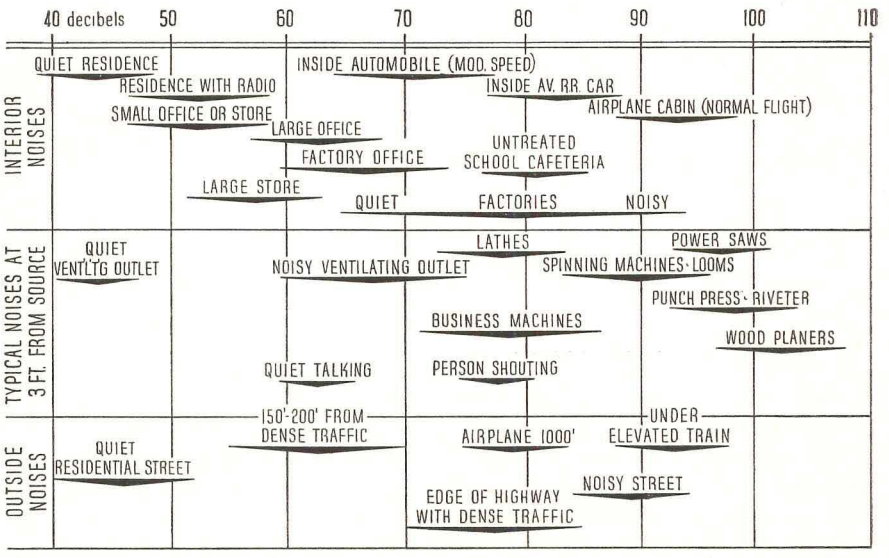
The average traffic condition at a site has considerable influence on the requirements for exterior noise isolation in a building. A theater on a busy commercial street may need 20 or 30 db more noise insulation than one in a park.

Another designating characteristic of a noise is its frequency spectrum. Noises usually contain many frequency components, or a continuous spread of sound energy over a wide range of frequency.

Average spectra of room noises are quite similar in most cases, for the sources are usually people walking, talking and working. The three lower curves in Fig. 2 are typical of most rooms. The general shape of these curves is also similar to that for many outdoor background noise conditions.

It is because of this general similarity that we can simplify many acoustic

*Fig. 1. Average sound levels for typical noises. These values give a measure of the sound intensity over the frequency range important to the ear. Noises from these sources naturally can't be pinned down to specific values; so the tapered lines indicate the range over which they may vary. Sound level, however, is not the only criterion for noise control*



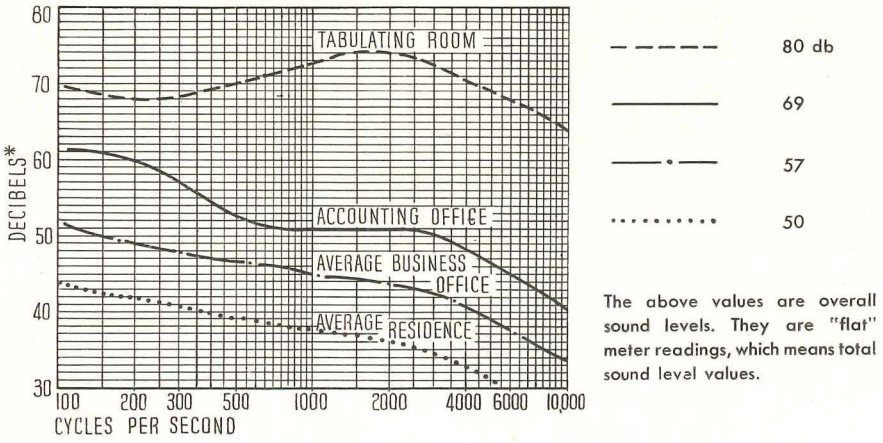



*Fig. 2. The frequency characteristic (pitch) of a noise may be just as important as, and sometimes more than, the intensity. The tabulating room curve shows quite a bit of noise around 1000 cps and above, which is usually more annoying than lower frequencies*

**NORMAL REQUIREMENTS FOR NOISE REDUCTION**

| Situation | Range of average NR (db) |
|---|---|
| ***Dwellings*** (apartments, hotels, row houses, single dwellings, etc.) | |
| Through party walls between living room of one dwelling and living room or bedroom of adjacent dwelling | 45–55 |
| Through party walls and floors between all other combinations of spaces | 40–50 |
| Between rooms within dwelling if privacy is expected between these rooms | 30–45 |
| ***Offices*** | |
| To protect private office or conference room from: | |
| a. rooms of same type | 35–45 |
| b. general clerical offices | 30–40 |
| c. business machines, accounting offices | 35–50 |
| d. noisy factory spaces, depending on types of machinery | 40–60 |
| e. outdoors, depending widely on nature of traffic | 25–55 |
| Noise reduction requirements to protect general clerical offices from spaces (b), (c), (d), and (e) can be 5 to 10 db lower than those values listed above. | |
| ***Schools and Churches*** | |
| Between class rooms, study halls or offices and rooms of the same type | 35–45 |
| Between music teaching studios or music practice rooms | 50–65 |
| Between auditorium or music room and: | |
| a. class room, study hall or office | 45–55 |
| b. corridors | 35–45 |
| c. shop, gymnasium, cafeteria | 45–60 |
| d. toilets, mechanical equipment rooms | 45–55 |
| e. band room (bass drum!) | 50–65 |
| Noise reduction requirements to protect class rooms from spaces (a) through (e) can be 10 db lower than values listed above | |
| ***Factories*** | |
| Requirements similar to those listed above for offices. In most cases, however, criteria must be determined on the basis of an acoustic survey of typical machines and operations involved. | |
| ***Broadcasting and Recording Studios*** | |
| Through walls, windows, and ventilating ducts between studios; also between studios and control rooms, general circulation spaces | 55–65 |

specifications to a single number: the overall sound level of an interfering noise, the average criterion for acceptable background, or the average transmission loss of a wall.

There are important exceptions, however. The tabulating room curve in Fig. 2, for example, shows an "unusual" amount of noise around 1000 cps and above. This upper frequency range is usually more annoying; or perhaps the annoyance arises from the unusual shape of the curve. The spectrum does not taper off.

In other cases, the low frequency may be accentuated, as in the heavy rumble of an unmuffled truck. Again, the noise may obtrude because it has a sharp spike in its spectrum, a whistle or whine at a particular frequency.

Whenever an unusual noise situation is anticipated, the architect should obtain special information or advice. Many such cases are discussed in the literature (see bibliography in Article 1, April, 1950). But sometimes it is necessary to measure the noise directly in order to obtain sufficient information for noise control engineering. In the remainder of this article we shall deal mainly with the average noise conditions that can be treated adequately in terms of single numbers.

### *Criteria for noise control*

The preceding sections on subjective effects and physical characteristics of noise describe, in a general way, the underlying information we need to establish criteria for noise control.

One way to specify criteria is in terms of recommended average background levels in rooms to meet particular functional requirements. A table of such criteria was given in the previous article.

The level in a legitimate theater, for example, should not exceed 30–35 db if the actors' voices are to be received intelligibly throughout the audience without undue masking by extraneous noise. In a public office, a range of 45–55 db is satisfactory to all normal conversation and business activity without excessive noise annoyance. It is more difficult to give such criteria for dwellings, where some of the noises intrude on privacy if they are heard at all.

Another type of criterion, more directly applicable to all kinds of architectural problems, is the required *noise reduction* (NR), in decibels, between two spaces. The NR is simply the difference between the (average overall unless otherwise specified) sound levels in the two spaces. In most cases the NR be-

tween adjacent spaces is about equal (within 5 db) to the effective transmission loss of the intervening structure.

Methods of calculating and designing for noise reduction are discussed later; first we present some NR criteria values.

The table across page lists requirements for NR in several common cases. Again it should be emphasized that these simple numbers apply only when the spaces contain the kinds of noises usually associated with them. The NR criteria are obtained in general by subtracting background noise criteria values from average sound levels of the source noises involved.

To see roughly what type of construction is involved in achieving these values of NR, refer to the transmission loss (TL) values listed for typical constructions in Fig. 3.

Take for example a school auditorium which is to be protected from a cafeteria. The auditorium background criterion is 35–40 db (previous article); and Fig. 1 shows a range of 75 to 85 db average sound level in a cafeteria.

Good acoustic design should provide protection against the worst conditions normally anticipated. At least, a compromise from optimum noise control should be accepted only if it is unavoidable; for example when optimum control cannot be attained by any means within the budget.

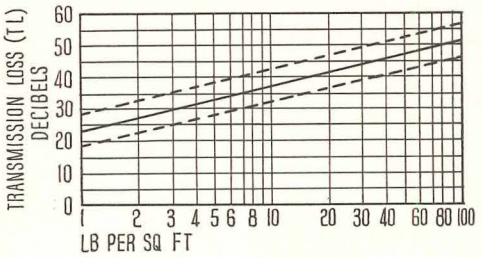
In any case, let us assume the extreme of 85 db in the cafeteria and call for 35 db in the auditorium. The difference is 50 db NR, which falls in the range 45–60 db specified in the table. This upper limit of 60 db NR would probably be needed for protection against shops with noisy power tools.

This table simplifies a large body of inter-related information obtained from practical experience. Though very useful, this material should be used only with caution and analysis of each problem.

In some cases, because of the unusual character of the intruding noise, or because of the meaning conveyed by it, the requirement for NR will be greater than that required simply to reduce the noise

(*Continued on page 252*)

**AVERAGE TRANSMISSION LOSS OF SOLID PARTITIONS (AVERAGE OF VALUES AT 125, 250, 500, 1000, AND 2000 CPS)**




**WEIGHT OF COMMON BUILDING MATERIALS, lb per sq ft per in. of thickness.**

| | | | |
|---|---|---|---|
| Cinder Concrete | 8 | Aluminum | 14 |
| Dense Concrete | 12 | Steel | 40 |
| Brick | 10–12 | Lead | 65 |

*Fig. 5 (below). A decibel calculation chart. With values x or 1/x known, noise reduction (NR) and transmission loss (TL) can be determined immediately. See text later in article for use of this chart*

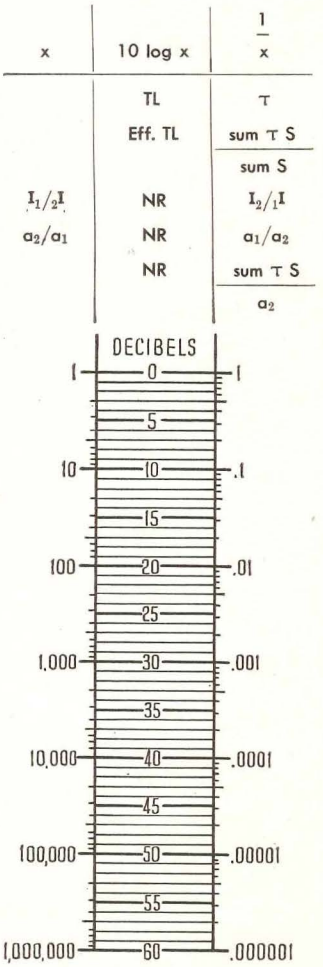
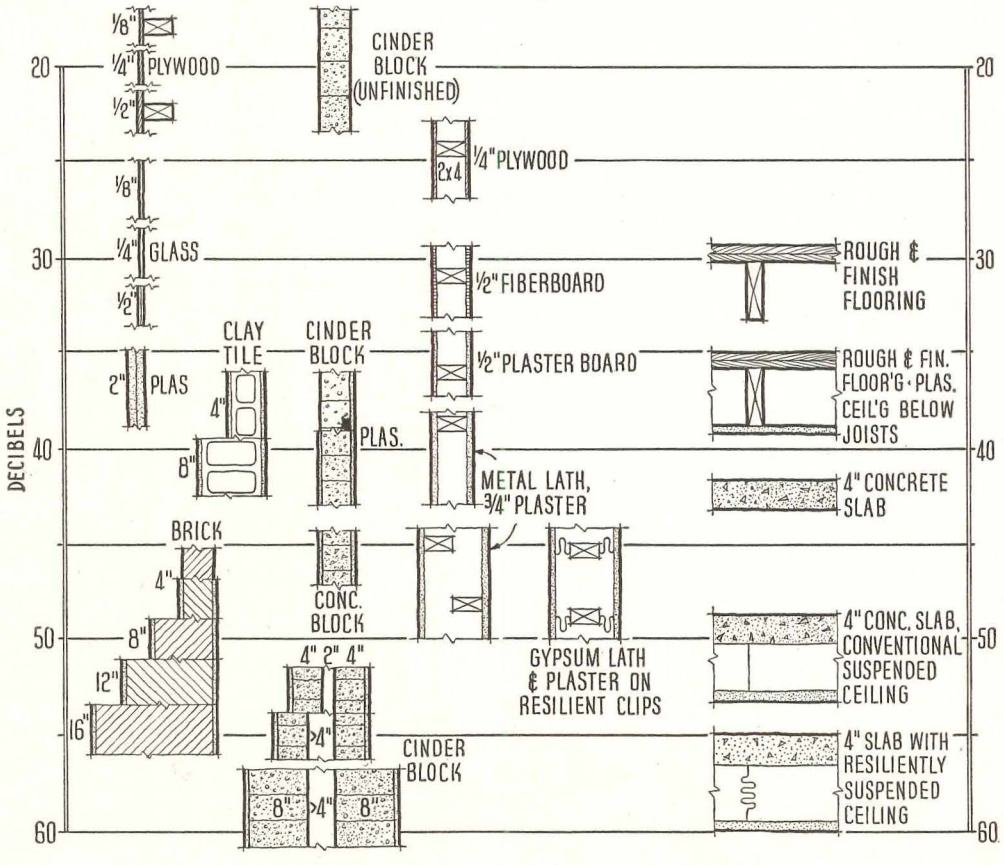



*Fig. 3 (below). In this chart the average transmission loss, TL, for a certain construction can be found by reading across to the decibel scale. The range over which the transmission losses may vary in practice is indicated by the length of the detail. Thus, details are not drawn to the same scale.* ***Fig. 4*** *(top of page). How TL of solid partitions varies with weight. Solid line is the mean; dashed lines indicate max. and min. limits*

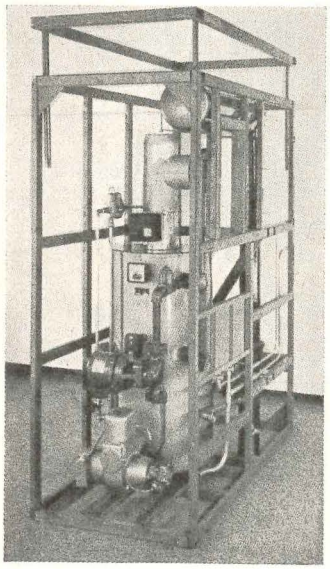
**AVERAGE TRANSMISSION LOSS FOR TYPICAL WALL AND FLOOR CONSTRUCTIONS**



# PRODUCTS for Better Building

### *Mechanical Core*

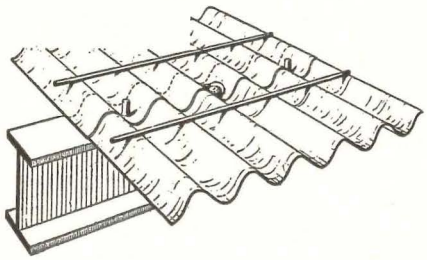
The *Lankton Utility Unit*, a central mechanical core, is designed for installation between kitchen and bathroom in small houses. The core includes a gas- or oil-fired forced warm air furnace or a boiler; a gas or electric water heater; and plumbing assembly complete with drains, vents, and copper water pipes serving all kitchen and bath fixtures. The unit is 30 in. wide, 66 in. long and 77 in. high, will pass through an ordinary sized door. The frame is made of 1 by 2 in. welded steel channels, with filler strips for nailing wall covering in bath and kitchen. Installed with bath and kitchen fixtures, the unit requires 8 ft in length: on No. 1 unit, a single wing 1 by 66 by 31 in. is supplied to fill the space between core and outside studs; on No. 2 model, two wings the same size are provided. Excess interior space is used for meters, sillcock, tools, etc. An adjustable soffit extends to ceiling height and eliminates framing above unit. An 8 in. wide panel core is also available containing plumbing only, with separate heating elements for installation in basement or utility room. The unit may be purchased as core only; with either bath or kitchen fixtures; or as a complete unit. Lankton Industries, Inc., Peoria, Ill.



*Mechanical core contains furnace, water heater and plumbing for kitchen and bath*

### *Combined Form and Reinforcement For Concrete*

*Cofar*, combination form and reinforcement for concrete floor and ceiling slabs, employs corrugated galvanized steel sheets with welded cross (T) wires to replace conventional reinforcing bars and forms. The sheets come ready, welded and cut to length for placing between permanent beams or walls. They are claimed to withstand construction loads at normal bending stresses, with or without temporary intermediate supports, depending on span. Maximum sheet length available is 14 ft; maximum width, 32 in. The metal may be obtained 16 to 26 ga thick, with corrugation depth as specified for use as form — $1\frac{1}{16}$ in. or more. The T-wires, for transverse ties and temperature reinforcement, are No. 4 ga cold-drawn high-strength wires or rods. They extend 6 in. beyond the edges of each sheet to overlap the wires of adjacent sheet 30 diameters. This provides interlock and continuity in transverse direction. Welded rod anchors are furnished for tying ends of sheets to concrete structural framing members. When supported on structural steel, the sheets are attached by stud- or arc-welded connections. The galvanized surface furnishes light and heat reflective ceilings for many occupancies. Ceiling lath or hangers are said to be easily attached. Granite City Steel Co., Granite City, Ill.

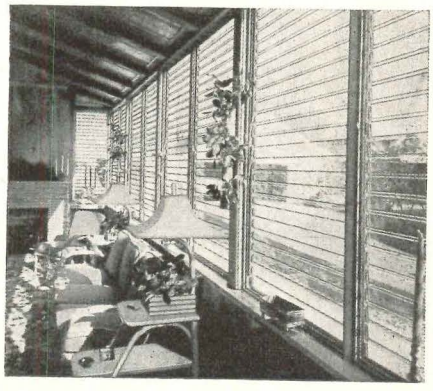


*Corrugated steel sheets with welded-on bars provide easily installed forms and reinforcement for concrete floor slabs*

### *Louver Windows*

Designed for use as windows, door panels, glass walls, and porch or breezeway enclosures, the *Clearview Venetian Windows* employ adjustable, overlapping plate glass or aluminum louvers set in sealed aluminum frames. The units are weatherstripped, and are claimed to provide positive protection from wind and rain, as well as light and ventilation control. The louvers are available in clear, tinted or obscure glass with ground edges, or in painted aluminum. All are interchangeable in whole or part, to provide full vision, semi-privacy or complete privacy as required. Louvers are adjusted to any position by a turn of a chrome-plated handle located on the inside frame. The frame and all aluminum parts are produced in clear lacquer finish, and in 10 standard colors of baked-on enamel. Units are available in stock sizes, or custom built to fit any size opening. Plastic or aluminum screens may be obtained to fit on the inside of the windows. Clearview Venetian Window Corp., Fort Lauderdale, Fla.

*All-glass louver windows give full ventilation control and vision, rain protection*



(*Continued on page 260*)

# TWO OUTSTANDING ACOUSTICAL MATERIALS

- BOTH ARE INCOMBUSTIBLE
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- BOTH HAVE PERFORATED OR TEXTURED SURFACES

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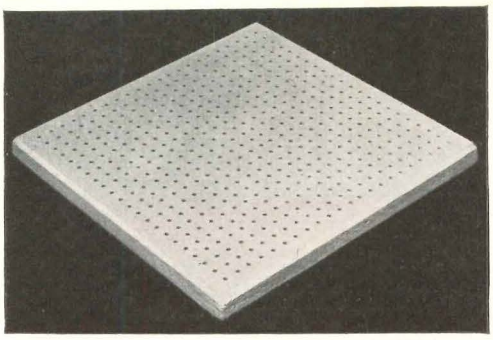
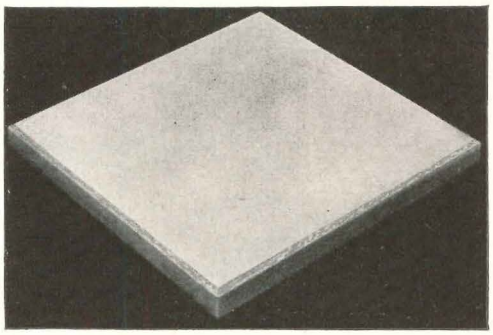


PERFORATED SURFACE

***Certile*** Acoustical Tile is a highly efficient sound-absorbing material made of incombustible glass fibers. The surfaces and bevels of the tile are finished with a washable paint which may be repainted many times without loss of acoustical value. Both the perforated and the textured Certile may be applied by standard methods. Available ¾″ and 1″ thick in 12″ x 12″ and 12″ x 24″ units.

TEXTURED SURFACE



***Certacoustic*** Tile is ideal for acoustical installations where a low cost, fire-safe material is desired. It is made from the same base stock and possesses most of the fine qualities of Certile. The surface is finished with a washable paint which may be repainted without loss of acoustical efficiency. The bevels are unpainted. Available ½″ and ¾″ thick in 12″ x 12″ units; ¾″ thick in 12″ x 24″ units.

**T. M. Reg. U. S. Pat. Off. by Owens-Corning Fiberglas Corp.*

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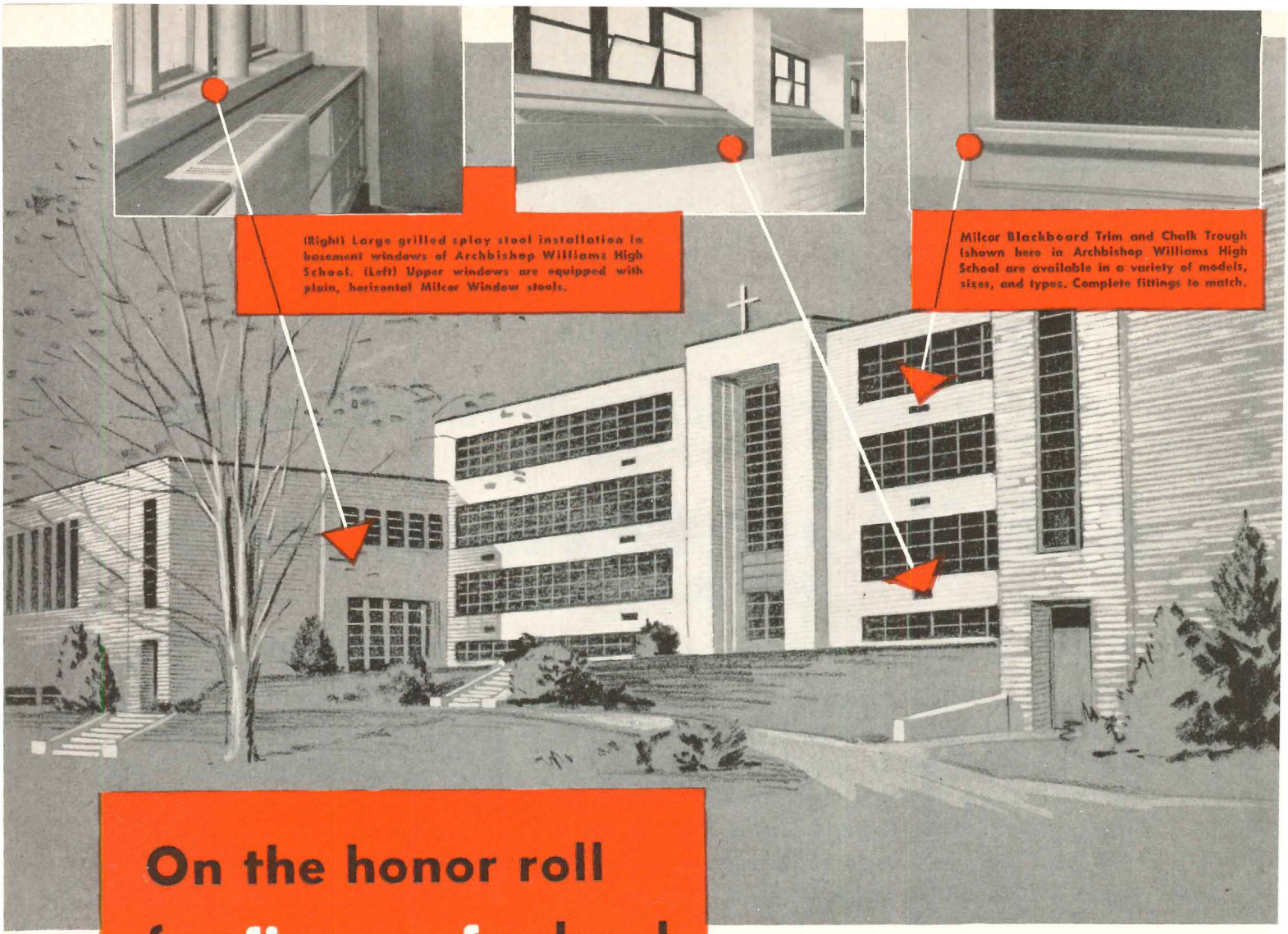


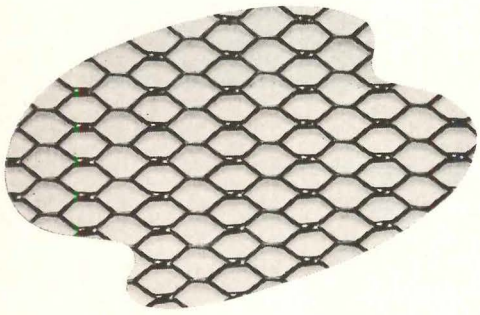
(Right) Large grilled splay stool installation in basement windows of Archbishop Williams High School. (Left) Upper windows are equipped with plain, horizontal Milcor Window stools.

Milcor Blackboard Trim and Chalk Trough (shown here in Archbishop Williams High School are available in a variety of models, sizes, and types. Complete fittings to match.

Archbishop Williams High School, Boston, Mass. Architects: McGinnis & Walsh. Contractor: Dillab Fireproofing Co., Cambridge, Mass.

# On the honor roll for fireproof school construction

# MILCOR* Metal Trim



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Milcor is a name honored by all who know school construction. Milcor products pass every test "magna cum laude" — for safety, service, sanitation — the outstanding leader in the fireproof construction field.

For almost every interior detail (as well as sub-plaster construction) there's a Milcor steel building product that is ideal. Chalk trough, blackboard trim, and window stools shown above are typical examples. It is easy to specify styles to meet both structural and decorative requirements.

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F-345

# ELECTRICAL CONDUITS: 1—Use and Installation

***This article is condensed from* Aspects of Electrical Conduit Installations in Houses *by Jefferson D. Brooks, Technical Bulletin No. 12, Jan. 1950, Housing and Home Finance Agency. Minimum requirements are given for safe installation of three commonly used types of steel conduits.***

## Types and Uses

1. *Rigid conduit* is an older, heavier type, softer than water pipe for easy bending, but sized for same tools. Internal diameter is a bit larger than nominal size. Galvanized or other rust-resistant finish is required if exposed to dampness. Enameled iron conduits may be used only indoors, with no severe corrosive influences. Materials especially suited to such conditions must be used; avoid dissimilar materials. Place conduit at least 18 in. under cinder fill subject to permanent moisture, or encase in 2 in. of non-cinder concrete. In wet locations, system must be water tight; leave at least ¼ in. air space between conduit or boxes and wall.

2. *Thin wall conduit* or *EMT* (electrical metallic tubing) is a lighter type, usually galvanized or similarly finished. It is used for exposed or concealed work where not subject to severe mechanical injury. Use is restricted in hazardous locations. Otherwise it is used as rigid conduit.

3. *Flexible conduit* is strong flexible tubing of spirally wound, interlocked steel strip, usually galvanized. Use in dry locations unless lead-covered or type RW (moisture resistant) wiring is employed. Do not use in hazardous locations. Conduits less than ½ in. size are used only for under-plaster extensions, fixtures, motor leads. Occasionally ⅜ in. size is permitted up to 48 in. (or longer) where larger size is not practicable.

Fig. 1. Conduit connections

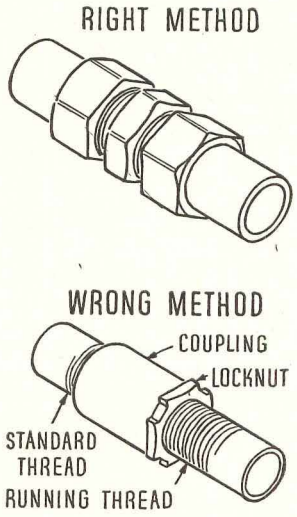



Fig. 2. Bends in circuit

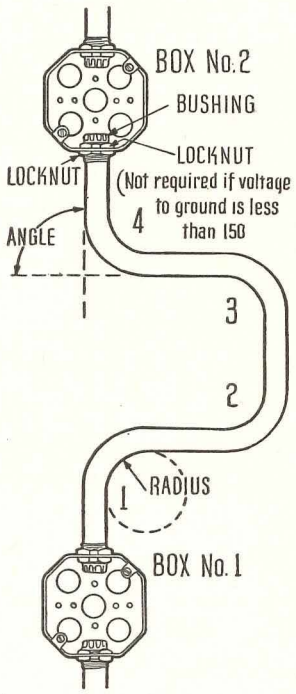
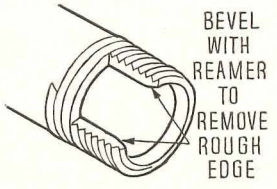



Fig. 3. Reamed end of conduit




### Fittings

1. Running threads must not be used on rigid conduit for connections at couplings; unions must be used. Threads are finer than for standard pipe; threadless connectors are often used. The latter must be watertight if buried in masonry, concrete, fill, or used in wet places

2. Bushings must be used on ends of conduit unless box or fitting affords equal protection. A bushing may replace box where more than 4 conductors leave conduit at control apparatus, if wires are bunched, taped and painted; bushings must be of insulated type, except for lead-covered wires

3. All ends of conduit must be reamed to remove rough edges

**TABLE 1**

| Conduit (trade size) (inches) | Radius of bends in inches: Ordinary conductors | Radius of bends in inches: Lead-covered conductors |
|---|---|---|
| ½ | 3.7 | 6.2 |
| ¾ | 4.9 | 8.3 |
| 1 | 6.3 | 10.5 |
| 1¼ | 8.3 | 13.8 |
| 1½ | 9.6 | 16.1 |
| 2 | 12.4 | 20.6 |
| 2½ | 14.8 | 24.6 |
| 3 | 18.4 | 30.6 |
| 3½ | 21.3 | 35.5 |
| 4 | 24.1 | 40.2 |
| 4½ | 27.0 | 45.0 |
| 5 | 30.3 | 50.4 |
| 6 | 36.4 | 60.6 |

***Bends** must not injure conduit or effectively reduce internal diameter. Radius of the inner edge of any bend not made by manufacturer must not be less than shown in Table 1. Conduit between 2 outlets, fittings, or combination, must not have more than equivalent of 4 quarter bends (Fig. 2)*

**TABLE 2. Max Support Intervals For Conductors in Vertical Conduits**

| | Feet |
|---|---|
| No. 0 and smaller | 100 |
| No. 00 to No. 000 | 80 |
| 250 to 350 MCM | 60 |
| 400 to 500 MCM | 50 |
| 600 to 750 MCM | 40 |
| 800 MCM and larger | 35 |

***Supports:** conductors in vertical conduits must be supported by clamps, wedges or insulators at intervals not greater than shown in Table 2. All conduits must be securely fastened in place. Runs must be continuous from box to box with no splices*

*(Continued on page 175)*

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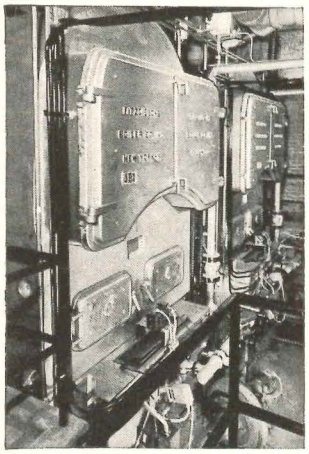

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# ELECTRICAL CONDUITS: 2—Installation and Selection

(*Continued from page 173*)

### *Miscellaneous Requirements*

Wires must not be inserted in conduits until rough mechanical work on house is completed. Pull wires are inserted after making up conduit connections. Graphite, talc or approved compound are used as wire lubricant; cleaning agents must not be used.

Conductors of signal or radio systems must not occupy same conduit with those of light or power systems, except for elevators, sound recording and remote control. Conduits must not pass through dust or vapor removal ducts. Rigid conduit, or flexible conduit with lead covered conductors, may pass through air-conditioning ducts only where necessary, and must not obstruct fire dampers. Switch enclosures must not be used as junction boxes to make taps or feed through.

Secondary wiring to cold cathode lamps of 1000 volts or less may occupy same conduit as branch circuit conductors. Light and power circuits of 600 volts or less may occupy same conduit, whether a-c or d-c. Circuits over 600 volts must be separated from those under 600 volts. Prevent air circulation from warmer to colder areas through conduit.

Vertical conductors No. 1 or larger require the following gutter widths if deflected where they leave cabinet:

No. 1 ..... 3 in.
No. 0 to 200 MCM ..... 4 in.
250 to 900 MCM ..... 6 in.

Where ungrounded conductors of No. 4 or larger are deflected more than 30 deg at ends of conduit run, an insulating bushing is required.

### *Conductors in Multiple*

Where circuit capacity makes it impracticable to run all conductors in one conduit, additional conduits may be used if conductors in any one conduit are balanced in size and include one from each phase. Current in one direction must substantially equal current in opposite direction (fig. 4). With circuits supplying cold cathode tubes, x-ray apparatus, and underplaster extensions, currents are so small that a single conductor may be placed in a conduit without trouble from induction. Conductors in sizes No. 0 to 500 MCM

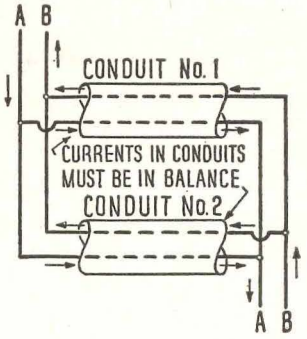



*Fig. 4. Conductors in multiple*

may be run in multiple if they are same length and have same area and type of insulation. Terminate both ends in manner to insure equal division of current. Except by special permission, not more than number of wires shown in Table 3 may be installed in multiple.

**TABLE 3.** Max No. of Wires To Be Installed in Multiple

| No. of wires: | Size |
|---|---|
| 3 | No. 0 |
| 4 | No. 00 |
| 5 | No. 000 to 500 MCM |

### *Wire Carrying Capacity*

Standard tabulated carrying capacities of wires are based upon 3 or less wires in a conduit, and a surrounding temperature of not more than 86 F. Capacity must be reduced to 80 per cent of that listed for 4, 5 or 6 wires in a conduit; to 70 per cent for 7, 8 or 9 wires. A neutral conductor used with balanced circuits is not counted in applying percentages. If one of the system wires is missing from circuit (as in a 3-wire circuit from a 4-wire system) the neutral conductor must be counted, for it carries the unbalanced current which would have been carried by the missing wire. All current-carrying capacity must be separately reduced for high surrounding temperatures by percentages given in Table 4. If room temp is within 18 deg of a maximum allowable temp, use insulation with next higher maximum.

**TABLE 4.** Temp Reduction Factors (percentages)

| Max Temp (°F) | Type of insulation | | | |
|---|---|---|---|---|
| | R, RW, RU, T, and TW | RH | V and AVB | AVA and AVL |
| 104 | 82 | 88 | 90 | 94 |
| 113 | 71 | 82 | 85 | 90 |
| 122 | 58 | 75 | 80 | 87 |
| 131 | 41 | 67 | 74 | 83 |
| 140 | ..... | 58 | 67 | 79 |
| 158 | ..... | 35 | 52 | 71 |
| 167 | ..... | .... | 43 | 66 |
| 176 | ..... | .... | 30 | 61 |
| 194 | ..... | .... | ..... | 50 |

### *Conduit Size Selection*

Due to bunching effect of wires in conduit, all space inside conduit cannot be filled with wire (fig. 5). Percentages of allowable fill are calculated in sq in. of net cross-sectional area for standard size conduits, for various numbers of wires, in Table 5; Section A is for non-lead-covered wires, Section B is for lead-covered.

Where conduits cannot be replaced without damage to house, it is satisfactory to rewire conduits, for increased capacity, with more or larger wires which occupy more space than permitted for original installations. These increased values in sq in. are given in Table 5, Section C.

Cross-sectional areas of the various types of wires, in sq in., are given in Table 6. Values are added together for any combination of wires to be installed in a single conduit. This total permits ready selection of a conduit size, filled to a given percentage, from Table 5. Portion of conduit available for wires must be not less than shown for number and kinds of wires involved.

Where all wires are of one size, non-lead-covered, and for new installations, use Table 7 to select conduit size.

In general, one conduit must not contain more than 9 wires. Table 8 shows conduit capacity for a greater no. of wires, where specially permitted.

(*Continued on page 177*)

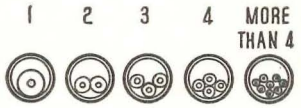
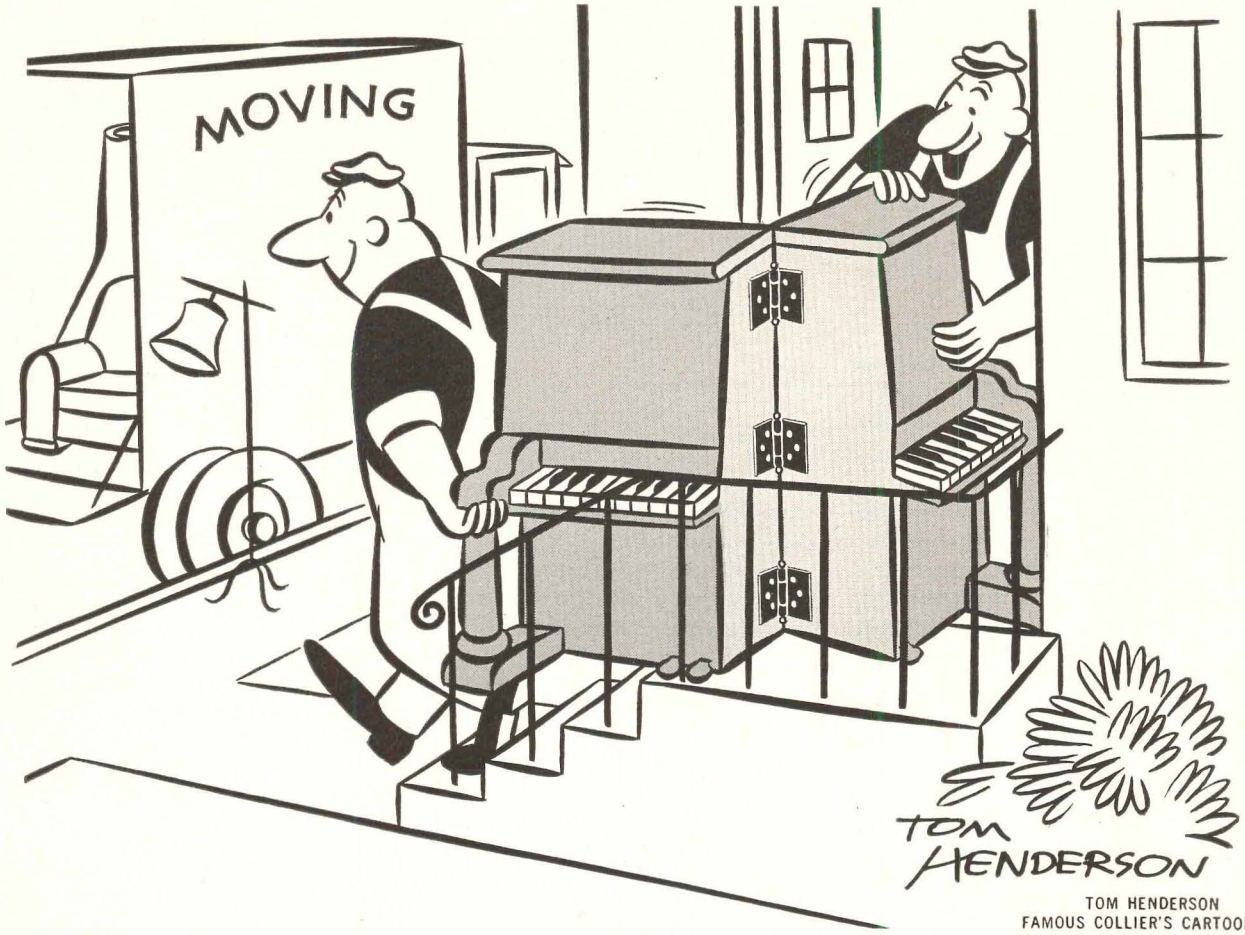



*Fig. 5. Cross-sectional area of conduit which conductors may occupy*

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"Boy, what-ta tight squeeze, it's a good thing . . .

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Highest quality chrome steel balls allow the knuckle to glide smoothly and evenly over tempered steel races. Leaves are beveled at the joint. Trim, square outer edges are finely milled sharp and clean.

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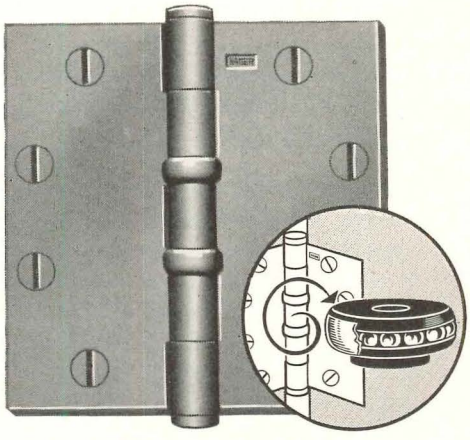

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# ELECTRICAL CONDUITS: 3—Size Selection Tables

(*Continued from page 175*)

**TABLE 5.**—*Net cross-sectional areas in square inches of conduit and tubing available for wires and cables for general use*

| Conduit (trade size) (in.) | Diameter (in.) | Area (sq. in.) (100 per cent) | A. Conductors not lead-covered | | | | B. Lead-covered conductors | | | | | C. Rewiring | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 conductor (53 per cent) | 2 conductor (31 per cent) | 3 conductors (43 per cent) | Over 3 conductors (40 per cent) | 1 conductor (55 per cent) | 2 conductors (30 per cent) | 3 conductors (40 per cent) | 4 conductors (38 per cent) | Over 4 conductors (35 per cent) | 1 conductor (60 per cent) | 2 conductors (40 per cent) | Over 2 conductors (50 per cent) |
| ½ | 0.622 | 0.30 | 0.16 | 0.09 | 0.13 | 0.12 | 0.17 | 0.09 | 0.12 | 0.11 | 0.11 | 0.18 | 0.12 | 0.15 |
| ¾ | .824 | .53 | .28 | .16 | .23 | .21 | .29 | .16 | .21 | .20 | .19 | .32 | .21 | .27 |
| 1 | 1.049 | .86 | .46 | .27 | .37 | .34 | .47 | .26 | .34 | .33 | .30 | .52 | .34 | .43 |
| 1¼ | 1.380 | 1.50 | .80 | .47 | .65 | .60 | .83 | .45 | .60 | .57 | .53 | .90 | .60 | .75 |
| 1½ | 1.610 | 2.04 | 1.08 | .63 | .88 | .82 | 1.12 | .61 | .82 | .78 | .71 | 1.22 | .82 | 1.02 |
| 2 | 2.067 | 3.36 | 1.78 | 1.04 | 1.44 | 1.34 | 1.85 | 1.01 | 1.34 | 1.28 | 1.18 | 2.02 | 1.34 | 1.68 |
| 2½ | 2.469 | 4.79 | 2.54 | 1.48 | 2.06 | 1.92 | 2.63 | 1.44 | 1.92 | 1.82 | 1.68 | 2.87 | 1.92 | 2.39 |
| 3 | 3.068 | 7.38 | 3.91 | 2.29 | 3.17 | 2.95 | 4.06 | 2.21 | 2.95 | 2.80 | 2.58 | 4.43 | 2.95 | 3.69 |
| 3½ | 3.548 | 9.90 | 5.25 | 3.07 | 4.26 | 3.96 | 5.44 | 2.97 | 3.96 | 3.76 | 3.47 | 5.94 | 3.96 | 4.95 |
| 4 | 4.026 | 12.72 | 6.74 | 3.94 | 5.47 | 5.09 | 7.00 | 3.82 | 5.09 | 4.83 | 4.45 | 7.63 | 5.09 | 6.36 |
| 4½ | 4.506 | 15.95 | 8.45 | 4.94 | 6.86 | 6.38 | 8.77 | 4.78 | 6.38 | 6.06 | 5.57 | 9.57 | 6.38 | 7.97 |
| 5 | 5.047 | 20.00 | 10.60 | 6.20 | 8.60 | 8.00 | 11.00 | 6.00 | 8.00 | 7.60 | 7.00 | 12.00 | 8.00 | 10.00 |
| 6 | 6.065 | 28.89 | 15.31 | 8.96 | 12.42 | 11.56 | 15.89 | 8.67 | 11.56 | 10.98 | 10.11 | 17.33 | 11.55 | 14.44 |

**TABLE 6.**—*Areas of conductors to be used in determining the number of wires of various sizes and combination that may be installed in a conduit*

Wires—approximate area in sq in.

| Wire size | RF-32;[1] R;[1] RH;[1] RW [1] | TF;[2] T;[2] TW;[2] RU [2] | Lead-covered RL and RHL—individual cables | | | AVA | AVB | AVL | Bare |
|---|---|---|---|---|---|---|---|---|---|
| | | | 1 conductor | 2 conductors | 3 conductors | | | | |
| 18 | 0.0167 | 0.0088 | ... | ... | ... | ... | ... | ... | 0.0013 |
| 16 | .0196 | .0109 | ... | ... | ... | ... | ... | ... | .0020 |
| 14 | .0327 | .0135 | 0.062 | 0.115 | 0.273 | 0.047 | 0.033 | 0.080 | .0032 |
| 12 | .0384 | .0172 | .066 | .146 | .301 | .055 | .040 | .091 | .0051 |
| 10 | .0460 | .0224 | .096 | .180 | .363 | .064 | .047 | .102 | .0081 |
| 8 | .0760 | .0408 | .132 | .255 | .528 | .075 | .057 | .119 | .0130 |
| 6 | .1238 | .0819 | .188 | .369 | .738 | .122 | .094 | .145 | .027 |
| 4 | .1605 | .1087 | .237 | .457 | .916 | .155 | .123 | .181 | .042 |
| 3 | .1817 | .1263 | ... | ... | ... | ... | ... | ... | .053 |
| 2 | .2067 | .1473 | .283 | .578 | 1.146 | .200 | .166 | .255 | .067 |
| 1 | .2715 | .2027 | .352 | .756 | 1.49 | .268 | .229 | .300 | .087 |
| 0 | .3107 | .2367 | .396 | .859 | 1.70 | .307 | .264 | .341 | .109 |
| 00 | .3578 | .2781 | .454 | .980 | 1.94 | .353 | .307 | .390 | .137 |
| 000 | .4151 | .3288 | .515 | 1.123 | 2.24 | .406 | .358 | .447 | .173 |
| 0000 | .4840 | .3904 | .593 | 1.302 | 2.68 | .478 | .425 | .521 | .219 |
| 250 | .5917 | .4877 | .754 | ... | 3.20 | .616 | .572 | .715 | .260 |
| 300 | .6837 | .5581 | .850 | ... | 3.62 | .692 | .649 | .800 | .312 |
| 350 | .7620 | .6291 | .950 | ... | 4.02 | .778 | .731 | .885 | .364 |
| 400 | .8365 | .6969 | 1.02 | ... | 4.52 | .850 | .800 | .960 | .416 |
| 500 | .9834 | .8316 | 1.18 | ... | 5.28 | .995 | .945 | 1.118 | .520 |

[1] For general use. [2] For rewiring existing conduits.

**TABLE 7.**—*Number of conductors in conduit or tubing—for general use in new installations*

Wire types RF-32, R, RH, RW, RU, TF, T, and TW

| Wire size | Maximum number of wires in conduit or tube | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 18 | ½ | ½ | ½ | ½ | ½ | ½ | ½ | ¾ | ¾ |
| 16 | ½ | ½ | ½ | ½ | ½ | ½ | ¾ | ¾ | ¾ |
| 14 | ½ | ½ | ½ | ½ | ¾ | ¾ | 1 | 1 | 1 |
| 12 | ½ | ½ | ½ | ¾ | ¾ | 1 | 1 | 1 | 1¼ |
| 10 | ½ | ¾ | ¾ | ¾ | 1 | 1 | 1 | 1¼ | 1¼ |
| 8 | ½ | ¾ | ¾ | 1 | 1¼ | 1¼ | 1¼ | 1½ | 1½ |
| 6 | ½ | 1 | 1 | 1¼ | 1½ | 1½ | 2 | 2 | 2 |
| 4 | ½ | 1¼ | [1] 1¼ | 1½ | 1½ | 2 | 2 | 2 | 2½ |
| 3 | ¾ | 1¼ | 1¼ | 1½ | 2 | 2 | 2 | 2½ | 2½ |
| 2 | ¾ | 1¼ | 1¼ | 2 | 2 | 2 | 2½ | 2½ | 2½ |
| 1 | ¾ | 1½ | 1½ | 2 | 2½ | 2½ | 2½ | 3 | 3 |
| 0 | 1 | 1½ | 2 | 2 | 2½ | 2½ | 3 | 3 | 3 |
| 00 | 1 | 2 | 2 | 2½ | 2½ | 3 | 3 | 3 | 3½ |
| 000 | 1 | 2 | 2 | 2½ | 3 | 3 | 3 | 3½ | 3½ |
| 0000 | 1¼ | 2 | 2½ | 3 | 3 | 3 | 3½ | 3½ | 4 |
| 250 | 1¼ | 2½ | 2½ | 3 | 3 | 3½ | 4 | 4 | 4½ |
| 300 | 1¼ | 2½ | 2½ | 3 | 3½ | 4 | 4 | 4½ | 4½ |
| 350 | 1¼ | 3 | 3 | 3½ | 3½ | 4 | 4½ | 4½ | 5 |
| 400 | 1½ | 3 | 3 | 3½ | 4 | 4 | 4½ | 5 | 5 |
| 500 | 1½ | 3 | 3 | 3½ | 4 | 4½ | 5 | 5 | 6 |

[1] 1 in. for services not over 50 ft long, with not more than 2 quarter bends, and using bare neutral.

**TABLE 8**—*More than 9 conductors in conduit (between motor and controller, stage pockets, border circuits, sign flashers, and elevator control wires)*

Wire types RF-32, R, RH, RW, RU, TF, T, and TW

| Wire size | Maximum number of wires in conduit or tube | | | | | | |
|---|---|---|---|---|---|---|---|
| | ¾ in. | 1 in. | 1¼ in. | 1½ in. | 2 in. | 2½ in. | 3 in. |
| 18 | 12 | 20 | 35 | 49 | 80 | 115 | 176 |
| 16 | 10 | 17 | 30 | 41 | 68 | 97 | 150 |
| 14 | .... | 10 | 18 | 25 | 40 | 59 | 90 |
| 12 | .... | .... | 15 | 21 | 35 | 50 | 77 |
| 10 | .... | .... | 13 | 17 | 29 | 41 | 64 |
| 8 | .... | .... | .... | 10 | 17 | 25 | 38 |
| 6 | .... | .... | .... | .... | .... | 15 | 23 |

**EXAMPLE—**

Problem: what size conduit is required for 3 No. 14, 3 No. 10 and 2 No. 6 type RW wires for a new installation.

Solution: from Table 6 select:

No. 14—0.0327 × 3—0.0981
No. 10— .0460 × 3—0.1380
No. 6— .1238 × 2—0.2476
Total 0.4837 sq in.

From Table 5, for more than 3 conductors, 0.60 sq in. represents the smallest conduit, 1¼ in. size, which will receive the wires and be filled to not more than 40 per cent of its total cross-sectional area. However, a 1-in. conduit would receive the 6 smaller wires.

# MANUFACTURERS' LITERATURE

### *Automatic Windows*

*Vita Automatic Windows.* Folder presents features and operation data on the automatically-opening glazed and screened window unit. Plan and section drawings show installation methods for wood or brick construction; diagram and notes give dimensions of the unit and space necessary for its installation. Typical applications are illustrated. An insert drawing gives measurements and details of frame assembly. 6 pp., illus. Vita Automatic Windows, Inc., 101 Park Ave., New York 17, N. Y.

### *Aluminum Sills*

*Window Sills and Thresholds — Alcoa Aluminum in Architecture.* Use and production of aluminum as a building material for sills and thresholds are discussed, and a line of stock shapes is presented. Profile sections, sketches, and size and weight tables are given for each type. Typical details for various wall and floor constructions are included, along with specifications and notes on special designs and installation procedures. Charts and graphs give performance records and test results on the material. 20 pp., illus. Aluminum Company of America, 801 Gulf Bldg., Pittsburgh 19, Pa.*

### *Plastic Panels*

*Corrulux Translucent Structural Panels — A New Idea In Building.* Folder pictures the standard colors available in the corrugated plastic panels, and describes features and uses. Illustrations depict the material employed as glazing, skylights, partitions, greenhouses, awnings, store fronts and facings. 4 pp., illus. Corrulux Corp., P.O. Box 6524, Houston 5, Texas.

### *Swimming Pool Drainage*

*Swimming Pool Drainage Products Manual SP-3.* Gives ideas and suggestions on pool layouts together with details of drainage methods to be used in the construction or remodeling of pools. Information is included on water supply and circulation, and various fittings for indoor and outdoor swimming, wading and diving pools, dressing rooms, etc. Drawings indicate typical designs for many types of municipal, commercial, private and institutional pools. 32 pp., illus. Josam Manufacturing Co., Dept. SP-2, 1302 Ontario, Cleveland 13, Ohio.*

### *Baseboard Heating*

• *Functional Heating Design With National Art Baseboard.* Folder discusses the unit and pictures types available. Cut away portions show construction and operation features. Assembly pieces are also illustrated. Dimensions, details and ratings are given in drawings and tables. 4 pp., illus. The National Radiator Co., Johnstown, Pa.

• *Comfort Floorlevel — General Automatic Hot Water Baseboard Heating.* Presents features of baseboard heating, and of this particular type. A circuit layout diagram is given for 2-story and duplex homes. Sample specifications and illustrations of the unit are included along with boiler and burner equipment available for use with the baseboard heaters. 4 pp., illus. General Automatic Products Corp. (formerly General Oil Burner Corp.), 2300 Sinclair Lane, Baltimore 13, Md.

• *Baseboard Heating With U.S. Radiant Baseboard.* Treats on function of heating, and gives results of comfort conditions in heated rooms. The radiant baseboards are compared with other heating methods. Photos show full and cut-away views of the unit, available accessories and fittings, the manufacturing process, and the various steps necessary for installation. Sample plan and isometric layouts, calculation sheet, output characteristics table, and capacity chart are included. 34 pp., illus. United States Radiator Corp., 127 Campbell Ave., N, Detroit, Mich.*

• *Fedders Wall Radiation (Catalog WR-C1).* Gives applications and features of a type similar to baseboard heating, designed for mounting at any desired height under windows or along walls. The basic unit and cover types available are presented with illustrations, details, specifications and dimensions. Several tables give capacity per ft of length. 6 pp., illus. Fedders-Quigan Corp., Buffalo 7, N. Y.*

### *Metal Building Panels*

*Fenestra Steel and Aluminum Building Panels.* Four types of metal building panels for use in floors, walls, roofs and partitions are described and illustrated. Among the topics covered are: acoustic treatment, fire resistance, panel electrification, waterproofing and insulation. Tables give ratings, spacings, allowable loads, sizes and weights. Details and sections depict installation methods for a multitude of panel uses and types of construction. Data are also included in reinforcing floor forms. 40 pp., illus. Detroit Steel Products Co., 2250 E. Grand Blvd., Detroit 11, Mich.*

### *Boiler and Firing Units*

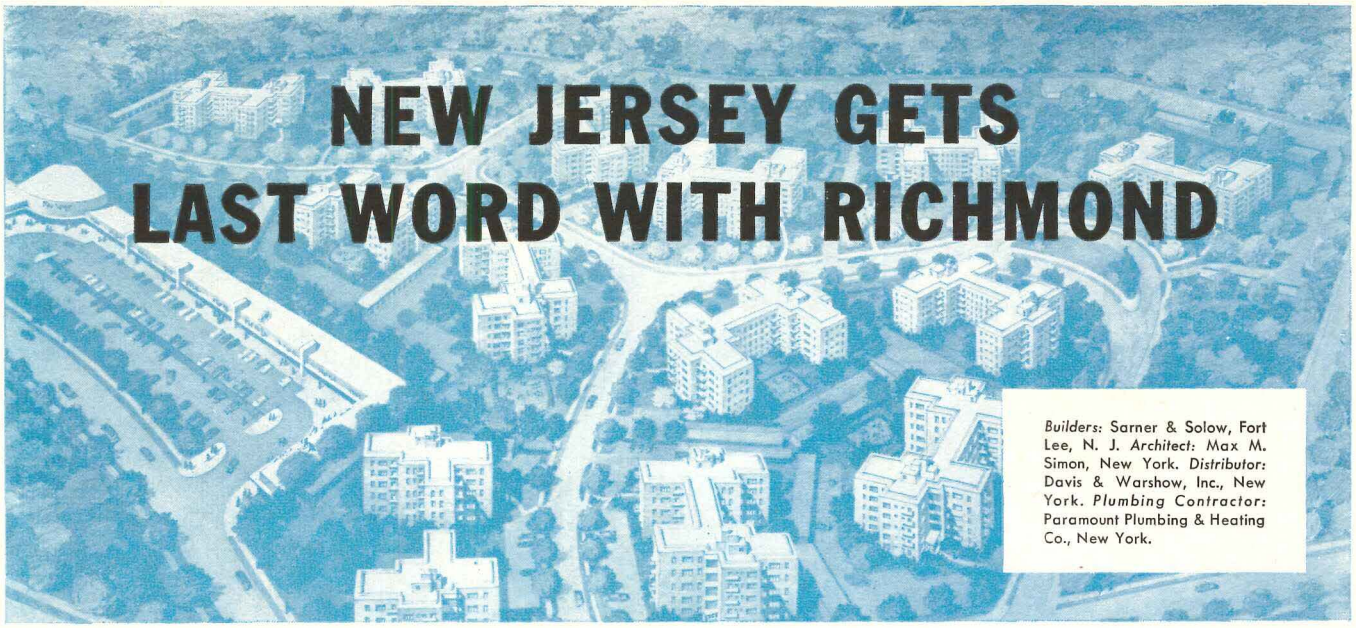
*Your Steam Costs! Modernize Your Boiler Room!* A series of 7 folders describe the complete line of York Power Steam-Pak Generators. Each includes descriptive specifications and dimensions of a particular model boiler. These include: (1) Gas fired for natural, manufactured or mixed gas; (2) Oil fired for light fuel oil; (3) Combination firing for No. 3 oil and gas; (4) Oil fired for No. 5 fuel oil; (5) Combination firing for No. 5 oil and gas; (6) Heavy oil fired for heavy Bunker C oil; and (7) Combination firing for No. 6 oil and gas. 4 pp. each, illus. York-Shipley, Inc., 319 Jessop Place, York, Penn.

### *Fans*

*Standards, Definitions, Terms and Test Codes for Centrifugal, Axial and Propeller Fans (Bulletin 110).* Covers the classification of air-moving equipment, standards, terms and definitions in use by the fan industry, and standard codes for air and sound measurements. Tables give data and size standards of various types of fans. Fan arrangements are illus-

(*Continued on page 284*)

** Other product information in Sweet's File, 1950.*



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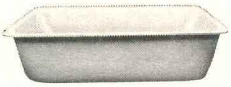
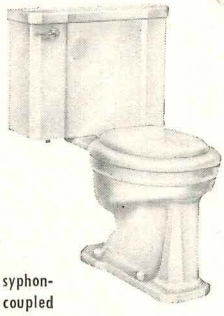
The Richmond Claremont 2-piece reverse trap close-coupled closet combination, plate G-210

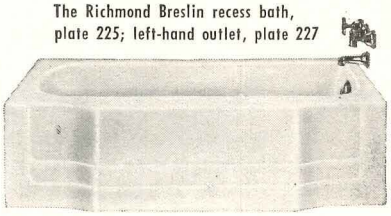
The Richmond Londo lavatory with center-set fitting, plate 869



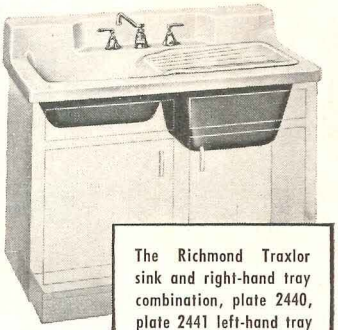
The Richmond Seaford flat-rim sink with center outlet, plate 2021



The Richmond Phoenix syphon-action 2-piece close-coupled closet combination, plate G-217



The Richmond Breslin recess bath, plate 225; left-hand outlet, plate 227



The Richmond Traxlor sink and right-hand tray combination, plate 2440, plate 2441 left-hand tray

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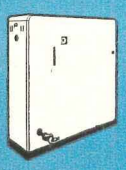
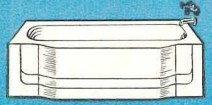
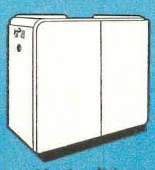


Gas Boilers



Enameled Cast Iron Ware



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## THE RECORD REPORTS

### WASHINGTON

(*Continued from page 21*)

campuses to house faculty and students under previous programs will employ these loans to refurbish the properties, make them more livable and permanent. Congress wrote the bill in such a way that housing to be secured with the loans can be new or it can be provided through rehabilitation, alteration, conversion or improvement of existing structures not now adequate for the proposed dwelling use.

Interestingly enough, the legislators provided that the housing so constructed or improved must not be of elaborate or extravagant design or materials.

Further, no such loans can be made by HHFA unless the educational institution seeking them proves it cannot secure funds for such housing from other sources on the same terms or conditions generally comparable to those specified in the Act.

### *Program Moves Ahead*

This loan scheme for colleges already has been activated. Housing Administrator Foley has borrowed Ormond E. Loomis, assistant to the Home Loan Bank Board, and designated him as an interim officer to organize loan procedures. He will be given two or three months to establish the basis for operation, then a new executive will be appointed.

There was no indication of when rules and regulations would be issued, or when first applications from colleges would be received. But if HHFA moves as rapidly as it has on other phases of the new Housing Act, the time should not be long. Of course, the straight loan program for colleges is new to the HHFA; but it certainly has plenty of precedent in counterparts in other agencies, and even within housing practices.

These loans to colleges represented one of the less controversial aspects of the latest housing bill. There was little dispute that colleges have been faced with unusually heavy housing problems brought on largely by the Servicemen's Readjustment Act, and aggravated by population increases. The educational institutions are considered good risks and the $300 million total loan figure went through Congress without being seriously challenged.

(*Continued on page 182*)

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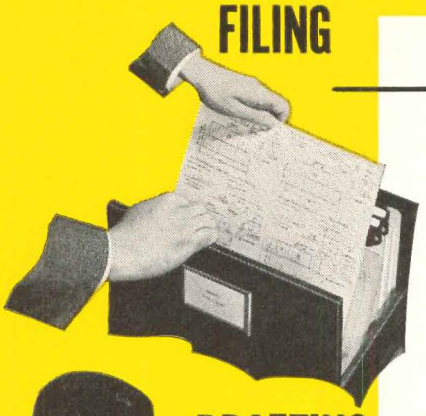

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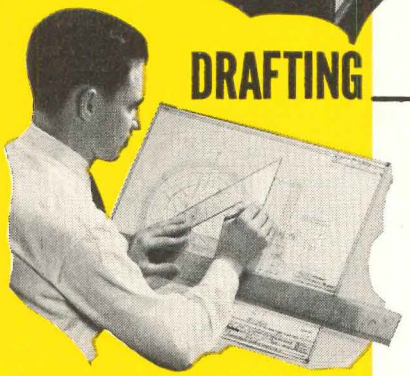
### DRAFTING



Crompton & Knowles has adopted the rule: "*A Kodagraph Autopositive intermediate of every drawing.*" And this is paying off today in lower re-drafting costs. *Before,* the original detail drawings (described above) and scale drawings were used as the blueprint "masters" . . . were exposed to machine wear-and-tear, constant handling. When they no longer produced legible blueprints, they had to be redrawn. *Now* the valuable originals are kept safe in the files—available for reference and revisions only. The "Autopositives" do the "heavy work" . . . whenever needed.

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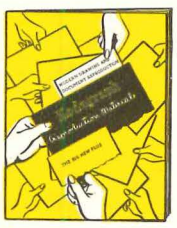

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# THE RECORD REPORTS

## WASHINGTON

(*Continued from page 180*)

### *Housing Amendments, 1950*

*Following are compromises worked out by the conference committee on the Housing Act of 1950, effective since the bill got the Presidential signature April 20:*

• FHA Title I, improvement and repair loan insurance, extended to July 1, 1955. New formula limits total amount of outstanding insured loans to $1,250 million, an increase of $5 million.

• A new Sec. 8, added to Title I, provides a new mortgage insurance program for very low-cost homes in suburban and outlying country areas. This replaces former FHA "class 3" loans and follows the well-known FHA processing procedures. A top sum of $250 million was provided for this program; $100 million now, and the balance at the direction of the President. Under the amendments, dollar mortgage limit for these loans changes from $4500 to $4750 (95 per cent up to $5000 of appraised value) where the mortgagor is the owner-occupant; and $4250 (85 per cent up to $5000 of appraised value) where the mortgagor is the operative builder. At the Federal Housing Commissioner's discretion, these limits can go up to $5600 and $5000, respectively, where higher construction costs in certain areas make it necessary. Maturity is 30 years, and maximum insurance rate cannot exceed five per cent exclusive of premium charges. A sum of $1 million was transferred from the existing Title I fund to carry out the low-cost home program.

• Title II mortgage insurance authorization is increased by $2250 million to total authorization of not more than $9 billion. Of the increase, $1 billion is immediately available.

• Title II amended to provide incentives for production of lower-cost homes; emphasis will be on production of three- and four-bedroom units.

• Federal Housing Commissioner is directed to channel benefits of Sec. 207 rental housing loan insurance to projects adequate for families with children and in which every effort has been made to achieve moderate rents. FHA said changes made in dollar amount limitations on mortgages insured under Sec. 207 provide an economically sound method for insurance of loans on rental

(*Continued on page 184*)

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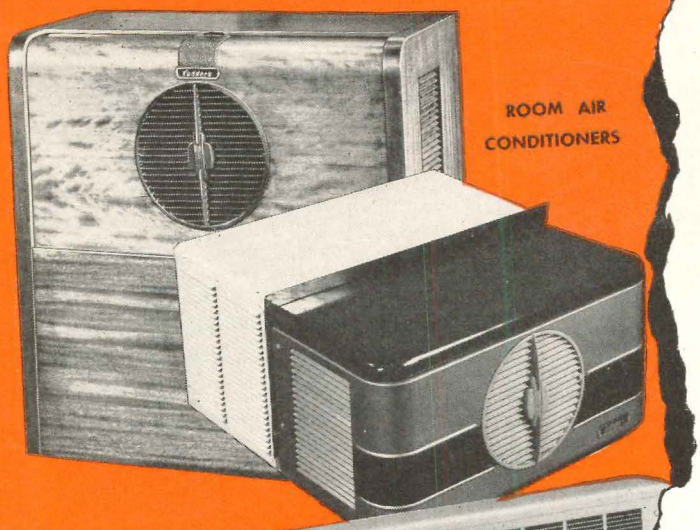
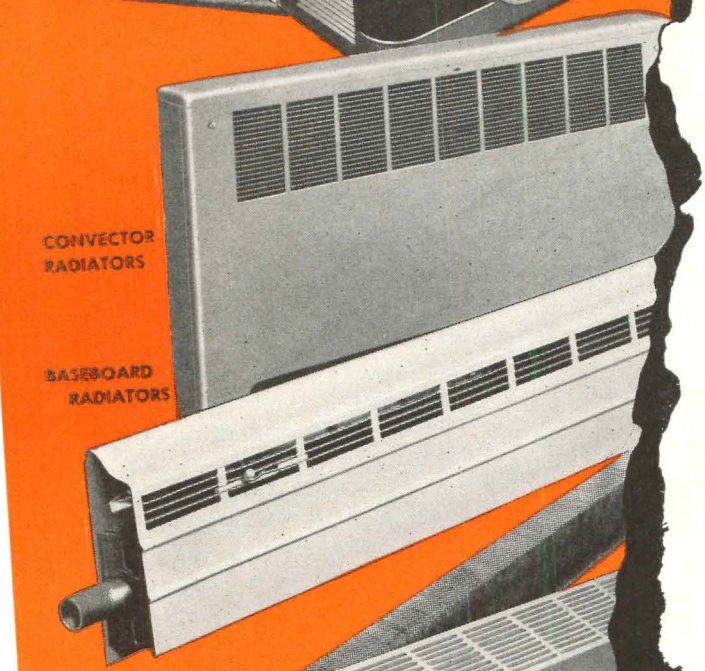
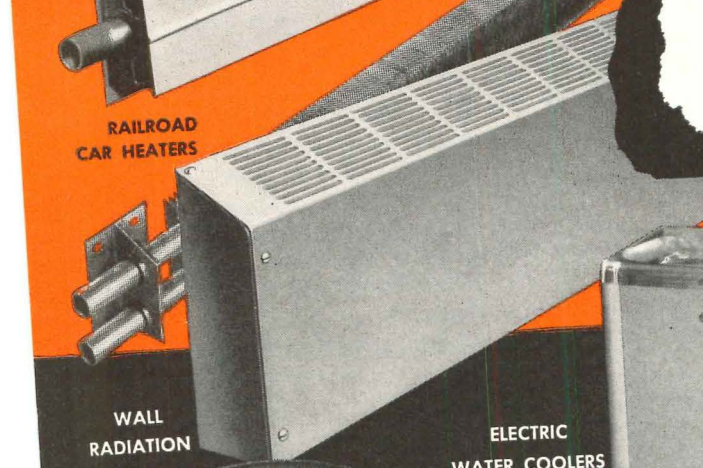
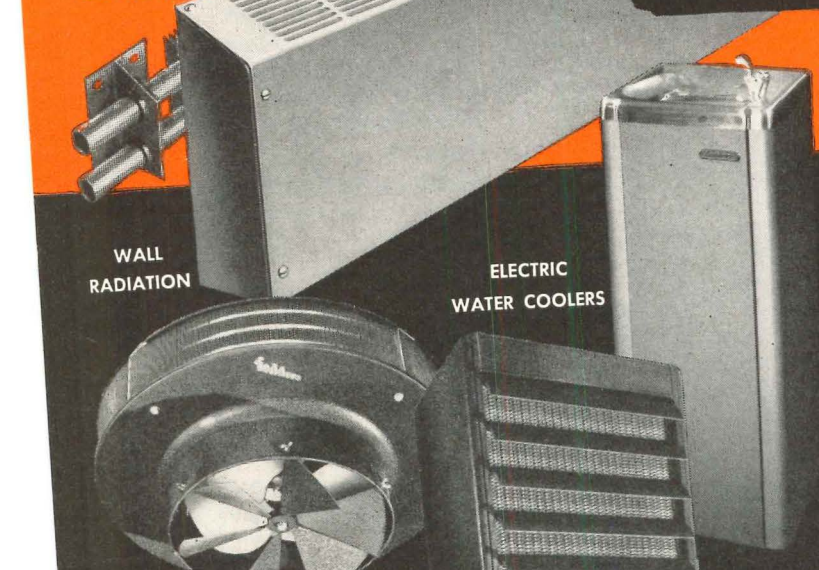
Did you know that Fedders is one of the foremost manufacturers of room air conditioning units?

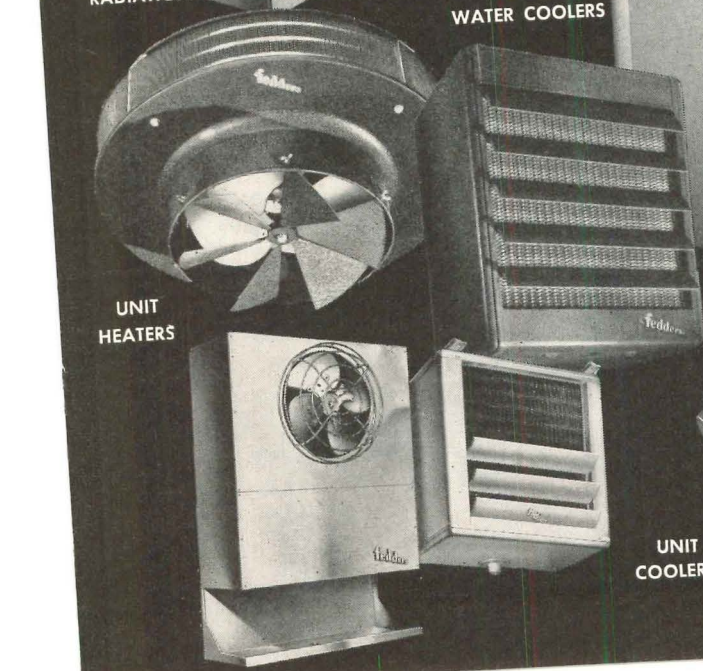
This all adds up to an engineering background responsible for Fedders performance. Today, more than ever before, men who specify, sell, install and use heating equipment look to Fedders for the best.





*For information on individual products, write*

**FEDDERS-QUIGAN CORPORATION**
**BUFFALO 7, N. Y.**

# THE RECORD REPORTS

## WASHINGTON

(*Continued from page 182*)

housing while continuing the stimulation of rental housing construction formerly provided by the temporary Sec. 608 which expired March 1.

• A new Sec. 213 liberalizes the former provisions for FHA insurance of mortgage loans for cooperative housing projects. Warren J. Lockwood, formerly assistant to the FHA Commissioner, now will administer this cooperative housing assistance program as Assistant to the Commissioner.

• Congress increased by $500 million the mortgage insurance authority for insuring loans under Sec. 608, permitting FHA to process applications received in field offices on or before March 1; but FHA announced immediately that all Sec. 608 applications received after February 15 would be laid aside for future consideration if and when more money for processing them was made available. The agency has set no time limit for issuing 608 commitments, and promises there will be no preference shown in handling those cases which can be covered with available funds.

• The secondary market purchase authority of Federal National Mortgage Association was increased $250 million. Builders were more concerned, however, with the fact that Congress took away FNMA's previous right to deal in future commitments. Hereafter, the agency can buy only after the mortgage has been arranged, not on a future promise basis. Builders say this will make it much harder to arrange insured loans.

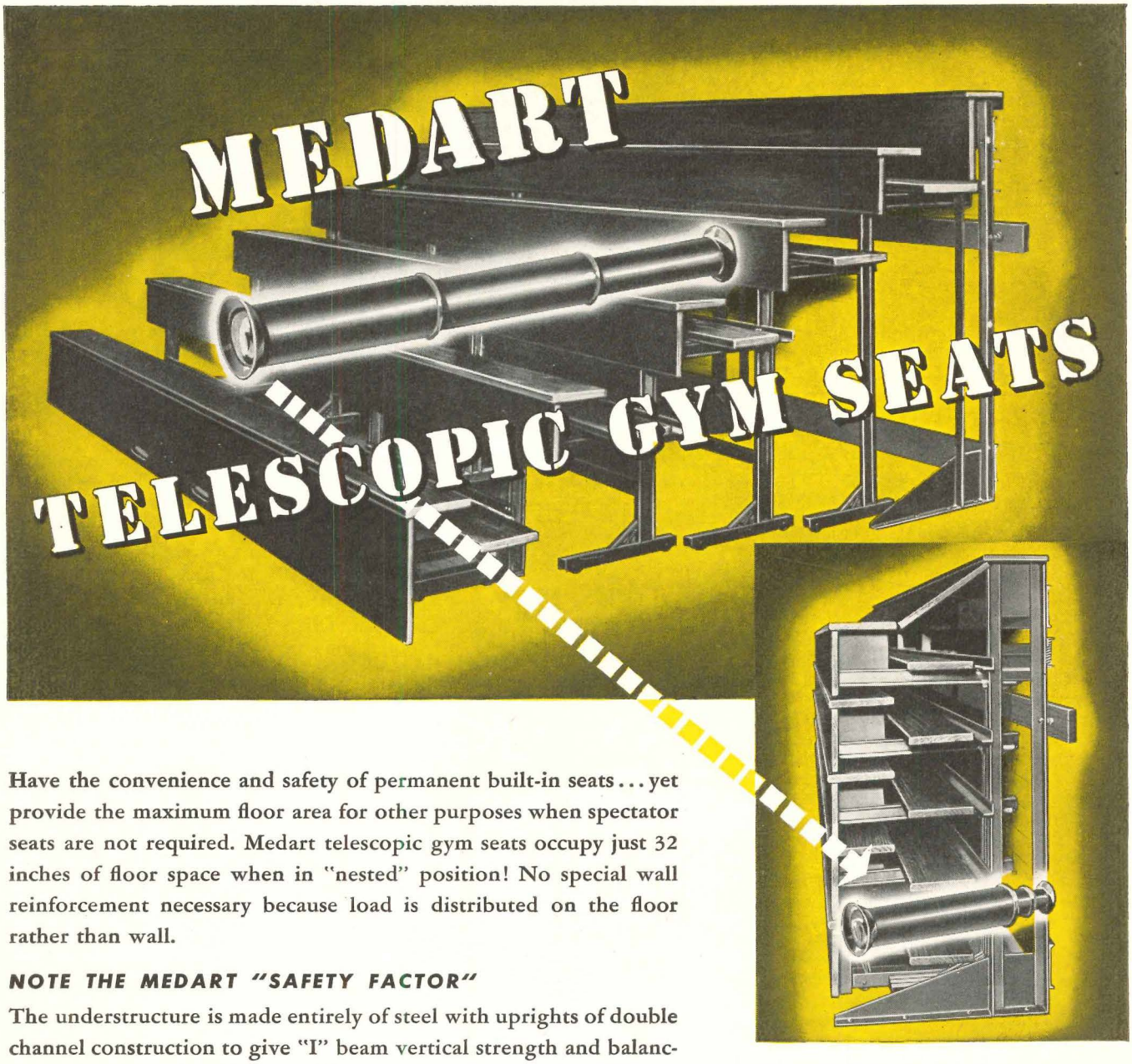
Miscellaneous new provisions cover disposal of war and veterans' housing; eight distinct changes in the Servicemen's Readjustment Act governing housing loans to veterans; standby authority for $150 million in direct loans to veterans when they cannot obtain four per cent locally; a $300 million direct loan program for student and faculty housing at colleges and universities.

### *VA Now Enforcing Standards*

One thing the new Housing Act does is to put teeth in the minimum construction standards of the Veterans Administration. Heretofore, these VA standards which parallel the FHA requirements have been on a voluntary basis —

(*Continued on page 186*)

# Save Valuable Floor Space with...




Have the convenience and safety of permanent built-in seats... yet provide the maximum floor area for other purposes when spectator seats are not required. Medart telescopic gym seats occupy just 32 inches of floor space when in "nested" position! No special wall reinforcement necessary because load is distributed on the floor rather than wall.

***NOTE THE MEDART "SAFETY FACTOR"***

The understructure is made entirely of steel with uprights of double channel construction to give "I" beam vertical strength and balancing support. Spacer angles and cross channels are of steel. Selected lumber used throughout for seatboards, footboards and risers—full length—full width . . . *one piece.*

**Medart Telescopic Gym Seats Available In WALL ATTACHED . . . MOVABLE...HIGH ROW (UP TO 20 ROWS HIGH) AND RECESSED TYPES**

*Write for descriptive literature . . . send your plans for suggestions.*

SEE OUR CATALOG IN SWEET'S

**SWEET'S FILE (ARCHITECTURAL) NO. 23g—3a and 23c—8a**

FM50-1

**FRED MEDART PRODUCTS, INC.**

**3540 DE KALB ST. ST. LOUIS 18, MO.**

*Leadership for over 75 years in School Equipment*

A complete line of Basketball Backstops both standard and special designs "tailored" to meet any structural condition. Write for descriptive literature.


The very latest design in Basketball and Football Scoreboards for spectator visibility. Write for descriptive literature.

# THE RECORD REPORTS

## WASHINGTON

(*Continued from page 184*)

ever since VA adopted its own schedule 18 months ago. Many builders have sought to comply with these rules to qualify for advance certification of reasonable value, but there have been instances of shoddy G.I. construction.

Veterans now have assurance, under terms of the new law, that all G.I. loan houses started after the middle of June will have to conform to the Veterans Administration minimum standards. Under the Servicemen's Readjustment Act, the price paid for homes constructed with guaranteed loans cannot exceed the reasonable value as determined by a VA appraiser.

At the same time, it was announced that Sec. 505a loans, the combination-type mortgages insured by FHA and guaranteed by VA, would be terminated on October 20, 1950. To bring about the orderly removal of these 505a's from building operations, the veterans' agency has set up a series of steps to be taken each month looking toward the termination date. The National Association of Home Builders had warned that cutting off the benefits of the combination loan in the middle of the building season would have been "disastrous" to the home building industry. If these Sec. 505a loans had been terminated completely in June or July, as NAHB had expected them to be, volume of new starts would have dropped 50 per cent in the last half of 1950, the Association predicted.

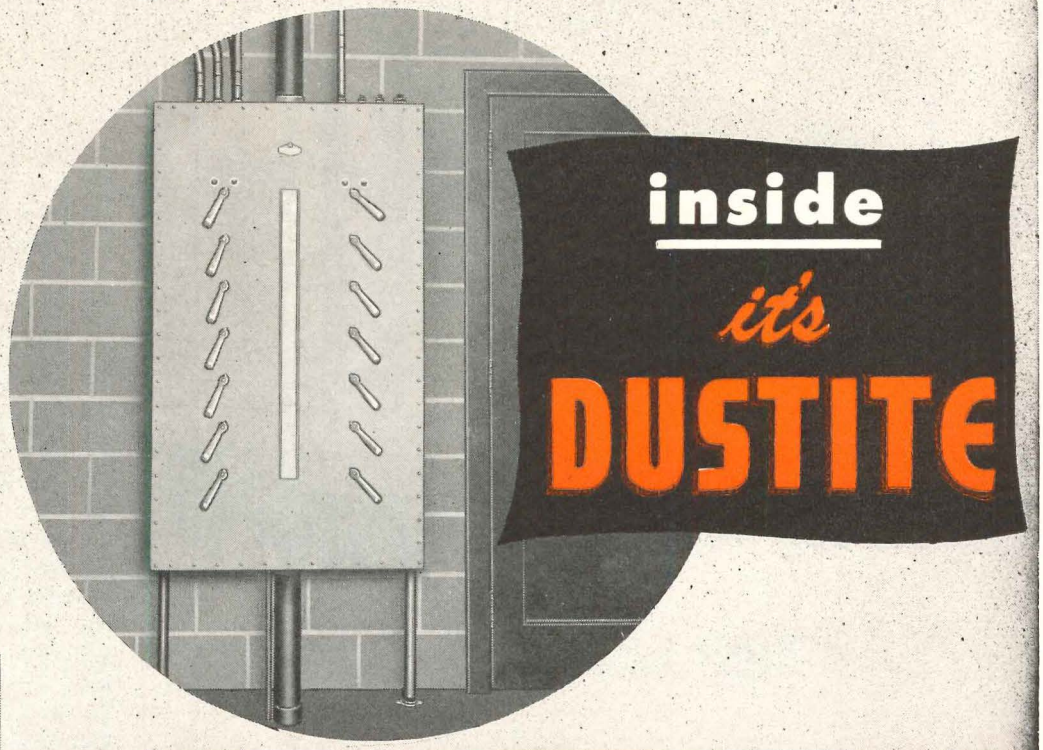
Now, Veterans Administration said it is effecting a gradual withdrawal of the combination loan benefits, giving full consideration to the interests of the home building industry. Home builders themselves would most probably give an argument against this VA stand, however. NAHB made it clear that it was advised of the recent drop (from 4½ to 4¼) of the percentage rate on FHA-insured mortgages, but not consulted in connection with the move.

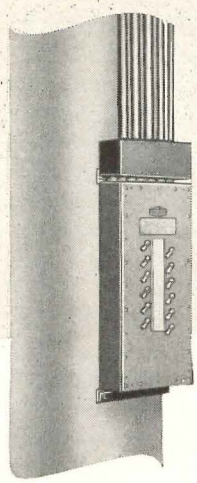
### *Hospital Programs*

In recent actions Congress has been bent on providing additional hospital space, both federal and non-federal, at a brisk pace in spite of efforts in certain quarters to retard the building programs for economy and other

(*Continued on page 188*)

# No hazard here . . . *because*



*Typical lighting panelboard illustrated above; typical power panelboard in circle.*

Designed for use where carbon black, coal or coke dust, grain dust and other dust conditions are hazards.

Approved by Underwriters' Laboratories, Inc., for Class II, Groups E, F & G Hazardous Locations.

FOR THOSE COMPANIES plagued with the hazards of volatile dust, the Frank Adam Electric Company has designed special light and power panelboards that provide *dust-free* performance, safety and dependability . . . regardless of the external dust condition . . . because (FA) DUSTITE PANELBOARDS remain dust-free *inside.*

These (FA) DUSTITE PANELBOARDS seal out the hazards of dust by means of dust-tight welded hubs for conduit outlets . . . welded box corners . . . external mounting brackets welded to back of cabinet . . . and a solid steel front plate with gasket protection all around.

The circuits are externally operated by a dust-tight mechanism of (FA) design. The handles operate through dust-tight bushings and engage the regular handles on the circuit breakers *inside* the cabinet. ON and OFF positions are indicated on the front of the cabinet.

And there's no reason to get inside the cabinet because all (FA) DUSTITE PANELBOARDS are of the automatic circuit breaker type, which provide protection without need for replacement of any parts.

Capacities 15 to 600 amps., 250 volts AC or DC, and 600 volts AC, main lugs only, or main circuit breakers.

Avoid the hazards of dust in your light and power panelboards by making them (FA) DUSTITE.

*Inquiries solicited . . . just address your nearest (FA) Representative (he's listed in Sweet's) or write for Bulletin 302.*

FA TRADE MARK

## *Frank Adam Electric Co.*

ST. LOUIS 13, MISSOURI

*Makers of* BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER

## THE RECORD REPORTS

### WASHINGTON

(*Continued from page 186*)

reasons. First the House restored the full amount of federal aid for the U.S. Public Health Service hospital construction program, voting the full $150 million for the coming fiscal year that it had authorized in amending the Hill-Burton Act last fall. Then it rushed through the Rankin bill putting back into the Veterans Administration hospital building program the 24 new structures and expansion of 14 others that President Truman deleted over a year ago.

Cost of the additional VA hospital construction would be $237 million, an amount already approved for appropriation. But in connection with this new legislation there was the big question mark concerning Presidential approval. It was argued by some that since the Chief Executive himself cut out the additional VA hospital work on advice of the Budget Bureau and the veterans' agency, he would not permit the Rankin bill to become law. The bill's author described it as a directive which the President could not ignore. At this writing, final approval was doubtful, however. The Senate had not yet acted.

The increase in federal aid funds for the Hill-Burton Act construction was more understandable. Last year, in amending the law — the Federal Hospital Construction Act — to change the percentage formula governing federal and state project contributions, members of Congress then approved a doubling of the $75 million per year allotment of federal funds to states. This spring, however, the House Appropriations Committee, in one of its heavy economy moods, voted out the old figure of $75 million for the coming fiscal year. The full House was quick to put the total up to the $150 million it had authorized, and there it stood as the measure went over to the Senate.

Meanwhile, the national hospital program, under guidance of U.S. Public Health, had reached the total of 1145 projects approved as of March 1. Final approval of federal funds from allotment for fiscal years 1951 and 1952 was deferred pending availability of the sum through the appropriations bill now being discussed. The March 1 data showed that total estimated cost of the

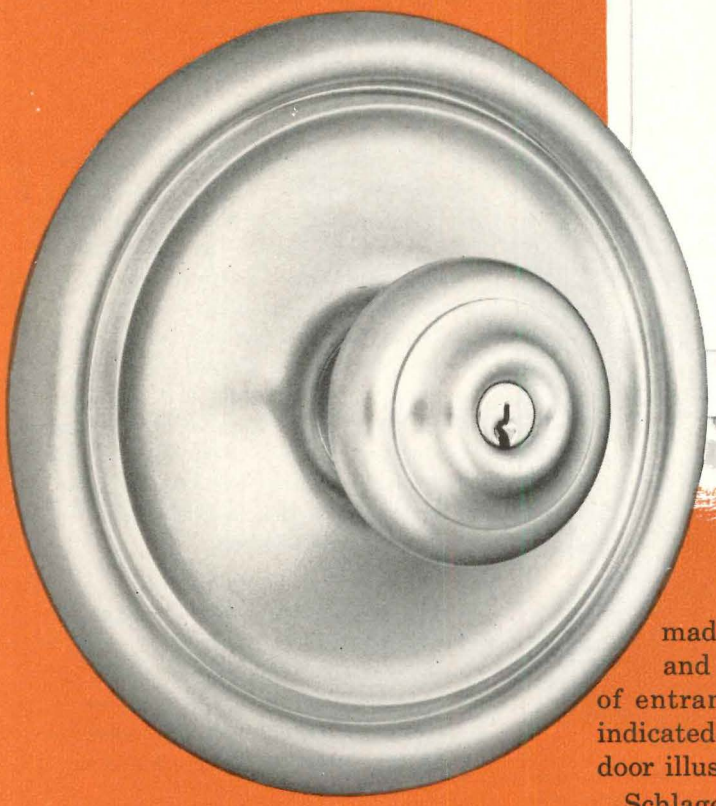
(*Continued on page 190*)

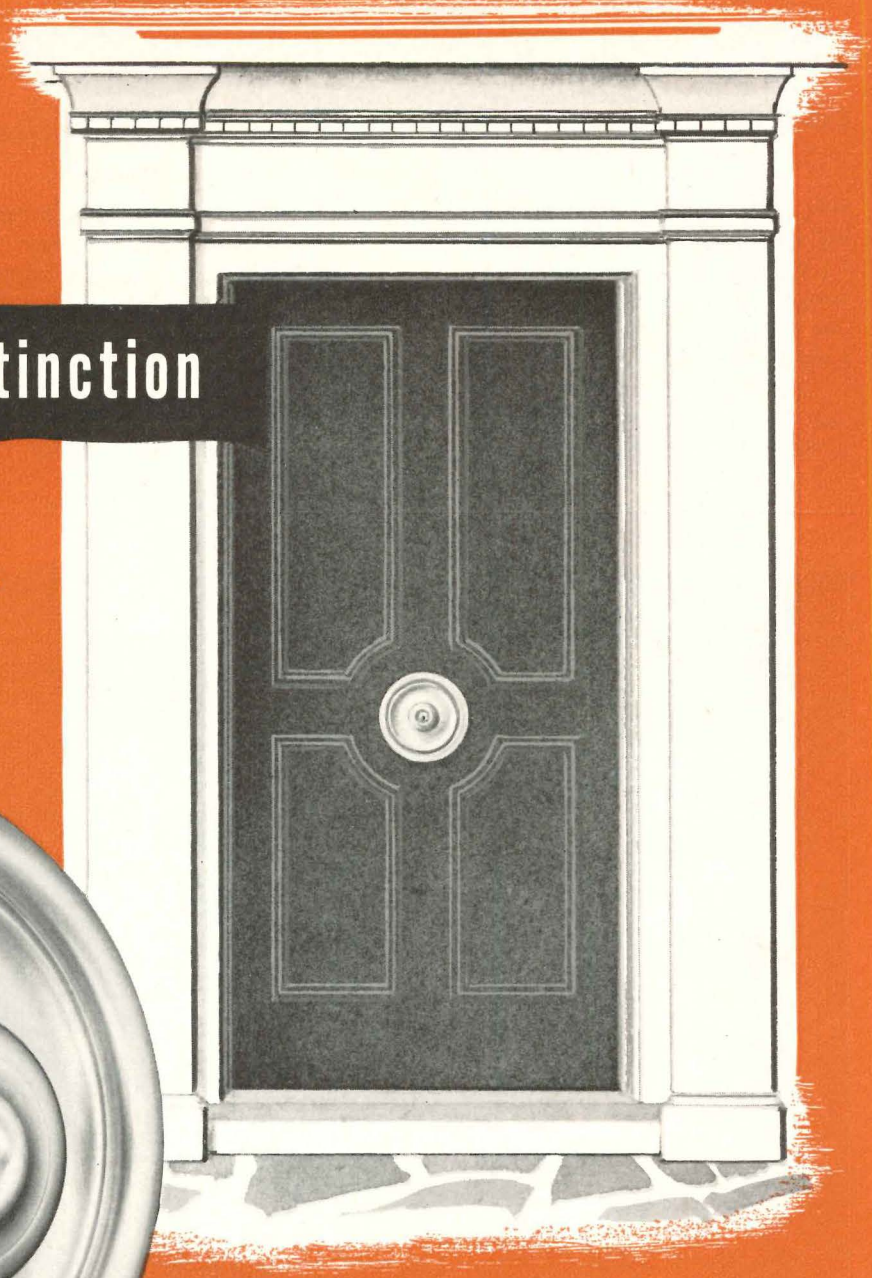
SCHLAGE®

# Entrance Door Distinction

*created by*

## Schlage "Long Backset"





Use of impressive, large escutcheons is made possible by the Schlage "long backset"—a new and notable design factor for dramatic treatment of entrance doors. Extreme flexibility of placement is indicated by centering of the Schlage lock on the panel door illustrated.

Schlage "long backset" locks are easy to install—have the dependable Schlage mechanism—proved by more than a quarter century in use.

*Do you have the new Schlage brochure illustrating "long backset" locks and designs? You may have your copy by requesting booklet No. AR-630.*

**"Pantheon" Design,** *with 8" escutcheon*—may be placed 5" to 24" from the door edge with the Schlage "long backset."

SCHLAGE®

**SCHLAGE LOCK COMPANY**

Bayshore Blvd.
San Francisco

Empire State Bldg.
New York

**SCHLAGE . . . FIRST NAME IN CYLINDRICAL LOCKS**

WASHINGTON (*Cont. from page 188*)

1145 projects now approved is $771,086,906; the federal share being $259,856,041, and the states' share $511,230,865. This much of the continuing program will add 55,435 hospital beds and 186 health centers to the nation's facilities.

As of March 1, there were in operation 158 hospitals under this program costing $41,836,712 and containing 3662 beds. Complete health centers numbered 44. Under construction were 574 hospitals costing $427,112,905, containing 30,754 beds; and 75 health centers. Initially approved and awaiting final confirmation were 413 projected hospitals to cost $302,137,289, and to furnish 21,019 additional beds; and 67 more health centers.



### *Shorts*

• It is believed that the forthcoming FHA annual report, due to be published later this month, will show on the basis of FHA property valuation that cost of single-family homes with mortgages insured under Sec. 203 (of the National Housing Act) during the last half of 1949 averaged $8507. The median valuation probably will show up slightly lower than this — around $8100, close to the average figure on existing homes in the same classification. FHA spokesmen said the annual report would carry a breakdown of these average valuations by the nine Census Bureau regions as well as for the U.S. as a whole, giving figures for both new and existing dwellings covered by insured mortgages. The percentage breakdown is being arranged on a 12-step scale with brackets of property valuation extending from less than $4000 to more than $16,000.

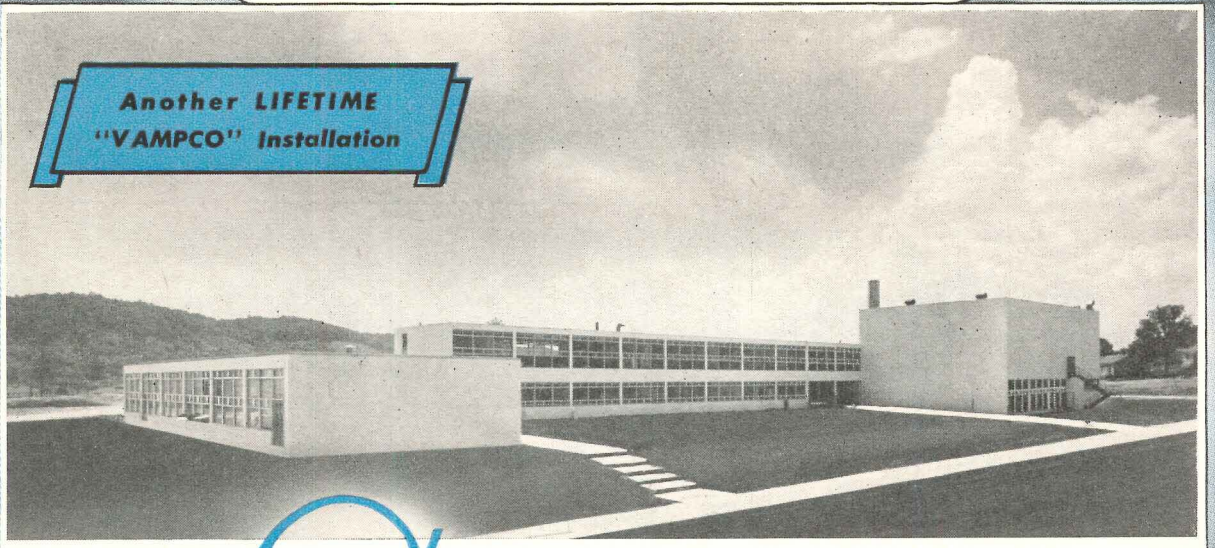
• The final breakup in the fantastic three-year history of the Lustron Corp. was at hand. Attorneys for Reconstruction Finance Corp., the government agency that loaned Lustron some $37.5 million for production and sale of enamel-covered steel prefabricated houses, said a request for sale of the assets was being entered in federal court at Columbus, Ohio, home of the Lustron firm. Negotiations for an out-of-court settlement to continue operations had broken down. The sale, it was said, would be either by sealed bid or by auction.

• Sen. Burnet Maybank, chairman of the Senate Banking Committee, threatened to sponsor legislation for $1 billion in direct government housing loans to veterans if private lending agencies continued to tighten up on such loans.

• Applications for advance planning loans for preparing plans and specifications on non-federal public works are coming into the General Services Administration in increasing numbers. Under the revived program applications now exceed $17 million in loans requested. The interest-free loans are made by GSA to states, cities and towns for planning billions of dollars worth of new construction. Under the former program, which lapsed July 1, 1947, over $50 million was advanced for design of public works estimated to cost $2.7 billion in price levels then current.

(*Continued on page 194*)

# VAMPCO ALL-ALUMINUM WINDOWS




**OAK RIDGE, TENN. ELEMENTARY SCHOOL**

**ARCHITECT: SKIDMORE, OWINGS AND MERRILL**

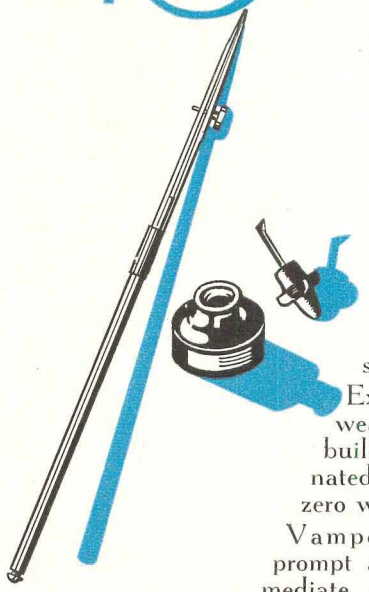
**CONTRACTOR: JOHN A. JOHNSON & SONS**

## Save on INSTALLATION . . .

### SAVE ON MAINTENANCE

## with VAMPCO ALUMINUM

## INTERMEDIATE PROJECTED WINDOWS



The architect for this Oak Ridge School was able to demonstrate an immediate saving as well as lasting economy when he specified all-aluminum windows.

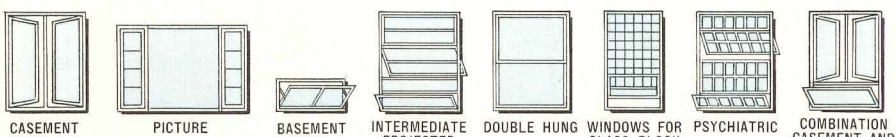
Designed with an aluminum subframe extruded integral with the outside frame of an intermediate projected window, each large panel was installed as a perfectly-fitting single unit — simplifying erection and reducing calking. Windows arrived on the job with hardware attached at the factory — another substantial saving.

Extra-heavy ventilator sections and side arms assure weather-tight fit and smooth action for the life of the building. Costly painting and refinishing are eliminated forever. Window maintenance is reduced to zero when you specify Vampco!

Vampco's Engineering Department will supply prompt and complete information on Vampco intermediate and custom projected windows (with or without integral subframe). Drop us a line for details!


**LOOK TO VAMPCO**

**FOR ALL THESE WINDOW TYPES — IN LIFETIME ALUMINUM**




**WRITE**

Dept. AR 6

our Engineering Department for money-saving suggestions . . . Consult SWEET'S for standard sizes and specifications.

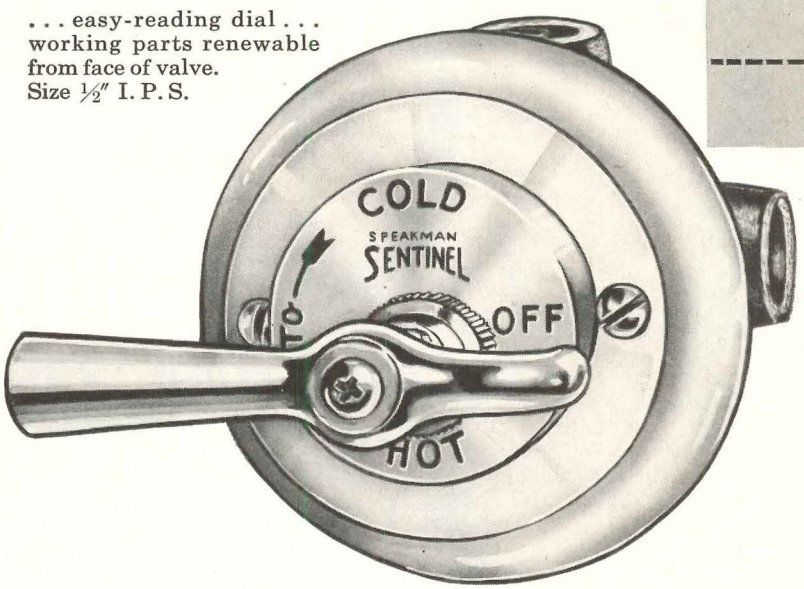
## VALLEY METAL PRODUCTS COMPANY - PLAINWELL, MICHIGAN

# From "Dorm" to "Gym"

## There's No Other Shower

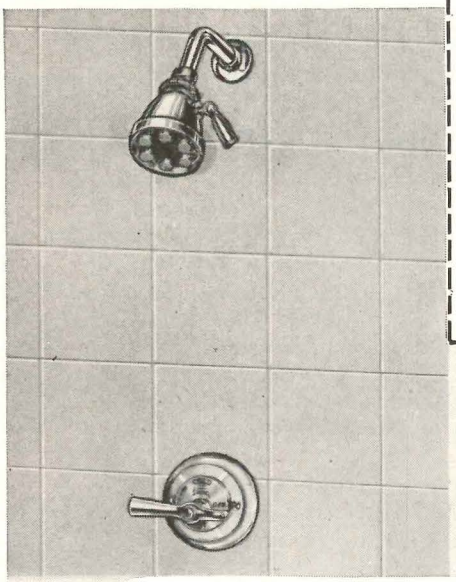
**SPEAKMAN *Sentinel***
**Balanced Pressure Mixing Valve**

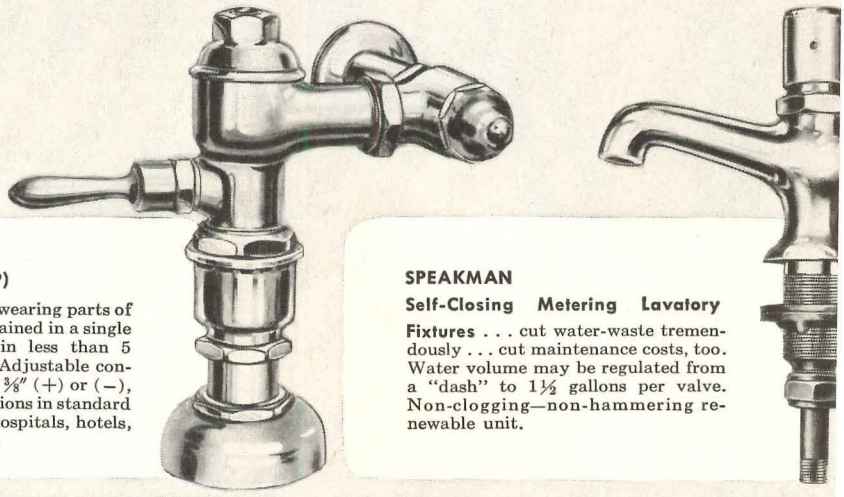
. . . easy-reading dial . . . working parts renewable from face of valve. Size ½" I. P. S.




**S-1700 SPEAKMAN**
**Concealed *Sentinel* Shower. ½" I. P. S.**

Many types available for concealed or exposed installation.





**SPEAKMAN**
**Si-Flo Flush Valve (K-9000-BSP)**

Compact . . . quiet operating. All wearing parts of the valve (except handle) are contained in a single piston unit—easily replaceable in less than 5 minutes. Cuts installation costs. Adjustable connection between valve and stop of ⅜" (+) or (−), ¾" overall, allows for slight variations in standard roughing-in of 4¾". For schools, hospitals, hotels, theatres . . . a type for every job.

**SPEAKMAN**
**Self-Closing Metering Lavatory Fixtures** . . . cut water-waste tremendously . . . cut maintenance costs, too. Water volume may be regulated from a "dash" to 1½ gallons per valve. Non-clogging—non-hammering renewable unit.

*In Our Eighty-First Year*

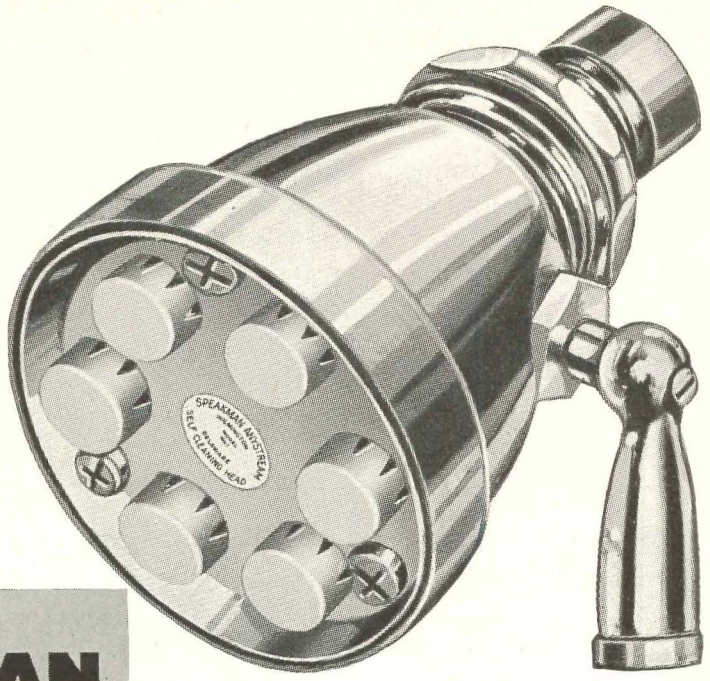
# SPEAKMAN

**SHOWERS AND FIXTURES**

**SPEAKMAN COMPANY, WILMINGTON, DELAWARE**

**SPEAKMAN**
**ANYSTREAM Shower Head**

. . . Handsomely designed for smart appearance . . . easily installed . . . used in finest hotels, clubs, schools, institutions and homes in America. Integral ball joint . . . concealed volume control. Can be equipped with Allen Set Screw to prevent vandalism. ½" I.P.S. female inlet.




# ike the SPEAKMAN ANYSTREAM SENTINEL!

*urn of the lever gives*

EEDLE SPRAY
*for*
*stimulation*

RMAL SPRAY
*for*
*relaxation*

OOD SPRAY
*r no-splash*
*rinsing*

EVER THIS!
*ıystream is*
*lf-cleaning*

You'll find the finest shower combination for schools, colleges and universities —whether in dormitories, fraternity houses, or in connection with athletic activities—is the Speakman *Sentinel*—consisting of the famous Anystream Shower Head and the *Sentinel* Balanced Pressure Mixing Valve. It's the shower that meets with instant, all-round approval because it gives perfect bathing comfort, hot-water economy and remarkable ease of maintenance.

## ANYSTREAM Shower Heads

Vigorous, hard-playing young people are always enthusiastic about the satisfying shower derived from the Anystream Self-Cleaning Shower Head. This water-saving shower head won't clog . . . has no pin-point holes to stop up . . . gives bathers a choice of showers—normal, needle or flood. Durable and dependable, it makes possible as much as 50% lower water consumption.

## SENTINEL Balanced Pressure Mixing Valve

The Speakman *Sentinel* Balanced Pressure Mixing Valve holds shower temperatures steady *despite water pressure fluctuations.* The miraculous f-l-o-a-t-i-n-g piston in the valve works on water pressure alone. It prevents sudden surges of icy cold or steaming hot water that often cause injury. The piston is easily removed for servicing *without shutting down the water supply to the valve.*

Speakman Showers and Fixtures are distributed nationally through wholesale plumbing supply dealers and contractors. From *Si-Flo* Flush Valves—the valve that whispers—to Speakman Self-Closing Metering Lavatory Fixtures that cut water-waste, it pays to specify Speakman—traditionally the best in brass.

*In Our Eighty-First Year*

**SPEAKMAN**

**SHOWERS AND FIXTURES**

**AKMAN COMPANY, WILMINGTON, DELAWARE**

see our CATALOG in SWEET'S FILE ARCHITECTURAL

*See Sweet's Architectural File for condensed catalog or write directly.*

## THE RECORD REPORTS

(*Continued from page 190*)

### ON THE CALENDAR

Through July 16: Exhibition of entries to the International Competition for Low-Cost Furniture Design, Museum of Modern Art, New York, N. Y.

June 12–15: 43rd Annual Convention, National Association of Building Owners, and Managers, Olympic Hotel, Seattle, Wash.

June 26–30: 53rd Annual Meeting and Ninth Exhibit of testing apparatus and related equipment, American Society for Testing Materials, Chalfonte-Haddon Hall, Atlantic City, N. J.

### OFFICE NOTES

#### *Offices Opened, Reopened*

• Dean M. Du Boff, Architect and Engineer, has announced the opening of an office at 106 E. State St., Peoria, Ill.

• Arthur D. Janssen, A.I.A., Architect, and William H. Daseking, Architect, Associate, announce the opening of their new offices at 1616 El Camino Real, Menlo Park, Calif.

• Olsen and Olsen, Architects, announce the opening of their new office building, 2437 Market St., Seattle, Wash.

#### *New Firms, Firm Changes*

• Max Alper, Architect, has announced admission to his firm as a partner of Zalman Alper. The firm, to be known as Alper and Alper, Architects, will continue the practice from offices at 8 South Dearborn St., Chicago 3, Ill.

• Following the recent death of J. C Berry of the firm of J. C. Berry and Howard Ensign, Architects, 312-B W. 10th Ave., Amarillo, Tex., Mr. Ensign has announced that he will continue the practice at the same address under the name of M. Howard Ensign.

• Marvin G. Probst, in affiliation with Graham, Anderson, Probst & White, announces the establishment of an office for the practice of architecture at Room 772, 612 S. Flower St., Los Angeles 17, Calif.

• Theodore Steinmeyer wishes to announce that his firm name is Theodore Steinmeyer, Architect. About two-and-a-half years ago this firm was a partnership, but is now to be listed as the above. The address is 714 S. Kirkwood Rd., Kirkwood, Mo.

• Rutherford L. Stinard, P.E., formerly in the New York City office of Trane Co., has opened his own office at 51 E. 42nd St., New York, N. Y.

#### *New Addresses*

The following new addresses have been announced:

Bernard J. Friedman, Architect, 18 Broadway Village, Tucson, Ariz.

Gaudreau and Gaudreau, Architects, Professional Bldg., 330 N. Charles St., Baltimore 1, Md.

Gibbons & Heidtmann, Architects, 211 E. 37th St., New York 16, N. Y.

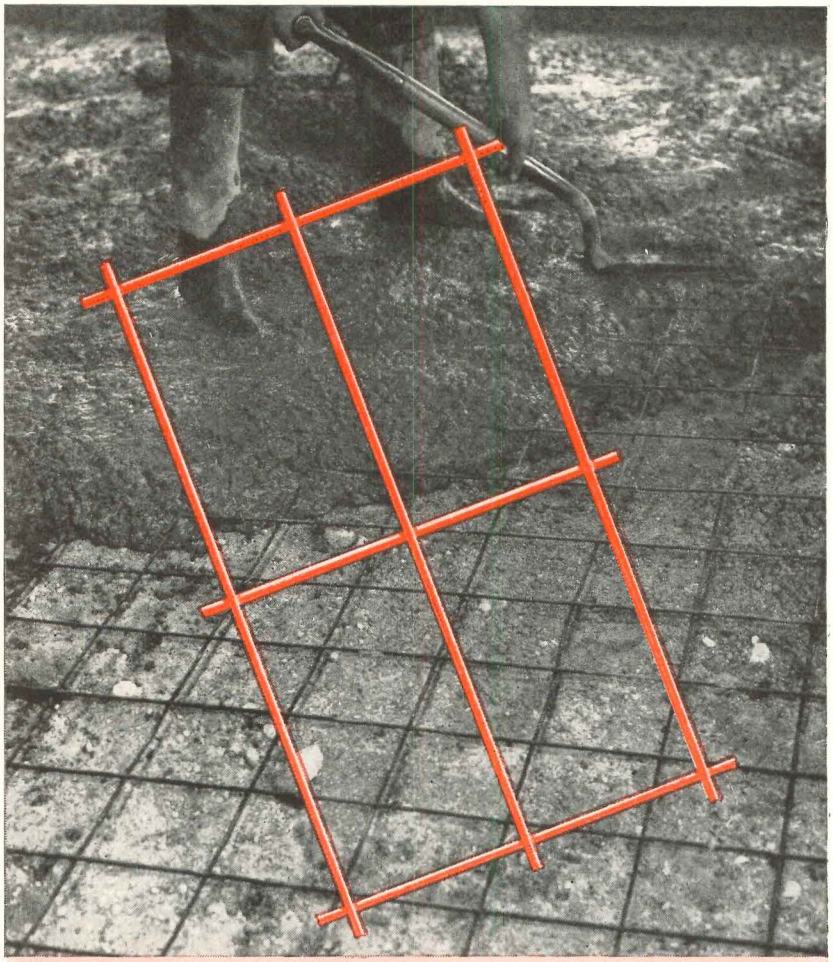
Daniel Laitin, Architect, 200 E. 37th St., New York 16, N. Y.

Vincent Rother, Architects, 1115 Sherbrooke St. W., Montreal, Que.

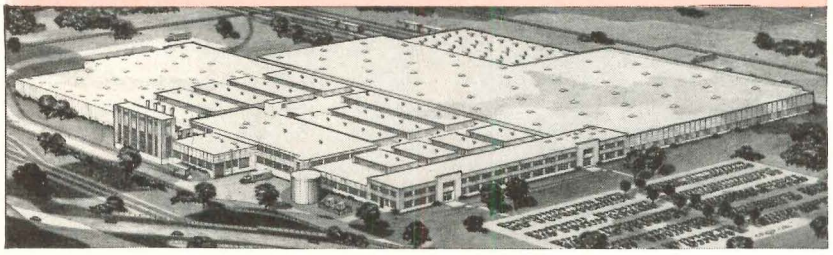
(*Continued on page 196*)

## For crack control in concrete ground slabs

## specify American Welded Wire Fabric



In the Continental Can Company's new plant at Pittsburgh, Pa., acres and acres of concrete flooring were laid on the ground. These slabs will be subjected to ponderous loads of machinery, to the customary heavy traffic encountered in industrial plants. They are laid on a tamped subgrade and, as further insurance against excessive cracking, are reinforced with American Welded Wire Fabric.



Architects and construction engineers have long recognized the need for distributed reinforcement in concrete slabs which rest on the ground. That is why so many of them specify American Welded Wire Fabric for concrete factory floors, driveways, sidewalks, etc.

Closely and accurately spaced, the many high tensile strength steel members of American Welded Wire Fabric fortify all parts of the slab. They minimize the effect of crack-causing stresses and strains, such as the impact of superimposed loads, friction with the subgrade during expansion and contraction of the slab, and unequal loading caused by unevenness of the sub-grade.

The world's most widely used reinforcement for concrete, American Welded Wire Fabric, has proved—during years of practical use and in sample slabs tested to destruction—to be definitely superior to other types of reinforcement. American Welded Wire Fabric is easily handled, quickly laid, so it helps you reduce material cost and construction time.

U·S·S American Welded Wire Fabric is available in every locality from jobbers' and dealers' stocks—supplemented by prompt mill shipment to identified projects.

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*Every type of concrete construction needs*

USS **AMERICAN WELDED WIRE FABRIC** *reinforcement*

UNITED STATES STEEL

(*Continued from page 194*)

Irving W. Rutherford, Architect and Engineer, 49 Garden St., Hartford, Conn.

## AT THE COLLEGES

### *Yale Plans Addition to Art Gallery Building*

Philip L. Goodwin, Architect, has drawn plans for a new three-story wing to occupy half a city block as an addition to Yale University's present Art Gallery building.

Disclosure of Yale's intention at an undisclosed time in the future to extend the Art Gallery was made in an article in the Yale Alumni Magazine.

The new wing, which is expected to cost about $2 million, will be built on a site now occupied by classrooms of the School of Fine Arts and some commercial firms. All the land is owned by Yale, and about half the necessary funds for the construction already have been raised.

The exterior of the wing will be of brick and will blend in design with Jonathan Edwards College, adjacent to the School of Fine Arts, and the present Art Gallery building.

The new wing will triple facilities for art collections, special exhibitions, teaching studios and shop space.



### *Columbia Arts Center Planning Group Forms*

A committee representing several fields of art and headed by Richard Rodgers, composer and producer, has been formed to develop plans for a new Arts Center at Columbia University, Dean Leopold Arnaud of the School of Architecture has announced.

The committee is composed of Eli Jacques Kahn, architect, who will direct activities in his area; Henry Allen Moe, director of the John Simon Guggenheim Memorial Foundation, who will head development of plans in painting and sculpture; Alfred de Liagre, Jr., producer, who will lead the work in the theater field; and Lawrence Tibbett, concert and opera star, whose field will be music.

Working with this group will be a Columbia faculty committee comprising Dean Arnaud in architecture and Professors Peppino Mangravite, painting and sculpture; Oscar James Campbell, theater; and Douglas Moore, music.

The Arts Center, envisioned as a great gathering place for students and practitioners of the creative arts, is expected when completed to house three schools of Columbia University — Architecture, Painting and Sculpture, and Dramatic Arts. It will house also the Department of Music and probably the Department of Fine Arts and Archaeology. It will include a small theater for workshop purposes, a large theater, an exhibition gallery and the libraries of the schools it contains.

A tentative location has been selected on the Morningside Heights campus on the east side of Amsterdam Avenue, between 116th and 117th streets.

### *Germans at North Carolina For City Planning Courses*

Twelve German city planning trainees have arrived at the University of North Carolina for a four-month course under the direction of the Department of City and Regional Planning.

(*Continued on page 198*)

HERE'S THE WIRE FOR EVERY **HOT SPOT** LOCATION

# NATIONAL ELECTRIC...

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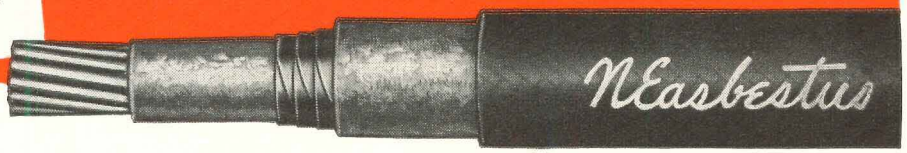


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Sizes 18 AWG to 1,000 MCM. 600-volt to 8000-volt ratings. Maximum operating temperatures up to 110° C. (230° F.) for 600-volt wire; up to 100° C. (212° F.) for 5000-volt wire.


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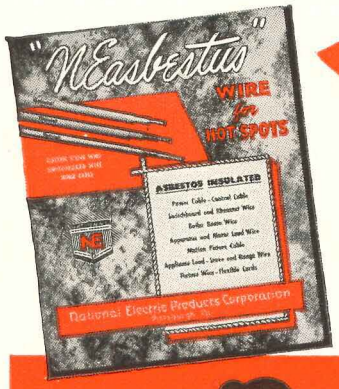
Sizes 18 AWG to 1,000 MCM. 300-volt and 600-volt ratings. Maximum operating temperatures up to 200° C. (392° F.) for 300-volt wire and 125° C. (257° F.) for 600-volt wire.

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1327 CHAMBER OF COMMERCE BLDG., PITTSBURGH 19, PA.

## THE RECORD REPORTS

(*Continued from page 196*)

The training is part of the U.S. State Department's reorientation program, under which selected specialists in various fields are brought to the United States to observe how their chosen fields function in a democracy.

The visiting trainees, all between the ages of 26 and 40 and all college graduates, come from Munich, Stuttgart, Karlsruhe and Frankfort. During their stay at Chapel Hill, the Germans are receiving orientation in American government before entering one quarter's work of courses in City Planning.

At the end of the Spring quarter, the trainees will tour the Tennessee Valley Authority and other centers of planning activity throughout the country.

### *Foundry Group Establishes $5000 Scholarship Fund*

Ohio State University has received a gift of $5000 from the Foundry Educational Foundation to be used for scholarships for upper class engineering students who plan to enter the foundry industry.

Prof. Paul N. Lehoczky, chairman of the department of industrial engineering in which foundry training is given, has revealed that the grant will provide 17 students next year with scholarships of about $300 each. It is expected that the same amount of money will be made available by the Foundation for several years to come.

The Foundry Educational Foundation is a national body originated through the efforts of Ohio foundrymen and supported by voluntary contributions of foundries and allied industries. Scholarships similar to those at Ohio State have been established by the Foundation at 11 colleges of engineering in the United States.

### *Kent State University Host To Architectural Symposium*

John Shear, head of the Department of Architecture at Carnegie Institute of Technology, and Dr. Serge Chermayeff, president of the Institute of Design, Illinois Institute of Technology, were among the speakers at an architectural symposium held May 3 at Kent State University, Kent, Ohio.

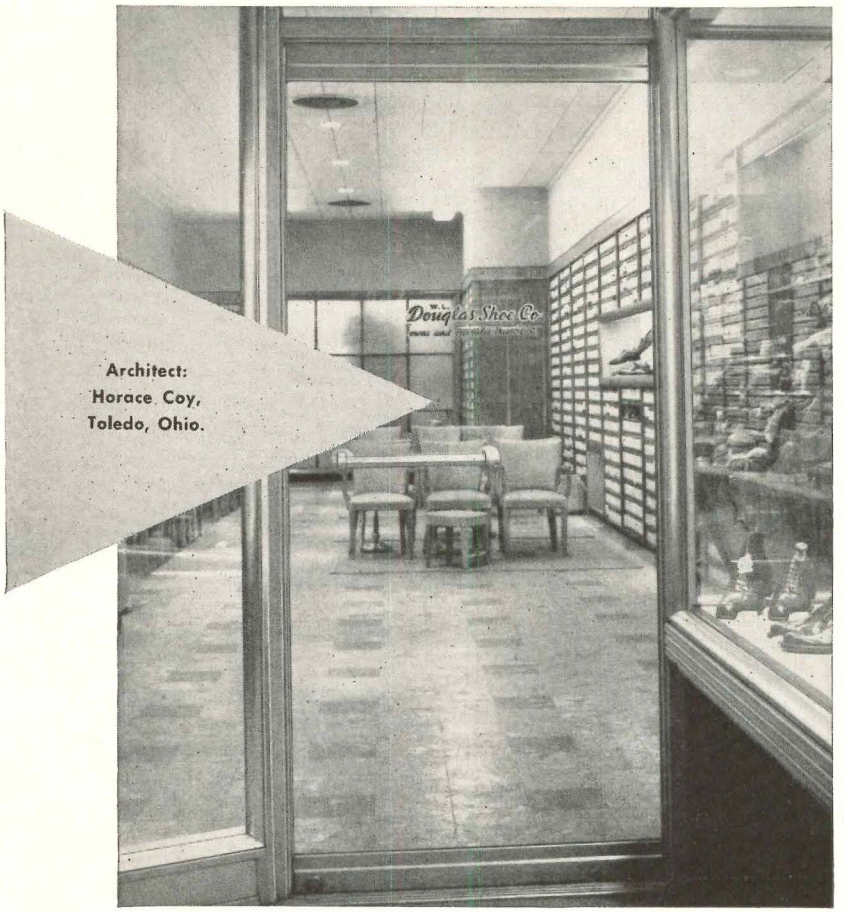
The symposium, in which practicing architects also participated, was arranged as part of the university's effort

(*Continued on page 200*)

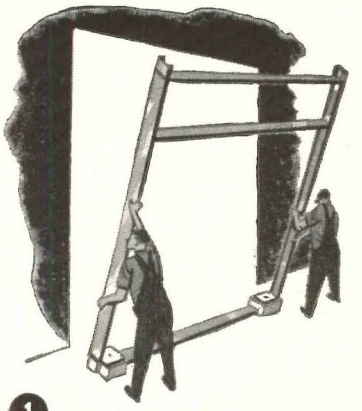
# How simple can it get? . . . the answer is in

# "The doorway that has everything!"

ARCHITECTS AND BUILDERS agree that, in its simplicity of installation, freedom from time-consuming calculations, and savings in setting, fitting and assembly labor, the new Pittsburgh Doorway leaves nothing to be desired. In fact, all you do is specify the style number and size of frame you need for the particular job (twelve standard, and four *free-standing,* designs are available to fill almost any requirement). It comes to you as a complete "package"—including moldings for transom glass, supports for sidelights, strikes for locks, sockets for bolts, Pittco Checking Floor Hinge. You just unpack the frame, bolt it into the building opening and hang the Herculite Doors, for whose massive strength the frames have been especially engineered. Why not send for complete details on Pittsburgh Doorways? The coupon below will bring them to you.




Architect:
Horace Coy,
Toledo, Ohio.

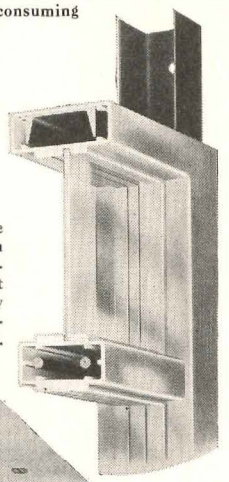


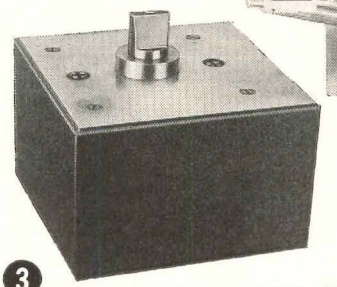
**1 ALL SET!**

Factory-built frame reaches job in one "package," ready for bolting into building opening. No worries about setting and fitting; no time-consuming calculations.

**2 PRECISION-BUILT.**

Special checking gauges are used by expert craftsmen to assure accuracy of all dimensions. Frame is built of special shapes and heavy extruded aluminum, reinforced with structural steel.





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## THE RECORD REPORTS

(*Continued from page 198*)

to integrate its growing program in architecture with the other arts and sciences in the curriculum and to offer greater service to the profession of architecture in its area.

In his discussion at a stimulating morning session, Dr. Chermayeff discussed the influence of the industrial process on the form and function of human shelter; the present-day lack of design standards relative to the form of the objects we produce; the wide division between "art" and "function" in the visual field about us; and efforts to solve these divisions.

Reviewing the current form of architectural training at Carnegie Tech, Mr. Shear stressed the importance of the eight-week projects conducted by combining the several instructors in various allied fields into a team so that students benefit from lectures and criticism covering all facets of the subject under study. William B. Huff, architect, of Akron, chairman of the afternoon session, introduced Mr. Shear.

J. Byers Hays, Cleveland architect, urged the need for fuller acceptance by practicing architects of community responsibility, especially in the area of city planning. His talk included a description of the architect's role in this country over the past half century.

The responsibilities carried by the architect in a major industrial design and building firm were outlined by Chief Engineer R. F. Graef of the H. K. Ferguson Co. of Cleveland, who discussed salient differences in procedures desirable for private architectural offices and firms like his own.

Architect Robert A. Little of Cleveland, in the major talk of the evening session, emphasized the need for close collaboration between client and architect.

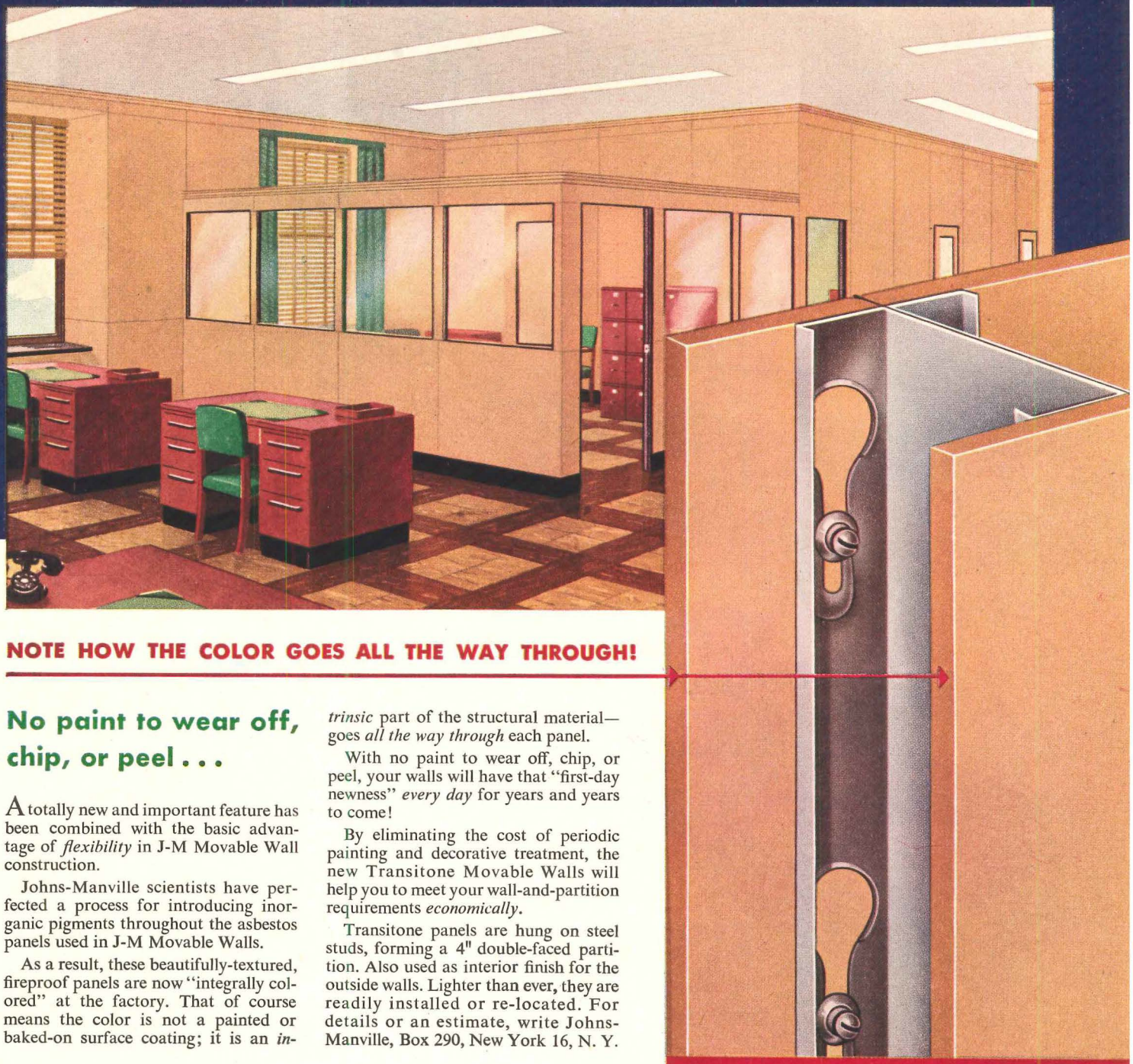
A review of current work in architecture at Kent State University was on display, along with two collaborative design problems.

### *Gift Provides Murals for Harvard Graduate Commons*

Three mural designs for Harvard's new Graduate Commons will be done by Jean Miro, Herbert Bayer and Hans Arp, thanks to an anonymous gift. The Commons is part of the new graduate dormitory center designed by The Architects Collaborative.

(*Continued on page 204*)

# NOW! Asbestos Movable Walls WITH THE PANELS "integrally colored"



**NOTE HOW THE COLOR GOES ALL THE WAY THROUGH!**

## No paint to wear off, chip, or peel . . .

A totally new and important feature has been combined with the basic advantage of *flexibility* in J-M Movable Wall construction.

Johns-Manville scientists have perfected a process for introducing inorganic pigments throughout the asbestos panels used in J-M Movable Walls.

As a result, these beautifully-textured, fireproof panels are now "integrally colored" at the factory. That of course means the color is not a painted or baked-on surface coating; it is an *intrinsic* part of the structural material—goes *all the way through* each panel.

With no paint to wear off, chip, or peel, your walls will have that "first-day newness" *every day* for years and years to come!

By eliminating the cost of periodic painting and decorative treatment, the new Transitone Movable Walls will help you to meet your wall-and-partition requirements *economically*.

Transitone panels are hung on steel studs, forming a 4" double-faced partition. Also used as interior finish for the outside walls. Lighter than ever, they are readily installed or re-located. For details or an estimate, write Johns-Manville, Box 290, New York 16, N. Y.

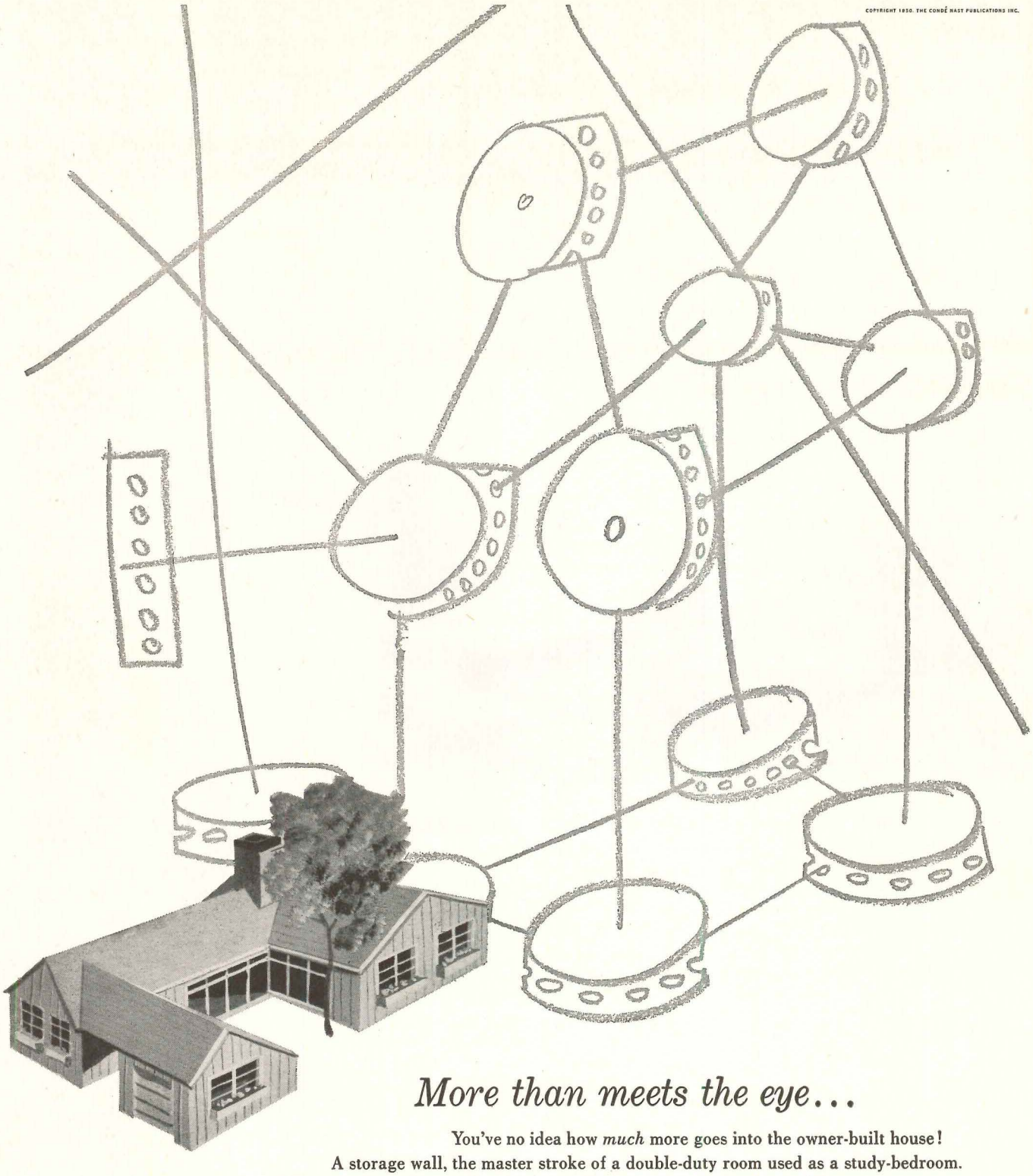
Cutaway of J-M Movable Wall construction. The 7/16"-thick asbestos panels, on patented steel studding, are available in a light tan or light green. Note color is not a surface coating; it actually goes *all the way through* each panel.

**Johns-Manville**

JOHNS-MANVILLE JM PRODUCTS

# Transitone

**MOVABLE WALLS** *with asbestos panels colored all the way through*



## *More than meets the eye...*

You've no idea how *much* more goes into the owner-built house!
A storage wall, the master stroke of a double-duty room used as a study-bedroom.
Owner-builders design their houses to fit their individual pattern of living.
Like clothes made-to-order, shoes custom-made...blueprints are tailored to include the important "extras"
that mean more profits for you. Reach these people through House & Garden...
*their* guide to better building, *your* guide to better business. Reach them because
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# IMPORTANT CONSIDERATIONS

## for the Architect about to recommend A SCHOOL TIME AND PROGRAM SYSTEM

### *FIRST*, let's define the function:

**A School Time and Program System has two primary functions: (1) to give the correct time in each classroom, and (2) to sound signals at pre-determined intervals. It must work automatically 5 days a week (often longer), in buildings jam-packed with kids and staffed by teachers and a principal who have neither the time nor the inclination to fuss with complicated gadgets.**

### *SECOND*, let's examine the features:

**The installation consists of a Master Clock — Program Controller with Secondary Clocks and Buzzers in classrooms (bells elsewhere). In order to function smoothly the system should have these advantages:**

**1** Master Clock-Program Controller must be "on time" together at all times. In the STANDARD System they are one and the same mechanism, geared together. They can never get "out of step."

**2** Master Clock and Secondary Clocks must also reveal exactly the same time.

In the STANDARD System there is only one synchronous motor — a heavy-duty, slow speed, precision-built unit located in the Master Clock. Secondary Clocks have no motors, electrical contacts, tubes or other complicated parts — require no cleaning, oiling, adjustment or renewal.

Other synchronous systems have one or two motors in each secondary clock and 1, 2 or 3 motors in the control unit where the failure of one disarranges the entire system.

**3** The Master Clock-Program Controller should keep running during current interruptions, so that when current is resumed the signals will sound on time.

In STANDARD Systems this is accomplished without a catching-up-to-time period — and without the use of batteries which require frequent attention or renewal.

**4** Each Secondary Clock should reset itself automatically after current failure.

In STANDARD Systems each clock has a 25-minute corrective range (slow or fast) and the reset feature functions in two seconds, silently. In certain other systems the Secondary Clocks must be reset in groups.

**5** The Program Controller should cover all the programming needs of the entire school. This means complete service with periods down to the minute, and silence during nights, weekends, etc.

Furthermore, it must be so simple that anyone can set up a program in a few minutes, and change schedules at a moment's notice.

STANDARD employs a special paper tape, marked in minutes and hours, and punched by the Principal according to the schedule desired. Spare tapes, with different schedules, can be installed in a few seconds when necessary. The tapes will last 15 years or longer, and are free.

Other systems employing lugs, pins, cams, etc., are not only difficult to set up, but are subject to failure when pins drop out or break off.

**6** For best performance and long-range economy, engineers agree that the wiring system for a clock and program service should be kept separate from light and power lines.

**7** The system should be backed by years of dependable operation in schools under all conditions.

STANDARD can produce ample evidence of dependable performance in case histories running back to the turn of the century.

***We shall be pleased to send you our new Bulletin No. 178, and to provide you with names of satisfied users to whom you may refer. Perhaps we can also assist you in preparing specifications for your time and program system. Please get in touch with us.***

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STANDARD

***25 Branch Offices***

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# THE RECORD REPORTS

(*Continued from page 200*)

### *Design Presentation Is Reenacted for Students*

Columbia University student associate members of the New York Chapter of the American Institute of Architects had a chance recently to learn something about a very practical aspect of architectural practice.

Gannett Herwig, associate member of the firm of Alfred Hopkins & Associates, reenacted the presentation to a client of an actual design recently completed by his firm.

The program was designed to show the students what is involved in presenting and describing a project to the layman, and how to explain the architect's philosophy in his approach to a design problem.

The meeting was the first of a proposed series of meetings, forums and discussions.

Student associate membership in the New York Chapter is an innovation intended to help the student toward proper orientation into the practical side of the profession. Membership is open to any student of architecture studying or living, or working part-time, in New York City, who has completed one year of architectural school.

### *Patent Classification Index Is Completed at Ohio State*

Completion of a new Patent Classification Index in the A. F. Davis Welding Library has been announced by the Department of Welding Engineering at Ohio State University.

The index is designed to make information on more than 12,000 U. S. patents on welding more easily available. Each patent in the library is classified or indexed in several different ways — by process, material product, use, inventor's name, date of issue, etc., on a single keysort card. These cards are sorted mechanically, and in very little time the numbers of patents pertaining to a given field may be determined.

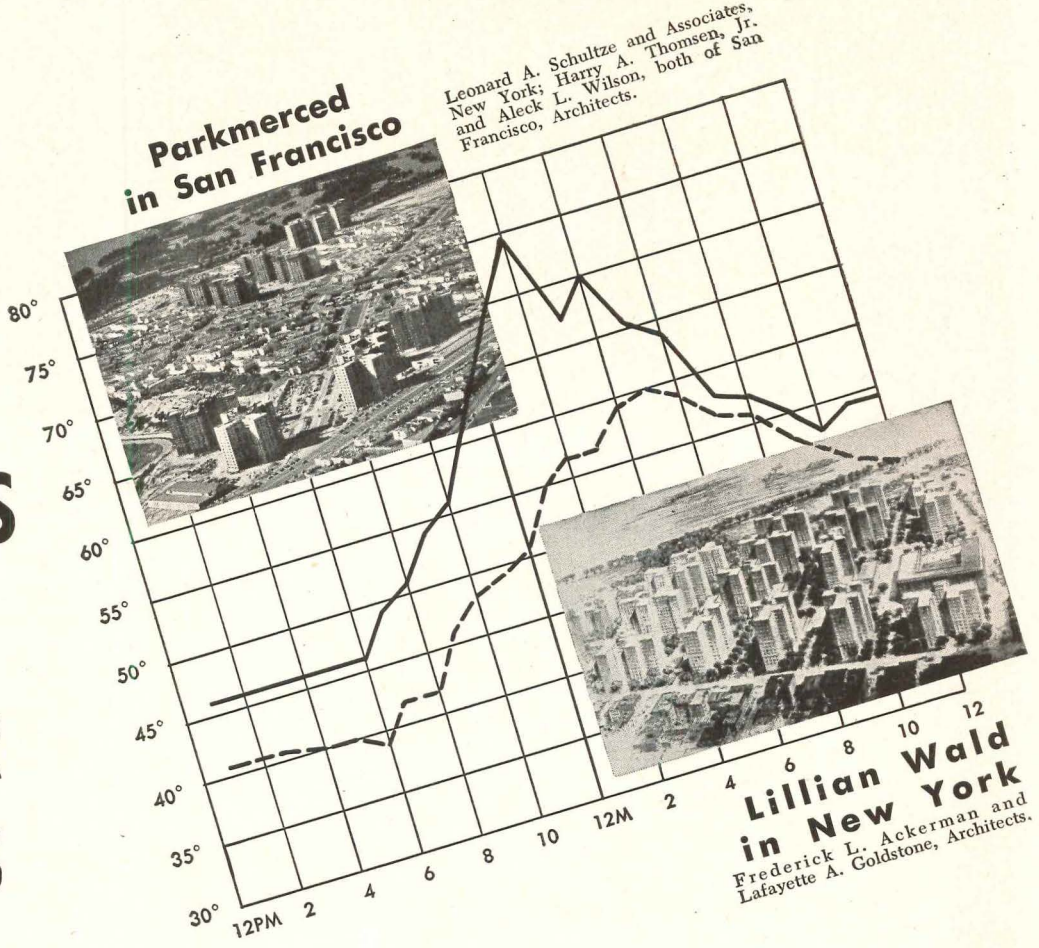
Services are free of charge to those who make use of the index system in person, but modest charges to defray clerical expense will be made for inquiries handled by mail.

### *Special Courses*

• A teacher training seminar in design will be held at the summer session of the

(*Continued on page 206*)

# TWO CLIMATES ...TWO WEBSTER SYSTEMS




### In San Francisco: "Short-Hour" Heating with Steam

Pictured at left is Parkmerced, the great housing development of Metropolitan Life Insurance Company. Shown graphically is a San Francisco winter day with temperature below 70° in the morning and evening and above 70° at midday.

In designing a Webster Vacuum Steam Heating System for Parkmerced, Consulting Engineer Thomas B. Hunter knew from experience that San Francisco buildings are best served and most economically served by what is known as "short hour" heating, with steam either full on or off entirely.

Knowing too that this type of operation demands the best in radiator valves and traps and vacuum pumps, Engineer Hunter approved the selection of Webster Sylphon Packless Valves, Webster Sylphon Traps and Nash Vacuum Pumps.

### In New York City: Continuous Heating with Steam

Pictured at right is Lillian Wald Houses of the New York City Housing Authority in downtown Manhattan. It is one of eight projects of this Authority, all equipped with Webster Moderator Systems furnished under a uniform specification which is the result of long study by the Authority and its numerous consulting engineers.*

Look at the temperatures for this New York winter day. Heat is needed all day with the amount of heat varying from 44% of maximum down to 14%. What is necessary—and provided by the "controlled-by-the-Weather" Webster Moderator System—is continuous heating with variation in the rate of heating to meet the changing demand.

*LILLIAN WALD—Sullivan A. S. Patorno; WOODSIDE—Meyer, Strong & Jones; ALBANY—Fellheimer, Wagner & Vollmer, Architects and Engineers; SOUTH BEACH—V. L. Folotico Associates; TODT HILL—E. V. Marquis; BRONX RIVER—Sullivan A. S. Patorno; DYCKMAN—Sullivan A. S. Patorno; FARRAGUT—Paul Wunderlich.

---

Whether it is a Webster Vacuum System for San Francisco or a Webster Moderator System for New York, each room occupant can make a positive heat shut-off with a Webster Radiator Valve—a prime necessity in large, multiple-unit housing.

Wherever you are—whatever your climate and heating requirements—there is a Webster System to fit your needs, and you are almost sure to find a long-resident Consulting Engineer in your community who knows your climatic requirements and knows from experience how well Webster equipment can serve you.

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Webster HEATING

## THE RECORD REPORTS

(*Continued from page 204*)

Institute of Design of Illinois Institute of Technology June 26–August 4.

The summer curriculum will represent an intensified six-week study of the Institute of Design's Foundation Course, which may be applied at the high school and college level as preparation for advanced study of architecture, industrial design, advertising and display, photography and film, painting and sculpture.

The course is open to professional educators or prospective teachers who have college, technical or art school degrees and to artists and designers with degree or completion certificate from a recognized school.

Applications should be addressed to: Barbara Chermayeff, admission counselor, Bulletin of Illinois Institute of Technology, Institute of Design, 632 N. Dearborn St., Chicago 10, Ill.

• Lehigh University, in cooperation with the Society of Industrial Designers, will present the second Product Design Seminar June 26-July 21 on the university campus at Bethlehem, Pa.

Nationally known leaders in the field of product design will participate in the seminar, as will members of the Lehigh faculty.

The special purpose of the seminar is to analyze the problems of product design and to give the attending delegates a review of current solutions to each problem.

Plans for the seminar are being made by a committee which includes Harold Van Doren and Raymond Spilman of the Society of Industrial Designers; Philip McConnell, executive secretary of the Society of Industrial Designers; Thomas T. Holme, Robert F. Herrick and Einar M. Ramberg, all of Lehigh.

Applications should be addressed to: Mr. E. M. Ramburg, Product Design Seminar, Lehigh University, Bethlehem, Pa.

• The 12th annual Fall Conference on City and Regional Planning has been scheduled by the Department of City and Regional Planning at the Massachusetts Institute of Technology for September 5 through 15.

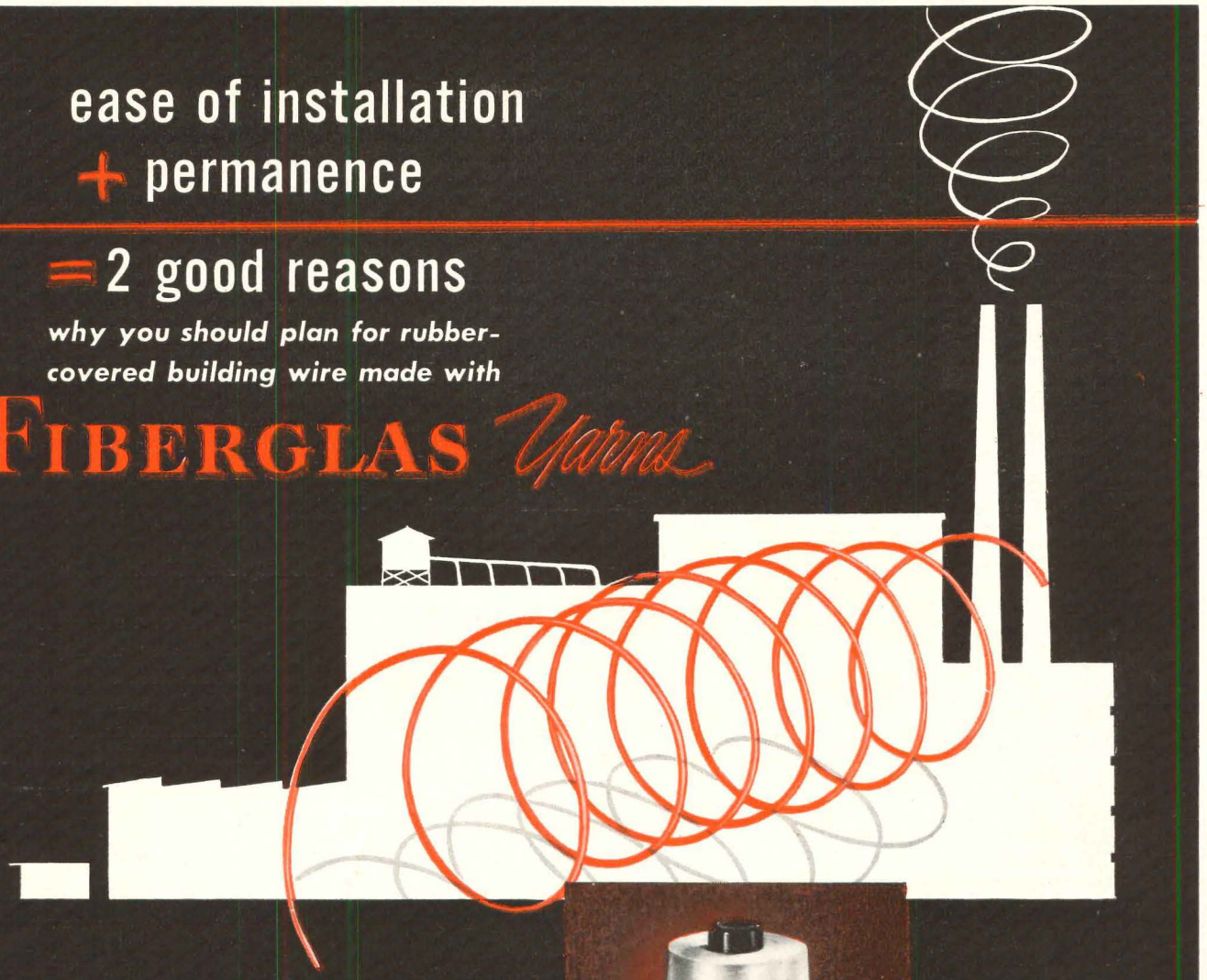
The conference, which will be held in morning and afternoon seminar sessions, will be open to qualified profes-

(*Continued on page 208*)

# ease of installation + permanence = 2 good reasons

*why you should plan for rubber-covered building wire made with*

# FIBERGLAS *Yarns*



## FIBERGLAS* *Yarns*

***Won't rot***

***Won't burn***

***Won't absorb moisture***

***Have great tensile strength***

***Permit production of wire with thinner textile covering that pulls through conduits easily***

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**FIBERGLAS IS IN YOUR LIFE . . . FOR GOOD!**

## THE RECORD REPORTS

(*Continued from page 206*)

sionals and others interested in the technical aspects of planning.

The curricula will include housing, zoning, the master plan, subdivision control, traffic, recreation and, with special emphasis, urban redevelopment, in reference to the Housing Act of 1949.

Frederick J. Adams will direct the conference, assisted by Flavel Shurtleff and other members of the M.I.T. staff. The registration fee will be $50, and accommodations can be arranged in M.I.T. dormitories.

Applications should be sent to Prof. Frederick J. Adams, Room 7–333, M.I.T., Cambridge 39, Mass.

### *Faculty Appointments*

• Hugh R. Pomeroy, executive director of the Westchester County Planning Commission, has been appointed visiting lecturer in the Department of City and Regional Planning at the University of North Carolina for the Spring quarter, to conduct a seminar on city planning.

• Appointments to the staff of the School of Architectural and Allied Arts at the University of Oregon have been announced as follows: Wilbert P. Lei, visiting critic in architectural design; Stanley W. Bryan, assistant professor of architecture; Allen McNown, instructor in architecture; and Frederick H. Heidel and Richard Prasch, instructors in free hand drawing.

• Hans Schleger, internationally known artist and designer, has been named visiting associate professor in the Institute of Design of Illinois Institute of Technology, Director Serge Chermayeff has announced.

A fellow of the Society of Industrial Artists, Schleger has had wide experience as independent designer, art director and consultant for several English firms since completing his education in his native Germany.

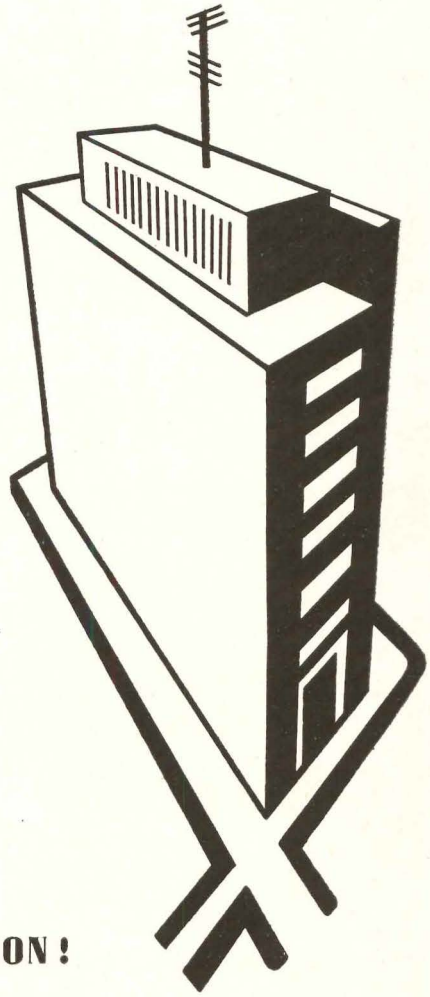
• Konrad Wachsmann, 48, architect and designer, has been named professor in charge of advanced building research and design at the Institute of Design of Illinois Institute of Technology.

(*Continued on page 210*)

# *Announcing...*

## THE JERROLD Mul-TV SYSTEM

### FOR APARTMENT HOUSES HOTELS AND HOSPITALS



The only MULTIPLE TELEVISION RECEIVING SYSTEM that guarantees better reception, with only one antenna, than if each receiver had its own.

Any make and any number of television receivers may be connected to the Mul-TV SYSTEM.

System provides clear, noise-free reception on all channels.

Any set may be tuned to any station at any time without interfering with other receivers connected to the system.

Installation is neat. Equipment is compact and easily installed—built for continuous duty.

**PERFECT RECEPTION WITHOUT EXCEPTION!**

*A perfect picture on every set, in every room, in any TV area! For complete facts, write, phone or wire:*

JERROLD ELECTRONICS CORPORATION

121 North Broad Street • Philadelphia 7, Pa.

## THE RECORD REPORTS

(*Continued from page 208*)

### ELECTIONS, APPOINTMENTS

• C. M. Baker has been named chief engineer of the Kalamazoo, Mich., works of Ingersoll Steel Division, Borg-Warner, Inc., succeeding L. C. Freeman, who recently reached retirement age.

• Paul F. Bronckhurst, formerly West Coast representative of leading engineering and construction companies, has joined the staff of Kaiser Engineers.

• Appointment of Richard A. Biggs as director of architectural development for Crucible Steel Co. of America has been announced. A former development engineer for Pittsburgh Corning Corp., Mr. Biggs has a degree in electrical engineering from Harvard and is a member of the American Society of Heating and Ventilating Engineers.

• The Chicago Land Clearance Commission has announced the appointments of Herman Berkman as chief of research; Robert Lillibridge as chief land planner; and Ray E. Murray as project engineer.

• Election of Lou R. Crandall, president of the George A. Fuller Co., as a member of the Board of Directors of the Commerce and Industry Association of New York, Inc., has been announced.

• Alfred E. Budell, president of the Industrial Engineering Co. of New York City, has been elected president of the Metropolitan Builders Association to succeed H. C. Turner Jr., president of the Turner Construction Company.

• Appointment of William F. Denne as district director of the Buffalo, N. Y., insuring office of the Federal Housing Administration has been announced by Commissioner Franklin D. Richards. He succeeds Alfred C. Gertis, who resigned to enter private business.

• James William Gaynor, director of management of the New York City Housing Authority for the past two years, has been named executive director. Other recent Housing Authority appointments include: Philip J. Cruise, formerly secretary, to be assistant to the chairman; Harold Klorfein, formerly assistant secretary, to secretary; and George R. Genung, formerly deputy director of management, to the post of director of management. John Shepard Parke, executive vice president of Presbyterian Hospital, has been reelected vice chairman of the Authority.

• Horace Gooch Jr. has been reelected president of the Society of the Plastics Industry, Inc. Mr. Gooch is a founder

(*Continued on page 212*)

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• Suffocating steam and smell hang heavy in a laundry. You need a constant flow of clean fresh air to wash them away. So specify windows that can stay open—even in rainy weather. Fenestra* Projected Steel Windows.

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(*Continued from page 210*)

and treasurer of Worcester Moulded Plastics Co. Other officers elected were: George H. Clark, vice president, The Formica Co., chairman of the board; Spencer E. Palmer, assistant vice president, Tennessee Eastman Corp., vice president; J. E. Gould, vice president, Detroit Macoid Corp., secretary-treasurer.

• Ralph G. Gulley has been named as architectural consultant and special assistant to the president, John D. Dale, of Durisol, Inc., manufacturer of building materials. Mr. Gulley has been a practicing architect for 18 years and was formerly a partner of Donald Deskey Associates, New York industrial design consultants.

• The firm of Holabird & Root & Burgee has been named as architects and engineers for the Chicago Fair of 1950. The national exposition on Chicago's lake shore will run from June 24 through Labor Day and will be designed to dramatize the achievements of science, agriculture, commerce and industry.

• Harry L. Murray of the Murray Engineering Co., Detroit, has been elected president of the National Association of Engineering Companies. Other officers for 1950 are: Walter W. Schmitt, Product Engineering Service, Inc., Detroit, vice president; and Walter R. Jackson, Modern Engineering Service Co., Berkeley, Mich., secretary-treasurer. Directors elected for three-year terms are: Albert F. Lehmann, Special Engineering Service, Inc., Detroit; William H. Bosserman, Bosserman-Pearce Engineering Co., Detroit, and Mr. Jackson.

• Members of the Executive Committee for 1950 of the National Association of Home Builders of the United States have been appointed by President Thomas P. Coogan as follows: Rodney Lockwood, immediate past president; Bill Atkinson, Oklahoma City; Alan Brockbank, Salt Lake City; Nate Manilow, Chicago; Joe Haverstick, Dayton, Ohio; Paul Burkhard, Glendale, Calif.; Frank Burns, Denver; George Goodyear, Charlotte, N. C.; Dick Hughes, Pampa, Tex.; B. A. Martin, Atlanta, Ga.; O. G. Powell, Des Moines, Ia.; Manny Spiegel, Passaic, N. J.

• W. Arthur Riehl, executive secretary of the Westchester Allied Trades Association, Inc., and a former War Production Board official, has been appointed secretary of the Building Trades Employers' Association of New York City. Mr. Riehl succeeds the late William G. Wheeler.

• Sam Tour, chairman of the Board of Sam Tour & Co., Inc. of New York City and president of the American Standards Testing Bureau, Inc., has been elected chairman of the Inter-Society Corrosion Committee of the National Association of Corrosion Engineers.

## AWARDS

### *Harry L. Horning Memorial*

T. A. Boyd, General Motors Research Laboratories consultant, has received the Harry L. Horning Memorial Award

(*Continued on page 214*)

## THE RECORD REPORTS

(*Continued from page 212*)

from the Society of Automotive Engineers "in recognition of distinguished service in the field of mutual adaptation of fuels and engines."

The award honored Mr. Boyd's contributions during his 30-year study of fuels and engines, which is considered to have benefited not only motoring but the economy at large by pointing the way toward more efficient utilization of hydrocarbon fuels.

### *"Klixon Award" Established*

A monetary award for technical articles on hermetically sealed refrigeration compressors published in *Refrigerating Engineering*, official publication of the American Society of Refrigerating Engineers, has been donated by the Spencer Thermostat Division of the Metals and Controls Corp., Attleboro, Mass.

To be known as the "Klixon Award," the $100 award will be made once every year for the next five years for the most outstanding paper on the electric system of hermetically sealed compressors. The award year will extend from September 1 to August 31, with the end of the first award year next August 31.

Presentation of the award will be at the ASRE annual meeting each December, and recipients will be selected by the ASRE Awards Committee.

### *James H. McGraw Award*

The James H. McGraw Award in Technical Institute Education will be presented for the first time at the Seattle meeting of the American Society for Engineering Education in June on the University of Washington campus.

The award which will consist of an annual prize of $500 in cash and an appropriately engraved certificate, is sponsored by the McGraw-Hill Book Co. in memory of James H. McGraw Sr., the company's founder, for the purpose of "recognizing and encouraging outstanding contributions to technical institute education in the United States."

Further information is available from Secretary A. B. Bronwell, Northwestern University, Evanston, Ill., of A. S. E. E.

### *Le Brun Scholarship Goes To Kansas City Architect*

Architect Ralph E. Myers of Kansas City has won the 1950 Le Brun Travel-

(*Continued on page 216*)


*Fixtures courtesy of American Radiator & Standard Sanitary Corp., Pittsburgh, Pa.*
*Patterns: 703 Coal Frost, 302 Meadow Green*

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# THE RECORD REPORTS

(*Continued from page 214*)

ing Scholarship of the New York Chapter of the American Institute of Architects.

Chairman Robert Carson of the scholarship committee announced the selection of Mr. Myers for his skillful handling of the design elements in a suburban railroad station.

The winning entry in the nationwide competition provided parking space for 800 automobiles and access to the tracks for peak loads of commuters.

Mr. Myers, a member of the firm of Kivett & Myers of Kansas City, studied at the Art Institute and the University of Illinois and has been a professor at the Finlay Engineering College.

The award provides $2800 for six months' study and travel in Europe.

### *Edmund A. Prentis Receives Columbia Engineering Award*

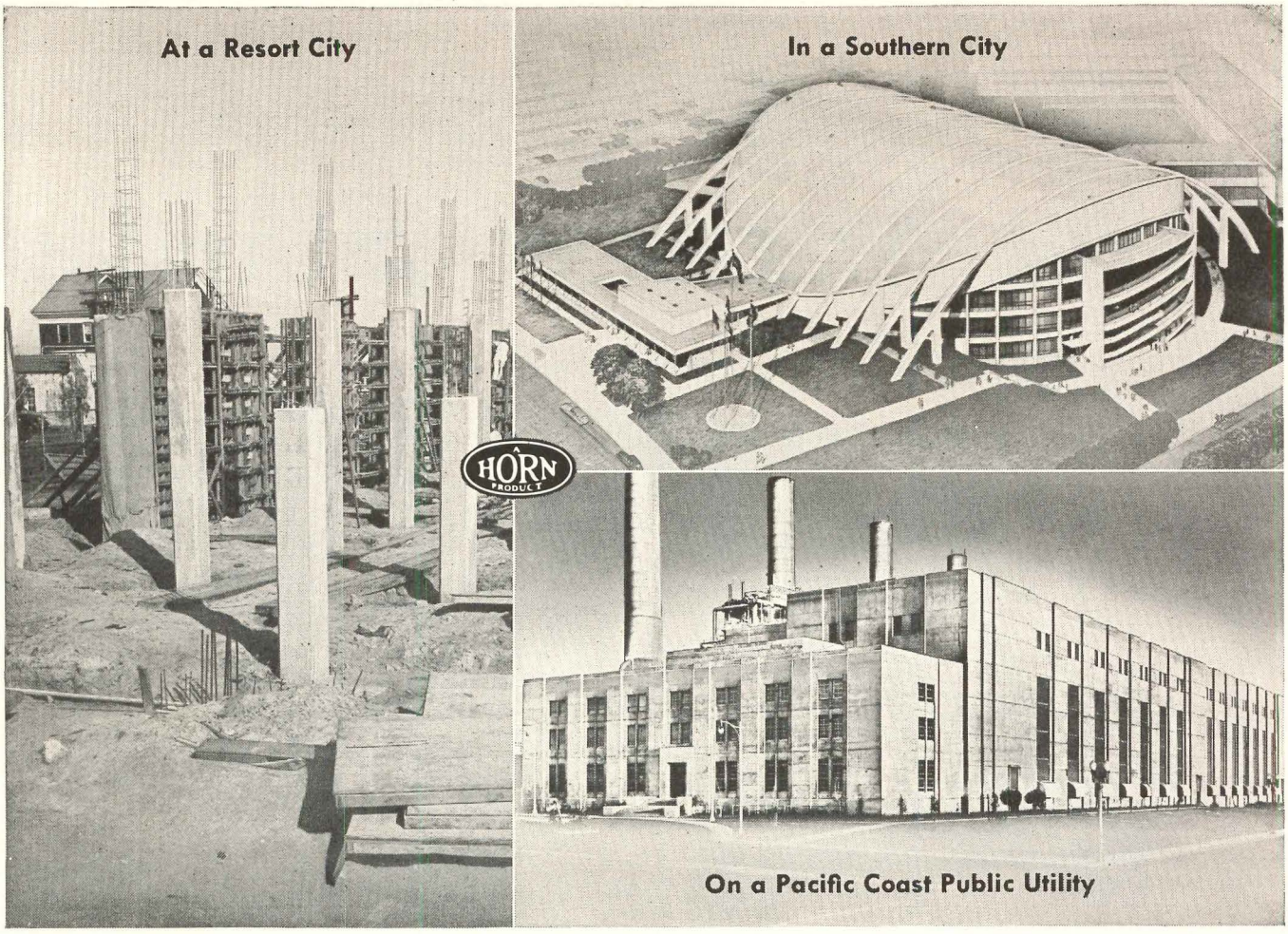
The Egleston Medal, awarded annually by the Alumni Association of Columbia University's School of Engineering for distinguished service in engineering, was presented this year to Edmund A. Prentis, partner in the New York firm of Spencer, White and Prentis.

The award was established in honor of Thomas Egleston, founder of the School of Mines from which the Engineering School developed. First presented in 1939, the award has previously gone to H. E. Dougherty, Dean James K. Finch, Philip Sporn, A. Chester Beatty and Harvey S. Mudd. George A. Wilkens was chairman of the 1950 award committee.

Mr. Prentis, a 1906 graduate of the school, has been active in many underground construction projects, including subway construction in New York.

### *Erratum*

The Sidney L. Strauss Memorial Award has been established by the New York Society of Architects to honor its late past president. Each constituent society or chapter of the New York State Association of Architects will be invited each year to nominate for the award an architect or other person for his services during the preceding year to the profession of architecture. The RECORD regrets having incorrectly stated in an announcement in the April issue that the award had been established by the New York State Association of Architects.

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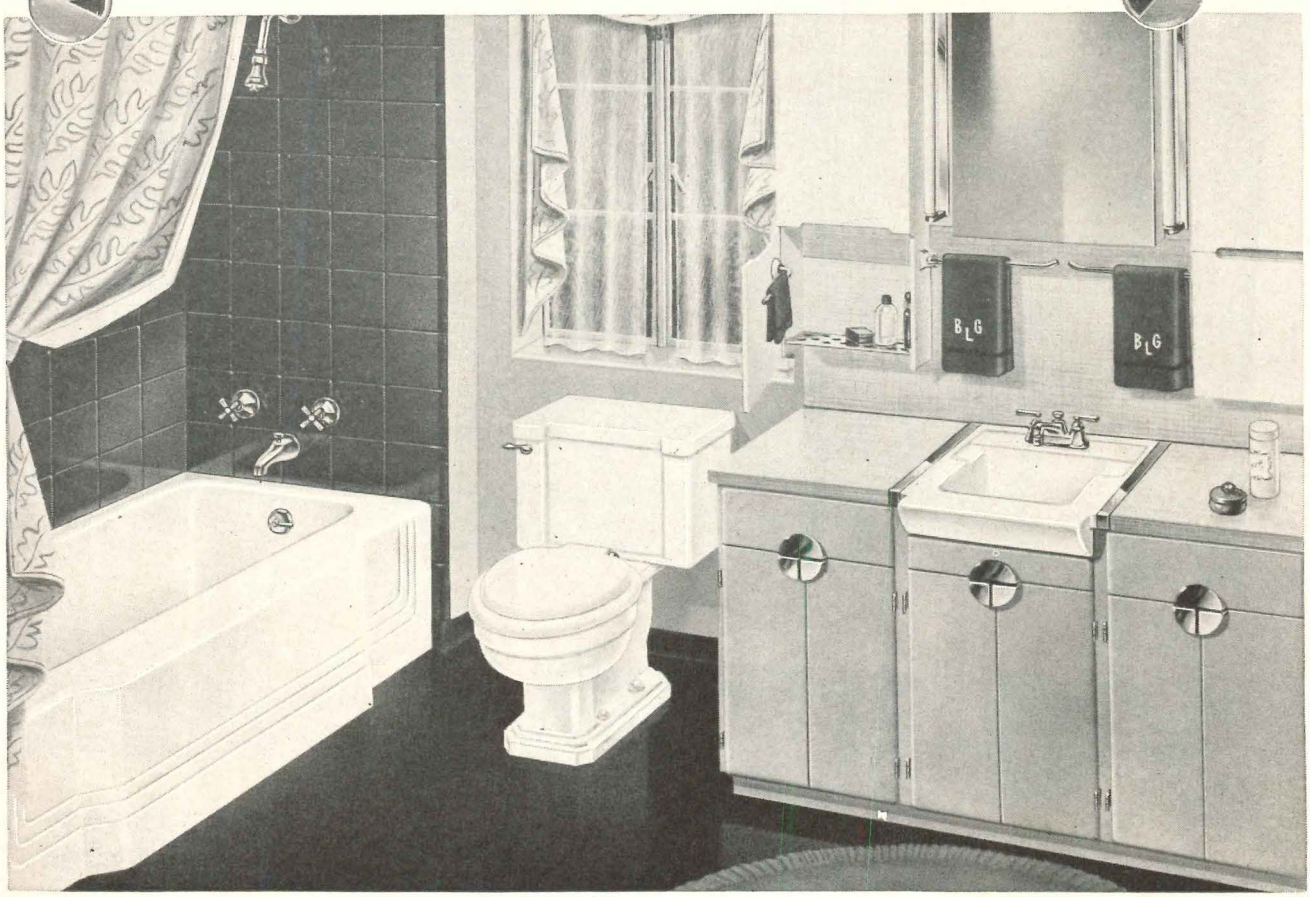

**THE NEW DRESSLYN LAVATORY-DRESSING TABLE** gives this bathroom extra glamour and utility. The Dresslyn is handsome and compact, with plenty of storage room. The genuine vitreous china lavatory has an extra deep bowl, protective spash rim and two integral soap dishes. The Dresslyn is available in two sizes and in a variety of appealing color combinations. The dressing table is available in two styles—closed front or with a kneehole on either left or right side. The Master Pembroke Bath and the Compact Water Closet are of permanently non-absorbent genuine vitreous china . . . so durable, so easy to keep sparkling clean.

**COMPLETENESS OF THE LINE** is indicated by the American-Standard Plumbing Fixtures supplied the St. Clare Hospital of Schenectady, N. Y. Autopsy Tables, Surgeons' Scrub-up Sinks and other such specialized fixtures by American-Standard were installed here. Comfortable heating was assured the hospital by the installation of Arco Radiators. In thousands of hospitals throughout the country, American-Standard products have proved to be efficient, long-lasting and economical to maintain.

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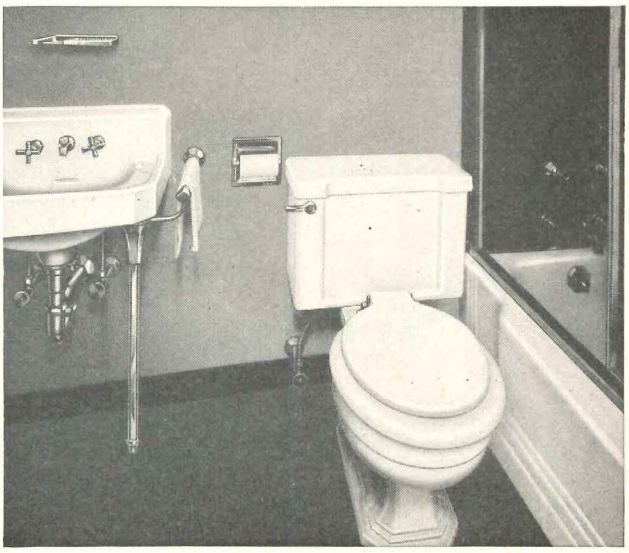
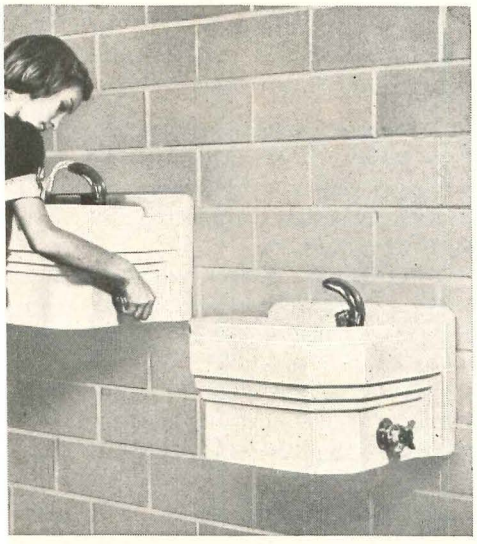
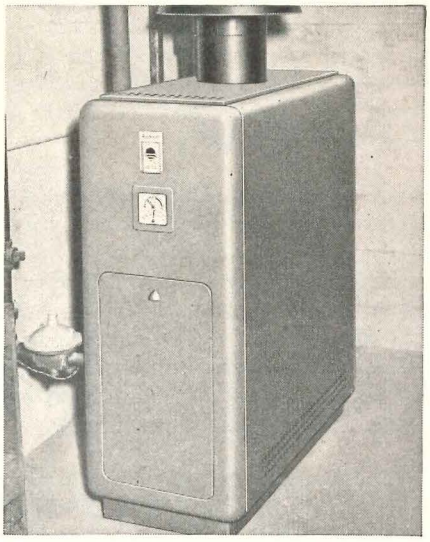


**CONVENIENCE AND BEAUTY** are combined in this bathroom of the Beverly-Carlton Hotel, Beverly Hills, California. The durable Master Pembroke Bath has low sides, wide bottom, for convenience and safety. Made of rigid cast iron with a thick coating of regular or acid-resisting enamel. The smart Marledge Lavatory has a deep, square bowl, splash back and non-tarnishing Chromard fittings. The genuine vitreous china Compact Water Closet features syphon vortex water action for thorough, quiet flushing.



**JUST THE RIGHT HEIGHT . . .** for students of all sizes. These handsome wall-supported Neo-Toric Drinking Fountains in the Rosedale School of Austin, Texas, are arranged so that even the smallest tots can easily reach them. They're made of permanently non-absorbent genuine vitreous china and feature angle stream bubbler with automatic volume regulator and metal guard that permits escape of water and prevents squirting.

**A DEPENDABLE SUPPLY OF HOT WATER** is furnished the Guest Ranch Motor Hotel of Cheyenne, Wyoming, by this Empire Gas Boiler. A good-looking boiler like this adds to the appearance of any building . . . the colorful jacket harmonizes with modern decorative schemes. And the Empire has all the features essential to perfect performance, including patented pin type cast iron sections, joined with gas-tight, metal-to-metal fit to assure maximum combustion efficiency.



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### *Building Up $7.5 Million For March, MacLean Shows*

Construction in March 1950 showed a healthy gain of $7.5 million over March a year ago, according to MacLean Building Reports Ltd.

Total volume for March 1950 was set at more than $75 million, with residential construction showing the principal increase.

**CANADA** *(Continued from page 16)*

Quebec registered a decline in the industrial category, but this was partly balanced by higher activity in Ontario and Alberta. Engineering was low across the country.

Comparative March figures for the four classifications follow:

Residential — 1950, $30,168,300; 1949, $19,896,900.

Commercial — 1950, $25,709,500; 1949, $20,820,900.

Industrial — 1950, $13,251,600; 1949, $17,115,200.

Engineering — 1950, $5,984,600; 1949, $9,755,300.

### *Biggest Building Year Foreseen by Canadians*

Minister of Trade & Commerce C. D. Howe predicted at a recent session of Parliament that 1950 would be Canada's greatest building year.

Mr. Howe foresees public investment climbing $4 million over the 1949 high to a record level of $3,600,000,000.

Experts of the Central Mortgage & Housing Corp. feel 1949's record of 91,000 units completed may be overshot this year by 5000 to 8000 units. Such a pace could mean that house building would be up $75 million over last year.

The boom in house building and construction generally is obvious in reports from coast to coast. Montreal has two housing projects of $1.8 million and $1.3 million respectively, and Dominion Textile Co. has started a 10-story structure to cost about $1.7 million. In Toronto, Bell Telephone is planning a $4 million office building; and Manufacturers Life, Confederation Life and Crown Life are putting up new offices.

In Ottawa, National Research Council is to have a new building, and plans call also for a 8- and 10-story Department of Veterans Affairs Building. Windsor has a $2 million plant extension; and an $8 million refinery is on the books for Edmonton.

### *'49 Housing Starts in U.S., Canada Compared*

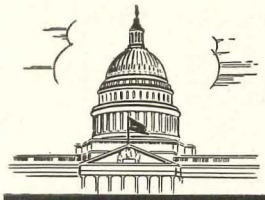
An interesting comparison of housebuilding activity in the United States and Canada can be made from 1949 government statistics released recently in the two countries.

The United States, setting an all-time record, had 1,019,000 starts for 67.4 per 10,000 of population (estimated at 151,000,000). Canada's 1949 total of 89,509, down slightly from 1948, produced a ratio of 63.9 starts per 10,000 of population (estimated at 14,000,000).

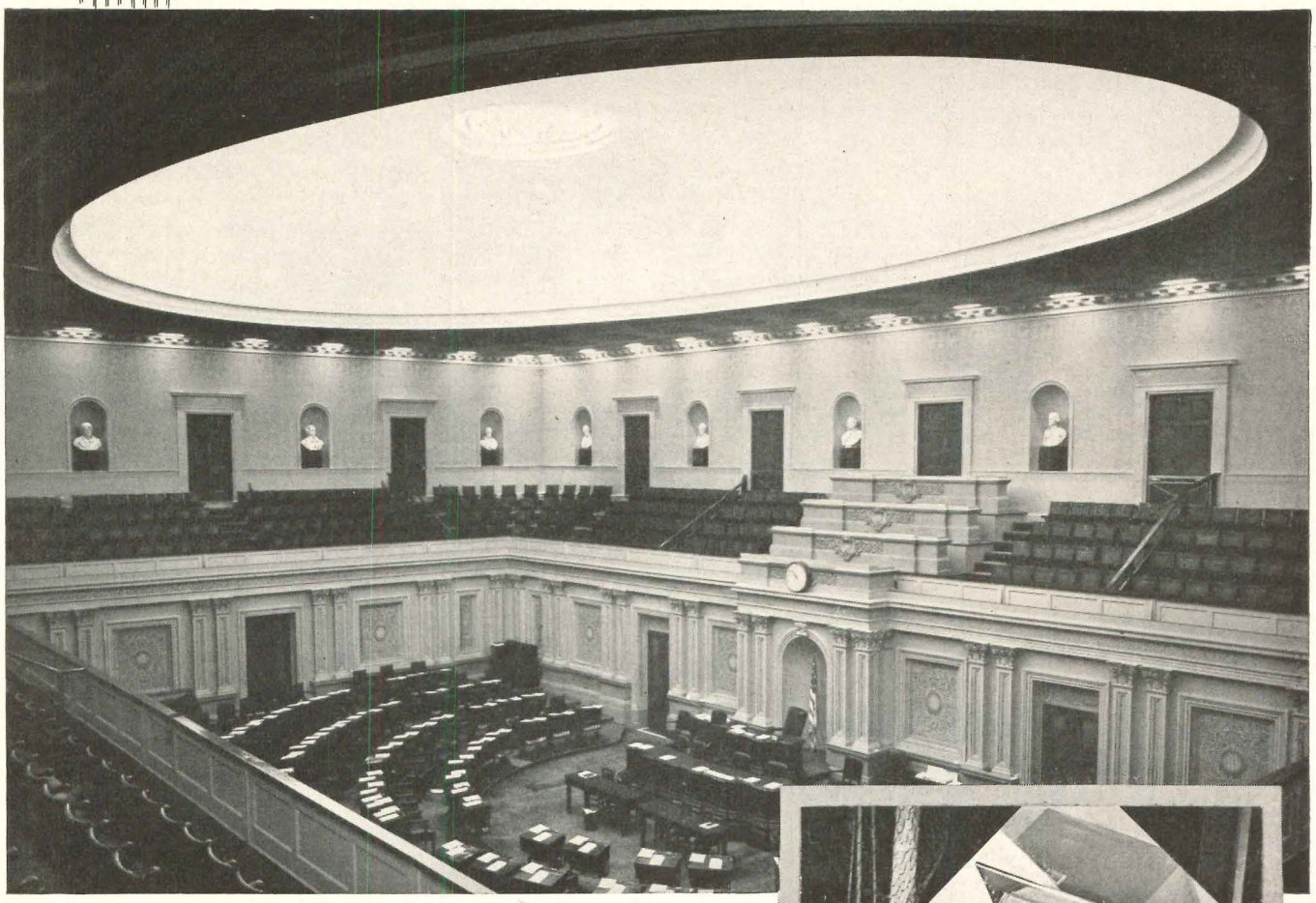
### *Lower Prices for Houses Not Expected Before '52*

The fellow who has put off home ownership till prices come down may have to wait yet another year — or longer. If anything, pressure is on to raise costs slightly; no cut in price is seen at least through 1951.

*(Continued on page 222)*



# HOLOPHANE Lights Both Houses of Congress



HOLOPHANE Lighting in the newly modernized Chamber of the United States Senate.

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FRANCIS P. SULLIVAN, *Associate Architect*
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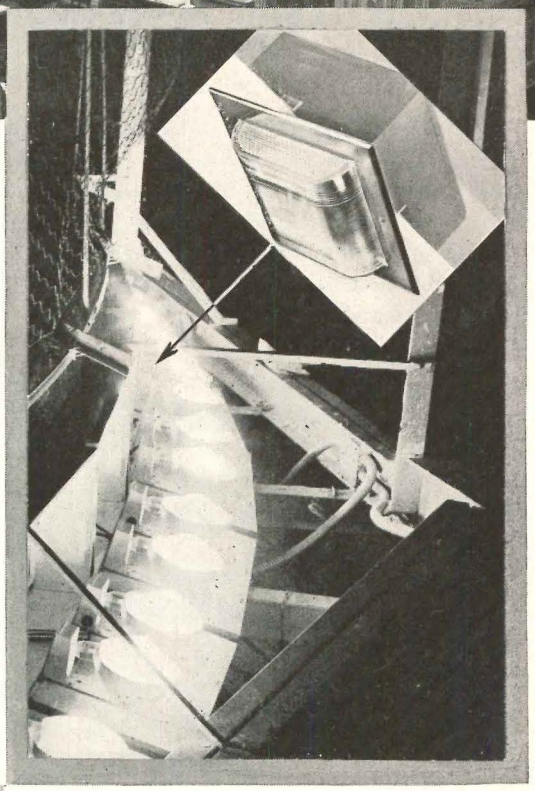

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## THE RECORD REPORTS

**CANADA** *(Continued from page 220)*

Demand for low- and middle-priced houses continues high; that means materials are still at premium demand, keeping prices strong. The March hike in rail freight rates may send prices up on such building materials as bricks, cement, lumber and steel. Manufacturing costs and fuel costs are also increasing and may be reflected in material costs soon.

Another round of wage increases by the building trades is also pending. Trades unions across Canada are angling for new wage rates that could send house building costs up. In Toronto, the plumbers' union threatens strike action on a demand for another 25 cents an hour; masons in the Toronto area are setting $2 an hour as their wage goal. The plumbers' union in Ottawa, on strike since January, faces court action. Although employers, attempting to hold building costs steady, have refused all wage demands up to now, some increase may be inevitable.

### *London and Kingston Are Test Areas for New NHA*

While Ontario hammers out details with Ottawa, two Ontario cities, London and Kingston, have become test areas for the latest National Housing Act legislation.

Under this plan, as reported in previous issues of the RECORD, Canadians are aided in buying houses through increased mortgage loans and lower down payments. Of the capital cost of each scheme, 75 per cent is advanced by Ottawa, 25 per cent by the province. It is up to municipalities to demonstrate their need for housing, to make land available at reasonable cost and to pay an as yet undetermined portion of the province's 25 per cent share. Ottawa is willing to finance installation of services where these are lacking, but the cost will be charged against the property.

In London and Kingston plans call for five-room houses to sell at $6100; six-room houses at $7600. These are to be sold with no down payment or only a token payment — say $600 — the cost to be paid off in 30 years at $30 and $38 a month. Provisions have been made for straight rental housing, but this will probably play a secondary role for the present.

Ontario argues that the down payment should be dispensed with entirely, that the cost could be recovered by higher mortgage payments. For the present, Ottawa doesn't agree.

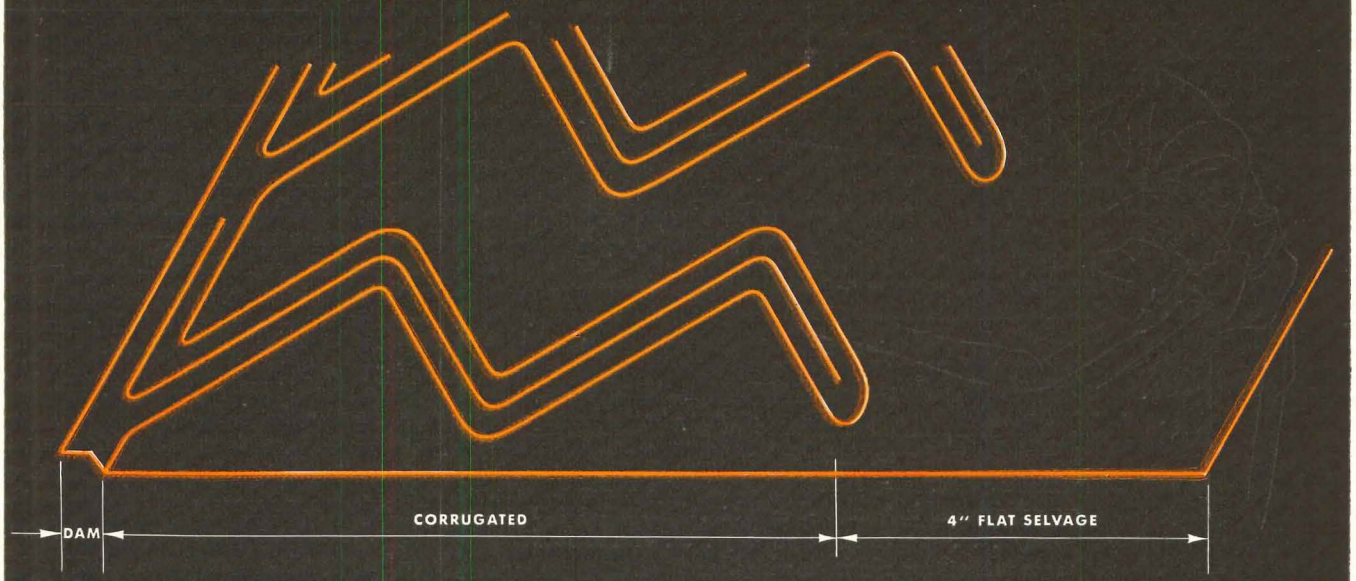
British Columbia plans to initiate a

*(Continued on page 224)*

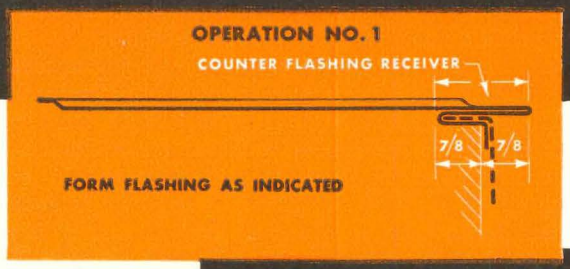


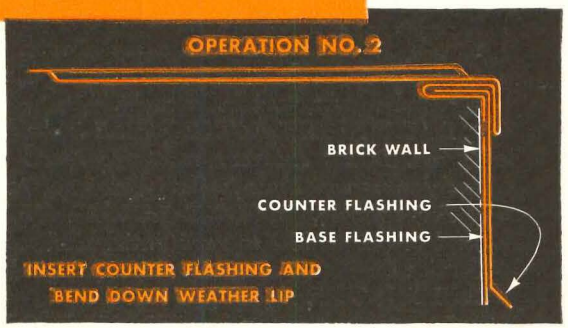

*Above: Photo of Fairlawn Theater, Toronto, Ont., one of first units in new Odeon chain. The late Jay I. English, Architect*

# For a neat job of through-wall and counter flashing




## 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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**THROUGH-WALL FLASHING**

## THE RECORD REPORTS

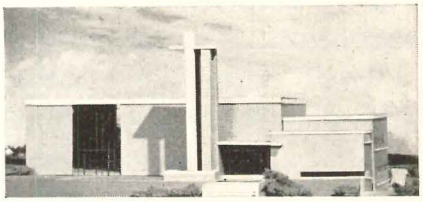
### CANADA

(*Continued from page 222*)

$20 million federal-provincial-municipal scheme. Details are now being worked out at the different levels of government. Three other provinces — Quebec, New Brunswick and Newfoundland — are also at this stage. First step in Newfoundland's program is a slum clearance project in St. John's. The province is to pay $750,000 and Ottawa $2¼ million of the $3 million bill.

Only Prince Edward Island has turned down Ottawa's offer. Because the tiny province has a very small urban population, there's no acute housing problem.

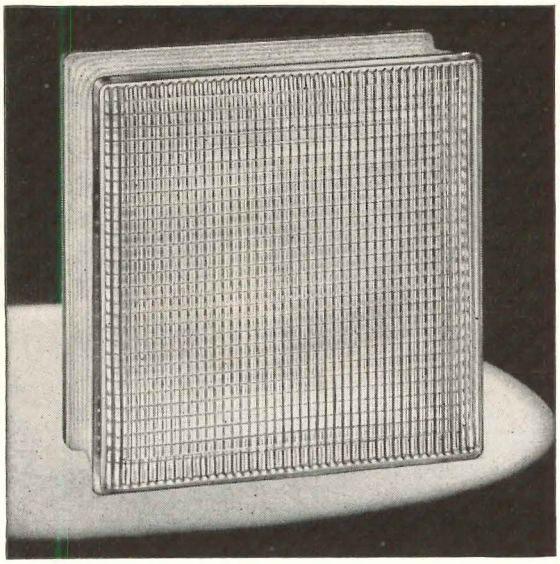
The prairie provinces, Manitoba, Saskatchewan and Alberta, are holding off. Alberta is readying a new Municipal Aid Act which provides loans to municipalities for such projects as installing utilities. From this beginning, the province may move toward agreement with the federal government. Saskatchewan wants Ottawa to contribute the province's 25 per cent, claims that existing financial commitments will keep the province out of the scheme otherwise. Manitoba is still reading the fine print in the new legislation, is "uncertain" about participation.



*Above: Photo of model shows projected building for First Unitarian Church of Toronto, celebrating its 105th anniversary. Richard A. Fischer, Toronto, Architect*

Ten representatives of business and the technical professions guide Council policies. During a typical year as many as 3000 Canadians have used the facilities provided; and immigrants with specialized training have been assisted in finding positions as well. While the main idea is to help Canadian industries, requests for graduates have been filled from as far away as India.

(*Continued on page 226*)



*"Light Direction with Azimuth Correction"*

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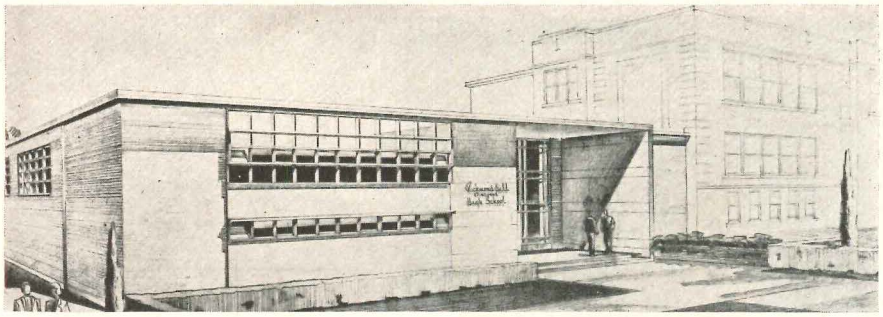
CANADA (Continued from page 224)



$400,000 addition to Richmond Hill High School near Toronto. Page & Steele, Architects



### *John B. Parkin Discusses Schools — Past and Future*

Teachers gathered at the Ontario Educational Association's spring conference heard some of the province's schools labelled "grim and ugly fortresses" while others were called "as good as any in the world."

Toronto's John B. Parkin, architect and authority on school design, charged that many older buildings are firetraps, with oily floors, outdated sanitation facilities, poor lighting and inadequate play areas.

Gazing into the crystal ball, Mr. Parkin suggested the school of the future might be without windows, or consist of 10 floors of classrooms set on top of one another.

What we want, he said, are buildings "the pupil hates to leave because every hour of work or play is a delight."

### *Veterans Build Their Own Under Veterans' Land Act*

Construction Superintendent H. C. Griffith reports that 70 per cent of all houses built under the Veterans' Land Act in 1949 were erected by the veterans themselves.

Most of the spare-time builders do all the unskilled work, take on some of the more difficult tasks as well. Figuring labor costs at about 42 per cent of the cost of a house, veterans save up to 32 per cent by giving a year's leisure time to the project. Mr. Griffith estimates the cash saving to be from $1500 to $3000.

The be-your-own-builder idea spread across the country from the maritimes, is backed by V.L.A. officials, who claim this is the only way a family can hope to get a good house for $6000, the limit allowed by the Act.

To teach the veterans and their wives how to build, evening classes are being held in several areas, with response reported as overwhelming.

### *Advice to Graduates: Get Some Practical Experience*

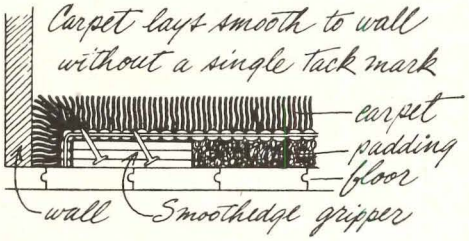
Technically-trained university graduates aiming at top senior jobs should first lower their sights to positions offering plenty of basic, practical experience.

That's the opinion of most technical leaders recently polled by the *Financial Post*. These leaders say the graduate should understand that he needs a long and arduous apprenticeship before he can achieve the professional efficiency and the knowledge of industrial relations

(Continued on page 228)

# how to get superior carpet installation by specifying *smoothedge*

**TACKLESS METHOD**

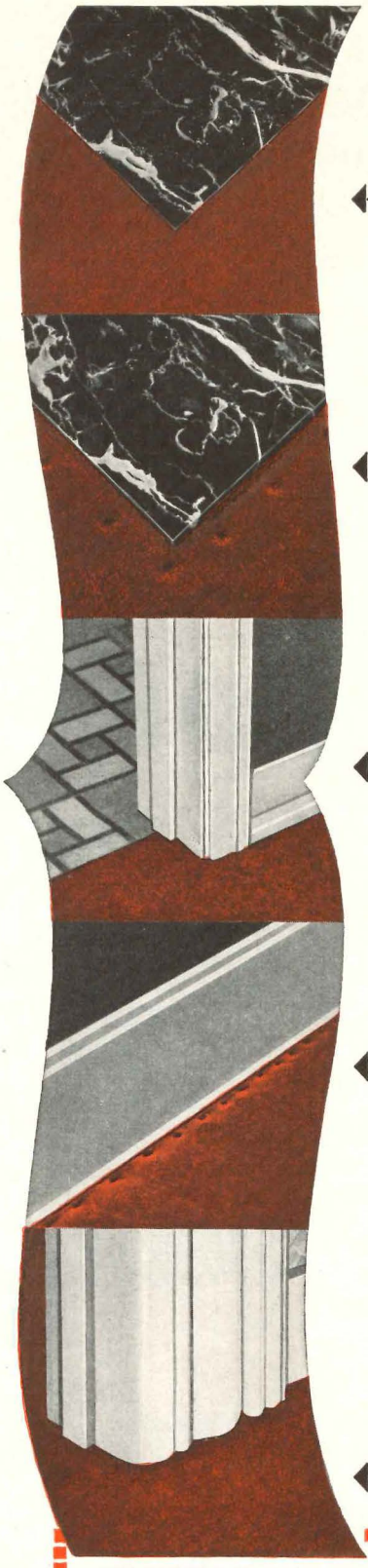



## HOW *smoothedge* WORKS

"*Smoothedge*" gripper holds the carpet firmly and *invisibly* from underneath. As a result, ugly tack marks, bulges, and dust-catching identations are eliminated. The carpet is also easier to take up for cleaning. No special provisions are required for either wood or concrete floors. To specify, merely state, "Carpet to be installed with *Smoothedge* carpet gripper, or equivalent."

## RECOGNIZED AND AVAILABLE NATIONALLY

Handled by over 4,000 carpet retailers and by 68 leading carpet distributors. Recommended by the mills themselves for wall-to-wall carpet installations.



***GET THIS*** • Smooth, beautiful effect at carpet edge. No ugly tack marks, scallops, dirt-catching indentations, or ripples.

**SPECIFY *smoothedge***
**TACKLESS INSTALLATION**

***AVOID THIS*** • Ugly puckers or tack marks are eliminated when carpet is installed the modern "*Smoothedge*" tackless way.

**SPECIFY *smoothedge***
**TACKLESS INSTALLATION**

***AT FLUSH DOORWAYS*** • Get unblemished appearance at this most noticeable area. You see only beautiful carpet, no tack marks with "*Smoothedge*."

**SPECIFY *smoothedge***
**TACKLESS INSTALLATION**

***ELIMINATE TACK MARKS*** • Tack marks never improved the appearance of lovely wall-to-wall carpet. Even the best turn-and-tack job shows tack marks.

**SPECIFY *smoothedge***
**TACKLESS INSTALLATION**

***AT DOOR JAMB*** • For smooth flowing carpet at door jambs, carpeted stairways, and wherever wall-to-wall carpet is installed, the floor covering looks its loveliest when you

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**TACKLESS INSTALLATION**

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GENTLEMEN:

Please send detailed, illustrated literature on "*Smoothedge*" tackless installation. Also send "*Smoothedge*" A.I.A. file.

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FIRM_____

STREET_____

CITY_____ ZONE____ STATE_____

## THE RECORD REPORTS

### CANADA

(*Continued from page 226*)

and other fundamentals which will qualify him for an executive job.

A unique job-placement agency that will help many of this year's budding architects, engineers and scientists get off on the right foot is the Technical Service Council. Supported by interested manufacturing concerns, it attempts to keep technically trained graduates in Canada by uniting them with the Canadian employers who can employ their skills to greatest advantage.

### *Cedar House Displayed at Better Homes Exhibition*

A solid cedar model house was the top news at the annual Better Homes Exhibition in Vancouver recently.

A year ago solid cedar houses were built experimentally by B. C. Lumber Manufacturers' Association. A four-room dwelling of 768 sq ft area was erected in 350 man-hours for $4580. Insulation and interior finish brought the cost up to $4978.

Walls of the latest model house are constructed of two-in. T & G solid cedar planks with aluminum foil blanket insulation and plywood interior finish. The house is basementless, rests on fir beams set on cedar posts. It has a four-in.-thick cedar plank sub-floor topped by hemlock flooring, except in kitchen and bathroom.

### *N.H.A. Loans at New High*

More joint loans won N.H.A. approval during March than in any previous month, according to Central Mortgage & Housing Corp.

Figures show 2622 joint loans approved, an increase of 900 over February and of 1504 over March of 1949. Value of loans, representing 2863 dwelling units, is $20,362,000.

### *Second Canadian Home Show Held At Toronto May 19–27*

Keen interest was shown by the public and the construction fraternity in the second annual Canadian National Better Homes Exposition, held at Exhibition Park, Toronto, May 19–27.

House building and home improvements were covered in exhibits ranging

(*Continued on page 230*)

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PRESIDENT

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COMCO Colloidal Paste thoroughly disperses and holds the concrete aggregate in suspension, keeping the heavier aggregate from settling and 'setting up'. It reduces the water-cement ratio as high as 25%, thereby densifying the concrete and reducing the volume. It eliminates honey-combs and voids that result from poor dispersion and excess water.

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Redi-Mix Men will find it most economical for themselves and the builders.

This material has stood the test of time in the Suez and Panama Canals, the old and new Main Post Office Buildings in Chicago, the Merchandise Mart, etc.

Produce a maximum volume of solid, fine-meshed durable concrete with a minimum of labor. Specify COMCO Colloidal Paste in the mix of all concrete construction.

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SPECIFICATIONS: Concrete Materials Corporation COMCO COLLOIDAL PASTE shall be added to the mix in accordance with the manufacturers directions.

Very truly yours,

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Anthony Penovich

AGP:gp

Anthony G. Penovich

• COMCO IS THE PRODUCT • ORDINARY CEMENT WILL NOT DO THE JOB •

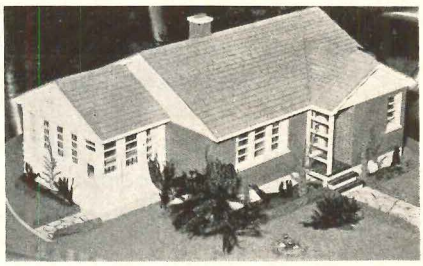
# THE RECORD REPORTS

## CANADA

(*Continued from page 228*)

from basic building materials to modern furnishings. Sponsors of the show were the National House Builders' Association and the Toronto Metropolitan Home Builders' Association.

One salient exhibit portrayed the history of small house architecture from Indian tepees to streamlined bungalow. Presented by Central Mortgage & Housing Corp., it demonstrated the right and wrong ways of constructing a house. Scale models were used for illustration. Giveaway booklets provided the latest information on N.H.A. financing.



*Above and below: Two of the scale models in the 1950 travelling exhibit of the Central Mortgage & Housing Corp. The display, which had its premiere at the Canadian National Better Homes Exposition, was notable for its illustration of basic principles for good house construction. Rotating platforms hold models*

### *Underground Wiring System Reported Installed at Low Cost*

Architects specializing in project housing will be interested in a new un-

(*Continued on page 232*)

## CANADA

(*Continued from page 230*)

derground wiring system installed in a Niagara Falls, Ont., subdivision. The advantages of burying wire instead of carrying them overhead are many, but up till now it's cost four or five times as much.

The comparatively recent development of low-cost insulated wiring suitable for underground use made the Niagara Falls installation possible. In effect, the sidewalks are employed as a protective covering for the wiring. The only evidence of the existence of electrical service is an occasional box-like transformer structure.

While the capital outlay was about 20 per cent more than for overhead wiring, the new system has 20 per cent greater capacity. Its life expectancy is 50 years, or twice that of an overhead system. Maintenance savings are realized by cutting out a complete replacement during the next half century, and by eliminating the cost of repairs to poles and wires damaged by weather, as well as the cost of tree pruning.

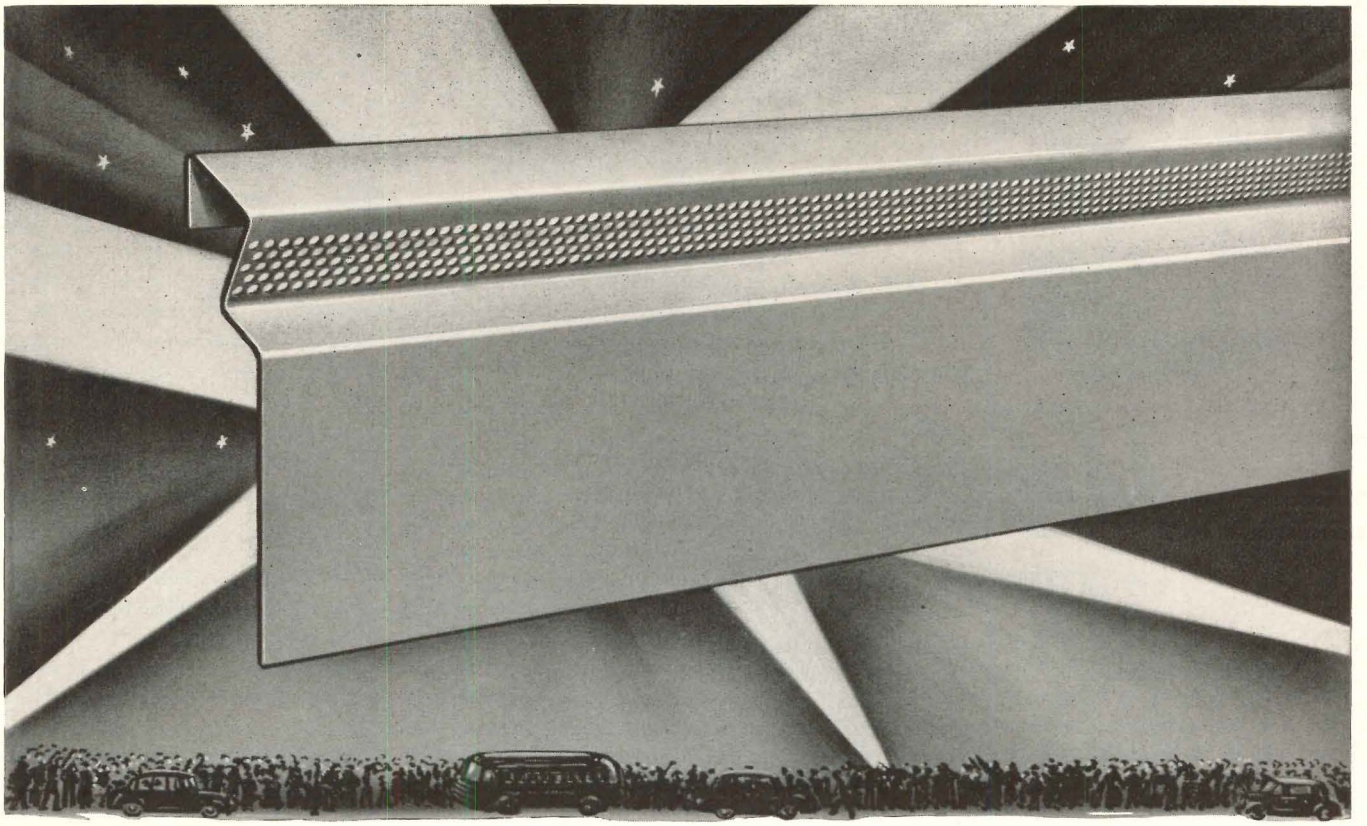
It is estimated that the relative installation cost would be lower on a larger project. There could be more mechanization and bulk buying of supplies. It would be less expensive, also, to locate each transformer in the center of a block.

### *Canadian Slighting of Native Talent Decried*

Too many Canadian organizations are looking south of the border for engineering brains, instead of using Canadian talent, complained President J. E. Armstrong of Montreal, in a talk before the Toronto branch of the Engineering Institute of Canada.

Dr. Austin Wright, general secretary, expressed agreement with Mr. Armstrong, and noted that Ottawa too hires American engineers when Canadians could do the job as well. He stressed that imported specialists were necessary only in unusual cases.

The Institute plans to publish a directory of consulting engineers throughout Canada, with details of special qualifications. There are now 13,000 members in 31 branches of the national engineering body.



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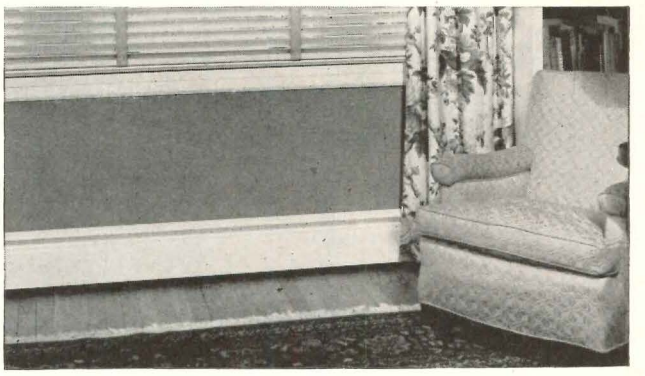
Here is *MAGIC* in Baseboard Cover design. The source of heat becomes invisible because Type L blends so completely with the room decoration — yet the smooth, absolute heating comfort of Vulcan fin-tube radiation is just as effective as ever.

Every architect, heating engineer, and homeowner who was privileged to preview Vulcan Type L gave it instant approval — a sure sign of its sales appeal and popularity.

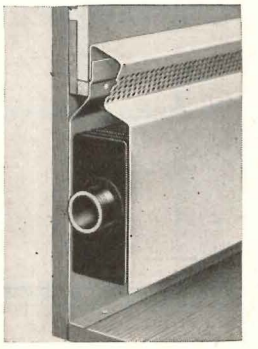
Made for Semi-recessed and Non-recessed installations, Type L has complete accessories and is available in any desired length in increments of 1".

*Remember Vulcan fin-tube radiation is easy to install* . . . requires few fittings or supports, comes cut to length, ends threaded or chamfered.

For Smooth Heating Comfort, for Beauty of installation. Vulcan has no equal.



You have to look *twice* to see it . . . experience its smooth heat but *once* to know why Vulcan is specified by leading architects and heating engineers.



Cross section Type L Cover, Semi-recessed.

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## A.I.A. CONVENTION

(*Continued from page 10*)

eral manager, Famous-Barr Store, St. Louis; Kenneth C. Welch, A.I.A., Grand Rapids, Mich.; James A. Wares, A.I.A., Marshall Field & Co., Chicago; Harold D. Hauf, A.I.A., editor-in-chief, ARCHITECTURAL RECORD, New York; and Lawrence B. Anderson, Department of Architecture, M.I.T., Cambridge, Mass.

Ecclesiastical — William Ward Watkin, A.I.A., Department of Architecture, Rice Institute, Houston, Tex.; Ernest A. Grunsfeld Jr., A.I.A., Department of Architecture, Catholic University, Washington, D. C.; Maurice Lavanoux, editor, *Liturgical Arts* Magazine, New York.

On the Awards committee with Mr. Heino are: Alfred L. Aydelott, Memphis; Richard M. Bennett, Chicago; Samuel E. Lunden, Los Angeles; George F. Pierce Jr., Houston; Harold R. Sleeper, New York; Charles F. Cellarius, Cincinnati.

The opening session of the convention also heard a report on the awards in the 1950 Building Products Literature Competition conducted jointly by the A.I.A. and The Producers' Council; and at the same session special A.I.A. awards were presented.

### *Special Awards*

These brought the Fine Arts Medal to Edward Steichen of the Museum of Modern Art, New York City, known for his creative talents in photography and for his outstanding work in connection with photographic records of both World Wars; the Craftsmanship Medal to Joseph Gardiner Reynolds of Boston, for his distinguished work in stained glass design and execution; honorary memberships to Miss Harlean James of Washington, executive secretary of the American Planning and Civic Association, and F. Stuart Fitzpatrick, also of Washington, manager of the Construction and Civic Development Department of the Chamber of Commerce of the United States. An honorary corresponding membership was awarded to Jose Calderon, outstanding architect of Lima, Peru.

In the Product Literature Competition, Certificates of Exceptional Merit and Certificates of Merit were offered for three classes of literature: (1) basic technical and design literature; (2) product literature; (3) promotional literature. The Jury of Awards was at

(*Continued on page 236*)


Burnham & Hammond, Inc., *Architects*

# MODERN DOOR CONTROL BY *LCN* · CLOSER CONCEALED IN HEAD FRAME

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## A.I.A. CONVENTION

(*Continued from page 234*)

liberty to refrain from awarding Certificates of Exceptional Merit if no entries appeared to merit such recognition, and such certificates were in fact awarded only in Class I.

### *Product Literature Winners*

Acoustical Materials Association and American Institute of Steel Construction received the only Certificates of Exceptional Merit given — these for their entries in Class I (manuals, handbooks, design data, application data, with primary emphasis on problem rather than product). The winning entries were *Sound Absorption Coefficients of Architectural Acoustical Materials* and *Manual of Steel Construction.*

Honored with Certificates of Merit in Class I were: Portland Cement Association; General Electric Co.; Westinghouse Electric Corp., Elevator Div.; Bell & Gossett Co.; Marble Institute of America, Inc.; West Coast Lumbermen's Association; Painting and Decorating Contractors of America; Revere Copper and Brass, Inc.; Gymnasium Seating Council (for *Modern Gymnasium Seating* by Harold R. Sleeper, F.A.I.A.); and American Seating Co. (for *The Co-ordinated Classroom* by Darell Boyd Harmon).

In Class II (catalogs, catalog-manuals, products data, or combination of product data with use and application data, with primary emphasis on product), Certificates of Merit were awarded to: Armstrong Cork Co.; The Celotex Corp.; Kaiser Aluminum and Chemical Sales, Inc.; Trimedge, Inc.; Pomona Tile Manufacturing Co.; Westinghouse Electric Corp., Elevator Div.; Otis Elevator Co.; Columbia Protektosite Co., Inc.; National Fireproofing Corp.; Tuttle and Bailey, Inc.; Minneapolis-Honeywell Regulator Co.; Anemostat Corp. of America; National Radiator Co.; The Clay Products Association, Inc.; Payne Furnace Div., Affiliated Gas Equipment; Owens-Corning Fiberglas Corp.; Smithcraft Lighting Div.; Century Lighting, Inc.; Unistrut Products Co.; Inland Steel Products Co.; Alhambra Foundry Co., Ltd.; The Producers' Council, Inc.

Also United States Gypsum; Julius Blum & Co., Inc.; Josam Manufacturing Co.; Speakman Co.; J. A. Zurn Manufacturing Co.; Crane Co.; Aluminum Co. of America; The Barrett Div., Allied

(*Continued on page 238*)

# CUSTOM-DESIGN Each Floor Plan

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| Pavonazzo | 428 |
| Rouge Royal | 429 |
| Medoux | 430 |
| Vert Maurin | 431 |
| New England | 432 |
| Lilas | 433 |
| Brocatelle | 437 |
| Emperor's Red | 438 |

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|---|---|
| Black | 420 |
| Onyx | 423 |
| Connemara | 427 |
| Rouge Royal | 429 |

**FEATURE STRIP**
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|---|---|
| Black | 420 |
| Red | 421 |
| Green | 434 |
| White | 435 |
| Yellow | 436 |

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## A.I.A. CONVENTION

(*Continued from page 236*)

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Certificates of Merit in Class III (promotional material, reminders, announcements, testimonials, case histories, etc.; primary purpose, sales promotion) were presented to The Kawneer Co.; E. L. Bruce Co.; Armstrong Cork Co.; S. Blickman, Inc.; California Redwood Association; Timber Engineering Co.; The Herman Miller Furniture Co., Zeeland, Mich.

Members of the Jury of Award for the 1950 competition included: (for the A.I.A.) Lessing W. Williams, A.I.A., chairman, New York; Julian E. Berla, A.I.A., Washington, D. C.; George B. Cummings, F.A.I.A., Binghamton, N. Y.; George S. Idell, A.I.A., Philadelphia; Ossian B. Ward, A.I.A., Louisville, Ky.; (for The Producers' Council) W. H. Easton, Otis Elevator Co., New York; Charles M. Mortensen, executive secretary, The Producers' Council, Washington, D. C.; Howard L. Spindler, American Radiator & Standard Sanitary Corp., New York.

### *Urban Planning Talks*

The need for widespread citizen education as a basis for any real progress in redevelopment was reiterated again and again in the speeches and symposia on urban and regional planning. Architects were urged to take the lead in developing public interest and understanding in a problem which has come to hold the seeds of complete disaster with the advent of the atomic bomb.

Paul Windels, president of the Regional Planning Association since 1943, summed up the basic factors of that problem as ". . . an antiquated and outmoded city pattern, the slowing up of city growth, the escape of population to the surrounding areas, the spread of the monolithic structure of the central city over the surrounding countryside, a low birth rate, vulnerability to military attack and the crushing financial burdens of local government, all resulting from the evils of excessive congestion."

(*Continued on page 240*)

# INVEST in *Sight* through BETTER *Light*

"Pittsburgh" Permaflector

LATROBE HIGH SCHOOL
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Classroom and school lighting, like all other lighting installations, must be "right" if eyesight is to be conserved and working efficiency achieved. The practical application of light is a science, but good lighting costs no more. Pittsburgh Permaflector Lighting Engineers stand ready with practical ideas and suggestions. They will work with you to help solve individual illuminating problems involving all types of applications. Send for details.

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**DESIGNED FOR SCHOOL and OFFICE LIGHTING**

**2 or 4-lamp units, using standard or slimline lamps, in a choice of steel, Alzak aluminum or framed-plastic side-panels.**

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**Permaflector Lighting Engineers in All Principal Cities**

PITTSBURGH PERMAFLECTOR LIGHTING EQUIPMENT IS DISTRIBUTED BY BETTER ELECTRICAL WHOLESALERS EVERYWHERE

## A.I.A. CONVENTION

(*Continued from page 238*)

Declaring that even though this country seems to be committed to an urban civilization, it is possible to control the conditions under which the urban areas develop, Mr. Windels outlined some objectives:

"It would seem that the greatest problem to be overcome is congestion. The basic aim of any new design must be to open up the overbuilt, crowded centers of cities to sun and air, to greater freedom and ease of movement for both people and vehicles and in the process to restore the smaller neighborhood patterns in the peripheral areas which now receive the major impact of population increases.

"Why should we aim at this pattern? Because we know that for normal, wholesome living, people must have a share in community life and association — something of human scale and participation to rekindle a sense of individual dignity and significance and social responsibility. Lives based on the anonymity of the conglomerate urban mass create the problems, human, social and political, which continue to plague us, and the anti-social mass emotions which spring from such environment.

"The blighted residential areas should be redesigned, based on a more even distribution and a generally lower density of population and a pattern of local neighborhoods, each separated from the others by broad avenues which serve also as main traffic highways. Within these main highway borders each neighborhood should have its own interior street layout, its own schools, playgrounds, shopping centers, parking and garage facilities, public and community buildings and other neighborhood amenities — with harmonious architectural features as though each were, within the city, a separate village with its distinctive identity, interests and community life."

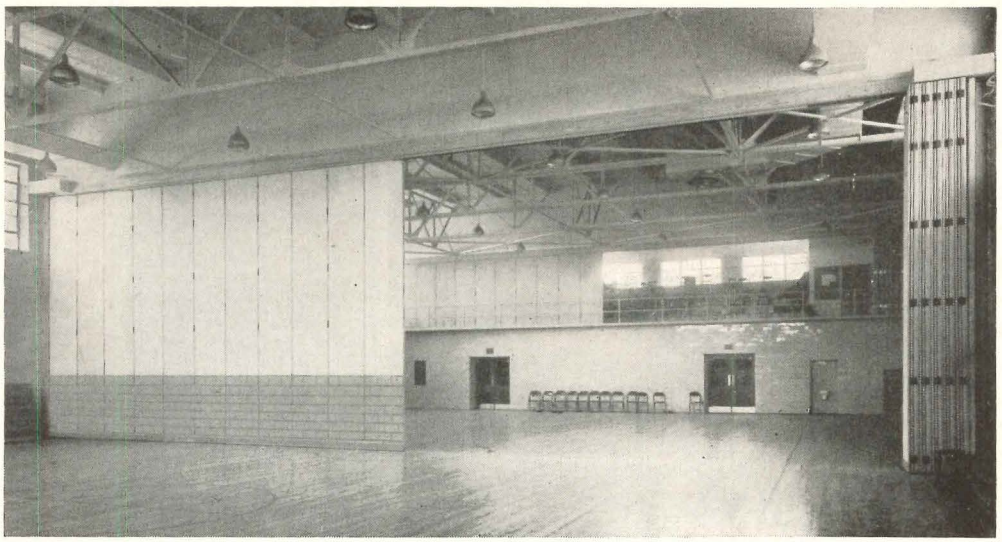
Although the so-called garden housing projects represent "an enormous advance" over what they have replaced, Mr. Windels said, they are "not the final answer."

"We must now raise our sights," he asserted, "and move on to the planning of entire neighborhoods with a variety of types of housing and more particularly we must attract families with small children by variations on the theme of one- and two-family buildings."

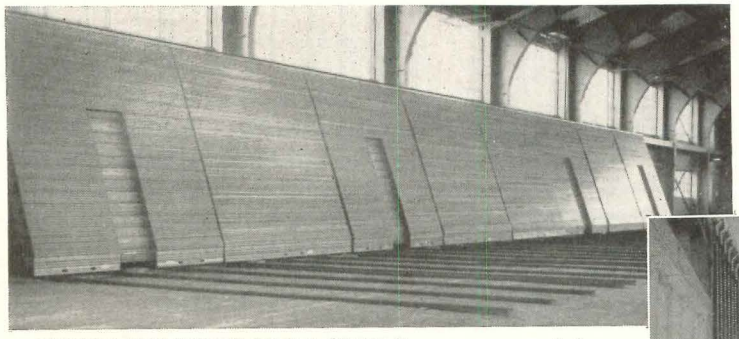
(*Continued on page 242*)

**"ORIGINATORS AND WORLD'S LARGEST MANUFACTURERS OF FOLDING PARTITIONS AND BLEACHERS!"**

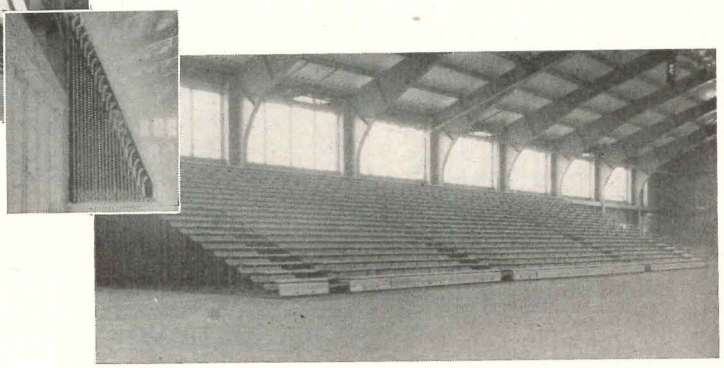
**FROM** Fairbanks to Capetown, Paris to Tokyo HORN FOLDING BLEACHERS AND PARTITIONS are specified. A HORN INSTALLATION carries the assurance of 40 years' experience.



● **HORN FOLDING PARTITIONS** are designed to utilize space and offer a long lasting, efficient operation. Manufactured in a new, modern factory according to specifications a Horn Folding Partition is factory installed to insure maximum operating life. There is a Horn Folding Partition for every problem!



**OMAHA UNIVERSITY**
**OMAHA, NEBRASKA**
**SELECTS HORN FOLDING BLEACHERS**



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**Designed to save space and labor.**

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## A.I.A. CONVENTION

(*Continued from page 240*)

As for suburban areas, Mr. Windels outlined some goals of the New York Regional Plan Association's plan for the 17 counties surrounding the New York area as ". . . *First*, that we deliberately set about to preserve the essential identity and character of these small towns. *Second*, that we channel a major part of the region's growth toward a much larger number of centers. *Third*, that we deliberately design and create entirely new and distinctive self-sufficient communities to accommodate a substantial part of our regional growth."

Public interest and public understanding were placed first by Mr. Windels among steps necessary to achieve the objectives he outlined.

"Every effort should be made," he said, "to strengthen citizen organizations for metropolitan planning and to establish them where they do not exist. Such agencies have already been established in New York, Pittsburgh, Chicago, San Francisco, St. Louis, Grand Rapids, Louisville, Cleveland, Toledo and a few other metropolitan areas. The complex problems of metropolitan areas, particularly those that straddle state lines, demand the existence of such unofficial agencies which are ideally suited to deal with such problems free from limiting political considerations."

Intensive research in the field of urban development, described as "barely touched" so far, is another step needed for achieving development objectives, according to Mr. Windels, who said there should be established a National Commission for Urban Population Distribution to study and report on trends and patterns of population movement to and within urban areas.

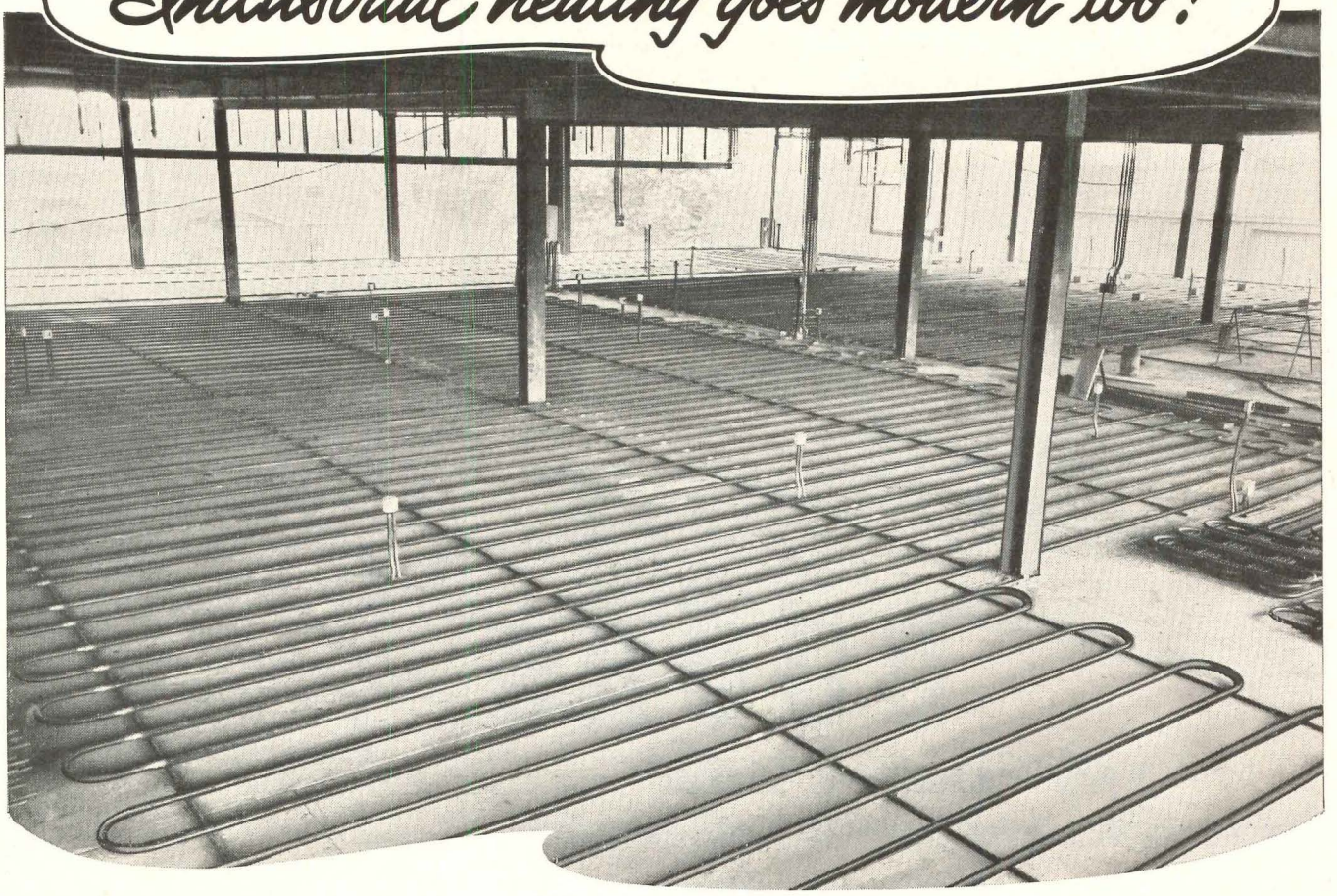
State and federal cooperation in urban planning and policies must also be enlisted, Mr. Windels added.

Lewis Mumford, author, teacher and town planning consultant, also urged the need for education in the aims of planning in his talk on regional planning and the small town.

"If the small, biotechnic city is to come into its own, as the agent of a new civilization," he said, "it will have to learn the arts of regional planning, regional culture and regional design; and create a life more highly organized and more purposeful and far more widely cultivated than that of the outmoded metropolis."

(*Continued on page 244*)

# Industrial heating goes modern too!



## Steel pipe is first choice for radiant heating advantages

Remember when a heating plant was just intended to keep folks warm? That day is gone!

Heating needs of modern business now go far beyond that of merely providing for human comforts. Today's heating systems must often function in capacities involving such requirements as quality of heat, consistency of temperature, preservation of humidity levels, conservation of space, and even psychological factors of health and efficiency.

*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.*

**COMMITTEE ON STEEL PIPE RESEARCH**

AMERICAN IRON AND STEEL INSTITUTE

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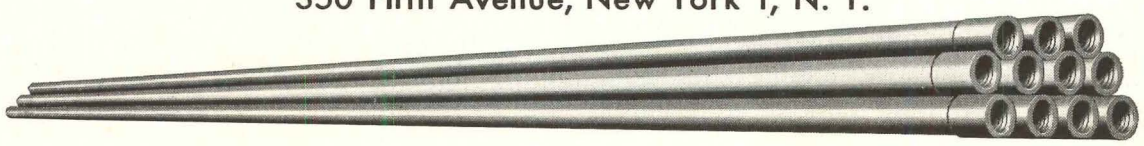


 (*Continued from page 242*)

Mr. Mumford sees the approach of "a new economy that will supplant the metropolitan economy."

"In this new economy," he declared, "any overgrowth in urban centers, like any over-concentration of wealth and power, will be regarded as a serious disorder, like the excessive functioning of the pituitary gland in the human body. The post-metropolitan economy will be one in which the advantages of concentration will be achieved by organization and plan, not by a mere massing together of population in a limited area; and in which the small community, kept close to the human scale, but subserving a wider range of human needs than any existing small town, will be the normal form of the city. This does not involve a step backward into the primitive and the undeveloped: it rather involves a step forward to a higher kind of organization, more advanced even in its technical facilities, and certainly far more economical, than the metropolitan economy."

The conception of bigness as a goal for small towns to strive for must be laid aside first of all, Mr. Mumford said, in favor of an ideal of organic growth, socially controlled and limited.

Summing up the principles which should underly planning for the towns of the future, Mr. Mumford said:

"Regional planning, insofar as it concerns itself with the small town, must address itself to the task of maintaining and multiplying small towns, not in furthering their indefinite growth. The small town of the future, once regional ideals and goals supplant metropolitan ideals, will have the following characteristics: First: it will be limited in area, limited in population and limited in density. In areas where clusters of small towns may be developed, the normal size of the small town will be between twenty thousand and fifty thousand people; in other areas, where because of topographical difficulties, perhaps, such clusters may be hard to achieve, as in the heavily dissected plateau of the Allegheny Valley, the small town might reach sixty, eighty, or in exceptional cases, perhaps a hundred thousand inhabitants; these would be normal variations, like the variations in height between human beings, variations which do not imply either dwarfism or giantism. Each town will be surrounded by a permanent greenbelt, either established by a state zoning law, or owned by the city; and since high land values are the main cause of deficient open spaces in the city, the smallness of the town and its restricted density — never more than a hundred persons per acre in the densest quarter — should permit sufficient garden space to give every family, and even such bachelors as may wish it, enough garden space to raise flowers and a limited amount of succulent vegetables. Such towns will have green cores within their superblocks, as well as greenbelts to define their outer limits. This pattern will both govern fresh growth and guide the internal reconstruction of the small town, as it seeks to develop its own qualities and resources."

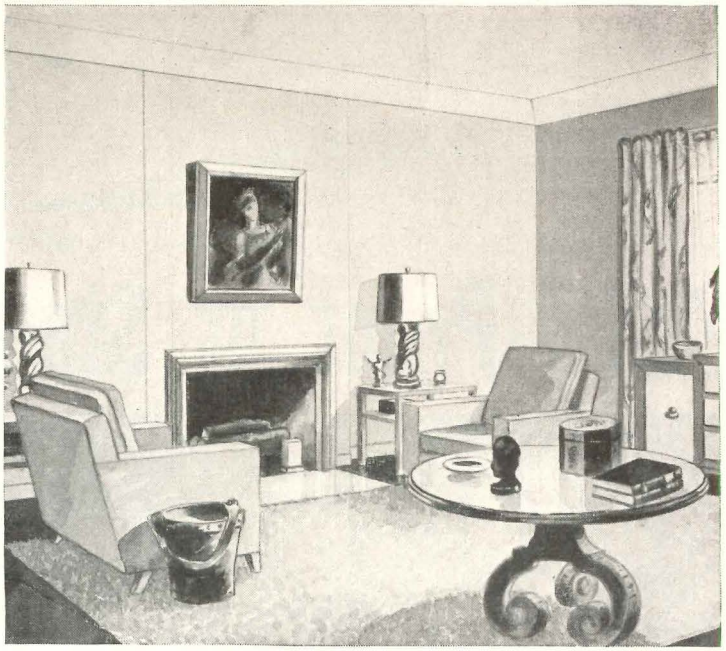
Since all these conditions cannot be achieved by any single small town, Mr. Mumford said, a "regional equivalent" to metropolitan advantages must be found.

(*Continued on page 246*)

# DRY

## WALL CONSTRUCTION has proved satisfactory . . .

*Says* Carl G. Lans, Director,
Technical Service Department,
National Association of Home Builders.

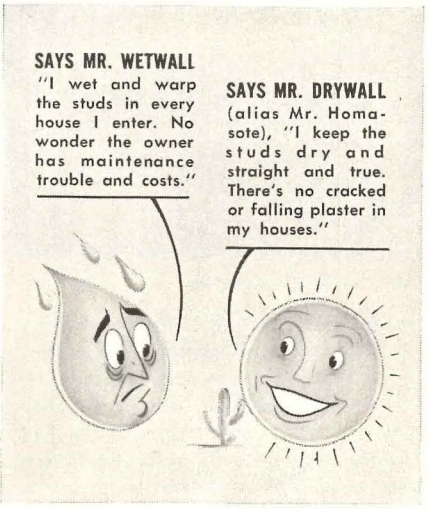


"When dry wall has once been accepted and gotten a hold, it has become general. The Washington, D.C., Metropolitan area is such an example. Before the war, everything was lath and plaster; now it is a rare thing in residential construction. Dry wall has proved satisfactory — not only because it is much more economical, but also because it produces a true, straight wall . . . and eliminates the introduction of many gallons of moisture into the house. In addition, it is a time saver."

Why build *wet* — when Dry Wall Construction is safer, faster, less expensive?

For 32 years Homasote has been used for Dry Wall Construction—in millions of dollars of private homes. Since 1936 its use has been supported by intensive research costing more than $500,000.

Dry Wall Construction — with Homasote Big Sheets — offers many major advantages . . . The average wall is covered with a single sheet; batten strips and unsightly wall joints are eliminated. Joints are made at doors and windows, as desired . . . Labor costs are minimized; many fewer handling operations; many fewer nails . . . In a single material you provide lasting insulation value and great structural strength . . . You build a quieter home, free from dampness — with dependable insurance against musty closets and mildewed walls.




Dry Wall Construction — with Homasote Big Sheets — means walls that are permanently crackproof, ideal for paper or paint, lending themselves to modern decorating effects, modern mouldings and trim.

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- The Nova Roller Door ( )
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Name_____
(Please print in pencil)

Address_____

City & Zone_____ State_____

## A.I.A. CONVENTION

(*Continued from page 244*)

"If the growth of the small town must be limited," Mr. Mumford put it, "its limitation will be more acceptable if it becomes part of a regional constellation of cities, with a common regional government for its overall activities, and with a capacity for mobilizing and distributing its cultural resources into each small town, instead of concentrating them, in a fixed, static, immobile pattern in a single dominating center.

"Let us not talk about regional planning," he went on, "until we believe in the principles of regionalism with sufficient conviction to demand the political authority that will be necessary, on the basis of a progressive extension of the welfare clauses in our state constitutions, to carry them out. For we need a regional authority with the power to float bonds and to make investments in new communities which our housing authorities now have; we need a regional authority with the power to zone land for urban and rural uses, and where necessary to buy land for public uses of an undetermined nature; we need an authority that will be capable of planning new cities, in order to keep the new towns under its jurisdiction from passing, under continued population pressure, beyond the normal limits of their growth; we need a regional authority with the power to set aside primeval areas and to fix new industrial sites; so that recreational facilities and industrial opportunities will be planned with a view to the needs of the population as a whole. No single community, however enlightened — not even the biggest of metropolitan centers — can make such plans or carry them out."

Areas where the kind of development he outlined would still be possible were listed by Mr. Mumford — the San Bernardino Valley in southern California, the Columbia River Valley, the Tennessee Valley and the state of North Carolina among them.

In conclusion, Mr. Mumford emphasized that the conception he had outlined was a deliberate departure from the idea that "regional planning is merely a means of dealing in a coordinated manner with the natural background."

"The further purpose of regional planning," he said, "is that of creating a balanced environment, with balanced communities, for people who are deter-

(*Continued on page 248*)

# Welding Cuts Structural Costs 12% Saves 7% on Steel

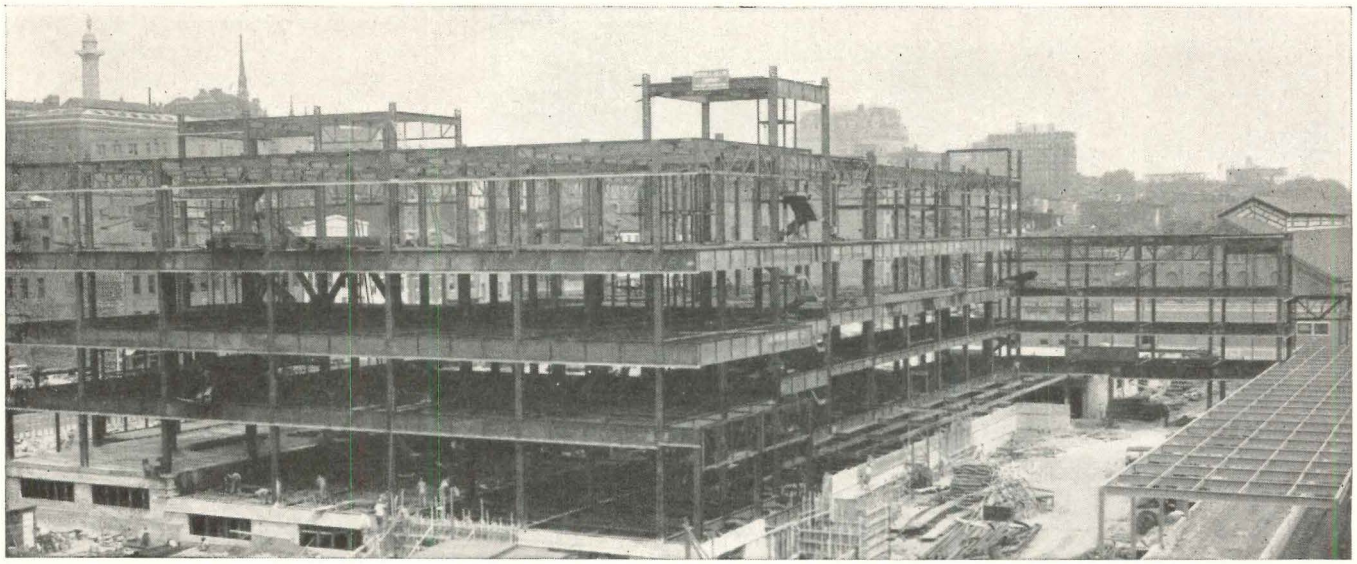

*Fig. 1. Framework partially complete for the 5 story plant of Baltimore Sun, Baltimore, Md. Architects: Palmer, Fisher, Williams and Nes; Consulting Engineer: Van Rensselaer P. Saxe; General Contractor: George A. Fuller Co.*

**By VAN RENSSELAER P. SAXE**
Consulting Engineer
Baltimore, Md.

A SAVING of $68,522 has resulted from the adoption of welded design for the publishing plant of the Baltimore Sun and Evening Sun shown in Fig. 1. Structural weight was cut by over 7%. A sizable amount of money was saved also on concrete and form work, as well as on reduced building height made possible by continuous beam design involving shallower structural members.

Typical framework connections illustrating the simple details for field erection are shown in Figures 2—3. Beams are positioned on erection seats or clips and then field-welded with Lincoln® "Fleetweld 5" electrodes using 400 ampere Lincoln "Shield-Arc" motor driven arc welders. In the design of frame members, bevel cuts for connections were so planned as to make maximum use of fast, easy downhand welding.

The quotation of the low bidder for riveted construction was $551,508. The actual cost of the welded frame was $482,986. This accounted for the $68,522 saving in the structure.

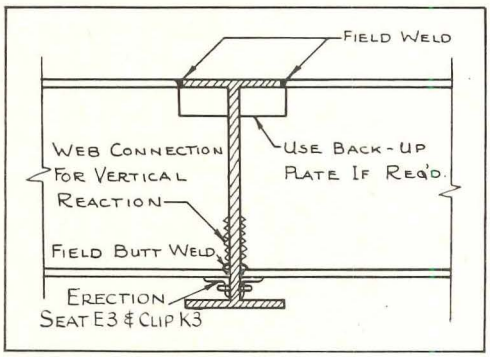


Fig. 2. *Typical beam to girder connection.*

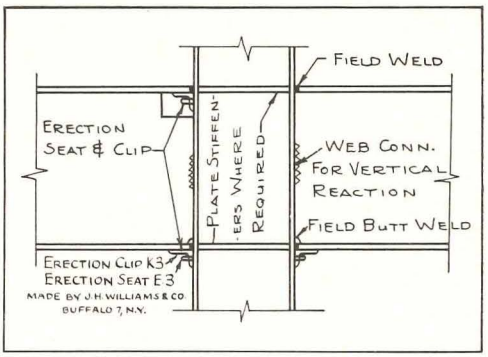


Fig. 3. *Typical beam to column connection.*

## A.I.A. CONVENTION

(*Continued from page 246*)

mined to lead an autonomous and balanced life, which will not merely recapture traditional values that have often fallen by the wayside but will more fully utilize the positive advantages of an advanced civilization."

In an absorbing lecture which he illustrated with slides taken on the spot, Albert Mayer gave a vivid and exciting picture of the job he and his associates are doing with the new capital of the Punjab in India.

Helmut E. Landsberg's talk on "Climate and Planning of Settlements" emphasized the change in man's attitude toward climate as a factor in planning — from the days when design of dwellings followed the dictates of climate through the recent era of considering it something to be fought with "gadgets," to the present day when intelligent planning takes advantage of desirable aspects of climate (capitalizing on prevailing winds, heat and light from the sun, etc.) and shuts out the undesirable through site selection and planning and building design.

Mr. Landsberg stressed also the new importance placed by planners on *microclimate* — the climatic environment of a very small area, which may be influenced by purely local factors to small-scale differences from another area only a few miles away. Microclimatic factors should be considered, he said, not only in design of individual houses or small subdivisions, but in large-scale city planning.

A joint luncheon meeting of the A.I.A. and the Joint Committee on the National Capital was held on Friday in the Presidential Room of the Hotel Statler. Maj.-Gen. U. S. Grant III, former chairman of the National Capital Park and Planning Commission, gave an address on "150 Years in the Life of the Federal City" and A.I.A. President Ralph Walker spoke on "Fifty Years Hence in the Federal City."

### *Lighting and Illumination*

Symposia on "Lighting and Illumination," the convention's secondary theme, included addresses by R. L. Biesele Jr. ("Daylighting"); Willard C. Brown ("Developments in Light Sources"); C. L. Crouch ("Basic Factors of Vision"); Stanley McCandless ("Dramatic Uses of Light"); and Howard M. Sharp ("The Effect of Basic Light Distribution").

# marble

## *integrity built into a school*

*E*conomy that considers *only* the first cost, may be false economy. This is particularly true in the school, where concentrated traffic and hard usage tend to make almost any material expendable. Marble, however, meets the most exacting demands for a hard surface material that wears well, is easily cleaned and maintained and retains its initial beauty year after year.

Marble spells refinement. It can create that atmosphere of culture and dignity in the school which is so necessary to proper education.

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MIA

**Marble Institute of America, inc.**

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# THIS BUILDING

Federal Telecommunications Laboratories, Inc., Nutley, N. J., American research and development unit of the International Telephone and Telegraph Corp. Architects and Engineers: Louis S. Weeks, Giffels & Vallet, L. Rossetti. General Contractors: George A. Fuller Co. Exterior walls, aluminum faced Q-Panels, fabricated and erected by H. H. Robertson Co.

# POINTED THE WAY . . .

Since the first units of this communications laboratory were erected in 1945, performance has been watched closely. This was among the first of the parade of postwar, aluminum-clad buildings—industrial, commercial and residential. In each, aluminum was used because it contributed either to lower cost, speedier construction or more efficient operation.

Here aluminum-faced insulated wall panels have equaled or exceeded expectations; have required no maintenance whatsoever.

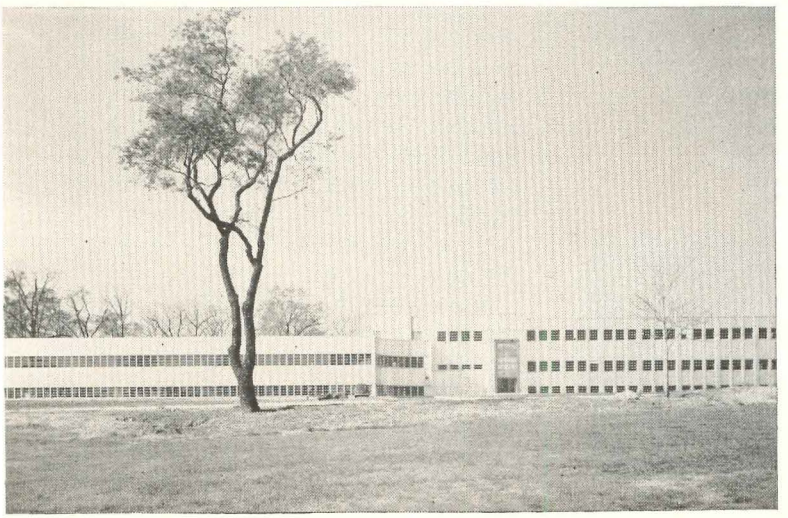
Alcoa engineers have contributed to the planning of every major aluminum-clad building erected in America. Our fund of aluminum knowledge, gained through sixty-two years of research and development, is available to all architects and builders.

For information on any application of aluminum, and for a forward look at aluminum's place in building's future, ask to see the book or film, "The Davenport Story". Call your near-by Alcoa Sales Office, or write ALUMINUM COMPANY OF AMERICA, 1888F Gulf Building, Pittsburgh 19, Pennsylvania.

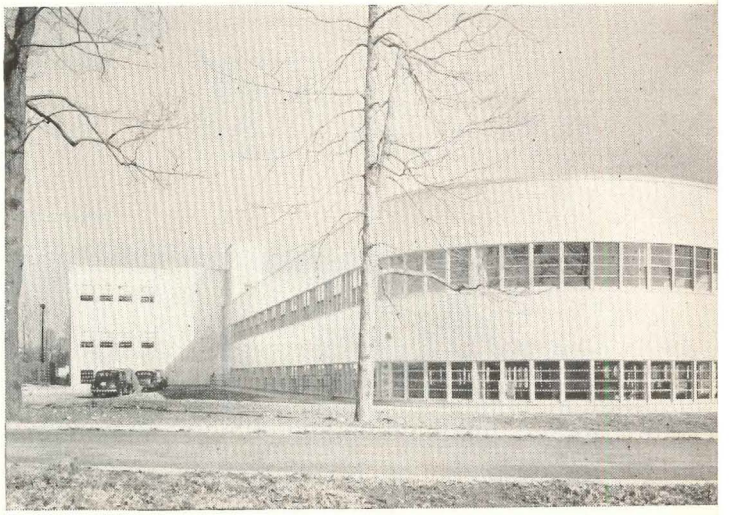
ALCOA

FIRST IN ALUMINUM

Addition of a wing required removal of panels at north end of one building. Microscopic examination of uncovered area revealed no evidence of air or moisture infiltration after three years.



Insulation factor of walls has equaled that of masonry of much greater thickness and cost. According to owners, greatest advantage is low maintenance. None required since erection.



## ACOUSTICS

(*Continued from page 169*)

to the criterion sound level. If functional requirements of the building lead to "unusual" noise conditions, the criteria should be modified accordingly. A bowling alley that can be put nowhere but under an auditorium requires especially high insulation above it. A band room adjacent to an auditorium but *never* to be used concurrently hardly requires the normally specified 50–65 db of NR. (But make the client sign an affidavit on that one!)

### *General methods of noise control*

Noise control in buildings is achieved by means of: (1) proper planning, to segregate sounds; (2) proper design and detailing of structures, to block effectively the passage of sounds; and (3) proper utilization of finishes and furnishings, to absorb sound. Segregation reduces noise by putting the source farther away; insulation reduces noise by presenting a barrier against its passage; and absorption reduces noise by draining off sound energy. These three techniques are based on distinctly different physical principles. *A clear visualization of these differences is the first step towards rational acoustic designing.*

Mathematical statements of these effects are sometimes complicated. But basically the equations express what one would expect intuitively: noise reduction increases with the distance of separation, with the insulating value of the structure (usually expressed as transmission loss of a given element), and with the amount of absorption in the room (expressed in absorption units or sabins).

Planning aspects of noise control were included in the previous article. The remainder of the present article deals with engineering methods for achieving noise control by insulation of structures and absorption of finishes.

### *Calculation of noise reduction*

Consider a sound source of constant power output, such as a person talking at a uniform level or a steadily operating motor or fan. If this source is placed in a room, the average sound level throughout the room and more than a few feet from the source is dependent mainly on the number of sound absorption units in the room. But before we can calculate this effect we must become more specific about the physical quantities involved; in order to get answers with meaningful numbers we must agree on some basic definitions, such as the following:

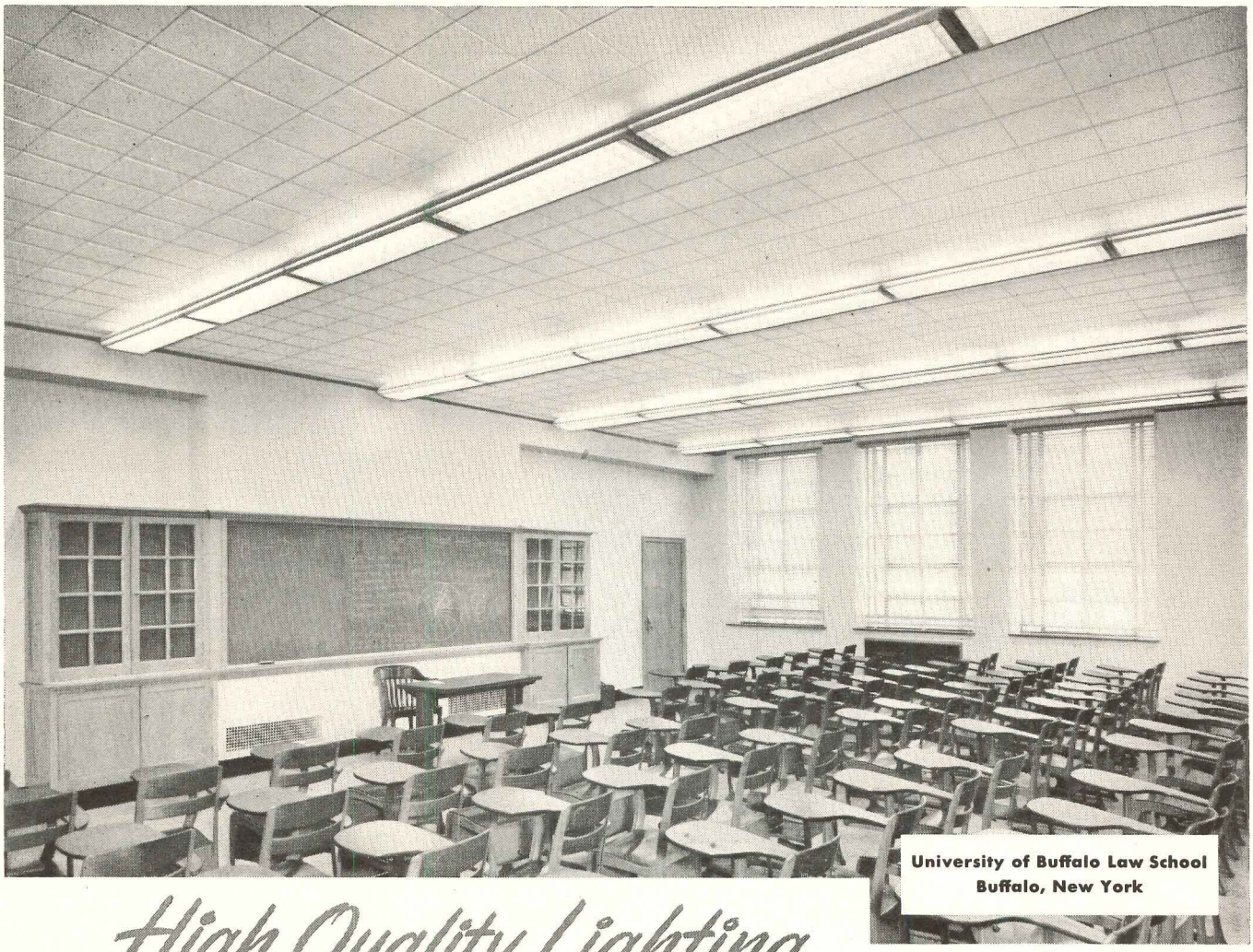
*Decibel* (db): a logarithmic unit expressing the ratio of two quantities, or the magnitude of one quantity with respect to a specified reference magnitude. The decibel by itself is not an absolute measure of anything unless associated (explicitly or implicitly) with a particular quantity and a particular reference.

*Intensity* (I): the amount of sound energy falling on a unit area per unit time, usually given in watts/sq cm. Analogous to light intensity.

*Intensity level* (IL) in decibels: IL = 10 log $(I/10^{-16})$ where I is the intensity of the sound whose IL we are computing; and $10^{-16}$ watts/sq cm is the standard reference intensity, which corresponds approximately to the weakest sound the ear can hear. At the threshold of hearing the intensity level (IL) is approximately zero since the ratio $I/10^{-16}$ is unity and the log is thus zero.

*Sound level* (SL) in decibels: a commonly used measure of the physical magnitude of sound; in certain idealized cases SL = IL; in these articles SL is defined as the quantity read on a standard *sound level meter* when properly

(*Continued on page 254*)



University of Buffalo Law School
Buffalo, New York

# *High Quality Lighting*
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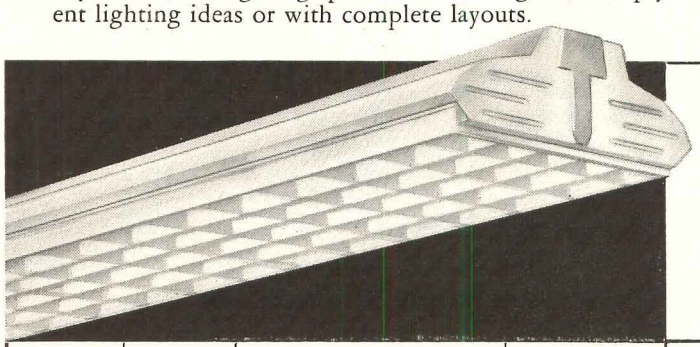
NEXT TIME you see an unusual lighting job . . . such as this classroom with 45 footcandles . . . check the manufacturer's name. Frequently you'll find it's Litecontrol.

Why? . . . probably because the outstanding engineers who do the outstanding jobs are never satisfied with second best. They know that Litecontrol fixtures are optically engineered to give more *and better-controlled light* at the least cost. And they know that the extra-sturdiness means more years of service for their clients . . . that other design features mean easier and cheaper maintenance.

So plan your next job around one or more of the many Litecontrol fixtures. If you like, our lighting specialists will be glad to help you with new and different lighting ideas or with complete layouts.

Architects: Duane Lyman & Associates.
Consultant: E. S. Burrows.
Contractor: Robertson Electric Co., Inc.
Lighting Equipment: 30 Litecontrol No. 4124, 2-lamp fixtures, surface mounted.
Lamps: 2-40 watt, white, fluorescent.
Watts per fixture: 100.
Average intensity in service: 45 footcandles.
Watts per square foot: 2.7.
Type of room: classroom.
Dimensions: 27′-6″ x 40′, 11′ ceiling.



### *The LITECONTROL No. 4124 Fixture . . .*

. . . has all those features so essential for good classroom and office lighting — low brightness, trim appearance, evenly illuminated louvres. Louvres are hinged for easy relamping and maintenance. Spring loaded catches allow opening on either side without special tools. Designed for surface, continuous run or pendant mounting.

| Cat. No. | No. of Lamps | HOUSING Length | Width | Height | Approx. Ship. Weight |
|---|---|---|---|---|---|
| 4124 | 2-40W | 49″ | 12″ | 5¼″ | 33 lbs. |
| 4044 | 4-40W | 49″ | 16″ | 5¼″ | 44 lbs. |

5328 and 5448 available for Slimline lamps.

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## ACOUSTICS

(*Continued from page 252*)

calibrated and used in accordance with standardized procedures.

*Absorption coefficient* ($\alpha$): the fraction of incident energy that is absorbed by a surface; the remaining fraction is reflected.

*Absorption units* (a) in sabins: the sq ft area of a surface (S) times its absorption coefficient; if several kinds of surfaces are involved in a room the total absorption is sum ($\alpha$S) over all surfaces.

*Transmission coefficient* ($\tau$): the fraction of incident energy that is transmitted through a barrier (wall, floor, window etc.).

*Transmission loss* (TL) in decibels: $TL = 10 \log(1/\tau)$; since $\tau$ is always less than unity its log would always be a negative number; it has been found more convenient to take the reciprocal of $\tau$ which is greater than unity so its log, or its decibel value, is a positive number; as TL increases the wall transmits less sound and becomes a better insulator.

*Noise reduction* (NR) in decibels: $NR = 10 \log(I_1/I_2) = IL_1 - IL_2$ is the difference in sound level (or IL) between two spaces or conditions.

With these definitions in mind let us return to the room with a steady noise source in it. Let $I_1$ be the average intensity in the room originally, and $I_2$ the intensity after some absorptive material has been added to the room. Of course there is always some sound absorption, even in a "bare" room. Let $a_1$ and $a_2$ be the number of absorption units before and after adding material. Then: $I_1/I_2 = a_2/a_1$. In words, the intensity is inversely proportional to the number of absorption units.

Thus the introduction of absorption achieves some noise reduction whose amount is: $NR = 10 \log(I_1/I_2) = 10 \log (a_2/a_1)$. This equation is solved graphically in Fig. 5, which is a general calculation chart for all relations involving decibels. A few calculations by the reader will show that it is easy to get between 5 and 10 decibels of NR by adding absorption to usual rooms; but that it is difficult to get much more than 10 db in most cases.

We should not, however, underestimate the value of 5 or 10 db reduction by absorptive treatment. As a matter of fact, the subjective improvement of the noise environment is often much greater than the calculated NR would indicate. For one thing, absorptive treatment on the ceiling or walls reduces the spreading of the sound; makes the room more like the outdoors where sound diminishes with distance from the source instead of being uniform everywhere. This confinement of noise has a beneficial psychological effect, particularly in large offices or in factories with many noisy machines.

Let us next consider noise reduction between two different rooms, and for simplicity place these rooms adjacent to each other with a common wall area having an S sq ft transmission coefficient $\tau$. Let $I_x$ be the average intensity in one room which contains a noise source, and $I_y$ be the intensity in the other. If either $\tau$ or S is increased, the transmitted intensity $I_y$ will obviously increase. In addition, $I_y$ will vary inversely with absorption $a_y$ in the receiving room. In general:

$$\frac{I_y}{I_x} = \frac{\tau_1 S_1 + \tau_2 S_2 + \tau_3 S_3 + \ldots\ldots}{a_y}$$

where $S_1$, $S_2$, $S_3$ etc. are different areas of the common wall having different transmission coefficients similarly designated. These different areas might be a door, a window, and a portion of solid wall.

(*Continued on page 256*)

# To the men who build

## Eliminating Deep Pockets of Concrete Between Joists IS Important

NAILING top lath to Macomber V Bar Joists saves time, labor and material. Competitive conditions today make these savings worthy of careful investigation.

When top lath is nailed into the steel top chord of the V Joist by driving a staple or roofing nail over the rib or mesh, a solid anchorage is the result.

In place of a specified 2" slab sagging between joists to a 4" slab, you have only a very slight deflection between joists due to the solid anchorage of nailing compared to wiring or clipping top lath.

While nailing is faster than other methods, the big saving is in the amount of concrete saved per square yard of floor area. These economies in both labor and materials can be the difference between profitable and dangerously close operation at today's close bids.

Any architect who specifies Macomber Nailable V Joists and the contractor who installs them will safeguard profits forever after with the one steel joist that costs no more but saves so much on every job. Send for V Joist catalog.

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**MACOMBER NAILABLE**
**V BAR JOISTS**
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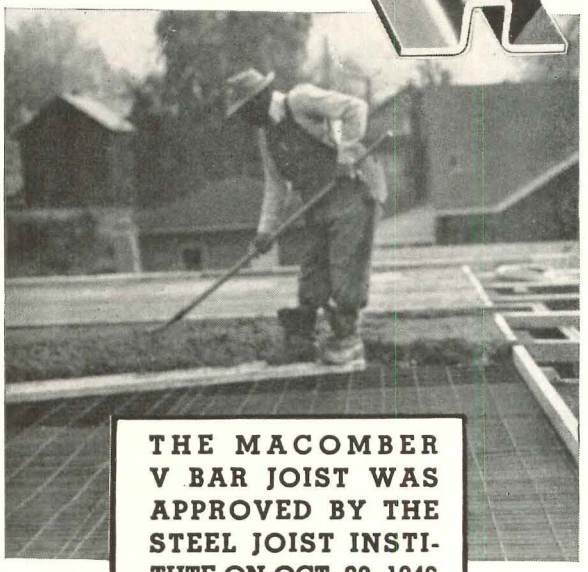

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V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK

## ACOUSTICS

(*Continued from page 254*)

NR = 10 $\log(I_x/I_y)$ = 10 $\log(a_y/\text{sum } \tau S)$. This equation is also evaluated in Fig. 5. Notice the reciprocal relation between this equation and the equation in the foregoing paragraph. The former, with $I_y/I_x$, is in the form commonly used in acoustics literature; but this ratio is always less than unity, so it is more convenient to invert it and get decibels directly as a positive number. Both forms can be read on Fig. 5, where the left hand side gives ratios greater than unity and the right side gives ratios less than unity (i.e., decibels).

Insulation values of structural elements are usually given in terms of transmission loss TL instead of $\tau$; but the conversion from one to the other can be read directly from Fig. 5. It is sometimes convenient to calculate the average or "effective" TL of a composite barrier, given by: Eff. TL = 10 log (sum(S)/sum($\tau$S)), also in the chart.

With the above definitions and formulas one can calculate the NR achieved between any two spaces, and compare this with NR criteria values discussed earlier. Or starting with a criterion and with basic data on wall areas, room finishes, etc., one can calculate the required TL values for particular elements. It is usually necessary to make several successive calculations, with different combinations of TL values, since there are usually several different paths or wall sections through which sound can travel.

There remains one more important quantity to consider: the frequency. We have already seen that noises usually contain many frequency components. Materials and structures also are frequency dependent in their properties of transmission and absorption. Values of $\alpha$ and TL (or $\tau$) are usually measured, and specified in standard bulletins and texts, at several different frequencies. A common set of frequencies is 128, 256, 512, 1024, 2048 and 4096 cps. These are essentially equivalent to the somewhat more convenient set 125, 250, 500, 1000, 2000 and 4000 cps.

The above formulas for NR can be applied to any frequency by using the corresponding values for $\alpha$ and TL. This may be important in special cases involving noises of unusual frequency characteristics. In usual cases (as discussed in earlier sections) we need use only average values. In the case of absorption, the most widely used average is the *noise reduction coefficient* (NRC) which is the average of the $\alpha$'s for 256, 512, 1024 and 2048 cps, taken to the nearest even 5 per cent. Values of NRC are given in bulletins on acoustic materials.

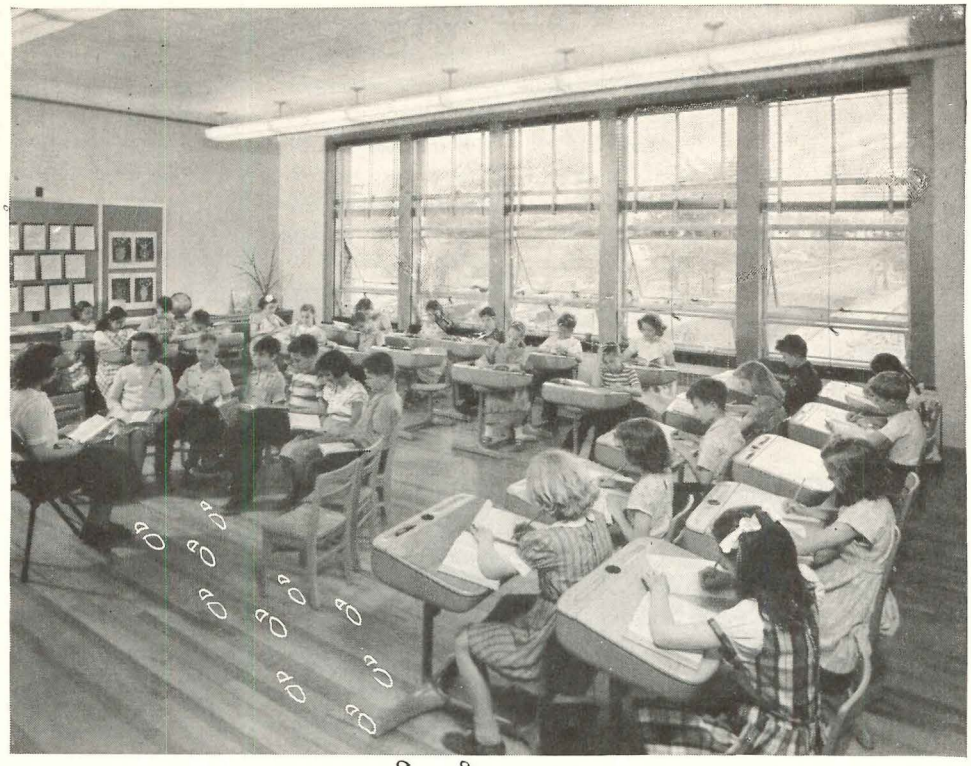
Frequencies for averaging TL values are less standardized. Many references give averages for "low frequencies" and "high frequencies"; or for three frequency bands. In this article *average TL* is the average from 128 to 2048 cps incl.

### *Sound insulating properties of structures**

We are now ready to discuss sound insulation of general and particular structural components, in terms of the average TL defined above. As long as the noises involved are of the common kinds encountered in buildings (traffic noise, speech, office machines, mechanical equipment, etc.) we need consider only this Av. TL and its effect on average sound levels.

* *cf. Noise Reduction in Dwellings, A. London,* Architectural Record, *October 1949.*

(*Continued on page 258*)



Junior High School, South Euclid, Ohio. Architects: Charles Bacon Rowley & Associates, Inc., Cleveland; General Contractor: Leo W. Schmidt Company, Garfield Heights, Ohio.

*by the square foot or by the million footsteps*

**—there's no floor value like**

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***BEECH AND BIRCH***

## ACOUSTICS

(*Continued from page 256*)

In Fig. 3 several types of walls, floors and panels are illustrated and are arranged according to their transmission loss values. In general the TL increases as the barrier becomes heavier and more complex. Unfortunately the cost also generally increases, so that economic compromises often become necessary. When high insulation is required, a variety of possible alternate solutions should be explored, with detailed and reliable information on sound insulation values.

A homogeneous wall increases in TL as its weight increases. The average trend is shown in Fig. 4; the solid line gives the mean value and the dashed lines give the range within which most homogeneous walls lie. The slope is about 50 db increase for each doubling of weight. Above about 50 db the single wall reaches diminishing returns in db per dollar, and it becomes more economical to split the wall into two or more independent leaves.

Thus, splitting a plastered 8 in. cinder block into two 4 in. leaves separated by a 4 in. air space gives about 55 db, which is about 8 db more than would be obtained from a solid, plastered cinder block of the same weight. Even if total thickness, instead of total weight, is the imposed limitation it will usually be possible to get higher TL in a split wall than in a single one.

Stud constructions, with wood or plaster facings, have similar properties. As long as the two faces are rigidly tied together, the TL follows the general weight law. But if the two faces are structurally separated, on separate rows of studs or on resilient mounts, the TL increases beyond that expected from weight alone.

In all cases, the values indicated in Figs. 3 and 4 will be obtained only if the wall is completely tight against air leaks. Thus, porous blocks are poor insulators when unfinished, but insulate more or less according to their weight when the faces are well sealed by plaster (see cinder block examples in Fig. 3). Any cracks which develop in a wall greatly reduce its insulation value.

The common practice of referring to porous sound absorbing materials as "sound insulation" has led to much misunderstanding. Such materials are almost transparent to sound; by themselves their TL is no more than 5 or 10 db. In some cases these porous materials are useful in the space between lightweight faces of a double wall, where the few db they add might bring the wall up to a required value. But between heavy leaves of masonry the additional gain from an absorptive blanket is negligible.

These brief considerations of sound insulating properties, and the associated figures, constitute only a general introduction to aid in visualizing the principles involved. In any particular problem one should refer to more specific information.

Also, the present article has not dealt with insulating properties of doors, windows and associated details; or with the many tricks and special products that can be used to enhance the insulating properties of structures. Other important subjects omitted include noise control of ventilating systems, effects of structure-borne vibration and impact generated noise, and vibration mounts and special housings to control noises from mechanical equipment at the source. These are all topics for a subsequent article.

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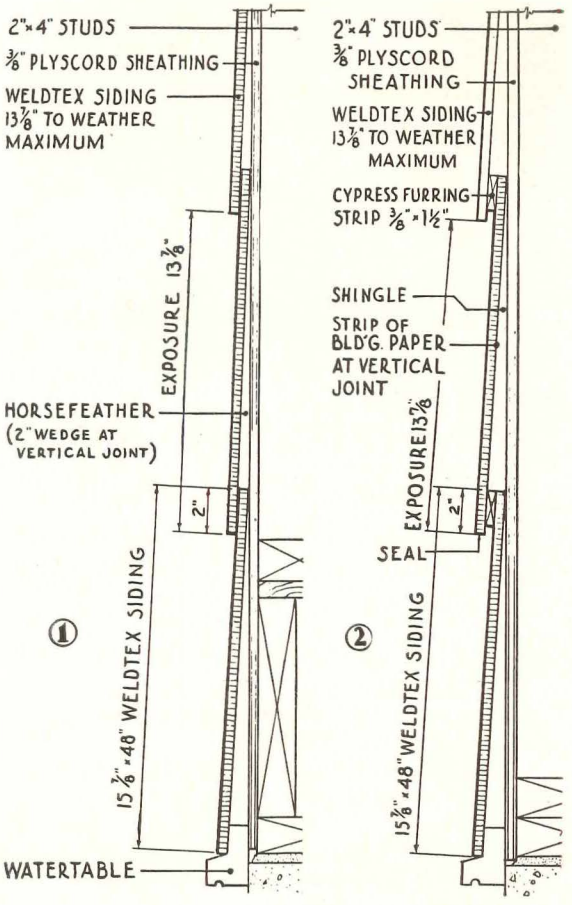


*Detail 1 shows normal installation of Weldtex Siding. Detail 2 shows how simply and easily you can fair out the butt of the board to create a deeper shadow line, when desired.*

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**PRODUCTS**
(*Continued from page 170*)

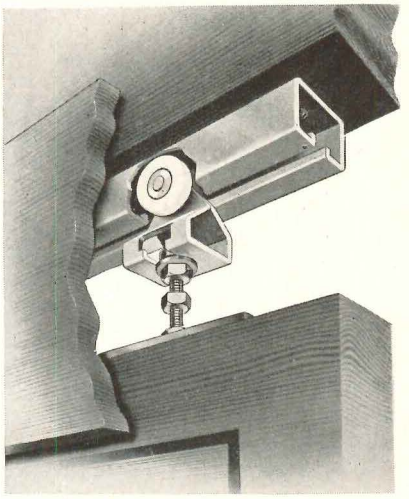
### *Electrically Conducting Glass*

The new *Corning E-C Glass* reportedly has a transparent skin that conducts electricity, but resists enough to heat the glass up to 660 F. This skin is said to be a metallic oxide, about 16 millionths of an inch thick, applied to the glass at a high temperature. It is claimed to be more resistant to scratching or to chemicals than the glass itself. The glass can produce a wide range of temperatures depending upon the resistance of the film and the power of current used. The base material is the heat resistant *Pyrex* brand borosilicate glass. Specific articles will be sold under the Pyrex trade-mark.

Currently, a coffee percolator and radiant heaters are being made. The latter are primarily for industrial use. Future additions to the line may include such items as household appliances, water heaters, resistors, combination heating and lighting units, heat exchangers, and various types of space heaters and driers. Corning Glass Works, Corning, N. Y.

### *Sliding Door Hardware*

The *Grant Silent Sliding-Door Hardware Series* feature nylon outer race ball bearing rollers to prevent noise transmission. There is said to be no metal to metal contact between stationary and moving hanger parts. The use of nylon is also claimed to assure longer track life.



*Nylon rollers allow smooth, noiseless operation of sliding door hardware*

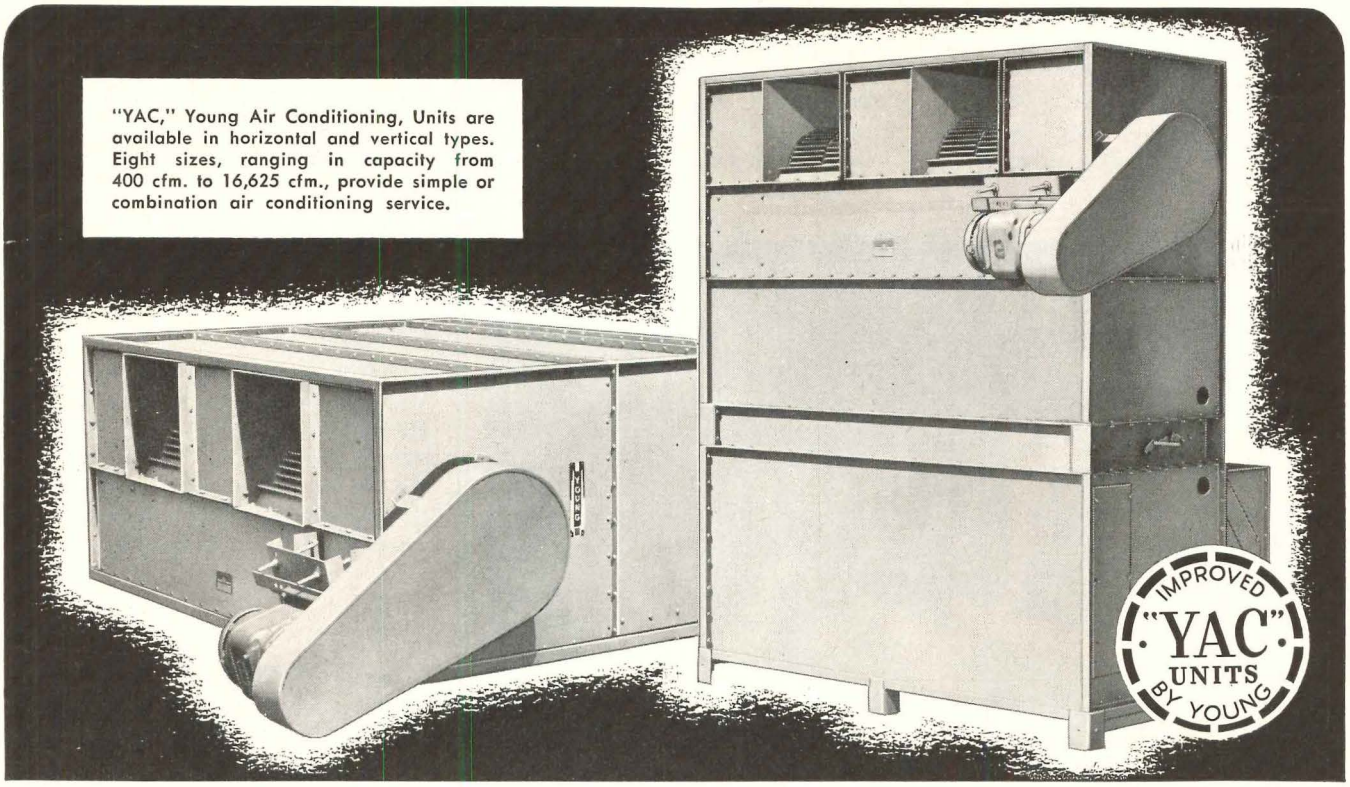
There are two models available in the line: the *No. 1600* single track series for center-hung interior doors and bi-parting closet doors up to 1⅜ in. thick, and the *No. 1700* double track series for bi-passing doors. Three adjustable hanger types are offered. Minimum headroom requirements are said to be necessary for the installation of the hardware. Grant Pulley & Hardware Co., Broadway at 57th St., Woodside, N. Y.

### *Automatic Clothes Washer*

The *Westinghouse Model L-5 Laundromat* features a built-in scale mechanism in the loading door to show the user the correct amount of hot water and soap needed to wash a given load of soiled clothes. The weight indicator for the scale is on the slanting front panel of the washer and has markings to correspond with the settings of a water control.

(*Continued on page 262*)

# Get Any Service Combination With YOUNG AIR CONDITIONING UNITS

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PRODUCTS
(*Continued from page 260*)

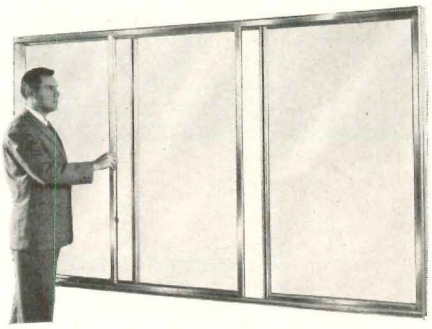
The latter varies the amount of water from 16 to 26 gal. An additional control dial determines water temperature and washing time. The machine automatically fills itself with water, washes, triple-rinses, spins garments to dry, cleans and drains itself, and shuts off. A new type snubber shoe is used to absorb vibration. The unit is powered by a 60-cycle, 115-volt, a-c motor, which is said to be lubricated for life. A limit control switch shuts the machine off under severe unbalanced load conditions. Westinghouse Electric Appliance Div., Mansfield, Ohio.

### *Apartment-Size Range*

The small *Perfection Gas Range, Model 920*, was designed for use in apartments and small homes. The unit is equipped with one large and three standard size burners and an automatic lighter. The burner tray is said to be deep and easy to clean, the burners non-clogging. The roller drawer-type broiler has a special smokeless grid. The 16-in. oven features full insulation, non-tip oven racks, and automatic heat control. The range is adaptable for use with any type gas. Perfection Stove Co., 7609 Platt Ave., Cleveland 4, Ohio.

### *Horizontal Sliding Windows*

The *Peterson Aluminum Window* combines an integral frame and fixed sash, with a sliding sash which is supported on two stainless steel rollers to open horizontally. There are said to be no sash balances, concealed sash springs, operating cranks or projecting hinges. Installation is claimed to be very simple, with no puttying or painting required. A high pile, woven weatherstrip is used to reduce friction, metal to metal contact and scratching. Sliding panels lift out for washing inside the room. Plastic screens cover the ventilating portion of the window. Storm sash panels are said to be easily installed in the aluminum extruded section from inside the room.



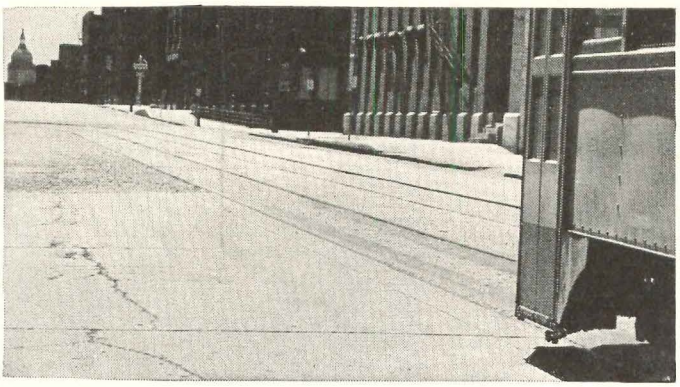
*Center panel of packaged aluminum window slides open, uses no cranks or springs*

A stainless steel plunger-type lock with friction control is used to secure the window in a closed position. The windows are available in a wide variety of standard and special styles and sizes. Peterson Window Corp., 20500 Mound Road, Detroit, Mich.

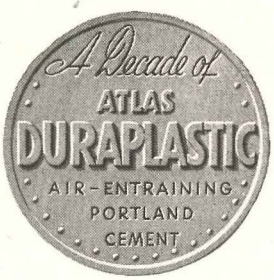
### *Refrigerator With Self-Sealing Magnetic Doors*

A new *General Electric* two-door combination refrigerator and freezer features self-sealing magnetic doors. Plastic door gaskets lined with 1-in. Alnico magnets are said to allow the doors to close almost without a sound, and to form a tight, uniform seal with

(*Continued on page 264*)

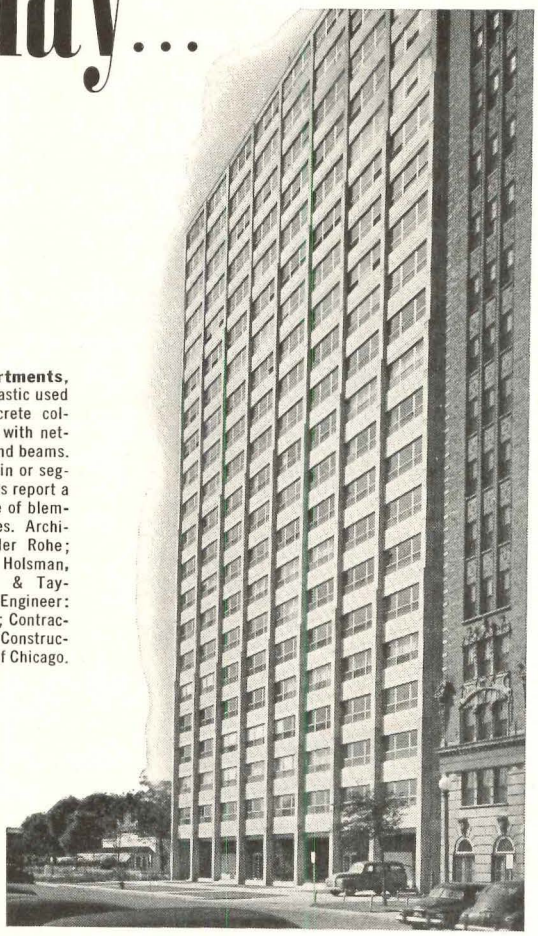


# Ten Years Ago...




this test paving was laid in Minneapolis—the first commercial use of Atlas Duraplastic air-entraining cement. Badly scaled background section was made with regular cement. Foreground concrete was laid at the same time with Duraplastic. Here are both sections, photographed ten years later, after ten severe winters, heavy applications of de-icing salts and many freezing-thawing cycles—convincing proof of Duraplastic concrete's lasting durability. Longitudinal structural crack shows some raveling. Note perfect transverse joint.

# Today...



**Promontory Apartments,** Chicago, Ill. Duraplastic used throughout in concrete columns 12 feet deep with network of steel bars and beams. No sign of water-gain or segregation. Contractors report a smooth surface free of blemishes or air bubbles. Architects: Mies van der Rohe; Pace Associates; Holsman, Holsman, Klekamp & Taylor; Structural Engineer: Frank J. Kornacker; Contractor: Peter Hamlin Construction Company—all of Chicago.

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That first test paving began a new era in concrete construction. As successful installations with Atlas Duraplastic have multiplied, so have the number of engineers and contractors who rely on its extra durability and improved performance for structural work. An outstanding example is this new apartment building, designed for simple beauty, constructed with Duraplastic by the most modern, economical methods.

Over the last ten years, Duraplastic's advantages have been applied to all types of mass and structural concrete—for foundations, walls, columns, and floors. It's ideal for slip-form, gunite, stucco and similar uses.

With Duraplastic, less mixing water is needed 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 has higher resistance to the effects of weather-exposure.

For structural concrete needs of today and tomorrow, Duraplastic offers better concrete at no extra cost. It 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.

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**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.*

AR-D-103

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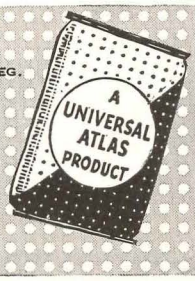


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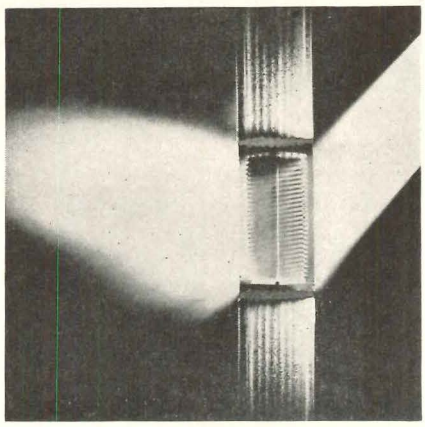
**PRODUCTS**
(*Continued from page 262*)

the cabinet. The fresh-food compartment door is said to close by itself when leveling screws under the front of the refrigerator are adjusted so that it is tilted slightly backwards. Both doors are opened by a slight pull on the handle. The fresh-food compartment is also equipped with a foot-pedal door opener. Other features include an improved ice-cube tray and a new rubber wheel mounting for fruit and vegetable drawers. The refrigerator will be available in 8- and 10-cu-ft models. Appliance & Merchandise Dept., General Electric Co., Bridgeport 2, Conn.

### *Light-Directing Glass Block*

*Insulux Light-Directing Glass Block No. 363* is claimed to accept more daylight under many conditions which were formerly considered unfavorable, and to diffuse daylight more uniformly to all portions of the room. A major portion of the available daylight is said to be directed toward the ceiling from where it is reflected downward onto work surfaces. The glass block, especially designed for school classrooms, is said to offer little surface glare when viewed from below normal eye level. This daylight control is accomplished by the addition of "azimuth-correcting" ribs on the outside and inside faces of the block; prisms on both inside faces direct the light upward. For use below eye-level, a companion block, *No. 365*, diffuses light in the vertical and horizontal planes. American Structural Products Co., Box 1035, Toledo 1, Ohio.

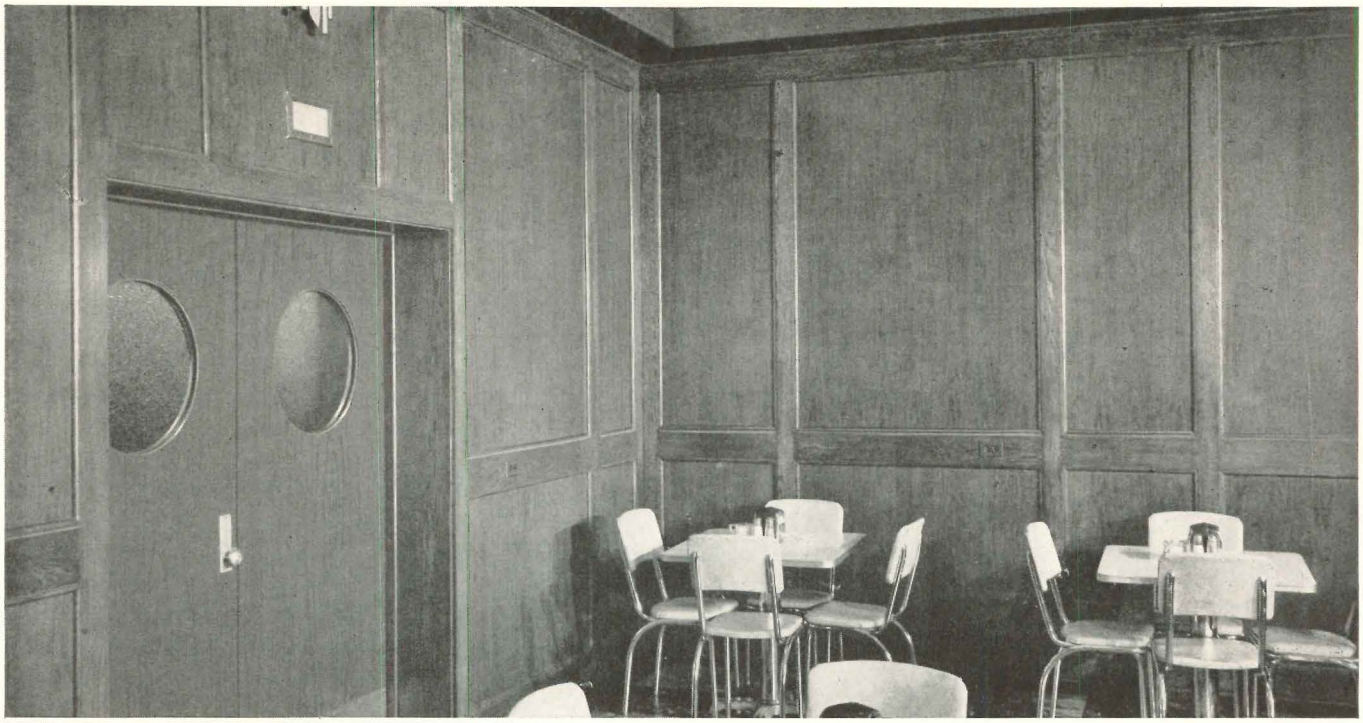


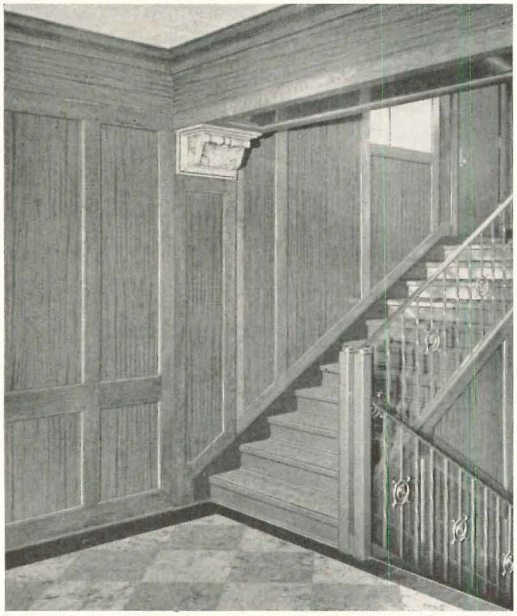
*Ribbed glass block diffuses light toward ceiling. Light source shown at right*

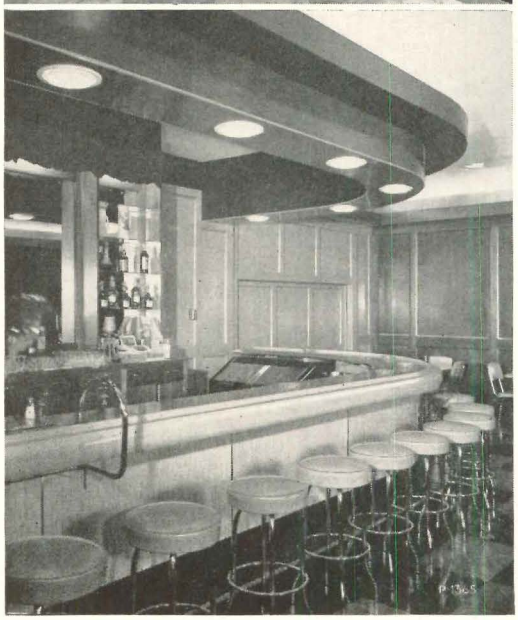
### *Aluminum Screen Frame*

The *Kaiser Aluminum Screen Frame* is claimed to have a very neat appearance, and exceptional strength and ease of assembly. The frame may be used with shade screening or conventional wire cloth screen. It is assembled from framing sections measuring $1\frac{5}{16}$ in. wide by $\frac{6}{16}$ in. thick; trim cover sections; and cast aluminum corners. Frame and trim sections are roll-formed from aluminum alloy. The trim cover slips over the spline and the selvage edge of the screening, and is held by grooves in the reverse of the frame section. No screws are said needed for assembly. With shade screening, the spline is used only at top and bottom. The cast aluminum corners, providing strength and rigidity, are held in frame sections by dimpled indentations. Sections for the frame are supplied in 15-ft lengths. Mullion assemblies, consisting of brace and cover, are available for very large windows. Kaiser Aluminum & Chemical Sales, Inc., 1924 Broadway, Oakland 12, Calif.

(*Continued on page 266*)







# "New Marlite Patterns perfect for matched panel work"

*—says registered architect* ***Charles J. Marr,***
*past president, architect's society of ohio*

"For the striking new Elk's Club at New Philadelphia, Ohio, we specified Marlite Wood Patterns for stairways, auditorium, ladies' lounge and cocktail bar. Faithfully reproducing the beauty and grain of fine selected woods, these versatile plastic-finished wall and ceiling panels provide a permanent surface that will eliminate costly periodic painting and redecorating—mighty important to *any* customer."

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*Interiors in the beautiful new Elk's Club, New Philadelphia, Ohio, showing decorative possibilities of Marlite Wood Pattern wall panels.*

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WALL PANELS

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FOR CREATING BEAUTIFUL INTERIORS

PRODUCTS
(*Continued from page 264*)

### *Interlocking Building Block*

*Hydro-Forged Stone* building block is said to resemble cut stone, granite or marble, and is made in a patented tongue and groove design within tolerances of five one-thousandths of an inch. When laid, these moulded stones are claimed to lock snugly into each other to form a wall of high strength. In order to insure against seepage of moisture, a mastic material, applied with a hand-operated gun is spread on the grooves as the blocks are assembled. No mortar is necessary.

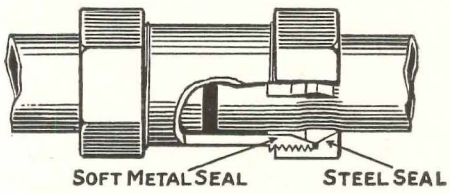
The blocks are made from a number of materials, many of them normally considered waste. These include sand, oyster shells, iron ore waste, crushed brick, coal mine tailings, stone dust, flue ash and pumice. Solid colors or veined appearance may be achieved through the process of mixing the ingredients. No further finishing is said to be required.

The standard block measures 8 in. wide, 4 in. high and 16 in. long. They are hollow in the center, providing dead air space for insulation. The blocks are formed on a specially designed hydraulic press under 150 ton pressure, and are said to be accurate and uniform. Cost of materials and labor for erection is claimed to be less than for concrete block. Hydro-Forged Stone Associates, Inc., 434 Bulkley Bldg., Cleveland, Ohio.



### *Threadless Pipe Fittings*

*Threadless Union Fittings* were designed to rigidly connect black or galvanized pipe, new or used, without any threading of the pipe ends. Installation is claimed to be quick and simple, with no need for pipe cutters, threading dies and other special tools; a hack saw and a monkey wrench are all that is required. The fittings are of steel with soft metal seals, manufactured in tees, couplings and elbows for use with ½ in. to 1½ in. pipe. To break into an existing line with the fittings, it is said to be necessary only to cut the line with a hack saw, part it ½ in., slip on a tee and tighten the sealing nuts. No removal of pipe is necessary. The units are said to be tested to pressures exceeding 2000 psi. Union Products Co., 54 S. Third St., Minneapolis 1, Minn.




*Threadless union simplifies installation and repairing of pipes and plumbing*

### *Sidewalk Snow Melting System*

Sidewalks around the new office building at 100 Park Avenue, New York City will have snow melting coils. Panels of ¾- and 1¼-in. steel pipe coils were embedded in the concrete sidewalk slabs. These are warmed by a mixture of prestone and water heated to 180 deg by steam in a closed system. Foam glass insulation and a vapor seal of tar

(*Continued on page 268*)

# Build Smokeless FIREPLACES without unnecessary supervision!

### *Compact Heatilator* Unit insures correct construction*

With the growing shortage of skilled masons, are you spending too much time supervising fireplace construction?

Use a Heatilator Fireplace Unit, and insure a fireplace that draws properly and will not smoke.

The Heatilator Unit is a complete fireplace from hearth to flue, around which the decorative masonry is built. It consists of:

1. *A scientifically designed firebox*
2. *A properly proportioned throat to insure proper draft*
3. *A removable damper with adjustable poker control*
4. *Extra wide down-draft shelf made of heavy steel*
5. *Complete metal smoke dome to speed passage of smoke into chimney*

By providing these parts in one compact form, with no extra parts to buy or build, the Heatilator Unit permits unsupervised construction. It eliminates guesswork and other causes of failure.

### *Costs little, if any, more than ordinary fireplace*

Because the Heatilator Unit is ready to install, it saves mason time and labor. It saves on expensive firebrick. *Thus, a completed Heatilator Fireplace costs little, if any, more than an ordinary fireplace!* In addition to this original economy, your client can count the dollars-and-cents savings of smokeless, trouble-free operation.

### *Heatilator Unit ups fireplace efficiency*

The Heatilator Fireplace draws in cool air from floor level, heats it, and circulates it to every corner of the room, and to other rooms as well. On cool Spring and Fall days, this use of heat ordinarily wasted makes furnace operation unnecessary. In mild climates, it is the only heating equipment needed. It saves the cost of expensive heating plants that are used only a short time each year.

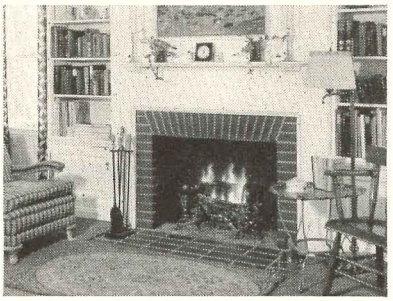
Heatilator Fireplaces are ideal for summer camps and cabins, making them usable weeks longer in Spring and Autumn. It solves the heating problem in basement recreation rooms without unsightly pipes and radiators. Heatilator Units, made of boiler plate steel, are built for a lifetime.

A Heatilator Fireplace permits any architectural style and the use of any material. The air intake and outlet grilles are easily placed to blend with the general design. When the mantel projects, the grilles are out of sight. If the mantel is flush, the intakes can be placed in baseboards on either side of the hearth . . . outlets high above mantel, in ceiling, or in an upstairs or adjacent room.

Give clients the advantages of a Heatilator Unit.

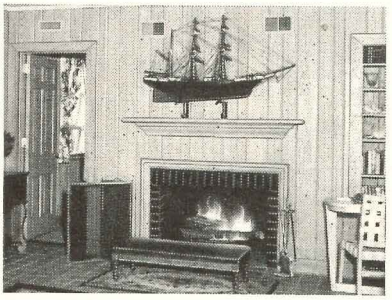
*Heatilator is the reg. trademark of Heatilator, Inc.

## HEATILATOR UNITS ADAPT THEMSELVES TO ANY DESIGN

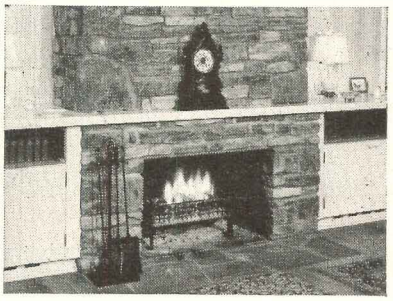


*A Colonial Fireplace built around a Heatilator Unit. Warm-air grilles are located in the bookshelf sides.*

*Classic design, with the modern advantages of a Heatilator Fireplace Unit. Grilles are located at sides.*

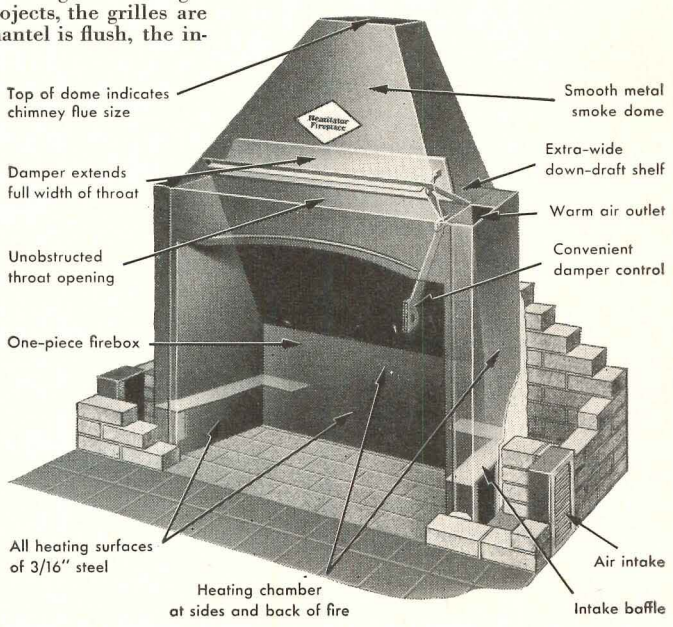


*A Heatilator Fireplace is the only heating equipment needed for many Florida homes, like this one.*



*The grilles in this Northern fieldstone fireplace are hard to find. An example of ingenious design.*

Write today for complete information and illustrations showing the variety of architectural styles possible with Heatilator Fireplace Units. Heatilator, Inc., 616 E. Brighton Avenue, Syracuse 5, N. Y.




HEATILATOR
T.M. REG. U.S. PAT. OFF.
*America's Leading*
FIREPLACE

**PRODUCTS**
(*Continued from page 266*)

mopped over a layer of tar paper were used beneath the slabs. Steel pipe was said to have been used because it is economical, forms easily, welds soundly, and its expansion and contraction, for all practical purposes, may be considered the same as concrete. American Iron & Steel Institute, 350 5th Ave., New York 1, N. Y.

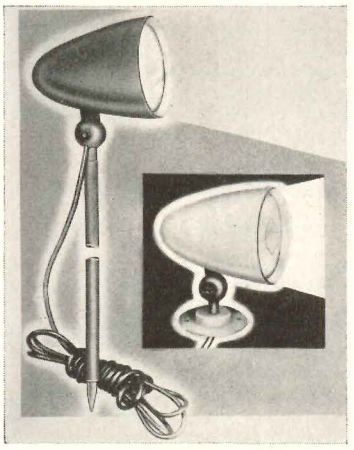
### *Underground Conduit Insulation*

Designed for insulating underground conduits for steam lines, The *Z-Crete* system forms a solid covering of water repellent insulation which provides both the insulating medium and the necessary structural conduit in the same operation. This insulating concrete is cast in place on the job, with no structural joints or voids, and is composed of Portland cement, vermiculite aggregate, waterproofing admix and water, entirely wrapped in a waterproof envelope of three moppings of hot pitch and 2 layers of tar-saturated felts. The Z-Crete is said to be a resilient material, similar to dry wood, which can be sawed or worked with ordinary hand tools. It can be formed after all piping operations have been completed, and supported on Z-Crete blocks at suitable spacings. It is said not to be necessary ordinarily to provide for drainage. The Zonolite Co., 135 S. La Salle, Chicago 3, Ill.

### *Outdoor Floodlights*

A new line of low cost outdoor floodlights, called *Moldcast*, have been introduced in aluminum alloy, finished in Lawn Green or Baked Aluminum outdoor enamels for house or garden use, or in natural aluminum for industrial use. The simple, bullet-shaped housings extend beyond the bulb for protection of the lamp, and are said to be weatherproof and corrosion resistant.

The home line includes a stake-mounted unit, a plate-mounted unit, and two additional types for permanent wiring installations. Extensions are available for the stake-mounted flood, so that the light can be brought up to a height of 12 ft.



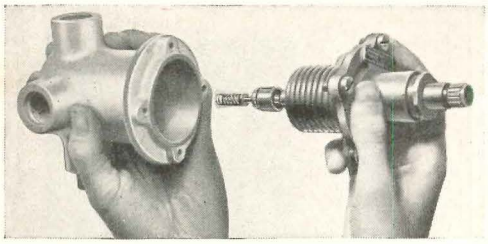
*New floodlights are available with either stake or plate mountings for outdoor use*

The commercial or industrial line features two units with and without cover plate for permanent wiring installations. Par-38 bulbs, either flood or spot, are recommended for use with the floodlights — they are not supplied with the original units. Moldcast Products, Inc., 68 Clifford St., Newark, N. J.

(*Continued on page 270*)

Bathers can really relax and enjoy a Powers regulated shower. No danger of scalding. No unexpected temperature changes

# THE KEY TO SAFE SHOWERS

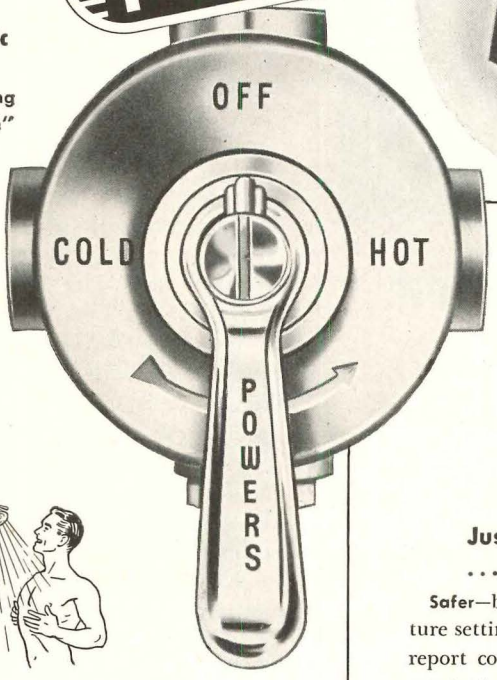


ONLY ONE MOVING PART—SIMPLICITY and durable construction insure many years of efficient carefree operation. Mixer body is made of bronze and parts subject to wear have a hard chromium finish.

POWERS

**TYPE H Thermostatic MIXER**

For exposed piping
Dial diameter 3¼"




## *Thermostatic* SHOWER MIXERS

***they are SAFE against scalding caused by***

**1 PRESSURE *or* 2 TEMPERATURE**

***fluctuations in water supply lines***

**Just what every shower user has always wanted! ... the perfect showers assured by POWERS mixers.**

**Safer**—because of their quick acting response to any change in temperature setting, pressure or temperature variations in water supply lines. Users report control within ½°F. **Greater Comfort**—shower temperature remains constant wherever set. No jumpy temperatures. **More Economical**—POWERS thermostatic mixers promptly deliver showers at just the right temperature . . . no waste of time, hot and cold water.

For new installations or when modernizing obsolete showers . . . play safe, use Powers type H thermostatic shower mixers. May we send Circular H-48?

**CHICAGO 14, ILL., 2752 Greenview Ave. • NEW YORK 17, N. Y., 231 E. 46th St.**
**LOS ANGELES 5, CAL., 1808 W. Eighth St. • TORONTO, ONT., 195 Spadina Ave.**

49HK

**THE POWERS REGULATOR CO.**
**OFFICES IN 50 CITIES • SEE YOUR PHONE BOOK**
***Over 55 Years of Water Temperature Control***

For modern showers the Safety of Powers Mixers is indispensable

Safest for use by children, the aged or infirm.

PRODUCTS
(*Continued from page 268*)

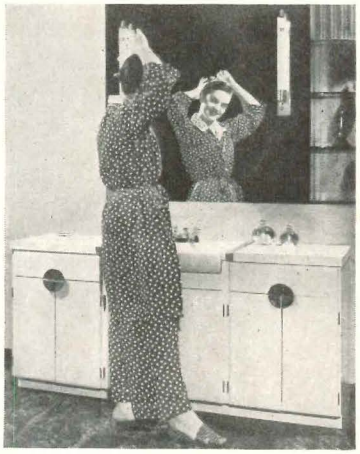
### *Carpeting*

The new *Couturier* nylon carpets feature three relief design elements and plain carpeting, which may be custom-tailored to individual design specifications. The three random patterns are called Elipse, Leaf and Chinese Cloud. They are woven in 27- and 36-in. widths, and have a 36-in. repeat. No allowance is said to be necessary for matching.

The carpeting is available in 10 colors. Any combination of these is available for the patterns. The plain carpeting comes in 15-ft, 12-ft, 3-ft and 2-ft-3-in. widths. The pattern strips and wider widths of plain carpeting may be divided into various widths for the desired tailoring. The nylon is said to be long wearing, easy to clean or wash, soil resistant, non-inflammable and moth proof. Nye-Wait Co., Inc., Auburn, N. Y.

### *Lavatory-Dressing Table*

The trim *Dresslyn* combination lavatory and cabinet unit is designed to provide extra bathroom storage space, and counter tops to flank the flush mounted, roll front lavatory. The unit is manufactured in two styles: a closed front model with 2 drawers and 3 storage cabinets; and a variation which has a knee-hole vanity section replacing one of the storage compartments. The lavatories may also be purchased separately for single or dual installation in custom-built counters. Two sizes are available.



*Treated-hardwood cabinet provides counter and storage space for built-in lavatory*

The standard cabinet models are 31 in. high, 16 in. wide, and either 58½ or 62¼ in. long, depending on the lavatory size. A stainless steel union strip is said to form a water-tight seal between lavatory and counter. Bowl and cabinets may be had in a variety of colors. The cabinets are made of treated hardwood, which is reported to be moisture resistant. Counter tops come in a variety of plastics. American Radiator & Standard Sanitary Corp., Bessemer Bldg., Pittsburgh 22, Pa.

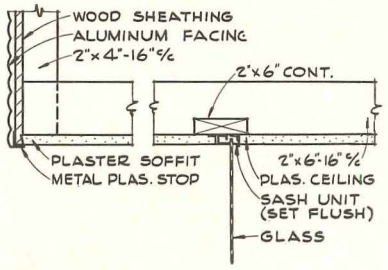
### *Rubber Emulsion Paint*

*Satin Luminall* paint, formulated with synthetic rubber, is said to dry in 20 minutes, and to cover interior surfaces with one coat. It can be washed with soap and water 30 days after application. The rubber emulsion paint thins with water, one quart per gallon of paste emulsion, and can be applied with brush, roller or spray to painted or unpainted surfaces, plaster board,

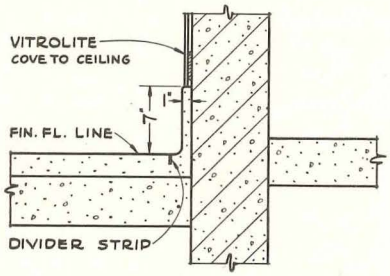
(*Continued on page 272*)

# DETAILS FOR YOUR STOREFRONT FILE

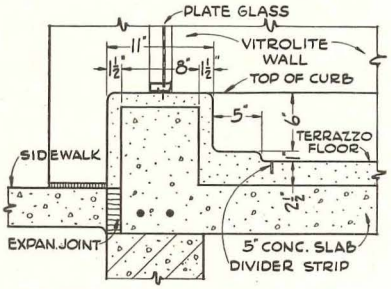
VISUAL FRONT



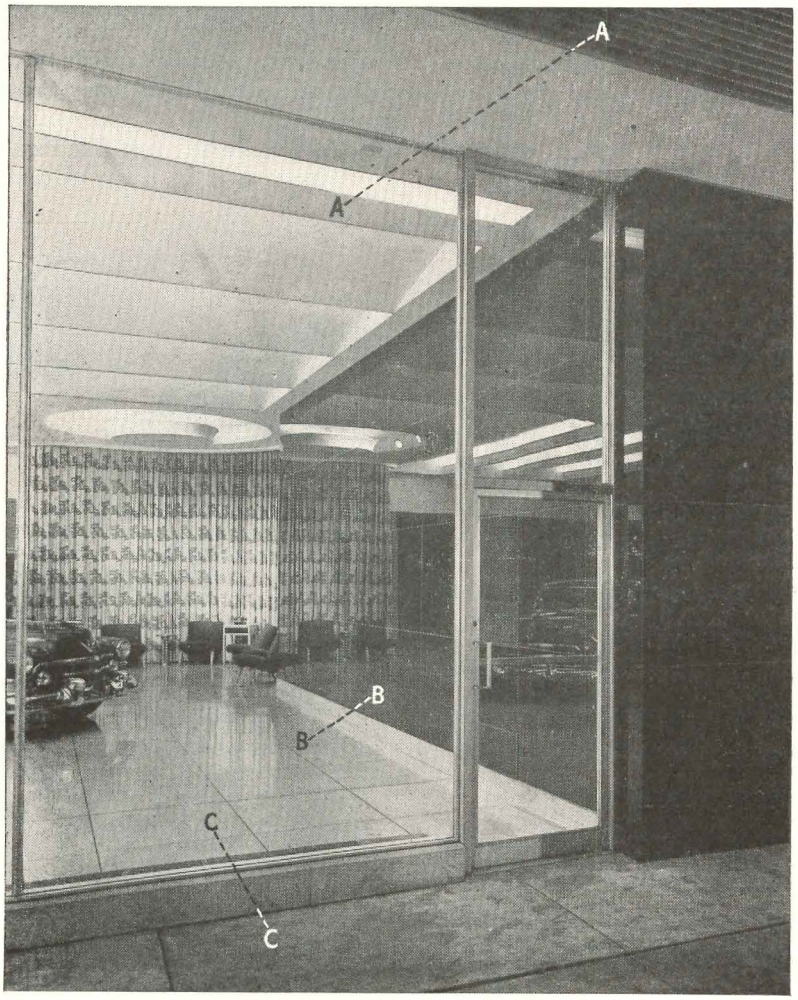

A-A Canopy and window head.



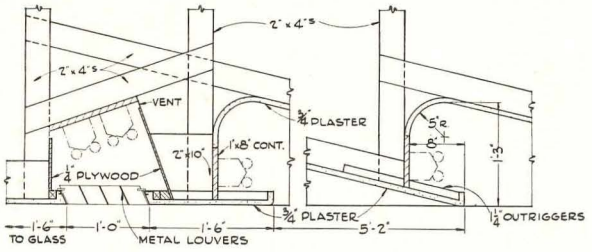

B-B Base, showing *Vitrolite* wall.




C-C Bulkhead. Plate glass extends along bulkhead to *Vitrolite* wall.




Architect: Karl B. Hoke, Toledo




Ceiling

Lighting

Details

INVITATION TO ENTER. The principle of the Visual Front—to make it easy for people to see into a store—is effectively carried out in this auto showroom. Clear Plate Glass is used expansively to permit a full view from many angles.

The large window is butted against a mahogany *Vitrolite** wall. Note that the *Vitrolite* extends back through the plate glass window. This carries the eye inside, creating an illusion of being inside the showroom even when outside. *Vitrolite* adds a wall of color that doesn't fade—doesn't need refinishing.

Write for our Visual Fronts book, which explains many interesting uses of glass in storefronts.

*®

**LIBBEY • OWENS • FORD**

6665 Nicholas Building, Toledo 3, Ohio

**PRODUCTS**
(*Continued from page 270*)

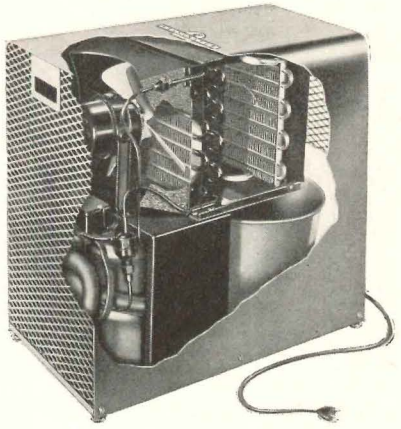
wall board, plaster, concrete, primed wood and metal. A gallon of paint is said to cover up to 700 sq ft on previously painted surfaces. It is available in 20 standard colors, and is claimed to be non-inflammable and non-toxic. Luminall Paint Div., National Chemical & Mfg. Co., 3617 May St., Chicago 9, Ill.

### *Mechanical Curtain Operator*

A tiny, fully-enclosed electrical motor, the *Vallen Midget Curtain Operator*, has been developed for home use to move large or heavy curtains along a special heavy duty, double track. The motor is actuated by a push button which may be located at any convenient spot. Draperies may be stopped while traveling in either direction and may also be reversed at any point of travel. Once installed, the operator is said to require no further attention, and to insure tautness of the cable at all times. A built-in protective device is claimed to prevent the possibility of fire or damage to the motor or drapery. Operation is reported to be silent and smooth, and permits an overlapping of the drapery at the center for privacy. Vallen, Inc., Akron, Ohio.

### *Electric Air Drier*

The compact *Kelvinator Electric Air Drier* is produced for either household or commercial use in closed areas where excess moisture may cause discomfort or property damage. The unit is also said to cause faster drying of clothes and rapid dehumidification of home laundries overloaded with moist air. The air drier is made of steel, finished in gray enamel. It measures 12½ in. wide, 20⅛ in. high, and 21¾ in. long. It may be connected to any 115-volt a-c electrical outlet. Major parts of the unit are a refrigerated drier coil, finned condenser, sealed refrigerating unit, fan and motor and removable 10-qt water container. A hose connection to a remote drain may be employed if facilities permit. Kelvinator Div., Nash-Kelvinator Corp., 14250 Plymouth Rd., Detroit 32, Mich.



*Compact new air drier will operate on any standard 115 volt electric outlet*

### *Metal Louvers*

A new system of industrial and commercial building louvers, called *Airlouver*, is claimed to have extreme sturdiness to resist the distortion effect of heavy air flow conditions. The heavy duty frame and overlapping blades, said to be weather proof in both open and closed positions, are fabricated in sizes ranging from 11⅞ by 12 in. to 74¾ by

(*Continued on page 274*)

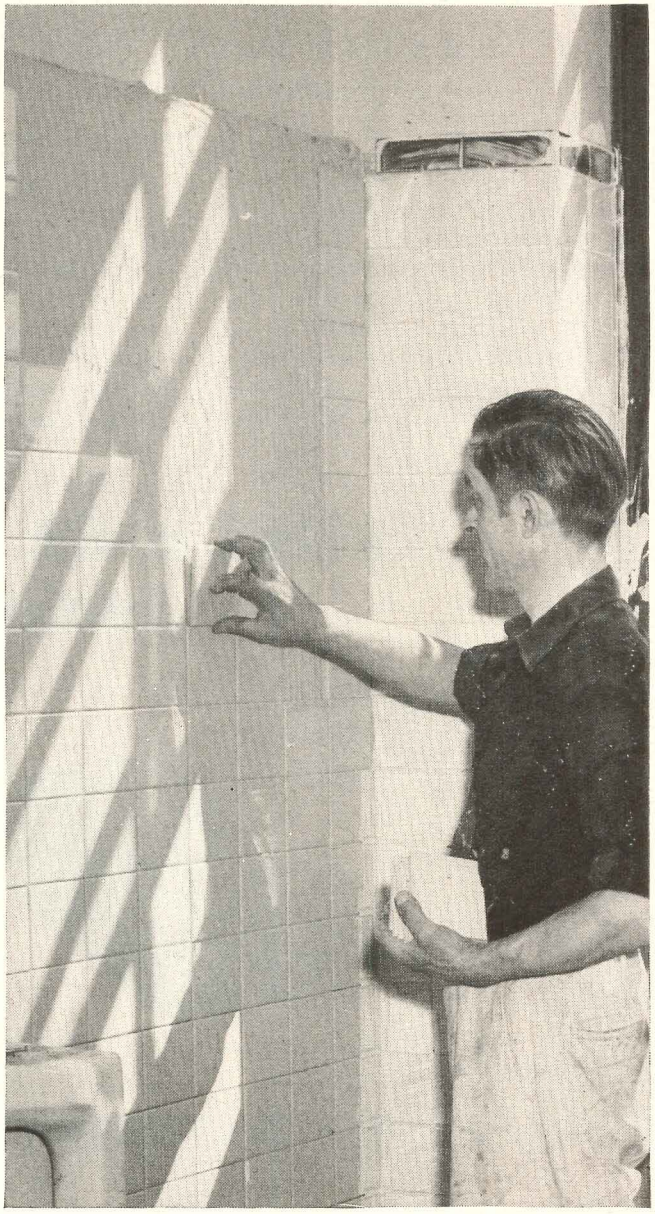
# Specify savings—specify adhesive-set clay tile!

**3M Ceramic Tile Adhesive goes on any dry-wall foundation**

Where do clay wall tile take more of a beating than in a school washroom? More repeated washings? More punishment than from sky-larking school kids?

The architect on the remodeling of the Cedar Knolls School, Cedar Knolls, N. J., had these service conditions in mind when 3M Ceramic Tile Adhesive was used in the washrooms.

He specified "3M" knowing that this synthetic rubber base, oil-free adhesive remains resilient to absorb shock and impact—no save-at-any-cost substitute but a quality product, worthy of the finest building.



**FLOATING TILE** on walls with 3M Ceramic Tile Adhesive, Cedar Knolls School. Tile can be set faster; there's less cleanup needed than when mortar is used—further savings which enable the contractor to quote for less.

**QUALITIES YOU GET WHEN YOU SPECIFY 3M CERAMIC TILE ADHESIVE**

**VERSATILITY**—Brown coat or putty coat plaster, plasterboard and plywood are suitable foundations for adhesive-set tile, *even in shower areas.*

**STRENGTH**—Adhesive test bonds resist shear forces up to 190 psi; *still are not totally destroyed.*

**LASTING RESILIENCY**—3M Ceramic Tile Adhesive is a synthetic rubber base adhesive *which contains no oils to dry out.*

**WRITE TODAY** for full information on this and other cost-cutting, quality 3M Building Adhesives—for all types of wall and floor covering materials.


Made in U.S.A. by MINNESOTA MINING & MFG. CO., ADHESIVES AND COATINGS DIV., 411 Piquette Ave., Detroit 2, Mich. Also makers of "Scotch" Brand Pressure-sensitive Tapes, "Scotch" Sound Recording Tapes, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-Slip Surfacing, "3M" Abrasives. General Offices: Saint Paul 6, Minnesota. General Export: Durex Abrasives Corp., New Rochelle, N. Y. In Canada: Canadian Durex Abrasives, Ltd., Brantford, Ontario.

**PRODUCTS**
(*Continued from page 272*)

48 in. By varying the number of blades used, and cutting the frames to suit width requirements, it is claimed that any size wall opening can be fitted with a pattern of equal-size units. The louvers are made in adjustable and fixed types, the former operated by any of several optional methods. Galvanized steel is the standard material used, but fabrication can be of copper, aluminum, monel or A.P.M. The Swartwout Co., 18511 Euclid Ave., Cleveland, Ohio.

### *Window Sills*

*Bettinger* porcelain enameled steel window sills have been developed to provide an acid-resisting permanently finished sill for bathrooms and kitchens. The units can be produced in almost any color desired and according to any specification. The manufacturers claim that they can be fabricated in virtually any size or shape. Features cited include economy, strong fade-proof colors, and resistance to weather and stain. The company provides personalized service in the production of standard porcelain enamel materials or step-by-step development of new applications. Bettinger Enamel Corp., Waltham, Mass.

### *Electric Clothes Drier*

The low-voltage tumble-action *Frigidaire Drier, Model TJ-61*, is said to operate on 115 volts as a plug-in appliance for any standard household electrical outlet, eliminating the extra cost of installation in homes not having 220-volt systems. The manufacturers claim that such a drier became practicable as the result of high water extraction efficiency afforded by the high-speed tub spin of the Frigidaire clothes washer, companion product to the drier. The unit is housed in a counter height cabinet, and includes a timer, 1400 watt, 115 volt heating element, appliance cord, and a revolving drum for tumbling clothes dry. Frigidaire Div., General Motors Corp., 300 Taylor, Dayton 1, Ohio.

### *Light-Weight Roofing*

The *Aluma-Life Roof* utilizes aluminum foil between cotton gum base layers, and a finish coating of light-colored marble or granite chips to form a roofing that is said to be lightweight, lifetime, hail-proof, hurricane-proof, insulated and fade-proof. The roofing is designed for bonding directly to wood sheathing, and is claimed to have excellent fire-resisting qualities. Insulating values are derived from the reflective qualities of the aluminum foil and the

(*Continued on page 276*)

*Light-colored marble chips over aluminum foil forms lightweight roofing with good reflective insulation values*

# WHATEVER YOU NEED IN AN ELECTRICAL RACEWAY . . . .

## Safety

## Strength of Steel

## Unbroken Corrosion Resistance

## Economy

## YOU GET WITH ELECTRUNITE E. M. T.

There are many reasons for specifying that wiring be enclosed in raceways of Republic ELECTRUNITE E.M.T.—the *original* lightweight rigid steel wiring raceway. Some of them are shown above.

Threadless ELECTRUNITE E.M.T. is approved by the National Electric Code and most local codes for exposed, concealed and concrete pan construction. It is easy to install in all locations—tight spaces between pans or narrow partitions. Every coupling and box connection is attached to the tube without disturbing the zinc coating. With today's demand for more and more outlets in offices, homes and factories, the ease of installation and economy of Republic E.M.T. will help meet these requirements within your client's construction budget.

Your nearest Steel and Tubes Division representative will be glad to outline all of the money-saving advantages of modern ELECTRUNITE E.M.T. Or, if you prefer, write today to:

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

**SEE SWEET'S FILE**
or write us for detailed information on these Republic Steel Building Products:

**Pipe—Sheets—Roofing**
**Enduro Stainless Steel**
**Toncan Enameling Iron**
**Electrunite E.M.T.**
**Fretz-Moon Rigid Steel Conduit**
**Berger Lockers, Bins, Shelving**
**Berger Cabinets for Kitchens**
**Truscon Steel Windows, Doors, Joists and other Building Products**

*Republic*
REPUBLIC STEEL
ELECTRUNITE® E.M.T.

LIGHTWEIGHT THREADLESS RIGID STEEL RACEWAY

PRODUCTS
(*Continued from page 274*)

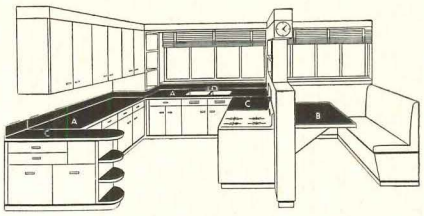
light-colored mineral chips. The foil also acts as a vapor seal.

The bonding agent is a vegetable gum sealer made from cotton rubber and asbestos fibers. It is reportedly not affected by acid fumes or salt air; will not crawl, slip, crack, blister or bleed; and can be coated for finish in any color. The roofing is said to eliminate the need for felts and metal flashing on chimneys and valleys. Aluminum Building Products, Inc., Route 1, Atlantic Blvd., Jacksonville, Fla.

### *New Micarta-On-Plywood Panel Sizes*

A new range of sizes of *Micarta-on-plywood* panels is designed to eliminate waste. Sizes are included for various applications: 48 by 96 in. for walls, wainscots and general use; 30 by 96 in. for counterfronts, wide counter tops, sink tops with back splashes; 30 by 60 in. for table and built-in dinette tops; and 24 by 96 in. for counter tops.

The panels use Micarta, a high pressure plastic laminate, factory-glued to ¾-in. plywood panels. The bond is said to be guaranteed waterproof. Exterior grade rotary cut Philippine Mahogany *Weldwood* is used for the core. A backing sheet balances the construction for stability. The panels can be sawed, planed or drilled with ordinary tools. Edges may be treated with snap-on metal moldings, wood strips, or sealed with wood filler and stained or painted. United States Plywood Corp., 55 W. 44th St., New York 18, N. Y.



*Kitchen counter tops employ convenient new sizes of micarta-on-plywood surfacing panels: A is 30 by 96 in.; B is 30 by 60 in.; C is half of a 24 by 96 in. panel*

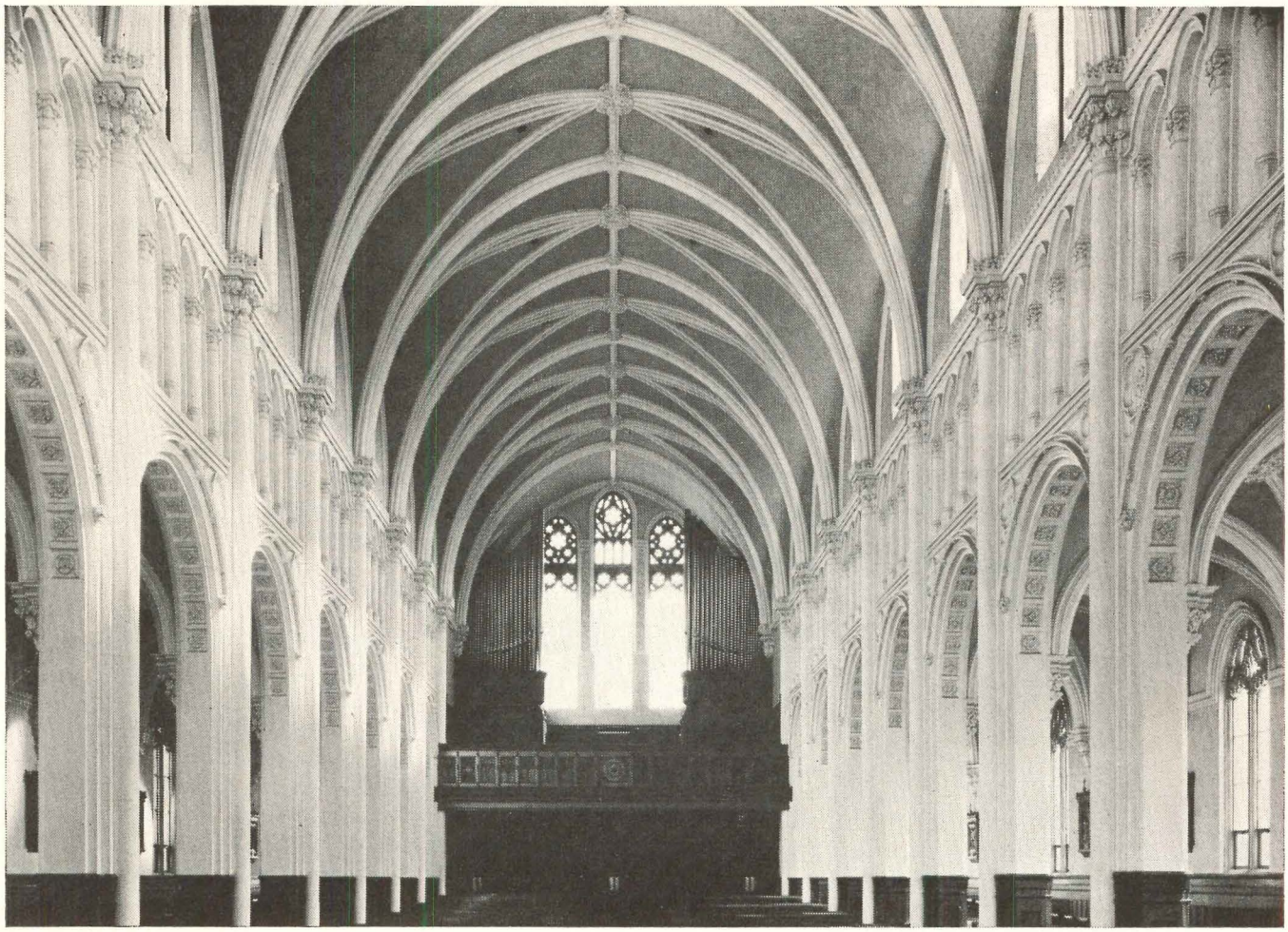
### *Electric Heater*

The electric *Quickheter* is being produced in a new model with a built-in switch permitting the use of thermostatic control where desired. The wall unit combines radiant and convection heating. It is recommended as an auxiliary or emergency heater for bathrooms, nurseries, bedrooms, etc. The heaters are 21 in. high, 3½ in. deep, and either 9 or 19 in. wide. Units are available for 120 or 240 volt service. The enclosing box is of 16 gage galvanized steel, with chromium finish front, and stain-resistant steel heat reflector. Heating elements are Nichrome wire. An air space behind the reflector prevents overheating of wall and provides additional air circulation. Frank Adam Electric Co., 3650 Windsor Place, St. Louis, Mo.

### *Vinyl Carpeting*

The new *Arrazin* carpet is said to be made of a tough vinyl plastic over a layer of cellular rubber. The carpeting is designed for use in stores, theatres, hotels, etc., where floors are subject to constant heavy traffic. It is claimed to

(*Continued on page 278*)



# *Architect's Traditional Design faithfully preserved with Gold Bond Plaster!*

NOWADAYS, with the trend toward modernistic churches, it's a pleasant relief to see this fine example of traditional style. Actually, this beautiful edifice is as exquisite in detail as a painting by one of the great masters.

An achievement indeed for the architect but no less an achievement for the general contractor and plastering contractor who executed the design to the most minute detail.

Gold Bond Building Products played a part too—Gold Bond Metal Lath, Plaster and Super-White Moulding—the latter product for the arches and ornamentation.

There is a definite advantage to the architect when Gold Bond products are specified and used exclusively. The entire responsibility for all these materials is centered in one reliable manufacturer, National Gypsum Company. There are now over 150 trade-marked Gold Bond building materials, scientifically engineered to give the utmost in satisfactory results. They are fully described in Sweet's.

**NATIONAL GYPSUM COMPANY, BUFFALO 2, NEW YORK**

*Fireproof Wallboards, decorative Insulation Boards, Lath, Plaster, Lime, Sheathing, Wall Paint, Rock Wool Insulation, Metal Lath and Sound Control Products.*

**ST. PIUS CHURCH, LYNN, MASS.**

*Architect*..... *P. J. O'Connell, Boston, Mass.*

*General Contr*..... *Patrick F. Beresford, Medford, Mass.*

*Plastering Contr*..... *James H. Boyle & Son, Cambridge, Mass.*

**You'll build or remodel better with Gold Bond**

**PRODUCTS**
(*Continued from page 276*)

be attractive, comfortable, and highly durable, with resistance to abrasive wear, chipping, cracking or buckling, if properly installed. The carpet is also said to be easy to maintain, sanitary, and the non-porous surface resistant to oil, grease and food stains. The sponge rubber base is claimed to impart great comfort and quiet in busy areas. The carpeting is available in ten colors. B. F. Goodrich Flooring Div., The Hood Rubber Co., Watertown, Mass.

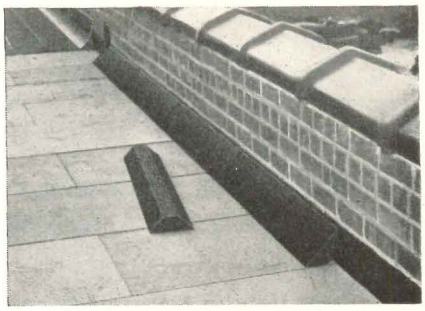
### *Television Projector*

A new television unit, called the *Norelco Duo-Vue*, projects the TV image on a home-movie screen or white wall, for a picture 3 ft high by 4 ft wide. The unit consists of a low wooden cabinet, 26½ in. wide, 20 in. deep and 23½ in. high, which houses a *Protelgram* optical system, auxiliary chassis and other necessary components. It is used with almost any standard table model direct-view TV receiver, which is placed on top of the unit. Connections are provided for attachment. When operated on direct-view, the unit serves as a base for the table model receiver. To produce the large image, the unit is pulled out about 9 ft from the wall on concealed ball bearing rubber casters. A switch changes over from direct-view to projection. Focusing is accomplished by adjusting distance from the wall. Individual components of the system are available for custom installations. The pictures are said to be easily viewed at distances of 5 to 30 ft, and to be free from tube-face distortion and room light reflections. North American Phillips Co., Inc., 100 E. 42 St., New York, N. Y.

### *Roofing Cant Strip*

A new product in the *Celotex* line of roofing materials is a low cost *Cant Strip* for roof and parapet wall junctions. The strip has a truncated triangular section, extending 4 in. up the wall and 4 in. over the roof deck. The cut-off right angle corner is said to permit a snug fit to wall and deck by allowing space for asphalt, mortar or other material which accumulates along the angle. The strip is of fiber board, coated on all surfaces to reduce danger of moisture absorption. It is said to be lightweight, strong, easy to handle and cut, and protected from attack by termites, dry rot or fungus growth. It is claimed that roofing felts are easily mopped over the strips to make a neat installation. The size of the angled surface is also said to reduce the possibility of cracking felt. The Celotex Corp., 120 S. LaSalle St., Chicago 3, Ill.

(*Continued on page 280*)



*Cant strip of cane fibre board is lightweight, strong, easy to cut and handle*

# Draftless Comfort for diplomats too

**THE U. N. SECRETARIAT BUILDING USES NEW ANEMOSTAT SQUARE AIR DIFFUSERS**

In conference rooms, offices, corridors . . . in fact, throughout the United Nations Secretariat Building the new square Anemostat Type E Air Diffusers provide stimulating, draftless comfort.

These new square Anemostat Air Diffusers offer *for the first time* . . . uniform circular air diffusion from a square outlet plus effective aspiration. This aspiration effect, the drawing of room air *into* the diffuser and mixing this room air with supply air *within* the outlet, is *the* important reason why Anemostats do a completely satisfactory job of eliminating annoying drafts and stale air pockets, equalizing temperature and humidity throughout the entire conditioned area.

**ANEMOSTAT®**

**DRAFTLESS** *Aspirating* **AIR DIFFUSERS**

ANEMOSTAT CORPORATION OF AMERICA

*10 East 39th Street, New York 16, N. Y.*

REPRESENTATIVES IN PRINCIPAL CITIES

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

Anemostat Type E Air Diffusers fit without modification into the framework that holds standard size acoustic tile. At a "twist of the wrist," the inner assembly can be quickly removed for cleaning.

**SECRETARIAT BUILDING OF THE UNITED NATIONS**

Wallace K. Harrison, Director of Planning • Max Abramovitz, Deputy Director of Planning • James A. Dawson, Chief Constructing Engineer • Syska & Hennessy, Inc., Consulting Engineers • Fuller-Turner-Walsh-Slattery, Inc., General Contractor • Almirall & Co., Inc., Sub-contractors for Heating, Ventilating and Air Conditioning.

**BULLETIN 29A**

**Gives the complete story on the new Anemostat Types E and E-1 Air Diffusers. Write for your copy.**

**PRODUCTS**
(*Continued from page 278*)

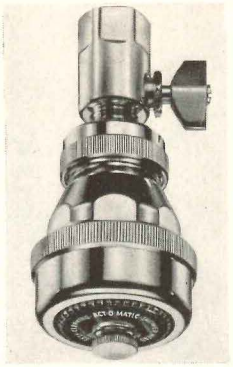
### *Shallow Well Pump*

The *Fadden Shallow Well Water System* is said to eliminate the conventional water storage tank to permit direct drawing of fresh water from wells, streams, etc. Designed for rural and suburban use, the unit is said to be compact and easily installed. It weighs 36 lb, and measures 17 by 11 by 9½ in. Flexible couplings are supplied to facilitate installations under the sink or other locations. The system has a rated capacity of 250 gal per hour at 25 ft suction lift and 20 lb pressure. It is said to be self priming and completely automatic, providing a steady flow of water with the opening of one or more taps. The unit is powered by a ¼ hp heavy duty AC motor by flexible drive coupling to the pump. Operation is claimed to be very quiet. Fadden Pump Co., Minneapolis 15, Minn.



### *Self-Cleaning Shower Head*

The *Act-O-Matic Shower Head* is said to have an automatic self-cleaning action which prevents shower heads from being limed or clogged, or from dripping. This is said to be accomplished by a special spray disc which moves downward when the water is turned on, delivering a cone-like spray. When the water is turned off the disc moves upward into drain position, opening a free waterway for draining.



*Movable disc in shower head automatically opens channel for drainage, and self-cleaning action*

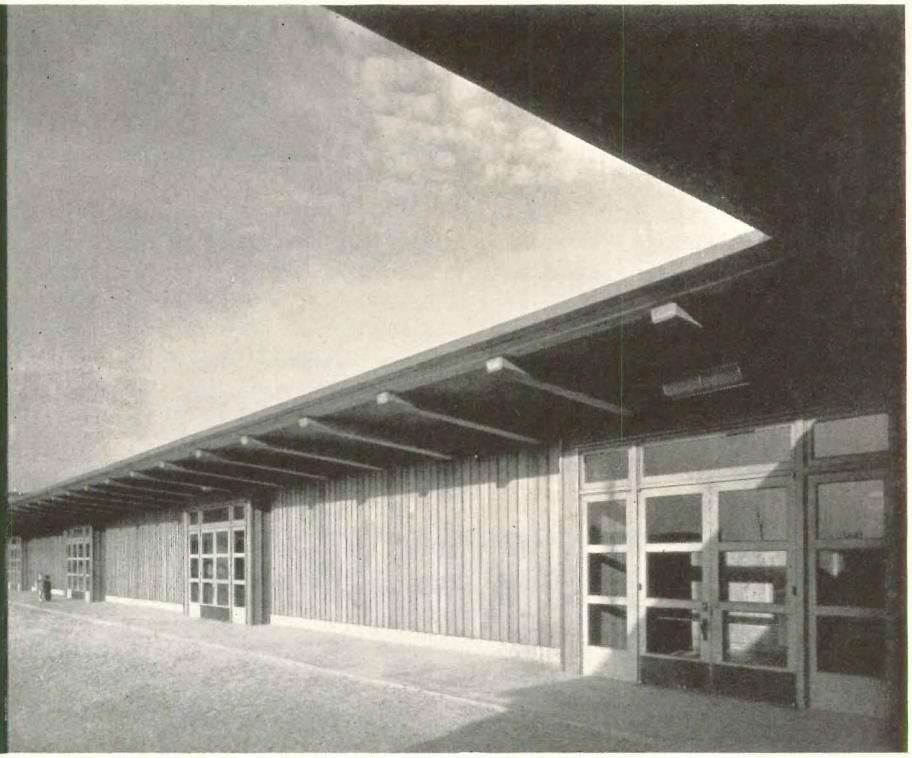
Each shower head is furnished chrome plated with ball joint and volume control. Vandal-proof models are available on order. Sloan Valve Co., 4300 W. Lake St., Chicago 24, Ill.

### *Plastic Roof Coating*

*Cocoon Roofing* is a vinyl plastic film, applied by spraying, which is said to allow roof repairs without removing the old roof coating. Through the principle of "continuous seal" from parapet to parapet, the roofing is said to provide complete waterproofing for a building. The roofing consists of four coatings. The first is a prime coating known as *Flex-Seal Clear*, used in a thin wash coat to provide an adhesive base for the plastic coat, which is applied next. The third coat is a mastic containing gilsonite asphalt, used for durability purposes. The final coating is a gilsonite vehicle with aluminum paste for insulation purposes. Drying times for the first two coats are said to be negligible. Coverages are said to average 250 to 300 sq ft per gal for the first coat, 2½ to 3 gal per 100 sq ft for the second, and 6 gal per 100 sq ft for the third. R. M. Hollingshead Corp., 840 Cooper St., Camden 2, N. J.

(*Continued on page 282*)

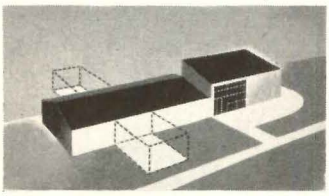
# REASONS WHY SO *MANY* SCHOOLS ARE BEING BUILT OF *WOOD*



CROW ISLAND SCHOOL, Winnetka, Ill. Saarinen & Saarinen and Perkins, Wheeler & Will, *Architects.*

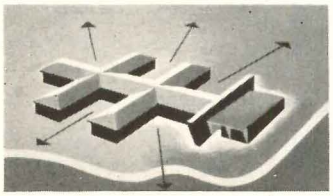
Hedrich-Blessing Photo

**FRIENDLINESS.** Large, friendly classrooms, conducive to easy concentration on school work, take advantage of the natural beauty of wood as a finishing material. Schools of wood have an invtting, homelike appearance. They belong in a neighborhood of homes.



**FLEXIBILITY.** Attractive schools, reflecting the natural beauty of wood, may be designed for any setting. Schools built of wood are the easiest to alter or enlarge in keeping with a community's changing needs and financial condition.

**HEALTH.** Wood is the ideal building material when you design classrooms that give full consideration to the health of children and teachers.



**SAFETY.** Wood frame construction is inherently wind and earthquake resistant. Many modern schools of wood further reduce disaster hazards—and reduce building costs, too—through designs that feature direct exit from all rooms at ground level.

## *Specify* WEST COAST WOODS

**Douglas Fir • West Coast Hemlock**
**Western Red Cedar • Sitka Spruce**

## FOR THE SCHOOLS *YOU* DESIGN

You plan soundly and for long building life, when you specify wood—especially West Coast Woods species—as the construction material.

Wood is durable, adaptable to every architectural style—and always in style. Wherever it is used, inside or outside, it can be depended upon to serve exceedingly well with genuine economy.

Schools of wood may be built quickly and economically. Wood is easy to obtain and craftsmen know how to use it effectively to build sturdy, solid structures of quality construction.

# WEST COAST WOODS

**DOUGLAS FIR • WEST COAST HEMLOCK • WESTERN RED CEDAR • SITKA SPRUCE**

*Lumber of Quality Produced by Member Mills*

**WEST COAST LUMBERMEN'S ASSOCIATION**


**Send for This FREE Booklet**

Beautifully illustrated in full color, "Today's Better Schools" points out the many advantages of wood in school construction. This new booklet tells how schools of wood meet today's educational needs. Send the coupon (below) *now* for your free copy.

WEST COAST LUMBERMEN'S ASSOCIATION
1410 S. W. Morrison Street — Room 826
Portland 5, Oregon

Please send me my free copy of "Today's Better Schools."

Name_____

Address_____

City_____ Zone____ State_____

**PRODUCTS**
(*Continued from page 280*)

### *Built-In Radio-Phonographs*

Two *Scott* radio-phonograph chassis for custom installations or custom-built cabinets have been recently introduced. The *Model 800-B* has a 2-unit chassis, with 24 tubes including a rectifier and voltage regulator. Its audio frequency range is 35 to 20,000 cycles, with the AM range from 35 to 8500 cycles and FM from 35 to 15,000 cycles. It also has a short wave band and plug-in to the audio systems for outside units. The set can be operated with remote control keyboards, available as extra equipment.

Second of the units is the *Model 510*, which has 14 tubes including 2 rectifiers. It also has the 2-unit chassis. With a 12-in. speaker, it has a fidelity of 30 to 20,000 cycles. Both sets have 3-speed automatic record-changers. Scott Radio Laboratories, Inc., 4541 N. Ravenswood Ave., Chicago 40, Ill.



### *Porcelain-Steel Sink Tops*

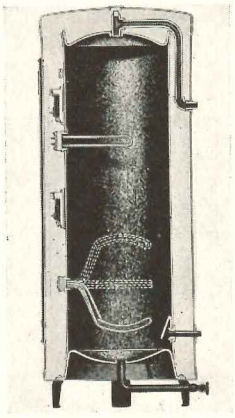
*Miratop* sink tops are made of vitreous porcelain fused to heavy gauge steel, then laminated to waterproof cushion sheets and plywood. It is said not to be affected by alcohol, household acids or heat. The tops are made in 11 colors, and in any size. Excel Sales Co., 1026 Reedsdale St., Pittsburgh 12, Pa.

### *Baseboard Heater Changes*

The United States Radiator Corp. announces that one of its products will have the name changed from *U.S. Comfort Ray* to *U-S Radiant Baseboard*. The new models will also have the ratings increased by about 15 per cent in accordance with the proposed I-B-R rating code. United States Radiator Corp., Radiant Baseboard Div., Detroit 31, Mich.

### *Water Heater*

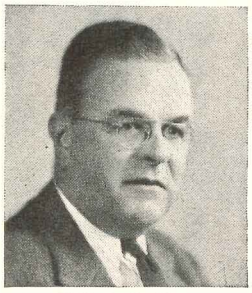
Through use of a patented adjustable element, any of three volumes of water is heated in the new *Smith 3-Way* automatic electric home water heater. The C-shaped heating element is located in the lower part of the tank, and utilizes the immersion principle of water heating. Placed in upper position, it heats the 50 gal strata of water above it. In horizontal — or intermediate — position, the element provides 60 gal of hot water, and in the lower position, it heats 80 gal. In addition to the change of position, the element may be set for wattages of 1000, 2000 or 3000, depending on terminal connections. Units are available with zinc-clad tanks or glass-fused-to-steel. A. O. Smith Corp., Kankakee, Ill.



*Electric water heater employs adjustable element to vary volume of water heated*

# Air Conditioning in Textile Mills*...

*by* **P. L. Davidson, Philadelphia, Pa.**
*and* **John deB. Shepard, Greenville, S. C.**
***Consulting Engineers***



Philip L. Davidson

John deB. Shepard

**Question:** Is a Central Station System more desirable than a Unit System?

**Answer:** "Both have obvious advantages. In a central station versus units, the cost of the base mechanical system is approximately equal. The former's cost exceeds that of the unit because it requires enclosure. This added cost, however, is offset by inherent easier maintenance and improved operating efficiency. Units, generally, should be limited to a capacity of 12,000 cfm. Central stations are often not practical beyond one floor of multistory mills, or to exceed 150,000 cfm."

**Question:** Does refrigeration have a place in textile mills?

**Answer:** "Definitely. Recent refrigeration installations give quick opportunity to spot effects of constant temperature in improved machine operation and handling of fibres. Current experiences with central systems reveal: (1) In a weave room operating on rayon fabrics with a modern central station humidifying system, the loom stops ranged from 2.3 to 5.4 per producing loom hour. The loom efficiencies averaged 92.6%, the seconds ranged between 15 and 16%. *When refrigeration was added,* the loom stops over a period of two months dropped to a range of 1.2 to 2.9. The efficiencies rose to 96%; the seconds dropped to a range between 4 and 7%.

(2) "A cotton spinning mill, after the installation of refrigeration, increased its spindle speeds 5% and its work load 14% with no increase in ends down.

(3) "A weave room running on combed broadcloth showed, after installation of refrigeration, an increase in production of 4½ to 5%.

(4) "A New England mill reported a 25% increase in production in a spinning room after the installation of a central station air conditioning system with refrigeration. This was attributed primarily to a decrease in absenteeism and only secondarily to a decrease in ends down.

"Records such as these highlight the results obtained with central station equipment where refrigeration is employed to fix temperatures constantly within a range of maximum efficiency and reasonable employee comfort. Advantages are frequently realized at an investment no greater than that required with straight or 100 per cent air systems.

"*This experience, proven in the textile field, should be significant in setting the pattern for all industrial air conditioning.*"

• • •



**This advertisement condensed from an article authored by these consulting engineers, and published in* Refrigerating Engineering, *February, 1950*

## LITERATURE

(*Continued from page 178*)

trated. Many charts, graphs, diagrams and pictures are included. 32 pp., illus. National Association of Fan Manufacturers Association, Inc., 2159 Guardian Bldg., Detroit 26, Mich.

### *Metal Doors and Roofing*

*(1) Overly Architectural Metal Products; (2) Overly Goodwin Batten Metal Roofing and Coping.* The first of these bulletins illustrates and describes combination metal door frames, jamb and trim; and kalamein and tin clad doors. Features, suggested specifications, details and dimensions are given.

The second bulletin presents a prefabricated batten type of metal roofing and coping. The component parts of the system are illustrated. Details show methods of installation and jointing. Suggested specifications are included. 8 pp., 4 pp., illus. Overly Manufacturing Co., Greensburg, Pa.*

### *Panel Heating*

*Hoffman Specialty Co. Engineering News.* A series of 13 bulletins on home panel heating prepared for the use of contractors, wholesalers, engineers and architects. The subjects covered include: (1) Panel Heating; (2) Calculations for Panel Heating; (3) Structural Details of Heating Panels; (4) Supplementary Calculations for Panel Heating; (5) Air Vents for Heating Systems; (6) No. 79 Air Vent for Hot Water Lines; (7) Resetting Series 90 Controller for Panel Heating; (8) Resetting Controller after installation; (9) Pressure Reducing Valves (out of print); (10) Radiator Vent Valves; (11) Resetting Temperature Control for Standing Radiation and for Panel Heating; (12) Ratings of Low Pressure Float and Thermostatic Traps; (13) Specifications for Panelomatic Hot Water Control System. Hoffman Specialty Co., Indianapolis 7, Ind.*

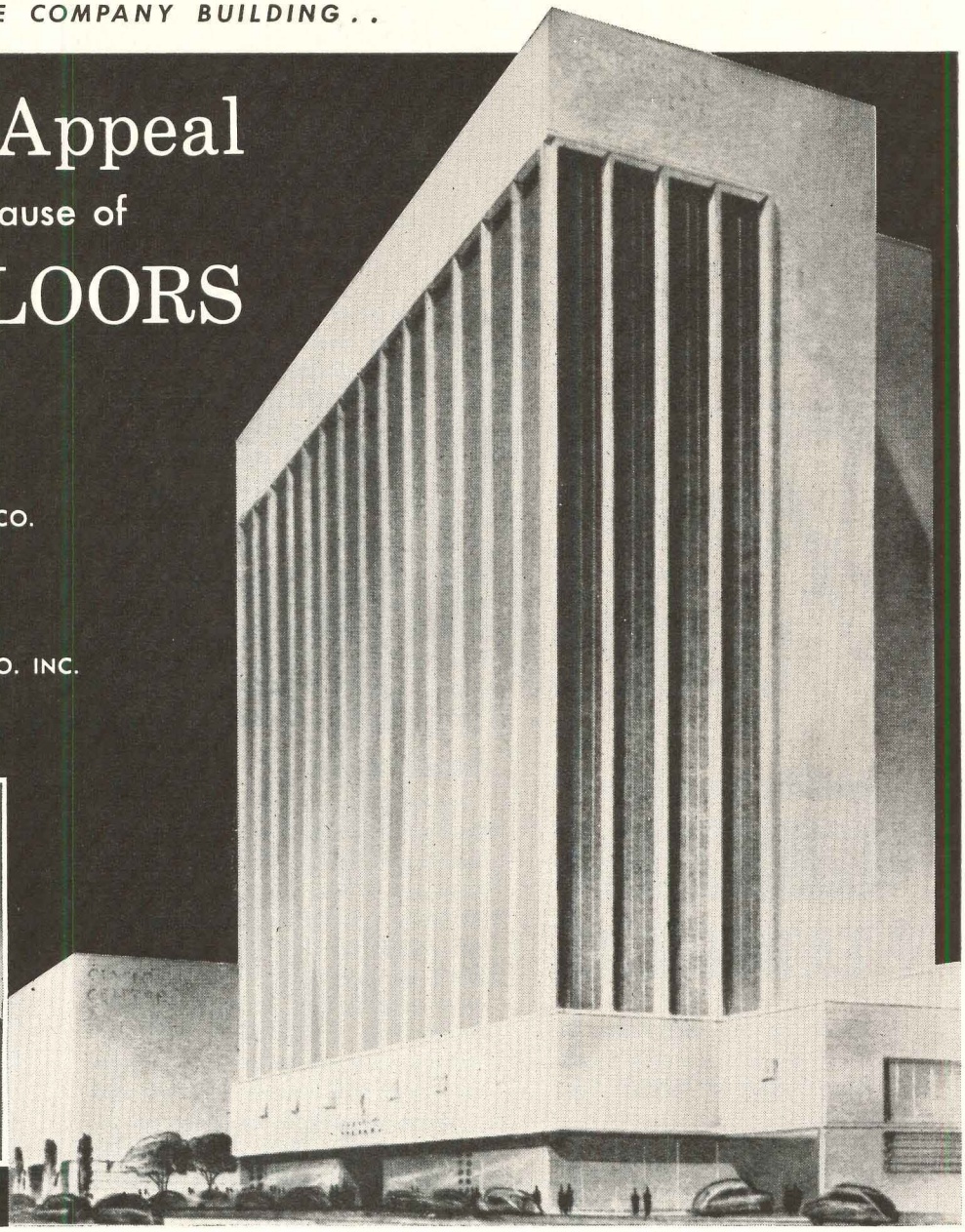
### *Architectural Aluminum*

*Reynolds Architectural Aluminum.* Portfolio covers a line of extruded shapes, embossed sheet, perforated sheet, plain sheet and plate, tubing and

(*Continued on page 286*)

*EMPLOYERS INSURANCE COMPANY BUILDING . .*

# Tenant Appeal because of Q-FLOORS

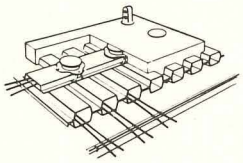


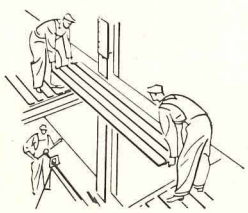
EMPLOYERS INSURANCE CO.
DALLAS, TEXAS

GEORGE DAHL
ARCHITECT

JAMES STEWART AND CO. INC.
CONTRACTOR

GEORGE DAHL, ARCHITECT





Architect George Dahl knows Q-Floor is not the lowest-priced floor on the market, but the best interests of a client are served by examining the final cost of a building and by specifying that material which brings about the best end result.

The quoted price of Q-Floor should be considered in relation to all other factors which are changed by the use of Q-Floor:

lightweight Q-Floor construction saves other materials in foundation and frame;

dry construction saves time, avoids winter delays and makes possible a variety of economies during erection;

earlier completion date effected by Q-Floors shortens financing time and permits earlier revenue . . . brings quicker cash benefits;

quick, inexpensive, easy electrical change attracts tenants, helps fill building quickly;

electrical flexibility protects your client's investment from electrical obsolescence.

Floor so influences other elements of a building, structurally, that the cost of a square foot of Q-Floor can be properly judged only in regard to its ability to decrease the cost of other component parts of the building. However, Q-Floor is more than economical—it is a modern essential for any building which must earn a living in this age of electricity.

*WRITE FOR NEWEST Q-FLOOR LITERATURE*

**H. H. ROBERTSON CO.**

2404 Farmers Bank Building
Pittsburgh 22, Pennsylvania

Offices in 50 Principal Cities
World-Wide Building Services

## Architectural Engineering

### LITERATURE

(*Continued from page 284*)

pipe, and other aluminum products for architectural use. Full size cross sections and assembly drawings are shown for all items. In each instance, the various alloys, tempers, sizes and lengths available are detailed. Among the items shown are: suspended aluminum ceilings; thresholds; sills; jambs; mouldings; partition framing sections; copings; gravel stops and fascia plates. The portfolio is available to architects, designers, engineers, and other company officials requesting it on their company letterhead. 61 pp., illus. Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky.*

### *Exhaust Fans*

*Emerson-Electric Exhaust Fans For Business, Industrial and Institutional Buildings (Catalog Unit No. X6559).* Illustrates a line of direct-drive and belt-drive exhaust fans, window fans, and ventilating fans. Information is included on the selection, installation and use of exhaust fans. Details of design, construction, specifications and performance data are given for the entire line. A copy of the catalog will be mailed to those requesting it on company stationery. 16 pp., illus. The Emerson Electric Mfg. Co., 8100 W. Florissant, St. Louis 21, Mo.*

### *Radiator Valves and Traps*

*Marsh Radiator Valves and Traps (Catalog Sections 10 and 11).* Features various patterns available in the line of valves and traps. Notes and diagrams explain construction, operation and use. Each type is covered with illustrations, details, roughing-in dimensions and capacities. Details of radiator valve accessories are also included. 16 pp., illus. Marsh Heating Equipment Co., Skokie, Ill.

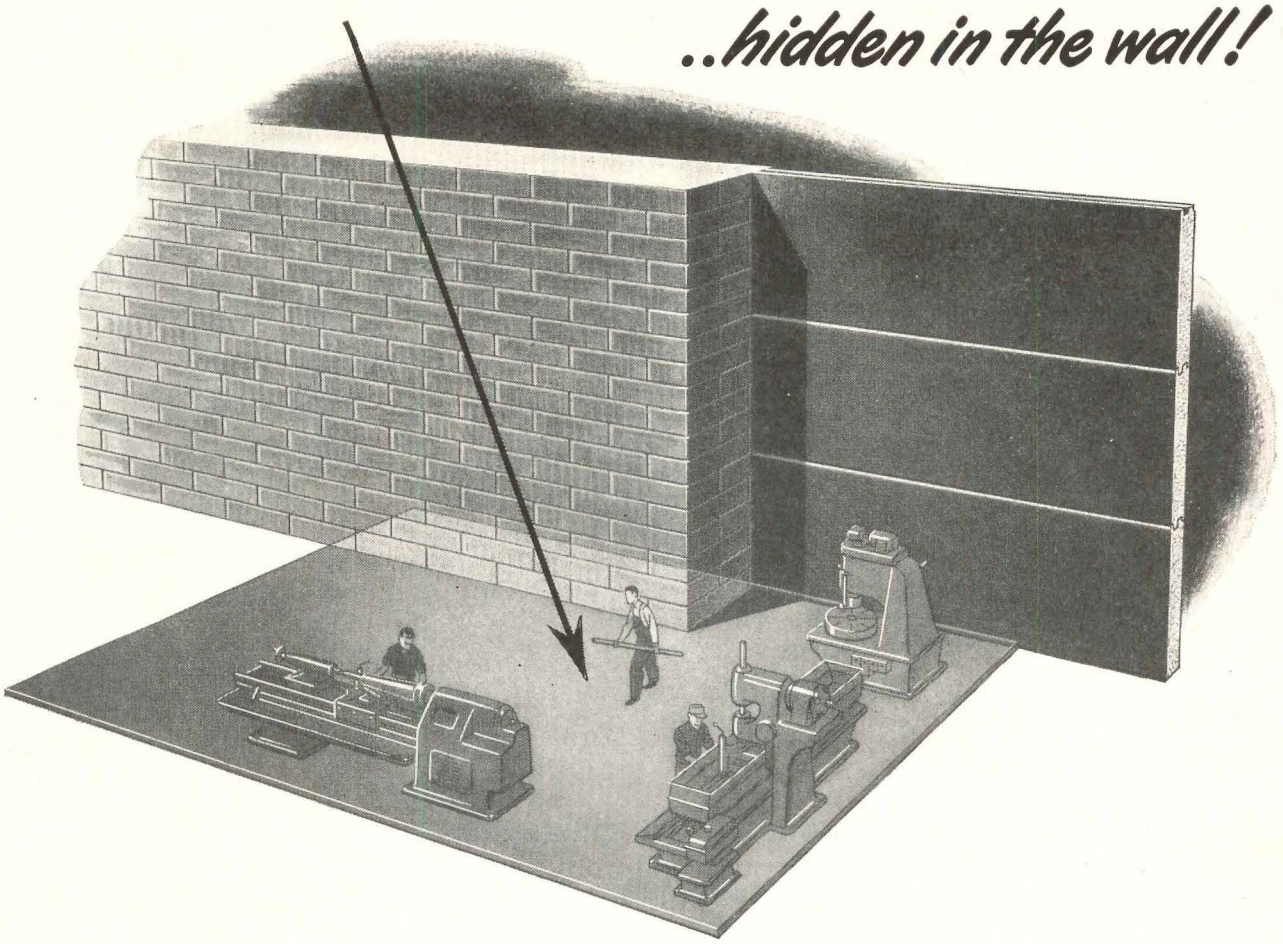
### *Slate*

*Buckingham-Virginia Slate Specification.* Folder lists characteristics, color and texture of the slate. Tables give suggested combinations in random widths and lengths, the number of pieces to the square in each size of slate, and the length exposed when laid standard

(*Continued on page 288*)

# FOUND

## 602 sq. ft. of floor space ..hidden in the wall!



It was a small plant Mr. Williams was building—150′ x 250′. Instead of the usual 12″ thick wall of brick, an alert young engineer suggested the new 3″-thick, insulated Fenestra* "C" Panels he'd heard so much about. Same function . . . same insulating value . . . same outside building dimensions. But *inside*—602 sq. ft. more floor space than he'd have had with the old-style wall. Floor area equal to a 20′ x 30′ room.

He also discovered:

*That* the installation speed of these panels cut construction costs . . . helped get equipment under cover quickly.

*That* they are lightweight, strong . . . reducing requirements for structural steel.

*That* they are noncombustible.

*That* they are good-looking and so smooth that dirt and grease can't get a grip.

And he *will* discover, when he wants to expand, that they are easily dismantled, moved and reinstalled.

*Fenestra Insulated "C" Panels are* standardized 3″ deep, 16″ wide, 18 gage painted steel or 16 B&S gage aluminum, 6′ to 14′ in length. Those of steel weigh only 6.50 lbs. per sq. ft. Aluminum, 3 lbs. Two formed members, joined to form a structural unit. Asphaltic impregnated felt inside full length of the joints to prevent metal-to-metal contact. Vapor-sealed, with felt stripping between formed sides and end closures. Double tongue and groove joints make a wall of "C" Panels an integral load-bearing unit. 3 positive bearing surfaces per panel for easy erection. Smooth surface permits easy flashing details.

Check into Fenestra "C" Panels right away . . . they save you time, money and *won't* waste floor space.

Mail the coupon, or have one of our engineering representatives call. Also ask about "D" Panels for floors and ceilings, and Holorib Roof Deck. *Trademark

**Fenestra**

**Panels • Windows • Doors**

*"Use Our 25 Years' Experience in Metal Panel Engineering"*

DETROIT STEEL PRODUCTS COMPANY
Building Panels Division
Dept. AR-6, 2252 E. Grand Boulevard
Detroit 11, Michigan

Please send me, without obligation, information on Fenestra Building Panels.

Name_____

Company_____

Address_____

## Architectural Engineering

### LITERATURE

(*Continued from page 286*)

headlap. The specifications cover the following items: general and guarantee, slate and application, roofing felt, cement, nails, hips, ridges and valleys. 4 pp., illus. Buckingham-Virginia Slate Corp., 1103 E. Main St., Richmond, Va.

### *Flue Pipe*

*Johns-Manville Transite Flue Pipe For Venting Domestic Gas-Burning Appliances (Form TR-84A)*. Pictures and describes the asbestos and cement flue piping. Drawings give sectional details of round and oval pipe and fittings. A table gives dimensions and weights for all types. Installation methods are shown, along with several combinations possible with the fittings. Johns-Manville, 22 E. 40th St., New York 18, N. Y.*

## LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Jack Z. Baruch, 1665 S. Central Park Ave., Chicago 23, Ill.

Dennis B. Behrendt, Architect, 2144 Melrose, Chicago, Ill.

Charles B. Belinky, Architectural Student, 3971 Blaine St., N. E., Washington 19, D. C.

David S. Booth, Student, 256 Forsythe Ave., Girard, O.

L. L. Doney, Draftsman, 1035 W. 13th St., San Pedro, Calif.

Dean M. Du Boff, Architect and Engineer, 106 E. State St., Peoria, Ill.

Robert W. Etheredge, Jr., Draftsman, 2114 Pine Dr., Raleigh, N. C.

Alexander H. Girard, 379 Fisher Rd., Grosse Pointe 30, Mich.

Samuel Horn, Architect, 2075 E. 29th St., Brooklyn 29, N. Y.

M. Michael Kane, Registered Architect, 1457 E. 68th St., Chicago, Ill.

Lucille H. Murawski, Architect, 3219 Hudson Blvd., Jersey City, N. J.

J. W. Sinnott, Sperry Gyroscope Co., Great Neck, L. I., N. Y.

Jack Turner, R.F.D. No. 2, Wilton, Conn.

John J. Zecca, Jr., Student, 24–41 81st St., Jackson Heights, N. Y.

Bethlehem Longspan Joists in garage of Crossman Cadillac, Inc., Great Neck, Long Island

# No wasted floor space with longspans

When you incorporate Longspan Steel Joists into designs for warehouses, factories, garages, and similar structures, you can plan on using all possible floor space through minimizing the number of interior columns.

Bethlehem Longspan Joists are ideal for supporting the roofs of small industrial buildings because they eliminate interior columns in floor areas *up to 64 ft across and greater.* Besides, they reduce the need for pilasters. They permit pipes, conduits and ducts to be run through the open webs of the joists. They are suitable for use with plaster ceilings, and can also be used to good advantage in floor construction.

Bethlehem Longspans are time-savers, as well, for they reach the job completely fabricated and clearly marked, ready for installation. They come in underslung construction with top-bearing ends, or in bottom-bearing construction with square ends, and with cambers of approximately ½ in. for 30-ft spans, ¾ in. for 40-ft spans, 1 in. for 50-ft spans, and 1½ in. for 60-ft spans.

Bethlehem Longspan Joists are now in good supply. Plan to use them in your next industrial building. Meanwhile, we'll be pleased to answer any question you may have about the use of steel joists. Just get in touch with the nearest Bethlehem sales office, or write to us at Bethlehem, Pa.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

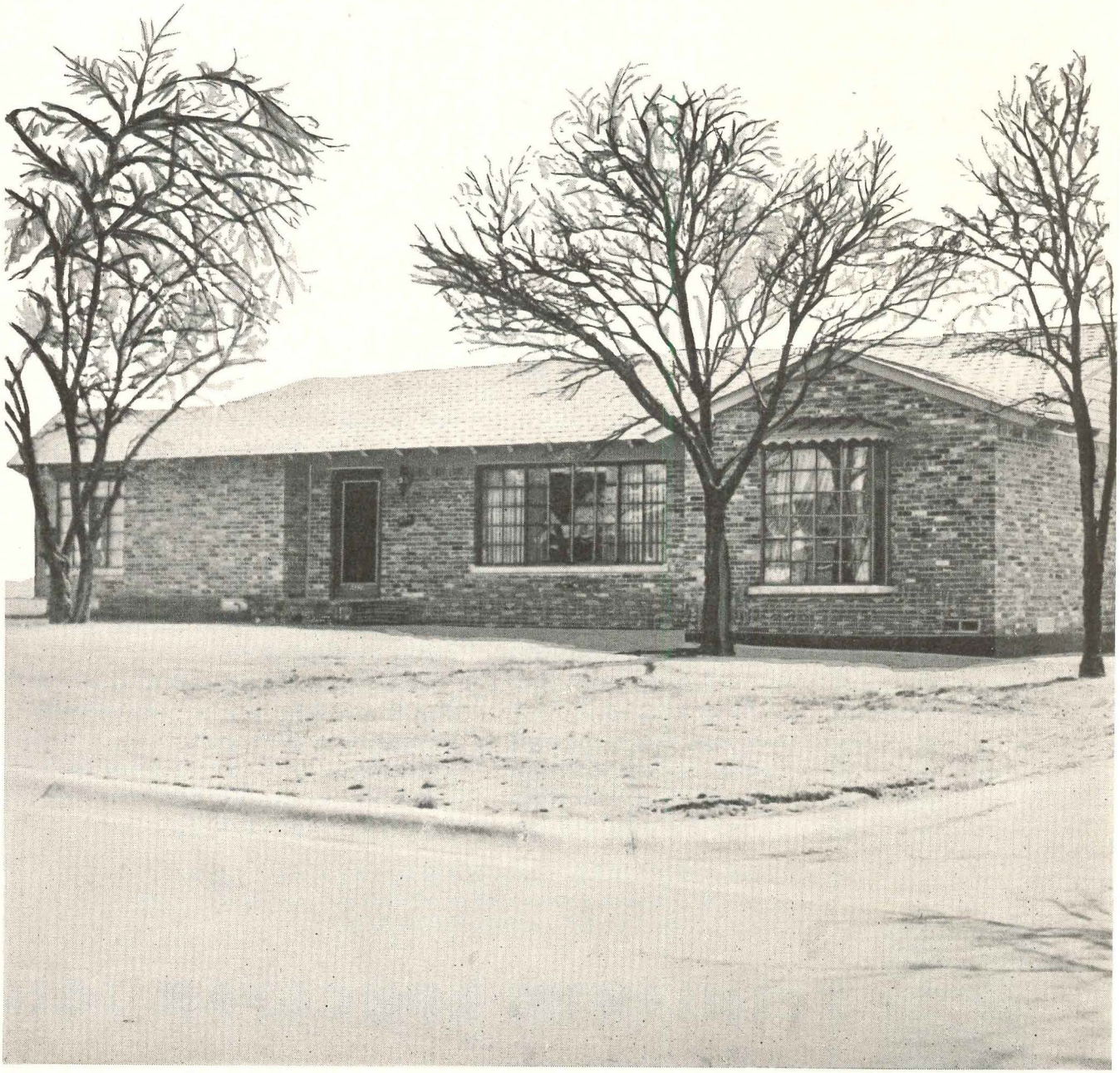
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation

*Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM STEEL

**BETHLEHEM LONGSPAN JOISTS**

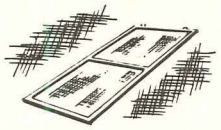
# Here's a way to give your clients at little or no extra cost!



# finest *All-Year* air conditioning

## These simple economies can offset its cost—

Many of the customary features in a home no longer have functional value when *All-Year* Air Conditioning is included . . . such things as porches, fireplaces, screens, etc. So in your preliminary planning you leave them out. This way you'll generally save enough to make up the cost of the Servel system. And clients feel they're making a marvelous exchange. For while the things that are omitted provide comfort for only *portions* of the year, Servel provides them with ideal comfort *all year*.

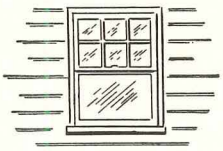


NO SCREENS

NO PORCH

NO ATTIC FAN

NO FIREPLACE



LOWER-COST WINDOW CONSTRUCTION


TOPS in new-home comforts today is *All-Year* Air Conditioning. Year round, the air is healthfully conditioned all through the house. Year round, the humidity is carefully controlled to eliminate stickiness in summertime and the drying-out tendencies of winter. Year round, the air is filtered clean—free of dust, dirt and pollen. Bracing in summer. Cosy in winter. The flick of a finger brings instant results. And by making the decision to include Servel *All-Year* Air Conditioning early in the planning stages, you can give your clients this ultimate in comfort at little or no extra cost.

Recent studies indicate that the additional expense of the *All-Year* Air Conditioner—over and above a conventional heating plant—can be offset by eliminating some of the usual features in a house. For instance, a house designed for *All-Year* Air Conditioning needs no porch, no fireplace, and no attic fan. Outside doors and windows may be kept closed; in fact, in many cases the glass may be fixed which permits the use of a simple wood frame. Therefore screens are not needed. And in most parts of the country, the total of these savings will enable you to include Servel's *All-Year* system at little or *no extra cost.*

The Servel *All-Year* Air Conditioner can be easily adapted to *any* size, type, style or shape of home your client wants. Ask your local Gas Company for all the particulars or write to Servel, Inc., 8006 Morton Avenue, Evansville, Indiana.

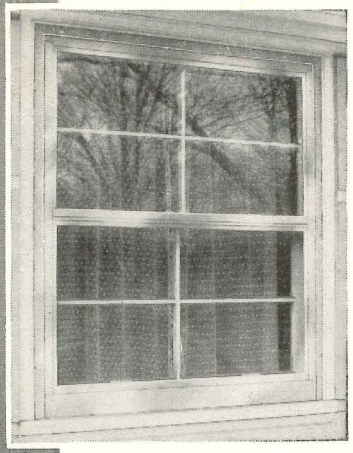
Servel

*All-Year* AIR CONDITIONER

STRENGTH, BEAUTY AND PERMANENCE THAT NO OTHER CONSTRUCTION CAN EQUAL . . .

# Stainless Steel Storm Windows

**Corrosion resistant . . . won't warp, bend or twist . . . never need painting . . . require virtually no upkeep . . . last a lifetime**



• • •

THIS rather recent development — *Stainless Steel* Storm Windows—should be of interest not only to home owners but to architects and builders as well. For it offers a highly desirable combination of advantages hitherto not obtainable in storm window construction . . . superlative good looks, permanent freedom from upkeep expense, and service that will outlast the building itself. The life-long performance that Stainless Steel assures, means *lowest* cost in the long run.

• • •

CONSTRUCTED OF *U·S·S Stainless Steel strip, these welded, reinforced and precision-built combination storm windows will give low-cost, lifetime service. They are produced by Corry-Jamestown Manufacturing Corporation, Corry, Pa.*

***Other U·S·S Stainless Steel applications:***—Gutters, downspouts and flashings · Copings and cornices · Window frames, sashes and screens · Show windows · Sculpture-relief or free-standing · Elevator doors and cars · Heating panels · Stair and door nosings · Hardware fireplace facings · Multistoried building pilasters · Store fronts · Parapets and spandrels · Curtain walls · Chutes and conveyors · Doors, interior and exterior · Kick plates and push plates · Sills · Stair rails · Escalator housings · Interior and exterior trim · Shower stalls · Grilles, plaques, louvers · Revolving doors · Cold-formed sections · Decorative trim.

ARCHITECTURALLY, the important thing to remember about Stainless Steel is that it is *not* a luxury material. Actually it is as *practical* as it is beautiful—is probably the most permanent, and therefore the most economical, of all structural materials.

Consider these facts:—Stainless Steel provides the highest strength-to-weight ratio of any structural material. It remains practically unaffected by corrosive attack, by extremes of heat or cold. It offers unsurpassed resistance to abrasion, wear and severe service. It is incombustible. It is easy to clean. It does not stain or discolor adjacent areas. It retains its lustrous good looks and superior strength indefinitely with the minimum of care and maintenance. With Stainless Steel, *first cost is virtually last cost.*

In U·S·S Stainless Steel—a perfected, service tested stainless—all these advantages are available in material form in sheets, plates, strip, bars, wire, tubing and piping of practically any dimension; in structural sections and special shapes of great variety; and in all standard architectural surface finishes.

Our representatives will gladly cooperate with you in developing your designs to include U·S·S Stainless Steel to insure optimum performance at minimum cost.

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## U·S·S STAINLESS STEEL

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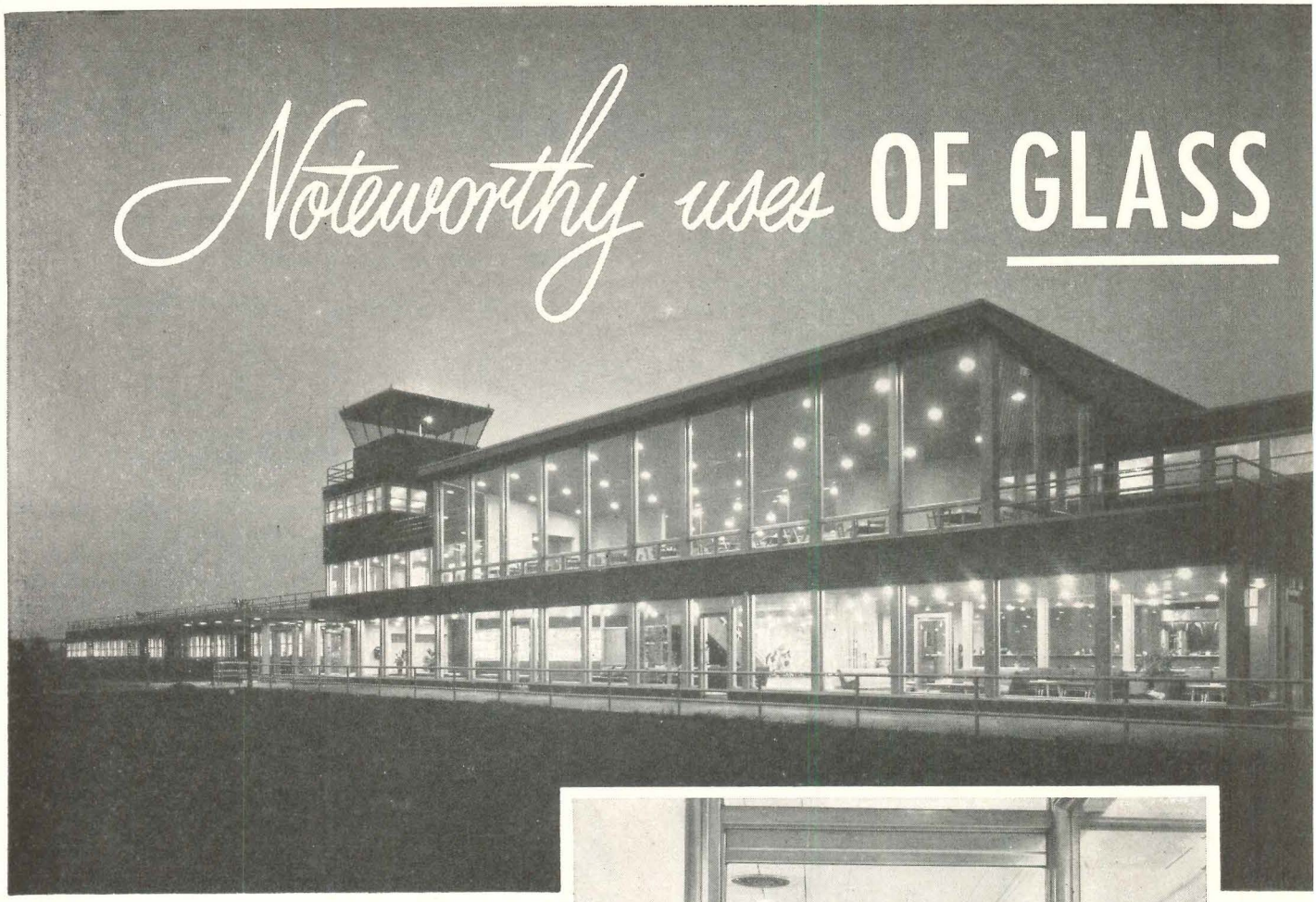
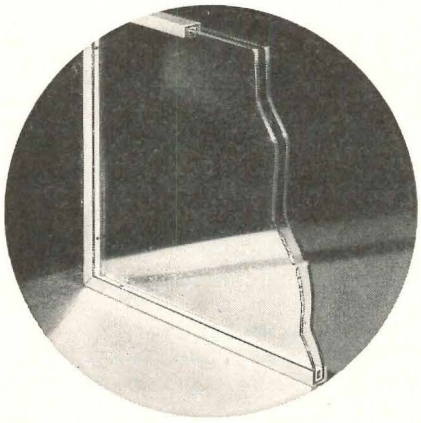
UNITED STATES STEEL

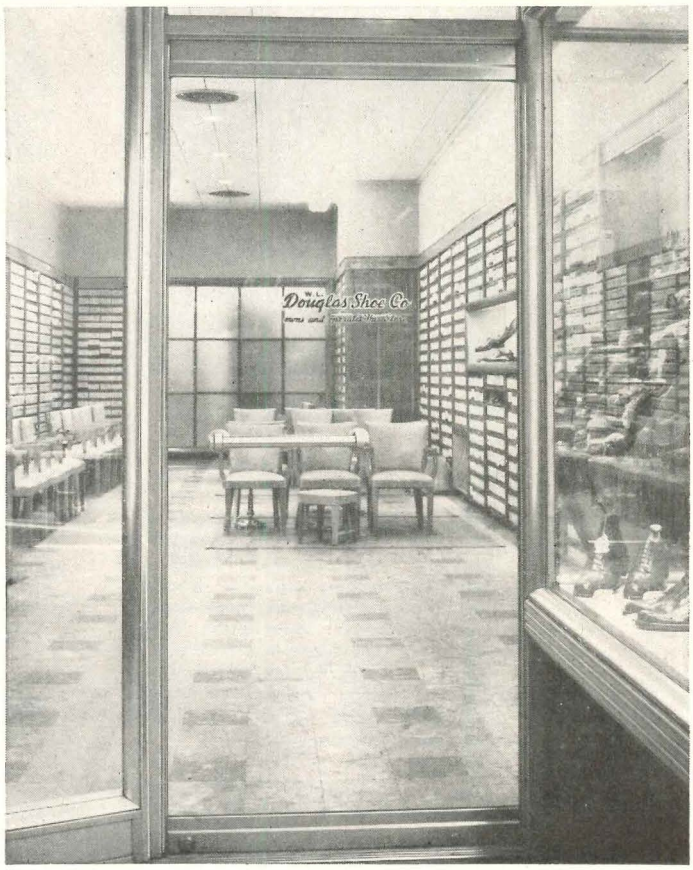
# Noteworthy uses OF GLASS



**1** **THIS VIEW** of the new terminal building at the South Bend, Indiana, airport, presents a spectacular scene—by day as well as at night. The whole effect is heightened by the use of more than 125 Twindow units which glaze almost the entire area of this side of the building. The built-in insulation of Twindow adds to the comfort and convenience of the patrons by eliminating cold downdrafts at windows. Besides, Twindow units afford a clear view of the airport activities. Architect: Roy A. Worden, South Bend, Ind.; Associate Architect: Vincent Fagan, South Bend, Ind.; Consulting Architect: Frank Montana, Detroit, Mich.

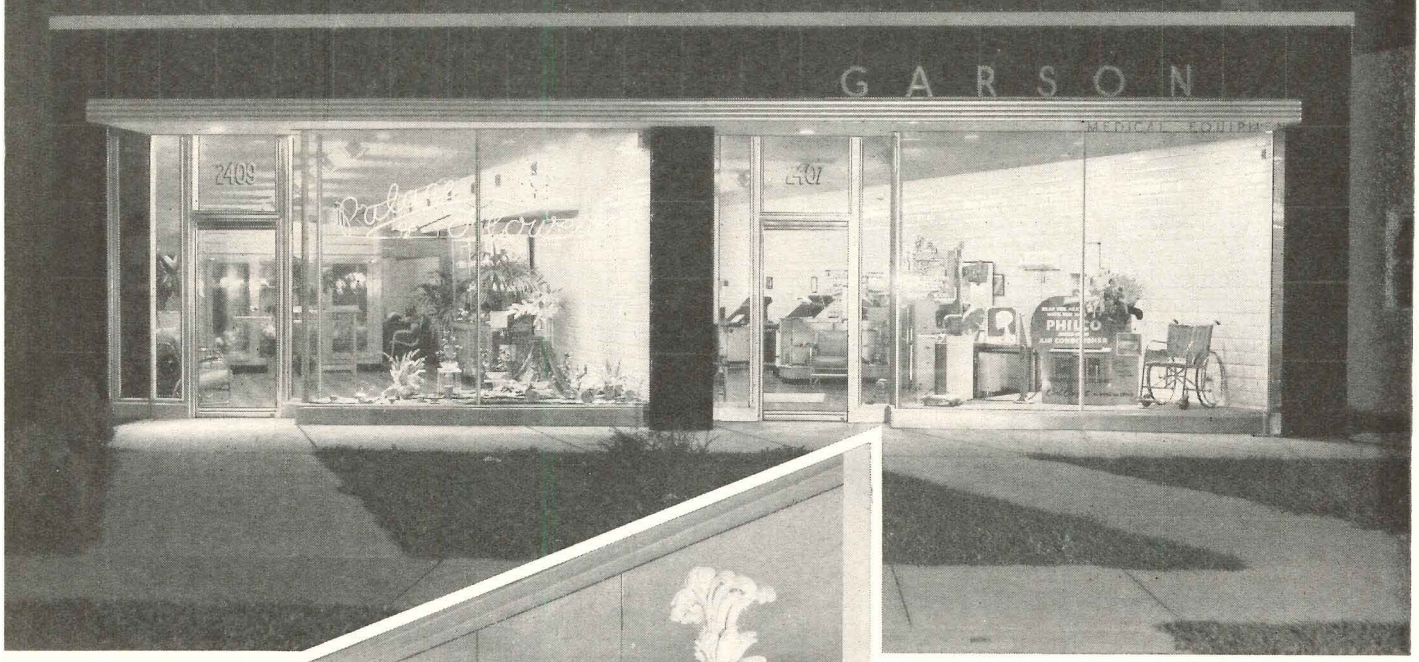


**CUTAWAY** shows the construction of a Twindow unit, with two panes of Pittsburgh Polished Plate Glass. The hermetically-sealed air space between the panes provides effective insulation which minimizes downdrafts, cuts heat losses through windows, reduces condensation. When three or more panes are used,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




**2** **PITTSBURGH DOORWAYS** cut corners for architects. They eliminate time-consuming calculations. There is no setting or fitting to worry about. From the twelve standard and four free-standing designs, you select the one for your job, simply by specifying the number and size needed. The frame reaches the job complete and ready for bolting into the building opening—in one "package." The massive Herculite Doors are then hung, and the work is done. Architect: Horace Coy, Toledo, Ohio.

# IN CURRENT DESIGN




**3** **GLASS HAS TRULY HELPED** to open new vistas in store front design. With large panels of Pittsburgh Plate Glass, architects have given merchants the greater benefits that come from "open vision." For this makes the entire interior a gigantic display, presenting the merchandise to the best possible advantage. In this group of two stores, Carrara Structural Glass, Herculite Doors, Pittsburgh Plate Glass and Pittco Store Front Metal were combined to create structures of immediate appeal and distinction. Architect: Myrle E. Smith, South Bend, Ind.

**4** **HERE'S AN ELEGANT** and dramatic setting in the reception room of the New York beauty salon of Michael-of-the-Waldorf. Along with other striking features are the walls of multi-paneled, beveled Pittsburgh Mirrors which pick up and reflect all the beauty, brilliance and subtlety of the furnishings and illumination. Designers: Earnshaw, Inc., New York and Philadelphia.

## DESIGN IT BETTER WITH— *Pittsburgh Glass*

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

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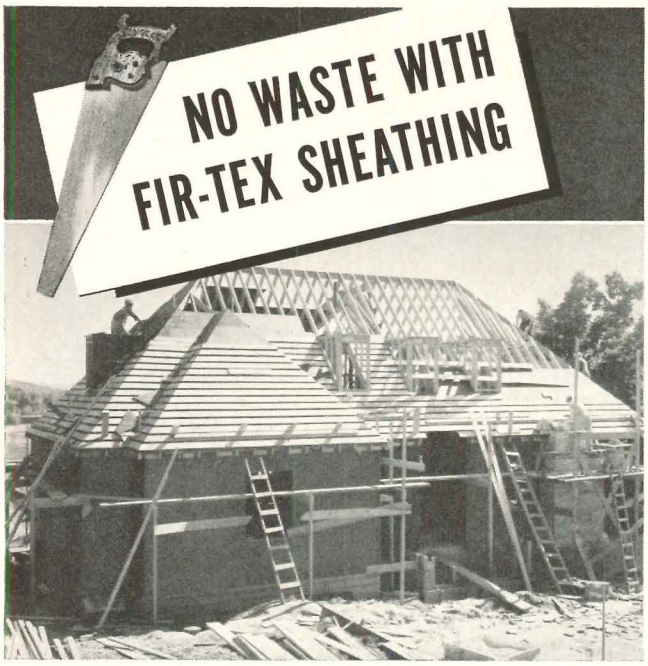
PITTSBURGH PLATE GLASS COMPANY

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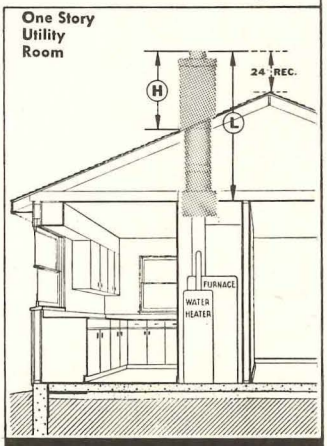


Typical VAN PACKER CHIMNEY INSTALLATION

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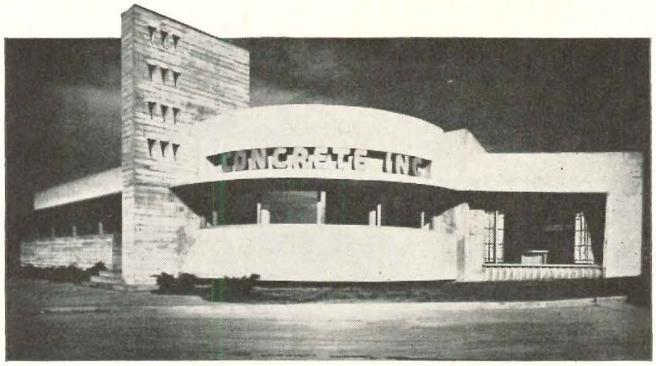
## CRYSTAL SILICONE WATER REPELLENT PROTECTS THIS BUILDING



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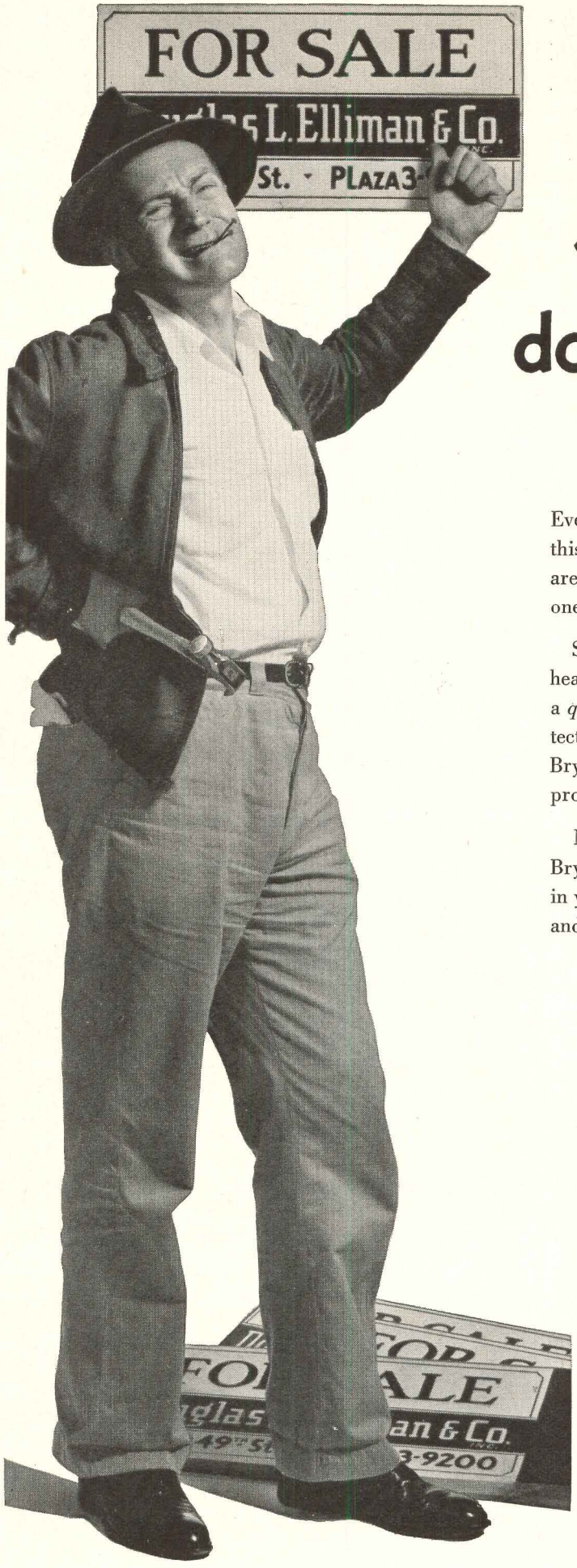


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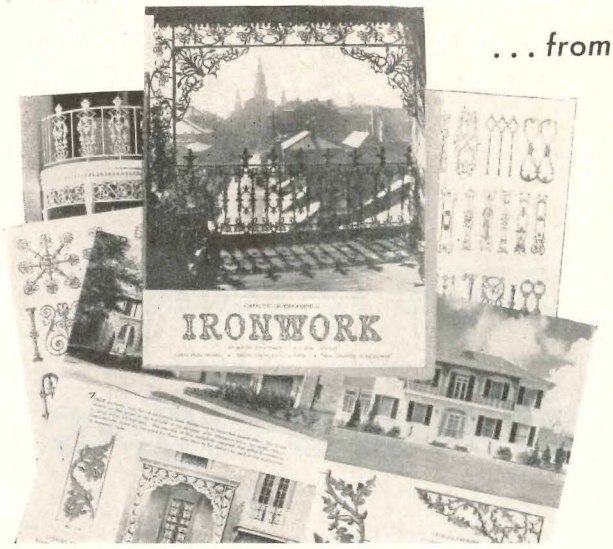


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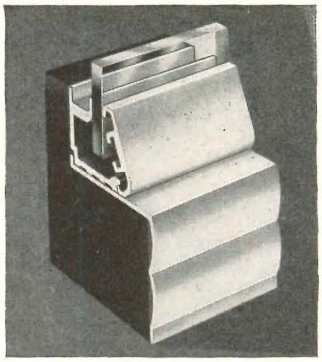

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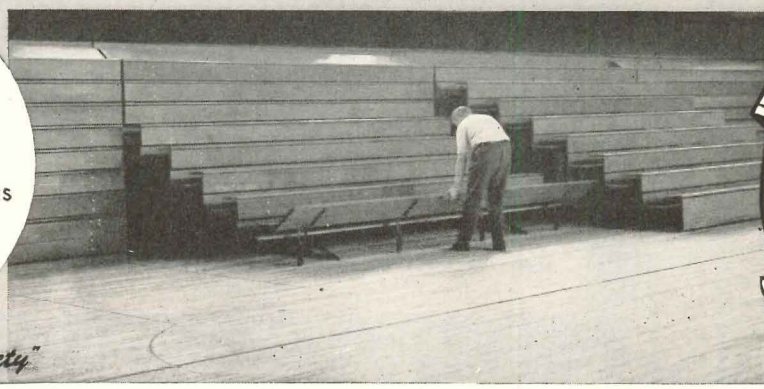

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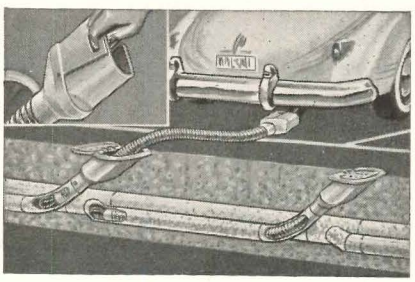

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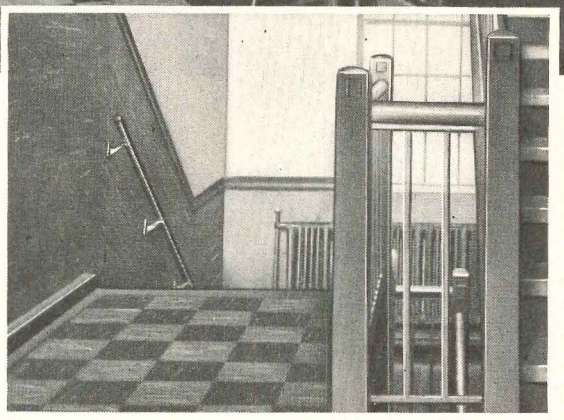

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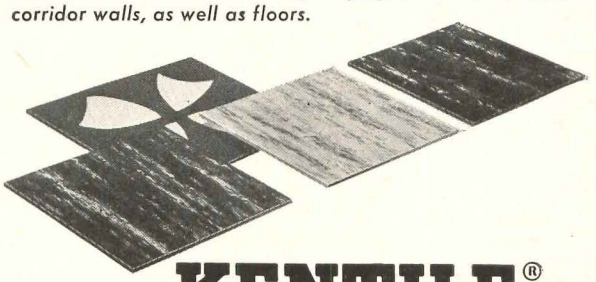

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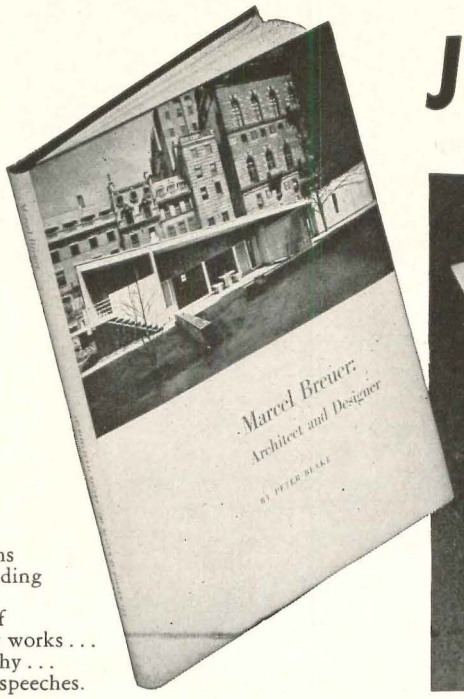


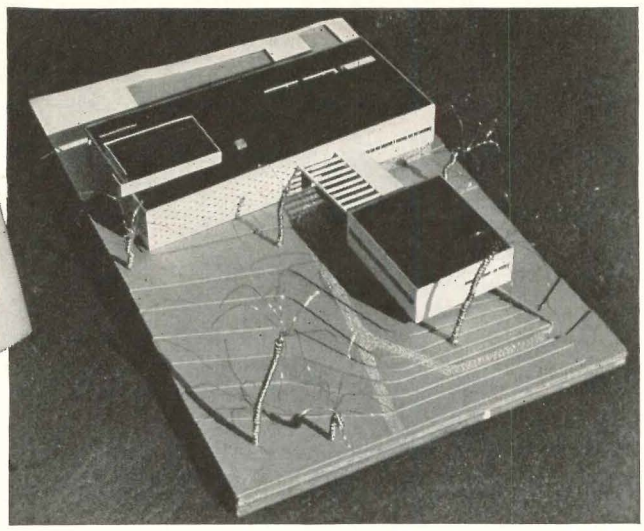

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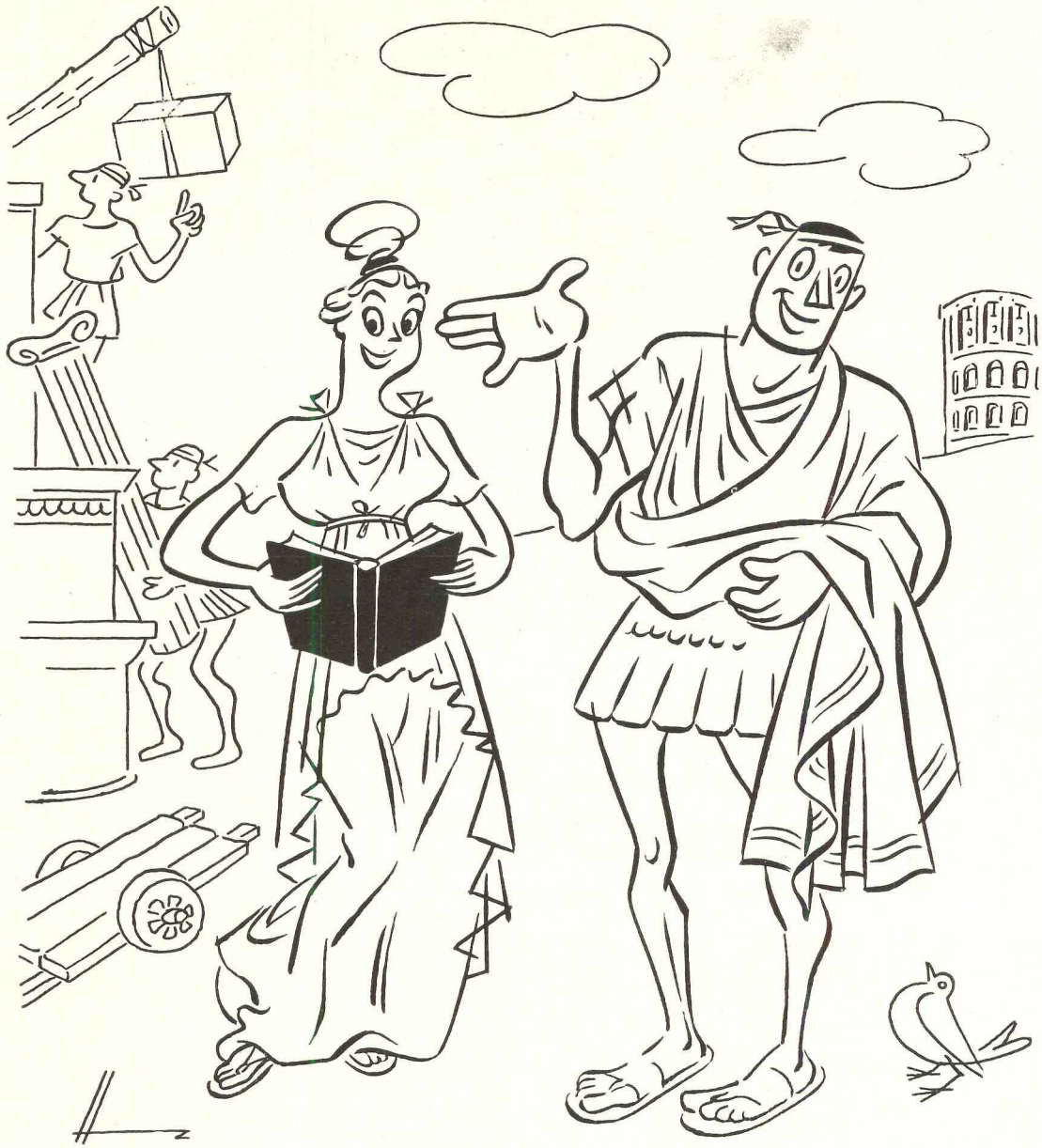

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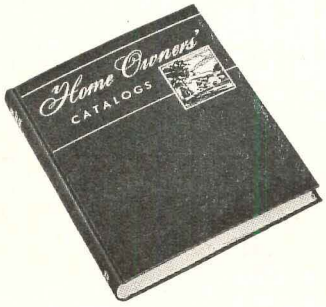


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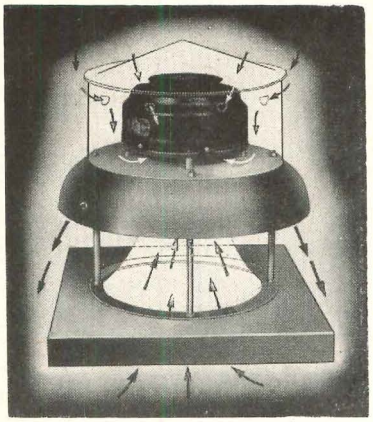

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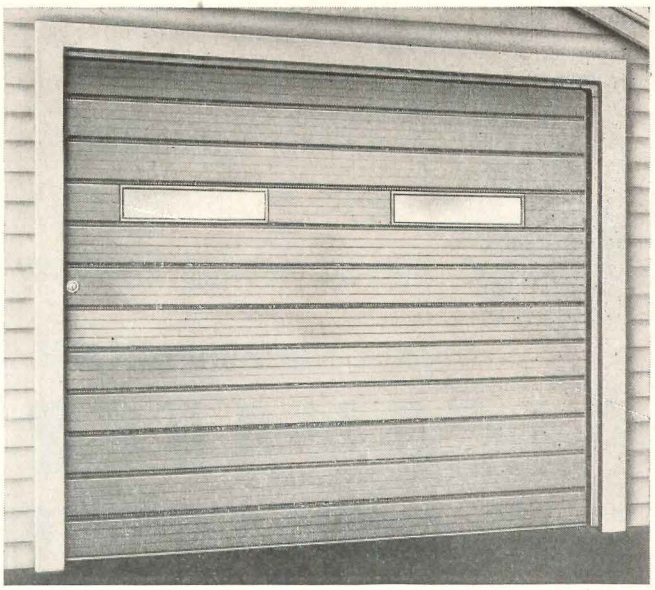

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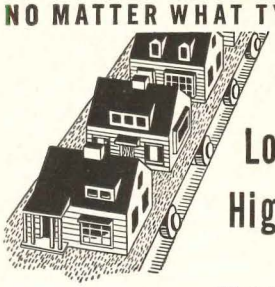

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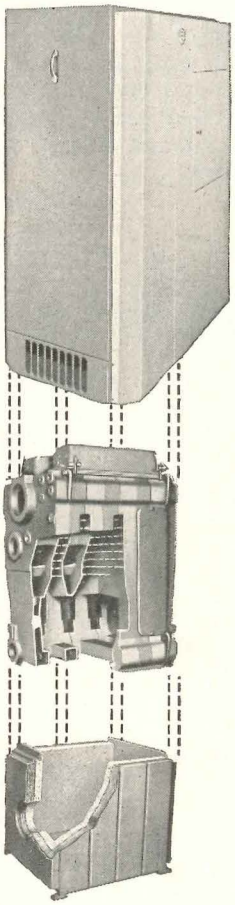

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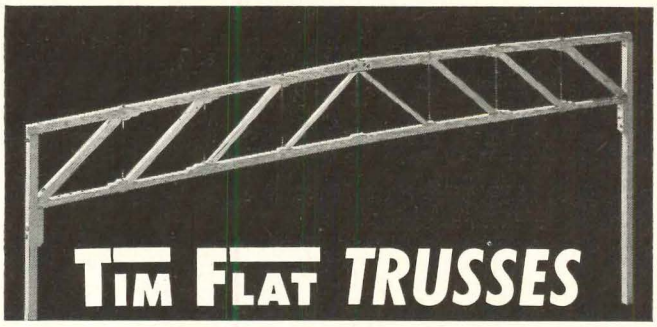

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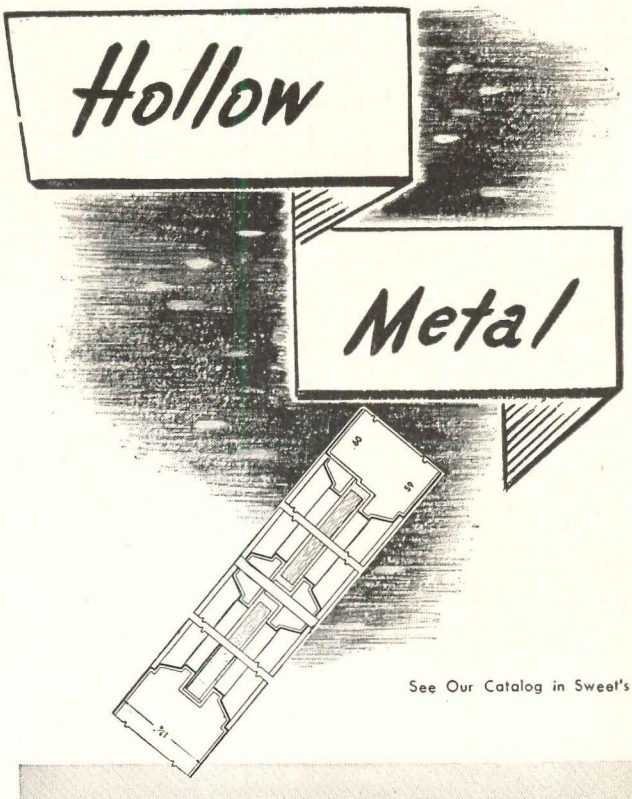


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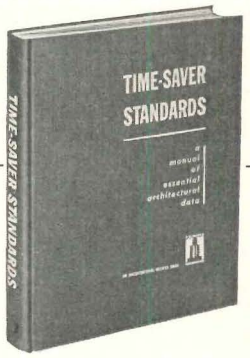


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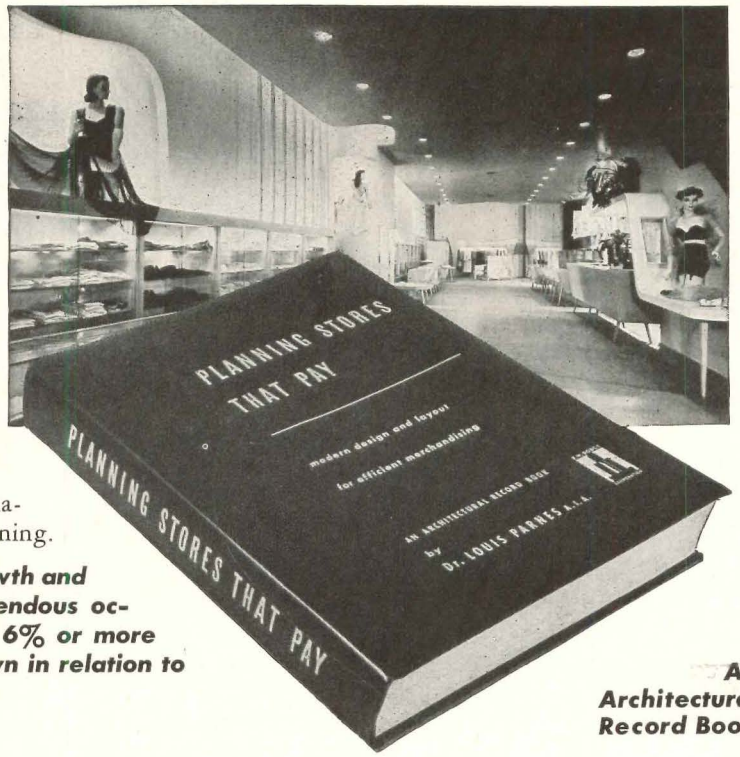


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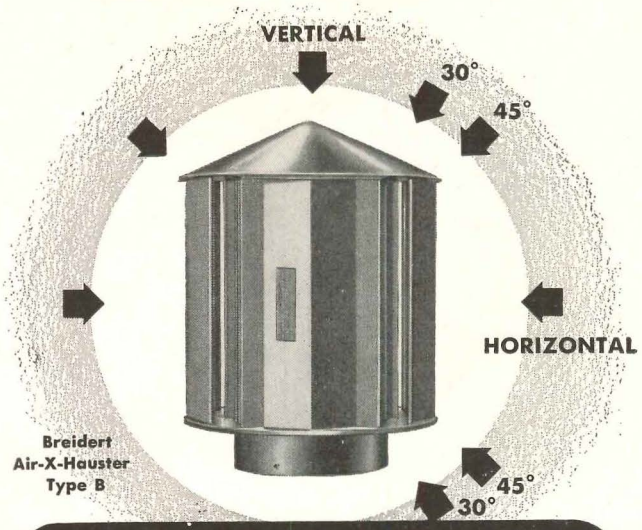


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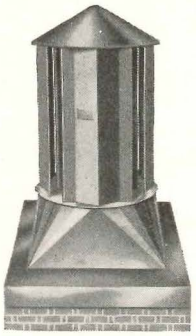

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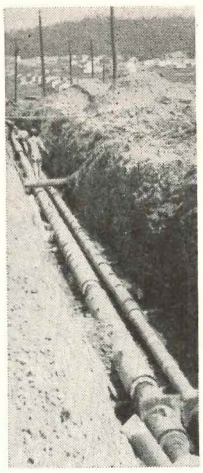

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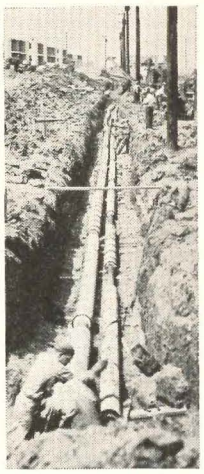

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*BTS—Building Types Study • TSS—Time-Saver Standards • AE—Architectural Engineering section*

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## BOOKS REVIEWED

ACOUSTICAL DESIGNING IN ARCHITECTURE. By Vern O. Knudsen and Cyril M. Harris — April, p. 32.

THE AMERICAN SCHOOL AND UNIVERSITY: 1949–1950. By the American School Publishing Corp. — April, p. 28.

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BUILDINGS FOR SMALL PUBLIC LIBRARIES. Prepared for the American Library Assn. Committee on Library Architecture and Building Planning — June, p. 30.

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