

# ARCHITECTURAL RECORD



SUNSET COMMUNITY CENTER, SAN FRANCISCO

MARCH 1952

NUTONE . . The Leading Name in Ventilating Fans . . PRESENTS . .

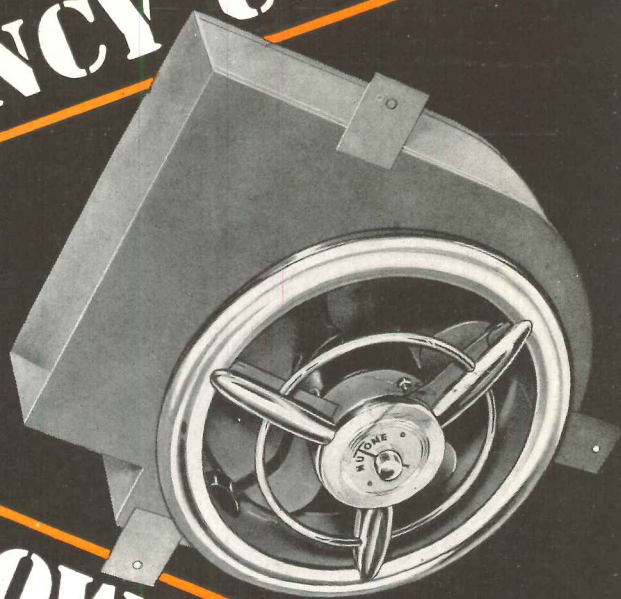
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# ARCHITECTURAL RECORD



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# THE RECORD REPORTS

## THE BIG NEWS: SIGNS OF RELAXING CONTROLS; NPA SHIFT ACKNOWLEDGES EASIER SUPPLY OUTLOOK

*Amended Regulation 6 Ups Steel Self-Certification Allowances; New Housing Regulation Revised after Strong Industry Protest; NPA Grants Materials for Completion of Most Deferred Projects, Permits 645 Religious, Community, Municipal Building Starts*

THE FIRST CRACKS in the wall of government restrictions around building came last month, as the National Production Authority appeared to recognize mounting evidence from construction industry groups and basic metals producers that the supply situation is easing.

A big factor in what amounted to a reversal of very recent NPA thinking was the Administration decision announced a month earlier to "phase out" the defense program over a longer period than originally planned. The President's announcement that 1955, instead of 1954, would be the target date for equipment of 143 air wings was an important item.

### *Beginning of the End?*

The news NPA had for members of its Construction Industry Advisory Committee at the second of two meetings called last month could be a forecast of the beginning of the end of controls.

These were the major announcements:

1. One provision of the newly-revised CMP Regulation 6 will more than double the amount of steel automatically permitted in the construction of small commercial, school and other non-industrial type buildings.

2. The new housing regulation will not include such restrictions, proposed earlier by NPA, as limitations on number of bathrooms and on maximum floor area. NPA said in effect that the only further restriction in the new order, to be administered by the Housing and Home Finance Agency, will be a cut of 25 lb in the amount of copper that may be self-authorized in one-family houses using copper water distribution systems.

Two specific actions by NPA also reflected a changed outlook: authority was granted to start 645 new "community" projects (such as churches, police stations, jails and homes for the aged) previously deferred; and materials were promised beginning with the second quarter for completion of nearly all commercial and industrial buildings

which had been halted by materials curbs.

### *More Steel the Key*

These relaxations, officials said, were made possible by a growing supply of light structural steel. Secretary of Commerce Charles Sawyer said they were evidence that "we are approaching the points where our capacity to produce will permit us to reduce controls," but added it would be "childish" to consider doing away with all controls now.

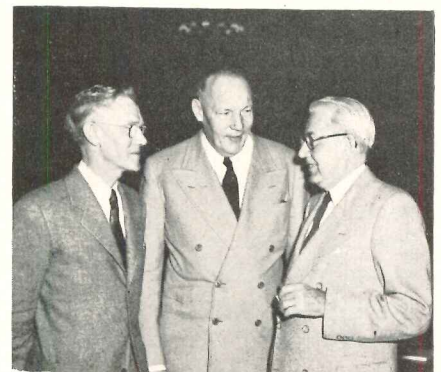
Indications of the easing supply picture were turning up with increasing frequency in the field.

The American Institute of Steel Construction, national association for fabricators of structural steel, has warned that unless government allows construction to proceed soon, plant capacity for manufacture of structural steel will lie idle by early summer; and a spot survey of steel warehouses late in February indicated many have lately been selling steel cheaper than the price at the mill — normally as much as 40 per cent higher.

*(Continued on page 14)*



*At the Chamber's C.I.A.C. meeting: Ralph Walker, Council chairman, and Norman Schlossman of Chicago, A.I.A. second vice president; and (below) William Scheick, BRAB executive director; F. Stuart Fitzpatrick, manager of Chamber's Construction and Civic Development Department; and Public Buildings Service Commissioner W. E. Reynolds*



## A.J.A. PLANS FIRST NEW YORK CONVENTION SINCE 1925

THE FIRST NEW YORK convention in 27 years of the American Institute of Architects is being planned to take full advantage of all the fabled resources, architectural and otherwise, of the world's biggest and busiest city.

Headquarters for the convention, June 23-27, will be one of the world's most famous hotels, the Waldorf-Astoria. The Grand Ballroom there has a capacity of over 2000.

There will be boat tours, bus tours and exhibits galore; and the convention program has been "streamlined" to let architects cover the convention and still have time to enjoy New York.

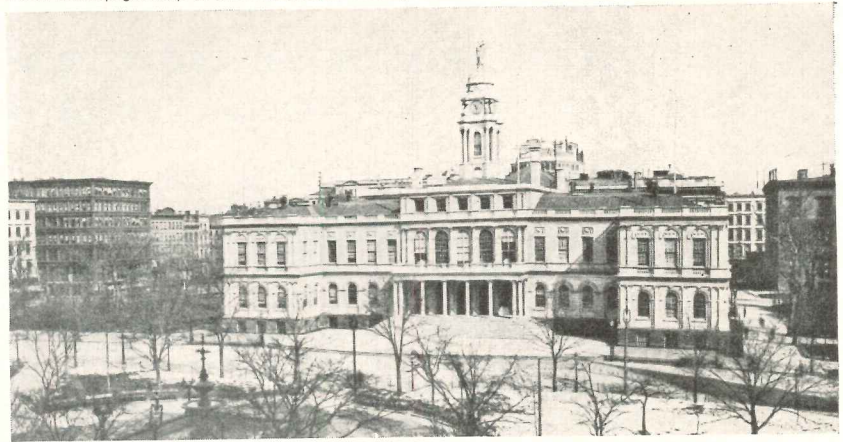
One of the special efforts of Conven-

tion Chairman Arthur Holden, F.A.I.A., and his committee is to make the convention the occasion of increasing public consciousness of architects and architecture. To this end they have enlisted the enthusiastic cooperation of museums, libraries and educational institutions throughout the five boroughs in planning exhibits and other special events during the period of the convention.

"The importance of the design of buildings in forming environments for human activity" is the theme of the program. Technical sessions will emphasize the structural resources of the architect.

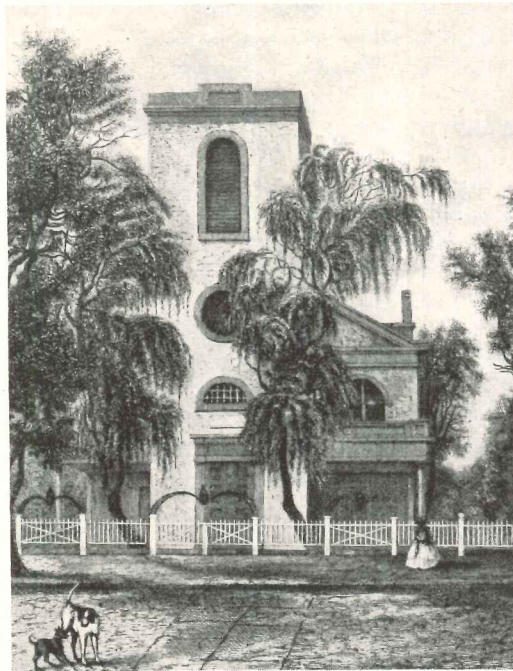


Photos on this page except as otherwise credited: courtesy New York Historical Society

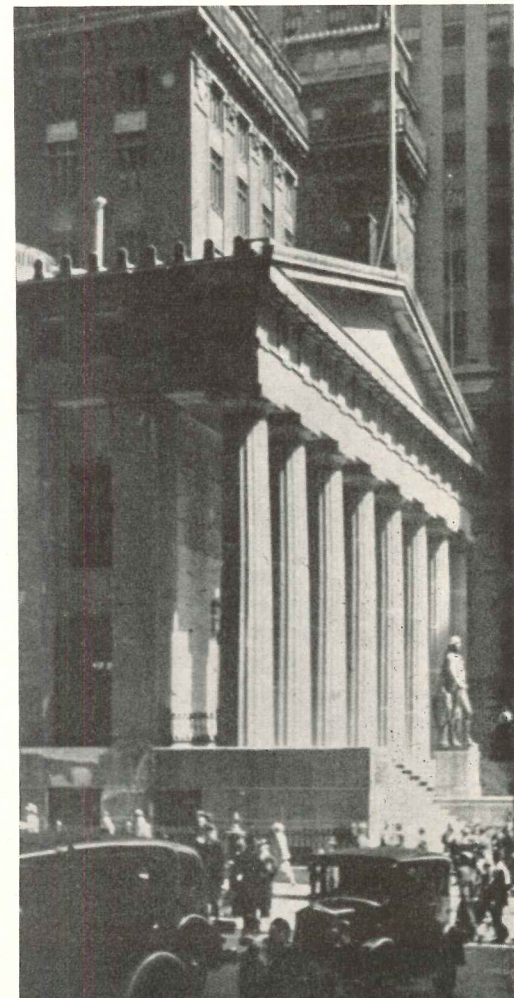


Above: New York's city hall, 1802-12, was designed by Mangin and McComb, who won competition which Latrobe and others entered

*St. Paul's Chapel, above, built in 1764-66 as a chapel of original Trinity Church, was added to in 1794 by L'Enfant. St. Luke's Chapel, right, 1822, has been altered often but still retains original character. Colonnade Row, below, designed by A. J. Davis and built in 1832, originally included eight houses, many of which have been demolished*



*The former Sub-Treasury Building, now the Federal Hall Museum, was completed in 1842, remodeled 1862. It stands on the site where Washington was inaugurated President*



Photos below and opposite page: Wayne Andrews





*Richard Upjohn's famed Trinity Church, 1839-46, still imposing amid skyscrapers which now surround it, greatly influenced American church design*

## ARCHITECTURAL HISTORIANS' MEETING FEATURES TOUR OF HISTORIC NEW YORK BUILDINGS

HIGHLIGHTING the recent meeting in New York of the Society of Architectural Historians was a tour of historic New York buildings which was arranged and guided by Talbot Hamlin. The Historians' tour was substantially the same as the tour which Professor Hamlin may conduct for the annual meeting of the American Institute of Architects in New York, June 23-27, and architects planning to attend the sessions are afforded on these pages a preview of some of the outstanding buildings they may expect to see this summer.

The tour for the historians culminated a tightly-packed and highly successful three-day meeting which also featured special exhibitions at the Avery Library, the Morgan Library, the Metropolitan Museum of Art, the New York Historical Society and the Architectural League.

Most of the papers presented at the meeting centered on various aspects of New York architecture. Chairmen for the sessions were Prof. James G. Van Derpool, Ralph Walker, Dr. Emerson H. Swift, Charles E. Peterson (retiring president of the Society) and Lydia Bond Powel.

Dr. Anthony N. B. Garvan of the University of Pennsylvania was pre-

sented with the Society's annual award for the book voted the outstanding contribution to architectural history by an American for the year. Dr. Garvan's book was "Architecture and Town Planning in Colonial Connecticut," published by Yale University Press. Honorable mention was accorded Samuel Wilson, Jr. for his editing of "Impressions Respecting New Orleans, by Benjamin Henry Boneval Latrobe, Diary and Sketches 1818-1820," published by Columbia University Press.

Officers for 1952 elected by the Society are: Henry-Russell Hitchcock, president; Mrs. John M. Gilchrist, vice president; John D. Forbes, secretary; and Miss Barbara Wriston, treasurer. Directors are Kenneth J. Conant, James G. Van Derpool, Frederick Gutheim, Richard H. Howland, Paul Norton, Charles E. Peterson and Clarence Ward.

The Society, which is the only organization of its kind in the world, is dedicated to the study of building "as a social art" and to the appreciation and preservation of noteworthy historic buildings. Although it was founded by and is composed principally of specialists in the field, membership is open to all persons interested in the aims and purposes of the Society.

*The versatility of nineteenth century American building is illustrated by these two familiar landmarks, both of which were built in 1885. Villard Mansion, left, is by McKim, Mead and White. De Vinne Press Building is by Babb, Cook and Willard*

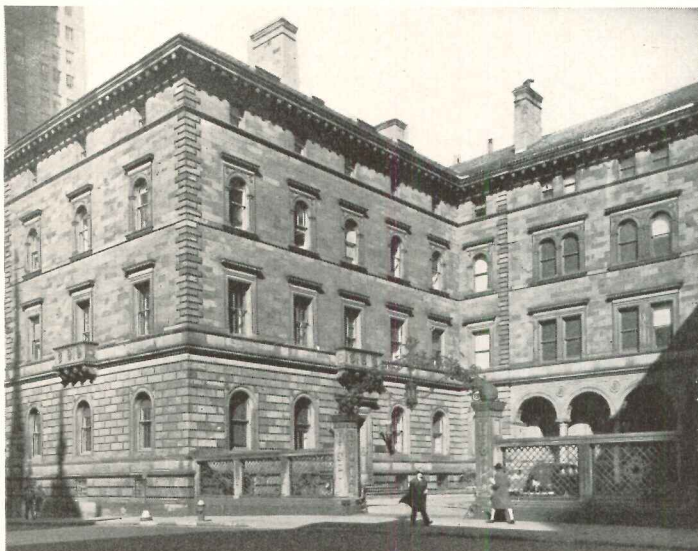




Photo: American Photo Service

Some of the A.H.A. "faculty": Standing: Rueben Graham, North Carolina Baptist Hospitals, Inc., Winston-Salem, N. C.; Lester Richwagen, Mary Fletcher Hospital, Burlington, Vt.; Robert W. Cutler, A.I.A., Skidmore, Owings & Merrill, New York; Marshall Shaffer, chief architect, Division of Hospital Facilities, USPHS; Roy Hudenburg, American Hospital Association,

Chicago (Institute coordinator). Seated: George Ivanick, USPHS; Slocum Kingsbury, A.I.A., Faulkner, Kingsbury & Stenhouse, Washington; Henry W. Shepley, A.I.A., Coolidge, Shepley, Bulfinch & Abbott, Boston; Addison Erdmann, A.I.A., New York; Jacque Norman, hospital consultant, Greenville, N. C.; Howard Post, food service consultant, N.Y.C.

## WRITING ARCHITECTURAL PROGRAMS FOR HOSPITALS CONSIDERED AT FIVE-DAY INSTITUTE IN NEW YORK

NEARLY 100 ARCHITECTS, hospital men and educators spent five hardworking days at the American Hospital Association's Institute on Development of Hospital Plans, held at the Park Sheraton Hotel in New York February 11-15.

Besides the floor discussions following speeches on various aspects of hospital planning, the Institute featured special group participation sessions. They gave those attending an opportunity to take

part in discussions of specific problems.

The sessions were programmed to emphasize development of architectural programs to fit various sets of requirements; and the aim was to provide guidance on writing the program.

Architect members of the "faculty," besides those pictured above, included Aaron W. Kiff, A.I.A., and James J. Souder, A.I.A., both of York and Sawyer, New York.



Photo: Fred Stone

At the Boston Institute of Art's recent symposium "The Future of Design," held in connection with the Institute's Gropius exhibit, four of the panel speakers: Serge Chermayeff, former head of the Chicago School of Design; Dean Pietro Belluschi of M.I.T.; Walter Gropius of Harvard; Gyorgy Kepes of M.I.T.

## BIG NEWS

(Cont. from p. 11)

Prime aluminum product manufacturers, who kept pointing out that within the next year aluminum production capacity will be nine times the pre-World War II level, were reported to disagree violently with the government claim of a continuing aluminum shortage and to feel present supply warrants an immediate increase in allotments.

A decline in metals prices abroad also seemed to point to better supplies; and there were reports of the return of a "buyer's market" already in some lines of builders' hardware.

### Industry Registers Protest

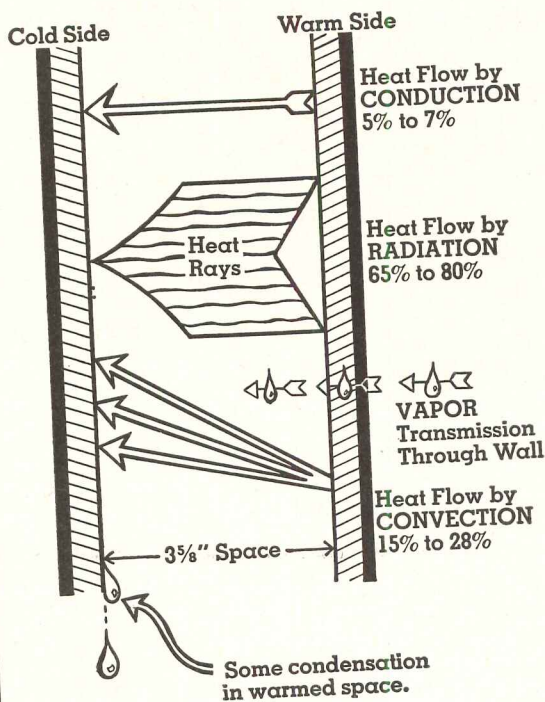
All these points were stressed by architects, builders and producers at the two big meetings early last month.

The first of the month's two sessions of the NPA Industry Advisory Committee presented some of the evidence, together with sharp protests and recommendations, apparently with effect.

The day after that meeting came the big all-industry round-table sponsored by the Construction Industry Advisory Council of the Construction and Civic Development Department of the Chamber of Commerce. Here, too, the industry was presenting the case for a "realistic" government construction policy; and heard discussion of the long-range prospects for construction — "better than those of most any other industry," said Norman P. Mason.



## HEAT & VAPOR FLOW THRU AIR SPACES IN NON-INSULATED WALL



## INVISIBLE OPEN WINDOWS AND TRAP DOORS DRAIN HEAT IN WINTER, LET SUMMER HEAT IN

Doors and windows may be tightly shut, every chink and cranny caulked and weatherstripped, yet heat may flow out of a structure or in, right through solid walls and internal wall spaces, as if through open windows.

Obedient to nature's law, heat flows through *space* by radiation, in the form of invisible rays, from warm to cold; from warm humans, animals, furniture, walls, ceilings, floors; to colder ceilings, walls, floors, furniture, animals, and human beings. Heat also flows by conduction through *solids* when these warmer objects touch colder objects. Even the warmth in the air convected to and in contact with the wall flows into the wall by direct conduction. ("Wall" is used as a general term. The principle applies to walls, floors, ceilings and roofs.)

But preponderantly, it is radiation which wall, ceiling and floor surfaces inside a room absorb. These rays are transformed to heat which then passes through the wall by direct conduction, as does heat acquired by the wall by conduction and convection. The entire process is repeated, radiant flow preponderant, inside the wall *space* in the direction of the inner surface of the colder outer wall. The total heat which is caused by absorption of radiation mingling with the convected heat which has been absorbed by conduction, flows through the outer wall by conduction. It is finally dissipated in the colder, ambient air outside mostly by radiation but also by convection.

### Heat Flow Reversed in Summer

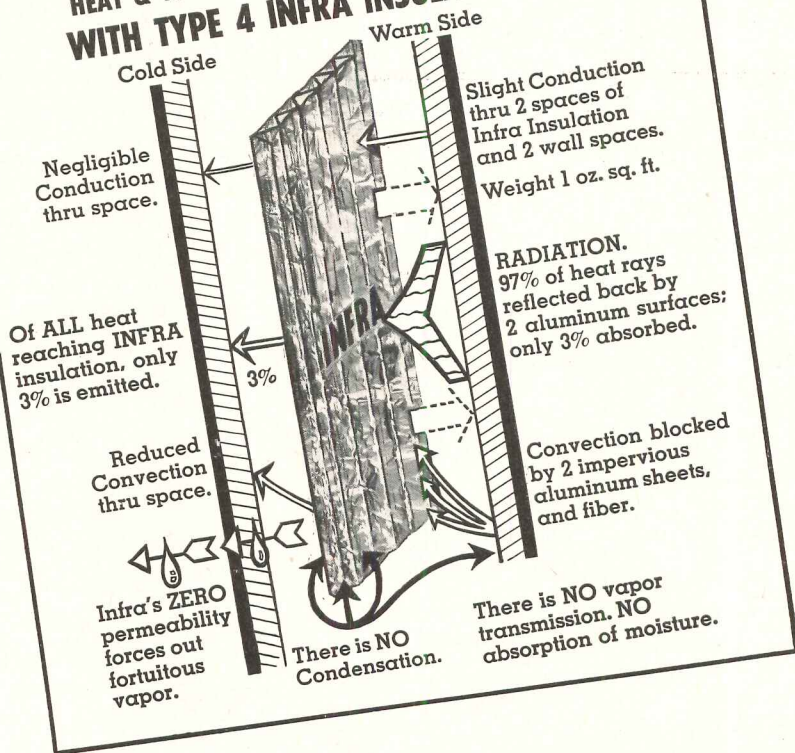
In summer, the process is the same but the direction of heat flow is reversed; from the warm outside walls toward the colder interior walls, to be finally transferred mostly by radiation, but somewhat by convection, to the occupants of the building.

Radiation accounts for 55% to 80% of heat flow through building spaces; convection 15% to 40%; conduction 5%. Multiple accordion aluminum sheets reflect 97% of radiation, and each aluminum and fiber sheet is an effective convection block. Being mostly air, 1 oz. per sq. ft., there is almost no conduction.

Multiple accordion aluminum is non-condensation-forming. It has zero permeability to all gases — water vapor, hot and cold air, etc. No dewpoint can be reached on its surfaces or within it. It can neither sustain nor retain fortuitous moisture, for instance, rain leaking in, but expels it as a vapor because its permeability in ratio to exterior walls is infinity and the minimum requirement is 1 to 5.

Multiple accordion aluminum is available as Infra Insulation, Types 4, 6, and 4 Jr. For an amplification of this discussion, get FREE "Simplified Physics of Vapor and Thermal Insulation."

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Wall-Heat	C.073, R 13.69	= 5 5/8" dry rockwool
Down-Heat	C.044, R 22.72	= 9" dry rockwool

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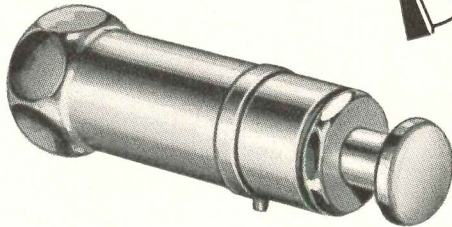
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Send Prices of Infra Insulations  Send Sample

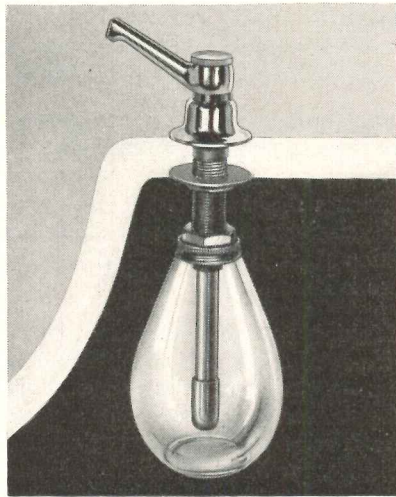
# Watrous

## Liquid soap dispensers and soap systems

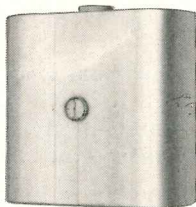
SEE OUR CATALOG IN SWEET'S



**C-860**  
HORIZONTAL TYPE  
VALVE FOR GRAVITY  
SYSTEMS



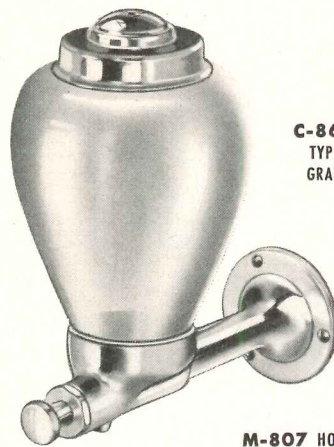
**M-801** PEAR SHAPED  
INDIVIDUAL LAVATORY  
DISPENSER; GLASS CONTAINER



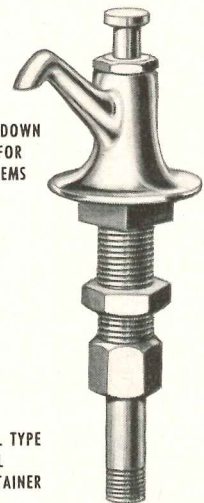
**M-851** VITREOUS  
ENAMEL SOAP TANK



**M-851-SS** STAINLESS  
STEEL SOAP TANK



**M-807** HORIZONTAL TYPE  
INDIVIDUAL WALL  
DISPENSER; GLASS CONTAINER



**C-866** PUSH-DOWN  
TYPE VALVE FOR  
GRAVITY SYSTEMS

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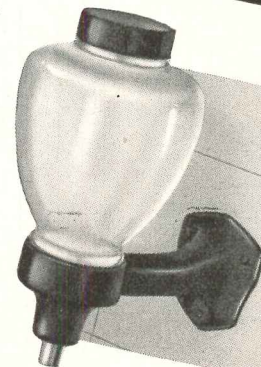
For complete details on Watrous Liquid Soap Dispensers see Sweets Catalog File or write for Bulletin No. 884-W.

### THE IMPERIAL BRASS MANUFACTURING CO.

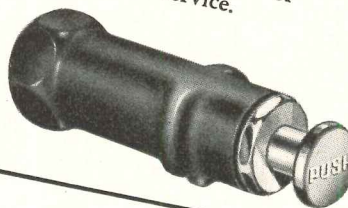
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**M-855** WALL TYPE  
SOAP DISPENSER



**C-955** LIQUID SOAP VALVE

## GOLD MEDAL WINNER

The El Panama Hotel (photo at right), Panama City, won the Gold Medal in Architecture for Edward L. Stone, Architect, in the 55th annual edition of the series of exhibitions held by the Architectural League of New York. The hotel was done in association with Carl J. Holzinger of New York and Mendez & Sanders, architects, of Panama. Architect Robert F. Smith of Miami won honorable mention for his Biscayne Cabana Colony at Miami. All the works accepted for the competitive Gold Medal exhibition were on view at the League



Photo: Ezra Stoller Pictor

## U. S. BRICK PRODUCTION IS 60 PER CENT MODULAR

APPROXIMATELY 60 PER CENT of national production of brick is now in modular sizes, according to a report given at the first 1952 meeting of the Executive Committee of the American Standards Association Project A62.

A resume of the session by William Demarest Jr., secretary for modular coordination of the American Institute of Architects, notes that the meeting recognized that the building program under the Wherry Act — which favors modular planning — should offer an opportunity to encourage many architects to convert without delay to the use of modular methods.

It was announced that a new A62 study committee is working on a modular standard to cover natural stones for exterior application.

Mr. Demarest attaches the greatest importance to the work of the window-study committees. In spite of several years' effort, he points out, the building industry still has no modular American Standard governing window sizes. He reports that the architects' committee will soon be called by the wood and metal window committee for a determined joint effort to resolve the remaining discrepancies.

A report from the Housing and Home Finance Agency reviewed its current projects in the modular coordination field:

1. Fundamental research at the Illinois Institute of Technology analyzing structural systems and design problems.

2. Preparation of a set of slides for distribution to schools of architecture

for use in teaching modular drafting.

3. Preparation of material to assist in coaching builders in efficient use of modular drawings.

4. Demonstration modular house projects being conducted by New York University, the University of Illinois and Southwest Research Institute.

## JANUARY BUILDING BELOW '51 MONTH BY 14 PER CENT

CONSTRUCTION CONTRACTS awarded in the 37 states east of the Rockies were off 14 per cent in January 1952 com-

pared with the first month of last year, F. W. Dodge Corporation reports.

Total for the month this year was \$902,091,000, against \$1,043,248,000 in January 1951.

Residential contracts of \$337,721,000 were down 20 per cent from the previous January; nonresidential awards for the first month of this year totaled \$357,676,000, or 22 per cent less than the \$461,016,000 total for January a year ago.

Public and private works and utilities totaled \$206,694,000 — a gain of 28 per cent over the figure for January 1951.



—Drawn for the RECORD by Alan Dunn

"Try thinking of it as 'space cadence' and maybe you'll feel better"

## TAX BILLS WOULD HELP ARCHITECTS, ENGINEERS

THERE ARE at least three bills before Congress proposing to amend the Internal Revenue Act so that self-employed persons, including architects and engineers, might set aside a certain amount of income for old-age assistance. This money would be tax-free in the year earned.

Prospects for these amendments are not considered bright. Sponsors said they had hopes the House Ways and Means Committee would consider the proposals as soon as the unit had a meeting on the subject of tax exemptions. More than a month after Congress convened, no meetings of the full Committee had been scheduled. The Senate Finance Committee, which handles tax measures, could not act until House-enacted bills were received. There was no indication of any early consideration of tax matters in either House.

Proponents of the plan to exempt a certain portion of the income of self-employed persons from taxation for federal purposes in the year in which it was earned included Sen. Irving M. Ives (R-N.Y.) and Rep. Daniel A. Reed (R-N.Y.) and Eugene J. Keogh (D-N.Y.). The Keogh-Reed bills were identical, both much like the Ives measure.

The Ives version would:

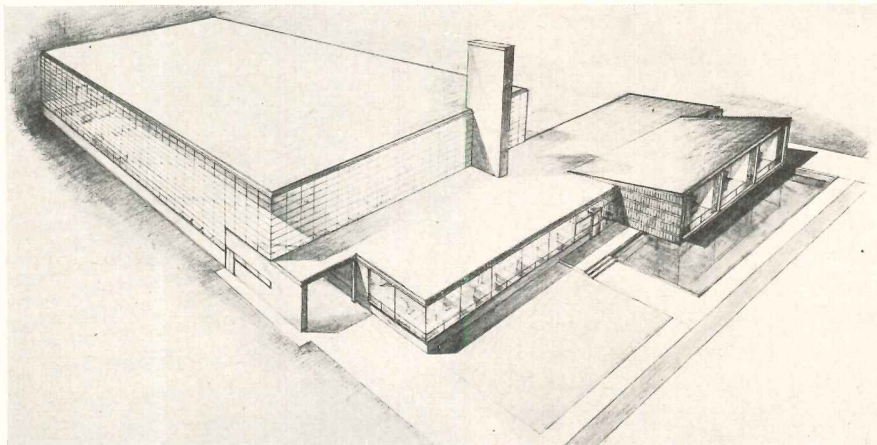
a) Permit the individual taxpayer to exclude up to 10 per cent of his annual income, or \$7500, whichever is lesser, from the amount of his income which is subject to federal income tax.

b) Require the taxpayer to pay the amount so excluded into a special pension or retirement fund sponsored by a bona fide agricultural, labor, business, industrial or professional organization for the exclusive benefit of its members.

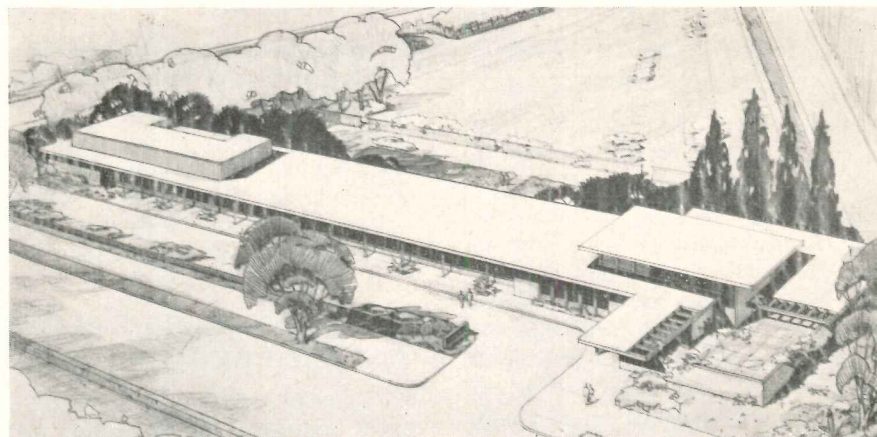
c) Provides that funds cannot be refunded till the taxpayer reaches the age of 60 and then only in specified ways — lump sum, to be taxed as long-term capital gain; 15 annual installments, each subject to annual federal income tax; by purchase of a single premium non-commutable life annuity with benefits subject to income tax as received.

d) Authorizes taxpayer to designate one or more beneficiaries to receive his accumulated funds on his death.

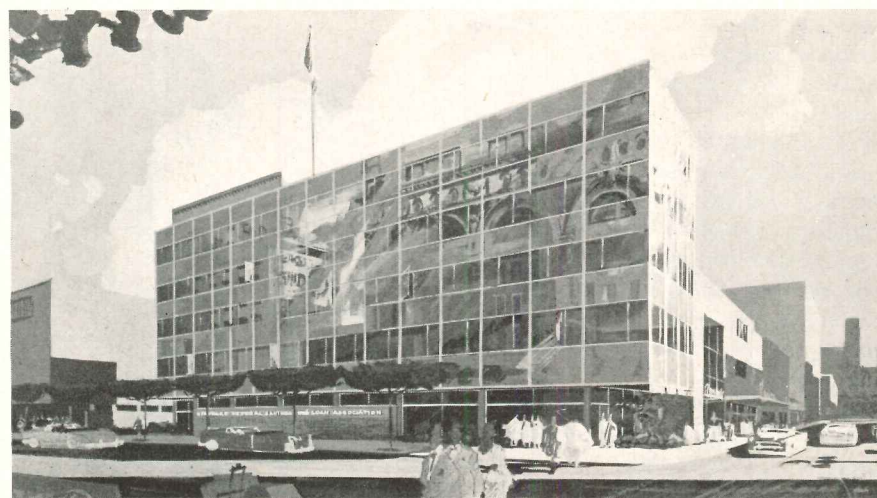
The Senate Finance group gave some consideration to the Ives measure last year, but deferred any formal action, referring it without prejudice to the Joint Committee on Internal Revenue Taxation for further study. Sen. Walter F. George of Georgia is chairman.



Factory-office building for Charles Grotnes Machine Works, Inc., Chicago, has been designed by Barancik-Conte Associates, Architects, as one-story structure of glass and face brick. Machine shop has steel sash and glass walls 21 ft high above 3-ft brick wall. Executive office wing is cantilevered out over a sunken garden



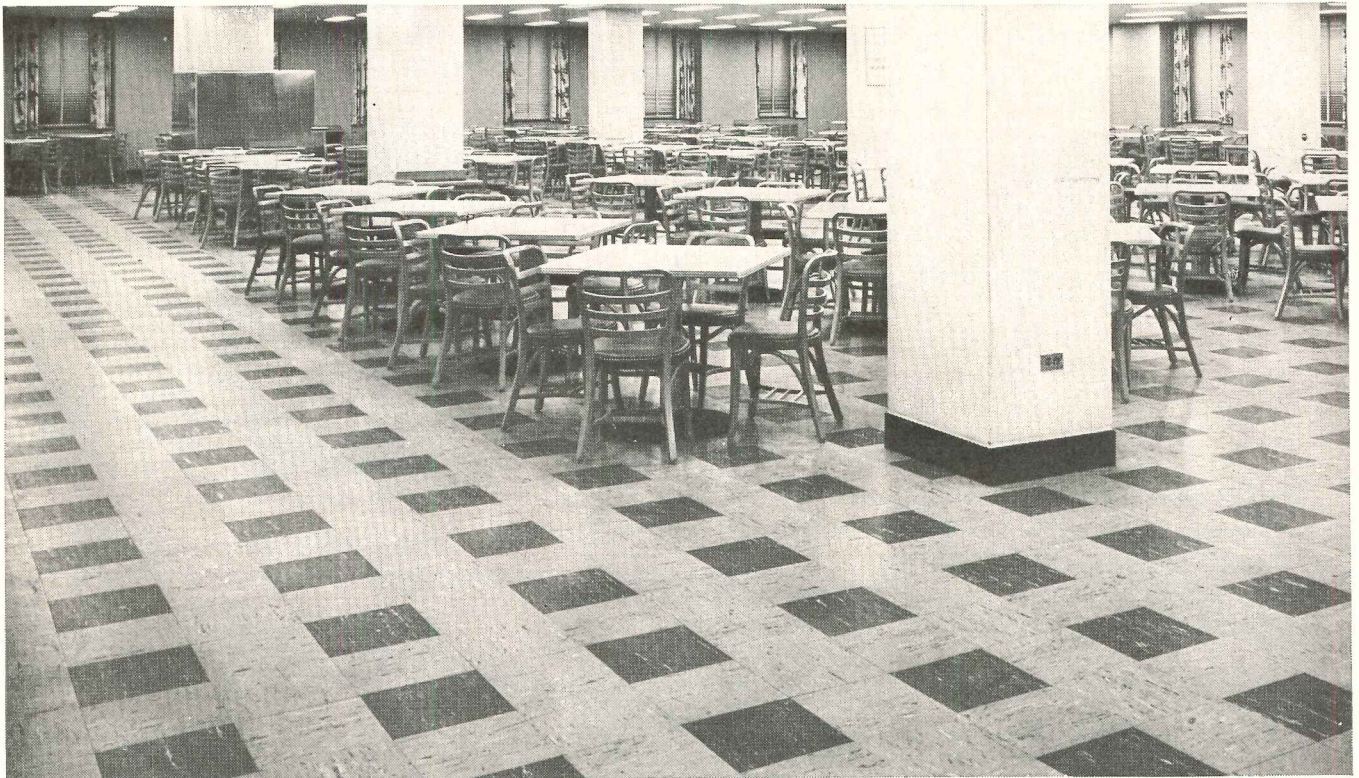
Architects Pereira & Luckman are building their new headquarters on a two-acre site at the western tip of Sunset Boulevard in Los Angeles. The building, of concrete, frame and glass, will have a total area of 20,000 sq ft. Facilities include space laboratory with floor scored off in modules to help clients visualize room sizes



Welton Becket and Associates, Architects, have designed an "all glass" building for Standard Federal Savings and Loan Association in Los Angeles. Continuous bands of wide sealed windows will alternate with opaque gray-blue glass spandrels; framing will be aluminum. Windows will have vertical louvered blinds on inside

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ease and economy of maintenance. The Kentile Flooring Contractor is such a man ... qualified by years of training and experience to decide which of the countless products and materials available today are best for your needs. Be sure to call on him whenever you need his technical knowledge. No obligation, of course.

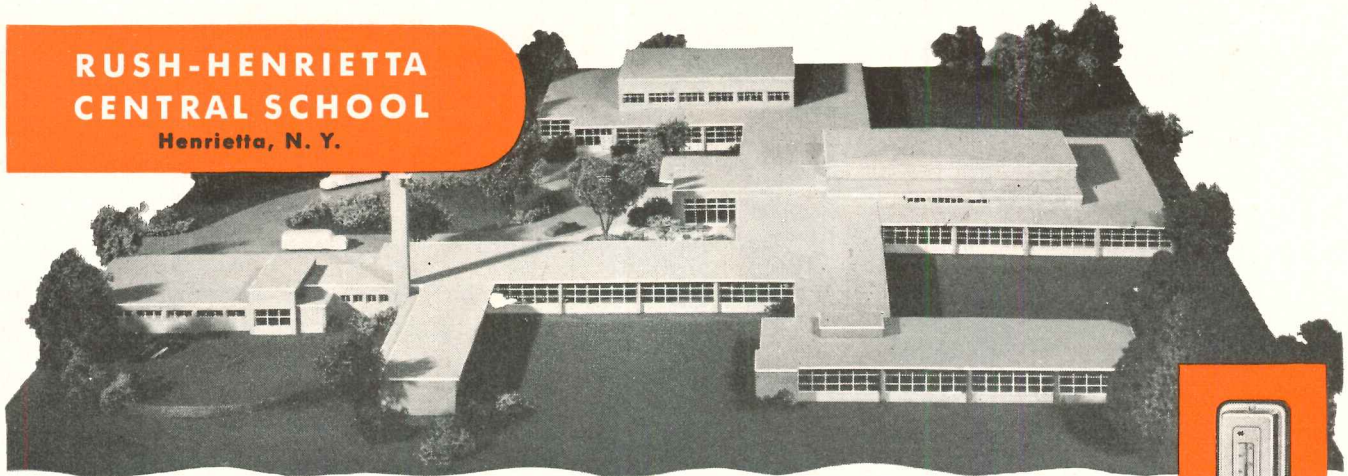
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# RUSH-HENRIETTA CENTRAL SCHOOL

Henrietta, N. Y.



Architects: ADE and TODD Rochester, N. Y. • Consulting Engineers: ROBSON & WOESE, Syracuse, N. Y.  
Heating Contractor: W. A. McCORMICK, Rochester, N. Y.



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**Ventilation** for each of the six zones is supplied by large unit ventilators controlled by a Powers duct thermostat and dampers.

**Auditorium** is heated by a central fan ventilating system. **Gymnasium** is heated by two large unit ventilators. Both types of ventilation

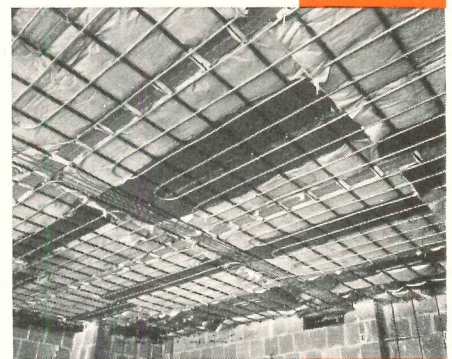
circulate room air except when rooms are occupied at which time outside air is proportioned to the load. Temperature in both of these spaces, as well as in the Locker Room, is regulated by various Powers controls.

**Steam Boiler Control for Varying Loads** Three oil-fired boilers here are regulated by a Powers No. 252 Pneumatic Pressure Regulator controlling three PE switches which cut in the right number of boilers required for the heating load.

**Powers MASTROL System of Control** is ideally suited for radiant heating. It has been widely used to control many types of forced hot water heating. Performance records show it unsurpassed for reliability. Maintenance cost is practically nil.

When problems of control for any type of heating or air conditioning arise, call Powers. Our more than sixty years of experience in supplying control for important buildings may be helpful to you.

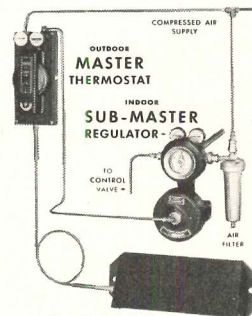
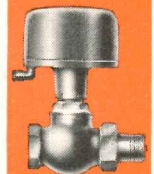
(a81)



Ceiling Coils before plastering

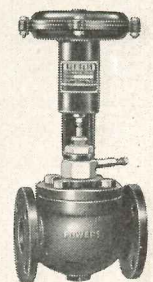
**81 Powers Individual Room Thermostats** here, control...

**87 Powers NO-PAK Valves** (packless, non-leaking type) which regulate heat in ceiling coils. Each room is provided with the temperature desired.



#### Powers MASTROL System of Control

in each of 6 zones regulates the temperature of water circulated from steam heated hot water converters to various rooms. Temperature of water is maintained in direct relation to weather out-doors.



#### Powers FLOWRITE Control Valves

Regulate steam to Hot Water Converters • Heating coils in Classroom Ventilators • Central Fan System in Auditorium • Large Unit Ventilators in Gymnasium.

Only a few of our many types of control for Radiant Heating are shown here.

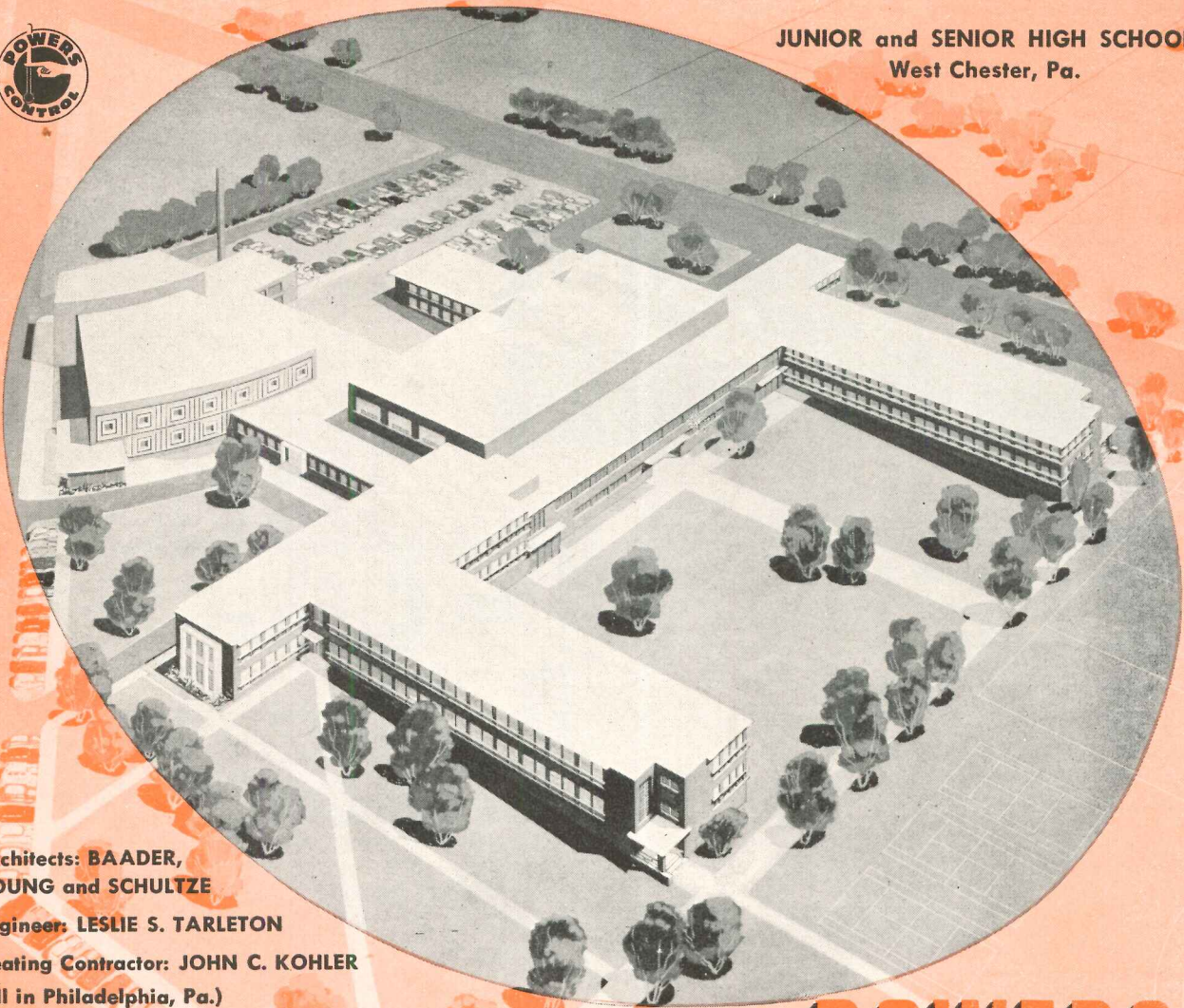
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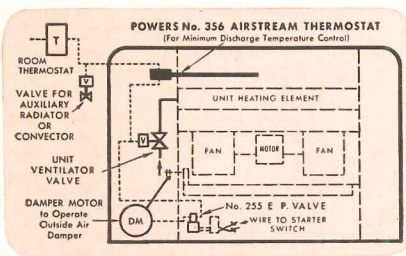


JUNIOR and SENIOR HIGH SCHOOL  
West Chester, Pa.



Architects: BAADER,  
YOUNG and SCHULTZE  
Engineer: LESLIE S. TARLETON  
Heating Contractor: JOHN C. KOHLER  
(all in Philadelphia, Pa.)

# Greater SIMPLICITY of **POWERS**



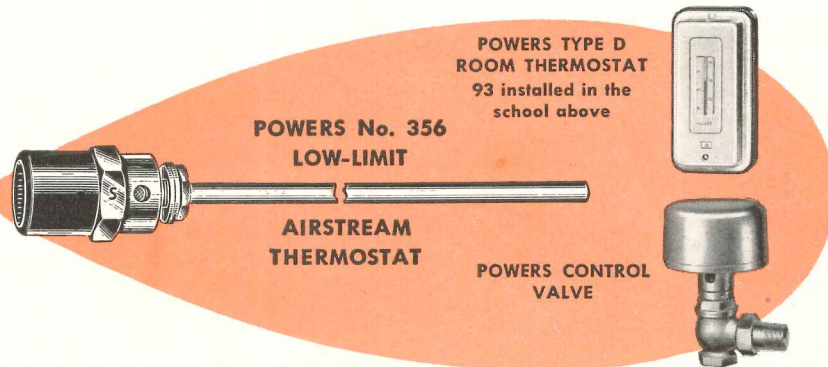
**UNIT VENTILATOR CONTROL**—used in this attractive modern school—is only one of the features that appeals to operating personnel. Equally important is the continuous accuracy of a Powers Low-Limit Thermostat.

As unit ventilators operate on minimum discharge temperature much of the time, a control system is only as good as its low-limit thermostat. Because of its superior design a Powers instrument needs no auxiliary devices to

supplement its dependable operation. To insure greatest comfort in classrooms regulate unit ventilators with Powers control. Its low cost maintenance and years of accurate service make it a very profitable investment.

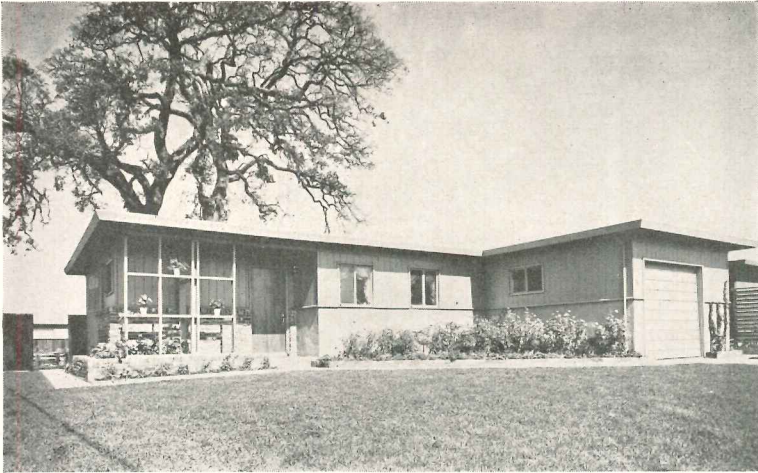
### Important Features

- Powers 2-line non-waste Airstream Thermostats have a graduated dial for ease of adjustment—also Adjustable Sensitivity for precise control.
- With its ingenious non-waste double air valve mechanism there is no continuous waste of compressed air. It is not a "leakstat".
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(a80)

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Photos: Courtesy Parents' Magazine

## HOUSING CHANGES SEEN BY BUILDERS; BROCKBANK ELECTED TO HEAD N.A.H.B.

### *Architects and Builders Cited in Two Sets of Awards*

TEN CHANGES in builder-built houses are predicted by Alan E. Brockbank, who was recently elected president of the National Association of Home Builders at the group's Chicago convention.

While experienced residential architects found none of the changes new, they were pleased to note intimations of open-mindedness on the part of builders towards the following:

1. Non-bearing interior walls which allow use of movable interior partitions. In some cases, interior walls to be floor-to-ceiling storage wall units or floor-to-ceiling bookcases.

2. Increased use of dual winter heating and summer air conditioning units. A limited supply of such equipment is now being produced, Brockbank said, at a price which allows its use in homes costing as low as \$12,000 in some areas.

3. Floor plans designed for easy expansion. In many cases, expansion to a third bedroom through a closet: after expansion, the closet becomes a hall. Pre-planning to eliminate ill-planned third bedrooms cutting off views and ventilation.

4. Rising popularity of recessed and indirect lighting and supplementary floor lamp lighting.

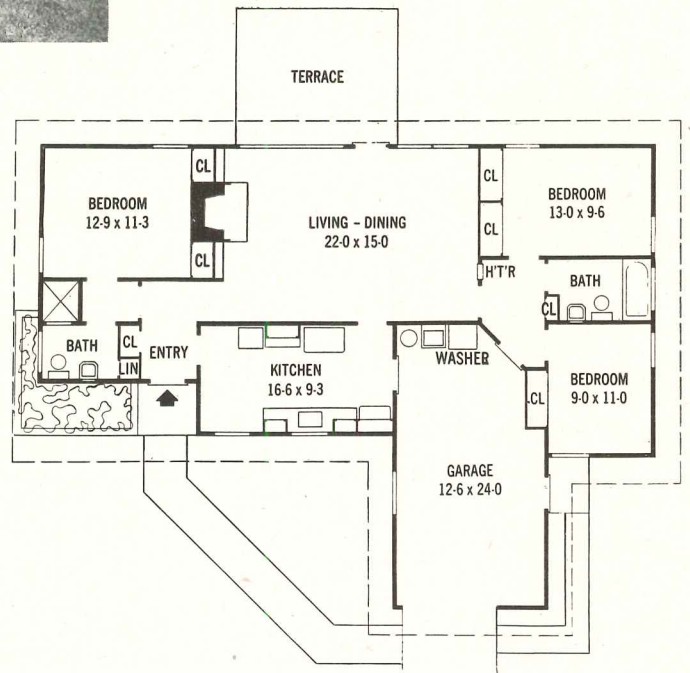
5. Rising popularity of furniture designed and built for use in contemporary-styled home.

6. Increased use of simplified roofs. More living room ceilings which follow the contour of the roof.

7. Increased use of many electric appliances including garbage disposal, dish

(Continued on page 386)

A \$9500 house designed by Architect John W. Davis of Sacramento, Cal., for his own family brought the National Merit Award in Parents' Magazine's second annual builders' competition "Best Homes for Family Living" to Builder Jere Strizek of Sacramento. Awards were presented at the N.A.H.B. convention in Chicago. Mr. Strizek has erected more than 100 similar houses in his Town and Country development just outside Sacramento



## BUILDING CODES GROUP RELEASES FIRST RESULTS

THE FIRST MAJOR RESULTS of three years of work toward greater uniformity of building codes in the United States have been released by the Joint Committee on the Unification of Building Codes.

Four sections of technical material on definitions, use and occupancy classifications, construction classifications and design loads can be obtained upon request to Building Commissioner A. H. Baum, 426 City Hall, St. Louis, Mo., who is chairman of the Joint Committee.

At its next meeting, May 16-17 in Detroit, the Committee will consider adding additional building code provisions covering means of egress, structural steel and iron, lathing and plastering, prefabricated construction, precautions during building construction and use of public property.

With a view to extending uniformity

of building codes throughout the United States and Canada, the work of the joint Committee is being studied by the Associate Committee on the National Building Code of the National Research Council of Canada.

## CODE OFFICIALS SESSION SUGGESTS BRAB PROJECT

THE NEED for an approved list of testing laboratories became the major topic of discussion at the Washington meeting of building code officials, inspectors and manufacturers' representatives sponsored last month by Southwest Research Institute.

Certification of testing laboratories was suggested as a useful new project for the Building Research Advisory Board, with an initial conference of code group representatives called by BRAB to discuss ways of raising funds to pay for it. The BRAB board will be asked to consider the project.



# The Cardinal Stritch Retreat House

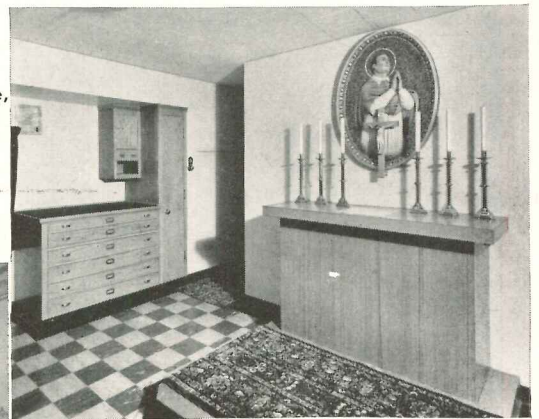
**EXEMPLIFIES THE BEAUTY IN WOOD  
BUILT, FINISHED AND INSTALLED  
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A remarkable blending of modern simplicity and Italian Renaissance elegance gives the interiors of the Cardinal Stritch Retreat House a rare beauty, both new and eminently ecclesiastical. Special cabinetwork and architectural woodwork for this distinguished interior were built and finished by Woodwork Corporation craftsmen, precisely to the architect's specifications. Installation of the Altars, Tester, Prie-Dieux, Vestment Cases, and other cabinet work was handled by Woodwork Corporation's installation specialists.

This complete Woodwork construction-finish-installation service eliminates delays and errors and assures satisfaction with economy. However large or small your custom woodwork plans, this organization of craftsmen is equipped to serve you well.



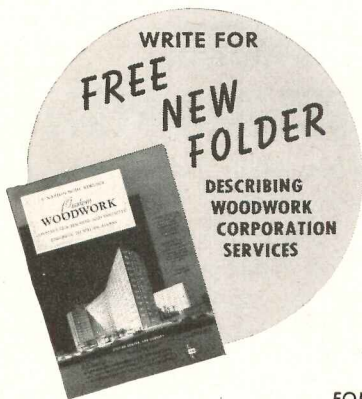
Reredos and Tester, Main Chapel Altar, Cardinal Stritch Retreat House, Mundelein, Illinois—Architects, McCarthy & Smith, Chicago



Altar and Vestment Case, Cardinal Stritch's Oratory



Nun's Chapel, Cardinal Stritch Retreat House



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SEND YOUR PLANS AND SPECIFICATIONS TO

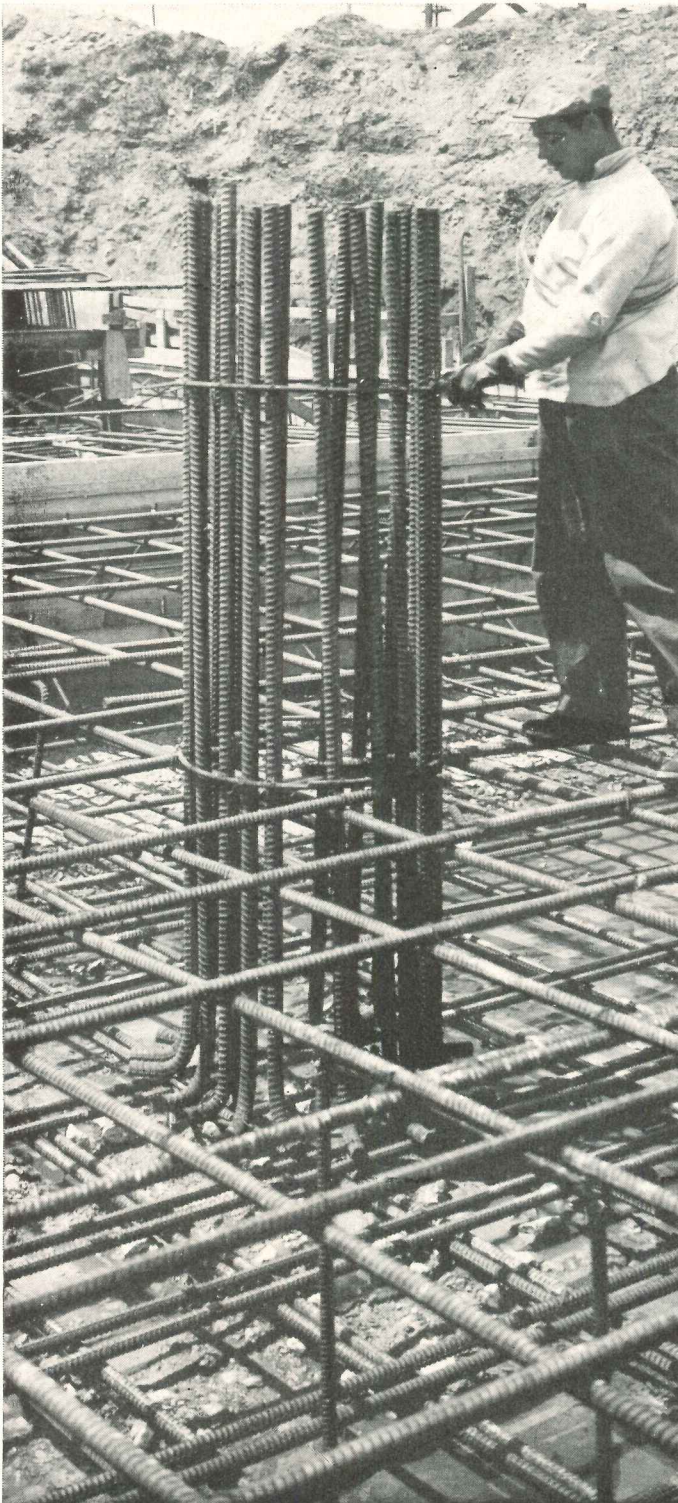
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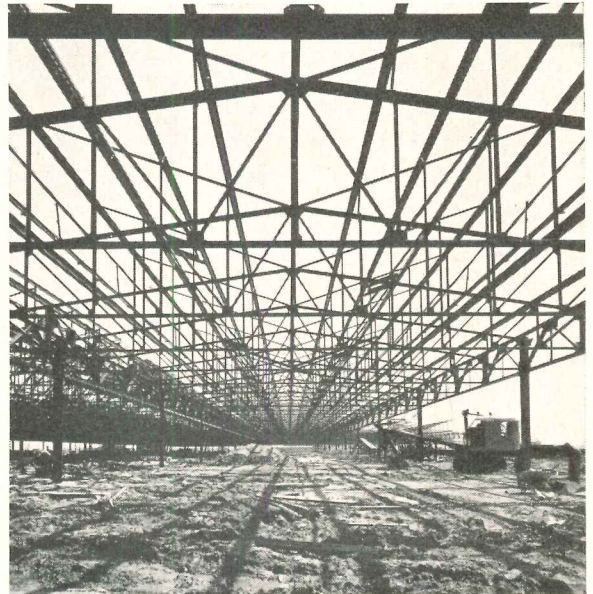


# CONSTRUCTIVE



## INLAND HI-BOND

The deep, reversed, double-helical ribs of Hi-Bond reinforcing bars provide a mechanical grip which gives maximum bond in concrete, thus permitting greater use of steel's potential strength in concrete construction. It also improves transfer of stresses, crack control and resistance to slip . . . advantages that will make possible higher design stresses and thereby lower construction costs. Hi-Bond meets standards set up by ASTM A 305.

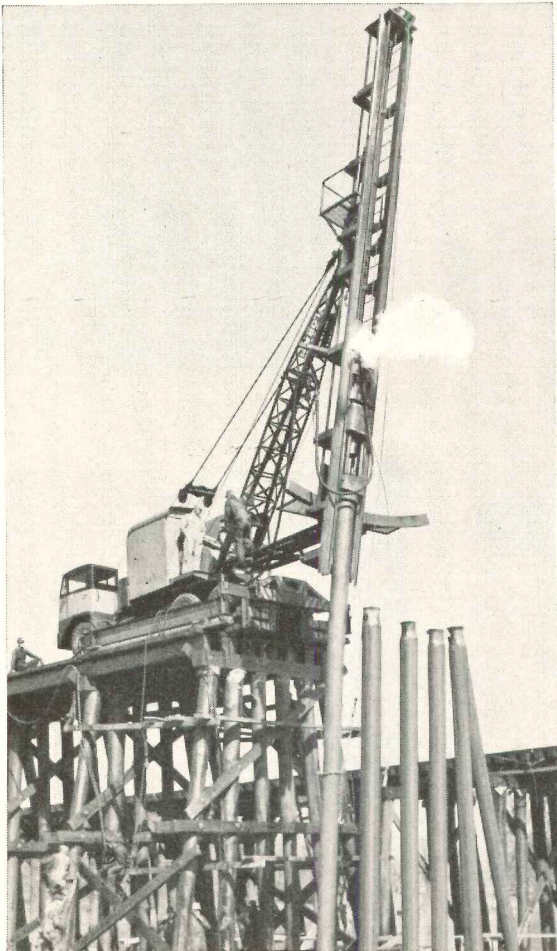


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# IDEAS



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## INLAND 4-WAY SAFETY PLATE

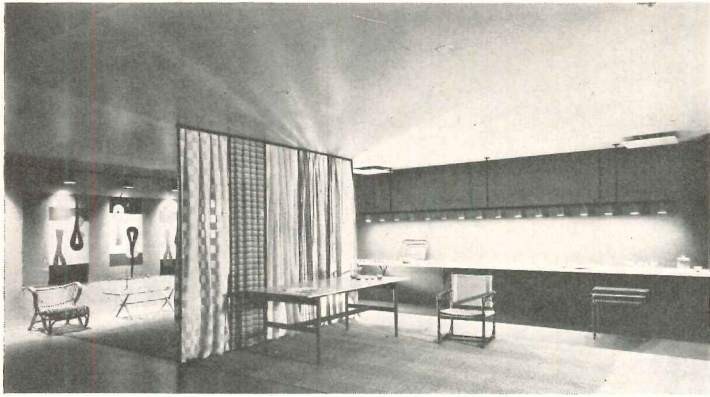
On scores of products, on new bridges, in new buildings—and for replacement, maintenance and repair—this scientifically designed steel floor plate, with its exclusive raised lug pattern, provides positive traction in every direction. Tough, durable, strong, it stands up under heavy loads and hard wear. It can be readily sheared, welded, punched, flame cut, and shaped. It has no pores, no cracks, absorbs no liquids and is easy to sweep. Comes in a wide variety of patterns and sizes. Write for Bulletin FI.



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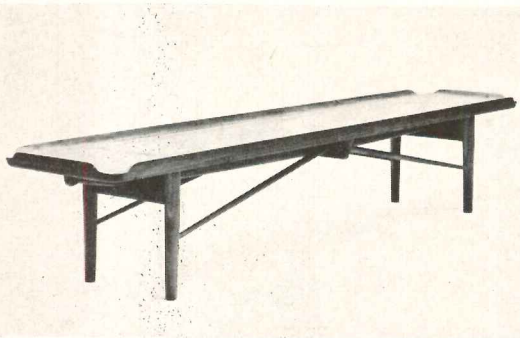
[Photo below: Carl Ullrich Inc.; others: courtesy Museum of Modern Art



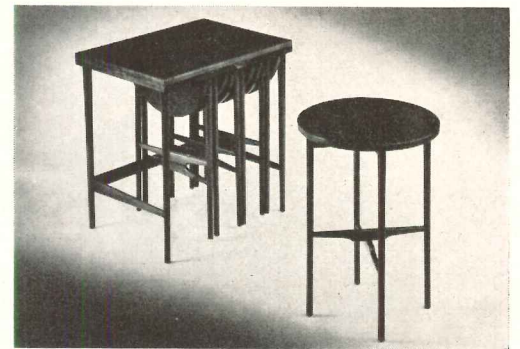
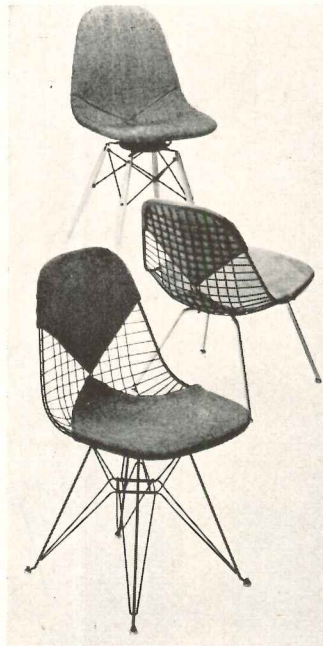
Left: One view of Paul Rudolph's installation for Good Design 1952. Right: side chair of wood with cellophane seat, designed by Italian Architect Gio Ponti, manufactured by M. Singer & Sons



Below: three new versions of the Eames chair; Charles Eames, designer; Herman Miller, manufacturer. Left: basket chair designed and manufactured by Dan Johnson. Right: "Sunfan" chair; designer, Sonna Rosen; manufacturer, Swedish Modern



Coffee table designed by Finn Juhl, manufactured by Baker Furniture Company



Nest of tables designed by Bertha Shaefer; M. Singer & Sons, manufacturer

## GOOD DESIGN 1952: PAUL RUDOLPH'S INSTALLATION GETS RAVES

A YOUNG ARCHITECT stole the show as the Chicago opening in January of Good Design 1952 marked the start of the third year of the project sponsored jointly by the Museum of Modern Art in New York and the Merchandise Mart in Chicago.

Paul Rudolph's installation, done just before he returned to active service in the Navy, was described by *The New York Times* as "breathtakingly spectacular" and the phrase seemed hardly too strong to describe most reactions.

Mr. Rudolph used opaque and translucent screen walls of a variety of materials to break up the space, and varying intensities of lighting for restful and highly dramatic contrast.

Nearly 250 new items were displayed in the show, which for the first time also included selections held over from last June's exhibit. Till now the whole exhibition has been new in January.

Objects in the exhibit span a wide range of styles and materials as well as uses — though Exhibit Director Edgar Kaufman Jr. himself expressed disappointment at the small number of exhibits in the appliance field.

Mr. Kaufman noted that restrictions or fear of restrictions in some metals and plastics probably tends to reduce the number of new models. But he added: "It seemed unfortunate to the Selection Committee that a number of new models have a tendency to ornate

gadgetry rather than straightforward design."

The more "sculptural" approach to design of contemporary furniture which has been notable in a number of lines introduced recently was represented in several of the selections; and taken all together, "modern" design as represented in the exhibit has a somewhat less austere aspect than it has sometimes worn.

At the same time, there are pieces in the exhibit that would not have shocked many people at a furniture exhibit of 50 years ago. These, presumably, are a soft answer to the hard question about "mixing" contemporary designs with traditional furnishings.

The New

# TRI-PANEL

by Morgan

HERE IS TODAY'S

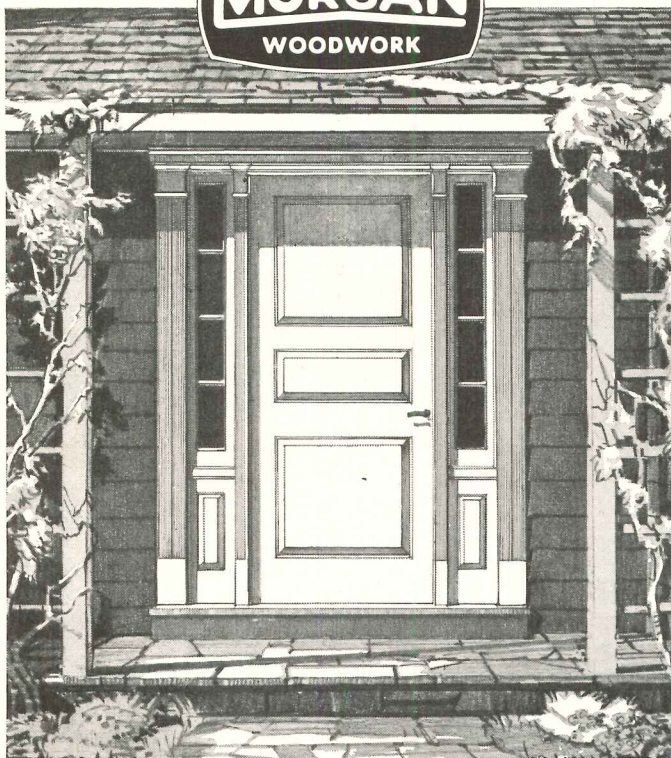
*Outstanding*

**PANEL DOOR**

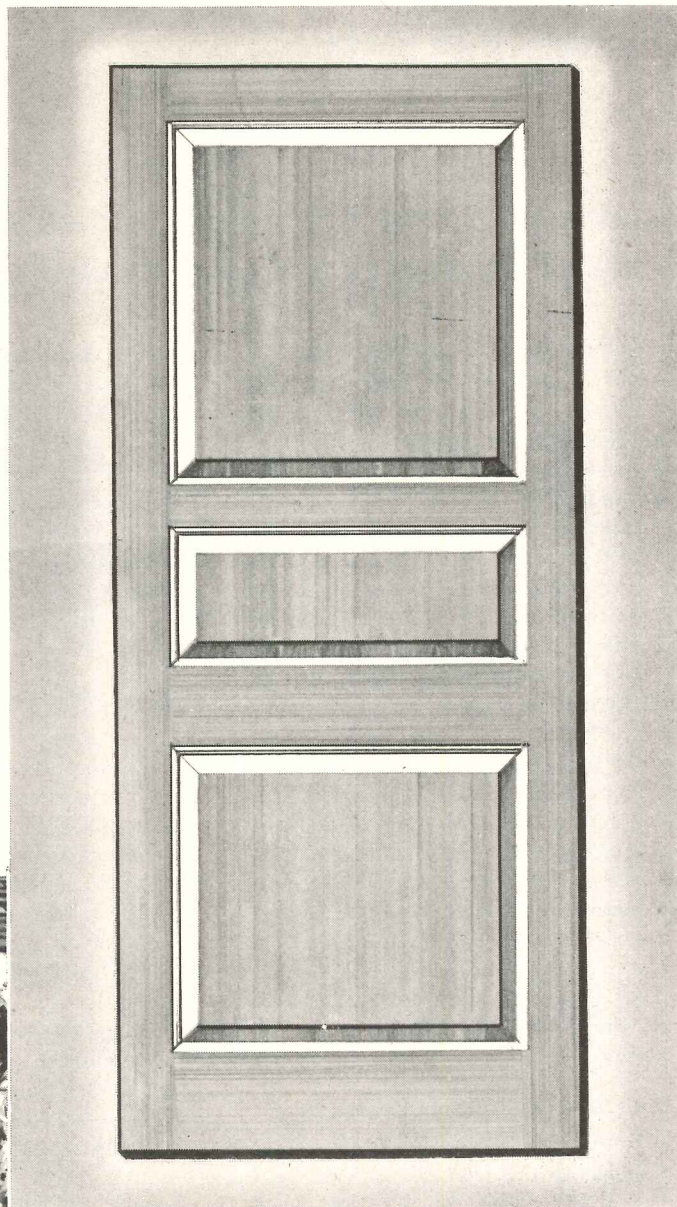
Designed by a Top Ranking Architect

to blend with Traditional, American Modern, or Ranch Style Homes! It's a full length picture of perfect dynamic symmetry, and precision detailing. Carefully proportioned panels are heavy, hip-raised, with ovolo sticking. Entire surface is sanded satin smooth for finishing as desired. Both M-117 and M-1073 Doors are available in standard sizes, in Kiln dried Pinewood. Here is another example of woodwork at its best. Send for your copies of Morgan Woodwork Catalogs.

An Original Design by the Manufacturers of

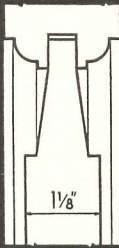


Above: Tri-Panel Exterior Door M-117 in Morgan M-14 Entrance



Above: M-117 Tri-Panel Exterior Door; Below: M1073 Tri-Panel Interior Door

M-117 DOOR

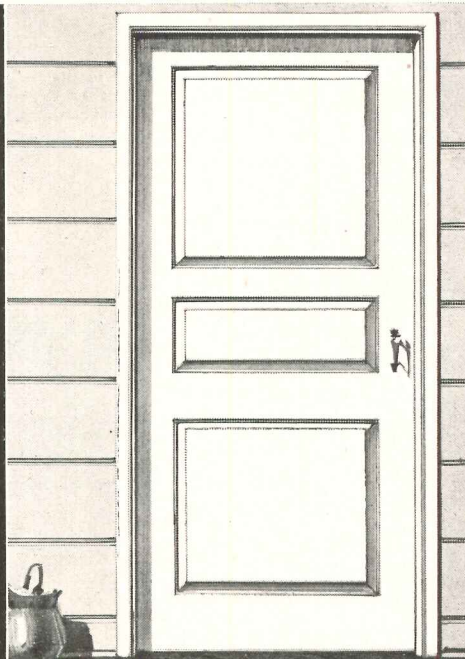


1 3/4" Thickness  
Heavy 1 1/8" Hip Raised  
Panels—2 sides

M-1073 DOOR



1 3/8" Thickness  
with 3/4" Hip Raised  
Panels—2 sides



## MORGAN COMPANY

Manufacturers since 1855 • Oshkosh, Wisconsin  
Doors • Corner Cabinets • Stairwork • Morganwalls  
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**NEED FOR QUALIFIED DRAFTSMEN STRESSED AT TORONTO;  
ARCHITECTS REELECT EARLE SHEPPARD ASSOCIATION HEAD**

ACTION TO INSURE a constant flow of qualified architectural draftsmen and assistants to architects' offices was urged at the convention of the Ontario Association of Architects recently held in Toronto.

Schools of architecture at Canadian universities were said to be doing a fine job of turning out future architects. But it was pointed out that large numbers of graduates, after obtaining the practical experience required for registration as architects, immediately opened their own offices.

"It takes 15 years to produce a competent architectural draftsman," said A. S. Mathers, prominent Toronto architect and chairman of the O.A.A. Committee on Education, "and we must take steps to ensure a steady supply of these men for our profession." Tribute was paid to the work of the School of Architectural Technology, Ryerson Institute, Toronto, in training architectural draftsmen and assistants.

**Speakers Include Americans**

Seminar speakers included A. L. Fleming K.C., Toronto, solicitor for the O.A.A., who discussed the legal aspects of professional practice, and O'Neil Ford of San Antonio, Tex., who

gave an excellent talk on the Youtz-Slick "lift-slab" method of construction.

Donald Q. Faragher of Rochester, president of the New York State Association of Architects, was one of the distinguished guests attending the convention. Another was the Hon. Stanley Woodward, U. S. Ambassador to Canada, who addressed the annual dinner on the subject "My Northern Exposure."

**Officers Elected**

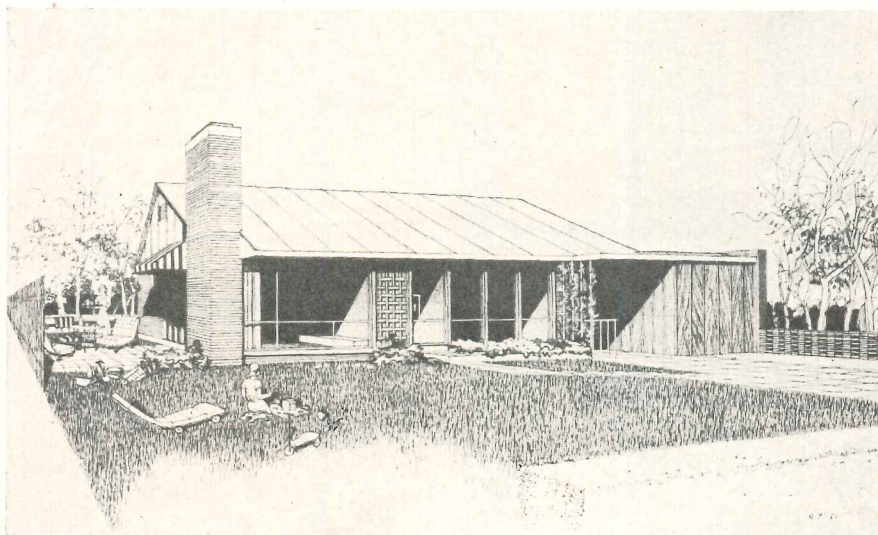
Earle L. Sheppard of Toronto was reelected for a second term as president of the Association. Other officers for 1952 are: Gordon S. Adamson, Toronto — vice president (second term); Robert D. Schoales, London — treasurer; W. H. Gilleland, Ottawa, F. H. Marani, Toronto, Alvin R. Prack, Hamilton and Hugh P. Sheppard, Windsor — councilors.

Registration Board consists of H. H. Madill, Toronto — chairman; John M. Kitchen, Ottawa — vice chairman; W. E. Fleury and Eric W. Haldenby, both of Toronto; and William R. Souter, Hamilton.

John D. Miller of Toronto is again secretary of both the Association and the Registration Board.



Ontario President Earle L. Sheppard shows an American guest around convention exhibit. His companion is Donald Q. Faragher, Rochester, New York State Association of Architects president. Below: U. S. Ambassador Stanley Woodward, dinner speaker, receives gift paperweight from Mr. Sheppard



The composite house designed to meet majority requirements revealed in poll

**2000 Women Polled on Tastes;  
House Designed to Match Them**

CHATELAINE, a leading women's magazine, recently released the results of a poll taken on national housing needs and tastes and a design by Gibson and Pokorny, Toronto architects, which incorporated the majority findings.

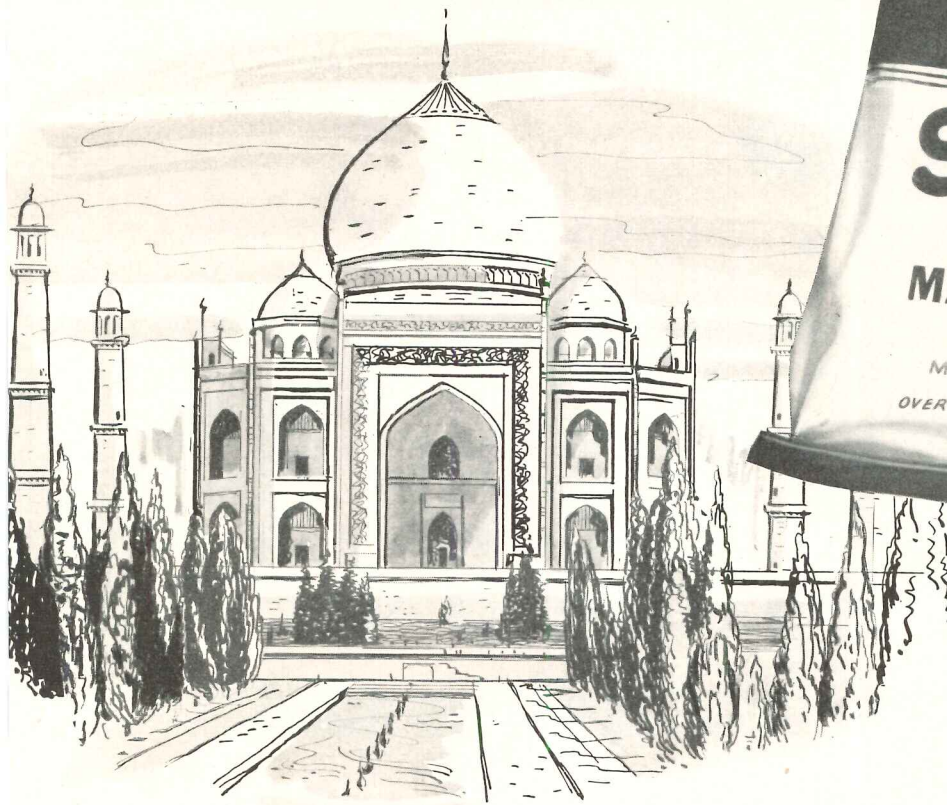
Participants in the poll were 2000 women in all walks of life and all parts of Canada who serve on the magazine's Consumer Council. Their views, taken on other subjects in the past, have proven to be remarkably representative of national opinion.

Some highlights of the poll results:

Minimum lot size specified was 53 ft wide by 120 ft deep. Fifty per cent of women interviewed want to live in

(Continued on page 384)

# fit for the walls of a Taj Mahal



Over 20,000 men labored 22 years to build the Taj Mahal in India, a building conceived primarily in white marble inlaid with mosaics of precious stones and said to be the most beautiful building in the world.

If the Taj Mahal, the loveliest of all world buildings, were being built today, the builders could not find a more perfect cement for setting the marble than Medusa StoneseT, white, non-staining masonry cement. In the 21 years since this amazing cement was introduced to the American architect and builder, it has found a place in setting, pargeting and pointing the most beautiful natural stone, marble, face brick, and glass block constructions in America.

StoneseT is non-staining. That means it is free from

soluble alkalis that cause stains from weeping joints or staining of the mortar itself due to impurities. Besides, it is the best of all mortar cements when tinted mortar is required. StoneseT complies with Federal Specifications SS-C-181-b Type II. It has minimum shrinkage, produces uniform color in all joints and is used for back-up masonry. Ready to use when delivered on the job—no admixture other than sand is required. These features plus its economy make StoneseT the world's finest mortar cement. If you have a really fine job, be sure to specify Medusa StoneseT.

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**BETTER** with



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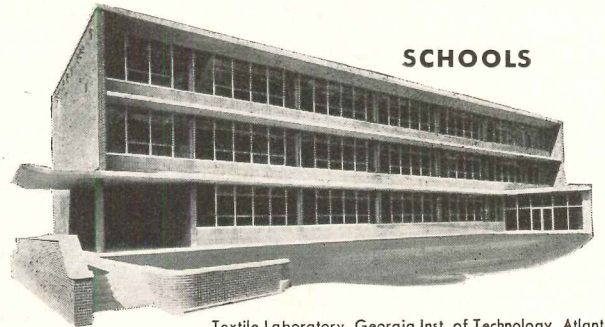
1000 Midland Bldg. Cleveland 15, Ohio    228 N. LaSalle St. Chicago 1, Ill.    135 W. Wells St. Milwaukee, Wis.    230 Park Ave. New York 17, N.Y.    1844 Oliver Bldg. Pittsburgh 22, Pa.    1307 Toledo Trust Bldg. Toledo, Ohio    25 N. George St. York, Pa.

# for any kind of building—one kind



**APARTMENTS  
AND RESIDENCES**

Twin Oaks Apartments, Kansas City, Mo.  
Architects: Voskamp & Slezak



**SCHOOLS**

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

## Quality

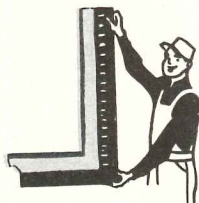
# ALUMINUM



For client protection insist on windows bearing this Quality Seal



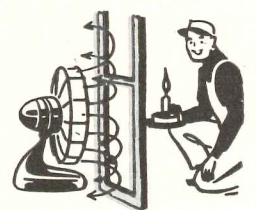
**TESTED** FOR QUALITY MATERIALS



**TESTED** FOR SOUND CONSTRUCTION



**TESTED** FOR STRENGTH OF SECTIONS



**TESTED** FOR LOW AIR INFILTRATION

## AVAILABILITY OF ALUMINUM WINDOWS

Don't be misled by false rumors. There is no need to use substitutes. Aluminum windows ARE AVAILABLE for immediate and future use. Present NPA Order M-4A permits unrestricted use of "Quality-Approved" aluminum windows, as class "B" building product under CMP. Consult individual manufacturers of "Quality-Approved" aluminum windows for up-to-the-minute information on their delivery schedules.



# of windows does the job best!

HOSPITALS



Georgia Baptist Hospital, Atlanta, Ga.  
Architects: Stevens & Wilkinson, Inc.

COMMERCIAL AND  
INDUSTRIAL BUILDINGS

Philadelphia Inquirer Rotogravure Bldg., Philadelphia, Pa.  
Architects: Albert Kahn Associates



Crowell-Collier Building, New York, N. Y.  
Architects: Leonard Schultze & Associates



*Approved*

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FOR schools and hospitals...for apartments and residences...  
for commercial and industrial buildings—the one sure way of  
giving your clients “the best” in windows is to specify “Quality-  
approved” aluminum windows for every building you design.  
Aluminum windows help clients save money year after year on  
maintenance costs. They never need painting or costly repairs.  
They cannot rust or rot. They always operate easily and will  
remain beautiful for the life of the building.

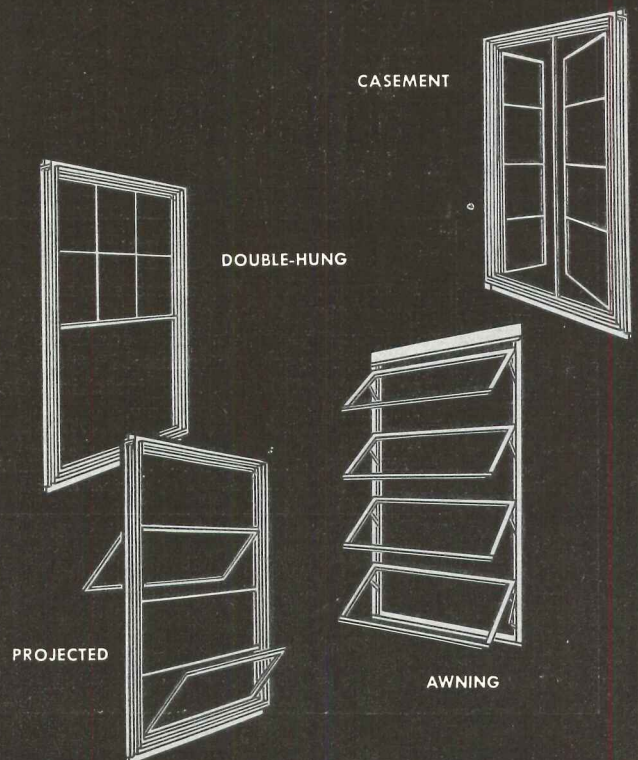
Be sure! Specify the *one* kind of aluminum windows that gives  
you all these advantages—the kind that bears the “Quality-  
approved” Seal. When you do, you can be sure of windows that  
have been tested and approved by an independent laboratory—  
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“Quality-Approved” aluminum windows are available in double-  
hung, casement, projected and awning types. For detailed speci-  
fications and names of manufacturers, consult Sweet’s (Section  
7a/ALU) or write direct to Dept. AR-3.

*Aluminum Window  
Manufacturers Association*

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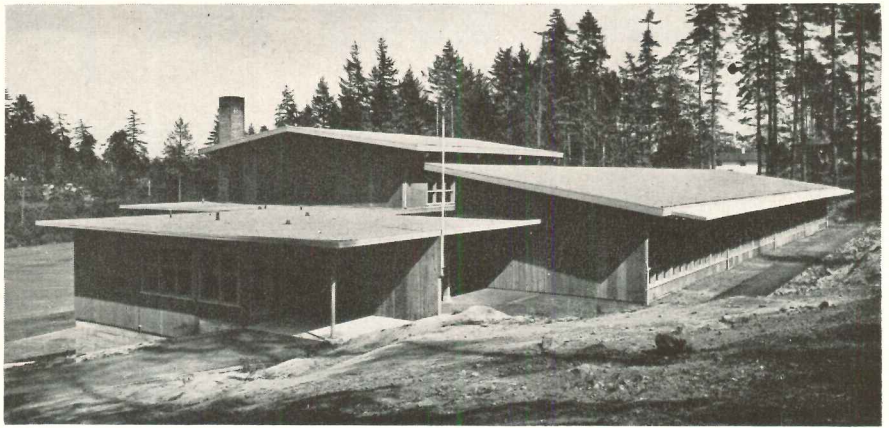
## THE RECORD REPORTS

### CANADA

(Continued from page 28)

#### New Elementary School Built at \$97,000 Cost

The View Royal Elementary School (photo at right) recently completed near Victoria, British Columbia, was built at a cost of \$97,000, or 37 cents per cu ft, exclusive of architects' fees. Architects



were Birley, Wade & Stockhill of Victoria.

It is built on a hillside site above a playing field, with its four elementary classrooms and one special classroom on the upper level and on the level of the field a large play space open to the field.

Construction is concrete and timber, with exterior facing of natural finish striated plywood, light gray-green wood trim and white sun screens. Interiors have plywood dados with fibreboard above. Daylighting is supplemented by bilateral lighting from semi-indirect fluorescent fixtures.

#### HOUSING TASTES (Continued)

towns or suburbs, only 16 per cent in cities.

Construction that combines brick with other materials was a close choice over all-brick. Votes were 29 per cent and 28 per cent respectively.

One-story house was demanded by 53 per cent, while 85 per cent expressed desire for a basement and 92 per cent wanted a sloping roof.

The returns showed women receptive to some newer ideas — for example, the all-on-one-floor "ranch style" dwelling. On the other hand, they don't intend to give up such traditional features as a basement, which they feel has proven its usefulness, or the sloping roof, which they consider more attractive than a flat one.

Big windows of the "picture" variety were insisted on by 60 per cent. For ordinary use, sliding "up and down" windows were chosen by 74 per cent, far outstripped dormer and casement windows in favor.

Separate dining room was preferred by 43 per cent, all other votes being cast for dining room combined with either living room or kitchen.

Three bedrooms were urged by 55 per cent  
(Continued on page 34)

# GLOBE SPRINKLERS



## FIREMEN EVERY 10 FEET

#### IS ANY BUILDING TRULY "FIRE-PROOF"?

No type of building is actually more "fire-proof" than a furnace. Consider, then, what happens to flammable contents when ignited in such a structure. Prevent FIRE in any building . . . by installing GLOBE Automatic Sprinklers, now.

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## THEY PAY FOR THEMSELVES



# Get the Whole Picture . . .

## BEFORE YOU DECIDE ON ANY ROOF DECK

SAME LIGHT STRUCTURAL STEEL THAT CARRIES OTHER PERMANENT ROOF DECKS

LEAKS THRU COMPOSITION COVERING OR MOISTURE FROM WITHIN, CANNOT IMPAIR STRENGTH OR INSULATING VALUE

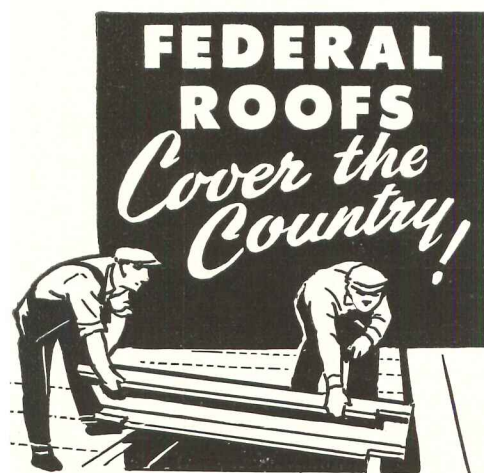
SATIN SMOOTH FINISHED CEILING EFFECT ON UNDER-SIDE REQUIRES NO PAINTING

PERMANENT, LIGHTWEIGHT, FIRESAFE, IMPERVIOUS STRUCTURAL CONCRETE LASTS AS LONG AS THE BUILDING - AND NO MAINTENANCE

THE ONLY TYPE OF LIGHTWEIGHT, PERMANENT, FIRE-SAFE ROOF DECK AVAILABLE, REQUIRING NO PAINTING, REPAIRS OR REPLACEMENTS!

WEATHERPROOF COVERING GOES ON IMMEDIATELY AFTER ROOF SLABS ARE LAID - NO DELAY WAITING FOR ROOF DECK TO DRY OUT

# FEDERAL- *Featherweight* STRUCTURAL CONCRETE PRECAST ROOF SLABS



All roofs look alike from the top, when the weatherproof covering is in place. But you've got to look deeper than that—down under the weatherproof covering to the roof deck material itself.

There just is no roof material to equal FEDERAL-Featherweight STRUCTURAL CONCRETE for lasting strength, resistance to weather, to moisture inside or outside the building, to heat, smoke, cinders, steam, gases or fumes. It cannot rot, rust or disintegrate.

For proof, you need only consider the thousands of Federal Roofs on foundries, forge shops, paper mills, railroad buildings and the like, where the roof really takes a beating—under conditions that only STRUCTURAL CONCRETE could possibly withstand.

Your roof deck should be paid for only once. Further expense for painting, repairs or replacements over the years is an unnecessary part of the overall cost—and must be anticipated with every other type of roof deck except precast STRUCTURAL CONCRETE, the original cost of which is its only cost.

ANY BUILDING—INDUSTRIAL OR INSTITUTIONAL—IS A BETTER BUILDING WITH A FEDERAL ROOF!

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## THE RECORD REPORTS

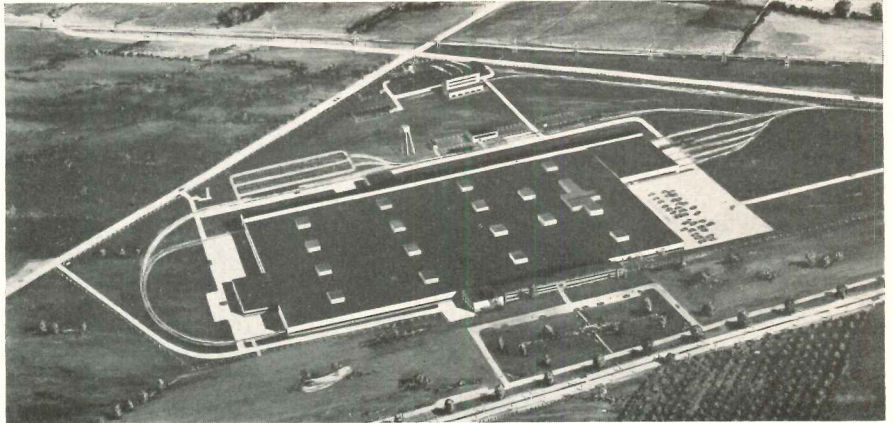
### CANADA

(Continued from page 32)

cent; and the same percentage said they'd like to have one bedroom double as a den.

Combined kitchen-laundry was in accordance with wishes of 50 per cent.

Hobby room appears to be highly prized feature; 60 per cent said they had leisure time interests.



### Canada's Largest Plant Under Way at Oakville

Ford of Canada's 32½-acre automobile assembly plant at Oakville, Ont., will have more floor area under one roof than any industrial building in Canada (photo of rendering above).

Site preparation has been completed and excavation for footings began in February. Giffels and Vallet of Windsor are engineers in charge.

The municipalities most affected, Trafalgar Township, in whose southeast portion the industrial colossus will be located, and the Town of Oakville, which possesses the necessary services and facilities, are bracing themselves to meet an expected influx of 20,000 or 30,000 people.

### Resistance to Zoning

Three years ago the Township Council passed an area subdivision control bylaw which prohibits the sale of land by medes or bounds unless it is in a registered plan of subdivision.

However, the Council has consistently refused to enact a zoning bylaw to regulate the use of land and the character, location and use of buildings. Last year it turned down a proposal to provide a green belt to protect existing residential sections from undesirable encroachments of industry and commerce.

Most recent evidence of its ability to meet the challenge of new conditions was to give first reading to a bylaw which will make speculators pay for the installation of new roads, water and sewer mains.

### Joint Planning Board Helps

Oakville, which has an excellent zoning law, watches the move on water and sewer mains with no small degree of interest. In the past, subdivisions in Trafalgar Township have been serviced with water provided by Oakville. The tremendous residential and industrial de-

(Continued on page 36)



El Camino College, California. Exterior concrete painted with Wesco Durasite  
Marsh, Smith & Powell, Architects, Los Angeles



## Sure, there's a colorful flat paint for CONCRETE

...There's a Specialized Wesco Paint for Every Stucco or Masonry Wall

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No *one* paint can be right for all surfaces, but there's a Wesco *Specialized* Paint for every masonry surface—old or new, painted or unpainted, dense, porous or patched—that will give it beauty and protect it for years.



Write for FREE Booklet "Masonry Painting Handbook"  
— 37 photos of masonry surfaces with painting specifications of leading architects and painting contractors.  
Address Dept. T, in care of the Wesco plant nearest you.

WORLD'S MOST COMPLETE LINE OF

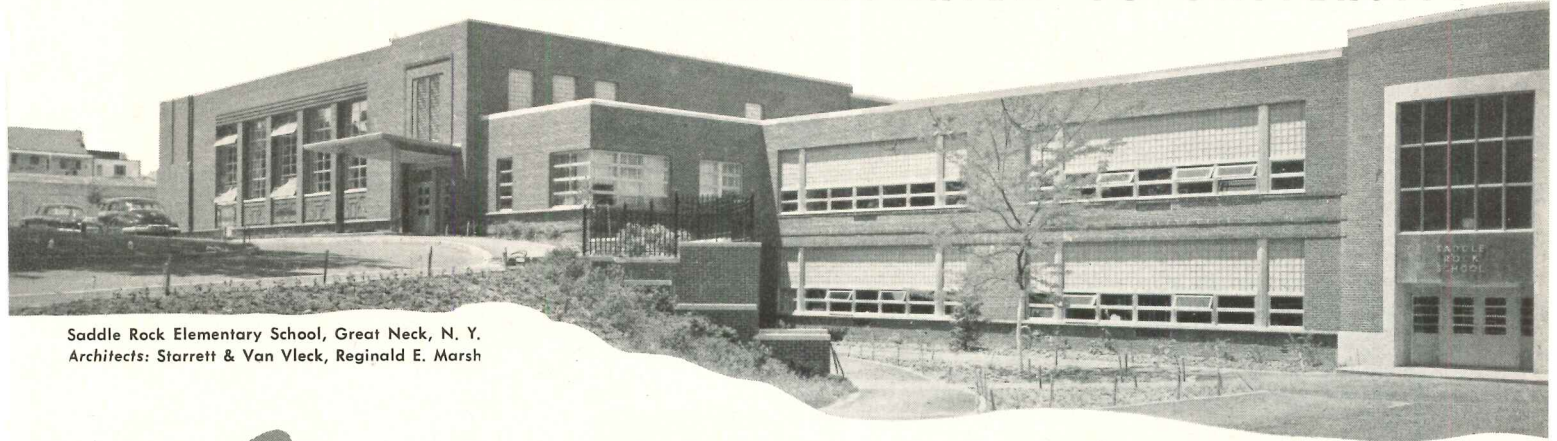
## Wesco Masonry Paints

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Trenton 7, N. J. • Matteson, Ill. • Good Hope, La. • Berkeley 10, Calif. • Los Angeles 23, Calif. • Portland 9, Oregon • Seattle 9, Washington • Montreal 22, Quebec • Sydney, Australia

# SCHOOL BUILDINGS

FROM KINDERGARTEN TO UNIVERSITY



Saddle Rock Elementary School, Great Neck, N. Y.  
Architects: Starrett & Van Vleck, Reginald E. Marsh

# aluminum WINDOWS

by **GENERAL BRONZE**

For more than 40 years "windows by General Bronze" has been synonymous with fine quality windows.

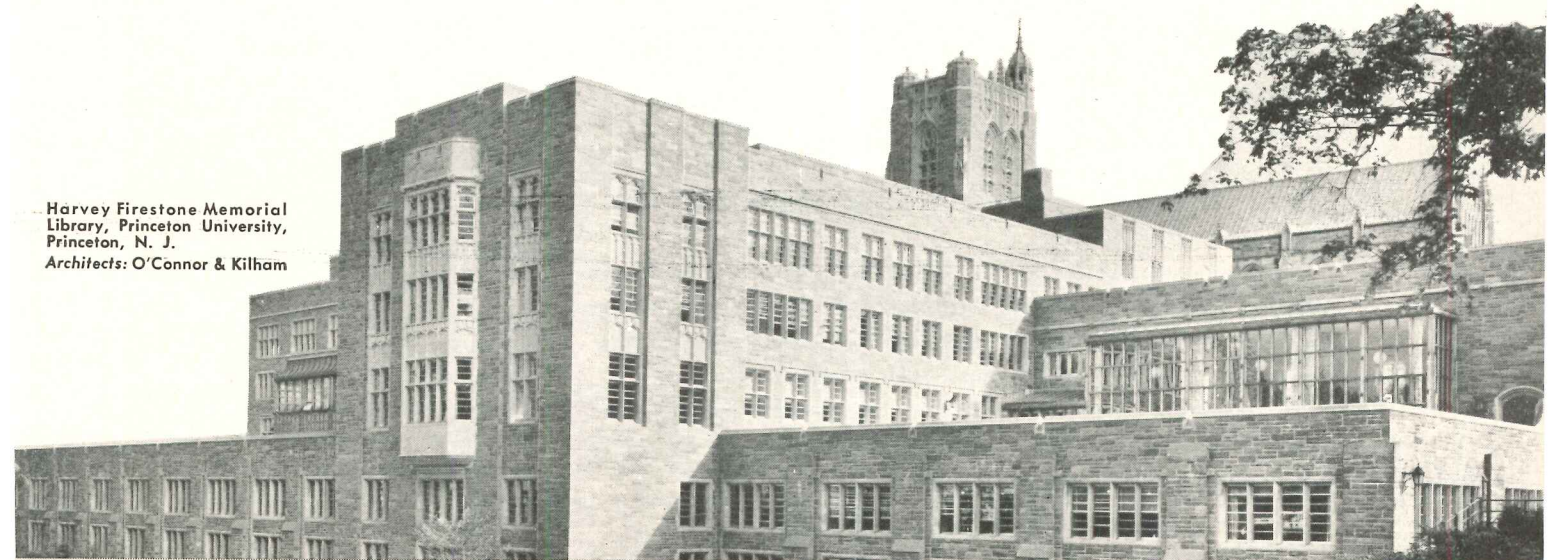
During these many years we have worked closely with hundreds of leading architectural firms on both large and small building projects—schools, hospitals, apartments and monumental buildings.

From this extensive experience, we have learned what features architects want in windows, spandrels, curtain walls and architectural metal work—what kind of help architects appreciate most—what makes their job run easier and smoother.

Because of our unequalled facilities and our vast experience, we are well qualified to serve you, especially when your requirements are great, difficult or unusual. We will be glad to discuss your problems with you at any time. Our catalogs are filed in Sweet's.



Harvey Firestone Memorial Library, Princeton University, Princeton, N. J.  
Architects: O'Connor & Kilham



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PERMATITE DIVISION—Custom-built Windows, Architectural Metal Work and Revolving Doors. ALWINTITE DIVISION—Residential Aluminum Windows.  
BRACH MFG. CO. DIVISION—Multel, T. V., Radio and Electronic Equipment. STEEL WELDMENTS, INC. DIVISION—Custom fabrication in steel and iron.



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of Stainless Steel being shipped again!



■ Thanks to new advances in metallurgy that have increased supplies of stainless steel, the famous Elkay LUSTERTONE Sink is in production again. There's enough stainless steel available for Elkay to resume production, but *not enough to meet* the accumulated consumer demand.

Any home is a better home with LUSTERTONE in the kitchen. It's the *only* sink guaranteed to outlast the home—never needs upkeep, never deteriorates, need never be replaced. Specify LUSTERTONE, because the lifetime cost is lower!

To make sure *your* clients get the LUSTERTONE they've been waiting for, see that your contractors order now—or file your specifications with Elkay *without delay*.

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*The World's Oldest and Largest Manufacturer of Stainless Steel Sinks*

## THE RECORD REPORTS

### CANADA

(Continued from page 34)

velopment in the offing may produce demands which cannot be met by Oakville's present system.

A joint Oakville-Trafalgar Planning Board is shared by the two municipalities. Its members are remarkably competent, and their efforts have accomplished much for the good of present and future residents. Whether or not the need for engaging a professional planning consultant is now recognized remains to be seen. None has been appointed to date.

#### *No Building Boom Seen*

Oakville does not expect much new construction within its borders as a result of Ford's arrival. The town is practically all built up.

But property values on the main street are skyrocketing. Three banks, whose location decisions are usually reliable indicators of anticipated business activity, have announced they intend to open branches in Oakville. With four already there, the total will be seven.

#### *1951 Building 50 Per Cent Over Record 1950 Total*

Construction contracts worth \$2.3 billion, 50 per cent over the record \$1.5 billion in 1950, were awarded in 1951, which thus became the best year in Canadian building history.

MacLean Building Reports Ltd., source of these figures, comments: "Gains each year are becoming a habit. 1951 is the sixth successive year construction contracts have outstripped past records. No other year of the post-war boom has shown a like increase and no year in previous construction history has topped the \$2 billion mark in contract awards."

#### *Housing No Longer Tops*

Major changes took place in the type of work being done by the expanding industry. Housing construction, the volume leader since 1943, was shouldered aside by engineering construction and was passed even by industrial and commercial construction in percentage share of total volume of 1951 contracts.

Biggest slice of the construction pie went to engineering, with 37.3 of the total. The portion given commercial

(Continued on page 384)

# there ought to be a law to protect your children!

***Inadequate school lighting is a more insidious  
menace to school youngsters than any dread disease.***

***And who but the architect-engineer is best  
qualified to lead the battle against inferior illumination . . .***

You know how often the lighting specifications are the last—and the least—on the school budget. You know how often a compromise may save dollars . . . and destroy young eyes.

No, you're not in this battle alone. School officials want to do the right thing . . . if only they can be shown the light. But you are the leader, the professional whose judgment and integrity are unquestioned. You have help, lots of sound, constructive help if you'll only make use of it . . .

Here, at SOLARLITE, we have invested our money, years and resources developing fixtures for every school lighting task . . . from a simple "Exit" light to our newest DEAN, the latest, the finest fixture anyone has yet produced for adequate, efficient classroom lighting.

But this is only the beginning. For while laboratory work has created this pronounced advance in fixtures, SOLARLITE engineers have gone right out into the field . . . yes, into schools themselves to explore lighting problems and results intimately. They have talked with teachers, school officials and the pupils themselves . . . they have pioneered new methods of lighting survey . . . in their zealous efforts to develop the finest possible school lighting.

If you have a school project on your boards now . . . if you ever hope to get one . . . before you do anything else, find out all the things SOLARLITE can do to help you lick the lighting problem. We will match our time with yours . . . we won't get in your hair . . . and together we can do so much to help America's school children.

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***Write for your free copy of "Take Our  
Children Out of the Twilight Zone"***

Here's a parade of the complete line of SOLARLITE school fixtures with data . . . including the revolutionary Chalkboard Dean, library stack lighting, etc. as well as successful school installations and other useful material . . . all compacted into an easy-to-use 8-page booklet. Write today.

**Take  
Our Children  
Out of the  
Twilight Zone**

**GSA Prepares Defense Code, Reports Research on Blast**

THE NEW REPORT to Congress of the General Services Administration (covering the fiscal year 1951, ending last June 30) projected the agency into the limited circle of federal groups concerned with design for atomic defense.

GSA, of which Public Buildings Service is a part, is always engaged in research

to simplify and improve federal building construction; but its relatively new activities in the civil defense field have now been given special notice.

A code has been prepared for the protection of federal personnel and property against hostile attack. The annual report notes that this code is to be made the basis for standards to be issued by other government agencies for the protection of civilians and their property.

**Blast Research on Windows**

Special investigative work by GSA researchers has been done in the field of window construction. In cooperation with the Atomic Energy Commission and the Defense Department, research work has been undertaken in GSA laboratories to determine the resistance of standard glazing and window construction materials to atomic blasts.

The report to Congress indicates that designs are being prepared from this research for windows that will have greater resistance to atomic blast force. A reduction in the hazards encountered from flying glass is an important objective of the tests.

GSA explained that similar investigations are being planned to determine the resistance of existing office buildings and hospitals. From the data obtained, standards for more resistive construction will be prepared.

**Warehouse Layouts Developed**

The annual report further disclosed that GSA's investigations have turned up improvements in warehouse layout and design that will save time and money. Typical warehouse plans have been developed which will reduce the time required for specific operations in buildings of this type.

"Consideration was given to minimizing maintenance costs through reduction in the amount of special equipment and in the distances traveled by such equipment," the report stated. The layouts have been incorporated in a brochure for distribution to all GSA regional offices for guidance in the procurement of warehouse space.

"Designs have been developed for two types of warehouses being constructed for the storage of strategic and critical materials," the GSA report said. "These types — one of steel column and steel roof construction, and the other of wood column and wood roof construction — have resulted in a reduction of the time formerly required for study and preparation of working drawings and award of contracts.

"These standardized designs include all architectural, structural and mechanical features required for efficient warehouse operation and also include provision for a standard type of reservoir required for fire protection.

"Bids which have been received,

(Continued on page 348)

WEATHER STRIPS FOR SLIDING DOORS



**Easier Operation**  
**Better Weather Protection**

Here at Maryville College in Tennessee, the lounge of the Fine Arts Building from the plans of Schweikher & Eltinge, Architects, has seven sliding glass doors which enclose an area 50 ft. in width, 6 ft. 10 in. in height. These doors are "Accurate" equipped. They roll on specially designed weather strip saddles, so as to eliminate overhead hangers, a saving in cost of installation. "Accurate" is constantly striving to improve operation and weathertight qualities of sliding doors specified for hospitals, hotels, schools, restaurants, clubs and dwellings. Our 47 year experience is at your command.

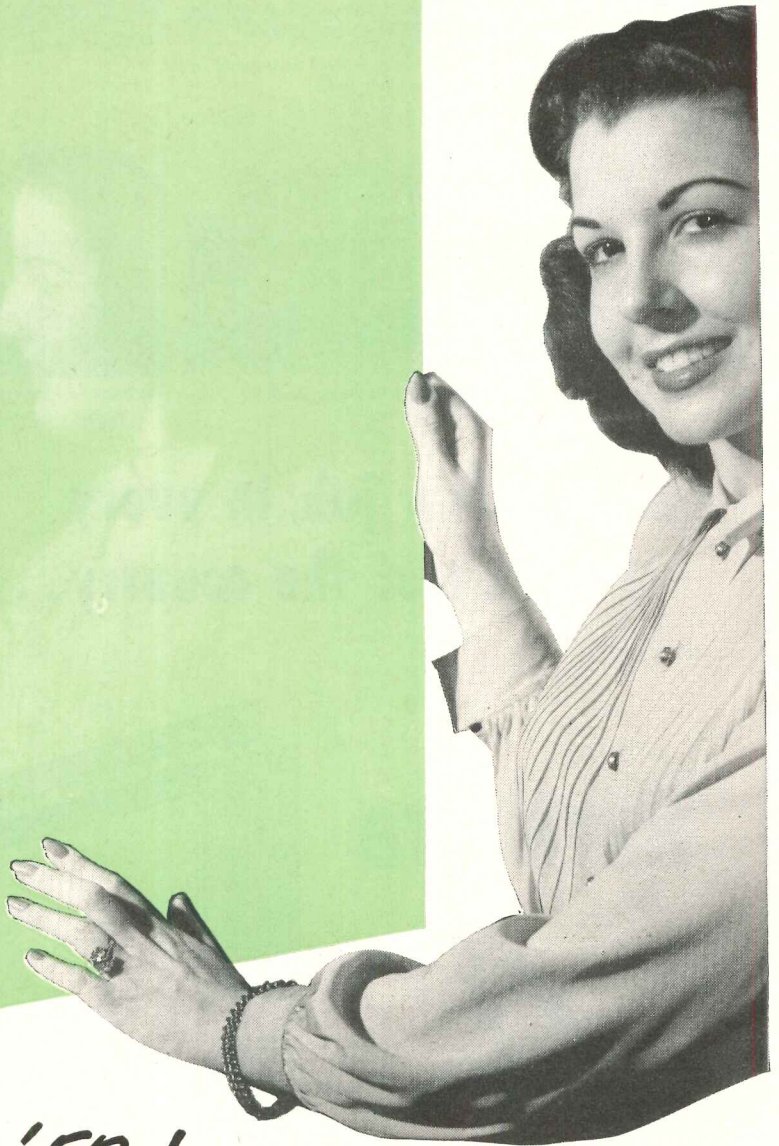
Write for working drawings to fit your immediate needs. Or, if you prefer,  
**ASK FOR ILLUSTRATED FOLDER**

**ACCURATE METAL WEATHER STRIP CO., Inc.**  
215 EAST 26th STREET, NEW YORK 10, N. Y.



# NEW Marlite HI-GLOSS

You can cut building and remodeling costs with this new low-cost, top-quality panel by the foremost manufacturer of prefinished wall panels. Produced by a new exclusive Marlite high-heat-baking process, lustrous Marlite HI-GLOSS panels combine outstanding beauty and durability . . . sell in the same low price range as Marlite Velvetex!



## Now it's two for '52!

These two new low-cost Marlite high-heat-bake panels will save costs, add quality and customer satisfaction for you in '52!

**NEW MARLITE WOOD PANELS** . . . *authentic reproduction of fine wood grains, costing far less than most unfinished fine woods.*

**NEW MARLITE HI-GLOSS** . . . *a high quality, low-cost panel, available in many striking colors and patterns.*

Made possible through revolutionary manufacturing techniques, Marlite HI-GLOSS and WOOD panels bring economy and sales appeal to all types of interiors. The quick and easy installation of wall-size panels reduces your cost. The durable, easy-to-clean walls in decorator correct colors will please your customers.



Get complete details at your lumber and building materials dealer, or write Marsh Wall Products, Inc., Dover, Ohio. Subsidiary of Masonite Corporation



SANTA ANA, CALIFORNIA. Rusco used on all Barkley Square and Sunshine Homes by builder Burt Huff.



FT. CAMPBELL, KENTUCKY. Wherry Housing Project, Southern Apartments, utilized thousands of Rusco Prime Windows.



PHILADELPHIA, PENNSYLVANIA. Plymouth Valley Homes, built by Ernie and Nolan, feature Rusco.



EVERETT, MASSACHUSETTS. State-aided Housing Project consisting of multiple-dwelling units.



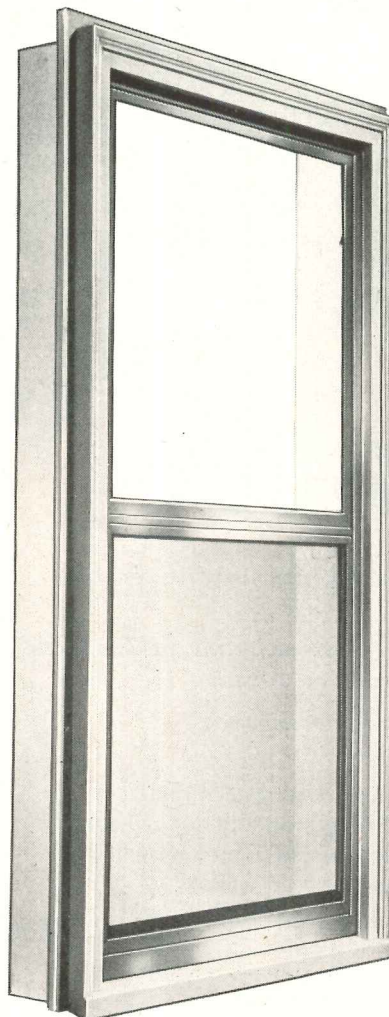
HOUSTON, TEXAS. All 84 units in McGregor Terrace Addition are built with Rusco.

On job after job, in every  
part of the country... the

**RUSCO**

**IS MAKING BIG**

here are  
**4**  
big  
reasons  
why



**A COMPLETE,  
PRE-ASSEMBLED UNIT,  
FACTORY PAINTED,  
HARDWARE FITTED,  
READY TO INSTALL**

**all in one unit**

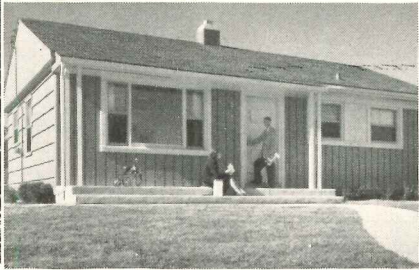
GLASS - SCREEN  
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INSULATING SASH (Optional)  
SURROUND (WOOD CASING,  
METAL CASING OR STEEL FINES)



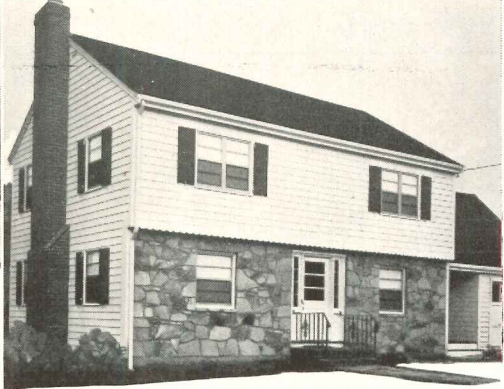
CLEVELAND, OHIO. Shaker Towers, deluxe apartment building, features Rusco Prime Windows with insulating sash.



BALTIMORE, MARYLAND. Rusco Prime Windows specified on all 87 units of Gebhart Housing Project.



PORT WASHINGTON, WISCONSIN. P & H prefabricated homes are now built with Rusco Prime Windows.

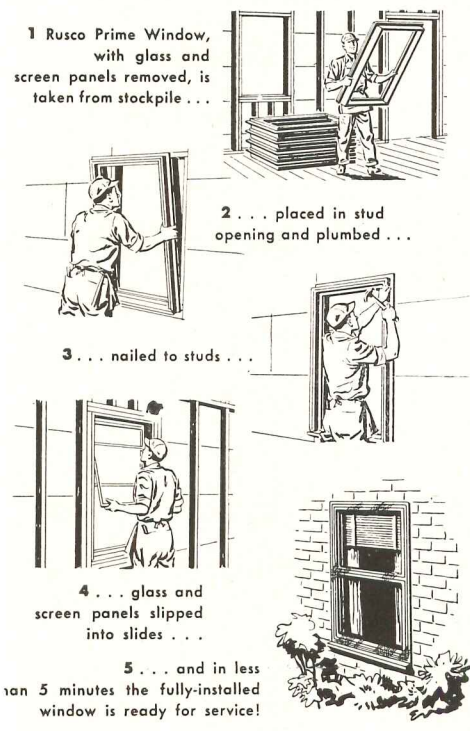


QUINCY, MASSACHUSETTS. A. J. Spinelle, builder of Furnace Brook Acres homes, highly recommends Rusco.

# Prime Window

## SAVINGS IN CONSTRUCTION TIME, LABOR AND MATERIALS

**2** CAN BE FULLY INSTALLED IN AS LITTLE AS 5 MINUTES



**3** CONVENIENCE OF COMPLETELY REMOVABLE AND INTERCHANGEABLE GLASS AND SCREEN PANELS



GLASS AND SCREEN INSERTS EASILY REMOVED FROM INSIDE FOR CONVENIENCE IN CLEANING. The Rusco removable sash feature has tremendous appeal as a convenience and safety feature.

**4** NO COSTLY CALL BACKS FOR ADJUSTMENTS

# RUSCO

HOT-DIPPED GALVANIZED

# PRIME WINDOW

AVAILABLE WITH OR WITHOUT INSULATING SASH

Made of Hot-Dipped Galvanized Steel, or Equal, Bonderized and finished with baked-on Outdoor Aluminum Enamel

For additional information or specifications write or wire ...

**F. C. RUSSELL COMPANY, Dept. 7, AR-32, Cleveland 1, Ohio**  
 IN CANADA: Toronto 13, Ontario

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

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.		Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel	
	Brick	Frame		Brick and Steel	Brick	Frame	Brick and Concr.		Brick and Steel	
1925	121.5	122.8	111.4	113.3	110.3	86.4	85.0	88.6	92.5	83.4
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	96.9	98.5	97.5
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.4	240.0	189.3	189.9	180.6	180.8	177.5
1950	256.2	254.5	249.5	251.5	248.0	194.3	196.2	185.4	183.7	185.0
Oct. 1951	274.4	272.5	264.9	266.6	263.8	214.6	216.4	206.6	204.7	208.3
Nov. 1951	274.4	272.5	264.9	266.6	263.8	214.6	216.4	206.6	204.7	208.3
Dec. 1951	274.4	272.5	264.9	266.6	263.8	216.1	219.0	207.9	205.0	208.9
Dec. 1951	122.2	122.6	% increase over 1939 102.7	99.9	102.8	150.4	163.5	% increase over 1939 118.6	110.5	120.6

ST. LOUIS

SAN FRANCISCO

1925	118.6	118.4	116.3	118.1	114.4	91.0	86.5	99.5	102.1	98.0
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
Oct. 1951	255.6	252.4	241.2	243.9	241.6	248.5	243.5	242.1	244.9	245.5
Nov. 1951	255.6	252.4	241.3	243.9	241.6	248.5	243.5	242.1	244.9	245.5
Dec. 1951	255.4	252.0	241.8	244.3	242.0	246.9	241.3	242.4	245.3	245.5
Dec. 1951	131.8	135.5	% increase over 1939 104.9	103.9	103.4	133.8	143.0	% increase over 1939 106.5	101.2	110.7

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

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

index for city A = 110  
index for city B = 95  
(both indexes must be for the same type of construction).

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

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

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

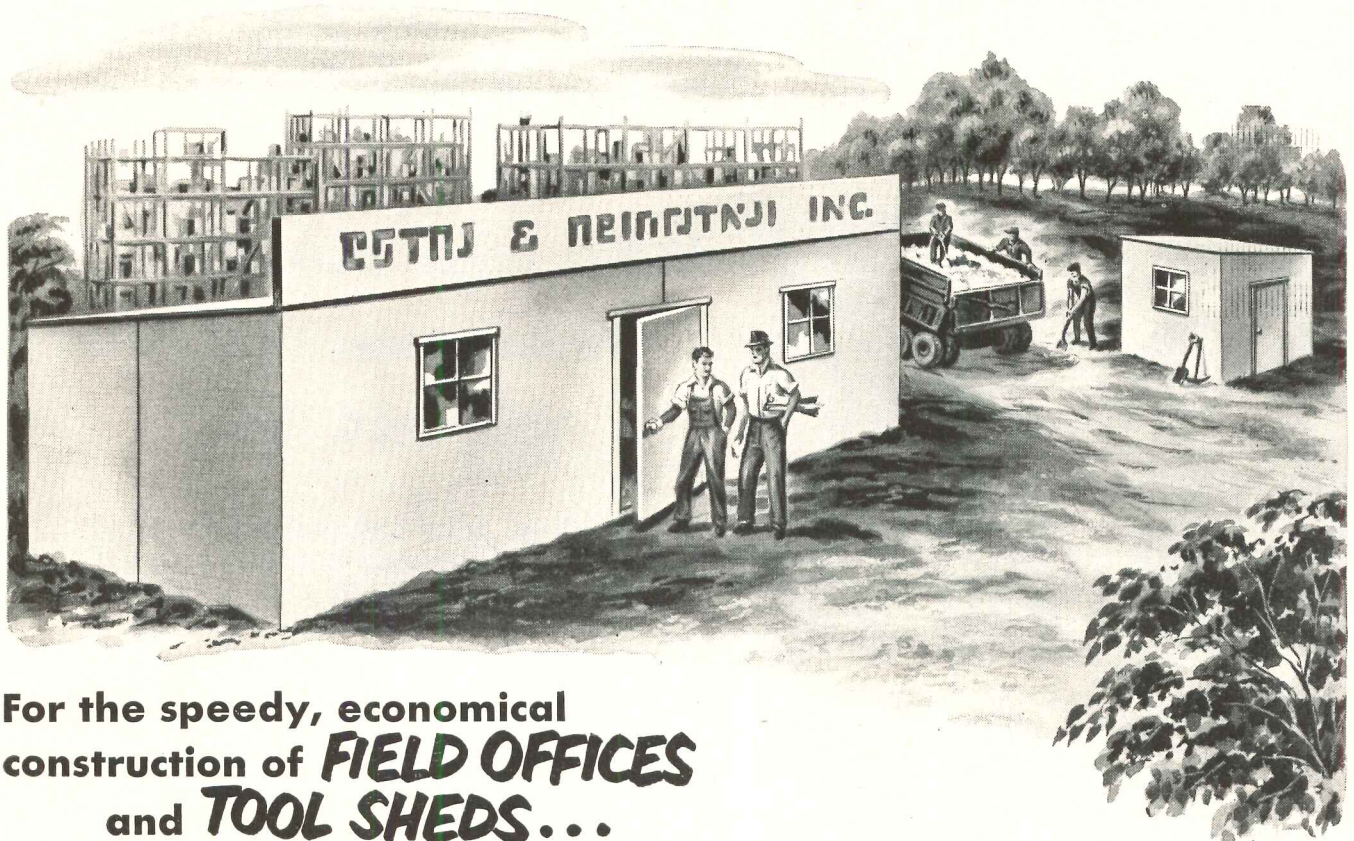
$$\frac{110-95}{110} = 0.136$$

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

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

These index numbers will appear regularly on this page.

another **HOMASOTE FIRST** — designed to reduce the cost of building



**For the speedy, economical construction of *FIELD OFFICES* and *TOOL SHEDS*...**

... use a material that's strong and crackproof—that's completely weatherproof, light in weight and easily worked... a material that's made in Big Sheets—up to 8' x 14'—in sizes two men can handle easily and at considerable savings in labor and materials.

Use Homasote—the oldest and strongest insulating-building board on the market. Here is a board that has proved itself in industrial, residential and farm buildings—and in every climate from Alaska to Little America. Homasote's re-

sistance to weather makes it the perfect *protective* material for field offices and tool sheds.

Homasote saws and nails like wood and need not be painted. The Big Sheets mean that you build better, faster and at less cost. Field offices and tool sheds may be easily transported from job to job.

For comfortable working conditions for men in the field—for full protection of records and tools—specify Homasote... Let us send you literature and specification folder showing its many uses.



**Nova Sales Co.**—a wholly owned Homasote subsidiary—distributes the Nova Roller Door, Nova-I. P. C Waterproofing Products, Nova Sidewalls and the Nova Loc-Nail. *Write for literature.*



**HOMASOTE  
COMPANY  
TRENTON 3, N. J.**



— makers of the oldest and strongest insulating-building board on the market

**Homasote Company, Trenton 3, N.J. Dept. 48A**

Send literature on Homasote Insulating-Building Board.

ADDRESS.....

NAME.....

CITY & ZONE.....

My lumber dealer is.....

# How come?



"Why, of course, I'll be glad to comment on my G-E Kitchen. Do come in, and let me tell you why I'm still as enthusiastic about my G-E Kitchen as I was the first day we signed up for this house.

"I don't mind telling you that it was the well-designed General Electric Kitchen that *sold* me on this house. My husband and I felt that a builder who put so much thought into the kitchen certainly must have put just as much thought and quality into the rest of the house. I'm sure many of my neighbors bought for the very same reason!



"I **always** wanted a General Electric Refrigerator in our new house. It's such a dependable, trouble-free refrigerator and there's so much space in it. I don't think there's a finer refrigerator in the world!

## While other builders' houses remained vacant, they sold 114

**H**ERE'S Mr. Abner Rosenberg and Mr. Albert Benenson, partners of Yedlin & Company, of Wallingford, Connecticut. They erected the Beth Page Project of 114 houses in Bethel, and *sold the entire development before it was completed.*

Here you see them calling on Mrs. C. R. Macgregor of 23 Fairfield Drive, after she had lived in one of the houses several months. They want to get her candid opinion of the G-E Kitchen that was installed in her home.



"Our friends are envious of our General Electric Dishwasher. Messy dishes are no longer a problem with us. We simply place them in here, turn the switch, and our dishes and silverware come out all shiny and clean.

"... and I must tell you about my Automatic G-E Clothes Washer, too. It gets clothes so nice and white and dry, they're a dream to iron!



"I think there's **nothing** like *electricity* for an oven. No odors, no uneven heat, and it's cool even in the summertime. My G-E is wonderful."

"Good!" says Mr. Benenson, "We put in these G-E Ranges because we found most women *preferred* General Electric appliances!"



"Here's another thing I like about my G-E Kitchen, Mr. Rosenberg; the interior wire shelves are perfect. They're so easy to keep clean and everything in the cabinets is in plain view! This G-E Kitchen certainly was designed with *me* in mind!"

## ● General Electric equipment does not call for a luxury price-tag!

The 114 houses in the Beth Page Project were tagged at only \$10,399.00 each.

And that included the full price of the General Electric Kitchen-Laundry!

Imagine what a selling feature General Electric equipment can be in *your* houses . . . just as it is for Messrs. Rosenberg and Benenson, and many other successful builders throughout the country.

Do you know, too, that even today under

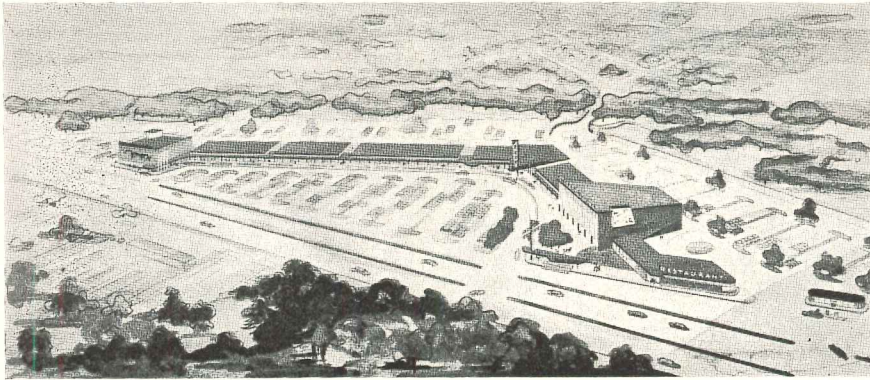
rigid credit restrictions, the complete General Electric Kitchen adds as little as \$3.50 a month extra to monthly mortgage payments!

No wonder even families with incomes of \$50 a week are enjoying the comfort of a G-E Equipped Kitchen-Laundry.

Why not start selling your houses faster, too? See your local G-E distributor, or write to the Home Bureau, General Electric Company, Louisville 2, Kentucky.

GENERAL  ELECTRIC

## REQUIRED READING



Left: projected L-shaped shopping center on Route 4, Hackensack, N. J. Kelly & Gruzen, Architects. Six arcades cut through the line of stores enabling those parking in the rear to reach the front without long detours

### SHOPPING CENTERS

*Shopping Centers, Design and Operation.* By Geoffrey Baker and Bruno Funaro. Reinhold Publishing Corp. (330 W. 42nd St., New York 18, N. Y.), 1951. 9 by 11½ in. 288 pp., illus. \$12.00.

REVIEWED BY MORRIS KETCHUM, JR.

Anyone interested in planning, developing, building, operating or renting space in a shopping center should be grateful to the authors of this scholarly guidebook. They have carefully analyzed all the basic factors underlying the design of shopping centers, correlated all their research material into readable form and provided a comprehensive survey of every noteworthy center planned or built to date.

The first steps in the development of a shopping center — site selection and market analysis — are clearly described. The now standardized methods used to logically determine the size of a center's trading area, to analyze the spending power and shopping habits of its potential customers, and to calculate its probable share of their shopping dollars are all well defined. Site considerations have been carefully scrutinized. Proper emphasis is placed on accessibility, highway capacity, cost and zoning. One regrets, however, the fact that there is no mention of the vital importance of obtaining a *unified* site of the right shape and size. Almost every second rate shopping center in this country owes its deficiencies to the fact that its site is split up in some way by a public highway, or is too long and narrow for a proper distribution of buildings and parking areas, or is too

small for full peaktime parking capacity.

Parking ratios, methods, and planning principles are brilliantly analyzed. The pros and cons of parking ratios based on unit sales versus ratios based on a rule-of-thumb relationship between building and parking areas, of angle parking versus ninety degree parking, are all carefully investigated. Based on his own experience, this reviewer finds himself in complete agreement with the authors as to the greater value of both unit sales ratios and a ninety degree parking system.

The authors' analysis of merchandise handling and store planning problems in shopping centers is less complete. The unpleasant confusion and the dangerous hazards inherent in the intermingling of auto, truck, and pedestrian traffic routes are not thoroughly discussed nor is the value of completely separating all these traffic streams given enough emphasis. The authors do not seem to realize, as well, the vital necessity for minimizing the distances travelled by shoppers on foot. In describing one method for isolating service by placing a truck court in the center of a store group, they fail to point out that this solution creates maximum shopper walking distances around the perimeter of stores. They state that overhangs and walkways should protect shoppers from the weather, yet none of the examples shown in photographs accomplish this simple function.

Site planning is skimmed over lightly. There is an interesting but brief comparison of ten different shopping center plans but no clear-cut statement of basic planning principles. The reader is not

warned that no well-planned shopping center should be split into fragments by highways; that store buildings should be closely grouped, not isolated; that shopper walking distances must be minimum, not maximum; that unified and separate traffic systems for autos, trucks, and pedestrians are essential. Inflexible structural systems dividing rows of stores into frozen compartments, duplicative store fronts facing in several directions, and honky-tonk signs and architecture deserve stronger condemnation.

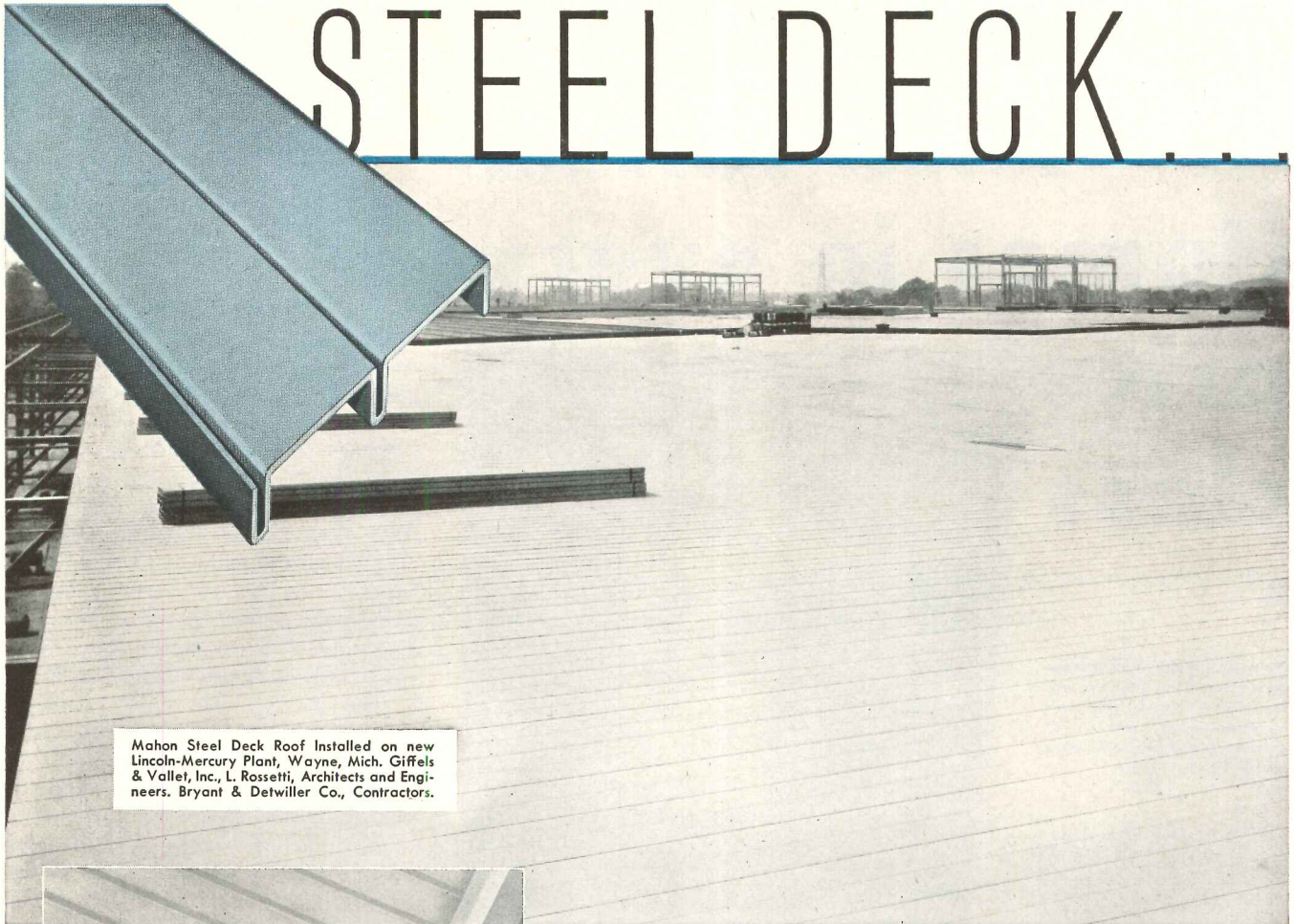
This same uncritical viewpoint carries through the comparative analyses of 63 shopping centers. It is no fault of the authors that their comprehensive survey includes every type of planning — from realtor's nightmares to progressive architectural solutions. This book would have been very thin and incomplete if only the best available material had been shown. The field is new. Almost any shopping center can operate successfully today even if poorly planned, thanks to good times and lack of competition. When more and better centers have been built, most of today's shopping centers will have their worries. The first sign of bad times will see many of them on the rocks.

It is probably too much to expect a guidebook to be both selective and comprehensive. The art and science of shopping center design is still in its infancy; not many definite standards have been established. The great value of this volume is that, properly used, it points the way from past mistakes to future triumphs.

(Reviews continued on page 48)



# STEEL DECK

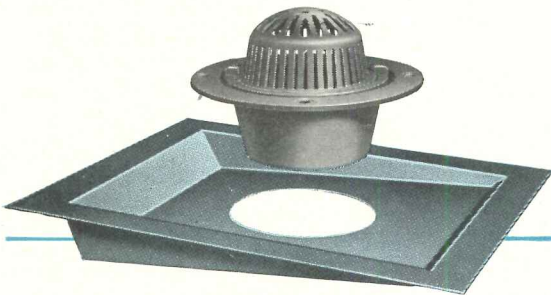


Mahon Steel Deck Roof Installed on new Lincoln-Mercury Plant, Wayne, Mich. Giffels & Vallet, Inc., L. Rossetti, Architects and Engineers. Bryant & Detwiller Co., Contractors.



## BUILT-UP SADDLES ELIMINATED

Built-up saddles are eliminated in Steel Deck Roofs. Purlins can be set to create valleys at sump locations in the drainage area. Steel Deck can be warped to conform. No additional deck plates are required—no cutting or fitting necessary.



## SUMP RECESSES and SUMPS

Mahon Roof Sump Recesses for use with Mahon Steel Deck can be furnished to fit any roof pitch. Mahon Cast Iron Sumps can also be furnished for 4", 5", and 6" conductors.

## 1,500,000 Sq. Ft. of Steel Deck Protects New Lincoln-Mercury Plant!

The increasing, widespread use of Steel Deck in roof construction in both industrial and commercial buildings is a logical development . . . because, no matter how you compare different types of roof construction, and materials employed, you will find that Steel Deck is the most economical, permanent, firesafe roof material available today. Its light weight permits structural economies, and the fact that it can be insulated to any degree, to produce specific thermal properties for any temperature range, reduces total roof cost per sq. ft. to an absolute minimum in any given locality. Mahon Steel Deck offers other desirable features . . . its narrow, vertical-leg stiffening ribs have no angular or horizontal surfaces where troublesome dust might accumulate, and, in addition to its primary use in roof construction, Mahon Steel Deck, due to its basic design, lends itself to a broader range of uses in modern buildings . . . alert designers are finding it ideally suitable for curtain walls, interior dividing walls, partitions, suspended ceilings, and permanent concrete floor forms. See Mahon's Steel Deck Insert and Mahon's Insulated Metal Wall Insert in Sweet's Files, or write for Catalogs B-52-A and B.

T H E R . C . M A H O N C O M P A N Y

Detroit 34, Michigan • Western Sales Division, Chicago 4, Illinois

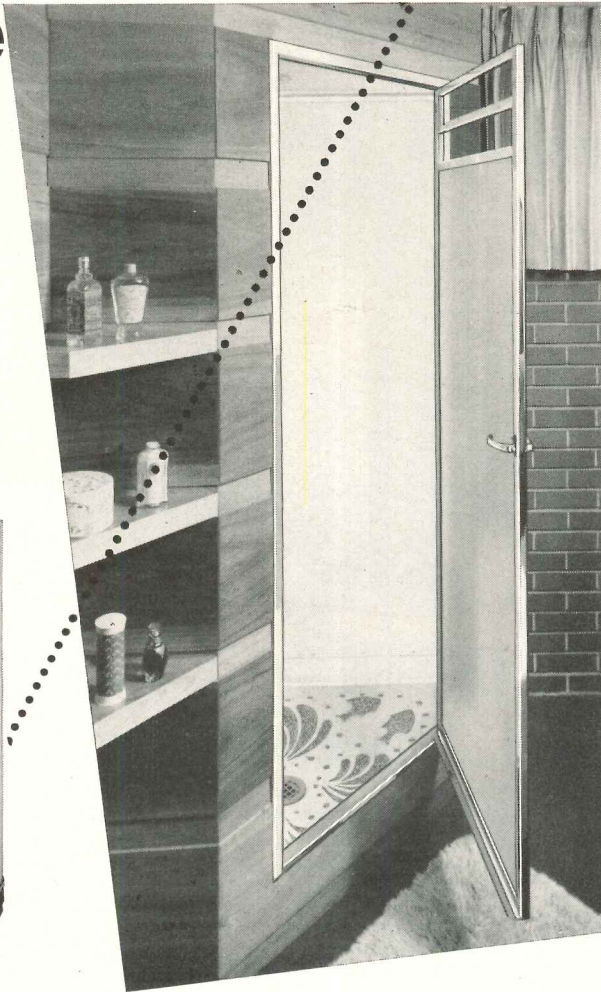
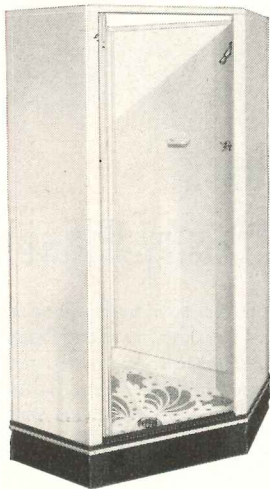
Representatives in all Principal Cities

Manufacturers of Steel Deck for Roofs, Partitions, Ceilings and Floors; Insulated Metal Walls of Aluminum, Stainless or Galvanized Steel; Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.

# M A H O N

**LEAK-PROOF  
TROUBLE-PROOF  
SHOWER BATHS FOR  
Homes in every  
price  
class**

Weisway's Model VR combines perfectly with interior finish materials for handsome built-in installations (as at right). Corner entrance models (below) save additional floor space.



**Weisway** CABINET SHOWERS

Wherever you plan separate shower baths Weisway is your safe, dependable answer. Weisways are complete, self-contained Cabinet Shower baths, engineered and built to quality standards which assure client's satisfaction, *protect your reputation* . . . Weisway walls are Bonderized, galvanized heavy gauge steel, with two separately baked on coats of enamel — corners sealed in compression tight joints. Vitreous porcelain enamel receptor, acoustically insulated, formed in one piece of heavy enameling iron, has Foot-Grip, No-Slip floor — safe, positively non-absorbent, easy to keep clean and sanitary. Write for catalog.

**HENRY WEIS MFG. CO., INC., 303 Weisway Bldg., Elkhart, Indiana**

**REQUIRED READING**

(Reviews continued from page 46)

**HUNGARIAN  
ARCHITECTURE**

*The Work of Architects Olgay and Olgay. Introduction by Marcel Breuer and Peter Blake. Reinhold Publishing Corp. (330 W. 42nd St., New York 18, N. Y.), 1952. 11½ by 8½ in. 72 pp., illus. \$5.00.*

Originally published in 1946 as the first volume of a series on arts and artists in Hungary, this interesting little book presents the architectural work to that date of twins Aladar and Victor Olgay. The first printing was sold out with the exception of 500 unbound copies which were shipped to Stockholm and then to New York. These are now published in a limited edition, with a cover and jacket designed by George Kepes, a former compatriot of the Olgays. At this writing, only 420 copies remain. The text is given in both Hungarian and English.

The quantity and quality of work presented is somewhat amazing, considering that the Olgays were only 36 years old when the book was compiled. These include churches, apartment houses, factories, exposition buildings and government buildings. Most of the commissions were won through architectural competitions. The designs show a good deal of imagination and vigor, with leanings toward the International Style. The buildings also have great interest as a partial record of architectural thought in Hungary after the war and before the Iron Curtain. The Olgays have been on university faculties in the U. S. since 1947, first at Notre Dame, now at M.I.T.

**OLD NEW YORKANA**

*As You Pass By. By Kenneth Holcomb Dunshee. Hastings House (41 E. 50th St., New York 22, N. Y.), 1952. 8½ by 11½ in. 270 pp. + Appendix, illus. \$10.00.*

It is quite probable that the average New Yorker, who goes to and from his office on the subway and more likely than not spends his working day several stories above ground, would find it difficult to believe that his city in the 18th and well into the 19th century was a small town that embraced the lower tip of Manhattan — what is now the financial district — and that Midtown was rolling country dotted with streams and ponds. Old New York was not only a small town in size but in character as well. Everyone knew his neighbor's business, all had a strong sense of civic

(Reviews continued on page 392)



Above: Brown U., Main Dining Room, Providence, R. I. Architects: Perry, Shaw & Hepburn.  
Pastel Green Kalistron covers wainscoting, Forest Green Kalistron on service doors.

## UNBELIEVABLE DURABILITY

*on our walls and doors...*

That's the comment frequently heard about *Kalistron* installations. When walls, doors, columns or furniture are covered with *Kalistron*, they literally defy the wear and tear of "heavy duty" service. Years after installation, the *Kalistron* is still in excellent condition . . . unmarred, unscratched, with practically no sign of wear.

*Kalistron* is different because its color is fused to *underside* of clear sheet of wear-resistant Vinylite. Since nothing can touch this under-surface, *Kalistron's* beauty stays fresh and new-looking.

*Kalistron* cannot chip, crack or peel; minimizes maintenance costs. Cleans easily with a damp cloth. In 28 standard colors: special colors matched.

SEND COUPON BELOW for sample of *Kalistron* and nail-file. Test *Kalistron* yourself . . . prove its unbelievable durability.

**Kalistron** †  
PAT. APPLIED FOR  
 ← COLOR FUSED TO UNDERSIDE  
 PLASTIC COVERING MATERIAL

U. S. Plywood Corp., Dept. F-89  
 55 West 44th St., New York 18

Please send me FREE Nail-File Test (swatch of *Kalistron* plus actual nail-file) and folder "Facts About *Kalistron*."

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

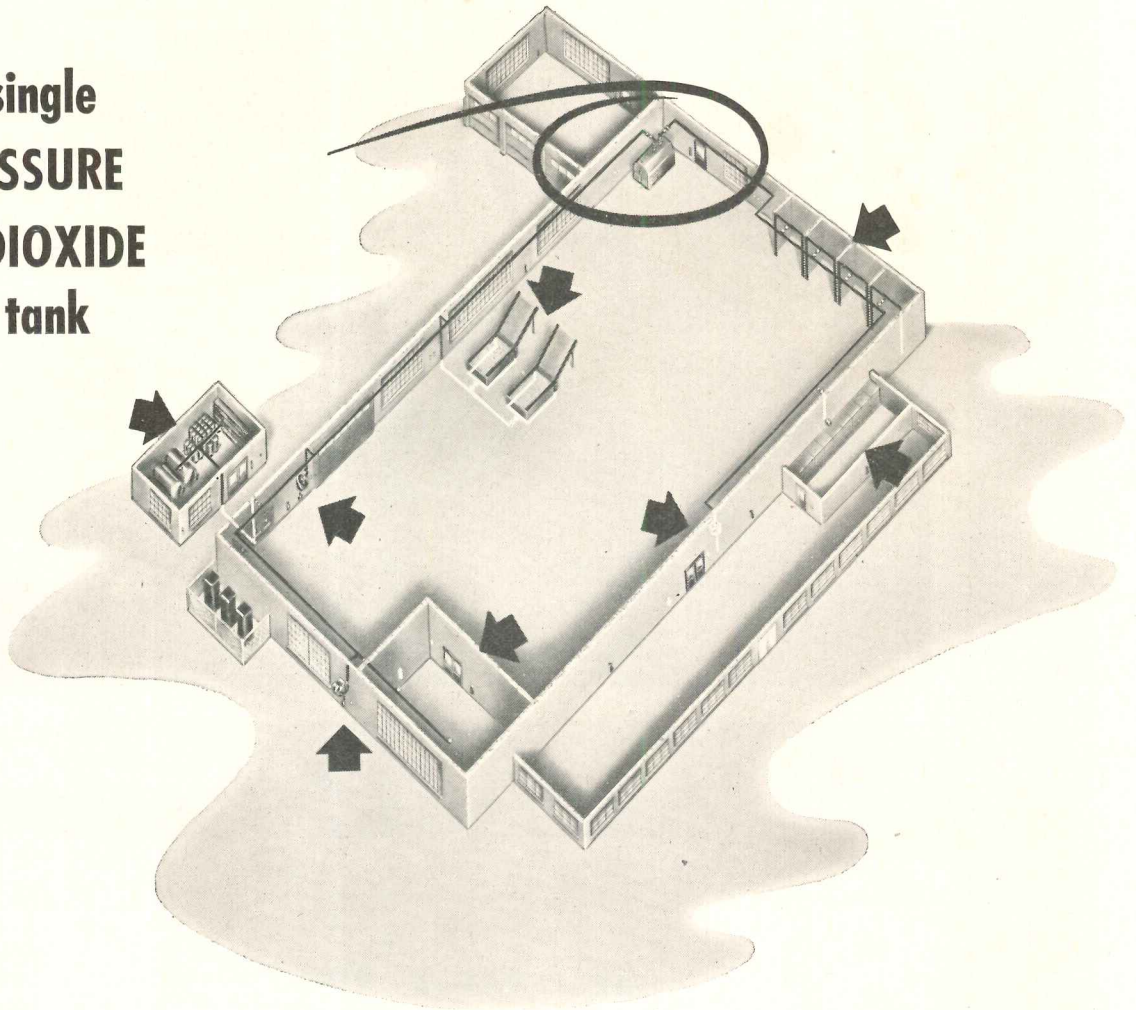
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† TRADEMARK

Color fused to  
 underside of  
 transparent vinyl  
 sheet . . . backed  
 by flocking

# Plant-Wide Fire Protection

from a single  
**LOW PRESSURE  
CARBON DIOXIDE  
storage tank**



Now, your larger size fire hazards can be protected more efficiently at less cost, thanks to C-O-TWO Low Pressure Carbon Dioxide Type Fire Extinguishing Systems. Simple piping, running from one centrally located storage tank, instantly transports clean, non-damaging, non-conducting carbon dioxide anywhere in the plant area . . . to flammable liquids, electrical equipment, storage spaces, manufacturing processes and record vaults. Fire at any protected location is extinguished in seconds with an absolute minimum of expense and interruption.

Flexibility is the keynote of these new type C-O-TWO Fire Extinguishing Systems . . . the low pressure carbon dioxide storage tanks range in capacities from one to fifty tons . . . discharge facilities can either be manual mechanical, manual electric, automatic mechanical, automatic electric or a combination of these . . . especially installed to fit your particular needs. Future plant expansion is easily and

economically provided for by initially installing an oversized low pressure carbon dioxide storage tank and adding the supplementary discharge facilities at a later date.

C-O-TWO Low Pressure Carbon Dioxide Type Fire Extinguishing Systems are built with the same superior design and high quality workmanship that have characterized C-O-TWO High Pressure Carbon Dioxide Type Fire Extinguishing Systems for many years. Whether it's fire detecting or fire extinguishing . . . portables or built-in systems . . . C-O-TWO means experienced engineering that assures you of the best type equipment for the particular fire hazard concerned.

So, with current expensive delayed replacements, why not let an expert C-O-TWO Fire Protection Engineer help you now in planning fully approved fire protection facilities for your various properties. Complete free information and descriptive literature are yours for the asking. Get the facts!

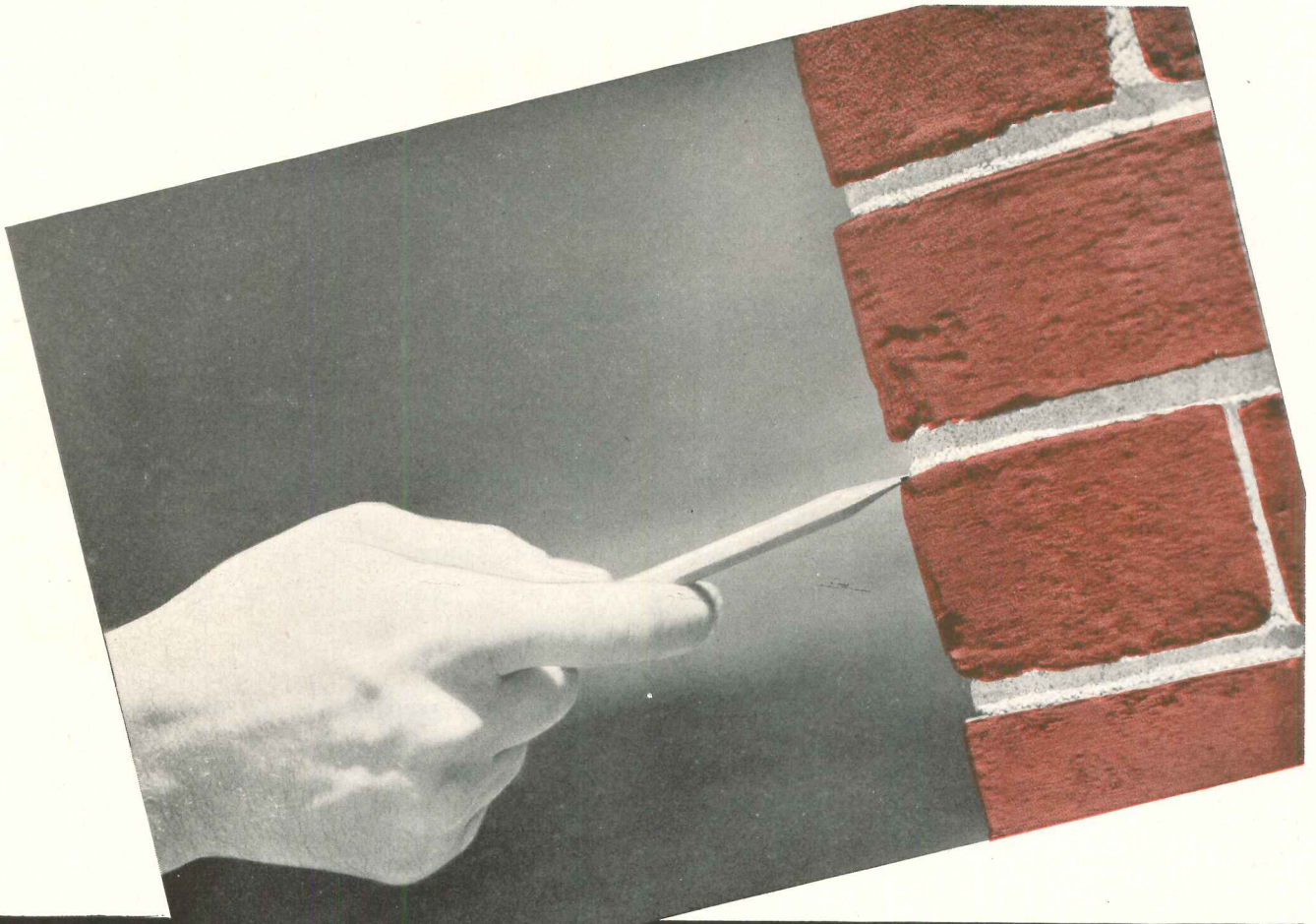


**C-O-TWO FIRE EQUIPMENT COMPANY**  
NEWARK 1 • NEW JERSEY

*Sales and Service in the Principal Cities of United States and Canada  
Affiliated with Pyrene Manufacturing Company*

**MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT**

**Squeeze-Grip Carbon Dioxide Type Fire Extinguishers • Dry Chemical Type Fire Extinguishers • Built-In Smoke and Heat Fire Detecting Systems  
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems**



# BRIXMENT

*is more durable!*

FOR permanent strength and beauty, mortar must be *durable* — must be able to withstand the alternate freezing and thawing to which it is subjected many times each winter.

Brixment mortar is *durable*. This durability is due partly to the strength and soundness of Brixment mortar, and partly to the fact that an air-entraining and water-proofing agent is incorporated into Brixment during manufacture. This helps prevent the mortar from becoming saturated — therefore helps protect it from the destructive action of freezing and thawing.



LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

# A Statement by Anaconda on the Copper Situation

**M**ANY users of copper have vital decisions to make . . . usually in connection with the present defense-induced shortages of copper and aluminum. This statement is an effort to remove the smoke screen surrounding the copper picture . . . to wipe away the confusion caused by too much talk supported by too few facts.

**Substitution poses problems** — Industry has been urged to substitute aluminum and other materials for copper. In some instances this may be logical and practicable. In many others it is difficult, if not impossible. But — before making *any* long-term decisions that may cost a great deal of money in engineering, new plant facilities or rescheduling of production operations — one should know the facts about the future of copper.

**New Anaconda projects** — The first major increase in copper production will come from Anaconda when the Greater Butte Project and the new Sulphide Plant at Chuquicamata, Chile, begin operations this spring. By 1953, these two projects should raise present levels of copper production by about 95,000 tons yearly.

Toward the close of 1953, Anaconda's new

Yerington project in Nevada is expected to start producing at an annual rate of 30,000 tons. By then, Anaconda will be adding to the present yearly copper supply at the rate of about 125,000 tons.

**Other new projects** — During 1954-55 still other new projects in the U. S. and friendly foreign countries will further augment the increasing copper supply. All told, it is estimated that by 1955, not less than 450,000 tons of copper could be produced annually — over and above present production levels.

Accordingly, in 1955-56, domestic production plus imports could bring the U. S. copper supply to 1,800,000 tons yearly. This would represent an increase of about 20% over present levels. Based on historical comparisons, and barring a large-scale shooting war, this amount of copper could support a Federal Reserve Board Index of Industrial Production of 270, an increase of 24% over the present, and 45% above the first half of 1950.



These are the 'things to come' in copper. On the basis of the facts there is no necessity for considering long-range substitution of other materials for the red metal.

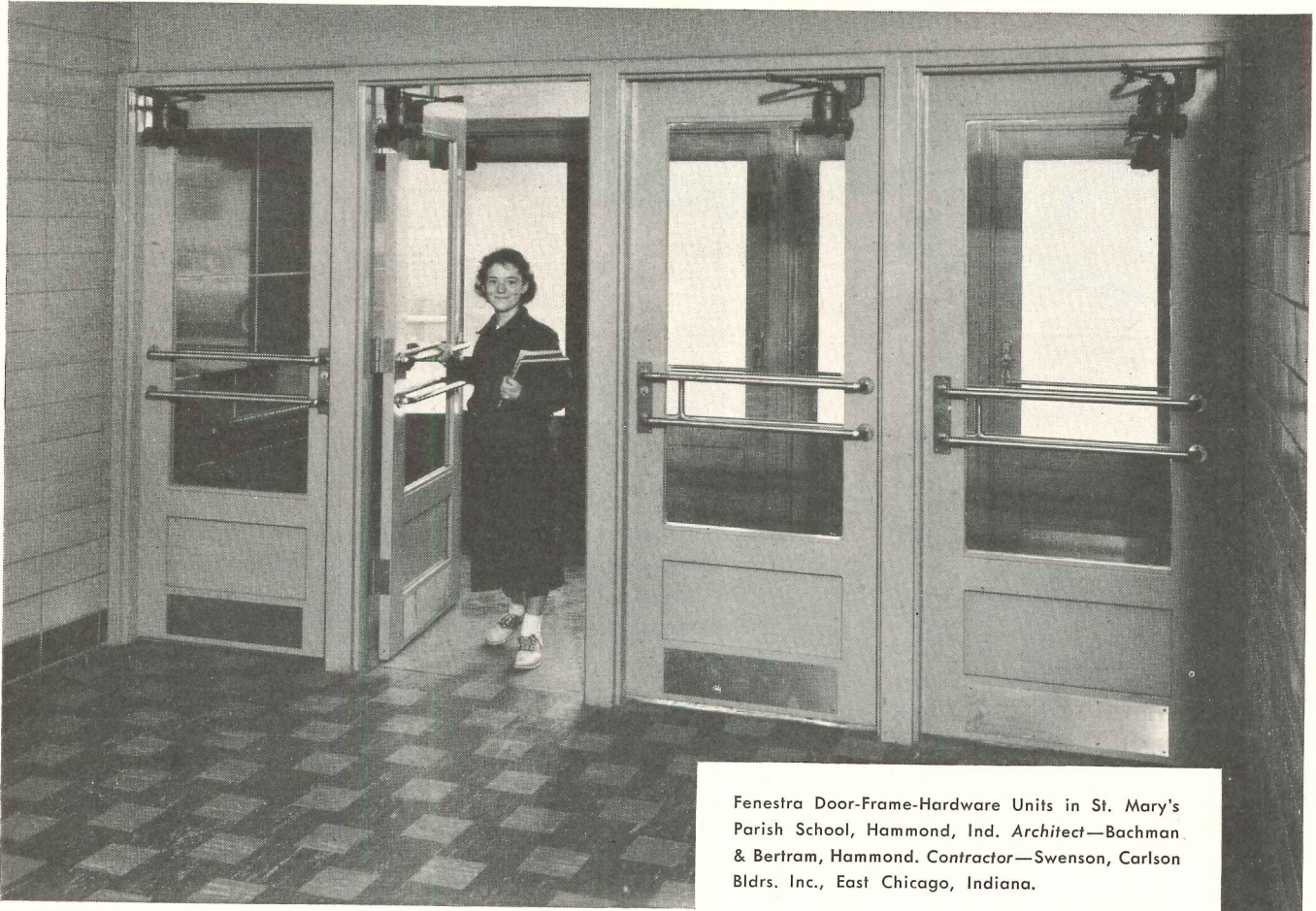
52320A

**ANACONDA**  
COPPER MINING COMPANY

The American Brass Company  
Anaconda Wire & Cable Company  
International Smelting and Refining Company

Andes Copper Mining Company  
Chile Copper Company  
Greene Cananea Copper Company

**PRODUCERS OF:** Copper, Zinc, Lead, Silver, Gold, Cadmium, Vanadium, Superphosphate, Manganese Ore, Ferromanganese.  
**MANUFACTURERS OF:** Electrical Wires and Cables, Copper, Brass, Bronze and other Copper Alloys in such forms as Sheet, Plate, Tube, Pipe, Rod, Wire, Forgings, Stampings, Extrusions, Flexible Metal Hose and Tubing.



Fenestra Door-Frame-Hardware Units in St. Mary's Parish School, Hammond, Ind. Architect—Bachman & Bertram, Hammond. Contractor—Swenson, Carlson Bldrs. Inc., East Chicago, Indiana.

## Look how you save with these Door-Frame-Hardware Units

These doors have clean, modern lines and velvety finish. They're steel so they will never shrink or warp or swell or splinter. They come complete with pre-fitted frames and beautiful hardware. They are *insulated* for quiet performance. They even come individually wrapped as a final quality measure.

Only long years of metal fabricating experience . . . the help of master craftsmen . . . tremendous plant facilities and unique manufacturing methods . . . could give you such Door-Frame-Hardware Units at such savings . . . only Fenestra\* is equipped to do it:

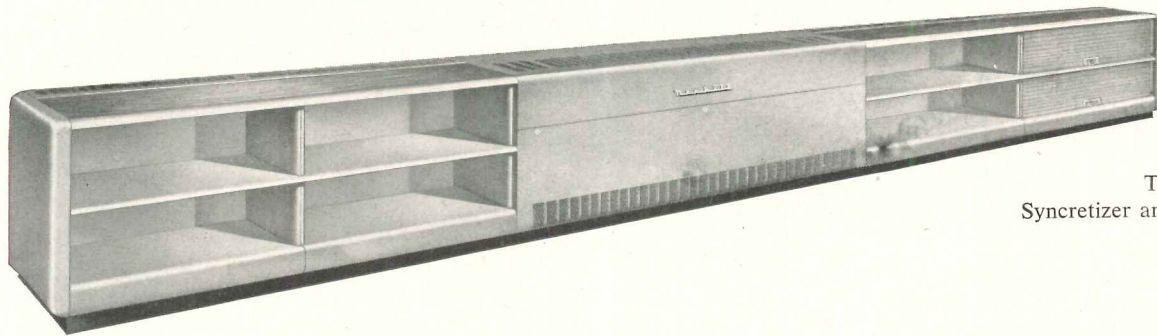
1. First cost is low because Fenestra's standardized types and sizes permit economical volume production.

2. Installation cost is low because the door is complete with pre-fitted frame and hardware ready to fill the opening—no cutting or fitting or mortising or prime-painting!
3. Maintenance cost is low because of the door's welded, reinforced construction.

Compare it, point for point, with *any* door on the market! You can get Fenestra Door-Frame-Hardware Units in a wide variety of sizes . . . in three types ingeniously designed for versatile use. Each door may be hinged right or left, swing-in or swing-out.

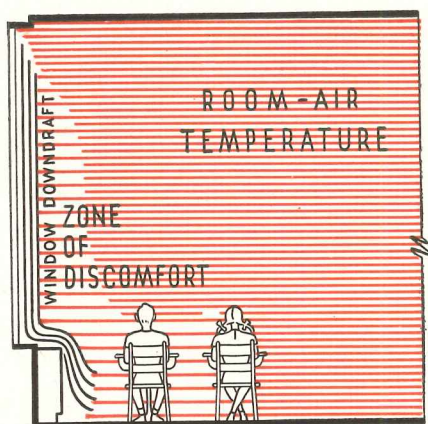
Get full details and prices. Call your Fenestra Representative—or write to Detroit Steel Products Company, Dept. AR-3, 2252 East Grand Boulevard, Detroit 11, Michigan. \*®

*Fenestra* HOLLOW METAL DOOR • FRAME • HARDWARE UNITS  
save building time, labor, materials and money

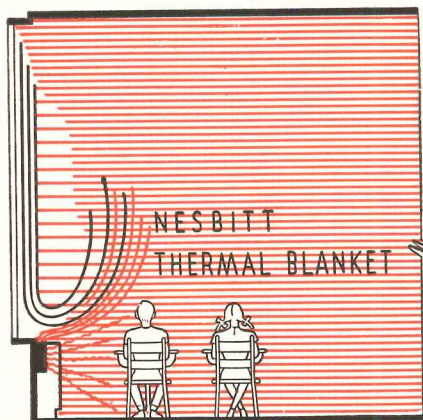


The Nesbitt Package  
Syncretizer and Storage Cabinets

## The Story of THERMAL



With room-air temperature evenly maintained, downdraft from large cold windows may remain the robber of comfort.



Nesbitt Syncretizer and Wind-o-line temper the downdraft, raise it out of impression range, and improve thermal balance.

THE STORY of classroom heating and ventilating began many years ago with the need for artificial heat in a one-room schoolhouse. A potbellied stove provided the heat.

With multi-room schools came central heat and hot-air, then steam-radiator distribution. Schoolrooms soon became so hot that the need for regular ventilation was recognized.

NESBITT became a character in the story in 1917 with a schoolroom unit that introduced outdoor air and heated air on the bypass principle.

The story progressed as knowledge increased. The *heating* effect of room occupants, electric lights, and the sun's rays became better known. The need for *cooling* during a large part of the classroom day hastened the development of heating and ventilating units.

Room-air temperature was the recognized index of comfort. But the widely divergent temperatures of the unit ventilator's air stream created conflict—*drafts*. NESBITT brought the air stream under separate control—syncretized, or harmonized, its temperature within draftless limits to that of the room air. Syncretized Air, a new standard of thermal comfort, was created—but air temperature remained its popular index.

### Comfort Can Now Be "Seen"

Today thermal comfort has another dimension. Besides *air temperature*, we consider the *radiant temperature differential* of the surrounding walls and surfaces of the classroom. The temperature especially of large windows in cold weather is so far below the room-air

temperature that it soaks up the body heat of pupils sitting near it and, to a degree, of all others whose bodies can "see" it (are exposed to it). This explains why the comfort *impression* of some pupils is poor even when the air temperature is good—according to the room thermostat.

### The Nesbitt Comfort Control

Within the Nesbitt Syncretizer heating and ventilating unit is the Comfort Control which "sees" and "feels" the outdoor air temperature at all times. This control automatically adjusts the temperature of the unit's continuous air stream so as to impose a protective thermal blanket—warm enough to shield room occupants from the chilling effect of cold windows, and cool enough to prevent overheating of the room air.

### Wind-o-line Radiation

For conditions of large glass area and extremely cold outdoor air—which accelerate the problem of window downdraft, Nesbitt provides Wind-o-line Radiation for integration with the Syncretizer. Wind-o-line consists of fin-and-tube radiation in a grilled wall-hung casing to extend from both ends of the ventilating unit for the full length of the windows, at the sill line—and continued, if required, along cold outside walls. (Or it may be had as a component of the storage cabinets in installations of The Nesbitt Package.)

Unlike the attempts to draw off window downdraft as recirculated air—which are easily proved to be ineffective

( THE POSITIVE ANSWER  
TO WINDOW DOWNDRAFT )

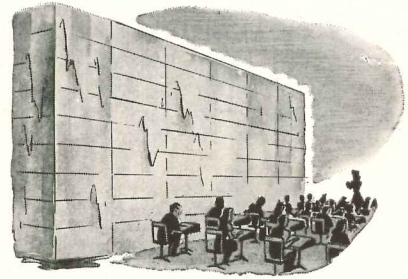
*Nesbitt*

SYNCRETIZER with WIND-O-LINE



**Like all good stories  
this one has *conflict... solution...  
and a happy ending***

(READING TIME: Four minutes—and worth it.)



In very cold weather large window areas become a "wall-of-ice" in the classroom.

# COMFORT in the Schoolroom

—Nesbitt Wind-o-line solves the problem of *heat loss* logically with a *heat gain* where and when needed. Convected currents of warm air from the grille temper the cold downdraft and divert its flow upward and above the heads of the room occupants. Radiation from the casing or cabinet helps to balance the radiant temperature differential.

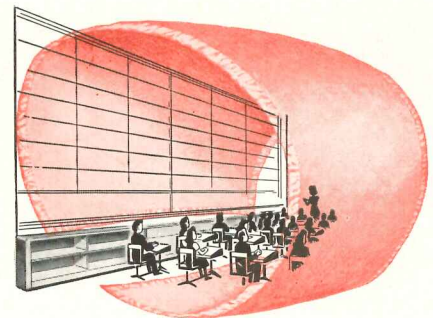
"Happily ever after"

For school officials, architects and engineers who have a personal interest

in Thermal Comfort the story turns out well: NESBITT SYNCRETIZED AIR—with Wind-o-line Radiation where desired—a *symmetrical* environment in which room-air and surface temperatures are better related to bodily heat exchange for a classroom comfort unequalled by any other system.

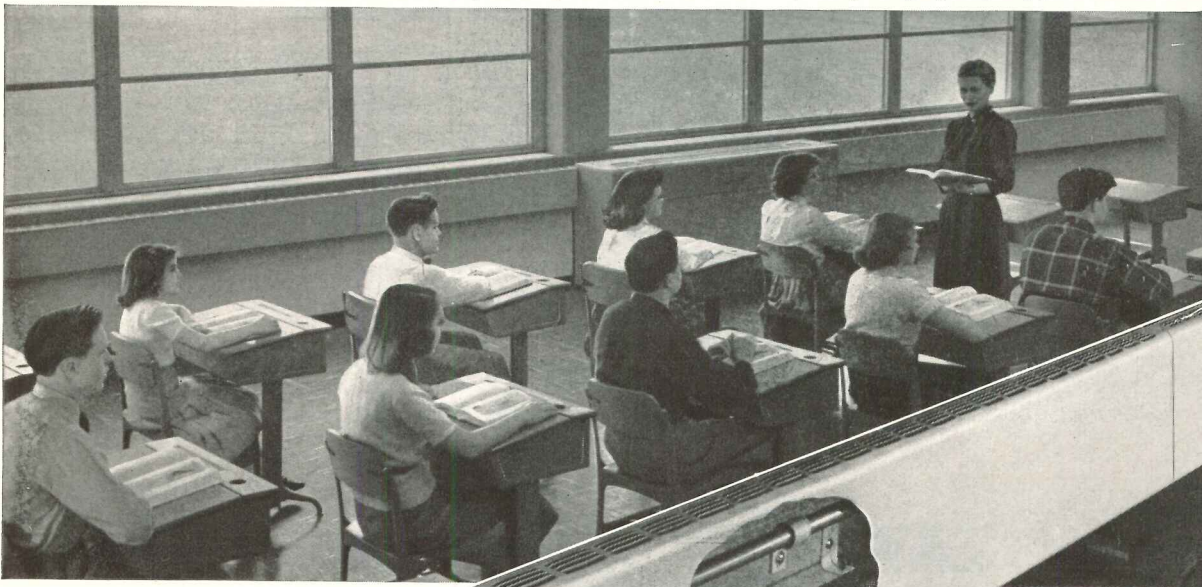
This is the story up to now. If it is ever to have a sequel, NESBITT expects to write it!

JOHN J. NESBITT, INC., STATE ROAD & RHAWN STREET, PHILADELPHIA 36, PA.



The Nesbitt "thermal blanket" protects pupils from the cold window downdraft.

*A cut-away view of Wind-o-line Radiation, and photograph of a typical installation.*



**The Nesbitt Syncretizer, Wind-o-line Radiation, and The Nesbitt Package are made and sold by John J. Nesbitt, Inc.; sold by American Blower Corporation.**

**MAIL THIS COUPON FOR MORE FACTS**

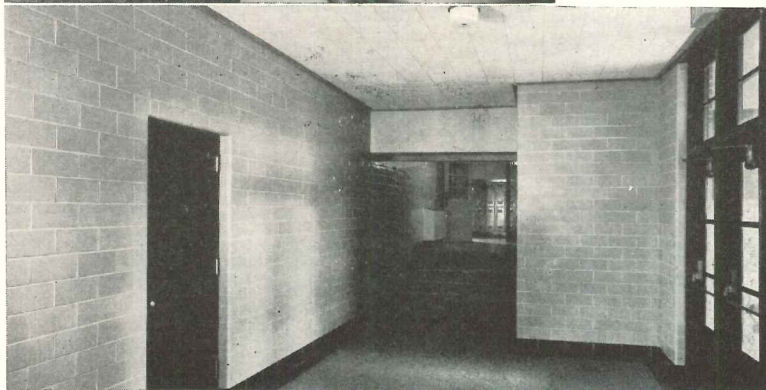
JOHN J. NESBITT, INC.  
State Rd. & Rhawn St., Philadelphia 36, Pa.  
Please send me publications describing the Nesbitt Syncretizer and Wind-o-line Radiation.

Name .....

Address .....

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

# NATCO Ceramic Glazed VITRITILE



## in the DEEP SOUTH

Good looks, durability, easy maintenance — these are just three of the many reasons why Natco Ceramic Glazed Vitritle was specified for the interior facing walls of St. Augustine's Parochial School in New Orleans. These walls resist hard usage, are easy to clean and keep clean, never need painting or re-decorating. Produced in modular sizes, Natco Ceramic Glazed Vitritle builds a wall and finish at one time — goes up fast — saves construction time and cost. The wide variety of attractive, enduring finishes available enabled the architects to select the color best suited for the purpose from both an appearance and functional standpoint.

Natco Vitritle is made from selected clay — which is not a vital critical raw material. There is plenty available. When you build with Natco Vitritle or any other Natco clay product, you are conserving vital raw materials for essential military and civilian use. All Natco Clay Products are readily available — their use does away with long, time-wasting, costly delays.

Above are two views showing interior walls of Natco Ceramic Glazed Vitritle in St. Augustine's Parochial School, New Orleans, Louisiana. Architects — Nolan, Norman and Nolan, New Orleans; General Contractors — Pittman Construction Company, New Orleans; Masonry Contractors — Dixie Construction Company, Birmingham, Alabama.

Send now for your copy of "The Scientific Approach to Color Specification" by the noted color authority, Faber Birren. It tells what the right colors are, what the right colors will do for schools and all other types of structures. It is yours for the asking.

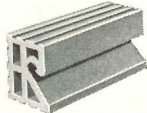
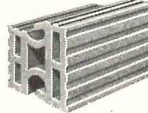
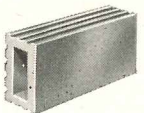
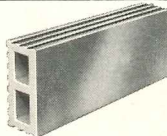

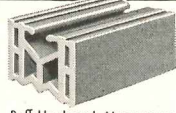


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 <p>Ceramic Glazed Vitritle 8" x 16" Nom. Face Size</p>	 <p>Non-Loadbearing Tile, Scored and Unscored, 12" x 12" Face In Standard Wall Thicknesses</p>	 <p>Buff Unglazed, Manganese Spot, Salt Glazed, Red Textured Dri-Speedwall Tile, 5½" x 12" Nom. Face Size</p>



Offices of B. F. Goodrich Company, Cleveland. Simpson Acoustical Tile installed by The Mid-West Acoustical & Supply Company, Cleveland

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*Quiet*

**These Simpson Acoustical Contractors Offer You a Complete Acoustical Service**

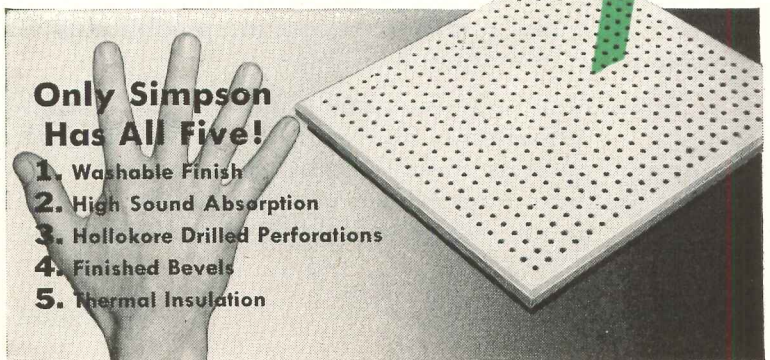
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| <p><b>ALABAMA</b><br/>Stokes Interiors, Inc., Mobile<br/>J. G. Whiddon, Montgomery</p> <p><b>ARIZONA</b><br/>M. H. Baldwin, Tucson</p> <p><b>CALIFORNIA</b><br/>Coast Insulating Products,<br/>Los Angeles<br/>Hal E. Niehoff &amp; Associates<br/>San Diego<br/>Hugh Whaling, Upland<br/>Cramer Company, San Francisco<br/>and Fresno</p> <p><b>COLORADO</b><br/>Construction Specialties Co., Denver</p> <p><b>CONNECTICUT</b><br/>W. T. Roberts Construction Co.,<br/>Hartford</p> <p><b>DISTRICT OF COLUMBIA</b><br/>Kane Acoustical Co., Washington</p> <p><b>GEORGIA</b><br/>Dumas and Searl, Inc., Atlanta</p> <p><b>ILLINOIS</b><br/>General Acoustics Co., Chicago<br/>Melvin R. Murdy, Moline</p> <p><b>INDIANA</b><br/>The Baldus Co., Inc., Fort Wayne</p> <p><b>IOWA</b><br/>Kelley Asbestos Products Co.,<br/>Sioux City</p> <p><b>KANSAS</b><br/>Kelley Asbestos Products Co.,<br/>Wichita</p> <p><b>KENTUCKY</b><br/>Atlas Plaster &amp; Supply Co., Inc.<br/>Louisville</p> <p><b>LOUISIANA</b><br/>Pioneer Contract &amp; Supply Co.,<br/>Baton Rouge</p> <p><b>MASSACHUSETTS</b><br/>W. T. Roberts Construction Co.,<br/>Cambridge</p> <p><b>MINNESOTA</b><br/>Dale Tile Company, Minneapolis</p> <p><b>MISSISSIPPI</b><br/>Stokes Interiors, Inc., Jackson</p> <p><b>MISSOURI</b><br/>Kelley Asbestos Products Co.,<br/>Kansas City<br/>Hamilton Company, Inc., St. Louis</p> | <p><b>NEBRASKA</b><br/>Kelley Asbestos Products Co.,<br/>Omaha</p> <p><b>NEW YORK</b><br/>Robert J. Harder, Lynbrook, L.I.<br/>Kane Acoustical Co., New York</p> <p><b>NORTH CAROLINA</b><br/>Bost Building Equipment Co., Inc.,<br/>Charlotte</p> <p><b>OKLAHOMA</b><br/>Harold C. Parker &amp; Co., Inc.,<br/>Oklahoma City<br/>Kelley Asbestos Products Co., Tulsa</p> <p><b>OHIO</b><br/>The Mid-West Acoustical &amp; Supply<br/>Co., Cleveland, Akron, Columbus,<br/>Dayton, Springfield and Toledo</p> <p><b>OREGON</b><br/>Acoustics Northwest, Portland<br/>R. L. Elfstrom Co., Salem</p> <p><b>PENNSYLVANIA</b><br/>Jones Sound Conditioning, Inc.,<br/>Ardmore</p> <p><b>TENNESSEE</b><br/>D. E. Madden Co., Inc., Memphis<br/>John Beretta Tile Co., Inc., Knoxville<br/>The Workman Co., Inc., Nashville</p> <p><b>TEXAS</b><br/>Blue Diamond Company, Dallas<br/>Otis Massey Co., Ltd., Houston<br/>Builder's Service Co., Fort Worth</p> <p><b>UTAH</b><br/>Utah Pioneer Corporation,<br/>Salt Lake City</p> <p><b>VIRGINIA</b><br/>Manson-Smith Co., Inc., Richmond</p> <p><b>WASHINGTON</b><br/>Elliott Bay Lumber Co., Seattle</p> <p><b>WISCONSIN</b><br/>Building Service, Inc., Milwaukee<br/>and Green Bay</p> | <p><b>CANADA</b><br/>Albion Lumber &amp; Millwork Co., Ltd.,<br/>Vancouver, B. C.<br/>Hancock Lumber Limited,<br/>Edmonton, Alberta</p> |
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SIMPSON Acoustical Tile is "keeping it quiet" in the offices of the B. F. Goodrich Company, Cleveland, just as this superior acoustical material is "keeping it quiet" in many other offices, schools, stores, restaurants, hospitals and homes throughout the United States.

Simpson Acoustical Tile is specified by more and more architects because of its high sound absorption, exclusive Hollokore drilled perforations, beautiful washable finish, painted bevels, and because it retains its crisp beauty and its efficiency, even after it has been repainted several times.

Specify Simpson Acoustical Tile for better sound conditioning. The authorized Simpson acoustical contractor nearest you is listed at the left.

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1065 Stuart Building, Seattle 1, Washington



**Only Simpson Has All Five!**

1. Washable Finish
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**Simpson**  
QUALITY SINCE 1895

**ACOUSTICAL PRODUCTS**

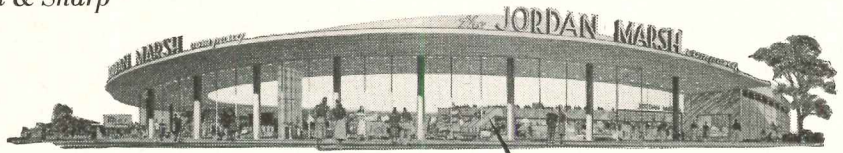
**For Better Sound Conditioning**



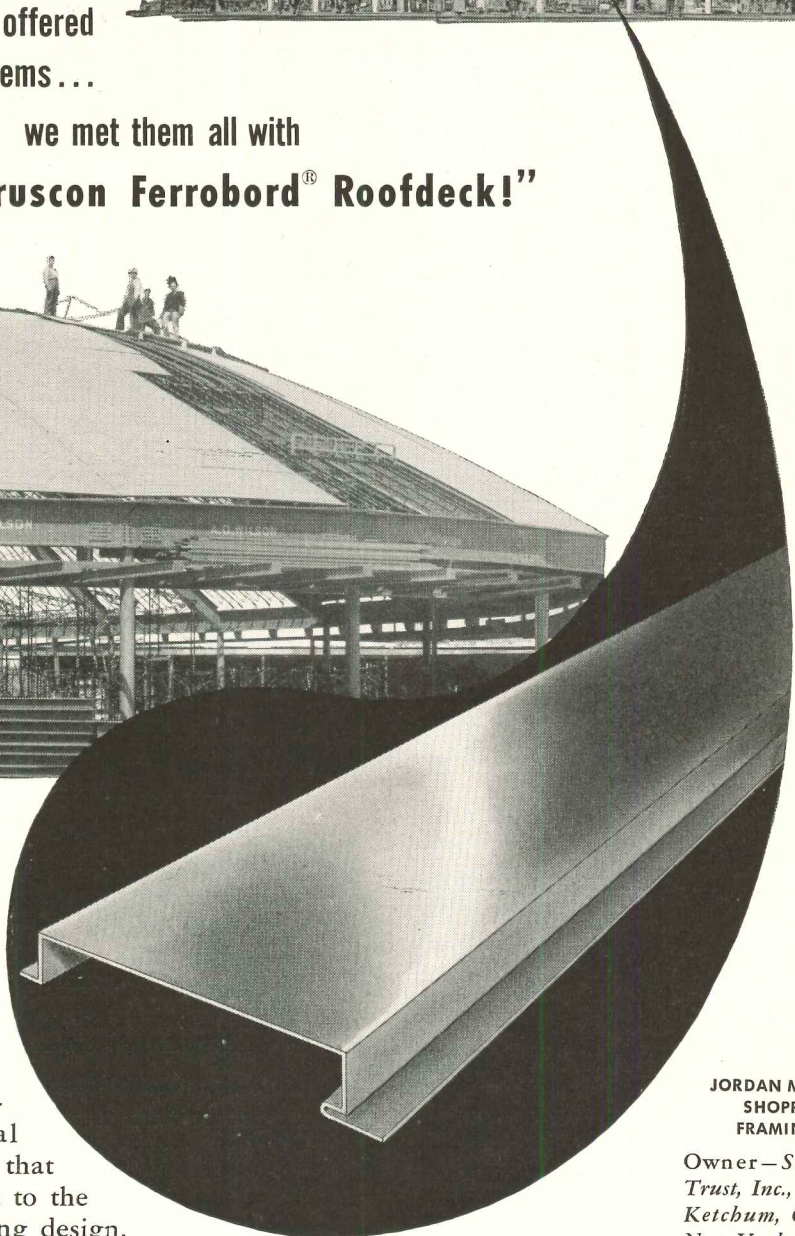
Architect Giná of Ketchum, Giná & Sharp

says:

"The unique design of this modern shopping center offered special roofing problems . . .



we met them all with  
**Truscon Ferrobord® Roofdeck!**"



The new Jordan Marsh Company shopping center is a modern architectural masterpiece . . . with a roofing installation of exceptional efficiency. Here, Truscon Ferrobord Roofdeck supplied a lightweight roof of high structural strength . . . and one that permitted easy conformation to the distinctive building design.

Truscon Ferrobord is adaptable to flat, pitched or curved roofs.

The 6" wide units are so designed and formed that each firmly interlocks with the adjoining unit along the entire length, achieving the maximum in lateral distribution of concentrated loadings.

See SWEET's for complete details on Truscon Ferrobord Roofdeck; and write for detailed literature on all other Truscon Steel Building Products. Truscon Steel Company, 1062 Albert Street, Youngstown 1, Ohio. Subsidiary of Republic Steel Corporation.

JORDAN MARSH COMPANY SHOPPING CENTER, FRAMINGHAM, MASS.

Owner—Suburban Centers Trust, Inc., Boston. Architect: Ketchum, Giná and Sharp, New York City. Contractor: George B. H. Macomber Company. 140,000 Sq. Ft., 20 Gauge 1½" Truscon Ferrobord Steel Roofdeck.

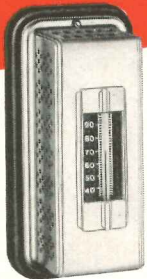


TRUSCON

a name you can build on

*the chances are  
wherever you are*

**MODERN SCHOOLS  
ARE EQUIPPED WITH  
JOHNSON TEMPERATURE  
CONTROL**



High School Glen Cove, L.I., New York  
Tooker & Marsh, architects, New York City  
A. Fentzloff, Inc., mechanical engineers, New York City  
J. J. Curley, heating contractor, Glen Cove

The high school at Glen Cove, on Long Island, serves as another example of the adaptability of Johnson Automatic Temperature Control. This building is heated by convectors. Classroom ventilation is provided by unit ventilators, while three central plant ventilating systems take care of the requirements in the auditorium and in two gymnasiums.

There are 67 Johnson room thermostats, operating Johnson valves on 111 convectors and Johnson damper operators and valves in 47 unit ventilator cabinets. The central ventilating systems are controlled by Johnson thermostats, of proper types for the service required, operating Johnson valves and dampers at the heating coils.

In any school building, large or small, old or new, Johnson Control is equally adaptable to all types of heating and ventilating installations. Ask your architect, engineers or heating contractor to call a Johnson engineer from a nearby branch office. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

**JOHNSON** *Automatic Temperature and  
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MANUFACTURE • APPLICATION • INSTALLATION • SINCE 1885



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**Architects  
and  
Engineers'**  
**DATA BOOK**



A.I.A. FILE NO. 318 (NM)

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*that simplifies electrical planning*

## for Architects and Engineers

The completely new edition of the famous Westinghouse Data Book is ready now! Prepared especially for Architects and Engineers, it contains valuable planning help on everything electrical. A truly complete electrical reference source.

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Distribution is being limited to those directly concerned with electrical planning. If you need the material and have not already received a copy, please contact your Westinghouse representative.

J-94893

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

**EQUIPMENT FOR THE  
CONSTRUCTION INDUSTRY**



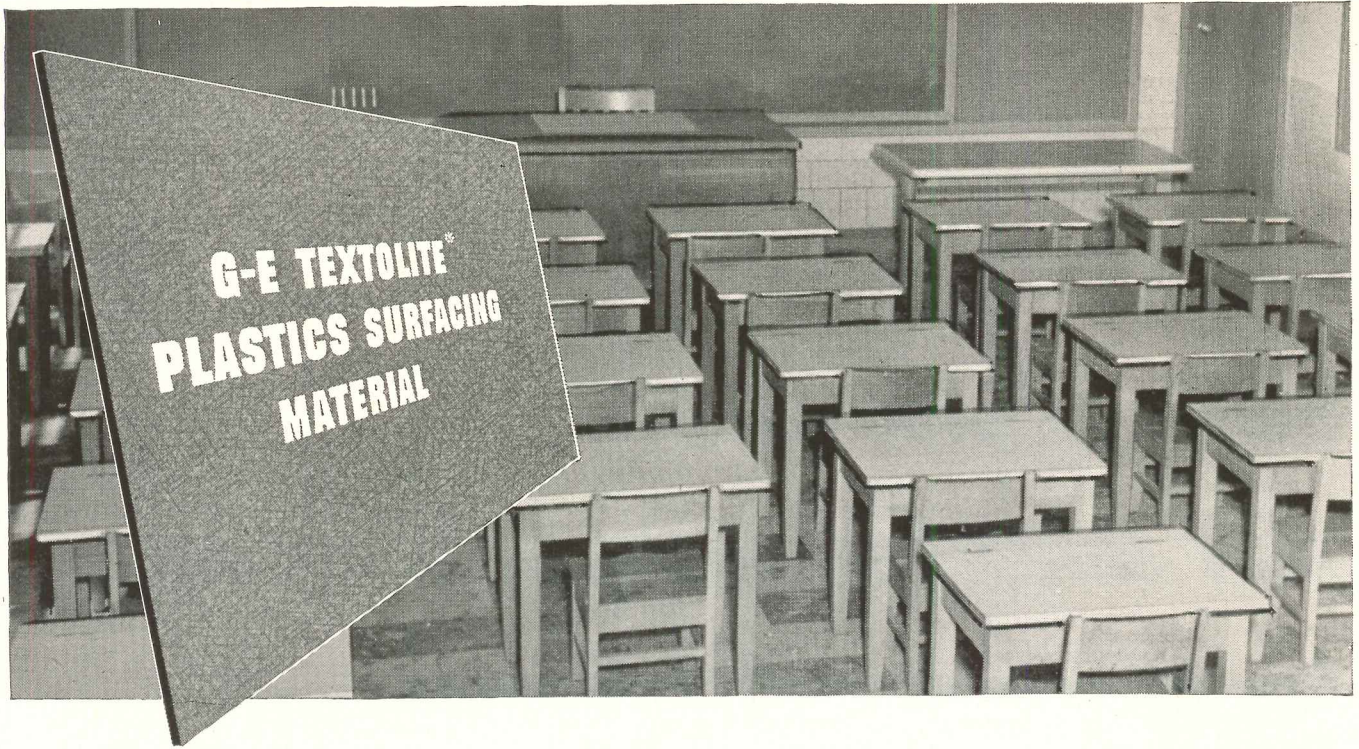


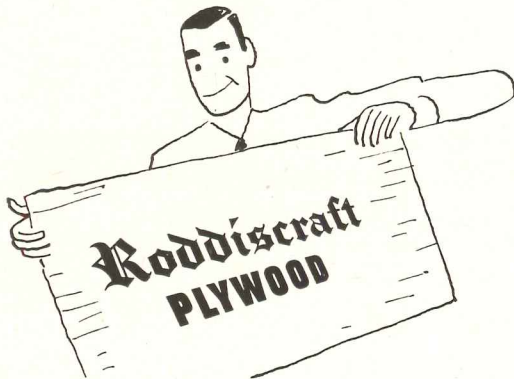
TABLE TOPS



DESK TOPS



CAFETERIA TABLES



## Design for Better School Living, Beauty, Better Illumination with G-E Textolite\*

G-E Textolite opens the door to brand new opportunities in the field of school design — gives the architect new aid in designing the drabness out of school rooms. It offers new opportunities in color, in cheerfulness — combined with durability unmatched by any other material.

G-E Textolite needs practically no maintenance — no polishing or periodic sanding and finishing—immune to inks, paints, oils, crayons, common acids — cleans

to original brightness easily with a damp cloth.

**A new Textolite Pattern — Developed Exclusively for School Use.** General Electric has developed a new pattern for school use in cooperation with Nela Park Lighting Laboratories. Engineered by lighting experts, it has ideal light reflective properties which improve illumination without glare. Other patterns also meet light reflective specifications.

G-E Textolite is available both in 1/16" thick sheet stock and factory-bonded to Roddiscraft Plywood in accordance with your specifications. Complete information, including free literature, is available from your Roddiscraft warehouse. A Roddiscraft representative will be glad to discuss Textolite applications with you.

### Roddiscraft Plywood—The Material of a Thousand Uses

Here is a material that matches its low cost with versatility. Use it for closets, partitions, shelving, built-ins — a host of applications that require lasting service, economy, pleasing appearance. And when you specify Roddiscraft Plywood, you are sure of a product of true craftsmanship quality.

\*Reg. U. S. Pat. Off.

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Marshfield, Wisconsin

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# A COMPLETE LINE OF QUALITY STEEL BUILDING PRODUCTS

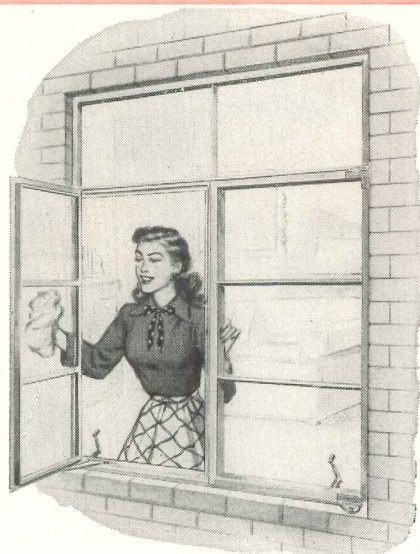
## ... KEEP CONSTRUCTION COSTS DOWN

Architects and builders everywhere are finding a way to combat today's top-heavy building costs by using Steelcraft building products. Low in first cost, they are easy and quick to install . . . speed up construction . . . help reduce overall building costs. A complete line of steel building products from one source . . . with prompt shipping schedules.

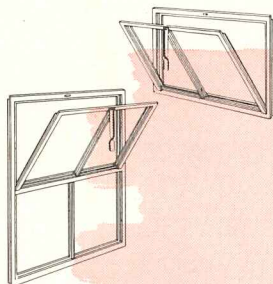
### BONDERIZED STEEL RESIDENCE CASEMENTS

Made of hot rolled steel sections, Steelcraft steel residence casements are available in all popular sizes. Picture windows, frames and combinations are standard items. Steelcraft steel casement windows are preferred by progressive architects and builders because they combine modern beauty with all these advantages:

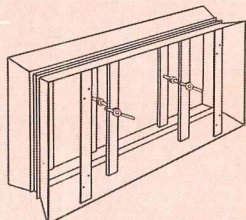
- **Easy to Operate** Precision built, die cast roto-type under screen operators and locking handles make them easy to open . . . easy to close. They will not stick, rattle or warp.
- **100% Ventilation** Full opening ventilators can be adjusted to deflect the breeze into the room insuring maximum ventilation at all times.
- **Weatherproof . . . Water-Tight** Double weathering contact on both the inner and outer edges provide two weather seals on all sides. Locks tight—stays tight.
- **Easy to Clean** Extra long reinforced extension type hinges allow more clearance at jamb permitting easy outside cleaning from the inside.
- **More Light** The trim narrow lines permit maximum amount of light to enter the room.
- **Minimum Upkeep** Bonderized for permanent protection with a baked-on prime coat reduces maintenance cost.



## STEELCRAFT PRECISION BUILT STEEL BUILDING PRODUCTS



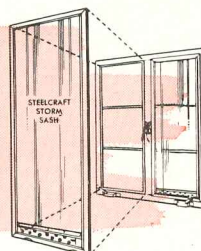
**Steel Basement and Utility Windows.** Armless ventilators are easily removed.



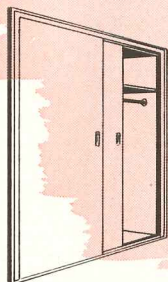
**Basement Sash Form.** Easy to use, saves time—reusable.



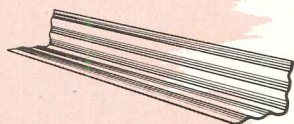
**Steel Door Frames.** One piece, welded construction. Reinforced mitered corners won't open.



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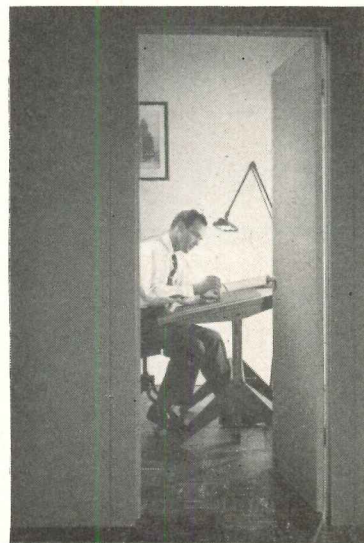
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**THE STEELCRAFT MANUFACTURING COMPANY**  
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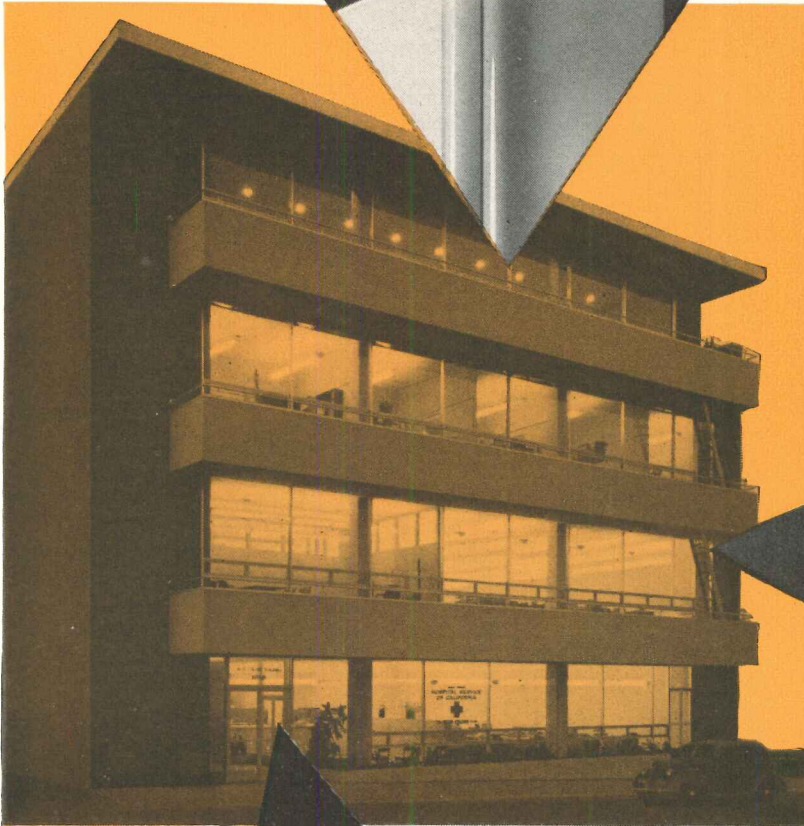
*Michelangelo Buonarroti said,  
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all those which are alike in quality  
and quantity must be treated  
according to one model and one style."*

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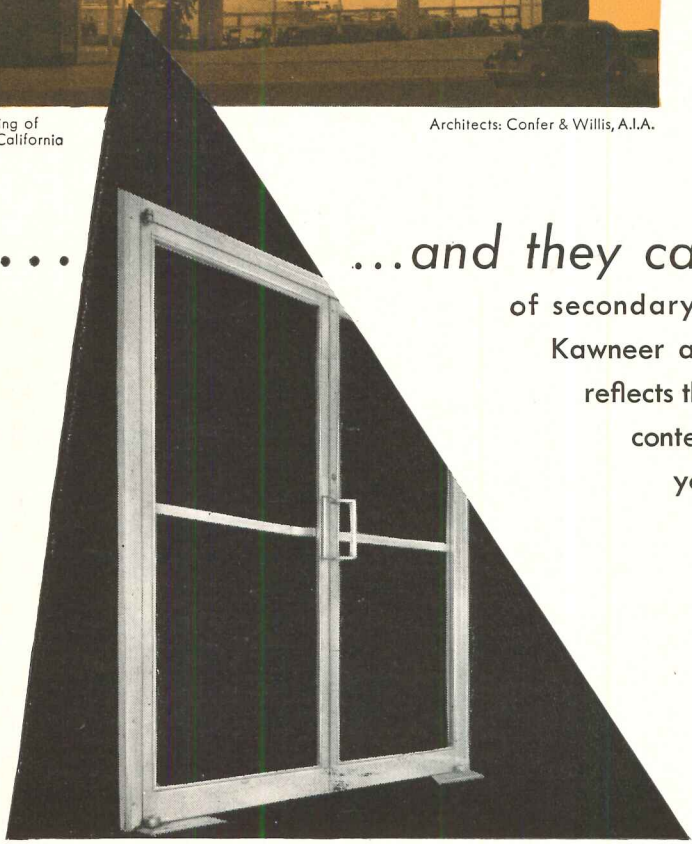
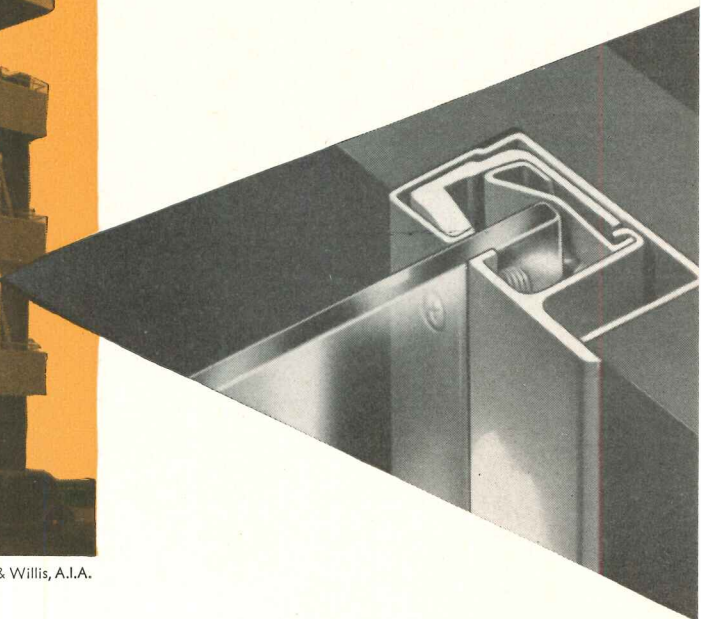
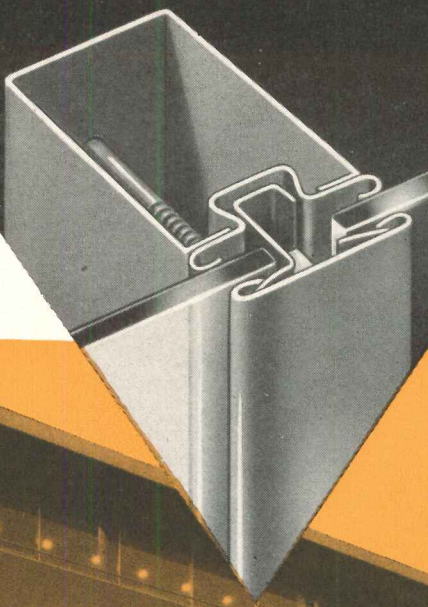
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The face of this modern sash is flush with surrounding surfaces, thus eliminating visual obstruction into the interior



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Architects: Confer & Willis, A.I.A.



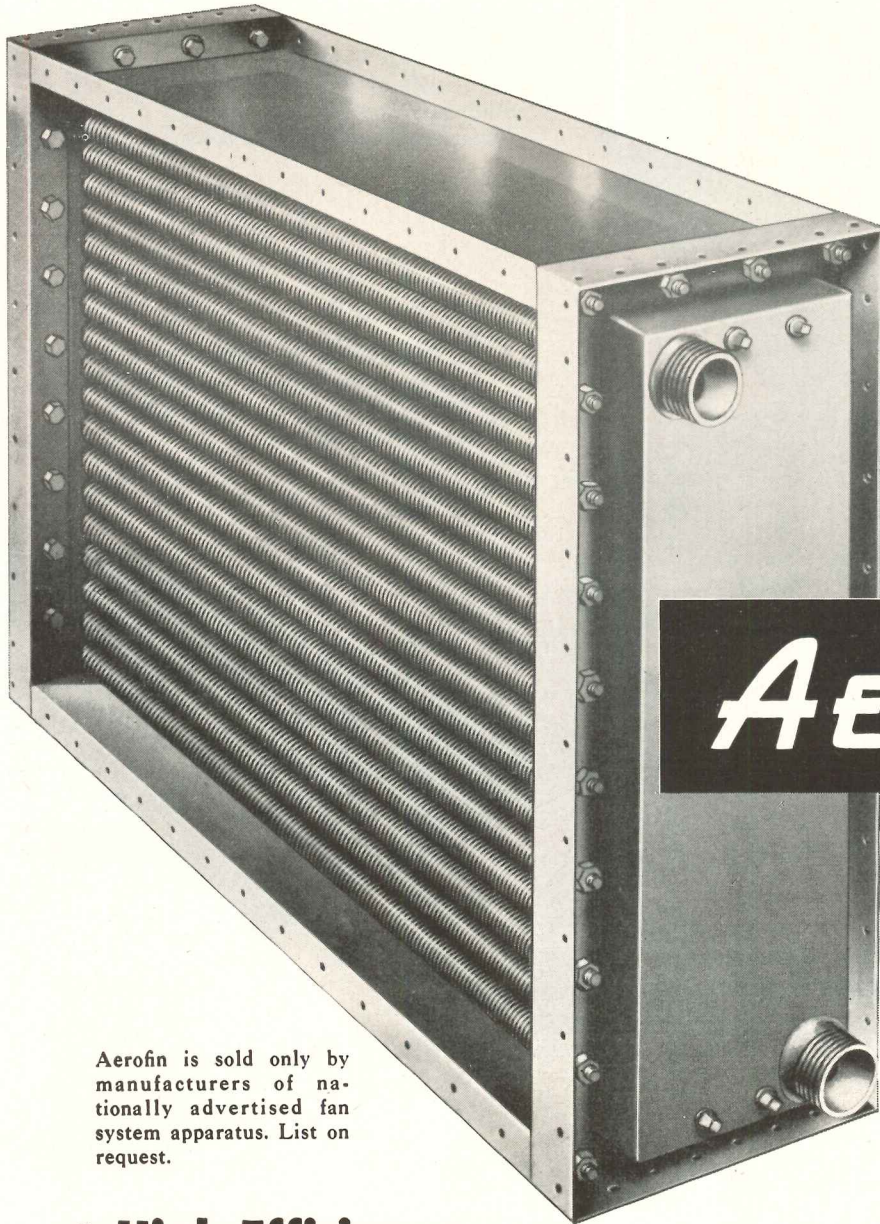
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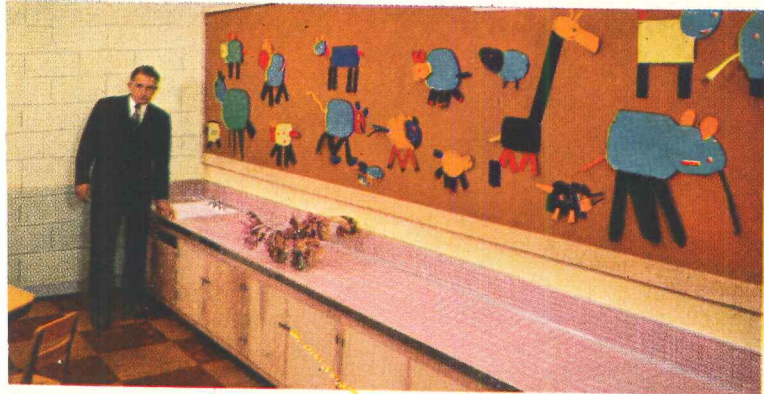
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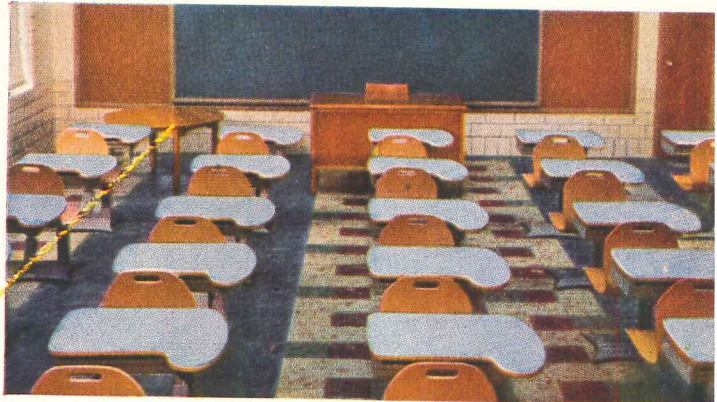
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**COUNTER TOPS** covered with beautiful G-E Textolite plastics surfacing are easily cleaned with just a damp cloth. This tough, wear-resistant plastics topping is also ideal for sink and counter tops in school kitchens.



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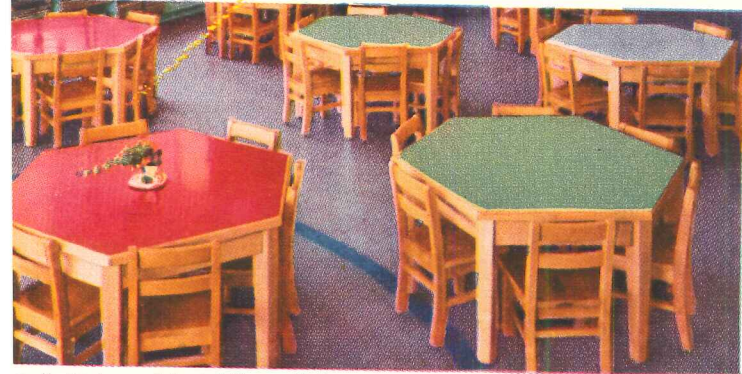


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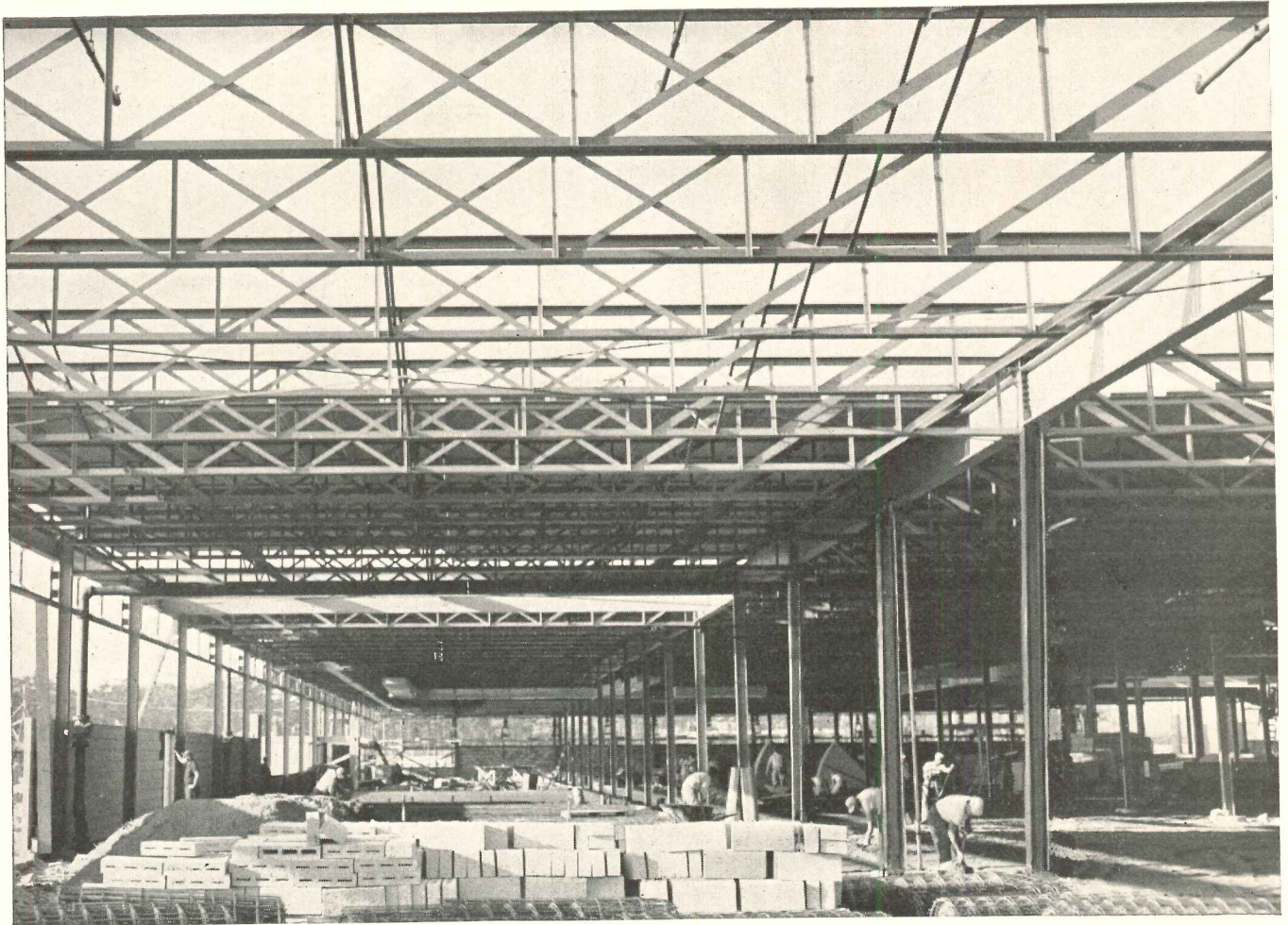
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# MIDGET SIZE

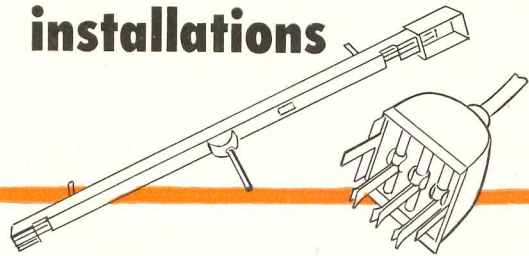


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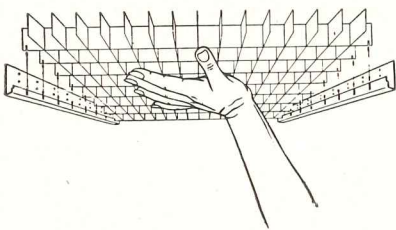
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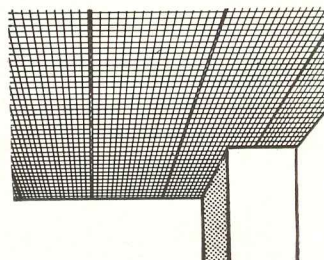
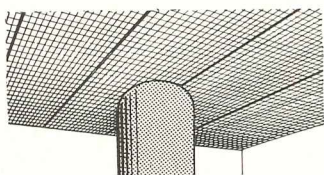
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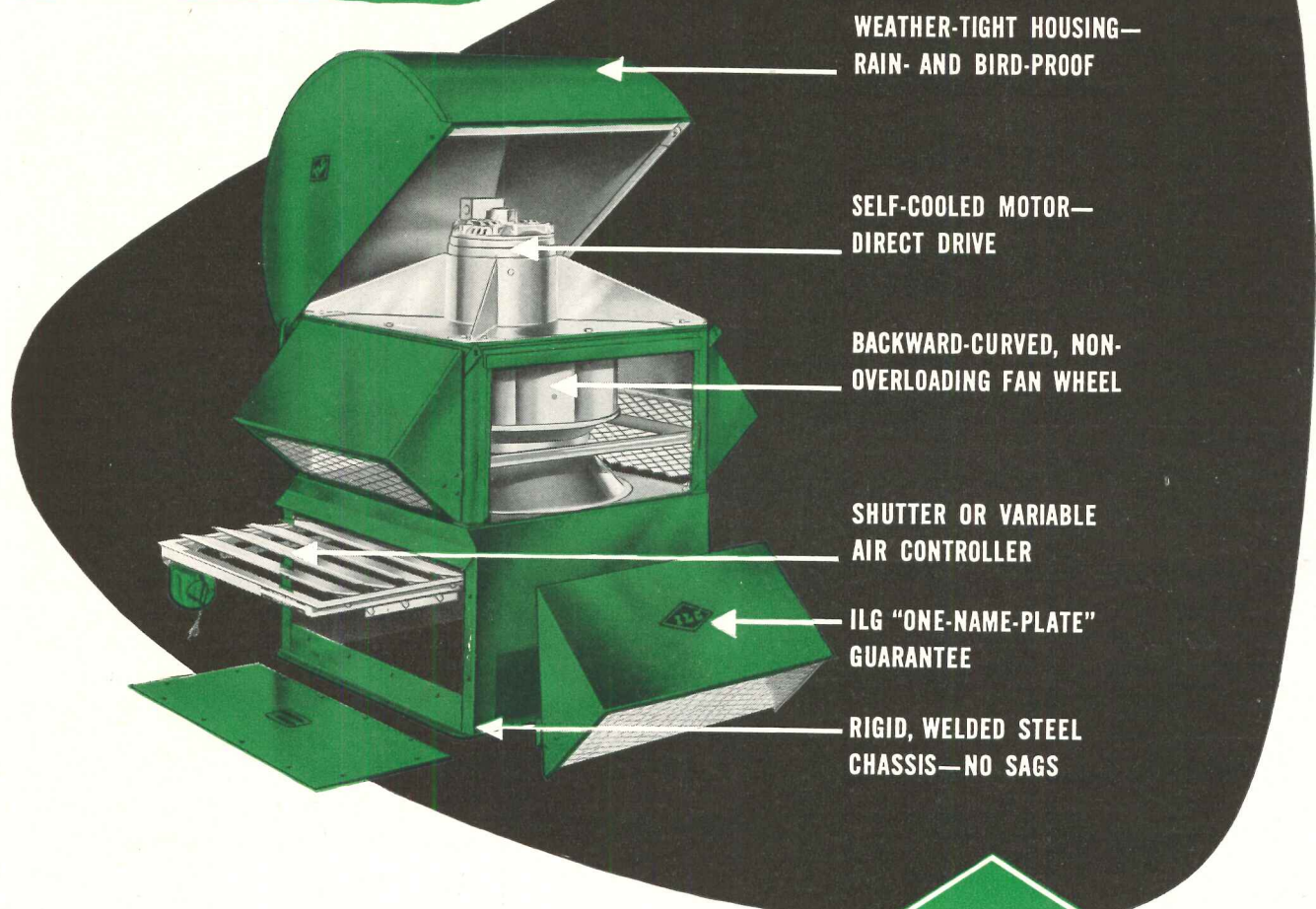
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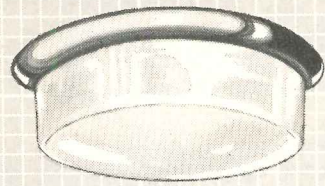
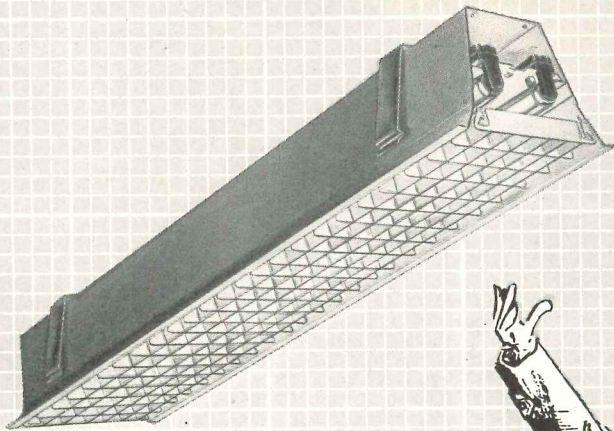
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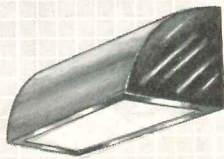




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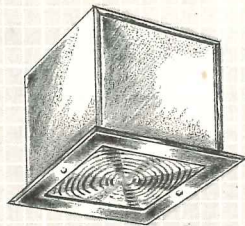
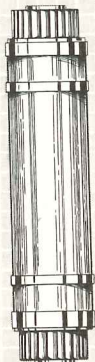


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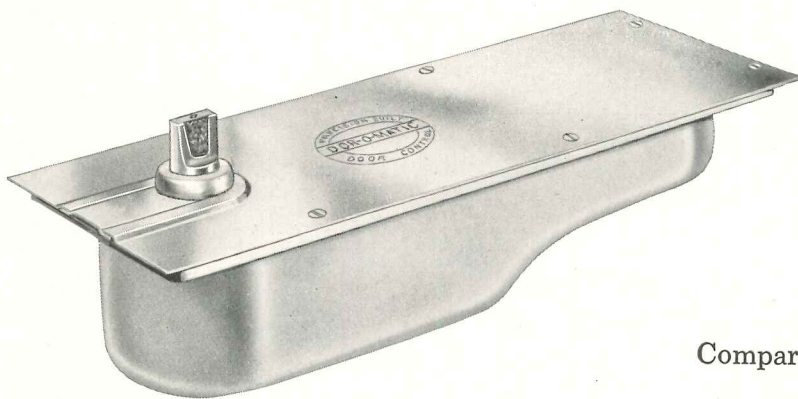
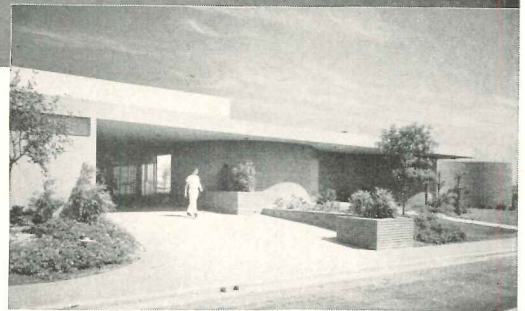
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*CONTRACTOR: The White Construction Company, New York City. Roof, gutters, and octagon conductors are aluminum—*

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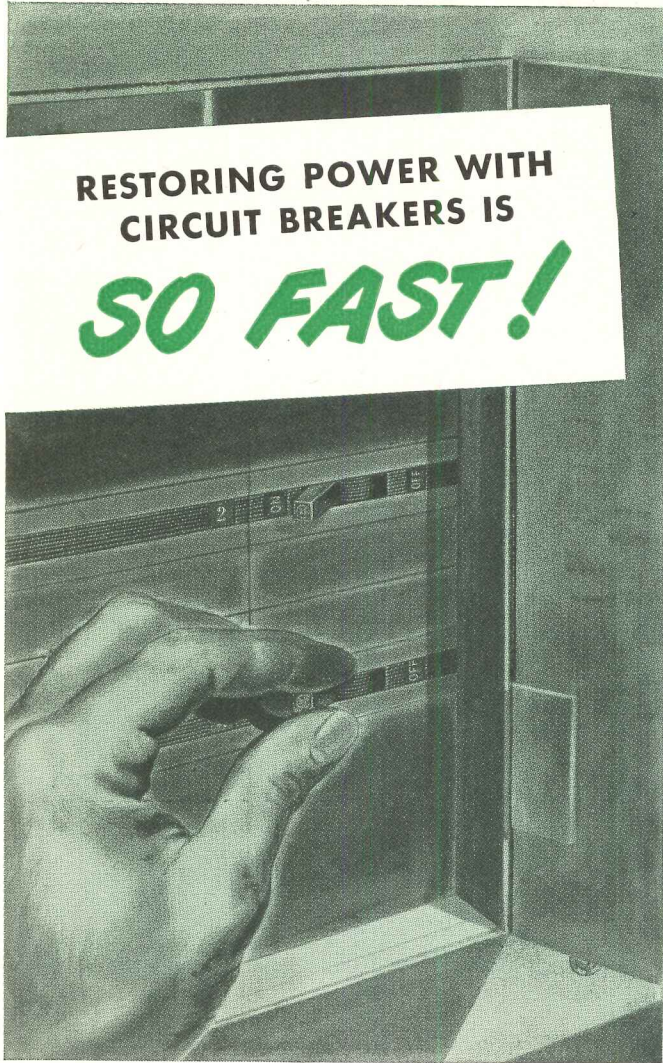




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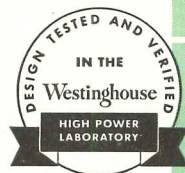
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J-30052



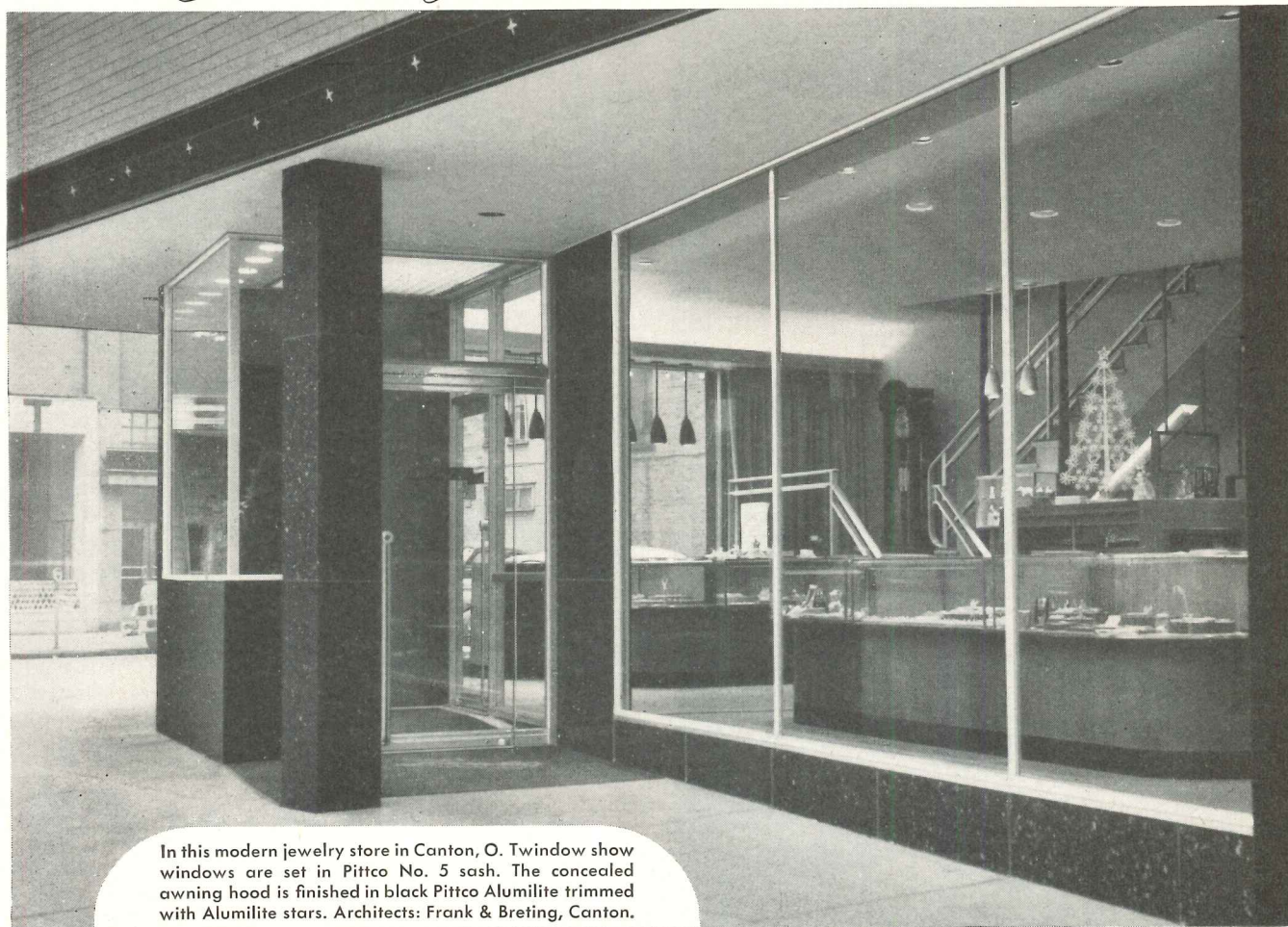
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**AB CIRCUIT BREAKERS**

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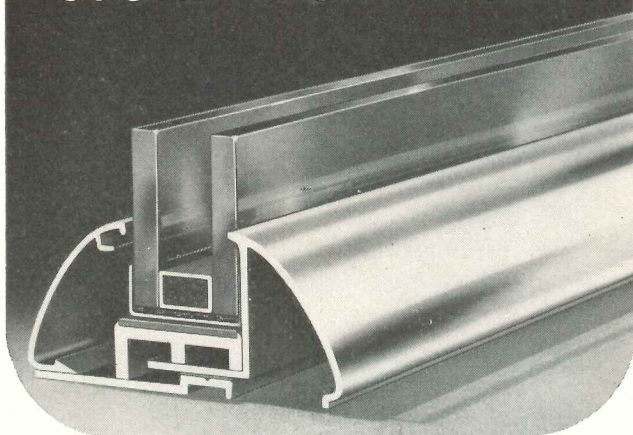


# Quality settings for insulated windows



In this modern jewelry store in Canton, O. Twindow show windows are set in Pittco No. 5 sash. The concealed awning hood is finished in black Pittco Alumilite trimmed with Alumilite stars. Architects: Frank & Breting, Canton.

## PITTCO STORE FRONT METAL



Pittco No. 5 sash, specially designed for use with Twindow.

● The complete line of Pittco Store Front Metal includes bars and sashes specifically designed for use with Twindow, Pittsburgh's window with built-in insulation.

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PITTSBURGH PLATE GLASS COMPANY

# Rolling Steel

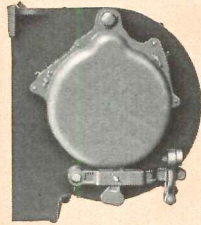
# DOORS

*Manually, Mechanically, or Power Operated*

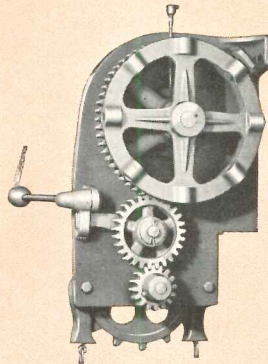
In the openings between an enclosed loading dock and a large food warehouse illustrated below, twenty-four Mahon automatic closing, Underwriters' Labeled Rolling Steel Fire Doors were installed to protect the contents of the building. These doors are manually operated in normal service, but are equipped with fusible links and an automatic closing device which quickly closes the door in case of fire. Mahon Underwriters' Labeled Rolling Steel Fire Doors, like all other Mahon Rolling Steel Doors, occupy no usable space inside or outside the opening . . . they are built to give a lifetime of trouble-free service . . . for instance, the galvanized steel for the interlocking curtain slats of Mahon Rolling Steel Doors is chemically cleaned, phosphated, and chromated to produce paint bond, and the protective enamel coating is baked on at 350° F. prior to roll-forming. This is just one of the extra value features of Mahon Rolling Steel Doors—you will find others if you check specifications carefully. See Sweet's Files for complete information, or write for Catalog No. G-52.

## THE R. C. MAHON COMPANY

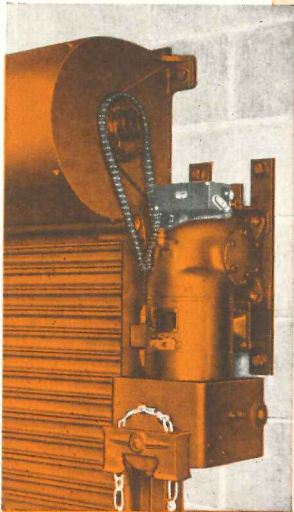
Detroit 34, Michigan • Chicago 4, Illinois • Representatives in all Principal Cities  
Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.



Mahon Release Device and Governor on the Automatic Closing Mechanism of a Mahon Rolling Steel Fire Door. Fusible links release the mechanism in case of fire and the door closes automatically.



Mahon Release Device for Chain-Gear Operator on Mahon Mechanically Operated Rolling Steel Fire Doors. Fusing of the Fusible Link, which releases the Automatic Closing Mechanism, simultaneously disengages the Chain-Gear Operator.



**MAHON STANDARD  
POWER OPERATOR 920-P**



**ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT**

Twenty-Four Mahon Automatic Underwriters' Labeled Doors installed in a new Warehouse for Food Warehouses, Inc., Detroit, Mich. Two Mahon Power Operated Rolling Steel Doors 17'-0" x 22'-0" are installed in railroad openings in this same building. Louis G. Redstone, Architect, Campbell Construction Company, General Contractors.

# MAHON

Task Matched industrial lighting plus "Springlox"...

only **BENJAMIN** *"Magna-Flo"* systems

bring you *Both!*

No other T12 Slimline System is so COMPLETE! No other lighting system has "Springlox" Lampholders! Only Benjamin "Magna-Flo" Systems bring you BOTH these advantages, so important to BETTER SEEING and QUICKER MAINTENANCE.

FREE DATA BULLETIN AD5705 brings you complete "Magna-Flo" specifications and details of the hundreds of "Magna-Flo" combinations which make possible lighting to MATCH ANY INDUSTRIAL SEEING TASK! Benjamin Electric Mfg. Co., Dept. Q-1, Des Plaines, Illinois.

for BETTER SEEING...

## 1 Task Matched Lighting Installations

You get BETTER SEEING, because the "Magna-Flo" Line is so complete that you can always specify units which are MATCHED TO THE SEEING TASK! No need to settle for "second choices" or substitute sizes and types! Just three channels and four reflectors form the basis for HUNDREDS OF COMBINATIONS! Assembly lines or drafting tables, inspection or production lighting, lighting for the discernment of fine detail or adequate light for larger work... whatever the seeing task, it can be MATCHED with "MAGNA-FLO".

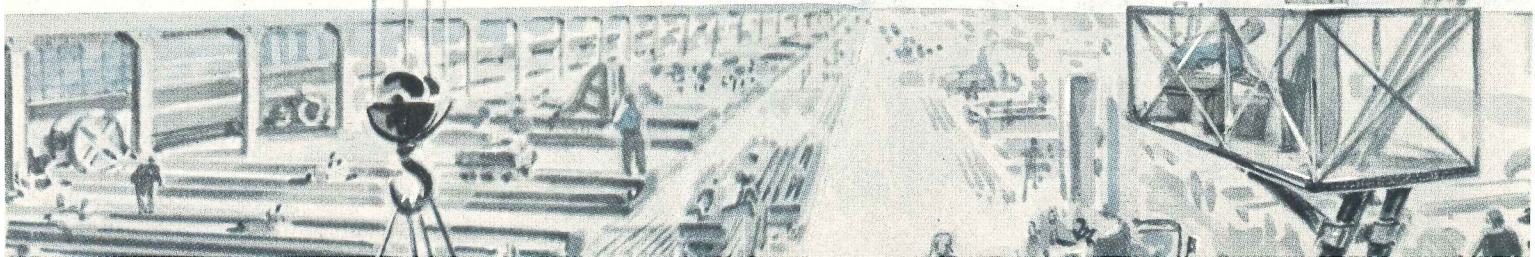
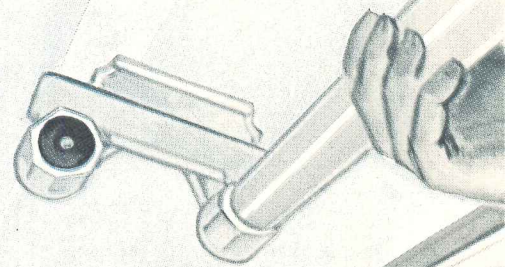
48", 72" and 96"  
CHANNELS for  
T12 LAMPS and  
REFLECTORS

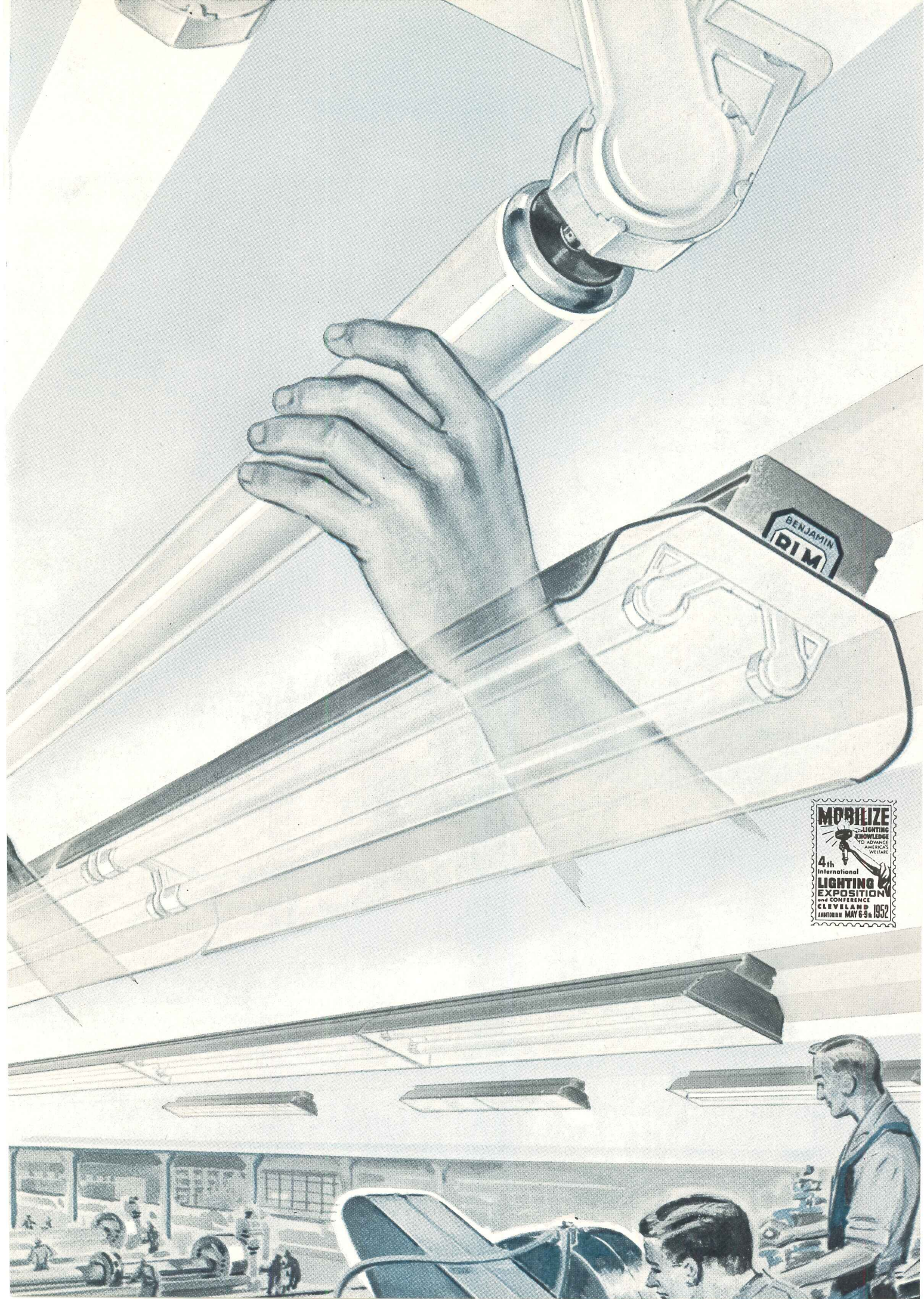
with 2 or 3-lamp "Springlox"...  
in INDIVIDUAL UNITS or CONTINUOUS LINES...  
with LOUVERS, COVERS or SHIELDS...  
Suspended by CHAIN, CONDUIT, CABLE, SINGLE-  
ROD, CEILING or TWIN-ROD.

for QUICKER MAINTENANCE...

## 2 "Springlox" Lampholders

There's nothing like this rugged, all-metal, patented Benjamin fluorescent lampholder for "quick-in, quick-out" lamp servicing that speeds up relamping and improves reflector maintenance. "Springlox" is one of the important exclusive advantages that make "Magna-Flo" Systems outstanding. It is a "MAGNA-FLO" PLUS that COSTS NOTHING EXTRA! In addition to its maintenance speed-up features, "Springlox" assures (1) COMPLETE SAFETY from lamps dropping out or being loosened by vibration, because it is self-adjusting for slight differences in lamp lengths; and (2) NEVER-FAILING SAFETY CONTACT because of a built-in "easy-make, easy-break" circuit switch.





BENJAMIN  
DIM

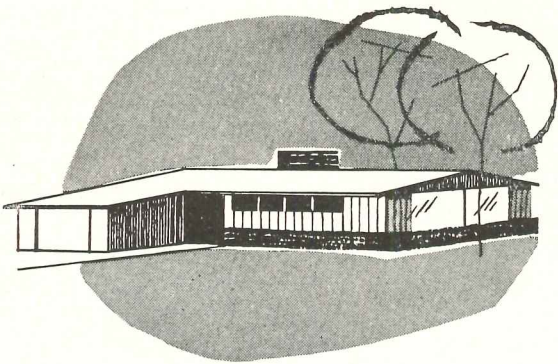
**Mobilize**  
LIGHTING  
KNOWLEDGE  
TO ADVANCE  
AMERICA'S  
WELFARE

4th  
International  
**LIGHTING**  
EXPOSITION  
and CONFERENCE  
CLEVELAND  
JANUARY - MAY 6-9 & 1952

# Today's house

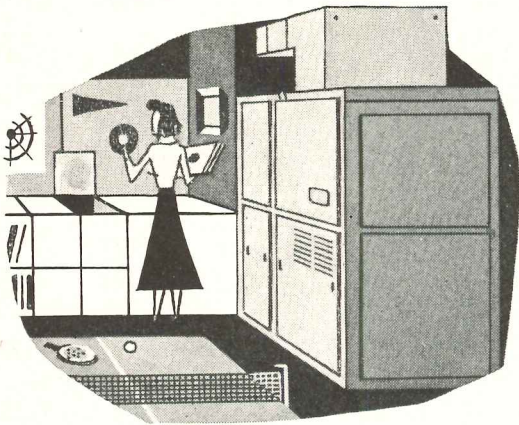
The Weathermaker Home is built around 4-season Carrier Weathermaker Air Conditioning.

Why is it such a good idea today?



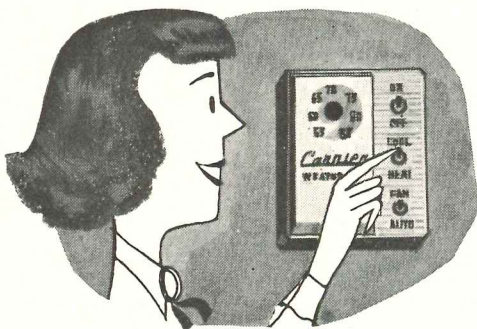
## Today's house needs space

Space today costs three times as much as it cost about ten years ago. So it's important to use space wisely . . . and in the Carrier Weathermaker Home you can. Windows need not be planned for ventilation. They can be fixed or grouped. So the floor plan can be a simple rectangle.



## Today's house needs comfort

Today's house is smaller. It has more window area. Its appliances create more heat. So it's bound to be hotter in the summer. In the Weathermaker Home, Carrier Weathermaker Air Conditioning delivers more comfort for less money than extra space would cost.



## Today's house needs freedom

Living today is a complicated affair. And we need all the help our houses can give us. The Weathermaker Home should be cleaner, quieter, easier to run (the weather you want is at your finger tips) and more fun to live in. There's increasing evidence that it's the kind of house people want today. We'd like to work with you in giving it to them.

CARRIER CORPORATION  
312 South Geddes Street, Syracuse 1, N. Y.

Please send me "How to Have a Carrier Weathermaker Home."

Name \_\_\_\_\_

Street \_\_\_\_\_

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

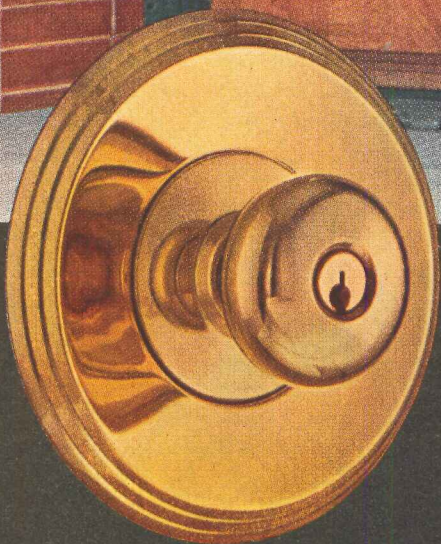
**Carrier**

AIR CONDITIONING • REFRIGERATION

ARCHITECTURAL RECORD

# SCHLAGE LOCKS ...

**DISTINCTIVE** appearance... **TIME-PROVEN** performance



SCHLAGE PLYMOUTH DESIGN  
with Riviera escutcheon

*The quality of Schlage cylindrical locks is clearly evident  
...in their beauty and in their trouble-free operation...  
time-proven for more than a quarter of a century.*

## **SCHLAGE**®

**THE Time-Proven CYLINDRICAL LOCK**

SCHLAGE LOCK COMPANY - 2201 BAYSHORE BOULEVARD, SAN FRANCISCO, CALIFORNIA

SCHLAGE LOCK COMPANY OF CANADA, LTD. - VANCOUVER, B. C.



## This office was planned for permanent flexibility

**HAUSERMAN**  
*Movable Interiors*

OFFICES • SCHOOLS • LABORATORIES  
 HOSPITALS • INDUSTRIAL PLANTS

**Korweld\*** —the non-metallic panel construction which combines the best features of *all* types of interior partitions—is an exclusive Hauserman development. Ask your Hauserman Representative for facts about this revolutionary new product.  
\*Trademark

Thanks to its walls, this beautiful office is a permanently practical investment. As space requirements vary in coming years, everything in this office—including *the walls*—can be moved or rearranged in a matter of hours.

Here, indeed, is the solution to future expansion problems for *this* company, and for the thousands of other American businesses—commercial, industrial and institutional—which now enjoy the many benefits of Hauserman *Movable Interiors*.

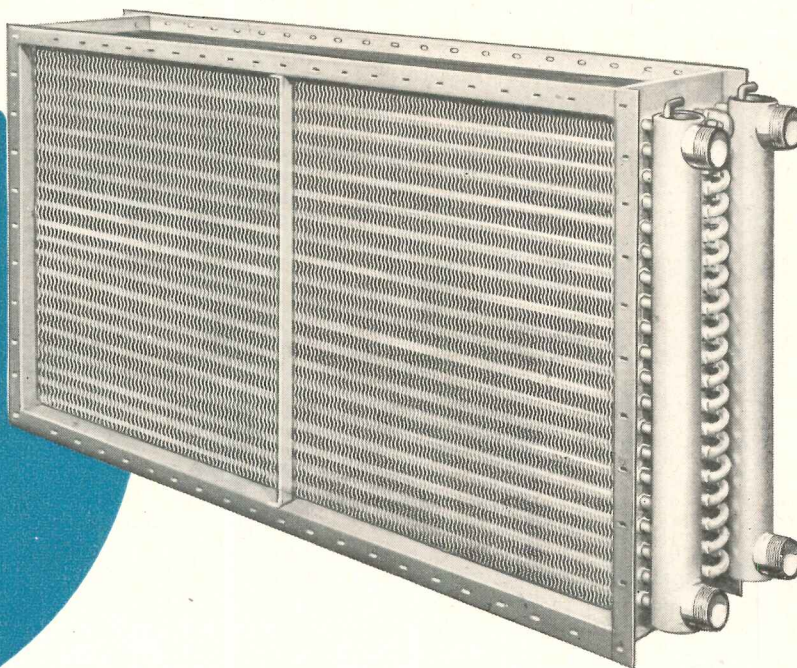
Today the demand for Hauserman *Movable Interiors* is the greatest in our almost 40-year history. Although production expansion already is underway, we urge you to *plan now*—as far in advance as possible—in order to insure delivery and erection of your clients' future Hauserman installations *on schedule*.

Your nearby Hauserman Representative will gladly furnish you with complete information . . . or write *today* to The E. F. Hauserman Co., 7167 Grant Avenue, Cleveland 5, Ohio.



# NEW STANDARD OF QUALITY!

*McQuay*  
**WATER  
COOLING  
COILS**

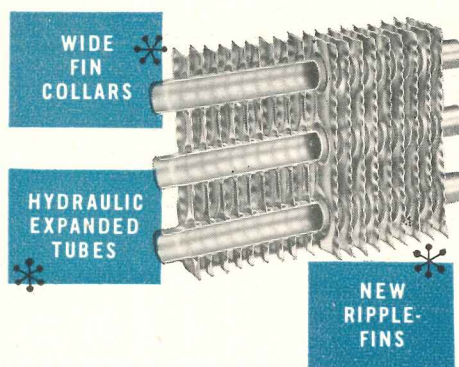


## ...featuring **NEW RIPPLE-FIN CONSTRUCTION**

Now, the new, improved Ripple-Fin makes McQuay Water Cooling Coils even more rugged and efficient. Consider these advantages of the new Ripple-Fin Coil construction:

- Easy to drain of condensed moisture. Water hang-up has been sharply reduced on coils requiring vertical (up) air flow.
- Produces a rippled air flow pattern . . . closer and longer contact between the air stream and the coil surface, preventing air by-pass and producing faster heat transfer.
- Permits increased face velocities without danger of moisture carry-over from fin surface to air stream.
- Offers greater heat transfer surface.
- Gives higher flexible strength with minimum air friction and cleaner operation.
- Copper tube headers provide inherent flexibility.
- Hydraulic expansion of all tubes into fins having wide smooth collars assures permanent mechanical bond.

Available in a wide variety of styles and sizes. Standard and special coils for cold water, brine, direct expansion, refrigerant condensing, steam, hot water, and other applications. Write McQuay, Inc., 1605 Broadway St. N.E., Minneapolis 13, Minn. Representatives in principal cities.



EXCLUSIVELY YOURS  
IN *McQuay* COILS!

*McQuay* **INC.**



**HEATING • AIR CONDITIONING • REFRIGERATION**



*In floor fill*  
.....  
*in roof fill*

Permalite expanded aggregate gives you concrete with only 1/7 to 1/3 the weight of sanded concrete. The great saving in deadweight can not only sharply reduce requirements in structural steel but also cut construction time and costs.

Permalite offers you consistent, rigidly controlled quality on every job, first bag to last. In its weight class, Permalite mixes require less water, have less drying shrinkage, higher strength, less absorption and have greater resistance to freezing and thawing.

Leading architects are specifying Permalite for *all types of construction* — industrial buildings, schools, hospitals, defense housing and military buildings. For full facts and specification data see your Sweet's File or send for new Permalite brochure; Great Lakes Carbon Corporation, 18 East 48th Street, New York 17, N. Y., Dept. 103.

**MAKES BETTER PLASTER, TOO**

U. L. approved Permalite/plaster carries maximum fire ratings up to 4 hours — does a faster, easier job of fireproofing structural steel. On walls and ceilings, it assures lighter, more crack-resistant base coats.



# PERMALITE

*lightweight aggregate*

## FILLS THE BILL

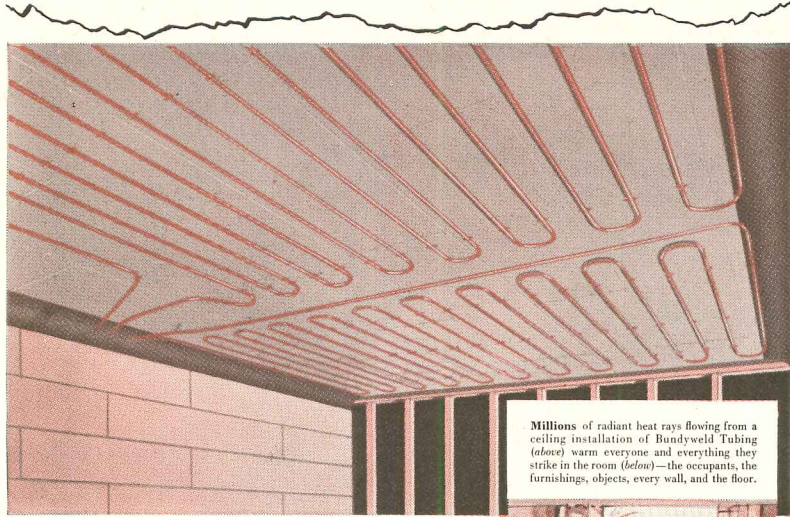
- ✓ Reduces deadload
- ✓ Cuts steel needs
- ✓ Lowers heat loss
- ✓ Fire resistant
- ✓ Availability unlimited
- ✓ Quality controlled
- ✓ Perlite Institute approval

# Permalite<sup>®</sup>

THE LEADING  
PERLITE  
AGGREGATE

A Building Product of Great Lakes Carbon Corporation and its Exclusive Permalite Licensees

# "Choose ceiling radiant heating," says Bundy to future home owners—for you



Millions of radiant heat rays flowing from a ceiling installation of Bundyweld Tubing (above) warm everyone and everything they strike in the room (below)—the occupants, the furnishings, objects, every wall, and the floor.

## Like having the sun in your ceiling— Bundyweld ceiling radiant heating

Have you considered the many advantages of ceiling radiant heating for that home you are planning to buy, remodel, or build? This truly modern system offers you savings, conveniences, and comfort not matched by any other.

With ceiling installations of Bundyweld, for example, heat rays flow evenly, freely downward, not up through floors to be lost in rugs, furniture, draperies. Here is heating that really radiates, gently warming everyone and everything in the room. Heating so comfortable, so natural it's like having the sun in your ceiling.

### Savings, too

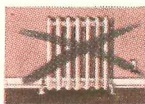
More, because it's draft-free heat, less dust is carried onto upholstery, curtains, draperies. Because it's even heat, no dirt streaks form on walls or ceilings. You save extensively on dry-cleaning, wall-washing, and redecorating

costs, enjoy easier day-to-day housekeeping. These home maintenance economies, plus fuel savings over the first few years, more than pay for any additional first costs. Continuing yearly savings make this your most economical long-run heating system by far.

Talk to your real estate man, heating contractor, architect, or builder about radiant heating now. And about Bundyweld Tubing, too. Bundyweld is the only tubing double-walled from a single strip. It's tough steel tubing, copper-coated inside and out. Bundyweld is leakproof, takes high pressures in stride, transmits heat quickly.

### Send coupon for free booklet

Send coupon at right for free booklet describing fully the many advantages of ceiling radiant heating. Radiant Heating Division, Bundy Tubing Company, Detroit 14, Michigan.



No radiators or registers to interfere with furniture arrangements or take up valuable floor and wall space.

Bundyweld is the only tubing double-walled from a single strip. It's quickly, easily fabricated into completed radiant heating grids—with major savings in time and construction costs



## BUNDY TUBING COMPANY

Detroit 14, Michigan

WORLD'S LARGEST PRODUCER OF SMALL-DIAMETER TUBING

Radiant Heating Division  
Bundy Tubing Company, Detroit 14, Michigan  
Send me the free literature I've checked:  
 Bundy consumer brochure on ceiling radiant heating  
 Bundy technical brochure for the trade

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

It is the conviction of Bundy Tubing Company that radiant heating systems rightly belong in ceilings.

Bundy tells future home owners why in an intensive, full-page, four-color campaign appearing in *Better Homes and Gardens* and *American Home*—magazines carrying immense weight with consumers interested in buying, building, or remodeling homes.

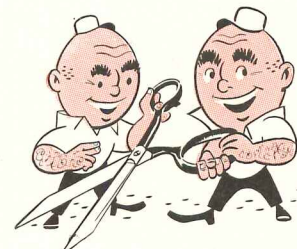
### Are you ready?

Interest in radiant heating has spurted sharply upward since the end of World War II. The all-new Bundy campaign is designed to give future home owners important information on ceiling radiant heating and on the Bundyweld Tubing features that help assure a perfect, long-lasting, economical system.

This campaign, of course, will help pave the way to even stronger consumer acceptance of ceiling radiant heating and Bundyweld Tubing. Result for architects and builders: Those who offer Bundyweld ceiling radiant heating systems will have a powerful, convincing, and much-wanted sales feature to speed sales to receptive buyers. Result for plumbing and heating contractors: Continually increasing business and good, sound profits from the installation of Bundyweld ceiling radiant heating systems.

### Radiant Heating Division

**BUNDY TUBING COMPANY**  
Detroit 14, Michigan



The Bundy consumer brochure on ceiling radiant heating, to be offered in every national radiant heating ad, was written with you in mind, too. Let us send you a copy. It's packed with meaty facts.

Radiant Heating Division  
Bundy Tubing Company, Detroit 14, Michigan  
Send me the free literature I've checked:  
 Bundy consumer brochure on ceiling radiant heating  
 Bundy technical brochure for the trade

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

## Advantages of Bundyweld Tubing

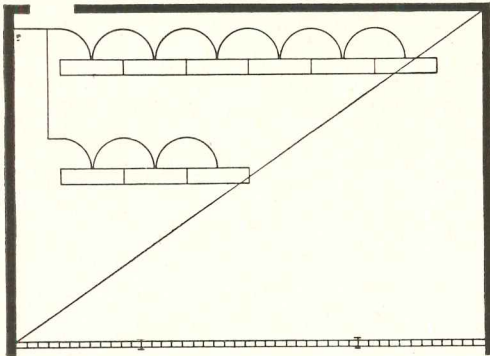
Bundyweld is the only tubing double-walled from a single strip. It's steel, copper brazed through 360° of wall contact, copper-coated inside and out. It gives perfect radiant heating performance. Bundyweld transmits heat quickly. It's leakproof. Its smoothness and freedom from scale promote unimpeded water flow.

Bundyweld gives major fabrication savings, too. Bundyweld comes in 20' lengths for easy handling, one end expanded (when specified) for easy joining. Ductile Bundyweld bends easily on simple fixture. Lightweight, rigid grids of Bundyweld are easily, quickly mounted on ceiling.

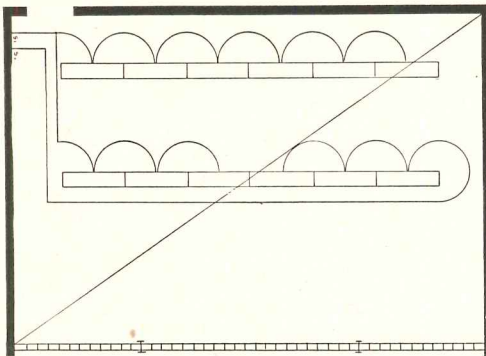
# How To Have EFFECTIVE LIGHTING

## and still conserve critical materials

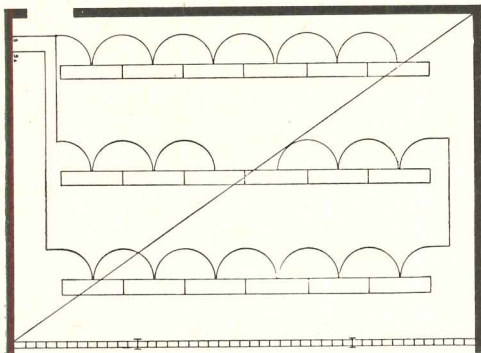
- 1** Use Functional Lighting Layouts, Requiring Minimum of Luminaires.



Save 1½ rows of luminaires—Minimum plan to supplement daylight. Utilizes 1½ rows of fixtures; corrects for body shadow cast by daylight from window-wall.



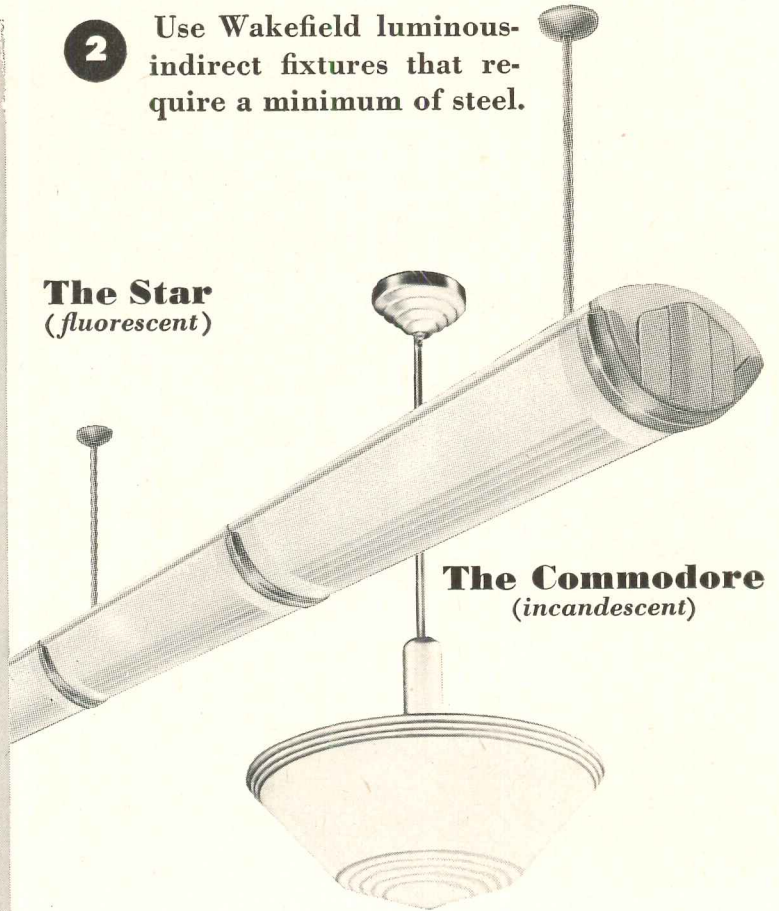
Saves 1 row of luminaires—Requires two rows of luminaires on the side away from window-wall. Supplementary light is completely adequate for daytime use.



Full functional 3-row layout —When a classroom is to be used at night. Circuits provide for 1½ rows with daylight; 3 full rows at night.

- 2** Use Wakefield luminous-indirect fixtures that require a minimum of steel.

**The Star**  
(fluorescent)



**The Commodore**  
(incandescent)

The Wakefield Star and Commodore both have reflectors made of non-critical Plaskon. Only hangers and wire-ways are metal. Thus, specifying Wakefield Stars or Commodores saves critical material while insuring ideal lighting conditions.

The translucent plastic reflectors completely shield the lamps, and provide a smoothly distributed, well-balanced light, free from glare and sharp brightness contrasts. The ceiling becomes the primary source of light, with the fixture and side-walls becoming a secondary source—a basic requirement of supplementary lighting for "Co-ordinated Classrooms."

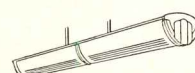
Write for your copy of our 20-page booklet, "Supplementary Lighting for the Co-ordinated Classroom." Address The F. W. Wakefield Brass Company, Vermilion, Ohio.

# Wakefield Over-ALL Lighting

BASIC FOR CO-ORDINATED CLASSROOMS



THE COMMODORE



THE STAR



THE WAKEFIELD CEILING



*housekeeper's helper*

**when keeping house is a business proposition**

**... new colors of easy-to-clean**

**Suntile**



Cleanliness is a dollars and cents matter in industrial kitchens or cafeterias, in food or drug plants, laboratories or public buildings. In fact, cleanliness is a "must."

Your selection of the right material for walls and floors will have much to do with the cost as well as the ease of cleaning and maintaining these interiors.

For instance, real clay Suntile has a hard, impervious glazed finish that is easy to clean with inexpensive soap and water. Dirt, grease, and smudge find no haven with Suntile. Costly, periodic redecorating and refinishing are ended practically for the life of the building.

Beyond this, however, Suntile has *color* advantages that also aid "housekeeping." New mottled tones of Suntile tend to resist soiling and reduce the necessity for "mirror-like" maintenance.

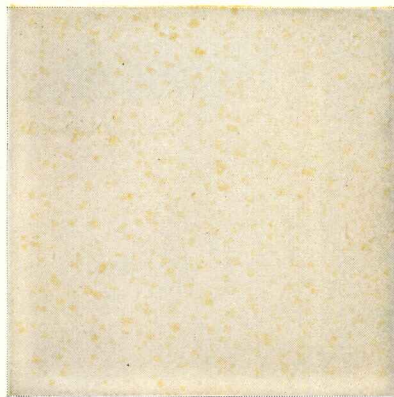
This very practical result is typical of the new Suntile functional color line. Better lighting, increased production, fewer accidents and higher employee morale are other results with sound business advantages.

HOW TO SELECT COLORS THAT ARE RIGHT for commercial, industrial and institutional interiors is discussed in our new descriptive booklet "Suntile Functional Color Recommendations." Your Authorized Suntile Dealer will give you a free copy or you may write us direct, Dept. AR-3, The Cambridge Tile Mfg. Co., P. O. Box 71, Cincinnati 15, Ohio.

**Suntile**

**GRAY HAUTEVILLE 734**

**a neutral tone  
of great service**



Suntile Gray Hauteville is a mottled gray tone. Gray has widespread use in many different types of interiors. The mottled effect makes it even more practical. This new gray is a warm, neutral color that avoids the "faded" tints of the past. It helps to control glare and create working conditions where vision is at its best. For obvious reasons mottled gray tends to combat dirt, smudge and stains. Suntile Gray Hauteville is but one of the functional colors in the new color line developed by Faber Birren, noted color authority, and The Cambridge Tile Mfg. Co.

**WEST COAST OFFICES**

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

The Cambridge Tile Mfg. Co.  
1335 South La Brea  
Los Angeles 19, California



**SUNTILE OFFERS YOU BOTH • BETTER TILE • BETTER INSTALLATION**



*Featured in America's  
Finest  
Multiple Dwellings*

KENILWORTH APTS., PITTSBURGH, PA.  
10 STORIES—136 UNITS



Constructed and Managed by—BEHRMAN & PASSELL  
Architect—TENNYSON & VAN WART

USF  
**WOOSTER**  
Hollow Steel  
**DOORS**  
AND FRAMES

A growing feature of modern residential building is the specification of USF "Wooster" Hollow Steel Doors and frames throughout. This typical installation, The Kennilworth in Pittsburgh, reflects the trend by featuring Wooster Doors and Frames at all corridor entrances, all interior doors, and also in sliding closet doors.

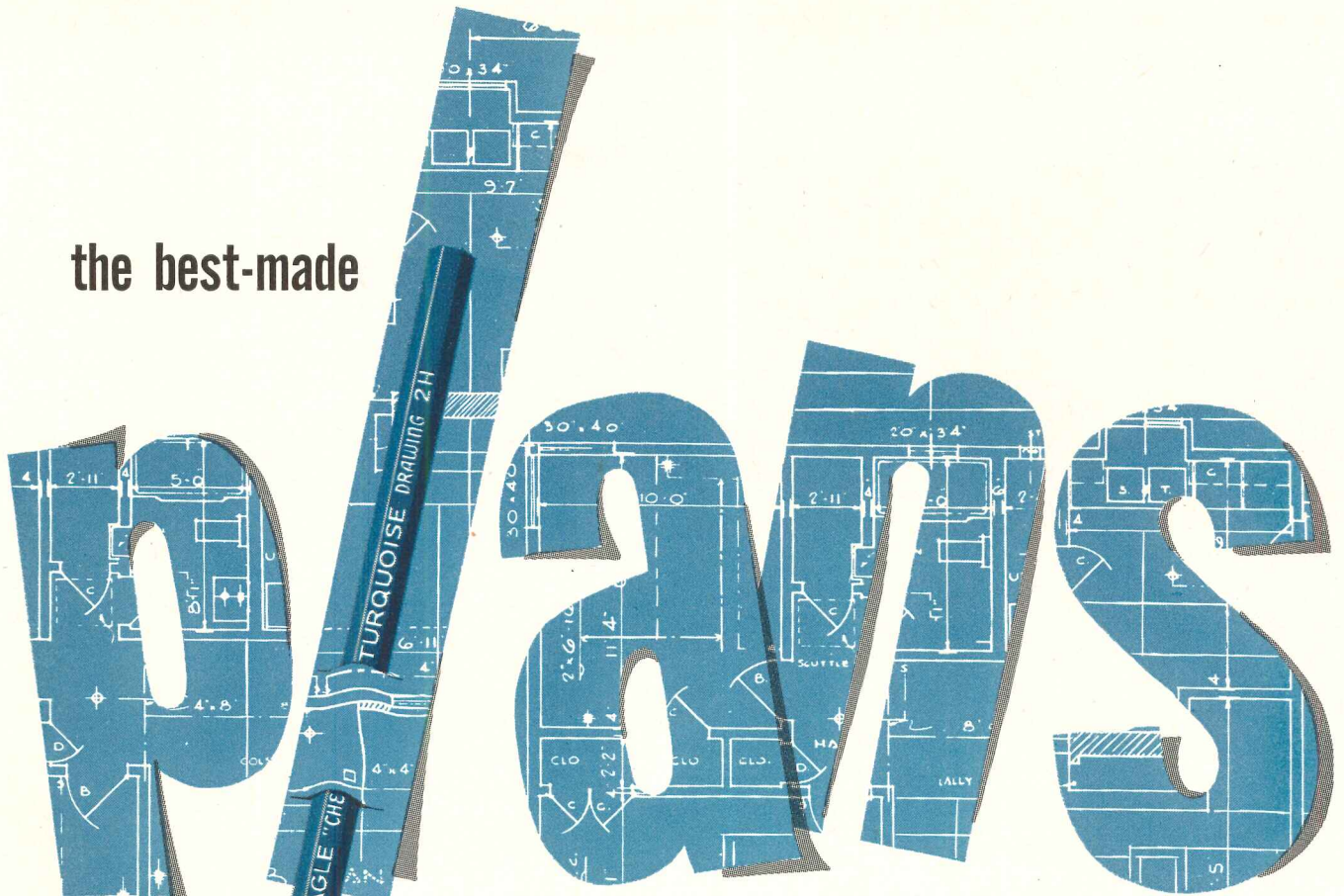
- FIRST to obtain the UL Class B Label on 1<sup>3</sup>/<sub>8</sub>" doors
- FIRST to meet A.S.T.M.—1<sup>1</sup>/<sub>2</sub> hour fire test on 1<sup>3</sup>/<sub>8</sub>" doors

*United Steel Fabricators* INC.  
WOOSTER, OHIO

Manufacturers of: Hollow Metal Doors and Frames • Prefabricated Metal Buildings • Corrugated Metal Window Wells • Highway Guard Rail • Structural Plate Bridge Flooring • Corrugated Metal Pipe



the best-made



are made with **Turquoise** containing  
**100% \* "Electronic" Graphite!**

**Unmatched smoothness!** "Electronic" is Eagle's trade name for a blend of purest crystalline graphites reduced to micronic fineness in our patented Attrition Mill. Leads made with it 100% have a frictionless, smooth-gliding quality never approached before.

**Non-crumbling points!** The microscopic graphite particles of infinitely varied, close-interlocking shapes combine with the clay binder to form the strongest, longest-wearing lead structure ever made.

**Perfect reproduction!** Because millions more of these finer graphite particles are compacted in every inch of its lead, Turquoise deposits denser, blacker, even lines that reproduce to perfection.

**Precision grading!** 17 individual, exactly controlled formulas of Electronic graphite and clay keep the 17 degrees of Turquoise evenly spaced and as true as a plumb line.

**Free Sample:** Write for a free sample, naming this magazine, your dealer, and the grade you desire.

\*®



EAGLE PENCIL COMPANY • NEW YORK • LONDON • TORONTO

AMERICA'S NUMBER 1 BUILDINGS USE

**YALE**

**meets rugged  
Des Moines'**

*Ultra modern Benjamin Franklin Junior High  
equipped exclusively with Yale hardware*

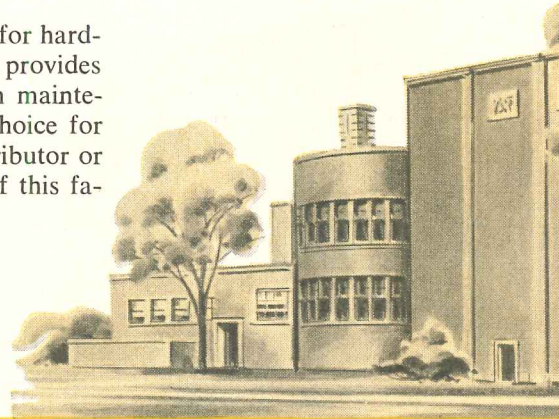
• PERHAPS the greatest testimony to the quality of Yale hardware is the fact that Yale has been specified for so many schools.

Take the new Benjamin Franklin Junior High, for example...

Here, as in most schools, the emphasis is on durability and economy as well as beauty. Architects and contractors demanded a product that could deliver years of trouble-free service under the severest of operating conditions. And so—they logically chose Yale.

If your next scheduled job calls for hardware of distinctive appearance that provides maximum security at rock-bottom maintenance costs, Yale is the logical choice for you. Let your Yale hardware distributor or supplier give you all the details of this famous and fine line of hardware.

The Yale & Towne Manufacturing Co., Stamford, Connecticut.  
(In Canada: St. Catharines, Ontario)



**Everywhere the first choice in hardware is YALE**



**New Chrysler Building East.** Twenty-one years of peak performance in the Chrysler Building made the selection of Yale automatic when it came to this magnificent new addition—the Chrysler East.



**St. Joseph's Hospital.** The staff of this new hospital in Phoenix know they can rely on their equipment. Dependability dictated the selection of all materials—including Yale hardware!



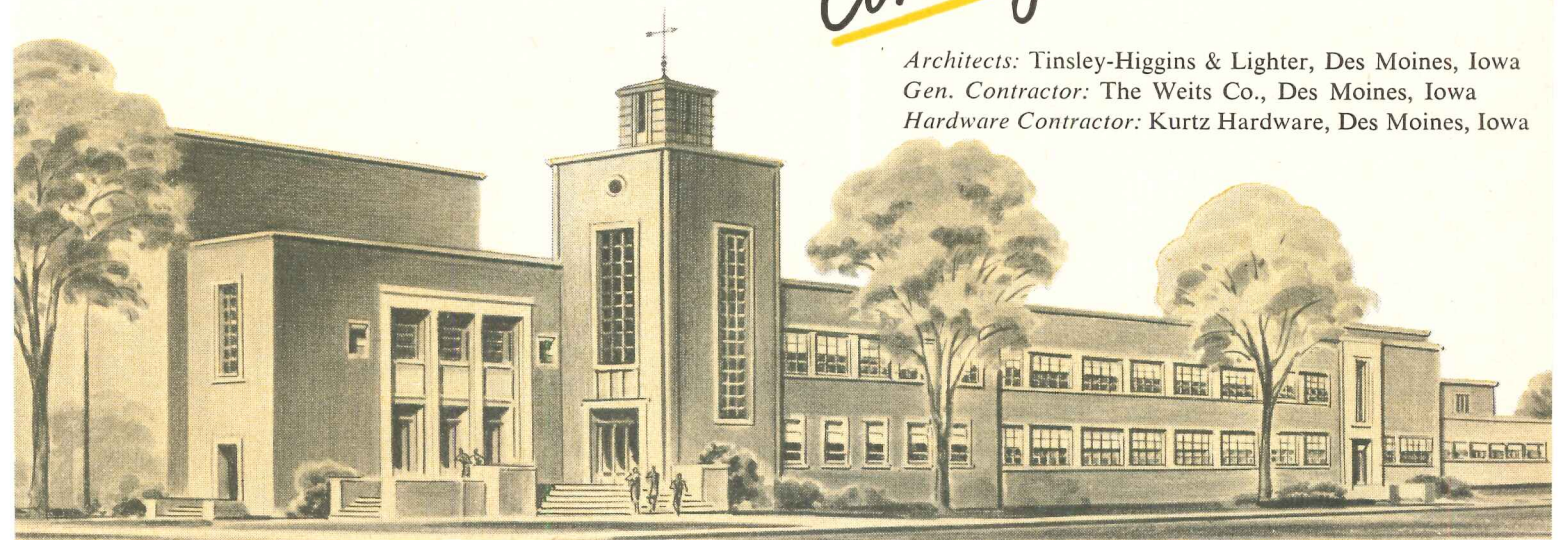
**The Carlton House.** A fifteen story apartment hotel, the new Carlton House represents the last word in luxurious living in New York. Excellent taste shows in every detail including the Yale hardware.



# durability requirements of newest school!

*And gets the order!*

*Architects: Tinsley-Higgins & Lighter, Des Moines, Iowa  
Gen. Contractor: The Weits Co., Des Moines, Iowa  
Hardware Contractor: Kurtz Hardware, Des Moines, Iowa*

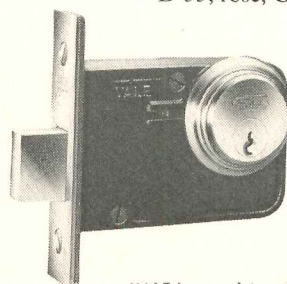
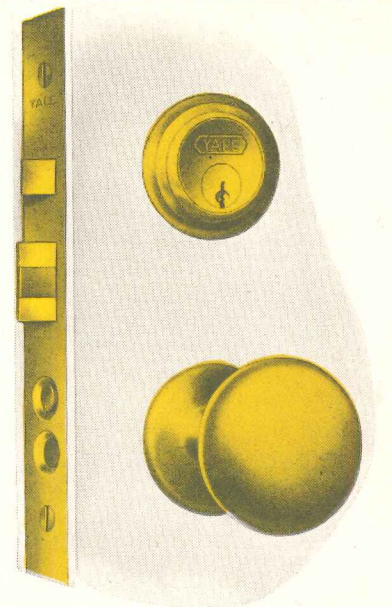


#### **Yale Compact Door Closer—**

Series 90—Unusually durable, this closer holds doors wide open or slightly ajar for ventilation. Features rotary piston that permits trim beauty while giving firm, powerful closing action. In many sizes, models, and finishes.

#### **Yale 8656 Builders' Lock —→**

With unlimited key changes, this popular lock boasts the additional security of five pin-tumblers. Easy to adjust to door thicknesses. Knob, D-35; rose, G522.



#### **← Yale 325 Deadlock**

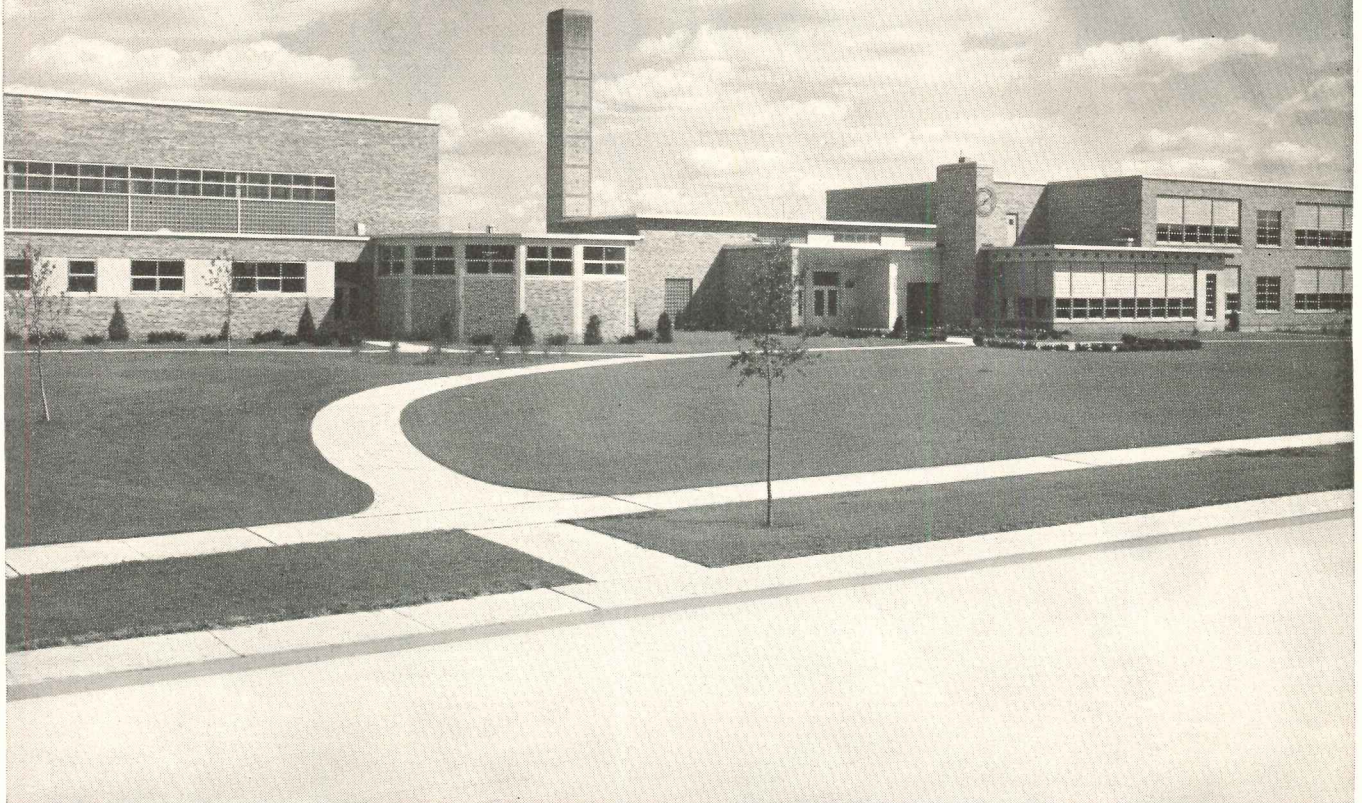
Key operated outside, knob inside, the #325 is a five pin-tumbler deadlock with almost unlimited key changes: Bronze front and bolt with annealed gray iron case. Easily adjustable to door thicknesses.

YALE is a registered trade mark

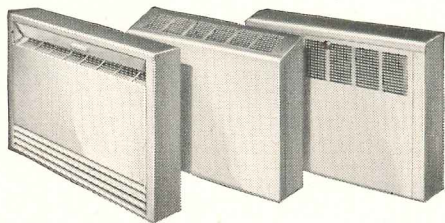
**YALE & TOWNE**

### New Elizabeth Waters school chooses MODINE

Built at a cost of \$1,000,000, this new Fond du Lac, Wis., elementary school relies on Modine Convectors for dependable, healthful heating service. Architect: Frank J. Stepnoski & Son. General Contractor: Hutter Construction. Plumbing and Heating Contractor: John F. Ahern Co. All firms are in Fond du Lac.



*America's finest buildings  
use America's finest convectors*



Choose from three enclosure types in Standard and heavy-duty Institutional models for free-standing, recessed or wall-hung installation

FOR today's schools, superior heating performance must be teamed with attractive styling and long-life construction. On all counts, Modine Convectors meet exacting professional standards. That's why more and more Modine Convectors are being specified by leading architects and engineers. For full information on heating at its finest, call your Modine representative. You'll find him listed in your classified phone book. Or write Modine Mfg. Co., 1510 DeKoven Ave., Racine, Wis.

R-1137

***Modine* CONVECTORS**

# IN PLANNING YOUR NEW SCHOOL ...save steel and money!

## Here's how LOWER CEILINGS can help you do it...Take these TWO steps:

### 1. REDUCE YOUR CLASSROOM CEILING HEIGHT...

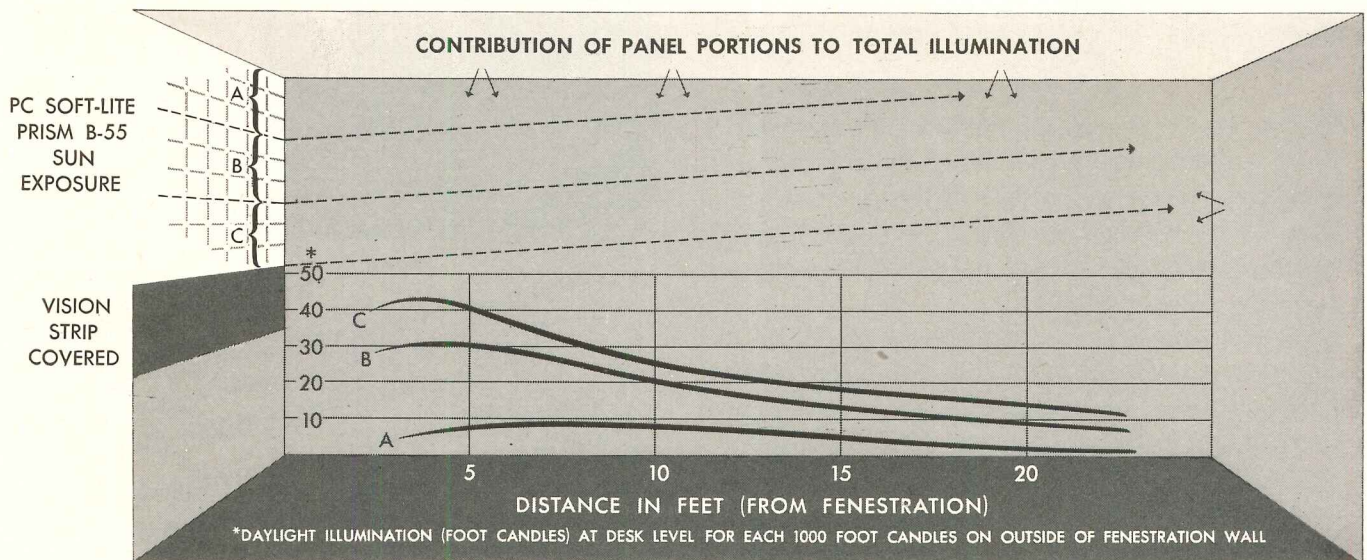
Use a 10-foot ceiling height instead of the usual 12-foot or higher. Architects estimate a saving of \$500 to \$1,000 per classroom for a two-foot reduction in ceiling height. The reduced cubage of the building means less critical material required—especially steel—and lower construction costs. Also, the finished rooms are easier to heat . . . need less maintenance . . . provide a more attractive educational environment.

### 2. PLAN FOR CONTROLLED DAYLIGHTING...

Daylight your new school with panels of Pittsburgh Corning Light-Directing Glass Blocks. The following

sketch shows how orientation-keyed patterns of PC Glass Blocks (Soft-Lite Prism B 55 for sun exposures and Prism A 55 for non-sun exposures) spread daylight in low-ceilinged classrooms. Tests prove that the bottom third of a glass block panel, beginning at eye level, provides 50% of the light that is directed to the far corners of a room. Because of this fact, ceiling heights can be safely lowered without greatly effecting the high standard of daylight performance needed to maintain visual comfort for pupils and teachers. Further, lower ceilings reduce the number of glass blocks needed for the fenestration—another saving to you in material costs.

**With PC Prism Glass Block fenestration, it is the lower portion of the panel that carries the daylighting load—as shown by illumination curves C and B below.**



- LINE A—Daylight delivered on desk tops by top 3rd of PC Prism Glass Block Panel (10-12 ft. above floor level)
- LINE B—Daylight delivered on desk tops by middle 3rd of PC Prism Glass Block Panel (8-10 ft. above floor level)
- LINE C—Daylight delivered on desk tops by bottom 3rd of PC Prism Glass Block Panel (6-8 ft. above floor level)

*PC Glass Blocks are immediately available. When properly designed, PC Glass Block construction requires no critical materials.*

**PITTSBURGH CORNING CORPORATION**  
PITTSBURGH 22, PA.



**GLASS BLOCKS**  
*The mark of a modern building*

Distributed by Pittsburgh Plate Glass Company; W.P. Fuller & Co. on the Pacific Coast; Hobbs Glass Ltd. in Canada; and by leading distributors of building materials everywhere.

Pittsburgh Corning Corporation  
Dept. BA-32, 307 Fourth Avenue  
Pittsburgh 22, Pa.

Please send me complete information on how to control daylight with PC Glass Blocks.

Name.....

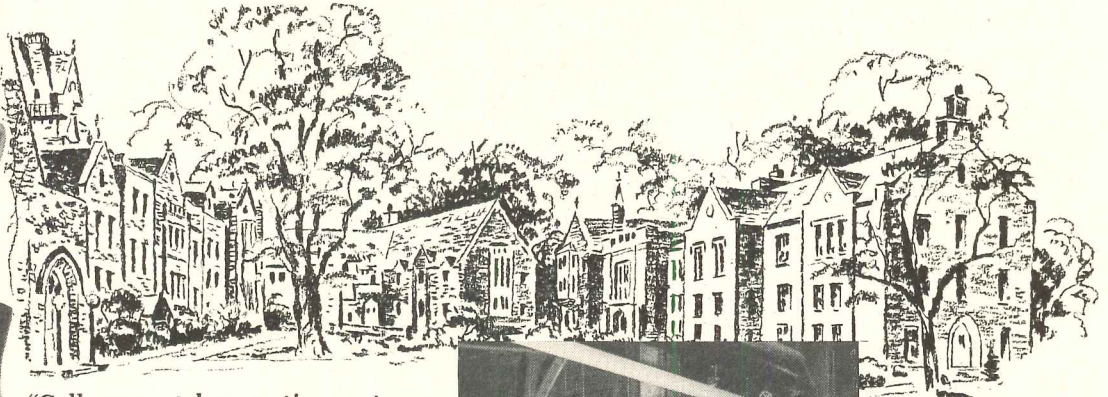
Address.....

City..... State.....

# "We 'educated' our College Heating Plant...

with a modern coal installation we saved  
more than a third of our fuel bill,"

says Mr. James Gribben, Chief Engineer of Bethany College, Bethany, West Virginia.



"Colleges watch operating costs as closely as any business firm—and one big item for our college is the heating bill.

That's exactly why Bethany went to the expense of putting in new coal heating equipment! Our old system supplied heat for sixteen buildings—to the tune of 2,600 tons of coal a year. Our new installation, with its automatic stoker, does the same job using only 1,650 tons. That's a fuel saving of 38.9%! Our eyes certainly have been opened to the efficiency and economy of bituminous coal—especially when it's burned with modern equipment."

Modern combustion installations can add anywhere from 10% to 40% to the energy obtained from the same amount of coal in years gone by. Great advances have been made in coal- and ash-handling equipment, too—cutting labor costs—making coal as clean and convenient to use as any fuel.

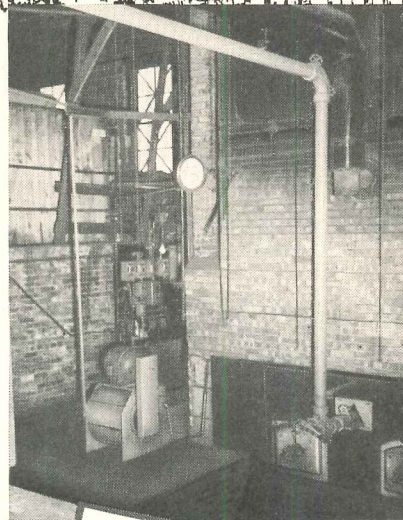
If you're planning to modernize your present installation—or thinking of building a new plant, call in a competent consulting engineer. He'll show you how a modern coal system designed to meet your specific needs can save you money and serve you better!

And don't forget—you'll always be able to get the coal you need. America's coal industry is the most efficient in the world. America's coal reserves are ample for centuries to come. Right now and for the future, too, coal users can be assured of a dependable fuel supply at reasonable prices.

## BITUMINOUS COAL INSTITUTE

A DEPARTMENT OF NATIONAL COAL ASSOCIATION

Washington, D. C.



Here's Bethany's new boiler room, showing the pipe of the automatic stoker. **THIS MODERN EQUIPMENT WILL PAY FOR ITSELF, THROUGH FUEL SAVINGS ALONE, IN LESS THAN TWO YEARS!**

**If you're running your own steam plant — for heat or for power — you just can't afford to ignore these facts!**

**COAL** in most places is today's most economical fuel.

**COAL** resources in America are adequate for all needs—for hundreds of years to come.

**COAL** production in the U.S.A. is highly mechanized and by far the most efficient in the world.

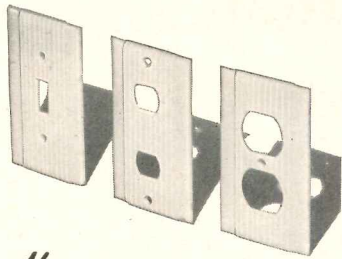
**COAL** prices will therefore remain the most stable of all fuels.

**COAL** is the safest fuel to store and use.

**COAL** is the fuel that industry counts on more and more—for with modern combustion and handling equipment, the inherent advantages of well-prepared coal net even bigger savings.

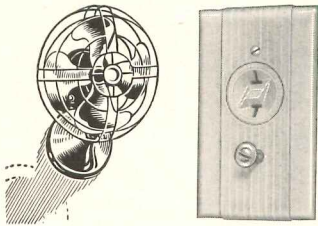
FOR HIGH EFFICIENCY  FOR LOW COST

# YOU CAN COUNT ON COAL!



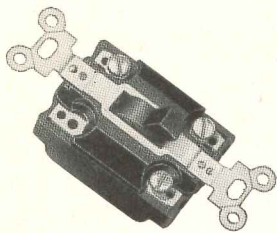
### New UNILINE PLATES

One attractive design to fill *all* wall plate needs. Blends with all interiors; provides complete architectural uniformity. Available in Bakelite and Ivorylite for Standard and Interchangeable devices.



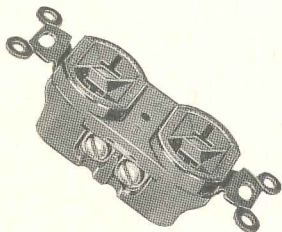
### FAN HANGER OUTLET

This neat device provides in one unit both electrical connection and mechanical support for fans. Modern Uniline design in Bakelite or Ivorylite. Easily installed in standard 4" box. 15 Amp. 125 V., 10 Amp. 250 V.



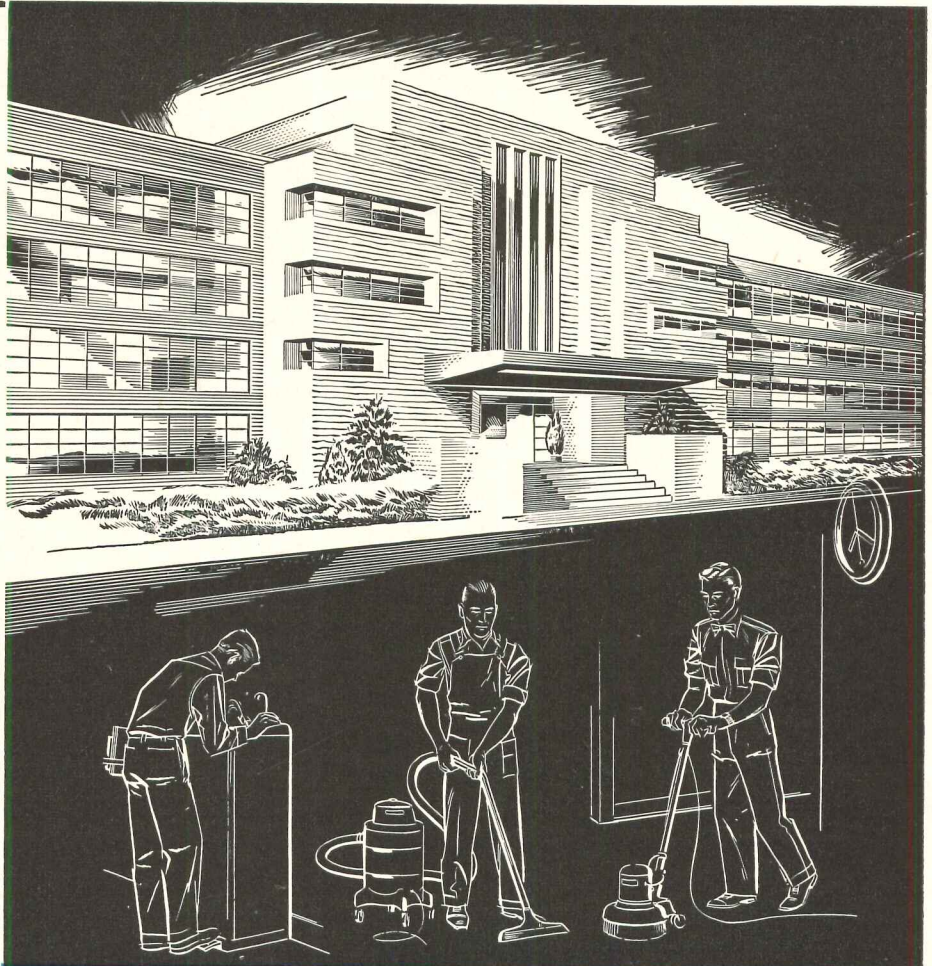
### BACK-OR TOP-WIRED SWITCH

Installed without bending or looping wire. Ideal for use with heavier wiring needed to meet modern electrical demands. Specification grade, T rated. 10 and 20 Ampere sizes with Brown or Ivorylite levers or lock.



### BACK-OR SIDE-WIRED CONVENIENCE OUTLETS

Advanced design for fast installation. An exclusive H&H feature allows instant conversion from Duplex to 2-Circuit receptacle by removing detachable fin. 15 Amp. 125 V., 10 Amp. 250 V.



## ELECTRICAL AVAILABILITY

*Important to* **SCHOOLS, OFFICES  
HOSPITALS, STORES**

Build your reputation by jobs done well. Make sure your specifications provide the full, modern electrical availability so important to your clients. Look to the complete H&H line; for every circuit requirement there's an H&H wiring device to give the ultimate in performance, convenience and dependability. You can make your electrical planning jobs easier, better; send today for your copy of our big, fully illustrated catalog. Just write to 1903 Laurel Street, Hartford 6, Connecticut.

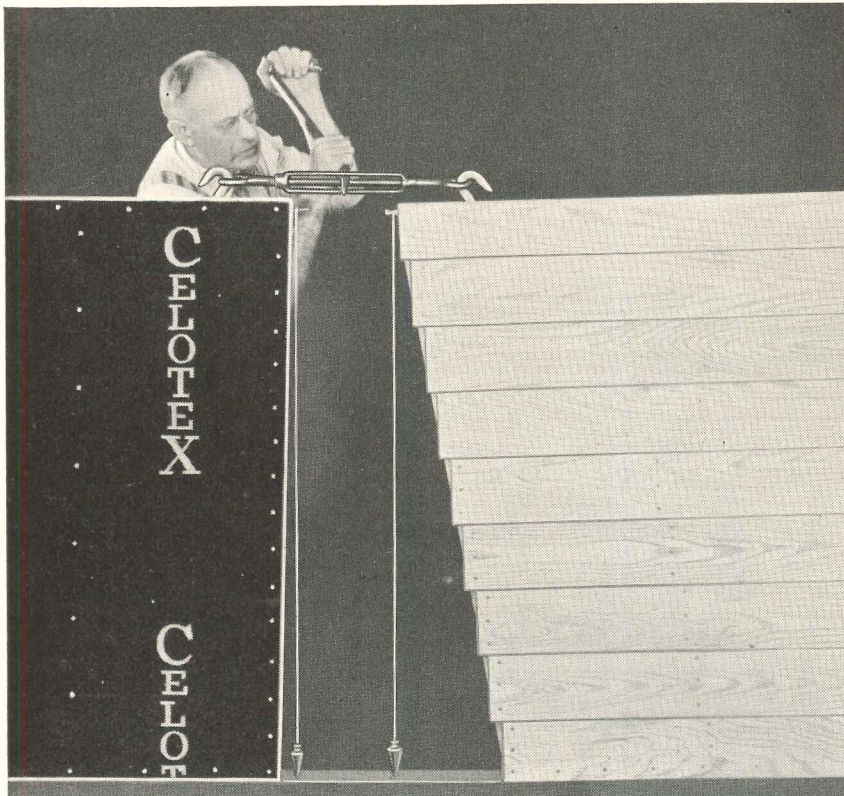


*Wiring Devices*  
AND ENCLOSED SWITCHES

**THE ARROW-HART & HEGEMAN ELECTRIC CO., HARTFORD, CONN.**

Branches in: Boston, Chicago, Dallas, Denver, Detroit, Los Angeles, New York, Philadelphia, San Francisco, Syracuse. In Canada: Arrow-Hart & Hegeman (Canada) Ltd., Mt. Dennis, Toronto.

# Does Far More...Yet Costs No More than ordinary sheathing, applied!



## "Tug of War" Test Proves Greater Bracing Strength

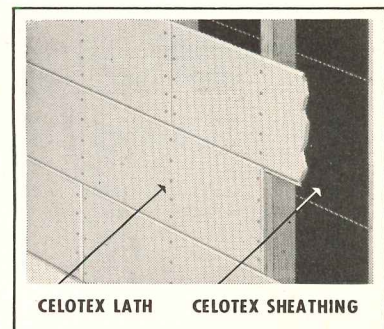
As the turnbuckle was tightened, note how the Celotex Insulating Sheathing panel remained plumb—while the panel of ordinary sheathing was distorted. Now you see why Celotex Insulating Sheathing builds a better, stronger wall at lower cost! Why it belongs in your specifications!

## CELOTEX INSULATING SHEATHING does several jobs at one cost

Applied (that's the only way to figure *true* cost), Celotex Insulating Sheathing costs no more, and **USUALLY LESS**, than ordinary sheathing. Yet it gives you far more.

- 1 INSULATES AND WEATHERPROOFS** as it builds. All at *one* cost. No building paper needed. Saves labor, materials.
- 2 GREATER BRACING STRENGTH**, about 30% greater than ordinary sheathing. *No corner bracing* needed to meet FHA requirements, with 4' wide,  $2\frac{5}{32}$ " thick Celotex Insulating Sheathing.
- 3 GOES UP 30% FASTER.** Easier to cut and fit. Up to 15% less waste. Siding or shingles can easily, quickly be applied *direct*.
- 4 DOUBLE-WATERPROOFED.** Inside, by integral treatment that coats every
- fibres; outside, by asphalt coating on both surfaces and all edges. Yet it has over twice the vapor permeability required by government agencies!
- 5 IT'S THE ONLY SHEATHING** made of tougher, stronger, long Louisiana cane fibres—and protected by the patented Ferox® Process from dry rot and termite attack.
- 6 NATIONALLY ADVERTISED** in The Saturday Evening Post, Better Homes & Gardens, American Home, Farm Journal and other leading magazines.

Count up the savings and advantages, and you'll agree: Celotex Insulating Sheathing is the key to more comfortable, more enduring homes at lower cost. That's why it's being specified by more and more architects all over the country. Write now for *free* booklet giving full data. The Celotex Corp., Dept. AR-32, 120 S. LaSalle St., Chicago 3, Ill.



Quick, low-cost way to build

*"the Ideal Wall"*

Celotex Insulating Lath *insulates* as it forms a strong, solid, continuous plaster base that reduces danger of plaster cracking. Used in combination with Celotex Insulating Sheathing, it gives you "the Ideal Wall"—a better, stronger wall with **BUILT-IN** insulation. Write for complete information today.

For better homes . . . specify genuine

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BUILDING PRODUCTS

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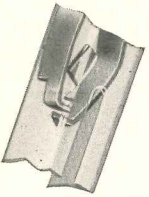
Compare Them  
for DURABILITY  
SECURITY  
TOP VALUE

**SAG-PROOF HINGES**



Rugged 5-knuckle hinges, with 3/16" semi-recessed pins, are made of 14-gauge steel, both welded and bolted into place.

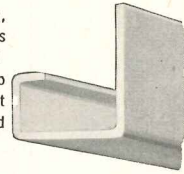
**GREATER SECURITY**



Only Medart Lockers have this patented pick-proof "dual latch" mechanism concealed in the lock rod channel. It's pre-locking, positive in action whether door is slammed or gently closed.

**STRONGER**

Entire frame—top, bottom and sides—is channel-shaped steel electrically welded into a single solid, rigid unit that stays square and true.



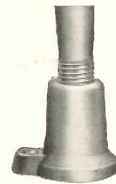
**STURDY BOTTOMS**



Built to take brutal punishment—won't break or sag. Full 1/4" flange of bottom is tied solidly to steel frame. Compare this feature with ordinary lockers!

**ADJUSTABLE LEGS**

Heavy malleable iron. Front legs are adjustable up or down to compensate for unevenness of floor.



# MEDART

## STEEL LOCKERS

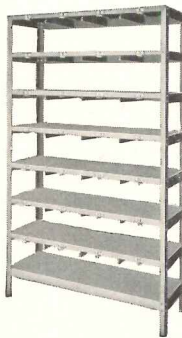


**MEDART LOCKERS**

are built in all standard types and sizes, both recessed and free-standing.

**BASKET SHELVING**

sturdy and very rugged, both permanent and portable, in many sizes is built by Medart.



A better constructed, stronger, more serviceable locker can't be bought! More than that, because Medart originated virtually every practical feature used in modern steel lockers, Medart builds the locker that includes them *all*—not just those above, but many more!

By actual comparison you'll find the skillful engineering, best quality metals and precision manufacture in Medart Lockers are a better paying long-term investment in extra years of service, far less maintenance, appearance that stays new indefinitely, and thoroughly dependable tamper-proof protection.

Medart offers 80 years of engineering experience to help analyze and solve the most complicated locker problem. No matter how modest your budget, Medart Lockers give you more for the money!

*Ask for Catalog*



**FRED MEDART PRODUCTS, INC.**

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*World's Only Complete Single Source For Gymnasium Equipment*

Telescopic  
Gym Seats

Lockers & Wire  
Basket Shelving

Lockerobes  
& Grade-Robes

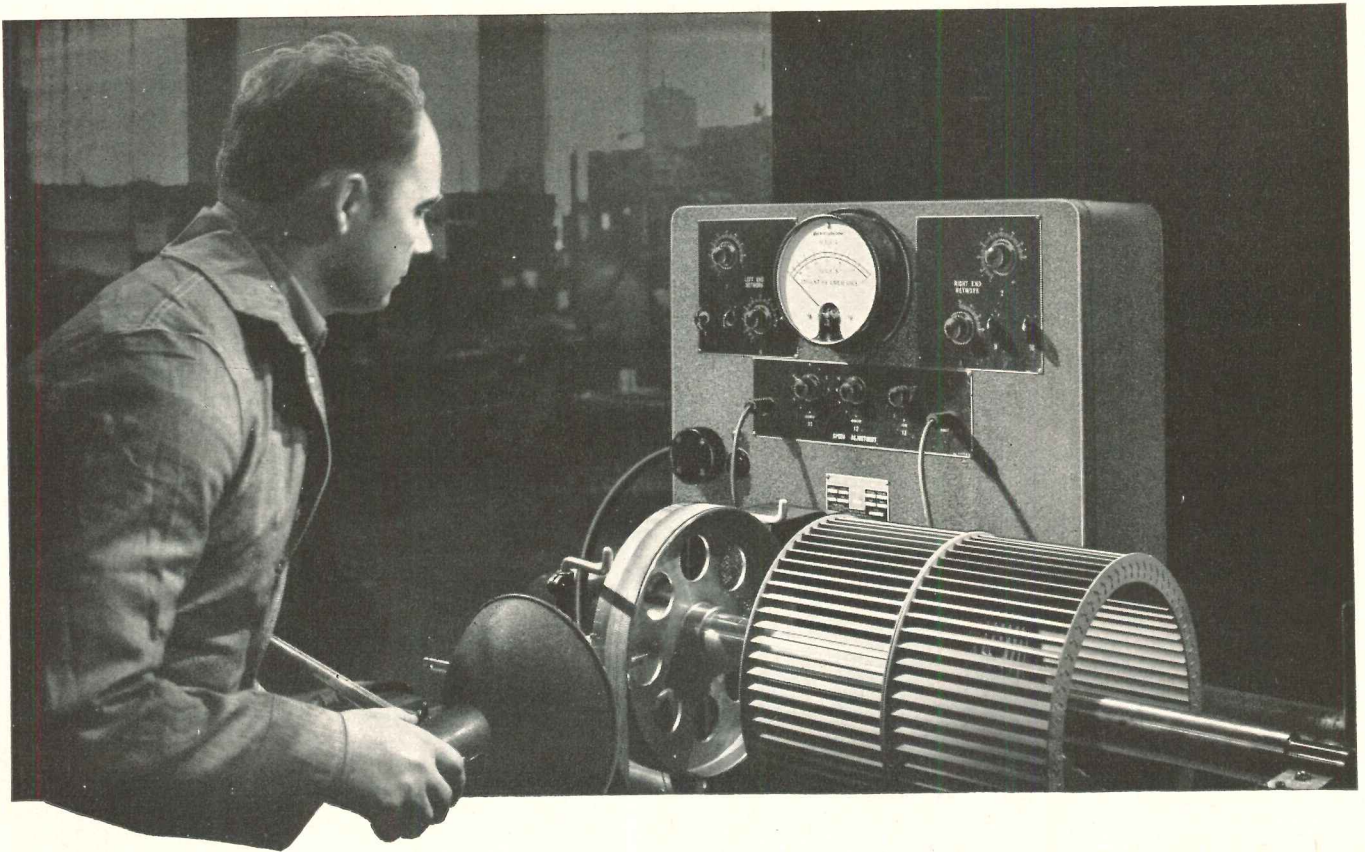
Basketball  
Backstops

Physical Fitness  
Apparatus

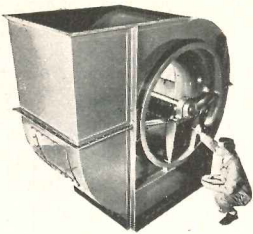
Basketball & Football  
Scoreboards

Physical Therapy  
Equipment





## Hairline balance cuts vibration in **TRANE** fans



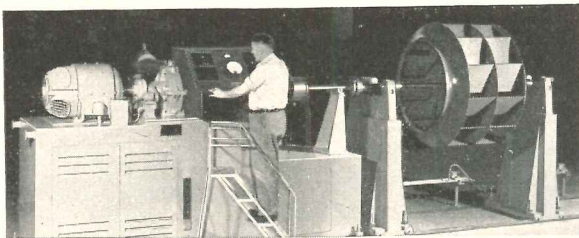
When TRANE engineers set out to balance TRANE Fans, they insisted on such exacting precision that two more major TRANE Fan advantages were created. Ultra-modern electronic machinery, for dynamically and statically balancing fans, was tailor-made to TRANE requirements. Balancing procedures were worked out so carefully that the tolerance permitted between wheel centerline and the center of gravity of the wheel is equal or less than the infinitely small space needed to slip the hub over the shaft. Thus TRANE Fan balance is as accurate as the fit of the hub to the shaft.

This hairline balance cuts vibration of TRANE Fans to an irreducible minimum. That's advantage Number One. As a result, fan bearings, the only point of friction

in a fan, last much longer. And TRANE Fans, large as well as small, can be installed anywhere in the building without danger of damage due to vibration. Advantage Number Two is less noise. As vibration is eliminated, noise, too, is reduced.

Besides less vibration and lower noise levels, other TRANE Fan features include rugged construction for long life—streamlined air inlet that moves more air with less power—more accurate fit and tolerance for consistent performance—chlorinated rubber base paint finish to prevent corrosion.

TRANE Fans are available in Class 1 and 2 construction for many applications. They are particularly valuable when combined with TRANE Cooling and Heating Coils for a complete central air conditioning system. In TRANE Coils, the streamlined fin-and-tube and the smooth TRANE Fin offer minimum resistance to air flow. This low air friction and higher efficiency of TRANE Fans produce better performance with lower horsepower consumption. For more details concerning TRANE products, contact the TRANE sales office nearest you.



*Special machines, built for TRANE (left), balance large fans both statically and dynamically. Above is a balancer for smaller size wheels.*

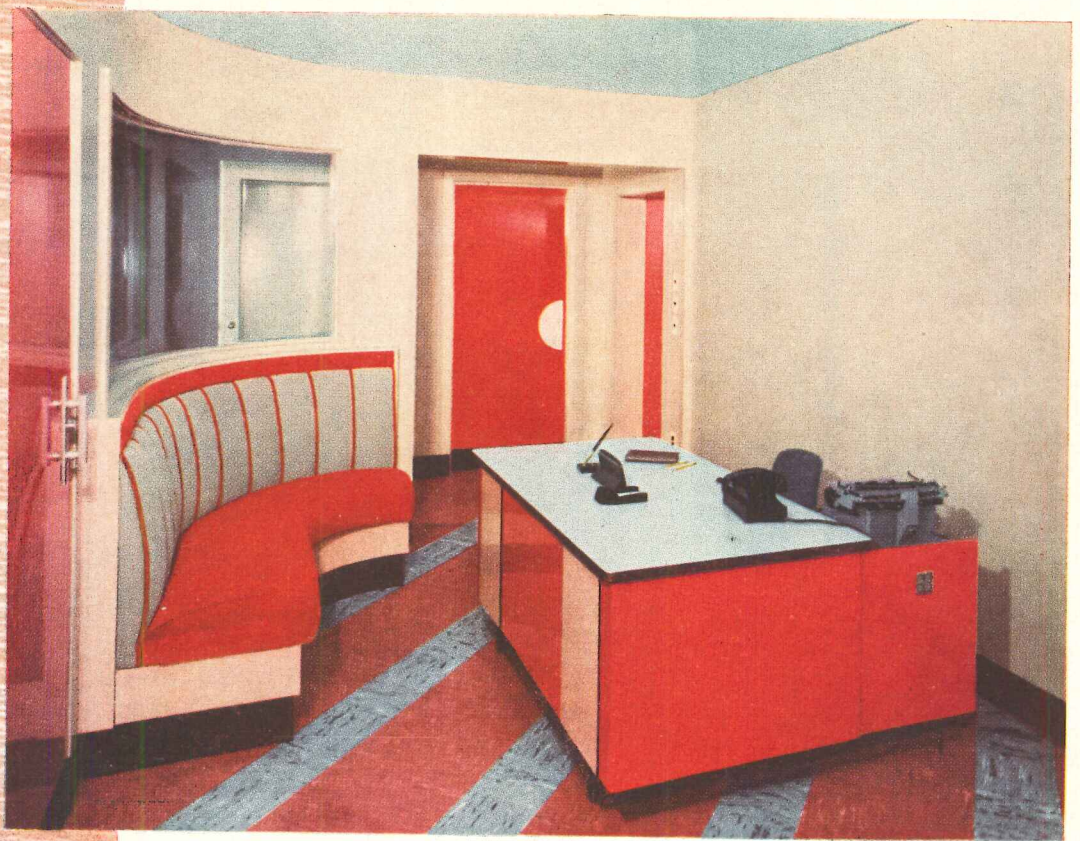
MANUFACTURING ENGINEERS OF HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT

# TRANE

THE TRANE COMPANY, LA CROSSE, WIS.  
Eastern Mfg. Division, Scranton, Pa.  
Trane Company of Canada, Ltd. . . . Toronto  
Offices in 80 U. S. and 14 Canadian Cities



# This is **NEVAMAR**<sup>®</sup>



## The Pre-finished Surfacing Material That Builds in Beauty and Durability

NEVAMAR is as beautiful as it is practical . . . as colorful as it is durable. For NEVAMAR is a high-pressure laminate . . . a hard, non-porous surfacing material that's designed for life-time service. A NEVAMAR surface adds immeasurably to the value of any installation. It requires a minimum of care—never needs painting or refinishing.

Specify NEVAMAR for wall

panels, doors, tops, built-in fixtures . . . for anything that calls for a surface whose beauty will last thru the years. It is available in beautiful wood grains, in addition to many other attractive patterns and colors. We'll be glad to send you samples for examination.



NEVAMAR high-pressure laminates conform to NEMA specifications.

This is **NEVAMAR**<sup>®</sup>

... a high-pressure laminate surface, designed for long life and lasting beauty. Nevamar is not affected by grease, alcohol, fruit acids, ammonia, bleach, ink or similar substances. It will not craze, crack or peel. Nevamar is resistant to cigarette burns and withstands boiling water. Nevamar may be cleaned with soap and water.

• To keep your Nevamar surface beautiful. Don't use abrasive cleansers. A protective pad should be used beneath hot vessels, electric toasters and similar appliances. Don't use your Nevamar surface as a cutting or chopping board.

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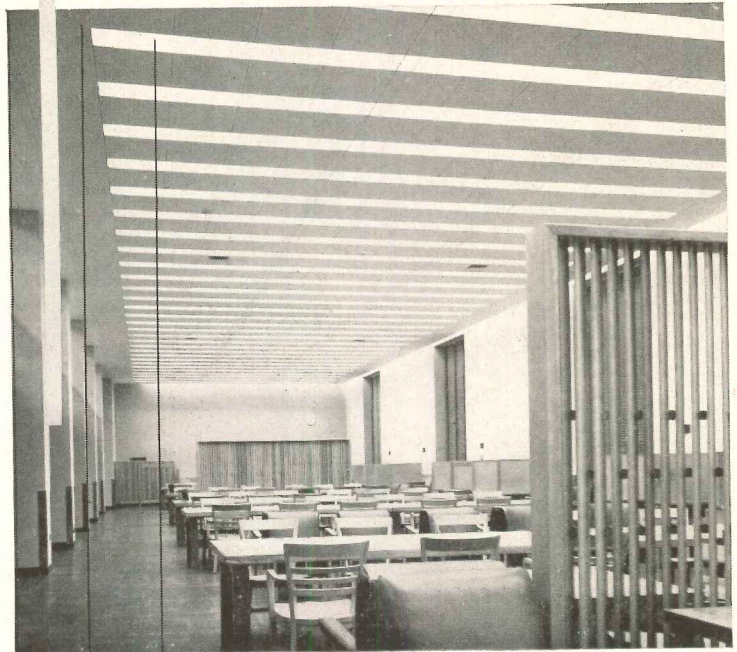
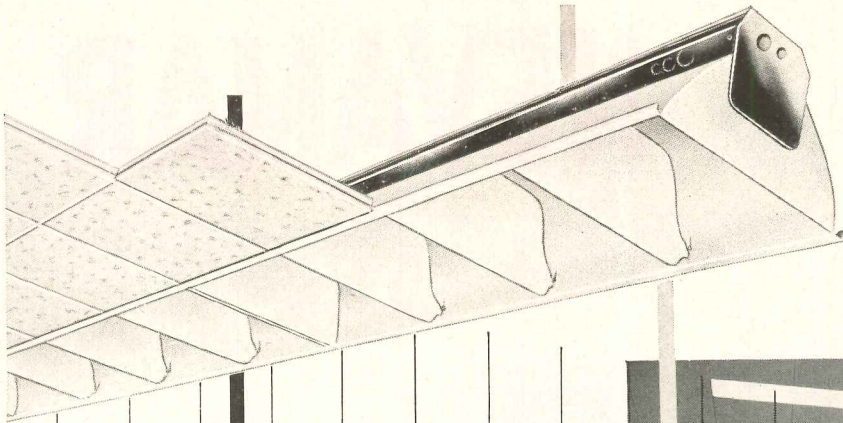
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**miller** leaders in lighting since 1844

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Miller lighting systems give you the maximum benefit of proper lighting. Easy, accurate vision for best accomplishment. They are engineered for easy installation—for low maintenance—for long service—for finest dollar-for-dollar value. Behind them are 108 years of pioneering and progress in GOOD LIGHTING. There's no need to compromise on lighting that's "almost" right. Miller has a complete line of luminaires—Fluorescent, Incandescent, and Mercury-vapor—that cover a wide range of industrial and commercial lighting requirements—that have been proven in thousands of installations. Light with confidence the *proven* Miller way. Miller field engineers and distributors are conveniently located for nation-wide service.

Luminaire shown is the Miller deep aluminum Troffer—the ultimate in low brightness for lighting comfort. Like all Miller Troffers, units can be arranged to form ceiling patterns as desired—CEILINGS UNLIMITED\*

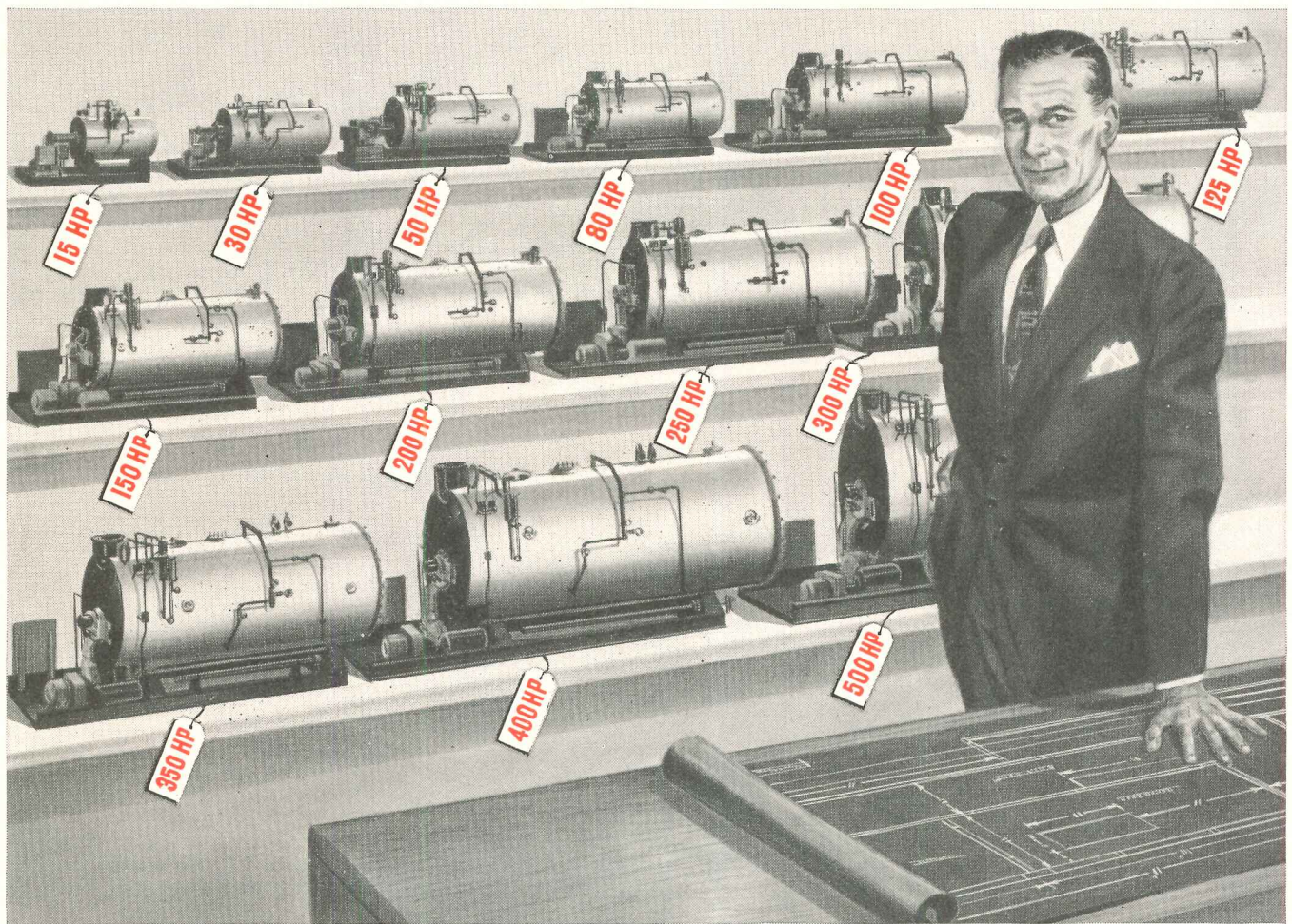
\*Reg. trademark U.S. Pat. Off.

Interior shown is Lamont Library, Cambridge, Mass.  
ARCHITECTS, Coolidge Shepley Bulfinch and Abbott, Boston, Mass.  
LIGHTING ENGINEER, Willard Thompson, Boston, Mass.  
ELECTRICAL CONTRACTOR, Hixon Electric Co., Boston, Mass.

**THE miller COMPANY** MERIDEN, CONN.  
SINCE 1844

ILLUMINATING DIVISION: Fluorescent, Incandescent, Mercury Lighting Equipment  
HEATING PRODUCTS DIVISION: Domestic Oil Burners and Liquid Fuel Devices  
ROLLING MILL DIVISION: Phosphor Bronze and Brass in Sheets, Strips and Rolls

# Selecting The Right Boiler Is Most Important...

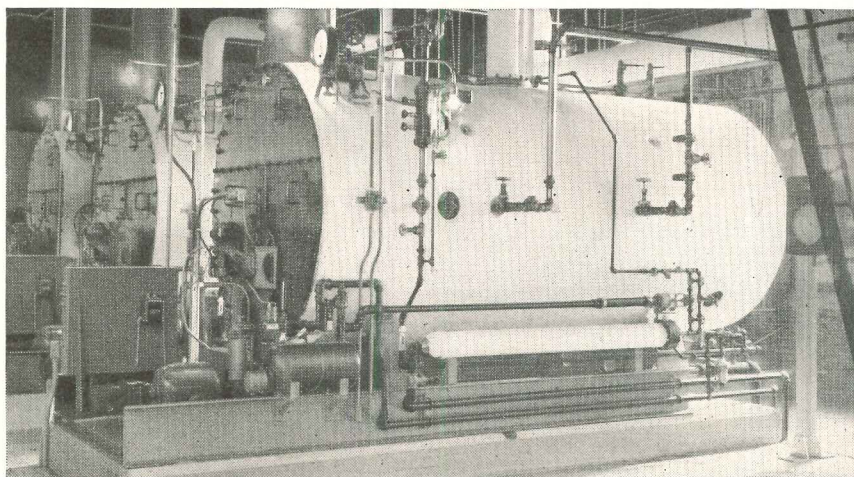


Cleaver-Brooks does not sell steam boilers "off the shelf" even though the boilers are available in standard models. Working with you, your engineers, and your consulting engineers Cleaver-Brooks helps analyze your particular steam needs and loads, both present and future.

These are a few of many factors considered: steam requirements in pounds per hour or b.h.p. — constant or fluctuating loads — fuels available — electric current characteristics — space and boiler room layout — provision for expansion.

Application engineering assistance of this kind assures you a steam plant tailored for your job. Cleaver-Brooks are the first and finest in modern, self-contained steam boilers — operate at a guaranteed efficiency of 80% — burn the fuel most available and economical in your area, gas, oil, or combination gas and oil — fully meet all codes — standard models available in sizes 15 to 500 hp; 15 to 200 p.s.i.

Write for latest, fully illustrated and descriptive Cleaver-Brooks Steam Boiler catalog.



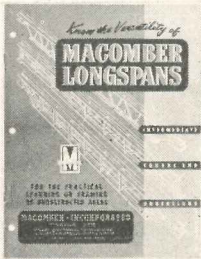
## Cleaver-Brooks

STEAM BOILERS

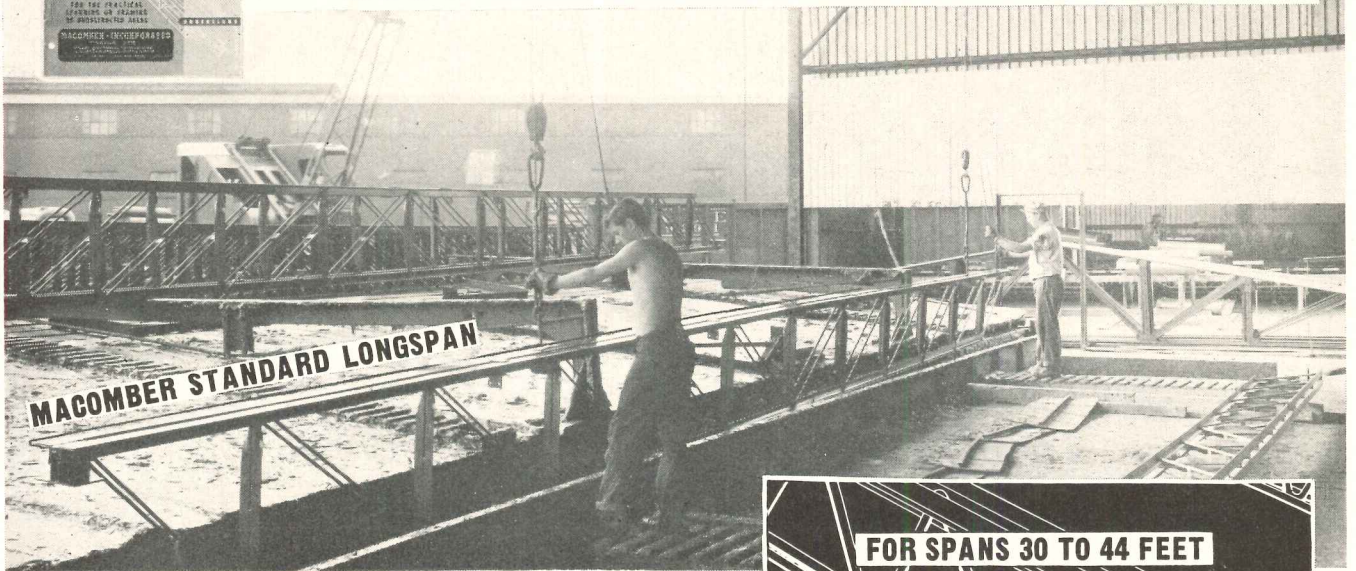
CLEAVER-BROOKS COMPANY  
Dept. C-334 E. Keefe Ave., Milwaukee 12, Wis., U.S.A.  
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Builders of Equipment for the Generation and Utilization of Heat • Steam Boilers • Oil and Bitumen Tank-Car Heaters • Distillation Equipment • Oil and Gas-Fired Conversion Burners

# MACOMBER LONGSPANS



**GIVE YOU AMPLE SELECTION FOR THE MOST ECONOMICAL UNIT TO USE**

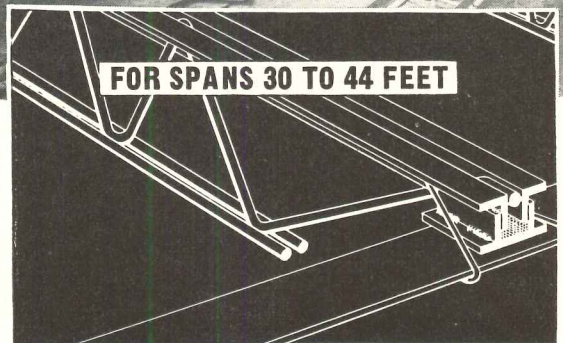


## DESIGNER'S CHOICE

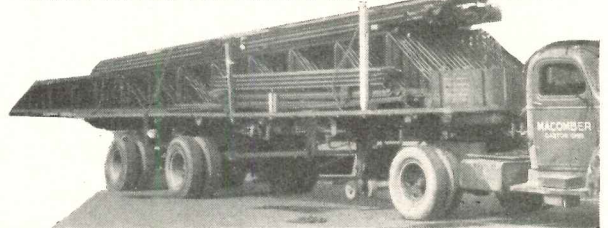
For the many buildings within the range of 30 to 44 foot spans, consider the structural economy where you have **THREE** depths of Longspans and **MANY** chord sizes to select from.

This is the "Designer's Choice" Macomber gives you in the Intermediate and Standard Longspans listed in the Catalog shown above.

The designer can quickly find and specify the most economical Longspan from this catalog for any span from 30 to 72 feet. Send for it.



**MACOMBER INTERMEDIATE LONGSPANS**

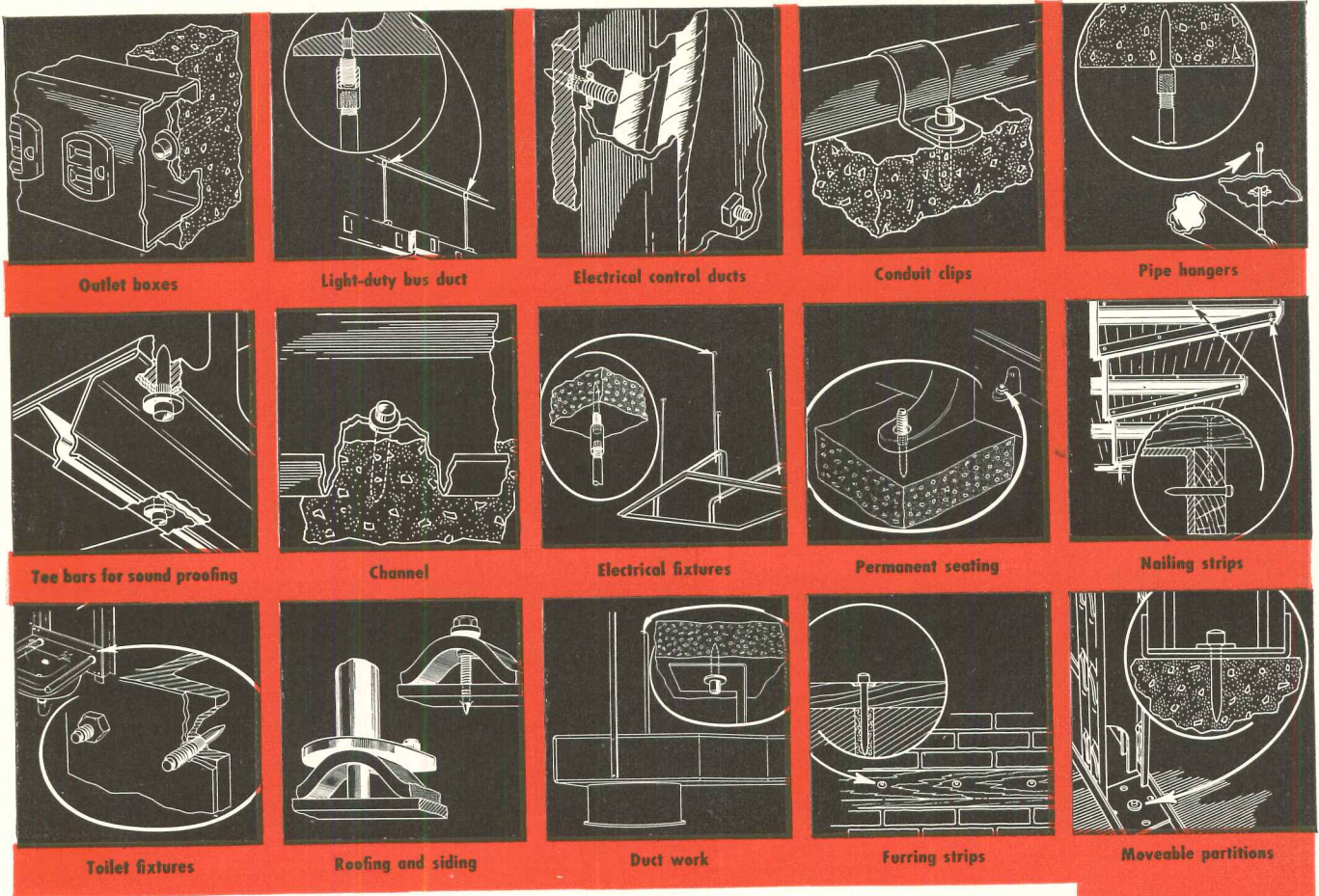


**STANDARDIZED STEEL BUILDING PRODUCTS**

**MACOMBER • INCORPORATED**

**CANTON, OHIO**

**V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK**



# FASTEN 15/1 FASTER WITH *Ramset System*

These diagrams indicate the wide versatility of fast, economical RAMSET SYSTEM for construction fastening jobs . . . 15 to 1 faster than conventional methods . . . at correspondingly lower costs.

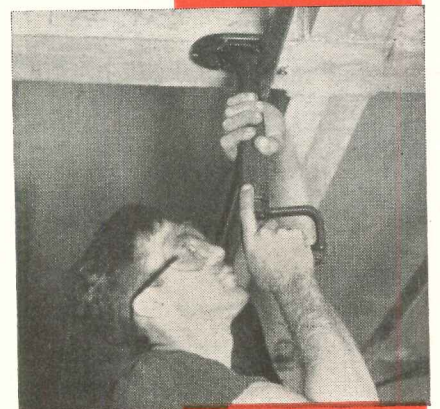
The adaptability, speed and economy of RAMSET SYSTEM have been greatly increased by our new line of Tru-Set Fasteners, with the Red-Tip Pilot that literally guides the fastener straight into the concrete or steel, resulting in pin-point accuracy of seating.

Specification and approval of "fastening with RAMSET SYSTEM" will speed completion of practically every building project, at lower cost. Our local sales representatives are at your service to suggest the most practical applications of RAMSET FASTENING SYSTEM.

**Ramset Fasteners, Inc.**

*Pioneer in powder-actuated fastening*

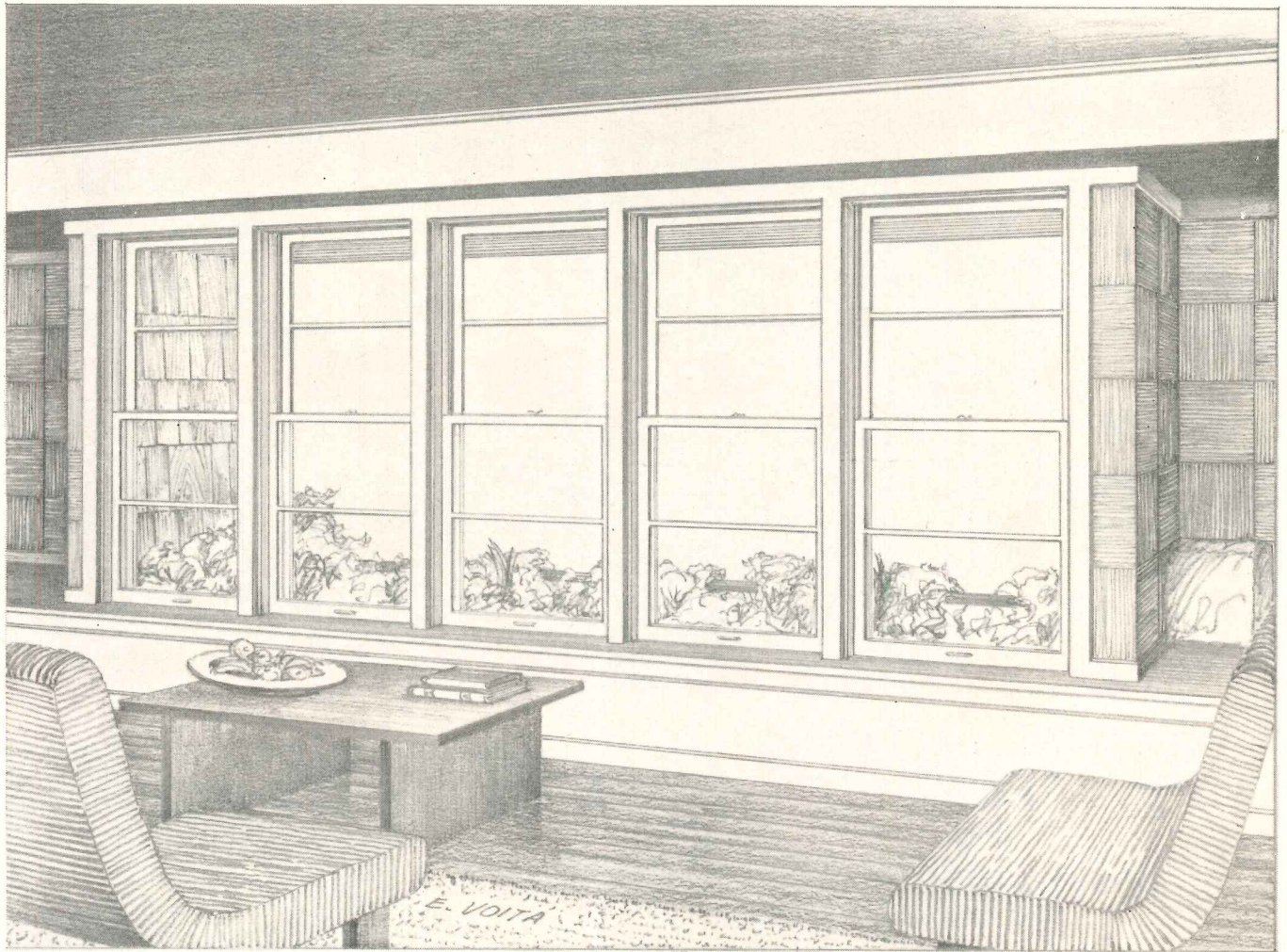
12117 BEREA ROAD • CLEVELAND 11, OHIO



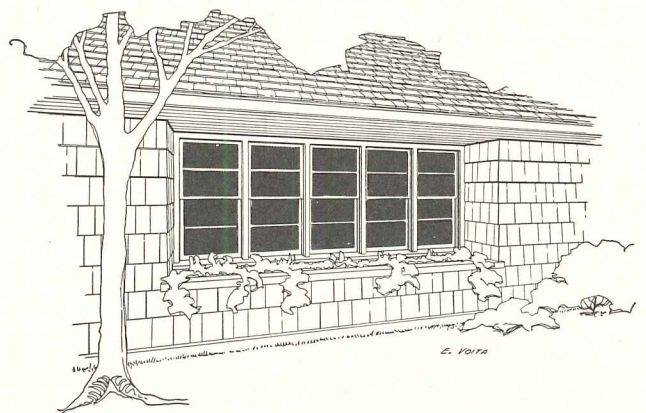
### Ask For "Modern Fastening Methods"

This booklet will help you apply RAMSET SYSTEM to the best advantage, with detailed drawings and descriptions showing the many applications on which RAMSET saves time and money—gets work finished faster. Ask for your copy.

# weather-tightness WITH WOOD WINDOWS



Under the modern, streamlined beauty of wood windows, there's an important user benefit: *comfort*. Wood windows do not easily transmit heat or cold. They can be weather-stripped efficiently at the factory. The better wood windows are carefully machined to fit snugly, yet to operate easily. Storm sash are easily fitted without additional framing. No wonder wood windows are so often specified in modern architectural design. Wood Window Program, 38 South Dearborn Street, Chicago 3, Illinois.



## wood windows

for modern beauty and modern performance

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after years of research,  
the makers of **FABRON\***  
present:

# Permon

TRADE MARK REGISTERED

—developed especially  
for wall surfaces  
subject to hard usage

## \*Use both!

For interior walls exposed to average wear, FABRON is still the most decorative and economical wall treatment available. PERMON was developed especially for areas subjected to heavier than average abuse: lower sections of corridor walls, service rooms, etc.

You'll want to use both together . . . for the colors of both are coordinated to produce combinations in perfect harmony—with PERMON for the wainscot and FABRON for the upper wall.

Yes, here it is—the wall covering made to fit your own specifications—a *plastifused fabric wall covering* . . . with a plastic armor permanently fused to fabric to provide advantages never before combined in a flexible wall covering.

You specified durability—the strength to withstand the abuse to which corridor walls, for example, are subjected. PERMON has it—and then some!

You specified beauty—colors of decorative quality and diversity. PERMON has them—and then some!

You specified easy application . . . no shrinkage after installation . . . washability . . . moderate cost. PERMON meets the specifications in every respect—and to a degree unmatched by any other flexible wall covering available today.

Reason? PERMON was built to *your* specifications by the *only firm specializing solely in plastifused fabric wall coverings for the institutional field.*

You asked for it—and now it's here! May we send you further details via the coupon below?

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AR 3-52

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# INCANDESCENT LIGHTING

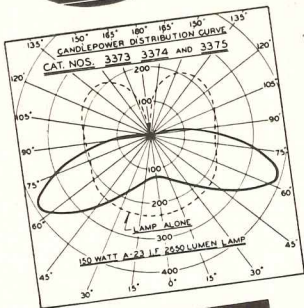
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**WIDE AREA PRISMATIC UNITS**  
Weather-Proof Construction

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**PERFORMANCE**  
Upward light from the lamp is redirected to useful downward light by the specular inner reflecting surface of the hood. This downward reflected light and the downward light from the lamp is bent upward and outward by the prismatic glass in the extended light distribution pattern shown on the Candlepower Distribution Curve. The radius of effective light coverage is upwards of three times the mounting height above the ground or floor.

**APPLICATION**  
The extended light distribution pattern which so effectively provides protective as well as utility lighting over wide areas, also provides high angle light for effective illumination of upper vertical surfaces. Suggested uses include:

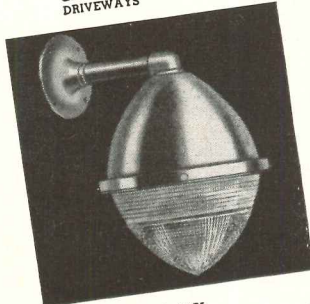
BUILDING ENTRANCES  
GATE ENTRANCES  
GARAGE COURTS  
DRIVEWAYS

LOADING DOCKS  
FENCE LIGHTING  
SHIPPING AREAS  
STORAGE AREAS

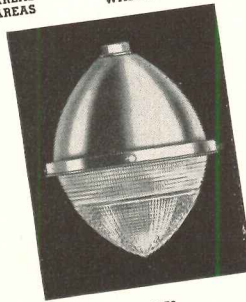
WAREHOUSES  
YARDS  
GAS STATIONS  
WALKWAYS



No. 3374



No. 3375



No. 3373

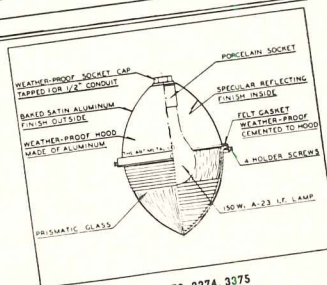
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No. 3374	7 3/4" Dia. Terminates in a self-aligning cover for attachment directly to the ears of a 3/4" or 4" outlet box. The 20° swivel action permits installation on sloping surfaces. Wired with No. 16AF wire with 6" leads.	150W A-23 Lamp Sid. Pkg. 4	App. Wt. 21
No. 3375	Wall Clearance 3 1/2" Terminates in a wall plate for attachment directly to the ears of a 3/4" or 4" outlet box. Wired with No. 16AF wire with 6" leads.	150W A-23 Lamp Sid. Pkg. 4	App. Wt. 24

**FINISH:**

Baked Satin Aluminum on all exterior metal surfaces.

**SPECIFICATIONS**

Prismatic glass provides symmetric widespread light distribution. 81 per cent of light output is in 40°-90° zone. The heavy pressed clear prismatic glass transmits light with minimum absorption and resists breakage. Weather-proof protection is provided by the one-piece aluminum hood and the mite light with minimum absorption and resists breakage. Weather-proof protection is provided by the one-piece aluminum hood and the mite light with minimum absorption and resists breakage. Reflecting surface on inside of hood is specular aluminum. Dust, dirt and moisture are sealed out as the glass is held firmly against the cemented felt gasket by means of pressure of the four holder screws moving against the bevelled underside of the glass flange. Lamp position—vertical (150W Max.) A-23. Finish is Baked Satin Aluminum on all exterior metal surfaces. Approved by Underwriters' Laboratories, Inc.



Nos. 3373, 3374, 3375

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**INCANDESCENT  
UNIFIED LIGHTING**

Unified in Design  
Characteristics

Engineered for appli-  
cation performance

THE ART METAL CO.  
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**THE ART METAL COMPANY**  
CLEVELAND 3, OHIO

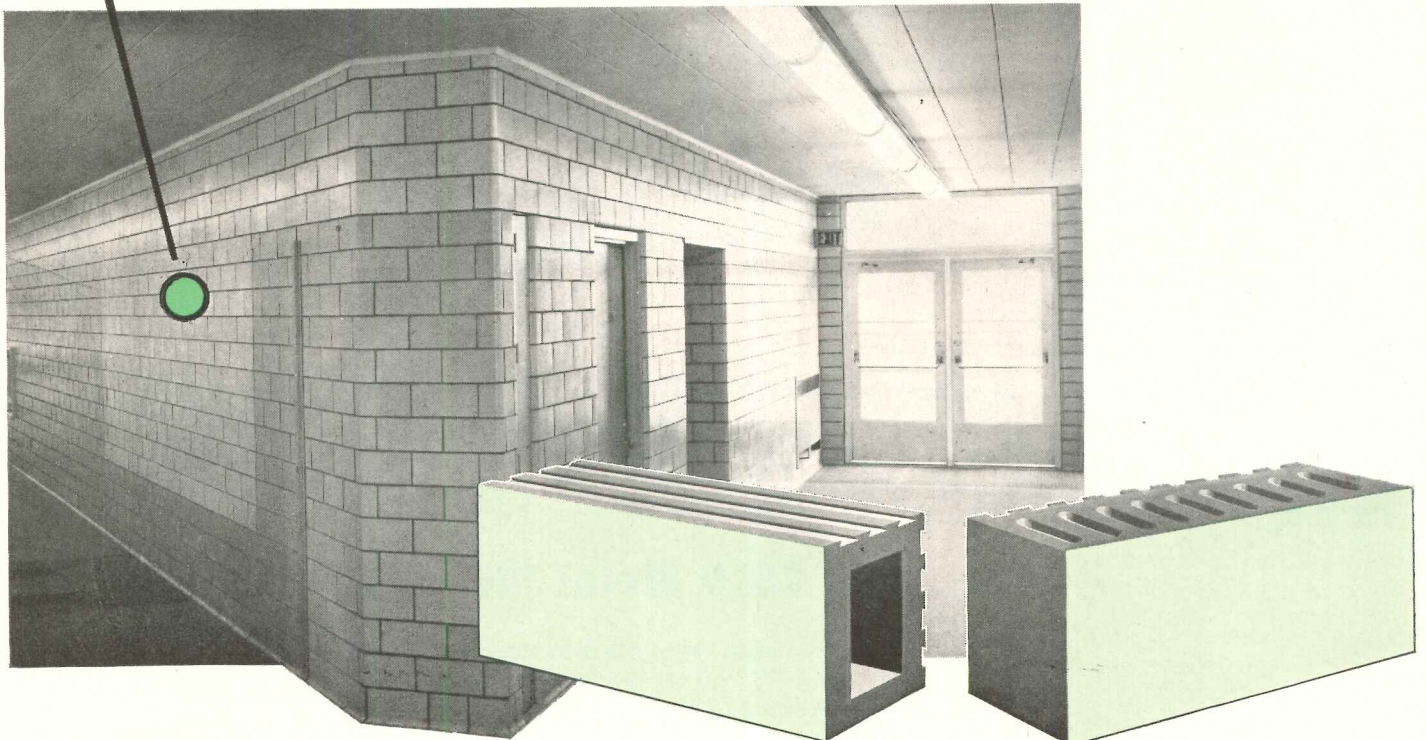
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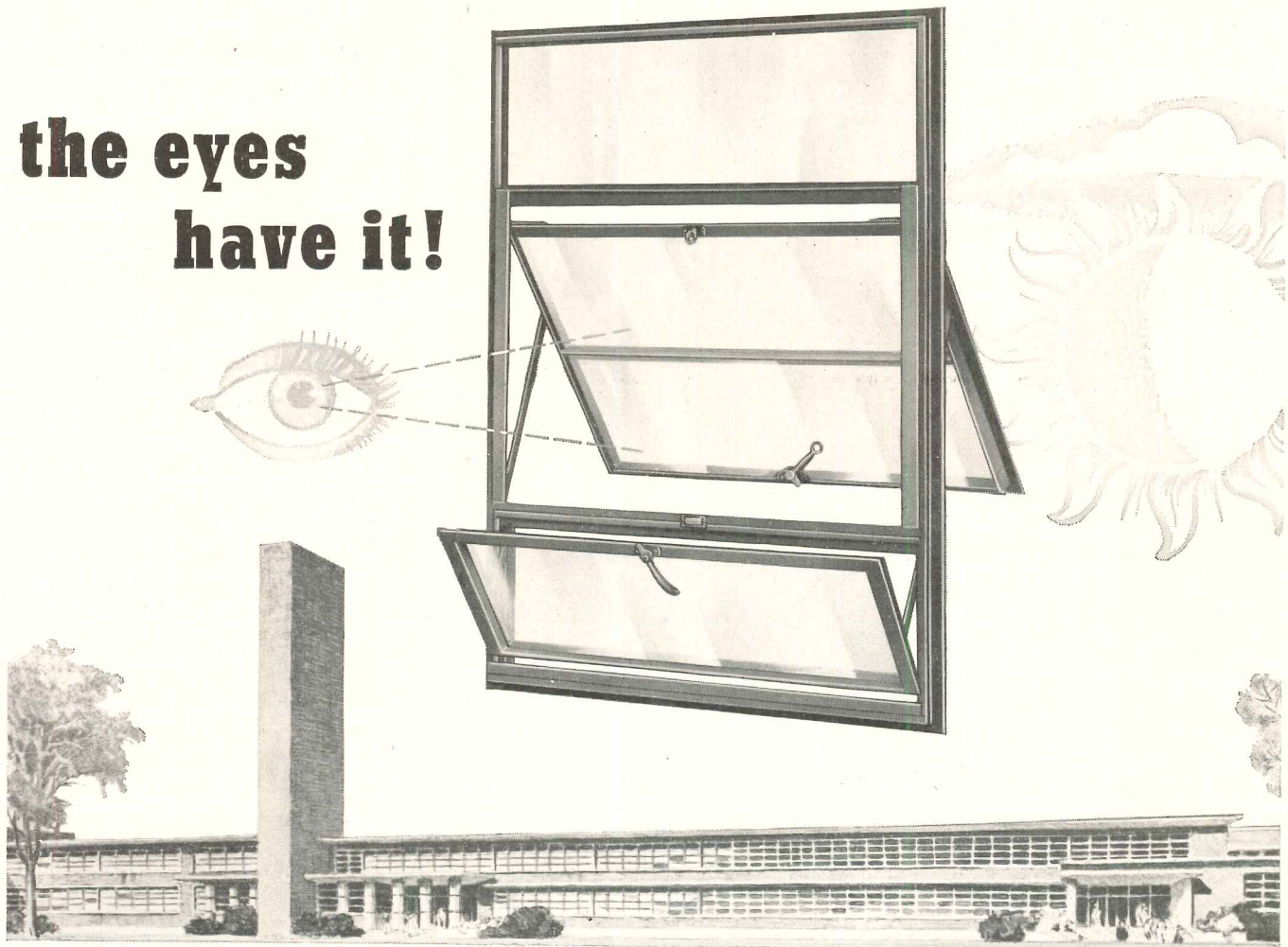
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## ...with **CECO Metal Windows for Schools**

As you read this your eyes are doing more than seeing—they are bringing into action your entire body—nerves, muscles, circulation.

And you are burning up energy—piling up fatigue in direct proportion to the amount of light available for vision. Medical science has proved eyestrain has a marked effect on the well-being of all. So it's necessary then that seeing be done with ease and in comfort. That's why proper illumination is all-important and there's where metal windows come in, for they admit more daylight than any other window.

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So there's good reason for the swing to Ceco Metal Windows in modern school construction. Besides giving more light for better sight, they permit distant vision so vital for relaxing young minds.

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## for Comfort Heating

# it's Sarcotherm



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Today the luxurious motels which are rapidly displacing the old overnight cabins along our highways from coast to coast, include central heat among the hotel comforts offered.

Heating of the one-story, spread-out buildings is usually by forced hot water or radiant means, for which

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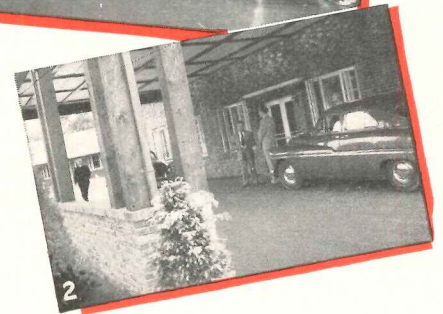
weather-compensated temperature control with continuous circulation is unequalled.

We have pioneered in this field and our experience is at the disposal of architects and engineers who are designing motor courts and wish to include the latest in automatic heating. Here are a few of the Motels recently equipped with Sarcotherm Controls:

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- Miami Courts Tourist Cabins, Salisbury, Md.
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- Garden Motor Lodge, Troy Hills, N. J.
- Dutch Maid Motor Lodge No. 2, Woodbridge, N. J.
- Smith's Tourist Court, R.F.D., Lynchburg, Va.
- Van Winkle Motel, Everett, Washington
- Snyder's Court, North Bend, Washington
- Leonard Auto Court, Parkland, Washington

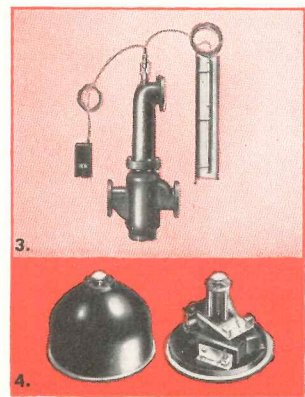
## SARCOTHERM CONTROLS, INC.

Empire State Bldg., New York 1, N. Y. • Represented in principal cities  
A SARCO PRODUCT



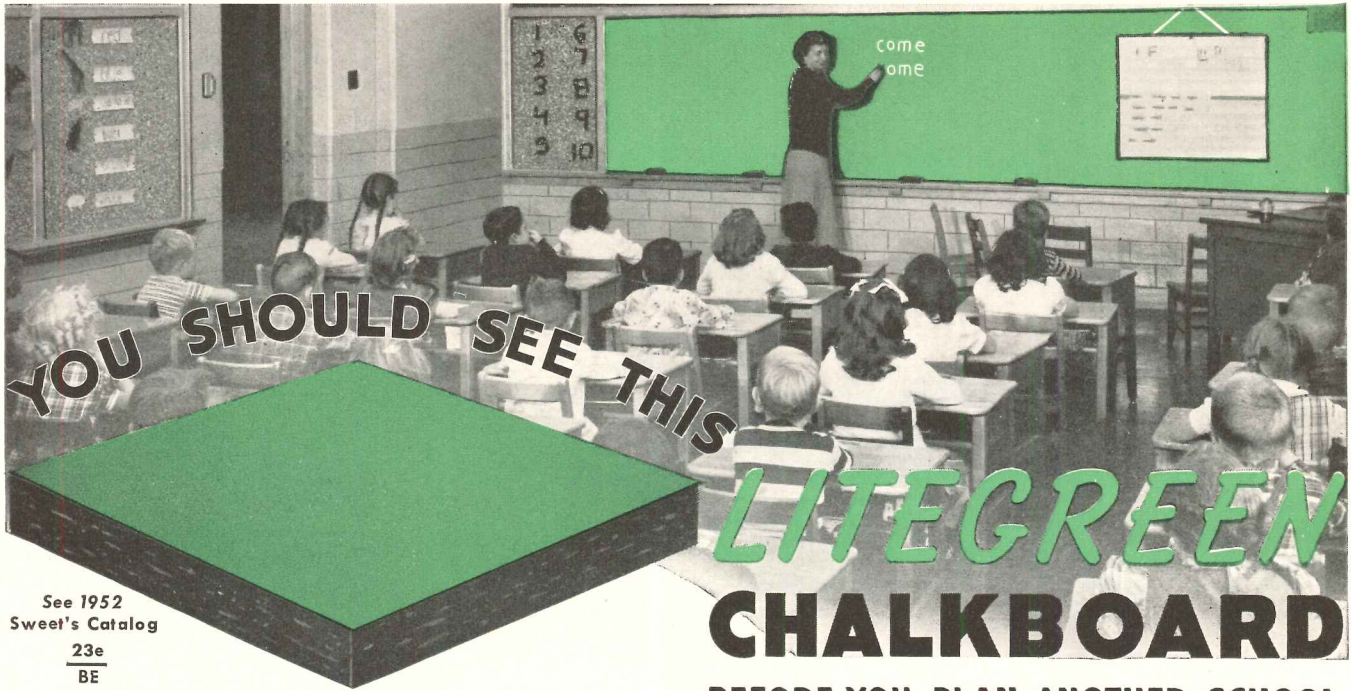
1. Main Lobby and Registration Desk at Tom Sawyer Motor Inn.

2. Friends meet at the main entrance in the atmosphere of an exclusive country club.



3. The heart of the Sarcotherm control system for radiant or forced hot water heating is this unique control valve. It is actuated by liquid expansion thermostats, one located outside the building and one in the valve itself. Between them they anticipate changes in heat loss ratio, thus maintaining comfort temperatures under all conditions.

4. The Sarcotherm Comfort Control "Thermoray" is an extremely sensitive thermostat affected by both radiation and convection.



See 1952  
Sweet's Catalog

23e  
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**Get This Test Kit**

Work-size samples of "B-C" Chalkboard constructions—Slatebestos and Videoplate—in black and Litegreen. Every architect's office should have this on file. Ask for Kit 361.

**BEFORE YOU PLAN ANOTHER SCHOOL**

**LITEGREEN**—now the standard color because of greater visibility, eye comfort, lower glare—is available in two modern machine surfaced constructions that are superior in writeability with ordinary chalk, ease and simplicity of installation. Beckley-Cardy offers both Slatebestos and Videoplate in Litegreen or standard black.

**SLATEBESTOS**—first of its kind. Fire resistant, damp-proof cement asbestos base. Permanent—won't expand or "explode." Easy installation.

**VIDEOPLATE**—newest of chalkboards. Tough, light weight, warp-proof fiberboard sheets. Rigid; smooth. May be had in extra lengths to reduce joints and seams.

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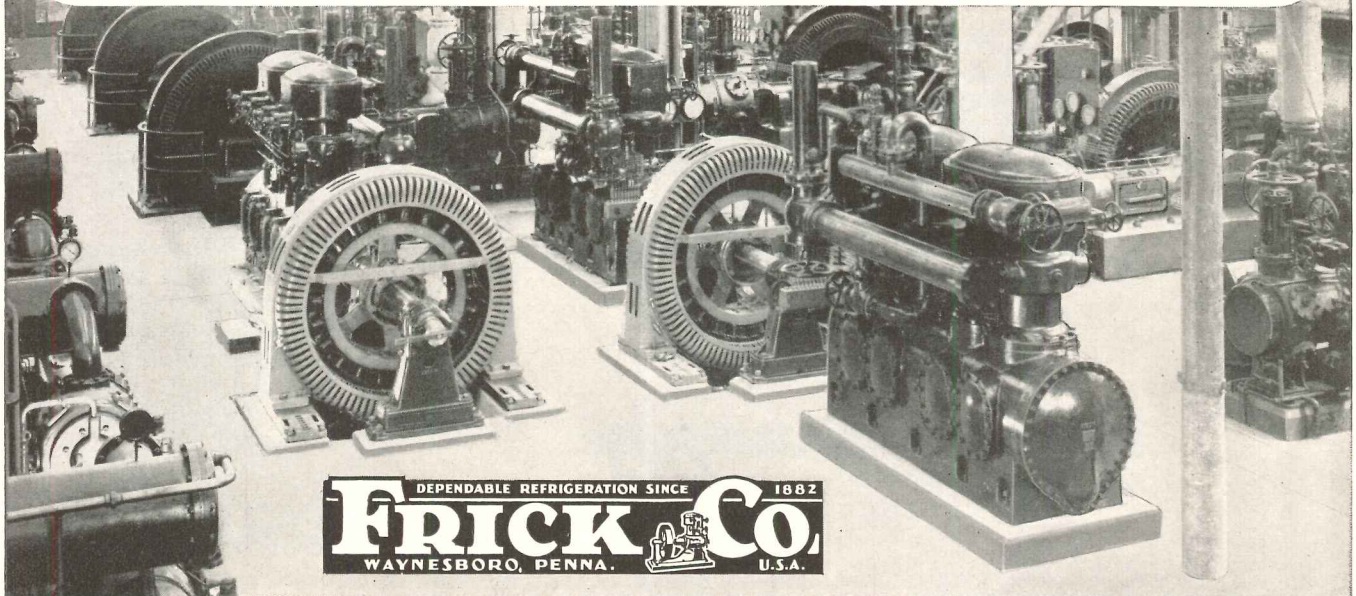
**• 1630-1634 INDIANA AVE., CHICAGO 16, ILLINOIS**

**Celanese Corp. Uses 6420 Horsepower of Frick Refrigeration**

Fourteen Frick refrigerating machines are in operation at the Amcelle plant of Celanese Corporation of America, near Cumberland, Md., makers of chemical yarns. Most of these ammonia compressors have been in use since 1929. The motors driving the new vertical machines, shown in the foreground, are each of 1250 hp.

This is a large-scale example of the dependability and economy of Frick ammonia refrigeration. Power requirements, when operating in summer weather on air conditioning loads, are only 0.70 hp. per ton of refrigeration.

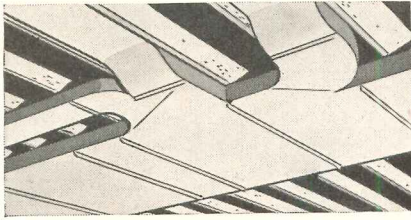
The really important jobs, whether for air conditioning, ice making, or other commercial cooling work, call for FRICK refrigeration.



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## Architectural Service

### Better Ductwork



Progressive heating and ventilating engineers recognize the many advantages of aluminum ducts. Lightweight aluminum reduces structural loads and will not rust from condensation in cooling systems. Both are important factors in modernizing existing buildings. Non-sparking aluminum is better suited to the removal of inflammable and explosive dust and fumes. And with *all* these advantages, aluminum installation usually costs less, particularly for handling larger sections.

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No other material has the design flexibility of aluminum for office partitioning. Rectangular aluminum tube framing minimizes floor load—also serves as wiring conduit. Reynolds embossed or plain aluminum paneling can be perforated for acoustical benefits, and painted to harmonize with color scheme. A natural aluminum finish is recommended for extruded trim elements.

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This new type ceiling is the lightweight companion to curtain walls . . . the answer to low cost modernization. Suspension is from roof structurals or floor above. Aluminum panels (or with other panel materials for variety) are simply laid in place. They are easily lifted for access to concealed utilities and ductwork. Perforations provide uniform air distribution and pass sound to be absorbed by insulating material above. Write to Reynolds for details on these and any other architectural aluminum applications.

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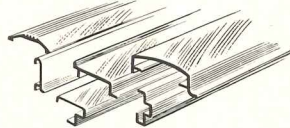
# Naturally... it's ALUMINUM

for ✓ UTILITY  
✓ APPEARANCE  
✓ INVESTMENT VALUE

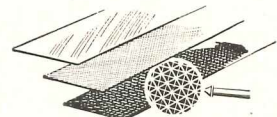
You can get these advantages plus specialized help from the Reynolds Architectural Service

When planning your next design, stop and ask yourself what other metal offers the advantages that you find in aluminum. Unlimited design flexibility . . . widest range of finishes . . . light weight . . . great strength . . . rust and corrosion resistance . . . low cost. All these factors mean aluminum is the ideal material for *your* specifications.

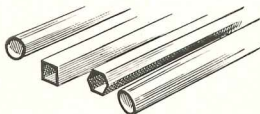
Even though the supply of aluminum is limited now, the assistance of Reynolds Architectural Service is still yours for the asking. This service is an efficient and economical solution to your design problems. For complete information, call the Reynolds office listed under "Aluminum" in your classified directory or write direct.



EXTRUDED SHAPES



SHEET



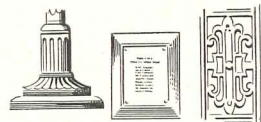
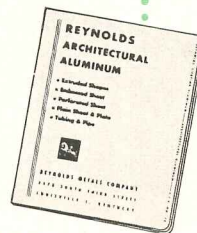
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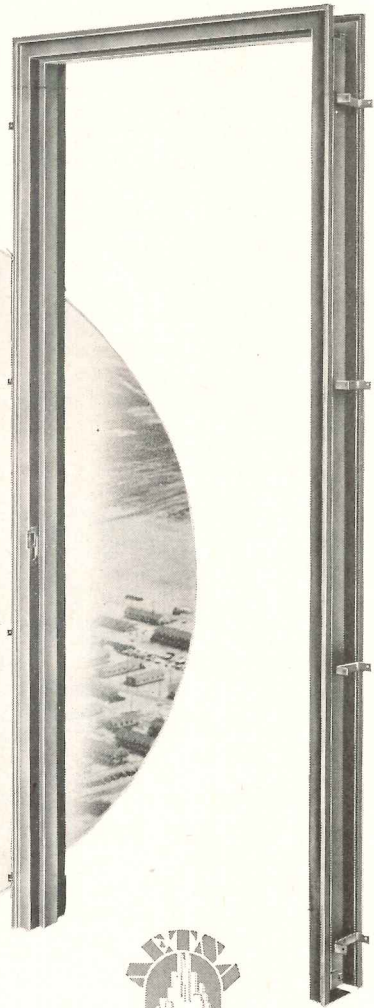


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BY...**

**AETNA**



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THAT'S ONE REASON WHY  
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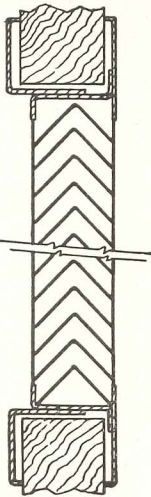
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# DOOR and PARTITION GRILLE

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First—*it's more rugged*. Will withstand heaviest use and abuse for years and years. Second—*it's low in cost*, competitively priced. Third—*it's good looking*. Will add beauty every time it is installed. Fourth—*lowers are absolutely secure*. Do not rattle when door is slammed.

● **HEAVY GAUGE STEEL. REINFORCED ON EITHER SIDE.**

● **ADAPTABLE TO ANY DOOR WIDTH...MADE TO ANY SIZE.**

● **73% FREE AREA.**

● **ONE-PIECE FRAME.**

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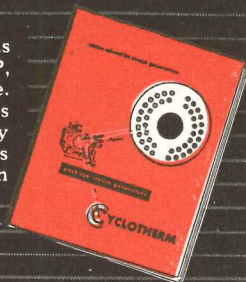


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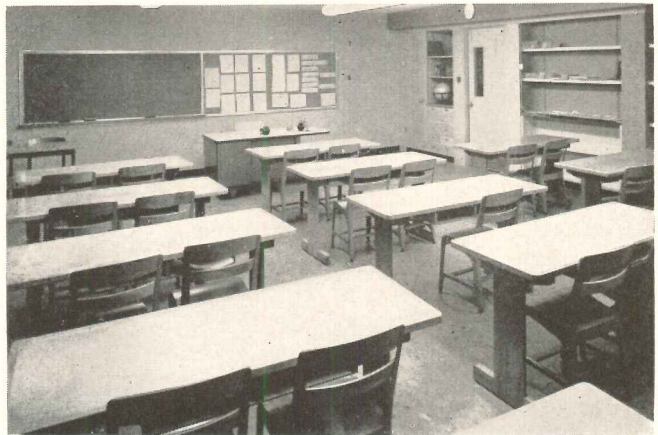
Air enters the combustion chamber at extremely high velocity in a revolving spiral vortex which travels the entire length of the furnace. The fuel is introduced into the entering air where it is slowly consumed as it moves in a cyclonic motion down the combustion chamber. This highly luminous flame transfers the heat to the fire tube by direct radiation and by a high rate of convection, resulting in an unusually high amount of heat transfer.

Boilers are designed for oil or gas operation from 18 through 500 HP, 15 to 200 lbs. operating pressure. Send for your copy of "Years Ahead in Steam Generation" today and find out for yourself the facts concerning Cyclotherm Steam Generators.



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CYCLOTHERM DIVISION UNITED STATES RADIATOR CORP.

*A perfect combination . . . . .*



*. . . . for the modern classroom*

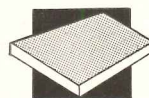
## ROWLES *See-GREEN* CHALKBOARDS

Enduraroc — Permasite — Duroplate

See-GREEN is a soft, pleasing light green color tone for chalkboards that brightens any classroom. Its cool restful color helps reduce the sharp contrast between the chalkboard and the walls. It helps reflect both the natural and artificial illumination to make the room lighter and brighter in every corner. It's glare-free, writes perfectly and is available in your choice of three different types of chalkboards — Enduraroc, Permasite or Duroplate.



## *See-GREEN* BULLETIN BOARDS

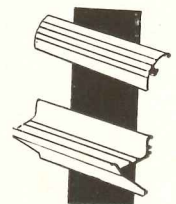


A fresh inviting new light green color for bulletin boards that harmonizes perfectly with See-GREEN Chalkboards. Helps make classrooms brighter and increases the effectiveness of classroom illumination.

See-GREEN Bulletin Boards for permanent installation are available in PERMA KORK,  $\frac{1}{4}$ " unmounted or  $\frac{1}{2}$ " thick mounted. Also available in DURATEX, a tacking surface of  $\frac{1}{8}$ " cork mounted on  $\frac{3}{8}$ " fibreboard backing. Both are also available in regular tan.

## ALUMINUM CHALKBOARD TRIM

A perfect finishing touch to your See-GREEN installation. Bright satin-finished Rowles Aluminum Trim and chalktrough is modern, durable and easy to install. A molding for every type of installation.



Full details on Rowles Chalkboards, Bulletin Boards and Aluminum Trim together with specifications may be found in Sweet's Architectural Catalog, or may be obtained by writing direct to

**E. W. A. ROWLES COMPANY**  
ARLINGTON HEIGHTS, ILLINOIS





## ALL "RUBBERIZED" OR "LATEX" EMULSION PAINTS THIN WITH WATER, BUT

Let's face it! All, yes *all* "rubberized" or "latex" emulsion paints thin with water. A big difference in Satin Luminall is its Concentrated Paste form. Your Client adds the water. Your Client pockets the savings. Satin Luminall mixes so easily that less labor is involved than in re-mixing other types.

When you specify Satin Luminall Concentrated Rubber Emulsion Paint, you get the only, yes the *only* type with brushing, spraying and rolling consistency adjustable for different surfaces. To the best of our knowledge, Satin

Luminall is the only type that's really safe from damage by freezing or other deterioration in the can.

Since "100% pure" latex fails to meet Luminall's high standards of performance (such as adhesion to walls, ceilings, woodwork) our latex is heavily fortified with time-tested alkyd resin of battleship fame.

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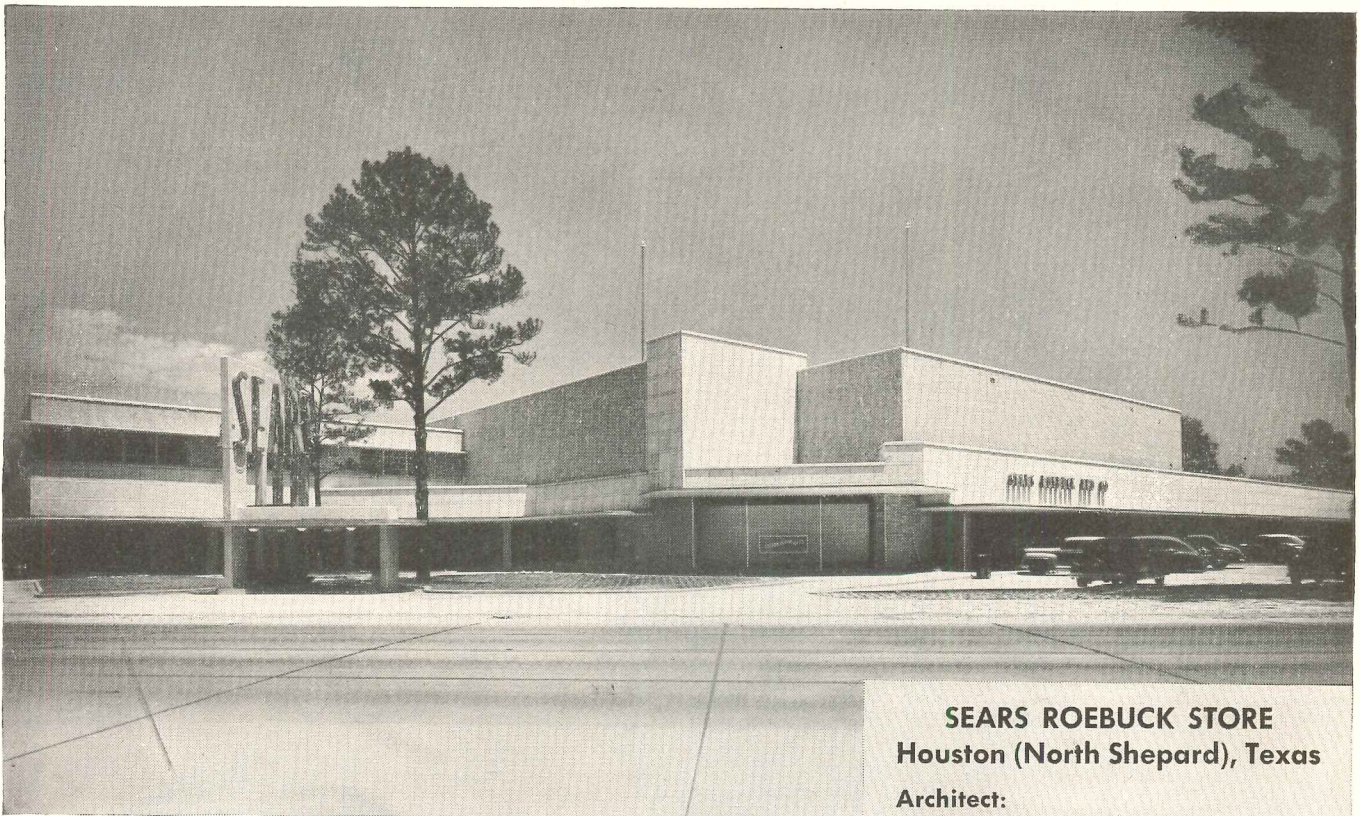


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**General Contractor:**  
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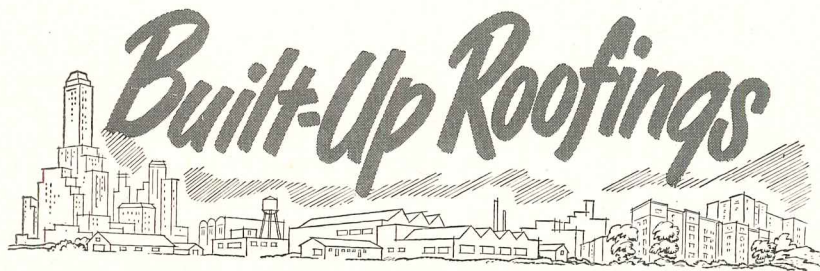
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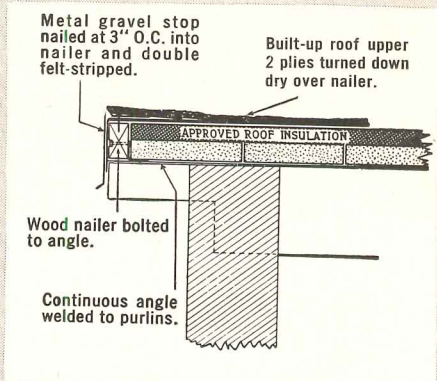
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SUNSET COMMUNITY CENTER, SAN FRANCISCO  
FORTY-THREE ACRES COOPERATIVELY PLANNED



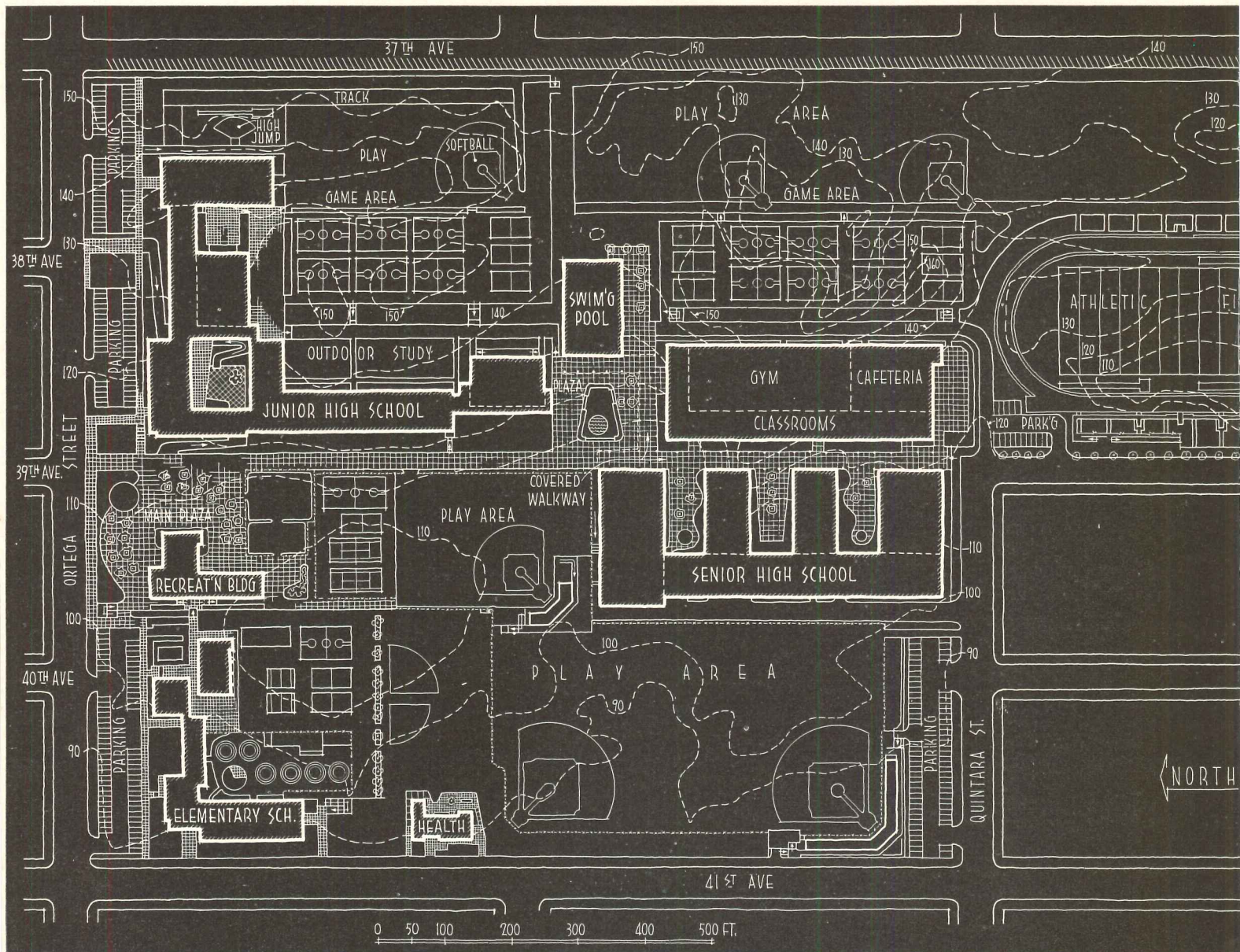
Junior High School; model photo by Ernest Braun

**Cooperating San Francisco Agencies:**

*Board of Education*  
*Recreation & Park Department*  
*Department of Public Health*  
*Department of Public Works*  
*Bureau of Architecture*  
*City Planning Department*  
*Art Commission*

**Architects, Engineers, Consultants:**

*Wurster, Bernardi & Emmons,*  
*Coordinating & Master Plan Architects*  
*Punnet, Perez & Hutchinson, Civil Engineers*  
*Thomas D. Church, Landscape Architect*  
*Stone & Mulloy, Architects,*  
*Elementary School*  
*Thomsen & Wilson, Architects,*  
*Junior High School*  
*Wurster, Bernardi & Emmons, Architects,*  
*Senior High School, Swimming Pool, Stadium*  
*William G. Merchant, Architect,*  
*Recreation Building & Center*  
*Dodge A. Riedy, Architect,*  
*Health Building*  
*N. L. Engelhardt, Educational Consultant*



## SUNSET COMMUNITY CENTER, SAN FRANCISCO, CALIF.

*Wurster, Bernardi & Emmons, Coordinating Architects*

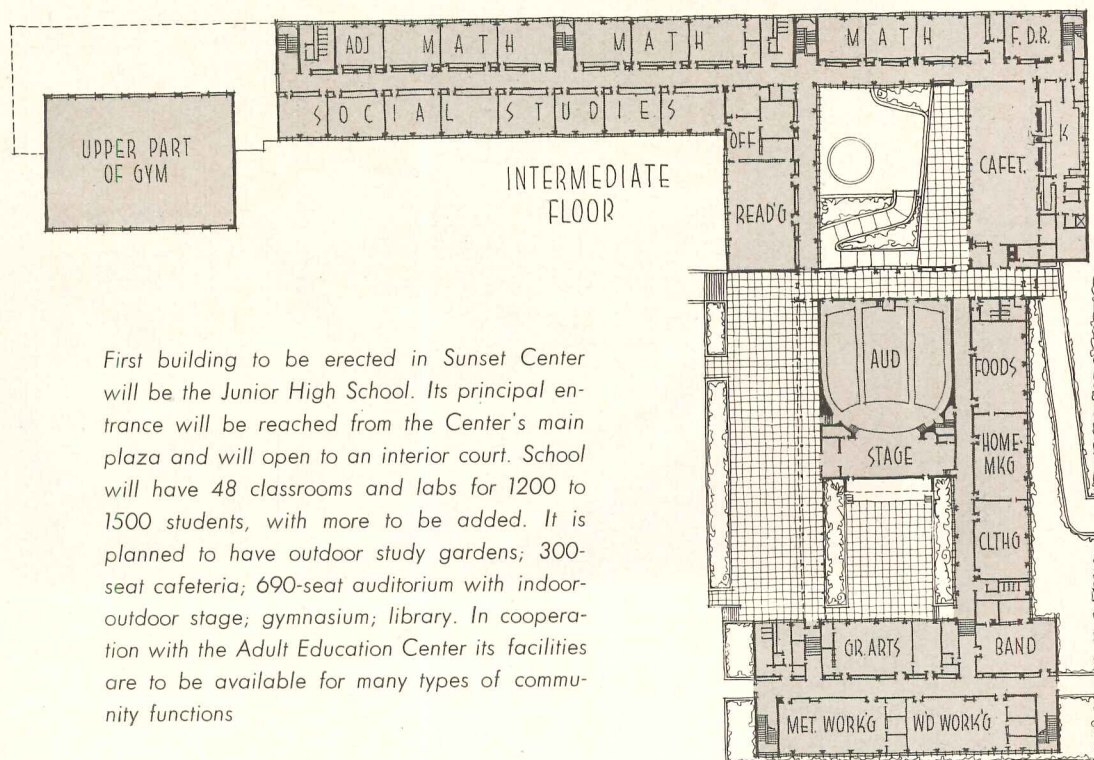
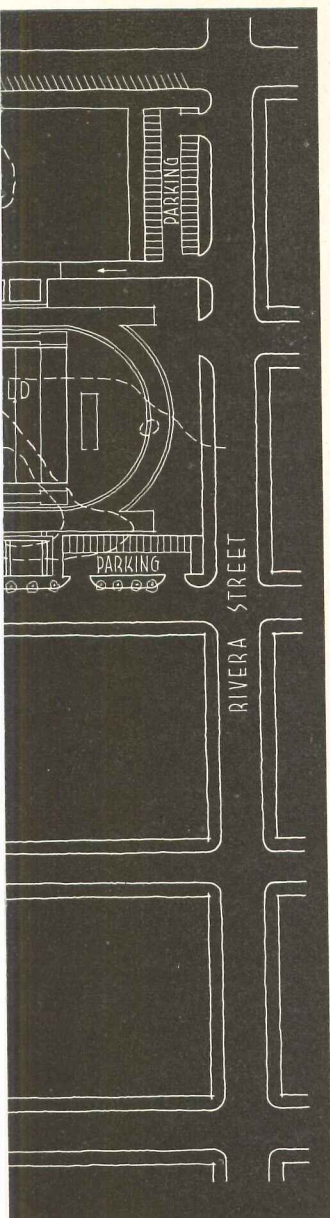
SUNSET COMMUNITY CENTER is to be the hub of local activities in San Francisco's growing Sunset district. This residential area, west of Mt. Sutro and south of Golden Gate Park, is expected to attain a population of 17,500 per square mile, which will mean nearly 50,000 within a mile of the Center. The ultimate need for a focal point in the sandy, duned district was foreseen by D. H. Burnham in 1905, in his plan for the city. Now the 10-block, 43-acre site is being graded. A junior high school is scheduled for starting immediately. An elementary school will follow; drawings are ready for a recreation center and a health building; preliminaries for a high school, gymnasium, swimming pool and stadium have been prepared. Full development will probably take most of a decade. The total cost is estimated at about \$12¼ million.

The scheme has changed several times since Burnham's day. The plan now being realized is essentially

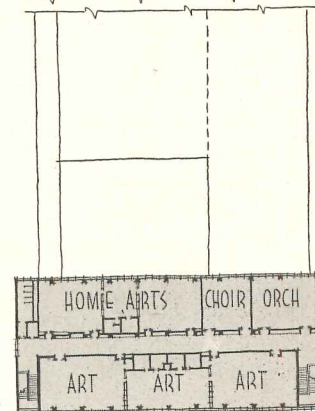
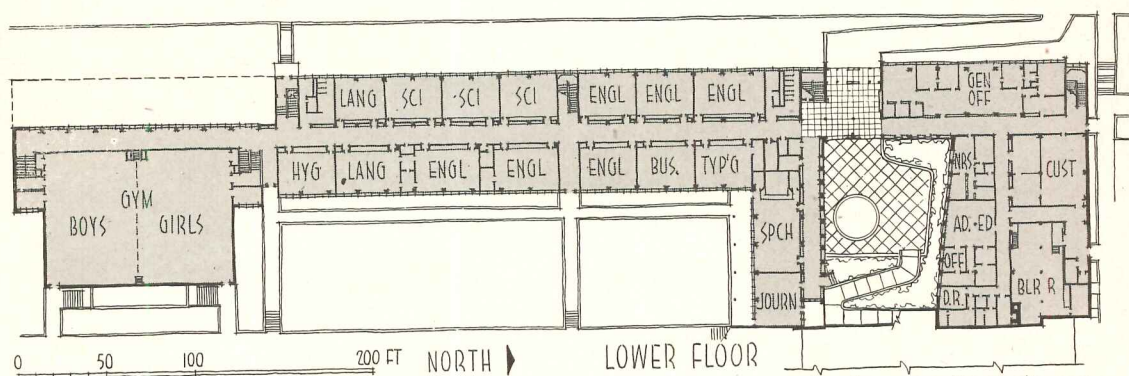
that presented in 1945 by Glenn Hall of San Francisco's Planning Commission and furthered by the then Planning Director, L. Deming Tilton, and his successors. Bringing it to its present stage has not been easy: definition of purpose, allocation of authority and responsibility, problems of site acquisition and development, and the need to coordinate without unduly hampering the several architects, have all been complex matters. The Center is to offer facilities for education, health and recreation for all age groups, as a means of establishing and maintaining high local standards; it is at once a social, cultural and economic venture. It has required the cooperation of several city agencies, among which expenses are being apportioned according to land occupancy and building costs.\* The rolling land drops about 80 ft from highest to lowest points; across it blows a strong northwest breeze. To break the wind the site is graded to three main levels, and most of the

# A. P. GIANNINI JUNIOR HIGH SCHOOL

Thomsen & Wilson, Architects

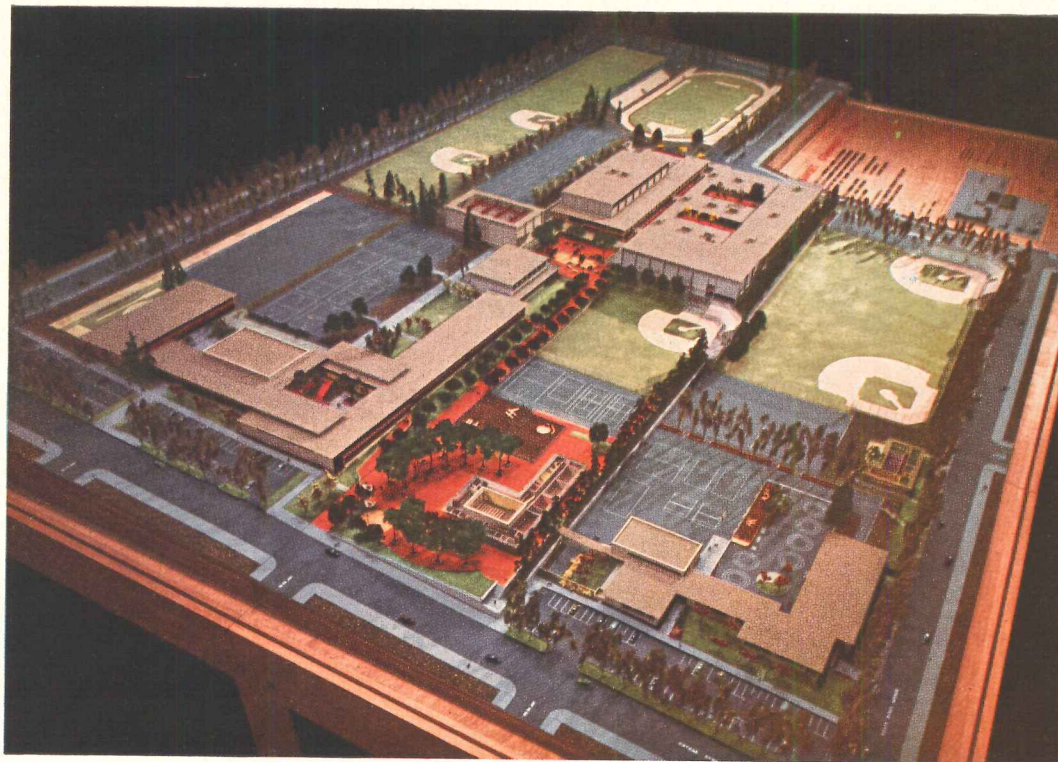


First building to be erected in Sunset Center will be the Junior High School. Its principal entrance will be reached from the Center's main plaza and will open to an interior court. School will have 48 classrooms and labs for 1200 to 1500 students, with more to be added. It is planned to have outdoor study gardens; 300-seat cafeteria; 690-seat auditorium with indoor-outdoor stage; gymnasium; library. In cooperation with the Adult Education Center its facilities are to be available for many types of community functions



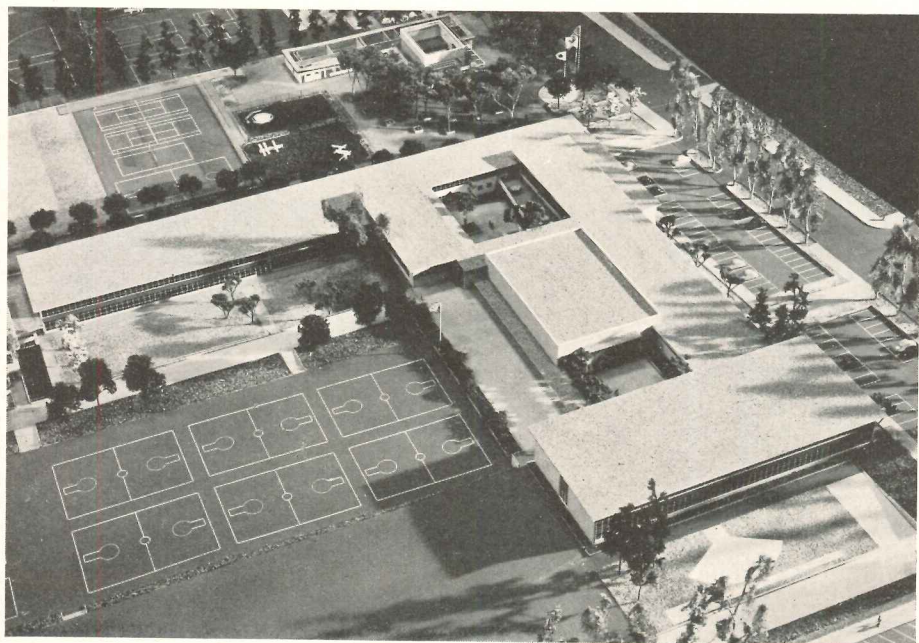
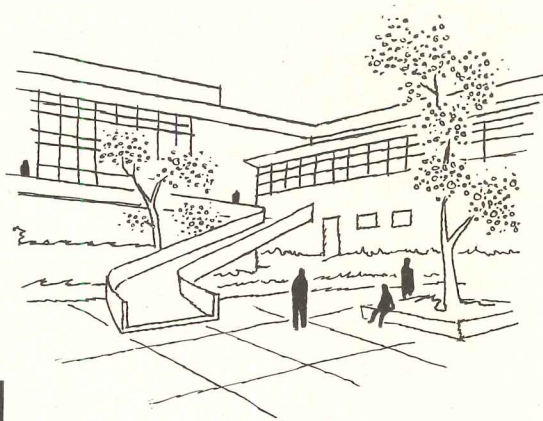
buildings are designed to form a series of interior courts and open areas. These will have the multiple effect of trapping sun, creating human scale, and — in conjunction with the peripheral placement of buildings — providing both easy accessibility and freedom from traffic hazards. The whole is to be lively and vital. From the brightly lit community plaza off Ortega St. a paved, lighted walkway will lead to 39th Ave. To preserve individuality each architect is to determine structural system, fenestration and range of color for his portion of the job. To achieve necessary unity all buildings are to be concrete, with composition roofs and overhanging eaves. The Coordinating Architects have developed preliminaries for the high school and other units only far enough to insure harmony. It has been suggested that they have design supervision also over street furniture: lighting and light standards, benches, telephone booths, news stands, and the like.

\* A few years ago the Library Commission withdrew from the group of cooperating agencies — the only San Francisco agency to do so.

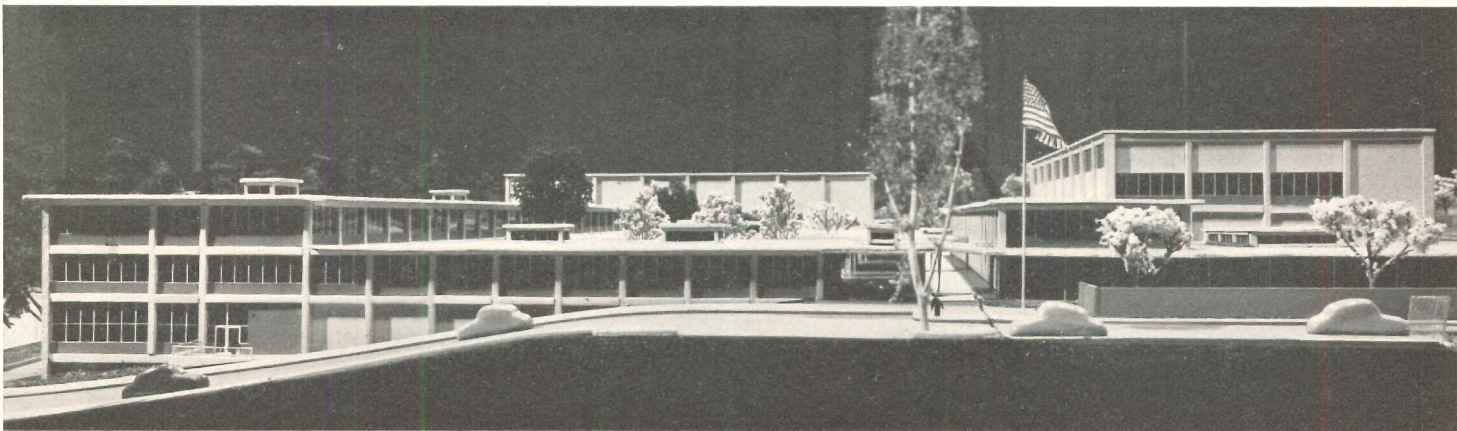


SUNSET CENTER'S topography (see photo above) affected design of the Junior High School. Though entered from the Center's Main Plaza midway down Ortega St., the principal floor level of the school is a story higher. To connect the two levels the interior court (sketch, right) and its ramps were developed. In the court, next to the cafeteria, is an outdoor dining terrace. The building is to be concrete, cement plastered on the exterior. Main entrance is to be metal and glass, other entrances wood and glass, fenestration wood awning type on 4-ft modules. Heat will be furnished by low-pressure, combination gas-oil burning boilers with convectors in classrooms, unit heaters in shop and gymnasium. This school will occupy 8.8 acres. Its estimated cost is \$3,800,000.00.

SUNSET COMMUNITY CENTER  
JUNIOR HIGH SCHOOL



Ernest Braun



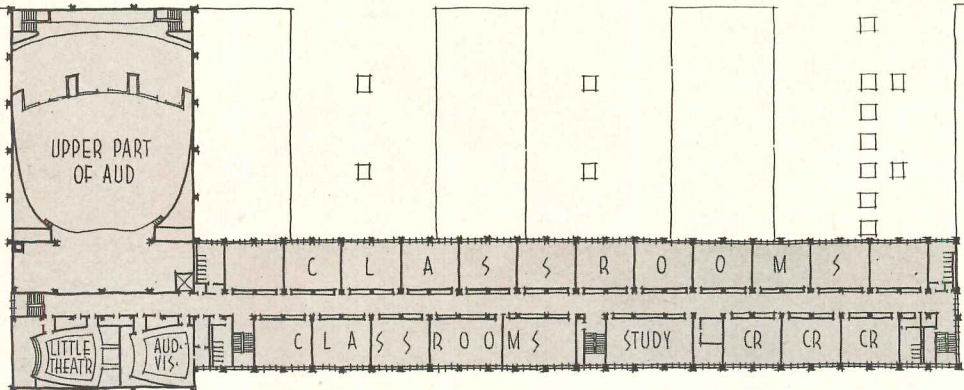
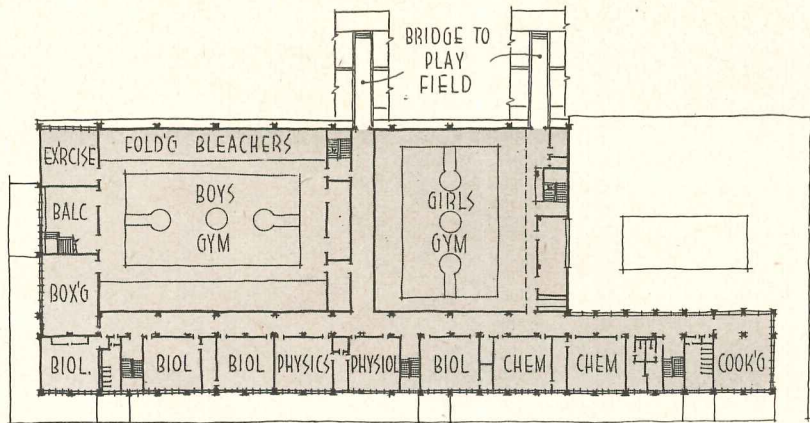
## SUNSET COMMUNITY CENTER: SENIOR HIGH SCHOOL

*Wurster, Bernardi & Emmons, Architects*

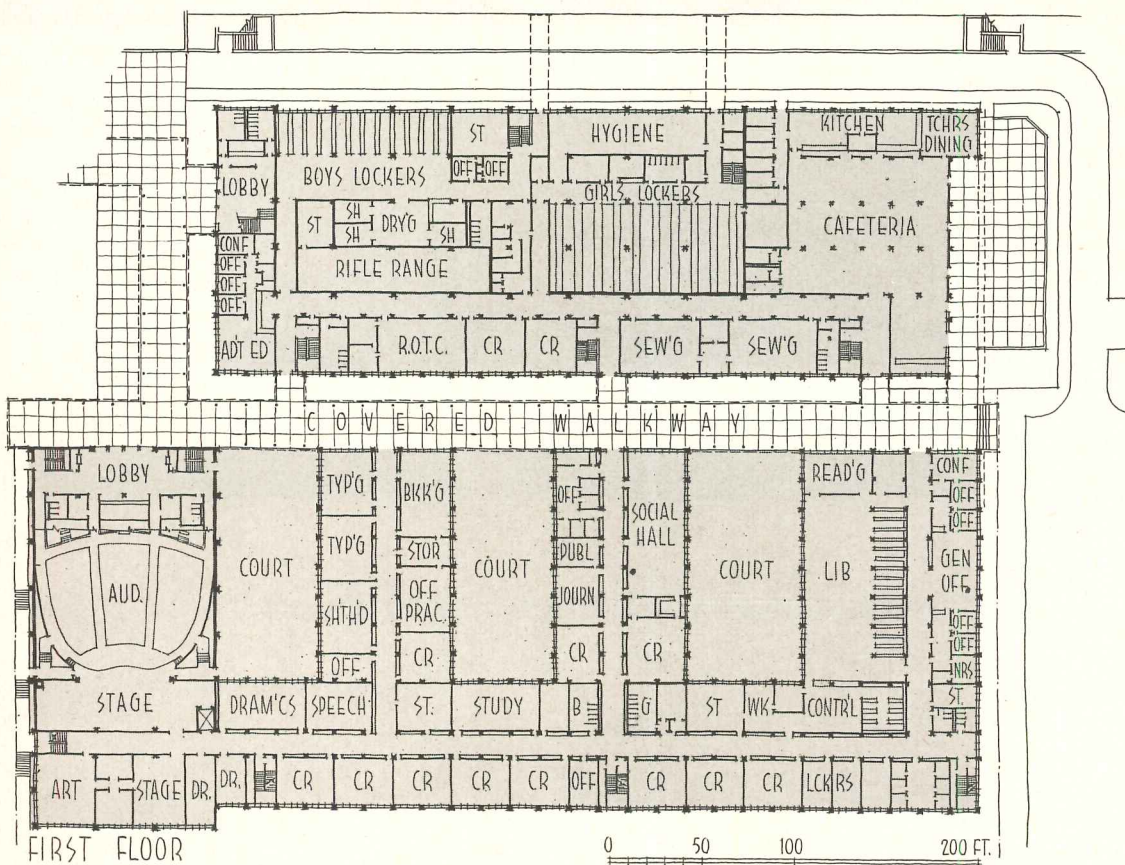
CONSTRUCTION of the Sunset Senior High School is scheduled for the final phase of the project, some five to ten years hence. Consequently the plans are in a rough preliminary stage, with a great deal of work remaining to be done on details. Enough has been done to determine the amount of space required for classrooms, laboratories and the other facilities needed in a secondary school for 1200 students. This was necessary to permit economical development of the entire project.

The high school proper consists of two buildings: one, a classroom unit three stories high on the west side and two on the east where the finish grade is higher; and two, a gymnasium-cafeteria building around which are wrapped two floors of additional classrooms. Between the buildings runs the walkway leading from Sunset Center's Main Plaza to 39th Avenue. For plans and further details of the high school buildings see the following pages.

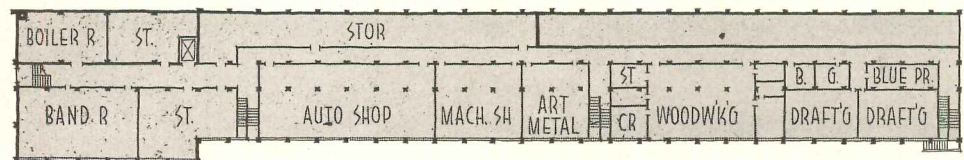
← NORTH



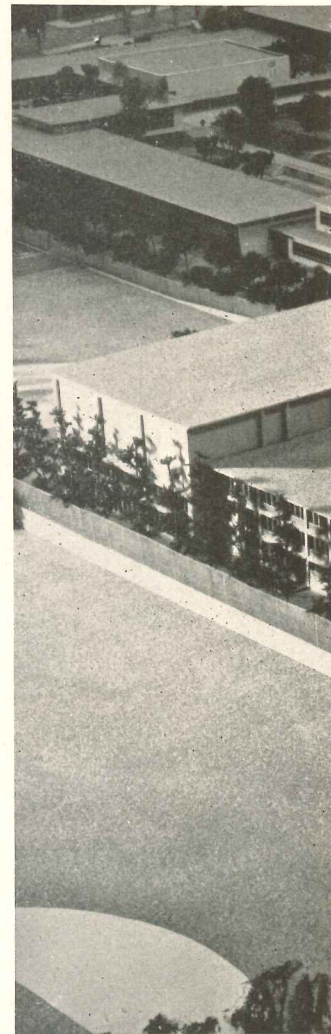
SECOND FLOOR



FIRST FLOOR

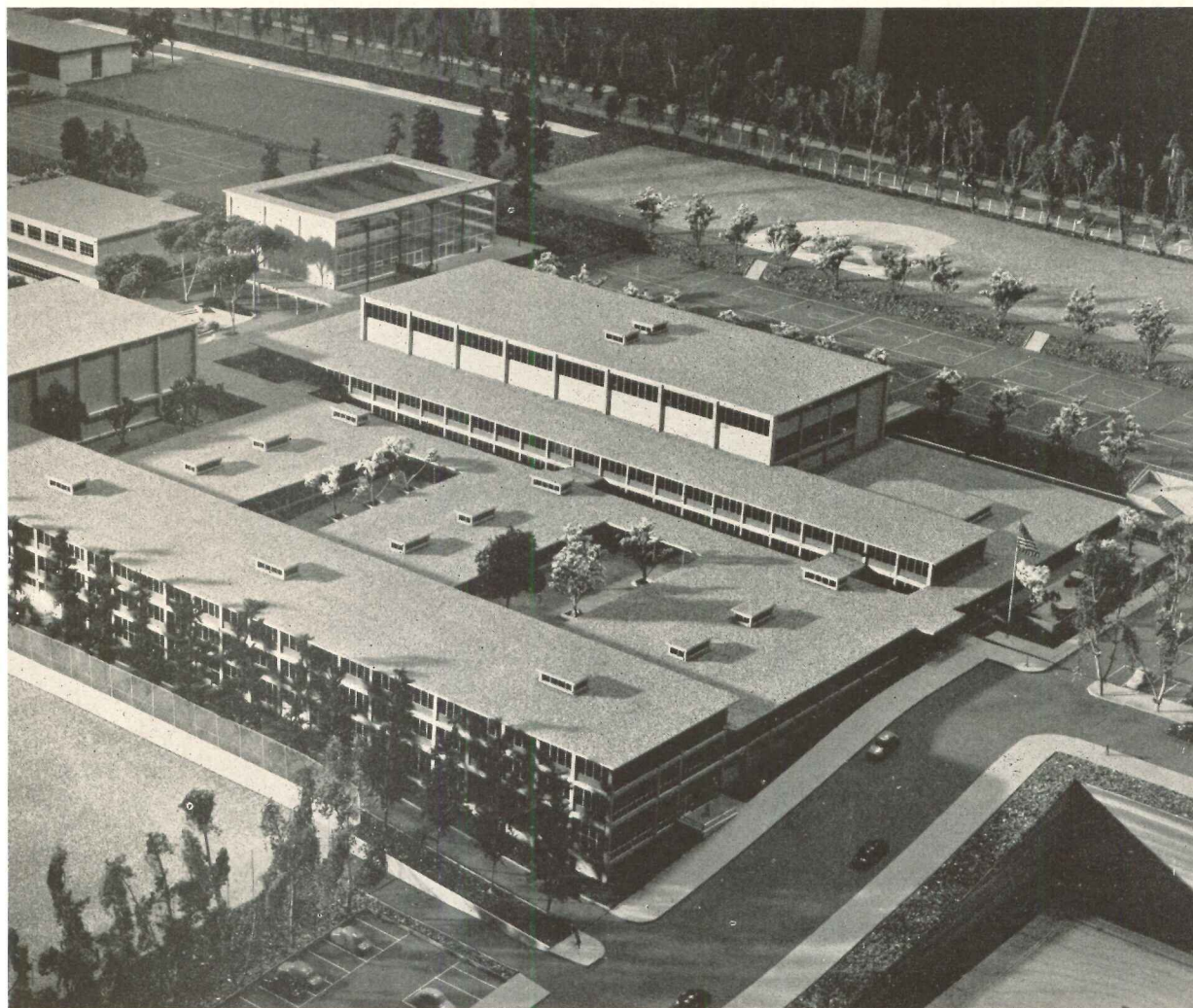


BASEMENT



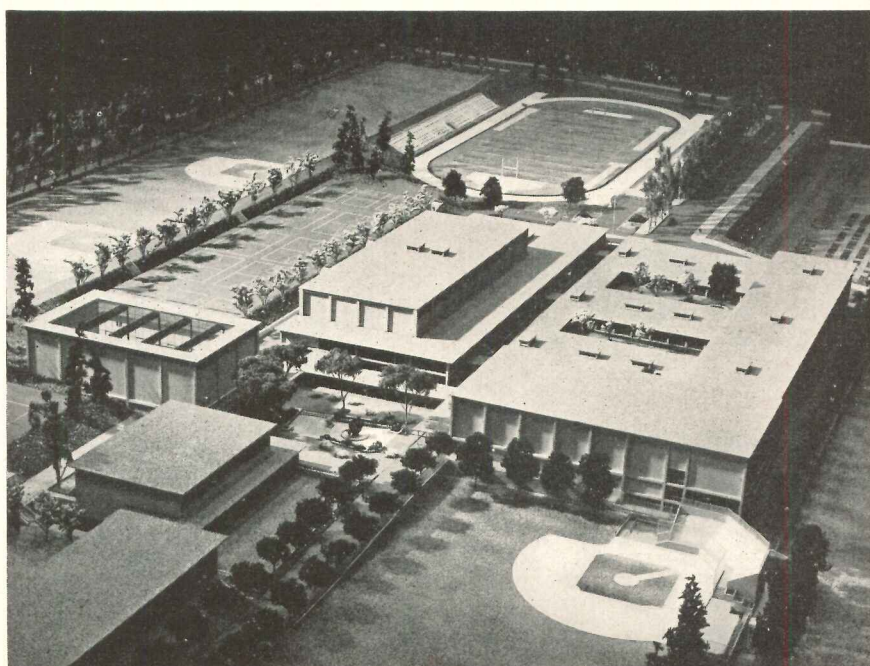


## SUNSET SENIOR HIGH SCHOOL

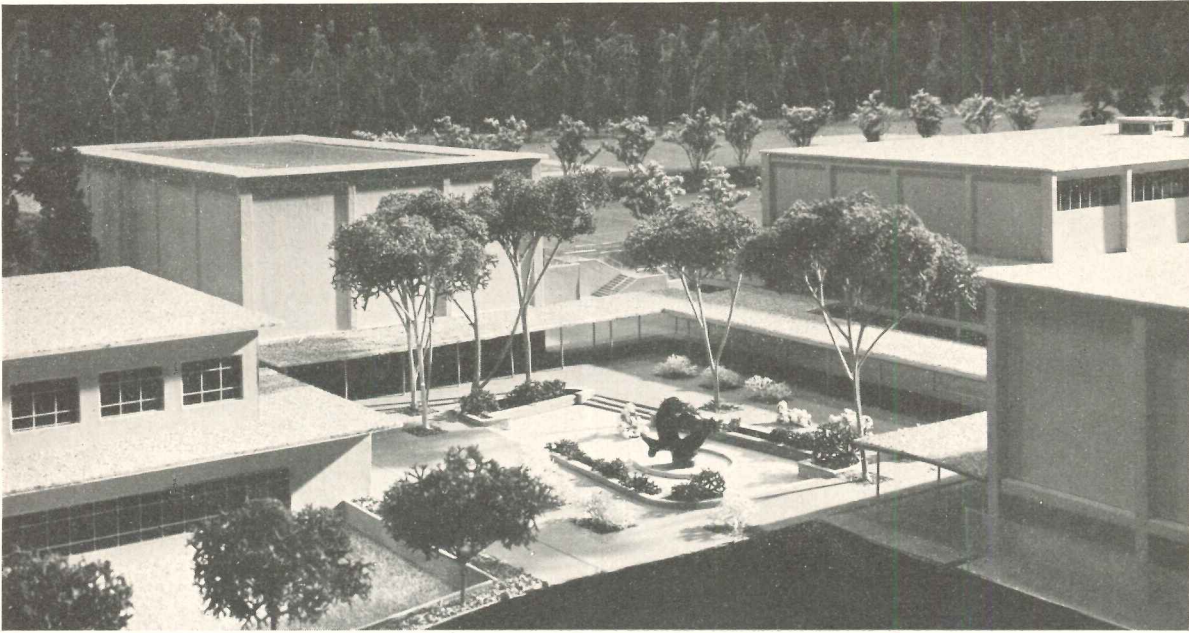


Ernest Braun

Sunset Community Center Senior High School's two main buildings will have the same composition roofs, eave overhangs and concrete construction established for other buildings on the site. Photo at right also shows the Athletic Stadium which will occupy the extreme south end of the Center's 43 acres; all told, the high school plant requires 19.4 acres. Construction proposed for the high school employs a reinforced concrete frame and floor system with exterior columns on the outer face of the building and curtain walls flush on the interior. The curtain walls are to consist of strip windows and precast, colored filler panels. This is consonant with the use of color throughout the project as a means of obtaining unity. Cost of high school buildings and stadium is estimated at \$5,000,000.00

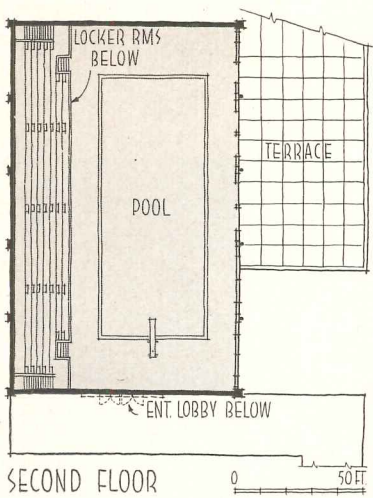


SUNSET SENIOR HIGH SCHOOL

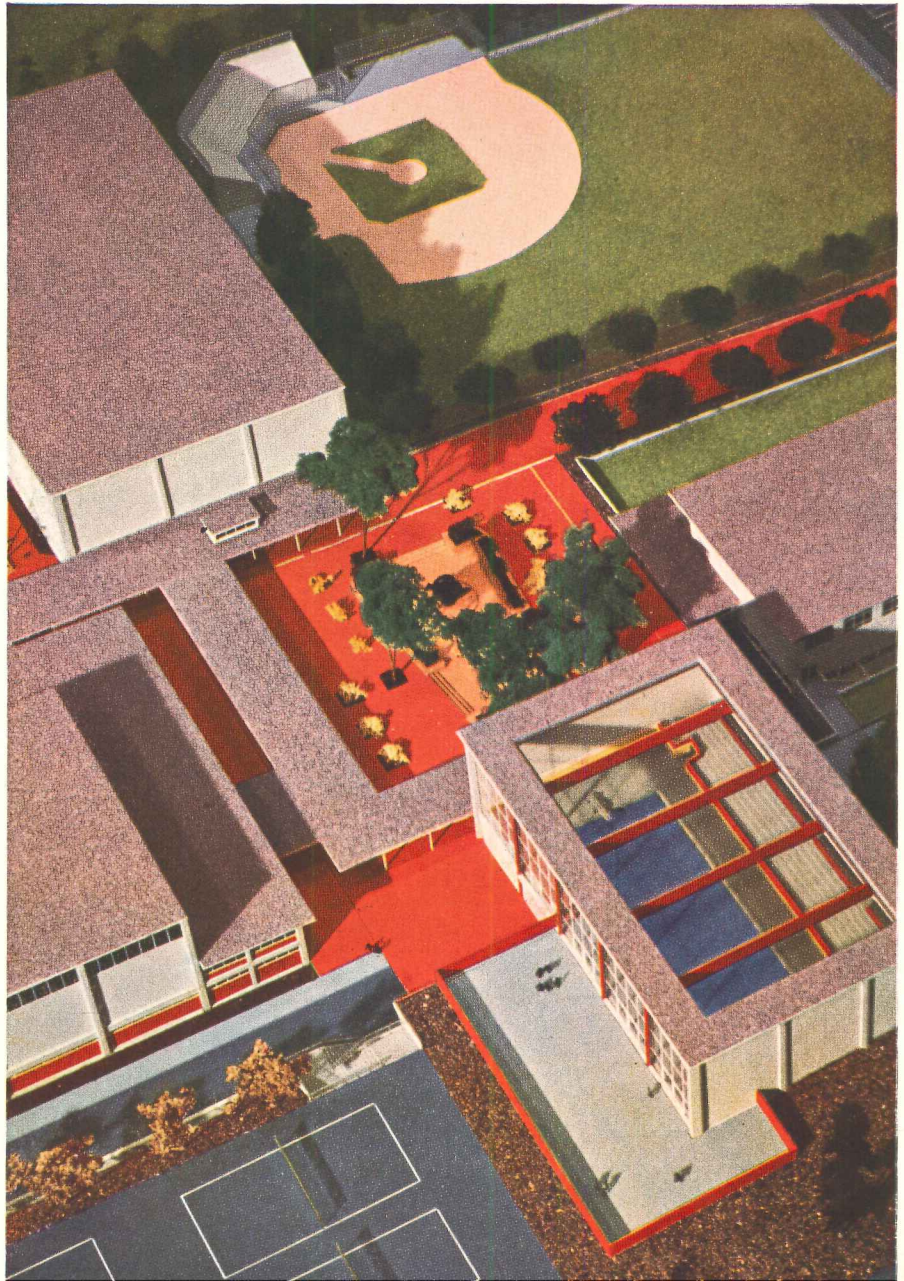


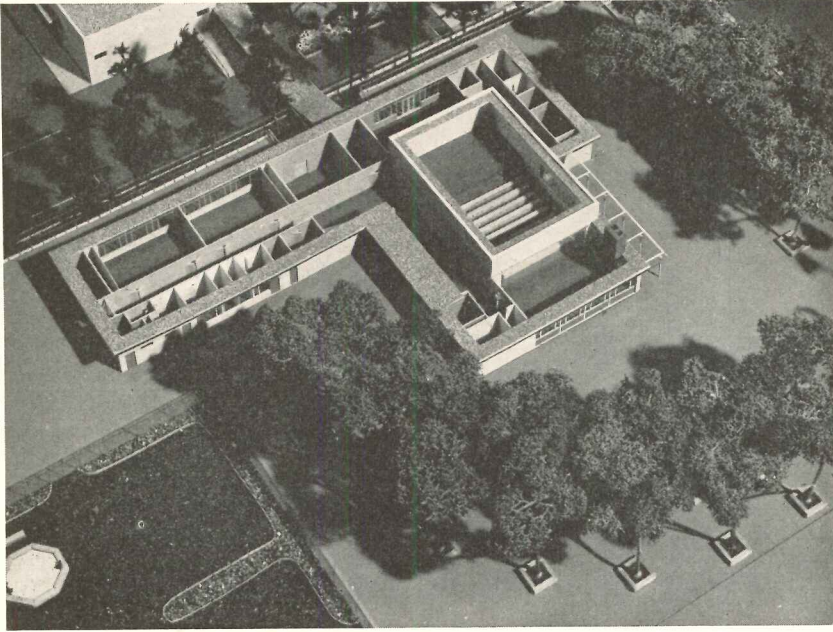
Ernest Braun

Sunset Community Center's Swimming Pool Building (above and right) has also been carried only to the rough preliminary stage of design by Wurster, Bernardi & Emmons. Its design is like that of the other high school buildings: exposed concrete frame with curtain walls set flush on interior. Expected to cost \$300,000.00,



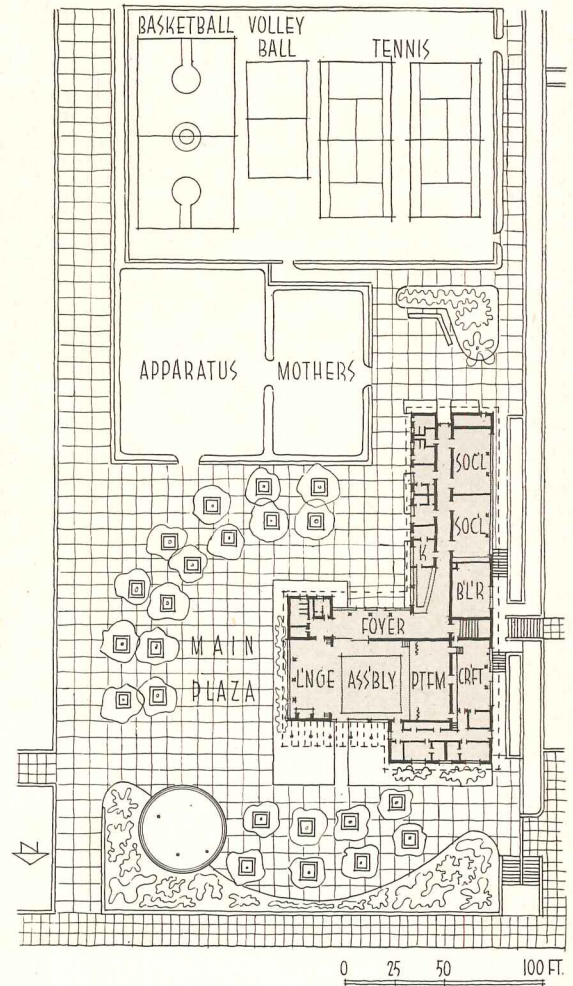
the building is to be situated between the junior and senior high gymnasiums. On the entire high school portion of the Center, preliminary structural engineering was done by A. V. Saph, Jr., and mechanical engineering by Garthorne, Buonacorsi & Murray





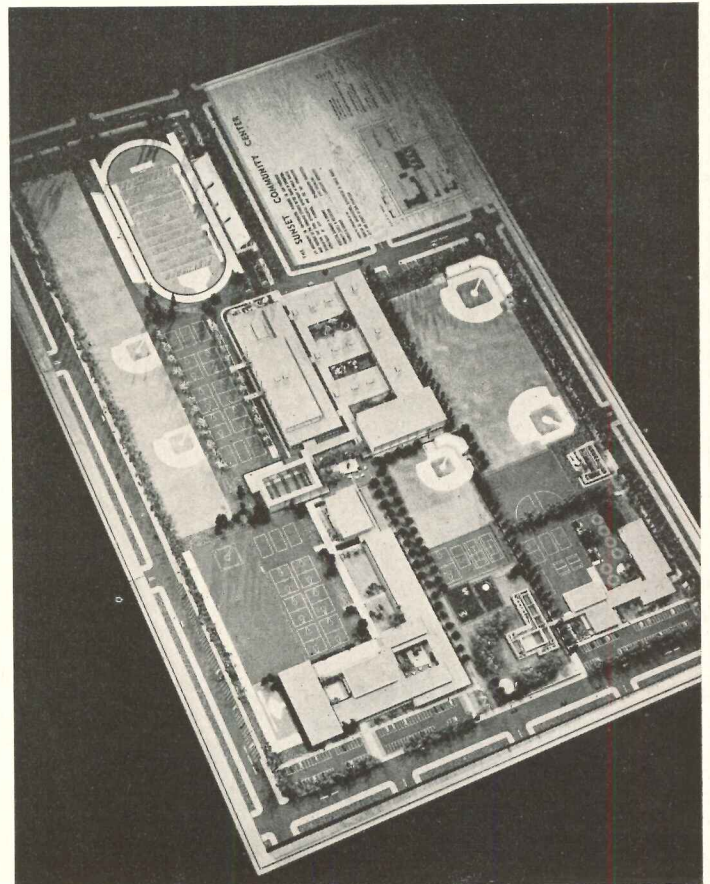
## SUNSET RECREATION CENTER

*William G. Merchant, Architect*



OFFICIALLY called the West Sunset Recreation Center, this unit in the Community Center will occupy 9.77 acres east of the elementary school (bottom right, adjoining bird's eye view of model). Its 150-seat assembly room is to be used both by adults and by students from the elementary school, to which a covered walk leads. Construction of the \$750,000.00 concrete building is to start as soon as regulations permit.

Since 1945, San Francisco's Art Commission has actively promoted and guided its development. At one time the project, all but abandoned, was saved by efforts of the city's present Director of Planning, Paul Opperman, and the Art Commission's Committee on Architecture. Recently it has passed upon design of the various buildings. With final schemes approved, the Chairman of the Commission's Committee on Civic Design, architect Francis Joseph McCarthy, presented a review and report citing many San Francisco individuals and agencies concerned with the Center's progress, including Jack Kent, former Planning Director; Ernest Born, architect member of the Art Commission; Superintendent of Schools, Dr. Herbert C. Clish; Thomas Brooks, Chief Administrative Officer, Department of Public Works; Harvey Teller, former Director, Recreation and Park Department; and the numerous designers and municipal agencies mentioned elsewhere in this issue.

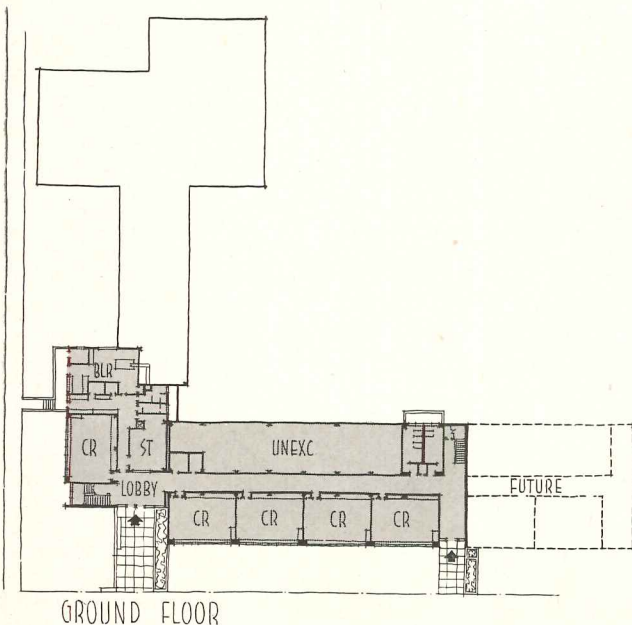
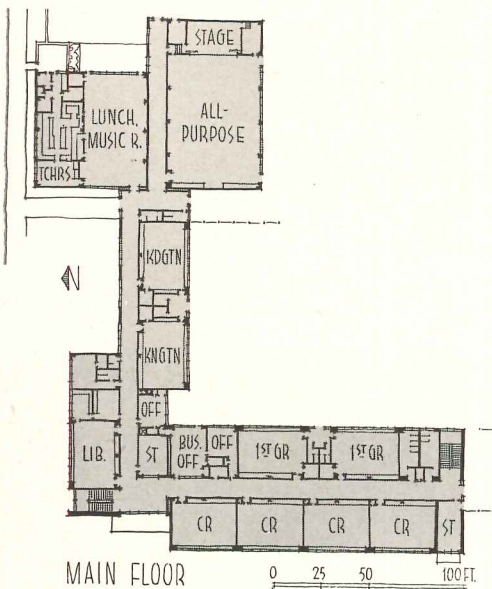


# MARK TWAIN ELEMENTARY SCHOOL

Stone & Mulloy, Architects

## SUNSET COMMUNITY CENTER

SIMILAR, again, to Sunset Center's other principal buildings, the Elementary School is a concrete building with overhanging roofs. However, it has individual windows with projected wood sash rather than the continuous strip windows of the Junior and Senior High Schools. In addition to approving over-all and individual building design, the San Francisco Art Commission has made such helpfully constructive comments as: "In both Elementary and Junior High Schools, parapets at roofs of gymnasium and multi-purpose room might better become overhangs like other roofs. Patterns of trees and planting might be improved, particularly to break up long paved areas. When actual colors are selected, the proposed gray of the concrete might be warmed up." These and numerous other suggestions indicate a continuing intent to make the ultimate Center live up fully to the possibilities now envisioned.



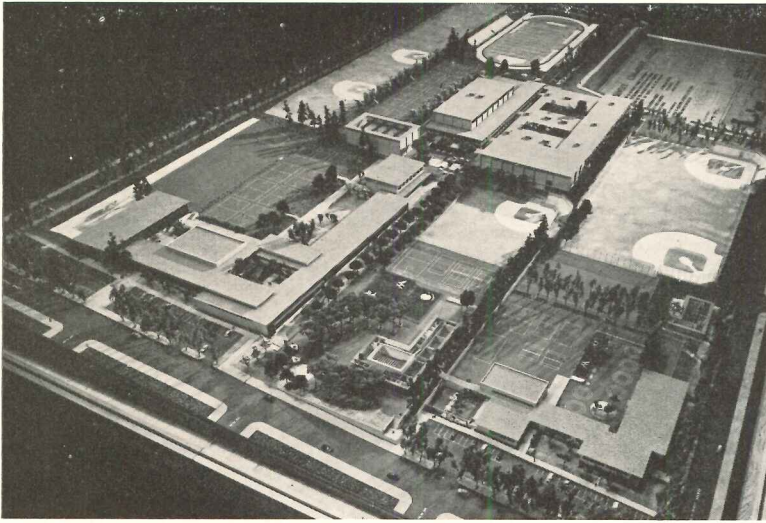
Ernest Braun



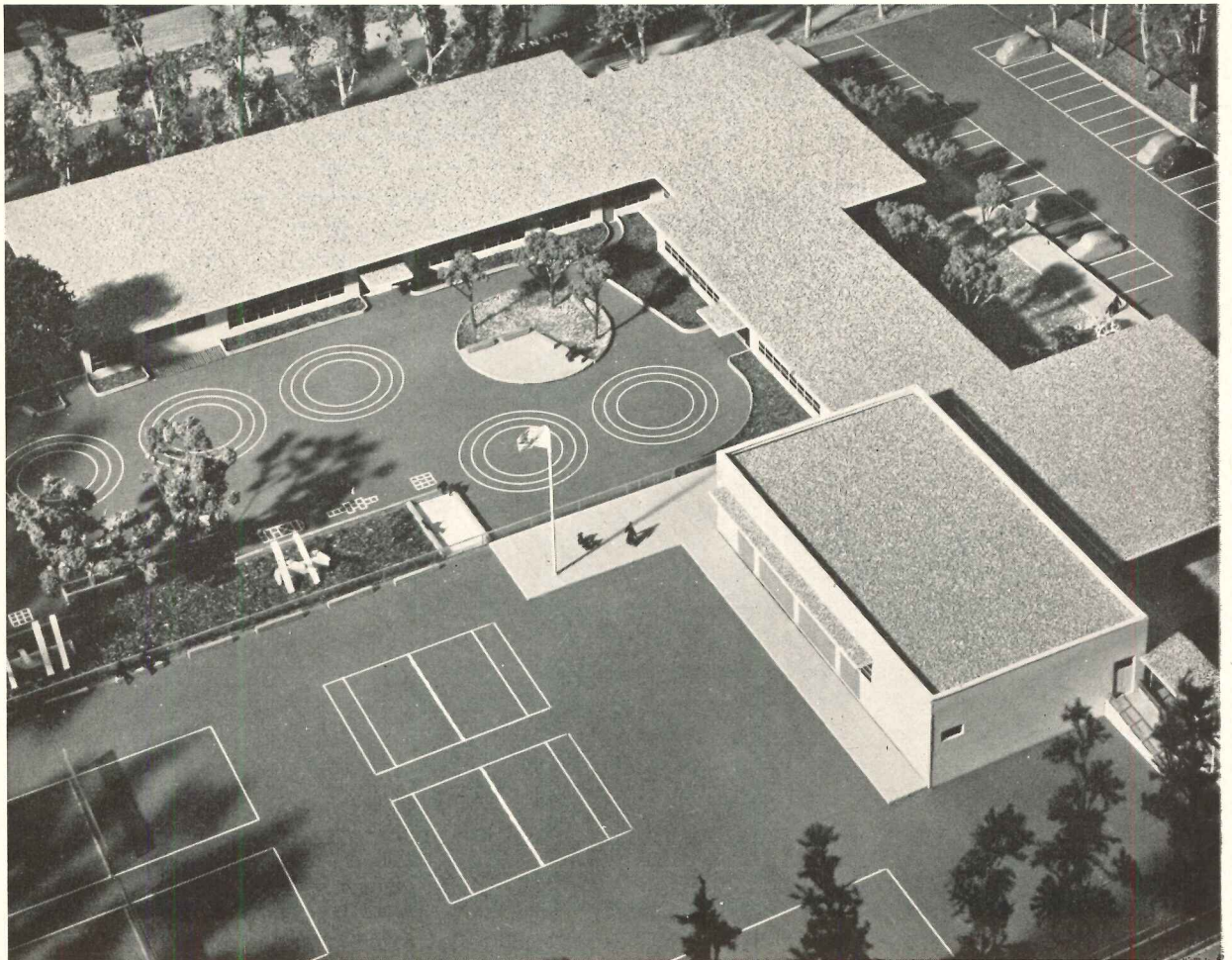
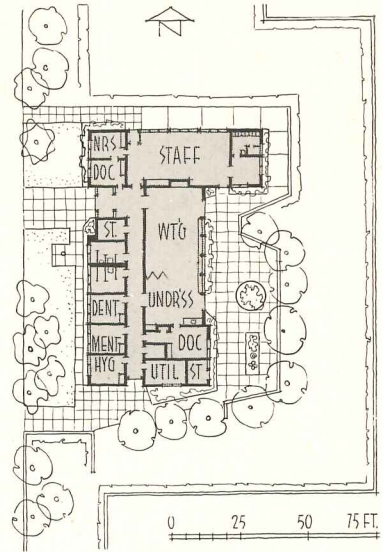
Construction of Elementary School is scheduled to follow Junior High School in another year or so. Estimated cost: \$1,200,000. Structural engineer: William Adrian. Mechanical Engineers: Garthorne, Buonacorsi & Murray

# SUNSET HEALTH CENTER

*Dodge A. Riedy, Architect*



Sunset Center's Health Building is to be the only wood frame structure; exterior will be integrally colored stucco. To be built as soon as regulations permit, it will house a well-baby clinic, public health nurse, etc. Estimated cost: \$100,000.00; land occupied: 0.4 acre



# SCHOOLS

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ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 184

## SOME TRENDS IN SCHOOL DESIGN

By Frank G. Lopez, A.I.A.

CERTAIN trends in school design are evident; one sees them forming and interacting everywhere in the country. Despite governmental limitations on the use of metals, we are in the middle of the greatest school building boom in our history. Are the directions design is taking likely to prove permanently beneficial? Are deficiencies also evident? Generally speaking, we believe the answer to both questions to be yes. There are heartening signs, and though many an exploratory concept may eventually prove to have been sterile, the shortcomings which even the best of our work may exhibit are being overcome as our knowledge and capacity are increasingly applied.

### *I: Cooperation in School Planning*

For one thing, it is generally accepted today that school design is a cooperative venture. At the least, an architect of a school can seldom get built his perfect solution of a community's needs; he must modify his ideal, taking into account the notions of the laymen who are empowering him to proceed — and today those notions are more likely to be solidly based than was the case twenty years ago. The member of a school board or building committee is better informed today; there are magazines and books and consultants and experts to keep the committee member abreast of educational and structural developments. Of course some of these are sources of misinformation, too; that can be expected when ideas and action follow each other as rapidly as they now do. There is little time for judicious weighing of merits. Yet the architect must have time to ponder. In his hands is much more than the expenditure of taxpayers' money; the designer of a school is to a greater degree than we commonly realize a molder of coming generations, a shaper of the future physical and cultural status of our nation.

Because ours is a democratic culture, cooperation of many kinds is both possible and desirable in designing and building schools. I do not mean compromise; I mean a pooling of the knowledges and capacities possessed by many individuals and agencies in order to produce the best buildings we can for our times. Nor do I mean that the architect, in cooperating, surrenders his function to become merely a catalyst, or a sort of grease in the gear case of progress. The cooperative process unearths an array of facts which are the basis for design. Without them, a school can be well designed only by accident. Conversely, without the prime architectural function, design, no set of facts can miraculously produce a school.

The school survey is one means of obtaining the necessary facts. It takes a multiplicity of forms. Your New England architect, dealing locally with perhaps the shrewdest, most skeptical group of individualists we have, may be forced to de-emphasize the formal survey (though many exhaustive surveys have been made there) and gain his sets of facts principally through intimate personal knowledge of local customs, preferences, trends — and pocketbooks. The professional educational consultant and services available from schools of education in our universities are well known. Occasionally the consultant, excessively zealous, oversteps his bounds to dictate building forms and even architectural design. Years ago, when few architects knew what educators were talking about, there was justification for such zeal. Nowadays things are different; many school architects have caught up to their opposite numbers in the field of education. Some have, in a manner, surpassed them; there are architects thoroughly competent to conduct complete educational surveys themselves, and a number do. They find the service they render fully appreciated. It is also expen-

sive to the architects who do it. John Hunter, of the firm of Hunter, Caldwell & Campbell, Altoona, Pa., architects with several million dollars' worth of schools on the boards, recently suggested informally that an ideal school survey group would consist of an architect well versed in schools, an educator familiar with architectural problems, and possibly a competent layman from the locality under survey — each with his function clearly defined. That, he believes, would permit true cooperation.

Another type of cooperation exists when a school is used for community purposes. Once considered a way to justify the very great cost of the modern school plant, the practice today is fairly common. Such cooperation, like any other kind, requires imagination, hard work, and knowledge of human nature. There was the Massachusetts architect who persuaded the town fathers not to rebuild their burnt-out town hall, but instead to replace their outmoded school buildings and, in the new structure, to incorporate the modest town offices really needed. There is the magnificent instance of the Sunset Community Center in San Francisco, reported elsewhere in this issue, whose 10-block, 43-acre urban site is being developed jointly by many municipal agencies and several architects. A similar though less comprehensive project has been in progress in Seattle. Particularly in times of high construction costs and materials limitations, this kind of cooperative venture can gain for a city facilities of a quality it might not otherwise obtain.

## *II: The High School Problem*

There are a few instances of research into secondary school building design problems, but these are mostly isolated efforts, seldom coordinated. Everybody realizes how acute the school problem as a whole is; but we have been preoccupied with elementary schools. The recent rise in the national birth rate, of course, is felt there first. In most localities the need at that level is expected to remain acute for a number of years. At the same time, the first-grader of two years ago will be in secondary school in another four to six years. Eight years hence, or at the most ten, all our communities will be howling for high schools, and then groaning at having to pay for them. Indeed, in areas where the population age-level has been advancing, for instance agricultural, mining and other stabilized regions where labor is physical and wages are low, new high schools are equalling if not outnumbering elementary schools.

Research on secondary schools is difficult. Their problems are less standardized than the elementary school's; there are more types. The high school may be junior, senior, or both; it may be a four-year type. It may develop into a junior college. It may have a specialized vocational curriculum or provide pre-collegiate training or one of the many variants of either — or both. Usually it is bigger than the elementary school, costs more to build, operate and maintain, and requires a larger site and greater expenditure for site development. Yet, tough as the problems are, if we do not

tackle them more thoroughly soon we will be wasting a deal of money building high schools that were obsolete before they were designed.

## *III: One-Story or Two-Story? Daylighting?*

Rising construction costs, and the realization that one-story schools need not be fireproof and hence can be less costly, have induced arguments familiar to all of us. All other things being equal, the point has been well proved, we believe. However, seldom is everything exactly equal. On fairly level terrain and a site large enough to spread the school out, the one-story building can be substantially less expensive. On a restricted urban site the school must go up in the air. Land costs prohibit anything else. Again, on a hilly site it is often folly to spend a great deal on grading; site costs can quickly wipe out the theoretical saving shown by one-story designs. The cost of providing foundations on hilly terrain may be very large. Why not use the space thus provided?

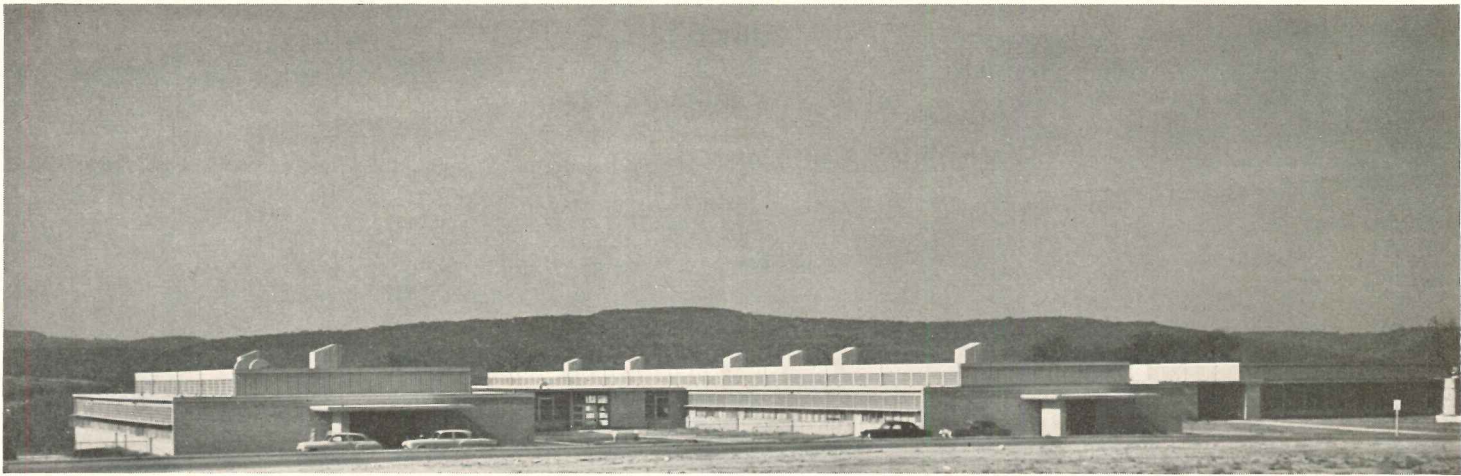
Another factor, quite serious, is the circulation problem. A finger plan for a fairly small elementary school can work quite well. The elementary classroom of today is self-contained; its pupils occupy the one room continuously. There is a tendency, though, to consolidate small schools to reduce expenses. In the large consolidated elementary school, excessive distances from entrances or bus-loading platforms to classrooms, and from classrooms to centrally grouped toilets, are likely to become handicaps. In secondary schools, where students move from room to room at frequent intervals, miles of corridor can constitute a definite drawback.

In more and more localities we can expect substantially less emphasis on daylighting. Natural light is so variable that it can seldom be relied on during the entire school day without considerable recourse to electric light. Control of daylight to prevent glare has been found costly and involved. We probably won't go to the extreme of providing only a narrow vision strip of glass, but need for darkening rooms for visual programs, complexity of daylight control and high construction costs are forcing us somewhat in that direction.

## *IV: Critical Materials*

As this is being written, the U. S. Office of Education is presenting to the Defense Production Agency in Washington requirements for steel, copper and aluminum for schools for the third quarter of 1952. These are based on applications in hand or expected before the beginning of the third quarter. Allocations are expected early in April. The Office of Education states, understandably, that estimating will be facilitated if applications are filed before April 1.

The Office also announces that, in addition to the more than 2000 projects currently under construction (including some college and library buildings), second quarter allocations will permit about 1500 new starts. Steel, copper and aluminum are expected to be scarce through the third quarter.

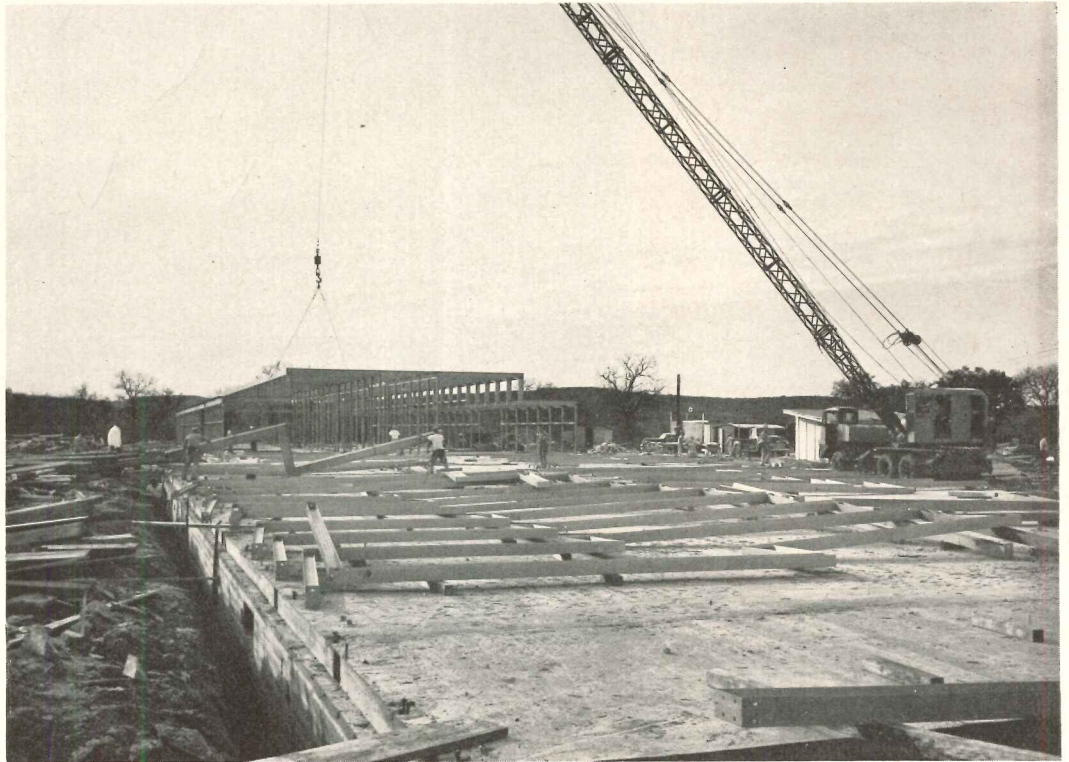


*In Casis, while some severely handicapped pupils may never leave treatment rooms, those physically able participate as fully as possible in regular program. University of Texas built and operates special education wing (foreground, below); Austin Board of Education, regular 20-room primary and elementary wings (center)*



Mears Studio





## NORMAL AND HANDICAPPED CHILDREN TOGETHER

*Casis Elementary School, Austin, Texas*

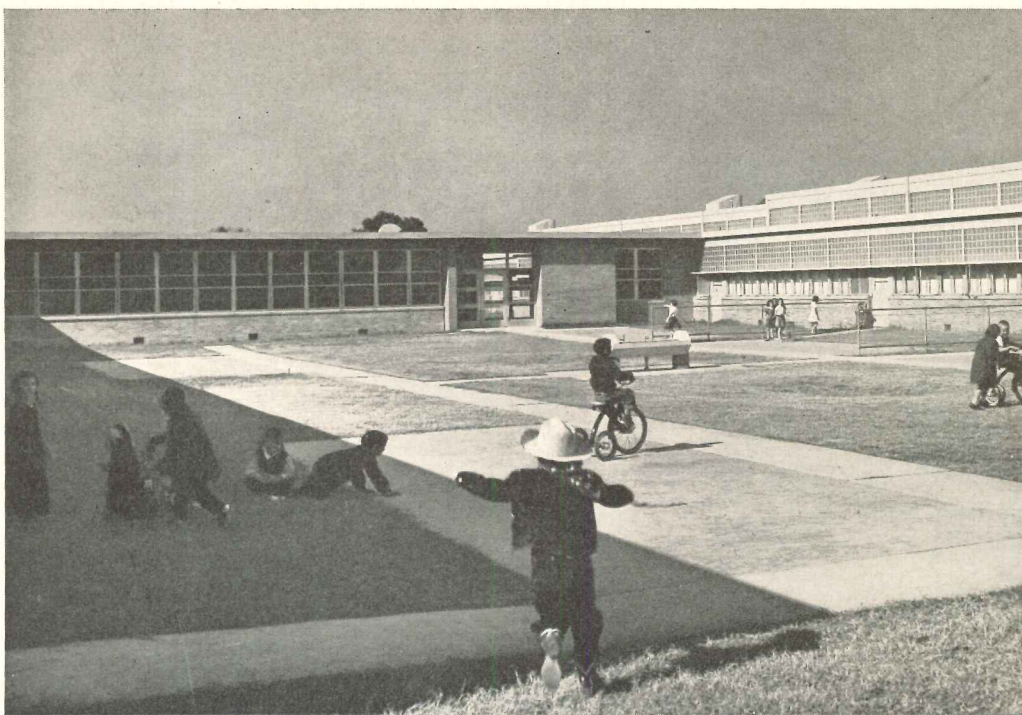
*Page, Southerland & Page, Architects;  
Cottingham & Wilson, Structural Engineers;  
Landauer & Guerrero, Mechanical Engineers*

**I**N DESIGN, CONSTRUCTION, AND OPERATION, Casis School is a cooperative venture of the Austin Board of Education and the University of Texas. Its planning was preceded by invitations to classroom teachers, architects, principals, citizens-at-large, specialists in education of handicapped children and the children themselves, to pool ideas and experiences. Particularly valuable was advice received from numerous faculty members at the University's School of Education, from the Special Education Department of the Austin Public Schools, and from consultants and specialists from the local Cerebral Palsy Committee and Center. Numerous special education schools were studied by the architects. Construction of Casis School, started in 1949, was completed in 1951.

The University's special education wing (see facing page) is a laboratory unit for teacher training. Even though only a portion of the handicapped pupils are able to experience fully the facilities designed primarily

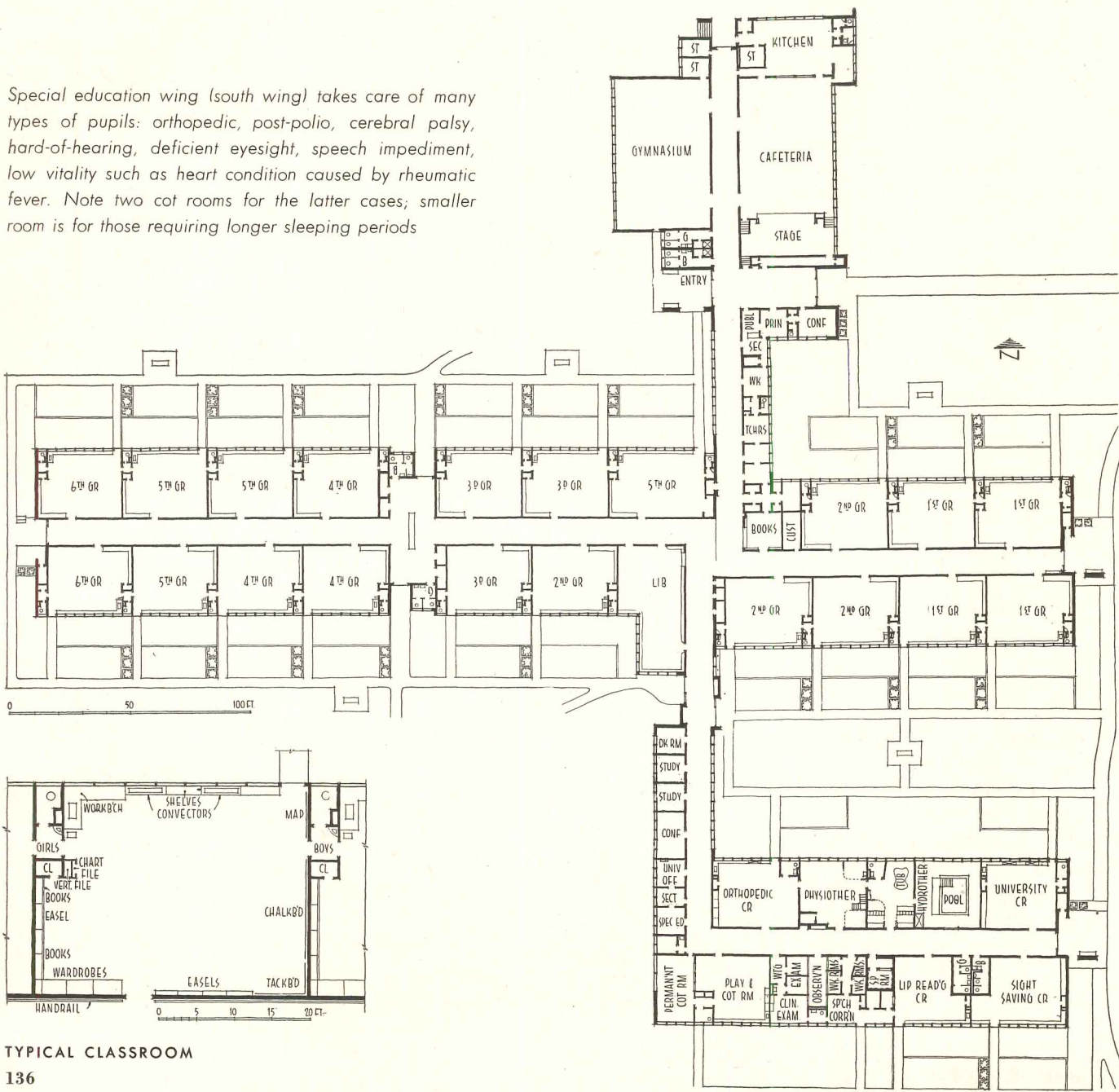
for normal children, the fact that they attend a "regular" school has therapeutic value; it also caused some modifications in design. Corridors throughout the building have handrails and are wider than usual to accommodate children in wheel chairs or on crutches. Bus entrances at both special and primary wings look alike; handicapped children can reach all facilities, indoors or out, without encountering a step. All classrooms have individual toilets; those in special wing and one stall in each public toilet in regular wing are designed for wheel-chair users — a reasonable compromise since the city could not finance special toilets throughout their portion of the building. Similarly, corridor floors are asphalt-tiled, treated with non-skid wax, but *not* buffed. This reduces psychological hazards presented by a shiny floor, and is a means of preparing handicapped children to face normal flooring outside the school. For the city, it necessitated no abnormal costs for special flooring throughout the whole building.

**CASIS SCHOOL, FOR  
NORMAL AND HANDICAPPED**



Mears Studio

*Special education wing (south wing) takes care of many types of pupils: orthopedic, post-polio, cerebral palsy, hard-of-hearing, deficient eyesight, speech impediment, low vitality such as heart condition caused by rheumatic fever. Note two cot rooms for the latter cases; smaller room is for those requiring longer sleeping periods*



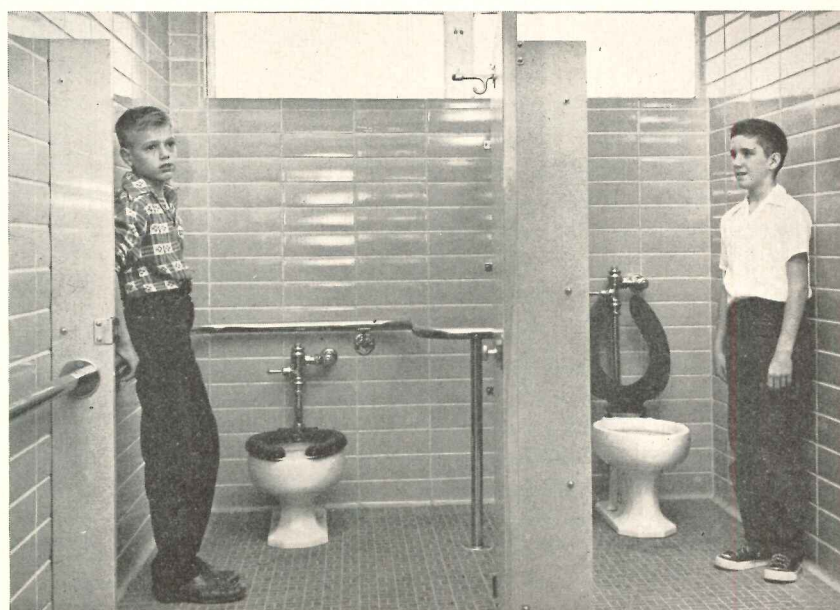
TYPICAL CLASSROOM



Hedrich-Blessing Studio

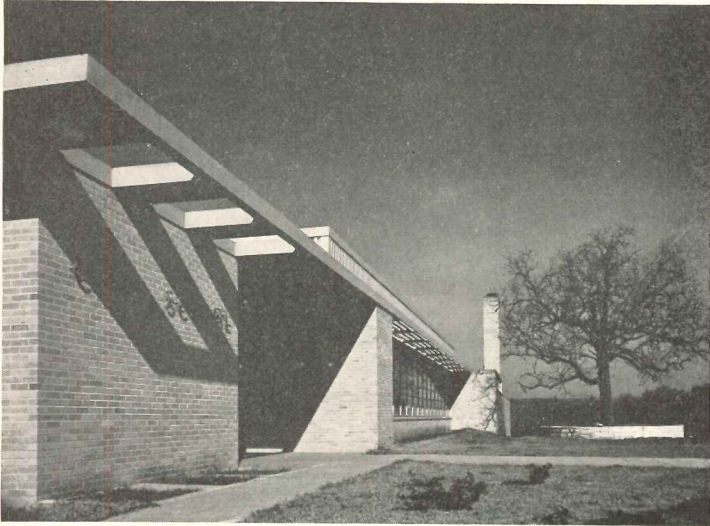


Special and regular classrooms are as nearly alike as possible, except that special rooms are larger and have the necessary treatment apparatus. Typical classroom plan (bottom left, facing page) shows standard equipment, economical placing of toilets so each serves boys or girls from two adjoining rooms. Photo at right: public toilet in regular school wing, with wide stall for handicapped children. Two photos above: directional glass block panels in windows and clerestories light interiors of all rooms. Top photo shows regular classroom; center, lip reading (special) room



Mears Studio

CASIS SCHOOL



Mears Studio

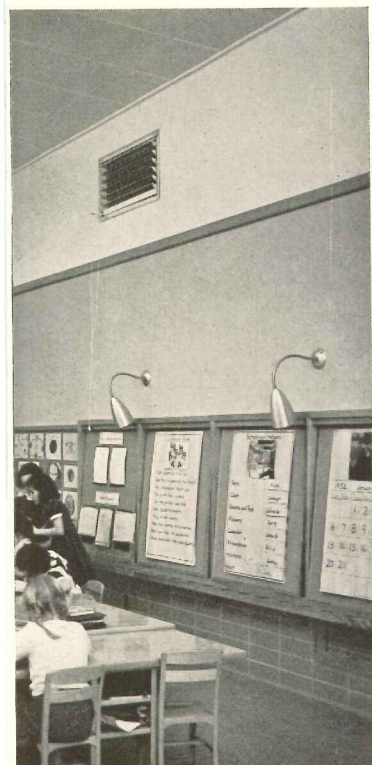


Mears Studio

Hedrich-Blessing Studio

In the special wing, orthopedic room was placed closest to regular classrooms used by special students. It has usual classroom facilities plus handrails with vertical bars for children of different heights. Desks and chairs are specially built for each student in school shop. Physiotherapy room (photo at right) is primarily for exercise and physical training, is used in conjunction with two adjoining hydrotherapy rooms (photo, bottom, facing page); these have radiant-heated floors. Suite even accommodates some stretcher patients. Clinical examination area (plan, preceding page) and speech correction room both adjoin observation room equipped with one-way-vision panels. Speech section contains a sound-isolated, acoustically dead room in which is delicate electrical testing apparatus. In sight-saving room lighting is automatically controlled to maintain a constant level.

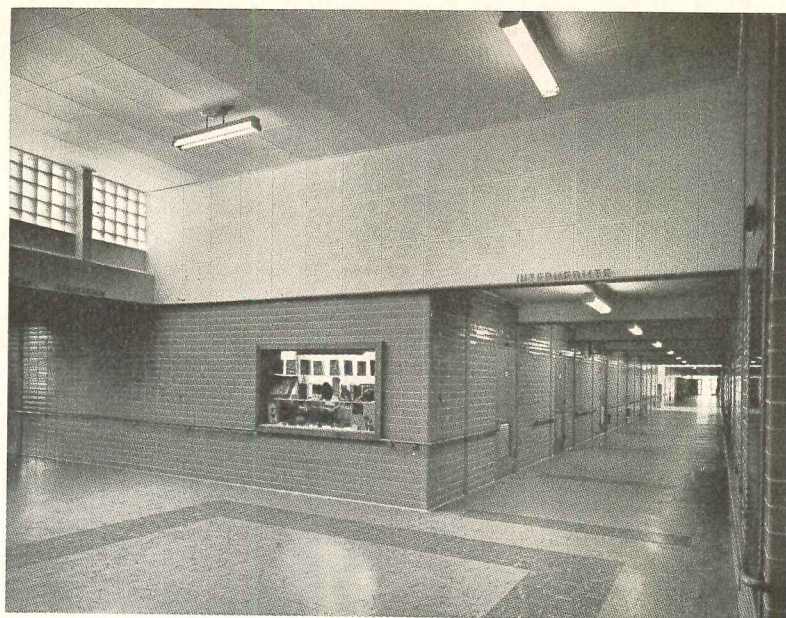




*It should not be forgotten that Casis is preponderantly a school for normal children. Planned for 600 students, it now has 672; 20 of these are full-time pupils in the special wing, 31 part-time in the special wing. Above: typical "regular" classroom*



Hedrich-Blessing Studio



Mears Studio



### CASIS SCHOOL

*At intervals in corridors, benches are provided (upper left) for handicapped students to rest on; corridors have handrails, non-skid asphalt tile floors (upper right). At left, library charging desk; below, library. Construction is steel frame; reinforced concrete could have been used although little difficulty was experienced in obtaining steel. Roofs are concrete poured on steel decking, with insulating fill*

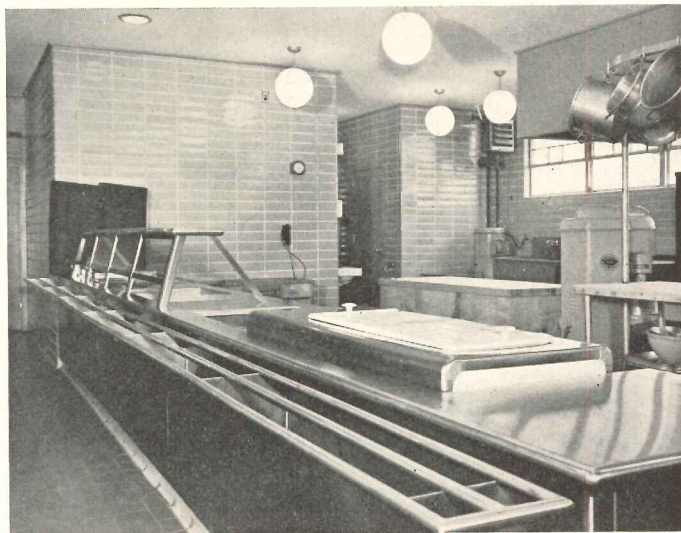




Total cost excluding site and landscaping was \$721,756.50; total sq ft, 61,175; cost per sq ft, \$11.76. Portion built by Austin Board of Education, 46,775 sq ft, cost \$11.61 per sq ft; special wing built by University of Texas, 14,400 sq ft, cost \$11.92 per sq ft. Such factors as joint use of low-pressure steam heating system, use of the special wing's speech correction facilities, etc., for normal students, and joint administrative area, must also be considered in assessing costs

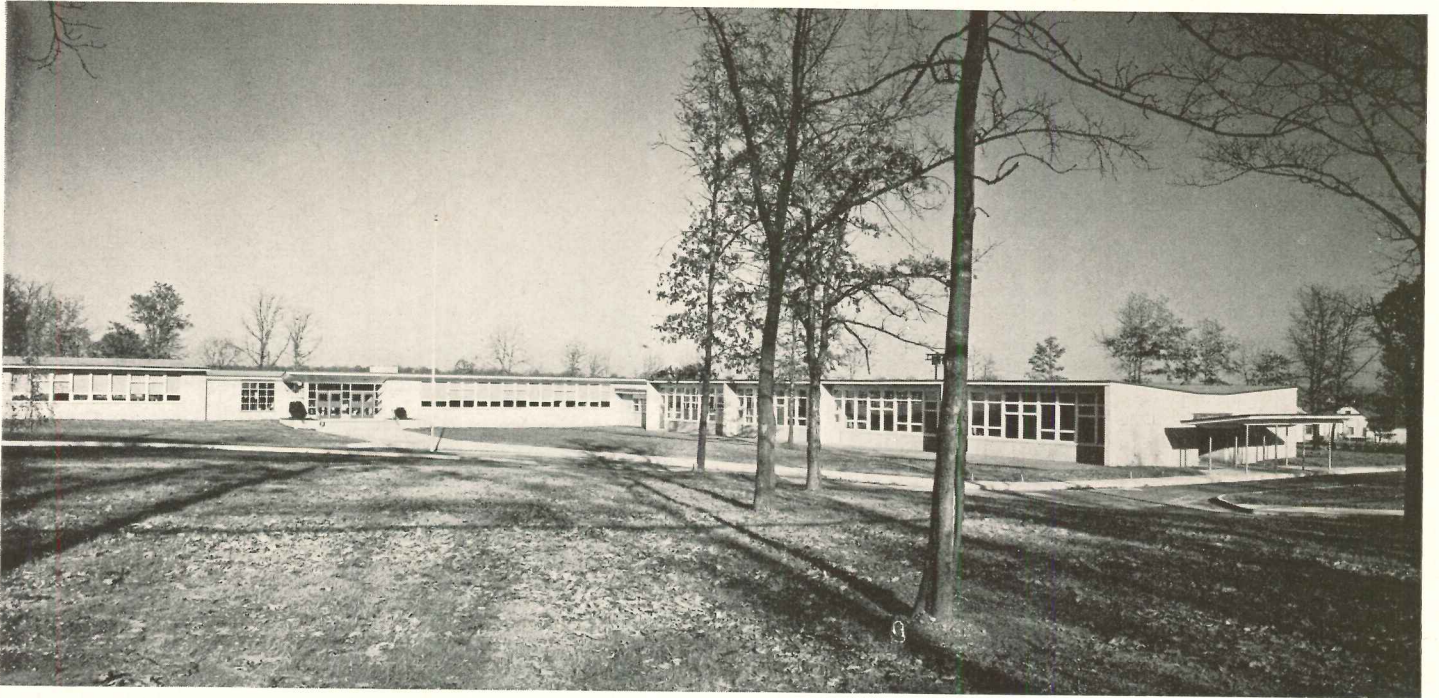
Design of Casis School took 15 months. Texas has provided special funds for educating exceptional children for about six years, but school systems are still proceeding tentatively in planning the buildings needed because not much is yet known positively concerning design requirements; also, specially trained teachers are few in number. In many respects, then, Casis is experimental

Mears Studio



Hedrich-Blessing





Ben Schnall

*Planned for kindergarten through eighth grade, Memorial School was designed under New Jersey's old State Schoolhouse Code which did not permit bilateral lighting. In these circumstances its double-loaded corridor is logical. The dihedral or butterfly roof results in sloping classroom ceilings which help to reflect natural light to inside areas of rooms. General views show, on this page, west wing (offices, cafeteria, library); on facing page, east wall of classroom wing. At right, exterior and interior of lobby at entrance from principal parking area*







## MEMORIAL ELEMENTARY SCHOOL

*Arthur Rigolo, Architect*

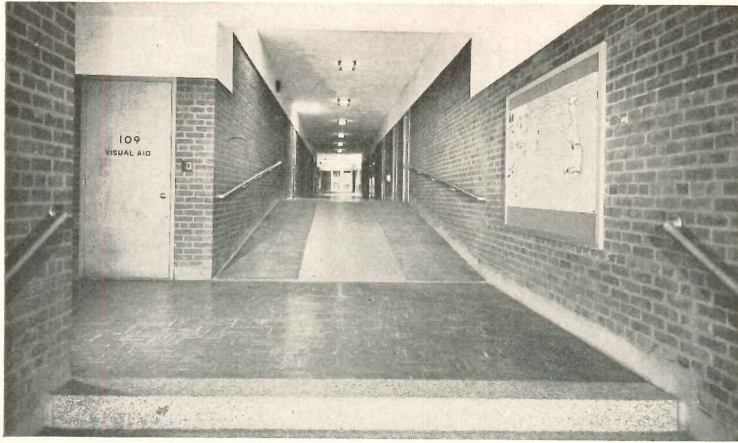
*Paramus, New Jersey*



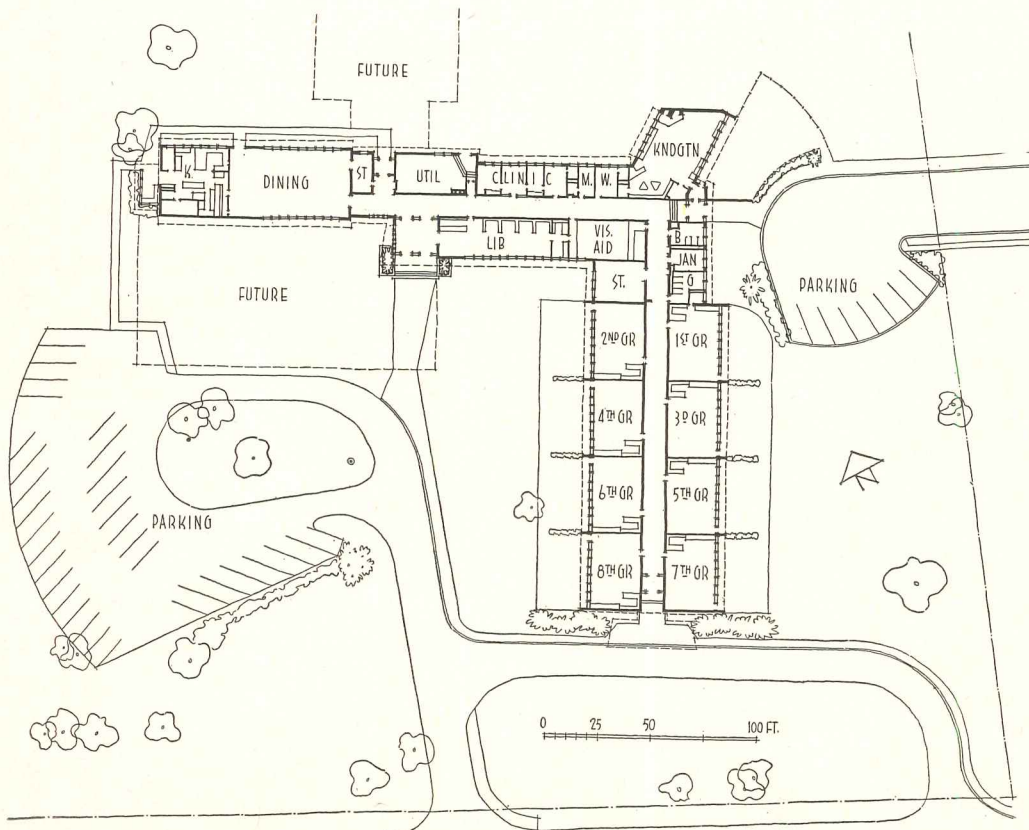
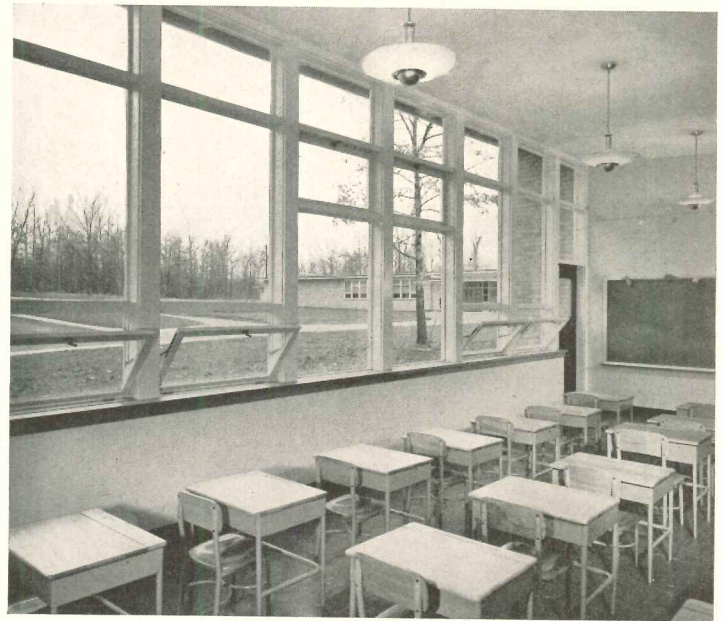
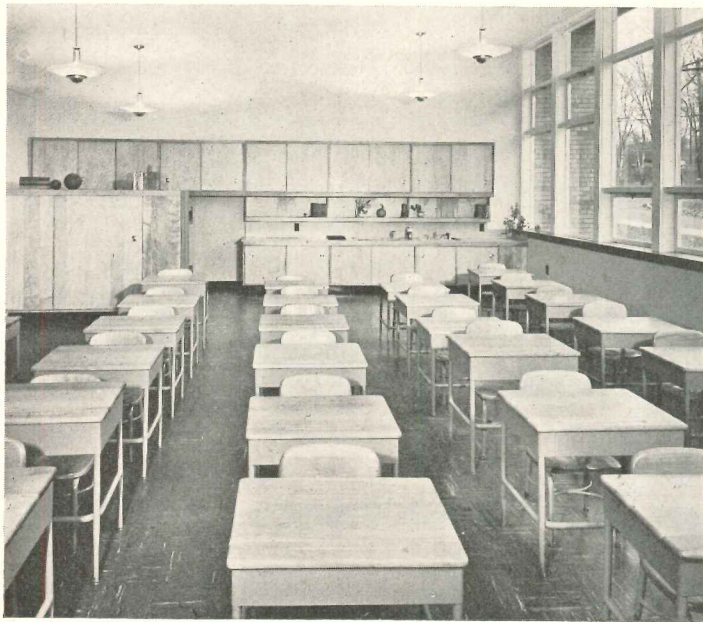
NOTABLE AS AN EXAMPLE of design quality achieved under an out-dated code, Memorial School was oriented to minimize disturbance from the sun, to follow site contours and to utilize an existing dead-end street as a separate entrance for the kindergarten. There are four different levels in the building, requiring a set of steps and two ramps in corridors.

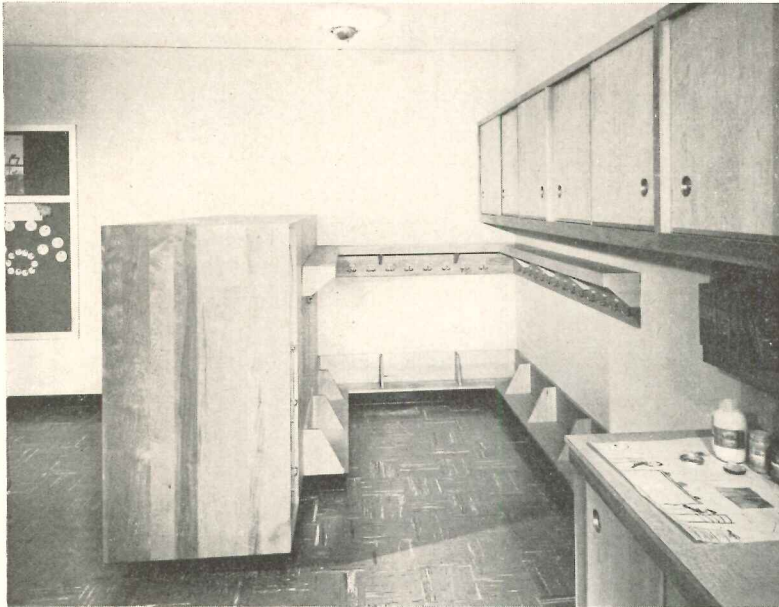
Another interesting feature is the method of heating and ventilating. Administration areas have floor and ceiling heating panels. Classroom and other areas have both floor heating panels and a warm air supply system. Floor panels, somewhat sluggish in response to demand, are designed to bring indoor temperature up to 50 F at an outdoor temperature of 0 F. The quickly responsive warm air system, taking up the balance of the load, heats classrooms to 70 F. To accomplish this there are two parallel ducts along window walls of classroom wing. Warm fresh air enters rooms from the outer (supply) duct via continuous slots in window sills. Slots have adjustable dampers. Return air enters inner (return) duct through grilles in toe-spaces of cabinets. Supply and return fans are centrally located.

Completed in September 1951, the school cost \$401,117.20, excluding furniture and fees but including site work, sewage disposal plant, and mechanical and electrical systems laid out to serve the present building and anticipated additions.



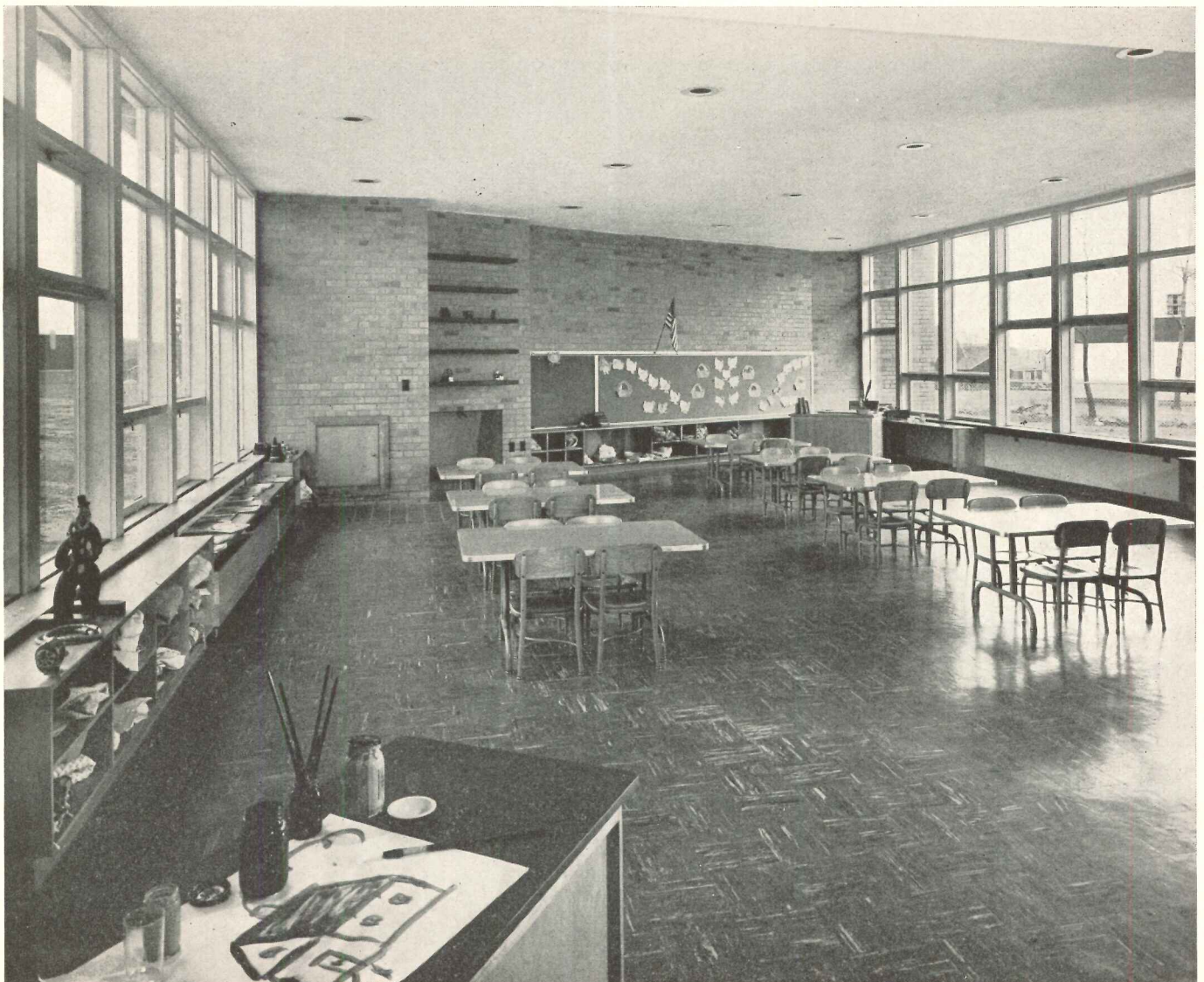
MEMORIAL ELEMENTARY SCHOOL





Ben Schnell

*In plan, note library next to lobby, convenient for public use; also, library work room which serves visual aids room as well. One corridor ramp is placed so entrances at both ends of sloping floor of visual aids room are entered on a level. At intervals in corridor ceilings, plastic bubble skylights are placed off center over drinking fountains, bulletin boards, etc. In photos of typical classrooms (facing page and left) is shown work center-coat storage area. Kindergarten (photo below) is placed at angle to catch more sun; in its window sills the warm air supply slots are visible*



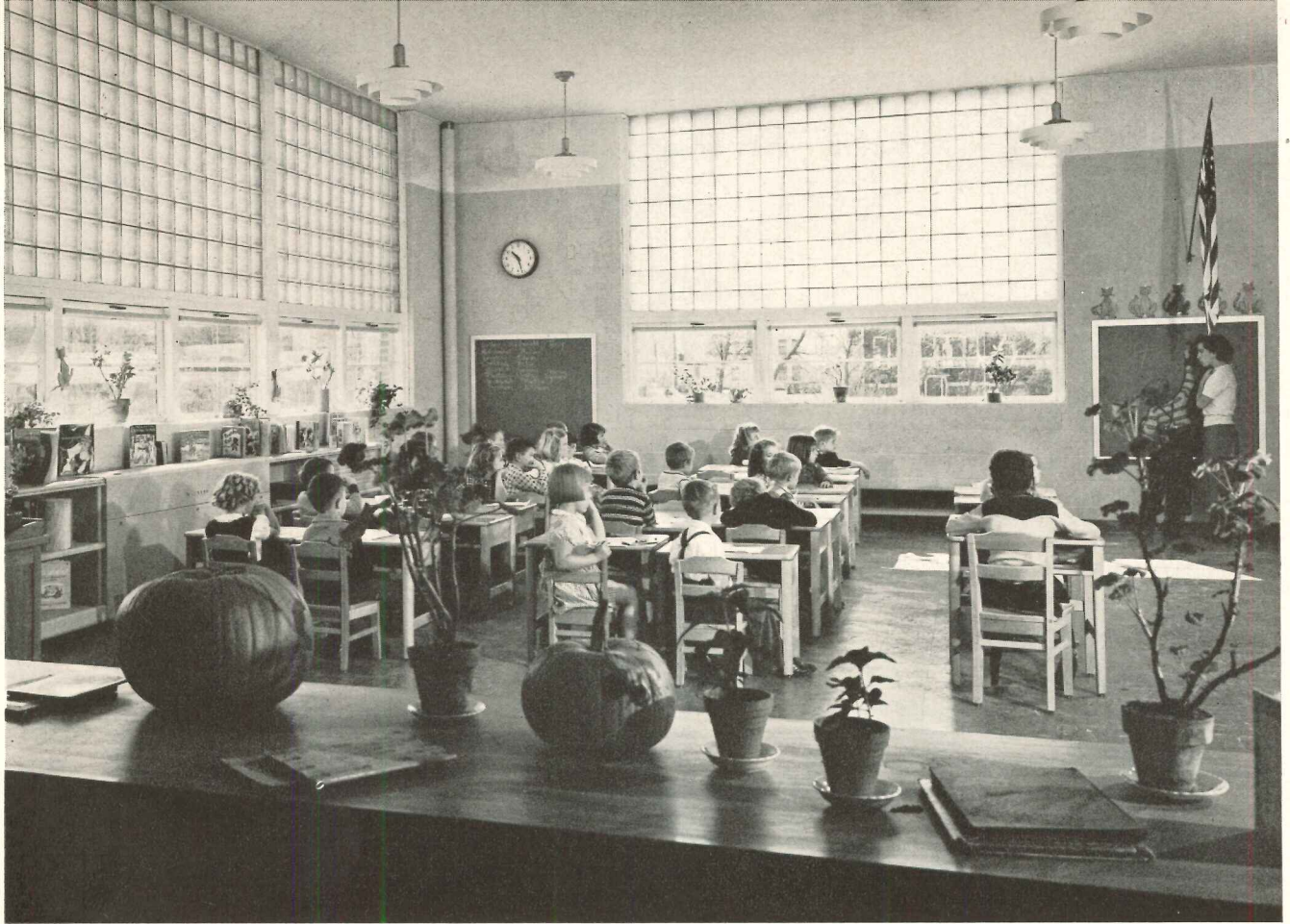
MEMORIAL ELEMENTARY SCHOOL

Kindergarten clothing area (right) and sink counter (below) demonstrate quality of interior finish. Walls are cinder block with plaster and face brick, with interiors generally off-white except that the front wall in each room is painted a distinctive color. Woodwork is birch. The anticipated addition to the school is currently in working drawing stage



Ben Schnall

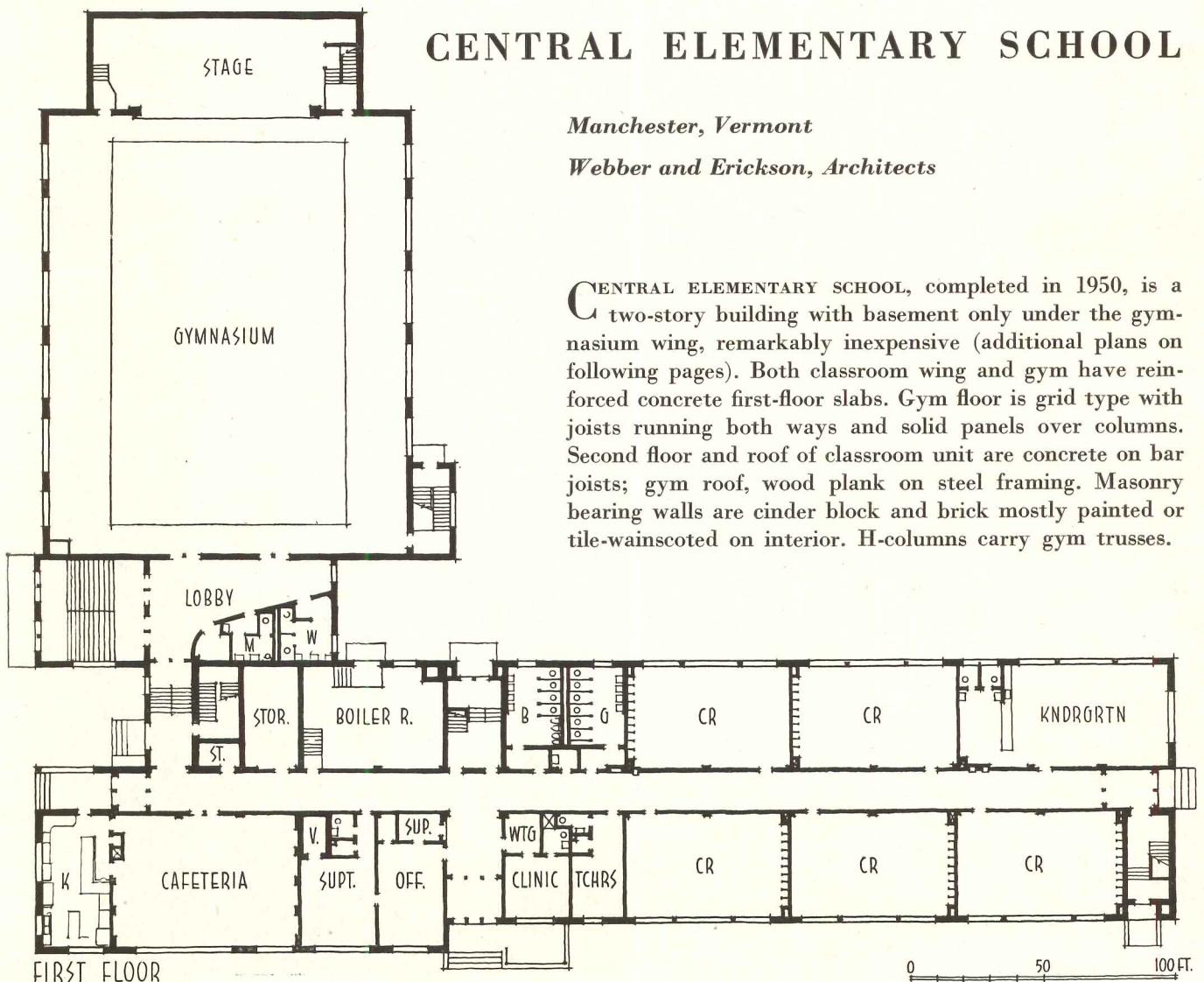




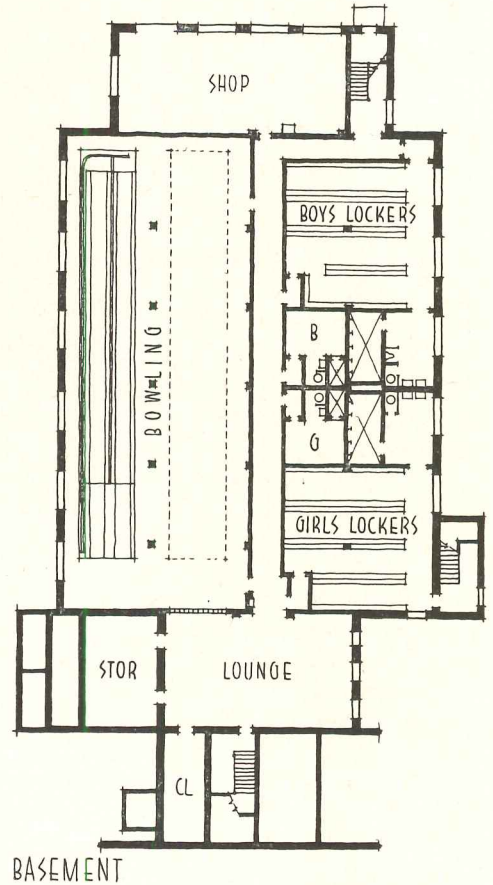
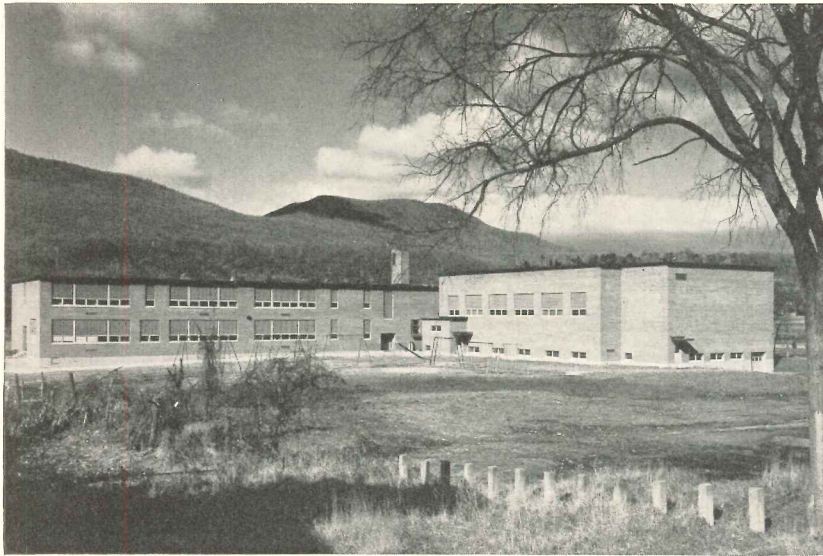
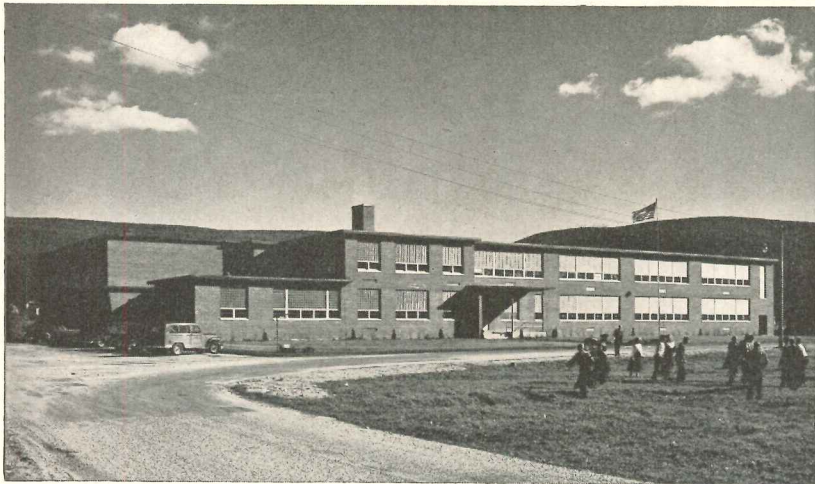
## CENTRAL ELEMENTARY SCHOOL

*Manchester, Vermont*

*Webber and Erickson, Architects*



CENTRAL ELEMENTARY SCHOOL, completed in 1950, is a two-story building with basement only under the gymnasium wing, remarkably inexpensive (additional plans on following pages). Both classroom wing and gym have reinforced concrete first-floor slabs. Gym floor is grid type with joists running both ways and solid panels over columns. Second floor and roof of classroom unit are concrete on bar joists; gym roof, wood plank on steel framing. Masonry bearing walls are cinder block and brick mostly painted or tile-wainscoted on interior. H-columns carry gym trusses.



**COST DATA**

<i>Classroom Wing</i>	<i>Gymnasium</i>
First floor . . . . . 13,638 sq ft	Lower floor . . . . . 10,672 sq ft
Second floor . . . . . 11,909 sq ft	Main floor . . . . . 10,672 sq ft
<b>Totals . . . . . 25,547 sq ft</b>	<b>21,344 sq ft</b>

Cost: \$303,242, or \$11.87 per sq ft      Cost: \$154,865, or \$7.26 per sq ft

*Cost for both buildings: Total sq ft, 46,891; total cost, \$458,107, or \$9.78 per sq ft. Maximum number of students permitted by state law is 507, making cost (both buildings) approx. \$904 per pupil. Desirable maximum capacity, at 25 sq ft per pupil, is 402.*

**STEEL TONNAGE REQUIRED**

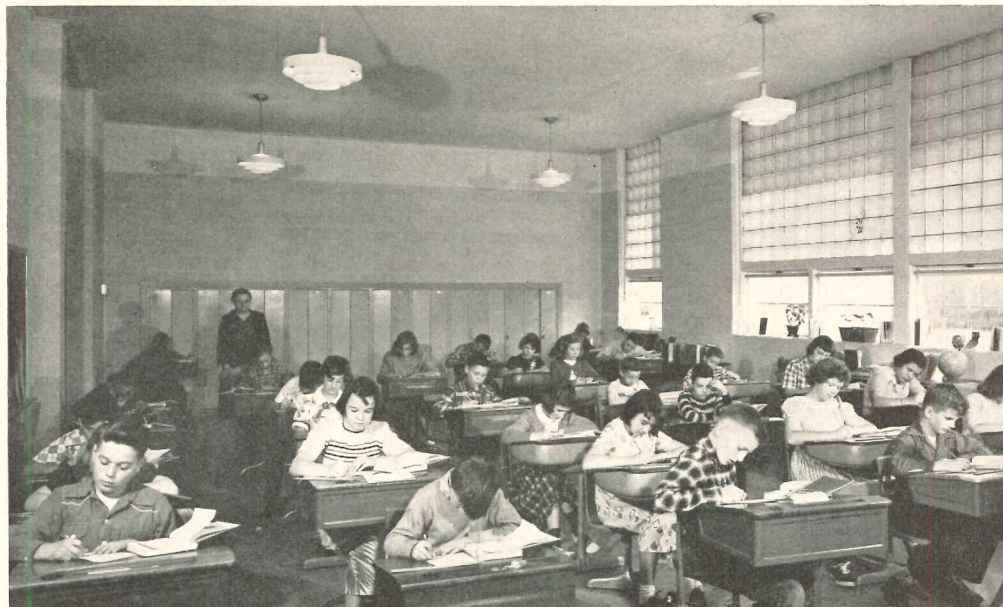
	<i>School</i>	<i>Gymnasium</i>	<i>Total</i>
Structural <sup>1</sup>	62	34	96
Bar Joists	53	4	57
Reinforcing	24	31	55
Miscellaneous <sup>2</sup>	—	—	approx. 3.5
<b>Totals</b>	<b>139</b>	<b>69</b>	<b>211.5</b>

*1, includes lally columns. 2, steel stairs, misc. iron*

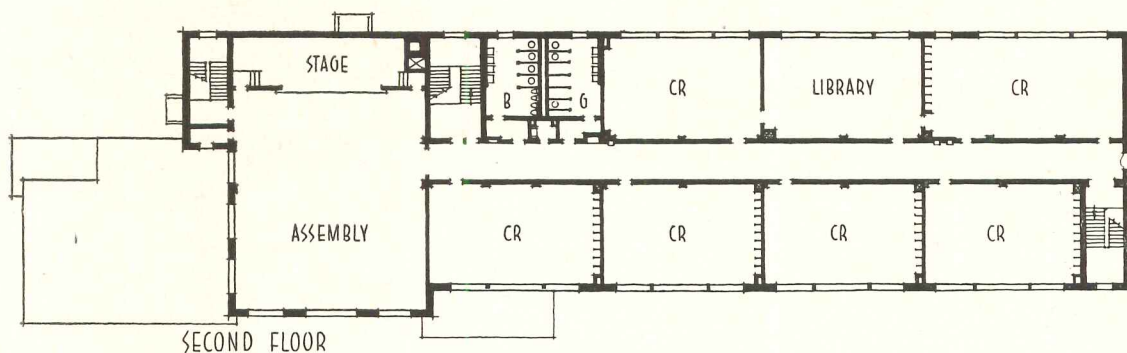
**CENTRAL  
ELEMENTARY  
SCHOOL**



Classroom wing roof slab is covered with fill insulation. Windows are directional glass block with steel sash; exterior sills are marble, available locally. Ceilings are acoustic plaster, chalk boards green on cement asbestos board with aluminum trim and chalk trays. Boilers are oil-fired. Ventilation is forced, through classroom lockers



Joseph Molitor





URBAN

Ernest Broun





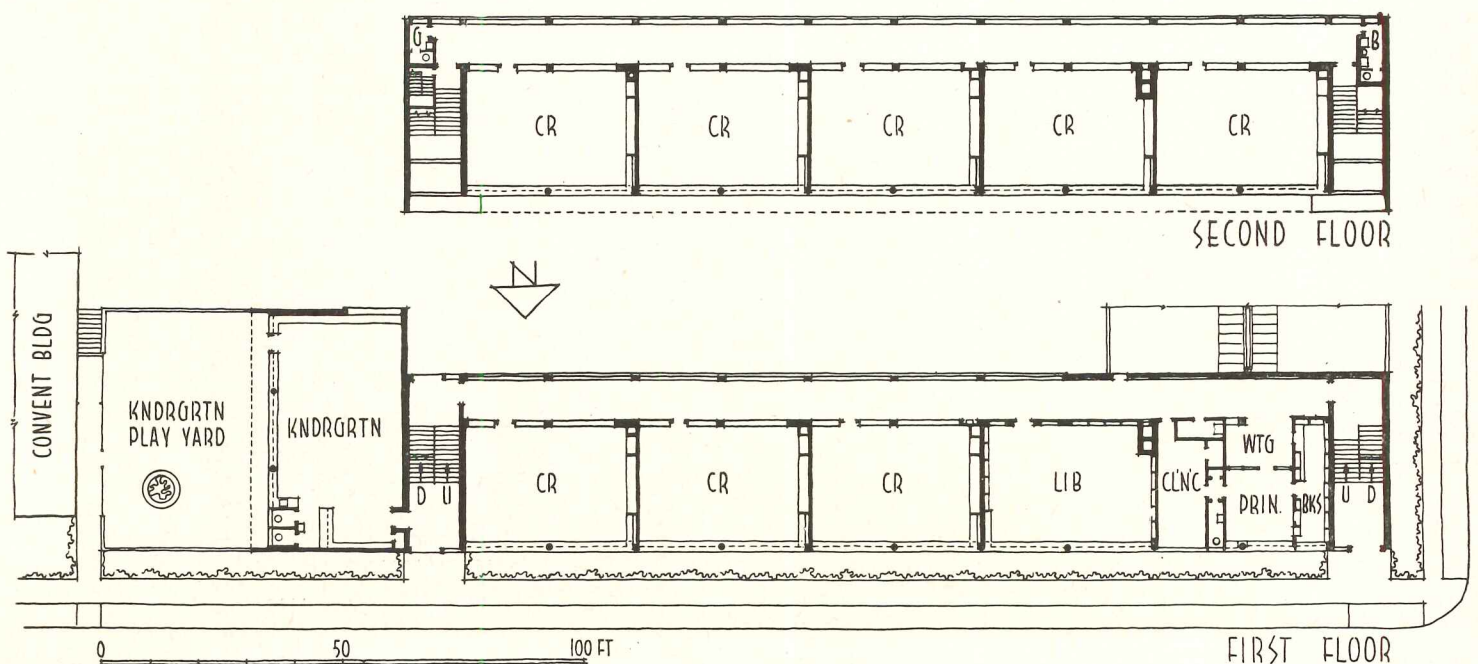
*All Souls' School, South San Francisco, Calif.*

## SITE REQUIRES TWO-STORY SCHOOL

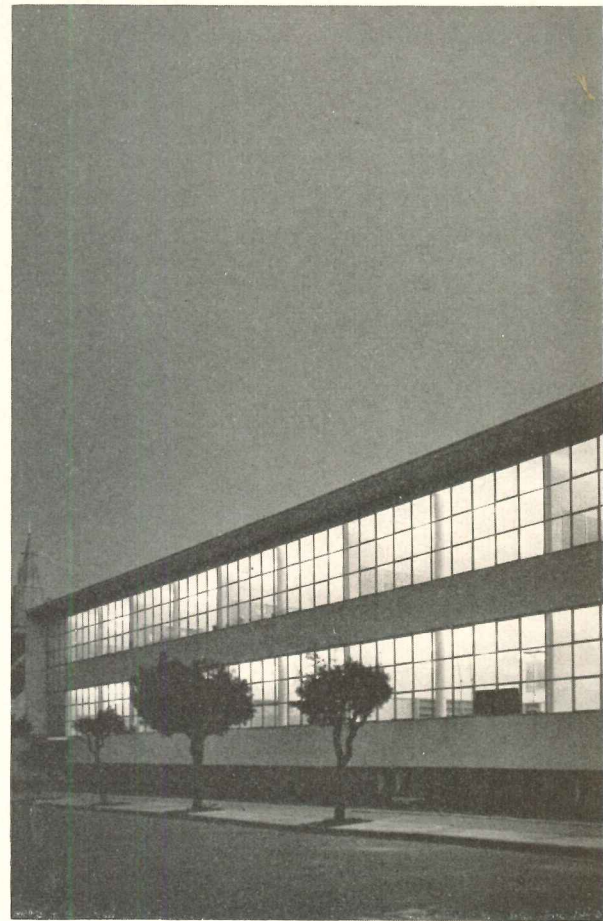
*Mario J. Ciampi, Architect*

THE SITE OF THIS PAROCHIAL SCHOOL is quite limited. Immediately to the east is the church; the land slopes sharply from north to south; the plot is in the center of a densely populated residential area serving industries on the outskirts of the city. Prevailing winds are from the northwest. The classroom wing was placed along Miller Avenue so the rooms would face north and at the same time bar wind from the play yard. A gymnasium wing

designed for future construction on the Spruce Avenue side will also help shield the play yard. To accomplish all these purposes and to provide the necessary eight classrooms, kindergarten and library, a two-story building was required; this in turn meant incombustible construction — reinforced concrete with concrete floor joists and roof slab. Construction was completed in November 1949.



ALL SOULS' SCHOOL



The pre-existing church and rectory adjoining this parochial school are of Gothic design. However, it was recognized that the school should be contemporary both to insure satisfactory, up-to-date educational facilities and to obtain an efficient, economical school plant. For uniformity's sake the architectural concrete of the school walls is painted a warm gray. Against this background color is employed quite liberally because the project is located in an area which has considerable fog during the year. The steel sash are painted bright yellow, and the interior stucco and paint colors are also bright. The two street entrances are aluminum and glass.

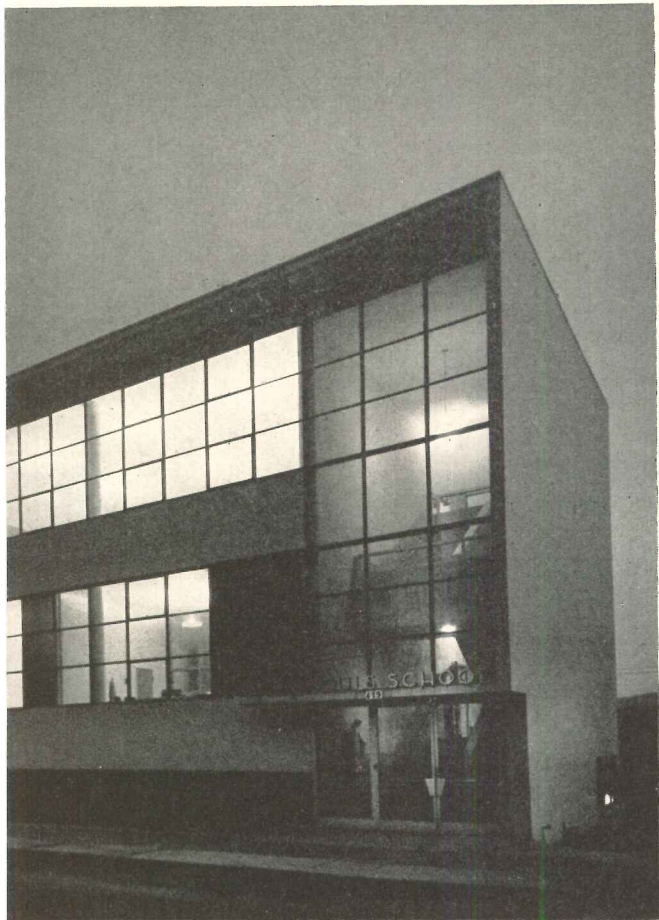
The two upper floors, shown in plan on the preceding page, contain eight classrooms, library and administrative office. The lowest floor (plan not shown) is fully exposed on the south or playground side because

the land slopes sharply. On this level are cafeteria, boiler room and toilets, directly accessible from the playground. The limited site means a small area for the playground. This and the varied ages of the children has entailed split recesses. Corridors on playground side help insulate classrooms from noise of children playing on the relatively small grounds.

CONSTRUCTION COSTS

General construction . . . . .	\$249,959
Plumbing . . . . .	15,691
Heating and ventilating . . . . .	17,951
Electrical . . . . .	9,539
Kitchen equipment . . . . .	4,662
<b>Total cost of project . . . . .</b>	<b>\$297,802</b>
<b>Total area: 23,739 sq ft; cost per sq ft . . . . .</b>	<b>\$12.60</b>

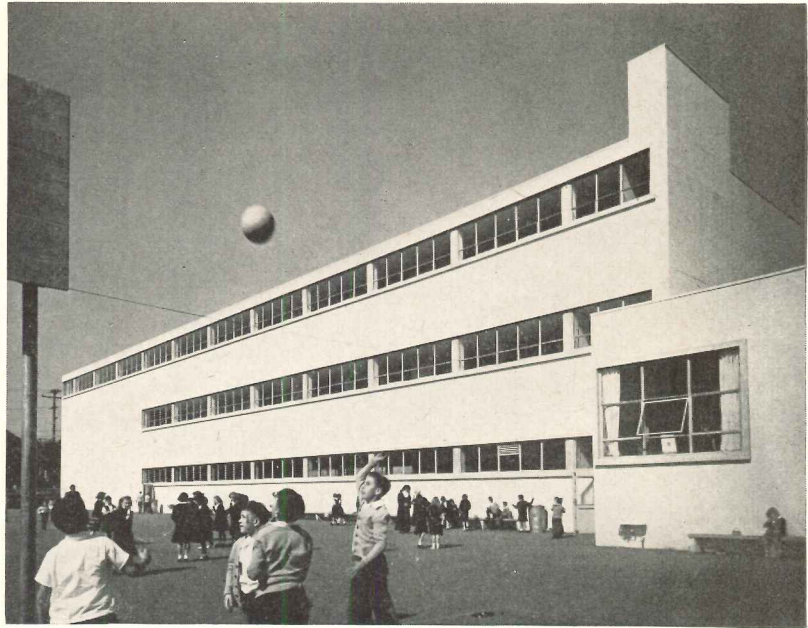
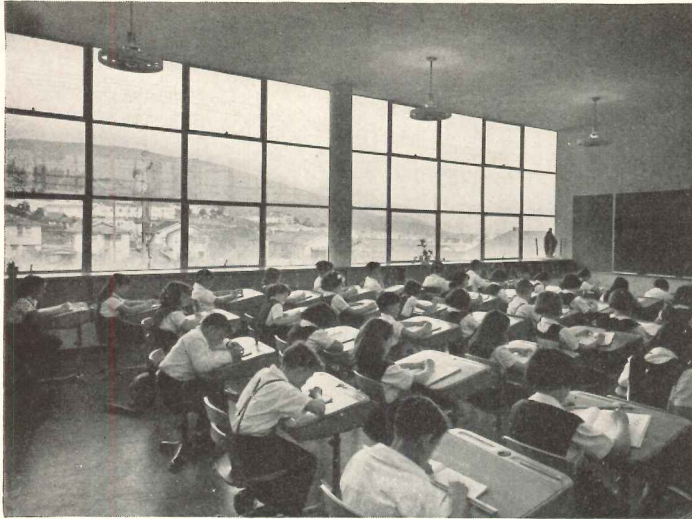
Ernest Braun



*Single-loaded corridor scheme was adopted for several reasons: to orient all classrooms uniformly to the north; to permit corridors to become protective sunshades on the south; to provide a buffer between noisy playground area and classrooms. Continuous borrowed lights in corridor wall assure bilaterally lit classrooms*

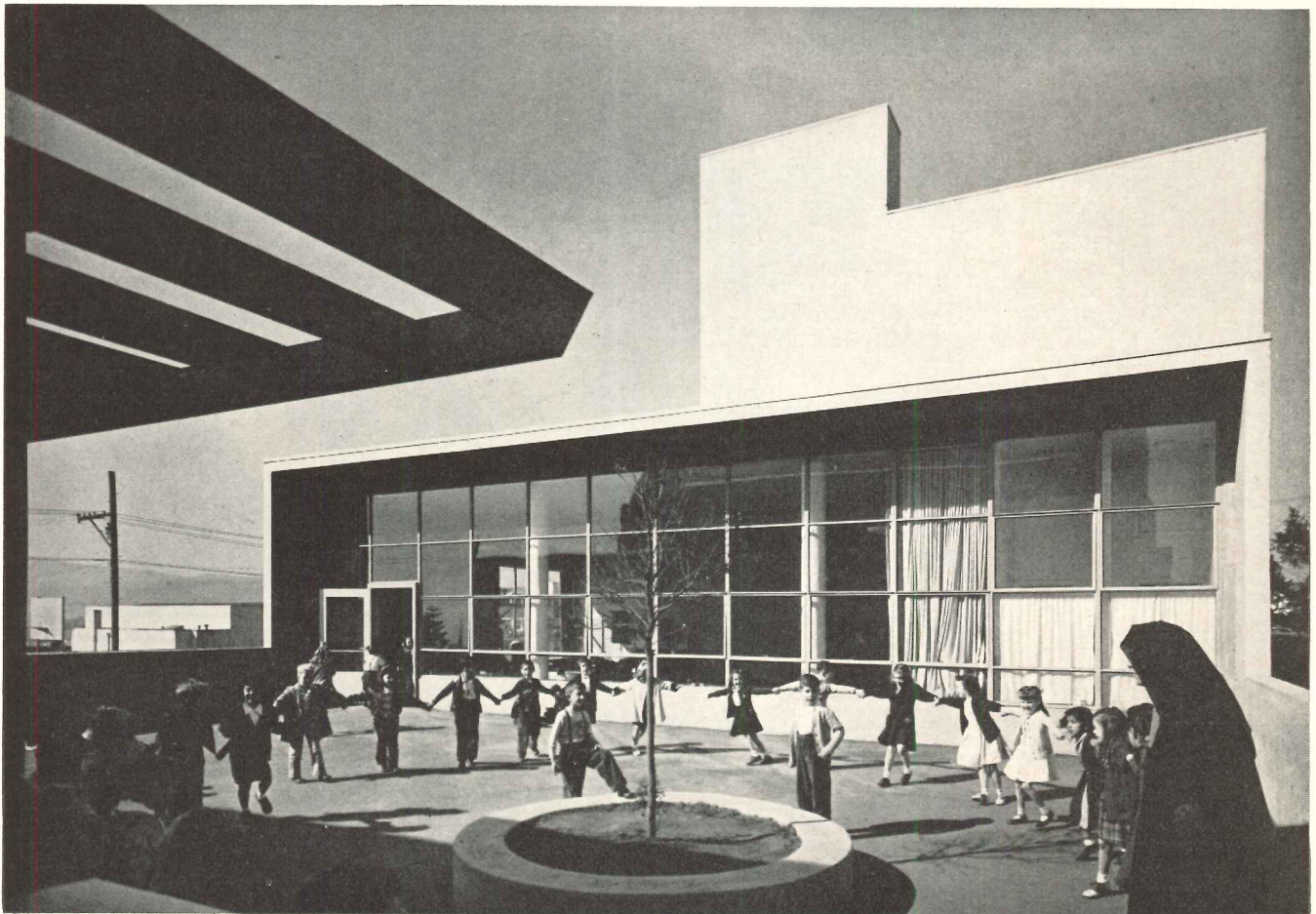


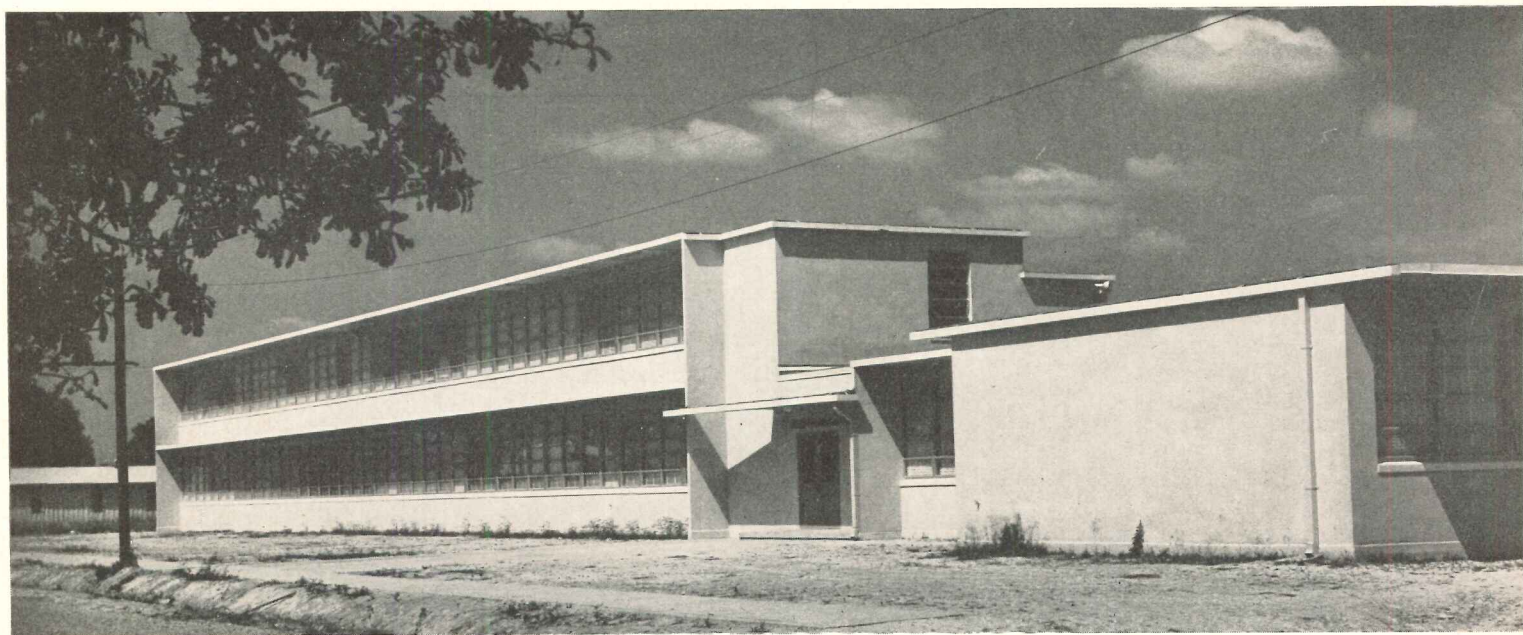
Ernest Braun



*Above: typical classroom; right, playground. Below, kindergarten, all on one level. Only in this room are drapes needed for natural light control; interior space, flexibility, etc., were thought more important than perfect orientation*

#### ALL SOULS' SCHOOL





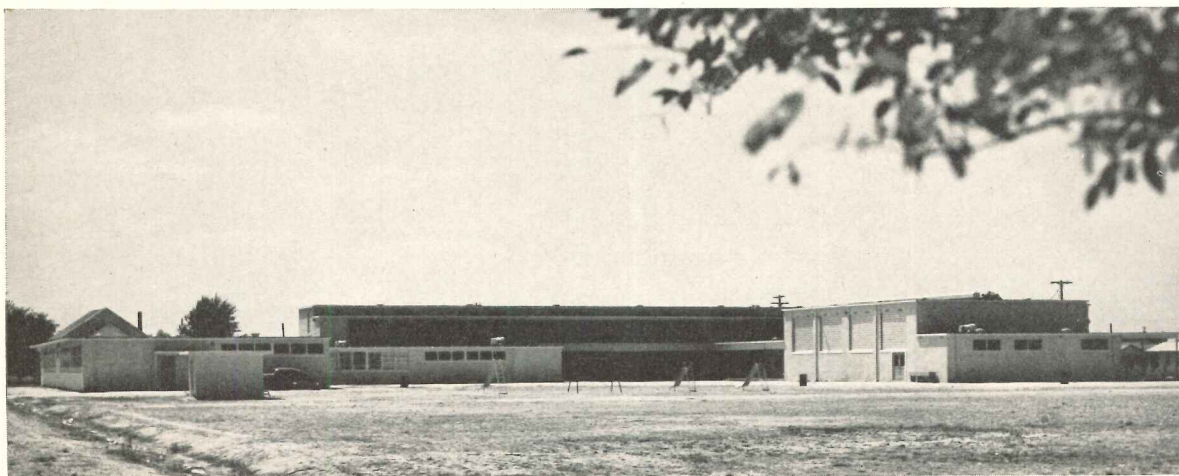
## NORTH SCOTLANDVILLE ELEMENTARY SCHOOL

*Scotlandville, Louisiana*

*Bodman & Murrell, Architects*

ANOTHER TWO-STORY SCHEME determined by a limited site, this school is a complete six-grade elementary plant for 500 pupils in a heavily populated suburban area. The level site faces a heavily traveled street and has secondary streets on two sides. Building was placed at front of site with play areas at rear. This is the first school in this part of Louisiana to have open corridors

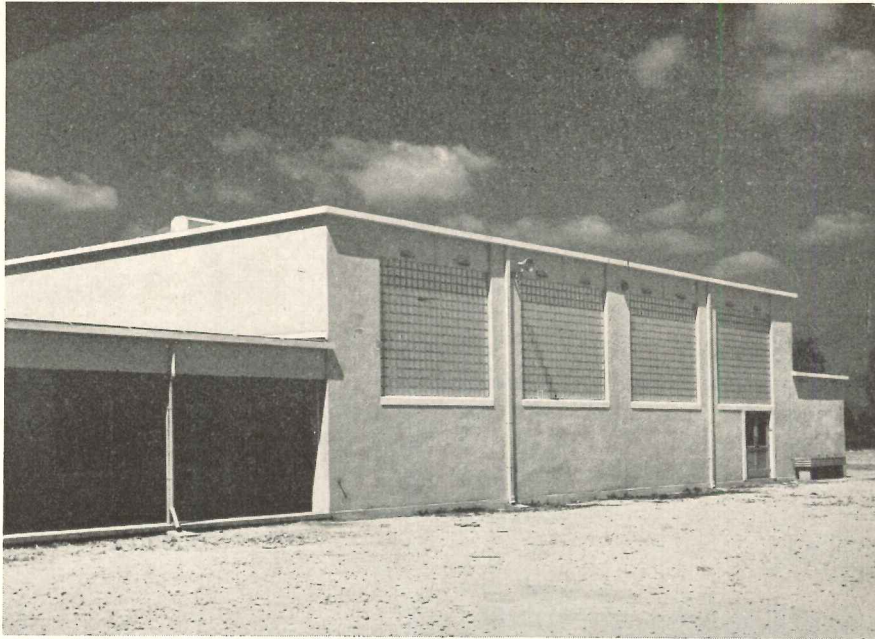
(on two stories), though others have since been planned. Construction is steel frame with concrete slabs on bar joists, lightweight concrete block walls stuccoed on exterior and exposed indoors, lightweight insulated roof-slab, steel projected windows, asphalt tile floors. Built in 1949, it cost (excluding land) \$280,500.00, or \$9.02 per sq ft.



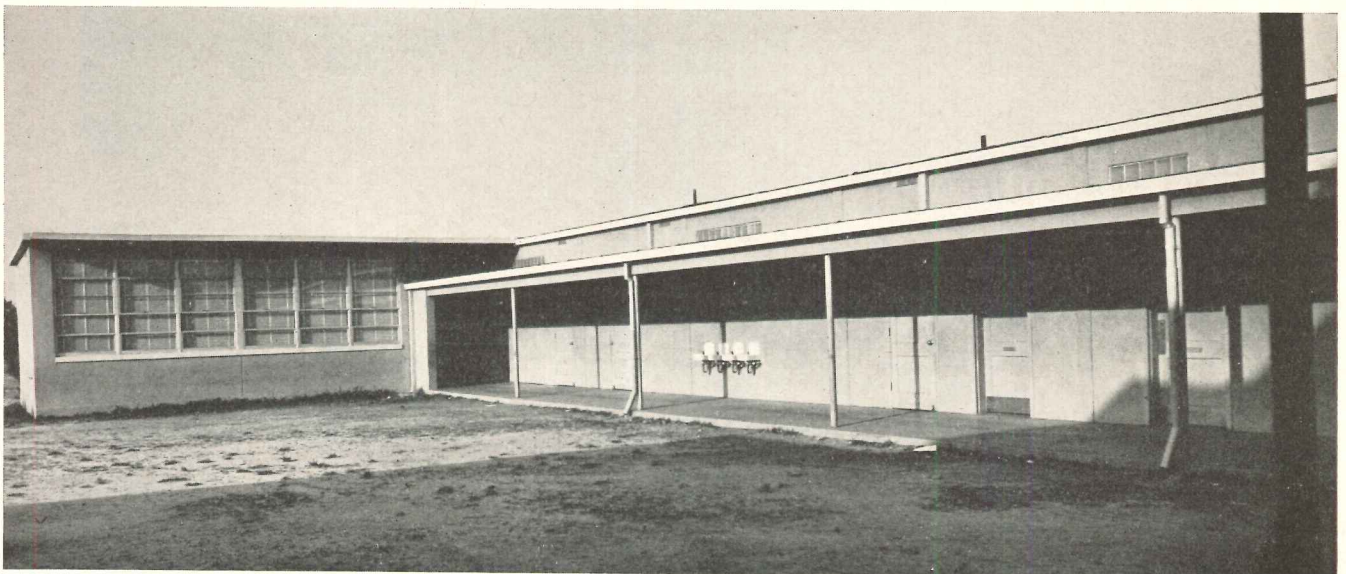
W. F. Farrell

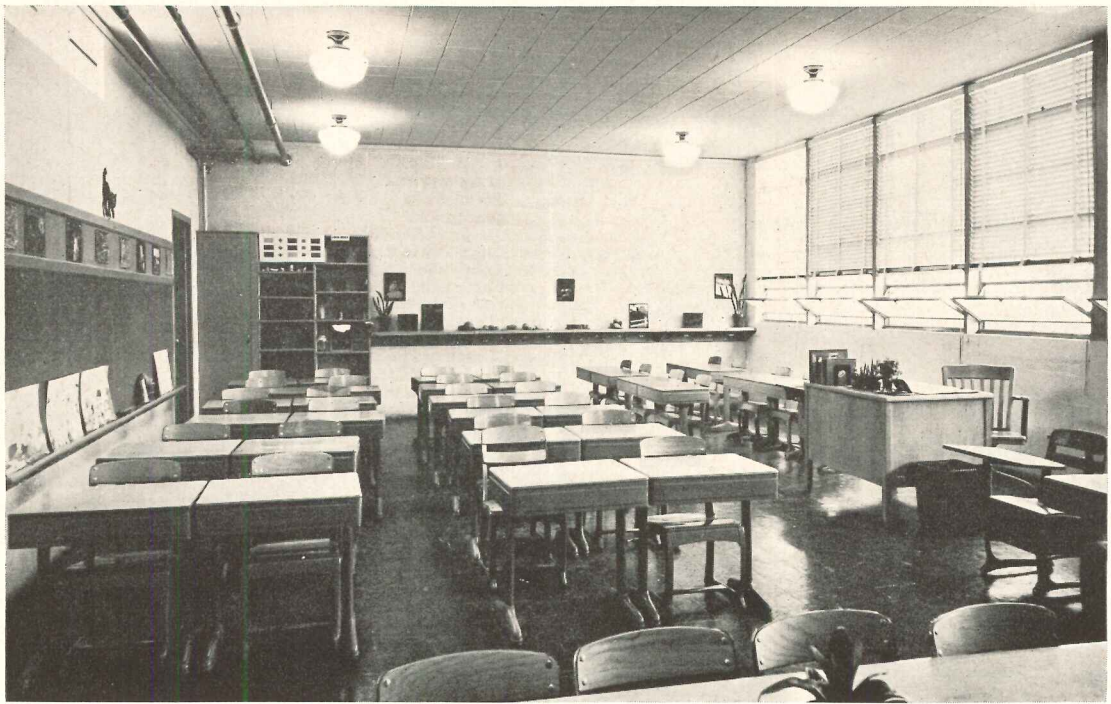
**NORTH  
SCOTLANDVILLE  
SCHOOL**

W. F. Farrell

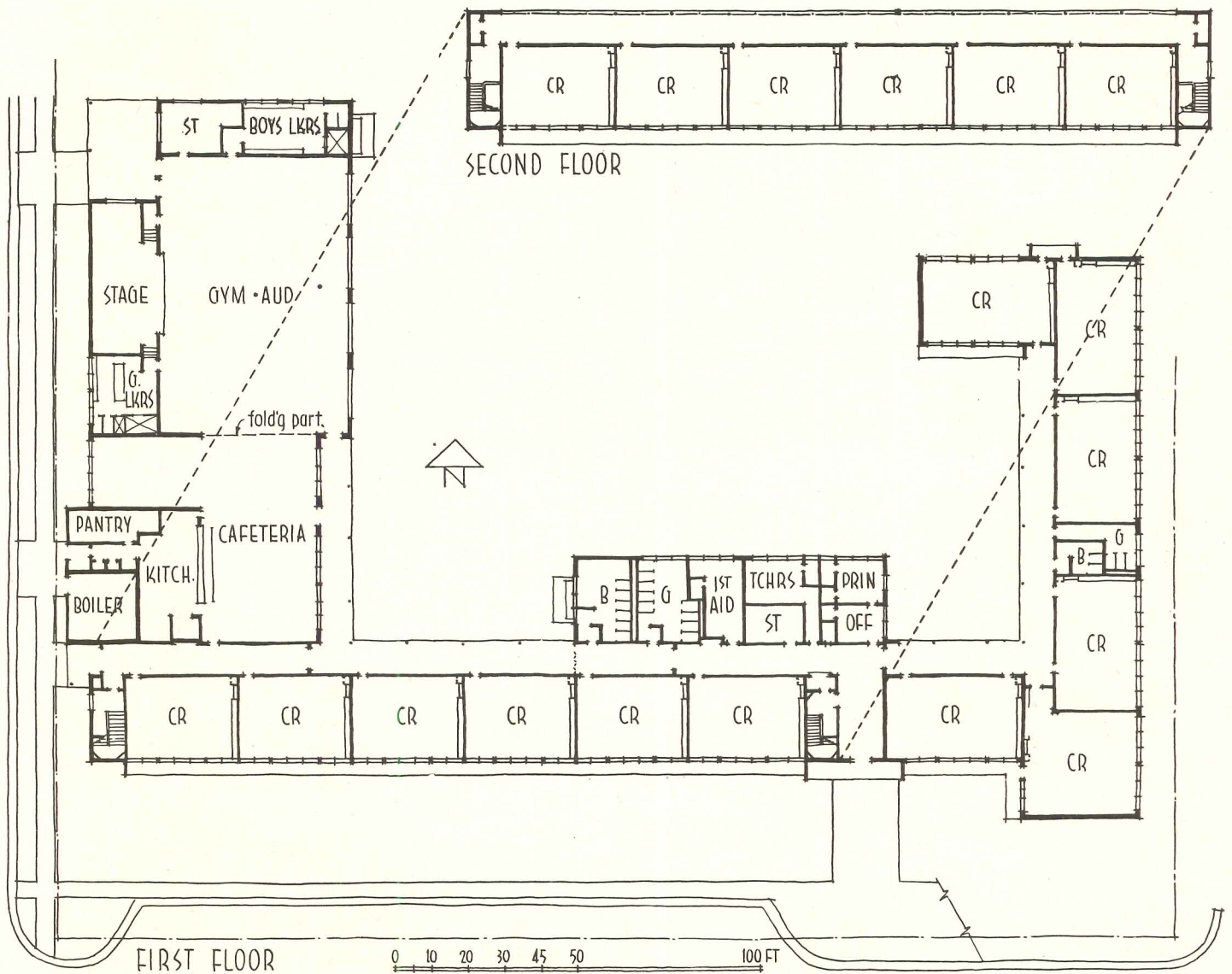


*Gym-auditorium (left, below) is separated from cafeteria by folding partition to increase area for occasional uses. This space, mechanically ventilated, has no windows but does get natural light through glass block panels. Bottom photo shows 1st and 2nd grade east wing where classrooms are large, have individual toilets*





Typical classroom, above, has clerestories on corridor side for bi-lateral light and ventilation. Note acoustic ceiling, flush wood doors, incandescent lighting. Millwork is natural cypress



# 12 GRADES AND COMMUNITY CENTER

*Muenster School, Muenster, Texas*

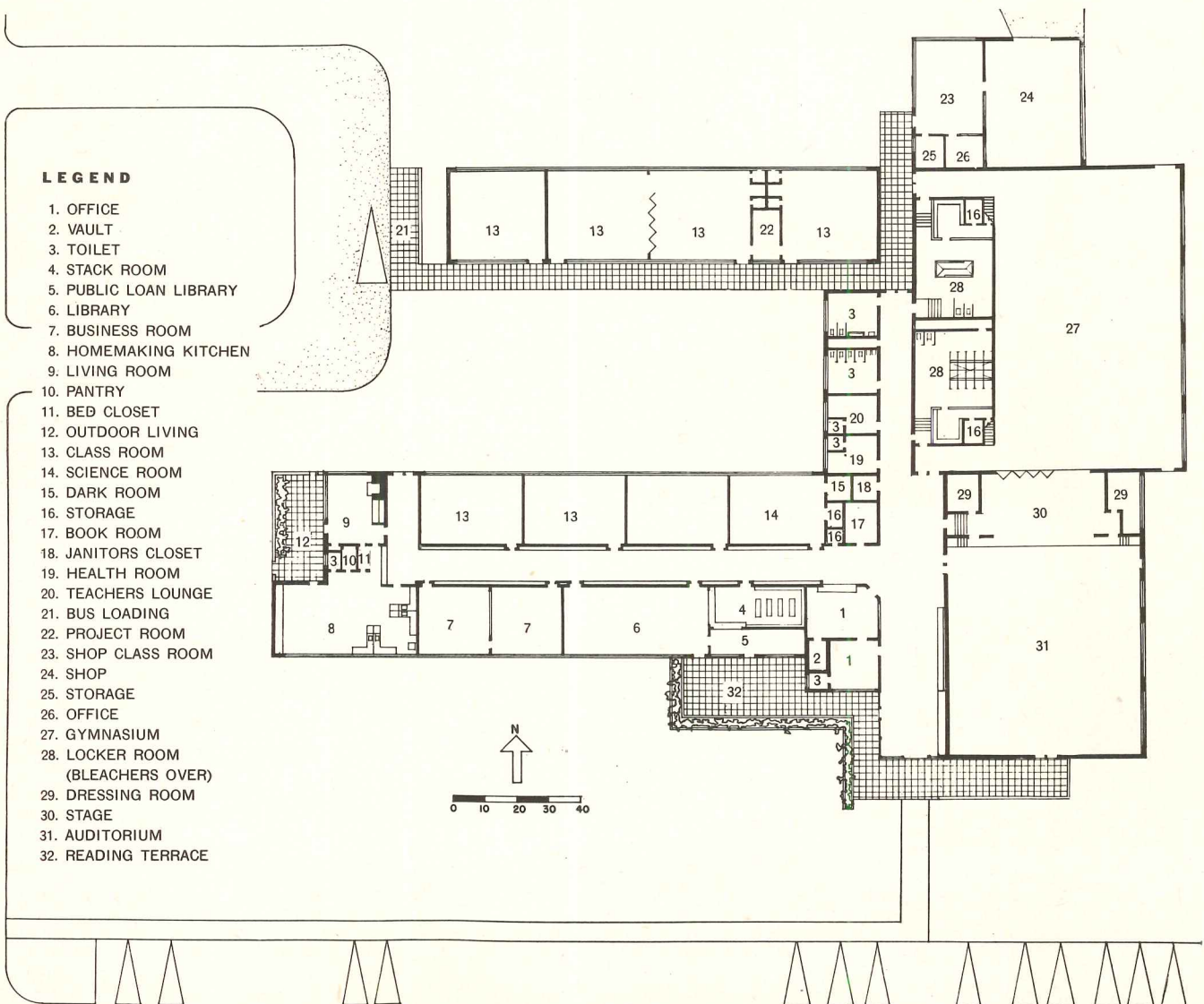
*Stanley Brown, Architect*

**M**UENSTER SCHOOL is both an elementary and a high school. Most of the community's children attend a local parochial school, so only four elementary classrooms were needed. The parochial school also furnishes lunch room service for the public school. The school library serves also as Muenster's public library. The gymnasium, the only one in town, is in constant use.

The open-corridor elementary wing has louvered clerestories above the low corridor and clear glazed windows shielded by the corridor roof. North windows are protected against sky glare by a wide overhang. Private toilets are provided for the two lowest grades. To improve circulation and reduce cost, the high school wing has a double-loaded corridor; secondary students change classes often. All rooms, laboratories, etc., have full complements of up-to date equipment. Notable is

the porch of the home-making suite where outdoor living, so prevalent in Texas, is experienced.

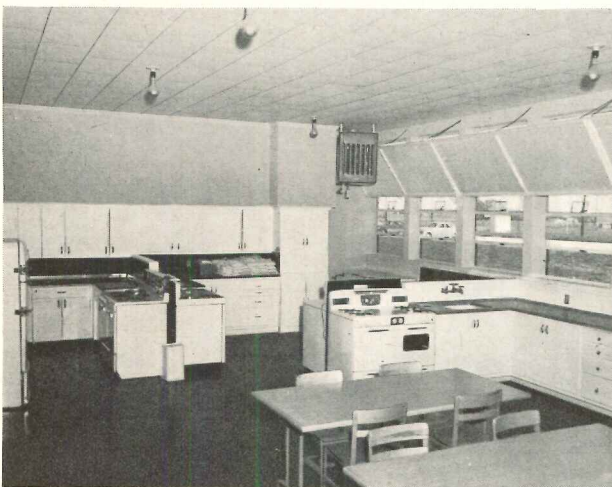
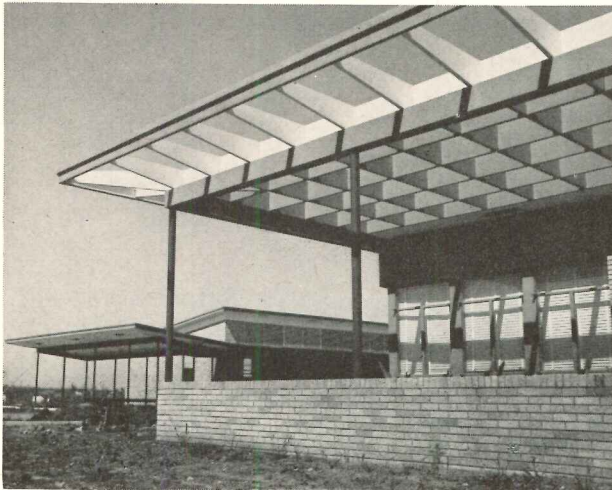
Total cost, on a fixed-fee contract and including land, equipment, site work, and architect's fee, was \$300,000.00; square footage totaled 36,198, or \$7.25 per sq ft including all fees. Construction is brick veneer, semi-fireproof, with plastered interior walls, fiberboard ceilings, concrete floors covered with asphalt tile, suspended unit heaters, natural ventilation, incandescent lighting, and complete sound and program systems. The school was built in 1950; the architect says that under today's limitations steel used to frame corridor roofs would be replaced with laminated wood members; there is little other structural steel and a minimum of copper or aluminum. The change, he says, would not materially affect construction cost or insurance rates.





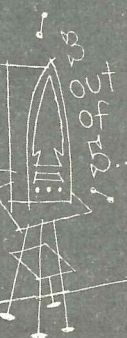
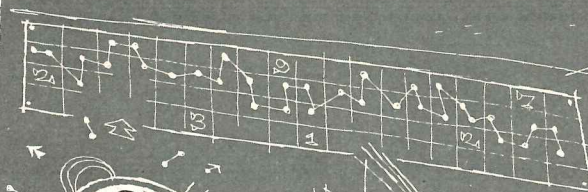
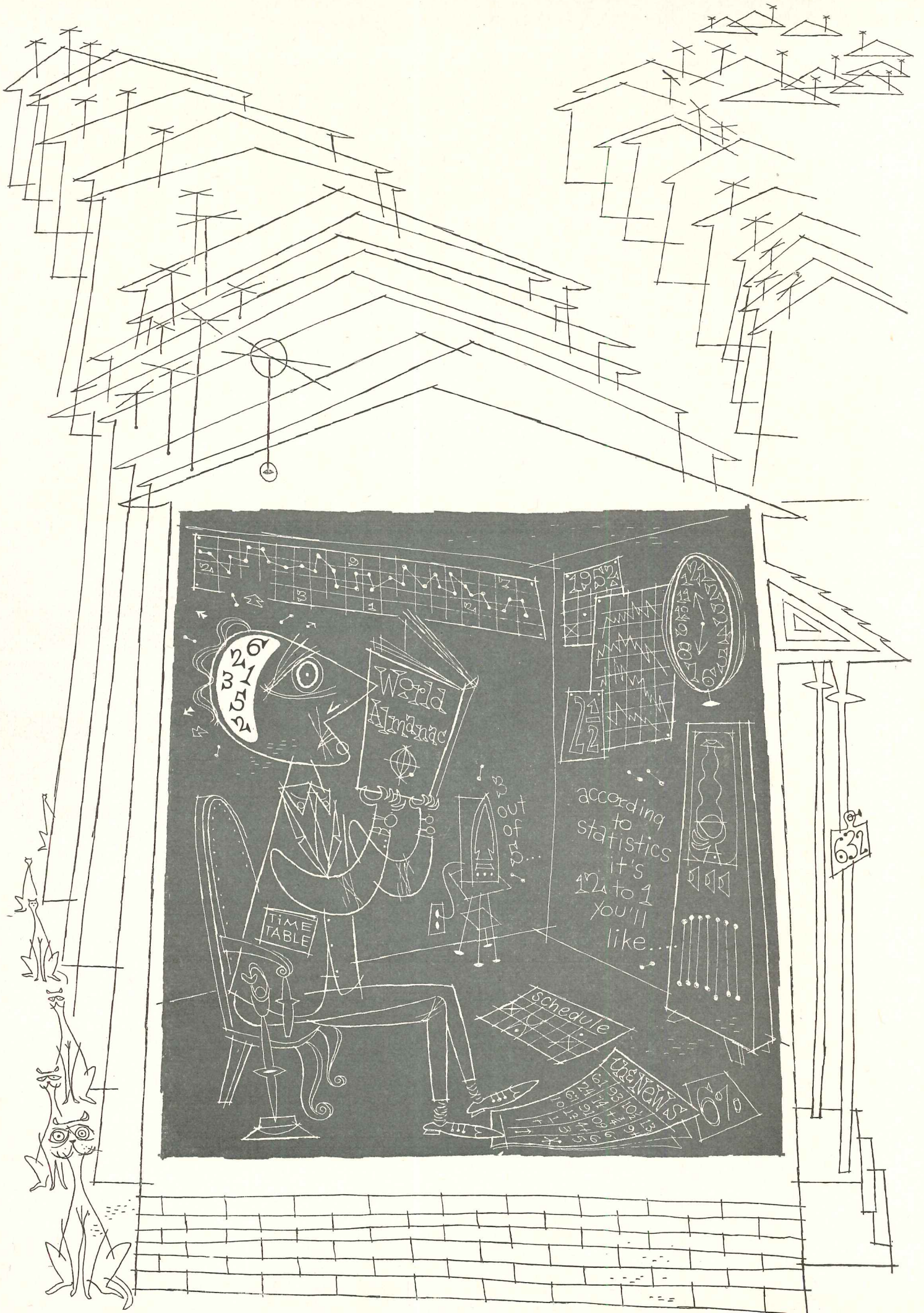


Above, view from west. Two photos below, porch of home-making suite

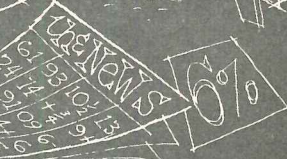


Above, left, home-making kitchen; right, elementary project room. Below, elementary wing and bus platform at left, high school wing at right





according to statistics it's 12 to 1 you'll like...



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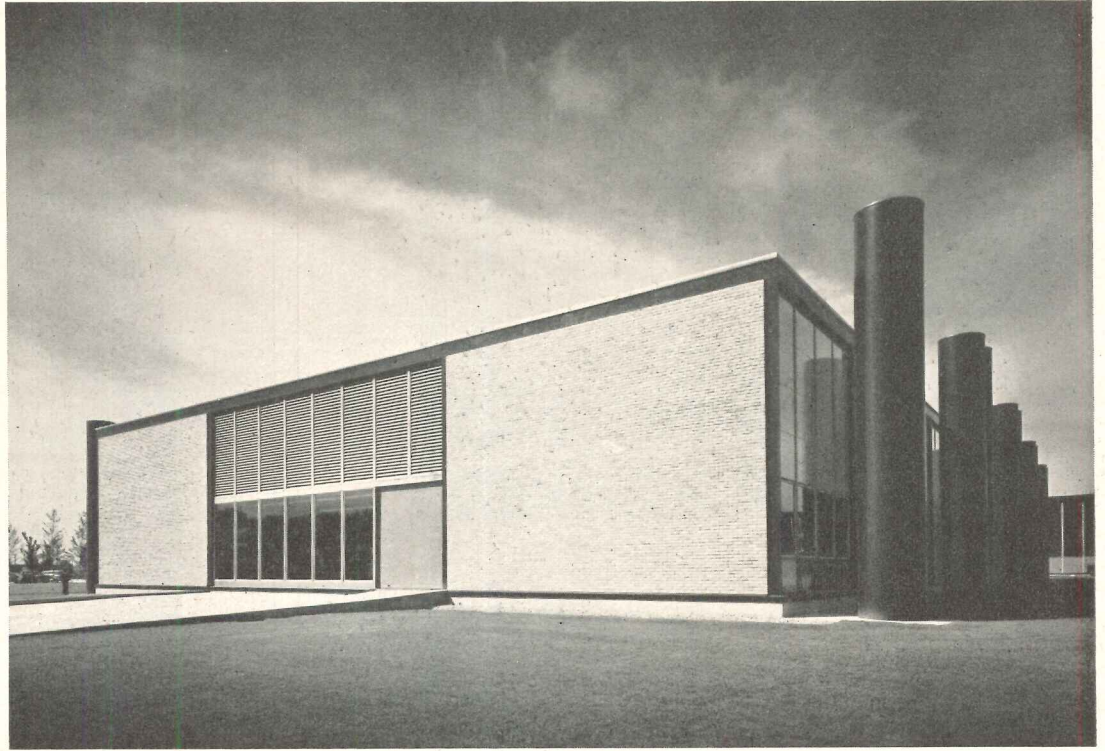


Photo: Ezra Stoller

G.M. Technical Center Dynamometer Building, Saarinen and Associates, Architects

*"General Motors thinks its new plants should be at least as good an industrial product as a Cadillac . . . not a Model T"*

## THE EVALUATION OF ARCHITECTURE

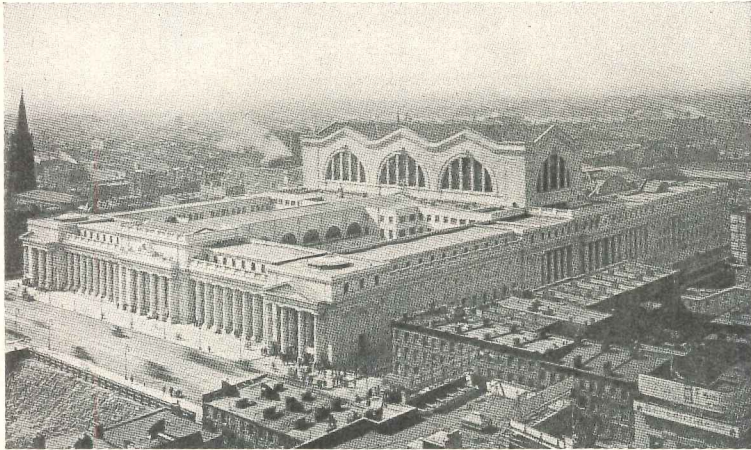
*By Henry S. Churchill, F.A.I.A.*

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*"We are told . . . it is Society for whom we are building, an anthropomorphic statistic"*

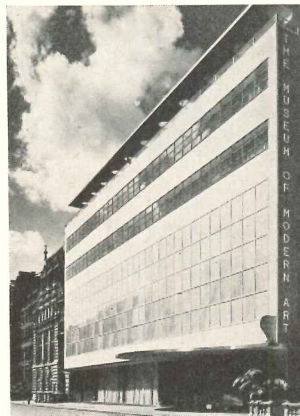
*Drawing by Tom Ballinger*

ARCHITECTURE, we all are well aware, is a many-sided profession, partly an art, partly a technique, partly a business. We expect to find in it the long-term esthetic values that are associated with the fine arts, and at the same time to demand that it fulfil the needs of the immediate present. If we consider it primarily a profession, the increase in specialization which is characteristic of highly industrial techniques makes it impossible for all except a very few individuals to know all they need to know. Technical design then becomes a matter of cooperation and coordination. If we consider it primarily an art, personal direction and vision are all important. If we consider it primarily a business, considerations of the market place and resultant compromises are paramount. All this, as I said, is common knowledge, and would hardly be worth repeating except



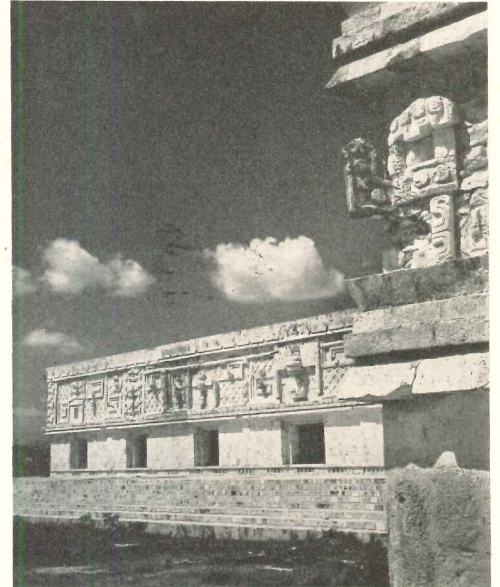
McKim, Mead and White, Architects

*"In the immediate past this expression was associated with the status of classical eclecticism — the Penn Station . . . the Museum of Modern Art"*



Philip Goodwin, Architect

Photo: Hedrich-Blessing



*"The ruins of the Maya stir us and trouble us deeply, even though we know nothing, except conjecturally, of their uses"*

Photo: Museum of Modern Art

that since we still largely believe, and to a great extent teach, that Architecture is an Art, some aspects of the resulting confusion of thought on the subject — particularly critical thought — are worth a little probing. By what standards should we judge or be judged? What should teachers, critics, historians accept as the function of the architect and his work?

It should be remembered that architecture has always been schizoid. Its immediate purpose has always been to produce sound shelter; at the same time, if the architect is to maintain a practice and earn a livelihood he must satisfy either the client's desire for profit or his pride, or both. No architect ever could — or can — continue to be an architect without clients. Therefore his accomplishment as a master of fine arts depends in a very large degree as much on the quality of the client as it does on the architect's creative abilities.

In this respect architecture resembles commercial art. Although it is more complicated and far more subtle, it still is, for the client, a form of advertising and a method of establishing status. Johnson's Wax found its original investment in Frank Lloyd Wright very well worth while, and came back for more. General Motors thinks its new plants should be at least as good an

industrial product as a Cadillac, something not at all in the category of a Model T. New York Life, with millions of policyholders, thinks its equity investments should produce good will as well as have long-term safety, and equates these with a good living environment. These are all sound commercial motives finding appropriate contemporary expression. In the immediate past this expression was associated with the status of classical eclecticism — the Penn Station, the Frick Mansion, the National Gallery, the Museum of Modern Art. Eclecticism is now outmoded because the newly acquired personal wealth which sponsored it, unsure of itself and seeking security and status in the true and tried forms of Europe's critically accepted and established cultural tradition, no longer exists as personal wealth. Wealth is now corporate, looks to its stockholders and the public for support. Corporate wealth finds in its own techniques the materials and sources for its structural forms and willingly accepts them because, at last, as a nation we have collectively accepted our civilization as based on technology and not on culture in the abstract.

Nevertheless it still remains easier, critically (and pedagogically) to judge the past than to forgive the

"Mies creates a house which is an objet d'art. We ask, is it a Home? Another house, a Home, may provide all the creature comforts and be as dull as a dead frog. An office building may be complete with brise-soleils and still be a collection of unorganized cliches"

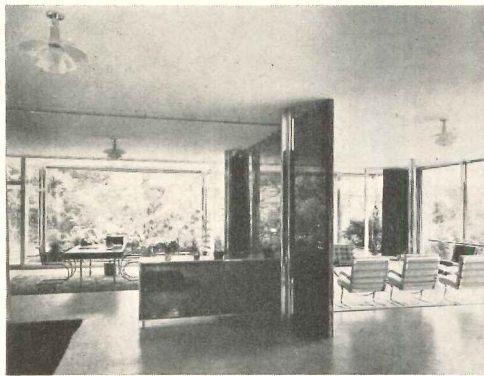


Photo: Museum of Modern Art

Photo: Julius Schulman

Tugendhat House, Mies Van Der Rohe, Architect

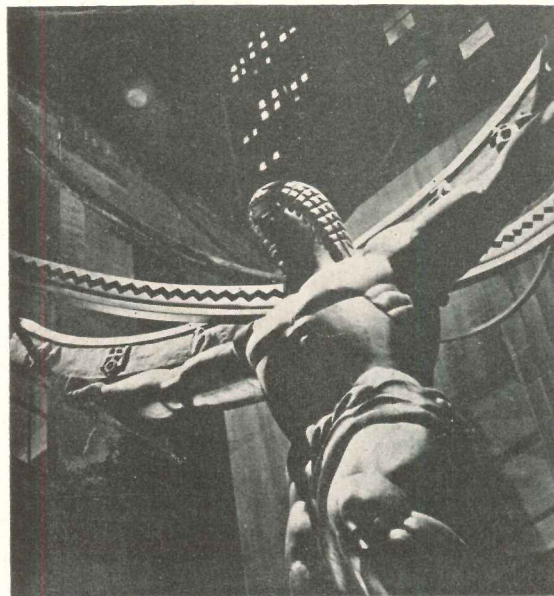
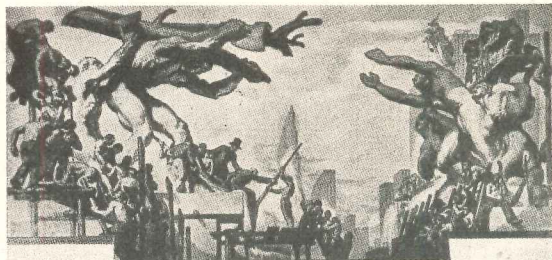
General Petroleum Building, Los Angeles; Welton Becket, Architect

present. We are still confused as to what architecture is. We look at the Parthenon *sub specie aeternitatis*, detachedly as Art, not as shelter. We are not concerned as to whether the roof leaked or not, nor worried by the lack of public toilets. The ruins of the Maya stir us and trouble us deeply even though we know nothing, except conjecturally, of their uses. But when we look at the architecture of today we are confused between the values we attach to techniques and practical purposes, of which we are proud, and those values we attach to emotional experience, which we are afraid of. Wright's roofs leak, so it is said, and the accusation becomes a sneer dampening the esthetic vibration; Mies creates a house which is an *objet d'art*, as impersonal and beautiful as a Sung vase. We ask, is it a Home, would you want to live in it? The emotion is deflated, we are relieved. Another house, a Home, may provide all the creature comforts and be as dull as a dead frog; an office building may have the latest system for recirculating stale air, be complete with brise-soleils, slab ends, and escalators and still be a collection of unorganized cliches. We admire the technical accomplishment and are not disturbed. Run-of-the-mill building has no characteristics at all. It is practical, it is com-

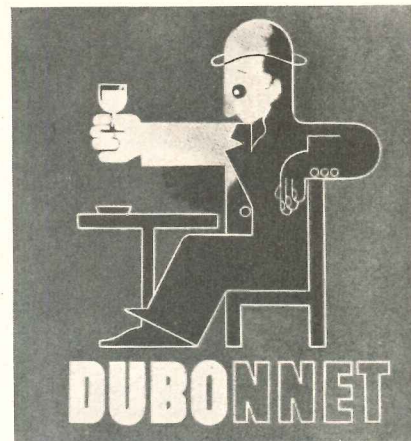
petent and, above all, it pays off. We admire that most of all, for that too is a value judgment in our society. Nor can we overlook, in thinking out our confusion, those other values imposed on us by Mumford and his school — social values, the place and function of a structure in relation to society-as-a-whole. This is an approach which has been growing in importance because, we are told, it is Society for whom we are really building, an anthropomorphic statistic. So we arrive at a point of view toward architecture not too remote from the moral values of Ruskin.

These confusions of external and alien values are, again, like those of the commercial arts, the creation of which depends on acceptance by the client for the purpose of obtaining public approval of himself or his product. They do not apply to the so-called fine arts, except perhaps in some minor degree, since in general the artist is concerned primarily with the expression of spiritual or prophetic values which may or may not be at once accepted by the public. Also, the costs of production are relatively low, are more often than not assumed by the artist and therefore are not a barrier to major creative effort since he remains relatively independent. Confusion as to creative purpose certainly

Sert Mural, R.C.A. Building



Atlas, International Building, Rockefeller Center; Lee Lawrie, Sculptor



Left: "Murals . . . are precisely what architecture is, a public art judged by contemporary values . . . Sculpture at its best and worst, too . . . is an adjunct to architecture or, if not, is at least set in its midst." Above: "The arts have accepted and been influenced by African Negro (art)." "There is no question that Cassandre is a greater artist than the man who does Miss Rheinpuss"

does not apply to music, of which architecture is supposed to be the frozen image; nor to poetry, which is the art of prophecy; nor to painting, except perhaps to the great murals, which extend from Siqueiros back to the caves of Altamira and which are precisely what architecture is, a public art judged by contemporary values before taking their place in the critical hierarchy; nor to sculpture which at its best is an adjunct to architecture (at its worst, too!), or if not an adjunct is at least set in its midst. The critical confusions that do beset these arts are all within the ideology of Art, not confusions as to their economic use, their social purpose, or their technological performance.

The arts have accepted and valued and been influenced by African Negro music, Andaman idols, hieratic symbolism, the painting of the insane and the poetry of the feeble-minded. Architecture cannot succumb to the hut, the cave or the igloo, no matter how charged with esthetic significance these forms may suddenly become.

Contemporary architecture does not have the same goals as the contemporary fine arts, and requires a different set of critical standards. A re-appraisal of the

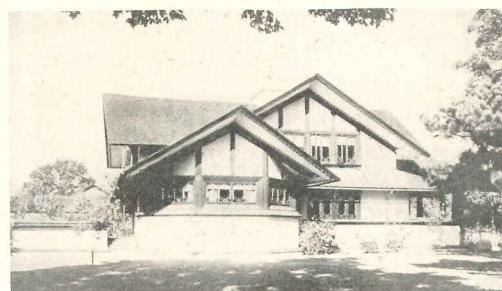
history of architecture is sorely needed, and a new attitude toward the relation of architecture to art and society on the part of critics and teachers. Architecture is a contemporary commercial art (using contemporary in the sense that socially the art and architecture of any period are contemporary to that period), and it is also an essential artifact for the use of people and an essential symbol of status or profit. The other arts may be safely ignored by practical men, since they serve no "practical" purpose. They may be allowed to wither in museums or deteriorate to the pages of the comics, the sound and fury of the screen, or the advertising pages of the slicks. Since architecture is essential, all it needs in order to flourish is architects. This truism is the heart of the matter, because the architect cannot be other than a product of his time. Unlike other artists he is rarely a seer or a prophet, and in this he resembles the commercial artist. The term is not meant to be derogatory. It merely limits the qualifications of the artist, excluding that peculiar gift of inner vision that characterizes the fine arts, and has nothing to do with quality, of which there are all degrees. There is no question, for instance, that Cassandre is a greater artist than the

Post Office, Miami, Fla.



Old State Capitol, Frankfort, Ky., Giedion Shryock, Architect

Two houses by Frank Lloyd Wright, 1895, 1900

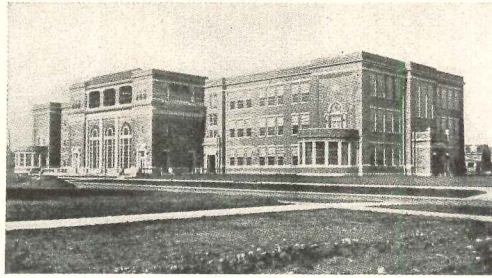


Left, top: ". . . the architect cannot express his hopes for the non-existent;" bottom: ". . . the unconscious summing-up of the best qualities of a period." Above: ". . . the architect can go no faster than he is permitted to go, not by his ability or technique, but by his client"

man who does Miss Rheinpuss; or that Rodgers, like Verdi, is better than the juke-box balladeer. The architect, like these, does not reveal new worlds but makes visible the glories of this in which he lives, for whose immediate needs he contrives his structures. His is the unconscious summing up of the best qualities of a period — Litchfield, Conn., let us say; the capitol in Columbus, Ohio, a masterpiece of its kind; the University Club in New York. But it takes the perspective of time to recognize them, to let the unconscious summing up of the worst qualities fade away: the slums of the mill towns, the neo-gothic monstrosities, the Jefferson Memorial, and housing projects.

If the contemporary world has no glory because it has no spirit, its leaders no ambition for anything except material gain, no flame of faith and little honor, the architect cannot express his hopes for the non-existent. The poet can prophesy, the writer can damn the follies of his time and describe Utopia, the musician can hear the spheres sing and the painter paint visions of heaven and earth. The architect must build, and what he builds is the image of the world around him as his client sees it, no more, no less.

This immediacy, this lack of transcendency, is not a handicap to the architect; it is part of his essence to understand his world in its essence, and to transform it into form. The thirteenth century cathedrals summed up the conquest of the Church over the mind and the souls of the people, the sure and certain hope. They did not foretell the Renaissance, the new invading spirit already manifest in the writings of Abelard and the unrest in Albi. Nor did Versailles at the acme of the power of the State presage the fall of the Bastille, although discontent was rife. There is no hint of the Industrial Revolution to be found in the work of the brothers Adam, although they heard the thump of the Newcomen engine. Wright and Mies — and who else? — are closing a period, or perhaps they are transitionals, like Brunelleschi and Schinkel. New attitudes are evident in the use industry is making of the architect — and the use he is making of industry — in, for example, the G. E. Technical Center or the Corning Glass works. Follow the line of evolution from Albert Kahn's factories through the "monumental industrial" of Wank's TVA work to the Technical Center, and it is clear that the architect can go no faster than he is per-



Junior High School, Huntington, W. Va.

*"... the school is no longer a monument to the School Board, it is a place for children; the "efficiency" of the huge consolidated school is bound to be not so efficient educationally as the inefficient small school"*

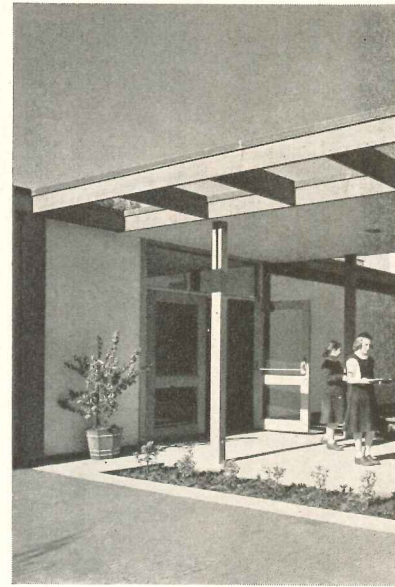


Photo: Roger Sturtevant

*"No progress has been made in housing since 1937, when the pattern of mediocrity was frozen by Washington." Top: 1938; bottom: 1950*

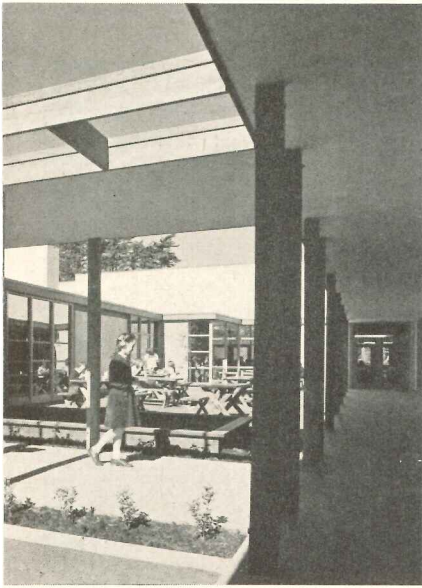
mitted to go, not by his ability or technique, but by his client. That no progress has been made in "housing" since 1937, when the pattern of mediocrity was frozen by Washington, is due to the same circumstance.

Another factor that influences the work of commercial artists is the "climate" of public opinion to which sponsors (clients) respond. How and why this "climate" changes is something for the social psychologists to explain, but change it does, as can be simply seen by comparing Godey's Lady's Book (text and ads) to the Woman's Home Companion. The climate, as it most closely affects the architect, is shifting from an exclusive concern with economics to a concern with human values. This is causing a shift from abstract grandeur as a symbol of wealth or power status to an entirely different set of concepts. Status always has been and always will be of paramount importance to the owner. It is what places him socially and determines the size of his mortgage. What he builds is the visible symbol of prestige; he picks his architect to that end. Versailles had to be bigger and better because Louis XIV had to have assurance not only of his place in the sun but a permanent world in which he *was* the sun. It is this that is the real economic determinant of architectural

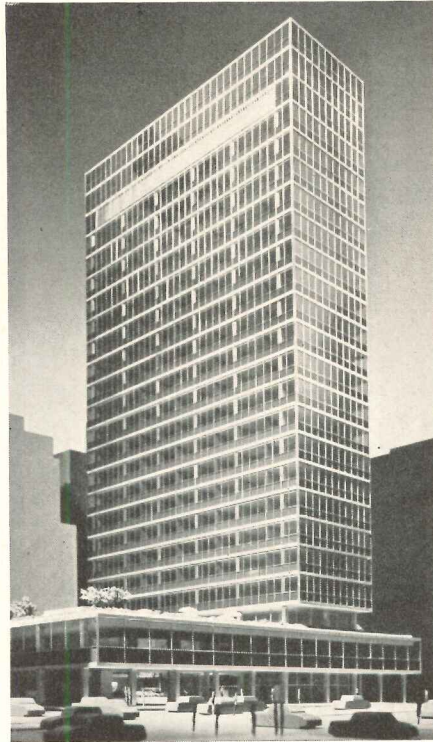
stylishness, the source of the millionaires' Italian palazzi, the merchants' Tudor houses, the Cape Cod suburb, the altitude race between the Chrysler Building and the Empire State, the prominence of Promontory and the fad for brise-soleils. And now, "Humanity — Our Client."

The difficulty, so far, is that this new client does not exist except as a faceless statistic. The faceless client of the Middle Ages, God, existed in men's hearts and was personified by the Church. Humanity, people, seem to be coming into men's minds but as yet no one represents them unless it be the bureaucracy of government agencies, something to give us pause if we care at all about architecture as an art. The faceless abstraction of The People must grow a face, must become a symbol. This may come about in the course of time — the influence of the idea is already becoming apparent, the idea that the needs of the people who use buildings are at least as important as the material welfare or aggrandizement of the specific owner. It shows in many ways: the school is no longer a monument to the School Board, it is a place for children; the "efficiency" of the huge consolidated school is found to be not so efficient educationally as the inefficient small school. The fac-





Katherine Burke School, San Francisco  
Kirby-Mulvin, Architects



The "Beau Dieu" of Amiens

Above: "The product of the huge anonymous office may be very fine . . . but it is a technical fineness like that of a machine." Right: "The faceless client of the Middle Ages, God, existed in men's hearts and was personified by the church"

tory, however pretentious the administrative building may be, is planned for the worker as well as for the machine, sometimes even for the public. Housing, including an increasing share of speculative housing, is more and more being planned with an eye for a complete living environment. The hospital, even, admits that patients are people and the doctors something, if not much, less than god. The new aspect and the new scale are beginning to creep into the design of office buildings, the last stronghold of economic determinism.

The problem for the architect is what part should he and can he play in this transformation, what attitude shall he take, what role shall he play? Shall he remain passive, and as a business man do nothing but accept his client's wishes, caring little whether the client is Business, Bureaucracy or Humanity? Is it enough that he remain an accomplished technician, riding herd on new structural materials, new methods of assembling new materials, nibbling at the edges of the sciences of acoustics, meteorology and what not? Can he dominate the scene, create an Architecture by active promotion of the forces in politics and life that are receptive to Architecture? These are most important questions, perhaps not answerable except as thought turns into

action and into teaching of what architecture has been and is in relation to the total culture of its time.

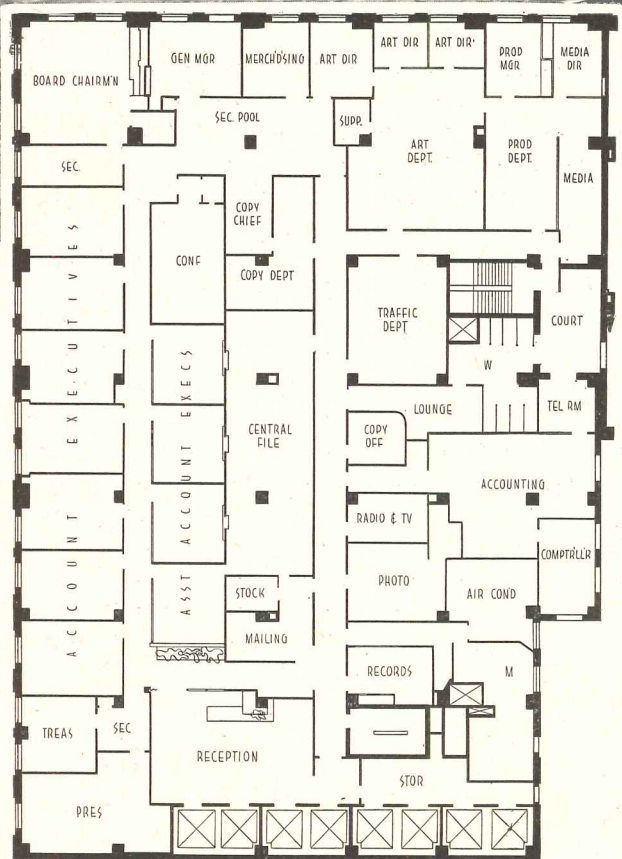
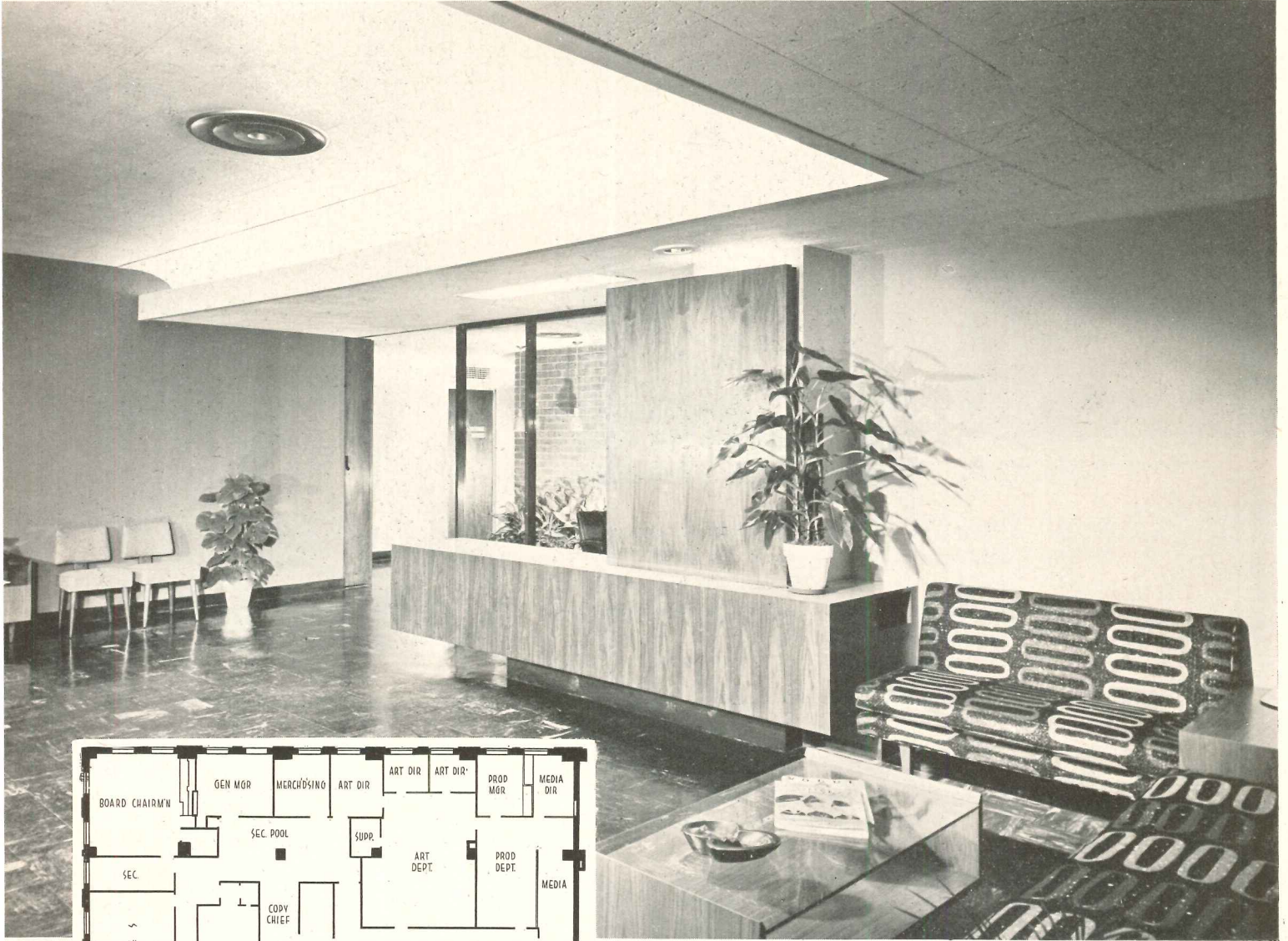
The answer is not, to my mind, the pat answer of "collaboration." The product of collaboration, the product of the huge anonymous office, leaves one cold. It may be a very fine product indeed, like Lever House, but it is an intellectual, a technical fineness like that of a machine, totally different from the quality of, let us say, Taliesin, or a work by Rouault. To have great emotional strength a work must be the product of a burning conviction, unquenched by collaborative compromise. This conviction may indeed seem collaborative, as in the cathedrals; but the unanimity of faith in those days, the unifying symbolism of the Church, was so great that all purpose was directed toward one end. That is not so today, but today, as then, the artistic greatness of the architect, the artistic value of his product, depends neither on collaboration nor on rugged individualism, but on his sensitivity as an interpreter of his client and of his time.

If Humanity is to be the client — and I believe that is so — the question for the architect is What Kind of Humanity? And that, indeed, is the question of our time. . . .

# NEW OFFICES EMPHASIZE COORDINATION

*Offices of Sterling Advertising Agency, Inc.*

*New York City*



Ben Schnall

THE PLANNING OF THIS SUITE OF OFFICES WAS COMPLICATED by the fact that the agency was moving from four small floors to one large one. The architects' first task, therefore, was to set up a logical and space-saving traffic pattern for interdepartmental operations. In addition, they were asked to provide a new centralized filing system for art work, etc., and to give the account executives attractive and functional quarters. The architects also served as decorators, and designed much of the furniture for the executive offices (see pages 170-171).

*Louis Hatkoff Associates  
Architects*



*Above: left, conference room; right, corridor between offices of account executives and their assistants. Opposite and below: reception room and entrance foyer. Ceilings throughout are suspended, with acoustical tile block. Floors are rubber tile in reception room, corridors and work areas, carpeted in executive offices*

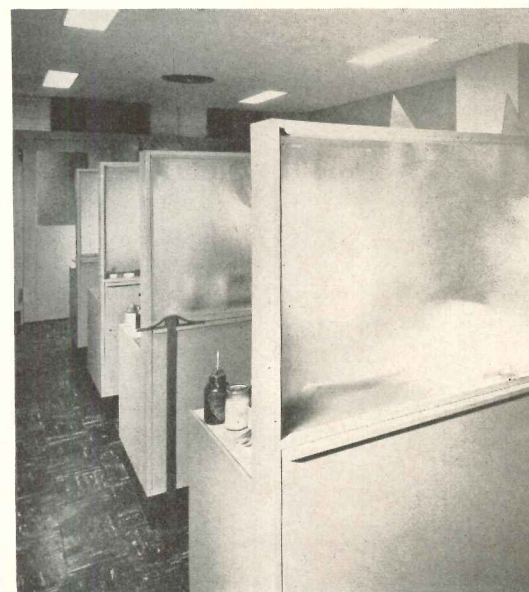
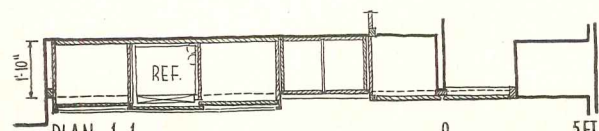
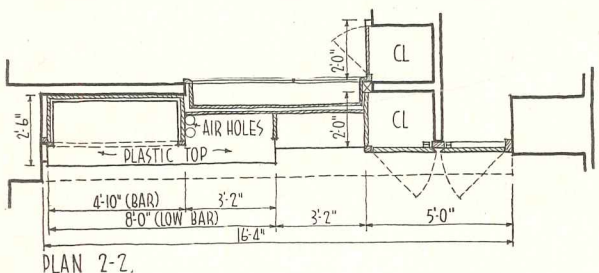
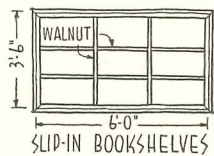
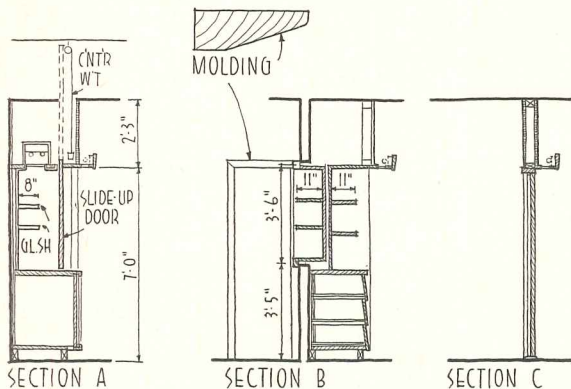
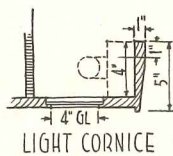
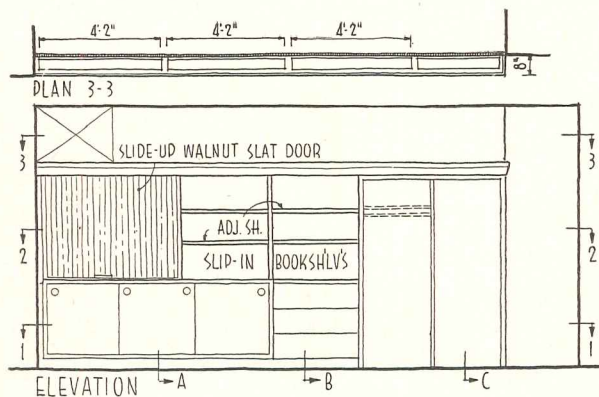


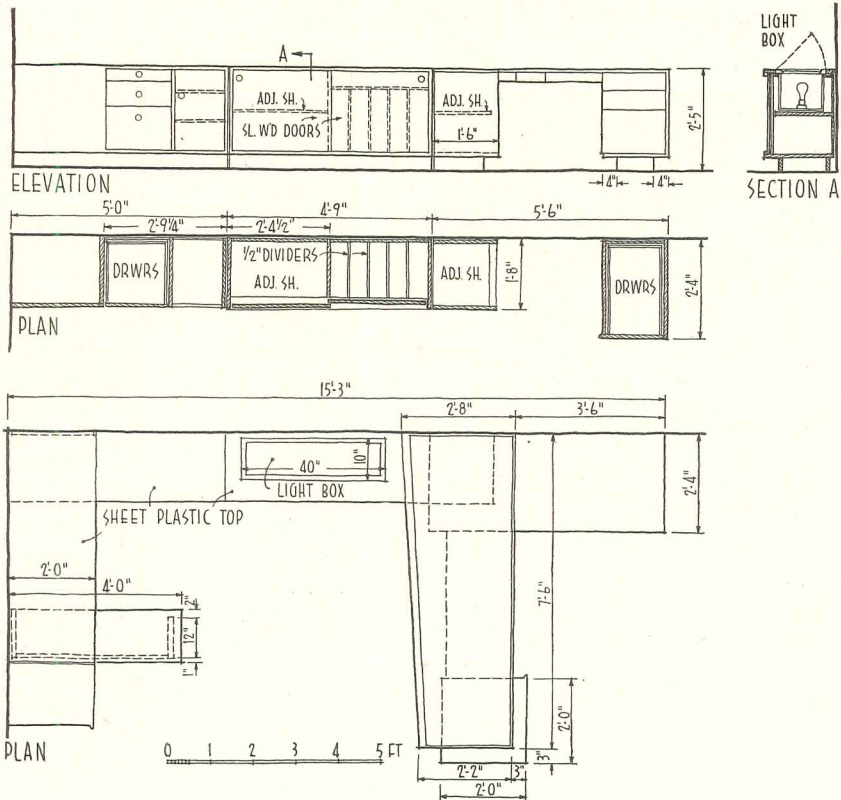
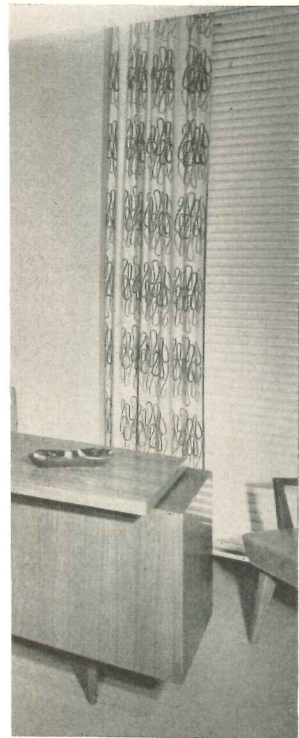


For the executive offices the architects designed special units for various kinds of storage. Wall unit above and below provides space for everything from coats to hospitality items

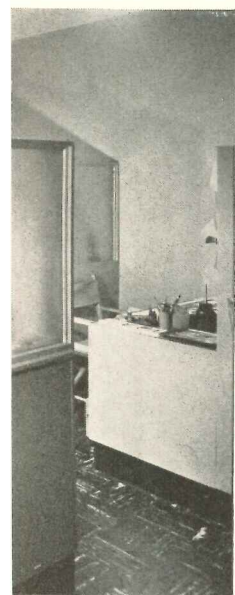


The typical account executive's office (above and opposite) has wall rack and cork bulletin board for presentations and display. Art department (below) is partitioned into individual cubicles to give each member of the staff privacy and tack-up space





Account executives' work area, specially designed by the architects, consists of work desk with drawers and storage space, a 7-ft long conference desk, vertical and horizontal storage cabinets, and a built-in light table

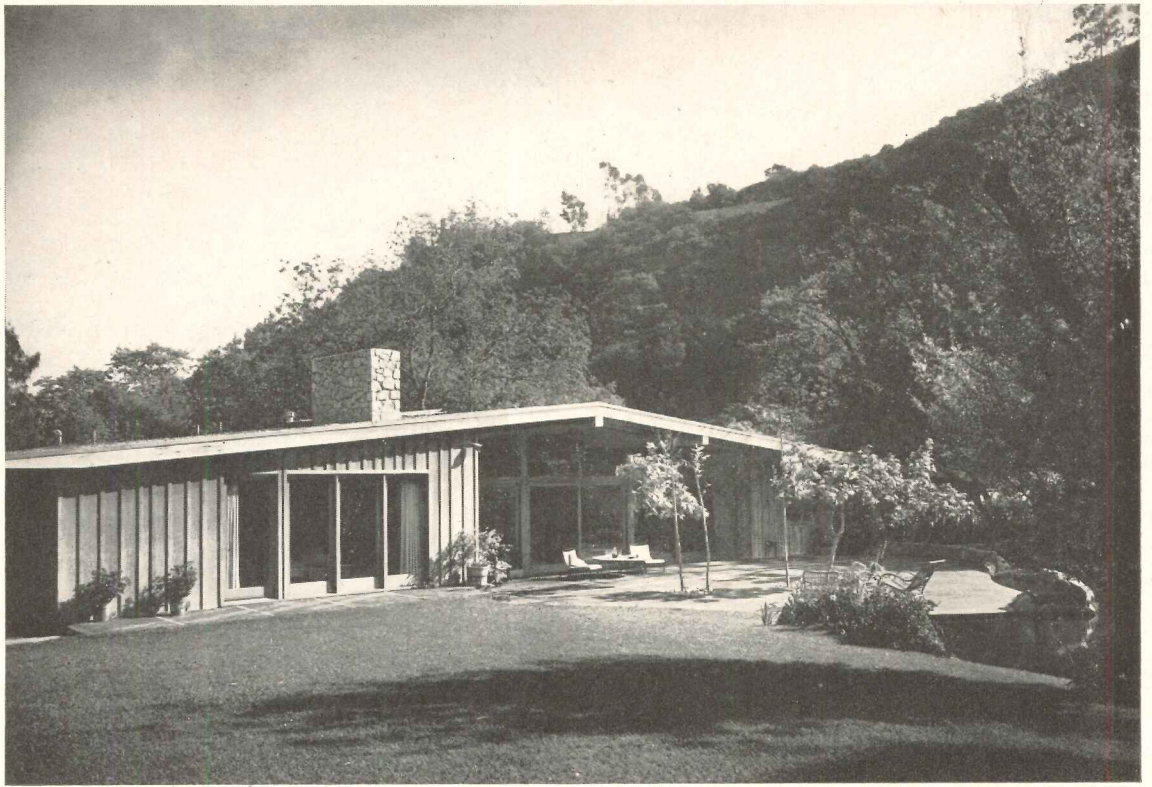


Ben Schnall





Maynard Parker



## FOUR HOUSES WITH EXCELLENT SITES

### 1. CALIFORNIA: LANDSCAPED CANYON

*Residence of Mrs. Zola Hall, Los Angeles*

*Edla Muir, Architect*

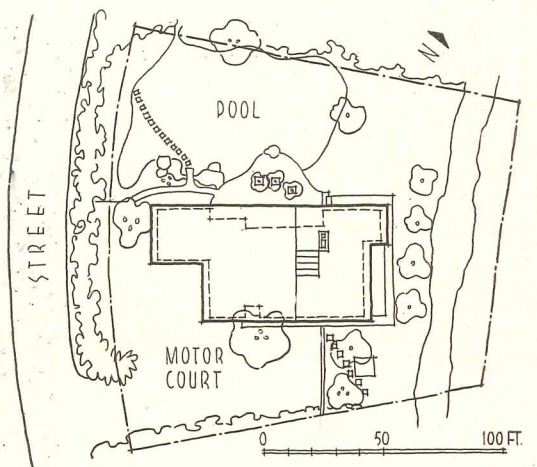
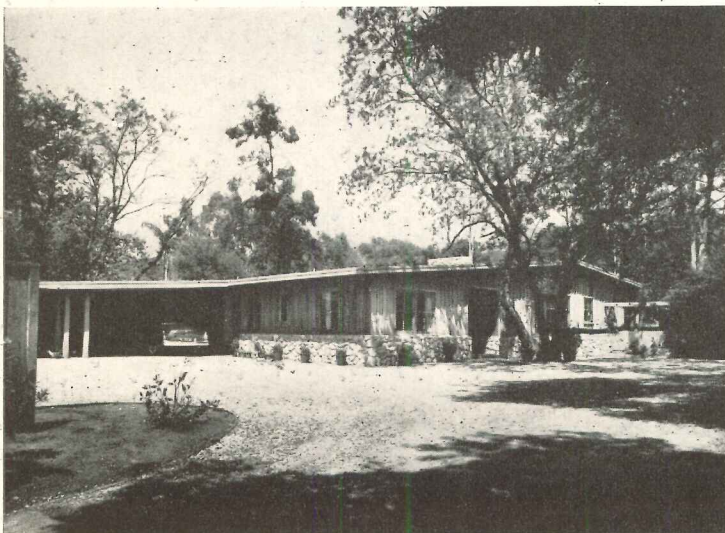
*Edward Huntsman, Landscape Architect*

**T**HIS CALIFORNIA HOUSE was designed not only around a lovely site, but around a natural landscaping plan as well. The canyon in which it is located was once used for a botanical project; much of the planting and the foundations of the pool were already in place when the owner bought the property.

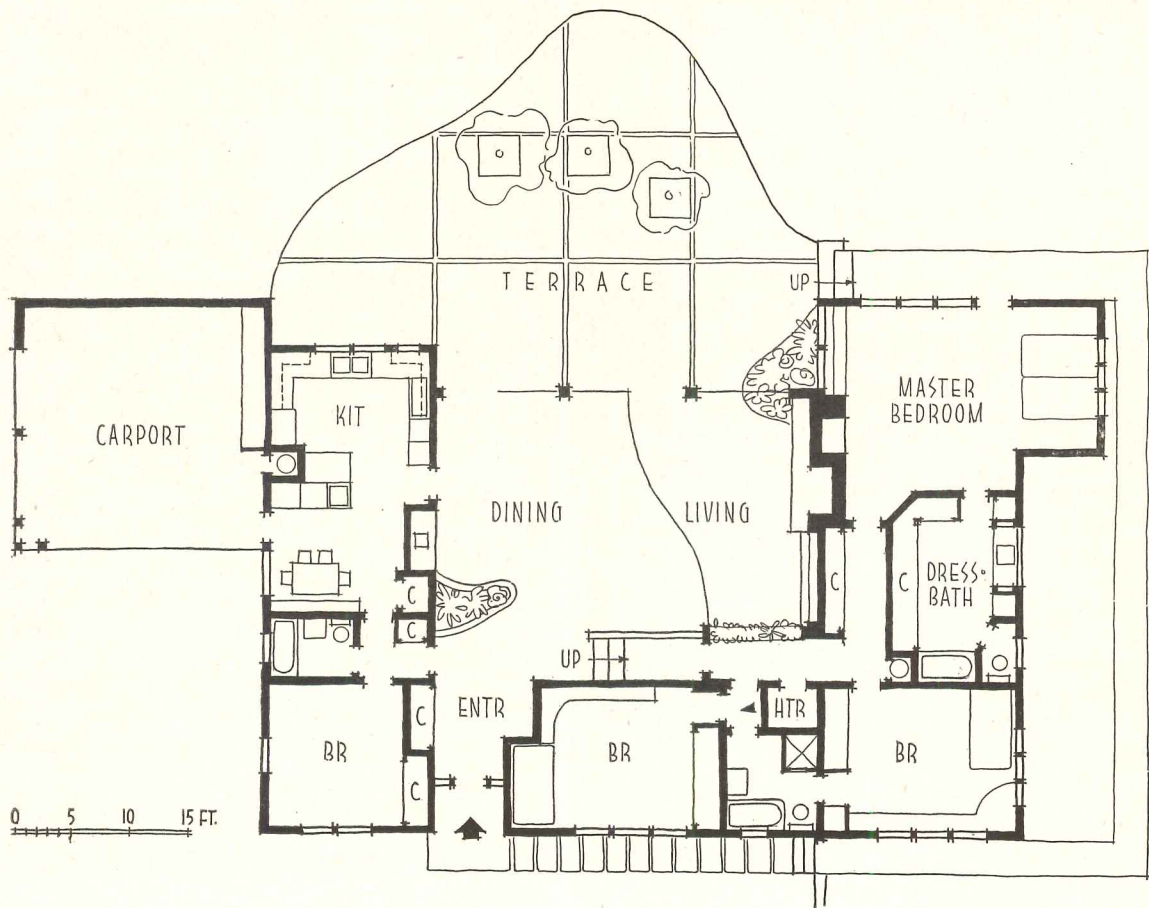
The house was placed with its long side facing the pool; living room and master bedroom are on this side, opening to a terrace cantilevered over the pool. The children's rooms are close to the main entrance. Since the

children are still small, ease of maintenance was an important consideration in the design of the house, and especially in the selection of materials. The entrance hall, for instance, is floored with acid-stained concrete; rough troweled and waxed, to minimize the carrying of dirt into the main part of the house.

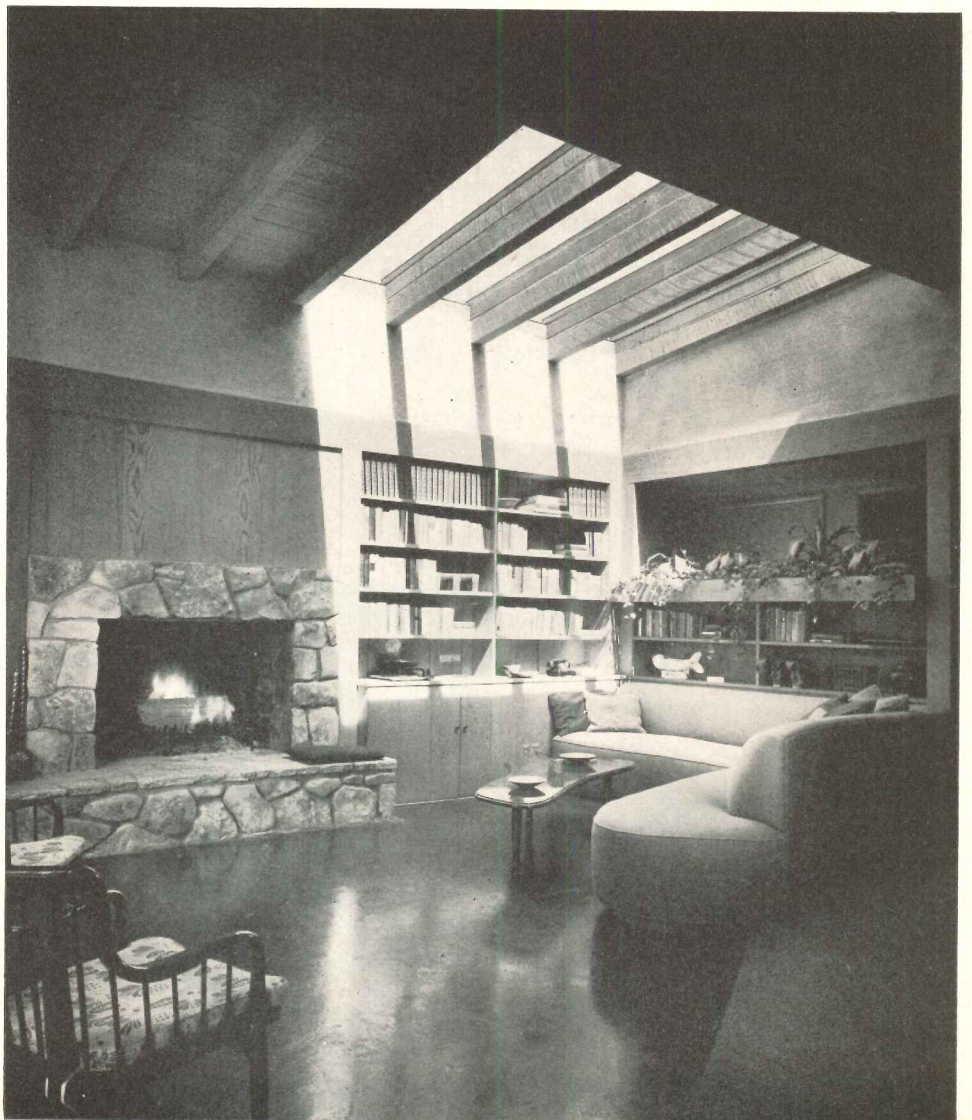
Construction is wood frame on concrete foundation. Exterior walls are random width, saw-surfaced redwood. The house won an Honor Award in the recent Southern California A.I.A. Honor Awards Program.



HALL HOUSE

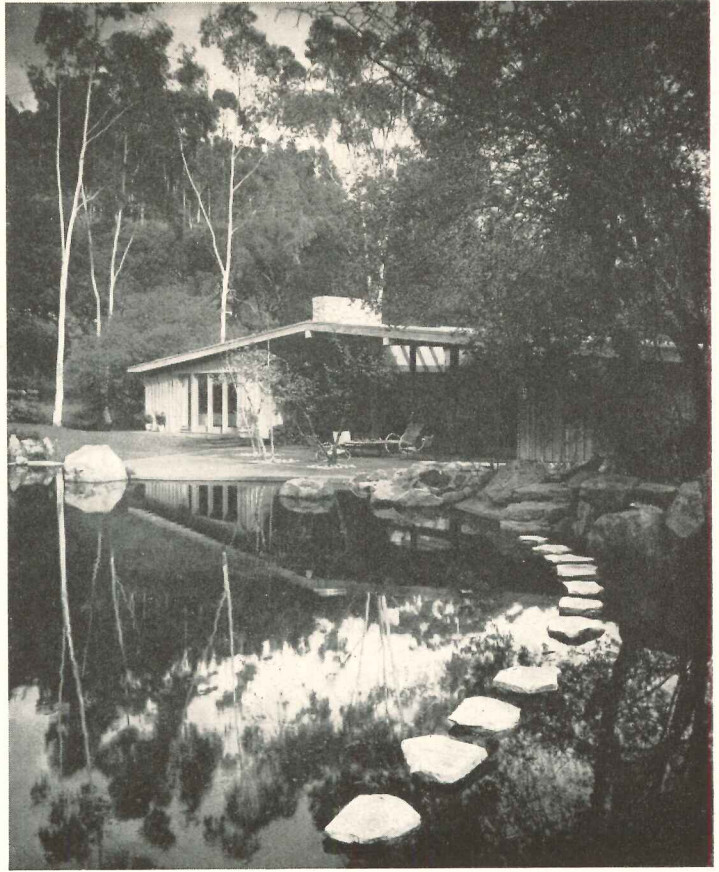


Skylight in living room was an afterthought, the architect says. "During construction," she explains, "tops of eucalyptus trees were visible between rafters and were so effective that we installed clear, polished wire-glass instead of sheathing and roofing." Living room ceiling is Douglas fir, saw-surfaced and painted one coat, then wiped off to give a gray stained look; walls are redwood

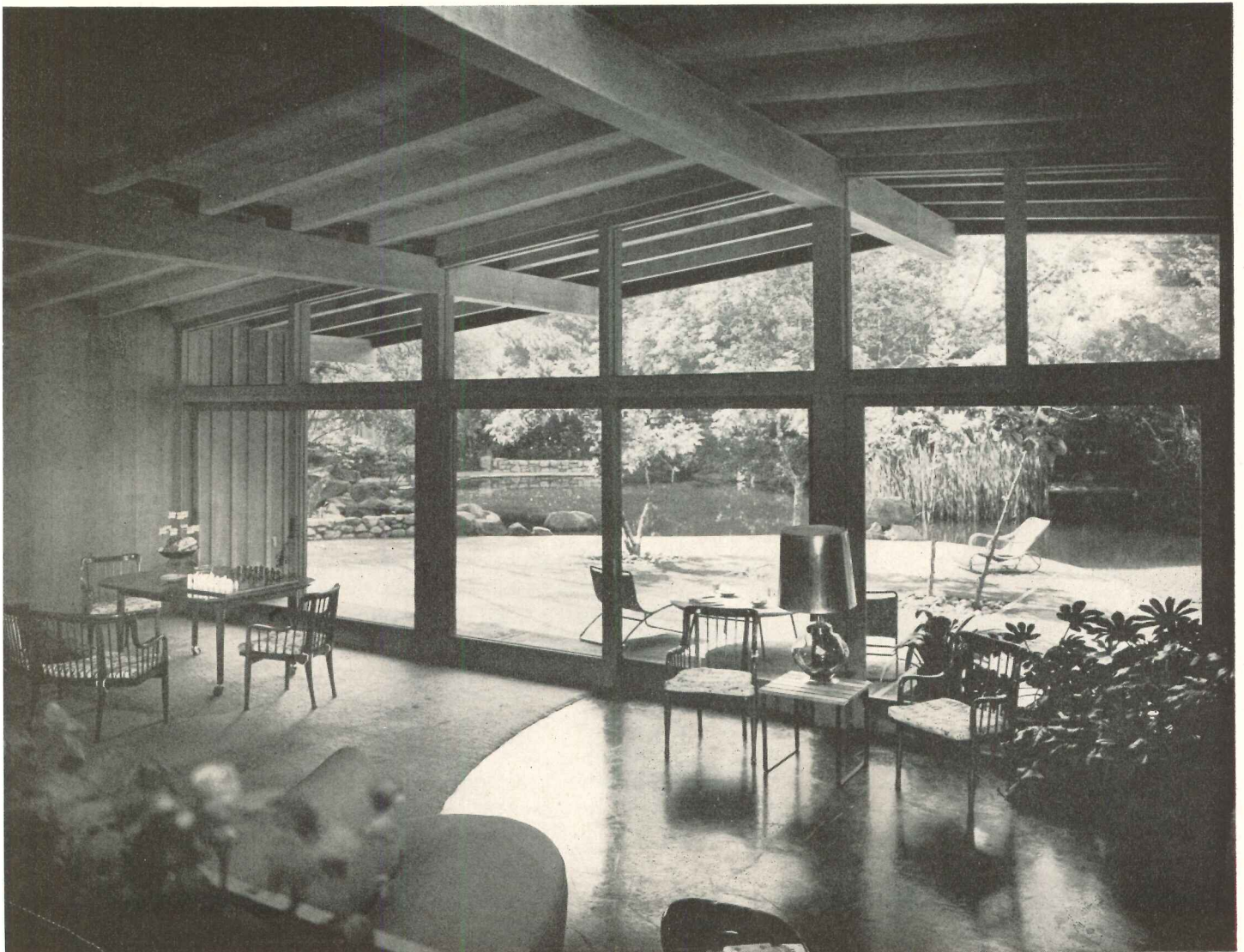




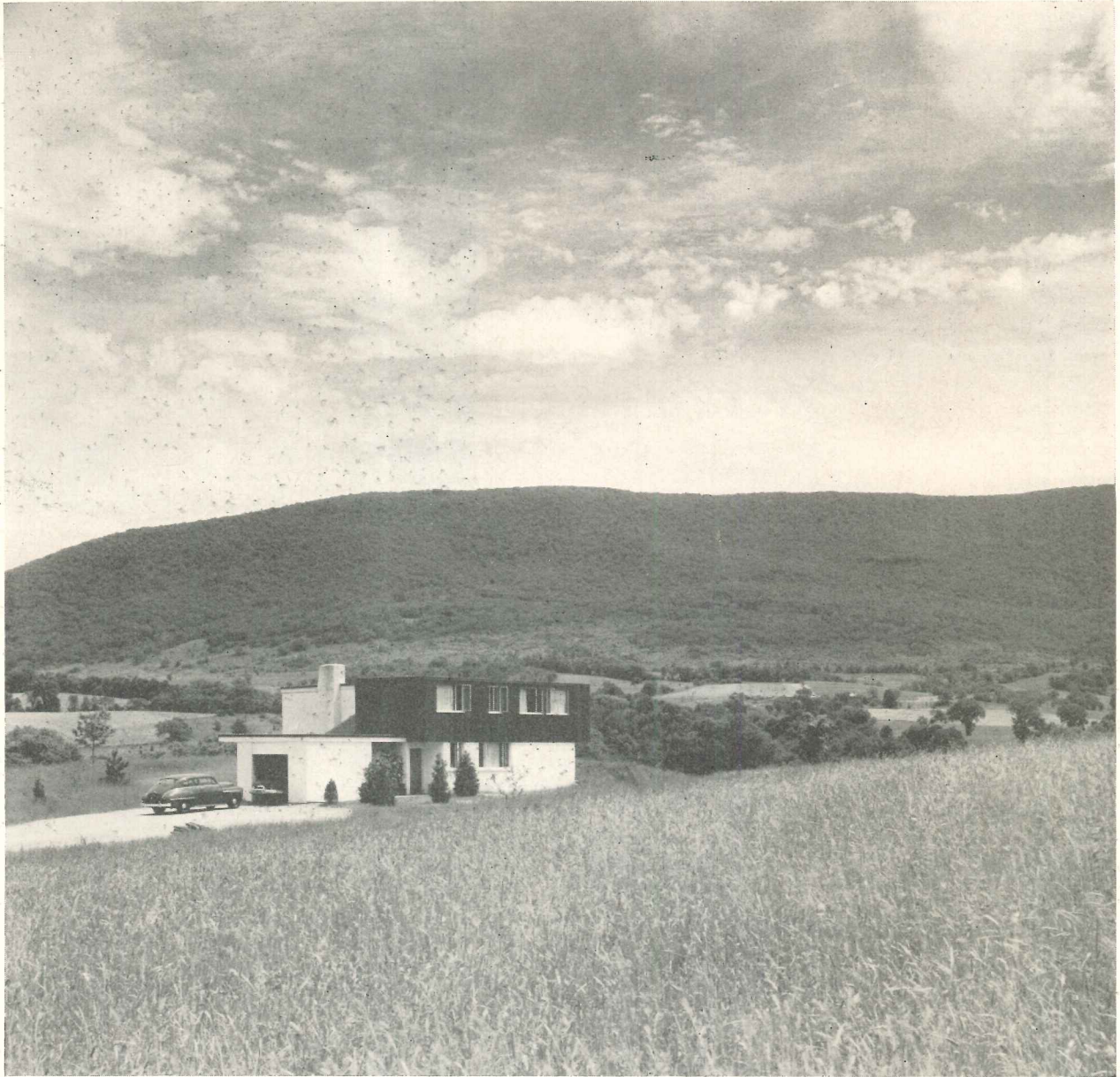
One of owner's requirements was a housekeeper's room strategically located for supervision of the children, and suitable for future family use if desired; placement next to kitchen and across entrance hall from children's rooms was ideal solution. Bedroom hall was opened up with planting box and rail to add to apparent size of living room and at same time bring light to the hall. A motion picture screen on a roller is installed above the bar in dining area (see plan); projector is operated from closet in hall at opposite end of the room, with bookcase concealing projector ports. Note excellent storage space all through the house, and convenient pass-through from kitchen to terrace



Maynard L. Parker



## 2. MASSACHUSETTS: ROLLING HILLS



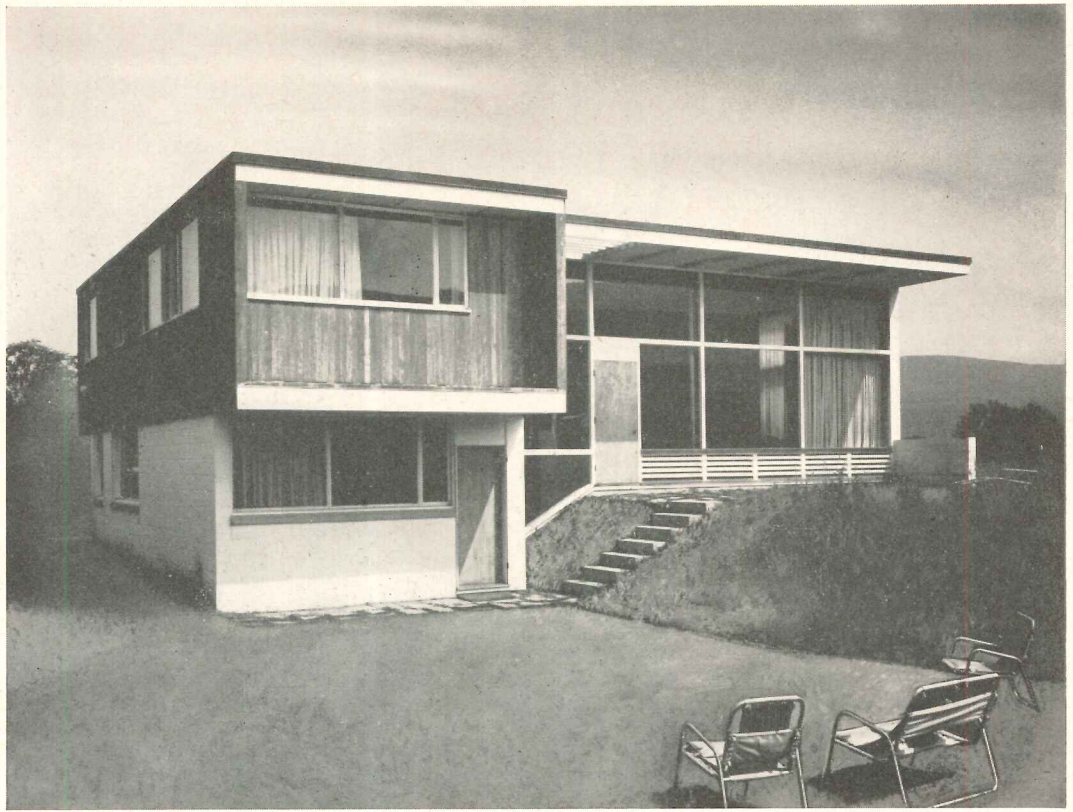
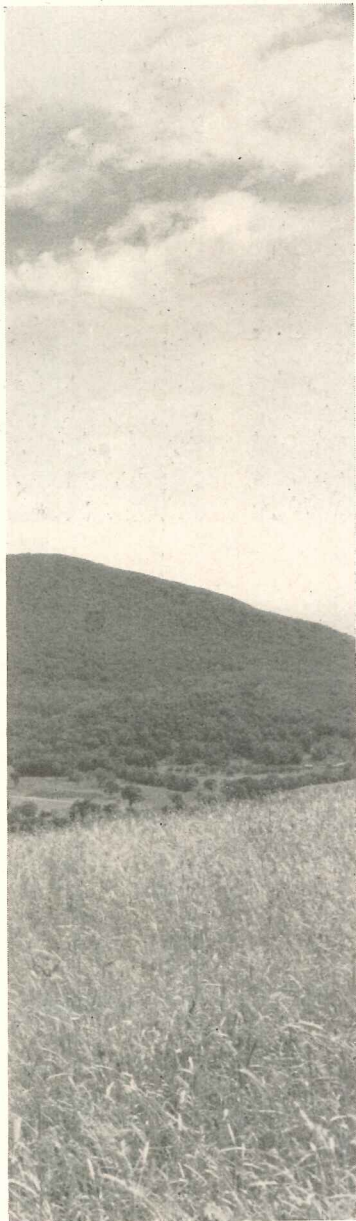
*Residence of Mr. and Mrs. Albert Keep*

*Williamstown, Massachusetts*

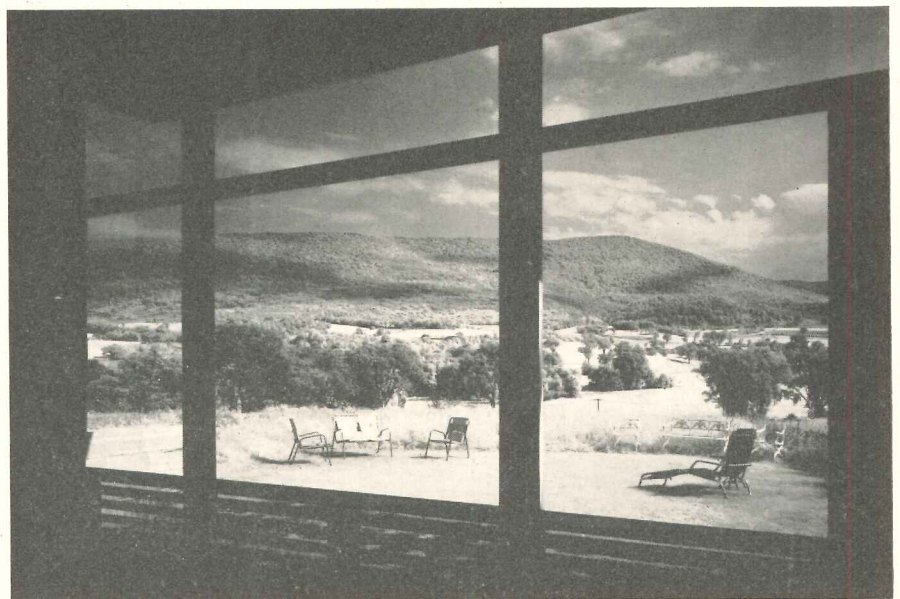
*E. H. and M. K. Hunter, Architects*

LOOKING AT THE SWEEP OF ROLLING fields in the photo above, it is not hard to imagine why the owner laid down as his chief requirement a house with an open feeling.

The architects used the sloping site for a living room wing of one and a half stories and a two-story kitchen-bedroom wing. The desired openness was achieved mainly in the intermediate-level, high-ceilinged and spacious living room which has one wall entirely of glass; at one end of the room stairs lead up to the balcony connecting the second-floor bedrooms and study, and down to the first-floor library-dining room



Joseph Molitor

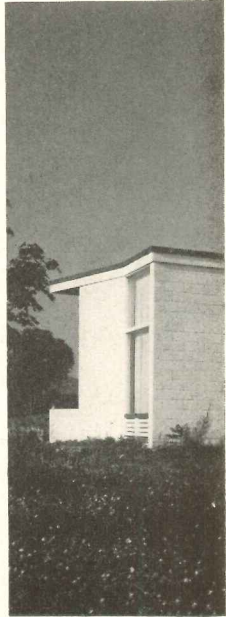
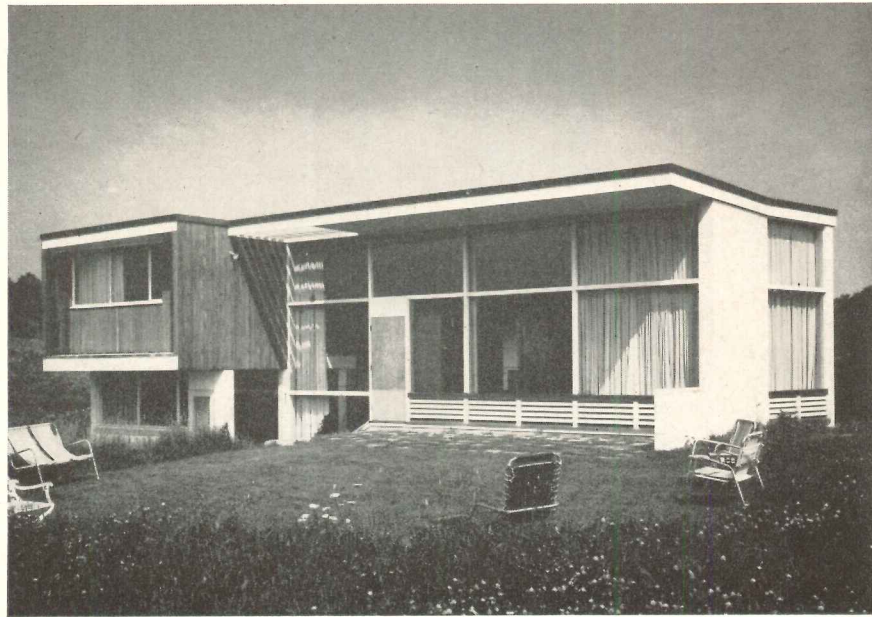


and kitchen. This upward and downward view adds materially to the open feeling of the living room. Built-in cabinets were used instead of railings on the balcony. A felicitous touch was the use of color on the balcony: a bright yellow curtain to cut off the upper story entirely; a bright red curtain to close off, either partially or wholly, the upstairs study; and bright blue burlap walls in the study, clearly visible from the living room. These pure-color curtains and burlap can be used in various combinations to give color to what is, in effect, one wall of the living room; the rest of the room is in quiet grays and whites.

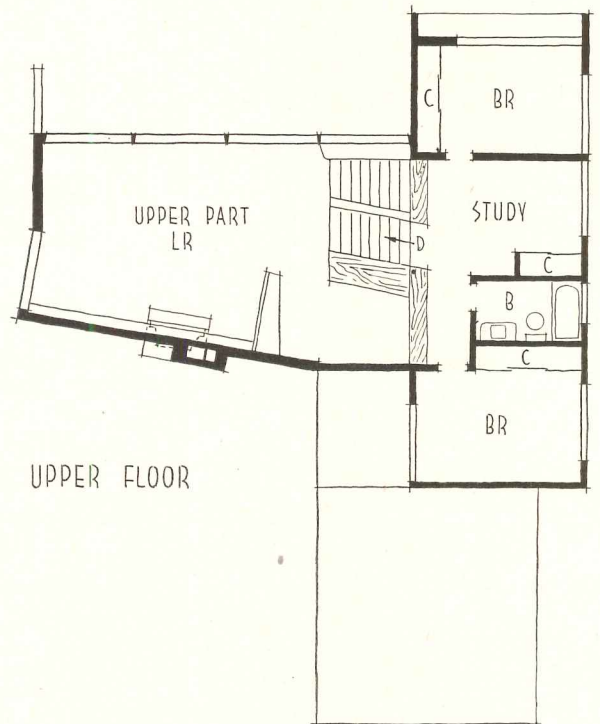
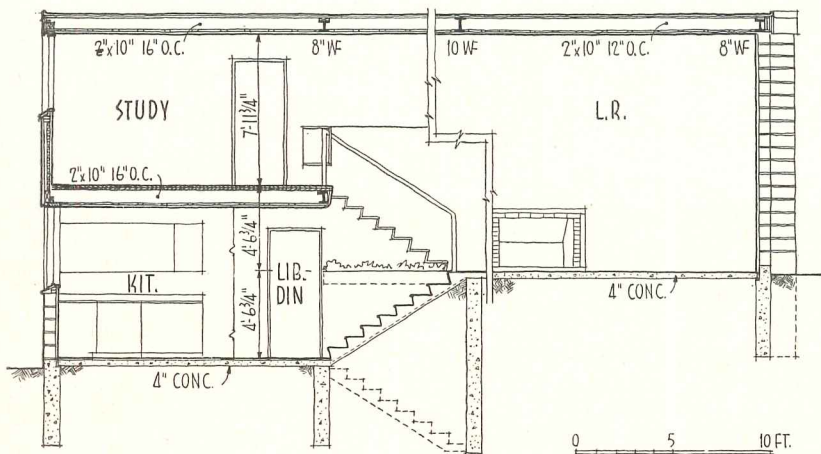
A tremendous amount of book storage space was one of the owner's principal requirements. The architects supplied floor-to-ceiling shelves on two sides of the living room, and additional shelves in the library. Then they made a bet with the owner that he couldn't fill so much space. They lost the bet!

Foundation of the house is poured concrete, framing is wood. Exterior walls are rift-sawn fir, stained. The house is fully insulated and has radiant panel heating — in floors on lower level and ceilings on upper. The living room has ventilating louvers under the large south windows.

KEEP HOUSE

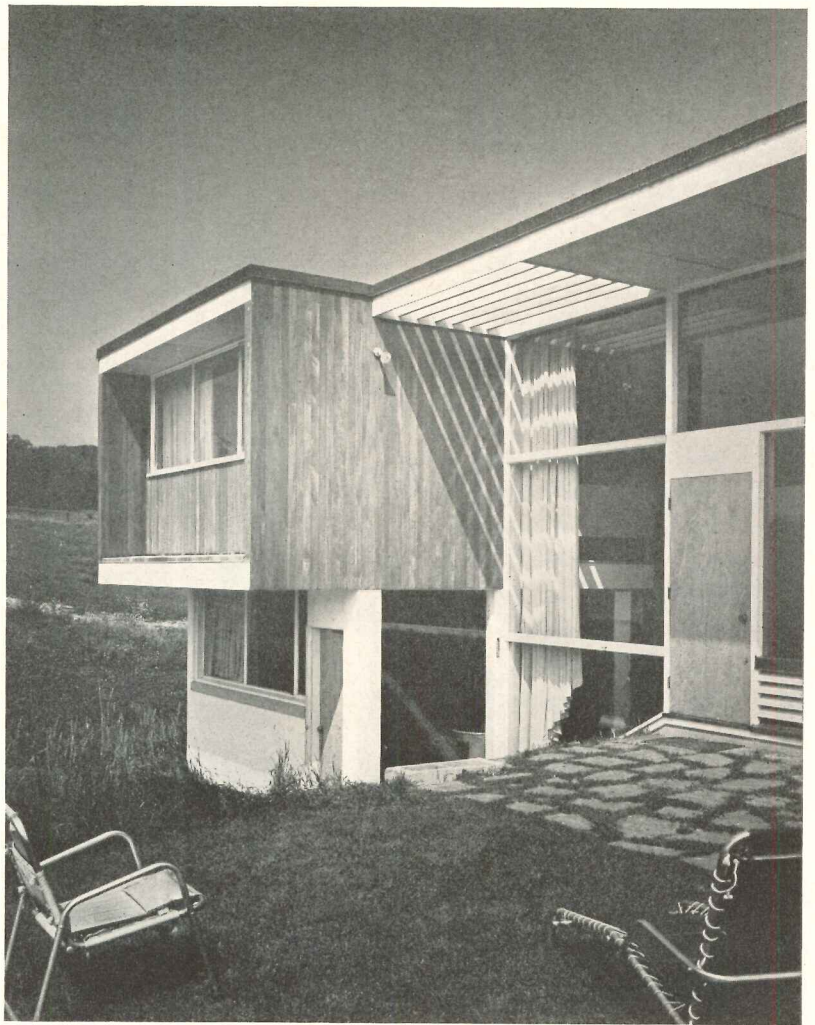


One-and-a-half story living room wing opens to south terrace; slatted roof overhang protects glass wall on this side from too much sun. Below windows are ventilating louvers

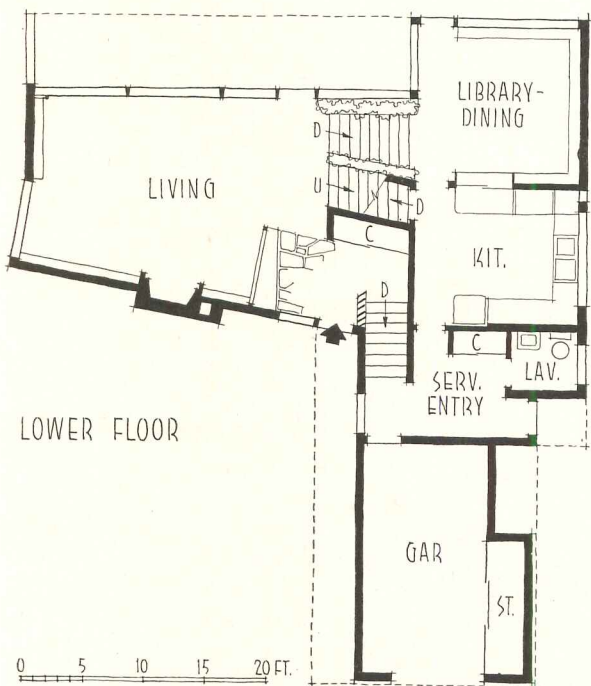




Joseph Molitor



Above left: on north side, house slopes steeply down toward garage on lowest level; living room wall here is windowless brick, with floor-to-ceiling bookshelves on interior. Above: at southwest corner of house, one bedroom projects over lower-level library-dining room (below)



## KEEP HOUSE

*Interior of the house is much concerned with books, as these photos show. Right: looking from living room up toward balcony study and bedrooms, and down to library-dining room. Below, and below right: living room has floor-to-ceiling book-shelves on two walls, completely filled*



Joseph Molitor



### 3. ALABAMA: ROCKY LEDGE

*Residence of Dr. and Mrs. W. C. Kennedy  
Florence, Alabama*

*Turner & Northington, Architects*

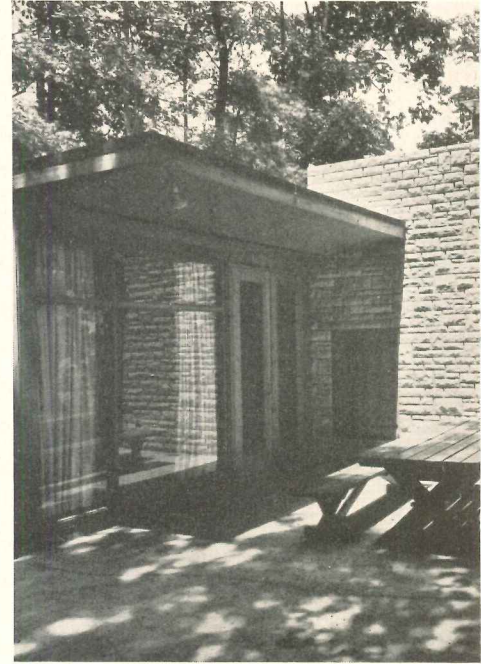
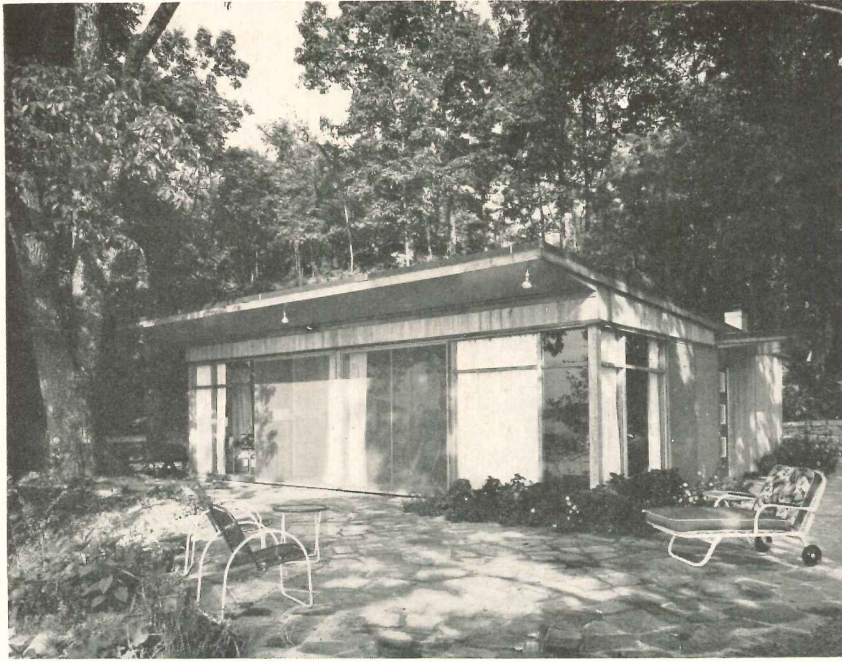
Jack Holmes

THIS SMALL ALABAMA HOUSE was planned as a lakeside retreat for its owners — and a retreat it certainly is. It is situated on an almost inaccessible rocky ledge jutting out into Lake Wilson; a private drive, some two miles long, terminates in a turnaround and parking area 25 ft above the house itself. From there, limestone steps wind down the side of the rock to the entrance terrace.

As originally planned, the house was to be built in two stages and used only for weekends until the bedroom wing was added. Actually, however, it is already being used as a year-round residence. When the new wing is added, it will be an entirely separate structure occupying an adjacent ledge; a glazed bridge spanning the deep crevasse between ledges will connect it with the living room wing.

The house is of wood construction with timber connectors used in all connections between beams, columns and rafters. The exterior is cypress, oiled and bleached. Interior walls are cypress and plywood, both natural and wiped. Floors are white concrete with terrazzo strips. The roof is covered with white marble chips — partly to provide a heat reflecting surface, and partly because the first view of the house (from the parking area) is of the roof.





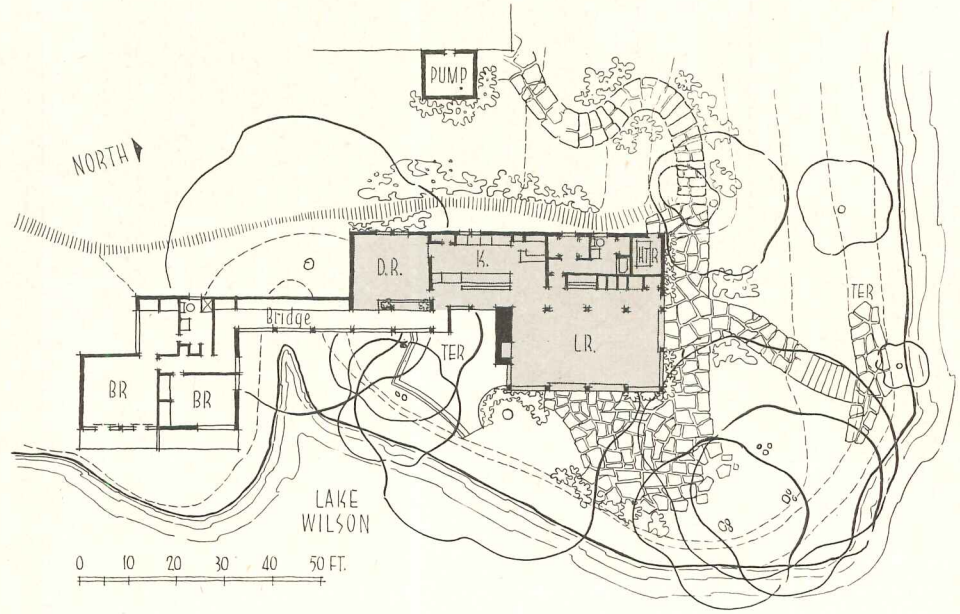
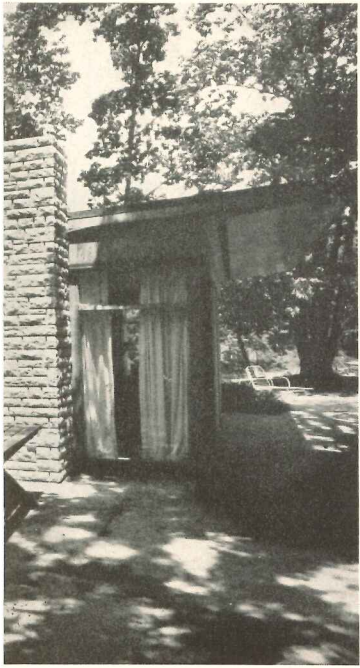
**KENNEDY HOUSE**

*The house is surrounded on three sides by terraces, each of which serves a different need. Eventually there will also be a lower terrace at water's edge, where a boathouse is to be constructed (see plan)*



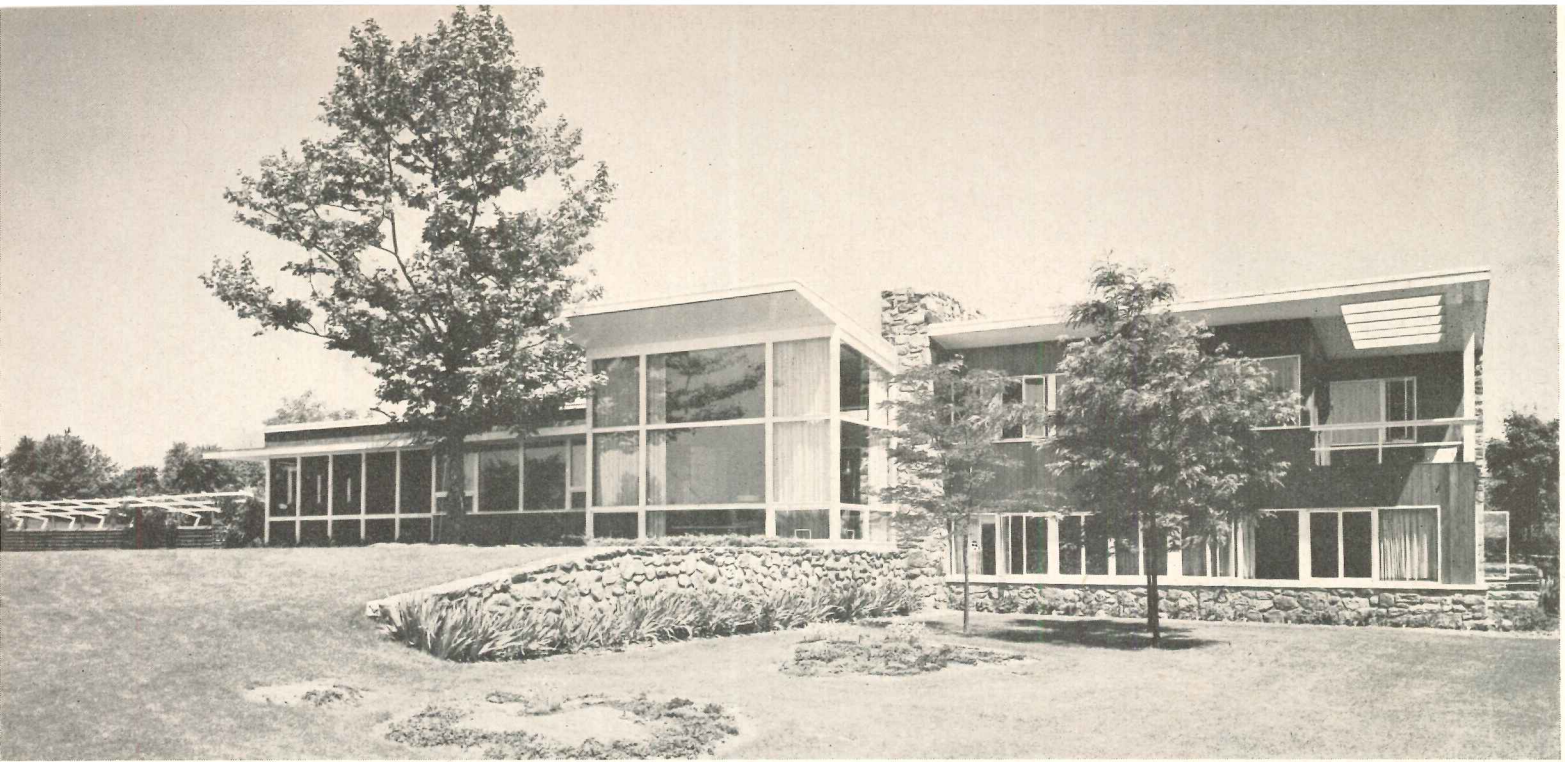
*Living room has three 8- by 8-ft sliding glass doors along one side. Fireplace wall is stone, with copper trim; ceiling is of 2- by 2-ft striated plywood squares, laid opposing. Opposite: piano is recessed into the wall, with keyboard exposed and louvers above to direct sound into the room*





Jack Holmes





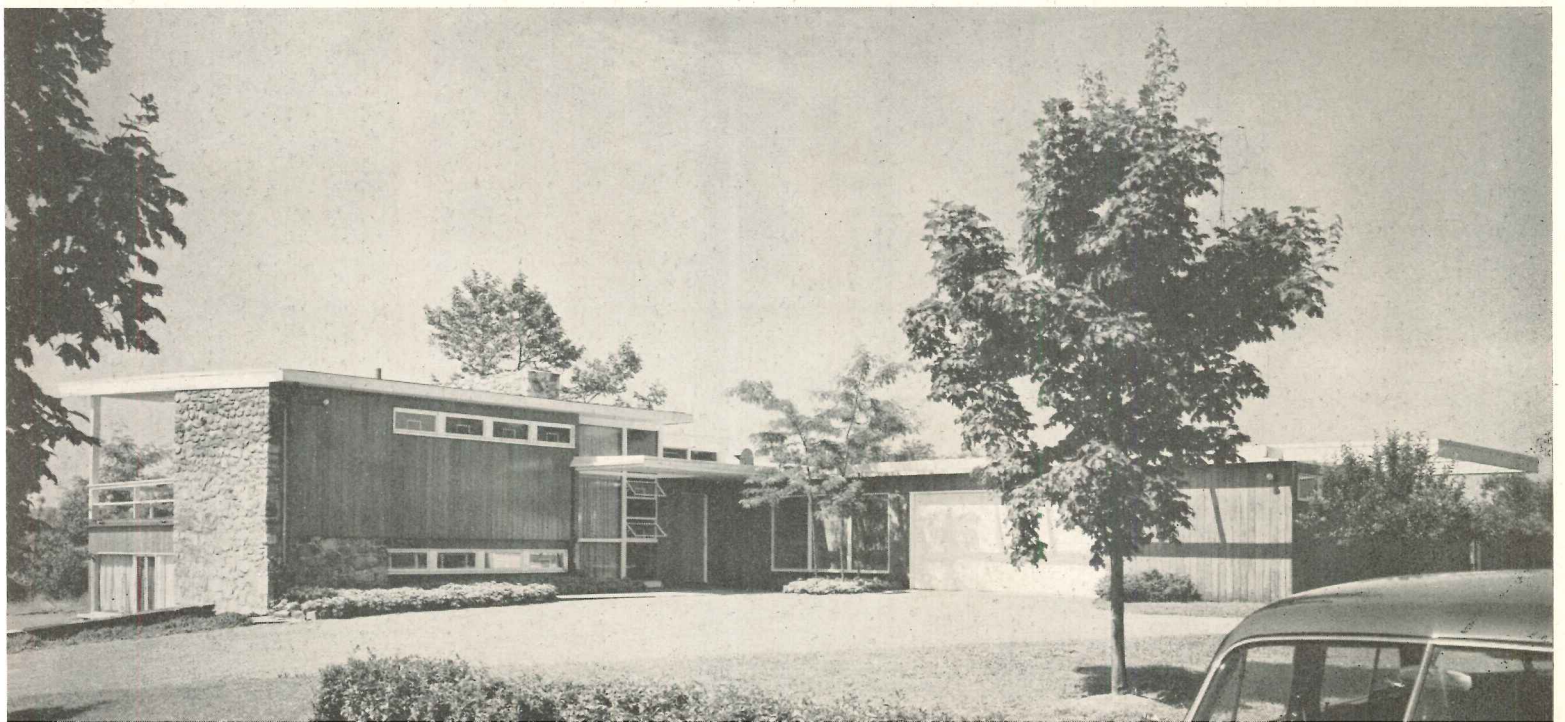
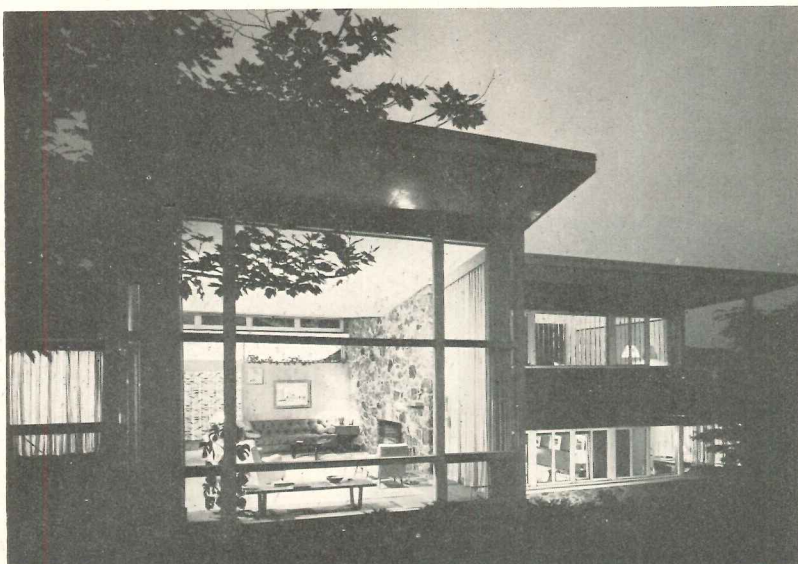
#### 4. NEW YORK: RESERVOIR VIEW

*House in Westchester County*

*Edelbaum & Webster,  
Architects*

*Landscape Architect: Entourage Inc.  
James C. Rose, Consultant*

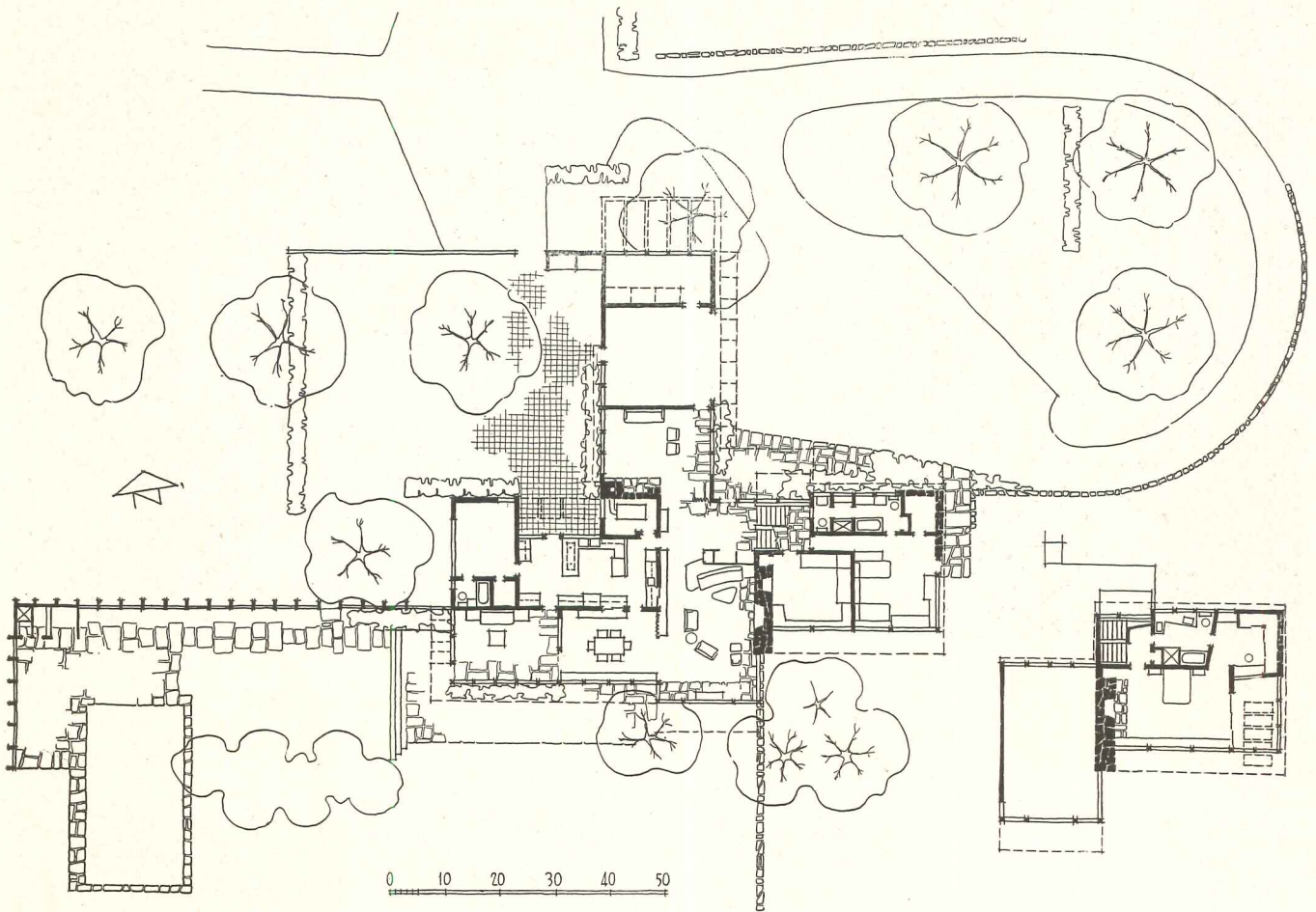
*Contractor: Joseph Moje*



LIKE MANY CITY DWELLERS who move to the country, the owners of this house purchased a site with a pleasant view and instructed their architects to make the most of that view. The 12-acre property, within commuting distance of New York City, is in a rural area where good hunting and fishing abound; it consists of rolling fields fringed with trees, and overlooks a city reservoir and pine-covered hills.

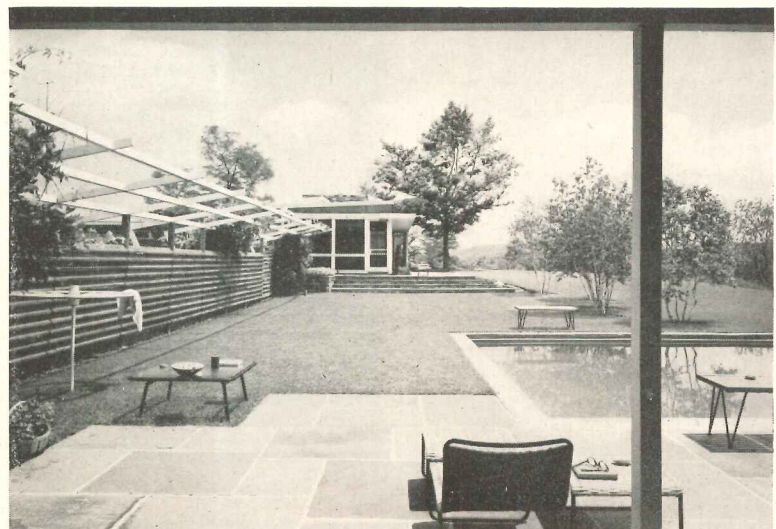
The house was placed on the brow of a southern slope, 1500 ft back from the road and facing the reservoir. Its T-shaped plan not only gives all main rooms a share in the view, but also separates the service and approach

areas from the living area. The bedroom wing, at the east end of the house, is two-storied, with the master suite half a story up from the living room, and the son's room and study-guest room a half story below the main level. The master suite has its own sun terrace, dressing room and spacious bath (with two wash basins — one at standing height, the other at sitting height). The lower-level study-guest room has a stone fireplace, built-in desk and files, right-angled daybeds with a corner blanket-storage unit, and built-in drawers. The son's room has its own entrance, and even has a cork wall for pin-ups.



Robert Damora

Local rough stone and natural cypress boarding were chosen for the exterior to harmonize with the site. Foundations are stone and concrete block; framing is fir



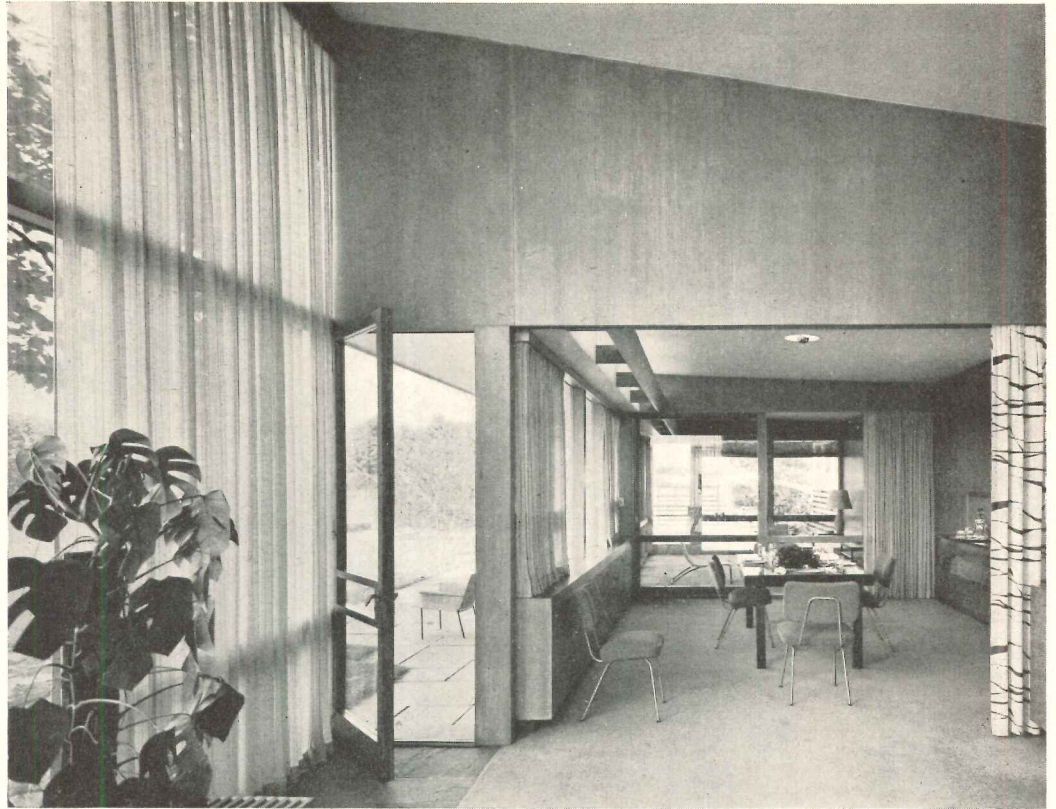
HOUSE IN WESTCHESTER COUNTY



*Living room has three exposures, generous storage space for books and records, music controls at table height, and a bar with pantry access. Rough stone of fireplace wall was selected to contrast with smooth expanses of glass, and stone border of floor to emphasize texture of carpet and fabrics*

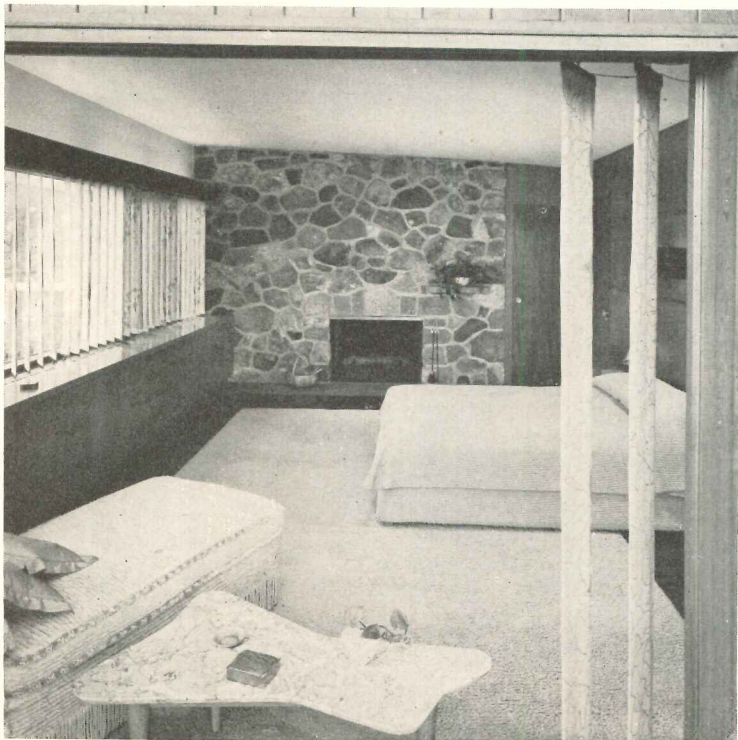


*Below: dining area can be curtained off when desired; change in ceiling height makes it almost separate room*



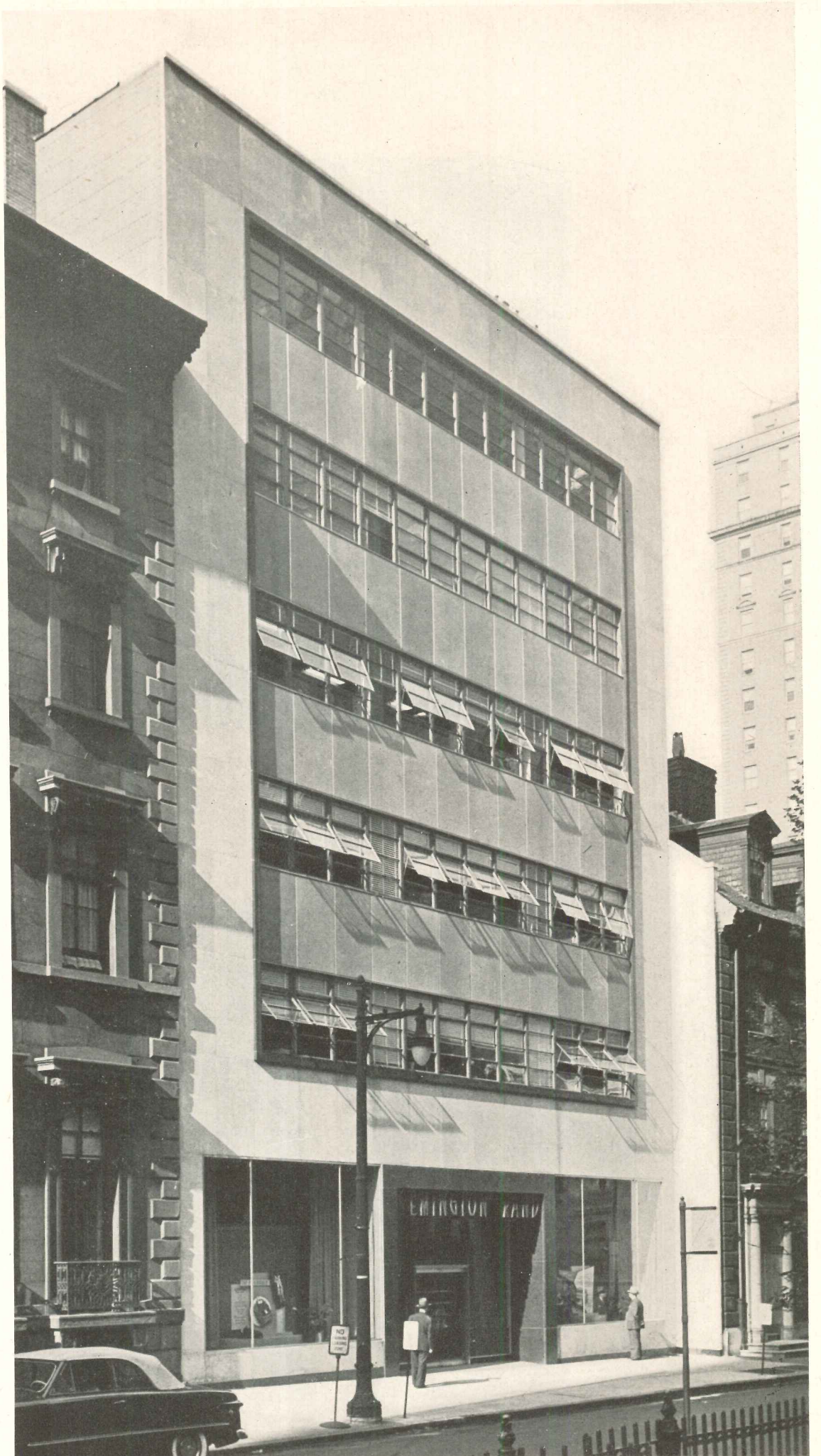
Robert Damora

*Below: left, the master bedroom, half a story above living room, has a stone fireplace and a private sun deck; right, kitchen cabinets are birch, made on job*



SMALL OFFICE BUILDINGS

REMINGTON-  
RAND INC.  
OFFICES





The first floor of the Remington-Rand building (plan below) houses main sales area, utilizes secondary street at rear for shipping and receiving

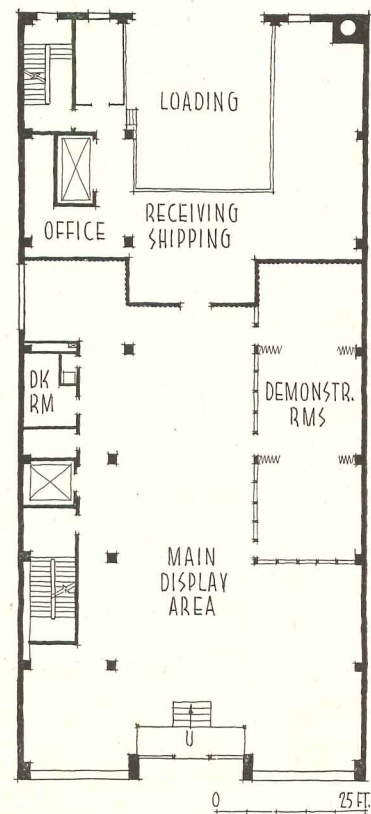
## OFFICES CONSOLIDATE ACTIVITIES FOR BUSINESS MACHINE SALES

*Philadelphia, Pennsylvania*

*Thalheimer and Weitz, Architects*

THE MULTIPLE ACTIVITIES of a business machine sales office — display, demonstration, administration, stock storage and maintenance — have been brought together here in a building almost as neatly styled as the machines it exhibits. The architects have circumvented the often heard debate on whether a multi-story building — even a small one as this — should be expressed vertically or horizontally, and have simply grouped windows and aluminum spandrels into a large panel with a cast granite frame.

All six floors are similar in plan, with utilities and toilets grouped on the stair wall. The rest of the areas are divided into offices and general stock space on the 2nd, 3rd and 4th floors, a maintenance division on the 4th, and stock and supply storage on the 5th and 6th. The building is constructed with steel frame, common brick exterior walls, concrete floor slabs. The facade is faced with limestone. Interiors have painted plaster walls, asphalt tile floors and hung plaster ceilings.



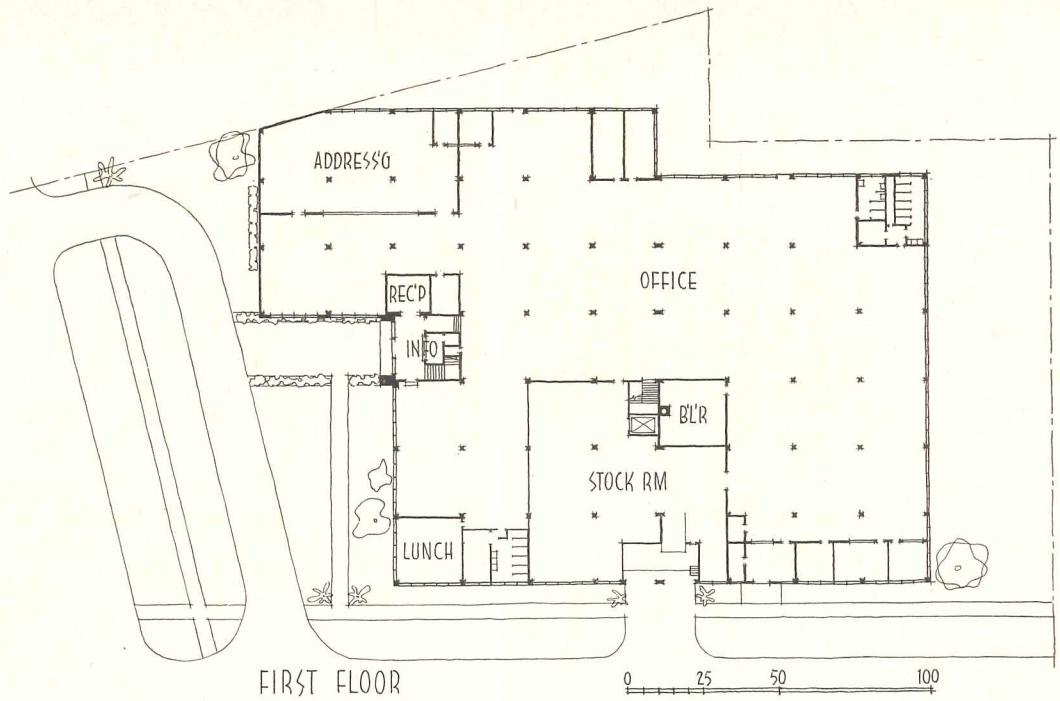
SMALL OFFICE BUILDINGS

ESQUIRE-CORONET OFFICES



Hedrich-Blessing

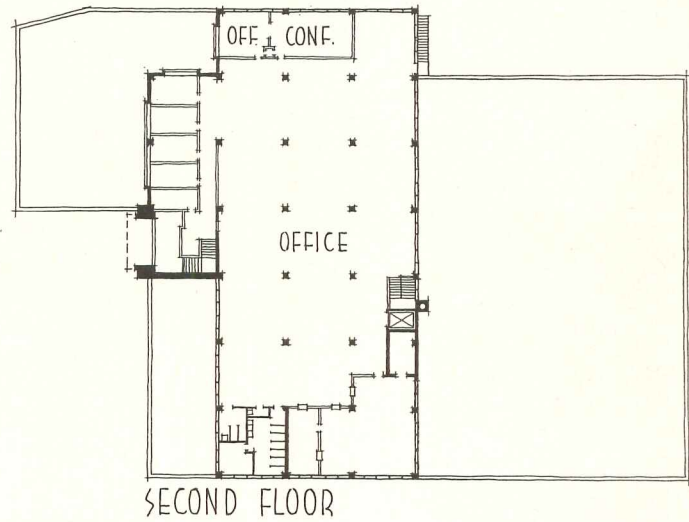




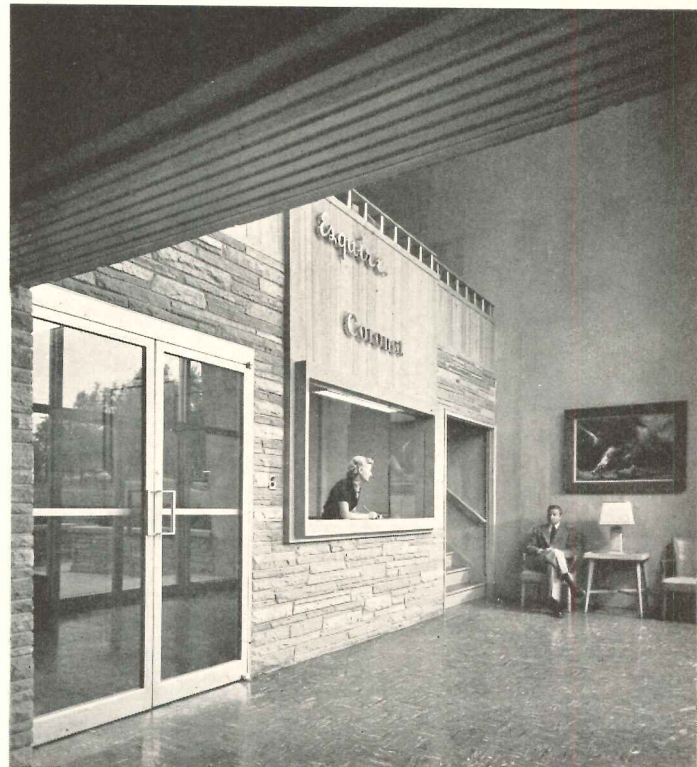
## LOW COST OFFICES FOR A MAGAZINE DIVISION

*Boulder, Colorado*

*Ralph Stoetzel, Architect*



THESE EFFICIENT, PLEASANT OFFICES for Esquire-Coronet Publications' Circulation Department are typical of an apparently growing trend for large organizations to relocate many of their activities in less congested cities — a trend which gives mutual benefit both to the cities and the businesses concerned. In this case, Esquire-Coronet desired to increase its operating efficiency by transferring the Circulation Department from company headquarters in Chicago. To attract an operation of this type, and thereby increase employment and revenues, the City of Boulder and its Chamber of Commerce donated a site for the offices. The architect was given the problem of designing a suitable office building at the cost of an industrial type building. This was solved by providing an open, flexible plan and a structure of reinforced concrete. Exterior walls are natural finish concrete, with some use of stone and brick at the entrance. Office interiors are finished with glazed tile walls, asphalt tile floors and acoustic tile ceilings. A curved driveway and a two-story, open-front lobby were used to ease the transition from the main street, which lies 10 to 15 feet above average property grade of

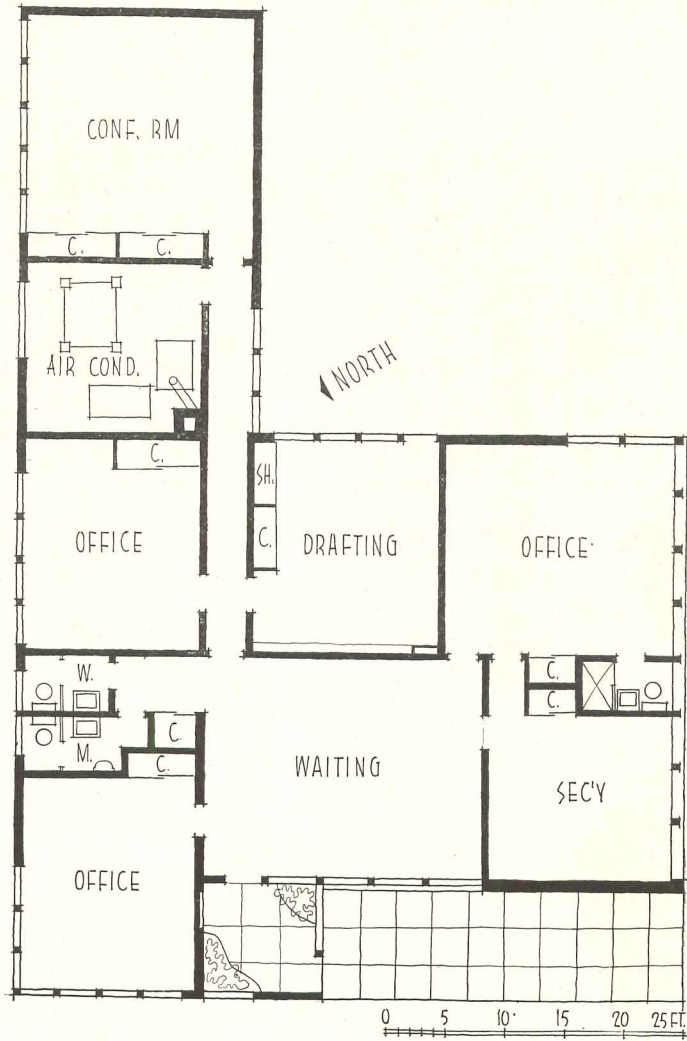




FRANK STAMATO  
& CO.  
OFFICES

OFFICES FOR AN AGREEABLE



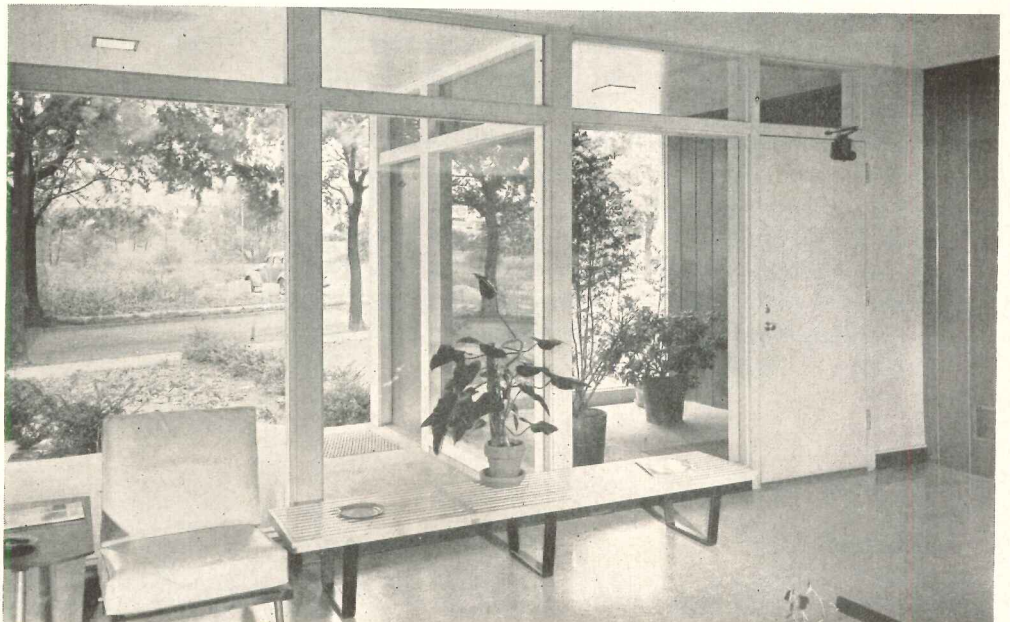


## CONTRACTOR

*Lodi, New Jersey*

*George Cooper Rudolph, Architect*

THE OWNER of this office building, a New Jersey road builder and garbage collection contractor, requested only three things of the architect: the correct number and sizes of offices, air conditioning, and his name visible from a highway 200 yds to the south. All questions of design, esthetics and furnishings were left in the architect's hands. After completion of the contract, Mr. Rudolph says of his client, "Of course now he is broke, but very proud."

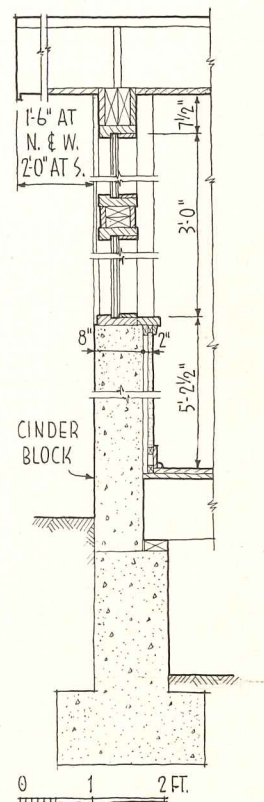


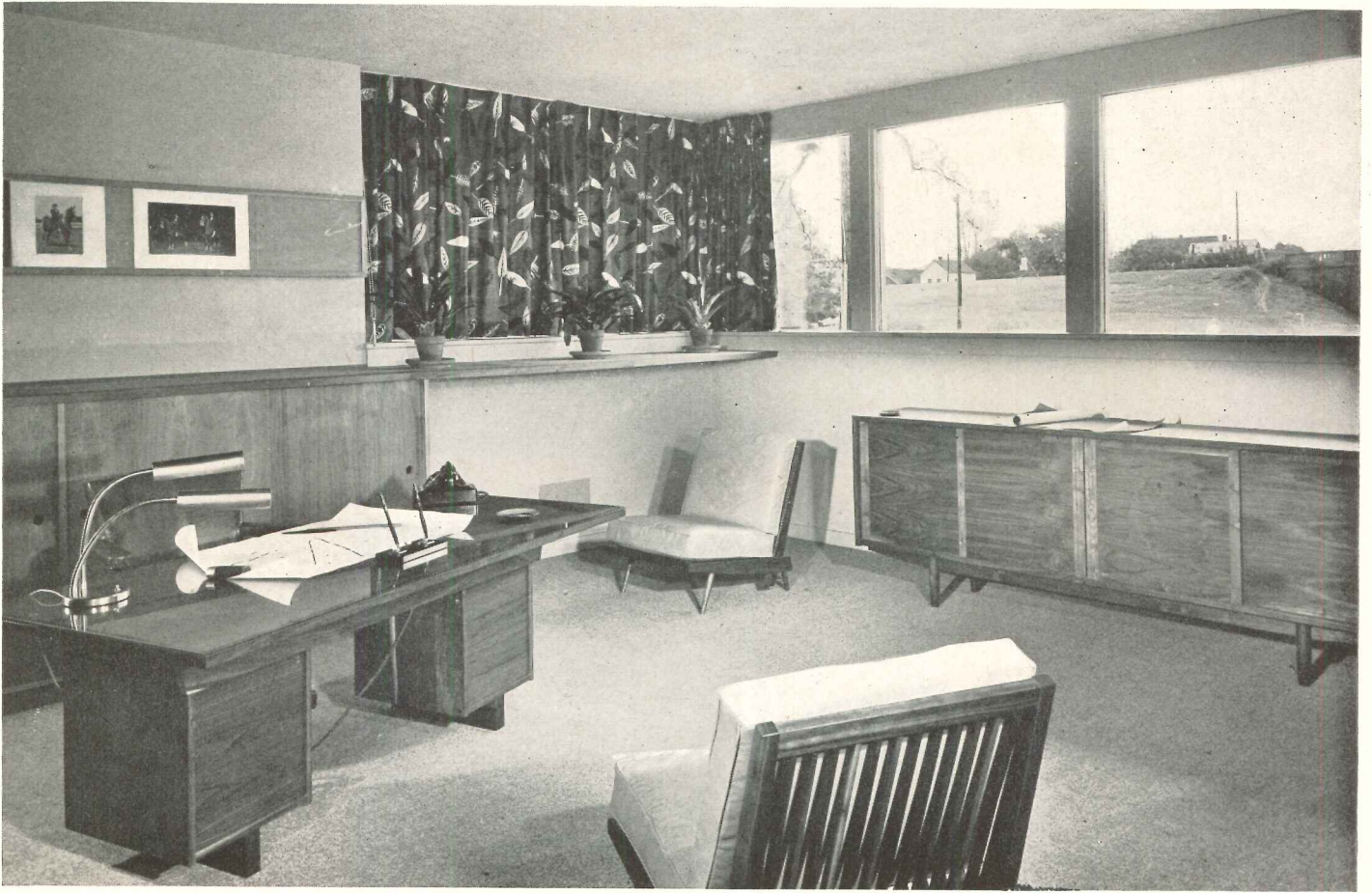
STAMATO OFFICES



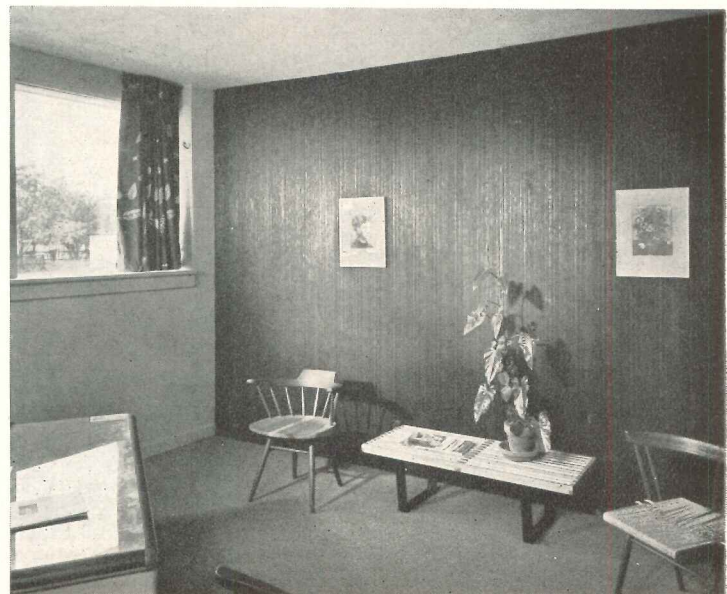
Ben Schnall

The building amply fulfills the client's few stipulations and provides extremely comfortable and pleasant areas for staff employees and clients. A planted entry leads into the waiting room, which joins directly with the large-size offices and the drafting room. The conference room is placed at the end of an ell for greater privacy and quietness. Construction is straightforward and simple (see wall section, right). Exterior walls are concrete block painted white, stone, and cedar-stained vertical wood siding. The large sign is on an extended wall to integrate it with the general design — and is quite visible from the highway. Interior partitions are wood frame, finished with plaster or wood veneer. Floors are rubber tile. Acoustical plaster is used on the waiting room ceiling. Landscaping for the project was done by Janet Darling.

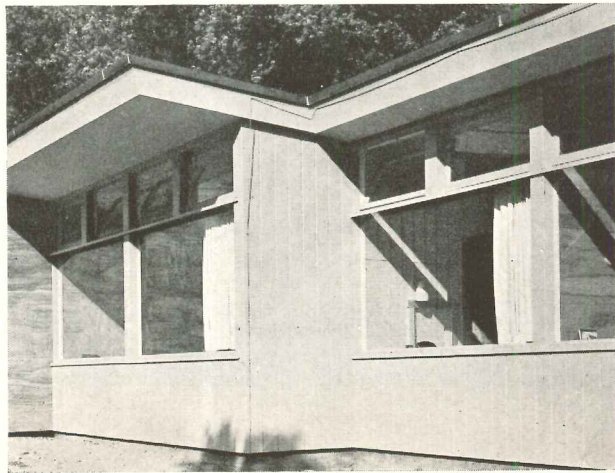
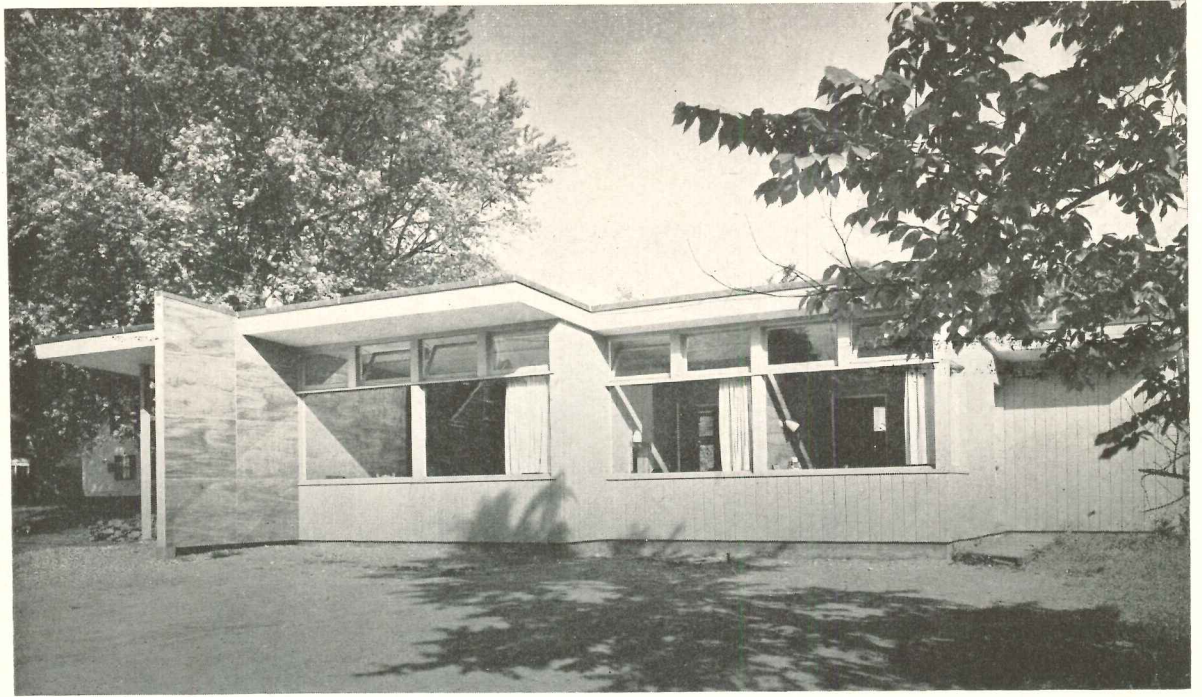




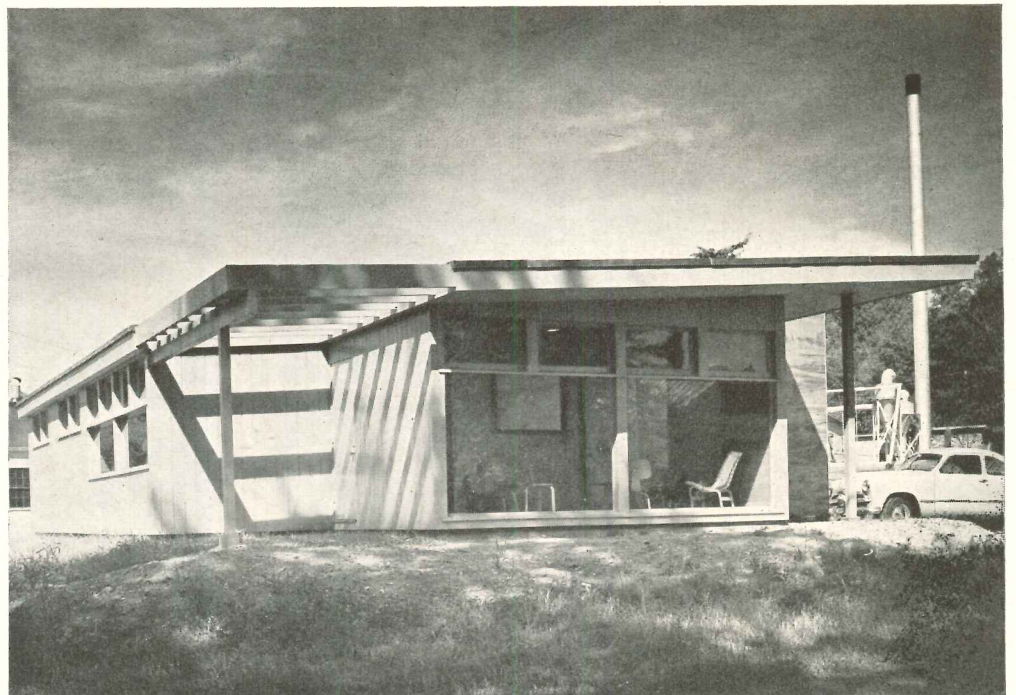
*The interiors were designed by Alexander R. Stavenitz, an associate of the architect, and include furniture by George Nakashima, a gesso mural by Louis Ross*

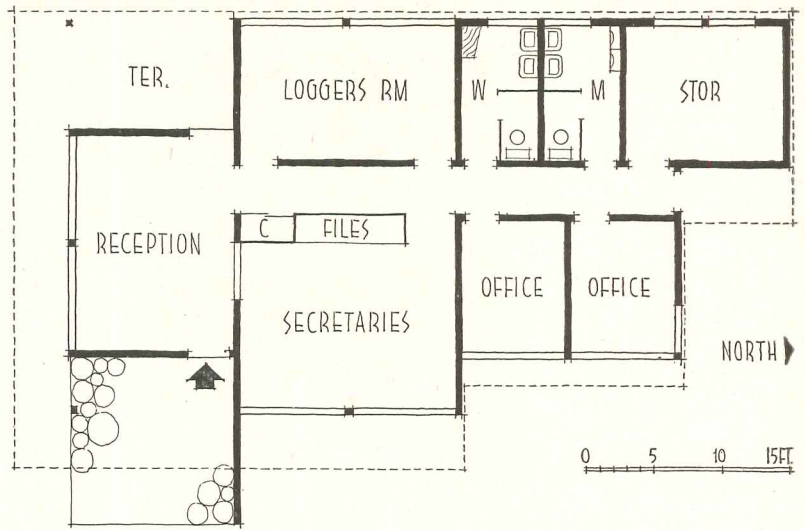


SMALL OFFICE BUILDINGS



BRADFORD  
VENEER AND  
PANEL CO., INC.  
OFFICES





## PLYWOOD MILL OFFICE FEATURES OWN PRODUCTS

*Bradford, Vermont*

*E. H. and M. K. Hunter, Architects*

THE CLEAN, UNAFFECTED DESIGN of this small plant office gives subtle emphasis to plywood products made by the owners, as well as fulfills its primary purpose of giving the office staff more pleasant working quarters. The building replaces use of an obsolete house as a center for paying factory employees and receiving customers, visitors, and lumbermen with their reports. The structure has framing of eastern spruce, concrete floor slab, and vertical pine shiplap siding painted gray. Interiors are finished with a variety of plywood panels.

The spur wall at the front displays waterproof plywood and gives added sun protection to adjoining offices. Noisier working spaces have acoustical tile ceilings instead of plywood. All detailing was specially done to enable the regular staff of maintenance men at the mill to do all purchasing and labor. Heating is by a one-zone, radiant floor panel system with a converter, so that steam from the main factory could be used. Most of the furniture used is of molded plywood and carries out the general plywood theme.

Joseph W. Molitor





BREWERY OFFICES DESIGNED



Hedrich-Blessing

MILLER  
BREWING  
COMPANY  
OFFICES





## TO BETTER PUBLIC RELATIONS

*Milwaukee, Wisconsin*

*Brooks Stevens Associates, Designers*

*Arthur L. and Arthur W. Seidenschwartz,  
Architectural Consultants*

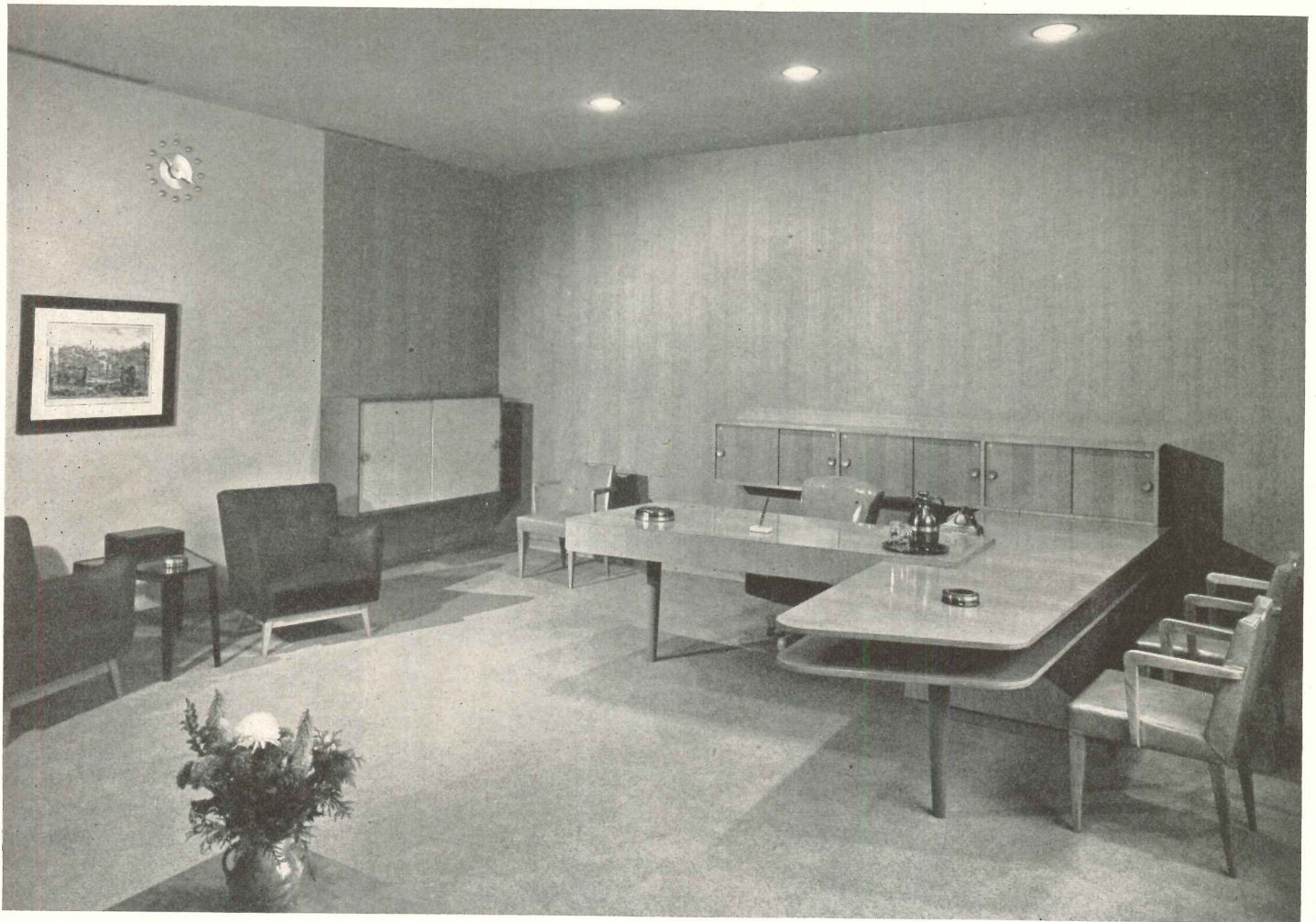
*Dailey, Brenner & Schreiber, Management Engineers*

THE CONSCIOUSLY DRAMATIC LIGHTING and lobby design of this new administration building for the Miller Brewing Company were planned to serve as an arresting focal point in the midst of the older, traditionally-styled plant buildings. The owners desired the building to be of the same basic materials — beige brick with limestone trim — as the others, but also wished it to be modern, functional, and to have as much merchandising and public relations value as possible. With this in mind, the designers, who also serve as consultants to the firm on all phases of merchandising design, were commissioned to give "complete consideration" to the general architecture, furniture design, fabrics, colors, *objets d'art*, and general planning for the industrial murals executed by Edmund Lewandowski.

The main floors of the building are planned around a central open area for general clerical groups, with executive offices ranging the outer perimeter. Most of these outer offices are designed with movable metal partitions, and can be altered in size on 4-ft modules. A penthouse-type office with balcony for the president is located above the corner lobby and an auditorium equipped for movies is in the basement. The building is of steel frame construction with brick exterior. Interior partitions are cinder block, plastered and painted.



MILLER BREWING COMPANY OFFICES



Hedrich-Blessing

Principal executives' offices (above, directly at right) and Board Room (right center) have specially designed plastic-surfaced furniture, oak veneer paneling, gold carpets. Other colors — gray greens, tile red, amber — were picked from the company's packaging colors. All metal work is two-tone brass and stainless steel to recall the brass beer and steel foam of an abstract symbol on the facade. The new building has resulted in a sharp rise in Brewery tour attendance

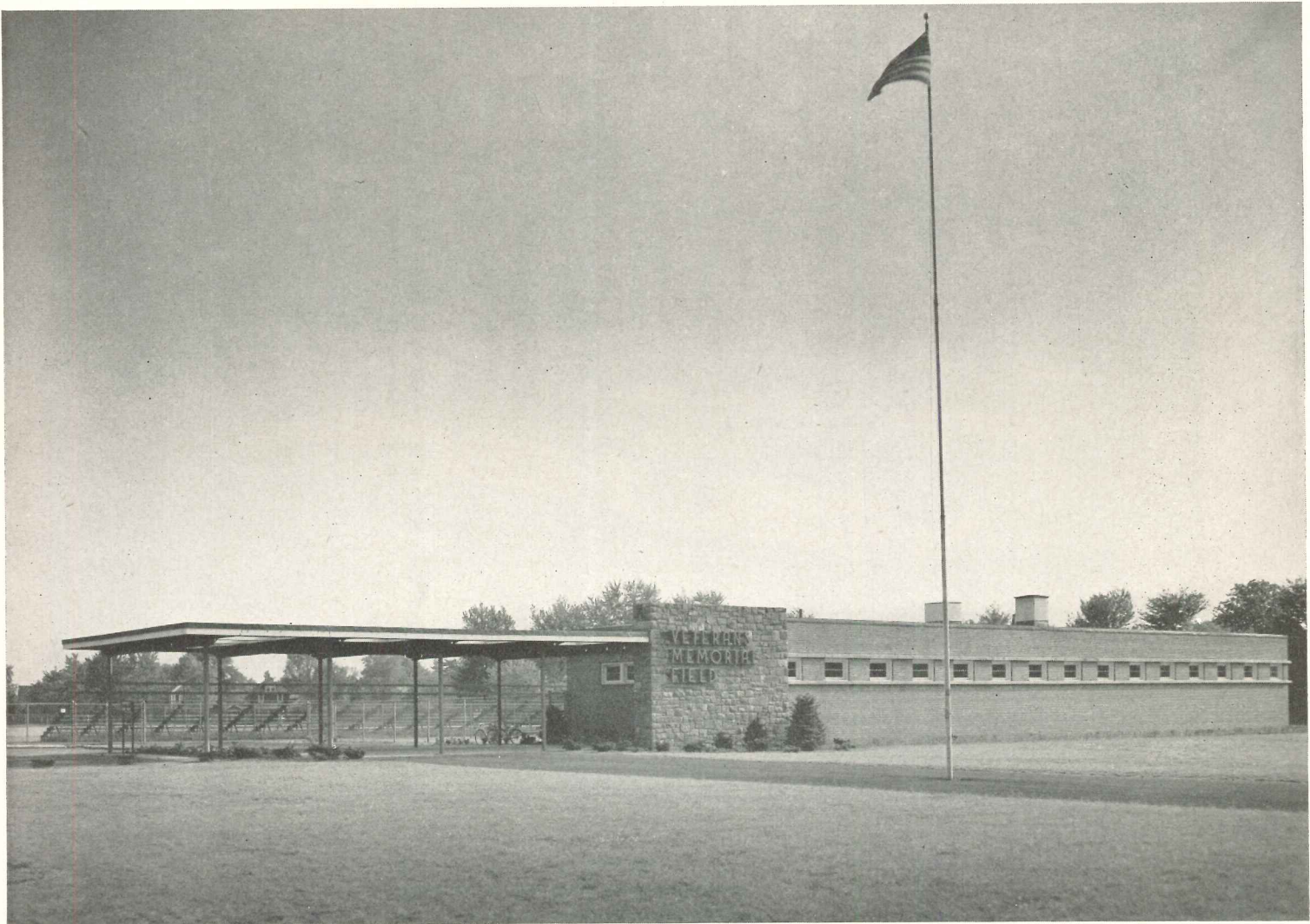




Central clerical area (above) is made comfortable with fluorescent lighting, air conditioning, acoustic ceilings. Below: basement auditorium



# FIELD HOUSE, VETERANS MEMORIAL FIELD,



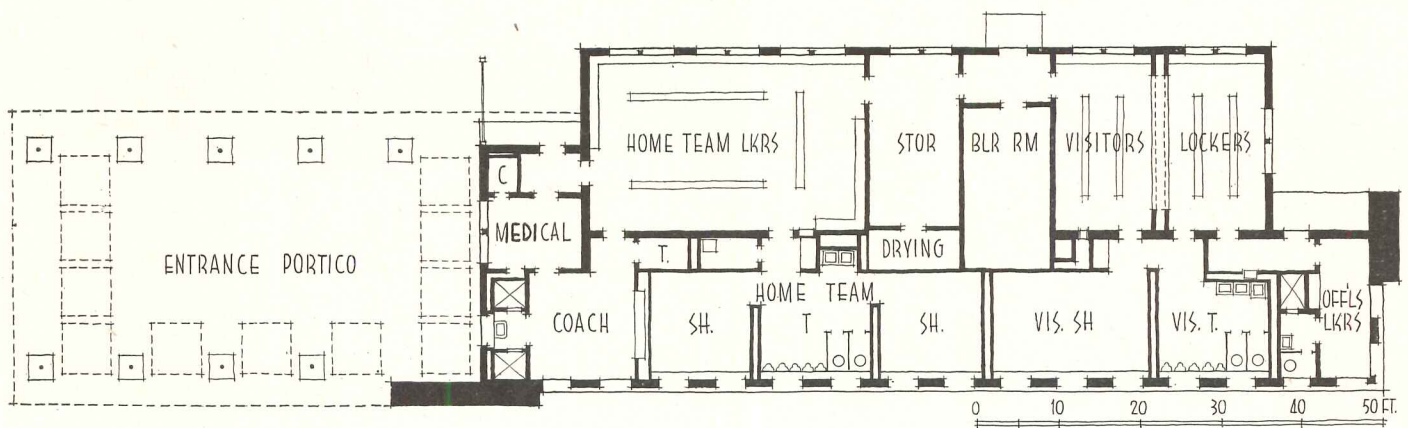
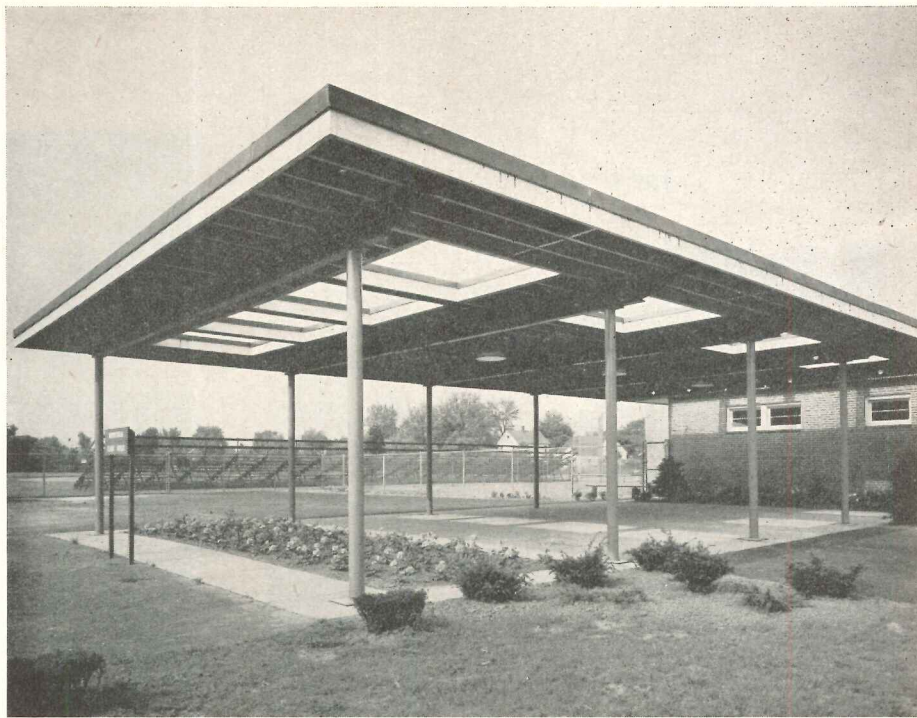
*Cost of construction and the building committee's insistence on easy and inexpensive maintenance were important factors in choice of materials. Foundations are reinforced concrete; exterior walls are cinder concrete and brick, trim is cast stone*



Joseph Mollitor

# GREENFIELD, MASS.

*James A. Britton, Architect*



*Wm. Cushman & Son, Inc., General Contractor*

*Richard J. Harrington, Heating and Ventilating Engineer*

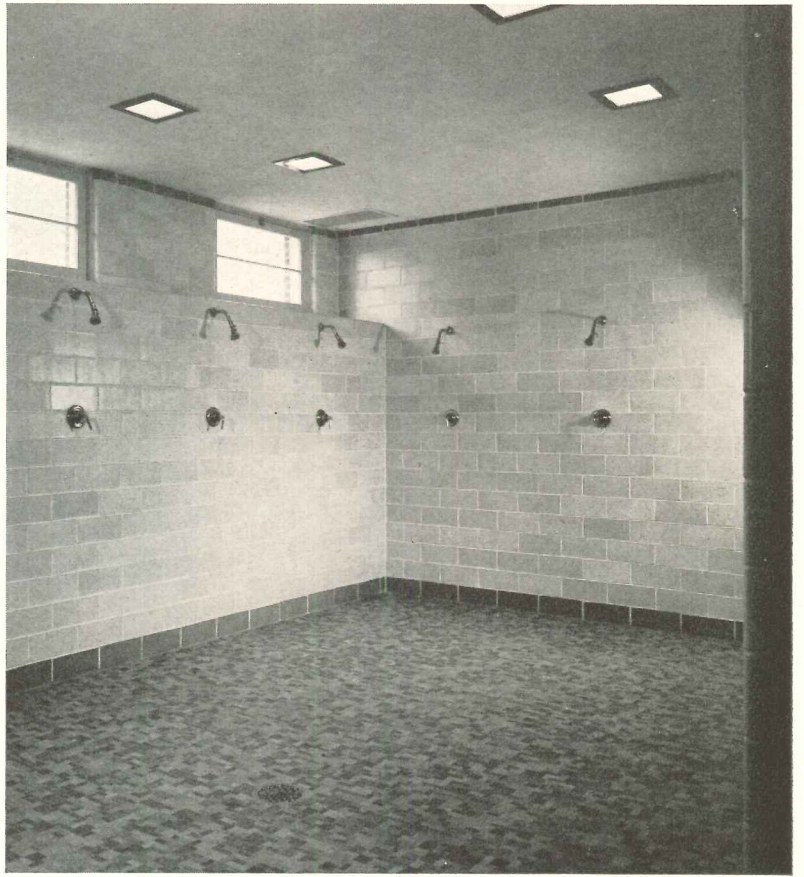
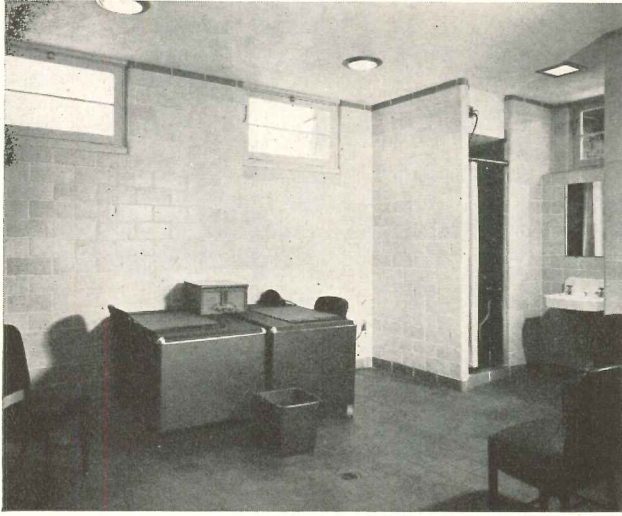
FOR ECONOMIC REASONS, the town of Greenfield (population 17,000) agreed to "streamline" its new athletic plant despite the fact that most of its public buildings are Georgian-Colonial. Now that it is completed, the citizens are proud of it and both town and architect, the latter reports, "are receiving exceedingly good publicity" from visiting teams and coaches.

The building is the first to be constructed at the Veterans Memorial Field, a 20-acre park and playground area in a rapidly expanding section of Greenfield. A sports arena may be added later, and the proposed new high school probably will occupy a site adjacent to the Field. Meanwhile the present building not only

houses the high school athletic teams, but also serves as a center for winter sports and summer playground activities, and is used by semi-professional teams.

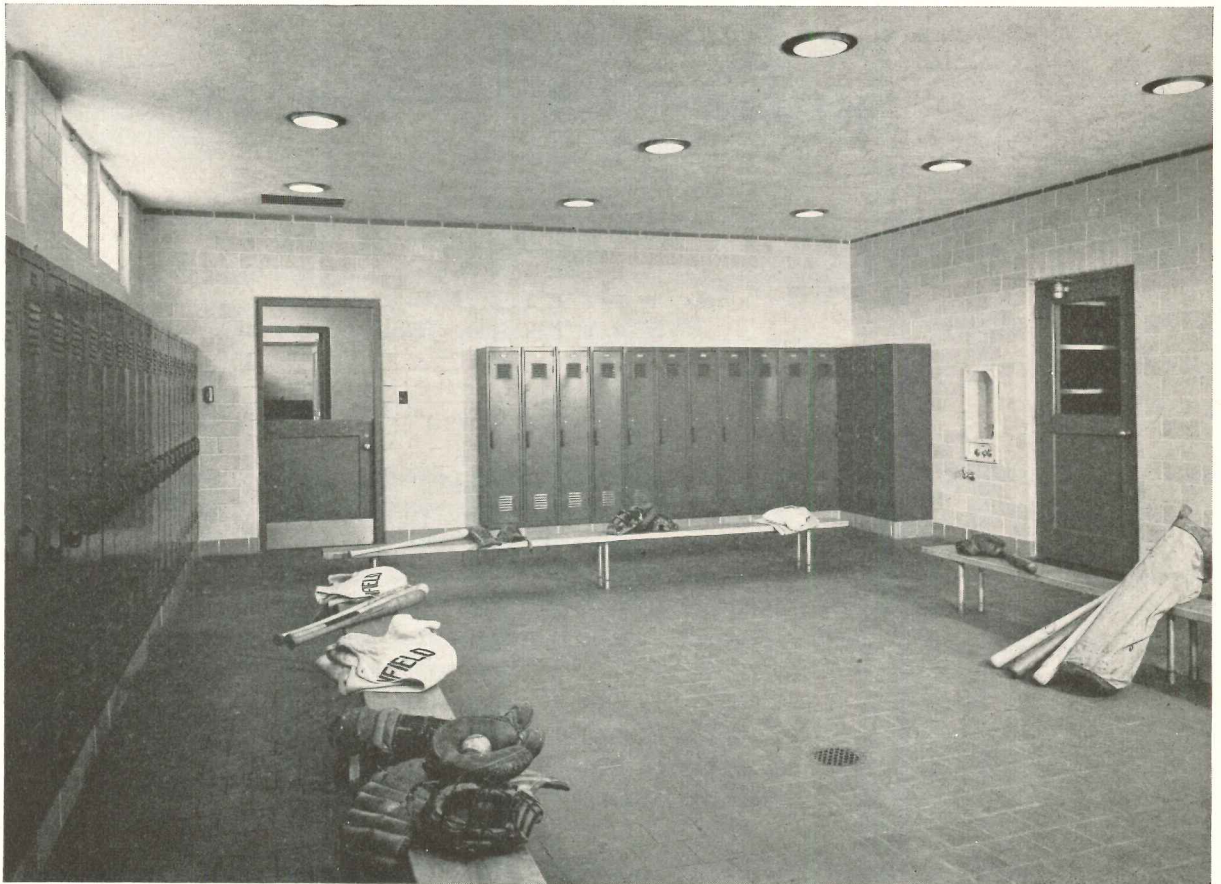
Requirements of the committee in charge of the project were numerous and detailed, starting with the stipulation that the building must be large enough to meet not only present but also future needs of the community. Considerable emphasis was put on keeping team members away from the general public, and visiting officials away from the teams — hence the long portico, which serves as the public "gate" to the Field, and the three separate entrances for home team, visiting team and officials.

## FIELD HOUSE



Coach's office (above) connects with both medical office and home team locker room (below), and has own shower. Interior walls throughout are glazed tile; floors are tile over reinforced concrete slab, ceilings are cement plaster on metal lath

Joseph Molitor

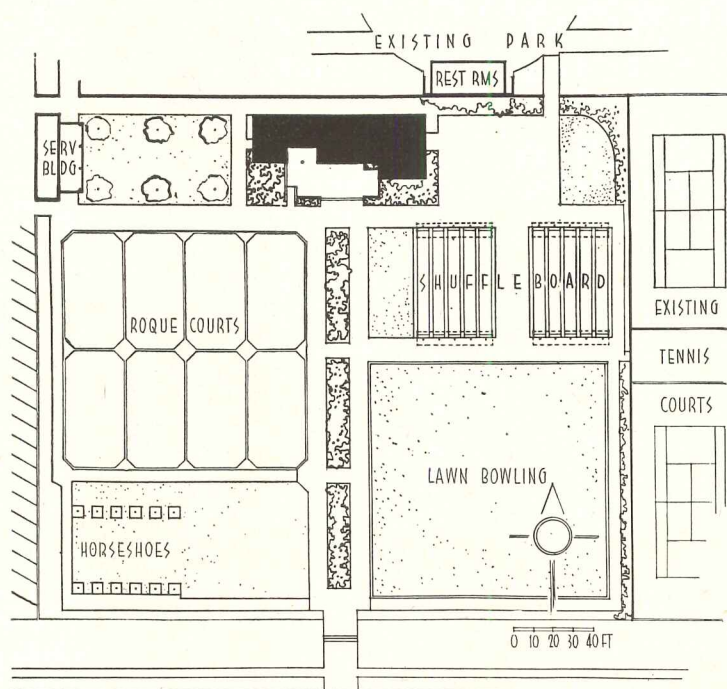




## ADULT RECREATION CENTER, GLENDALE, CALIF.

*Graham Latta and Carl Denney, Architects*

*Arthur G. Bartin, Landscape Architect*



CONVENIENCE was the keynote in the selection of the site for Glendale's Adult Recreation Center; providing varied facilities for an attendance of over 130,000 a year was the architects' problem. The site, 1½ blocks from the heart of the city, is a 300-ft-square portion of a city park, bordered on one side by a municipal parking area. The architects' commission included site planning, a clubhouse and service building, roque and shuffleboard courts.

The clubhouse, planned to serve both local members and visiting teams, consists of lounge, locker room, snack bar and kitchen. The kitchen is larger than required by the snack bar to permit preparation of luncheons for guest teams during inter-city roque and shuffleboard tournaments.

The building is concrete slab floor on grade with acid stain finish. Walls are reinforced brick, brush-coated; ceilings are acoustical tile.

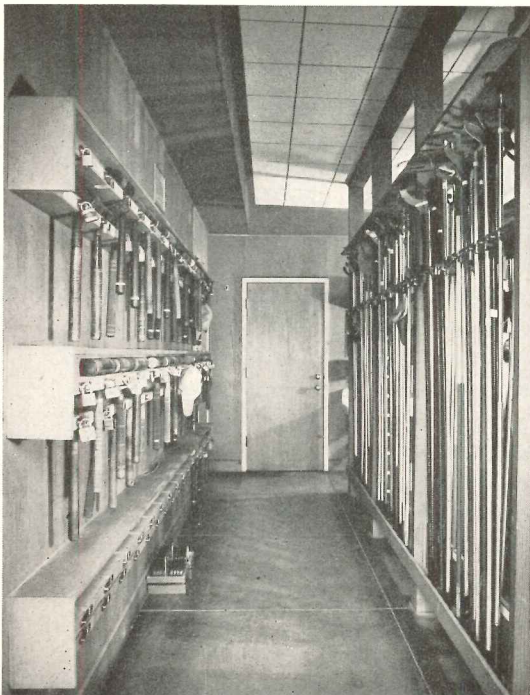


**ADULT RECREATION CENTER**

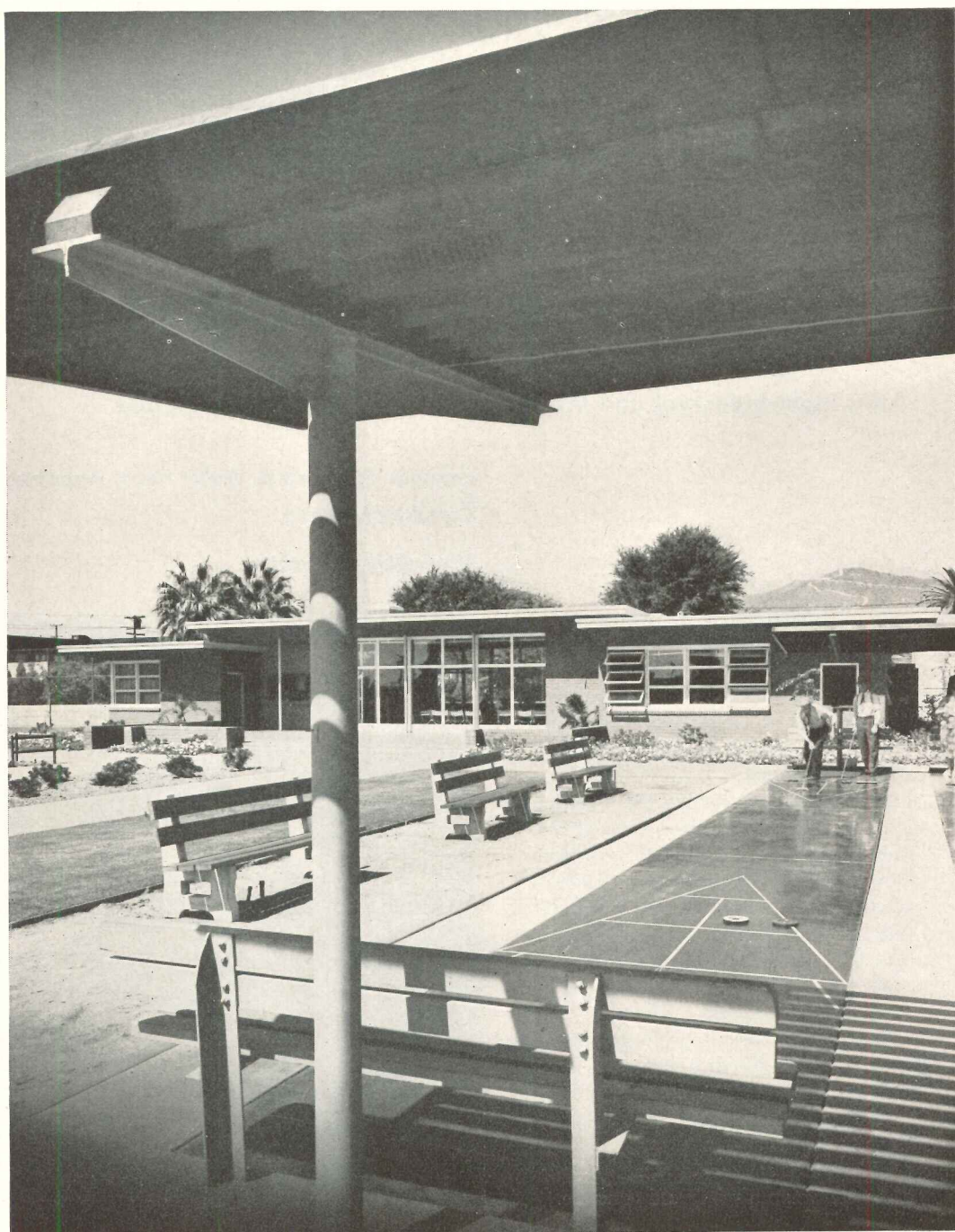
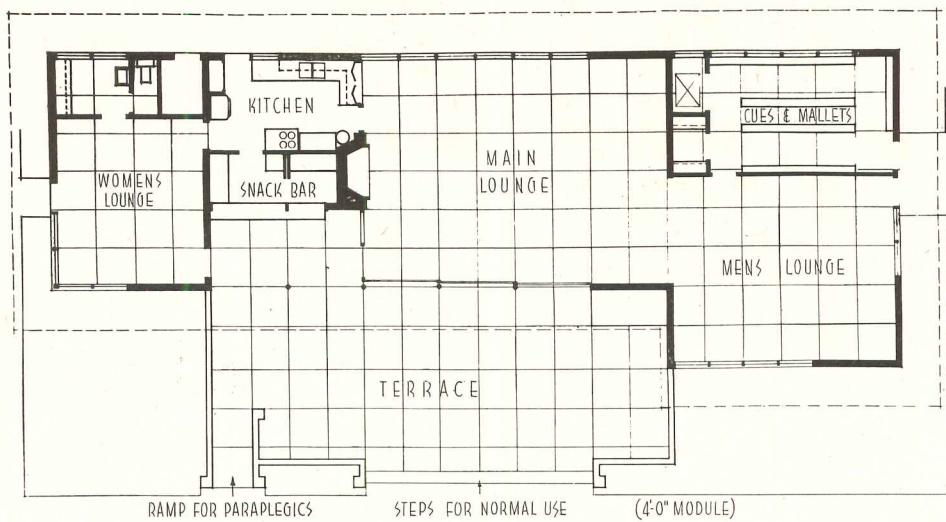
*Clubhouse centers around main lounge which can be thrown open to paved terrace by a triple sliding door (right). Window wall on opposite side of room (above) overlooks landscaped area to rear. Locker room (below) is primarily for storage of members' individually owned mallets and cues; a few lockers are also provided for bowlers. Note (plan opposite) ramp for paraplegics at west end of terrace*



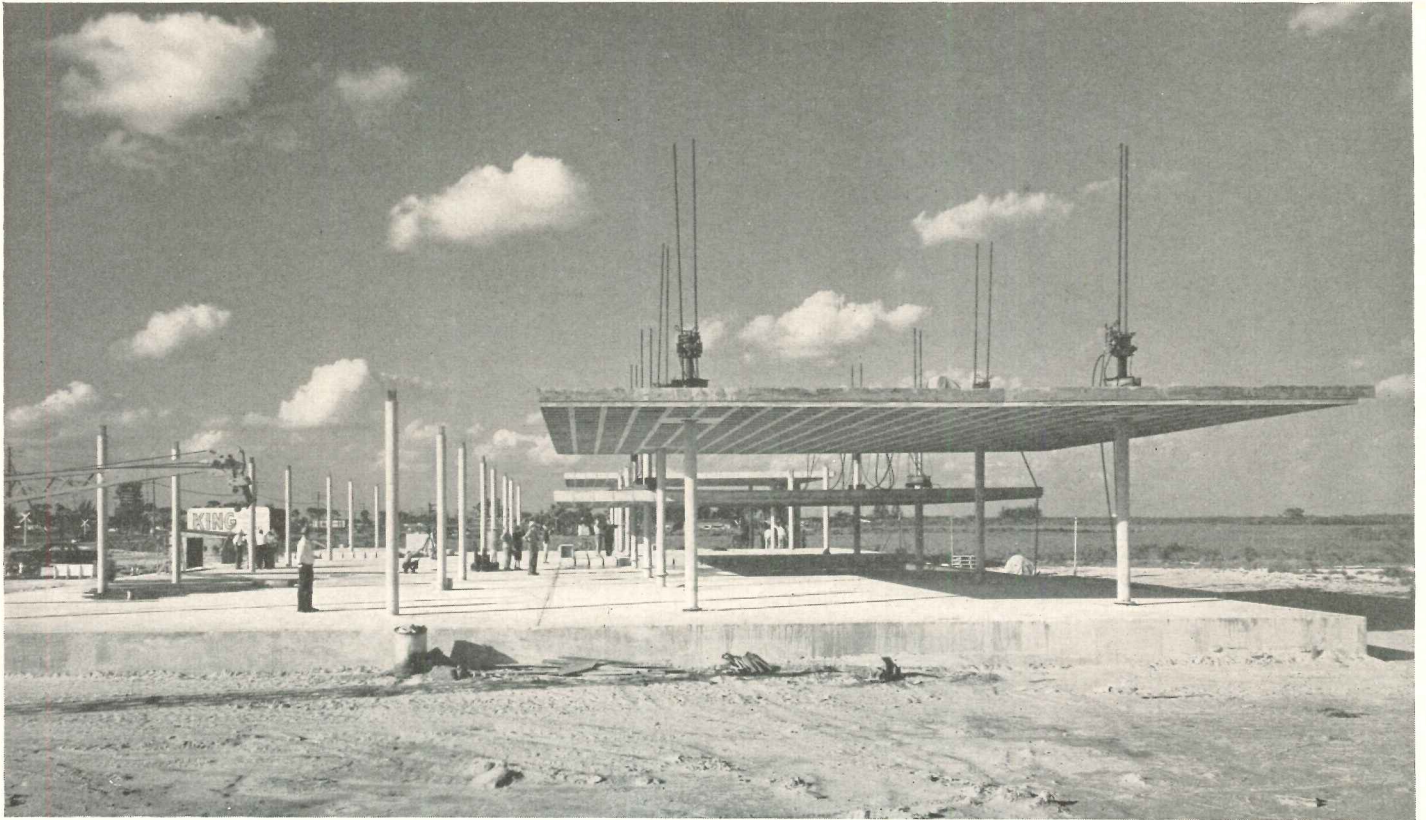
*Far right: concrete-based columns, slatted at top to receive cantilevered beams, with redwood louvers spaced and sloped at carefully controlled angles in opposite directions at north and south shelters, cut down summer sun on shuffleboard courts and secure maximum winter sun*







Julius Shulman



Jack Holmes

## MECHANIZED BUILDING TECHNIQUES COMBINED

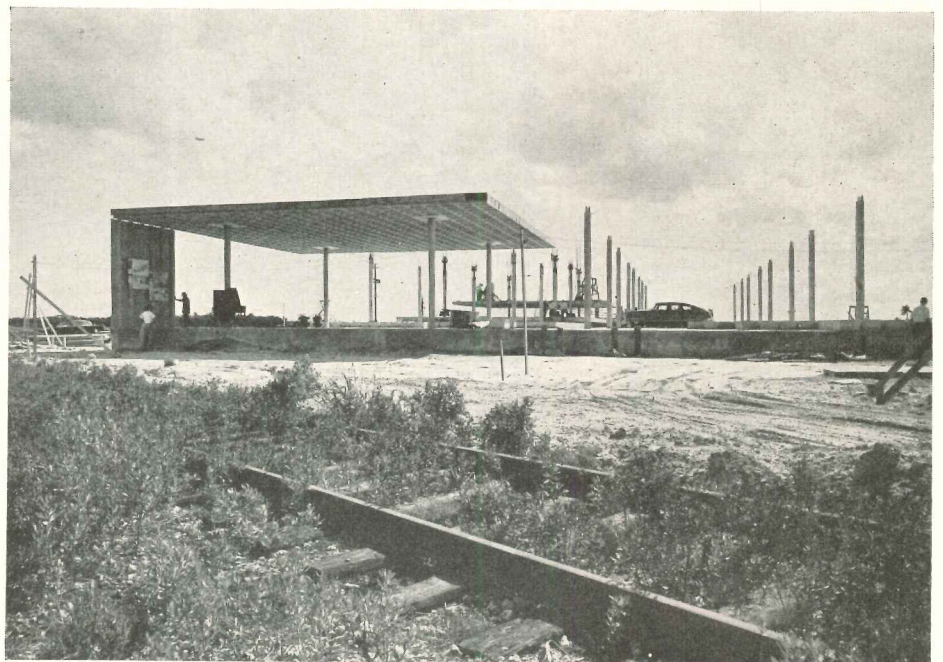
**Atlas Light Industrial and Warehousing Terminal, Miami, Florida**

*Laurence G. Farrant & Walter Harry, Associate  
Consulting Engineers*

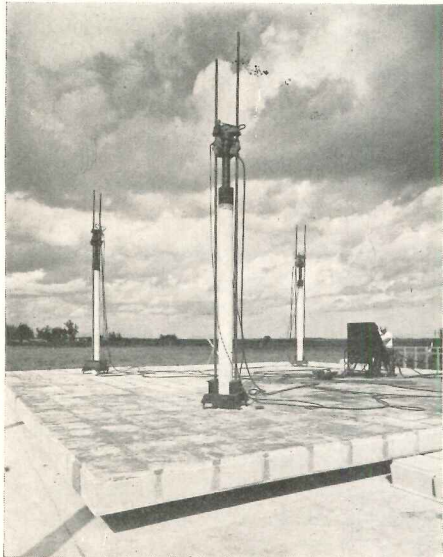
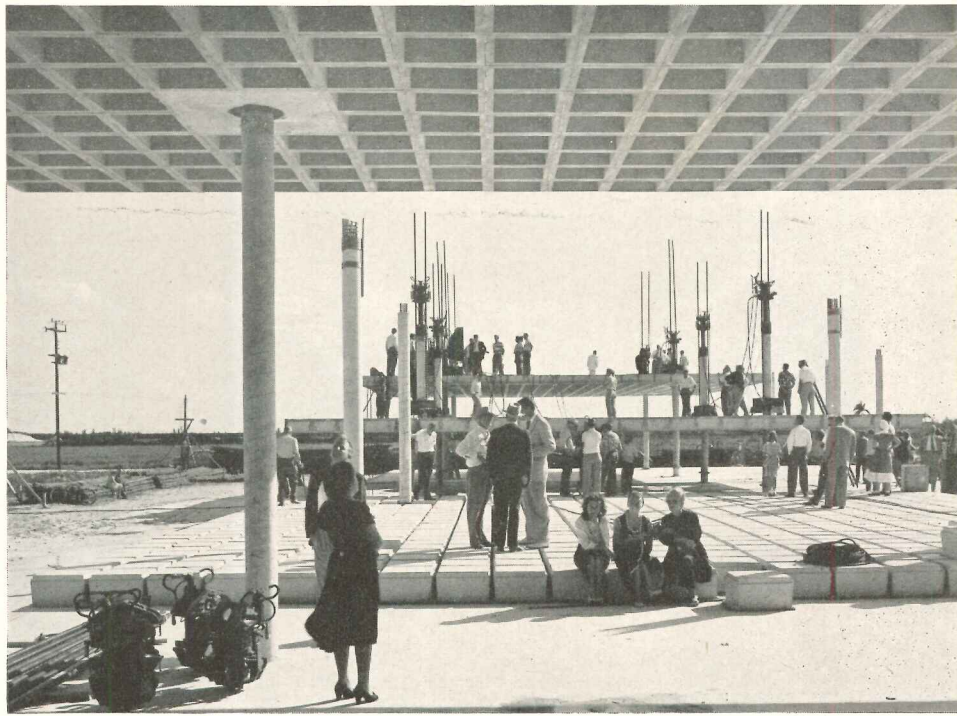
*Morris Burk, Contractor*

**F**OR SEVERAL REASONS, REINFORCED CONCRETE is finding application in a wider variety of buildings than ever before, and the main reason has been the development of mass-production techniques. Of course material shortages have given impetus to the use of concrete; but more than that, the material itself is intrinsically better, some of the unknowns of structural design have been eliminated, factory quality control methods have been introduced, and the mechanized techniques of erecting precast structural elements have, in some cases, practically eliminated on-the-job form work. This all adds up to less cost.

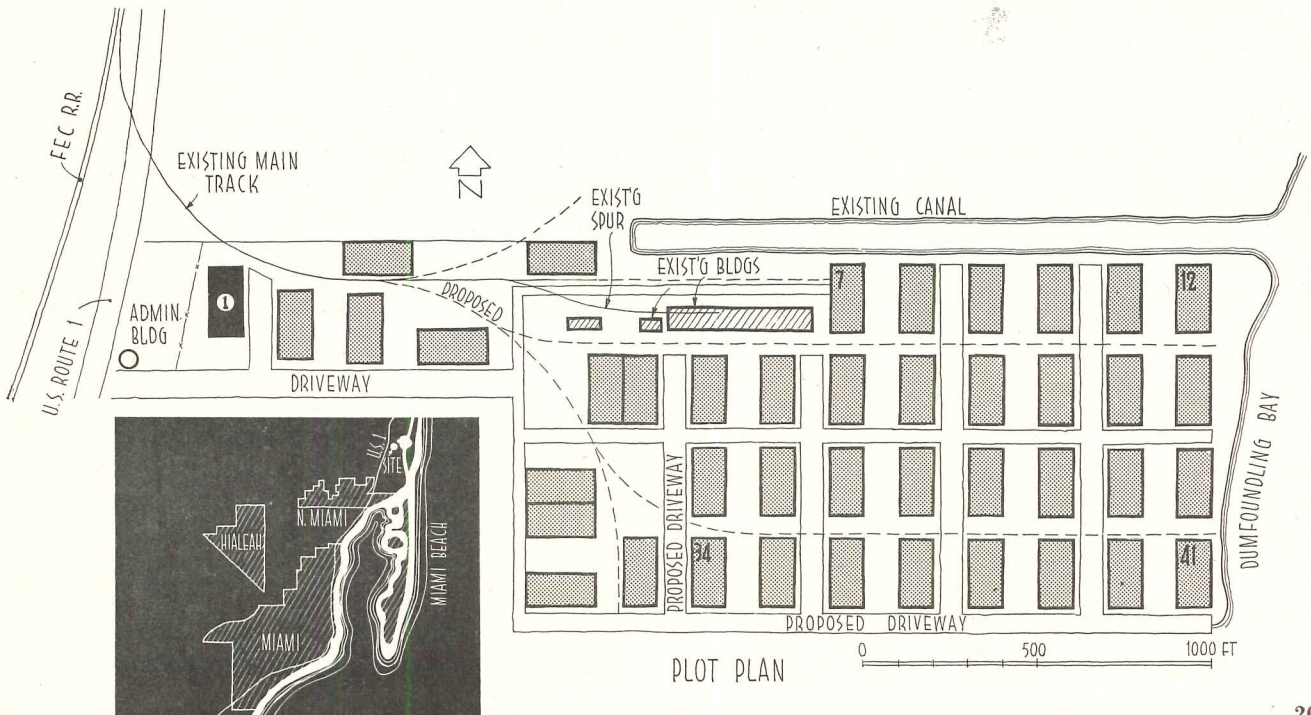
This 100 by 200 ft prototype for a series of some 40 light industrial and warehouse buildings exemplifies the mechanized approach. The engineers have integrated several already successful ideas and some new ones of their own to develop a reinforced concrete.

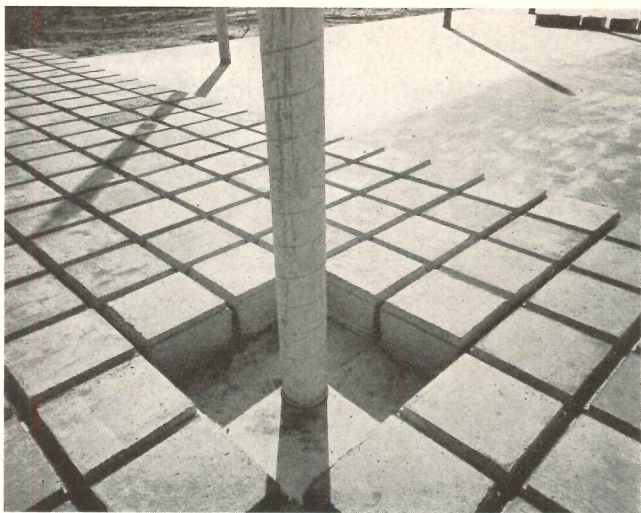


Two roof slabs of the first building in Atlas' Miami warehousing and light industrial terminal were raised during a special demonstration on Sunday, February 3. A third slab had been lifted before, and blocks for a fourth lay on the floor slab. A newspaper story attracted a large crowd of sightseers, but also among them were many interested architects and engineers from all over the country

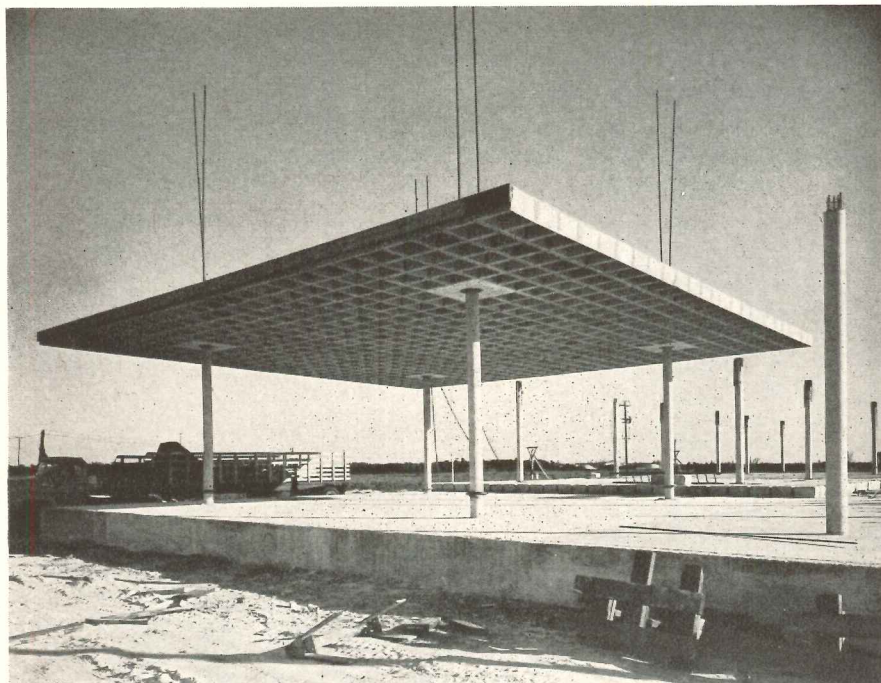
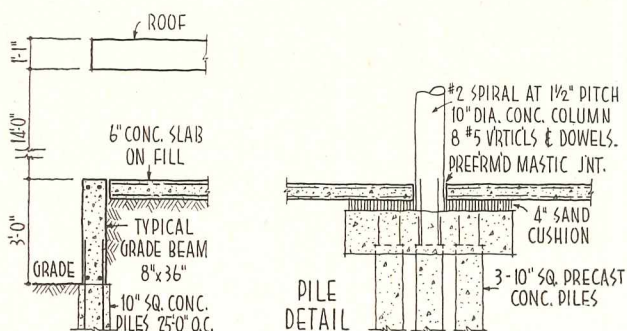
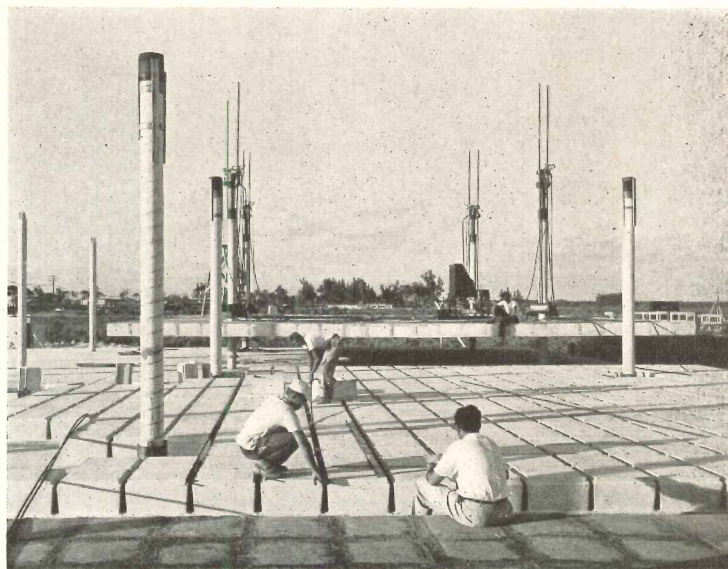


Most of the buildings in the Atlas terminal will be 100 by 200 ft, and so require eight 50 by 50 ft roof slabs. Each slab, comprised of 609 coffered "waffle" blocks and weighing about 88 tons, is raised by the Youtz-Slick lift slab method (See AR, January, 1950). Hydraulic jacks, atop the reinforced concrete columns and connected to lifting yokes by means of tension screws, raise the slabs 14 ft; some unused jacks are on the floor in top photo (left). A single operator manipulates the controls which regulate the lifting operation. Below: the site, 12 miles from the center of Miami on U. S. highway 1, has both rail and water transportation. Buildings are laid out on a 50-ft grid so that they can be expanded if the lessee wishes. Blacked in building is one under construction. Those with gray tone will go up later





After the floor slab and columns are hard, precast, coffered blocks, designed by the structural engineer, are assembled, and reinforcing is placed between blocks by two men



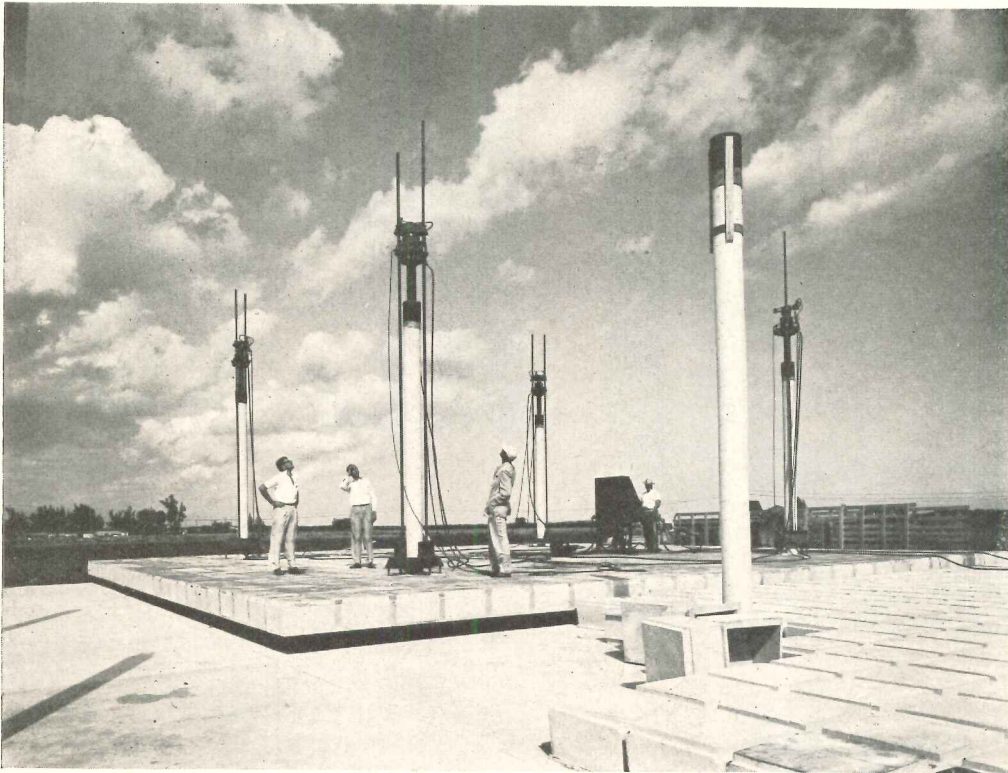
Eight of these "unit buildings" comprise a completed structure. The cantilever extends 10 ft, and the distance between columns of the "unit" is 30 ft. Floor slab is elevated above grade to accommodate loading and unloading

structure that can compete favorably with steel, and at the same time provide a fireproof building.

Located at Ojus, about 12 miles from the center of Miami, the 80-acre site is ideal for terminal operation. Other terminals owned by the Atlas Terminals corporation are located in New York City and Beacon, N. Y., totaling about 3,000,000 sq ft. The Miami terminal will bring the total up to nearly 4,000,000 sq ft. Another point in favor of the site is that the only existing spur of the Florida East Coast R. R. to cross U. S. 1 that near to Miami already serves a steel fabricator on the site. Also, it is adjacent to an 8-ft deep channel connecting with the intracoastal waterway.

Since the terminal is designed for light industrial buildings as well as warehouses, the Atlas corporation plans to furnish manufacturers with such utilities as steam, water, and power. In addition, a machine shop will be provided for equipment repairs.

The buildings have been laid out on a 50 by 50 ft grid which corresponds to the size of the "unit buildings," eight of them comprising a complete 100 by 200 ft structure. There is a minimum of 100 ft between these buildings, so that additional 50 ft sq units can be tacked on.



Jack Holmes

Left: contractor Burk, engineer Farrant, and Atlas executive Baptiste watch operation of a hydraulic jack during the trial lifting of a slab. Grout poured between blocks to cement them together hardens for two days before slab is ready for lifting. Below, top: at lower left can be seen a flange on top of a column after jack equipment has been removed. Below, bottom: slabs in various stages of lifting

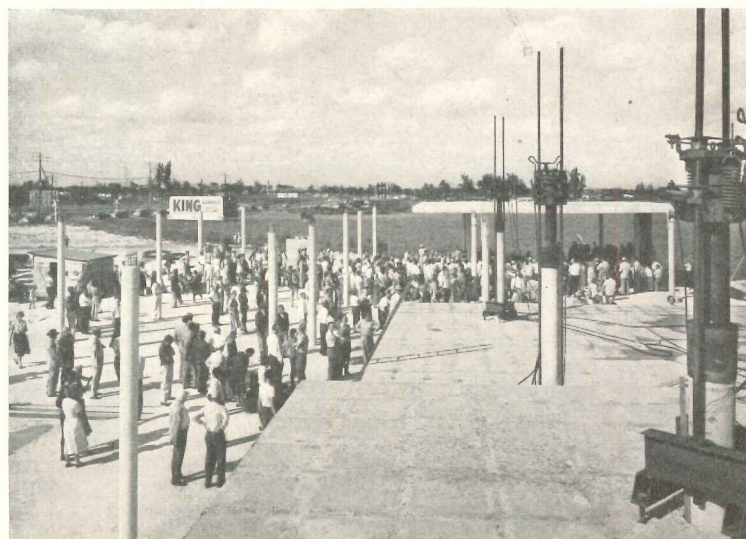
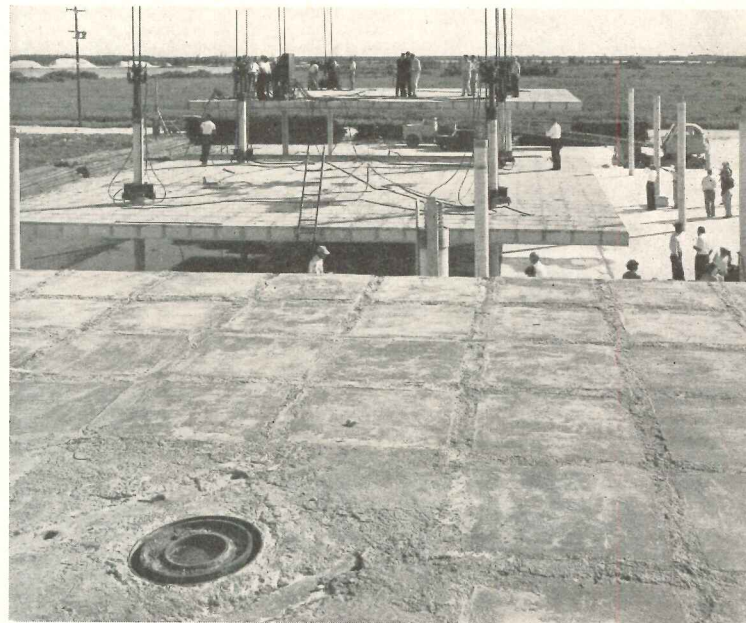
Since the terminal buildings were conceived as a series of structurally independent "unit buildings" (each requiring four columns), the engineers decided the "units" should be 50 ft sq for reasonable column spacing. For maximum economy, the columns then were located 10 ft inside the perimeter of the 50 ft sq. This makes a column arrangement across the width of the building of 10 ft cantilever, 30 ft span, 20 ft span, 30 ft span, and 10 ft cantilever.

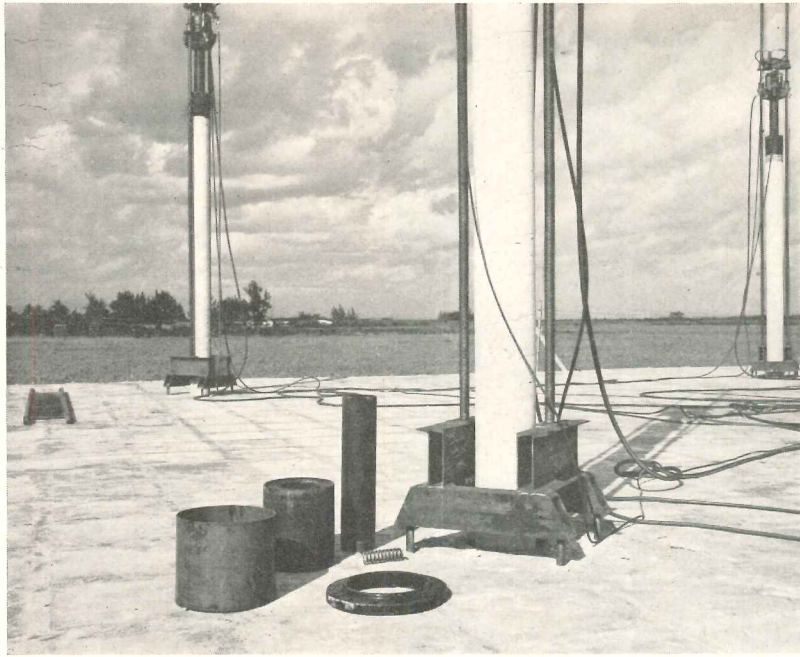
According to the owner, a 10 ft aisle is desirable around the perimeter of a warehouse because it provides ready access to the inventory stacked in the center; and, in addition, it prevents stock from being stacked against windows. In small industrial buildings, machines such as lathes could fit easily in this 10 ft space.

Definite plans are being made by Atlas Terminals, Inc. to construct one of the 20,000 sq ft buildings in the New York Metropolitan area to determine its potentialities there.

### Construction Steps

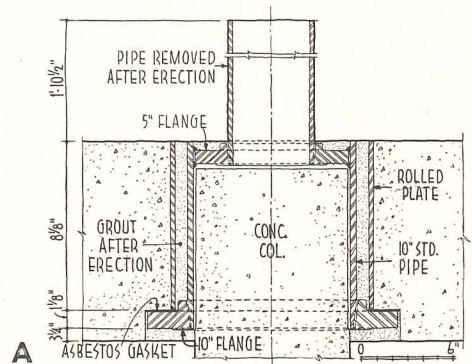
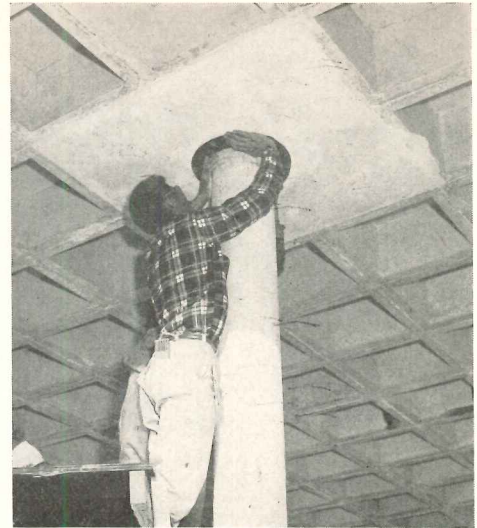
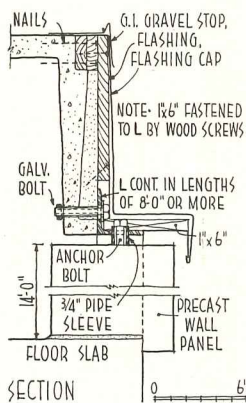
**The Parts.** A minimum of on-the-site labor is required because many precast concrete parts are obtained from nearby factories. For example, the 50 by 50





Above: parts used in lift-up process and in supporting slab. Left to right — rolled plate, 10-in. pipe, 10-in. flange, 5-in. pipe and threaded sleeve. (See also detail at far right)

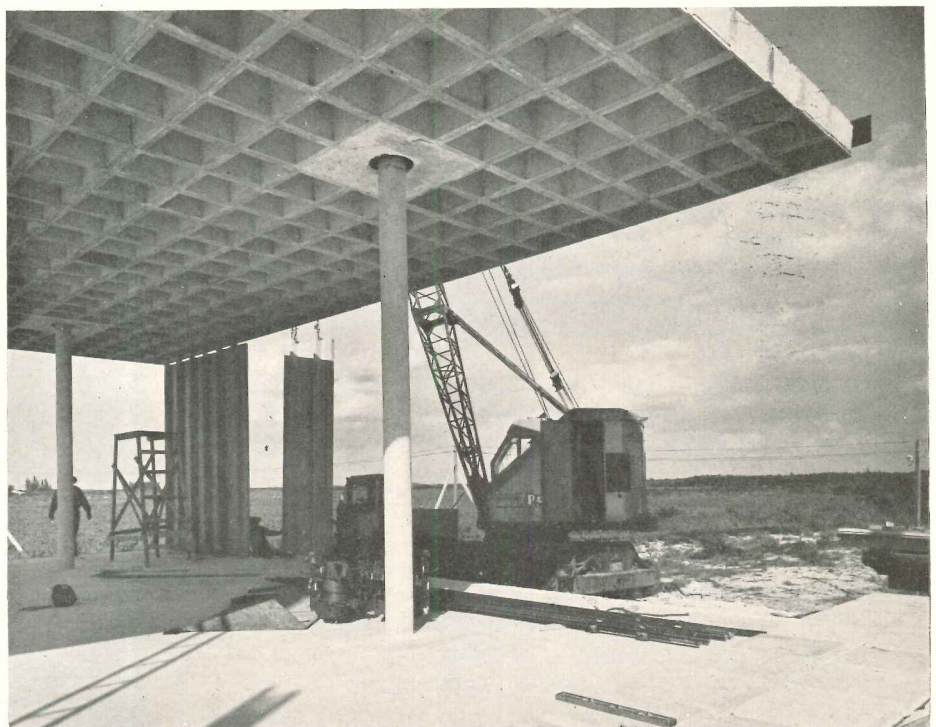
Below, right: panels rest on grade beam and are held in position by cantilever

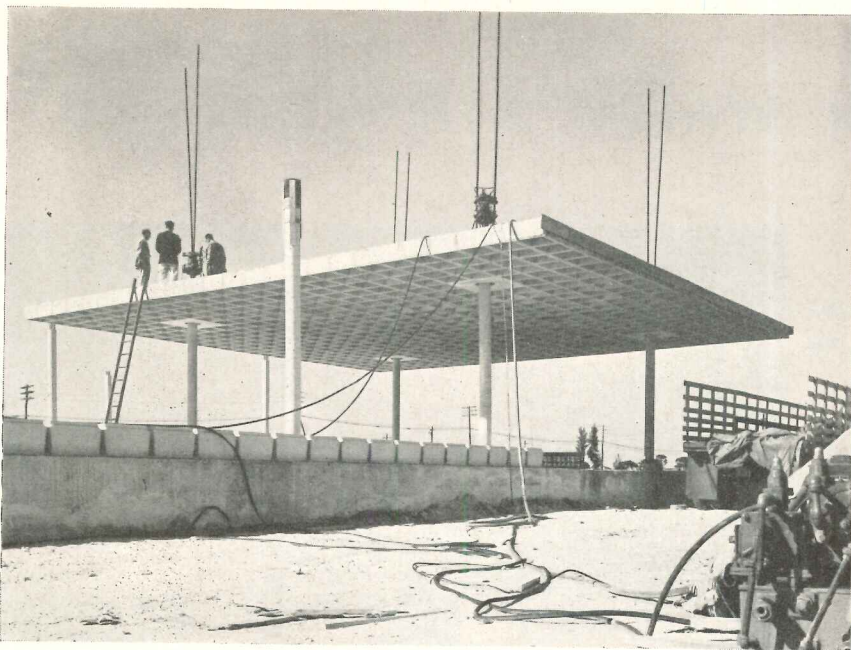


Above: after the slab is lifted to the top of the column, a flange is screwed onto the bottom of the 10-in. pipe capping the column, and this flange supports the slab

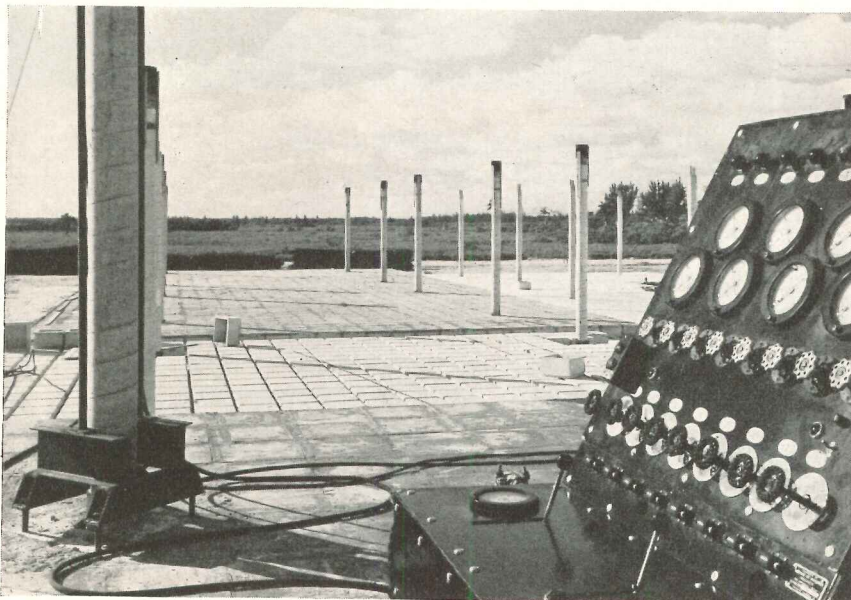
ft waffle-like roof slabs are comprised of 609 precast, coffered blocks, 2 ft sq, developed by Farrant and Harry. The piles and demountable wall panels are also precast. Shoring and virtually all formwork are eliminated by using the Youtz-Slick lift slab method. The principal idea is that hydraulic jacks on top of the columns raise a slab, fabricated on the ground, up to ceiling height. (See AR, January, 1949, pp. 121-123).

After the 6-in. floor slab and 10-in. concrete columns (poured in fiber tube forms) have set, the blocks for the roof are assembled side by side on the floor. A projection on the bottom of the blocks keeps them apart so there will be room for the reinforcing in between; only two men are required to place it. The blocks taper out from bottom to top, which makes room for inspection





Above: oil lines leading from pump to hydraulic jacks. Below: instrument panel.



Jack Holmes

of the bars at the bottom of the space; and a ledge is formed at the top for laying bars there.

Next, two carpenters nail edge forms around the blocks, and five laborers pour grout on top of the blocks and squeegee it between the blocks to cement them together.

Concrete is poured into a 4-ft sq space left around the columns at the same time. Screw anchors, fastened to the lifting yoke which pulls the slab up the columns, are embedded in it. A cylindrical piece of rolled steel dropped over the column prevents contact between the column and newly poured concrete.

**The Lifting Process.** A crew of three men assembles hydraulic jacks atop the four columns of each "unit building." The jacks hoist the slab at the rate of

3 in. per stroke of the piston. The Institute of Inventive Research, which licenses the Youtz-Slick lift slab method, sent one of their engineers to Miami to instruct a crew in the use of the equipment. The jack actually is mounted on a length of 5-in. dia. steel pipe, which sits on top of the column and is removed after the slab is raised. (See detail **A**). Tension screws connect the jack and the lifting yoke and thereby transfer the lifting force to the slab.

Slipping down over the top of the column is a piece of 10-in. pipe about 8 in. long and threaded at the bottom. After the slab is raised, a 10-in. I. D. flange, which has been dropped over the column beforehand, is screwed onto the bottom of this pipe to hold up the slab. No spot welding is necessary.

**The Time Schedule.** Erection of the

buildings will go something like this:

Day	Operation
First	Blocks laid
Second	Reinforcing placed
Third	Grout poured
Fourth-Fifth	Grout cures
Sixth	Roof slab lifted

Poured-in-place slabs generally take at least 10 days to cure before they can be lifted.

### Structural Design

Although in Miami the roof need only be designed for a live load of 20 lb per sq ft, a test panel 4 ft wide and 16 ft long, having only minimum reinforcing, withstood a load of 500 lb per sq ft. Wall panels are designed to resist a wind of 150 mph.

The unit building was analyzed by the *Presan* method (Photo-reflective stress analysis; see AR, December, 1951, pp. 180-182). According to the engineer, this analysis effected a saving of nearly 50 per cent in the amount of steel prescribed by conventional design methods. Resulting slab deflections, which were very small, followed the *Presan* analysis closely.

Each 100 by 200 ft building can be erected with less than 25 tons of reinforcing steel, which means that it can be self-certified under present CMP regulations. Actually, *Presan* analysis figures showed that only 1.82 lb of steel per sq ft are needed.

The 50 by 50 ft slabs each weigh about 175,000 lb, including grouting, concrete, and reinforcing.

### Costs

The engineer estimates that cost of the roof slabs in place will run about \$1.20 per sq ft, with further economies possible following more experience. Cost of the buildings, including precast, demountable wall panels, nominal lighting, and four toilet rooms, is expected to be about \$4 per sq ft.

### Design Possibilities

Since the roof is supported wholly by the columns, wall panels need not be load-bearing, and can be made of any economical material that will stand the weather. Fenestration can follow any pattern desired. It would be very easy to form a clerestory by simply raising one slab above the others and filling the intervening space with windows. Also, some of the roof slab blocks could be made with open tops, since only the ribs are necessary to the structural strength, and the blocks could be covered with a transparent material to form a skylight.

# TRENDS IN WARM AIR HEATING

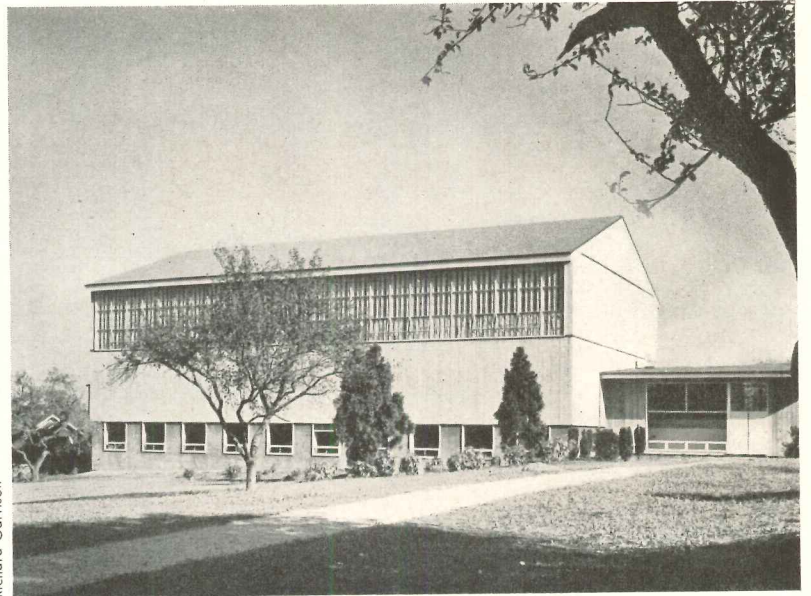
By R. G. Vanderweil, Consulting Engineer \*

Two heating installations in schools recently published by *Architectural Record* are analyzed by the author and future possibilities discussed

**C**OSTS OF EVERY ITEM going into schools and other institutional buildings today have to be scrutinized and kept to a minimum without reducing their quality standards. And it is logical to look first at the items that normally cost the most — take the heating system, for example. With close collaboration of architect and engineer, it is often possible to provide a better heating system at a lower cost. In these buildings, where ventilation is required at any rate, the use of warm air also for radiant heating seems most feasible. Provisions of air paths (ducts or conduits) within natural cavities of the building, so that surfaces of floors, ceilings or walls in proximity to large glass areas can be heated, may greatly improve comfort conditions without adding much to building cost.

In this article two actual examples of "radiant-air heating systems" in schools are analyzed and future possibilities are investigated. But before introducing both systems, a note about the benefits of "teamwork" between architect and engineer. The engineer was consulted during the early planning stages of these buildings. Thus, architects and engineer were able to discuss manifold possibilities, estimate their combined structural-

\* Formerly with Slocum & Fuller, Consulting Engineers.



*Gymnasium, Priory School, Portsmouth, R. I. Anderson and Beckwith, Harkness and Geddes, Associated Architects*

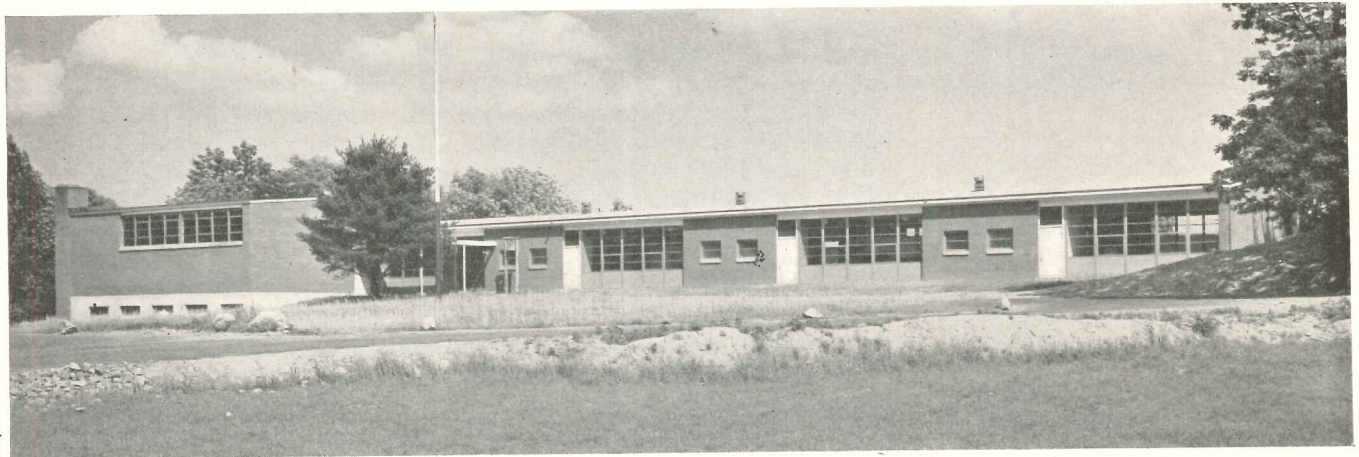
mechanical installation cost and thereby eliminate, one by one, the less economical solutions. Not only was the heating system influenced by the construction, but also the design of the building by the heating system.

How important such early discussions may be was indicated to the author by a prior experience (with a copper tube type radiant heating system) in which the architect of a large group of apartments, by utilizing structural steel as well as the tubing to conduct heat, could let the heating contract for slightly less than the electric contract.

## Two Installations

**Dedham School.** The building was to be used by young children, and it was felt that with floors resting directly on the ground, some provision should be made to obtain warm floors. Since Massachusetts law calls for strict mechanical ventilation, it was logical to combine ventilating and radiant heating systems.

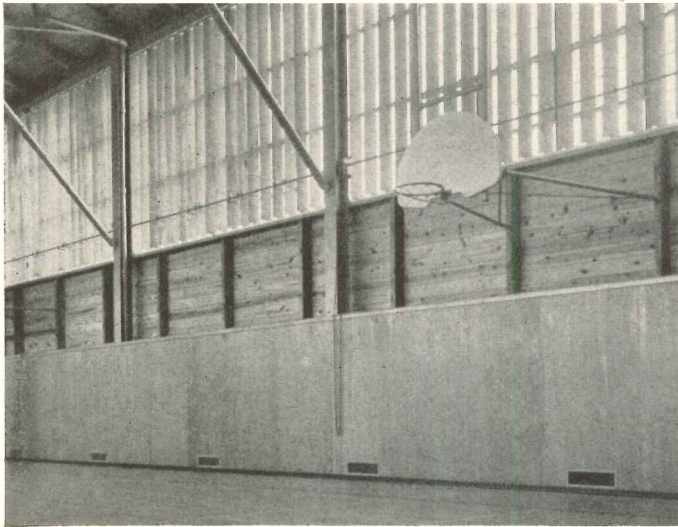
**Priory Gymnasium.** We were confronted with one of those not-too-frequent cases where the building structure lent itself readily to a low cost, but high quality, heating system. The external



*Dedham Country Day School, Dedham, Mass. Bogner and Richmond, Architects*

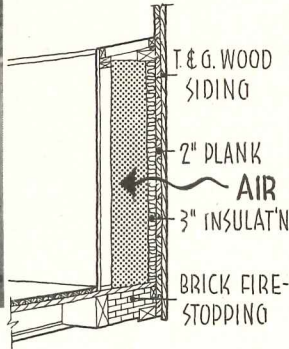


## Part 2: Radiant Heating by Air in Institutional Buildings



Richard Garrison

Plywood interior panels were required first of all to keep columns from projecting into gym at floor level for safety's sake, so this provided a natural channel for distributing warm air. Air flows out at the floor and also up in front of windows. Unit heaters are in the four corners of the room



walls were formed by a relatively thin skin, so it was essential to apply an internal facing and additional insulation. The building cost, then, was not increased much by providing enlarged "hollow spaces" (plenum chambers) around the perimeter to convey warm air. Plywood facings had to be provided anyway in order to avoid dangerous projections of the columns into the room.

It was possible to locate four unit heaters within the plenum in the four corners of the building. Since the most economical (but not necessarily the best) system of heating the gymnasium would have been by unit heaters, the cost of the heating system proper was identical to that of the cheapest installation with relatively small additional cost for the plenum. The resulting heating system provided even distribution of temperature throughout the room together with the required ventilation. Cold air currents under the large windows were avoided plus stratification of air.

TABLE A

Dedham School	Cost	Per Cent
a. Total contract price of building	\$117,000	100
b. Saving due to omission of framed crawl space and ductwork	(7,500)	(6.4)
c. Additional cost of masonry conduit	3,100	2.6
d. Cost of heating and ventilating system	20,100	17.2

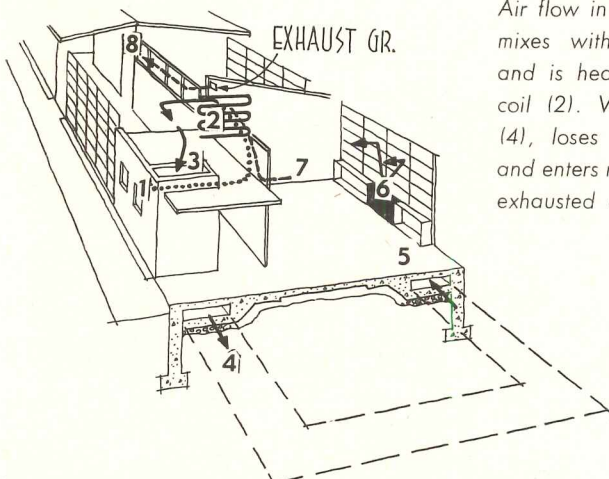
TABLE B

Priory Gymnasium	Cost	Per Cent
a. Total contract price . . . . .	\$181,500	100
b. Cost of heating system	36,500	20.1
c. Approx. additional cost for provision of plenum minus saving on piping	1,500	.8
d. Cost for heating and plenum	38,500	20.8

### Heating System and Comfort

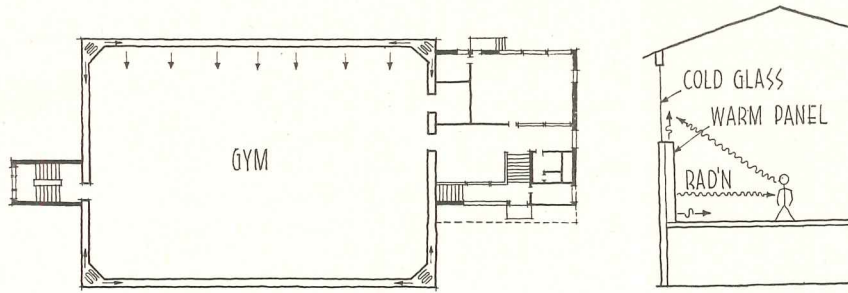
In applying this solution to the gymnasium, we could adhere to the three main laws for comfort by heating: (1) reduce to "normal" the heat loss of the human body; (2) provide for approximately equal heat loss in all directions — front, sides, and back of the occupant; (3) avoid excessive drafts and movement of cold air along the floors.

Although these laws cannot always be adhered to strictly, they should be kept in mind by the designing engineer and serious deviations avoided. (Strict adherence is not necessary, as can be shown by examples: standing in front of a new fire in a cold cabin results in discomfort, as will sitting near the window in a room where radiation is at the inside wall. However, in the same room when sitting, say within six feet from the window, serious discomfort will no longer be experienced. This shows that small deviations from (1) to (3) above can be naturally compensated for by the body's internal control mechanism.)



Air flow in Dedham School. Fresh air (1) mixes with return air from room (7) and is heated to 135 F by the heating coil (2). Warm air (3) flows to trench (4), loses some heat by radiation (5) and enters room at (6). Half of room air is exhausted at (8), and then to outdoors

## TRENDS IN WARM AIR HEATING



Priory Gymnasium

1

In many instances artificial ventilation is required for comfort, not only in institutional buildings, restaurants, hospitals, etc., but more and more in homes, in order to relieve allergic conditions of inhabitants, etc.

### Installation Cost

Direct cost comparisons of combined radiant-air systems with conventional systems must be made with caution, because of additional work performed by the general, rather than the heating contractor, but an indirect price analysis still will be of great value. Let us see how such an approximate cost comparison runs for the Dedham School (Table A). The conduit (Item c.) was provided in order to avoid cool floors. However, without this conduit a crawl space would have to be provided and traditional ducts substituted. Considering that the expense for the conduit was compensated for by savings due to omission of crawl space, the cost of the conduit did not materially add to the building cost.

In the Priory Gymnasium (Table B) the plenum chamber must be considered part of the heating. However, the system, according to sum d., still was quite economical for this type of building, and actually resulted in comfort superior to unit heaters. Figures given for the gymnasium include the basement and its heating system, which comprised considerable ventilation for

locker rooms, etc. Since the building was simple, and provisions for heating and ventilating were made outside the building, the heating contract does not reflect the simplicity of the gymnasium system. Included is the revamping of an existing central heating plant and addition of considerable underground steam and condensate conduit.

Reviewing installation costs of the two buildings under discussion, the following conclusions may be drawn:

**Dedham School** — The total erection cost as built was reduced by approximately four per cent below that of an equal building with basement using conventional methods of school heating.

**Priory Gymnasium** — The total erection cost as built was increased by approximately one per cent over that of a building using the most economical heating system — projection type unit heaters — regardless of comfort.

### Operating Cost

Not too much is known about the operating cost of radiant-air heating systems. It is the author's opinion that, essentially, there are neither savings nor additional operating cost over and above that of conventional heating and ventilating systems. Large savings sometimes claimed by radiant heating proponents have remained hypothetical so far, and will remain so until two identical structures are built close to each

Left: projection type unit heaters in the four corners of the gym blow air through the plenum chamber around the periphery of the room. Right: warm air enters the room at the floor and in front of windows. Radiation from warm panel compensates for occupant's loss to cold glass

other and are provided with different types of heating systems operating with similar equipment and identical fuel. Slight savings may be possible with radiant heating because of (a) more even temperature distribution throughout the rooms, (b) smaller stratification so commonly causing serious overheating near the ceilings of high rooms (this would have been particularly noticeable in the case of the gymnasium), and (c) careful selection of controls necessary for radiant-air heating.

Actual oil consumption of the gymnasium is not known, because the central boiler plant supplies heat to other buildings. Fuel consumption of the Dedham School proved to be nearly identical during the past two heating seasons and was about 12,050 gallons per season. Considering the size of the building and the strict ventilation requirements (15 cfm of fresh air per pupil) this oil consumption turned out to be on the low side of an estimate made prior to erection.

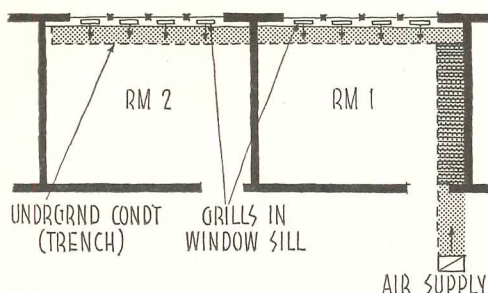
### The Control Problem

This, no doubt, is the most vital problem for two reasons: (1) Computations for the radiant output will not always prove precise where masonry conduit is used, and (2) slight variations in heat output can be compensated for by controls. Such variations are due to change of thickness and variations of conductivity of the building materials used to transmit heat to the room. The inertia of masonry conduits, particularly on ground, is great, and no practical mathematical means are available to compute the heat lag. (This is due to wide variations of ground conductivities with composition of soil and presence or lack of moisture, frost, etc.)

Obviously there is an inter-relationship between heat lag of air conduit and temperature of the air supplied to the room. While the conduit is cold, we have to supply ample hot air to it, and then

### Dedham School

2



Since more of the warm air conduit runs under Room 1 than Room 2, part of the conduit in Room 1 had to be covered with a material of greater insulating value. Otherwise, it would have been more difficult to control temperatures

at the far end, cool air is delivered to the room. The heat lost by the air in passing through the conduit was consumed mostly in heating the conduit and the ground below. Only a small amount of this heat was supplied by radiation through the top slab of the conduit to the room above. Fortunately enough, this "Lag" is not serious where radiant-air heating is applied to one room only, or where the duct heat inertia is small.

during the early morning hours. Although the school is heated by intermediate recirculation at night, the controls at night maintain a room temperature of only 55 F. Therefore, the conduits cool off at night and absorb additional heat early in the morning. In order to compensate for this lag, additional air had to be conveyed to Room 2. (Room 2 also requires slightly more heat by air at the starting period

(b) conduits are kept short and in no case more than three rooms are connected to each zone, because (c) zones do not cover more than one exposure and, because (d) there is no special "shade problem." In the one room which, at times, is shaded considerably more than others, greater differences of temperature are met than in the remainder of the building.

### Likely Future Uses

In the near future, we will likely find this system installed in relatively small buildings. The reason for this is that the radiant-air heating system has to be broken down into relatively small subsections so that one conduit will not supply too many spaces simultaneously. Application to all kinds of institutional buildings, churches, and industrial buildings normally calling for ventilation is most likely.

In industrial buildings, conditions may occur where application of air-radiant systems may become economical.

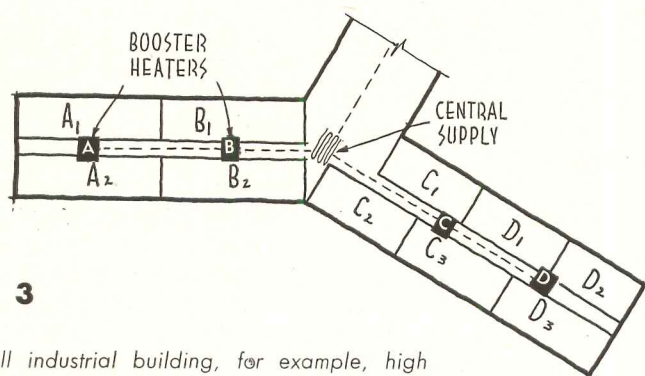
Restrictions to the size of buildings may not be as critical as would seem at first. The author can well visualize a combination of a high velocity supply duct and the system under discussion as shown in Fig. 3. Where fresh air requirements to the rooms are not excessive, a central filter-preheat coil-fan assembly could be provided at point "CS", supplying air to the high velocity duct work indicated by dashed lines. From here, high pressure air could be conveyed to booster heaters A to D, which could be located in the attic space and each individually controlled to suit the conditions in each zone A1, A2, B1, etc. From these coils, warm air would flow to the underground masonry conduits located around the building's periphery and from there on would be like the Dedham School.

It is most likely that the system will be used only in one- or two-story structures. Air ducts or conduits would present an increasing problem with growing height, although certain methods again may be used to overcome such restrictions. A hung ceiling forms a fine plenum chamber to carry hot air used simultaneously for a ceiling radiant panel for the room below and a floor panel for the room above.

### Critical Materials

Presently, the system may gain impetus due to scarcity of metals. Considerable amounts of critical materials can be saved by proper design and application of this system.

### High Velocity Air Distribution



In a small industrial building, for example, high velocity air might be preheated and filtered at a central supply, brought up to proper temperature by booster heaters (A, B, C, D) in the attic, and then delivered to a peripheral trench which would supply air to the rooms, as in the Dedham School

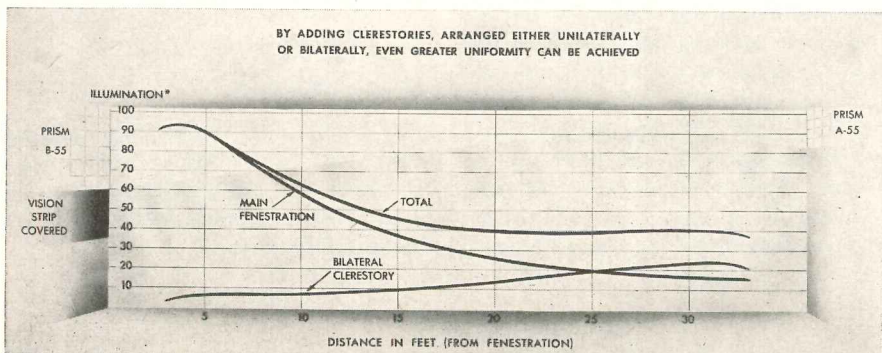
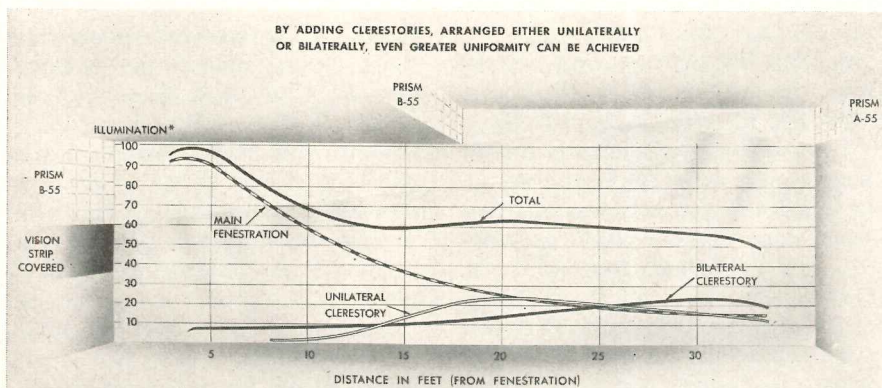
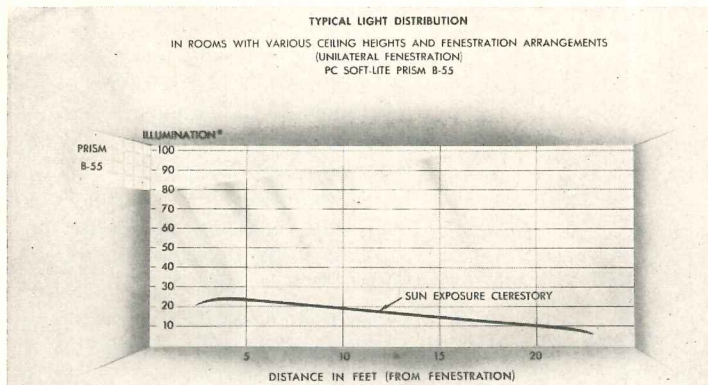
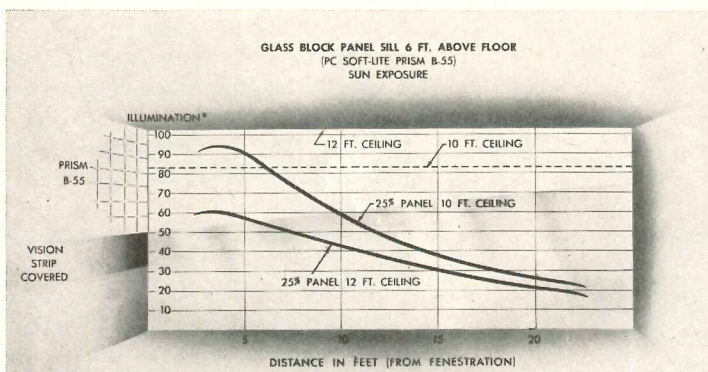
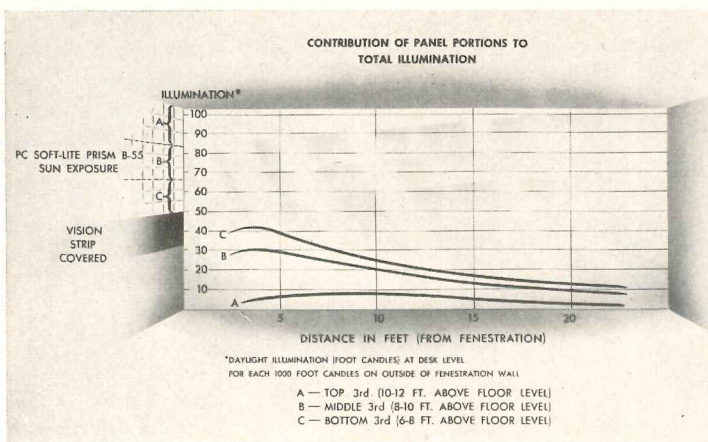
Obviously, in the gymnasium, where both were true, simple, direct control of unit ventilators by room thermostats could be used.

Quite different was the case of the school system. Here the conduit was broken down into runs supplying more than one room, and also the heat lag was more serious. Fig. 2 indicates the difficulties. The intricate heat balance of "heat supplied by air versus heat supplied by radiation" through conduit top was disturbed by the additional length of the underground conduit in Room 1. In order to obtain equal proportions of panel areas in Rooms 1 and 2, an insulating type trench cover was selected rather than plain concrete, which cut to a minimum the radiant heat supply of this portion of the conduit.

Furthermore, it was expected that the inertia of conduits would severely cool the air supplied to Room 2, particularly

because its floor conduit is colder and radiation smaller than that of Room 1, which is nearer the warm air supply.)

Controls had to be provided accordingly. In addition to a thermostat controlling the main heating coil ahead of the conduit, individual room control dampers were called for to regulate the air supplied to the room, from its minimum requirements—fixed by state law—to a maximum expected to be necessary to compensate for the difference in supply air temperature of Rooms 1 and 2. However, the owner decided to operate the system—at least for the first heating season—without individual room controls, and, much to our surprise, temperatures in all rooms could be maintained sufficiently close, so that the system is operating without room control dampers for the third heating season. This could be achieved only because of (a) rather careful manual damper setting by the owner, because



## Research Points to Lower Classroom Costs with Lower Ceilings

*Daylighting quality maintained while money and materials are conserved by reduced ceiling heights*

Recent laboratory research undertaken by the Pittsburgh Corning Corp. points toward one solution to the problems of increased costs of construction and maintenance of schools. Tests made with light-directing prism type glass block demonstrated that costs could be cut, without sacrificing lighting efficiency, by planning classrooms with lower ceilings. Savings in materials and labor for lower ceiling classrooms are reported to range from \$150 to \$500 for each 1 ft reduction in height. Heating and maintenance costs are also reduced.

The effects in terms of daylighting of lower ceiling heights was demonstrated by the tests, graphic results of which may be seen at left. Since variation in ceiling height reduces the number of courses of glass blocks in the fenestration, engineers set out to determine which portion of a block panel supplies most light to the far side of a classroom. After blacking out the vision strip below a panel, they divided the panel into three portions, and blacked each of these in turn, while testing lighting levels in the room. The test revealed that the bottom third of the glass block panel yielded 50 per cent of the daylight directed to the area of the classroom opposite the fenestration. This performance relationship finding demonstrated that it was practical from the standpoint of lighting effectiveness to reduce ceiling heights. However, engineers pointed out that, since the lower courses of the blocks provide the illumination for the far side of the room, the sill height of the block panel should not be raised above 6 ft, since this would reduce the desired light distribution.

Several states are said to have already begun experimenting with the lower ceilings in conjunction with light-directing block and to have reported successful results. Pittsburgh Corning Corp., 307 Fourth Ave., Pittsburgh 22, Pa.

# PRODUCTS for Better Building

## Classroom Daylighting Analysis Compares Costs of 5 Schemes

This daylighting study, conducted by The Architect's Collaborative under the sponsorship of the Wasco Flashing Co., is a good example of unbiased product research to determine what type of classroom fenestration provides the best light for the least amount of money and critical materials. The sponsor's explicit objective was to compare the effectiveness of its line of *Skydome* plastic skylights with other schemes; TAC wished to analyze possible sections to use on their plans for the Flagg Street School in Worcester, Mass., now being prepared in association with Albert Roy. In order to make the study as objective as possible, Bernard F. Greene, Consulting Engineer of New York, was commissioned to prepare the lighting analysis, and Thomas Worcester, Inc., of Boston was employed to make actual take-offs and cost estimates for each system.

Four typical fenestration schemes were selected in addition to the one using white translucent *Skydomes* — all based on a typical elementary classroom plan from the Flagg St. School. For simplification, constant elements for all schemes — floors, cabinet work, etc. — were eliminated from the analysis. Thus figures are based generally on portions from window and transom sills upward, with consideration of the different ceiling heights involved. The architects feel that the results are fairly typical, although varying local conditions might give different cost results in competitive bidding.

**The Criteria:** the following objectives were used to measure the performance of each daylighting system:

1. Adequate illumination (in foot-candles) in all parts of room on sunny and overcast days (see Chart 3).
2. Brightness contrasts within comfortable ratios, without producing a visually "dead" room (see Chart 2).
3. Psychological factor — room should take advantage of stimulating effect of natural light, let in sunlight or cut it out as needed.

**Assumed Conditions:** lighting — sky brightness (overcast) 1000 ft L, (clear day) 2000 ft L; 42 deg N latitude; 10 AM or 2 PM; March 21 or Sept. 21; sidewall window faces south.

CHART 1

ILLUMINATION	COST	SECTIONS*
<b>PLAN</b>	Comparative cost shown in percentages using lowest cost as base of reference.	
Good except for overcast days. Lack of flexibility and possibility of direct sun.	<b>SCHEME A 103%</b> Simple framing. Eliminating domes, clerestory, makes cost near B, C, despite higher cost of block.	
Good for all conditions assuming control device for low sun angles.	<b>SCHEME B 100%</b> Simple framing. In spite of <i>Skydome</i> cost, slightly cheapest solution.	
Good except inside wall, where illumination drops. Also assumes sun control.	<b>SCHEME C 103.5%</b> Simple framing but slightly more, producing slightly higher cost than Scheme B.	
Least good. Little light from corridor monitor. Inside wall dark.	<b>SCHEME D 118%</b> Framing of monitor over corridor more than offsets otherwise simple framing.	
Good for all conditions assuming use of sun control device at times as in Scheme B.	<b>SCHEME E 134%</b> Most complicated framing. Despite attempt to lighten structure, this is most expensive solution.	

\* Ceiling Heights: Scheme A, 12 ft; B, 9ft-6 in.; C, 10 ft-10 in.; D, 10 ft-10 in.; E, 10 ft-10 in.

Reflectivity of points (see diagram, Chart 2): 2,3 and 4 — 70%; 5 — 20%; 6 — 60%; 7 — 80%; 8 — 60%.

**Construction:** classroom size, 28 by 34 ft.

Roof — tar and gravel on 3 in. decking. Frame — 3 bays per room; beams framing to 3½ in. lally cols. in ext. walls. Inside walls — 12 in. painted concrete block bearing walls.

Windows — wood subframes, fixed plate glass, opening metal vents.

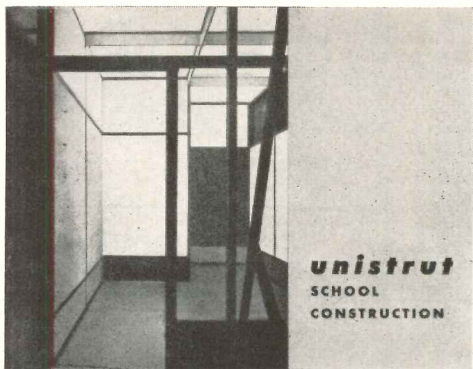
Transoms — wire glass in metal frames.

**Conclusions:** Schemes B and E give

good even lighting levels on both sunny and overcast days. All Schemes except A have high brightness contrast ratios, especially on sunny days. Lighting experts debate as to proper ratio of task brightness to max. brightness within field of vision, some recommending as low as 3 to 1 ratio. Even Scheme A produces about a 1 to 10 ratio. TAC feels that a constantly low ratio produces an enervating effect — that perhaps the ideal condition is one in which these ratios can be varied, and even direct

(Continued on page 308)

## LITERATURE FOR THE OFFICE



Booklet, left, contains extensive report on research project for low-cost school system. Prototype school, below, developed through project, employs module framing, can be expanded, diminished or demounted

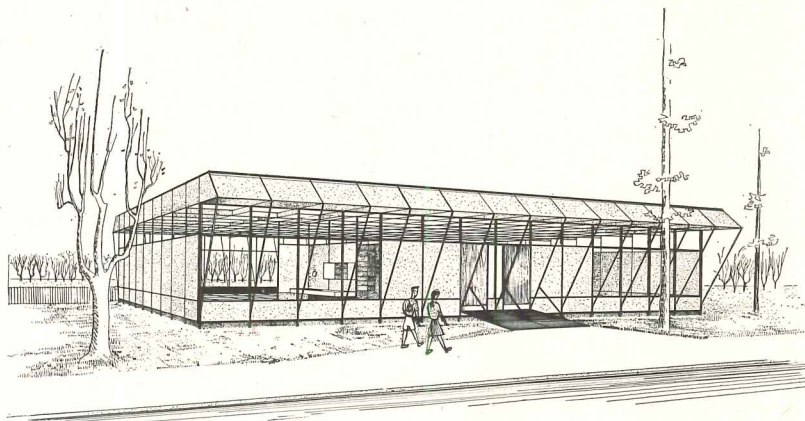
### University Research Program Develops Low-Cost School

*Unistrut School Construction: A Report of Research Project M 811.* Descriptive booklet reports findings of a research project conducted by the University of Michigan Engineering Research Institute and sponsored by Charles W. Atwood, president of the *Unistrut Corp.* The objective of the research was the development of a standardized system of low-cost school construction, which would offer a high degree of durability and which would permit easy expansion and complete demounting of the structure for re-use when desired.

The system developed in the project consists of standardized steel framing members, bolted together with standard connector pieces. Pre-cut stock 48 in. panels of asbestos cement, glass and plastic are fitted into the framework, which is based on a 49 in. bay-space module.

The booklet describes the history of the project itself, with separate sections dealing in detail with the prototype school developed, the structural system evolved for it, and a bill of materials employed in the structure. All are fully illustrated with drawings and photographs. Appendices include data on heating, lighting, acoustics and roof system for this project. 68 pp., illus. College of Architecture and Design, Engineering Research Institute, University of Michigan, Ann Arbor, Mich.

\*Other product information in *Sweet's File*, 1952.



### Fluorescent Lighting Units

*Great Northern Fluorescent Lighting Fixtures and Mercury Vapor Lighting.* Catalog describes the manufacturer's line of commercial (recessed troffers), industrial, school and residential fluorescent units. Complete specifications are given, together with data on construction, finish, wiring, mounting, louvers, panels, sizes and component parts. Also included are dimensional diagrams and tables of coefficients for accessories. Both interior and exterior fixtures are illustrated and described. 52 pp., illus. Great Northern Mfg. Corp., 4217, 19-21 Harrison St., Chicago 24, Ill.

### Stucco and Plaster Application Guide

*The Keystone System: Stucco Application, Plaster Reinforcing and other Reinforcing Applications.* Designed to serve as a complete procedure guide for the application of siding and surfacing materials where open mesh steel reinforcing

is required, this manual describes and illustrates in detail each step of a process recommended by the manufacturer on the basis of research tests and consultation with authorities in the field.

Methods of stucco application to new construction and overcoatings for older buildings are both included, and sections on plaster reinforcing and other uses for keymesh reinforcing are also featured. Various textures which may be achieved with stucco are shown and the processes for obtaining them are illustrated. Included among these textures are Spanish, Californian, Italian, Italian Travertine, English Cottage, Colonial and Modern American. The process for creating a simulated stone finish is also presented. A table of stucco application data is included in the volume along with many construction details and photographs and illustrations of typical projects. 44 pp., illus., Keystone Steel and Wire Co., Peoria 7, Ill.

(Continued on page 342)

# 500 gallons

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**WEATHER-TIGHTNESS OF**

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**ONLY ADLAKE ALUMINUM WINDOWS GIVE  
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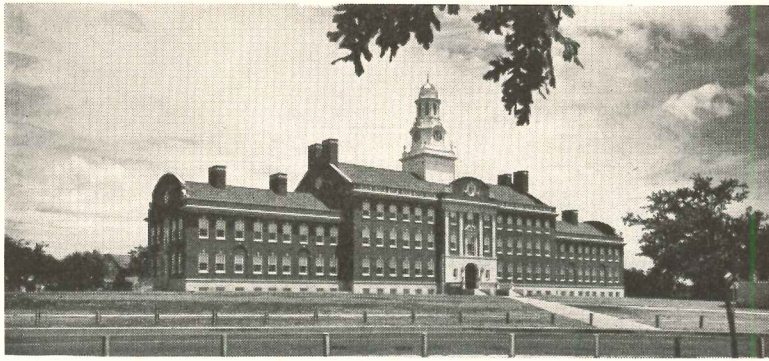
Yes, the standards of ADLAKE Aluminum Windows are kept high by quality control and thorough testing. That's why the ADLAKE name is your best assurance of dependability, long-range economy, and lasting beauty. Get the full story on ADLAKE Windows today . . . ADLAKE Representatives are in most major cities.



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There's a Conduit Weathermaster System installed in the Fondren Science Building at Southern Methodist University. It keeps the air fresh and clean and at proper temperature the year round for clear thinking. And the beauty of it is the quiet.

What little noise there is from the equipment is kept in the basement, all in one place. The 263 room units have no moving parts, like motors or fans. They get filtered, dehumidified air from the central station through conduits, then distribute it evenly and silently.

There's no wiring or heavy maintenance in the rooms. Servicing and filter-cleaning are all done in one place, at the central station.

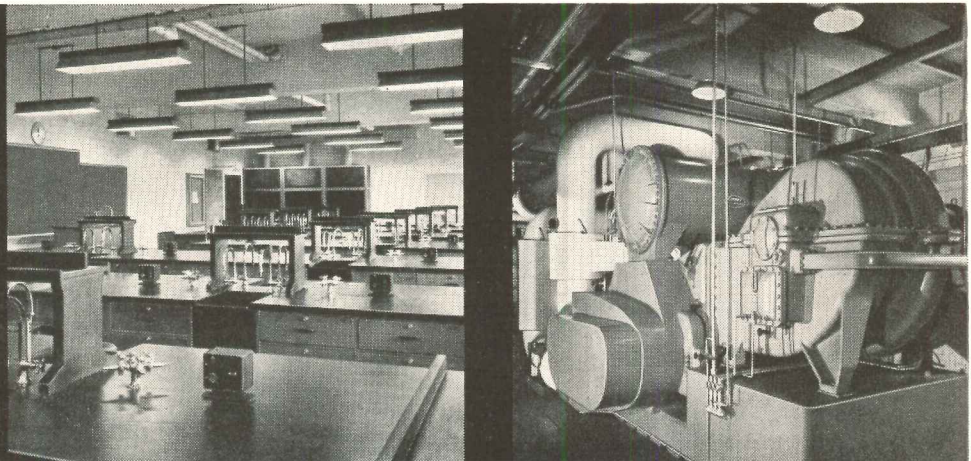
A Conduit Weathermaster System will fit into anybody's plans. Vertical or horizontal buildings, there's no restriction on design. And installation costs are held down by standardized prefabricated fittings.

There's more to the Conduit Weathermaster story, of course. Complete details are yours for the asking. Just write for our booklet, "Conduit Weathermaster System." Carrier Corporation, Syracuse 1, New York.

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

**Carrier**

AIR CONDITIONING  
REFRIGERATION  
INDUSTRIAL HEATING



Inside the Fondren Science Building at Southern Methodist University: one of the comfortable classrooms, and one of the two Carrier Centrifugal Machines which supply refrigeration for the Conduit Weathermaster System. Mark Lemmon, *architect*; Zumwalt & Vinther, *engineers*; Martyn Bros., Inc., *mechanical contractor*.



FIREPROOFING WITH LIGHTWEIGHT PLASTER: 1

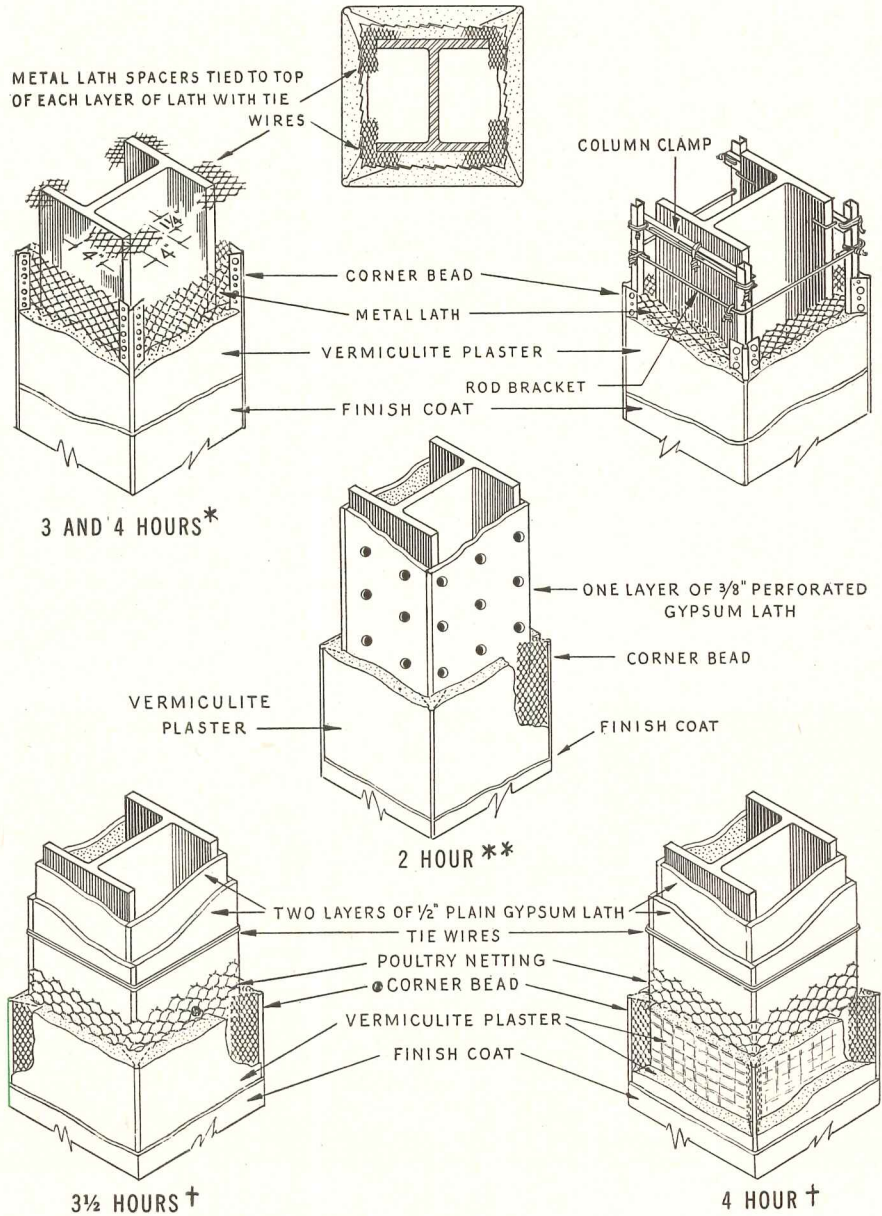
The following sheets of details and fire test summaries on the use of lightweight vermiculite plaster fireproofing are presented as one method of reducing structural steel tonnage and subsequent costs in construction.

The smaller deadload of lightweight plaster fireproofing requires somewhat smaller structural members, lighter reinforcing and supporting channels for the fireproofing, and smaller foundations. Such savings are

more conspicuous in multi-story buildings, but are still evident in relatively small ones. All data contained in these pages is copyrighted by and presented through the courtesy of the Vermiculite Institute.

TYPICAL COLUMN FIREPROOFING DETAILS

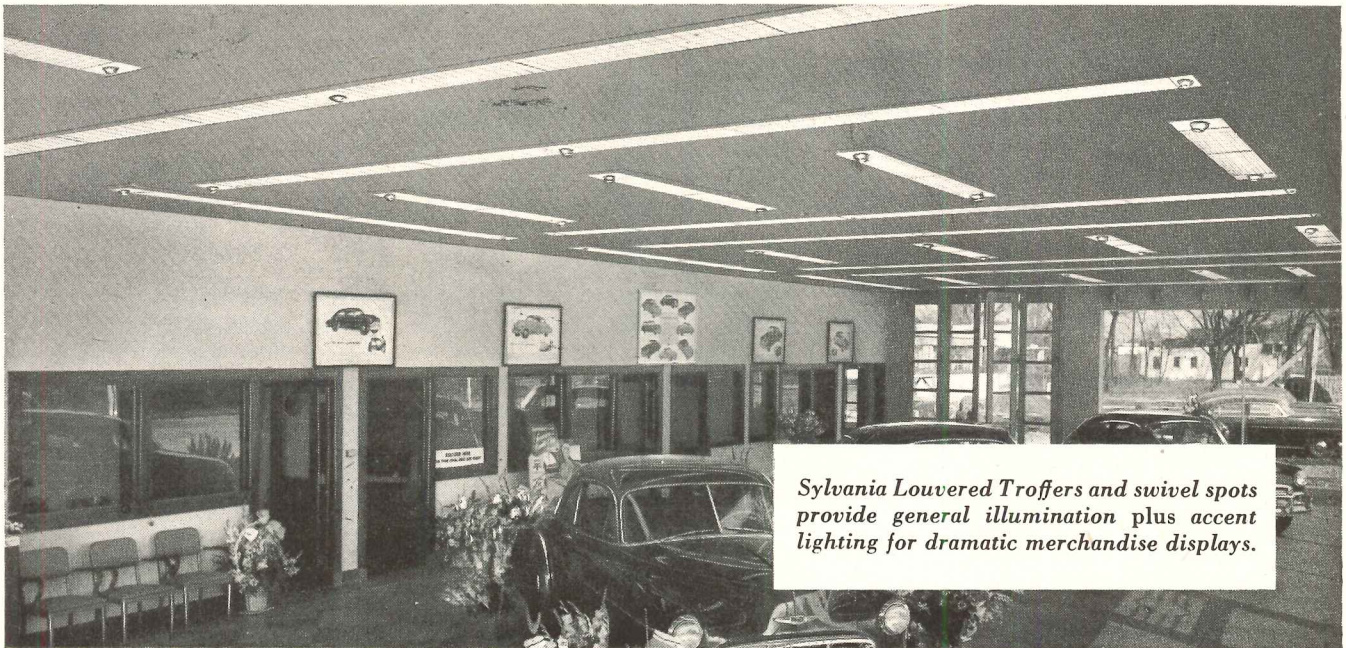
NO SCALE



\* See Item 1 on Sheet 2

\*\* See Item 3 on Sheet 2

† See Item 2 on Sheet 2



*Sylvania Louvered Troffers and swivel spots provide general illumination plus accent lighting for dramatic merchandise displays.*

## DRAMATIC CEILING LIGHTING ... FOR BETTER SEEING ... BETTER SELLING

**New versatile Sylvania Troffers make lighting a part of interior design.** You can make lighting an integral part of ceiling design with the improved line of Sylvania Troffers.

These shallow, versatile units may be recessed in practically any ceiling to form decorative lighting patterns. They give ample illumination where required . . . without interrupting planned architectural simplicity.

### **New flexibility**

You'll find Sylvania Troffers adaptable to a great variety of modern needs. Available in two, four, six or eight-foot lengths . . . for single or

continuous row installation. Equipped with choice of shieldings which include 45° x 45° louvers, translucent ribbed Albalite glass, Twinlite concentrator type lens, curved glass lens or light-weight plastic. Spotlights and corner boxes to match!

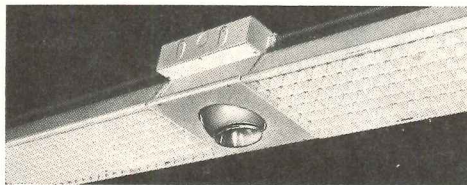
*Easy maintenance* is another important feature. Shielding frames are hinged for quick tube replacement . . . close tightly with a spring latch.

So, for new installations or remodeling jobs, remember Sylvania Troffers. New folder gives full details. Mail the coupon for your copy now.



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*Detail photo shows 45° x 45° lower shielded troffers in continuous row with swivel spotlight.*



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FIREPROOFING WITH LIGHTWEIGHT PLASTER: 2

SUMMARY OF FLOOR AND CEILING FIRE TESTS							
	CONSTRUCTION	AVERAGE TEMPERATURE AT RATING INDICATED	DESCRIPTION	RATING	AUTHORITY	ITEM No.	
FLOOR AND ROOF ASSEMBLIES	STEEL PLATE CONSTRUCTION		Steel Plate Floor Assembly 2" vermiculite concrete topping. Suspended ceiling with 1" vermiculite plaster over face of metal lath.	4 hrs.	Underwriters' Laboratories, Inc. Ret. 2773—9/12/44	1.	
			2 1/2" sand concrete topping. Attached or suspended ceiling of vermiculite plaster on metal lath. 1" ..... 3/4" .....	4 hrs. 3 hrs.	National Bureau of Standards BMS92—Table 44	2.	
	CELLULAR STEEL CONSTRUCTION		Minimum of 2" cinder concrete fill. Furred ceiling of 1/2 inch vermiculite plaster over face of metal lath. Distance x = 2 1/4" or more.	4 hrs.	Underwriters' Laboratories, Inc. Ret. 2689—12/18/39	3.	
			Minimum of 2" sand concrete fill. Furred ceiling of 1" vermiculite plaster on metal lath. Distance x = 2" or more.	4 hrs.	National Bureau of Standards BMS92—Table 45	4.	
			Minimum of 2 1/2" sand concrete fill. Suspended ceiling of 3/4" vermiculite plaster plus 1/2" of vermiculite acoustical plastic over the face of metal lath. Distance x = 7 1/4" or more. Distance y = 2 1/2" or more.	4 hrs.	Underwriters' Laboratories, Inc. Ret. 2773—11/29/50	5.	
			Minimum of 2" sand concrete fill. Suspended ceiling of 3/4" vermiculite plaster over the face of metal lath. Distance x = 15 3/4" or more. Distance y = 3 1/2" or more. Ceiling had openings for two duct outlets as shown and for two electrical outlet boxes; aggregate area of openings did not exceed 100 square inches in each 100 square feet of ceiling area. Duct openings protected by fire dampers as shown.	3 hrs.	Underwriters' Laboratories, Inc. Ret. 2689—12/13/49 Submitter (floor manufacturer) stopped test at 3 hours. In test of similar floor construction without openings in ceiling (see item No. 3 above) average temperatures at 3 hours were: unexposed surface 190°F cellular floor 700° unexposed side of lath 920° exposed plaster surface 1925°	6.	
	STEEL JOIST AND LIGHT STEEL CONSTRUCTION		2 1/2" sand concrete fill. 1" vermiculite plaster on metal lath.	4 hrs.	National Bureau of Standards BMS92—Table 43	7.	
			2 1/2" sand concrete fill. 3/4" vermiculite plaster on metal lath.	3 hrs.			
			2" sand concrete fill. 3/4" vermiculite plaster on metal lath.	2 1/2 hrs.			
	CEILING FIREPROOFING WITH INCOMBUSTIBLE MATERIALS ABOVE	ATTACHED or FURRED		Ceiling of 1" of vermiculite plaster on metal lath attached to or furred from the lower flange of supporting primary beams.	4 hrs.	National Bureau of Standards BMS92—Tables 43 & 44 and Para. 1, Page 41 & Para. 4, Page 42	8.
				Ceiling of 3/4" of vermiculite plaster on metal lath attached to or furred from the lower flange of supporting primary beams.	3 hrs.		
Ceiling of 3/4" of vermiculite plaster on metal lath attached to or furred from the lower flange of supporting primary beams.				2 1/2 hrs.			
S U S P E N D E D			Ceiling of 1" of vermiculite plaster over the face of metal lath. At least 2 1/2" air space between structural members and back of metal lath.	4 hrs.	Underwriters' Laboratories, Inc. Ret. 2773—1/20/47	9.	
				Ceiling of 3/8" of vermiculite plaster plus 1/2" of vermiculite acoustical plastic over the face of metal lath. At least 2 1/2" air space between structural members and back of metal lath.	4 hrs.	Underwriters' Laboratories, Inc. Ret. 2773—11/29/50	10.
					Ceiling of 3/8" of vermiculite plaster over the face of metal lath. Ceiling had openings for two duct outlets as shown and for two electrical outlet boxes; aggregate area of openings did not exceed 100 square inches in each 100 square feet of ceiling area. Duct openings protected by dampers.	3 hrs.	Underwriters' Laboratories, Inc. Ret. 2689—12/13/49 See comments under item 6 above



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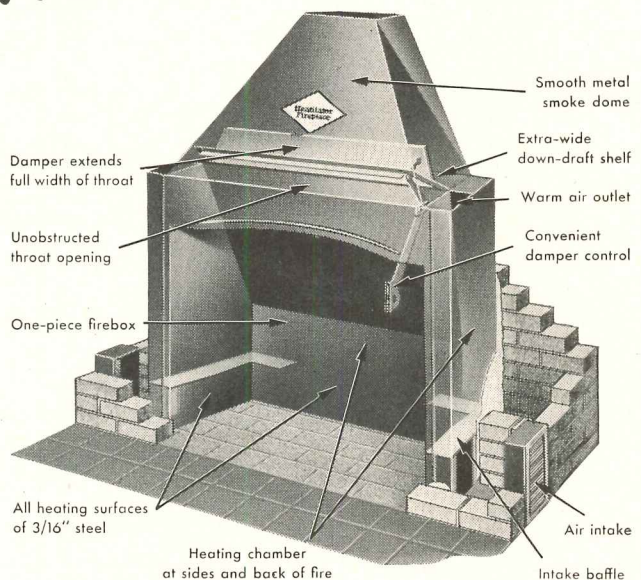
The Heatilator Fireplace puts no limit on mantel design or use of materials... gives you complete freedom of architectural expression. It's ideal for basement rooms too... and as a supplemental source of comfort during service interruptions or emergencies. The leader since 1927, Heatilator Fireplaces have been proved in actual use by hundreds of thousands of satisfied home owners. Specify "Heatilator" in your next home or group of homes. Heatilator, Inc., 383 E. Brighton Ave., Syracuse 5, New York.

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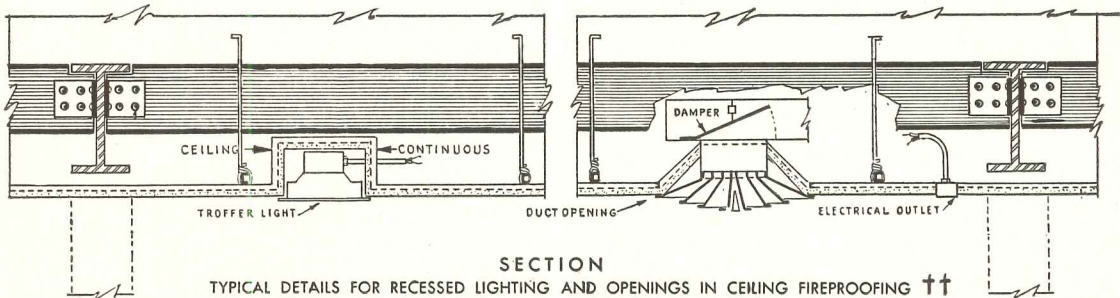
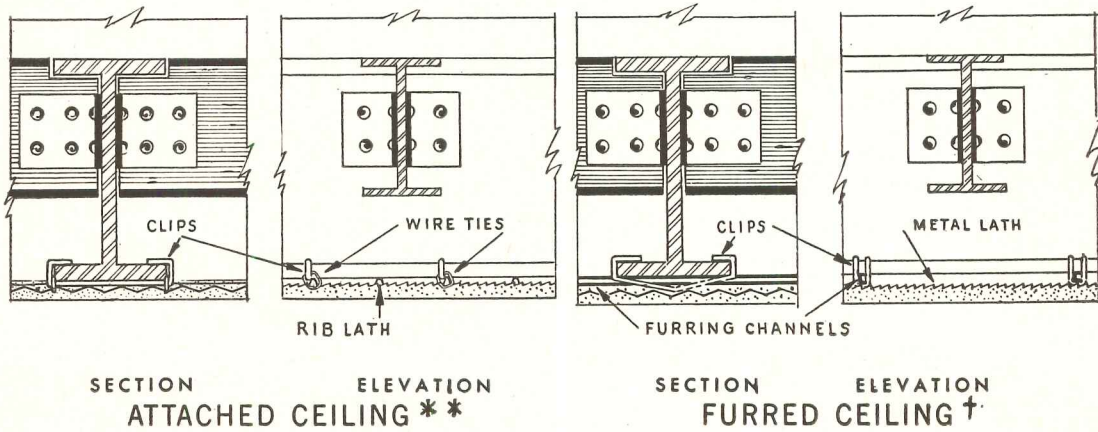
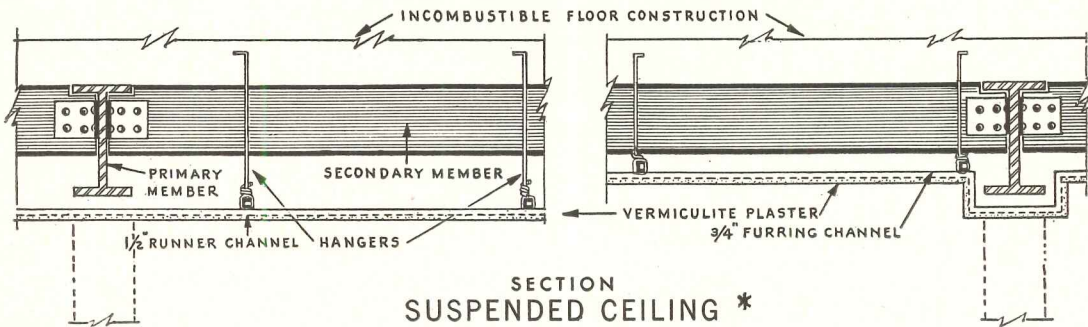
T. M. REG. U. S. PAT. OFF.



FIREPROOFING WITH LIGHTWEIGHT PLASTER: 3

TYPICAL BEAM, GIRDER AND TRUSS FIREPROOFING DETAILS

FIREPROOFING PRIMARY AND SECONDARY MEMBERS WITH A CEILING  
NO SCALE



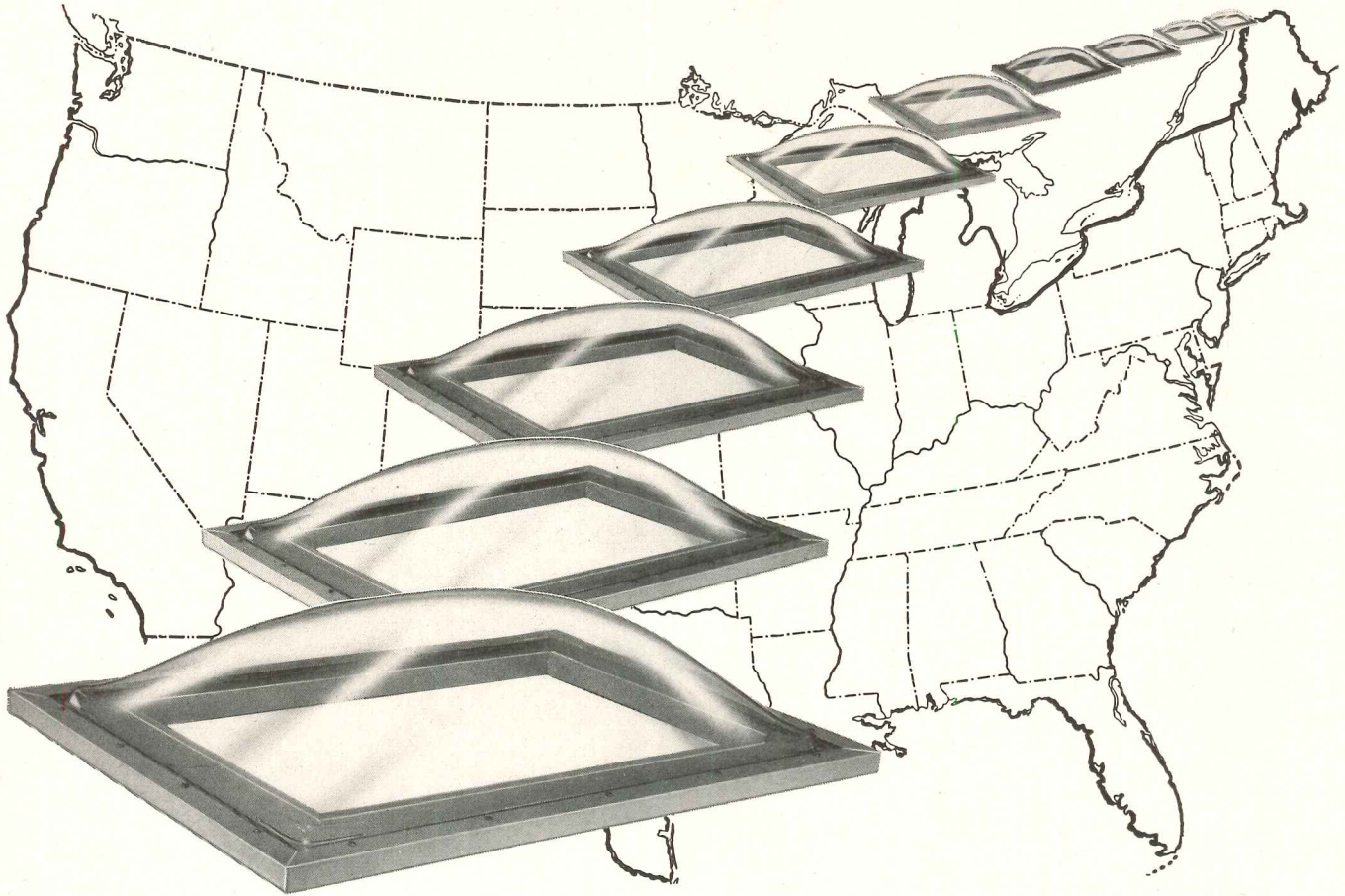
\* See Items 1-2-5-6-9-10-11 on Sheet 4

† See Items 3-4-8 on Sheet 4

\*\* See Items 2-7-8 on Sheet 4

†† See Items 6-11 on Sheet 4

**"we approve Wascolite Skydomes for daylighting"**



**. . . said School Boards in 42 states in 1951**

**HERE'S  
WHY:**

**BETTER DAYLIGHTING** . . . an abundance of *glare-free, evenly distributed* daylight under cloudy or sunny conditions.

**LOWER COST** . . . the Skydome system permits economical flat roofs and low ceilings . . . simple structural designs using less steel and other critical materials than any other over-all daylighting method.

**DEPENDABILITY** . . . long, trouble-free life insured by prefabricated, weather-proof, shatter-resistant construction . . . by the proved stability of the acrylic dome material under severe outdoor conditions since 1940.



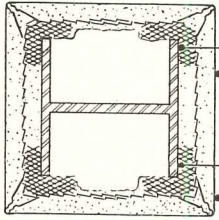
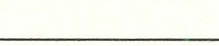
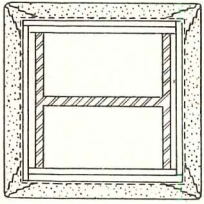
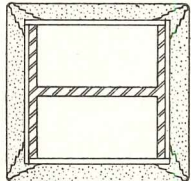
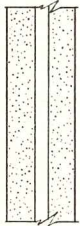

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See for yourself why School Boards in 42 states agreed with the nation's leading architects last year . . . approved Wascolite Skydomes for nearly 100 schools. Mail the coupon for information.

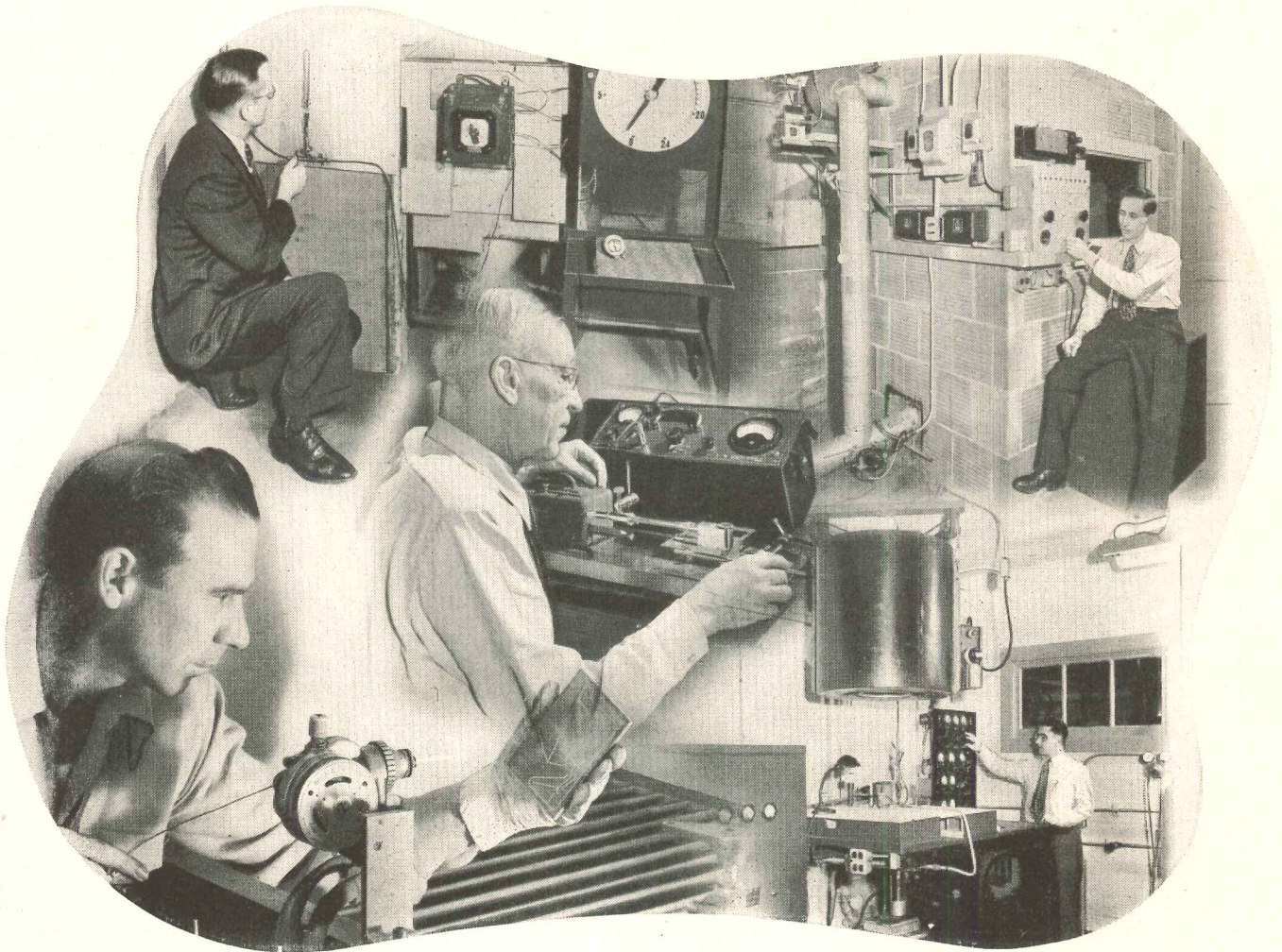
FIREPROOFING WITH LIGHTWEIGHT PLASTER: 4

SUMMARY OF COLUMN AND SOLID PARTITION FIRE TESTS							
	CONSTRUCTION	AVERAGE TEMPERATURE AT RATING INDICATED	DESCRIPTION	RATING	AUTHORITY	ITEM No.	
C O L U M N	M E T A L L A T H		Column protected with 1 1/2" vermiculite plaster over the face of metal lath. Lath spaced 1/4" from column flanges. Space behind lath on flange faces filled with plaster, as shown.	4 hrs.	Underwriters' Laboratories, Inc. Ret. 2851—5/10/49	1.	
			Same protection as above except 1" vermiculite plaster over face of metal lath.	3 hrs.			
	M I N E R L A T H			Column protected with 1 1/2" vermiculite plaster applied over two layers of 1/2" thick long length plain gypsum lath wrapped with one layer of hexagonal mesh poultry netting.	4 hrs.	National Bureau of Standards Test 294	2.
				Same protection as above except 1" vermiculite plaster applied over gypsum lath.	3 1/2 hrs.		
	G Y P S U M	L A T H		Column protected with 1" vermiculite plaster applied over one layer of 3/8" thick perforated gypsum lath.	2 hrs.	National Bureau of Standards Test 294	3.
P A R T I T I O N S	G Y P S U M		1" of vermiculite plaster applied to each face of 1/2" thick long length plain gypsum lath. No studs. Overall thickness of partition 2 1/2"	2 hrs.	National Bureau of Standards Tests 300 & 301	4.	
			3/4" of vermiculite plaster applied to each face of 1/2" thick long length plain gypsum lath. No studs. Overall thickness of partition 2".	1 hr.			
	M E T A L	L A T H		Vermiculite plaster applied on metal lath fastened to incombustible studs spaced 16" on centers. Overall thickness of partition 2 1/2".	2 hrs.	National Bureau of Standards Tests 298 & 299	5.
Vermiculite plaster applied on metal lath fastened to incombustible studs spaced 16" on centers. Overall thickness of partition 2".				1 hr.			

*Conquest of the elements, the electron harnessed, attack on illness—aspects of these and other accomplishments of special interest to architects and engineers are found in*

## Your Progress Report from Honeywell

*on the development of the science of temperature control*

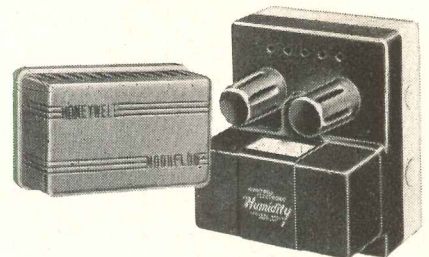
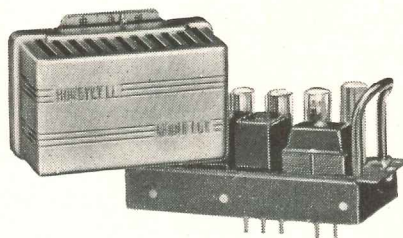


**T**HERE'S a direct—and mighty important—relationship between the Honeywell products displayed on these two pages and the photo montage you see above.

Because one of the most important parts of Honeywell company policy from the beginning has been an insistence on thorough, painstaking research.

That's one big reason why Honeywell has been able to contribute so much to the development of the science of temperature control.

And that's why—when you specify Honeywell products like the eight shown here—you know you're giving your client the finest available anywhere.



### *The sensitivity of electronics applied to*

#### *Air Conditioning Control*

Here's a new system that enables you to give clients the ultimate in comfort—with increased efficiency and lower maintenance costs. Because it is *electronic*, it's *100 times as sensitive* as conventional systems—with faster reaction to changes in load, no temperature "overshoot," no waste of warm or cool air.

#### *Humidity Control*

A system that out-performs them all! That's what Honeywell's new Electronic Humidity Control System does—with an accuracy that a few years ago was considered unattainable. Ideal for use where conditions demand absolutely *uniform* humidity, it's a *thousand times* more sensitive than ordinary systems.