

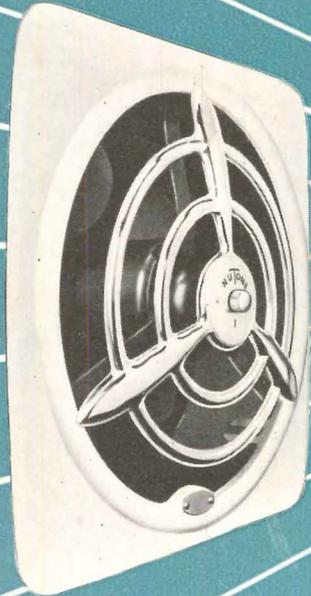
ARCHITECTURAL RECORD

JULY 1952

UNITED NATIONS



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THE RECORD REPORTS



President and chairman: Glenn L. Stanton and Arthur A. Holden

THE A. I. A. MEETS IN NEW YORK

AN ADVANCE REGISTRATION of 600 and hotel room registrations of 1200 for the 84th annual convention of the American Institute of Architects June 24-27 were reported as this issue of the RECORD went to press a week before the convention opened.

It looked as though this year's session, the A.I.A.'s first in New York for 27 years, would follow the pattern of re-

cent years and be a record-breaker attendance-wise.

In most other respects, however, the convention as planned by the committees headed by Arthur A. Holden, F.A.I.A., New York regional director and general chairman of arrangements for the convention, was breaking sharply from the trend of recent conventions.

(Continued on page 12)

NPA GLUM ON STEEL, UPS COPPER, ALUMINUM USERS

THE STEEL STRIKE plunged Washington into official protestations of gloom over the outlook for a quick return to a "normal" civilian economy; and at the National Production Authority these took the form of a glum announcement that the easing of steel curbs and ending of the ban on amusement buildings promised for July 1 would be postponed.

Only a few days later surprise amendments to CMP Regulation 6 and M-100, the basic housing construction regulation, made substantial increases in self-authorization allowances of copper and aluminum for all construction except public roads and recreational buildings.

Copper increases were made possible, NPA said, because of the decline in world copper prices which followed lifting of the U.S. price ceiling late in May. More aluminum is available, according to NPA, because expected civilian demand "has not materialized in full" — a restrained translation of the cries of oversupply which have been coming from producers for many months.

Commercial construction was allowed 750 lb of copper per project instead of 200; 1000 lb of aluminum instead of none. One- to four-family dwellings got 50 instead of 35 lb of copper (steel water pipes) and 175 against 135 (copper pipes).

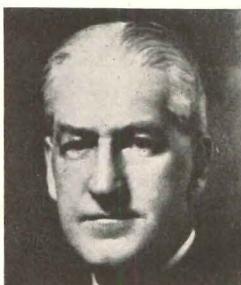
REGULATION X RELAXED; BUILDERS: "NOT ENOUGH"

THE LONG-AWAITED RELAXATION of Regulation X came last month, but the reaction it drew from the industry made it seem far from a bonanza.

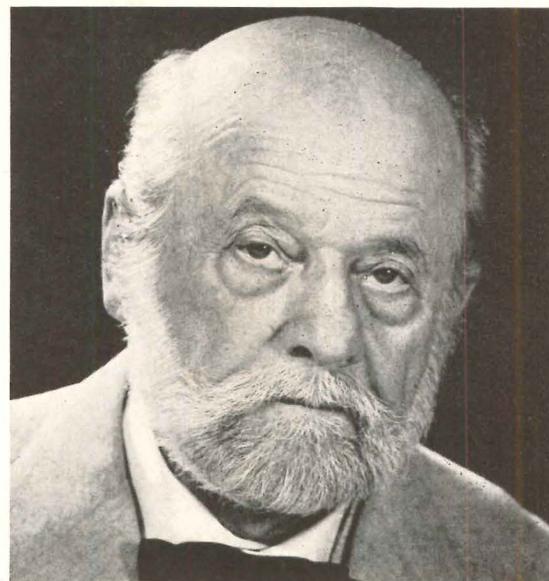
(Continued on page 12)



New honorary members: Robert Moses, N.Y.C. Coordinator of Construction (et cetera), and John Riley, N.Y.C. Coordinator of School Construction



William Stanley Parker, F.A.I.A., Edward C. Kemper Award winner (above); Auguste Perret of France (at right and in Al Bendiner cartoons), 1952 A.I.A. Gold Medalist. Below: (left) George Nakashima, Craftsmanship Medal winner; (right) Marshall Fredericks, sculptor, Fine Arts Medal winner



RICHARDS LEAVES FHA

FRANKLIN D. RICHARDS, since 1947 commissioner of the Federal Housing Administration, resigned his post effective June 30 to open his own mortgage brokerage and financing office in Washington.

Mr. Richards, who succeeded Raymond M. Foley as FHA commissioner, had been connected with FHA since 1934, when he was appointed FHA director for the state of Utah. He was born in Ogden, Utah, in 1900 and practiced law in Salt Lake City from 1923 until he joined FHA.

FCDA ISSUES NEW MANUAL

"IMPROVEMENT OF SHELTER AREAS," Part II of the Federal Civil Defense Administration's long-scheduled series on design of bomb shelters, was published last month. Copies (15 cents each) are available from the Government Printing Office.

The new technical manual, which includes instructions and drawings, is intended primarily for architects and engineers. Frederic A. Pawley was the A.I.A. member of a reviewing panel.

REGULATION X (Continued from p. 11)

The National Association of Home Builders called the action only a "token" relaxation of "Regulation Axe" and predicted it would be little help "to families in need of housing."

N.A.H.B. President Alan Brockbank,

A.I.A. CONVENTION

(Continued from page 11)

First, the program had been "streamlined," to meet objections reported to Chairman Holden to recent working conventions so crowded with events that, for example, last year's had to be set up with a dual program — two sets of seminars running concurrently. This year's program had a total of three seminars, all on the technical theme "Structural Resources for Architectural Design."

who described Regulation X as "the greatest obstacle to home ownership ever faced by the home-buying public," said the credit restriction must be removed completely.

"We will take the home buyer's case direct to Congress," Mr. Brockbank said. "There is no good reason for retention of these credit curbs over housing."

Lumber Dealers Protest

Another quick protest came from the National Retail Lumber Dealers Association, whose executive vice president, H. R. Northup, called the revision "extremely disappointing," offering "no important relief" to families seeking any but the lowest-priced homes.

Another objective of the streamlining, according to the committee, was to free visiting architects to spend the maximum amount of time enjoying New York; and the most elaborate efforts of the committee were devoted to arranging a wide variety of tours and trips to promote this enjoyment.

Second, the choice of speakers for the major addresses of the convention brought non-architects to a position of prominence on the program that they have not until this year attained. Of four major speakers at this year's convention, only one, Hugh Ferriss, newly-elected president of the New York Chapter of the A.I.A., was an architect. The others were Pyke Johnson, president of the Automotive Safety Foundation; Ernest T. Weir, chairman of the Republic Steel Corporation; and (at the annual banquet) Deane W. Malott, president of Cornell University.

Behind the Convention

Matthew W. Del Gaudio was co-chairman of the 1952 convention committee headed by Mr. Holden; Alonzo W. Clark, secretary; Daniel Schwartzman, treasurer.

Host chapter and society representatives were: Vito Battista, Brooklyn Chapter; Michael A. Cardo, Bronx Chapter; George Cavalieri, New York Society; William C. Halbert, Westchester Chapter; Oswald Fischer, Queens Chapter; Francis Kealy, New York Chapter; Theodore Koch, Staten Island Chapter; Joseph Watterson, L. I. Chapter; Harry Silverman, Brooklyn Society.

Subcommittee chairmen were as follows: Leopold Arnaud, Engineering Advancement Exhibit; William F. R. Ballard, City Planning Exhibit; J. Gordon Carr, Annual Dinner; Robert W. Cutler, Trips and Visits; Frederick J. Frost Jr., Opening Luncheon; Wallace K. Harrison, United Nations Exhibit; Albert F. Heino, Honor Awards; A. Gordon Lorimer, Building Products Exhibit; Geoffrey N. Lawford, Public Relations.

Also Julian Clarence Levi, Reception; William Potter, Finance; Harold R. Sleeper, Building Industry Luncheon; Eldredge Snyder, Ladies Entertainment; Ralph Walker, Collateral Exhibits; Edgar I. William, Special Entertainment; John N. Linn, Tickets; Kenneth K. Stowell, Student Activities; Lawrence Grant White, President's Reception.

REVISED REGULATION X SCHEDULE OF DOWNPAYMENTS

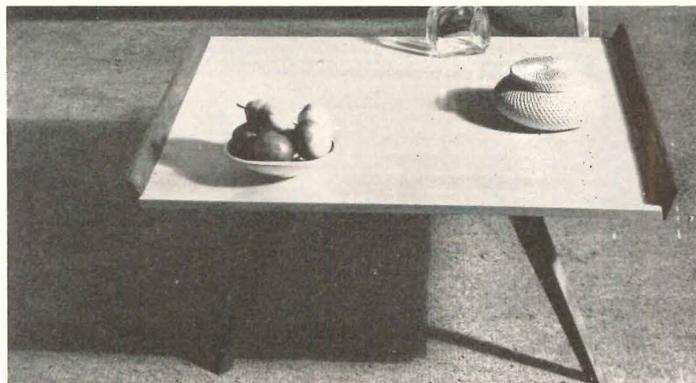
| Value (Transaction Price) Per Family Unit | Non-Veteran (FHA) and Conventional Minimum Down Payment | | VA Loans | |
|--|---|----------------------|------------------|----------------------|
| | Dollar Amount | Per Cent Of Value | Dollar Amount | Per Cent Of Value |
| \$ 5,000 | \$ 250 | 5.0 | \$ 0 | 0.0 |
| 6,000 | 300 | 5.0 | 0 | 0.0 |
| 7,000 | 350 | 5.0 | 0 | 0.0 |
| 8,000 | 950 | 11.9 | 380 | 4.8 |
| 9,000 | 1,200 | 13.3 | 480 | 5.3 |
| 10,000 | 1,450 | 14.5 | 580 | 5.8 |
| 11,000 | 1,900 | 17.3 | 740 | 6.7 |
| 12,000 | 2,350 | 19.6 | 900 | 7.5 |
| 13,000 | 2,800 | 21.5 | 1,450 | 11.2 |
| 14,000 | 3,250 | 23.2 | 2,000 | 14.3 |
| 15,000 | 3,700 | 24.7 | 2,550 | 17.0 |
| 16,000 | 4,250 | 26.6 | 3,100 | 19.4 |
| 17,000 | 4,800 | 28.2 | 3,670 | 21.6 |
| 18,000 | 5,350 | 29.7 | 4,240 | 23.6 |
| 19,000 | 5,900 | 31.1 | 4,810 | 25.3 |
| 20,000 | 6,450 | 32.2 | 5,380 | 26.9 |
| 21,000 | 7,000 | 33.3 | 5,950 | 28.3 |
| 22,000 | 7,750 | 35.2 | 6,650 | 30.2 |
| 23,000 | 8,500 | 37.0 | 7,350 | 32.0 |
| 24,000 | 9,250 | 38.5 | 8,050 | 33.5 |
| 25,000 | 10,000 | 40.0 | 8,750 | 35.0 |
| Over \$25,000 | — | 40.0 | — | 35.0 |



Only three Nakashima pieces are commercially available — Knoll Associates has these. At left: the chair, which has a frame of clear birch, mortised and tenoned joints. At right: another chair; this one available in walnut or cherry as well as in birch. Below right: the table (38 x 34 x 16 $\frac{5}{8}$ in.) has solid birch top, walnut sides and legs



The English oak burl coffee table (below) is one of Nakashima's custom designs, was made from a log that was originally brought to this country as ballast on a ship, resisted an attempt to burn it, and finally was sawn. "It stood in my shop for about a year until we evolved a design for it," Nakashima says. The photograph of Nakashima on page 11 shows him beside the next board of this same log



KNOLL EXHIBITS WORK OF A.I.A. CRAFTSMANSHIP MEDAL WINNER

ONE OF THE MANY New York exhibits timed to coincide with the national convention of the American Institute of Architects was Knoll Associates' showing of the work of George Nakashima, who received this year's A.I.A. Craftsmanship Medal.

An architect turned woodworker, Mr. Nakashima executes nearly all of his designs in his own shop near New Hope, Pa. He believes very firmly that design and execution are too far apart these days: "There is too much of the conception of form and the imposition of it to manufacture with a complete separation of the designer and the mechanic," he says. "That is probably why we have yet to achieve a truly

honest contemporary product in wood, either in architecture or in furniture, in relation to the fine machinery at our disposal. We are all fouled up in catchwords such as 'modern' and 'traditional' and avoid the real issues. A new type of man must be born who is as capable with machinery and tools as he is with a pencil. There is no doubt that, in the final analysis, the tool is more sensitive than the pencil."

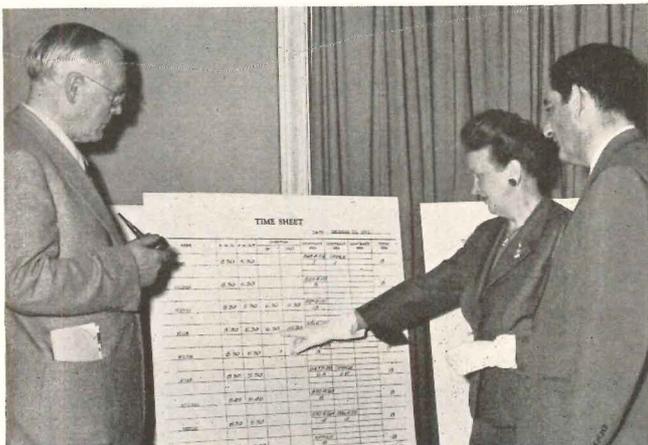
Knoll Associates does have three Nakashima designs (shown above) for distribution; otherwise Mr. Nakashima's pieces are all custom work. His tools are modern power lathes and ancient Japanese saws and chisels; he uses local woods, buying standing trees — ash,

walnut, birch, oak, poplar, cherry — from the countryside around him. Much of his stock is air-dried, for about six months; the rest is kiln-dried.

Mr. Nakashima feels strongly about finishes. "Varnish," he says, "has a chilling effect on wood. Never can aging or the subtle weathering of a fine piece of wood take place if it has been varnished. Woods should be waxed or oiled."

Mr. Nakashima, who has architectural degrees from the University of Washington and Massachusetts Institute of Technology as well as a diploma from Fontainebleau, practiced architecture for six years in Japan and India and five years on the West coast.

Seminar: Architectural Accounting Systems. Neil J. Convery (left), moderator; Miss Ellis Leigh and Joseph Abel, speakers



Gruber's Photo Centre



Seminar: Architectural Public Relations. Searle H. von Storch, Moderator Victor M. Reynal, John Caulfield Smith and Harold Sleeper, F.A.I.A., and President Elmer S. Tuthill of the two New Jersey groups

FOCUS ON PUBLIC RELATIONS AT NEW JERSEY CONVENTION

ARCHITECTURAL PUBLIC RELATIONS, a subject by no means new to New Jersey architects, nevertheless made the biggest news at last month's Asbury Park convention of the New Jersey Chapter of the American Institute of Architects and the New Jersey Society of Architects.

How the Ontario Association of Architects spends the \$5000 it allots to promotion was described in a frank, detailed and factual account by the Association's public relations director, John Caulfield Smith, a contributing editor of ARCHITECTURAL RECORD. Mr. Smith's description of the methods used in Ontario made his hearers feel that American architects have hardly gotten started in the field of professional public relations. His talk was followed by a barrage of questions and developed considerable sentiment for attempting to arrange a spot for Mr. Smith at the A.I.A. national convention.

The public relations program in New

Jersey, as described by Victor M. Reynal, A.I.A., has allotted \$1000 of a \$2000 budget to paid newspaper advertising ("It pays to consult an architect before you build"). Other features: a speakers' bureau with a projector and slides; a brochure on architects' services, with a list of members of the two New Jersey groups.

Harold R. Sleeper, F.A.I.A., a member of the national A.I.A. Committee on Public Relations which was to present a special report to the national convention at the end of last month, outlined some of the possibilities envisaged by the committee. Public relations as a tool for the individual architect was discussed by Searle H. von Storch, A.I.A.

Accounting for Architects

Architectural accounting systems made the subject of the other major seminar at a very down-to-earth convention. Neil J. Convery, A.I.A., was moderator; speakers were Joseph H.

Abel, A.I.A., of Washington, D. C., and Miss Ellis Leigh of the Office of Emil A. Schmidlin, A.I.A.

Officers Reelected

Elmer S. Tuthill of Summit, president of the two organizations, and the entire slate of officers were reelected by the convention, the second joint annual session. It had a total registration of over 600, including 230 architects, 50 per cent over last year's meeting.

Building Awards Given

Eleven certificates of award and one special award were given for entries in the third annual convention exhibition. Award-winning architects were: Vincent G. Kling, Philadelphia; Fenick A. Vogel, Caldwell, N. J.; Kelly & Gruzen, New York; Lawrence C. Licht, Frank E. Johnson Associate, Englewood, N. J.; Arthur Rigolo, Clifton, N. J.; Herman C. Litwack, Newark; Oren Thomas, Collingswood, N. J.

RECORD WINS AWARDS

Three Certificates of Merit for editorial excellence were awarded to Architectural Record in this year's Industrial Marketing competition for business publications. The series on architectural philosophy (montage at left) was given an award as an outstanding series of articles; the June 1951 issue, with a Building Types Study on Schools and School Practice as an outstanding single issue; and the article on Pietro Belluschi's "Vacation House in Oregon" (July 1951) for outstanding graphic presentation

FUNCTION AND EXPRESSION IN ARCHITECTURE

By Lewis Mumford

THE ARCHITECTURAL LIFE

by William W. Wurster,
Dean of Architecture, University of California

ARCHITECTURE AND SOCIETY

By Pietro Belluschi

THE INTERNATIONAL STYLE

TWENTY YEARS AFTER

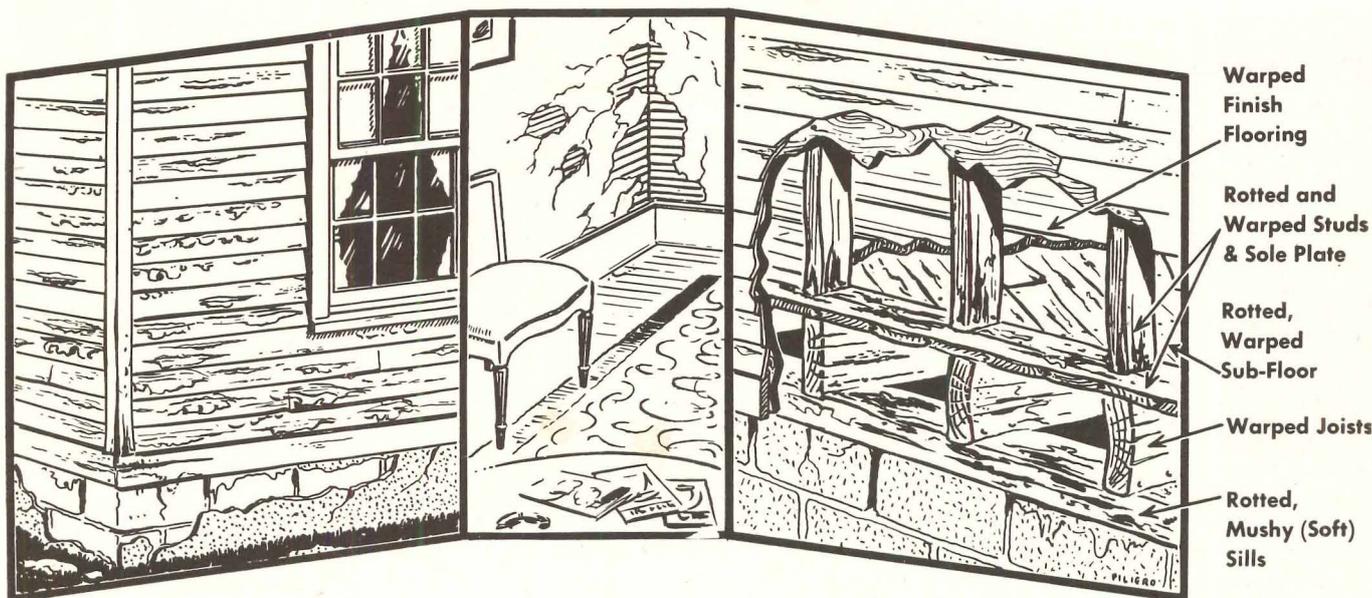
By Henry-Russell Hitchcock

HUMANITY.—

OUR CLIENT

By John Ely Burchard

More Destructive than Termites!



CONDENSATION WILL MAKE PAINT PEEL, PLASTER CRUMBLE, WOOD ROT, AND MASONRY AND MORTAR DETERIORATE.

Ordinary insulation in walls lets water vapor flow through, condense, accumulate and cause damage. Vapor is a gas. It flows through walls from high vapor density areas to low. Cold air can retain less vapor in suspension, and creates a low density area. Vapor pierces plaster, wood, brick, stone, asphalt, building paper, ordinary insulations. Wherever it touches a substance colder than its dew-point, it condenses.

Inside walls, within ordinary insulation, onto and within siding or sheathing, onto inner wall surfaces, vapor flows and condenses if a vapor barrier of **zero** permeability is not provided. Upon condensing, it stimulates fungi and insects which greedily break down wood and cause timber rot. It makes paint peel, plaster crumble, iron rust.

Impervious to vapor, multiple accordion aluminum is also non-condensation-forming. The slight mass of the aluminum sheet on the warm side

(1/5 oz. per sq. ft.) approximates the adjacent air's temperature (by conduction) so quickly that it can extract very little heat from it. Therefore the air can retain its vapor content in suspension, without otherwise resulting condensation.

Each aluminum sheet throws back 97% radiation on the warm side, emits but 3% on the cold. On the cold side, each aluminum sheet is slightly warmer than adjacent air, and heats it. Therefore the capacity of the air to retain vapor in suspension is slightly increased, and no dewpoint is ever reached. Nowhere on nor within multiple accordion aluminum does condensation formation occur.

The aluminum and fiber sheets block inner and outer convection. In addition, the air spaces practically eliminate conduction.

Multiple accordion aluminum is commercially available as Infra Insulation, Types 6, 4, and 4 Jr. For a complete discussion of the subject, ask us to send at our expense, Schwartz's "Simplified Physics of Vapor and Thermal Insulation," and the Government booklet, "Insulation and Weather-Proofing" (Div. Farm Bldgs. & Rural Housing).

INFRA WALL HEAT FLOW THERMAL FACTORS

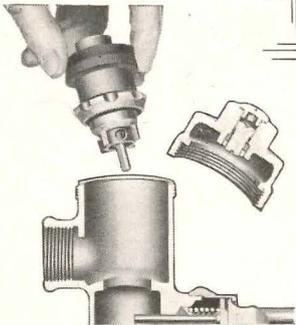
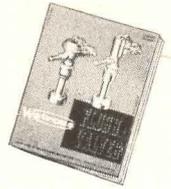
| | |
|------------|--|
| Type 6 | C. 073, R 13.69 = 5 5/8" dry Rockwool |
| Type 4 | C. 107, R 9.34 = 3 3/4" dry Rockwool |
| Type 4 Jr. | C. 123, R 8.13 = 3 1/3" dry Rockwool (Type 4 Jr. in 1" Space) |

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WOrth 4-2241

Infra Insulation, Inc., 525 Bway., N. Y. C. Dept. R-7
 Please send free literature on how to avoid damage by condensation.
 Send price lists Send free sample
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 Address _____

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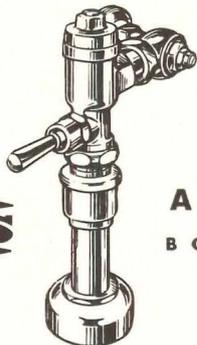
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ARCHITECTS AND ENGINEERS MEET AT THE OCTAGON

Gretchen van Tasse

Around the conference table at the first meeting of the Joint Committee of the American Institute of Civil Engineers and the American Institute of Architects: G. Brooks Earnest, Joseph Ehlers, Alvin E. Harley and Craig P. Hazelet of A.S.C.E.; Leonard H. Bailey, Mason G. Lockwood and Edmund R. Purves of A.I.A. The committee is another attempt to encourage joint discussion of common problems



Underwood & Underwood

JAMES HORNBECK BECOMES RECORD ASSOCIATE EDITOR

JAMES S. HORNBECK, an architect with 14 years' experience in both large and small architectural offices, has become an associate editor of **ARCHITECTURAL RECORD**.

For the last two and a half years, Mr. Hornbeck has been a designer with the New York architectural firm of Harrison & Abramovitz; for three years before that he was a designer in the New York office of Skidmore, Owings and Merrill.

Mr. Hornbeck got his B.S. in Architecture from Pennsylvania State College followed by graduate study at Harvard. He was in the office of Eden & Kapp, State College, Pa., for two years before returning to Penn State for a five-year stint as an instructor in the Department of Architecture.

His later experience included design and drafting for the architectural unit of the Pennsylvania Turnpike Commission; design and specification writing for W. T. Grant Company, New York; war-time design for the Austin Company, New York; and two years with the Manhattan Engineer District, Kellex Corp., New York, working on design and development of industrial buildings for the atomic bomb project at Oak Ridge.

CONVOCATION WILL MARK ENGINEERING CENTENNIAL

MORE THAN 40 engineering organizations are making plans to participate in the convocation program which will mark the Centennial of Engineering to be held in Chicago September 3-13 in honor of the hundredth anniversary of the American Society of Civil Engineers.

The American Institute of Architects will be represented on the program by a speaker, as yet unannounced; presentation of a scroll in honor of the occasion;

and its major 1952 convention exhibit, "The Re-Union of Architecture and Engineering: 1852-1952."

Twelve symposiums will constitute the principal general sessions, and the individual engineering societies will hold their own more specialized technical sessions.

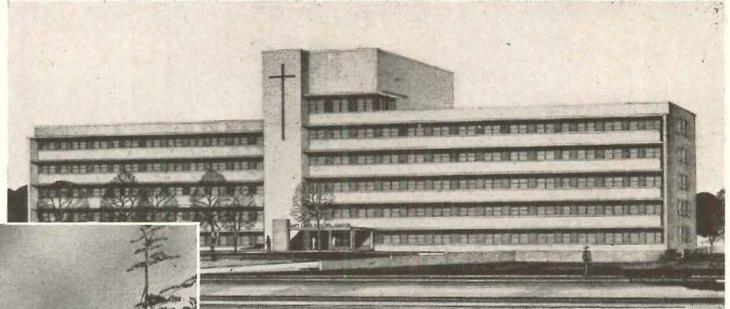
Activities of the Centennial are directed by a corporation headed by Lenox R. Lohr, M.A.S.C.E., president.



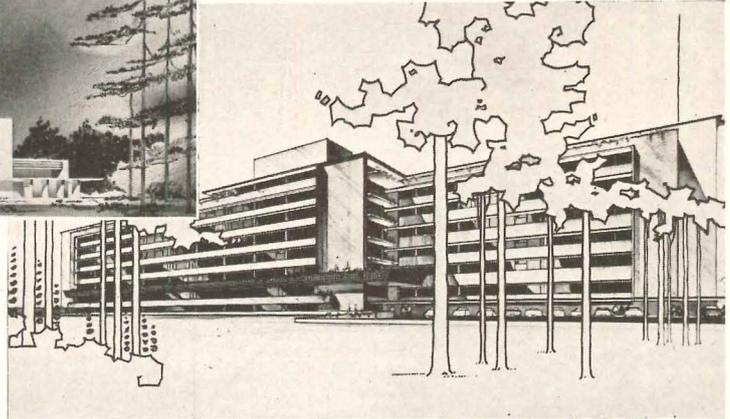
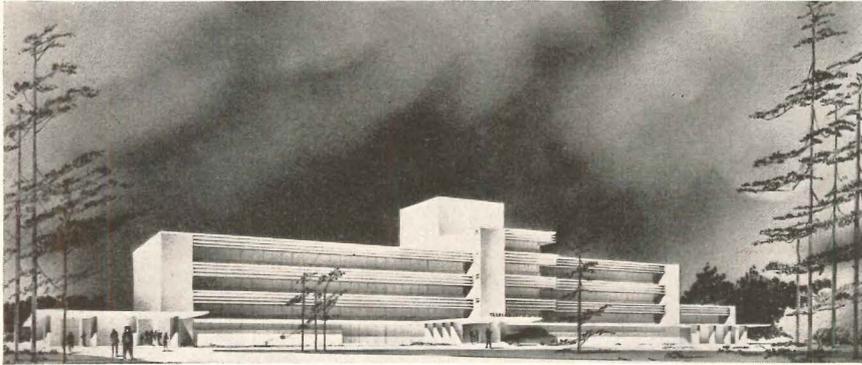
—Drawn for the RECORD by Alan Dunn

"It's a light, cheery apartment — you get the full afternoon glare from the U.N. Building. . . ."

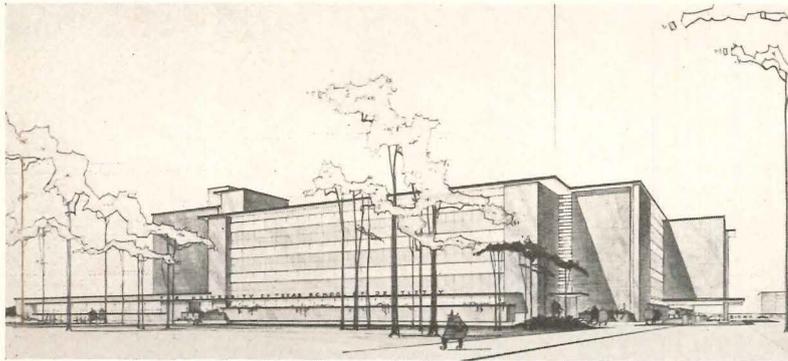
Construction is well advanced on three new buildings for the Texas Medical Center: 315-bed general hospital, St. Luke's Episcopal (right) — Staub & Rather and Hiram A. Salisbury, Architects; 100-bed special hospital, Texas Children's (below) — Milton Foy Martin, Architect; M. D. Anderson Hospital for Cancer Research (below right) — MacKie & Kamrath, Architects



Harper Leiper Company



Below: a fourth new building got under way in May, the University of Texas School of Dentistry — MacKie & Kamrath, Architects. Two other buildings will be started before the end of the year: Houston Academy of Medicine Library — Cameron Fairchild, Architect; City-County Charity Hospital (Jefferson Davis) — Alfred C. Finn, H. Edward Maddox and C. A. Johnson, Architects



Harper Leiper Company

TEXAS MEDICAL CENTER: FIVE UNITS ARE BUILT, FOUR UNDER WAY, TWO MORE '52 STARTS PLANNED

SIX YEARS after the public dedication of its site on the outskirts of Houston, the Texas Medical Center represents a capital investment of more than \$53,000,000, not including the \$12,000,000 Veterans Administration Hospital located just outside the 163-acre tract but an integral part of the Medical Center program.

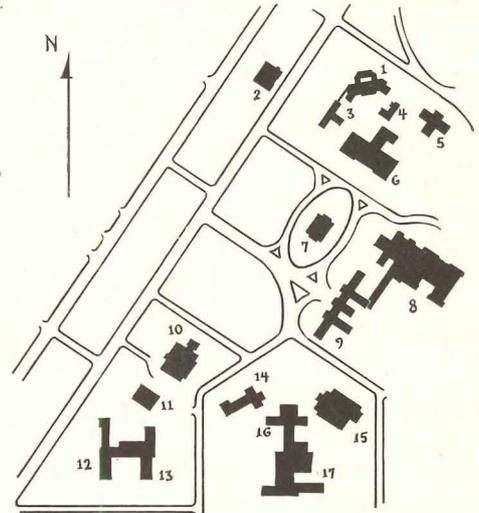
Five new buildings have been completed: Baylor University College of Medicine (1947), Hermann Hospital No. 2 (1949), and Hermann Professional Building — Kenneth Franzheim, Hedrick & Lindsley, architects; Methodist Hospital (1951) — Watkin, Nunn, McGinty and Phenix, architects; and Arabis Temple Crippled Children's Clinic

(1952) — Alfred C. Finn, architect.

Four more buildings are under way and construction is expected to start before the end of this year on two others. Two of the projects in the original scheme are still unscheduled: the University of Texas School of Public Health and Graduate School of Medicine.

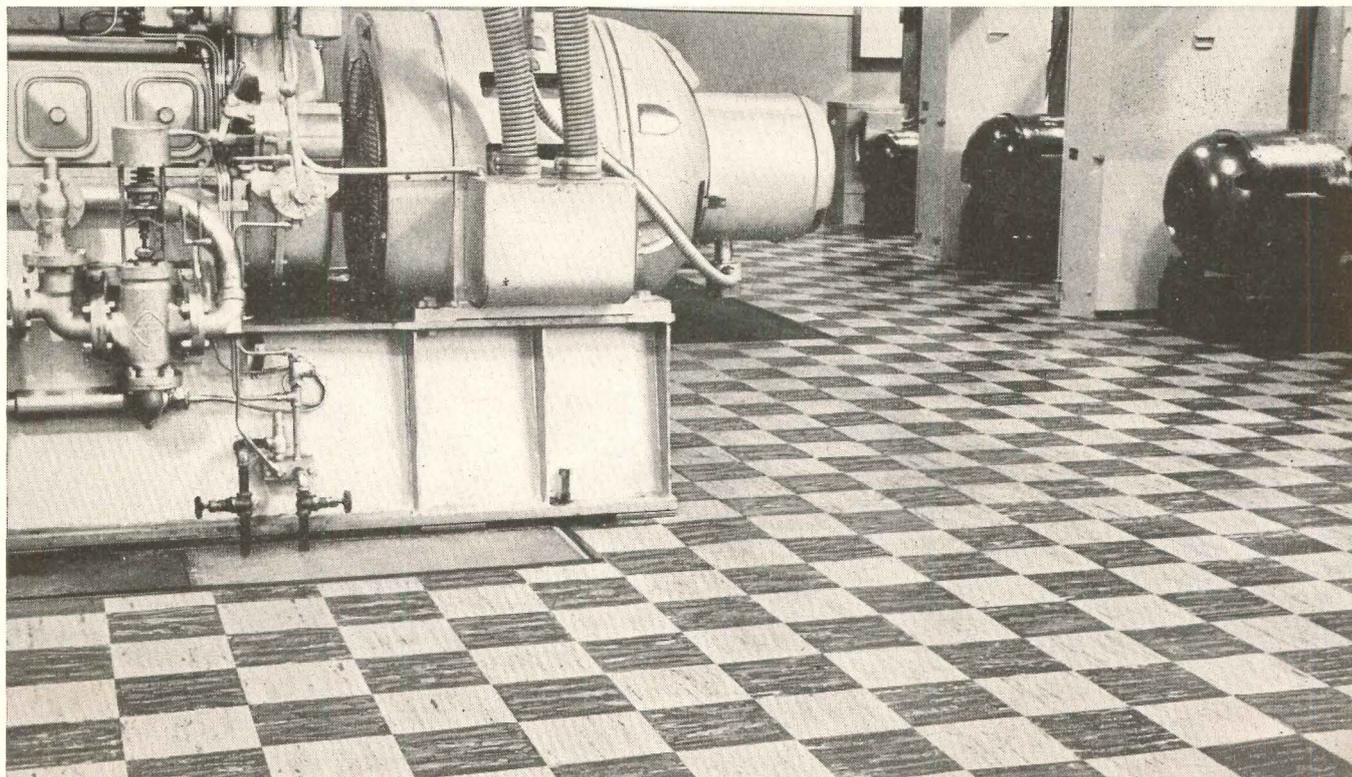
The Center is administered by a joint Board of Trustees for an association of universities and hospitals devoted to the advancement of research, education and treatment in the fields of medicine, dentistry and the allied health sciences. The Board, with its Architectural Committee, must approve all building plans, plot plans and specifications.

SKETCH: PORTION OF 163-ACRE SITE



Legend: • indicates completed buildings

- 1. Hermann Hospital No. 1 •
- 2. Hermann Professional Building •
- 3. University of Houston School of Nursing •
- 4. Hermann Hospital Internes •
- 5. Crippled Children's Hospital •
- 6. Hermann Hospital No. 2 •
- 7. Academy of Medicine Library •
- 8. Jefferson Davis Hospital •
- 9. Baylor University College of Medicine •
- 10. Methodist Hospital •
- 11. Power Plant and Laundry •
- 12. Texas Children's Hospital •
- 13. St. Luke's Episcopal Hospital •
- 14. School of Public Health (U. of Tex.) •
- 15. School of Dentistry (U. of Tex.) •
- 16. Graduate School of Medicine (U. of Tex.) •
- 17. M. D. Anderson Cancer Hospital (U. of Tex.) •



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that busy specifiers everywhere are learning to count on specialists for accurate and up-to-date information. Such a man is the Kentile Flooring Contractor. Call on him as often as you wish...you'll find his extensive background makes him a valuable addition to your "staff."

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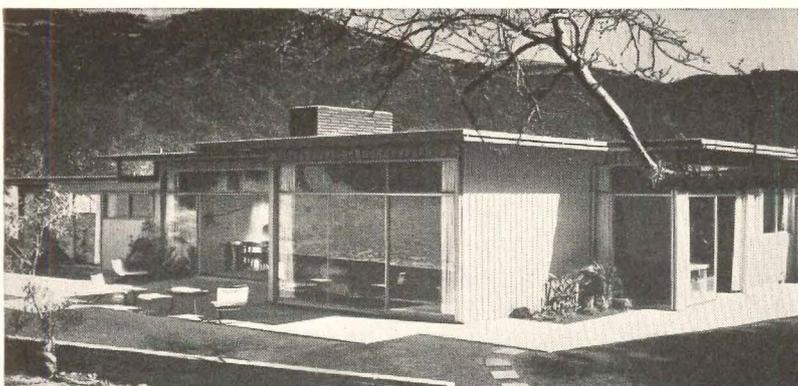
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YOUR FUTURE'S UNLIMITED



Smart, modern, practical is the exterior of this Mandeville Canyon residence near Los Angeles, designed by William Wilson Wurster, AIA. Effective vertical application of Kaiser Aluminum Siding is both striking in appearance and functional. Helps deaden sound and provides excellent insulation. Attractive baked-on enamel coat can't crack, peel or blister — is amazingly easy to clean.



Curved surface
creates tension
Result: A weatherproof
lock



Kaiser Aluminum Siding is rot-proof, rust-proof — lasts for generations. Slightly concave surface gives rigid, ripple-free construction. Installed under tension, Kaiser Aluminum Siding assures tight, weatherproof joints. Upper edge of strip fits into slotted lower edge of adjoining strips for easy installation. Nails go through pre-punched holes, are completely concealed.

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So you should plan now to incorporate light, strong, corrosion-resistant Kaiser Aluminum in your future construction.

Check before you substitute

The defense program today is making heavy demands on Kaiser Aluminum production facilities. So you may not always find Kaiser Aluminum readily available for non-defense projects.

However, it may pay you to check with your Kaiser Aluminum dealer before you specify less-satisfactory substitute materials. For he still may be able to meet certain requirements from his stocks.

A few of today's modern aluminum applications

Shown here are a few of the modern applications in which aluminum was specified for its unique advantages in design, beauty and practicality.

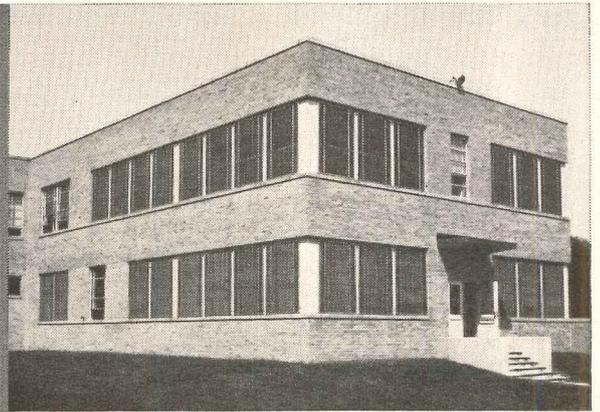
These applications suggest the unlimited possibilities of your future designs—with aluminum!

Write for information

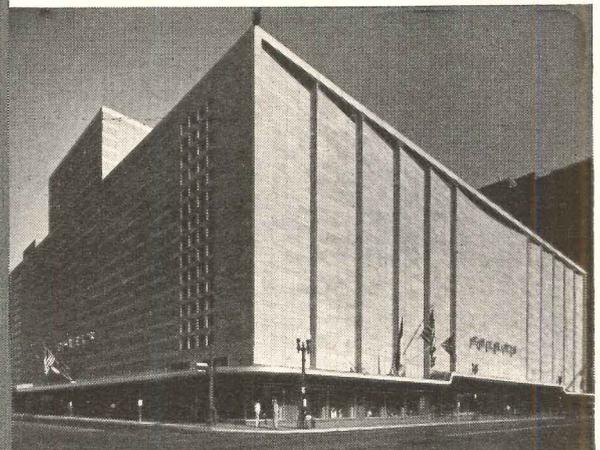
Write for full information about any Kaiser Aluminum building product—and for AIA files. 65 Kaiser Aluminum offices and warehouse distributors in principal cities. Kaiser Aluminum & Chemical Sales, Inc., Oakland 12, California.

Kaiser Aluminum

building materials for home, farm and industry



Kaiser Aluminum Shade Screening on New Jersey offices of Chilcott Laboratories made air-conditioning feasible. Tiny louvers stop hot sun rays before they hit the glass, reducing heat to controllable levels. Glare effectively reduced. Soft, adequate illumination lessens eye-fatigue. Anodized finish requires no maintenance, no painting. Hinging makes windows easily accessible for cleaning.



Kaiser Aluminum Ductwork in Foley's Federated Department Store in Houston fabricated on the jobsite. Highly workable, easily joinable by standard methods, aluminum ducts were installed with less worker fatigue, less wear on equipment. Pound for pound, aluminum ductwork has three times the working surface of steel. Uninsulated, it delivers as much heat as insulated galvanized material.



Kaiser Aluminum Roofing is effectively used as a ceiling liner in a Golden State Dairy building at Van Nuys, California. Because it is so easy to clean, aluminum contributes to maximum sanitation. Because it's solid aluminum—not clad or veneered—this ceiling is highly resistant to rust and corrosion. Never requires painting. Virtually maintenance-free. Strong—durable—lasts for years. And because aluminum is so light in weight, it is far easier to install.

FRANK LLOYD WRIGHT CONQUERS PARIS: AND VICE VERSA

Henry H. Reed Jr. Analyzes Reviews of Beaux Arts Exhibit; Even Communists Bow to "Most Famous American Architect"

TO FRANK LLOYD WRIGHT, who is not unaccustomed to public applause, the reaction of the Paris press to his work on exhibit this spring at the Ecole Nationale Supérieure des Beaux-Arts may have seemed only suitable, but its warmth and extent must have impressed him at least with the perceptiveness of French journalists. It was a minority, represented by Bernard Champigneulle of *Le Figaro littéraire*, which gently protested the sermonizing of the Sage of the Middle West. "Frank Lloyd Wright has come to Paris to preach a crusade against the skyscraper" was his ironical comment; after all, the city has only one, the 60-year-old Eiffel Tower.

The main stream of critical comment was not ironical.

"The inspiration of Frank Lloyd Wright is the boldest and most generous of the 20th century," announced André Chastel of *Le Monde*, the Paris equivalent of *The New York Times*.

"Frank Lloyd Wright, inventor of the space house, triumphs in Paris," was the title of the article of A. H. Martinie in *Arts*.

Even *Les Lettres françaises*, the Communist literary weekly, could not conceal its admiration for his work, although it complained that the exhibition was all part of the machinations of the State Department. "Frank Lloyd Wright is the most famous American architect," it told its readers; but warned them also that the exhibition itself was sponsored

"by the American bureau of propaganda."

It was a golden opportunity, to the great annoyance of the Communists, for our information services, and they outdid themselves in helping the writers. Maximilien Gauthier in *Les Nouvelles littéraires* was even equipped to quote the sculptor Horatio Greenough in discussing the background to Wright's work. There were very few mistakes and then only in captions — as in *Arts*, where a picture of the Robie house was identified as "la maison dans le désert."

As for the presentation, the French government matched our efforts by refurbishing the great Salle Foch of the Ecole. It was a welcome to the artist in the great tradition of France despite the fact, as André Chastel noted, that the recognition had come a little late. The tardiness may be forgotten when the setting is recalled: first of all, the Ecole itself on the Left Bank of the Seine; then, a few steps away, Le Vau's Institut de France and the Hôtel des Monnaies of Antoine; on the other bank of the river stretches the impassive façade of the Grande Galerie of the Louvre, and beyond, the garden of the Tuileries.

"Builder and poet" was the eloquent accolade of Chastel, for whom Wright is an architect who looks on "space as the true end of architecture."

His work is "stamped with a ferociously independent personality," wrote

André Warnod in the daily *Le Figaro*, "... he considers architecture as a plastic art comparable to sculpture."

"True architecture for him goes beyond technical progress and meeting the demands of comfort," observed Martinie (*Arts*) "once those necessary conditions are answered — it is only a question of construction and livability — there remains that of beauty, and there lies the mission of the architect." He praised Wright's "mastery of imposing masses as well as his sense of proportion in handling voids and solids. . . ."

Gauthier (*Les Nouvelles littéraires*) was enchanted by the "organic" theory itself and particularly its expression in city planning, Broadacre City, "where each of us, we may be sure, would at last find conditions fundamental to our happiness."

The Communist Marcel Cornu, after complaining of the Marshall Plan, the Atlantic Pact, the *Reader's Digest*, and the presence in France of American soldiers, calmed his readers by saying that, after all, Wright had nothing to do with our foreign policy and that he represented the "other, true America." "A real pioneer," who as a child "ran barefoot in the fields and forests of his native land not far from the Great Lakes," Wright "loves and feels the countryside." Cornu praised especially the early work, which "we feel to be national, work which cannot be copied, but whose feeling has value for us."

"This architecture of fifty years ago is for us warmly sympathetic," he wrote,

(Continued on page 268)

WRIGHT'S GUGGENHEIM MUSEUM: DICTIONARY OF CLASSIC TERMS?

The Editor
ARCHITECTURAL RECORD

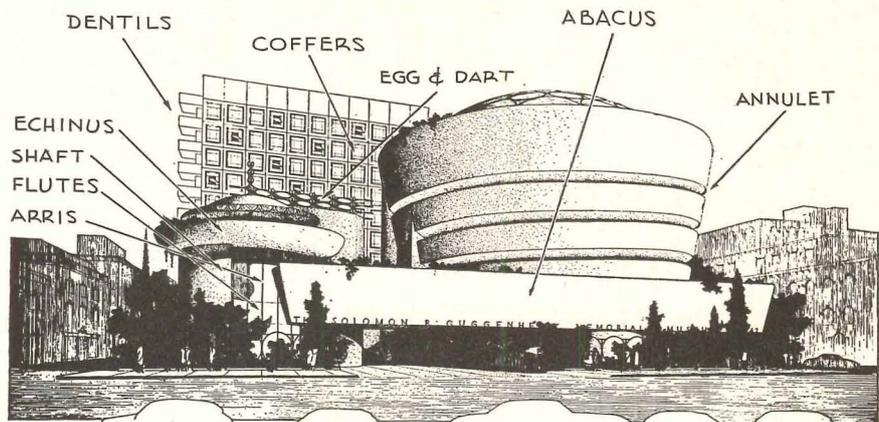
Dear Sir:

Younger men may be a bit rusty when confronted with terms used to describe parts of the Classic Orders, especially Greek Doric.

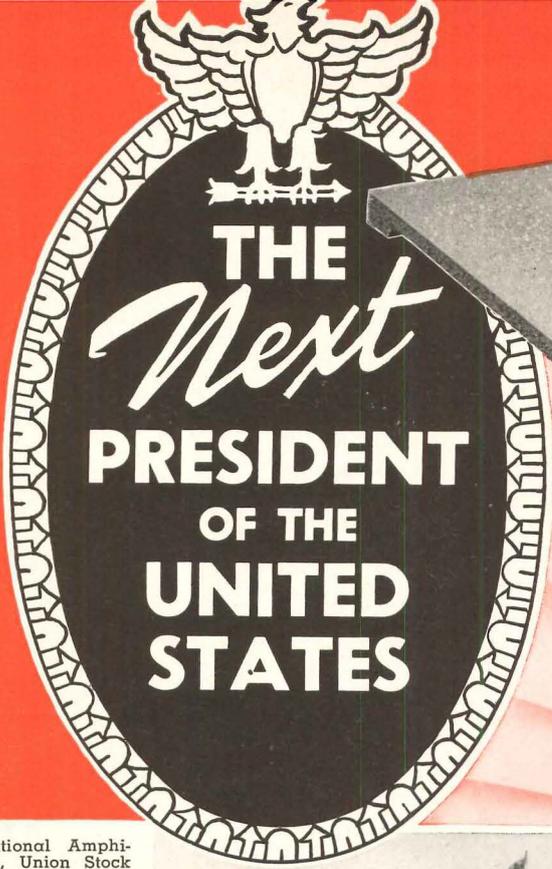
For those more at home in the modern idiom we append an illustrated dictionary of such terms, using for their benefit examples found in the Frank Lloyd Wright drawing of the Guggenheim Museum reproduced in your current issue.

Mr. Wright's scholarly approach to classic detail should give heart to die-hard traditionalists.

Yours sincerely,
Alfred D. Reid, A.I.A.



Alfred D. Reid's "illustrated dictionary"; the Wright drawing was one of the illustrations for Mr. Wright's article "Organic Architecture Looks at Modern Architecture" (ARCHITECTURAL RECORD, May 1952, pages 148-154)



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Next
PRESIDENT
OF THE
UNITED
STATES

WILL BE

Nominated

UNDER A **FEDERAL ROOF!**

rnational Amphitheatre, Union Stock Exchange, Chicago, exterior and also interior showing smooth shed ceiling effect underside of Federal-Featherweight cast Structural concrete Roof, total 60,000 sq. ft. Architects: A. Epstein & Sons, Inc., Chicago; Contractor: Poirer Construction Co., Chicago.



The famous International Amphitheatre, Chicago, long the show place for livestock exhibits, industrial displays, sports and athletic events, now makes its bow to the nation as host to both Republican and Democratic Presidential Conventions in July.

In common with hundreds of other famous public buildings across the country, the International Amphitheatre protects both its patrons and its property with a permanent, lightweight, firesafe, no-maintenance Federal-Featherweight STRUCTURAL CONCRETE Precast Roof Deck.

Most other equally well-known public buildings in Chicago are also roofed with Federal—the Adler Planetarium, Shedd Aquarium, Field Museum, Rockefeller Chapel, and others—as well as countless more non-industrial and industrial buildings everywhere. Federal Roofs truly *Cover the Country!* CATALOG ON REQUEST.

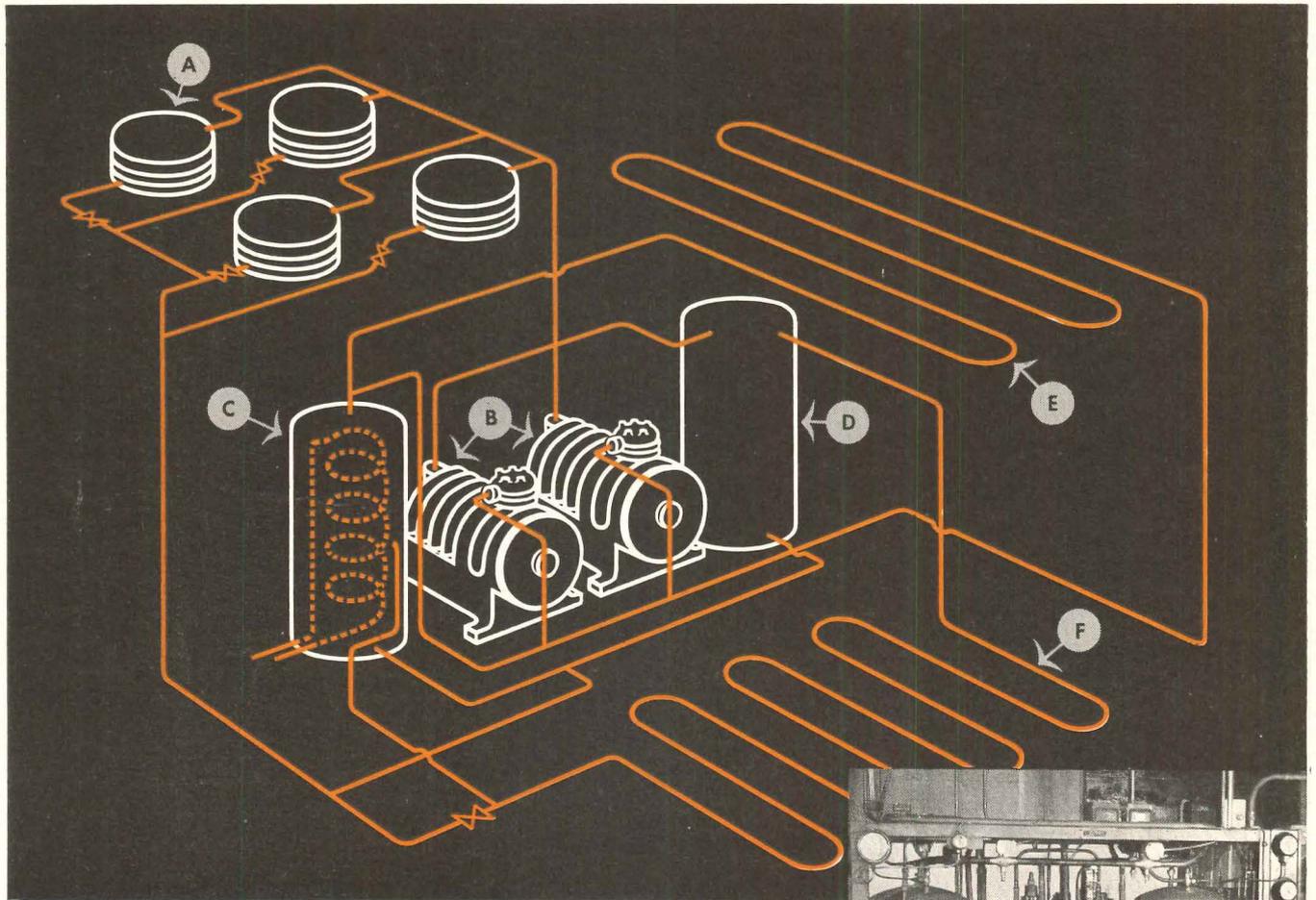
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[CHANNEL ROOF DECK SLABS for use with composition covering.
NAILING CONCRETE SLABS to hold securely, slate, tile, copper or other ornamental roof.]

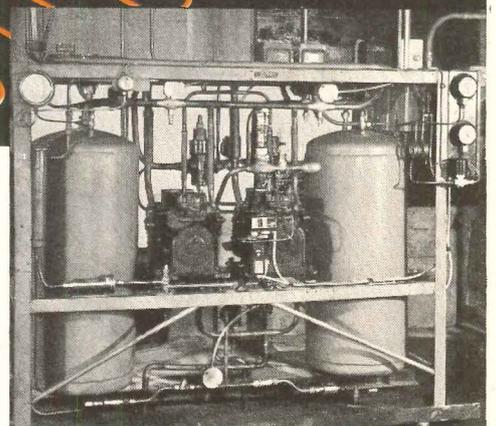
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How **ANACONDA** copper "HEAT PUMP"



HOW IT WORKS — Heat pump system in sausage plant removes heat from sausage with forced-air refrigerating convectors (a). Compressors (b) use Freon-12 refrigerant. 80-gallon heat exchanger tank (c) warms domestic water running through 300 feet of copper tubing. Surge tank (d) takes care of vapor or liquid refrigerant. 500 feet of copper tubing in office floors (e) provides radiant heat, and 1800 feet in basement floor (f) dissipates heat in summer, stores it for radiant heating on nights, weekends.



HEAT PUMP HEART — All mechanical equipment is assembled as a packaged unit. Two 3-hp. compressors, plus automatic controls, are located between heat exchanger (left) and surge tank (right). Charles Charlton, Hartford, Conn., Designer.

tubes contribute to

Success story

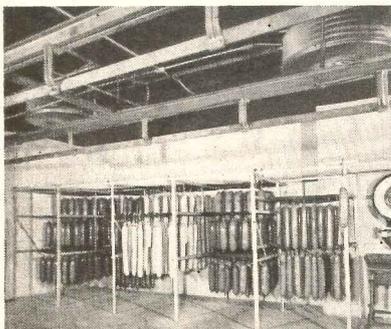
When both heating and cooling sides of a refrigeration system are put to work, it's a true heat pump *with important operating economies*. Here's an interesting example of such double duty. In the Hartford, Connecticut sausage plant of Mucke & Sons, process heat warms offices. ANACONDA Copper Tubing plays an essential part. Its excellent heat-transfer properties, corrosion resistance, and consistent uniformity make for high efficiency.

Primarily this system was designed to cool cooked sausage. However, it was apparent that *three* jobs could be done by the "heat" side. Designer Charles Charlton used heat removed from the sausage (1) to heat offices, (2) to provide washroom hot water, (3) as a reserve, stored underground, for use when sausage processing is not in operation.

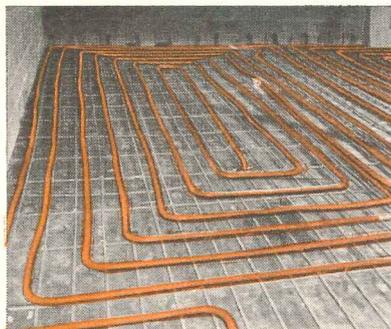
Nothing succeeds like success. Results have been so encouraging that Mucke & Sons are thinking of expanding the system to make further use of the heat.

If this installation interests you, we will gladly forward a complete description on request. The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

5211 C



HEAT REMOVED - Corner of the sausage cooling room shows two of the circular connectors in the ceiling. Temperature is kept at 40° F. Cooler is 25 ft. x 35 ft. with a cooling load of 60,000 Btu per hour.

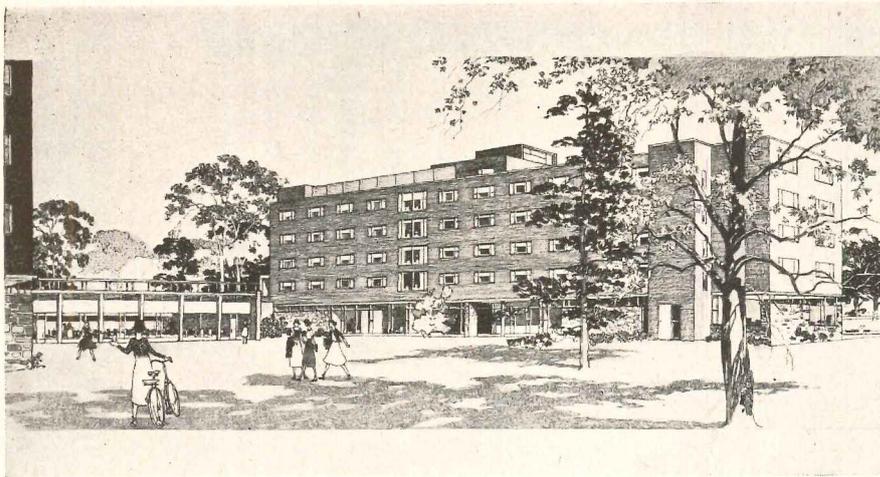


HEAT USED - Shown here is part of the 500 feet of copper coil embedded in concrete slabs in the floor of adjacent plant offices and other areas. This tubing circulates the refrigerant gas to furnish radiant heat.



modern piping calls for **ANACONDA**® copper tubes

WELLESLEY COLLEGE BUILDS TWO NEW DORMITORIES



Dining rooms form connecting link between dormitory units (above). Below (in order): cafeteria, dining room, students room and (bottom right) "quiet room" off living room

Need for Economy Brings Contemporary Design to Still Another Campus

THE 600-ACRE CAMPUS of 77-year-old Wellesley College is getting its first contemporary buildings for a familiar reason — in the words of a college announcement to alumnae about the new dormitories, "from economic necessity they will be simpler in design."

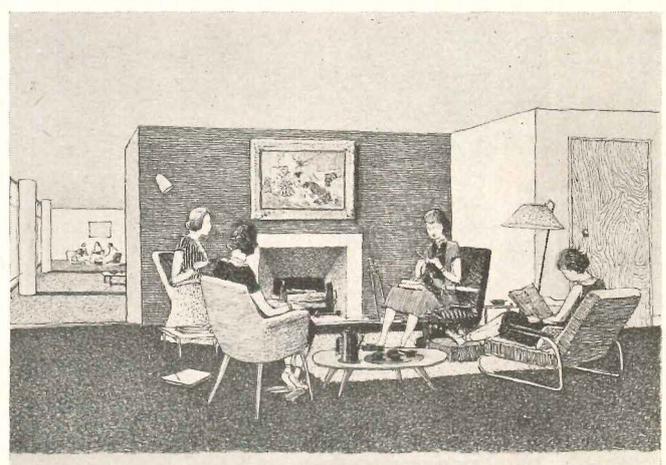
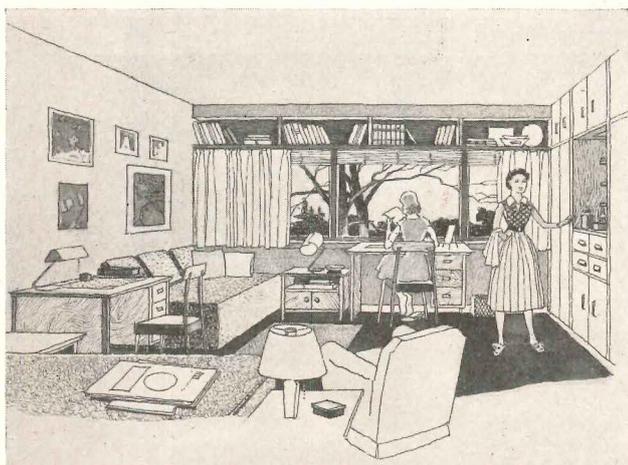
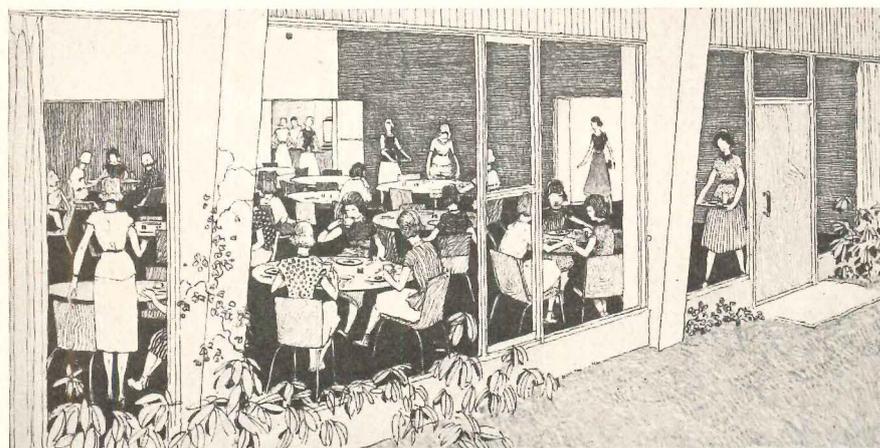
Coolidge Shepley Bulfinch & Abbott, the Boston architects who introduced organic architecture to the Harvard Yard with the Lamont Library, have planned three new dormitories, each with its own dining room but all served from a central kitchen. Two of the dormitories, the kitchen and three dining rooms are now under construction, to be ready for occupancy this fall; construction of the third dormitory will be postponed — again from economic necessity — for several years.

The dormitories will be of red brick, with the first floor of glass and fieldstone. There will be living quarters for 137 girls in each dormitory, arranged in an equal number of double and single rooms. Each floor will have 11 double and 11 single rooms, a central lobby or living room off the elevator and stairs with kitchenette and ironing boards.

Seminar rooms in the group will provide quarters for small classes obviating the cost of opening and lighting regular classroom buildings for evening seminars.

On the lower floor are the dining rooms between the dormitories, and in each dormitory building a large living room with fireplace and beyond that a "quiet room" with a fireplace and books which can be used as a library or study room.

The separate dining rooms, planned with their central kitchen to preserve the sense of each dormitory as a house unit while gaining economy in food preparation, can on occasion be combined into one great hall.



THE RECORD REPORTS

NEWS FROM CANADA by John Caulfield Smith

Vancouver Assembly Elects R. S. Morris R.A.I.C. Head

AT THE RECENT ASSEMBLY in Vancouver of the Royal Architectural Institute of Canada, R. Schofield Morris of Toronto was elected president of the organization, succeeding John Roxburgh Smith of Montreal.

Other new officers are: Louis N. Audet, Sherbrooke, Que. — first vice-president; Peter M. Thornton, Vancouver — second vice-president; D. E. Kertland, Toronto — honorary secretary; A. J. C. Paine, Montreal — honorary treasurer.

Highlight of the meeting was the announcement of an architectural competition for the new National Gallery of Canada, to be erected in Ottawa. This

is expected to be one of the most important events of its kind ever held in Canada.

Cite Housing Inadequacies

Several important resolutions were passed by the assembly, including the following:

1. That the R.A.I.C. continue any practical steps which will lead to the retention in Canada of young university graduates, in order that their services may be available for the continual development of the nation.

2. That in the opinion of the assembly the continued inadequacy of the housing program constitutes a major threat to the healthy development of the Cana-

(Continued on page 32)



Monkey house in Stanley Park, Vancouver, B. C., includes an enclosed cage and hospital facilities in front (above), open cage and island surrounded by moat in rear (below). Architect is Percy C. Underwood, Vancouver

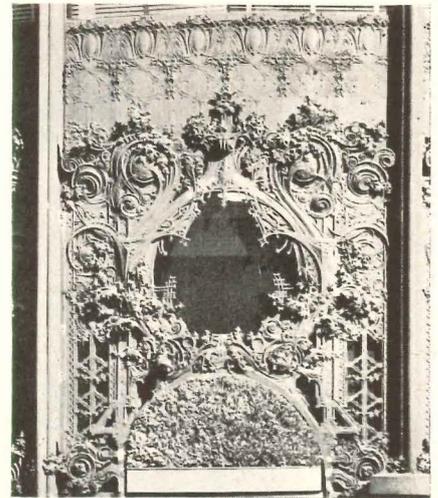


GEORGE ELMSLIE, F.A.I.A.; ASSOCIATE OF SULLIVAN

WITH THE DEATH of George Elmslie on April 24, there was removed one of the last major figures of the "Chicago School" which included Louis Sullivan, Frank Lloyd Wright and the first John Wellborn Root.

Mr. Elmslie was the long-time close associate of Sullivan, first in the firm of Adler & Sullivan and later in Sullivan's independent practice.

During these years of association, he was in charge of both the design and execution of Sullivan's ornament. He de-



Delicate ornamental ironwork for Louis Sullivan's Carson-Pirie-Scott store in Chicago was designed and executed by George Elmslie

signed the ornamental ironwork for the Carson-Pirie-Scott store in Chicago (then the Schlesinger & Mayer store) and also had a major share in the design of Sullivan's Owatonna, Minn., Bank.

From 1910 to 1920, Mr. Elmslie was in partnership with William Gray Purcell in the firm of Purcell & Elmslie. Since 1920 he had been practicing alone.

Exhibit Planned

An exhibit on the work of Purcell & Elmslie and their place in the history of the Chicago School is being prepared by the Walker Art Center in Minneapolis.

Mr. Elmslie became Sullivan's literary executor and was the author of numerous papers on architecture. He was himself a Fellow of the American Institute of Architects, and on behalf of Sullivan he accepted the Gold Medal of the American Institute of Architects in 1946.

Miracle Surface Anchors Speed Construction of United Nations Headquarters

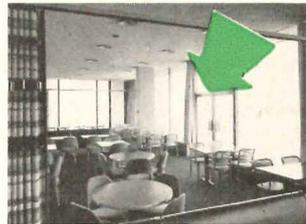
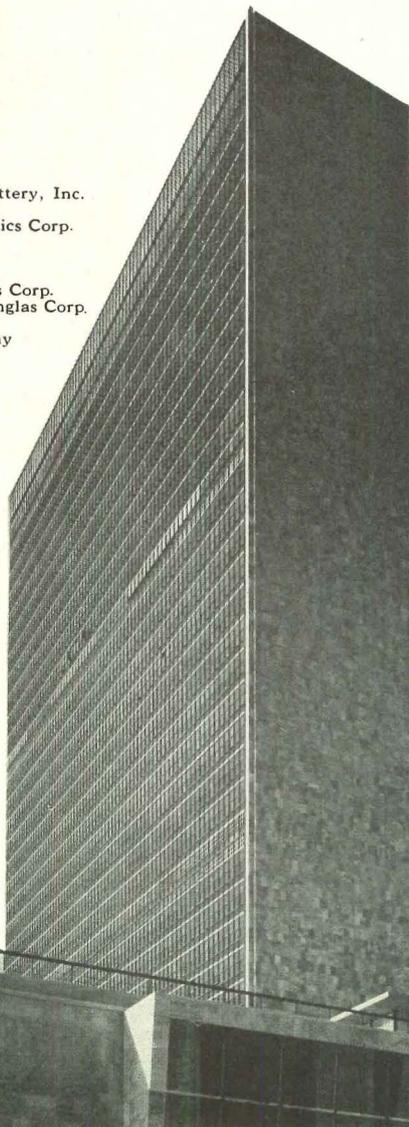
cuts time and construction costs

In the United Nations Headquarters — as in many modern commercial and residential new construction and modernization jobs — Miracle Surface Anchors bonded with Miracle Adhesive cut costs and construction time.

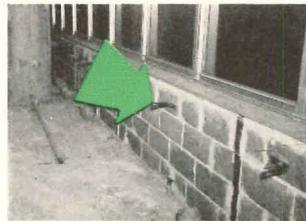
For Miracle Anchors bonded with Miracle Adhesive provide firm anchorage to all types of rigid surfaces without drilling, welding or expansion bolts. Reports show Miracle Anchors install in 2/3 to 3/4 the time required for mechanical anchorage.

A Miracle Surface Anchor consists of a small perforated metal plate 2" x 2" or 2-3/4" x 2-3/4" to the center of which is factory welded, a nail, bolt, spindle, prong or threaded stud, and they are available in a variety of shapes and sizes depending upon the material and load to be supported. The perforated base is especially designed to provide positive anchorage by bonding it with Miracle Adhesive to masonry, metals, wall boards, plaster, tile, glass, etc.

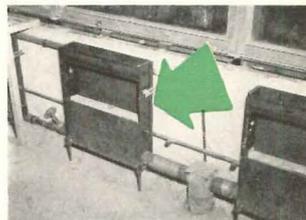
Architects:
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Consulting Engineers:
Syska & Hennessy, Inc.
General Contractors:
Fuller-Turner-Walsh-Slaterry, Inc.
Acoustics:
William J. Scully Acoustics Corp.
Air Conditioning:
Carrier Corp.
Insulation:
Owens-Corning Fiberglas Corp.
Pittsburgh Corning Foamglas Corp.
Controls:
Johnson Service Company



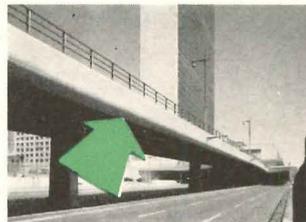
Delegates Dining Room — Conference Area. Air conditioning units installed with Miracle Surface Anchors.



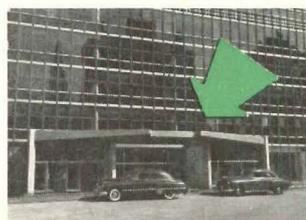
Miracle Anchor Bolts and Miracle Adhesive hold anchor brackets for Carrier Weathermaster Units throughout Secretariat Building.



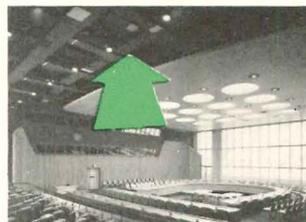
Carrier Weathermaster Unit in position. Brackets secured by Miracle Anchor Bolts and Miracle Adhesive.



Miracle Surface Anchors bonded with Miracle Adhesive fix Owens-Corning Fiberglas on FDR Drive and Reproduction Area of the site.



Miracle Surface Anchors bonded with Miracle Adhesive secure Pittsburgh Corning Fiberglas over front door to Secretariat Building.

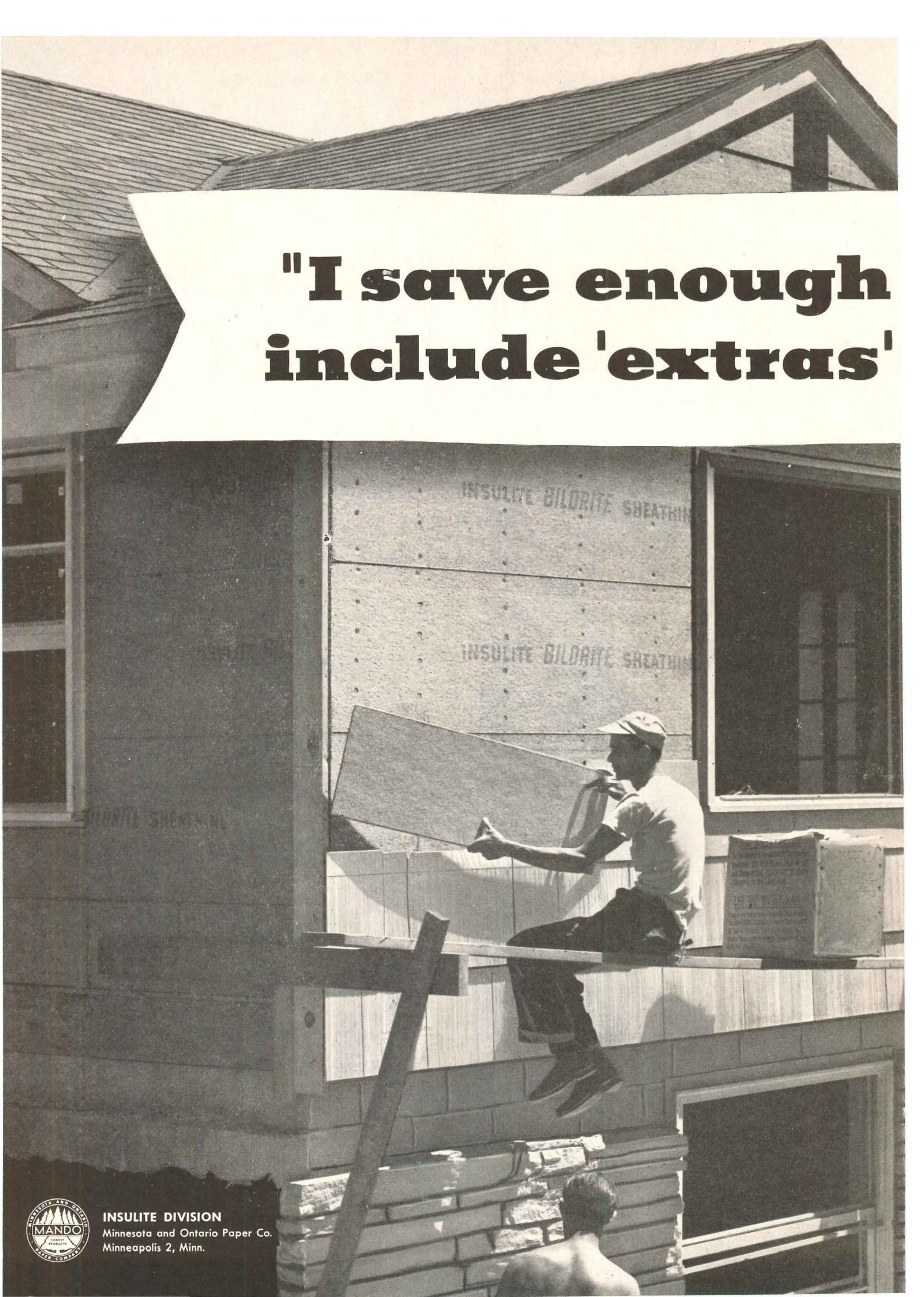


Miracle Surface Anchors and Miracle Adhesive securely hold larger Pneumatic Air Lines for Johnson Pneumatic Control System for air conditioning, heating and cooling units.

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Miracle Surface Anchors are manufactured by DEVICES, INC., 214 E. 53rd St., New York 22.



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include 'extras'"**



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Roscoe E. Albright, Jackson, Michigan, builder, tells how Insulite Shingle-Backer and Bildrite Sheathing help him build better homes, yet save enough to pay for extra features!

with **INSULITE** to at no extra cost!"

"I'm able to include such features as automatic dishwashers at no increase in cost with the money I save using Insulite Shingle-Backer and Bildrite Sheathing. My saving on the home pictured here ran to about \$180. Here's how it's done."

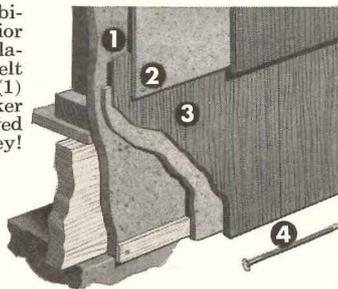


BILDRITE SHEATHING goes up faster, easier. Cuts application time at least 25%. 4-foot sheets have twice the bracing strength of horizontally-applied wood sheathing thus save corner-bracing. Waterproofed throughout—eliminates need for building paper. No waste.



INSULITE SHINGLE-BACKER speeds completions. Handy 4-foot panel applies far faster and easier than wood under-course shingles. Cuts application time in half. Produces deep, modern shadow-line. Eliminates waste. Waterproofed throughout. In easy-to-handle packages.

DEVELOPED BY INSULITE, this combination makes a strong, tight exterior wall with more than twice the insulation value of wood sheathing, felt and double-course wood shingles: (1) Bildrite Sheathing (2) Shingle-Backer (3) Outer-course Shingles (4) Grooved Nail. A better wall for less money!



Get all the facts. Contact your Insulite representative, consult your Sweet's File or write direct. See how this new Insulite sidewall system builds better-looking, better insulated, more permanent jobs for less money!

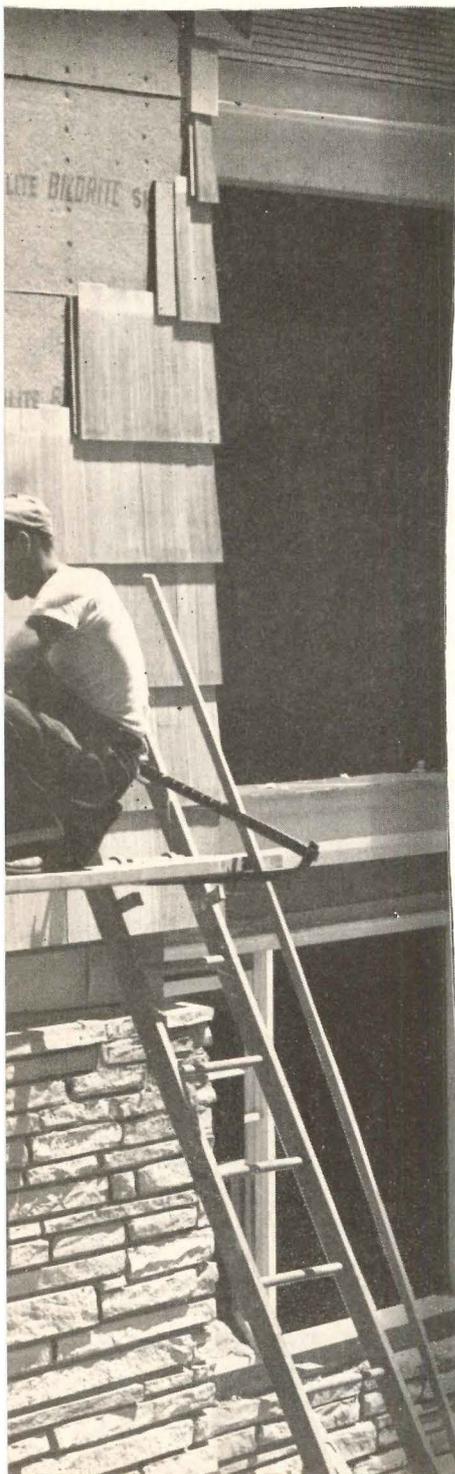
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BUILD AND INSULATE WITH DOUBLE-DUTY

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Made of hardy Northern wood



THE RECORD REPORTS

CANADA

(Continued from page 28)

dian people and that this resolution will be an instruction to the incoming executive to urge on all authorities concerned the prime necessity for more effective action.



Public utilities building in Scarborough, Ont., has adjacent garage. Architect is J. H. W. Bradfield, Toronto, Ont.

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3. That the federal and provincial governments be approached and requested to establish as a principle in the concluding of arrangements with companies for the development of Canada's natural resources that prime consideration be given to provision for employment of Canadian architects and other professional and technically trained personnel in such development projects.

Honor Briton and American

The presence of distinguished visitors lent exceptional color and interest to this year's assembly. Both A. Graham Henderson, president of the Royal Institute of British Architects, and Glenn Stanton, president of the American Institute of Architects, were present to receive Honorary Fellowships.

Other new members of the College of Fellows are: Fred L. Townley and H. H. Simmonds, both of Vancouver; W. Michael Brown, Armdale, N. S.; E. J. Turcotte, Montreal; J. A. G. Easton, Toronto; John M. Kitchen, Ottawa, and Leslie Russell, Winnipeg.

Outgoing Chief's Proposals

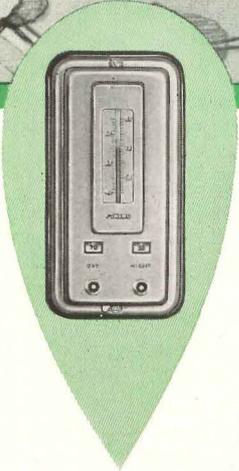
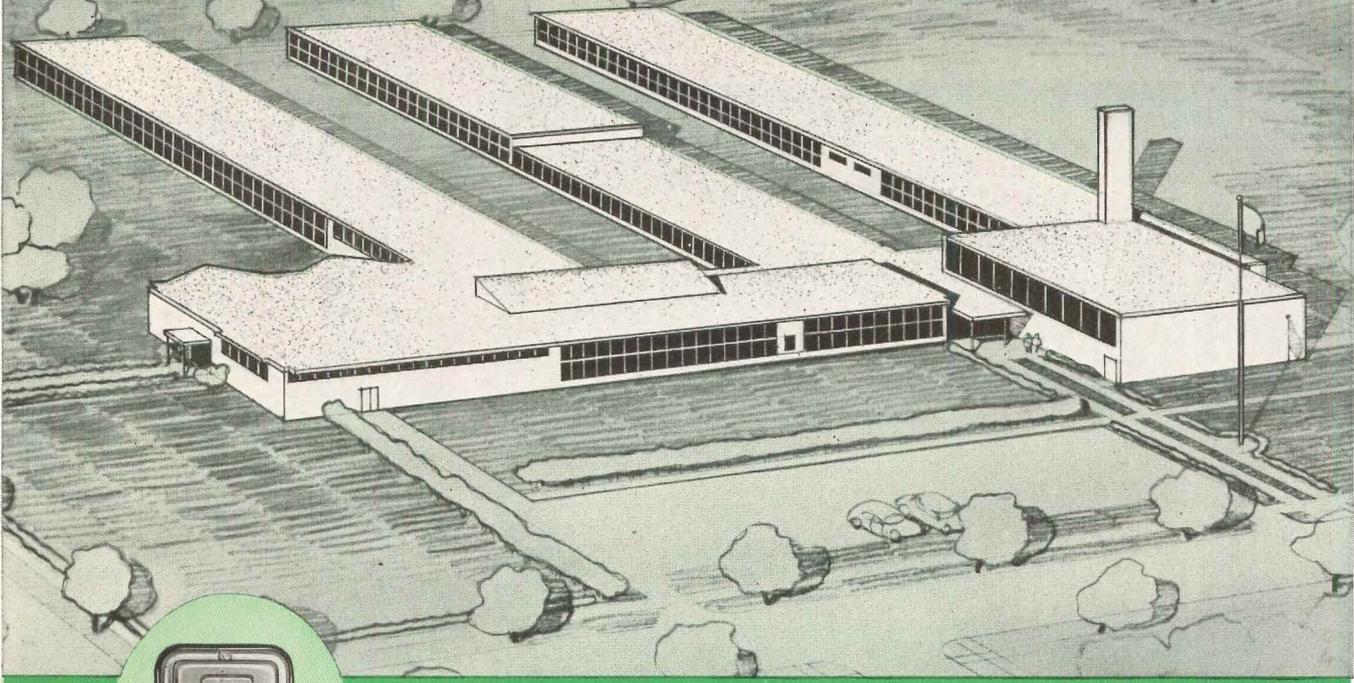
Retiring President Smith, reviewing the problems facing Canada's architects, said the federal government should divert surplus treasury funds to housing and slum clearance. He also urged recruitment of an increasingly greater number of candidates for university training in architecture, warning that at the present pace of Canadian growth and of death and retirement of older technicians, a serious shortage of fully trained and competent architects faces the nation.

(Continued on page 34)

BLOOMINGTON, MINNESOTA, ELEMENTARY SCHOOL

Another prominent
UNIT VENTILATOR CONTROL
installation by

POWERS



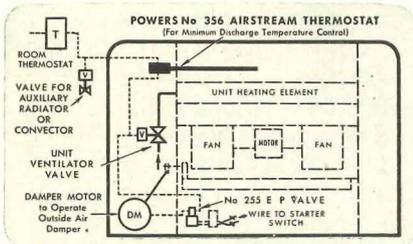
Architect: Eugene D. Corwin • Consulting Engineers: Gausman & Moore
Heating Contractor: E. R. Johnson Plbg. & Heating Co. (all of St. Paul, Minn.)

Comfortable Classrooms under severe weather conditions are assured in Bloomington's modern school. No expense has been spared in giving children and teachers the best of heating and ventilating equipment for classrooms and gymnasium.

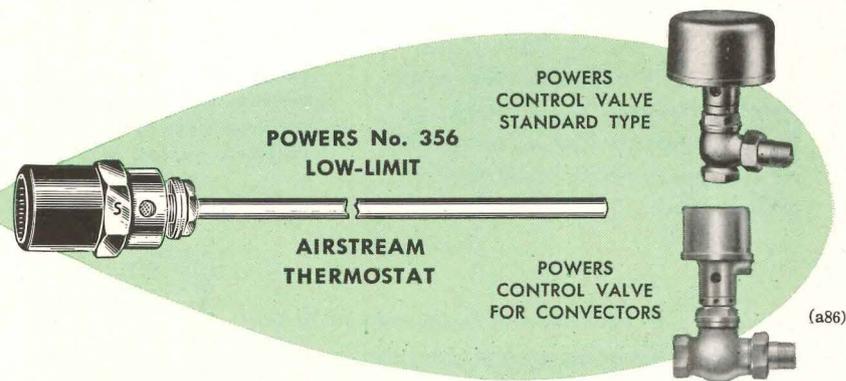
Greater Simplicity and dependable operation of Powers controls for Unit Ventilators in classrooms appeal especially to operating personnel.

Because of its superior design a Powers Low Limit Thermostat requires no auxiliary devices to supplement its accurate control of unit ventilator discharge temperature. Once set for the proper temperature it requires no readjustment—there are no fine restrictions to be serviced. Contact our nearest office for further information about its superior features. There's no obligation.

75 Powers Day-Night Thermostats here control 117 Diaphragm Valves in Unit Ventilators and Convectors.



Unit Ventilator Control by Powers



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THE RECORD REPORTS

CANADA (Continued from page 32)

Marani & Morris Partner

The new president, who will guide R.A.I.C. activities during the coming year, was born in Hamilton, Ontario, 54 years ago. He received his education at Highfield School, Hamilton; Ashbury College, Ottawa; McGill University— from which he received his Bachelor of Architecture degree in 1923; and the Royal Military College. He is a partner in the Toronto firm of Marani & Morris.

Booth designed by Venchiarutti & Venchiarutti, Toronto, Ont. for Sarachini Construction Co. Ltd., Toronto, was a feature of the recent National Home Show held there. Display included renderings done by the architects for the contractor



Building Off 13 Per Cent; Biggest Drop in Industrial

Building contracts totaling \$525 million for the first four months of this year were 13 per cent below the same period last year, with the industrial category registering the steepest drop.

Canada's manufacturers indicated, in a survey conducted late in 1951, that they planned to put more money into factory construction this year, but so far they have not matched word and deed: for the first four months of 1952, contract awards in the industrial category are off 46 per cent.

Residential and commercial and institutional awards are also down. Engineering is the only category that shows a rise this year: it's up 39 per cent.

Contract award totals, in millions of dollars, for the first four months of each year, are given by MacLean Building Reports Ltd. as follows:

| | 1952 | % Change from 1951 |
|----------------------------|------------|--------------------|
| Residential | 111 | - 10 |
| Commercial & Institutional | 124 | - 29 |
| Industrial | 87 | - 46 |
| Engineering | 203 | + 39 |
| Total | 525 | + 13 |

Canadian Architects Welcome Head of British Institute

THE FIRST OCCASION on which a president of the Royal Institute of British Architects has visited Canada while in office is now history.

Passing through Ontario on his way to attend the annual Assembly of the R.A.I.C. in Vancouver, A. Graham Henderson, A.R.S.A., president of the R.I.B.A., and C. D. Spragg, its secretary, had a warm welcome from the Ontario Association of Architects. Mem-

(Continued on page 36)

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Specify "Cipco Built" for your special designs. Your Architectural Hardware Consultant will be happy to work with you on either need.

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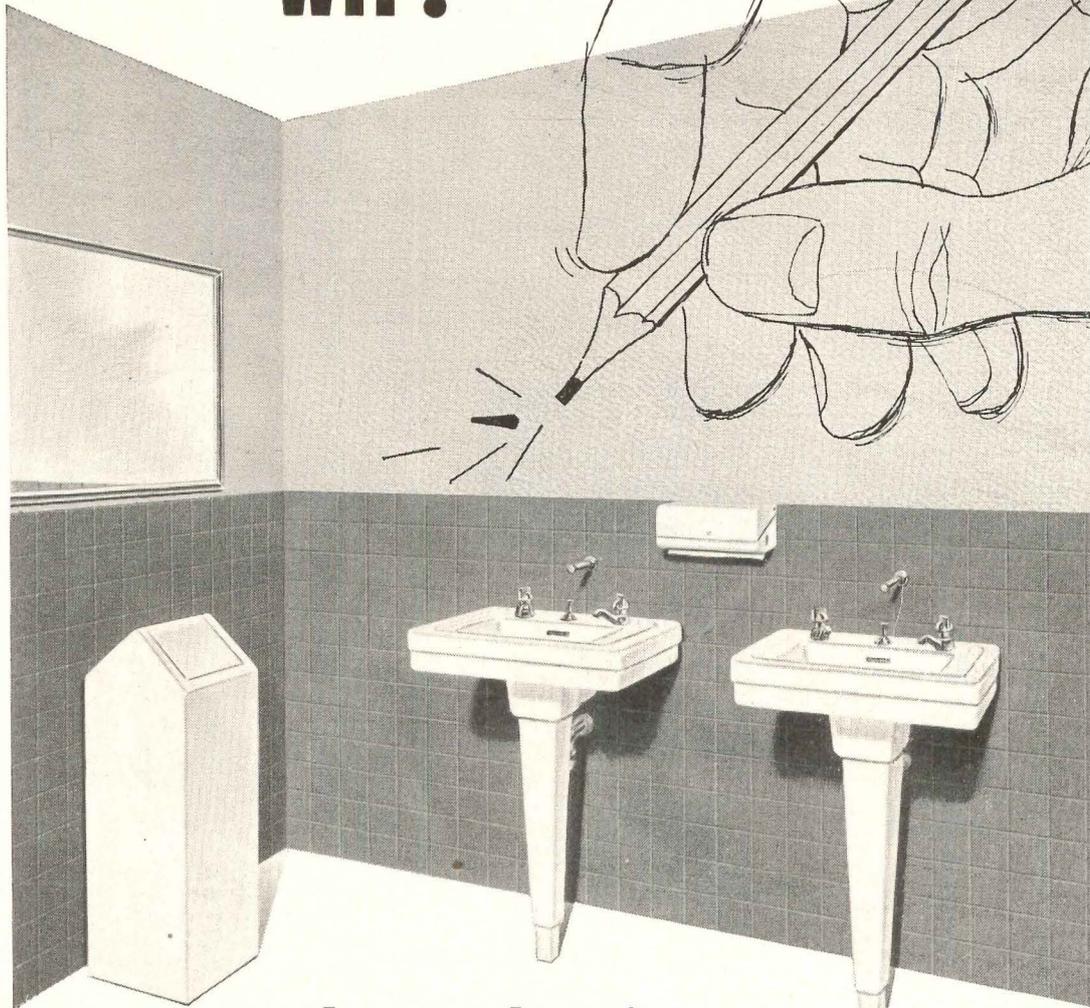
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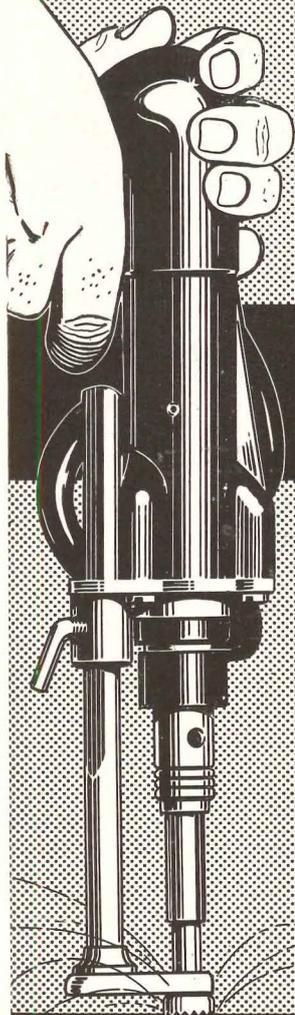


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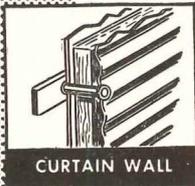
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DIVISION OF GREGORY INDUSTRIES, INC., LORAIN, OHIO



THE RECORD REPORTS

CANADA

(Continued from page 34)

bers of both the Ottawa and Toronto Chapters entertained him on behalf of their colleagues.

Impressed by Ottawa Plan

In Ottawa, the British party was taken on a tour of the national capital area by John M. Kitchen, Ottawa architect who is associate consultant of the National Capital Planning Committee. They then viewed the model of the city as it will be someday, spending half an hour studying its many features.

The visitors were entertained at the residence of Mr. and Mrs. Gordon Hughes before a Chapter dinner at the Ottawa Country Club.

Toronto Has Full Program

In Toronto, Mr. and Mrs. Henderson and Mr. Spragg were guests at a luncheon given at the York Club by Mr. and Mrs. R. Schofield Morris. A sightseeing tour of the city and its environs was arranged for the afternoon and later there was a Chapter reception at the Toronto Hunt Club. The same evening, Mr. and Mrs. A. S. Mathers gave a buffet supper at their home, including as guests local members of the College of Fellows, the president of the O.A.A., the chairman of the Toronto Chapter, and their wives. A motor trip to Niagara Falls took place the next day.



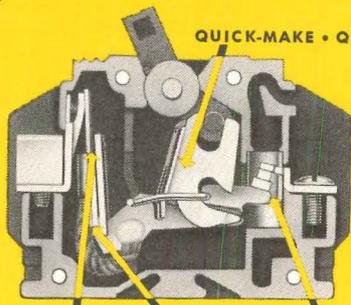
Alfred Bernard, left, 21-year-old Toronto carpenter, receives the craftsmanship award of the Ontario Association of Architects from Harland Steele, right, Toronto architect

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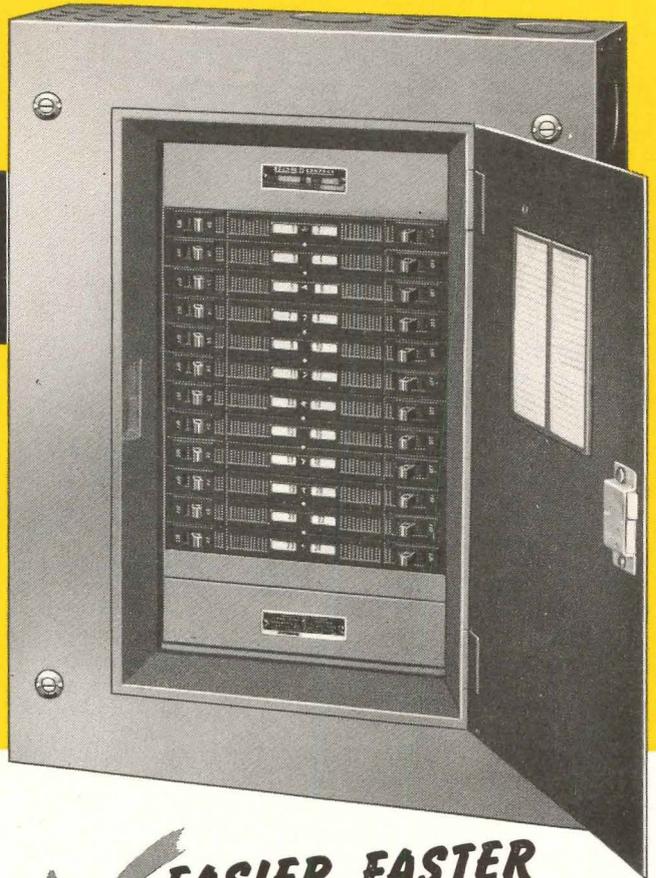
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"DOWN TIME" is minimized because of important QB breaker design features. Resistance to vibration results from the stainless steel latch being independent of the trip element. Thermal (*coilless*) magnetic trip affords 2-way protection. Thermal element holds harmless momentary overloads but trips if excessive current continues. Magnetic element responds instantly to heavy overloads or shorts. Simple reset operation restores service quickly when the breaker trips.



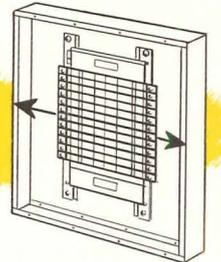
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No Wire Looping
Slotted and box type connectors for 15-30 and 40-50 ampere breakers.

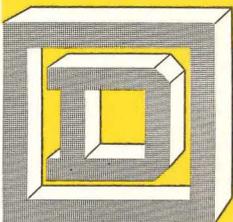


Generous Wiring Space
Wide gutters simplify wiring. All terminals readily accessible.

NQB PANELBOARDS are available from 4 to 42 circuits—15, 20, 30, 40 and 50 ampere breakers—main breaker or lugs only construction. They are a logical first choice for modern control and protection of all 125/250 volt A.C. lighting and appliance circuits.

for complete details, write for Bulletin 1640.
Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS



SQUARE D COMPANY

**AIRPORT DESIGN CHANGES
RECOMMENDED FOR SAFETY**

*President's Commission Gives
Specific Suggestions for
Future Planning*

SOME RATHER SPECIFIC RECOMMENDATIONS for planning of new airports are given in Part I of the final report of the President's Airport Commission, ap-

pointed to study the problem of airport safety after the series of tragic accidents at Elizabeth, N. J., earlier this year.

Future airports, says the report, should provide:

1) *Clear, and if possible, level areas at least 1000 ft wide and a half mile long beyond the end of dominant runways;* these areas to be included within the boundaries of the airport.

2) A "protected" area; fan-shaped

zones extending from the ends of dominant runways for two miles each beyond the runway extensions and spreading to a width of 6000 ft at the outer ends. (It was recognized that cost of acquisition of so much land often is beyond the capacity of a single community.)

3) *Single or parallel runways.* Technical difficulties with cross-wind landings are being overcome through research. While shorter runways oriented at 90 degrees to the dominant runway will be required for some years yet, more emphasis now on the single or parallel strip and on the extension zones beyond the ends of these runways was urged.

4) *Main runways at least 8400 ft long at major terminals* (10,000 ft is regarded as adequate for all types of practicable transport craft now foreseen). Additional length would provide additional safety but should not be required for normal operations.

5) *Runway strengths adequate to the greatest wheel loads anticipated,* to be reinforced or rebuilt if future planes impose greater wheel loads. Long-term standards for runway strength were not considered wise, nor was it thought desirable for airplane designers to be limited in wheel load weight.

6) *Integration of air and ground traffic.* The inadequacy of present road networks in the vicinity of major cities and between city and airport was cited as one of the greatest deterrents to future development of transport aviation.

7) *Adequate acoustical treatment in runway areas and at test stands.*

8) *Separate facilities whenever possible for military and civil aircraft.*

What Now?

The Commission, which included Gen. James Doolittle as chairman, C. H. Horne and J. C. Hunsaker, recognized the impossibility of achieving many of these standards at existing airports or even, very soon, at new facilities. The recommended control of ground use in approach zones as the major immediate expedient for protection of populous areas around existing airports.

Existence of airports in such areas (and the large investments of public and private funds involved) may be seriously threatened by public pressure of ever-increasing numbers of residents unless local authorities prevent further use of land close to airports for public

(Continued on page 276)

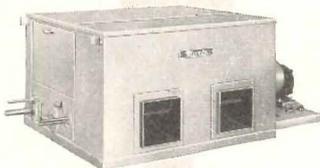
Mech. Contractors: Shelby Construction Company,
Huffman-Wolfe;
Consulting Engineers: Weil and Moses.

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SOUTH'S
LARGEST
APARTMENT
HOTEL

selects *Marlo* comfort conditioning!



Ductless Marlo Remote Units offer complete, economical summer-winter comfort conditioning.



Compact Marlo Floor and Ceiling Units efficiently serve any area.

**THE MAGNIFICENT, NEW CLAIBORNE
TOWERS OF NEW ORLEANS IN-
STALLED 1172 MARLO REMOTE ROOM
AIR CONDITIONING UNITS FOR
THREE VERY GOOD REASONS:**

- Easy installation (simple piping only —no ductwork needed).
- Individual controls to personalize humidity and temperature to suit tenants.
- Economical operation.

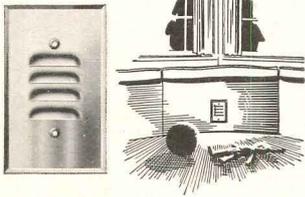
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COIL CO. • 6135 Manchester Rd. • St. Louis 10, Mo.
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COOLING TOWERS • EVAPORATIVE CONDENSERS • INDUSTRIAL COOLERS
AIR CONDITIONING UNITS • MULTI-ZONE UNITS • BLAST HEATING & COOLING COILS

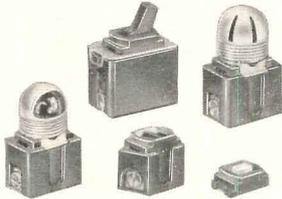
Wiring Devices:

TOP TYPES FOR TOTS



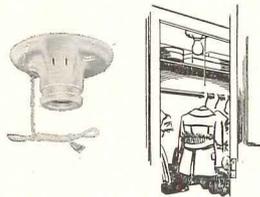
LOUVERED WARNING LIGHT

Provides deflected lighting in children's rooms so as not to disturb sleep. Many other warning type gangs available.



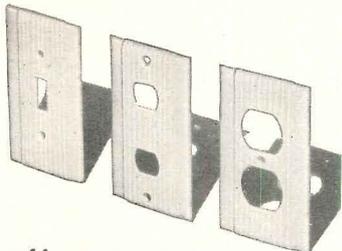
INTERCHANGEABLE LINE

Many attractive space saving combinations are possible with the H&H interchangeable line. A complete assortment of plates, outlets, switches, bell pushes and others.



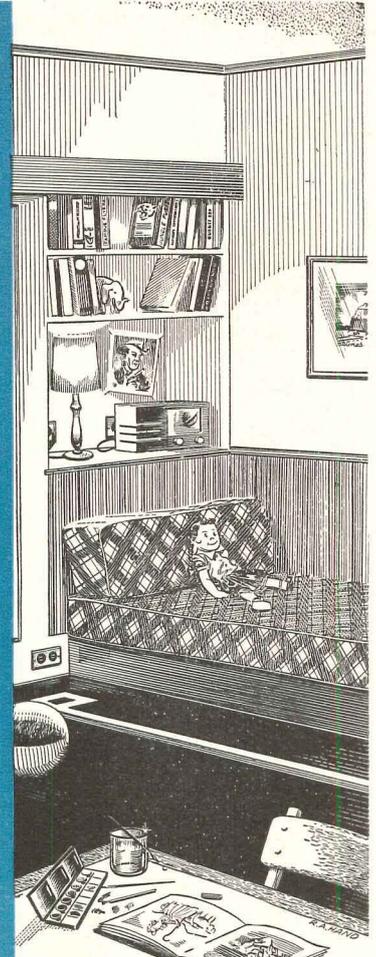
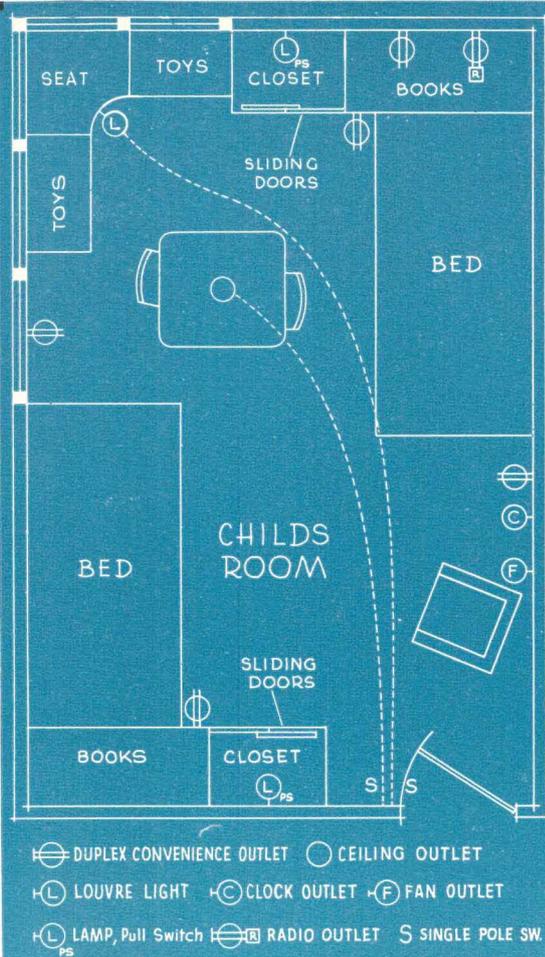
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Shadeholder grooves accommodate overhead shaded lights. Practical for closets and stairways. Available in many types, with or without convenience outlets.



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Important Room!

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For more information, write today to: 1907 Laurel Street, Hartford 6, Conn.

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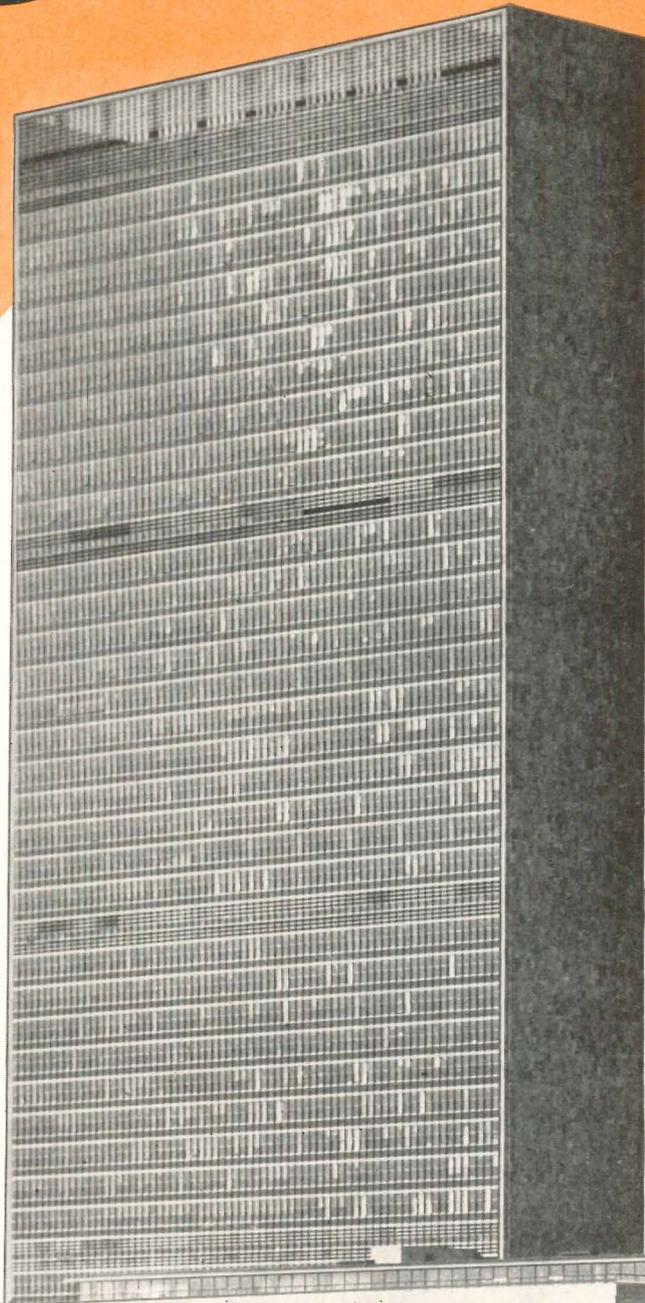
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These are the three major structures of the World's workshop for universal peace and advancement.

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Wallace K. Harrison
Director of Planning

see our
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in
SWEET'S FILE
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LOCKWOOD HARDWARE MFG. CO.

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LOCKWOOD HARDWARE SYMBOL OF BUILDING'S STANDARD OF QUALITY AND SECURITY . . .

Its selection, first for the Secretariat Building, again for the Conference Building and again for the General Assembly Building, is both a distinguished honor and a sincere tribute to the performance of Lockwood products.

This 70-odd year old brand name continues to build an ever growing preference throughout the country, by its progress in product development and service to the architectural profession and building industry.

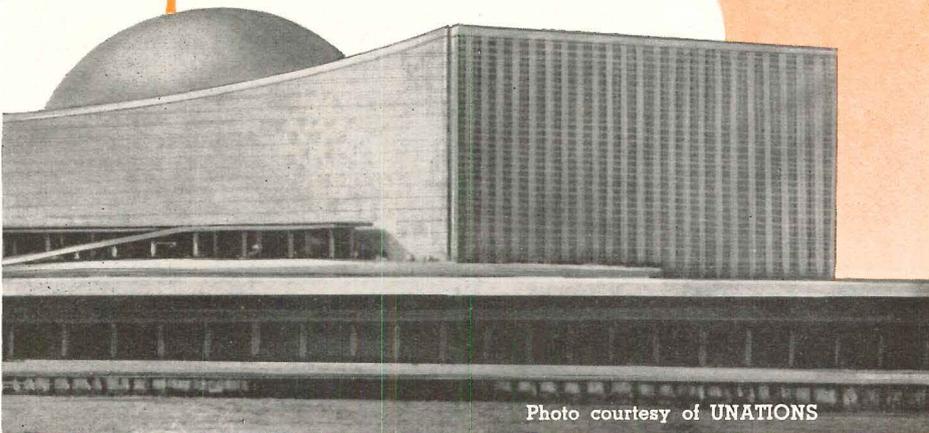
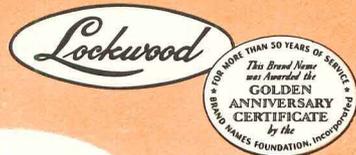
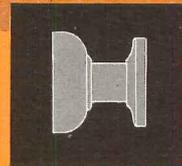
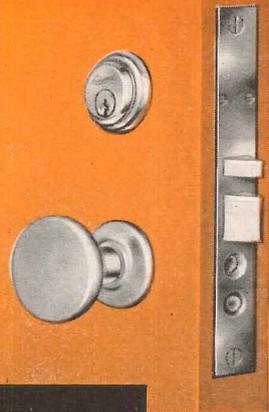
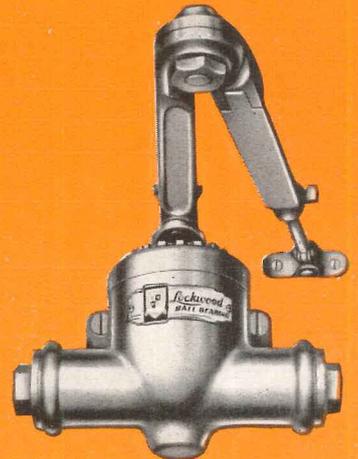


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"5100 series" Heavy Duty Mortise Lockset keyed in Lockwood secure "12 Section Grand Master Key System." Specially designed urn-shaped knob with screwless rose.



Ball-Bearing Rack and Pinion Door Closer, the ultimate in efficient door control.



Specially designed Door Pull made in aluminum. Has concealed throughbolts.

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. | | Brick and Steel | Residential | | Apts., Hotels Office Bldgs. Brick and Concr. | Commercial and Factory Bldgs. Brick and Concr. | | Brick and Steel | | | |
|-----------|-------------|-------|--|--|-------|-----------------------|-------------|-------|--|--|----------------------|-----------------------|-------|-------|-------|
| | Brick | Frame | | Brick | Steel | | Brick | Frame | | Brick | 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 | | | | |
| 1951 | 273.2 | 271.3 | 263.7 | 265.2 | 262.2 | | 212.8 | 214.6 | 204.2 | 202.8 | 205.0 | | | | |
| Feb. 1952 | 278.3 | 275.1 | 270.1 | 274.1 | 270.4 | | 217.8 | 220.1 | 210.5 | 207.7 | 211.1 | | | | |
| Mar. 1952 | 277.2 | 273.7 | 269.9 | 274.0 | 270.1 | | 217.8 | 220.1 | 210.5 | 207.7 | 211.1 | | | | |
| Apr. 1952 | 277.2 | 273.7 | 269.9 | 274.0 | 270.1 | | 217.8 | 220.1 | 210.5 | 207.7 | 211.1 | | | | |
| Apr. 1952 | 124.5 | 123.6 | % increase over 1939 | | | 106.5 | 105.4 | 107.6 | 152.4 | 164.9 | % increase over 1939 | | 121.3 | 113.2 | 122.9 |

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 | | | | | |
| 1951 | 252.0 | 248.3 | 238.5 | 240.9 | 239.0 | 245.2 | 240.4 | 239.6 | 243.1 | 243.1 | | | | | |
| Feb. 1952 | 255.9 | 252.7 | 241.6 | 244.2 | 242.0 | 247.6 | 242.3 | 242.1 | 245.0 | 245.4 | | | | | |
| Mar. 1952 | 254.8 | 251.3 | 241.8 | 244.2 | 241.9 | 248.0 | 242.8 | 242.2 | 245.0 | 245.5 | | | | | |
| Apr. 1952 | 258.9 | 253.2 | 247.5 | 253.5 | 246.2 | 248.0 | 242.8 | 242.2 | 245.0 | 245.5 | | | | | |
| Apr. 1952 | 134.9 | 136.6 | % increase over 1939 | | | 109.7 | 111.6 | 106.9 | 134.8 | 144.5 | % increase over 1939 | | 106.3 | 101.0 | 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.

**Show Place
... or Office Space?**

It all depends on which you want . . . and on "Modernfold" doors. Note, at right, how a well-known home furnishings dealer uses "Modernfold" doors to combine or separate his showroom from his credit department.

Fold the large "Modernfold" doors together and you have an eye-catching, sound-retarding backdrop. Open the doors and the two rooms become one again. Note, too, how the use of a small "Modernfold" door makes room for another chair, in space normally wasted on door swing.



**Your ideas come to life . . . for life
with "MODERNFOLD" doors**

Whether you need *floor plan flexibility* . . . or want to use the space that swinging doors waste . . . specify "Modernfold"—the original folding door. No other folding door *anywhere* equals "Modernfold" doors for quality of design . . . for quality and strength of materials . . . for *completeness of line*.

Regardless of how your room division or door closure problems may vary . . . you get exactly what you want when you specify "Modernfold" doors—your guarantee against client complaint. For on their performance record alone, "Modernfold" doors look better, operate easier, last longer.

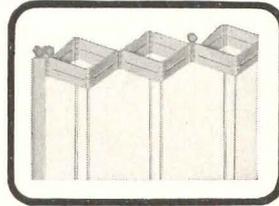
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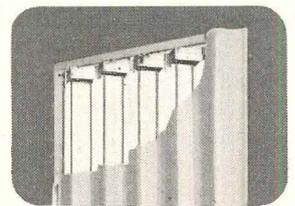
Better Looking

Fabric covering conceals all operating mechanism. No cornice needed. Adjustable trolleys keep doors hanging flush to jamb.



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Balanced pantograph hinge construction at both top and bottom; trolleys attached at hinge intersections. No side-wise twist or pull possible.



Longer Lasting

More steel hinges both top and bottom; more steel in each hinge; two vertical steel rods welded to each hinge assembly.

YOU CAN'T GET MORE IN A FOLDING DOOR



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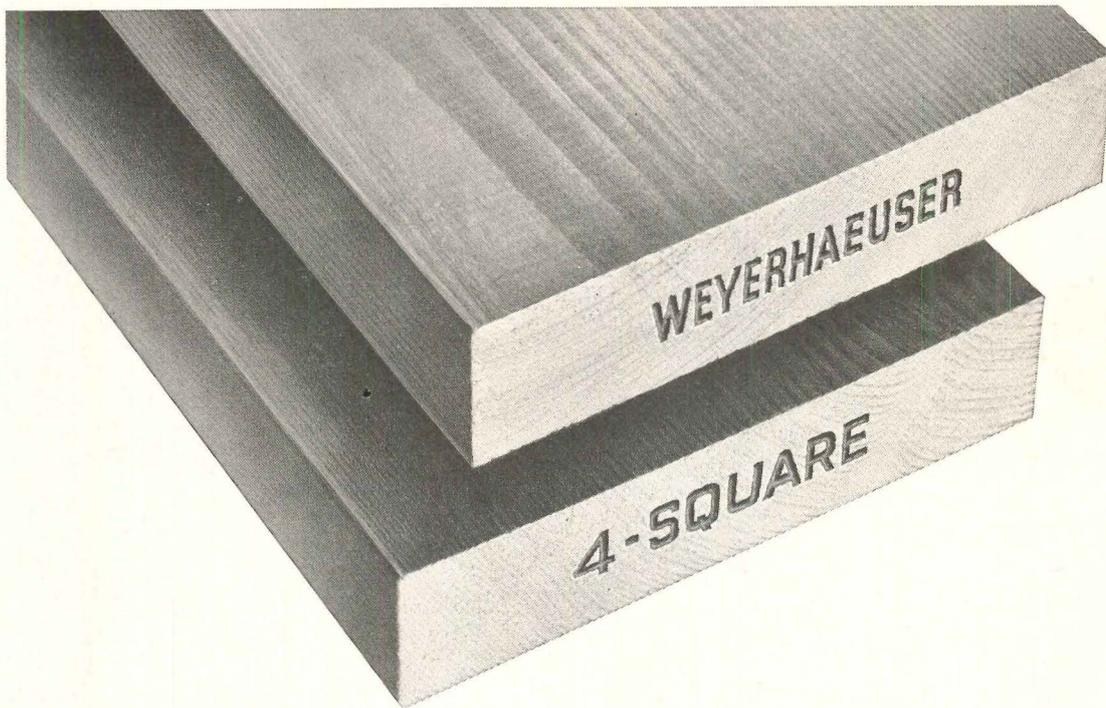
New Castle Products
Box No. 815
New Castle, Indiana
Gentlemen:

Please send me full details on "Modernfold" doors.

Name.....

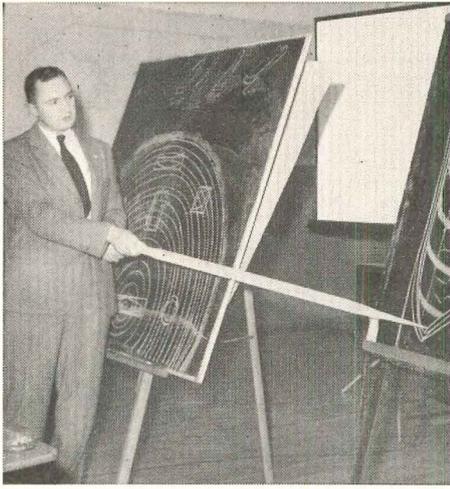
Address.....

City.....County.....State.....



THIS BRAND NAME ON LUMBER MEANS . . .





SCHOOLDAYS are never over for a good lumberman. Here instructor points out important facts concerning lumber and its handling.



THERE'S A RIGHT and a wrong way to plant trees. This man knows the right way because of training in the proper handling of seedlings.



"PIANO PLAYER" this man is called. He operates a team of high speed saws, individually controlled from the "keyboard."

Good Lumber... *produced by* Trained Personnel

How many feet of clear lumber can be obtained from a 40 foot Douglas Fir log?

The answer to that question depends in part on the skill, the training, the experience of many different men doing many different jobs. Each log must be appraised as an individual problem by men with the know-how needed to get the most out of it, with the least waste and in the least amount of time.

In a Weyerhaeuser mill, for example, a single man, the head sawyer, makes thousands of decisions in a single day . . . determining where and how to cut to secure the greatest yield of good lumber from every log. This is just one example of why Weyerhaeuser places such emphasis on getting the best men in the industry for each of the many dozens of highly technical operations necessary to the job of producing high quality Weyerhaeuser 4-Square Lumber.

In addition to the selection of top personnel, Weyerhaeuser conducts a broad program of training designed to sharpen the skills and aptitudes of its men to the utmost.

Add together all the men who contribute to the quality of the finished product . . . the fellers, scalers, hookers, loaders, buckers, crane and bulldozer operators, linemen and section hands . . . everyone from brush monkey to mill mechanic . . . and you will get some idea of the army of technicians needed to make that famous brand, "Weyerhaeuser 4-Square" mean greater lumber value to you.



The Coos Bay, Oregon, Mill

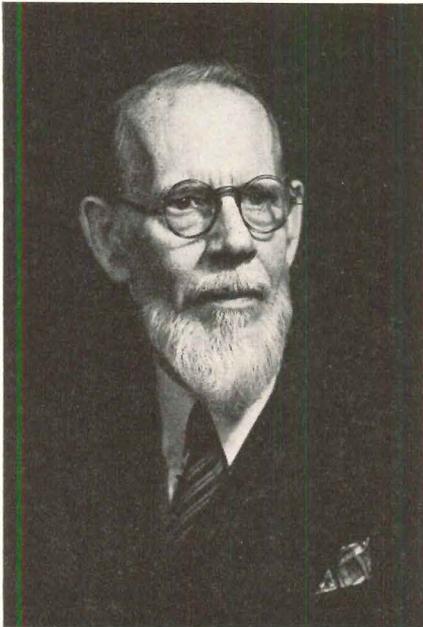
At mills located on the West Coast and Inland Empire, Weyerhaeuser 4-Square Lumber is produced in a range of products from Douglas Fir, Idaho White Pine, Ponderosa Pine, West Coast Hemlock, Western Red Cedar and related species.

Weyerhaeuser 4-Square Lumber and Services

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REQUIRED READING

THE THEORY OF ARCHITECTURE



Forms and Functions of 20th Century Architecture. Edited by Talbot Hamlin. Columbia University Press (Columbia University, New York 27, N. Y.), 1952. 4 Vols., 3100 pp., illus. \$80.00.

This impressive work by Professor Hamlin has the singular distinction of being the first comprehensive book on the theory and methods of architectural planning and design since the advent of the contemporary movement. It was specifically intended to succeed the completely outdated work of Julien Guadet — "Elements and Theory of Architecture" — published at the turn of the century. Professor Hamlin, who devoted five years to the preparation of the book while on leave of absence from his post as Avery Architectural Librarian at Columbia University, and the University's School of Architecture which sponsored the project are certainly due a vote of thanks for their initiative and effort in seeking to provide a greatly needed definitive work for our era.

The book is divided into three main sections. Volume I, "The Elements of Building," treats separately room types and uses, circulation, mechanical equip-

ment, the various structural elements as they affect design, landscaping, interior design and ornament. The second volume, "The Principles of Composition," takes up the question of architectural esthetics under such headings as unity, balance, character and structural methods. These first two volumes were written in the main by Professor Hamlin. Volumes III and IV, "Building Types," contain 51 separate articles written by well-known architects, planners and writers, and edited by Hamlin.

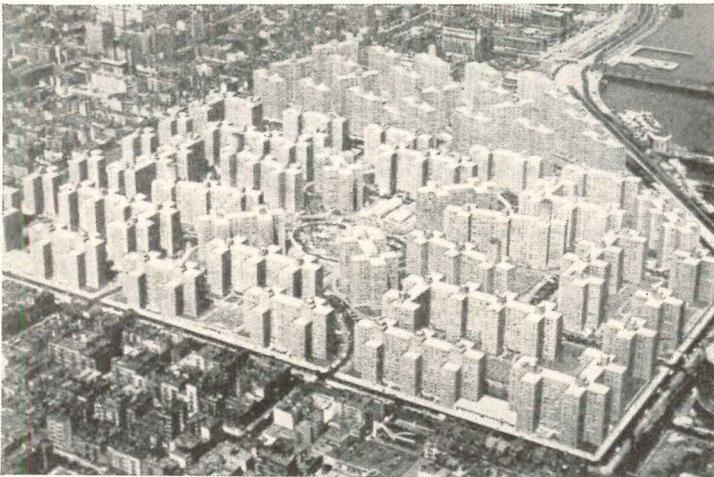
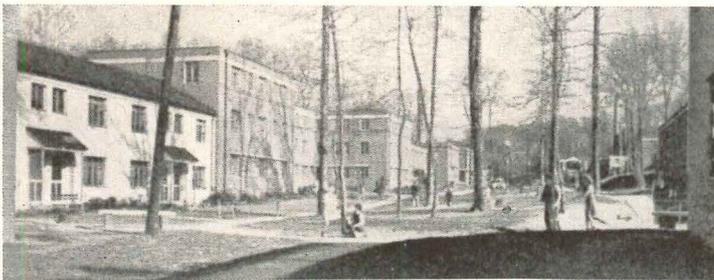
It is perhaps inevitable that a work of such size and scope should become the object of a great amount of spirited criticism and praise. The title itself may have misled many who have expected — or hoped — to find an *avant garde* guidebook to contemporary design. A quick leafing through the book, especially of the first two volumes, has proved disconcerting to many because of the preponderance of historical illustrations. Hamlin, who is basically a historian, has apparently sought to correlate contemporary design with the historical evolution of styles, and has used a traditional approach in the presentation of his material. Within such a framework it is inevitable that some of the elements of building and composition are best illustrated with historical details. However, 20th century work is more than amply illustrated among the 3700 or so photographs.

While the book generally forwards the functionalist concept of design and planning, a strong plea for more humanistic values is made in many ways throughout the text. In the section under Character, Hamlin says, "The pleasure one gets from perceiving character in a building is not merely a cold realization of the mechanical fitness of its forms to the purpose they serve; it is a definitely emotional reaction as well. The good building puts one in the right emotional state; it prepares one for the activities that go on in it."

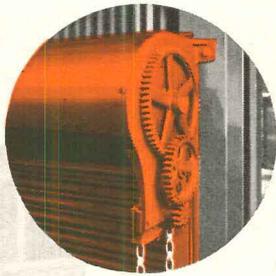
The articles on building types in the last two volumes of the work are a bit more exuberant and stimulating than Professor Hamlin's methodical and scholarly approach, and cover most of the current planning requirements.

(Reviews continued on page 48)

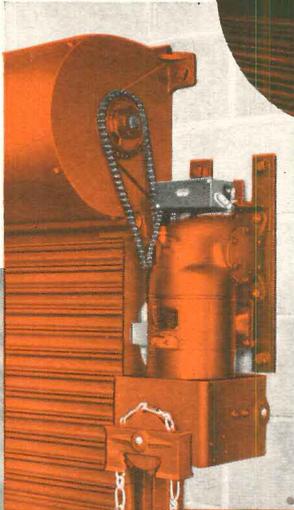
Talbot Hamlin's Theory: "The United States is at a cultural turning point. Are we going to develop . . . humanity or inhumanity" in our communities



Rolling Steel DOORS



**MAHON
CHAIN-GEAR
OPERATOR**



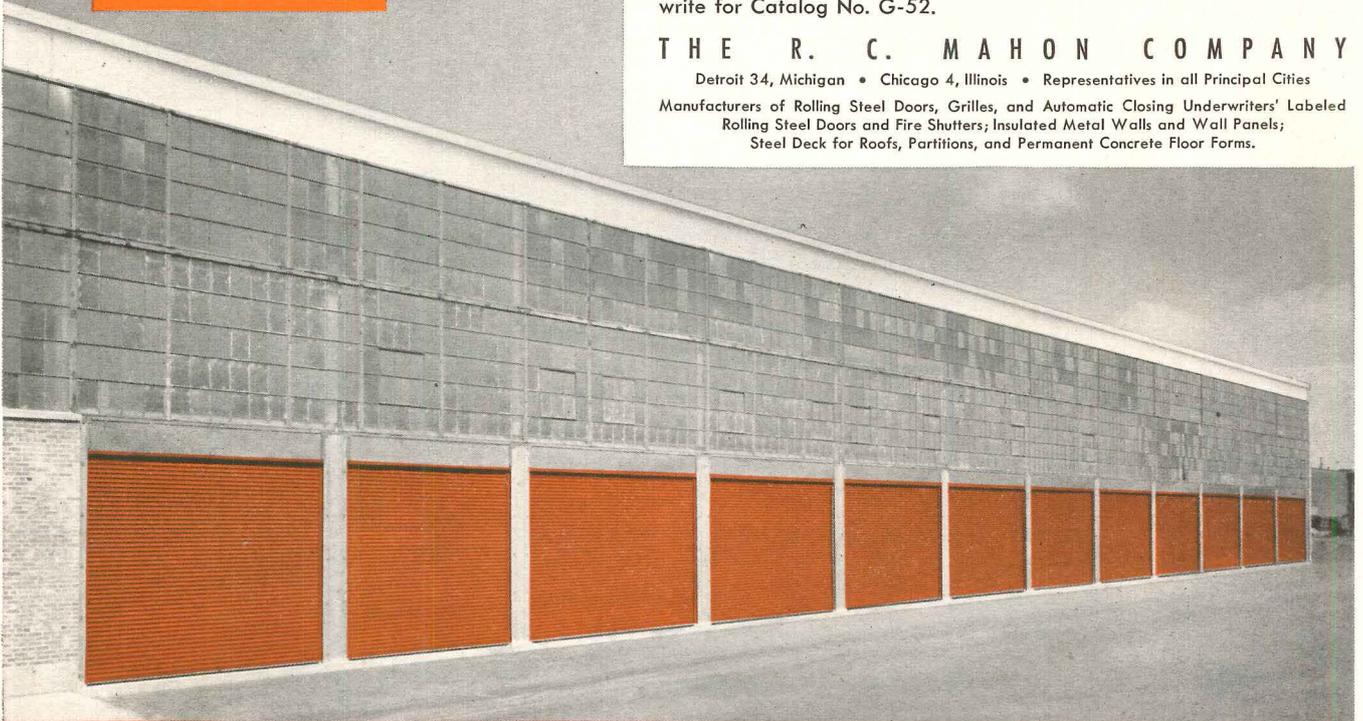
**MAHON STANDARD
POWER OPERATOR 920-P**

Manually, Mechanically, or Power Operated

Here again is illustrated a building in which only Rolling Steel Doors could meet the operating requirements. It is a foundry building with high clearance below trusses and continuous sash above door lintels to provide good natural light. Rolling Steel Doors were chosen because their vertical roll-up action occupies no usable space inside or outside the door opening, and does not create an obstruction above the lintel level. No other type of door offers these inherent advantages of space economy and compactness in operation. There are other advantages too . . . Rolling Steel Doors are permanent—their all-metal construction provides maximum security against intrusion and fire, and assures you a lifetime of continuous trouble-free service. Like most other things, there is a vast difference in the quality of the various rolling steel doors on the market today—a careful check of specifications will reveal this. For instance, the galvanized steel material for the interlocking slats of Mahon Rolling Steel Doors is chemically cleaned, phosphated and chromated to provide 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. See Sweet's Files for complete information including Specifications, or write for Catalog No. G-52.

THE R. C. MAHON COMPANY

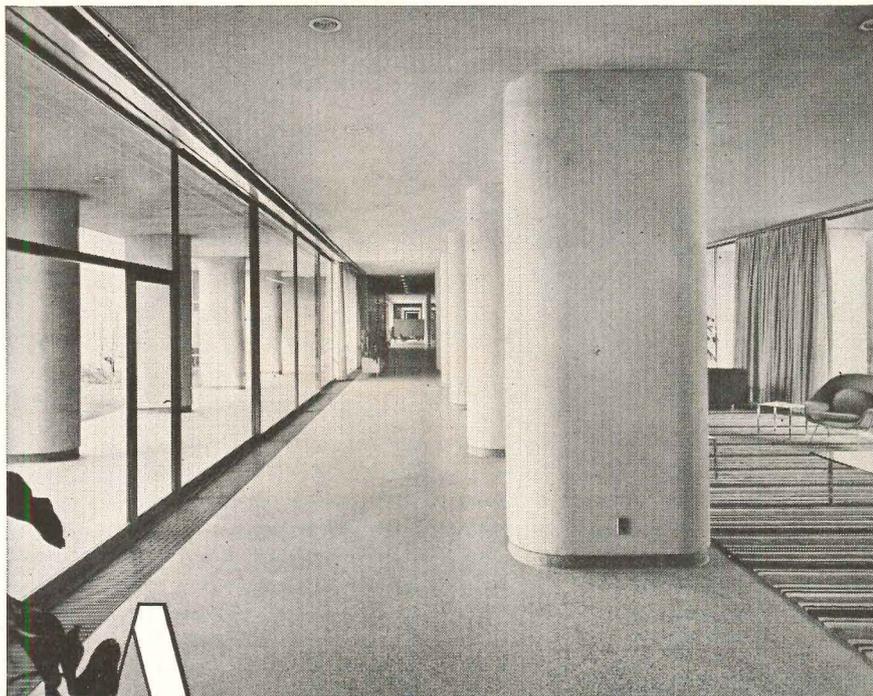
Detroit 34, Michigan • Chicago 4, Illinois • Representatives in all Principal Cities
Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions, and Permanent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



ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Twelve of fifteen Mahon Power Operated Rolling Steel Doors installed in a new foundry building built by Spence Bros., General Contractors, Saginaw, Michigan.

MAHON



Apartment on columns

Architectural concrete slabs cover interior and exterior columns, unifying design

For see-through spaciousness integrating lobby and gardens into visual unity, the new Manhattan House in New York rests upon 74 handsome columns. Beautiful column facings are pre-cast concrete slabs made with Atlas White Cement and white quartz aggregate . . . gracefully accenting the open areas in the building base.

Two flat U-shaped slabs, 11' high and 2½" thick, are joined to form each column. Shop-fitted with shiplap joints, each pair encloses a support column and conduits. Design of the entire ground floor is integrated because concrete slabs are used indoors as well as out.

You will find many beautiful and original uses for concrete facing slabs made with Atlas White Cement. The range of forms, textures and colors is tremendous. And because Atlas White Cement is a true, uniform white, it enhances the rich color values of both pigments and aggregates.

Atlas White Cement complies with ASTM and Federal Specifications. For further information see SWEET'S Catalog, Section 4E/7a and 13C/5, or write Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Ave., New York 17.

Architects:
Skidmore, Owings,
& Merrill and Mayer
& Whittlesey.
Owner:
New York Life Insurance
Company.
MoSai Precast Facing
Slabs:
Dextone Co.,
New Haven, Conn.



FOR BEAUTY AND UTILITY
ATLAS WHITE CEMENT
®
FOR TERRAZZO, PAINT, SLABS, STUCCO

AR-C-31R

"THEATRE GUILD ON THE AIR" Sponsored by U. S. Steel Subsidiaries
Sunday Evenings — September to June

REQUIRED READING

(Reviews continued from page 46)

SOIL MECHANICS AND FOUNDATIONS

Introductory Soil Mechanics and Foundations. By George B. Sowers and George F. Sowers. The Macmillan Company (60 Fifth Ave., New York, N. Y.), 1951. 6 by 9½ in. 284 pp., illus.

Not until the early 1900's was much known about the complex nature of soils and their relation to building problems. The tremendous increase in the size of buildings at this time stimulated research in the new phase of civil engineering called soil mechanics, and since 1930 soil mechanics has become an indispensable tool to architects and engineers.

The authors feel that it is extremely important for architects and engineers to have sufficient knowledge of soil mechanics to apply its principles to routine problems and to make intelligent appraisals of recommendations of specialists. Thus it is written both as an undergraduate text and as a reference book. They point out that there is a need for careful, scientific soils engineering on even small construction jobs, and so the book explains how the theories are applicable to the situations frequently encountered in practice.

MODERN FURNISHINGS

Modern Furnishings for the Home. By William J. Hennessey. Reinhold Publishing Corp. (330 W. 42nd St., New York 18, N. Y.), 1952. 8½ by 10½ in. 296 pp., illus. \$10.00.

Mr. Hennessey has compiled in this attractive book a comprehensive showing of what is available in today's field of better contemporary furniture. Actually the book is a catalog, containing over 450 illustrations of work turned out by well known American and European designers, giving a description of each piece with the catalog number, size, material, finish, and designer's and manufacturer's name. An extensive foreword traces the history of modern furniture design and explains the thinking behind contemporary furnishings, taking the reader back to the turn of the 19th Century, L'Art Nouveau, the work of Gropius, Sullivan, Wright, etc.

Equally instructive to consumer and student, the book strives to better acquaint the reader with the outstanding designers and manufacturers of today. Acting upon the theory that the "Steering of a client around the wholesale-retail circuit is a grueling procedure," the catalog has been assembled to assist

(Continued on page 326)



● Typical classroom of Stratfield School, Fairfield, Conn., after being painted according to Pittsburgh COLOR DYNAMICS.

5 big advantages that **PITTSBURGH COLOR DYNAMICS** gives schools you design or build!

1. reduced eye-strain
2. better academic grades
3. higher teaching efficiency ratings
4. fewer housekeeping problems
5. less vandalism

COLOR is now being used in school and college buildings to promote the morale, health and safety of students and teachers as well as to improve their classroom efficiency.

● **All over the country**, architects who design and contractors who erect school buildings are becoming increasingly aware of the value of Pittsburgh COLOR DYNAMICS for functional and decorative purposes.

● **This painting system** is based upon the principles of the *energy in color*. Medical men and students of psychology have come to recognize its influence upon human beings.

● **By the purposeful use** of this energy, school rooms are now being given color arrangements in keeping with their uses, exposure to sunlight and available lighting facilities.

● **With COLOR DYNAMICS** eye-strain is lessened, concentration is stimulated, academic grades of students are better and efficiency ratings of teachers are higher. Housekeeping is simplified and vandalism is discouraged as pupils take greater pride in their surroundings.

● **You can also use color** to make changes in appearance—rooms can be made to seem more spacious. Hallways can be made to appear wider as well as brighter and stairways can be made safer.

● **Learn for yourself** how easy it is to gain these worthwhile benefits for your school. The whole story of COLOR DYNAMICS and how you can use it is told in a brand new booklet packed with practical suggestions. Write for your *free* copy.

We'll make a Color Engineering Study for You—FREE!

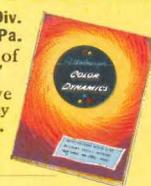
● We'll be glad to explain exactly how you can apply COLOR DYNAMICS with scientific accuracy by submitting a scientific color engineering study of schools you are planning or building, *free* and without obligation.

● Call your nearest Pittsburgh Plate Glass Company branch and arrange to have one of our trained color experts see you at your convenience. Or send the coupon below.

SEND FOR A COPY OF THIS BOOK!

Pittsburgh Plate Glass Co., Paint Div.
Department AR-72, Pittsburgh 22, Pa.

- Please send me a FREE copy of your Booklet "Color Dynamics."
 Please have your representative call for a Color Dynamics Survey without obligation on our part.



Name _____

Street _____

City _____

County _____

State _____



PITTSBURGH PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

What brings customers back again?

You know the answer. It's something "extra" at a fair price. In a store, shopping convenience may be the extra. Or, patrons may be drawn by simple things like friendliness and trusted good taste.

Customers for Otis escalators are the same way. Like shoppers in stores, they try to buy important things wisely, from sellers they trust. Certainly, vertical transportation is a major purchase. It can boost a store's sales. Yet mistakes may cut traffic capacity, and they're very costly to correct.

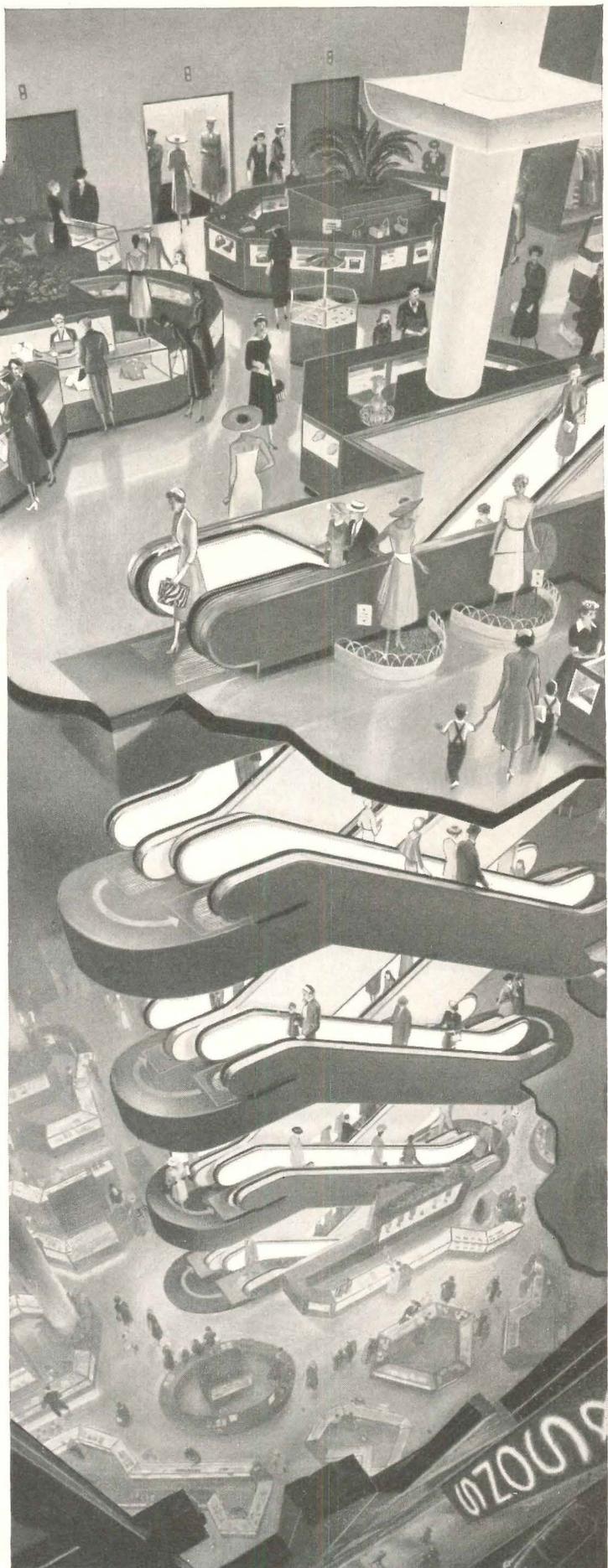
Otis has solved many problems to make an escalator installation as painless as possible. Special features help craftsmen of different trades cooperate. This cuts installation time and cost. We interfere very little with shopping activities, and we get our work done promptly.

Most important, an Otis customer can count on good performance, day after day, for years and decades. The responsibility we assume always means an extra value for you. **Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.**

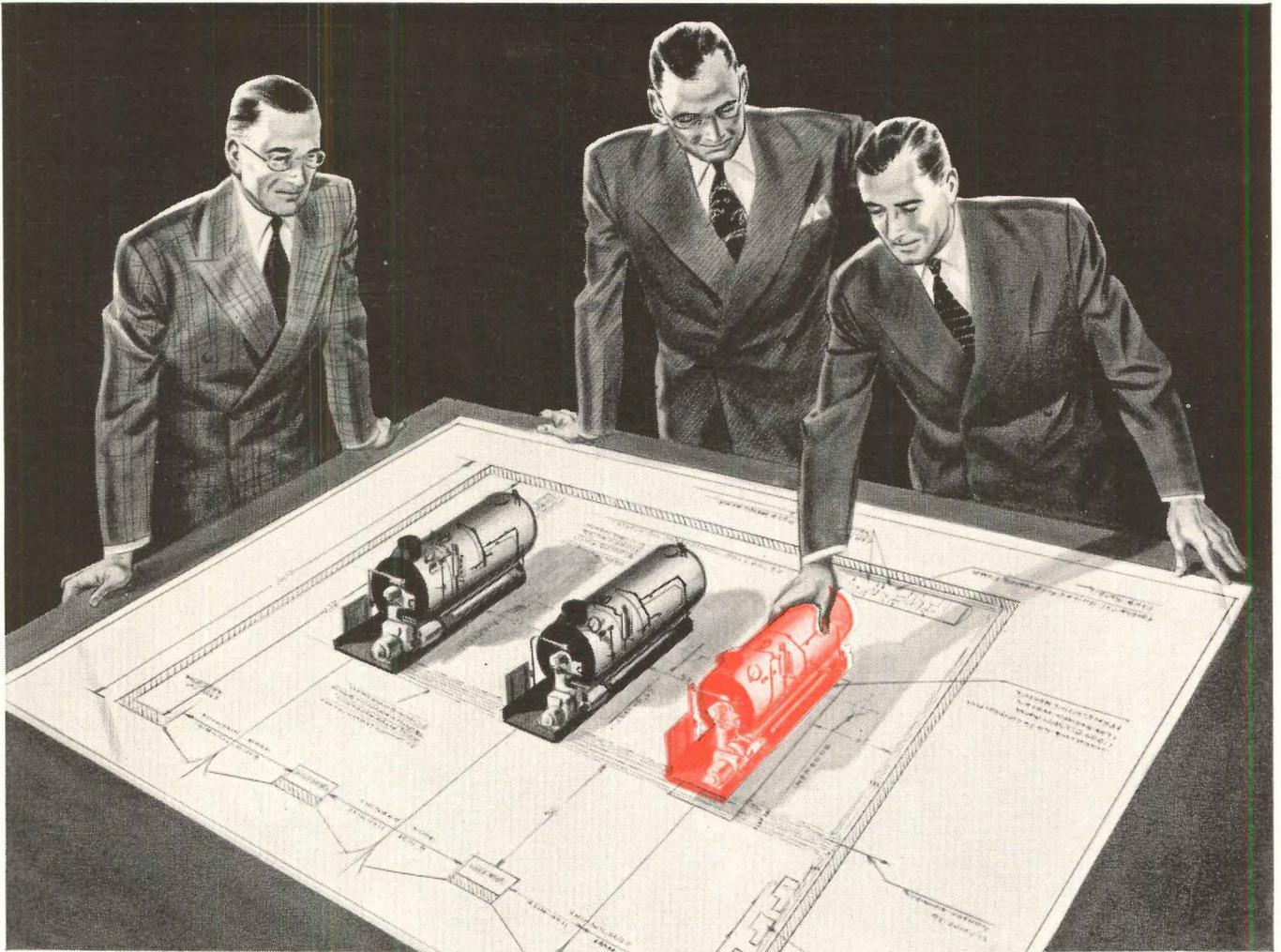
**Better elevating
is the business of**



Escalators • Passenger Elevators • Freight Elevators • Electric Dumbwaiters • Maintenance • Modernization



Plan Your Boiler Installation this Way..



...to Balance Load Factor with Low Investment
...to Meet Present Needs and Future Expansion...

CLEAVER-BROOKS self-contained steam boilers are the answer to both present and future steam needs. You can install Cleaver-Brooks boilers in units to fit your present steam capacity requirements . . . keeping your investment at a minimum and your boiler efficiency at a maximum. Here's how it works . . .

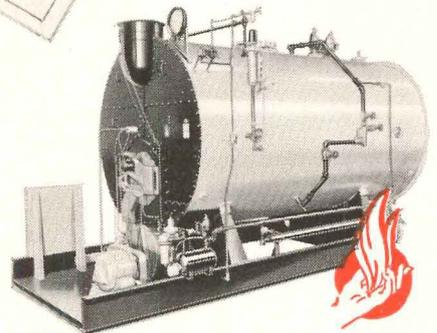
Your initial Cleaver-Brooks boiler installation is made in the size or capacity to fit your present steam load — this assures full use now at top efficiency and low capital investment.

As increased steam needs arise, additional Cleaver-Brooks boilers can be added to keep pace with your expanded requirements.

With this flexible program, you have the greatest return from your boiler investment — minimum original cost and lowest operating cost. Your boilers are always operating at maximum efficiency (80%) over the entire working range (30 to 100%).

Cleaver-Brooks self-contained boilers are ideal for multiple installations because of their compactness, low headroom requirements, fast installation, automatic operation, range of sizes. Available in standard models—15 to 500 hp.; 15 to 250 psi; gas, oil or combination gas and oil fired units.

Get all the story — write today for latest catalog.



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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

Where the *other* services also count - it's always BAYLEY WINDOWS



The Tinnerman Products Co., Cleveland, Ohio
McGeorge-Hargett & Assoc., Archt., Cleveland, Ohio
The Sam W. Emerson Co., Contr., Cleveland, Ohio



Highlights of this New Popular BAYLEY Product

- Carries Quality Approved Seal of the Aluminum Window Mfgs. Ass'n. for materials, construction, strength of sections and air infiltration.
- Modern Appearance.
- Economical — Painting unnecessary.
- Permanent — Long carefree life.
- Simplicity — No complicated mechanism.
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- Extra deep sections — Accommodate "Thermopane" or "Twindow" glazing.
- Easily washed from inside.
- Prepared for screens.
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- Positive acting hardware of white, bronze.

73 Years of
RELIABILITY



Bayley Aluminum Projected Window

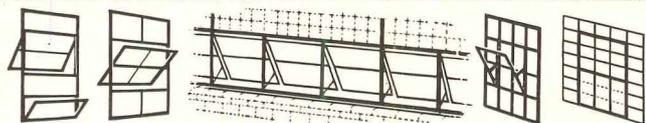
Offers New Features for Modern Buildings of All Types

The *first* essential to a truly satisfactory relationship is a fine quality product. But much more is also required. Full appreciation of this fact is the bedrock of Bayley's policy — and is the reason discriminating designers from coast to coast have so highly favored Bayley for so many years.

Bayley's determination to better serve through all the building stages — from the building's inception to its occupancy — is again exemplified in the Bayley Aluminum Projected Window. It represents the culmination of years of conscientious endeavor. First to fully recognize the universal advantages of the projected window, Bayley refined its desirable features in the most enduring construction material developed through long research by the Aluminum Industry. The result is an ideal window for schools, hospitals, institutional and commercial buildings — but equally suited for private living units — that reflects Bayley's years of specialized window experience.

Regardless of window requirements, you too will find *extra values* in discussing your needs with Bayley. Write or phone.

See Bayley in Sweet's. Complete catalogs on aluminum windows, 17a/BA; steel windows, 17b/BAL; Saf-T-Gard Hospital Detention Window, 17b/BAY.



PROJECTED PIVOTED VueLINE GUARD SAF-T-GARD

THE WILLIAM BAYLEY COMPANY

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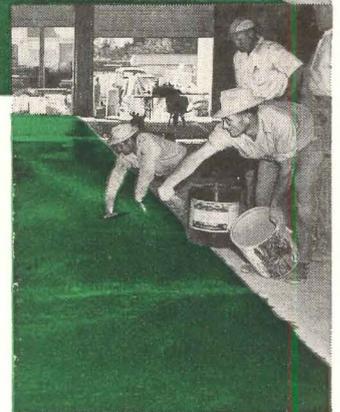


COLORUNDUM

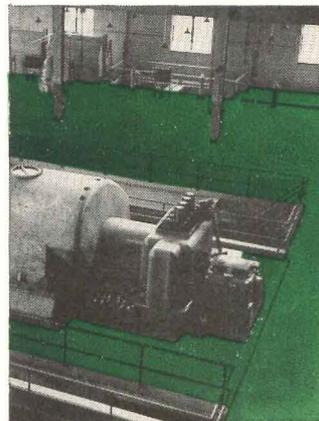
for colored concrete floors
and sidewalks use **COLORUNDUM**

All over the nation modern building design now includes the use of Colorundum in colored concrete floors, sidewalks, roof decks, industrial and other walkways and driveways. Colorundum is used widely in exteriors or interiors . . . as a wear-resistant and colorful concrete topping of long life . . . at practically the average cost of ordinary concrete. Decorative color combinations are often employed of red, maroon, brown, green, dark green, french grey, black. Colorundum is a dry powder ready for use, composed of coloring mediums, fused aggregates, water-repellent and hardening elements. Colorundum is dusted on and floated and trowelled into the fresh concrete topping. The non-slip, non-metallic surface makes it an ideal flooring on new concrete or when replacing old concrete floors or sidewalks.

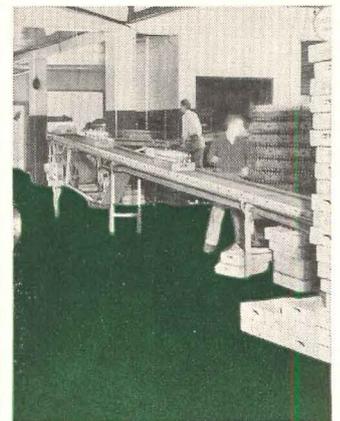
trowelled into the fresh
concrete topping



Colorundum central fire station floor



Colorundum power plant floor



Colorundum industrial floor

HORN

A. C. HORN COMPANY, Inc. est. 1897

Manufacturers of materials for building maintenance and construction
LONG ISLAND CITY 1, N. Y. • Los Angeles • San Francisco • Houston
Chicago • Toronto **SUBSIDIARY OF SUN CHEMICAL CORP.**

A. C. HORN COMPANY, INC.,
Long Island City 1, N. Y.

Please send me complete data on
COLORUNDUM



free copy of your
96-page Construction
Data Handbook



AR-2

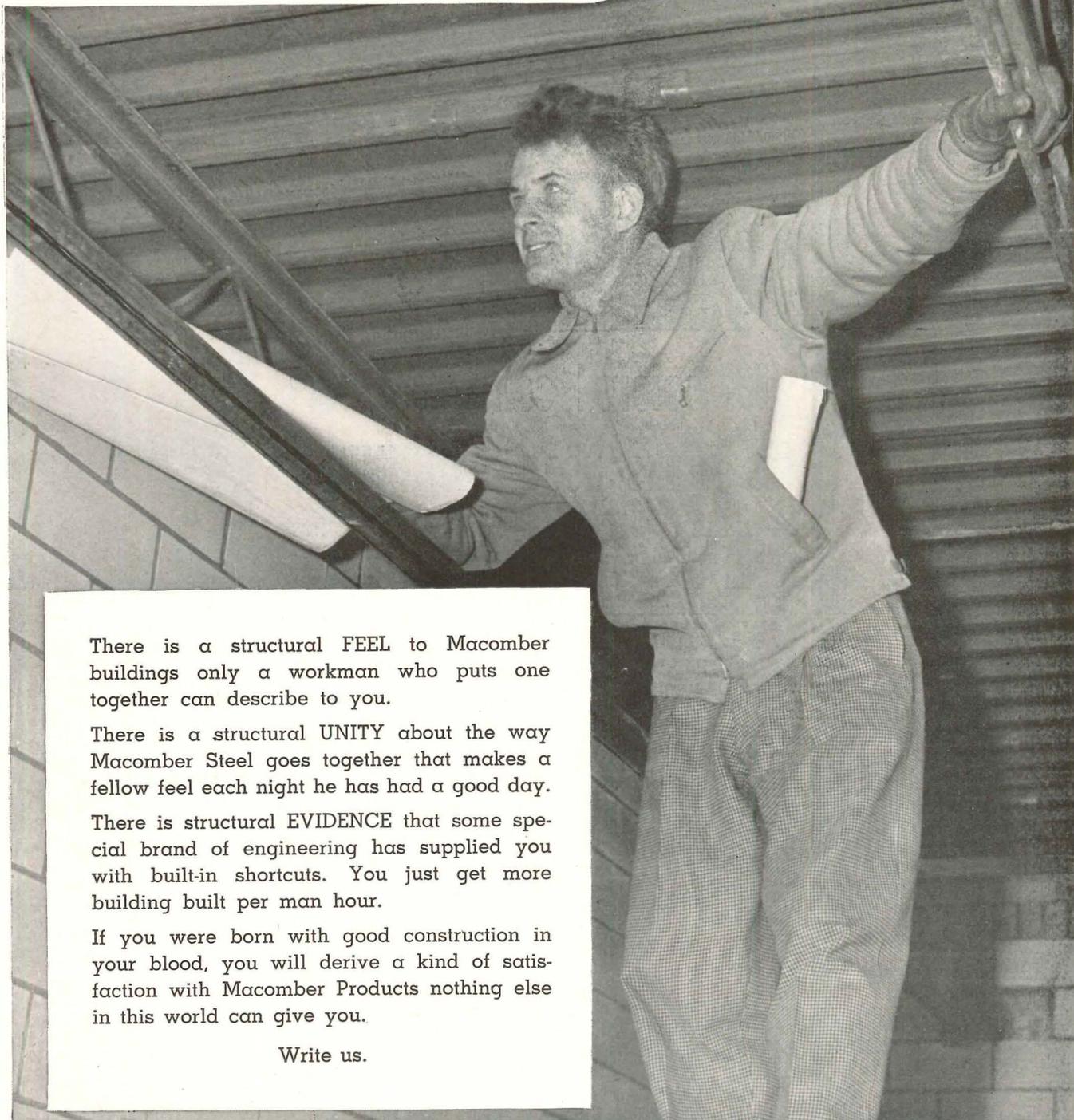
NAME _____ TITLE _____

FIRM NAME _____

ADDRESS _____

CITY _____ STATE _____

When I inspect a **MACOMBER JOB**—



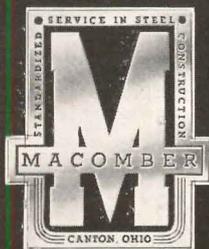
There is a structural **FEEL** to Macomber buildings only a workman who puts one together can describe to you.

There is a structural **UNITY** about the way Macomber Steel goes together that makes a fellow feel each night he has had a good day.

There is structural **EVIDENCE** that some special brand of engineering has supplied you with built-in shortcuts. You just get more building built per man hour.

If you were born with good construction in your blood, you will derive a kind of satisfaction with Macomber Products nothing else in this world can give you.

Write us.



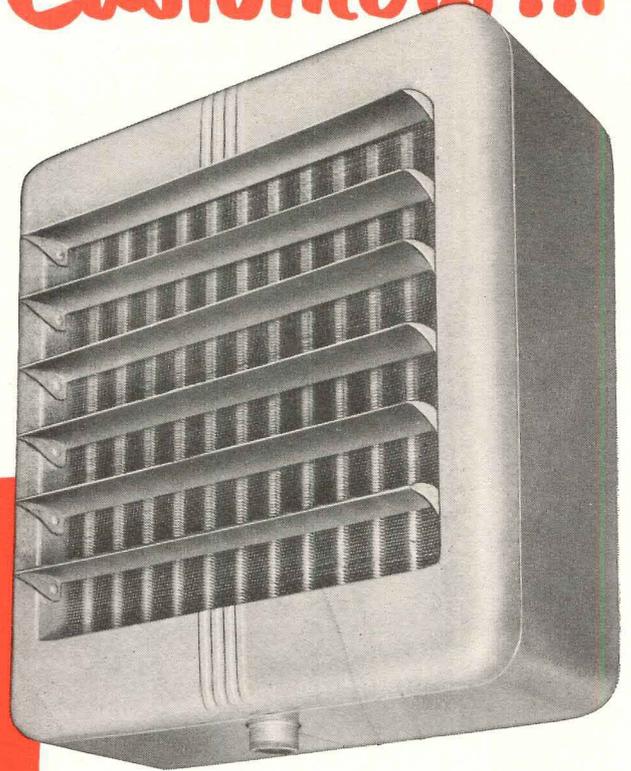
STANDARDIZED STEEL BUILDING PRODUCTS

MACOMBER • INCORPORATED

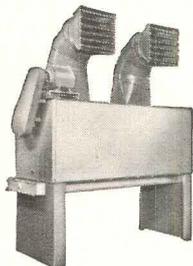
CANTON, OHIO

V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK

Remind Your Customers ...



**ACTION NOW WILL
SAVE HEATING
HEADACHES LATER!**



Blower Type UNIT HEATERS

For effective heat distribution over large open areas. Available in 8 sizes . . . in suspended and floor models, with one and two row coils; capacities from 23,800 to 1,659,000 Btu per hour.



Down Flow UNIT HEATERS

This McQuay "vertical" unit heater, suspended near the ceiling, utilizes the warm air in that area and distributes it down to the floor level. No wasted heat, no cold spots. Four types of draftless diffusers available.

This is the time to remind customers that installing McQuay Horizontal Unit Heaters *now*, will save them the grief of another season of struggling along with the old system.

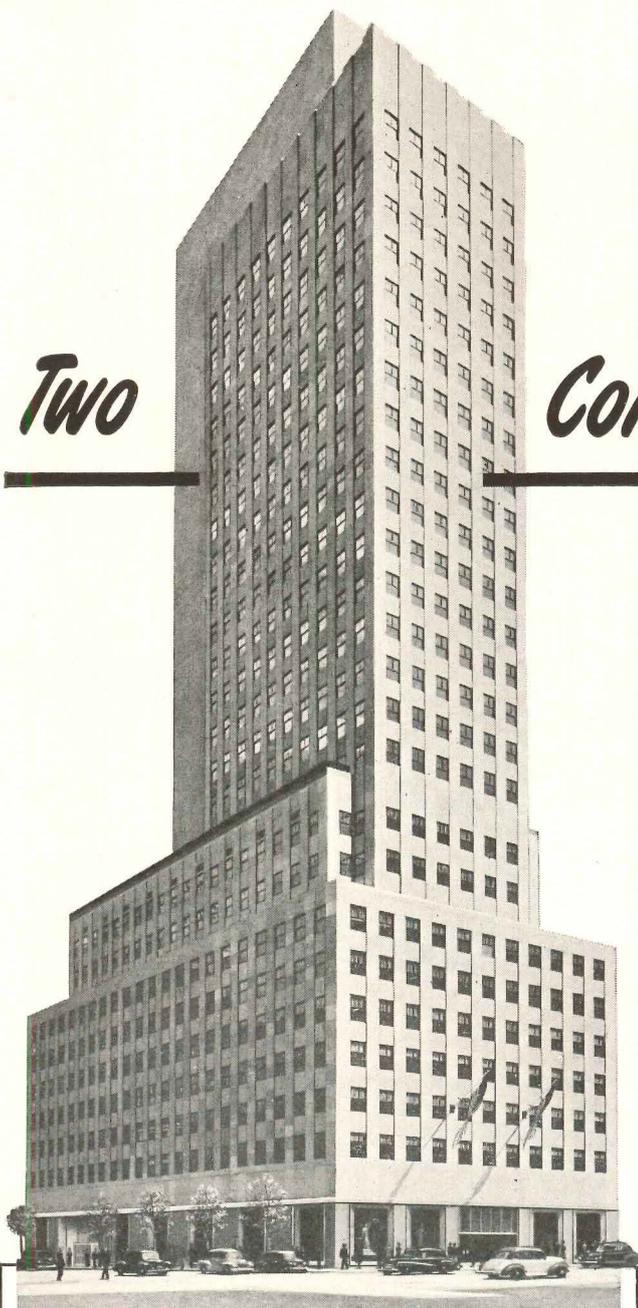
McQuay Horizontal Unit Heaters are made in a wide range of capacities, from 20,300 to 360,000 Btu per hour. Every unit has the exclusive Ripple Fin Coil construction . . . with these advantages: more heat transfer surface, greater flexible strength, cleaner operation . . . flexible copper tube headers to accommodate unequal expansion and contraction. Tubes expanded into fins having wide, smooth collars, without use of any low conductivity bonding agents, provide a permanent mechanical bond.

These advantages, plus modern cabinet styling, quiet motor fan assembly and Test Code Ratings are your guarantee of satisfied customers—especially if you convince them the time to get the job done is now—before, not after, the heat is needed. Write for catalog. Representatives in principal cities. McQuay Inc., 1605 Broadway St. N.E., Minneapolis 13, Minnesota.

McQuay INC.

HEATING • AIR CONDITIONING • REFRIGERATION





Two

Sinclair Oil Building First Skyscraper in New York with . . .

Construction Advantages

1. Beams, girders and floors fire protected with lightweight PERMALITE/plaster.
2. Lightweight PERMALITE/plaster also used throughout on interior walls.

This latest addition to the Rockefeller Center skyline is an outstanding example of lightweight construction in a multi-story structure.

90,000 square yards of lightweight Permalite/plaster were used in this building. Permalite aggregate was specified for good reasons:

- Reduces dead load . . . eliminates the need for costly embedding of structural steel in heavy concrete.
- U.L. approved . . . meets rigid specifications of Underwriter's Laboratories fire test. Carries the maximum (4 hour) fire rating.
- Uniformity . . . frequent production control tests assures high quality — at all times.
- Convenience . . . packed in handy 4 cu. ft. bags that facilitate storage, handling and batch mixing on each floor without exceeding live load limits.

See how you can take full advantage of modern *steel saving* lightweight construction with Permalite aggregates. Complete data in our bulletins PA-26, PA-7 and PA-9. Write for your copies. See our insert in Sweet's Catalog. Great Lakes Carbon Corporation, 18 East 48th Street, New York 17, N.Y. Dept. 10-7.

WHERE APPLIED: One-inch plaster fireproofing for office area framework. One-inch plaster on expanded metal lath suspended from lightweight steel decking in office areas. Permalite/plaster walls throughout.

Architects: Carson & Lundin
Consulting Engineers: Edwards & Hjorth
General Contractor: Turner Construction Co.
Plastering Contractor: James Kane & Co.

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THE LEADING
PERLITE
AGGREGATE

A Building Product of Great Lakes Carbon Corporation and the Following Exclusive Permalite Licensees:

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Chicago, Illinois • Allentown, Pennsylvania • Baltimore, Maryland • Cincinnati, Ohio • Dallas, Texas • Hopewell, Virginia • Boston, Massachusetts

**WE'RE OLD ENOUGH
TO KNOW BETTER...**

and we do!



"MANHATTAN HOUSE"
Architects
Skidmore, Owings and Merrill

Aetna started fabricating hollow metal doors and frames over 50 years ago.

Since then, the hollow metal door and frame industry has become of prime importance in the building field.

Aetna's expansion has paralleled that of the industry, and today, Aetna is the country's leading producer of hollow metal doors and frames.

We owe our growth and leadership to architects, designers, specification writers and builders, who know that Aetna products are of high quality and that Aetna engineering and follow-through on specifications are painstaking, accurate, dependable.

AETNA STEEL PRODUCTS CORPORATION

730 FIFTH AVENUE, NEW YORK 19, NEW YORK

MANUFACTURERS OF STANDARDIZED STEEL DOORS AND FRAMES FOR HOUSING UNITS.

FABRICATORS OF QUALITY HOLLOW METAL PRODUCTS FOR SCHOOLS, HOSPITALS, OFFICE BUILDINGS, ETC.

50 years ago this month,
Willis H. Carrier founded the
air conditioning industry

A printer in Brooklyn was having his troubles. Moisture content of the air was making his paper swell and shrink. But nobody could do anything about that . . . or could they?

Willis Carrier, then a young engineer with Buffalo Forge Company, thought he could. He designed a system that controlled the temperature and relative humidity in that print shop, winter and summer. This was the pioneer air conditioning installation.

Dr. Carrier and his associates formed the company which today leads the industry. And Carrier Corporation has virtually written the history of air conditioning. Carrier created the machines, opened the markets, blazed the trails.

That you are kept comfortable by air conditioning in bus, plane and train . . . restaurant, store and theater . . . office, factory and home . . . is due to the pioneering of this one company.

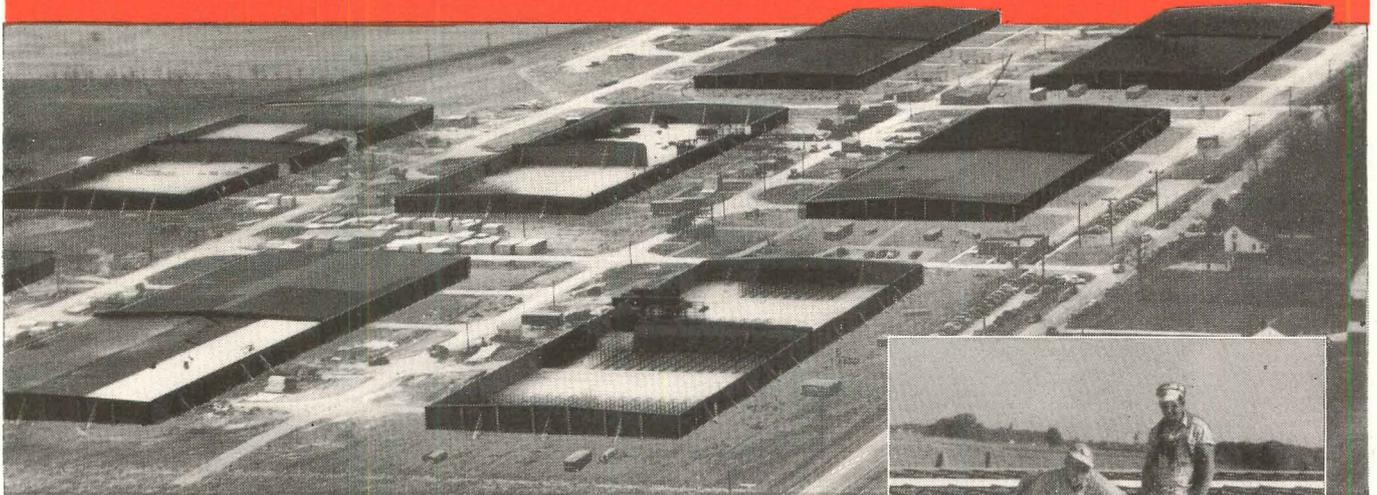
But Carrier has made even more important *indirect* contributions to your well-being. For air conditioning is also a production tool that is essential to the manufacture of synthetic fabrics, radar and electronic equipment, pharmaceuticals, precision aircraft parts, optical instruments, photographic film and scores of other products.

Air conditioning is an important part of your life today. But tomorrow it will be more important. For this industry of ours is very young. And its field of service is unlimited.



AIR CONDITIONING • REFRIGERATION
for 50 years—the people who know air conditioning best

New Warehouses Get Finest Roof Decks—Kaylo®



Joseph E. Seagram & Sons, Inc., Milan, Indiana

General Contractor: F. W. Owens Co., Louisville, Kentucky

Kaylo Roof Tile is lightweight yet strong ... and it also insulates

The qualities essential to finest roof deck construction are combined in Kaylo Insulating Roof Tile, a remarkable, lightweight material—hydrous calcium silicate, *not glass*.

High insulating value of Kaylo Tile aids in temperature control to save on heating and cooling costs. Added fire-safety, too, is provided because the tile is incombustible.

Although Kaylo Tile have more than adequate strength for typical roof loads, a Kaylo deck weighs only six pounds per square foot. Therefore, a relatively lighter structure supports the Kaylo deck with resulting savings of structural steel.

A Kaylo deck gives other economies. For example, Kaylo Tile's smooth under-side makes a completed ceiling as it forms the roof. The tile ceiling reflects light; requires no painting or other treatment. Get all the facts about Kaylo Insulating Roof Tile.



FAST AND EASY TO INSTALL

A Kaylo roof deck can be constructed in only three steps: installing the sub-purlins, laying the tile and grouting the end joints. The deck is then ready for covering with standard built-up roofing materials. On these warehouse installations, barrel racks support the roof.



WRITE FOR FREE BOOK—“Kaylo Insulating Roof Tile.” Address: Dept. N-216, Owens-Illinois Glass Company, Kaylo Division, Toledo 1, Ohio.

KAYLO® ... first in calcium silicate

...pioneered by OWENS  ILLINOIS Glass Company

MAIN OFFICE: TOLEDO 1, OHIO — KAYLO SALES OFFICES: ATLANTA • BOSTON • CHICAGO • CINCINNATI • CLEVELAND • DETROIT
HOUSTON • MINNEAPOLIS • NEW YORK • OKLAHOMA CITY • PHILADELPHIA • PITTSBURGH • ST. LOUIS • WASHINGTON

On the beam for Sunbeam

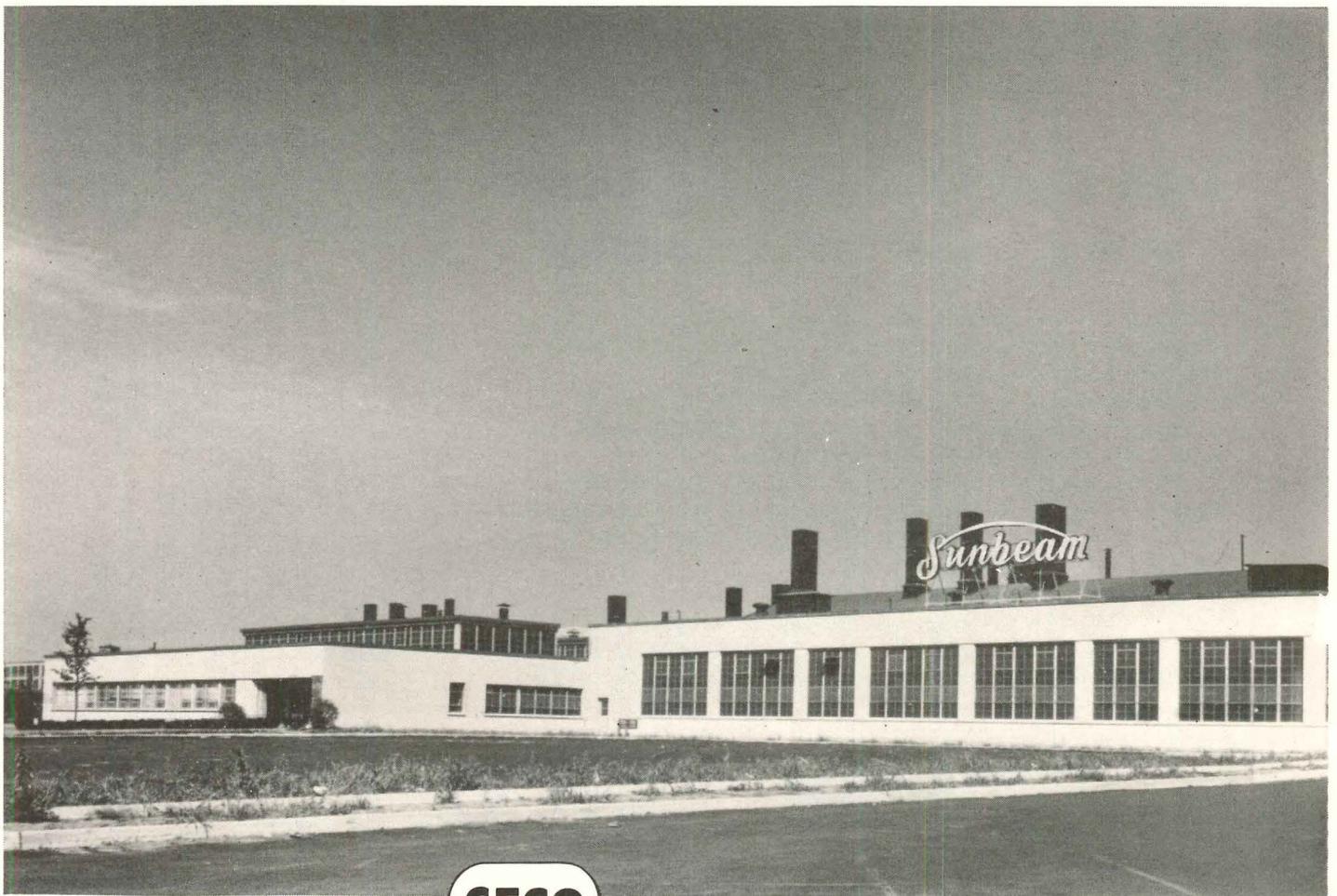
When a company begins a long range building program in critical times there's need for greater care in selecting materials and services. That was the situation facing the Sunbeam Corporation, their architects Olsen and Urbain and the contractors Campbell-Lowrie-Lautermilch, Inc.

Where could they be sure of steel products of engineered excellence? Where could they be sure of a follow thru detailing service? Could all this be found at ONE source to save time . . . increase efficiency? Such a challenge led to us here at Ceco for we had been delivering

that kind of service successfully day after day . . . year in year out.

Design called for three types of windows. Architectural Projected, Commercial Projected and Horizontally Pivoted Steel Windows met the need. Precision Engineered, they assure the tightest weather seal ever . . . can't warp, rot or swell. Maintenance cost is lower too. And since muntins are slender they let in more light than any other type of window opening and allow 100% controlled ventilation so important in industrial buildings.

Because doors had to be fire resistive,



CECO

Olsen & Urbain, Architects

Campbell-Lowrie-Lautermilch Inc., Contractors

CECO STEEL PRODUCTS CORPORATION • General Offices: 5601 West 26th St., Chicago 50, Ill.

...CECO ONE SOURCE SERVICE

Ceco Industrial Doors were specified. Rugged and serviceable, they're made to last the life of a building. On the structural side Ceco supplied reinforcing steel and prepared erection details...on windows and doors Ceco performed the erection work.

Here from ONE source, the architect and contractor found a broad service that could be tailored to fit the job...a specific service featured by Ceco. Today more and more architects, engineers and contractors depend more and more on Ceco in solving building problems.

In construction products

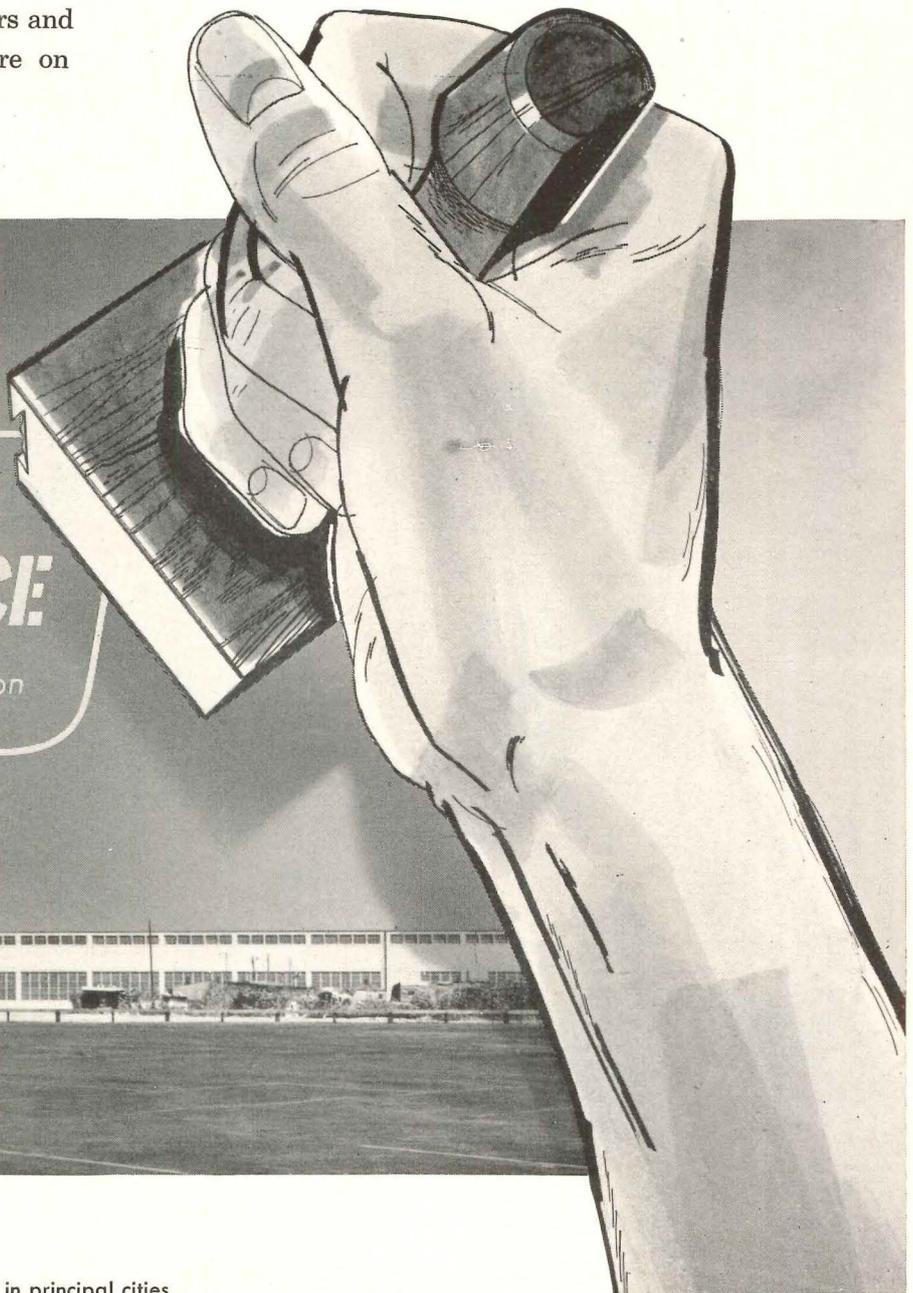
CECO ENGINEERING

makes the big difference

CITED BY CECO FOR

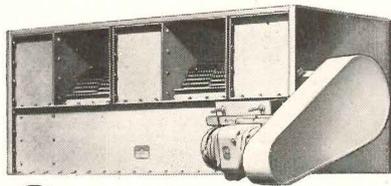
EXCELLENCE

in Design and Construction



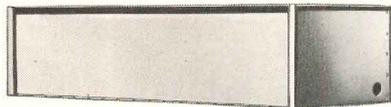
Offices, warehouses and fabricating plants in principal cities

YOUNG SECTIONAL DESIGN PROVIDES MAXIMUM AIR CONDITIONING UNIT FLEXIBILITY



1 FAN SECTION

Centrifugal multiblade fans are properly balanced for quiet operation. Air discharge direction alterable. Shaft extensions provided for left or right hand drive.



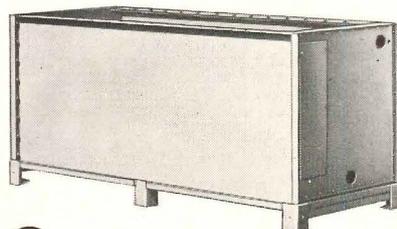
2 HEATING COIL SECTION

Heating coils are available for use in hot water or steam systems. Copper tube non-ferrous finned coils are available in two sizes for each unit.



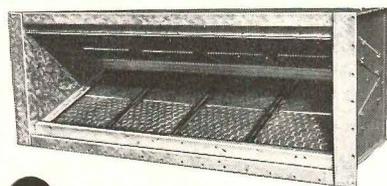
3 DAMPER SECTION

"YAC" Units can be furnished with either face and by-pass dampers, face and external by-pass dampers, or no dampers as required for the specific air conditioning job.



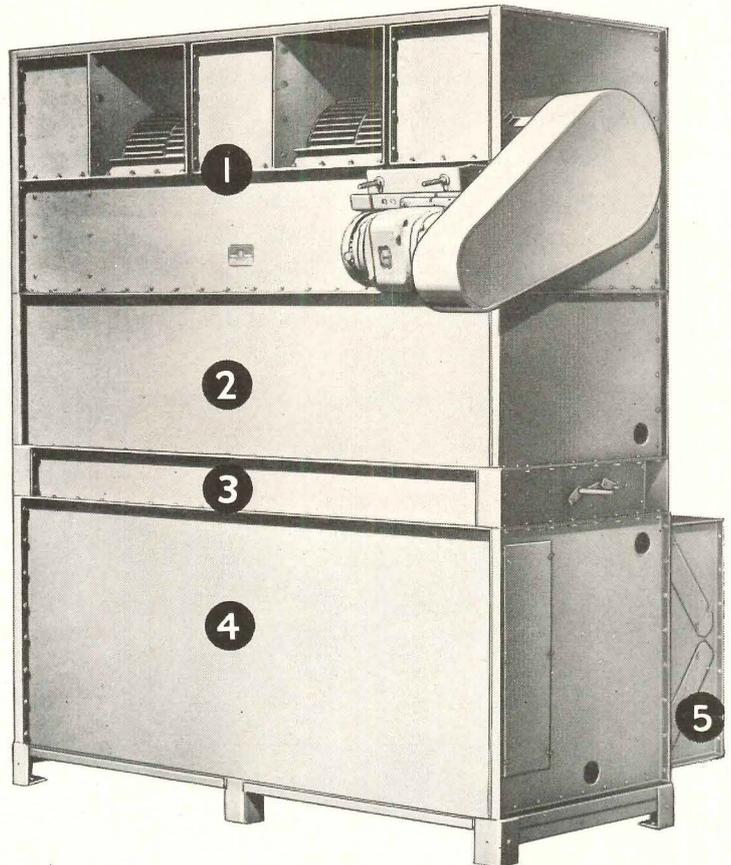
4 BASE & COOLING COIL SECTION

Continuous serpentine or cleanable type water, or direct expansion cooling coils are available in two sizes for each unit. Spray, grid, or pan type humidifiers are optional equipment.

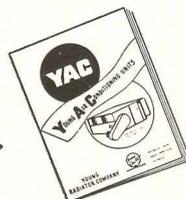


5 FILTER SECTION

Dry throw away or cleanable type filters are serviced through access panels which are conveniently located on either right or left side of the unit, as desired.



Young sectional design enables you to provide partial or complete air conditioning service at low cost. Whether your requirements call for simple heating or cooling—or, heating, cooling, humidifying, dehumidifying, circulating, and filtering in any combination—you can meet them exactly with Young "YAC" Units. Eight compact sizes, in horizontal or vertical types, are designed for right or left hand installation. Air may be discharged in any direction by rotating and interchanging fan section panels. Young sectional design also means greater ease in handling, installing, and servicing.



Young sectional design is completely described in "YAC" Catalog 7550 which will be sent upon request.



YOUNG

Heating, Cooling, Air Conditioning
Products for Home and Industry.

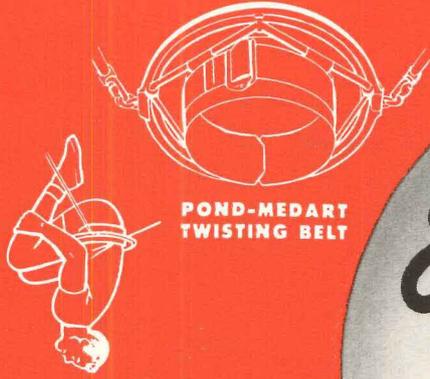
Heat Transfer Products for Auto-
motive and Industrial Applications.

YOUNG RADIATOR COMPANY

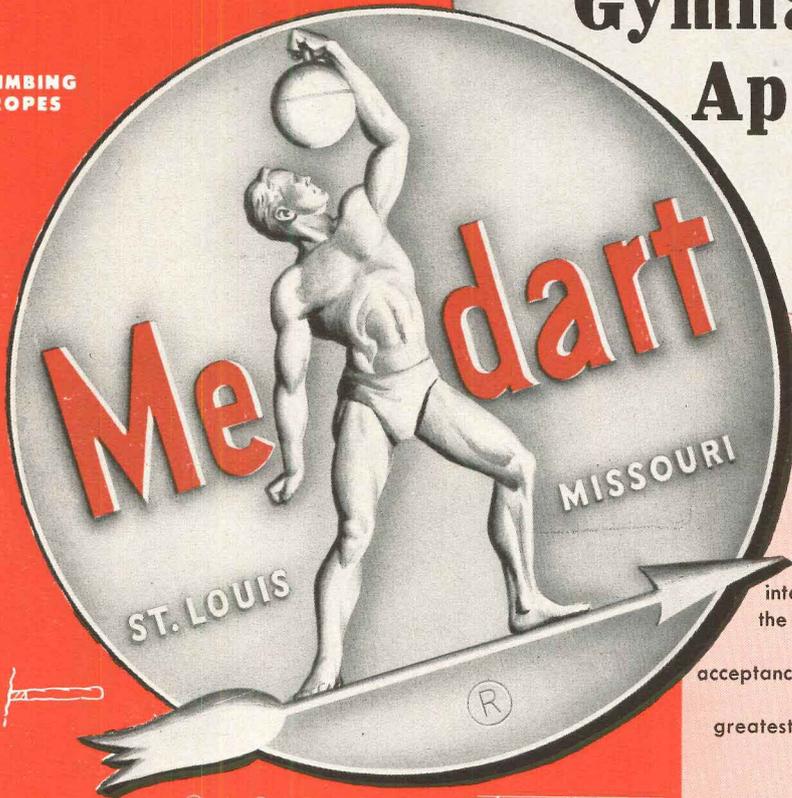
Dept. 612-G • RACINE, WISCONSIN
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CLIMBING ROPES



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Everything in Gymnasium Apparatus

Whether you need only a single item of gym apparatus... or all the physical-fitness equipment required to completely furnish the largest modern gym... you can get it from Medart. For here is the Only Complete Single Source In The World!

Here is equipment reflecting an international reputation for skillful design and the finest of materials and craftsmanship. Here is quality equipment that has won coveted acceptance and approval from thousands of leading schools and colleges, the Olympics and the greatest of championship meets. Here is equipment that has never been surpassed in value, in serviceability, or in precise conformance to Official standards.

If it is your responsibility to recommend or buy gymnasium equipment... or, if you are concerned in the modernization, planning, building or furnishing of a gymnasium... it will be to your advantage to consult with Medart. Nearly 80 years of experience is at your service without obligation.

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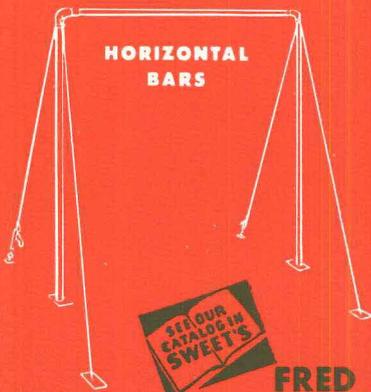
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TYPICAL EQUIPMENT IN THE MEDART LINE

- Climbing Poles & Ladders
 - Boxing Rings & Bag Supports
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 - Anthropometric Equipment
 - Football Scoreboards
 - Basketball Scoreboards
 - Telescopic Gym Seats
- Stall Bars
 - Resistance Machines
 - Rowing Machines
 - Pulley Weights
 - Mats & Mat Trucks
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 - Lockers
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... plus many other items not illustrated or listed here.



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Telescopic Gym Seats

Lockers & Wire Basket Shelving

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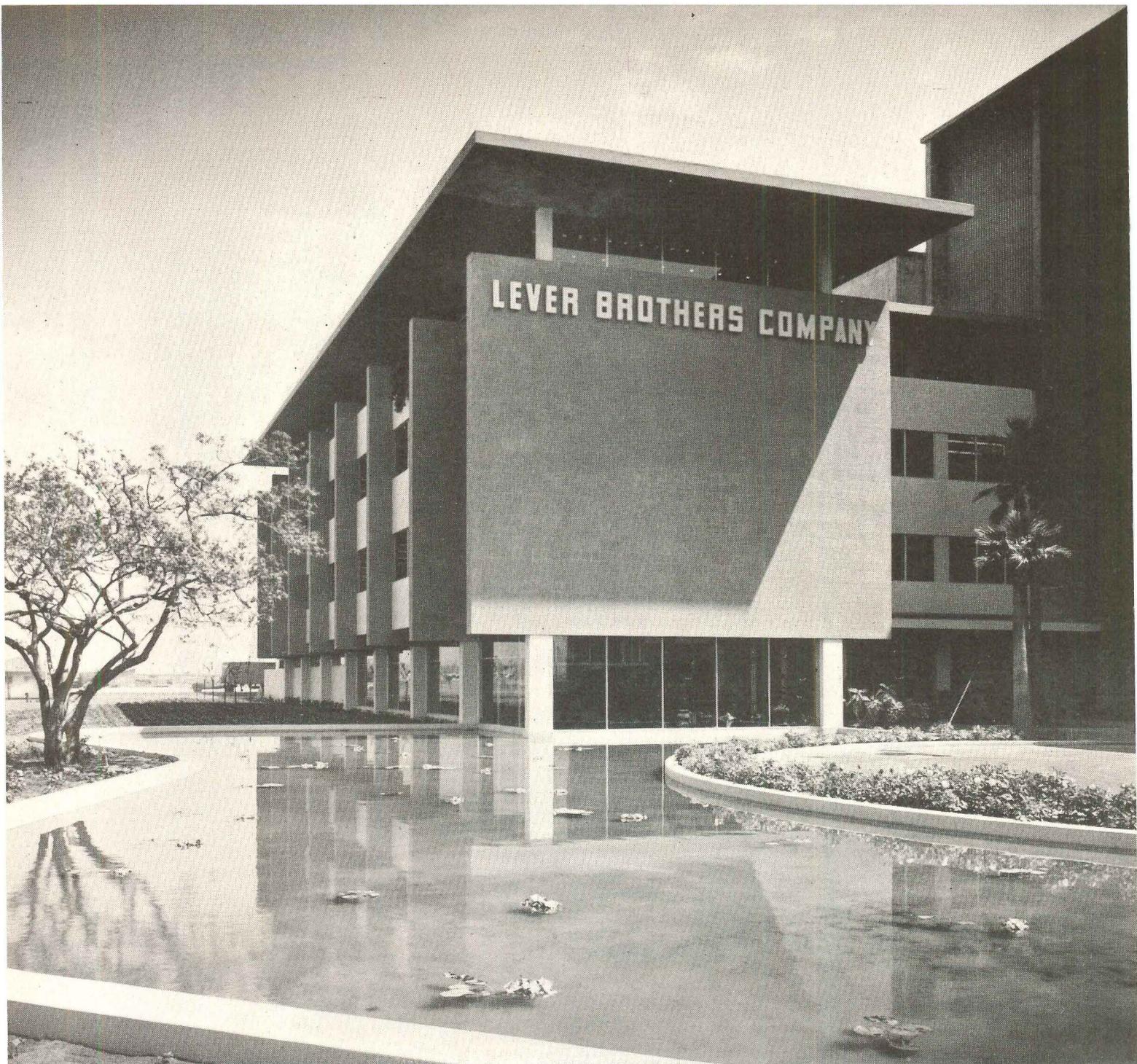
Basketball Backstops

Physical Fitness Apparatus

Basketball & Football Scoreboards

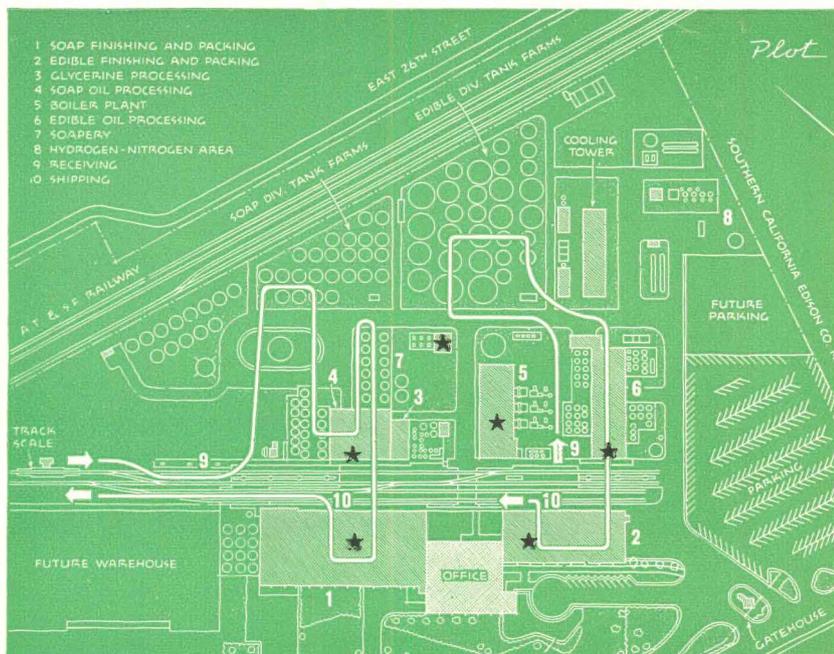
Physical Therapy Equipment

World's Only Complete Single Source For Gymnasium Equipment



Office building of the new Lever Brothers plant, Los Angeles, California, reflects the trend of today's industrial design.

★ Six Westinghouse Power Centers, spotted in black, are the heart of the plant's electrical distribution system which provides reliable service under all conditions.



They matched modern plant design with modern power distribution

This 25-million-dollar Lever Brothers plant incorporates the most modern advances in design, layout and construction methods. And its system for distributing electrical power is as modern as the plant—assuring uninterrupted service under all conditions.

The secondary network system was specified in the early planning days by Bechtel Corporation—the engineers and constructors—with Westinghouse assistance. It contains six interconnected power centers that maintain service even though an electrical disturbance may fault a primary line. Secondary faults are isolated quickly. The ultimate in reliable power is assured.

Early planning has also taken full advantage of the flexibility of factory-assembled Westinghouse Power Centers. These compact, standardized units save valuable space . . . minimize layout problems. Their dry-type transformers permit them to be located safely anywhere

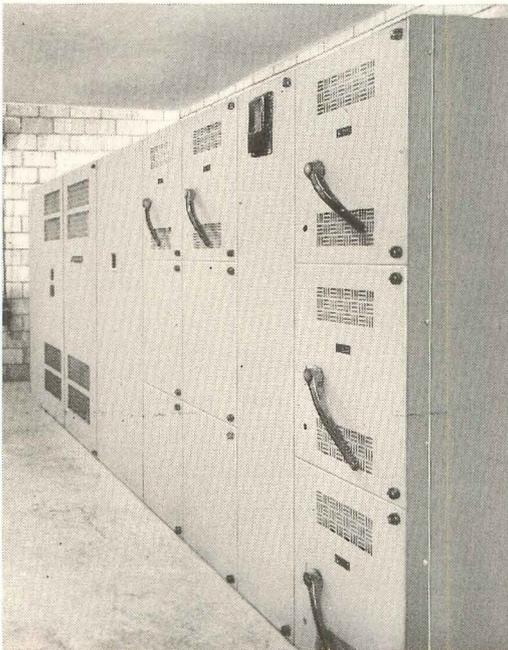
in the plant. Additional units can be added easily, as loads and capacity increase.

CONSIDER THIS: A plant's distribution system is a vital design consideration. It must be planned at the blueprint stage . . . treated as an integral part of the building or expansion program. Today, the power needs of a modern plant require this kind of planning—coupled with completely co-ordinated equipment.

Westinghouse offers you assistance on *both* of these requirements . . . and backs them with years of experience, gained throughout all industry. You benefit by getting more freedom in design techniques . . . by providing your customer with the best system economically possible for *his* plant.

There is one best system of distributing electrical power for *every* plant. Let Westinghouse help you select it on your next job. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-94955

Space problems were minimized with six of these compact Westinghouse ASL Dry-Type Network Power Centers. They are standardized, factory-assembled units . . . can be expanded easily as power needs grow.



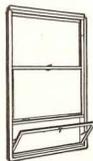
YOU CAN BE SURE... IF IT'S
Westinghouse

SYSTEM PLANNING

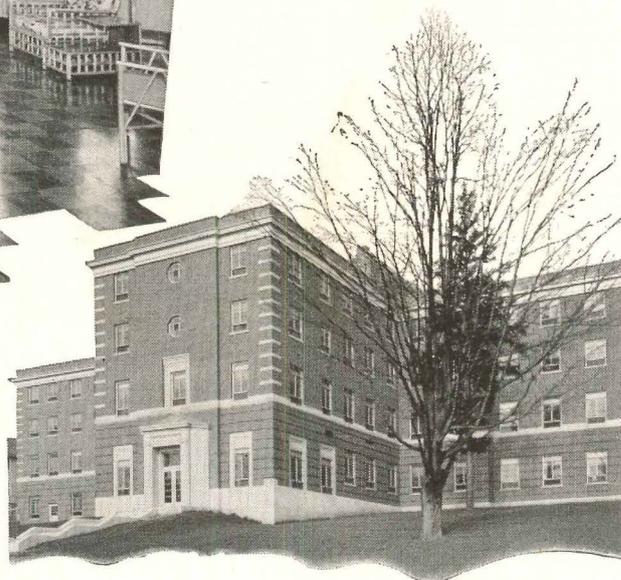


Hospitals are Happier

**with Truscon
Steel Windows**



Truscon Intermediate Casement Combination Steel Windows in the Nurses Home, General Hospital, Lowell, Mass.
James H. Ritchie, Boston, *Architect.*
Volpe Construction Co., Malden, Mass., *Contractors.*

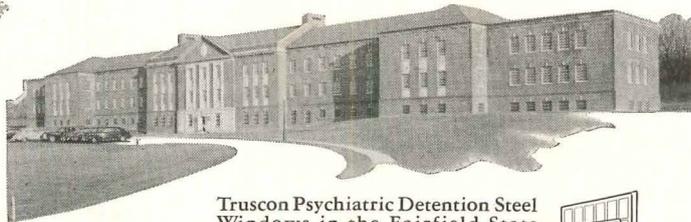
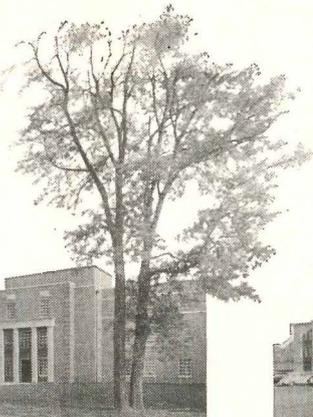


Truscon Series 46 Double-Hung Steel Windows, Truscon Architectural Projected Steel Windows, and Truscon Intermediate Steel Casements in the Youngstown Hospital, North Unit, Youngstown, Ohio. Truscon "O-T" Open Truss Steel Joists and Truscon Reinforcing Bars also used in this structure.
Kling & Frost, *Architects.*
Joseph Bucheit & Sons, *Contractor.*

Truscon Maxim-Air Steel Windows in the Ward and Infirmary Building, Arkansas State Hospital for Nervous Diseases, Benton, Arkansas.



Trapp & Clippard, *Architects.*
Linebarger Construction Company, *Contractors.*



Truscon Psychiatric Detention Steel Windows in the Fairfield State Hospital, Newton, Connecticut.
Adolph J. Adiletta, Bridgeport, Conn., *Architect.*
Fronge Construction Company, Bridgeport, Conn., *Contractors.*



Nature's free sunlight and fresh air are particularly valuable assets to hospitals of all kinds. Make these important hygienic and therapeutic forces fully available to the hospitals, sanitariums and similar institutions now on your boards, by adapting Truscon Steel Windows to their many specific needs. See SWEET's for complete specifications on the entire range of Truscon Steel Windows, and write for free illustrated literature.

TRUSCON® STEEL COMPANY
1062 ALBERT STREET • YOUNGSTOWN 1, OHIO
Subsidiary of Republic Steel Corporation

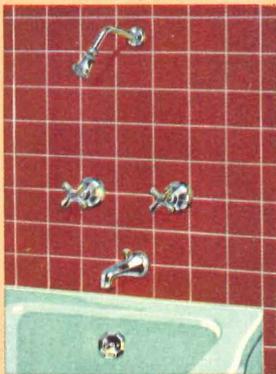


TRUSCON a name you can build on

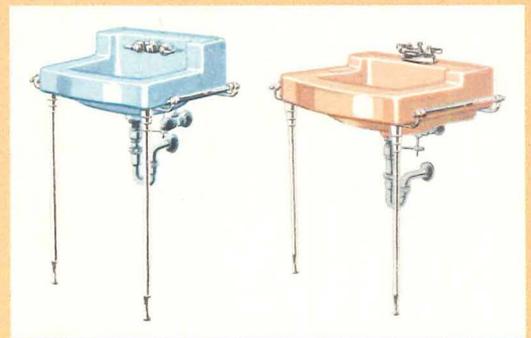


AND BRIGGS FIXTURES OF FORMED STEEL OR VITREOUS CHINA PUT EXTRA VALUE IN ANY HOME!

Yes, it's quality—striking modern beauty combined with proved durability—that sells Briggs Beautyware! Home owners know that they can be proud to have visitors see these luxury-styled plumbing fixtures in their bathrooms. Briggs Beautyware *looks* expensive—recently redesigned and restyled, its smart, new lines and smooth, flowing contours give it an unmistakable mark of quality. Your customers are finding out that the stain-proof, acid-resistant luster of Briggs Beautyware just won't wear off! Dependable Briggs Beautyware fixtures retain that "just like new" look through the years. That's why they're first choice among discriminating home owners everywhere. Cash in on the established sales appeal of Briggs Beautyware!



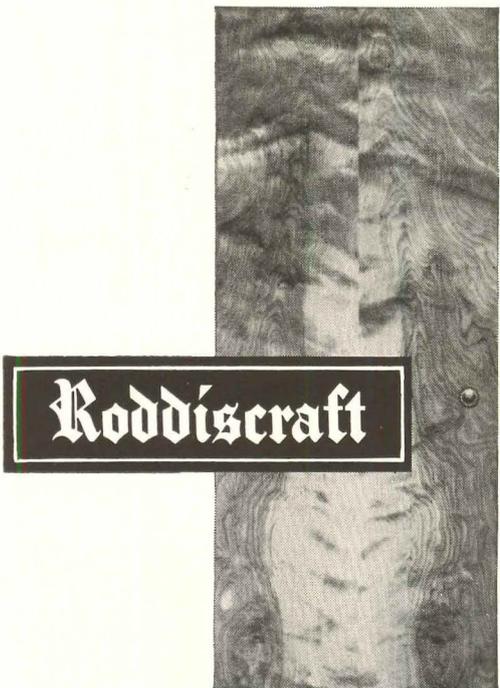
The high quality of Briggs Beautyware chromium plated brass fittings has long been well known throughout the plumbing ware industry. Like every other feature of nationally advertised Briggs Beautyware, these fittings are today maintained at the same high level of workmanship which has always distinguished them.



Briggs Beautyware vitreous china lavatories are built to the same exacting specifications that have been traditional with Briggs fixtures from the very start. Briggs is proud that any modifications in its products have always been made with the object of *improving* them. This basic Briggs policy is unchanged today.

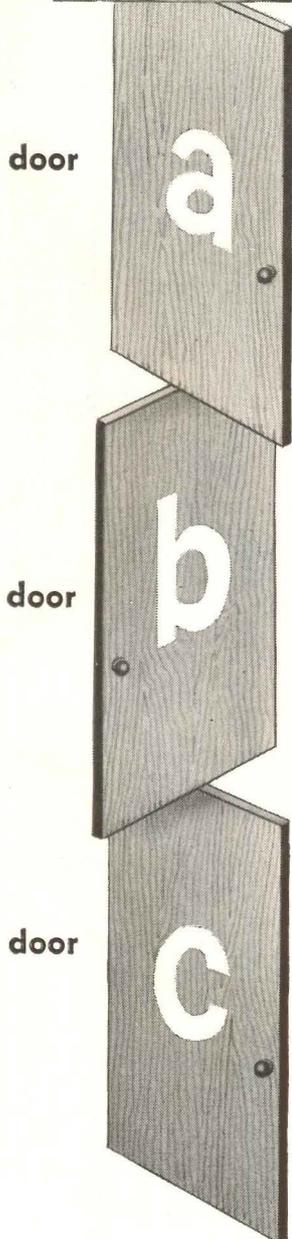


Closets, too, are the finest that Briggs has ever manufactured. Engineered for speedy, efficient installation, these sturdy fixtures have proved themselves trouble-free in thousands of American homes.



Roddiscraft

Top Door
in a preference poll



RODDISCRAFT Flush Doors are preferred by architects nearly 2 to 1 over the second-choice door, according to recent surveys.

Such leadership imposes real responsibility—and an obligation to produce quality doors that will merit the continued preference of members of the profession.

Roddiscraft has put quality first for more than sixty years. This policy which has earned the preference of architects today will continue to govern our operations tomorrow.

Roddiscraft

RODDIS PLYWOOD CORPORATION

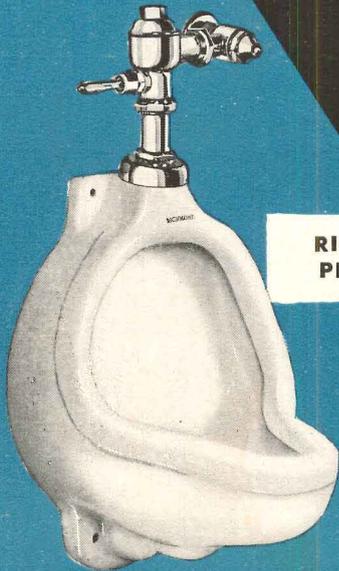
Marshfield, Wisconsin

NATIONWIDE Roddiscraft WAREHOUSE SERVICE

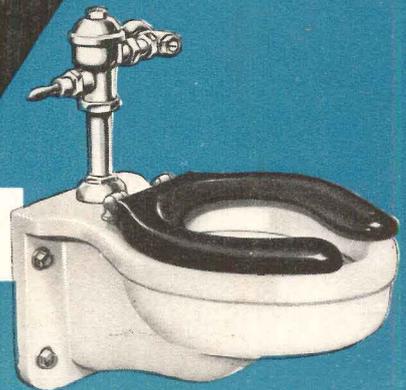
- Cambridge 39, Mass. • Charlotte 6, N. C. • Chicago 32, Ill.
- Cincinnati 2, Ohio • Dallas 10, Texas • Detroit 14, Mich.
- Houston 10, Texas • Kansas City 3, Kan. • Los Angeles 58, Calif.
- Louisville 10, Ky. • Marshfield, Wis. • Miami 38, Fla.
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- Port Newark 5, N. J. • Philadelphia 34, Pa. • St. Louis 16, Mo.
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**RICHMOND BROMLYN
PLATE No. G-705**



**RICHMOND DANA
PLATE No. G-355**



**RICHMOND WINDSOR
PLATE No. G-260**

for today's modern industrial and institutional buildings...

3 new RICHMOND plumbing fixtures

These latest additions to Richmond's fine plumbing line are designed for maximum sanitation, long wear and low maintenance... finished in Richmond "whiter white" for attractive appearance. Such features make them ideally suited for rest rooms and recreation areas in today's schools and hospitals as well as in plants and offices. For any installation, Richmond can furnish plumbing fixtures to fit your requirements in vitreous china and enamel cast iron, acid-resisting or regular enamel, in any of Richmond's modern, lustrous colors.

Richmond Bromlyn—vitreous china wall-hung drinking fountain with shielded anti-squirt bubbler and lever handle. Automatic pressure regulator with flow-control. Waste strainer and 1¼" deep-seal trap to wall with cleanout.

Richmond Dana—vitreous china syphon jet urinal with flush rim, 1¼" OD top inlet, 2" FIP outlet. Acid and stain resistant... wall hung... for thorough sanitation.

Richmond Windsor—wall-hung syphon jet, elongated closet in acid and stain-resistant vitreous china with 1½" top inlet. Available with back inlet-G-263.



RICHMOND

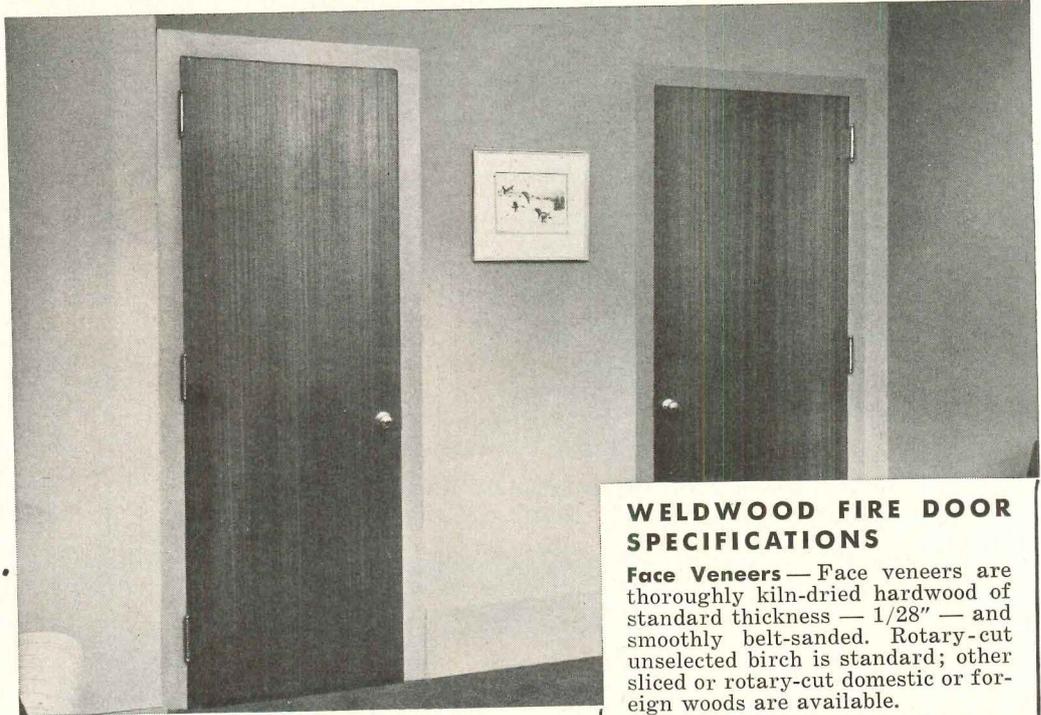
RICHMOND RADIATOR CO.—AFFILIATE OF REYNOLDS METALS CO.

See your wholesaler or Mail Coupon Today:

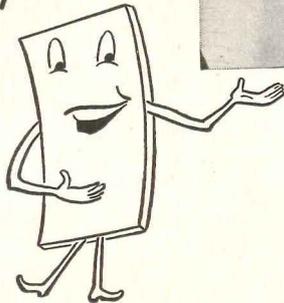
Richmond Radiator Company AR/7
19 East 47th Street, New York 17, New York
Please send me additional information on Richmond fine plumbing fixtures. No obligation, of course.

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We are plumbing wholesalers plumbing contractors building contractors.

African Mahogany Weldwood
Fire Doors used in the offices
of Beatty & Oliver, Inc., 37
Wall Street, New York City.



*"Come in!"
it says to you...*



*"Keep out!"
it says to fire*



WELDWOOD FIRE DOOR SPECIFICATIONS

Face Veneers—Face veneers are thoroughly kiln-dried hardwood of standard thickness — 1/28" — and smoothly belt-sanded. Rotary-cut unselected birch is standard; other sliced or rotary-cut domestic or foreign woods are available.

Core—The core is made of incombustible Kaylo[®] composition, having a normal density of 20 pounds per cubic foot. The core sections are joined together with tongue-and-groove joints, as approved by the Underwriters' Laboratories. The core is smoothly sanded prior to application of crossbands and face veneers.

Banding—The edge banding is of birch, treated with Class "A" fire-proofing agent. The top banding is 1/2" in thickness; the side banding 3/4"; and the bottom banding is 1 1/2" in thickness, made by laminating two 3/4" pieces.

Crossbands—Crossbands are thoroughly kiln-dried hardwood, 1/16" thick, extending the full width of the door.

Adhesives—The core and edge banding are bonded together with a waterproof resin glue. The entire core is sized on two sides to insure perfect glue bond between core and crossband. The core, crossband and face veneer are bonded with waterproof Tego film phenolic glue by the hot plate process.

Sizes—The thickness of all fire doors is 1 3/4". Available in range of standard sizes up to and including 4' by 7'.

Vision Panel—If required, a vision panel frame for a 10" x 10" light (only size available) shall be provided carton-packed and complete with screws. A baked finish of light brown metal paint is provided on all surfaces. Glazing with 1/4" wire glass shall be done by others.

*T. M. Reg. Owens-Illinois Glass Co.



...The Weldwood[®] Fire Door

Visitors feel right at home when greeted by the soft, friendly beauty of Weldwood Fire Doors.

But these doors also present a tough, *keep out* attitude where fire and heat are concerned.

With Weldwood Fire Doors on the job, *no* fire can spread should it break out in any office.

And if fire should invade from elsewhere, the Weldwood Fire Doors, with their remarkable mineral core, stand ready to give the kind of protection that earned them the hard-to-get Underwriters' Label.

So be sure your buildings have this protection.

Also, remember the Weldwood Stay-Strate Door where a labeled door is not necessary, but where fire resistance is a desired advantage.

The Weldwood Stay-Strate Door is available in the same wide range of beautiful hardwood faces as the Weldwood Fire Door . . . and offers the same advantages except that the edge banding is not fireproofed.

Like the Weldwood Fire Door, it has striking beauty...unusually light weight . . . exceptional stability . . . extraordinary durability . . . and is proof against rot, vermin and decay.

Send for complete information about both of these Weldwood Flush Doors today.

United States Plywood Corporation carries the most complete line of flush doors on the market including the famous Weldwood Fire Doors, Weldwood Stay-Strate Doors, Weldwood Honeycomb Doors, Mengel Hollow-core Doors, Mengel and Algoma Lumber Core Doors, 1 3/8" and 1 3/4" with a variety of both foreign and domestic face veneers.

WELDWOOD[®] FLUSH DOORS

Manufactured and distributed by

UNITED STATES PLYWOOD CORPORATION

55 West 44th Street, New York 18, N. Y.

Branches in Principal Cities • Distributing Units in Chief Trading Areas
Dealers Everywhere

Get the "Big 6" in your "specs"!



New ILG "PRV" power roof ventilators

- 1 **SELF-COOLED MOTOR**—pressure ventilated with clean, cool, outside air—reduces solar heat load—cooler operation results in longer life, lower maintenance. Direct-drive—no belts, no pulleys to waste power and increase maintenance costs.
- 2 **CENTRIFUGAL FAN TYPE**—with backward curved blades. No possibility of motor overload at any capacity over complete range of pressure delivery.
- 3 **INLET CONE**—specially designed to equalize inlet velocities and eliminate eddy currents, thus contributing to quiet operation and improved operating efficiency.
- 4 **PRACTICALLY NO CURBING**—self-contained base assembly eliminates extra cost of expensive high curbing commonly required—also cost of installing air control accessories on the job.
- 5 **BIRD SCREENING** is furnished as standard equipment on ILG "PRV" Power Roof Ventilators. No "extra" charges to throw your costs out of line!
- 6 **ACCESSIBLE AIR CONTROLLERS**—gravity or motor operated shutter, or manually or motor operated air controller slides out on tracks for easy adjustment or servicing.

These are only six of dozens of new features. Get the complete story from our nearby Branch Office (consult classified directory) or send coupon today.

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TO: P. A. Nichols

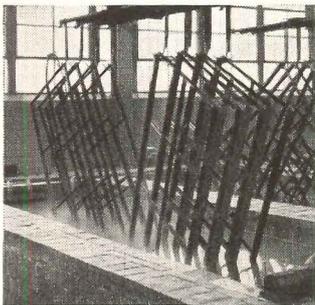
FROM: E. C. Hodges

Phil:

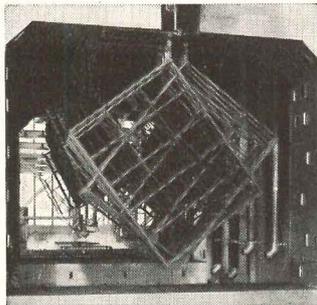
See attached ad on saving thousands of dollars by eliminating window painting with Fenestra Super Hot-Dip Galvanized Steel Windows...Check for the new plant...

Thanks, E.

Now You Can Eliminate Maintenance Painting!



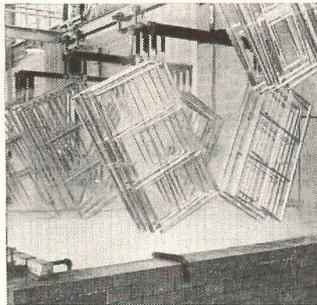
FLUXING. After cleaning, pickling and rinsing, Fenestra Windows dip into a flux bath that provides a film to prevent contamination of the cleaned steel as it passes to galvanizing tank.



DRYING. In this oven, the flux is dried on. Of course, in the galvanizing tank, this protective coat of flux volatilizes on contact with the molten zinc to permit a strong zinc-iron bond.



GALVANIZING. Assemblies dip deep into molten zinc, and come up with a heavy, smooth, uniform coating. Temperature and timing are automatically controlled with laboratory accuracy.



BONDERIZING. Here you see the galvanized assemblies being Bonderized to give the surface a soft silver color and to provide a holding surface for decorative paint, if it is ever desired.

Here's why it will pay you to check, too:

A window painting bill for a typical plant can run around \$3,000 every few years.

The most practical answer to that—and any other window problem—is Fenestra* Super Hot-Dip Galvanized Steel Windows. They are rugged, rigid—and completely protected from rust.

Here's why they are called *Super Galvanized*: Fenestra has developed a Hot-Dip Galvanizing system designed specifically for steel windows, and has built a special plant around it. It is the only one of its kind in America.

Completely automatic controls move Fenestra window assemblies through a series of special tanks where they are cleaned and pickled, rinsed, fluxed, dried, galvanized and Bonderized. Every step is laboratory controlled.

So add Super Hot-Dip Galvanizing to other Fenestra advantages . . . such as integral ventilator butts that increase window strength, precision machining of window bars for perfectly uniform window size, automatic assembly of ventilators for perfect fit, continuous double contact for weather tightness all around vent openings, rigid *interlocking* muntin joints.

And, remember, Fenestra's volume production, permitted by standardization of types and sizes, keeps the cost of Fenestra Windows low.

Call your Fenestra Representative or write Detroit Steel Products Company, Dept. AR-7, 2252 East Grand Boulevard, Detroit 11, Mich.

*®

Fenestra SUPER HOT-DIP GALVANIZED STEEL WINDOWS
from America's first plant especially designed to galvanize steel windows



The direct-process prints and blueprints received from vendors are reproduced on Auto-positive Paper when extra copies are needed for the drafting room or shop. Deletions and additions can be made readily on Auto-positive intermediates . . . saving drafting time.

Drawing Reproduction Revolutionized with Kodagraph Autopositive Paper

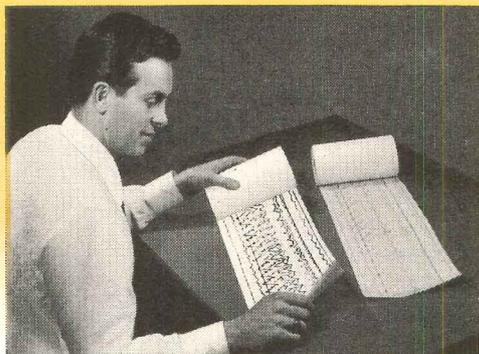
Here are some of the ways Sikorsky Aircraft, Div. of United Aircraft Corp., is using this photographic intermediate material.

There are no limitations now on the types of drawings, prints, or documents which can be reproduced in Sikorsky Aircraft's direct-process machine.

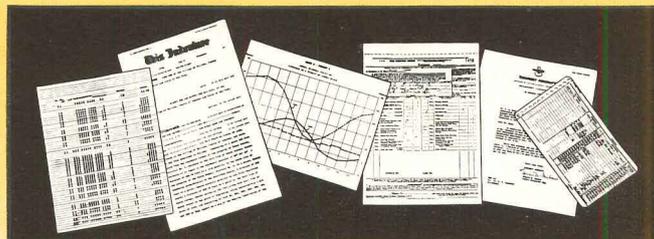
Translucent or opaque—it doesn't matter; even "two-sided" originals can be reproduced on *Kodagraph Autopositive Paper*. And each print is a sparkling intermediate—dense photographic black lines on durable, evenly translucent white paper—*ready* to produce as many direct-process prints as are needed.



How positive photographic intermediates are produced. Kodagraph Autopositive Paper is exposed in Sikorsky's direct-process machine . . . processed in standard photographic solutions. No negative step . . . no darkroom handling—a revolutionary, economical operation that speeds print service to all departments!



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Engineering department reports, charts, letters—documents of every type—are reproduced on Autopositive Paper so that the required number of direct-process prints can be made. A local blueprinter handles the "overflow" demand for Autopositive copies.

Learn how Kodagraph Autopositive Paper is simplifying routines in thousands of concerns. Write today for a free copy of "New Short Cuts and Savings" for interesting facts about companies you know . . . and a revolutionary new product *you should know*.

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Gentlemen: Please send me a free copy of your new illustrated booklet, "New Short Cuts and Savings."

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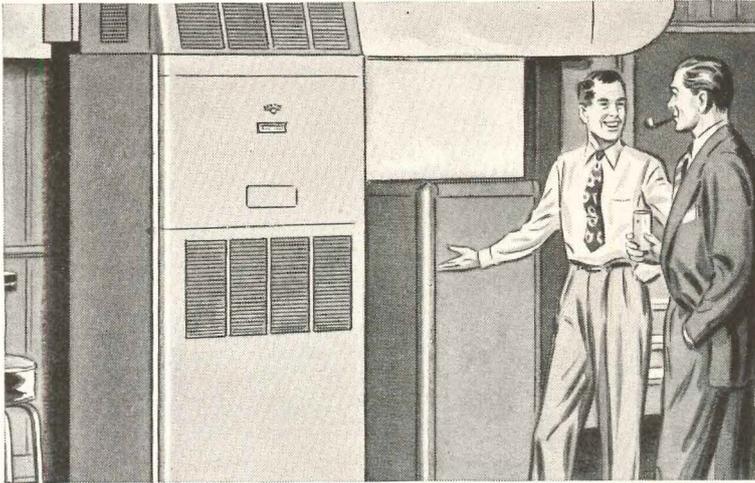
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Kodagraph Autopositive Paper

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in engineering drawing reproduction

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NOW! Summer comfort for any home— at a surprisingly moderate cost!



With hot air heating systems, a Frigidaire Air Conditioner can be placed beside the furnace and connected to the warm air distribution ducts. A damper directs return air to the air conditioner, by-passing the furnace during the summer.



With other heating systems—such as radiant heating—Frigidaire Air Conditioner is installed in a concealed central location. Short ducts lead to the rooms, and cooling for each may be controlled as desired. This plan is ideal for single-story homes.

FRIGIDAIRE Appliances— Refrigeration and Air Conditioning Products

Refrigerators • Electric Ranges • Home Laundry Equipment
Food Freezers • Water Coolers • Electric Water Heaters
Air Conditioning • Commercial Refrigeration Equipment
Electric Dehumidifier

Frigidaire reserves the right to change specifications, or discontinue models, without notice

Frigidaire Self-Contained Units Make Moderately Priced Air Conditioned Homes A Reality!

Yes, it's easy to give new or existing homes the big advantage of air conditioned comfort! One compact, completely self-contained Frigidaire Air Conditioner does the job—furnishes dust-free, dehumidified air at temperatures to suit the season.

Installation cost is remarkably reasonable—even for existing structures. Operating cost is also low, for these Frigidaire-designed and built units give years of thrifty, trouble-free service. 3, 5 and 7½-ton models available.

Look at these important Frigidaire advantages

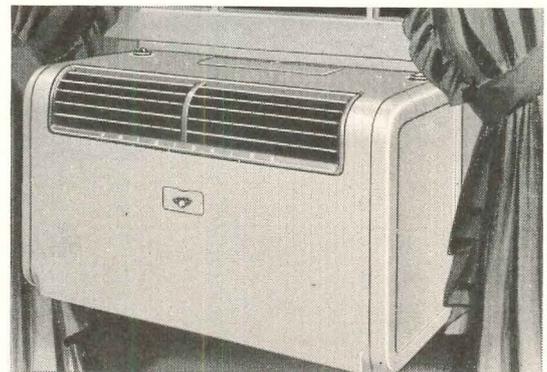
Frigidaire Compressor is famous for its dependability—precision-matched with cooling unit and controls to give years of thrifty, trouble-free service.

5-Year Protection Plan on all models. Includes a 1-year warranty on the entire conditioner and a 5-year warranty on the compressor mechanism, including the motor.

Cleanable filters are scientifically made of expanded aluminum—can easily be taken out and cleaned.

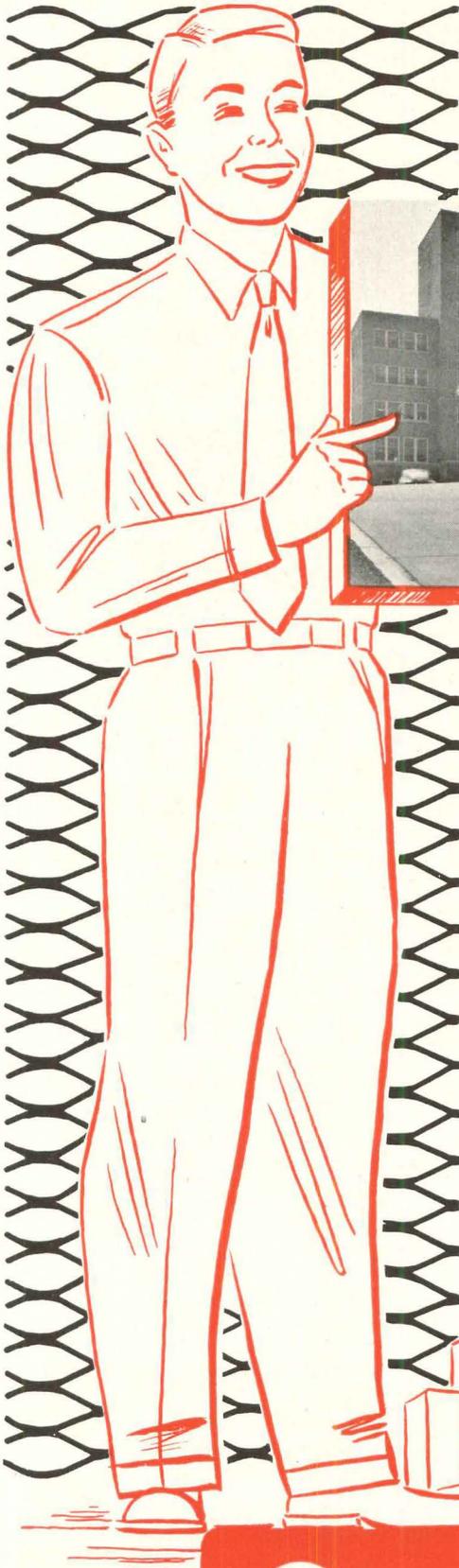
Multipath Cooling Unit assures fast, even cooling.

For full details on home installation of Frigidaire Air Conditioners—as well as their many other applications—call your Frigidaire Dealer. Look for his name in the Yellow Pages of phone book under "Air Conditioning" or "Refrigeration Equipment." See Frigidaire Catalogs in Sweet's Files or write Frigidaire Division of General Motors, Dayton 1, Ohio. In Canada, Leaside (Toronto 17), Ontario.



Frigidaire Room Air Conditioners, in three models, are compact, quiet, need no plumbing, are easy to install. Model ARO-100A (shown) has Automatic Selective Cooling feature.

more meshes per sheet with *Bostwick*
Diamond Mesh Metal Lath

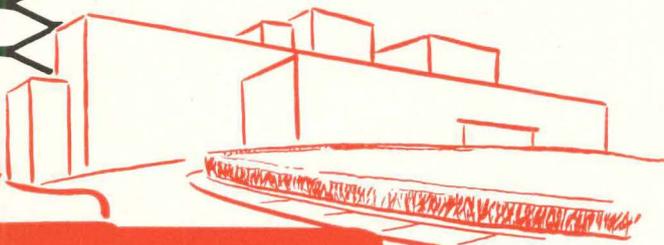


Bostwick METAL LATH
FOR FLEXIBILITY IN DESIGN

● Georgetown Hospital at Washington, D. C., was designed by Kayser, Neal and Reed, Pittsburgh, Pa. As the job progressed from rough preliminary sketches to finished plans and specifications no adjustments in dimensions were required by limitations of the lath or corner bead.

Metal lath has always met the structural, decorative, and functional designs of every decade. That's why Bostwick metal lath has been used in the finest structures for over a half-century.

Hence, when you are down to details on your next job, why don't you investigate Bostwick metal lath, corner bead, casings and accessories. We'll gladly send you specification data.



THE

Bostwick

105 HEATON AVE. • NILES, OHIO

STEEL LATH COMPANY

In modern buildings, the trend

SOLEX HEAT-ABSORBING GLASS was used to glaze the fixed lights of the massive tower section of Lever House in New York City. The second floor section has Solex in the fixed lights, and Solex Herculite in the spandrel lights. Solex assures more comfortable surroundings for employees. It is particularly recommended for southern and western exposures, for it reduces heat and glare; keeps interiors ten to twenty degrees cooler than outside temperature. Architects: Skidmore, Owings and Merrill, New York City.



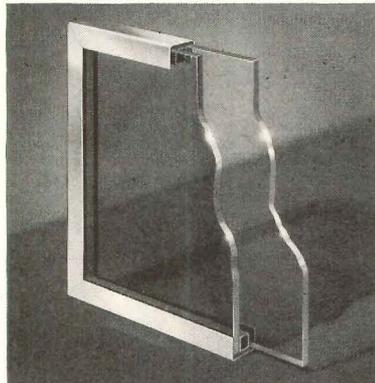
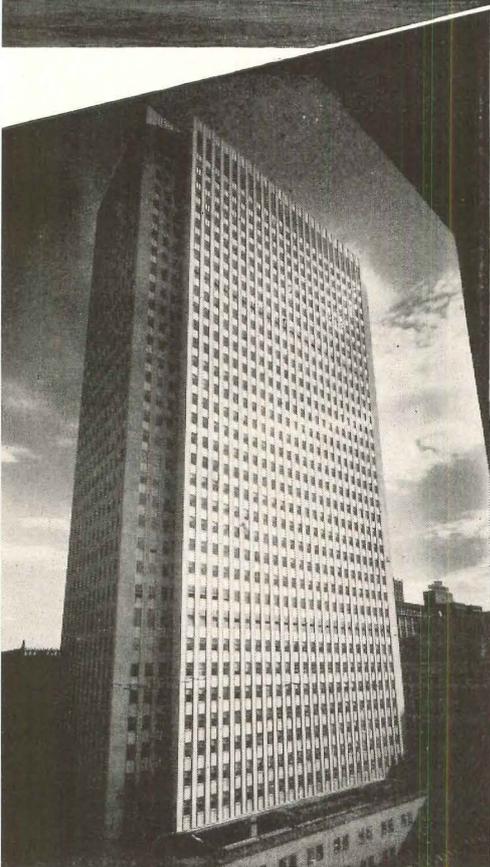
is toward

SOLEX Heat-Absorbing Glass

...*"the best glass under the sun!"*



6550 SOLEX-TWINDOW units were among the substantial number of Pittsburgh Glass products selected for the mammoth Greater Pittsburgh Airport at Pittsburgh, Pa. Solex increases the visibility of distant objects. And when used in Twindow units—with the outer pane of Solex and the inner light of Plate Glass—it forms an insulating window of extreme efficiency. It offers great protection to delicate electronic instruments against excessive temperature variations. Architect: Joseph Hoover, Pittsburgh Pa.



SOLEX-TWINDOW gives all the advantages of Twindow, "the window with built-in insulation," plus a means for reducing the strong heat and brightness of intense sunlight. The sectional view here shows the make-up of this unit. The outer pane is Solex Plate Glass, the inner clear Plate Glass. Between these two panes is a sealed-in air space. The entire unit is enclosed in a stainless steel frame. This protects the seal and glass edges, making handling safer and easier, and cutting installation time.

AT 525 WILLIAM PENN PLACE, in the heart of downtown Pittsburgh, is this new 41-story skyscraper, completely glazed with Solex—"the best glass under the sun!" Solex transmits 70% to 75% of the sun's total light, but admits less than 45% of the total solar heat. Its soft greenish color, almost unnoticeable from inside the room, is easy on the eyes. Solex reduces fading and bleaching of upholstery, draperies, rugs and other fabrics that are normally affected by sunlight. Architects: W. K. Harrison, M. Abramovitz, New York City, and W. Cocken, Pittsburgh, Pa.

Design it better with

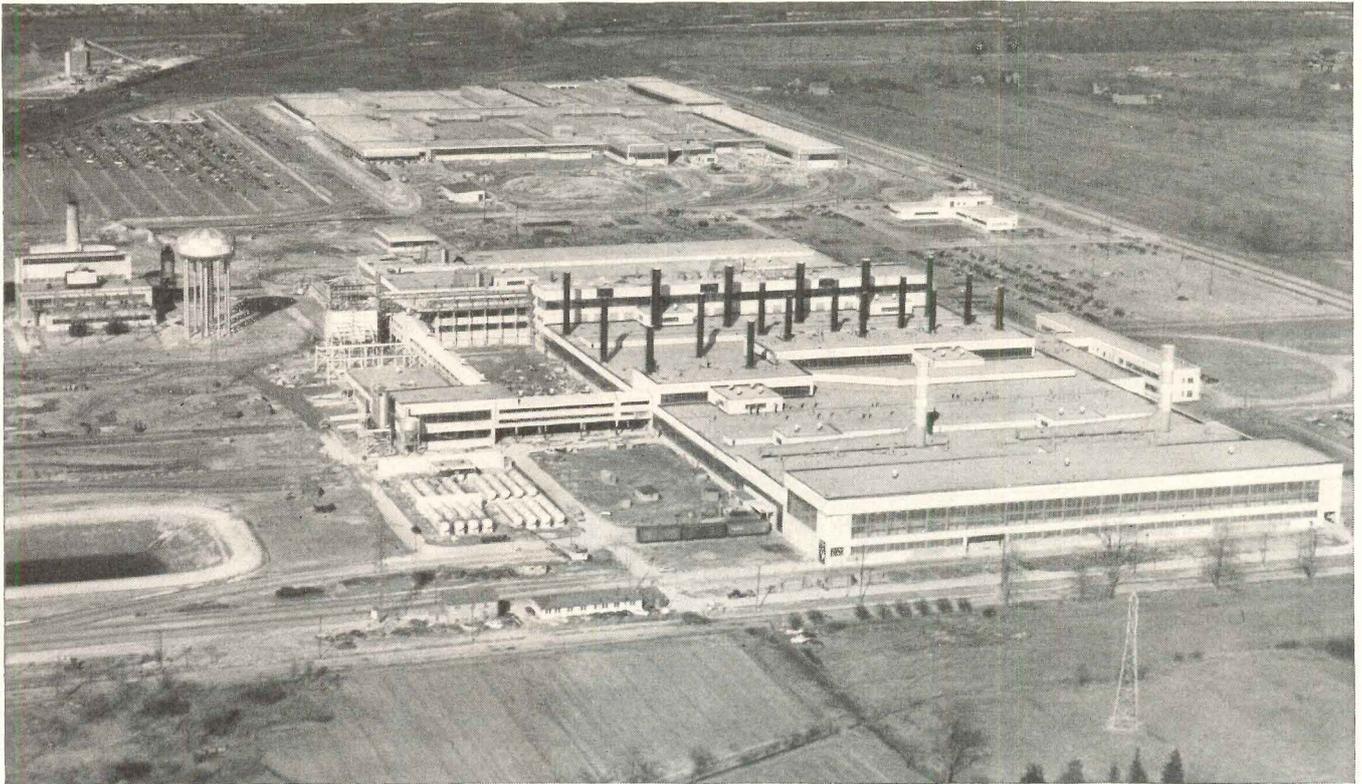
Pittsburgh Glass



Your Sweet's Catalog File contains detailed information on all Pittsburgh Plate Glass Company Products . . . Sections 7a, 13e, 16b, 15, 21.

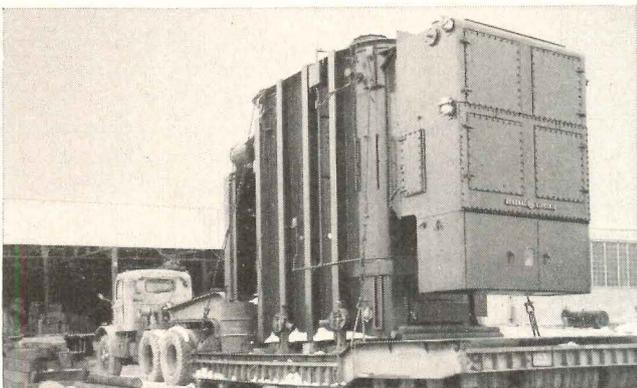
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

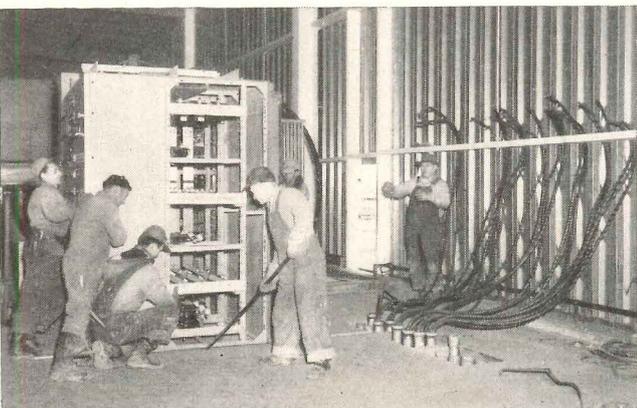


EASY TO SPECIFY AND INSTALL, G-E POWER DISTRIBUTION EQUIPMENT SERVES 1,000,000 SQ FT IN NEW ENGINE PLANT

"Packaged power" speeds Ford expansion



PRE-ENGINEERED to make system design easier, this 35,000-kva transformer is on its way to the plant substation. Use of two units increases dependability of power supply.



EQUIPMENT ARRIVES in unit form for fast installation, to conserve skilled manpower. Here, the switchgear section of a load-center unit substation is moved into position.

Pre-engineered components save months on design and installation of power system for new plant

Use of many automatic machines and processes in the new Ford Motor Co. engine plant near Cleveland means a heavy power demand. That made planning, selection, and installation of the power distribution system one of the most important phases of plant construction.

Ford, and Hatfield Electric Co. electrical contractors, saved months of engineering and installation time by selecting a power system made up of G-E equipment. Here's how: (1) co-ordinated systems are readily designed using pre-engineered G-E components, (2) "packaged" G-E equipment is quickly installed and connected, and (3) lost time involved in "piecemeal" systems is eliminated since we co-ordinate manufacture and shipment of system components.

You can save time and money on industrial plant electrification by specifying user-preferred G-E equipment. And our engineers are ready to assist in such planning and design. Besides power distribution, they'll help on outdoor lighting and electric drives for plant service systems. Contact your G-E Apparatus Sales Office early in the planning. General Electric Co., Schenectady 5, N. Y.

665-117B

**Engineered Electrical Systems
for Industrial Plants**

GENERAL  ELECTRIC

DISASTER *averted by*

FIRESTOP BESTWALL®

FIRE CONFINED TO TWO BATHS IN HUGE HOUSING PROJECT

A vicious fire raged for over an hour in a small area of the Susan B. Clayton Housing Development in Houston, Texas.

But it could not break through the FIRESTOP Bestwall barrier.

The unretouched photos tell the story. According to FPHA authorities, FIRESTOP Bestwall "saved the entire building from being a total loss."

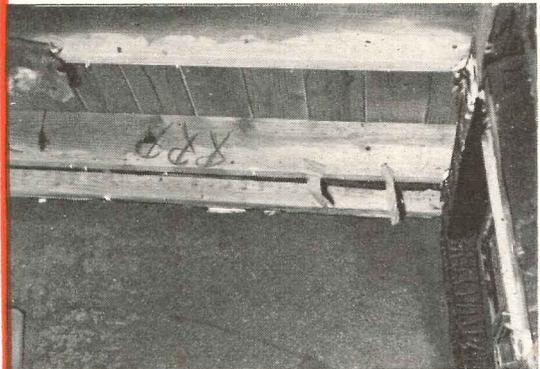
FIRESTOP Bestwall, considered by many as the greatest improvement in gypsum wallboard history, offers up to 1 hour resistance for walls and ceilings.

This amazing gypsum product far outclasses any ordinary wallboard. Besides its superior fire resistance, FIRESTOP has greater structural strength and better sound-deadening characteristics. It is the one and only wallboard carrying the mark of Underwriters Laboratories (UL) Re-examination Service.

"Facts about FIRESTOP" is yours for the asking. It contains complete information on fire resistance and other characteristics of this remarkable development.



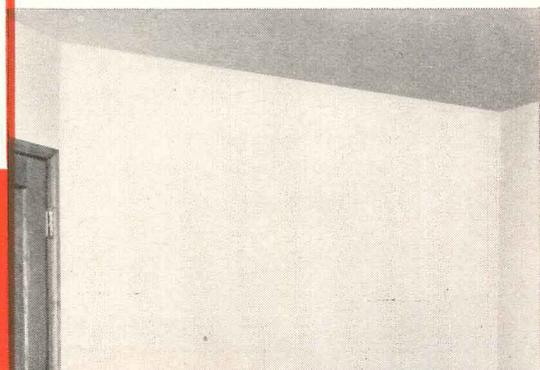
Right foreground shows section where firemen broke through FIRESTOP during blaze. Charred side of wooden stud is the result. Then compare remaining undamaged studs between the FIRESTOP wallboards. Wallboards were broken away after fire to show undamaged condition.



FIRESTOP Bestwall was removed from overhead wooden beams after the fire to show their undamaged condition. Note that walls above tiling remained intact though severely burned.



Nowhere has fire broken through the wall, although the tile panels are blistered.



The FIRESTOP wall adjacent to bathroom remains intact and undamaged. On other adjacent walls the intense heat blackened the nailheads, but FIRESTOP Bestwall remained undamaged.



Certain-teed

REG. U.S. PAT. OFF.

Quality made Certain . . . Satisfaction Guaranteed

CERTAIN-TEED PRODUCTS CORPORATION

ARDMORE, PENNSYLVANIA

EXPORT DEPARTMENT: 100 East 42nd St., New York 17, N.Y.

... "improved
overhead doors" ...



Barcol OVERdoors

Attractive Appearance **PLUS**

Special design sections to match the architectural theme will make Barcol OVERdoors an *attractive* part of the house. In the mechanism, a pair of tailored springs provide *easy working* through accurate counterbalancing. Ball bearing rollers and other friction-reducing devices add to *easy working*. An exclusive cam closing action insures *no sticking* of the door, through its free-running operation, and also is principally responsible for snug and *weathertight closing* all around the frame. Finally, *long life* is achieved by good engineering, well-made parts with plated finish, and skilled installation.

**MECHANICAL FEATURES THAT
PROVIDE...**

EASY WORKING

NO STICKING

**WEATHERTIGHT
CLOSING**

LONG LIFE

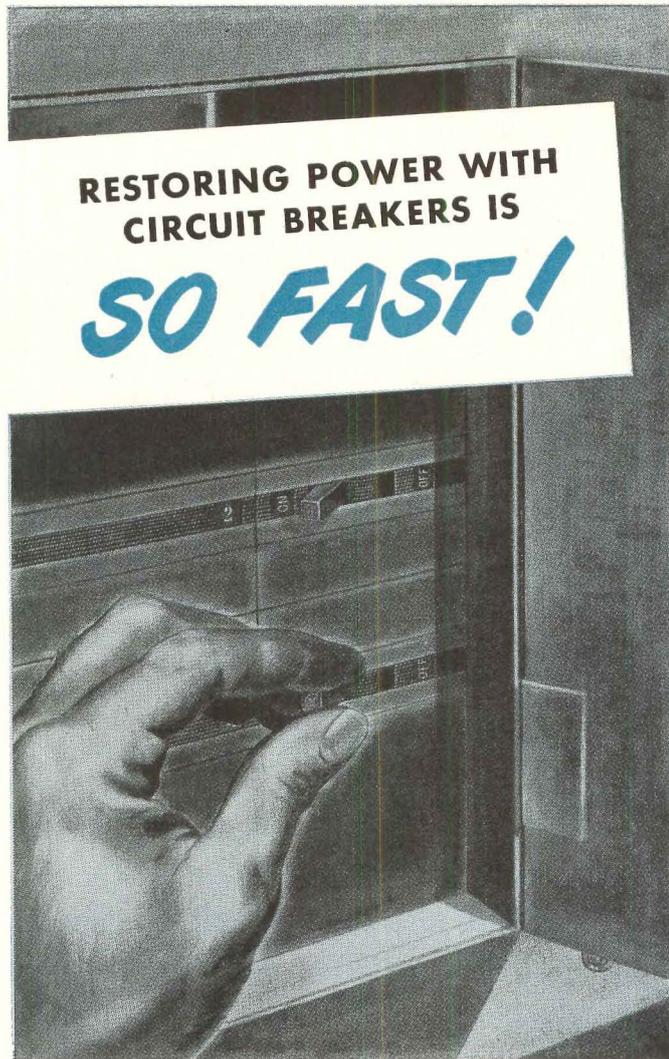


FACTORY-TRAINED SALES AND SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

BARBER-COLMAN COMPANY

102 MILL ST., ROCKFORD, ILLINOIS

Save with **SAFER...SURER**
AB BREAKERS



The blow that often hurts worse than a power outage is inability to get back into production. With one investment you can have reliable circuit control and protection, and help in eliminating road blocks to capacity production—with Westinghouse Circuit Breakers.

On short circuits, Westinghouse Breakers trip instantly, yet provide a time lag on temporary, harmless overloads to minimize circuit interruptions. As soon as trouble is cleared on the line, flip the handle back to "on" position and power is restored—just as quick as that. No need to chase fuses, no costly maintenance time to install them. In addition, Westinghouse Breakers are

tamperproof—provide you dependable protection for years and years without attention.

Westinghouse has a complete line of Circuit Breakers for industrial and commercial applications in ratings from 5 through 600 amperes. For complete information, call your nearest Westinghouse office, or write for Bulletin D. B. 29-060, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

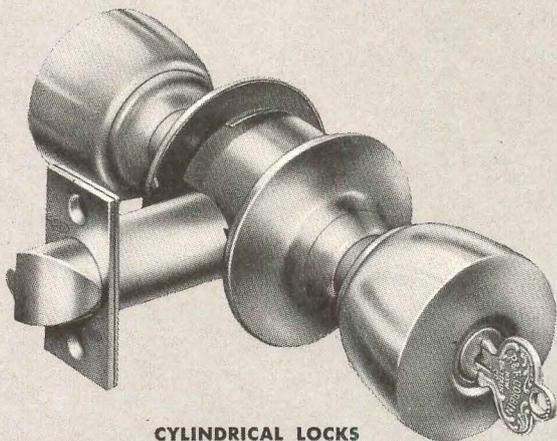
J-30052



YOU CAN BE **SURE..** IF IT'S
Westinghouse
AB CIRCUIT BREAKERS
THE COMPLETE LINE

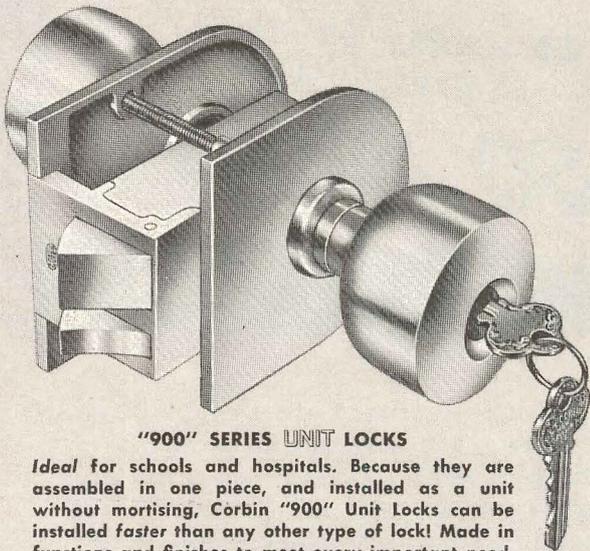


PRODUCTS LIKE THESE



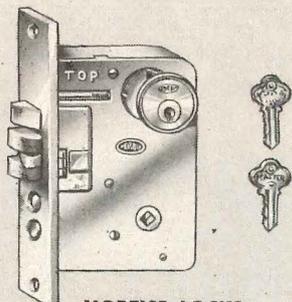
CYLINDRICAL LOCKS

For every type of construction. Heavy-Duty, with extra-quality features, including $\frac{5}{8}$ inch throw and the famous smooth-working, long-lasting roll-back Corbin latch principle. 100% reversible. Made in 13 most-used functions.



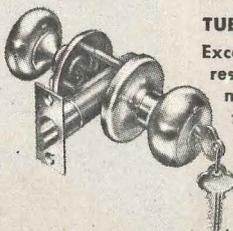
"900" SERIES UNIT LOCKS

Ideal for schools and hospitals. Because they are assembled in one piece, and installed as a unit without mortising, Corbin "900" Unit Locks can be installed faster than any other type of lock! Made in functions and finishes to meet every important need.



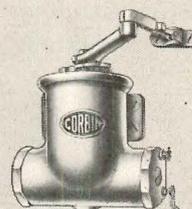
MORTISE LOCKS

Made in a variety of functions and weights for every requirement. Can be master-keyed with other Corbin cylinder locks.



TUBULAR LOCKS

Excellent for use in residences and apartments. Corbin time-tested pin tumbler security at low cost. Functions for every residential door.



DOOR CLOSERS

Can be used on right or left-hand doors. Adjustable hold-open attachments available. Made in six sizes and all popular finishes.

... make **CORBIN** the world's

For convenience . . . for unsurpassed economy and satisfaction for your clients, it pays to base your specifications on the *complete* line of Corbin locks and builders' hardware. Take locks, for instance. Because Corbin manufactures *every major type of lock*, you are never limited in choice. You can switch from type to type *as requirements vary*. Yet all locks can be master-keyed as needed and harmonious in design. No need for costly over-specification or inadequate under-specification here! In addition, Corbin offers *all* the hardware to equip a building . . . plus experienced representatives whose up-to-date knowledge can be of invaluable help to you.

P. & F. Corbin DIVISION

The American Hardware Corporation
New Britain, Connecticut, U.S.A.

.. and **MEN LIKE THESE!**

*most widely used
builders' hardware*

FOR AUTHORITATIVE ASSISTANCE, CALL YOUR CORBIN REPRESENTATIVE

Years of close contact with the hardware and lock problems which confront architects and engineers have made these Corbin consultants among the top men in their field. There's a Corbin representative of similar high calibre in your locality who will gladly work with you in the selection of builders' hardware. Put his experience and integrity to work for *you* when plans reach the specification stage!

GOOD BUILDINGS DESERVE GOOD HARDWARE



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An up-to-date, abbreviated version of the Corbin Catalog, revised to meet today's unique conditions, is now available. Ask your Corbin distributor for your copy today.



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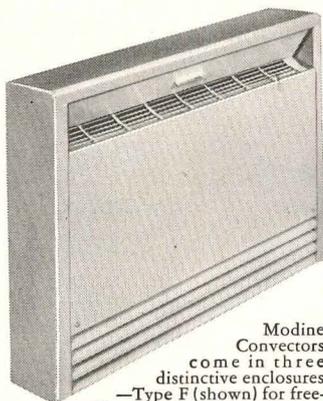
MR. L. E. NELSON,
L. E. Nelson & Son,
Omaha, Nebraska

Cleveland's Shaker Towers chooses MODINE

780 Modine Convectors provide individual room comfort for 92 suites. Architect: Joseph Ceruti. General Contractor: Roediger Construction Co. Heating Contractor: Spohn Heating & Ventilating Co.



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

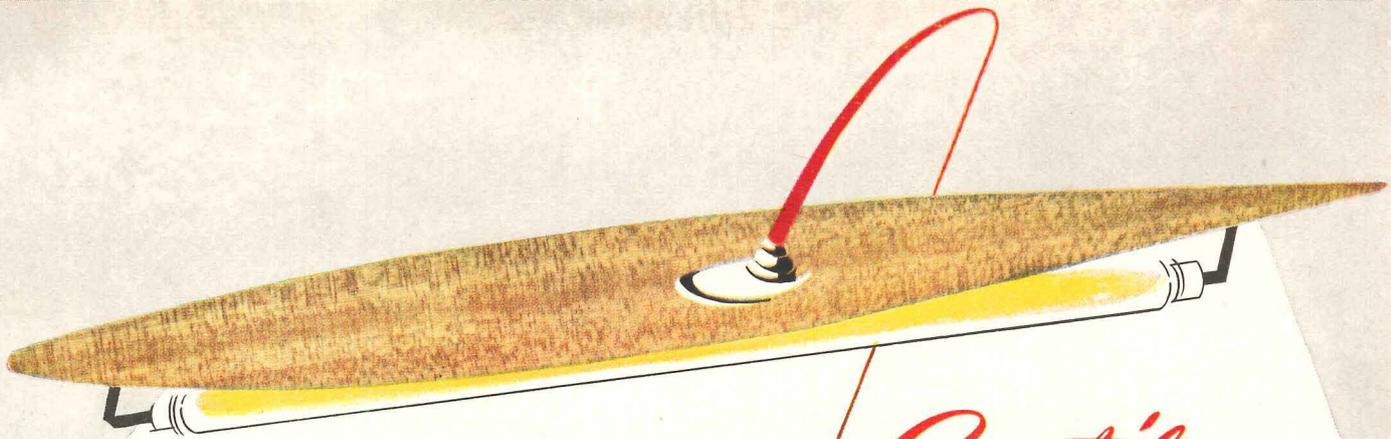


Modine Convectors come in three distinctive enclosures —Type F (shown) for free-standing or recessed installation, Types W and S for wall-hanging.

Today, superior heating performance must be teamed with subtle styling and long-life construction. On all counts, Modine Convectors meet the most 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 Avenue, Racine, Wisconsin.

***Modine* CONVECTORS**

R-1134



Ceratile

**unique new
beauty treatment
for home
interiors!**

There is something *really* NEW in tile.

It's Ceratile—a real clay tile with a soft, fabric-like texture in tones, shades and hues never before possible in ceramic tile.

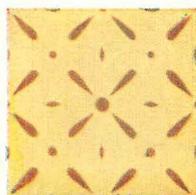
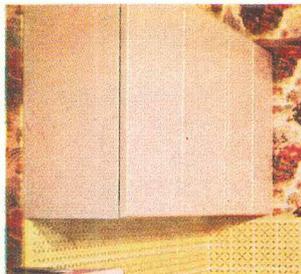
The 34 current designs are your newest means of giving new life and beauty to bathrooms, kitchens, foyers, playrooms and decorative areas, or any other place you desire. In fact, the only thing

old about Ceratile is its wonderful practicability.

The beauty treatment you prescribe for today's and tomorrow's homes will endure for generations.



This tile is CORAL
In 4 1/4" or 6" tiles



This is BUTTER PRINT
In 4 1/4" tiles only



What you see here only approximates the true beauty and color of Ceratile. Until you can see the real thing, write for address of Ceratile dealer nearest you, and for full-color brochure showing 34 patterns of Ceratile available for immediate delivery. Custom patterns, to your order, also available as production schedules permit. Ceratile can be frostproofed for exterior use in freezing climates. Address requests to Dept. AR-7.

THE CAMBRIDGE TILE MFG. CO.

Authorized Distributors of Ceratile
P. O. Box 71, Cincinnati 15, Ohio

WEST COAST OFFICES

- The Cambridge Tile Mfg. Co., 470 Alabama Street, San Francisco 10, California
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Architect Albert Anis specified

ALL ALUMINUM MIAMI AWNING WINDOWS

for the Surfside Plaza, Miami Beach

Problem: *to convert the 25 year old Surfside Plaza building into a modern hotel in keeping with the current trend of newly constructed hotel buildings.*

Solution: *"The most important element of such a change was to provide modern windows with the thought of architectural beauty as well as perfection in construction in daily operation of such windows"*

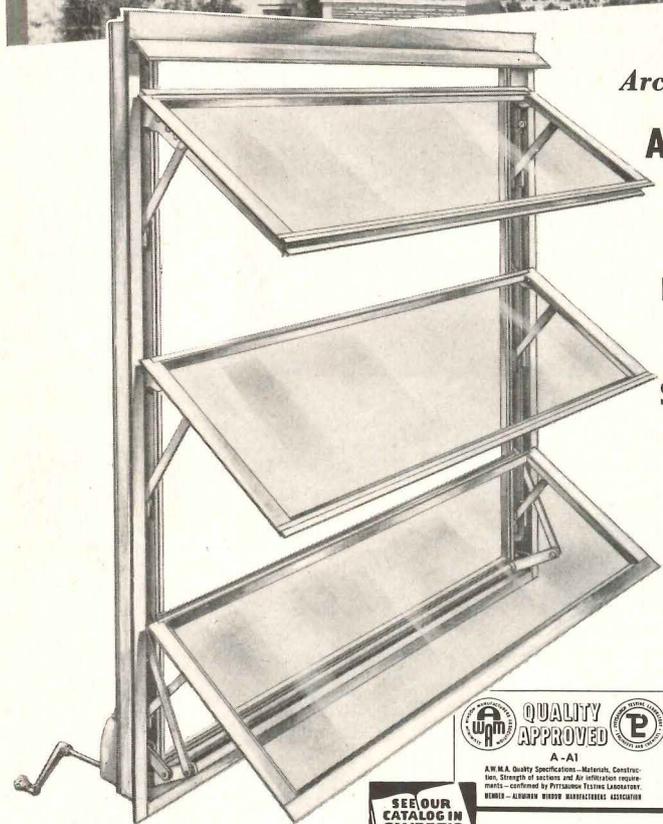
Specify the all-aluminum Miami Awning Window for homes, hospitals, schools, and office buildings.

Air Infiltration Tests Taken by Pittsburgh Testing Laboratories

* Constructed from extra heavy aluminum alloy sections (63-ST5). Both sides of vent sections are actuated with equal pressure through a patented, concealed torque shaft allowing easy, balanced opening and closing.

* Plastic weather-stripping optional.

* Available for immediate shipment.



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For further information, see Sweet's Architectural File ^{17A}/_{Mt} or—write, wire or phone Miami Window Corp., Dept. AR-7.



MIAMI WINDOW CORPORATION

5200 N. W. 37th Avenue, Miami 42, Florida

4850 Schlage Locks stand watch on the superb, new S. S. United States



U. S. LINES AGAIN CHOOSES SCHLAGE LOCKS

Locks face their most grueling tests aboard ship. Sea duty subjects locks to everlasting motion during every minute of every voyage, and to the continuing corrosive action of damp salt air.

During 12 years of this rigorous service on the S.S. America, Schlage Locks have proven their ruggedness and

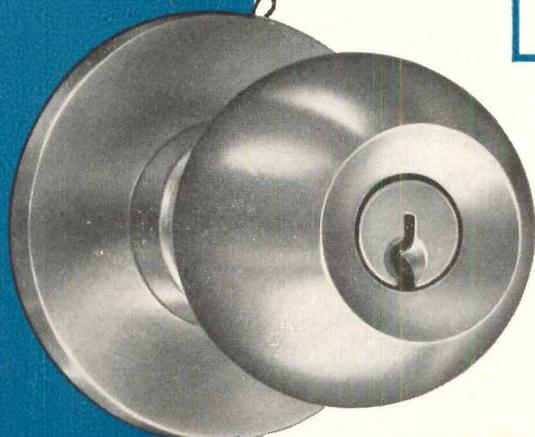
their extreme resistance to corrosion. Now, U. S. Lines has again selected the time-proven Schlage Lock for use throughout the magnificent, new S.S. United States.

Schlage Locks for commercial buildings and residences have the same type of durable mechanism as the locks used on the S.S. United States.

| FACTS ABOUT THE S. S. UNITED STATES | | | |
|--|---------------|--|--------------|
| THE LARGEST SHIP EVER BUILT IN THE UNITED STATES | | | |
| Length | 990' | Gross tonnage | Over 50,000 |
| Beam | 101'6" | Total passengers . . | 2,000 |
| Depth: Keel to top of forward funnel . . | 175' | Total crew | 1,000 |
| Number of decks . . | 12 | Estimated cost | \$70,000,000 |
| Speed | 30 knots plus | Builders: Newport News Shipbuilding and Dry Dock Co. | |

Schlage Saturn Design in Luster Sealed* Aluminum is used throughout the S.S. United States

*Luster-Sealed Aluminum, treated with Alcoa's alumilite process, permanently resists corrosion and needs no polishing . . . ever!



SCHLAGE®

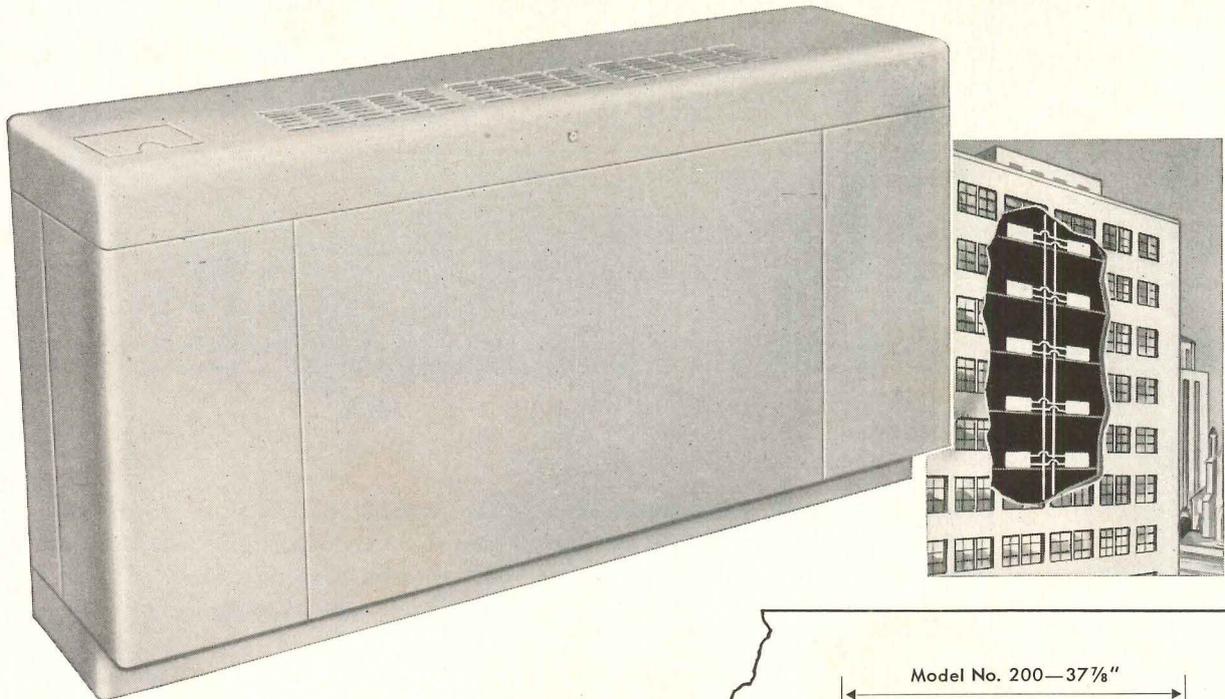
THE TIME-PROVEN CYLINDRICAL LOCK

Schlage Lock Company, San Francisco, California
SCHLAGE LOCK COMPANY OF CANADA, LTD., VANCOUVER, B. C.

THE REMOTAIRE by AMERICAN-Standard

... a new remote type room conditioner for multi-room installations ...

HEATS IN WINTER...COOLS IN SUMMER



● Here's year 'round comfort-conditioning for such multi-room installations as hotels, motels, office buildings, hospitals, apartments and residences.

The Remotaire uses chilled or heated water supplied through a simple piping system from a remotely located central water chiller and heating plant. Designed for location under windows, the Remotaire can be free standing or recessed into the wall 4 inches.

Individual control of each unit allows the occupant to choose the room temperature that suits him best without affecting adjoining spaces.

The Remotaire is provided with an arrangement for introducing ventilation air through a wall aperture. However, ventilation air may be supplied by several other methods if desired.

Whether for modernization of an existing building, or in the planning of a new building, put this quality remote type room conditioner to work in the buildings *you* plan. For further information, send for descriptive literature—Form 298.



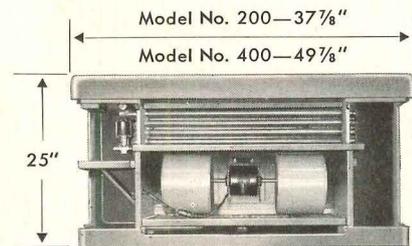
American Radiator & Standard Sanitary Corporation,
Dept. AR-72, Pittsburgh, Pa.

AMERICAN-Standard
HEATING-COOLING



Serving home and industry

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



THE REMOTAIRE IS SMARTLY STYLED, STURDILY CONSTRUCTED. All surfaces of the heavy-gauge furniture steel cabinet are bonderized and finished with a baked-on gray semi-gloss enamel.

IT'S EASY TO INSTALL . . . in both old and new buildings. Ventilation air can be introduced through a wall aperture or by several other methods if desired. Piping and electrical connections are easily made in spacious end compartments.

IT'S SIMPLE TO OPERATE . . . Individual control of each unit allows the occupant to choose the room temperature that suits him best without affecting adjoining spaces. Room ventilation can be adjusted with the fresh air damper located in each unit.

EASY TO CLEAN AROUND. The cabinet is designed with toe-step offset . . . allows maximum cleanliness of floor (and eliminates unsightly return air grille).

FLEXIBLE INSTALLATION. Coil is designed for either right or left hand connections and can be easily reversed in the field if necessary. Spacious end compartments with removable end panels provide ease of installation and allow more than a 90° horizontal wrench swing.

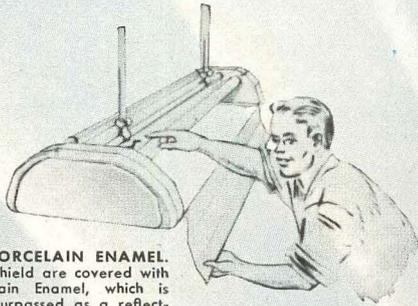
now, a new high in seeing comfort
through sensationally-increased

UPWARD LIGHT...

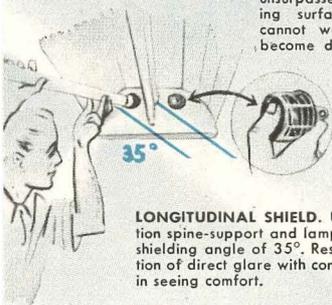
Now, approximately $\frac{1}{4}$ of light is directed UPWARD through a completely new, precedent-shattering concept of lighting unit design! The new Benjamin "Task-Master" is the modern solution to the brightness ratio problem. By combining greater upward flow of light with a new high of 35° in lamp shielding, "Task-Master" doubles, even triples, present standards for industrial seeing comfort. In addition to sensationally-increased UPWARD light and lamp shielding, "Task-Master" features revolutionary new, easier methods of installation and maintenance, such as those illustrated below. Send for FREE "Task-Master" Bulletin, giving further details. Write for Bulletin AD 5906. Benjamin Electric Mfg. Co., Dept. Q-1, Des Plaines, Illinois.

BENJAMIN "Task Master"

DETACHABLE REFLECTORS are hinged to make possible easier, more thorough cleaning right on the fixture. They may also be detached and cleaned away from the unit. Available with sliding hangers, as shown.



"LIFE-TIME" PORCELAIN ENAMEL. Reflectors and shield are covered with genuine Porcelain Enamel, which is unsurpassed as a reflecting surface because it cannot wear, scratch or become dull.

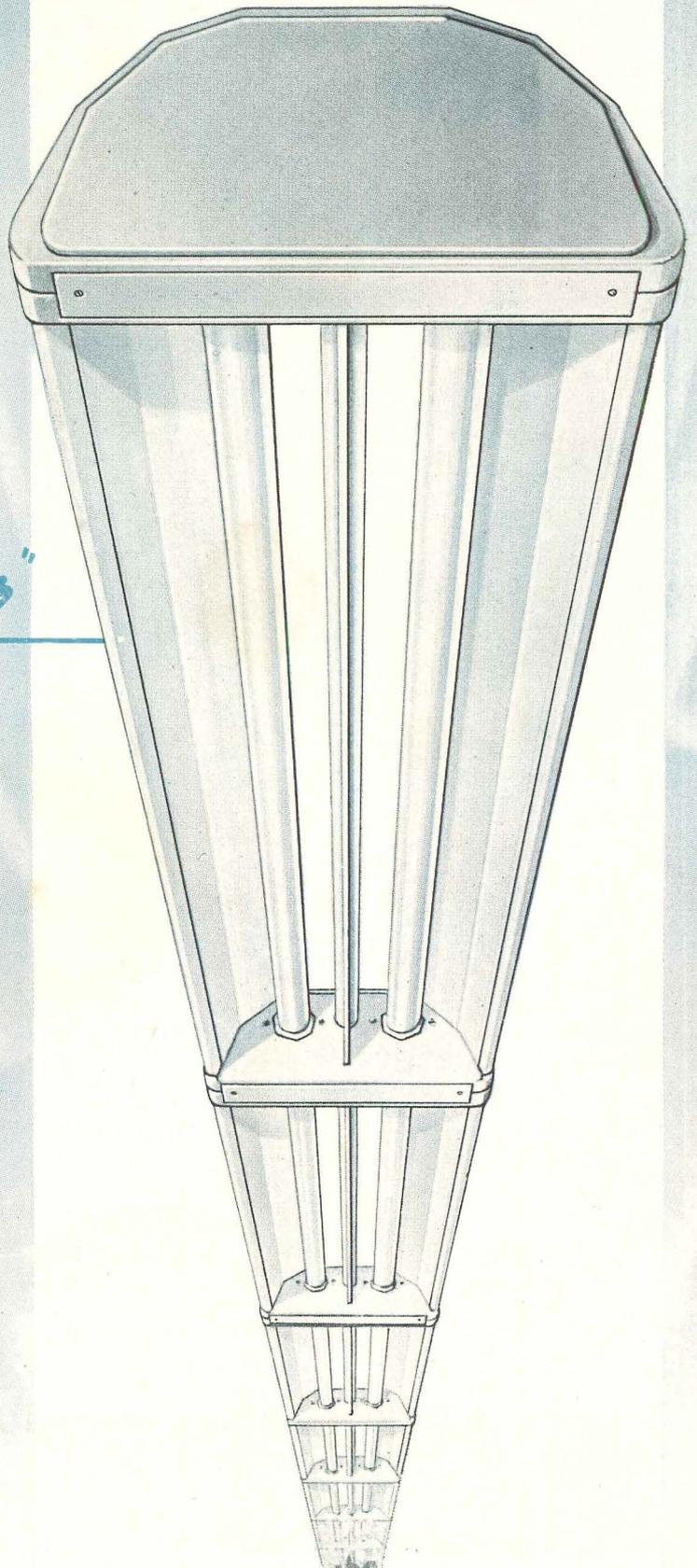
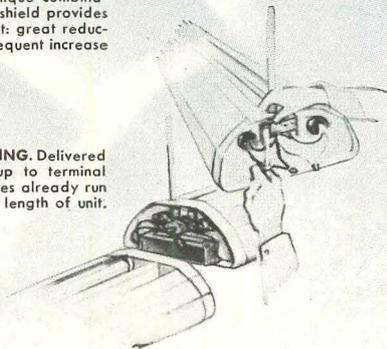


"SPRINGLOX" LAMPHOLDERS are standard equipment. These rugged, all-metal, lifetime lampholders facilitate lamping and relamping through patented spring design.

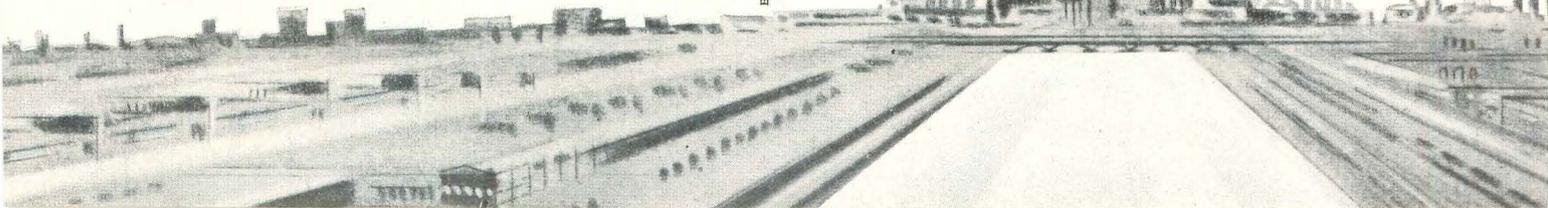
LONGITUDINAL SHIELD. Unique combination spine-support and lamp shield provides shielding angle of 35°. Result: great reduction of direct glare with consequent increase in seeing comfort.

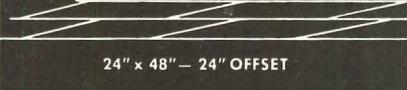
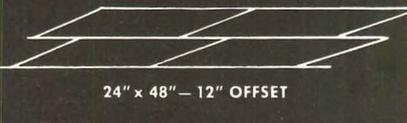
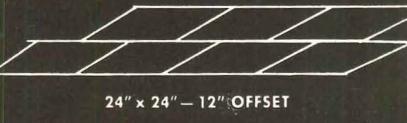
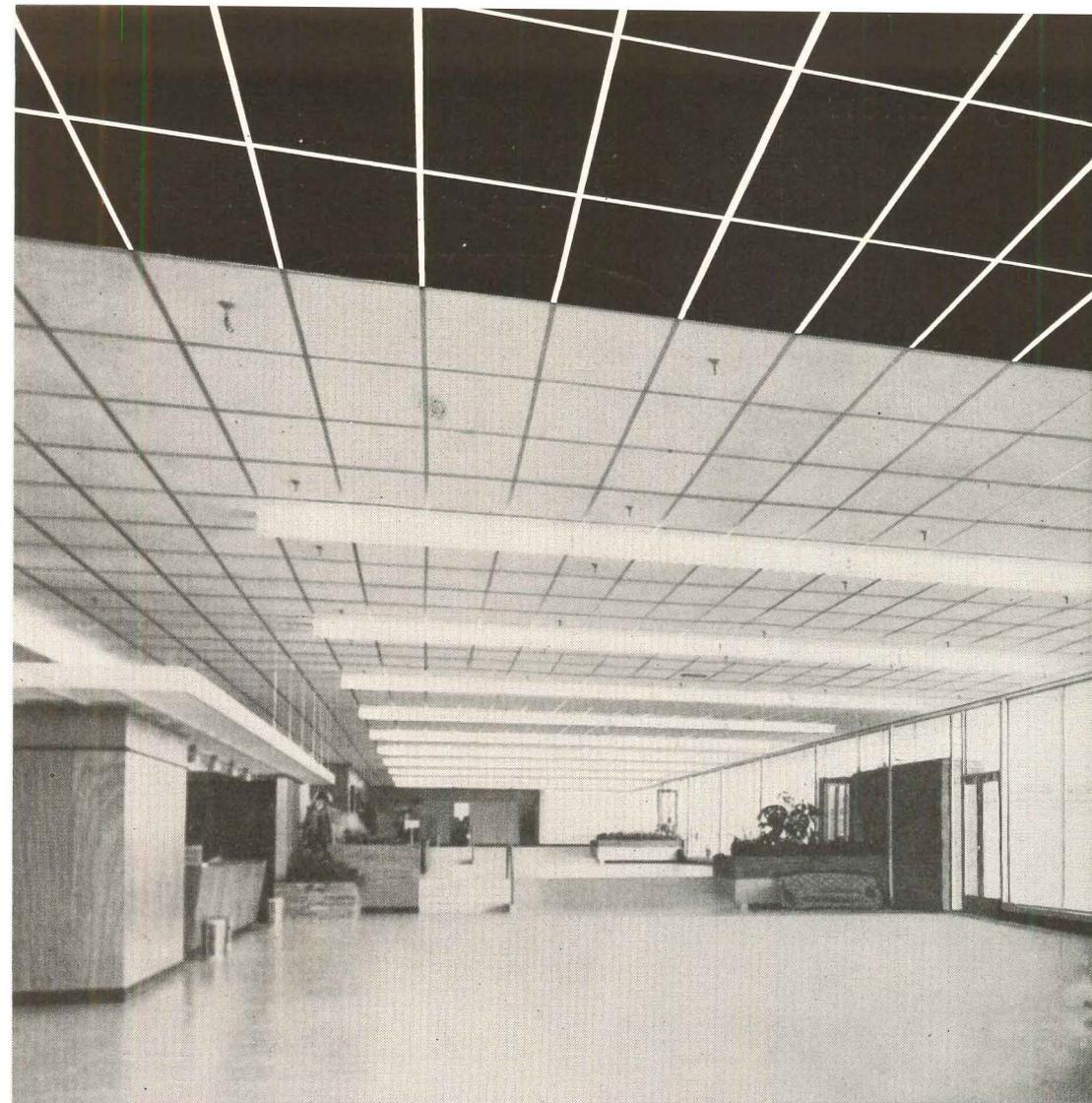
PRE-WIRED—NO WIRE SPLICING. Delivered with all connections made up to terminal block. Branch-circuit wire comes already run through spine support, entire length of unit.

SPECIAL "HOOK-UP" DESIGN makes it possible for the installer to temporarily hang one unit on another while connecting the jumper wires to opposite terminal blocks.



B5018





The various sizes of Fiberglas Ceiling Board open up many pattern possibilities indicated above that fit accepted suspension systems... patterns that are harmonious with good interior design.

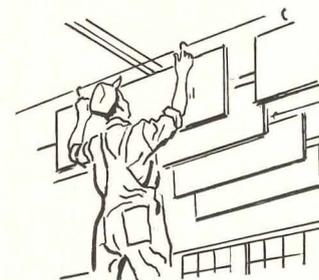
Pattern for low-cost QUIET ... with FIRE SAFETY!

Fiberglas* Ceiling Board, one of the complete line of Fiberglas Sound Control products, is especially suited for large-area ceilings where smart, modern eye appeal is desirable. It offers the inseparable advantages of all Fiberglas acoustical materials—high noise reduction, fire safety and low cost. In fact, its light weight contributes to the cost advantage since it is installed by lightweight suspension systems that emphasize economy. High in light reflection, dimensionally stable, easily maintained, with the important *plus* of thermal insulation.

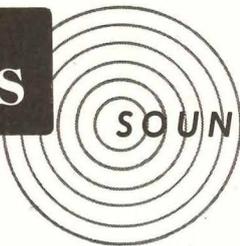
For complete design data and details, call your nearest Fiberglas Acoustical Contractor listed in the yellow pages. Or write to: OWENS-CORNING FIBERGLAS CORPORATION, Dept. 68-G, Toledo 1, Ohio.



Fiberglas Acoustical Tiles:
Textured, Perforated and Sonofaced*



Fiberglas Noise-Stop* Baffles

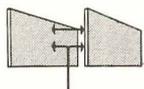


SOUND CONTROL PRODUCTS

*Fiberglas (Reg. U.S. Pat. Off.) Sonofaced and Noise-Stop are trade-marks of Owens-Corning Fiberglas Corporation.



Acoustical Tile



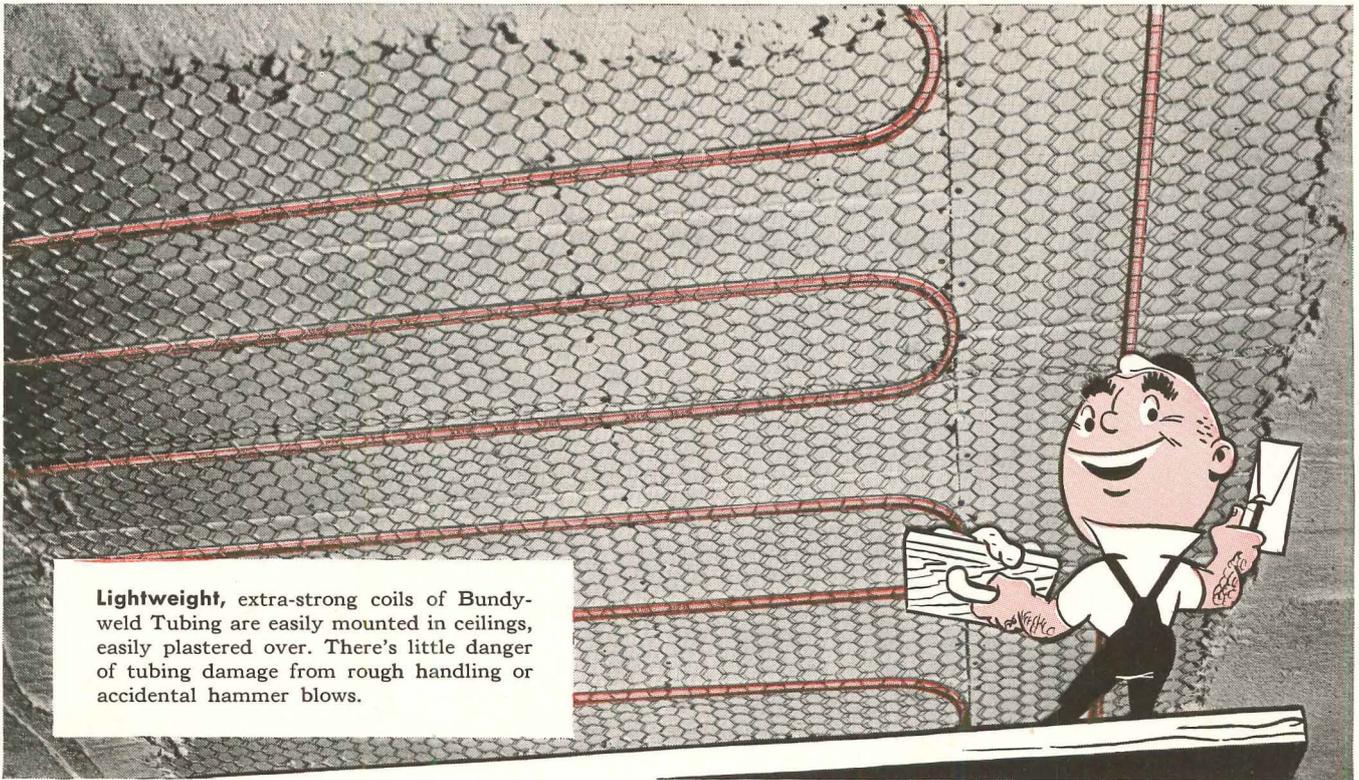
Noise-Stop* Baffles



Ceiling Board



Sonofaced* Acoustical Tile



Lightweight, extra-strong coils of Bundyweld Tubing are easily mounted in ceilings, easily plastered over. There's little danger of tubing damage from rough handling or accidental hammer blows.

Put your houses years ahead with Bundyweld ceiling radiant heating

Key to Low Cost

Bundyweld is the only tubing double-walled from a single strip, copper-brazed through 360° of wall contact. It's leak-proof, thinner walled, yet stronger. It transmits heat quickly, has high bursting strength. It saves up to 50% on material costs and installation time.

Standard 20' or 24' lengths of Bundyweld are easily formed into coils in shop or on job site. Expanded ends (furnished when specified) are quickly soldered into leakproof union. Joined, lightweight coils are easily mounted onto ceiling, quickly plastered over.

Interest in this newest, most practical method of heating a home widens daily. Present users hail it enthusiastically. Prospective home buyers demand to know more about it.

To thousands, Bundyweld ceiling radiant heating has already proved a cleaner, more economical, more convenient way to heat. They in turn are selling friends on the idea of walls without dirt streaks, of warmth that's always even, of air that's fresh as spring.

But the biggest boom is coming from

Bundy ads in *American Home* and in *Better Homes & Gardens*. People who are planning to buy a home now or later are sending in an avalanche of coupons. They want to know more about Bundyweld ceiling radiant heating. They want to know the names of builders and architects using it. These people are *your prospects!*

Why not place your houses squarely in the middle of this interest? Why not put your homes ahead of all competition for years to come? Send the coupon!



Bundyweld ceiling radiant heating

Radiant Heating Division
BUNDY TUBING COMPANY
 Detroit 14, Michigan

Radiant Heating Division, Dept. AR-652
 Bundy Tubing Company, Detroit 14, Michigan

Send free 20-page nontechnical brochure explaining Bundyweld ceiling radiant heating.

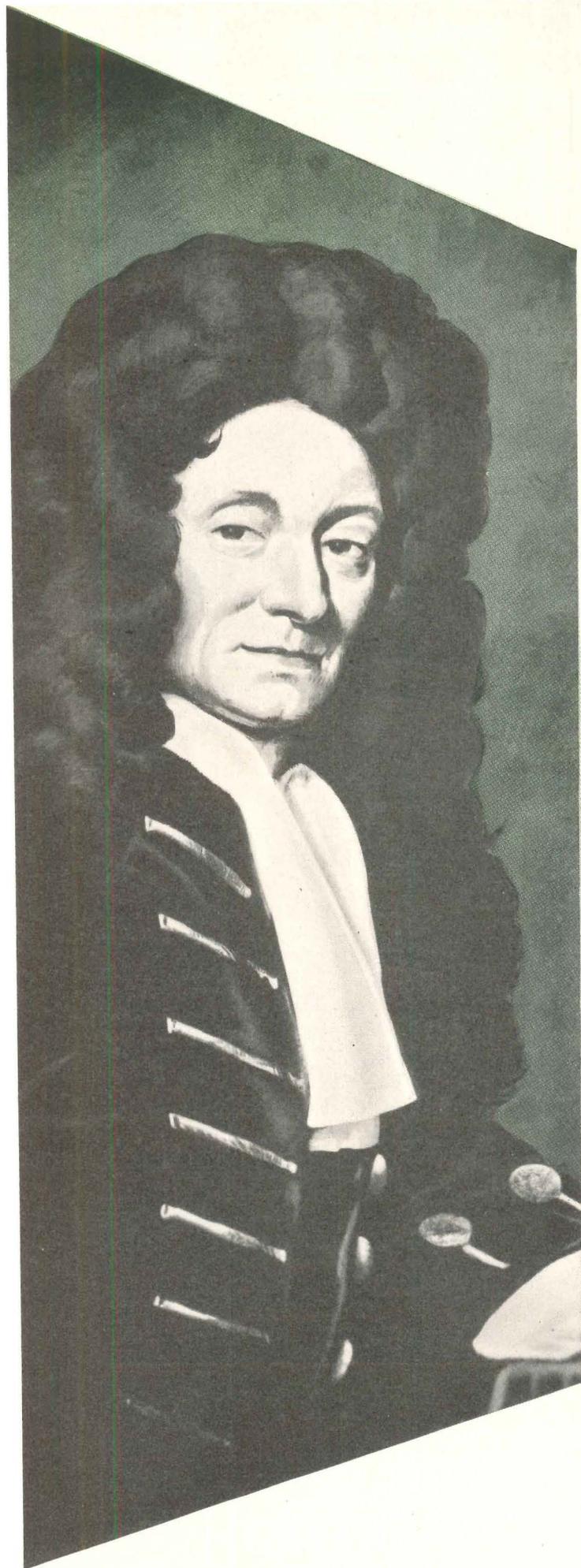
Send Bundy technical radiant heating pamphlet.

Name _____ Title _____

Company _____

Address _____

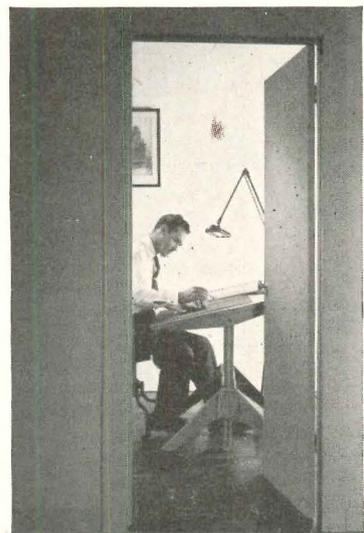
City _____ Zone _____ State _____



250 years ago Sir Christopher Wren wrote:

*"We architects are scrupulous
in small things . . .*

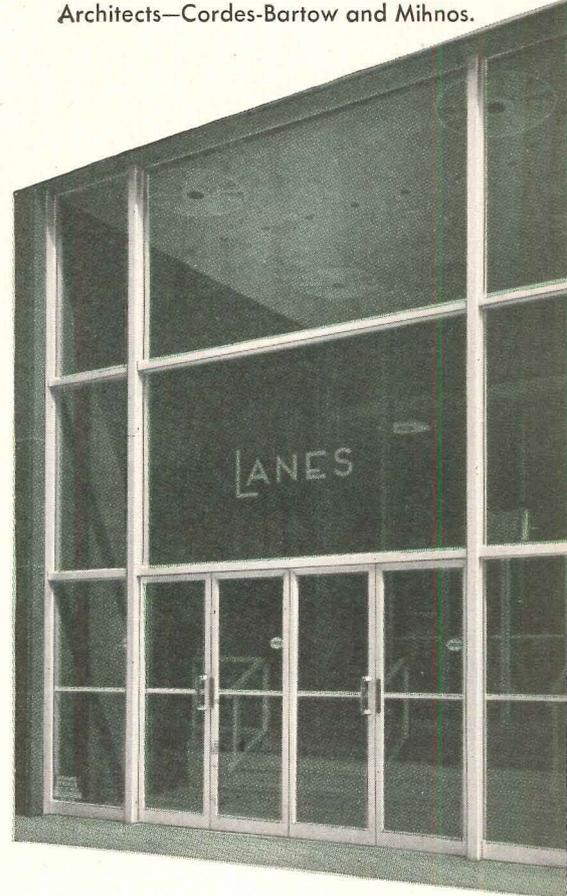
AND ARCHITECTS TODAY
HEARTILY AGREE WITH
THE GREAT ENGLISHMAN..





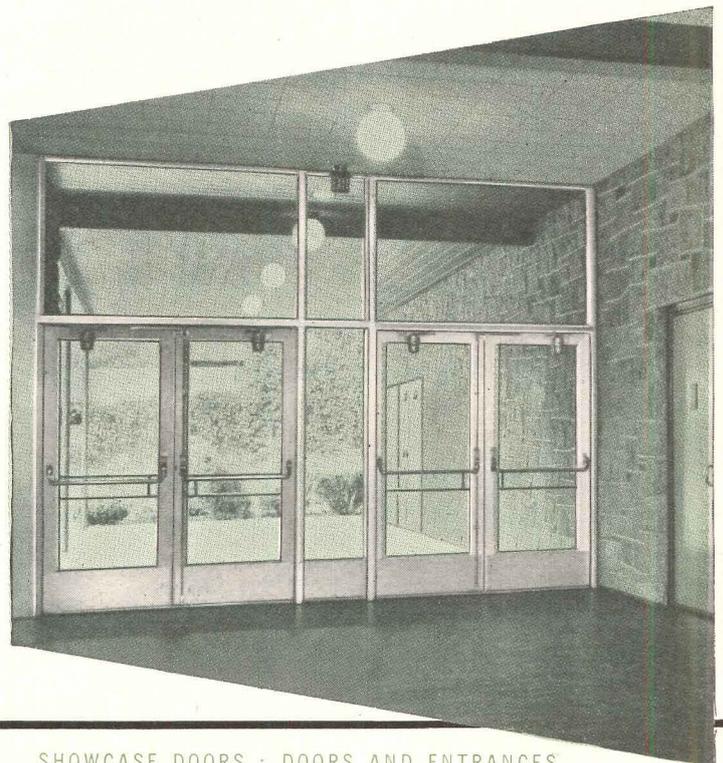
Esquire Coronet publications building in Boulder, Colorado. A striking treatment of an entrance unit featuring Kawneer doors and mullion construction. Architect—Ralph Stoetzel.

Lanes Department Store in New York City uses two pairs of Kawneer doors within one frame. Architects—Cordes-Bartow and Mihnos.



... **PAINSTAKING ATTENTION TO DETAIL HAS ALWAYS BEEN THE ARCHITECT'S TRADEMARK.** To meet high contemporary standards, Kawneer Entrances are cleanly and handsomely styled to reflect the utmost simplicity in line and form. They are precision-engineered for maximum strength, smooth operation, and weather protection.

Transfiguration School in Tarrytown, New York, shows an excellent solution to an entrance problem that required panic exit devices. Architect—Robert A. Green.



Kawneer

ARCHITECTURAL METAL PRODUCTS

SHOWCASE DOORS · DOORS AND ENTRANCES

CONSULT KAWNEER DETAIL PORTFOLIO, SWEET'S CATALOGS OR WRITE DEPT. AR-101, 1105 NORTH FRONT STREET, NILES, MICH., OR 930 DWIGHT WAY, BERKELEY, CAL.

FLOORING BEAUTY *for years to come!*



THIS is the flooring that even years from now will proudly testify to your good judgment. For this is Wingfoot Rubber Flooring, Goodyear's rich, smooth, lustrous flooring that assures lasting satisfaction. For years to come your clients will still be enjoying the like-new beauty, resilience, comfort and quiet of this enduringly lovely flooring. Always specify it. See your Wingfoot Rubber Flooring Dealer for samples and specifications, or write Goodyear, Flooring Department, Akron 16, Ohio.

LASTING BEAUTY—Colors are integral, never fade or "walk off." Choose from 16 marbled colors.

DURABILITY—Smooth, resilient surface defies time and wear, resists fire, stains, alcohol, inks,

cigarette burns, most acids.

MAINTENANCE EASE—Keeps its brand-new look with minimum maintenance because dirt can't penetrate surface.

ADAPTABILITY—Wingfoot Rubber, available in rolls 36" wide or 9" x 9" tiles, is highly favored by architects, builders and owners for both commercial and residential use.

ECONOMY—So durable is Wingfoot Rubber Flooring, it retains its just-installed look long after conventional floorings need replacement.

WINGFOOT *Rubber* FLOORING { SHEET
by and
GOODYEAR TILE
Makers of VINYL-TILE Flooring

Wingfoot—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio



BRIXMENT ASSURES A GOOD BOND

After all is said and done, the first function of a mortar is to form a good, tight *bond* with the brick. Upon this characteristic depend both the strength and the water-tightness of the wall. A good bond is particularly important in securing water-tight walls, because most cases of leakage are caused by the passage of water *between* the brick and the mortar.

Brixment mortar assures a good, strong, *thorough* bond because: (1) Its great plasticity permits a more complete bedding of the brick, and an increased area of contact between the

brick and mortar.

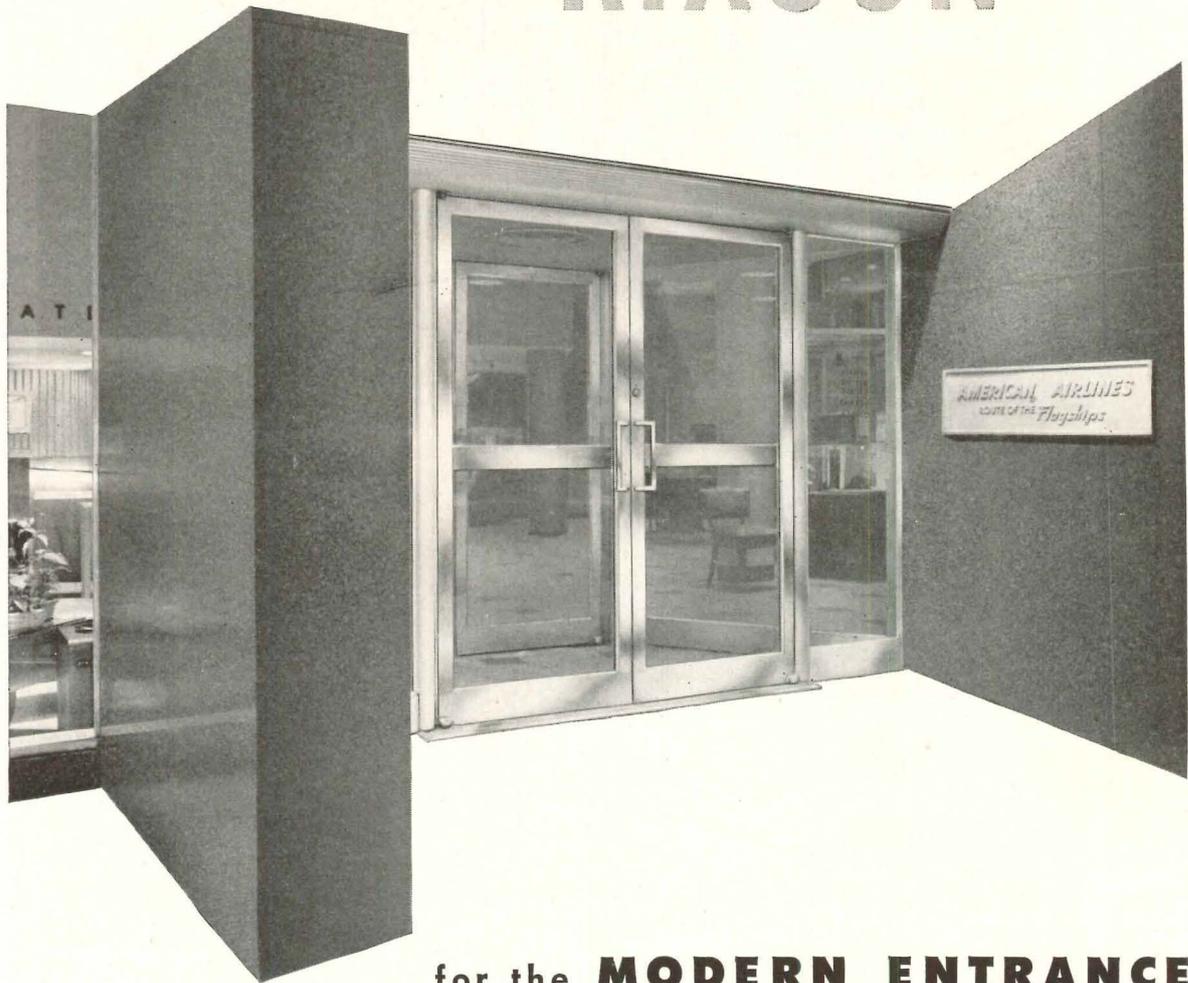
(2) Its high water-retaining capacity keeps the brick from sucking the water out of the mortar too fast, and prevents the mortar from congealing before the brick is thoroughly bedded and bonded.

(3) It hardens slowly enough to permit deeper penetration and more thorough keying into the pores of the brick.

Because of these characteristics, Brixment mortar makes a *better bond*. Isn't this what you want in *your* brickwork?

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE 2, KY.

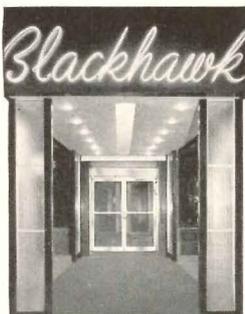
invisible door closers



for the **MODERN ENTRANCE**
achieving both **design** and **function**

Because RIXSON Checking Floor Hinges are concealed in the rigid floor... allowing a full, unobstructed door opening... they make possible the clean cut simplicity required in modern design. No unsightly arms, or any parts of the closed mechanism are ever visible. To add to the modern atmosphere is the invisible power... the dependable, trouble free function of RIXSON Closers... that gently brings the doors to a quiet close after each opening.

manufacturers of precision built hardware for 52 years



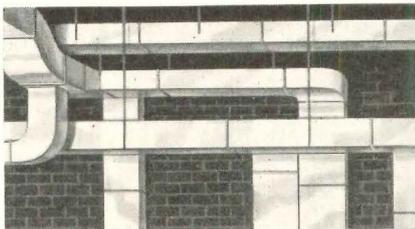
Rixson concealed closers are ideal for entrance remodeling and modernizing. Template drawings available on request.

THE OSCAR C. **RIXSON** COMPANY

4450 W. Carroll Avenue, Chicago 24, Illinois

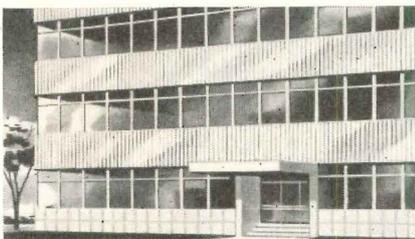
Architectural Service

Better Ductwork



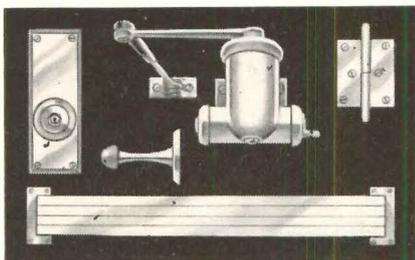
It's smart to specify aluminum for ductwork because, at one-third the weight of other metals, aluminum cuts tons from added weight to reduce structural loads. Aluminum will not rust from condensation in cooling systems. Aluminum also is a natural insulator. Non-sparking aluminum also is ideally suited to the removal of inflammable and explosive dust and fumes in industrial installations. And, with all of these advantages, aluminum ductwork installation is easier—usually costs less, particularly when handling larger sections.

Curtain Walls and Spandrels

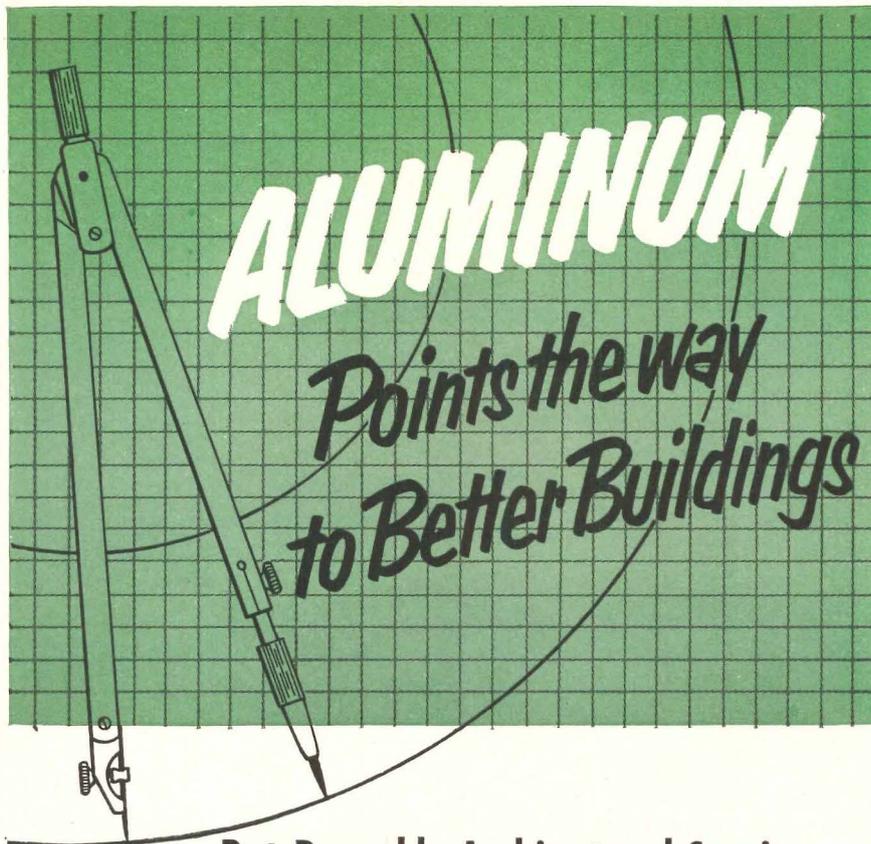


Corrosion-resistant aluminum curtain walls and spandrels retain their attractiveness for years and years. Lightweight for minimum building load and easy handling of large sections; choice of sheet, extruded or cast designs; freedom from destructive rust; high heat reflection; and the wide range of durable, decorative finishes all make aluminum the material of first consideration for curtain walls and spandrels. Here again, aluminum's unlimited flexibility compliments the design skill of experienced architects.

Attractive Hardware



Aluminum hardware completes the white metal theme in modern design. Like other aluminum trim, the natural color of aluminum hardware, in a wide range of finishes, harmonizes with all decorative schemes. Aluminum hardware won't rust or corrode—stays bright and attractive. A full line of aluminum hardware—closers, escutcheons, knobs, strike plates, push bars, kick plates, hinges, stops—is available. Write to Reynolds for list of aluminum hardware manufacturers and for information on any other architectural aluminum applications.



Put Reynolds Architectural Service to Work on Your Designs



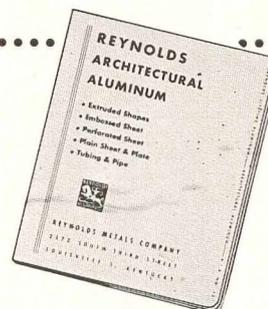
Aluminum, the modern metal, points the way to better buildings at lower cost... and, Reynolds Architectural Service points the way for architects to get the most from aluminum. Reynolds Architectural Service is available to architects for the asking. It's a specialized service set up to work with you on aluminum design problems.

Aluminum extruded shapes and tubing, structurals, sheet and other mill products point the way to better building through unlimited design flexibility, wide range of finishes, lightweight, great strength, resistance to rust and corrosion and low cost. Remember—*aluminum is the only mass-produced metal that costs less today than before World War II.*

Take advantage of Reynolds Architectural Service on special designs, but be sure to specify aluminum for all of its advantages in standard products, too. For complete information call the Reynolds office listed under "Aluminum" in your classified telephone directory or write direct.

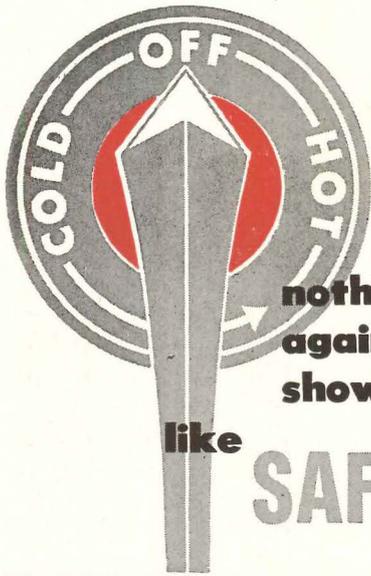
FREE BOOKLET!

Send for your copy of Reynolds Architectural Folio today! A complete, up-to-date kit on architectural aluminum. In loose leaf form with drawings for direct tracing. Free when requested on business letterhead. Write to Reynolds Metals Company, 2572 So. Third St., Louisville 1, Ky.



REYNOLDS ALUMINUM

MODERN DESIGN HAS ALUMINUM IN MIND



nothing protects
against sudden
shower scalds

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SAFETYMIX



GIVE THEM THIS EXTRA SHOWER SAFETY
... AT NO EXTRA COST!

**SHOWER
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... No scalds ... no chills. Protects against both sudden scalds and chills. Even with pressure fluctuations up to 85%, Safety-mix keeps shower temperature constant. Automatically shuts down flow when either hot or cold water fails.

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... Only one moving part. Designed and manufactured by engineers and approved by architects, pressure-actuated Safety-mix is the most rugged shower control valve made. Only Safety-mix has the patented Flow Control Spindle with but one moving part to control all valve functions.

**FREE FROM
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... Easy to fix as a faucet. Safety-mix is designed with self-cleaning action to prevent clogging. Saves water. All parts accessible from front.

**COSTS
NO MORE**

Because it costs no more than ordinary shower valves and is guaranteed to be entirely as represented, architects specify Safety-mix and engineers recommend it. Safety-mix gives the extra safety and satisfaction that builds better reputations. Safety-mix is used in thousands of schools, colleges, hotels, industrial plants, institutions and better homes from coast to coast.

See Sweets Architectural File or your Domestic Engineering Catalog.

Send for bulletin and prices.



You know the Western Pines^{*}
in rooms like this



Now meet the Associated Woods[†]
in rooms like this!



White Fir's straight, even grain and light color make it ideal for interior paneling such as is shown here in this inviting living room.



★THESE ARE THE WESTERN PINES

IDAHO WHITE PINE
PONDEROSA PINE • SUGAR PINE

†THESE ARE THE ASSOCIATED WOODS

LARCH • DOUGLAS FIR • WHITE FIR
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RED CEDAR • LODGEPOLE PINE



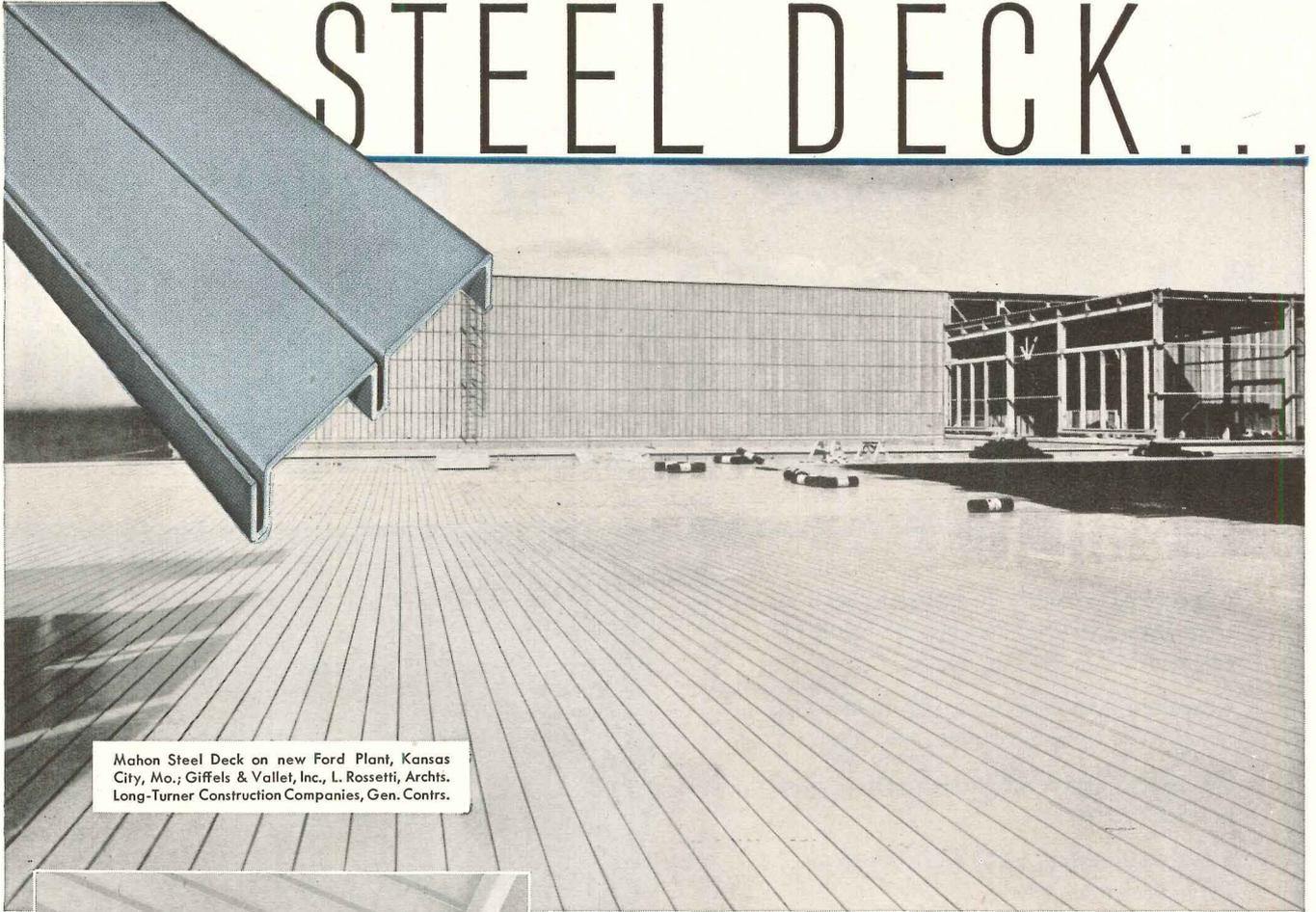
All are well manufactured, seasoned, and graded to the high Association standards. You can specify and buy them with confidence!

For information on any of the Woods of the Western Pine Region, write

WESTERN PINE ASSOCIATION

DEPT. 525-U, YEON BUILDING • PORTLAND 4, OREGON

STEEL DECK . . .

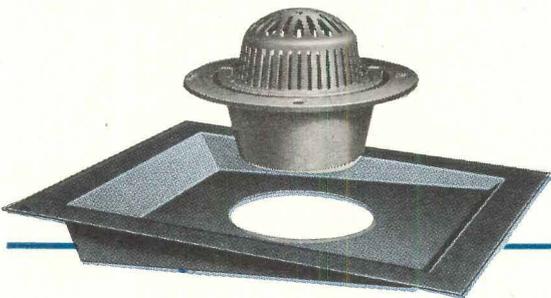


Mahon Steel Deck on new Ford Plant, Kansas City, Mo.; Giffels & Vallet, Inc., L. Rossetti, Archts. Long-Turner Construction Companies, Gen. Contrs.



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.

1,070,000 Sq. Ft. of Mahon Steel Deck Protects New Ford Plant at Kansas City!

For industrial plants large and small, auditoriums, armories, theatres and commercial buildings of all types, steel deck provides the most economical, permanent roof construction available today. No matter how you figure it, your total roof cost per square foot will be less than any other type of roof construction with comparable "U" Factor . . . because, Steel Deck can be insulated to the exact degree to meet the thermal requirements of temperature range in any given locality—and, Steel Deck's light weight permits additional economies in the supporting structure. Mahon Steel Deck is available in Galvanized or Enamel Coated Steel . . . it is a product embodying distinctive and desirable features in both design and quality—for instance, the vertical leg stiffening ribs eliminate all horizontal or angular surfaces where troublesome dust may accumulate. In the enamel coating process, the metal is chemically cleaned and phosphated to provide paint bond, and the protective coat of synthetic enamel is baked on at 350° F. prior to roll-forming. These are items that warrant your consideration when selecting Steel Deck for the roof of any building. See Mahon's Insert in Sweet's Files for complete information, 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 • 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; Insulated Metal Wall Panels; Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.

M A H O N

Now! Here's the inside story of the Celotex Self-Insulating Wall

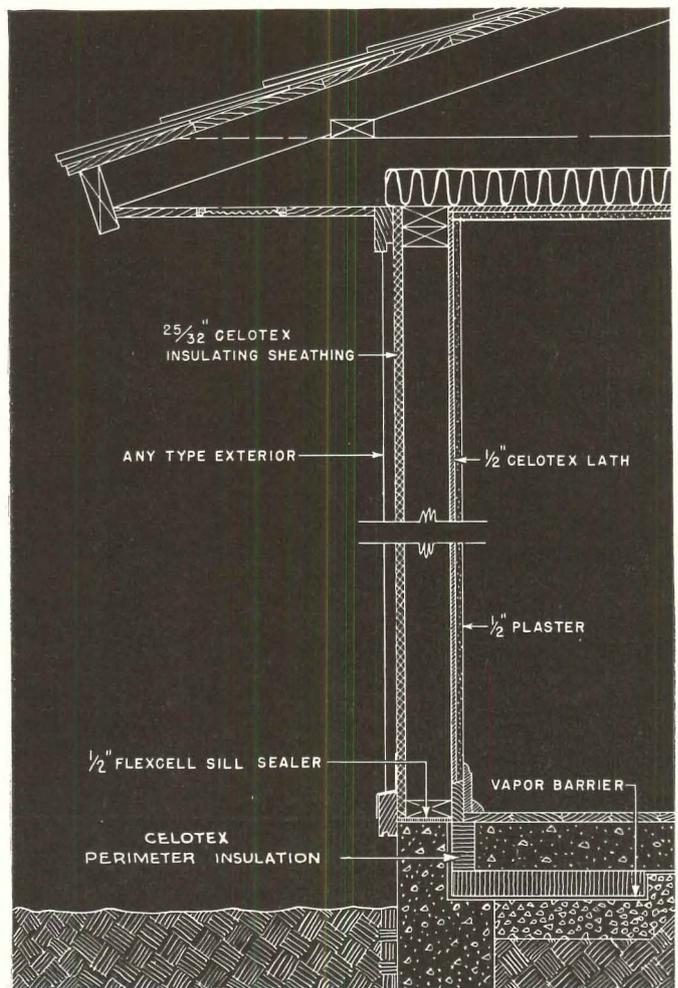
- **Costs less to build** than conventional insulated frame wall of comparable insulating efficiency.
- **Exceeds FHA** insulation requirements in about 90% of the areas in the United States.
- **Greater structural strength**—easier, quicker to erect.
- **Any type siding** can be applied to it speedily and economically.

You get a stronger, better wall with BUILT-IN insulation—at less cost—when you specify the Celotex Self-Insulating Wall!

Celotex 25/32" Insulating Sheathing on the outside insulates and weatherproofs as it builds. All at *one* cost. Saves labor, materials. Has 2½ times the insulating value of yellow pine. Celotex 25/32" Big Board Insulating Sheathing has 30% greater bracing strength than ordinary sheathing. Eliminates need for corner bracing. Goes up 30% faster, with up to 15% less waste. It's DOUBLE-WATERPROOFED — inside, by integral treatment; outside, by asphalt coating. Yet has more than twice the vapor permeability required by government agencies.

Celotex 1/2" Insulating Lath on the inside provides a strong, solid, continuous plaster base — PLUS 5 times the insulation value of ordinary lath! Shiplapped long edges slide easily into place, fit snugly. Beveling of all face edges provides added plaster thickness at joints. Two types: Regular, and Vapor Seal with an asphalt vapor barrier on the back. Both Celotex Insulating Sheathing and Celotex Insulating Lath are made of tough, strong, interlocking Louisiana cane fibres — and protected by the patented Ferox® Process from dry rot and termite attack.

Write today for factual literature giving full technical data on the Celotex Self-Insulating Wall. The Celotex Corporation, Dept. AR-72, 120 S. LaSalle St., Chicago 3, Ill.



"U" VALUE OF THIS WALL IS 0.15 with wood siding and plastered interior. SAME WALL but with wood sheathing and 3/8" gypsum lath has "U" value of only 0.25.

Build Better... Specify Genuine

CELOTEX

REG. U. S. PAT. OFF.

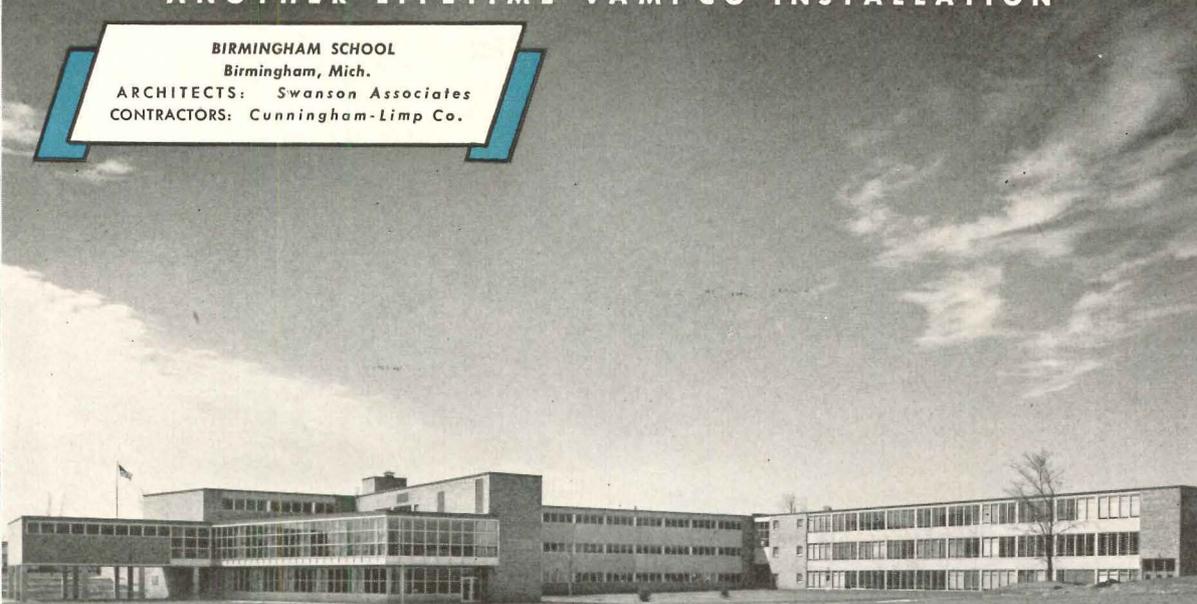
BUILDING PRODUCTS

THE CELOTEX CORPORATION • 120 S. LASALLE STREET • CHICAGO 3, ILLINOIS

VAMPCO ALL-ALUMINUM WINDOWS

ANOTHER LIFETIME "VAMPCO" INSTALLATION

BIRMINGHAM SCHOOL
 Birmingham, Mich.
 ARCHITECTS: Swanson Associates
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Windows by VAMPCO

**FOR STRUCTURAL
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Economies

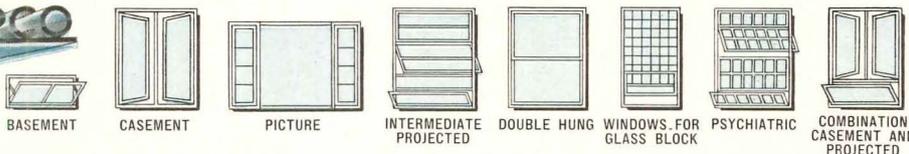
You give your client more for his money when you plan with VAMPCO. You provide maximum function and utility. If VAMPCO'S versatile stock patterns do not provide just what you need, you can afford to consider special designing.

Precision VAMPCO factory fabrication saves many costly man-hours of fitting and installation on the job. Windows are shipped complete, with hardware in place.

And VAMPCO'S lifetime aluminum never rusts, never corrodes, never needs paint. VAMPCO windows pay their own way—on maintenance savings alone.

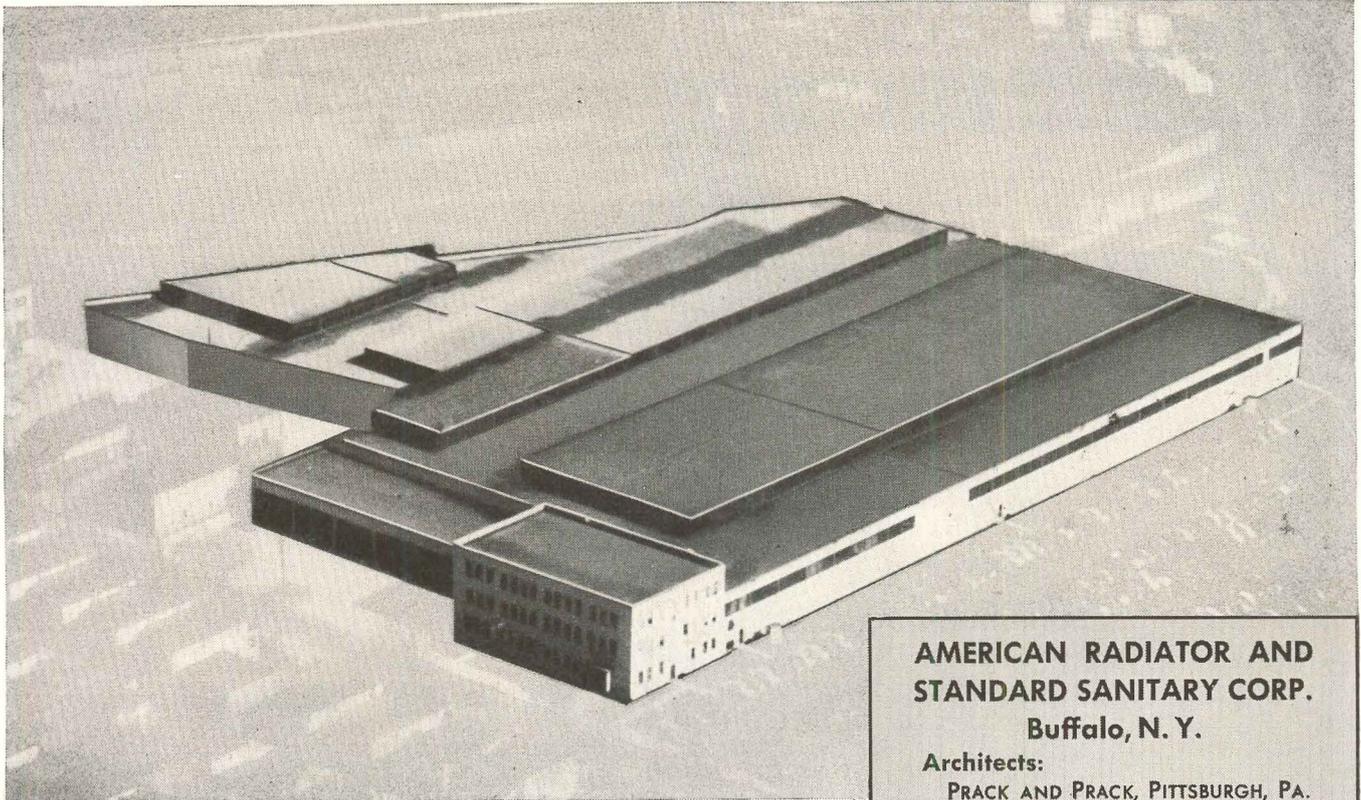
All the know-how and friendly cooperation of VAMPCO'S Engineering Service are yours for the asking. No obligation whatever! Just address your questions to Dept. AR72.

FOR ALL THESE WINDOW TYPES — IN LIFETIME ALUMINUM



VALLEY METAL PRODUCTS CO. PLAINWELL MICHIGAN

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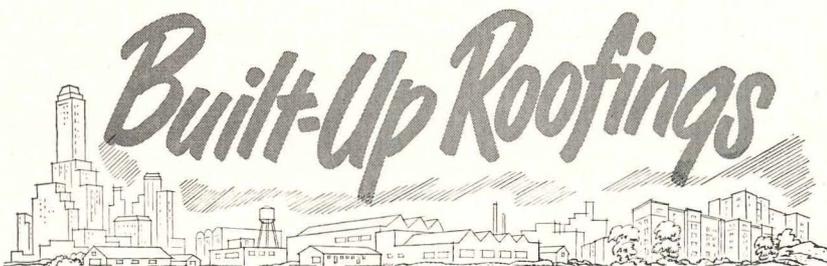


RETURN ENGAGEMENT IN *Buffalo*

Twice in three years, The American Radiator and Standard Sanitary Corp. has selected Ruberoid roofing in new buildings in Buffalo, N. Y. First in 1949, architects Prack & Prack specified a 20-year Ruberoid Bonded Built-Up Roof for a new office and warehouse. This year, the architects called on Ruberoid again to supply the roofing for an addition to this plant. In all, 1640 squares of Ruberoid Coal Tar Pitch and Tarred Felt unite these two buildings under one roof with a guarantee of 20 years minimum service.

You'll find a complete catalog of roofing specifications in "Ruberoid Built-Up Roofs and Flashings." There's one

for that job that's on the boards right now and for every job that comes into the shop. There are Ruberoid specifications to meet any specific conditions . . . many are bonded for as long as 20 years. If you would like a copy of this handy book, there's a new edition ready now. A note on your letterhead will send it your way. We will also send you a Ruberoid Built-Up Roof Selector that serves as an automatic index to the Roofing Book. For further information, consult your nearest Ruberoid dealer or Sweet's Architectural Catalog, Section 8A/RU. The Ruberoid Co., 500 Fifth Avenue, New York 36, N. Y.



The **RUBEROID** Co.

ASPHALT AND ASBESTOS BUILDING MATERIALS

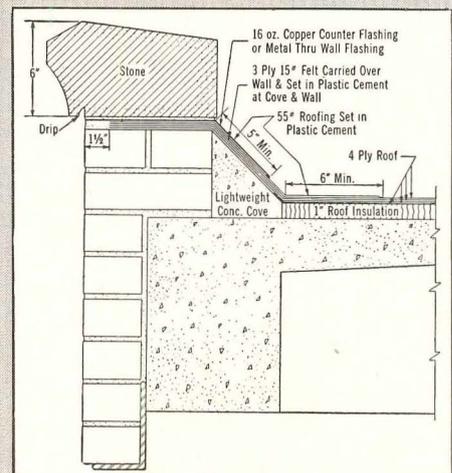
AMERICAN RADIATOR AND STANDARD SANITARY CORP. Buffalo, N. Y.

Architects:
PRACK AND PRACK, PITTSBURGH, PA.

General Contractor:
JOHN W. COWPER CO., INC.,
BUFFALO, N. Y.

Roofing Contractor:
JAMES J. DRAPER CO., INC.,
BUFFALO, N. Y.

RUBEROID RECOMMENDATION Flashing Low Parapet Walls



THE RIGHT ROOF FOR ANY JOB — FROM ONE SOURCE

Ruberoid makes every type of built-up roof — Smooth Surfaced Asbestos, Coal Tar Pitch with gravel or slag surfacing, and smooth or gravel-and-slag surfaced Asphalt . . . in specifications to meet any need. Ruberoid Approved Roofers are not prejudiced in favor of any one type. You are assured of centralized responsibility, smoother operation, uniform quality with Ruberoid built-up roofings.



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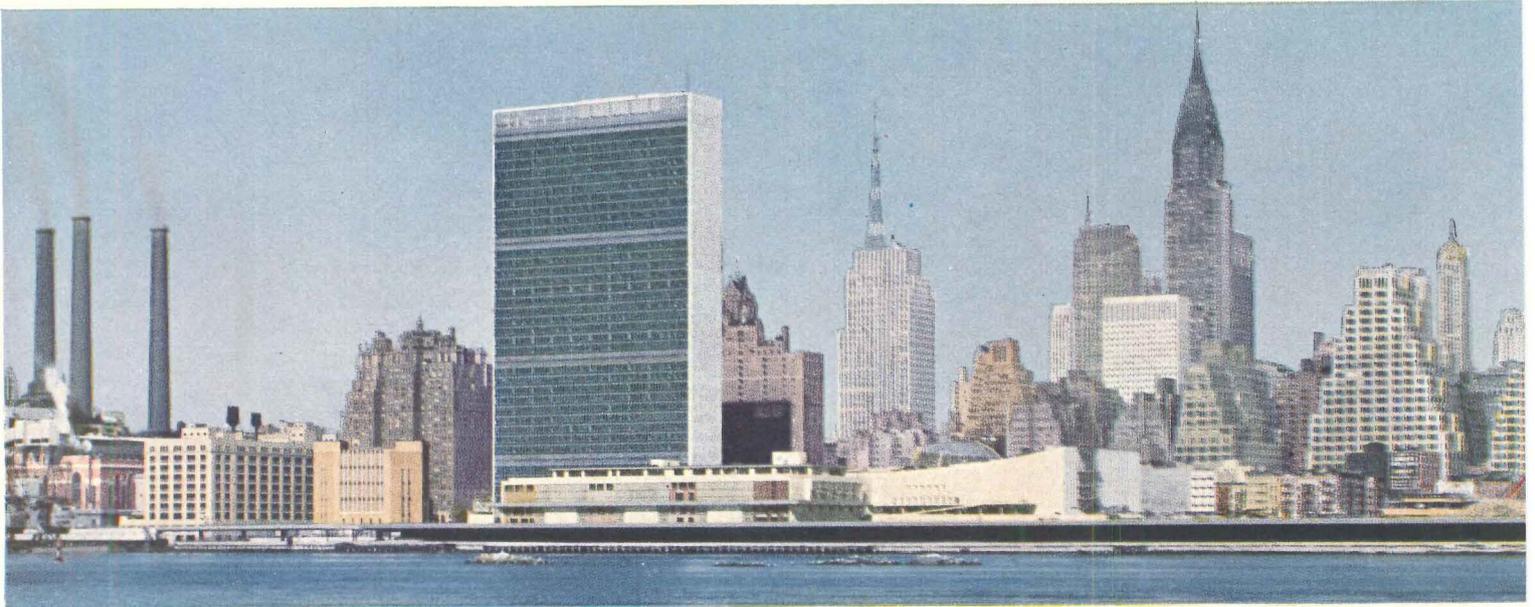
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MATTHEW NOWICKI (*Poland*)
PETER NOSKOV (*Union of Soviet Socialist Republics*)
HUGH FERRISS (*United States of America*)
ERNEST WEISSMANN (*Yugoslavia*)

CONSULTING ENGINEERS

WILLIAM MUESER
EMIL H. PRAEGER
JOHN F. HENNESSY
JAMES L. EDWARDS
EDWARD J. CONTENT
WILLIAM WILSON, *Coordinator*

UNITED NATIONS



A DESCRIPTION AND APPRAISAL

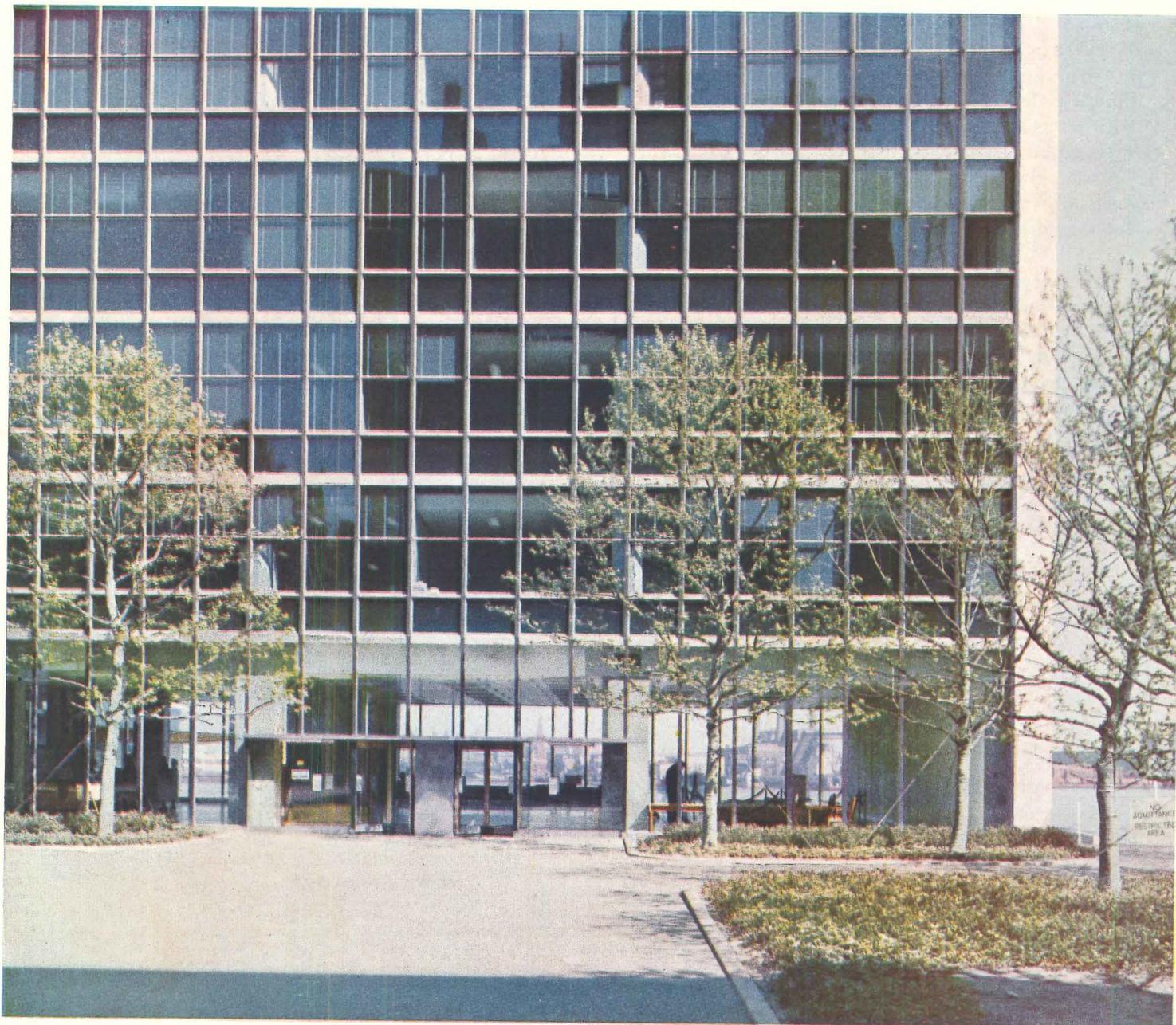
by HENRY STERN CHURCHILL, F.A.I.A.

THE buildings for the United Nations constitute what is probably the most important architectural work of the century. They constitute a World Capitol, and as such draw the eyes of the world as a symbol of hope for world peace and the visible expression of world government. Therefore these structures deserve careful critical comment as to both function and purpose.

The site for the United Nations buildings is seventeen and a half acres, bounded by the East River, Forty-second Street, First Avenue and Forty-eighth Street. The Franklin D. Roosevelt Drive, an expressway, runs along the river edge, and part of the buildings are cantilevered over it. The site forms an enclave in the city, state and nation, with specific rights of extra-territoriality. Nevertheless, by agreement various facilities are furnished by the City of New York, such as the right to build over the Drive, sewer connections, access from city streets and fire protection. Heat, in the form

of steam, comes from the New York Steam Company; and electric light and power come from the Consolidated Edison Company, so that there are certain anomalies in the situation. The City has also agreed to make certain physical improvements. The heavy traffic along First Avenue is being carried past the site in a tunnel; the approach from Forty-second Street has been cleared of old encumbrances and widened; Forty-seventh Street has been widened from First to Second Avenue. From the point of view of city planning, this is little enough. No effort has been made to plan for the tremendous effect U.N. is going to have on the entire surrounding area, and an excellent study made by the Committee on Civic Design and Development of the New York Chapter, A.I.A., has been completely ignored. The U.N. group must be considered within this framework, including the unpleasant vistas of Con Edison stacks, the hideous ventilation building for the Queensborough

HEADQUARTERS



Joseph W. Molitor

Facing page: U.N. from across the East River. Above: Transparent ground floor, Secretariat, from entrance court



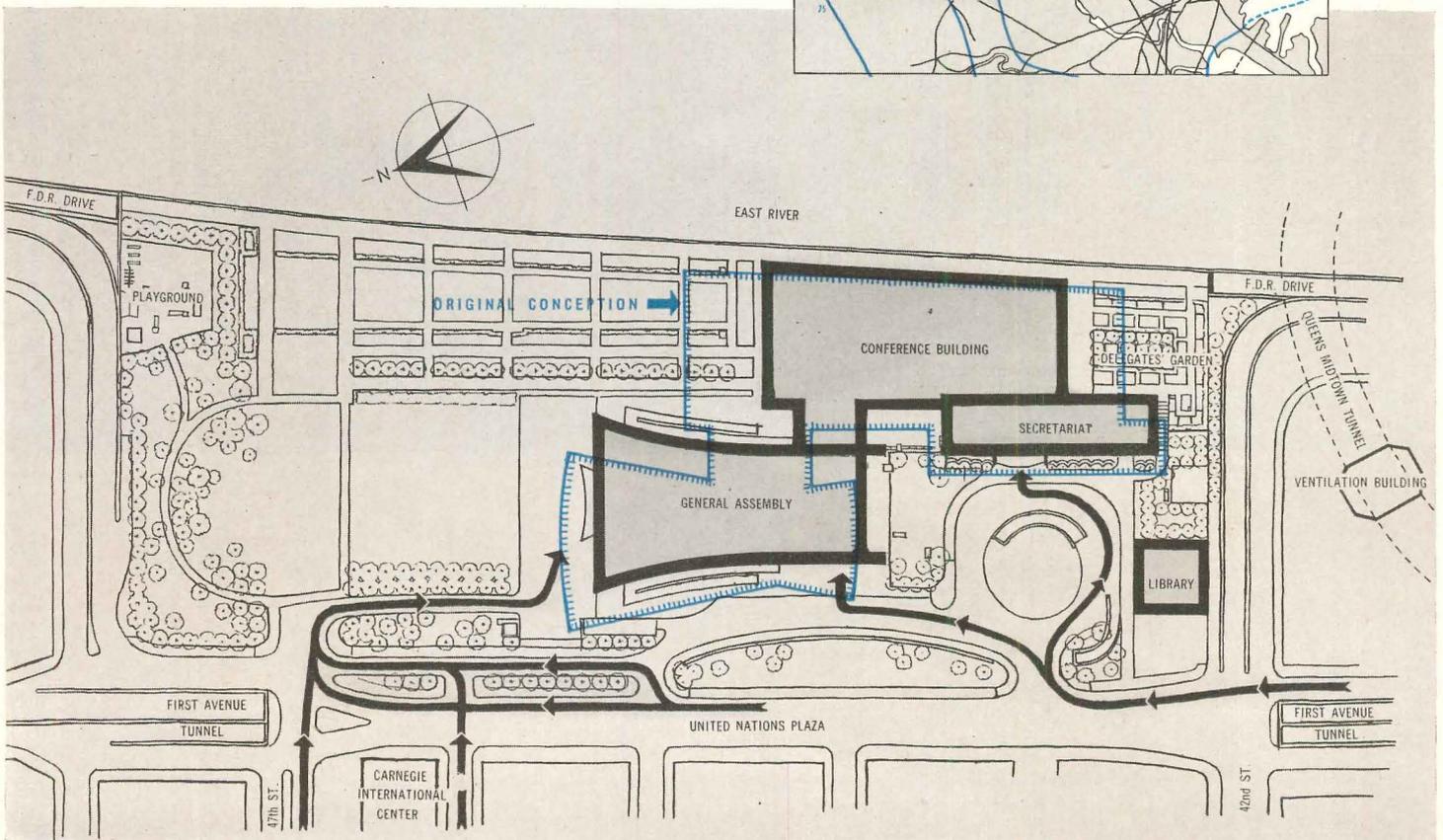
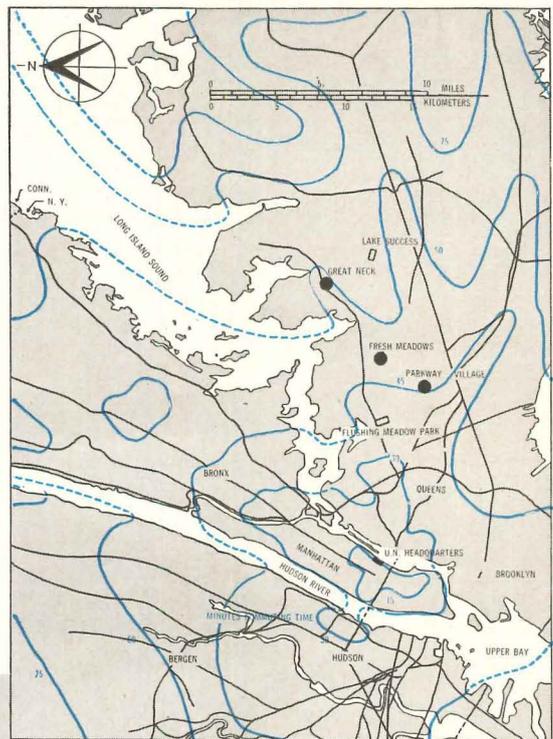
Tunnel, the monstrous rears of Tudor City and the intrusive sky-scraper that prevents any view of the Capitol from the Forty-seventh Street approach until one is almost at First Avenue. A physically less fortunate site would have required effort to find. What might have been possible had large acreage been acquired in Westchester County or in Philadelphia is now beside the point. It is significant that the Rockefeller gift of a cramped urban site was in line with the Delegates' desire to be within easy reach of New York's glamour.

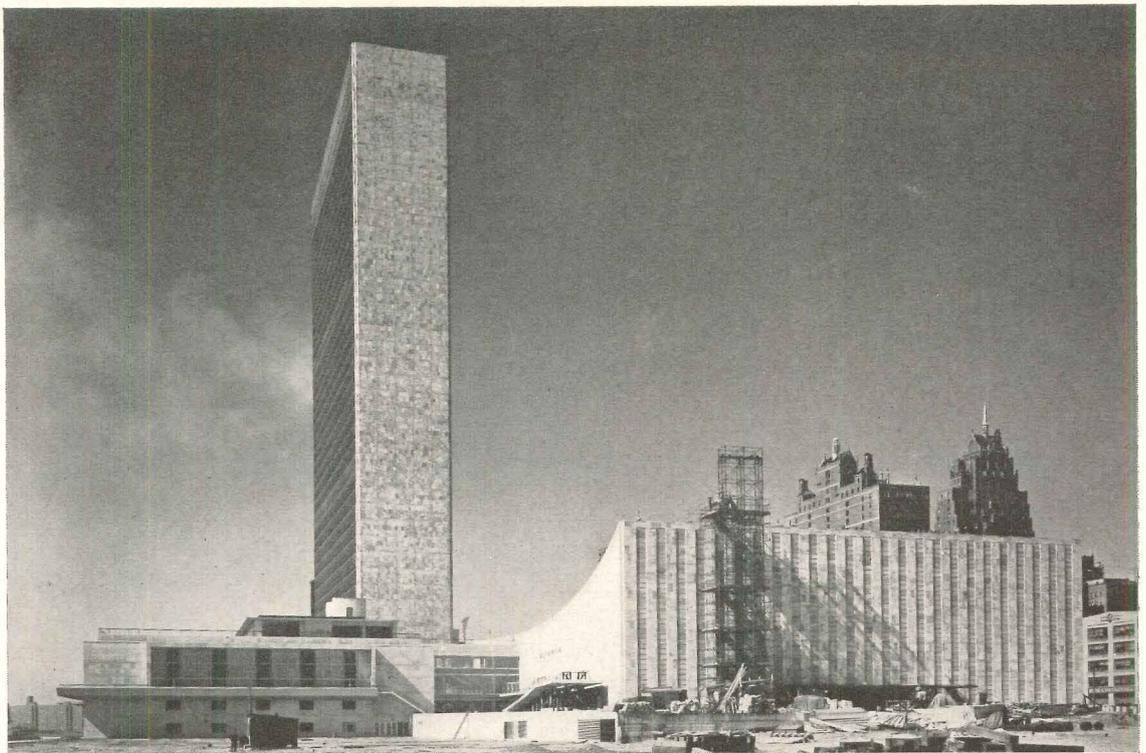
When the site was determined, Wallace Harrison was appointed Director of Planning by the U.N. and provided with funds to set up a Planning Office. This office was first established to service the Board of Design Consultants. For this purpose it consisted of about thirty draftsmen and consulting engineers. Contact between the designers and the drafting room was handled by Michael M. Harris (now Assistant Director of Planning); he continued to shoulder most of the burden of coordination of design and production of working drawings throughout. During the working drawing stage there were about a hundred and fifty men, plus the mechanical engineering men and attachés from the structural engineers. In general the work was divided

into four parts, each under a responsible job captain: Secretariat, Meeting Hall Area (now Conference Building), General Assembly, Parking and Site Planning. Job meetings were held weekly. Harris attended these and all the other meetings — meetings with the City, the Park Department, the U.N. Advisory Board. There was also a special Board on Code Requirements, because since the City was furnishing fire protection, it was thought advisable to comply, in the main, with the City Code. Policy and general development of design were controlled by Wallace Harrison and Max Abramo-

SITE PLAN

MAP: COMMUTING DISTANCES





vitz. Within the framework as determined by the Board of Design there were endless changes of detail, endless decisions to be made and coordinated and checked. It was an exceedingly involved and complicated technical and design undertaking. Engineers and contractors working closely with the architectural staff made the organization closely knit and contributed to the smoothness of operation. James A. Dawson, Coordinator of Construction for the Planning Office, has headed a staff of 30 or 40 supervisors, estimators, etc.

One of the immediate problems, to be attacked even before the meeting of the Board of Design Consultants, was the organization of the program. How many employees? How many conference rooms, meeting rooms? What were the special needs of the eight major departments of U.N.? What would be the relation of delegates to staff, how would the press be accommodated, what areas should the public be admitted to? What special problems were raised by the international character of the staff? What services would be required in the way of reproduction of the spoken word, of written material; how big and what kind of a library; what types of inter-com systems? How much parking?

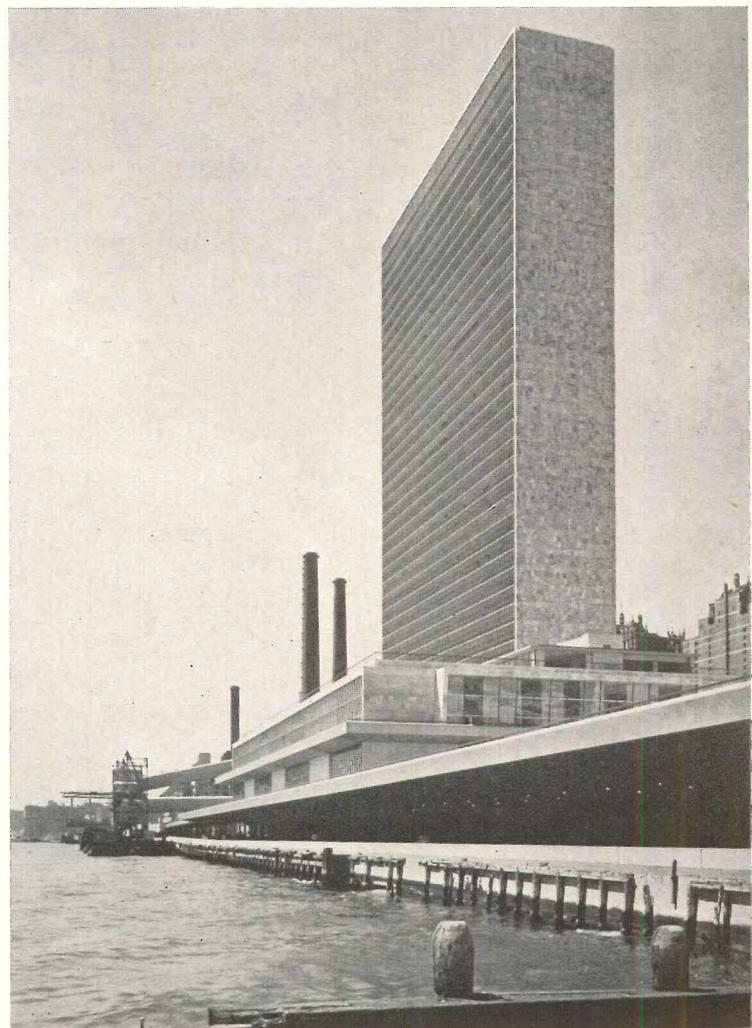
Research into these and a host of related questions was undertaken by Harmon Goldstone of Harrison's office. He prepared a series of reports which, together with engineers' reports on foundations and all other basic technical data, served as a working program. Care was taken not to have any drawings or sketches made prior to the meeting of the designers.

The organization of the United Nations may be summarized thus:

The General Assembly, which is the supreme governing body, and consists of Delegates from all the member states. It meets for two or three months in the year.

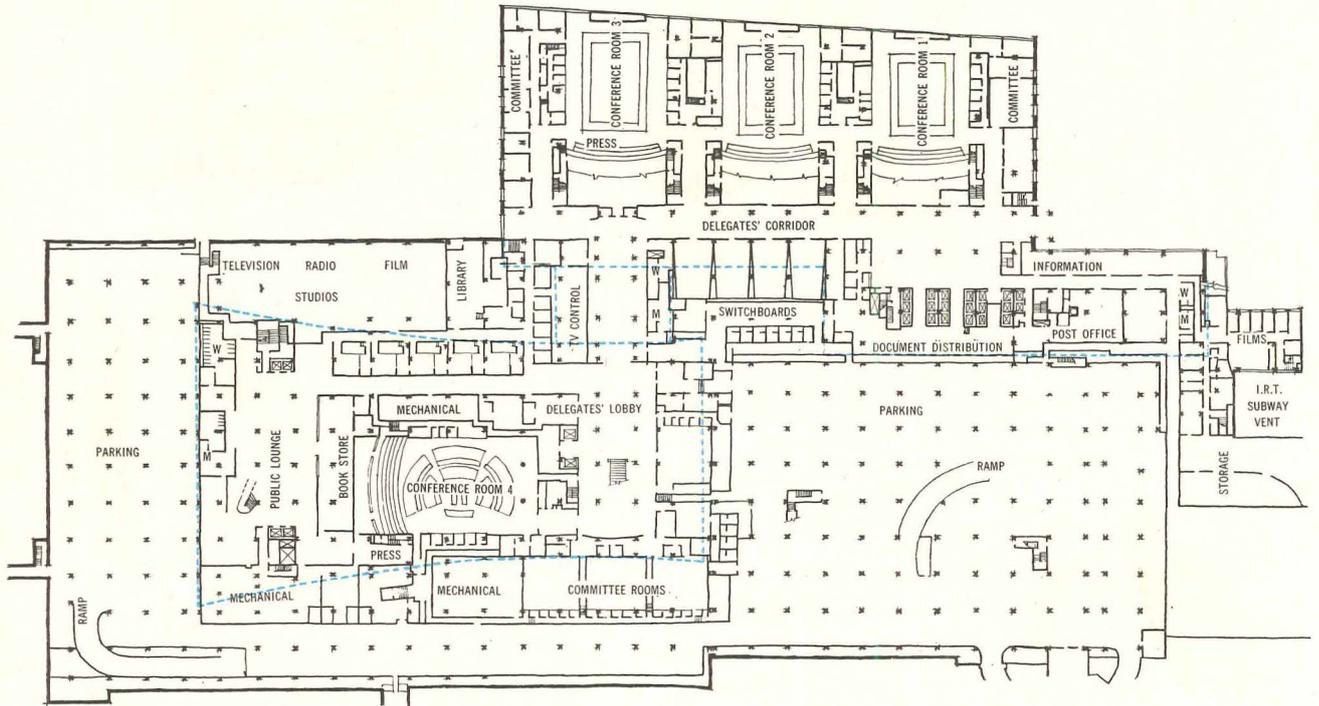
The Security Council, the *Trusteeship Council* and the *Economic and Social Council*, to which are delegated authority in their respective spheres. The Security

Above: View from north; upon completion this will be the public entrance façade.
Below: Conference Building cantilevered over Franklin D. Roosevelt Drive

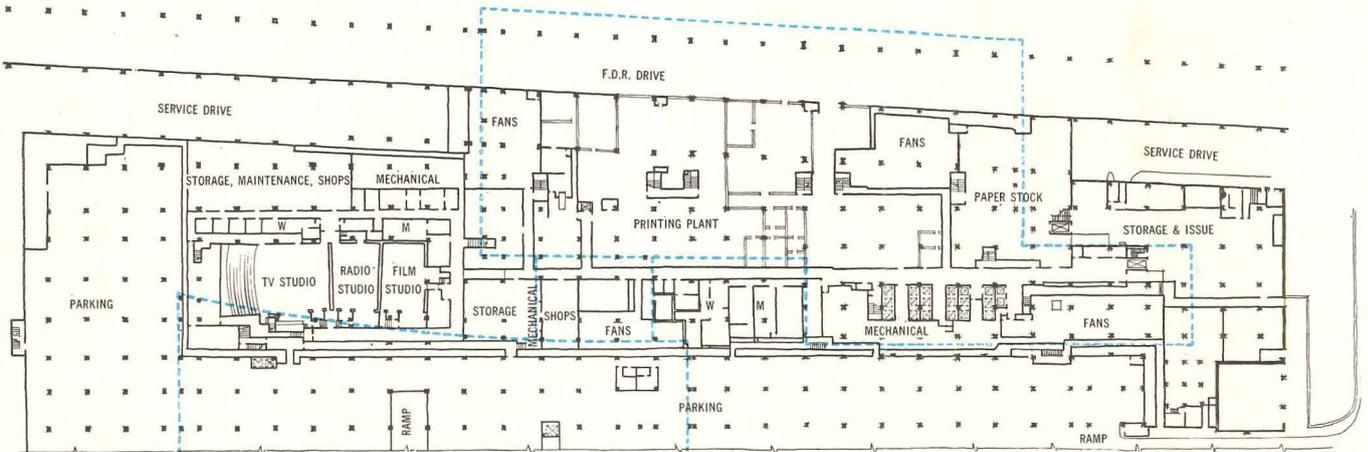




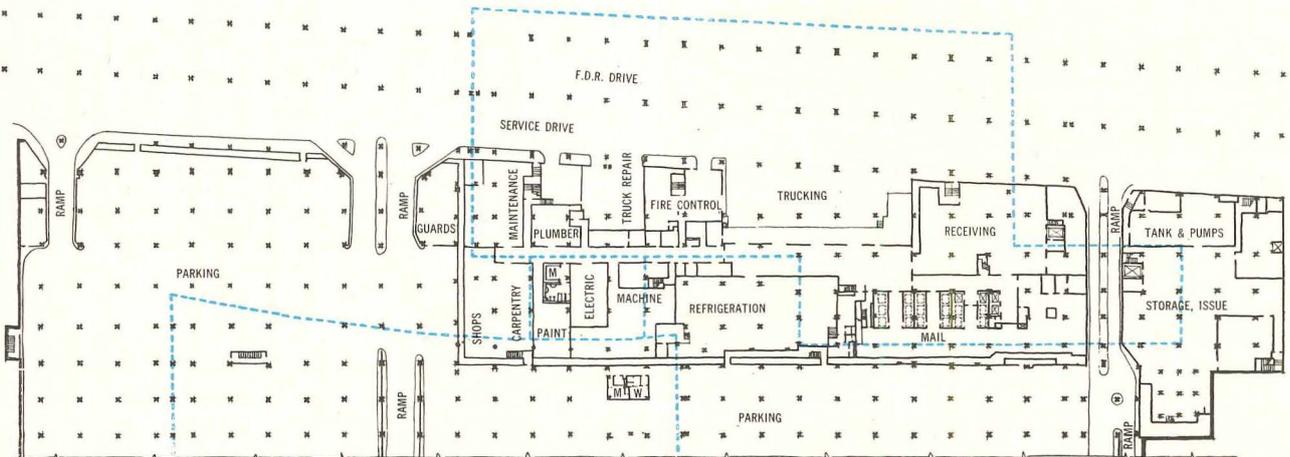
FIRST BASEMENT

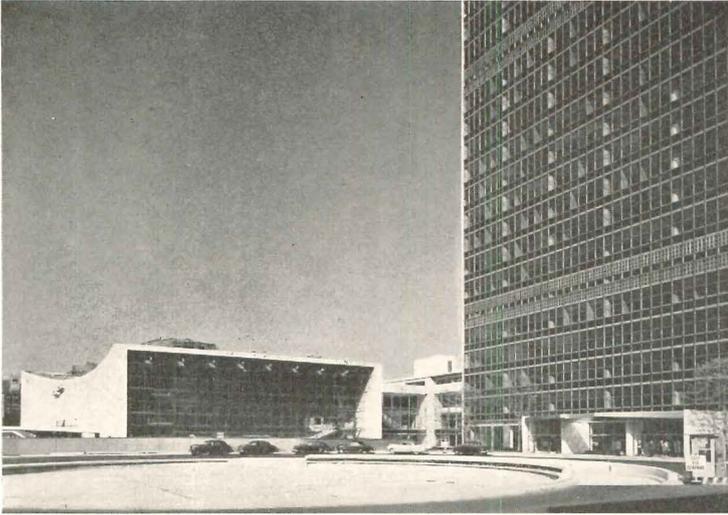


SECOND BASEMENT



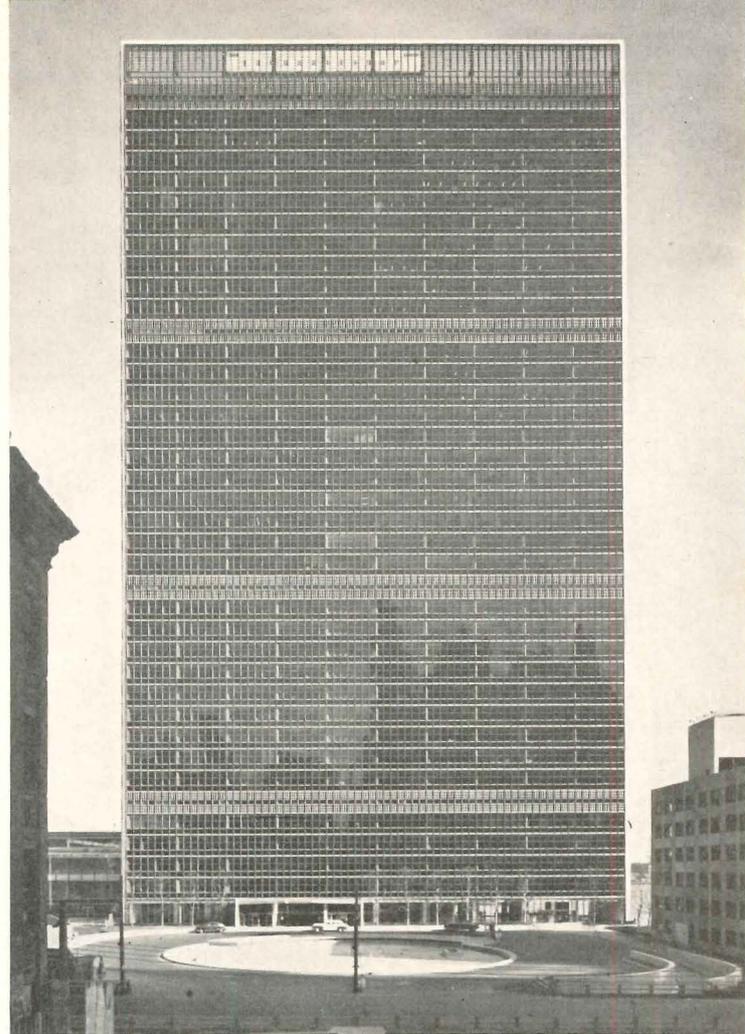
THIRD BASEMENT





Joseph W. Molitor

Above: Secretariat entrance court; upon completion, to be used only by U.N. personnel.
 Right: Secretariat façade



Council is in permanent session; the other two meet three or four times a year.

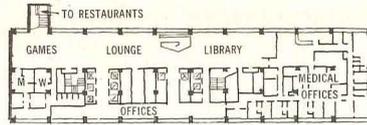
The Court of International Justice. This sits at The Hague, and is not part of the New York City group.

The Secretariat, which is an internationally recruited Civil Service, has the job of keeping the United Nations organization running. It is headed by the Secretary General, and is divided into eight departments. The Departments of Security Council Affairs, Economic Affairs, Social Affairs and Trusteeship Affairs deal with the work of the three Councils. The Legal Department handles problems of international law; the Administrative and Financial Department handles budget, personnel and organizational matters. The Department of Conference and General Services handles all the enormous amount of paper work for the United Nations (it takes 400 man-hours to get a one-hour speech by a delegate into the record — including translation into five languages, editing for the Journal and printing in the Official Record); it runs a full-scale printing plant, and documents are distributed by dumbwaiters, conveyors and pneumatic tubes. This Department also handles security, plant operation, transportation, mail and messenger service. The eighth Department is Public Relations. In addition there are two other groups closely tied in with the U.N., the *Specialized Agencies* and the *non-governmental international organizations*. While not part of U.N., they had to be considered in the basic program.

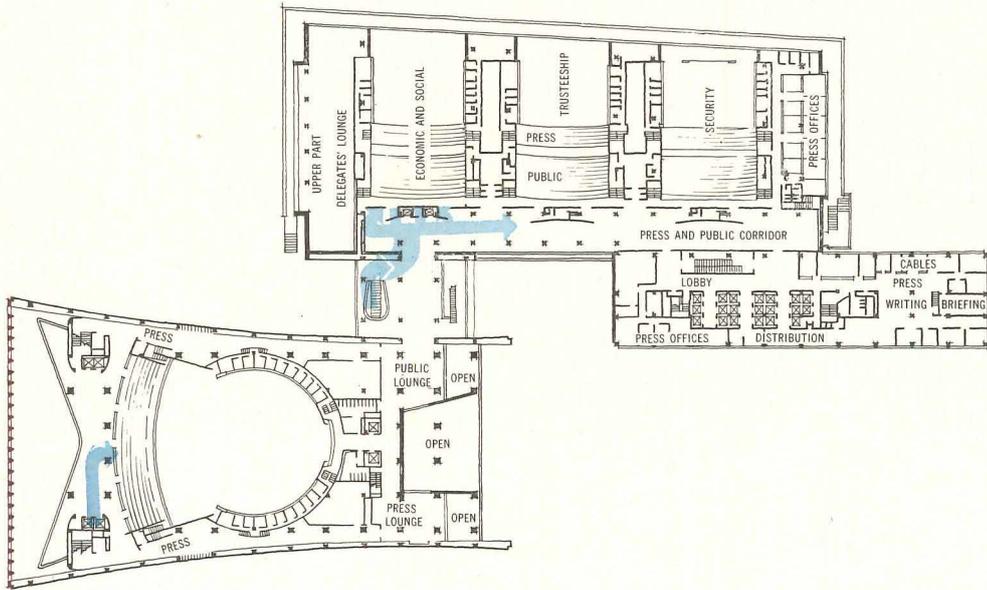
Goldstone's program fluctuated widely for quite a while, because there was no way of calculating precisely the future personnel needs. Preliminary designs were based on 2300, which rose shortly to 5265, and finally settled down to about 4000 ultimate, with an immediate layout for 3200 (exclusive, of course, of "service personnel" — elevator operators, cleaners, etc.).

Early in 1947 the Director of Planning, his Deputy Director, Max Abramovitz, and the Ten International Design Consultants began work on the design. Fifty-three basic schemes, many with three or four variations, were made and discussed, with the Director acting as umpire, moderator, and soother of ruffled feelings. By May of 1947 a final parti was unanimously agreed upon — the first unanimous presentation ever made to the General Assembly by a U.N. committee.

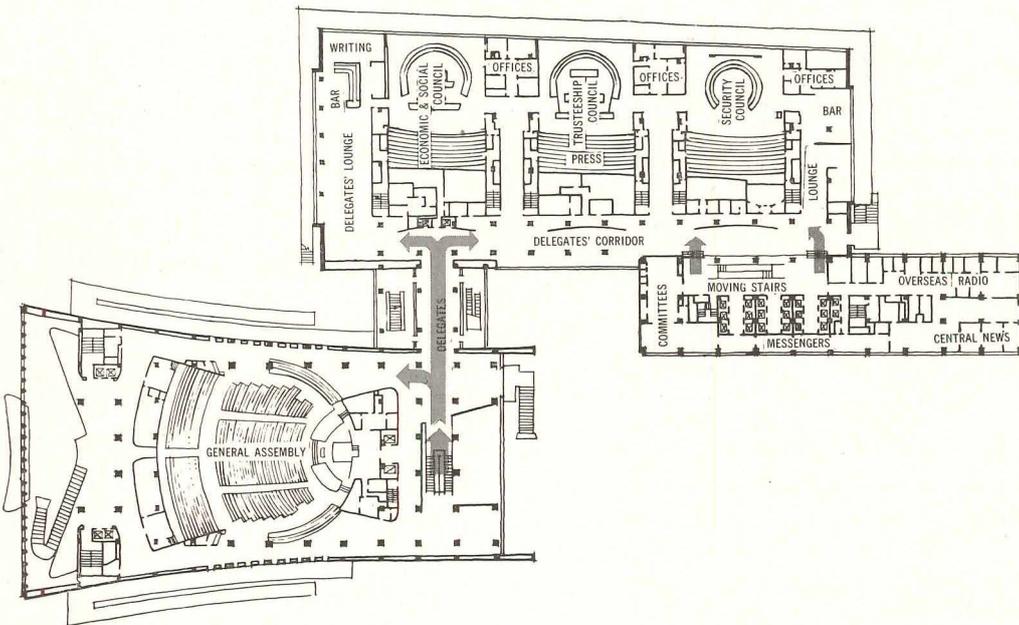
Five essential decisions were made. 1) the Secretariat, which has the greatest daily flow of population, should be at the south end of the site because of its convenience to 42nd Street and cross-town transportation; 2) the Secretariat was to be a high-rise structure because experience at Lake Success showed that intercommunication, of which there is a great deal, was far easier and less time-consuming vertically than horizontally; 3) that given a high-rise building on the south, an east-west orientation would throw less shadow over the site than north-south, even though there was a considerably greater cost entailed for heating and air conditioning; 4) the location of the Council Rooms to



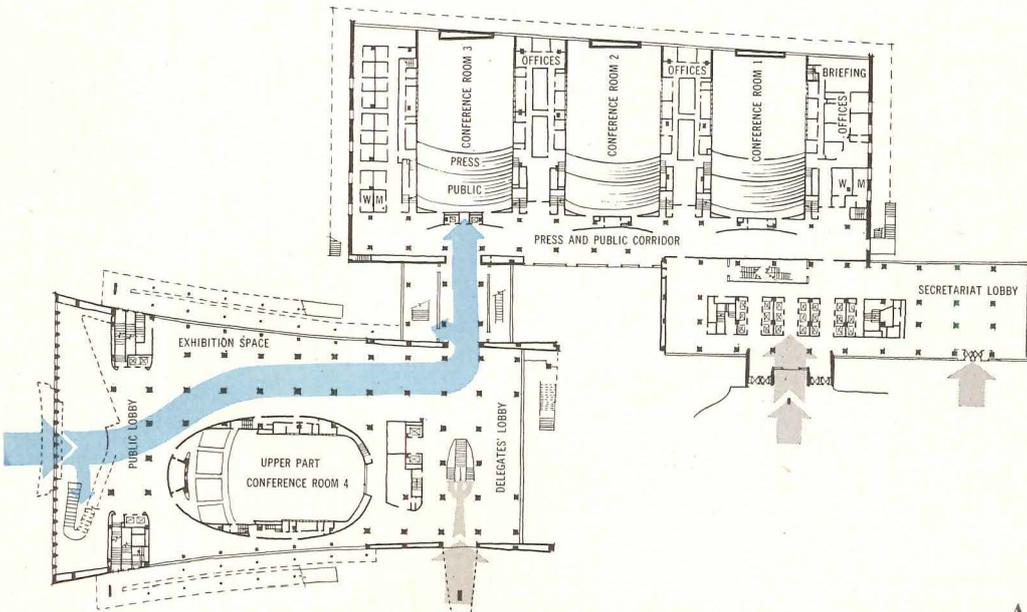
SECRETARIAT FLOOR



PRESS AND PUBLIC LEVEL



DELEGATES' LEVEL



ENTRANCE LEVEL

Facsimile of one of the many pages of the program of May 1947. One of several programs prepared before the Board of Design started work, this contained explanations and area tabulations under the following headings: Preliminary Summary of Considerations Affecting Planning; Meeting Hall (now Conference Building) Areas; Booths (for translators, broadcasters, etc.); Secretariat; Military Staff; Specialized Agencies; Delegations; Staff; Eating; Circulation, Traffic and Parking; Documents and Sales

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Rev. HIG:ml: 3-5-47
Rev. HIG:hgl: 6-5-47

SECRETARIAT REQUIREMENTS - based on Questionnaire Returns

| Department | Number of Employees | | NUMBER OF OFFICES | | | | | | No. of people in open office space | No. of Conference Rooms | SPACE IN SQUARE FEET | | | | Total (1947) (Budget) (Total) | Sq. Ft. of Office | Personnel | | |
|--------------|---------------------|---------------------|-------------------|-----------|------------|------------|------------|------------|------------------------------------|-------------------------|----------------------|------------------|---------------|----------------|-------------------------------|--------------------|------------|------------|------------|
| | Mar. 31 1947 | 3-5yr. Budget Total | Type 1 | Type 2 | Type 3 | Type 4 | Type 5 | Total | | | Office space | Conference space | Storage | Special Spaces | | | | | |
| Sec-Gen Off | 68 | 59 | 61 | 3 | 5 | 13 | 6 | 4 | 31 | 15 | 2 | 9,990 | 1,940 | - | 800 | 12,730 | (11,630) | 164 | 209 |
| Sec.Council | 73 | 85 | 290 | 1 | 5 | 18 | 121 | 65 | 210 | 22 | 4 | 39,410 | 2,736 | 1,984 | 1,500 | 38,730 | (15,320) | 133 | 153 |
| Sec. Affairs | 176 | 206 | 534 | 1 | 7 | 39 | 187 | 134 | 348 | 186 | 6 | 62,090 | 3,980 | 675 | 1,040 | 67,735 | (44,295) | 117 | 127 |
| Soc. Affairs | 133 | 253 | 332 | 1 | 5 | 42 | 101 | 149 | 298 | 3 | 4 | 42,820 | 4,222 | 1,205 | 2,915 | 51,162 | (42,575) | 129 | 154 |
| Trusteeship | 69 | 141 | 213 | 1 | 8 | 39 | 96 | 24 | 168 | 1 | 3 | 28,690 | 1,750 | 900 | 3,450 | 34,350 | (25,960) | 135 | 161 |
| Legal Dept. | 41 | 51 | 85 | 1 | 4 | 7 | 13 | 26 | 51 | 0 | 1 | 10,120 | 1,200 | 1,000 | 400 | 12,720 | (9,360) | 121 | 150 |
| Pub. Infor. | 252 | 337 | 671 | 1 | 8 | 48 | 178 | 151 | 386 | 148 | 2 | 65,390 | 1,436 | 6,770 | 29,240 | 102,796* | (64,780*) | 104 | 153 |
| Gen. & Gen. | 1,659 | 1,816 | 2,603 | 1 | 37 | 69 | 191 | 114 | 412 | 1,416 | 8 | 139,715 | 3,084 | 147,519 | 129,705 | 420,023* | (211,997*) | 79 | 150 |
| Adm. & Fin. | 328 | 376 | 447 | 1 | 20 | 34 | 20 | 41 | 116 | 288 | 7 | 40,600 | 2,685 | 2,040 | 17,904 | 63,229* | (25,284) | 98 | 112 |
| Mil.St.Sec. | 69 | 69 | 69 | - | 5 | 16 | 6 | 10 | 37 | 15 | 5 | 7,850 | 500 | 616 | 2,670 | 11,636 | (11,636) | 114 | 169 |
| TOTAL | 2,848 | 3,393 | 5,765 | 11 | 104 | 375 | 899 | 718 | 2,057 | 2,094 | 42 | 439,595 | 23,533 | 161,859 | 189,624 | 624,611 net | | 102 | 155 |

FO T A L 624,611 net

On Concourse Level:
 Reproduction Section 33,508
 Document Distr. Work Space 9,460
 Maintenance Shops 21,730
 Mech. Repair Storage & Shops 5,110
69,808

On Service Level:
 Receiving 14,890
 Storage & Issue 83,000
 Document Distr. Storage 50,000
147,890

- 217,698

ABOVE GROUND STORY: 596,913 net 746,141 gross

* Plus 8,180 in Library and 45,250 in Meeting Hall Area.
 # Plus 180,000 in Library and 32,400 in Meeting Hall Area.
 † Plus 41,720 in Staff and Athletic Facilities.
 # 150,000 to be added when rest of site is developed

the east was determined as a logical relation to the General Assembly which was given the place of honor at the center of the site along First Avenue; 5) agreements were reached with the City to cantilever over Roosevelt Drive, to build a tunnel past the site for First Avenue traffic, to widen 47th Street, and to construct minor parks adjacent to the site.

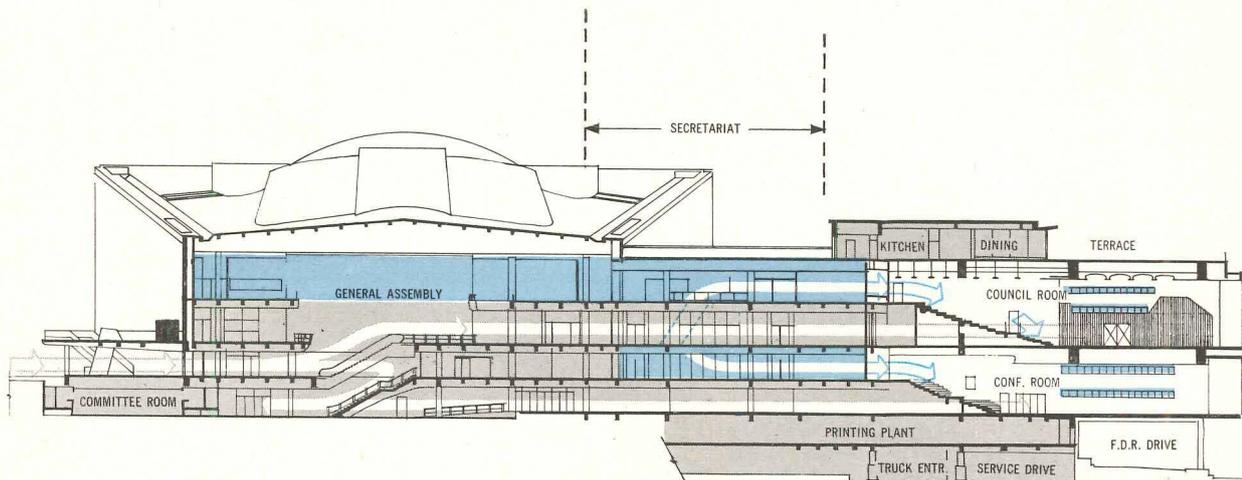
The first plans also contemplated an additional structure for Specialized Agencies and Delegations Offices at the north end of the site. This was abandoned for lack of funds. Since then the Carnegie Endowment for International Peace has acquired a site at the corner of Forty-sixth Street and First Avenue and is erecting a building there which will house many of the non-governmental agencies.

The original scheme was to have cost about \$85,000,000, as a loan without interest from the United States, repayable over 32 years. This was cut to \$65,000,000 by the U.N. itself, to scale down its request for presentation to a Congress dubious of the whole idea.* The cut necessitated a general scaling down of areas and cubage. This was done without altering the original

approved design. In fact the main elements of plan, section and general conception, as approved by the Design Consultants and the U.N., have not been changed in any essential respect whatever.

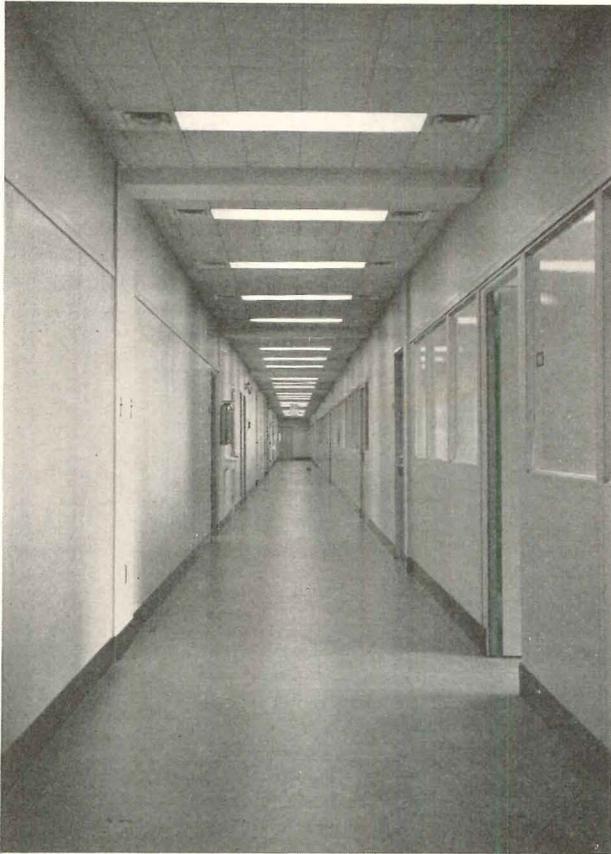
Let us consider each of the group components in some detail, starting with the Secretariat. This building is 544 ft high, 287 ft long, 72 ft wide and has 39 floors and 3 basements. Visually it completely dominates the group; when one thinks of U.N. one thinks only of the vast green-glass, marble-end slab, although in plan it forms only a small part of the total building area. This visual dominance is probably as it should be, for in governmental organizations today the clerical worker with his paper-shuffling and the permanent heads of departments, divisions, bureaus, sections are the people who get the work done, subtly influence policy, and see that the wheels go 'round. Without the typists, the file-clerks, the men and women in the little cubicles, not only U.N. but all our businesses would collapse. The office building has consequently become the char-

* Recently the U. N. has appropriated an additional \$3,000,000. which was needed for completion of the work.

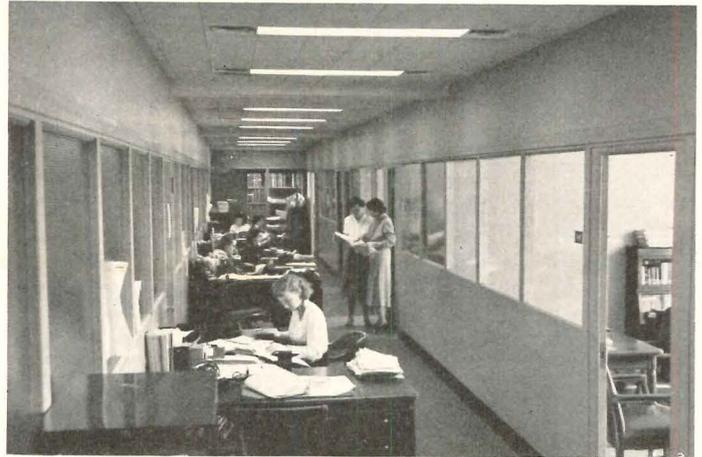




ALL STOPS FROM
15th TO 27th FLOOR



Photos courtesy U.N.



Joseph W. McClintock

The Secretariat: facing page, elevator lobby; upper left, office floor corridor; lower left, unfinished office floor; above, interior and outside offices

acteristic form of American architecture, and it is in the technique of office buildings that our greatest advances have been made. It is somehow fitting that the Secretariat should become the symbol of the U.N. — an up-ended filing case for human beings, their hopes, their fears and their aspirations for a steady job. That is the new American Dream, a steady job, that is what we hope a United World will bring us, in the terms of peace and security; and of that the Secretariat is a just, if unconscious, expression.

Unconscious expression because actually the Secretariat is more than an American office building. It houses people from many nations with greatly differing cultural backgrounds. This raised a lot of technical problems, from how to provide temperatures and working conditions for a variety of physiological natures to psychological problems of adjustment to mechanical devices and personal habits, to questions of elevator controls and signs. Since there are practical limits to providing for national whims, the answer was to make the process of adjustment to our way as painless as

possible. The result is, of course, a forceful expression of Our Way, not theirs.

Seen from a distance the Secretariat is very handsome indeed. It has, on the whole, remarkable clarity, and a quality of brightness. The utility floors are differentiated from the others by a kind of tracery, repeated at the top in the form of a high grille intended to hide the pent-house. The location of these bands could have been more carefully studied. They have no rhythmic relation to the whole surface and so they are disturbing, whereas careful placement might have enhanced the scale and dynamic effect of the façade. The top grille is also most unfortunate. It does not hide the pent-house, which is actually a very simple shape and could very well have been left visible. The grille, against the sky, seems frivolous, a little rococo, like the lace on men's eighteenth century sleeves.

As a mechanism the Secretariat works exceedingly well. The impression on entering is one of great openness and space; there is easy access to elevators and to the big lobby with the floor-to-ceiling windows which give it



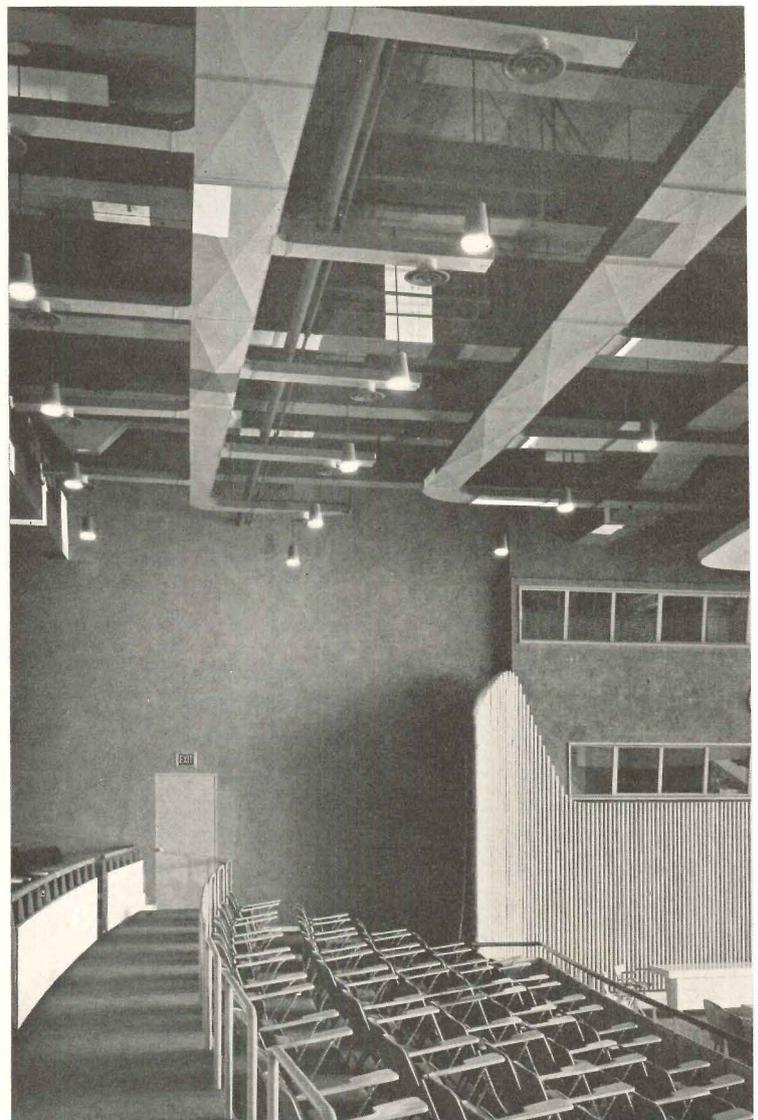
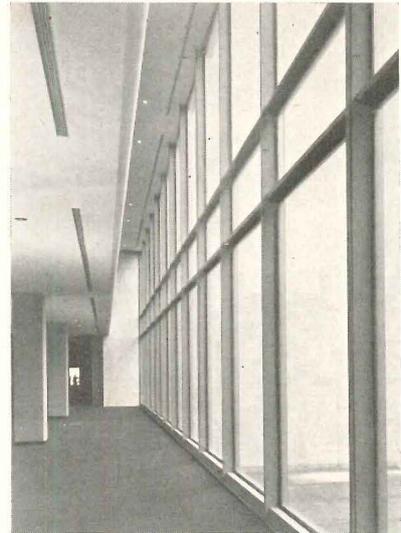
its spaciousness and extension to the outer world. It is with details that most fault can be found: the entrance canopy which, though intended to be only part of a flamboyant two-story entrance motif, is in its present state only reminiscent of hotels and broadcasting stations; the restlessness of the ceiling; the poor handling, both inside and outside, of the narrow end-returns of the marble slab-ends where they come down through the first floor.

The office floors are efficient and simple. The big windows are pleasant, but raise a question of technology. The windows on the utility floors, although far smaller, seem to distribute just as much light with less glare: one questions the actual value of the big glass areas, so carefully contrived with venetian blinds to cut the glare and with heat resistant glass to keep out the hot western sun. Incidentally this glass was used on the east side as well, where it was not needed for technical reasons, in order to preserve the visual color balance within the office space. Psychologically this was a wise decision, for the difference in color would have required continual adjustment of the eyes.

There was trouble with the glass wall too, at first, from leakage resulting from the up-draft of air. Leaky walls are common enough on sky-scrapers. As with the leaky roofs attributed to Wright's houses, the prominence of the work has made it a target for snide criticism.

The floors are all laid out for maximum flexibility. The air conditioning is individually controlled for each bay, and all windows are openable. This was a concession to the great variety of desires as to "climate" expected from the differing national backgrounds of the personnel, paying off in better morale, and probably in fewer respiratory troubles. The use of double-hung sash also permits the windows to be cleaned in the ordinary way. (A wall-washing machine, once considered, was abandoned when cost estimates were found prohibitively high.) The electric lighting (fluorescent in sunken troffers) and the ventilation outlets are spaced on a modular system; and in practice it has been found that very little shifting of equipment has been needed in installing the many office partitions.

The main telephone switchboard is housed in the Secretariat; there is also an inter-com system; and, as has been said, a system of dumbwaiters, conveyors and pneumatic tubes for the distribution and routing of office memoranda, mail, and printed matter. This system will also extend to the Library, which is housed in the building originally built for the New York City Housing Authority — an unrelated structure left on the northwest corner of the site. The building was brand new and expensive when U.N. took it over; even remodeling it for library use cost a small fortune. It does



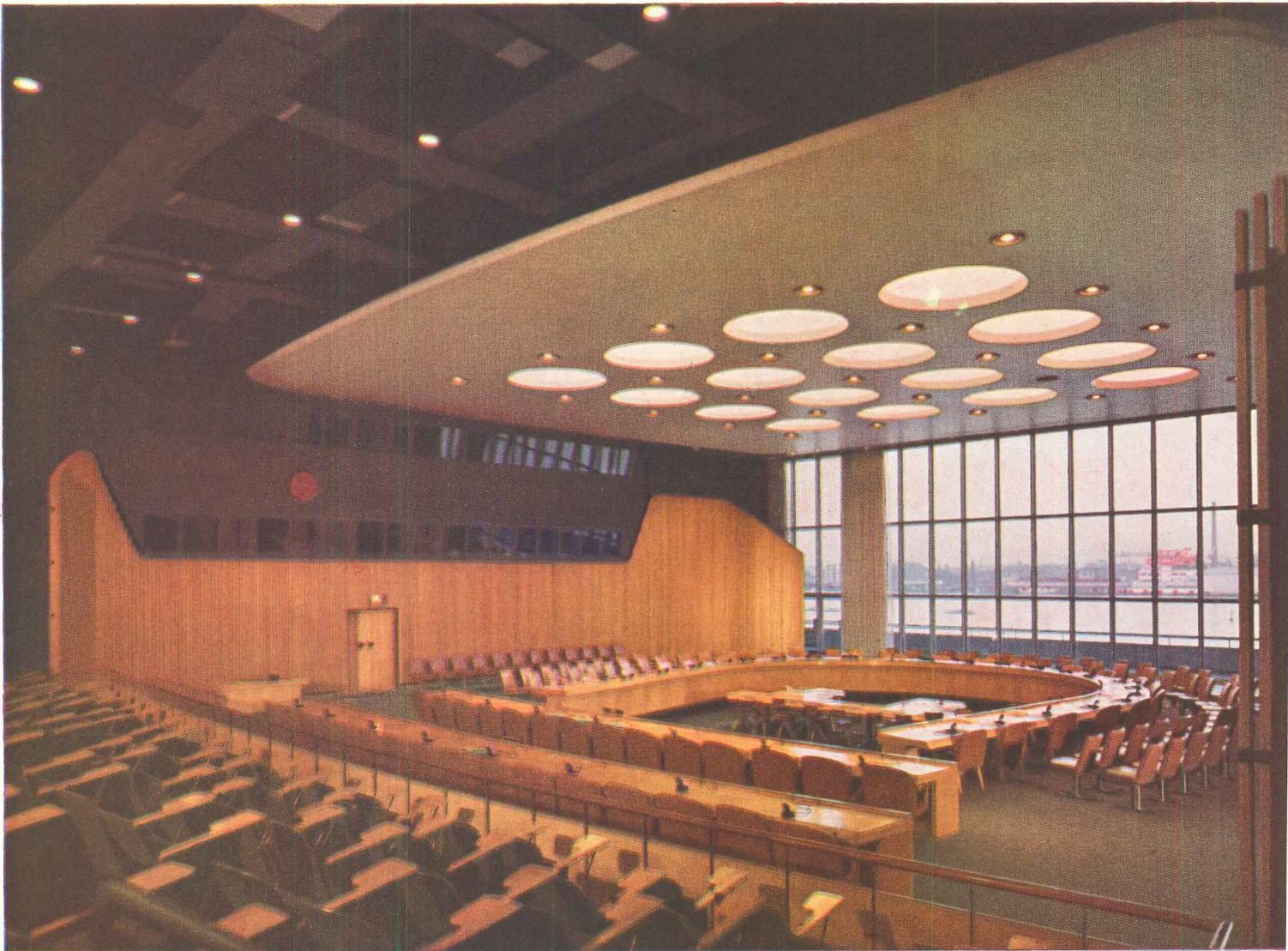
Joseph W. Molitor

not help the appearance of the World Capital. There exist preliminary plans for drastically modifying the building, but there are no funds for carrying them out.

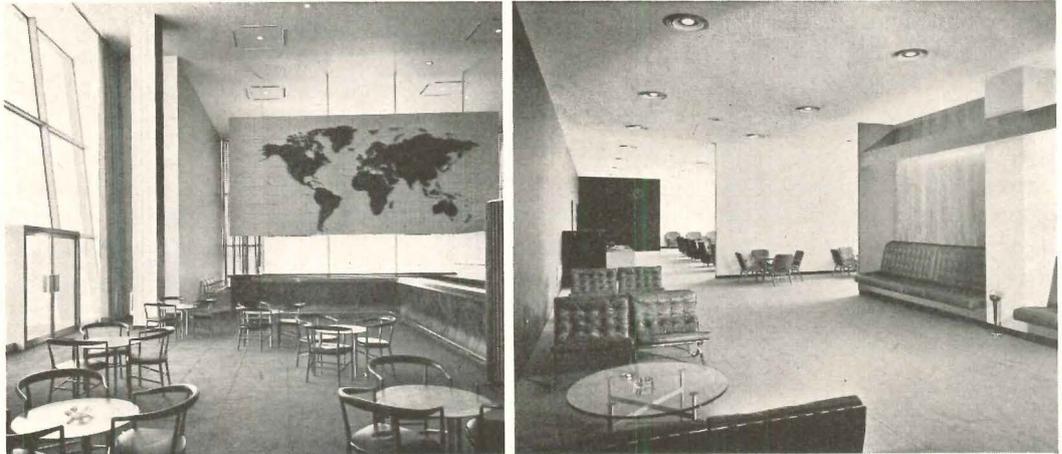
The Secretariat connects directly with the Conference Building by broad, spacious corridors which are pleasant in color and lighting. Here again there is a feeling of amplitude; the corridors open partly on big windows, which afford a very satisfactory variety. The entrances to the big meeting rooms are shielded by curved screen walls, which break up the long corridor vistas and provide contrast of form. When the General Assembly is completed the public will have access through that building instead of, as now, through the Secretariat. The circulation is so arranged that there is always separation of delegates from public and press, in relation to both the Council Rooms and the Conference Rooms.

The Conference Rooms, all alike, are simply and directly treated. They face the River, and the center section of the river wall is blanked off, leaving a full length window at each side. This is unpleasant, from the public gallery, because of the sharp contrast in brightness value thus created, but the location of the public gallery was not the decision of the architects. These rooms as well as the Council Rooms have communications booths on two sides. From one side radio, television and recording engineers can operate; the other side is for the simultaneous translators. For the Council, Conference and General Assembly areas there are about 200 such booths, a potential television studio, and large areas for the representatives of papers, radio and newsreels. The acoustics of all areas were given most careful study. The acoustical problem today is totally

(Text continued on page 118)

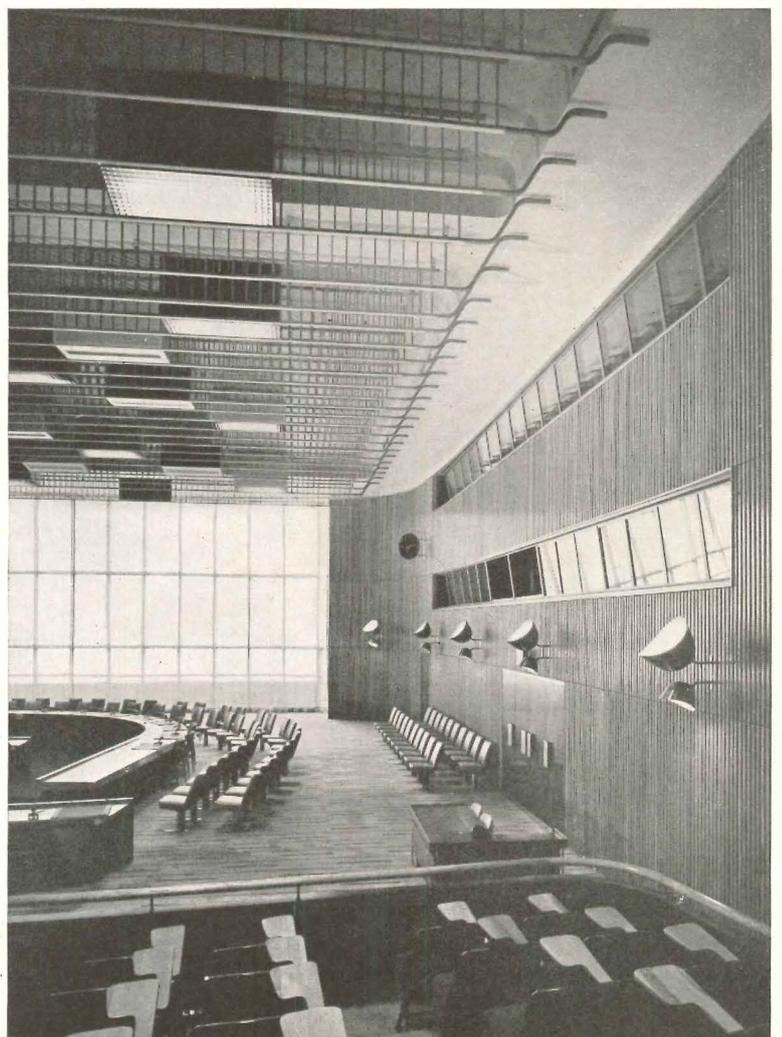


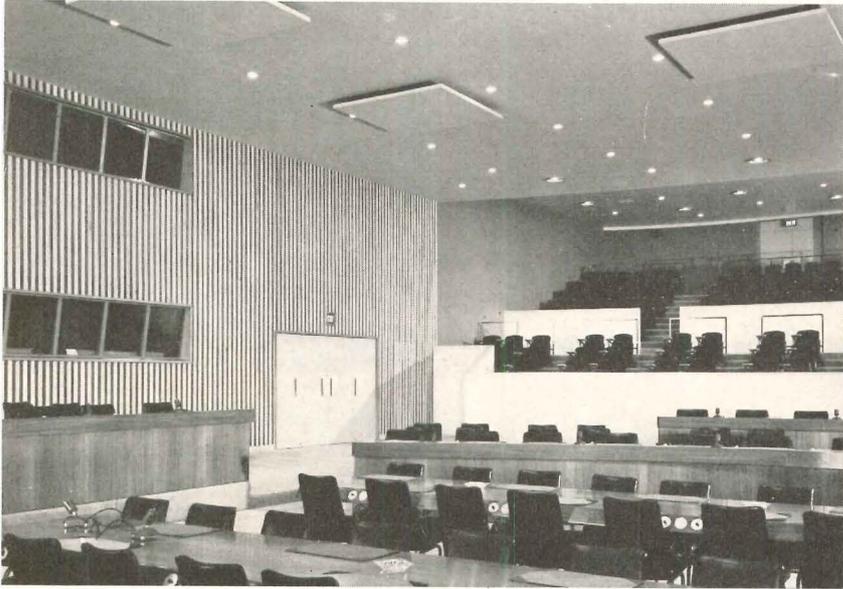
Facing page, top: Conference Building corridor, Entrance Level; bottom, press gallery, Economic and Social Council. Above, Delegates' area, Economic and Social Council



Joseph W. Molitor

Above, left, Delegates' Lounge, north end of Conference Building; right, Inner and Outer Lounges at south end. Below, left, Security Council; right, Trusteeship Council





Above, left, press and public galleries, typical Conference Room; right, balcony at south end of Conference Building; below, typical Conference Room



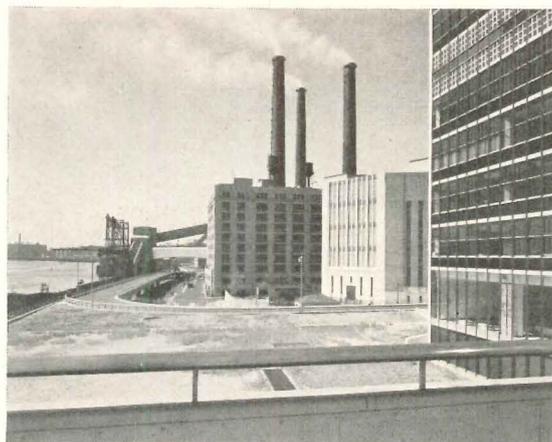


different than it was in the old days, when the unaided voice-waves had to be carefully nursed to the far reaches of a hall. Today amplifiers are used, together with devices for preventing reflection and oscillation, such as walls slightly askew, as well as acoustical tile and wave-breaking materials for the walls.

Every seat is equipped with ear-phones which can be switched to the simultaneous translation into any one of the five official languages. The actual speeches and the translations are all recorded. While technically marvelous and most impressive, it seemed to this observer that all this is admirably suited to produce the greatest possible amount of verbal vacuity and bombast and the least opportunity for an interchange of real thought. With every word possibly going around the world, preserved to "the last syllable of recorded time," the tiniest issue and smallest man are magnified out of all proportion.

The Council Chambers were designed and decorated by three different architects, all working within an exactly similar structural frame. The Security Council, donated by Norway, was done by Arnstein Arneberg. The walls are covered from floor to ceiling in a royal blue cloth with gold decorations, and the same material is used for upholstery and drapes. Doors and other woodwork are richly worked with inlay. Arneberg has built a free-standing screen in front of the window to serve as a background for the President of the Council, thus creating an effect very similar to that of the Conference Rooms below. While rich and consistent, the Security Council Room seems curiously antique; not "old-fashioned," but reminiscent rather of the best late medieval decors — the older part of the Chateau of Blois, or the sacristies of late Gothic cathedrals, almost as though the room had been restored by Viollet-le-Duc. One questions the wearability of the material, against which crowds will rub, and the constant repetition of the motif tends to become monotonous. The screen is to be decorated: a great deal of the final effect of the room will depend upon the decoration.

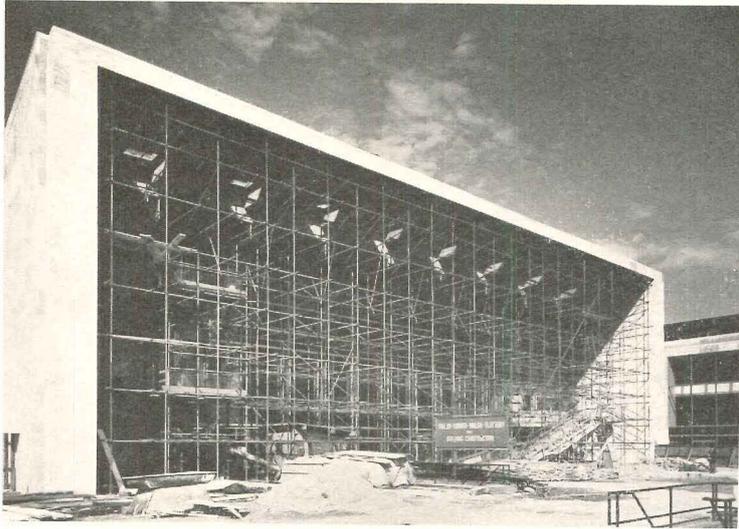
The Trusteeship Council was given by Denmark and designed by Finn Juhl. It is strikingly light and vibrant; fine wood is used, there are beautiful light railings, and the chairs and seats are upholstered in plain, clear colors carefully chosen; public, press, delegates and assistants all have different colors. The ceiling is a motive based on bar joists, sharply colored and arpeggio-like; and this is repeated in the carpet of the meeting portion of the room. The window, unobstructed except for translucent drapes, opens wide over the East River. This great light silhouettes speakers, even with the drapes drawn; in all these rooms the public will suffer from eye-strain. The Trusteeship Council, however, is a gay and pleasant room; perhaps the only false note is sounded by the side lighting fixtures, sort of tilted



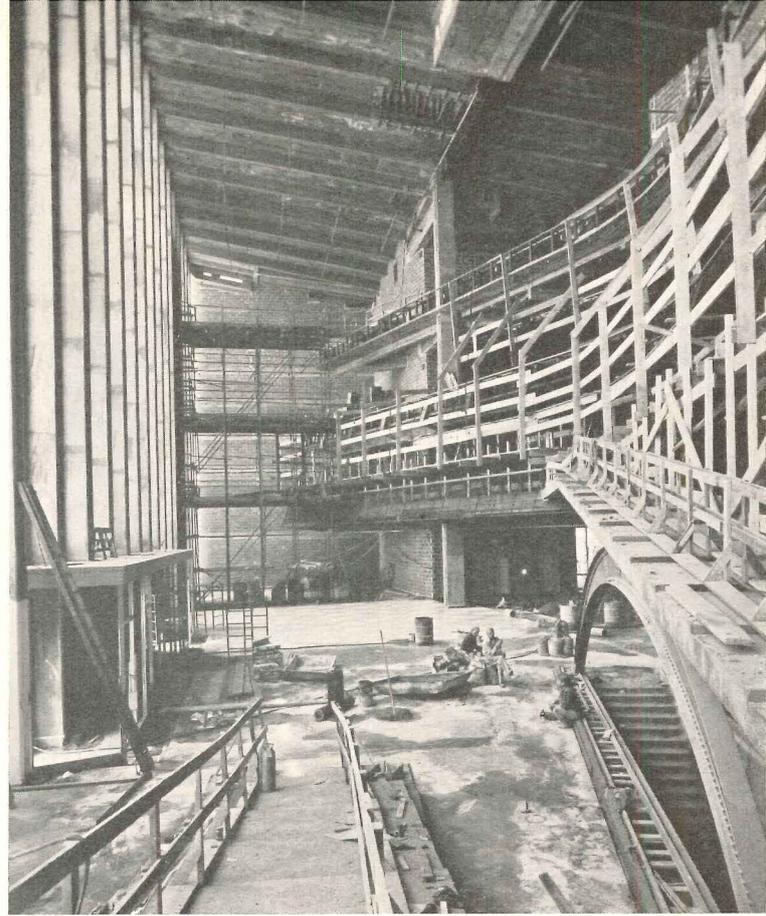
aluminum kettle-drums grossly out of scale with the sharp fineness of the rest of the design.

The Economic and Social Council, given by Sweden, designed by Sven Markelius, is the boldest and most dramatic of the three. Markelius has chosen to make a very sharp distinction between the public gallery and the delegates' working area, shrouding the former in somber colors, emphasizing light in the latter. The ceiling over the gallery has been left un-furred: all the ducts, pipes and paraphernalia ordinarily concealed are here exposed and painted in a strong pattern of grays, blacks and patches of off-white. Over the working area the architect has used concealed lighting hidden above a white free-form suspended ceiling. The same strong contrast is carried out in the color of the upholstery. The walls are wainscoted with vertical battens of light wood — all the woodwork is finely detailed and exquisitely finished.

Here are three rooms of identical size, serving identical purposes, with the same structural frame; in the three very similar conference rooms below, designed by the U.N. Planning Office and decorated by Abel Sorensen, no effort at decorative symbolism was attempted. It would be hard to find a better example of the uncertainty and irresolution that besets modern architecture outside the field of structural design. Striking as all three principal Council rooms are, they do not speak the same language; they lack a common accord of dignity. They are vibrant, thin; their attraction comes from and is on the surface, there is no depth. All three lack conviction; they are the expression of personal ideas of decoration,



Above, south end, General Assembly, May 1952.
 Right, interior, public lobby, ramp and galleries
 under construction, north end of General Assembly



Joseph W. Molitor

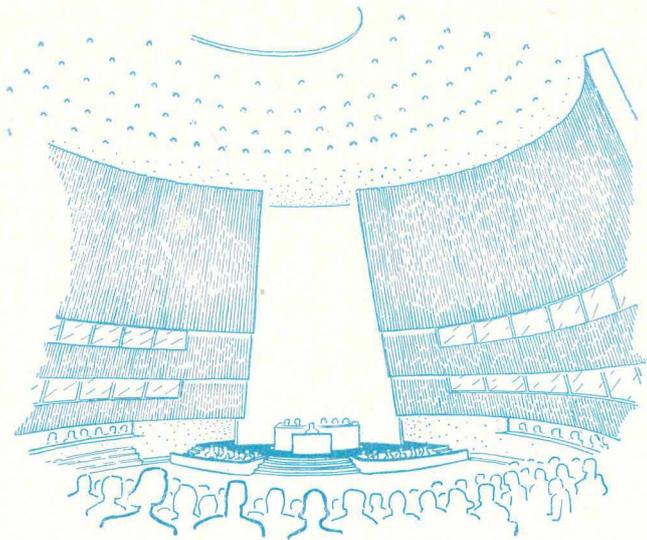
Facing page, top, looking south from Conference Building balcony; bottom, kitchen on top floor, Conference Building

not the expression of an underlying and common culture. They are not, in fact, *architectural* decoration at all, as is evident from the fact that the basic architecture has had no real influence on them. The great decorative styles of the past have been based on architectural form, not on superficial overlay. By contrast the unpretentious simplicity of the less important Conference rooms, providing merely a quiet work-a-day color scheme, seems much more to the point. . . . We are not convinced about U.N., we are not convinced about anything really; we cannot therefore convey metaphysical values, since they do not exist for us as conviction but only as an intellectual belief or something we read about.

The Conference Building also has lounges and bars for delegates and press, elegantly done, light and pleasant with their windows and sense of space; attractive, chic. The windows open over the river; north across the open terraces of the U.N. property, which will some day be landscaped and green, south towards the unsightly mass of the Con Edison plant and the confusion of Brooklyn. The roof of the building forms a terrace outside the Cafeteria for the Secretariat and the Dining Room for the delegates. These latter are efficient, pleasant rooms; the Dining Room broken up by low screens, with quite delightful furniture and flowers on every table and an air of quiet refinement. The kitchen, serving both eating places, shines with stainless steel and Monel metal; all the latest cooking and clean-up and serving devices have been incorporated. It deserves

to be under the rotating direction of the finest chefs of each member country. Peace and accord may here perhaps at last be achieved not by the gross bellies of Napoleon's armies but by the delicate flatulence of delegates.

In general the architecture of the Conference Building is straightforward and clean. The large expanses of glass give it lightness and the effective handling of the masonry provides a strong, simple frame. But there are some curious anomalies, like the slanting window-wall at the north, apparently done for effect, and therefore unpleasant; and the odd free-form penthouse over the restaurant, inexplicable and inexcusable, particularly when seen from the main entrance court to the Secretariat. These and some other occasional forms are inconsistent and therefore disturbing esthetically; one seeks immediately to rationalize them, and no answer is apparent. Much of the detailing, too, is inconsistent and sometimes incongruous. In the last analysis it is the details of a structure that bind it together and give it coherence, that produce a sense of scale and relation between parts. Most modern architecture lacks just this careful attention to detail, and the U.N. is no exception, although one had hoped it would be, and perhaps had it been designed in less of a frantic rush and had more leisure and loving care been possible, it might have been. Time and love as well as conviction go into truly great art. St. Peter's was not built in a year, nor was the Farnese Palace designed in a few months. Although the Director of Planning has given



Interior, General Assembly

tireless effort to design there simply has not been enough time for the full expression of thought or for the revision necessary to fuse the parts into a thoroughly studied and consistent whole.

Below the street level of the Secretariat and Conference Building, both structures where the flow of words is unimpeded, are the printing plant and recording rooms where the flow is dammed and immortalized on paper and tape. The huge plant prints everything — delegates' speeches, reports of international portent, daily menus for the restaurant, forms. Here too are carpenter and upholstery shops, metal working and electric shops for the maintenance of the vast project. Here is the equipment for the heating, ventilating and refrigeration of the air-conditioning plant and the other mechanical needs. Here is a complete fire-fighting section, with a control room into which trouble in any part

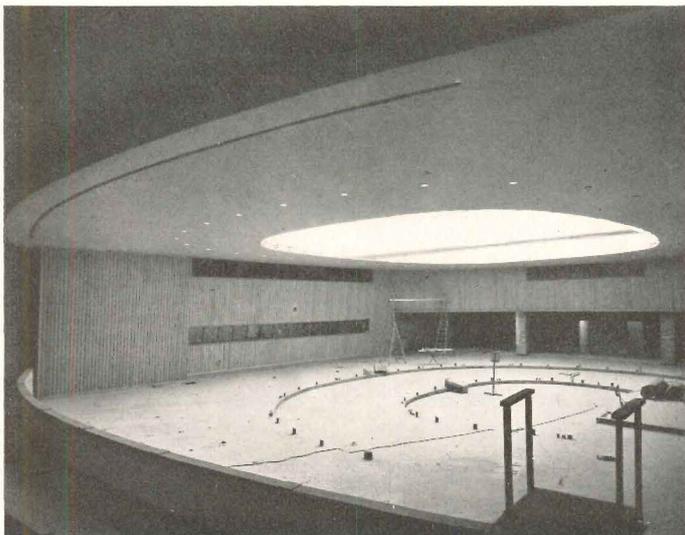
of any of the structures is automatically flashed on light panels. Here is the communications control room; from every device leads come back here to a control panel. Here are the well separated truck entrance, the auto-repair station, and general services such as locker rooms and storage. Below all this for two levels, and extending under the General Assembly and entrance courts as well, for three levels, is parking for 1500 cars.

Coming back up, there is the General Assembly, the real center of the Parliament of Nations. This, not the Secretariat towering in its green and gray brilliance, nor the half-hidden Conference Building, this and not those working areas is the symbolic core of the world's hopes. This the unborn World's Hypostyle Hall, its Parthenon, its Temple of Supreme Harmony, the emblem of Government rising, like that of London, Paris or Washington, over a noble river.

The architects felt this, of course. The General Assembly is, in plan, the focal point of the composition, and the flowing form of the structure was to characterize and emphasize its difference and its importance.

To me it lacks dignity and strength; it has a certain grace, but no beauty. The concave sweep of the wall, the concave droop of the roof make it weak and uncertain. A catenary held between two verticals has power and precision, but this curve is amorphous and is chopped off at points that have no visible relation to the curve or to each other. The dome of the Assembly Hall and the little pill-boxes that enclose the elevator machinery are inept and unrelated to the composition. The dome neither dominates, as one feels a dome should do, nor is it a decorative element, as it, together with the elevator enclosures, might have been. There are other curious discordances: the north front, the public entrance, is of so completely different a character from the south front — which opens out to the delegates' garden and the Secretariat entrance court — that although they are never seen at the same time the memory of the one comes as a shock when one looks at the other. The south front is of a piece with the other

Joseph W. Molitor



buildings, a great window in a simple frame, and completes the composition of the court on which it faces. The north front, meant to be imposing, is quite unconvincing. On it, the use of photo-sensitive glass between the marble piers was intended to give a "solid" effect, which it momentarily does, and then one understands it is not solid at all, but a veneer seeming very thin and fragile and still somehow forbidding (though, of course, the building is still under construction). And on the west side, the First Avenue façade, the simplicity of the curved wall is marred by the rigidity of the ramps and the unbearably heavy canopy of the delegates' entrance.

The inside cannot be fully judged as yet. However, the plan is again thoroughly coordinated and excellent. The public enters into a huge hall, open to the roof and lighted by the strips between the piers with a very cold and gray light. Great ramps lead up to the public galleries, and it will no doubt be most impressive in scale. To the left of the foyer the public goes into a large space with big windows opening to the garden; the windows are cut across by a ramp similar to the one on the First Avenue side. The ramps provide fire exits from the main delegates' floor. This hall will be used for exhibitions and displays, and goes on to the connecting element between the General Assembly and the Conference Building with its Council and Conference rooms. Delegates enter from the First Avenue side, and go down to coat rooms and another large conference room, or up a double stairway with escalator in between to their lounge overlooking a garden and the Secretariat court. The garden is reached by a flight of free-form steps which, together with the proposed two-story marquee over the Secretariat entrance, was intended as a foil and diversion to the prevailing severity. From their foyer the delegates can go to the Assembly Hall or Conference Building without conflicting with the public.

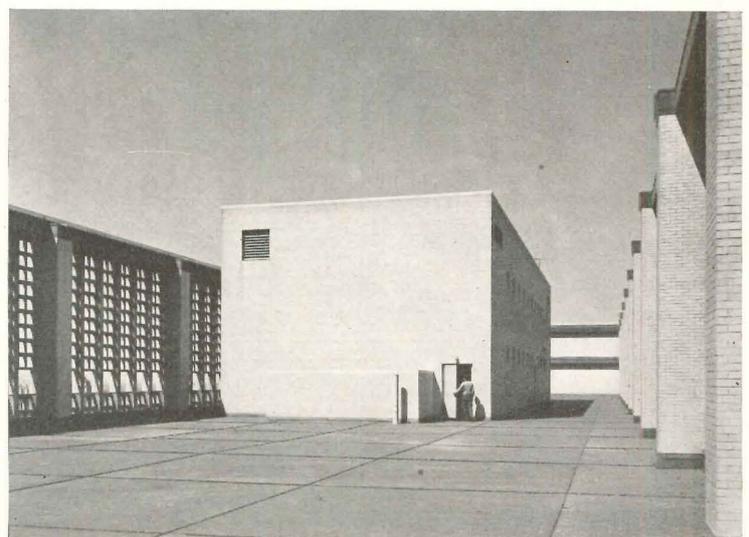
The Assembly Hall itself will undoubtedly be a most impressive room. It will have great scale, and every effort has been made to achieve a dramatic setting for

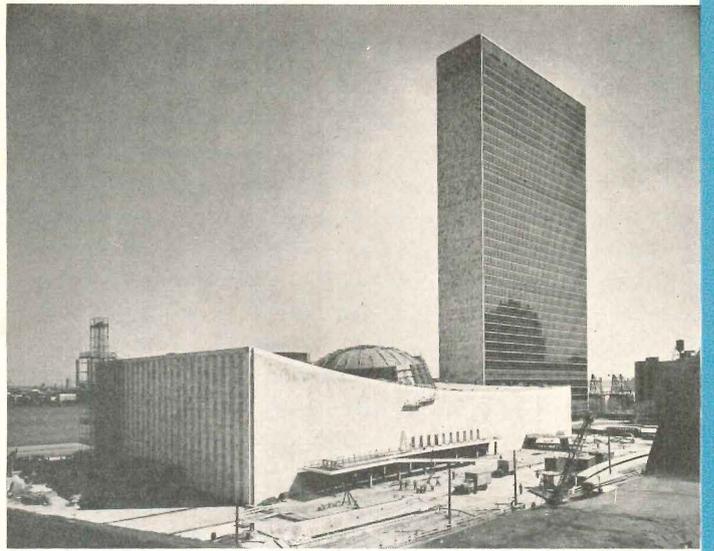
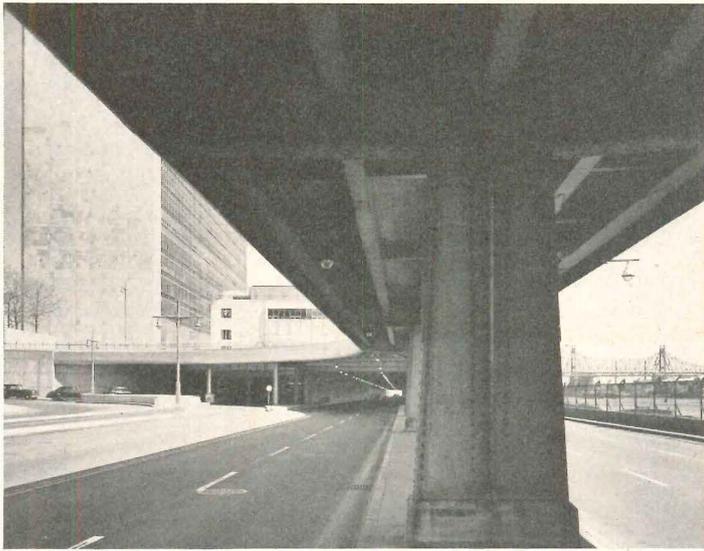
the august body it will house. Like the other meeting rooms it will be acoustically perfect, and equipped with every device for hearing, recording and publicity.

The planning of the U.N. group is a triumph of clarity and ingenuity, a putting together and sorting out of an almost incredible variety of elements and functions. It is also a triumph of technical skill, of structural ability, of mechanical engineering. Almost every possible device of a mechanical nature has been used to further the comfort of the users of the buildings, to speed up communication, to disseminate information quickly and accurately. It is, in other words, a very fine example of American architectural skill.

It is not, however, much more than that; and perhaps it could not be. Our architectural genius today, and in the United States particularly, lies in the design of buildings for the use of business. Our most successful structures, esthetically as well as technically, are office buildings and factories. We are accomplished in the design of residences, too; but none of these classes of architecture speaks to the deep symbolic needs of our being, they have little emotional impact. The Secretariat is the U.N. to the world. By its simplicity of form and dominating mass it has become the symbol for U.N. The General Assembly building does not dominate either by its physical presence or its spiritual content. It is not that the effort to have the General Assembly provide the symbol was not made: it was. The failure is not the fault of the architects, but of a time in which no emotional symbols are possible because there is no deep belief, no emotional content in our lives. Symbols are not "created": they exist or they do not exist. The non-existent symbolism that was consciously striven for in the General Assembly got transferred subconsciously and necessarily to the real and existing symbol, the building which houses what we most believe in — paper-work, files, reports, pay-rolls, publicity. Symbols, great art, are not created *ad hoc*; they are inherent in the cultural and emotional heritage, and appear as such, whether we like them or not.

*Left to right, facing page: Conference Room No. 4; printing plant.
This page: typical mechanical floor in Secretariat; Secretariat roof*



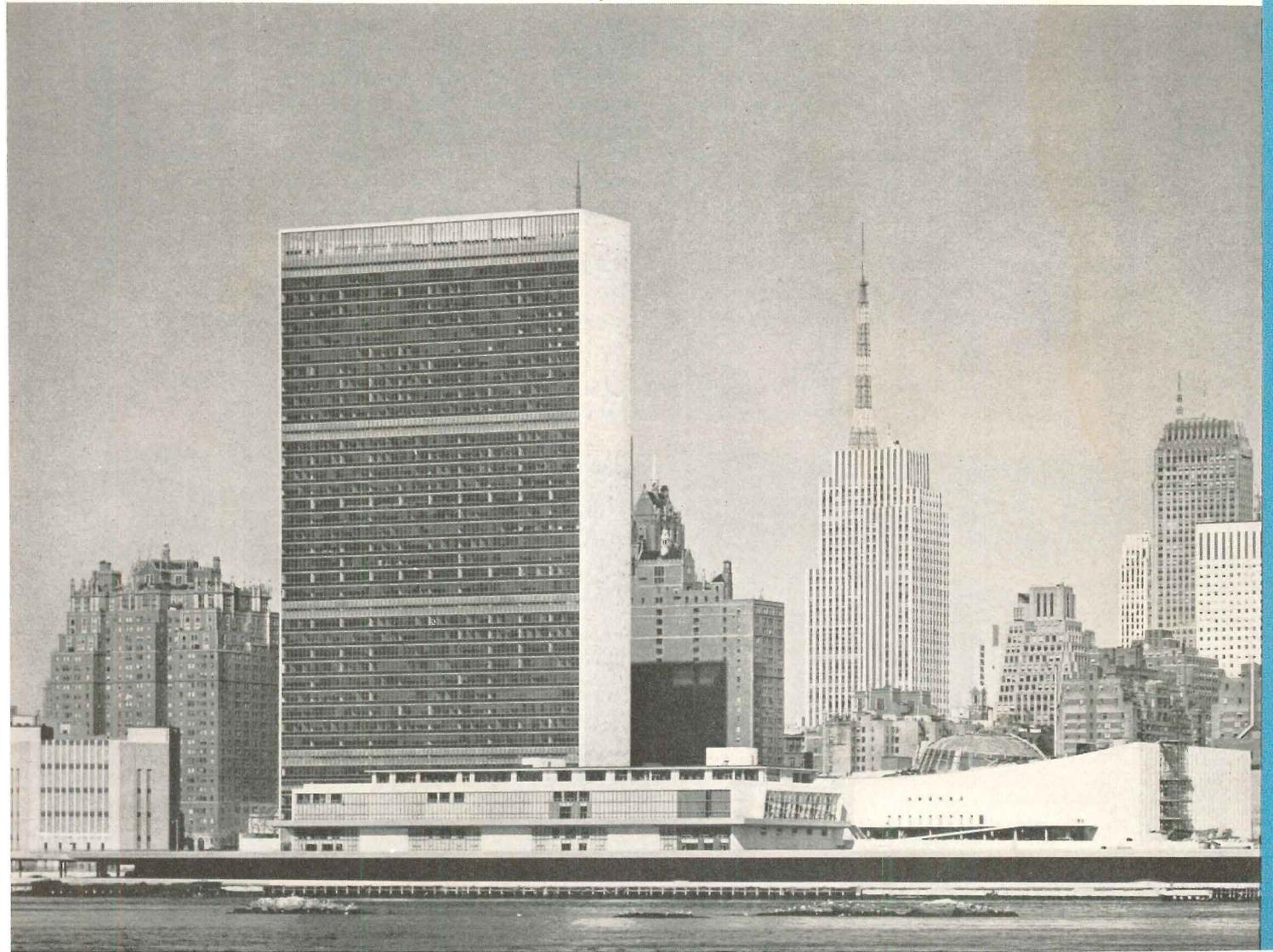


UNITED NATIONS



Above, left, looking north along Franklin D. Roosevelt Drive, with U.N. service drive at left center; right, General Assembly and Secretariat from Northwest. Below, U.N. Headquarters from the East River

Joseph W. Molitor

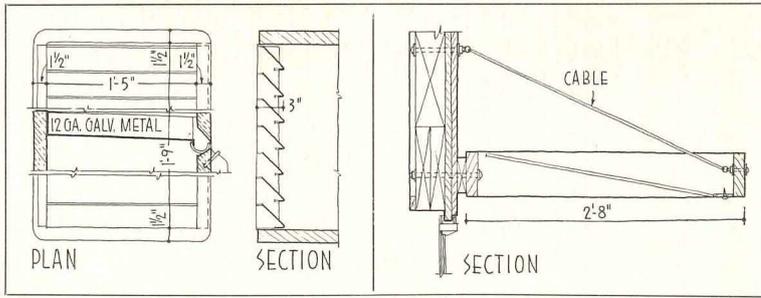


TWO HOUSES

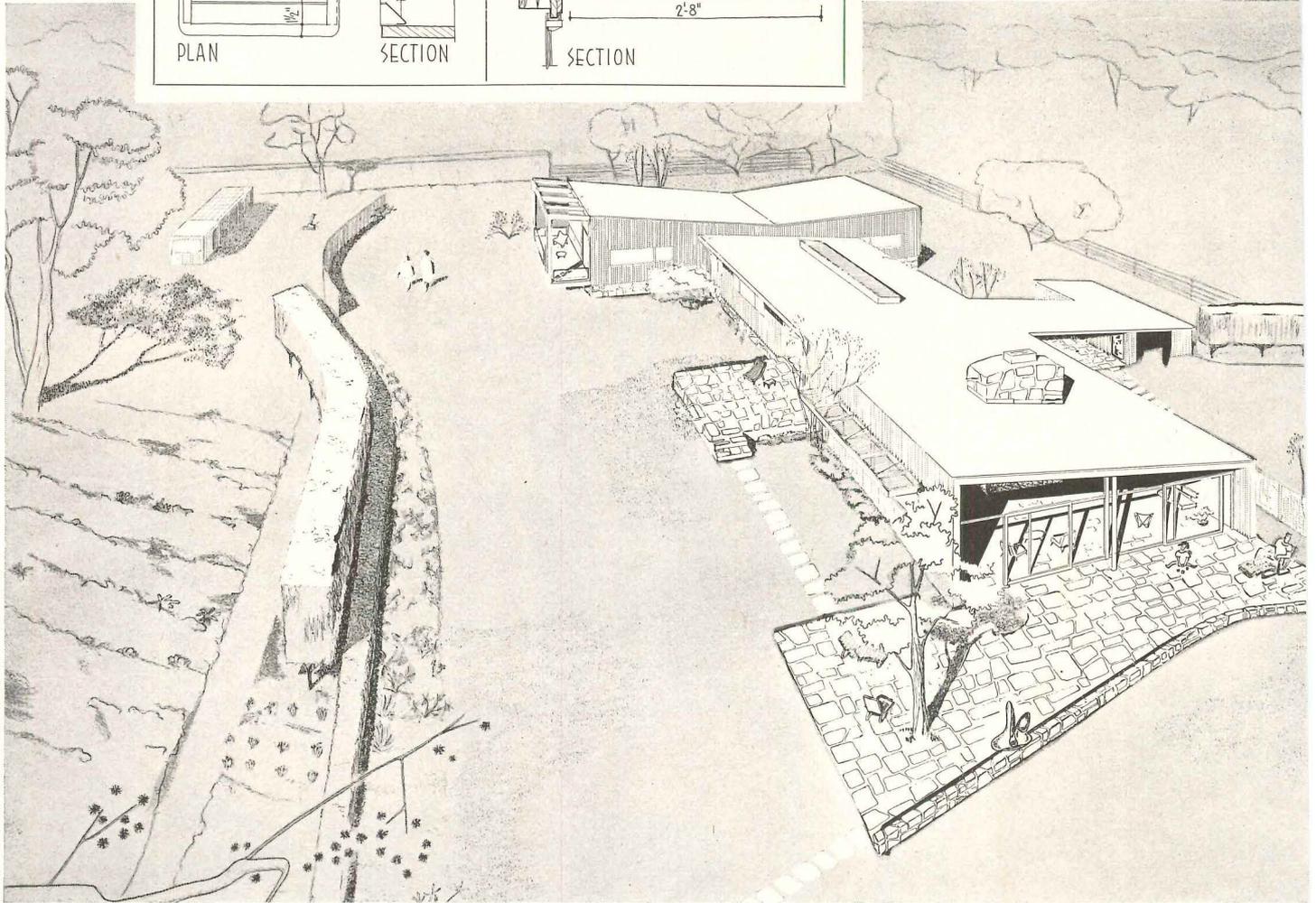
George Nemeny and A. W. Keller, Architects



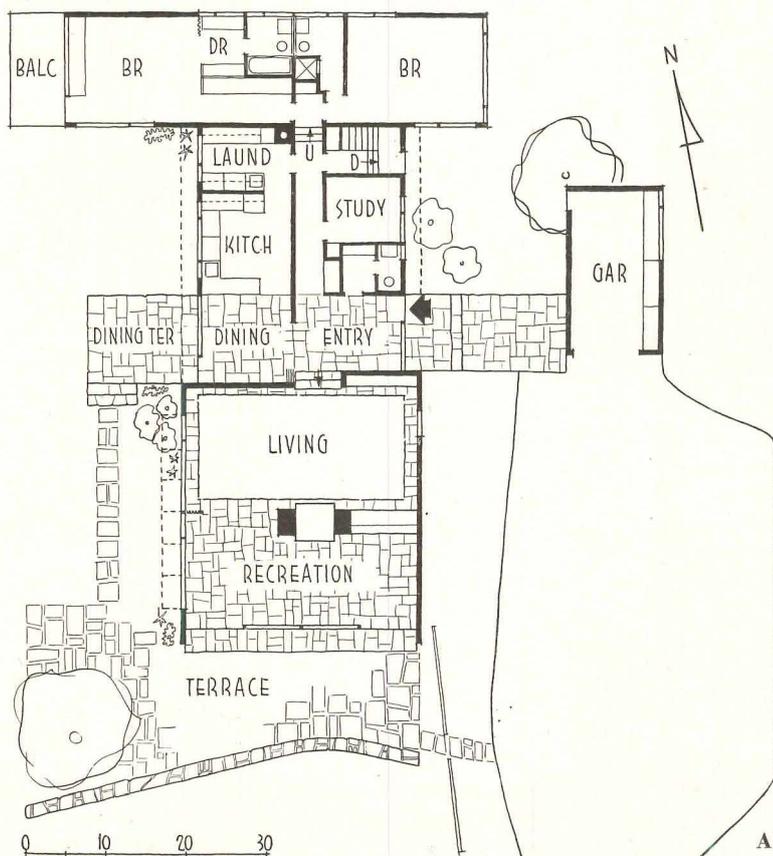
Ingenious metal rain guard for chimney



Sunshade consists of amber glass set in wood frame



Rendering by Stanley M. Sherman



OPENNESS WITH PRIVACY FOR A THREE ZONE PLAN

House for Mr. & Mrs. Jack Diamond

Hewlett Neck, Long Island, N. Y.

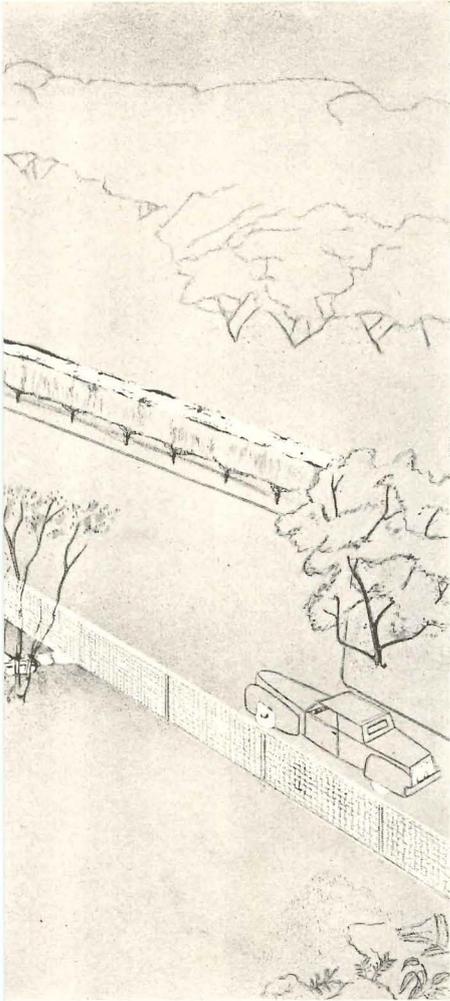
George Nemeny & A. W. Geller, Architects

BY JUDICIOUSLY PLACING the house against the far northeast zoning limit of the plot, all principal rooms can face southwest to a maximum size garden area, which in turn is screened from neighboring houses by fences and planting. Privacy from the northeast is gained by the detached garage and minimum fenestration in this direction, as well as by raising the bedroom element to provide a playroom below grade.

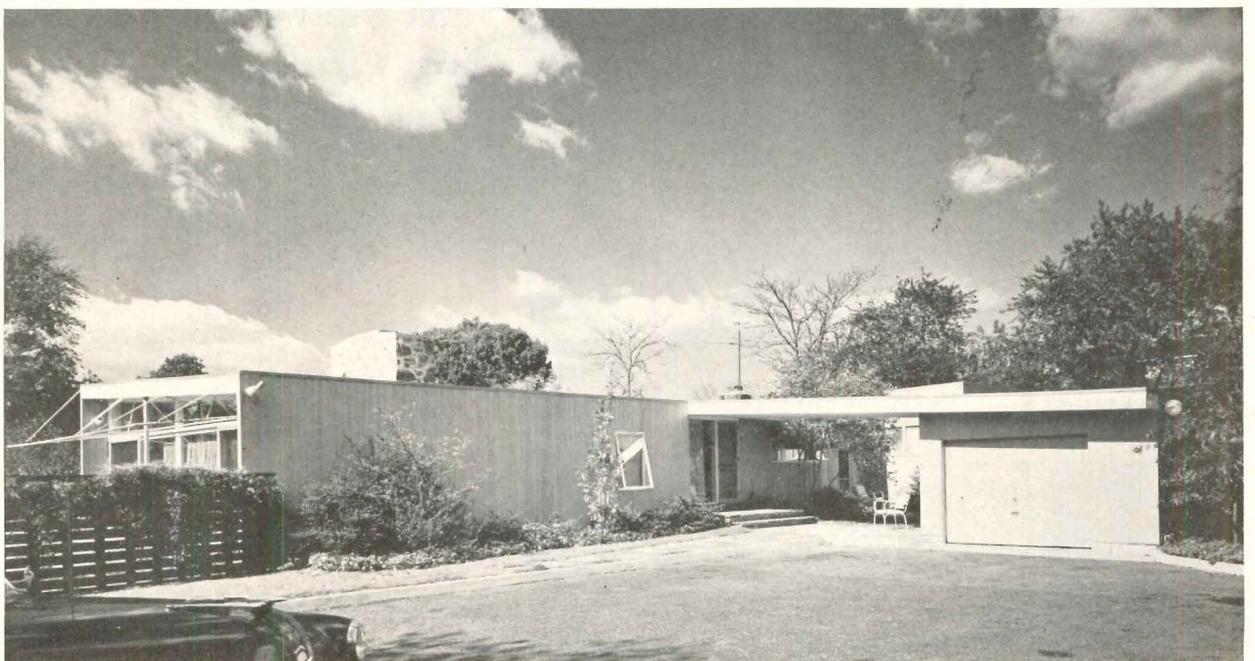
The glass-ended entry which divides the living and utility zones (see plan) yields an outside vista in its two main directions as well as a glimpse of the outdoors through and around the open fireplace in the third direction.

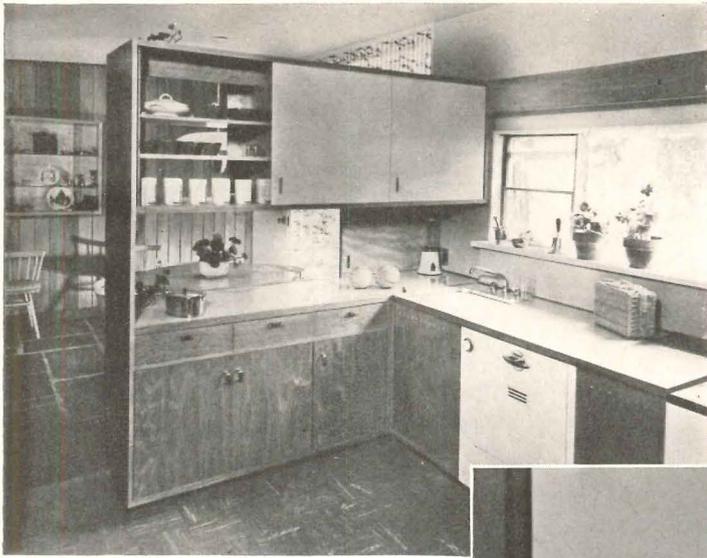
Exterior materials: bluestone paving and walks; gray stained vertical cedar boards; flush doors, glass frames and overhangs painted white.

Garden fence, blank wall and separated garage (below) serve as visual block to the east. Motor court in foreground can accommodate six cars



Ezra Stoller



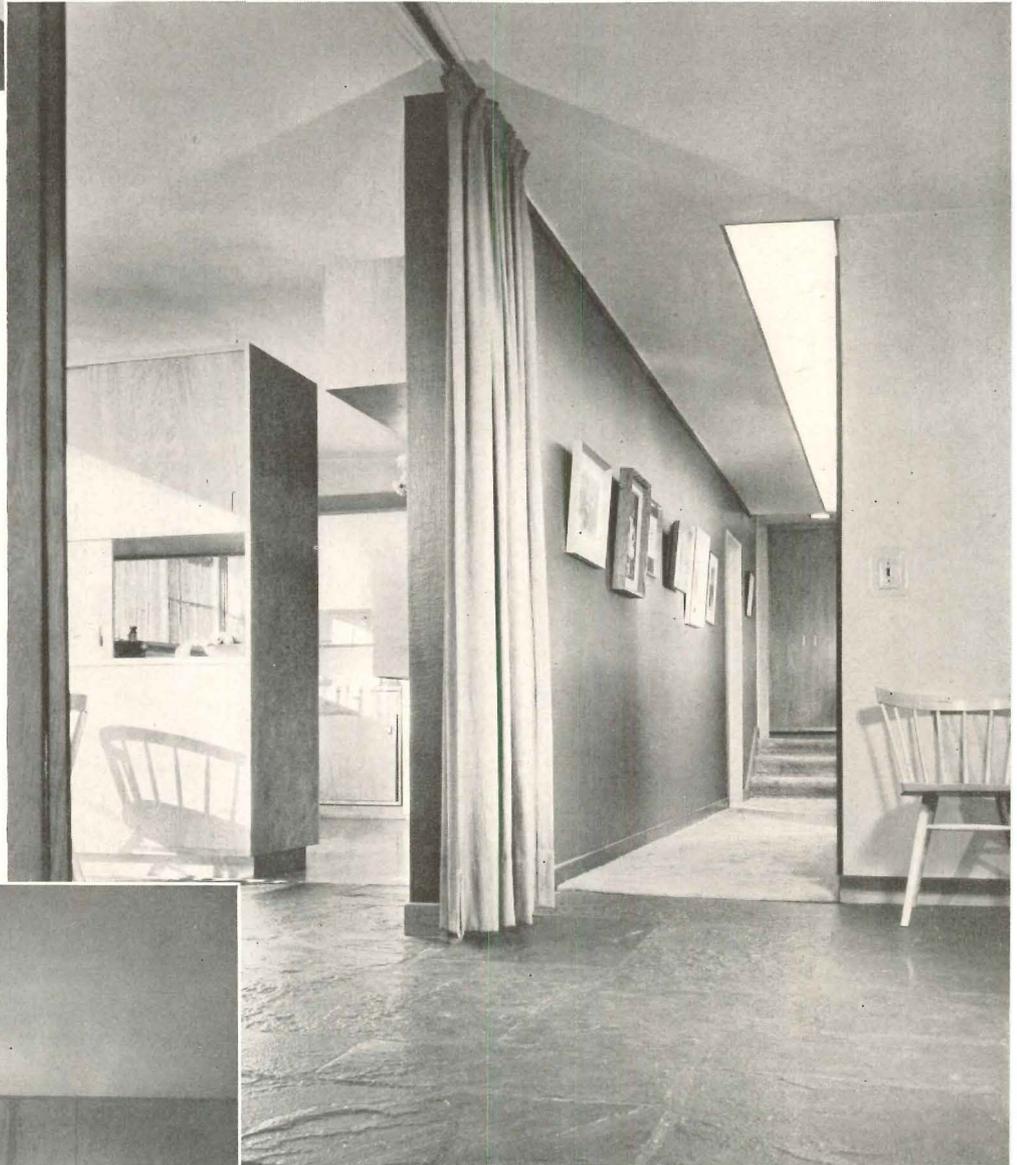


Kitchen (left) has pass-through to dining area beyond; birch shelves above can be opened from either side. Both kitchen and dining areas orient to southwest

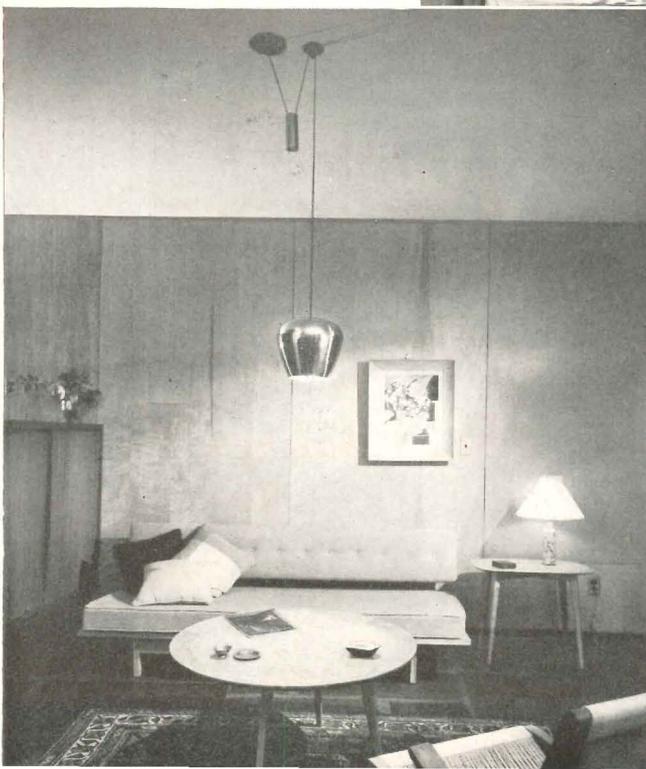
Glass walled entry (facing page) carries flagstone and cedar boards inside — demonstrates how detached garage blocks view of neighbors, creates open feeling

THE DIAMOND HOUSE

Ezra Stoller

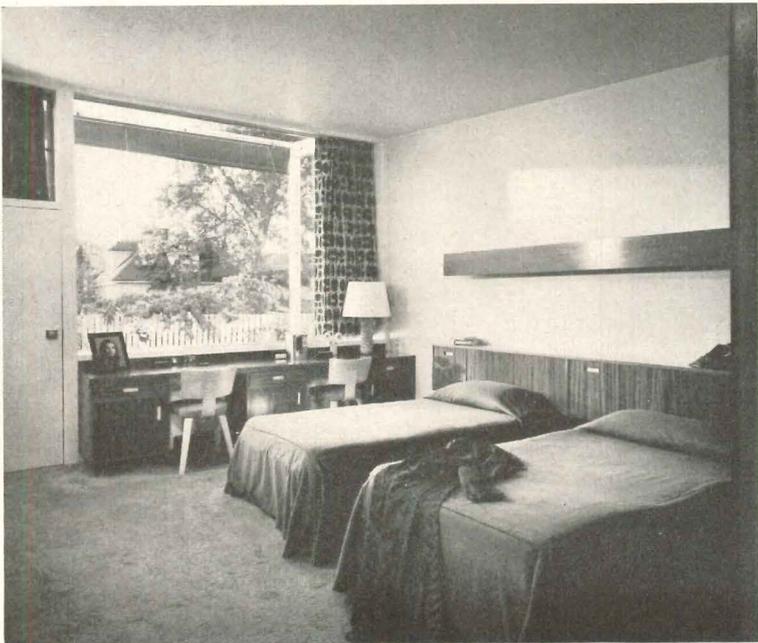


Passage to bedroom zone (above) becomes a skylighted gallery for owner's paintings. Fluorescent tubes between skylight panels provide light at night



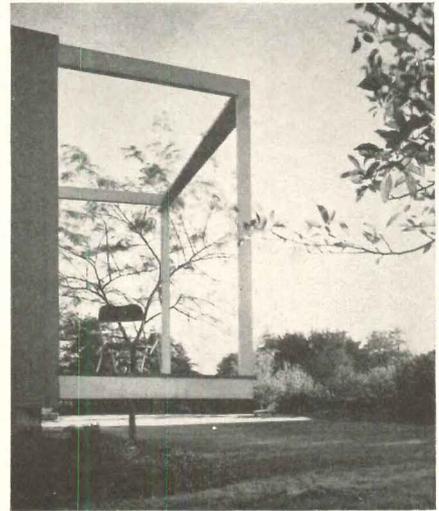
Birch panels in living-recreation zone (left) serve as foil for owner's treasured oriental rugs. Adjustable brass lighting fixture was designed by architects





Ezra Stoller

THE DIAMOND HOUSE



Master bedroom contains built-in mahogany desk unit under window; cabinet for radio, phone and books at head of beds; special wardrobe units — all architect designed. Door leads to cantilevered balcony, which features adjustable canvas sun screen

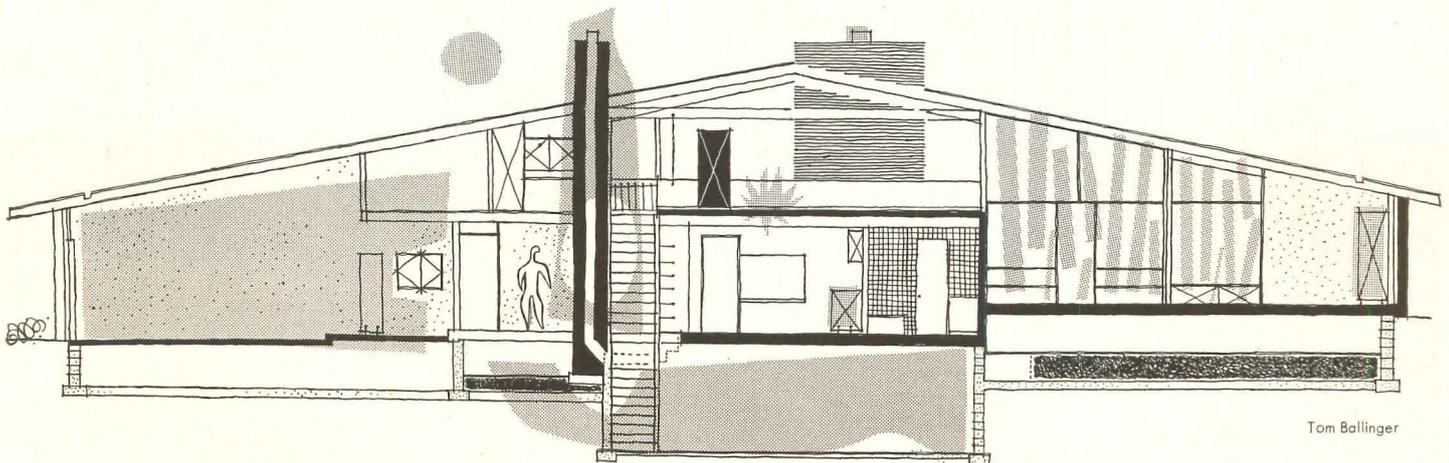


THE DESIGN APPROACH AND THE BANK ACCOUNT

THE process by means of which these two houses came into being and the question of whether the architects' bank account became as a result fatter or leaner are points of interest architects at large may ponder.

As for the process, George Nemeny and A. W. Geller, designers of the houses, feel that the kind of architecture represented by them requires a great amount of personal, continuous attention and follow through. In starting a

which they regard as the synthesis or crystallization of their best thought at that time. They regard each house as a new experience and a lesson — not as a further example in the unfolding of a personal style. To engender a more creative attitude, they, like certain others, try to free their minds of the current clichés and too direct influences. They prefer "the open road." They keep the basic solution and all of its elements flexible as



Tom Ballinger

house, their first step is a careful analysis of the client family's needs, tastes and budget. As an example, the program for the Diamond house amounted to six, single-spaced, typewritten pages. As the design is then slowly developed, client education and persuasion are often involved in the process, as well as time consuming discussions of unconventional construction and unusual details. As for drawings, the set for the Diamond house comprised thirty sheets, of which twenty were details. The foregoing examples are typical.

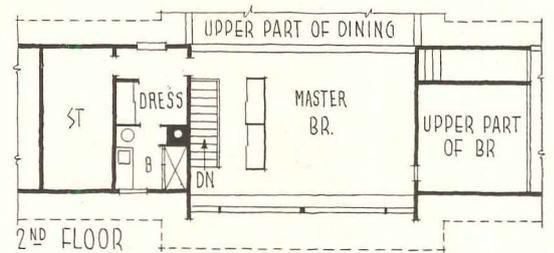
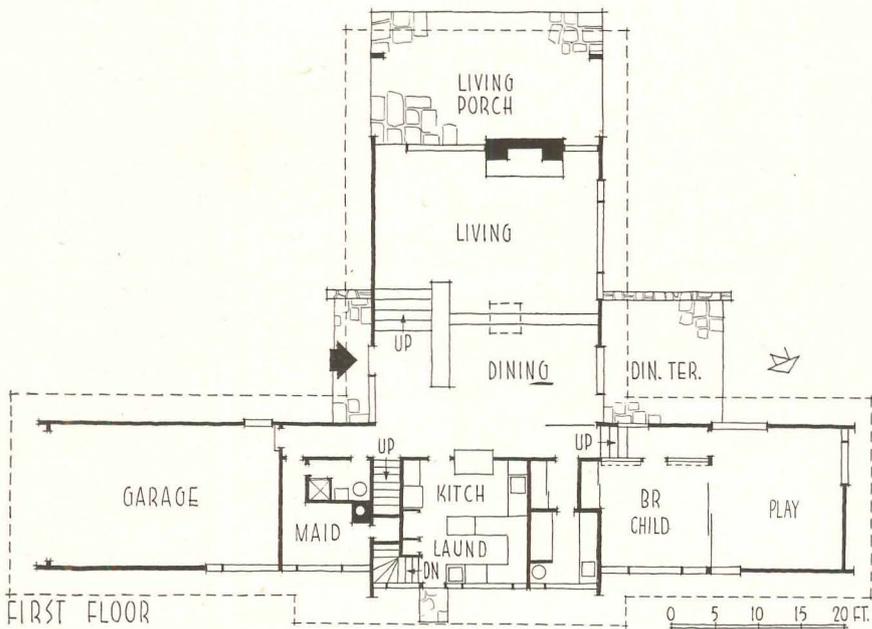
Philosophically, these architects try to avoid a formulated approach — they like to mix the ingredients, stir the pot, and see what happens. They explore all the avenues they think might lead to a possible solution, and after trying many of them finally arrive at an answer

long as possible, even to a point where changes are sometimes made on the job in order to secure the desired effect.

In answer to our question, "can this kind of highly personalized practice be conducted at a profit charging minimum Institute rates?" their answer was that if such a practice consisted entirely of houses, it would have a tough struggle indeed, and might not be able to survive. However, these architects find that if their commissions are in the ratio of 60 per cent residential to 40 per cent other types, they can get along well enough. Aside from that, though, Nemeny and Geller feel that the satisfaction they derive from doing the most creative job they are capable of, plus the owner's pride in his home, is much more important than making an assured profit.



Ezra Stoller



A GENTLY SLOPING ROOF SHELTERS THREE LEVELS



House for Mr. & Mrs. Morton G. Mack

North Newstead, South Orange, N. J.

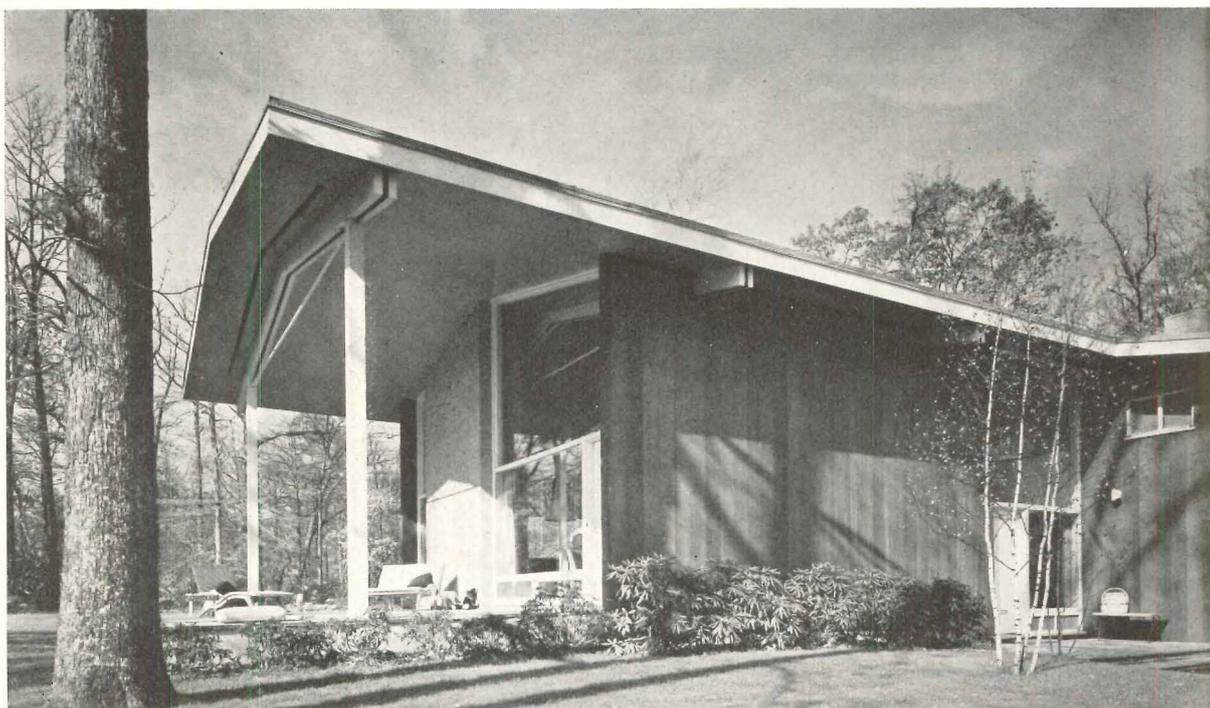
George Nemeny & A. W. Geller, Architects

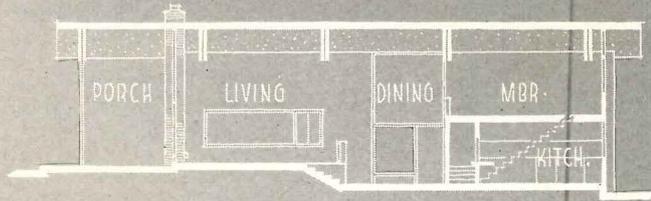
HERE IS A HOUSE DESIGN that capitalizes on a two-story, sloping-roof building restriction by playing it up and making it the theme for a dramatic effect. An interesting T shaped plan in three levels is thus pulled into spatial unity by the single, continuous, pitched roof that shelters it — this feeling further emphasized by the simple device of painting the entire ceiling and exterior soffit a soft, sky-blue color.

The structure is honestly expressed in the living-dining-porch wing of the T: simple triangular trusses with steel tie rods, spaced 14 ft on centers.

Exterior glass frames, doors, and roof overhang fascias are painted white to contrast with the vertical redwood siding; fireplace brick is a light warm gray. Interior walls are all painted white; interior cabinets are mahogany; kitchen cabinets are white oak.

Direct elevation of living porch (opposite page) assumes an almost Mondrianesque quality in relationships of glass, brick and wood. In photo above, unity created by the single roof becomes apparent

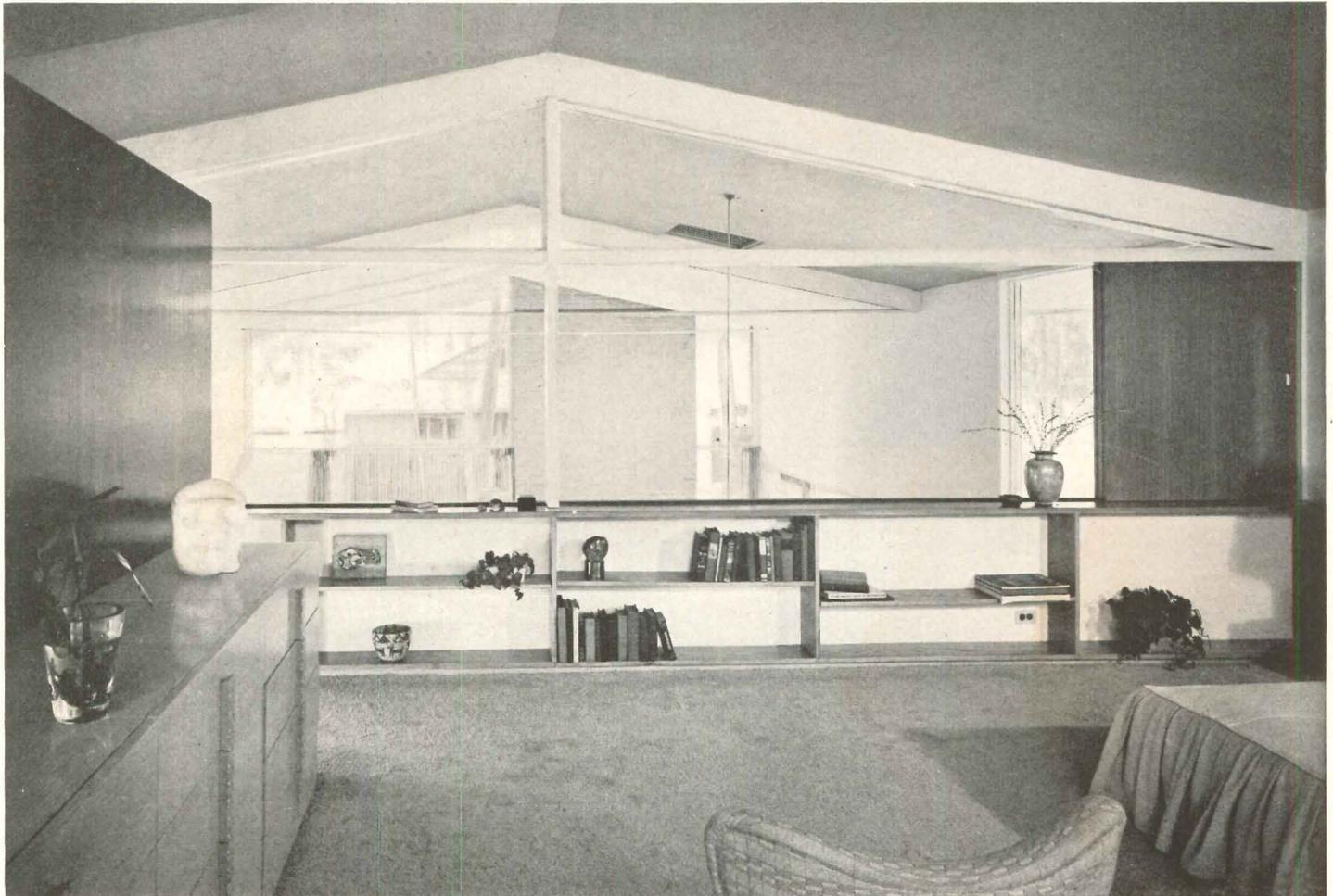




THE MACK HOUSE

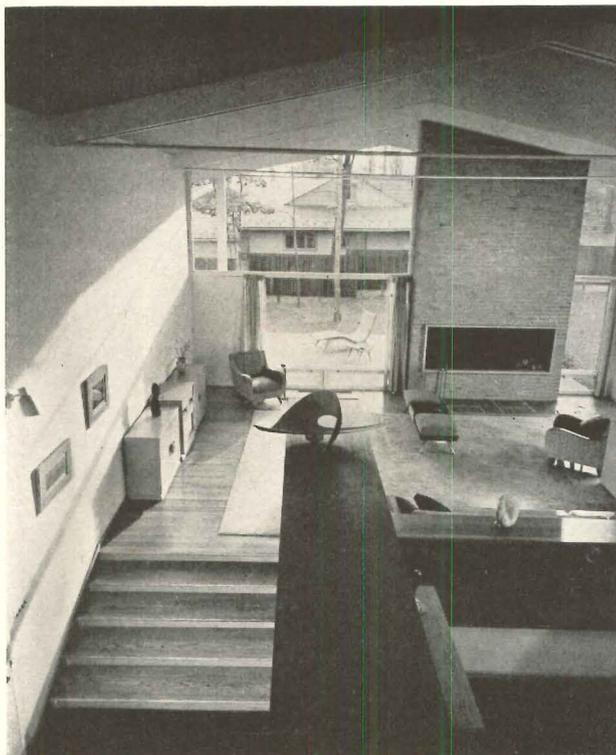
Looking down from the master bedroom (left page) the three-level relationship can be seen best; trusses express the structure

Master bedroom bookcase (below) becomes balcony railing. Privacy is obtained by closing sliding panels; top triangle glazed

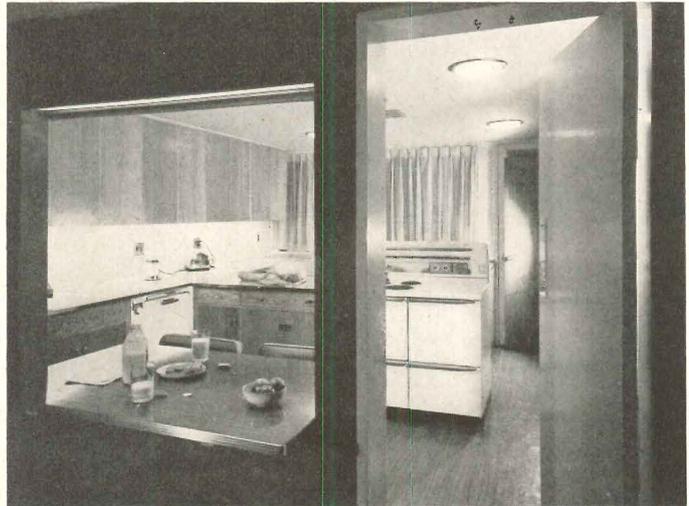
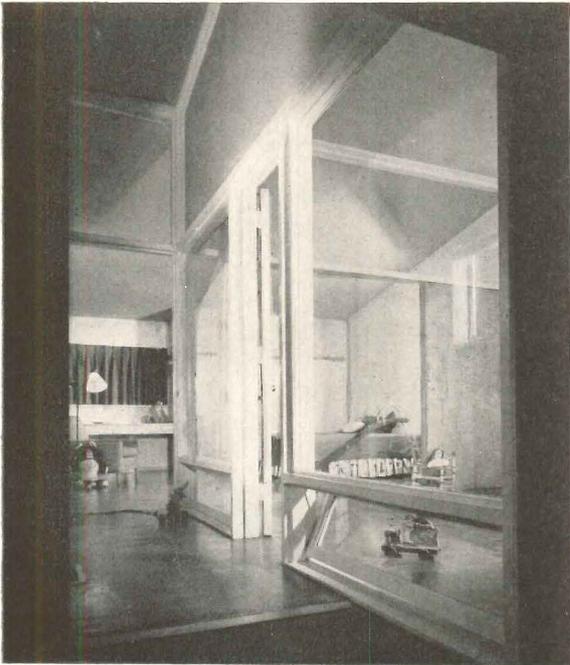


Ezra Stoller

From entry (left) five risers ascend to spacious living area which in turn opens out to sheltered porch beyond



View from living area (above) shows the bedroom balcony over kitchen-laundry

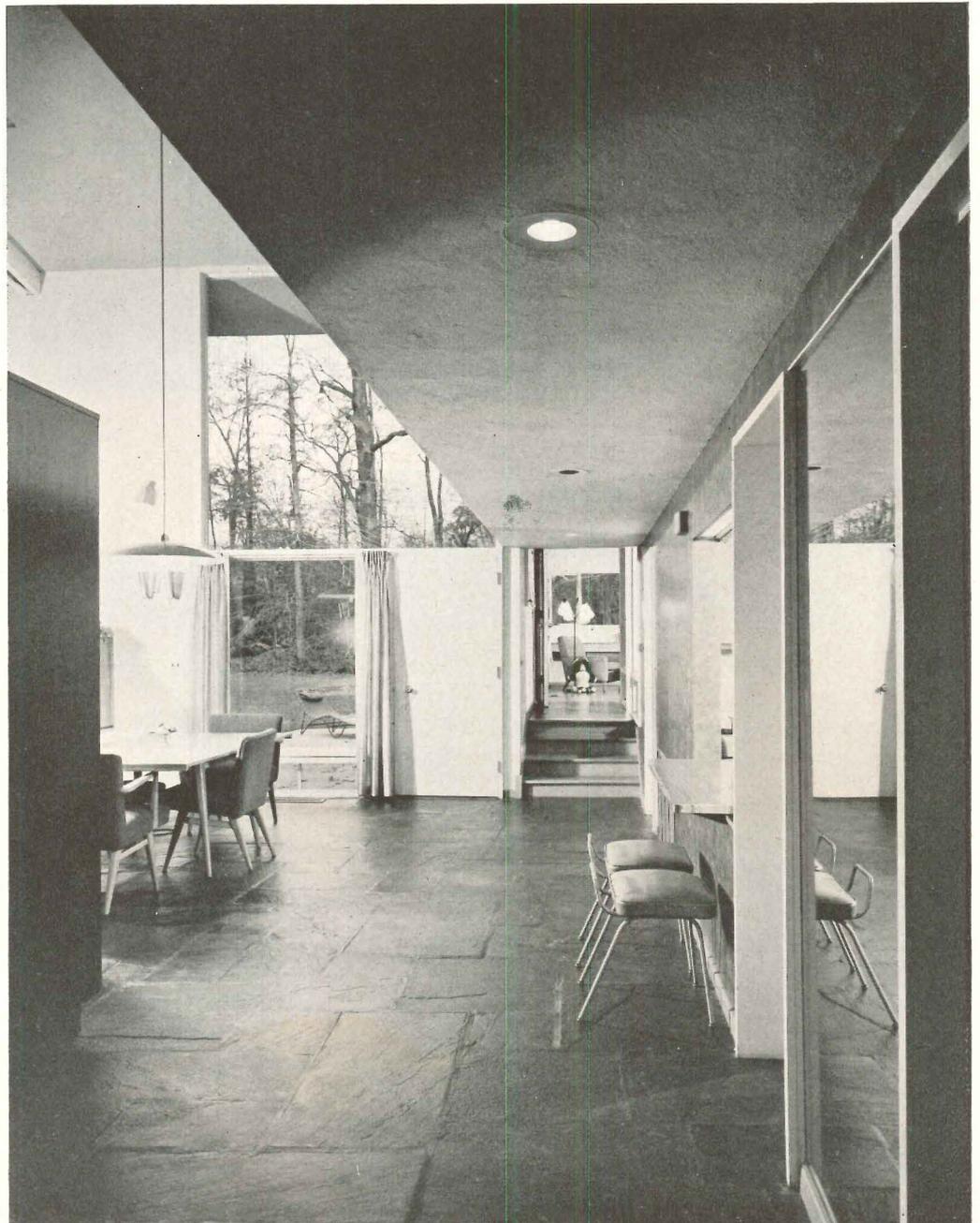


Ezra Stoller

THE MACK HOUSE

Photos above show (left) child's bedroom and playroom; (right) the kitchen and laundry.

When standing near the ground level entrance (right) one can see through to the outdoors ahead and can enter either dining area at same level or can turn left to ascend to living area. Straight through is passage to child's quarters; at near right the kitchen pass-through projects





NEW ORLEANS: McDONOGH NO. 39 ELEMENTARY SCHOOL

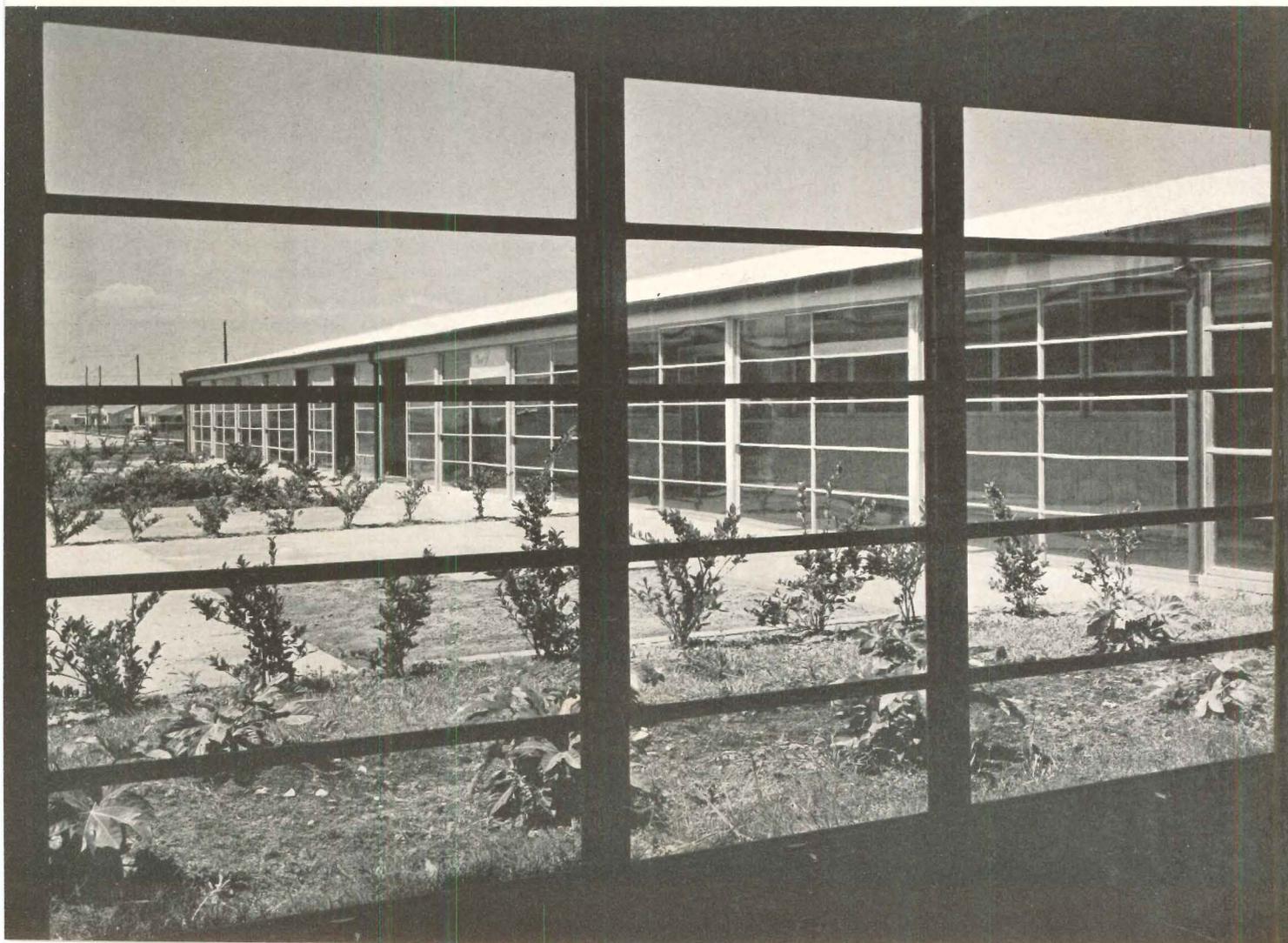
Gentilly School Associated Architects:

Freret & Wolf

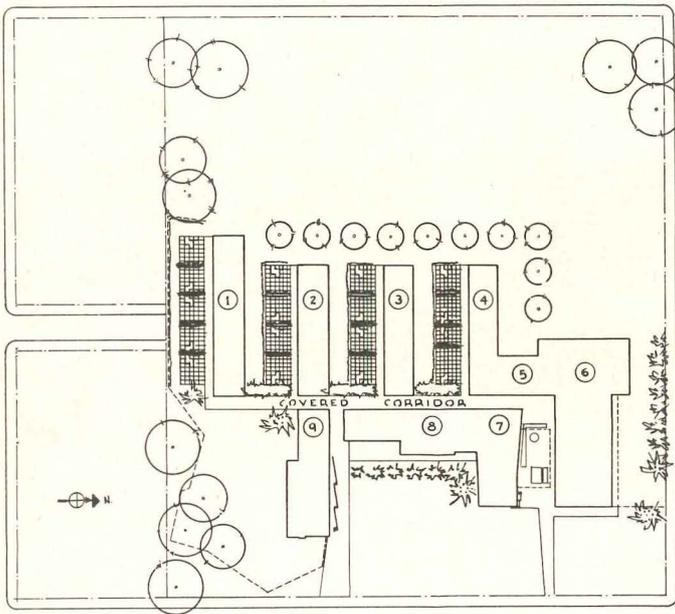
Golstein, Parham & Labouisse

Curtis & Davis

Joseph W. Molitor

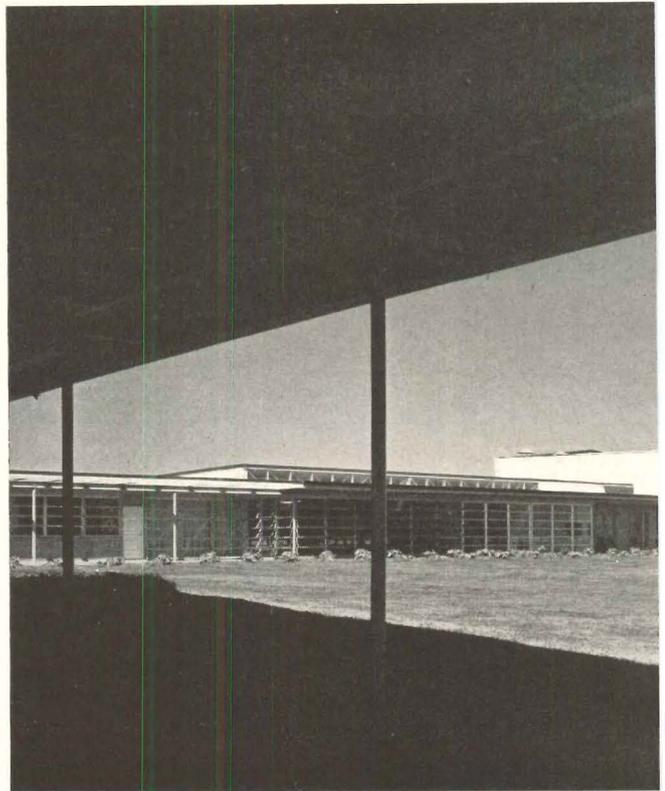


NEW ORLEANS SCHOOL



PLOT PLAN
SCALE 40 0 40 80

- LEGEND**
- 1-4 Elementary School
 - 5 Lockers
 - 6 Gymnasium & Cafeteria
 - 7 Auditorium
 - 8 Multi-Purpose Room, Offices
 - 9 Kindergarten



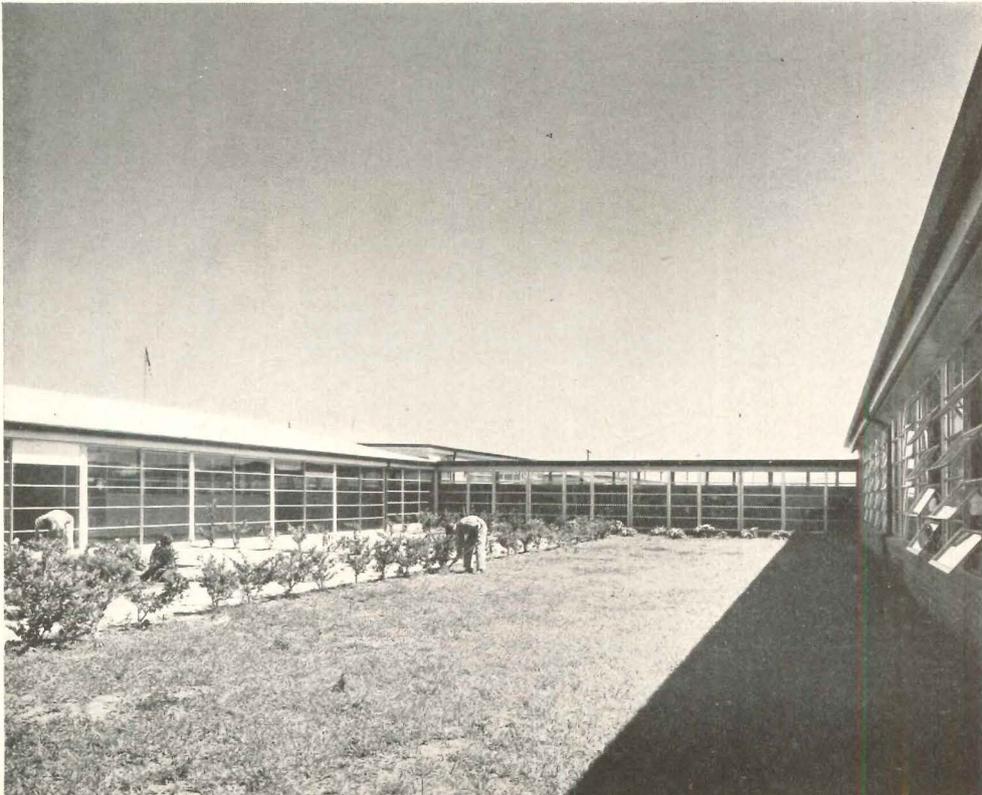
THE FIRST POINT on which all the architects of this New Orleans school agreed was that every classroom must have cross ventilation and an adjoining outdoor area where classes could meet in good weather. Since protection from direct sunlight was essential, a classroom exposure directly to the north was indicated, and the architects were faced with a major problem: if the corridors were placed to the south, they would cut off the classrooms from their outdoor areas; if the corridors were placed to the north, sun control devices along the south would be required. After considerable study, the architects decided that the sun control afforded by corridors along the south side outweighed the advantages of direct connection between classrooms and outdoor areas.

Another main planning factor was the knowledge that certain parts of the school would be used for community functions, and should be well segregated from the classroom buildings. The auditorium, gymnasium, library and cafeteria, accordingly, were all located at the north end of the site, and given their own entrance directly from the street.

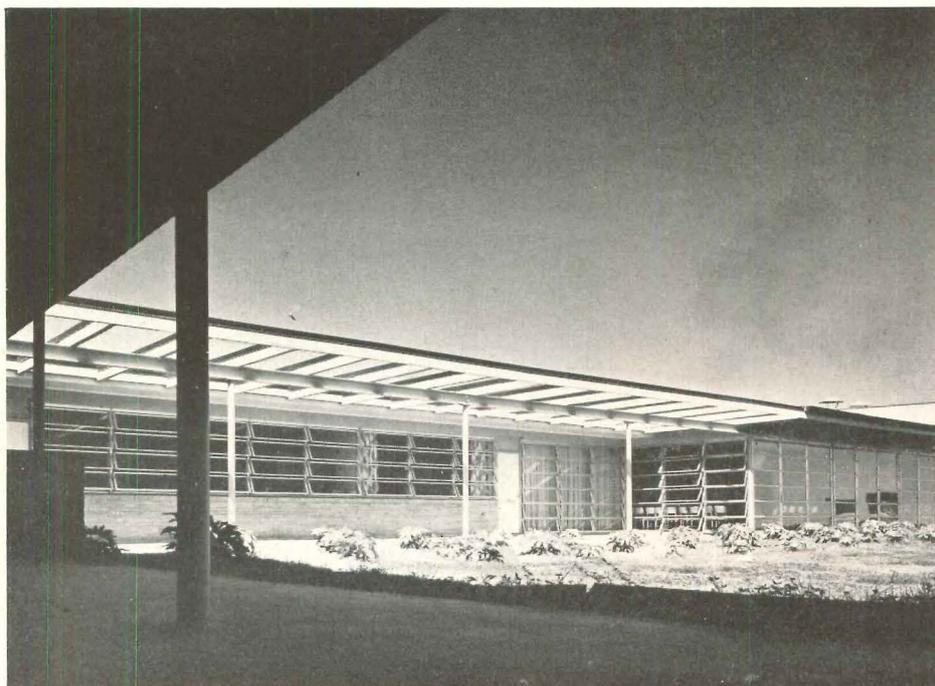
The administrative wing occupies a central position on the east side of the north-south corridor, and adjacent to the main school entrance. All elementary school classrooms are on the west side of the corridor. The kindergarten building and playground have their own corner of the site, right alongside the administration wing (the architects felt that the kindergarten needs closer administrative control than the elementary department), and well separated from the other classroom buildings.

Original plans called for open corridors throughout, but, as a bow to winter weather, classroom corridors were finally closed in with sliding doors. The school was designed with as many structural members as possible exposed, and with the classroom cabinets forming the separation between corridor and classroom. Foundations are wood pile and concrete slab; framing is light steel and masonry. Exterior walls are brick and concrete block, painted. Interior walls are glazed tile and plaster, floors are concrete and asphalt tile, ceilings are acoustic tile. Heating is radiant, in floor slab.

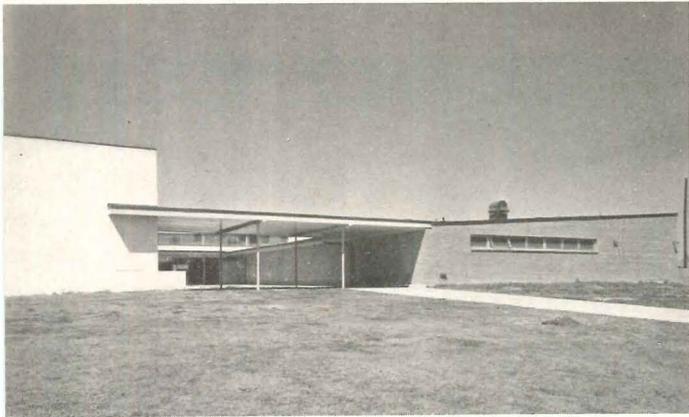
All classroom buildings are connected by a central corridor; to the south of each building is a generous court, partly paved, where classes can meet in good weather



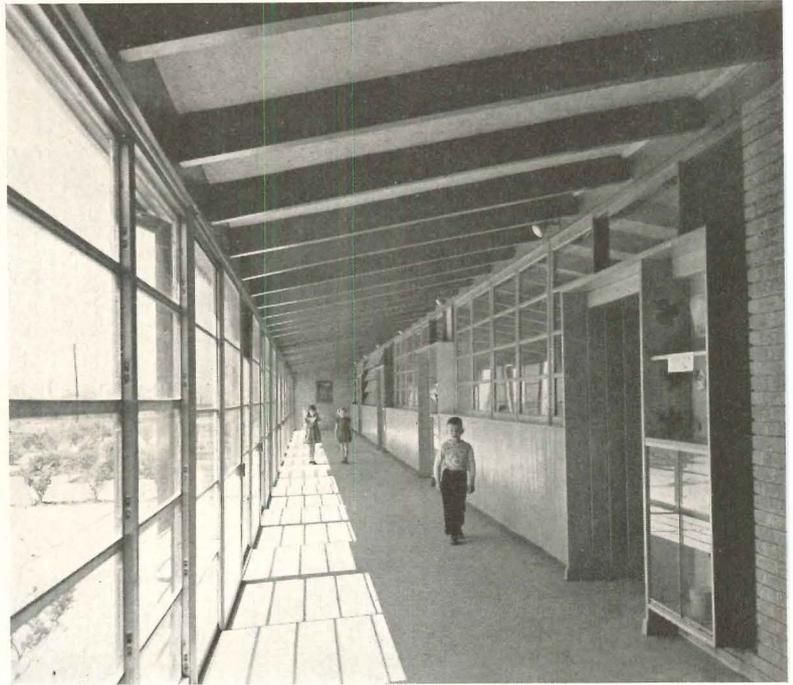
Joseph W. Molitor



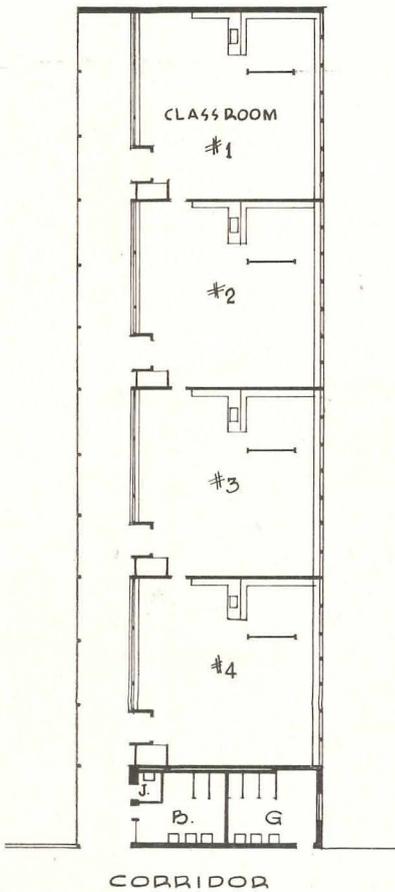
NEW ORLEANS SCHOOL



Joseph W. Molitor

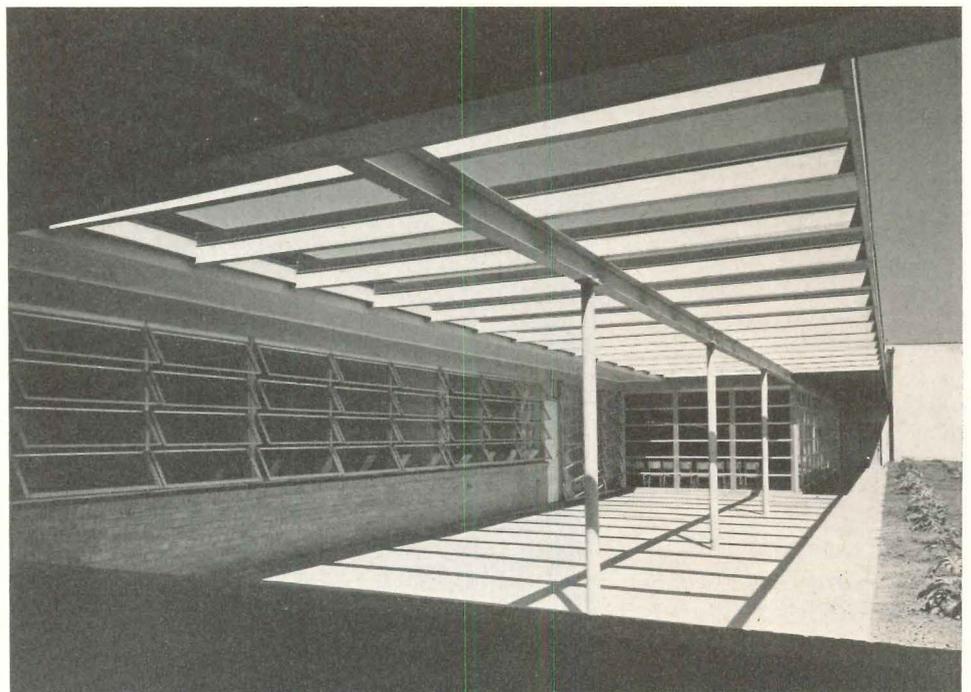


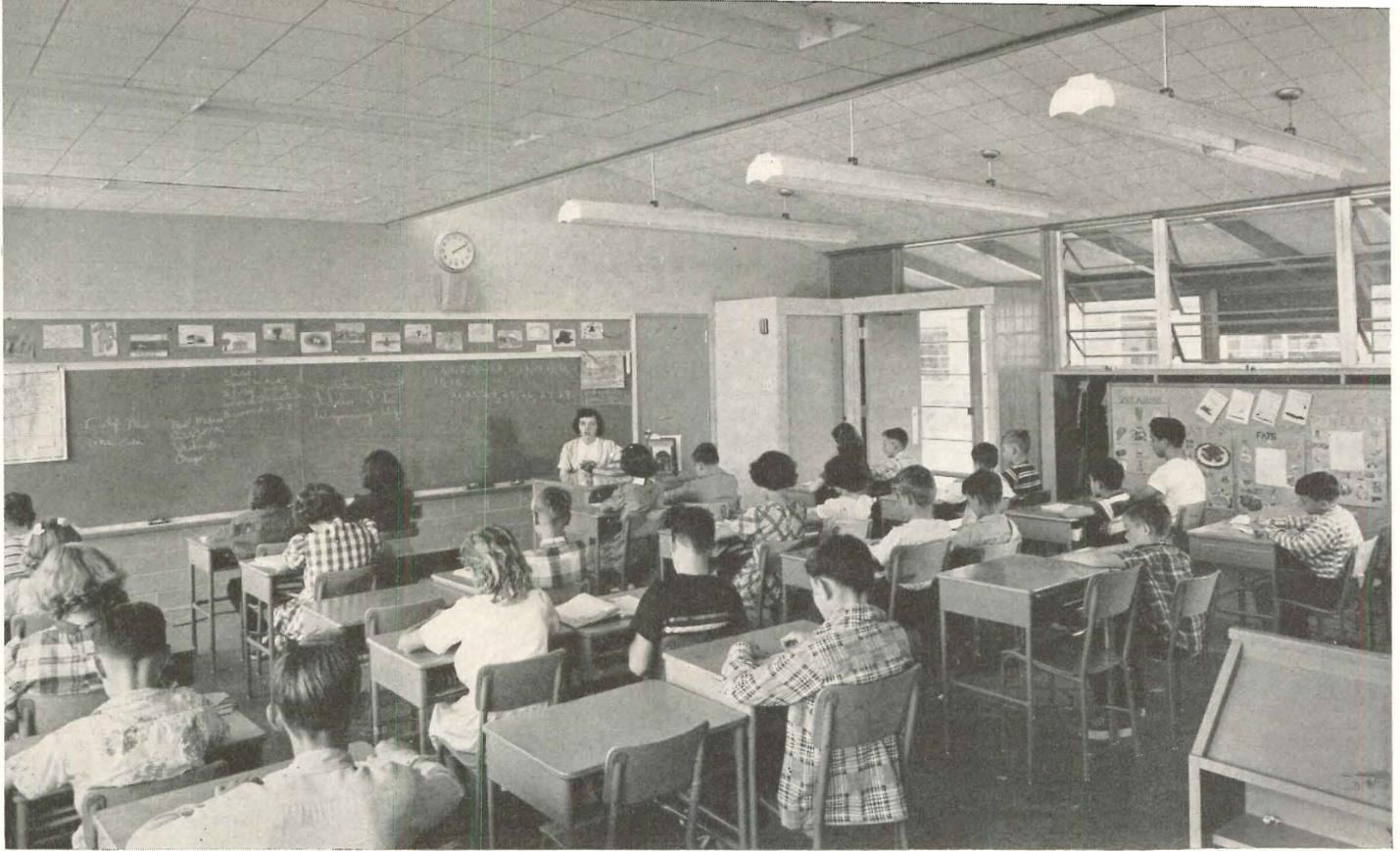
Left above: entrance to "community" end of school — auditorium, gymnasium and cafeteria. Above: typical classroom corridor; sliding glass doors provide required cross ventilation for classrooms. Left: plan of classroom building



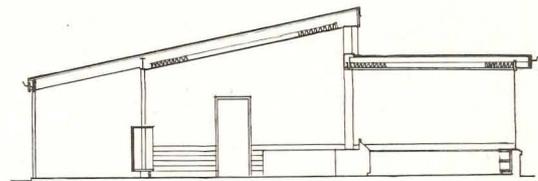
FLOOR PLAN

SCALE 4 0 4 8 12



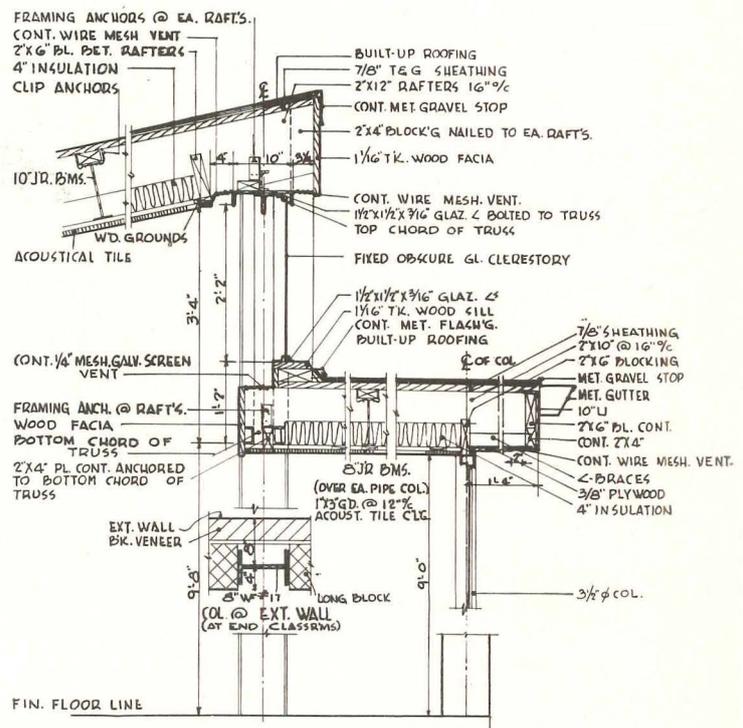
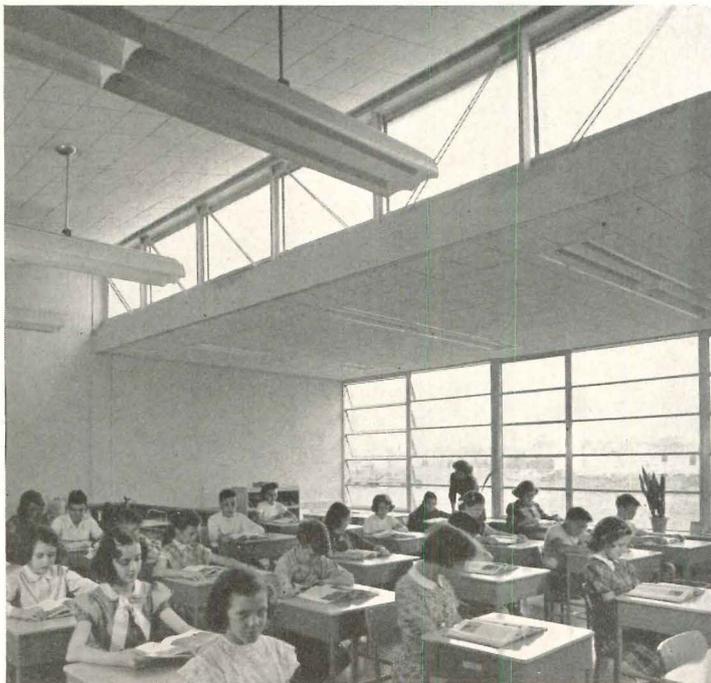


Every classroom has window sill at height suitable for age group. Several scale models were made of typical classroom sections and tested with light meters to assure uniform light intensity throughout the room



TYPICAL SECTION BUILDINGS 1-2-3&4

SCALE 4 0 4 8 12

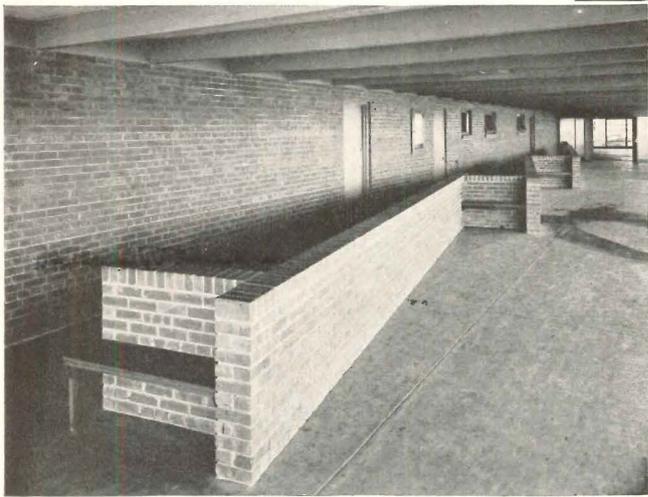


CONSTRUCTION DETAILS

SCALE 0 4 8 12 16

NEW ORLEANS SCHOOL

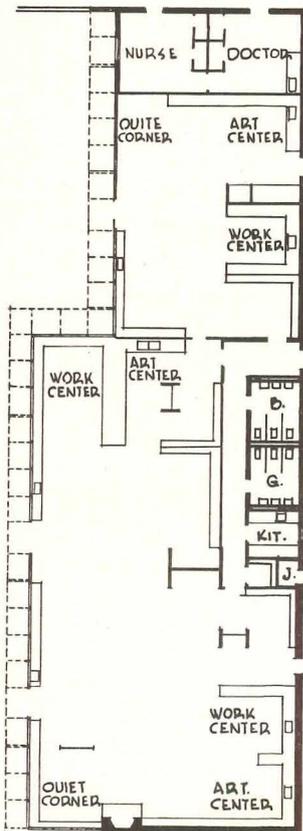
KINDERGARTEN



Entrances to kindergarten building are from main entrance corridor; low brick wall protects the youngsters from onrushing elementary school pupils. School nurse and doctor have offices at west end of building



CORRIDOR

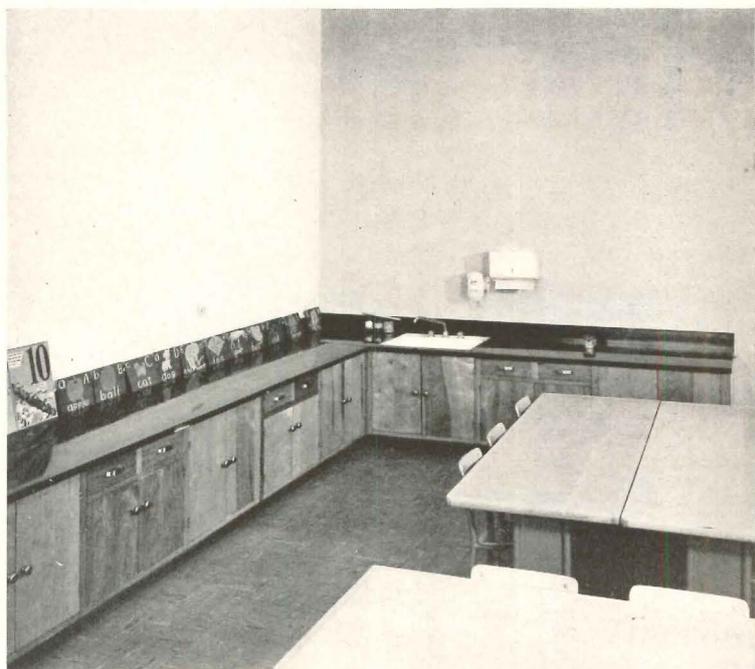
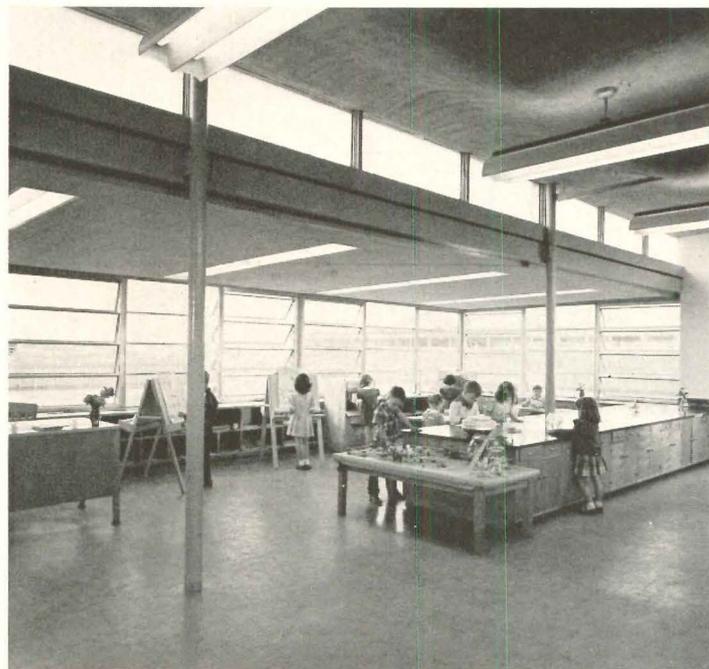
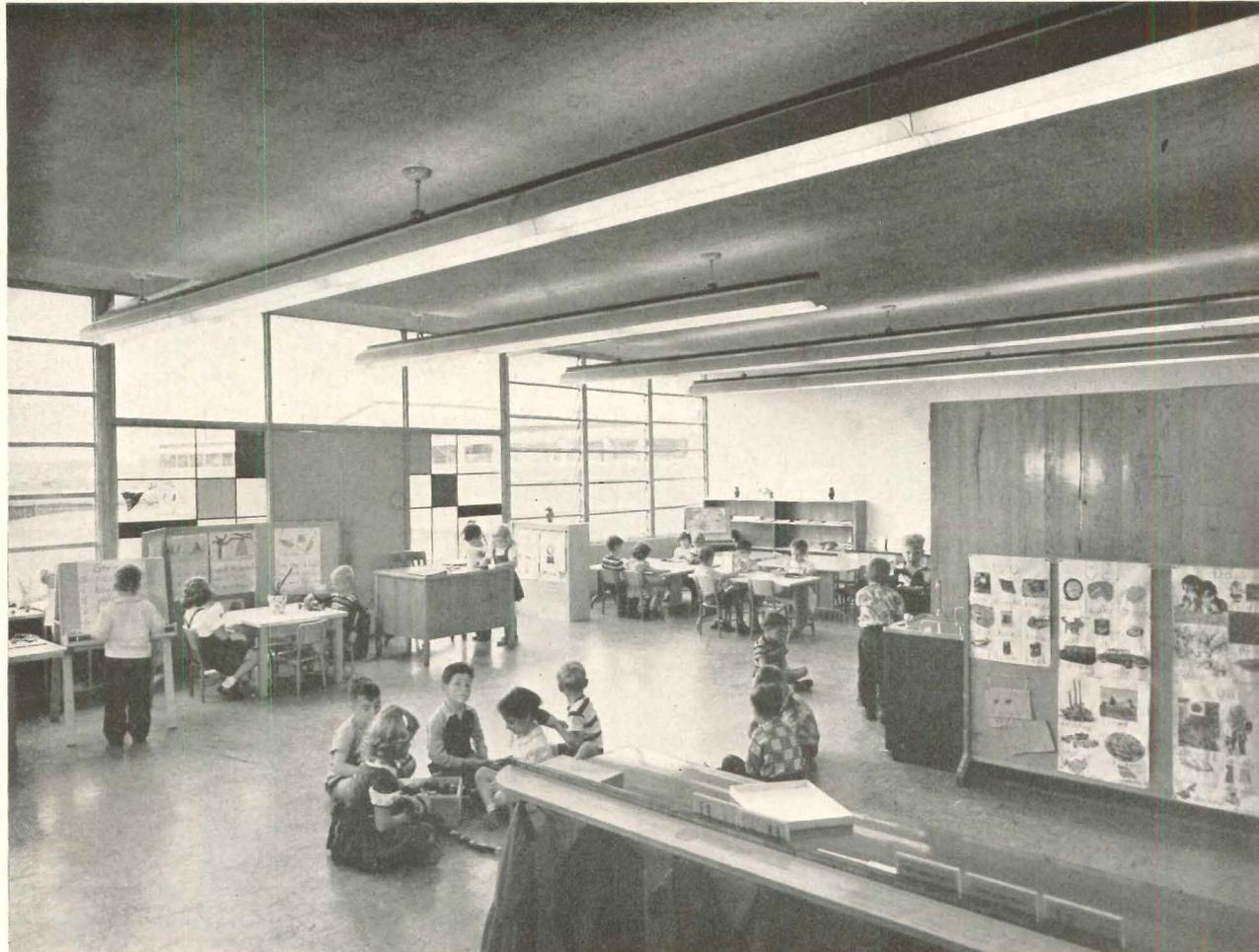


FLOOR PLAN

SCALE 4 0 4 8 12



Joseph W. Molitor

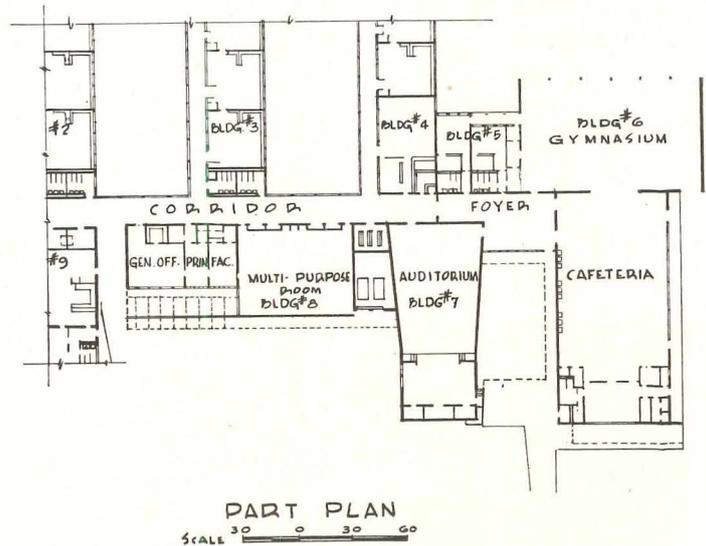


Kindergarten building has own play area (opposite page) at southeast corner of site, well away from elementary school traffic. Building is designed in scale with small occupants: most partitions are pint-sized storage areas, window sills and ceilings are low

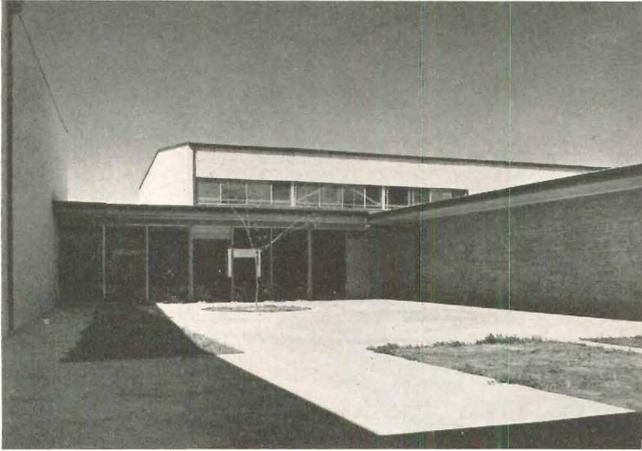


NEW ORLEANS SCHOOL

CAREFUL STUDY was made of the school elements which would be, or might be, used by the community at large. The gymnasium, cafeteria and auditorium have a special "public" entrance, and can be used quite independently of the school proper. The library (above), which might possibly be used by non-students, was placed at the east end of Building 4, easily accessible to the general public. The multi-purpose room (below), intended primarily for special classes and small school assemblies, also could be put to community use.



NEW ORLEANS SCHOOL



Joseph W. Molitor

Across-page: top left, library; top right, gymnasium from west; bottom, multi-purpose room. Above: left, gymnasium from community entrance; right, gymnasium interior. Below: cafeteria has wash basin at entrance

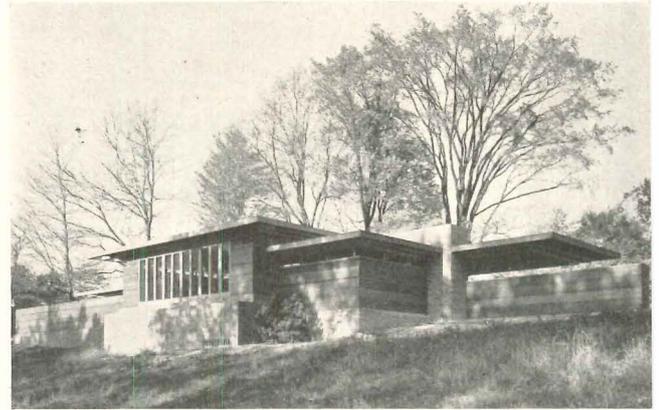


THE ARCHITECTURE



Museum of Modern Art

Le Corbusier's Swiss Building, Cité Universitaire, Paris, 1931



Museum of Modern Art

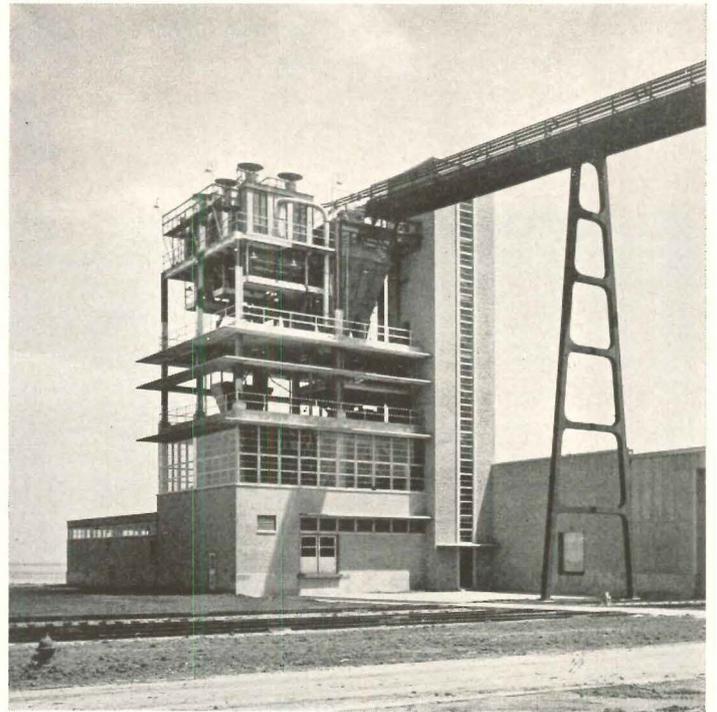
House at Okemos, Mich., Frank Lloyd Wright

"Where is a common denominator...?"

Willow Run Bomber Plant Albert Kahn Associated Architect & Engineers



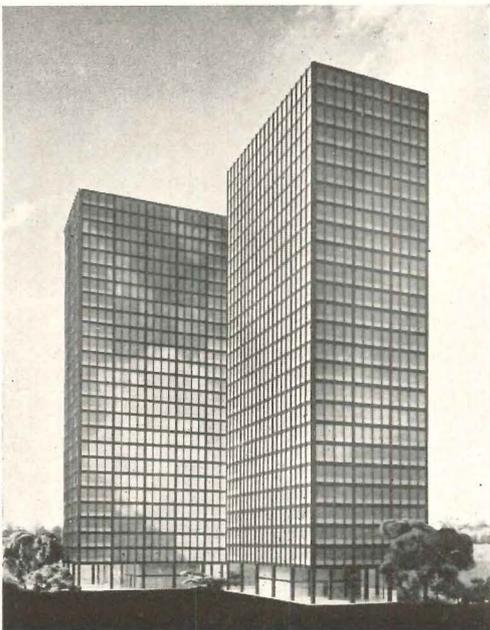
Hedrich-Blessing



Elwood M. Payne

Corn Products Plant, Corpus Christi, The H. K. Ferguson Co.

Chicago Apartment House, Mies van der Rohe



Hedrich-Blessing, Museum of Modern Art

Walter Gropius' own house



Damora

OF RELATIVITY

By *Richard M. Bennett*

WHEN OBSERVED FACTS contradict prevailing theory, when master architects create excellent buildings though they reflect apparently conflicting philosophies, and when our students are accused of more interest in employing the mannerism and details that highlight the differences than in creating their own solutions, the time has come to discover a positive philosophy broad enough to embrace all good things and condemn bad things even though they may be based on a "good" theory. To put it in other words, must we not find and emphasize the broad architectural principles that allow us to admire such dissimilar structures as a windowless factory and a new Texas plant that merely roofs its machinery; Mies' Farnsworth house, Henry Hill's own home; the UN building, Wright's Johnson Wax factory; both an early Neutra house and a new one? Where is a common denominator for a Wright apprentice, a student of Gropius, and a graduate of the Illinois Institute of Technology? And, more important than solving the conflict of the fierce loyalties of youth, what can be the framework of approach for all conscientious practitioners who are honestly striving to overcome what they fear may be the prejudices of *their* youth?

It is these men who are most apt to note and remember the contradiction between what men say and what men do — between the claims of followers and the realities they build. They hear that a building which received international recognition and was visited by thousands a year ago has never been lived in because it did not fit the needs of its client and now sits vacant with parts of its daring structure quietly collapsed. Remembering the early arguments, arguments they used themselves, that modern architecture is based on economy, they read of the utterly fantastic cost of a perfect modern building; they wonder about work which is presented to the public as the last word — more than that, the building of tomorrow — which makes little pretense of considering economic means of maintaining basic comfort. They read the predictions and manifestoes of machine-age architecture and are disappointed as one prefabricating experiment after another fails, and wonder why. They are impressed by the master who lets them understand that beauty can only lie in the simple geometric shape and are a little perplexed with certain forms he revels in actually building. And finally their pondering of the ultimate contradiction that "less is more" can only be assuaged by Frank Lloyd Wright's great insight which takes refuge in the fact or truth that "the truth transcends the facts."

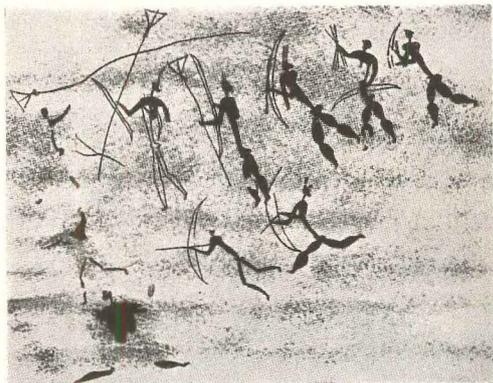
For they know that in the turmoil and in spite of the

contradictions there is tremendous vitality, excitement and promise in the tide of modern architecture. Its strength can only be coming from a basic rightness; underlying it are principles which have always been right and which must be applied to today's problems with today's means. They know that the solution to the architect's problem is not the simple choice of following Wright or Mies; deciding to expose construction; to suppress the mechanical plant; to eliminate crafts — to revere craftsmanship; to seek to develop a regional style — to lose themselves in international clichés; to base their work on some dynamic module; to copy the Swedes; or to go back to Vitruvius.

PERHAPS the solution is not to be found in architecture at all, but in observation of the world around us — the social, economic and scientific forces and ideas of our time which our architecture must reflect even as all other architectures have been reflections of theirs.

First of all, if we see contradictions in our architecture, it is because our time in history is beset with a variety of contradictions. From these men have drawn, are drawing, conflicting theories. In some fields there exist apparently two absolute answers over which they continue to debate, and in some fields even prepare to go to war. This is tragically apparent in economics and politics. Marx and Engels, with many others, pointed to social and economic inequalities. Marx's absolute solution to unfair distribution was Communism, leading to the Russian Revolution. Far from solving poverty and power, master and worker, that solution has intensified many evils. Yet millions prepare for war urged on by slogans derived from a system supposed to solve *all* things. Meanwhile in free nations where a relative rather than an absolute approach is possible, the difference between rich and poor has been narrowing without completely stifling the relative free growth of individuals.

A happier and more conclusive example of the clash between observed fact and accepted theory is in the field of science. Euclidean geometry — still the architect's tool — became suspect when the world the astronomers could see behaved in a way at variance with our then absolute mathematics. It was not until Einstein proposed and proved his Theory of Relativity that science was truly free to move forward again. His thinking has caused the absolute world of the scientist to disappear, and we are told mass, energy, space and time are interchangeable, straight lines bend, and mathematical systems can be made up. While convenient



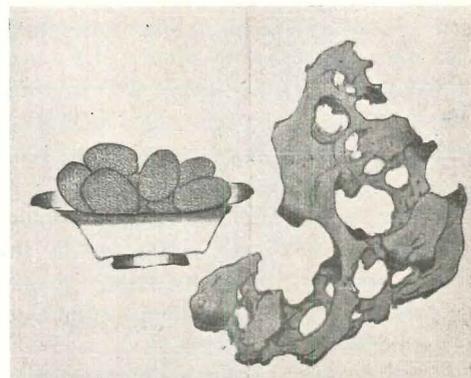
Painting from Southern Rhodesia, from *Arts Graphiques* 39



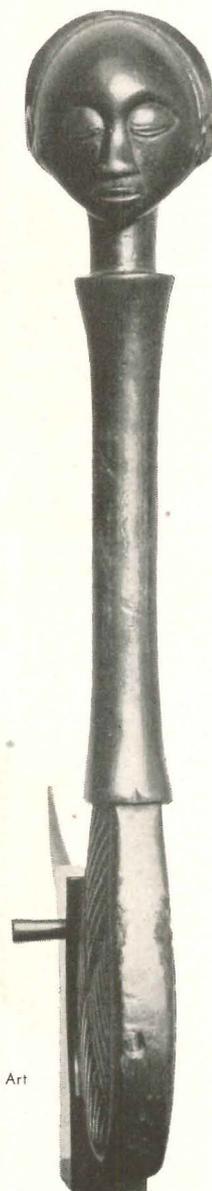
Remains of Cretan plaque in silver, 2000 B.C.



French tapestry, 15th century, from *La Tapisserie*



Chinese wood block, 17th century



Ceremonial axe, Belgian Congo, Smith College Museum of Art

Viewing . . . that wealth of expression, can there be any one way?

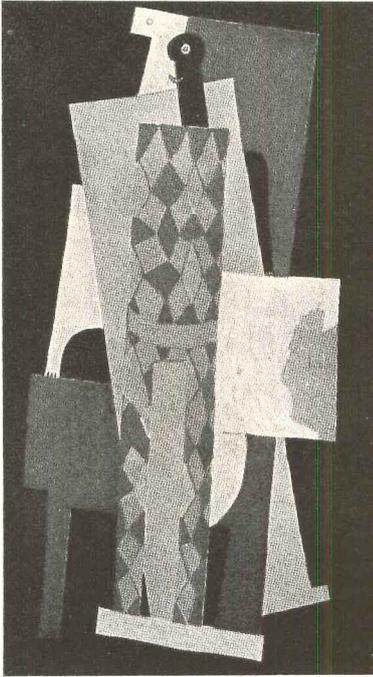
within certain practical limits, there is no system of measurement and mathematics that of necessity truly describes or fits the universe we are in. There is no magic right or wrong.

In the field of art — well what is art? Malraux in his “*Twilight of the Absolute*” reviews the sweeping panorama of cave paintings and Renaissance tapestry, African masques and Greek statues, Chinese drawing and Picasso’s recent pottery, all available to us in pictures and museums. Viewing but a part of that wealth of expression we have inherited and are creating, what art teacher can say, “*This is the way to paint — to draw — to model?*”

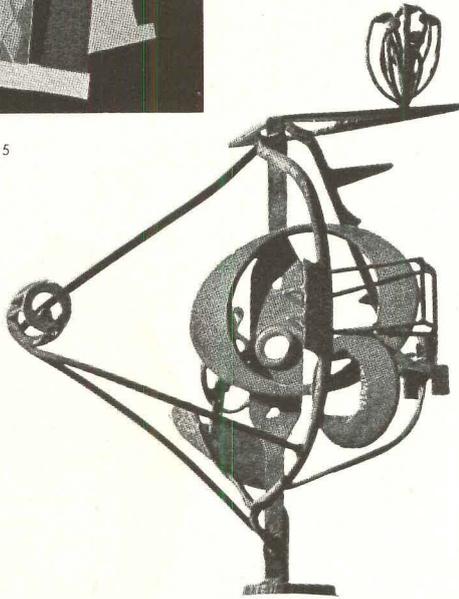
The young field of social science has much to teach the architect. He has always seen himself as a practical psychologist, a leader. But new disciplines are transforming our idea of leader and led. Social decision and action

is not typified by the man on horseback unsheathing his sword and leading a charge. That change is the result of many relative factors: access to raw materials, frustration of ideas, the explosive effect of wealth-producing machines — a myriad of forces about which the mind of a free community may be finally crystallized, we are told, by the catalytic influence of its postman or barber.

Reflection may call to mind other examples in which only relative good may be discovered instead of the absolute black or white decision we long for. Certainly there is enough evidence to suggest that our time is the Age of Relativity, and our architecture must be evaluated in such a framework. Of course this is no new theory: most of our definitions of architecture say it is the product of social and economic forces and a synthesis of structure, function and esthetics. How men have tried to transform these related factors into a



Harlequin by Picasso 1915



Blackburn: Song of an Irish Blacksmith, David Smith
Courtesy Willard Gallery

single absolute! It is said that if a building shows its structure, it is functional, therefore beautiful. Or if it supports a shelter that conforms to the volume required by the process it shelters, it is automatically beautiful. Unfortunately a passionate faith in any of these absolute definitions gives no insurance for excellence in design. Architects, even as the scientists, must reject the idea of a single approach and a final absolute solution if they are to free themselves for happy progress.

It must be remembered that a building is the result of relating an almost infinite number of objectives and choices: the available resources in labor and material, the expected life of the building, the action and objects it is to shelter (function); a choice of the materials actually available; the exploitation of site; the challenge of the climate; the determination of desirable comfort value; the collaboration of painters and sculptors; the

economics of building maintenance; social and psychological objectives; and all the other limiting and challenging factors one can think of.

Now, if it were possible to properly relate *all* the factors one should think of into a unity, we would probably achieve that organic architecture Frank Lloyd Wright talks of, and that perhaps is our ideal. For such an architecture would not be aimed at a universal absolute, but result in that variety we find in flowers and trees and every living thing. For each of these varies with the richness of its nourishment, the benevolence of its particular climate, the aggressiveness of its neighbors, the exigencies of its breeding — and in every one we discern beauty.

But history will probably never label the architecture of our time organic, because most of us are incapable of taking into account all the factors there are because we do not know them; others will not; and none of us is without a conscious mind and ego which inevitably stand in the way of the selfless action that results in rose and oak tree. The greatest beauty we create may occur when our men of genius intuitively grasp the short cut and create structures that synthesize factors more pedestrian minds could take a lifetime to rationalize. Nevertheless, it can be seen that to some extent all our buildings are relative architecture, and all our architects find themselves pleasantly in a position similar to that of the character who was surprised to find he had been speaking prose all his life. In design the architect reveals whether he is trying to tell a complete story or is content to illuminate an episode. There is no absolute that demands relating a building to everything, but how well a building relates to as many factors as possible is as fine a goal as can be set. Such an overall synthesis is certainly as good as taking delight in any single aspect of architecture, say structure, and emphasizing that. It is as if a man, setting out to cut a diamond, chooses whether to polish one facet or to form the whole gem.

Unfortunately, the architect today faces the most bewildering series of choices in history, just after throwing away the prop of continuing to repeat inherited forms. There are those who follow as closely as possible the mannerisms of a living master, but to copy a present fashion is no better than to copy a past one.

It is a time when it is easy to do something apparently smart and different. And the applause is great if the result is easily photographed, identified. Such recognition can make us forget that mannerisms and simplification by mere elimination are of much less importance than a good working plan for a building, its relation to its site, the excellence of its mechanical plant, its conspiracy with natural forces, the fact that its cost was within its budget, its concern and empathy for the client, and scores of other very relative realities that make a building a pleasant experience as well as a pretty object.

The satisfaction we find in the finished perfection of some that master elementary harmonies and the prom-

ise we see in other more complex, still imperfect, symphonies make this a most exciting era of architecture. For ours is not an age of maturity, of accepted style. It is a time for relating things, of experiment, of youthful enthusiasm, of much promise.

And, as Horatio Greenough said a century ago, "Beauty is . . . promise . . ."

Our buildings inevitably tell our story, haltingly or

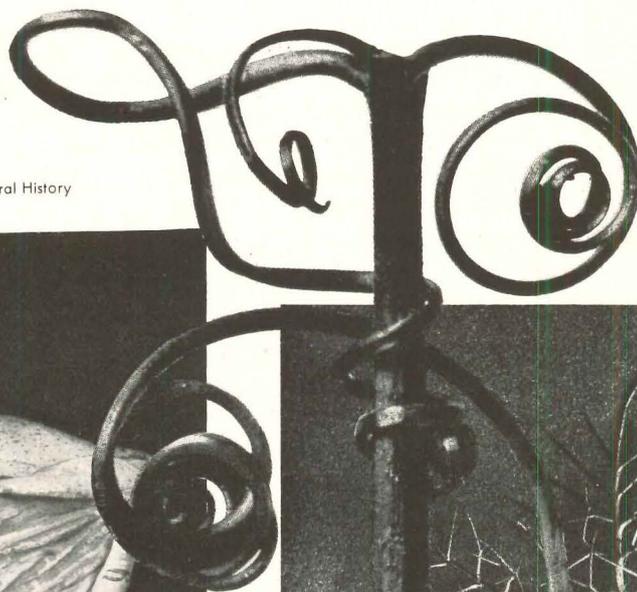
beautifully. As a chorus they make an incoherent babel that reflects how little our whole society is in accord, but here and there is an architectural statement whose calmness and serenity bespeak a well adjusted designer who has used the full range of sound and made a building not talk, but sing with full chords. And when he does transcend a thin tinkling tune, it is because his heart was set on a song for many people, not a solo for himself.

"... architecture would ... result in that variety ..."

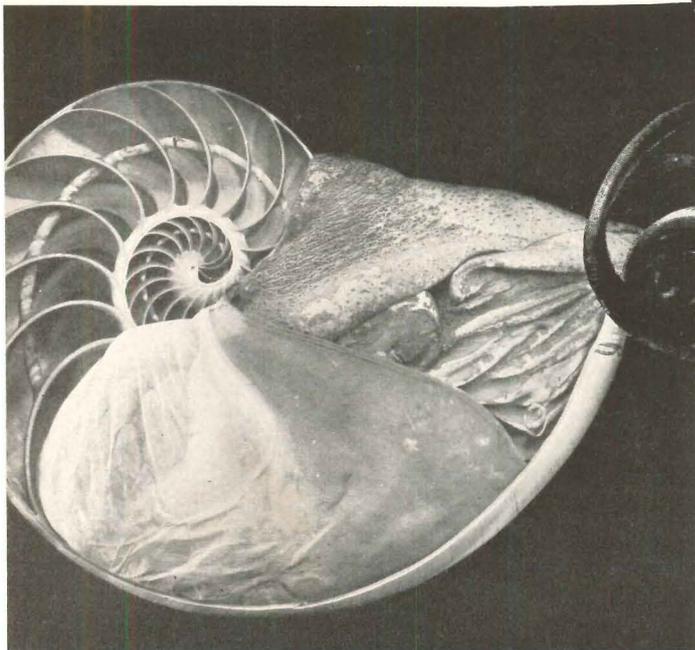
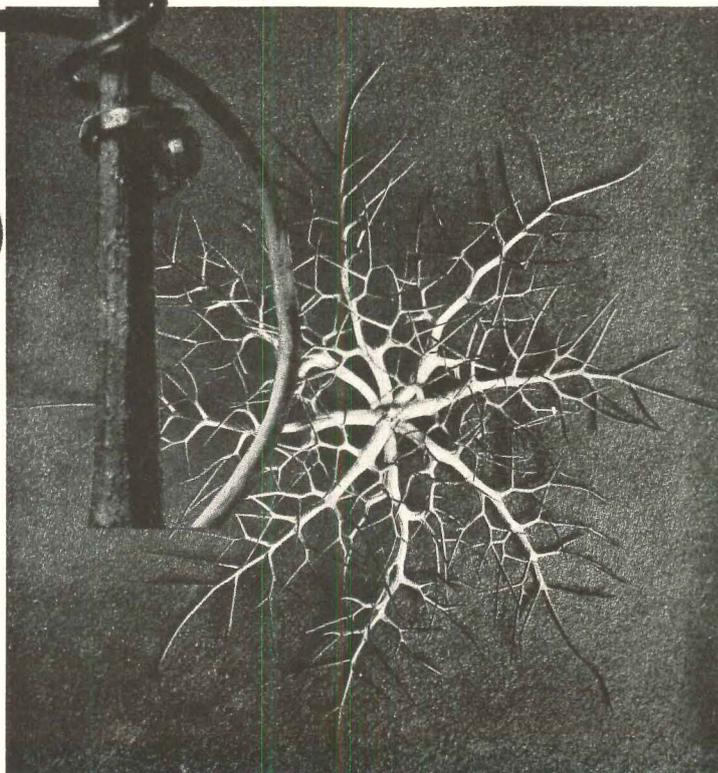


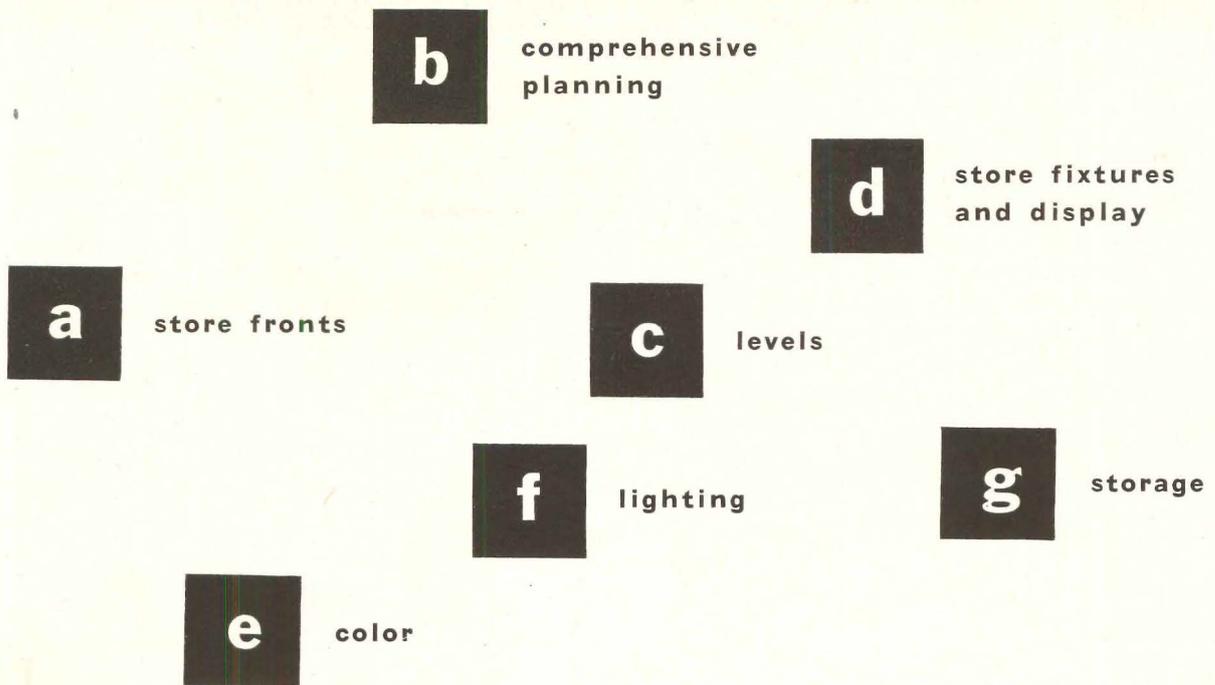
Quartz crystal, American Museum of Natural History

Chambered nautilus (cutaway), American Museum of Natural History



Pumpkin vine | Black caraway
from *Wunder in der Natur*, Karl Blossfeldt





STORE DESIGN

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 188

by Caleb Hornbostel, Architect

THE NEWEST RELAXATION in the basic construction order by the National Production Authority this month is expected to add much to stimulate the field of store construction. For this reason and also because store design has gone through a complete overhauling in the postwar years, now — the middle of 1952 — is a good time to view in retrospect what the trends, directions and innovations have been and where they may be going.

Starting with the store front, we can obviously see that the open front has become an accepted formula except in the few cases where a store by its very nature can afford the closed front type of design. The open front has raised a host of design problems which did not exist before, namely, reflection, sun glare and sun control, new methods of window display, artificial lighting both day and night, a general reorganization of merchandise within the completely exposed store, together with a new approach to the design of display fixtures and casework in general.

In comprehensive planning of stores the most important consideration is circulation of customer traffic within the store. In planning suburban stores, which exist by serving the car shopper, parking facilities have become one of the major design factors. Parking facilities within the city are also a primary factor, but the solution to this problem goes beyond the usual field of store design and enters into that of civic planning.

A freer handling of levels within stores is one of the newer trends in store planning.

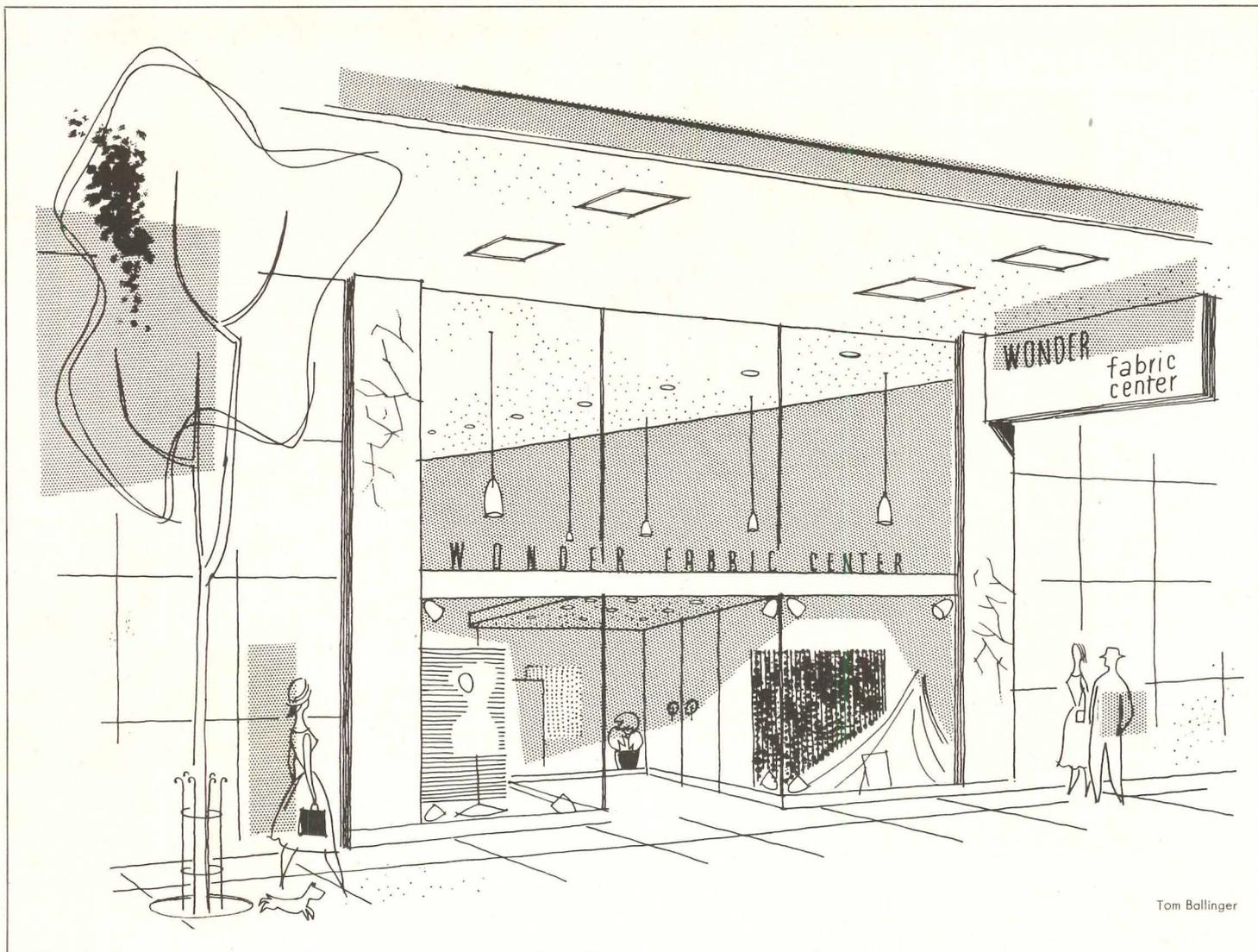
The whole field of display and casework is still in a state of change. The tendency is toward complete flexibility of fixtures and display, with the result that the store is becoming more and more of a stage set which adjusts to seasons, sales volume and buying trends.

Color has become a useful tool in store design. The psychological effects of color and its integration with lighting and display are being closely studied at present, indicating more use of color in the future.

Perhaps the greatest strides and innovations have taken place in store lighting. Lighting has now become an integral part of all comprehensive planning. Not only has general interior lighting changed, but, with the open store front, day and night lighting throughout the store has also become very important. The store sign enters the lighting problem and it, too, must be integrated into the design as a whole.

In store design the internal business operation of the store itself demands integrated storage of stock. There are three accepted methods of approaching this problem: (1) self-selection, where the majority of stock is on the actual sales floor and only remote storage is necessary; (2) all stock is concealed; and (3) multiple types of storage — exposed stock in showcases with some concealed stock, and reserve stock adjacent to the selling area.

Each of these aspects of store design has been treated separately and includes the opinions of a number of architects active in the field.



Tom Ballinger

a store fronts

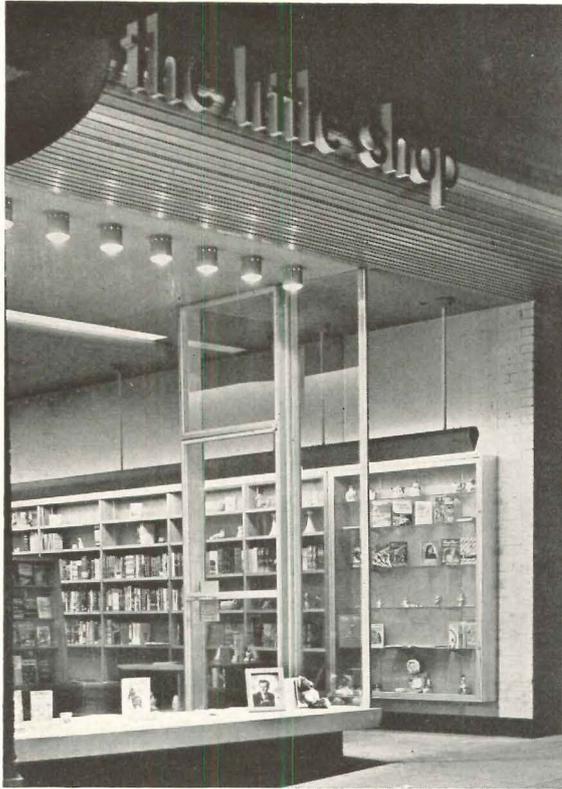
"THE STORE FRONT is the silent salesman working on the street 24 hours a day. It is newspaper advertising plastered across Main Street. Few indeed are the shops that are entered through a self-effacing door. These shops are the ones that have established a reputation for exclusiveness and customer selectivity which marks them as the extreme minority in the retail field. Mr. and Mrs. America and their children have been educated to shopping habits in which the store front plays a stellar role. Window shopping is probably the greatest single pastime of men, women and children throughout the country. Millions of dollars a year are spent on window display, and retailers today are much too canny to spend their money on anything which does not produce ample return on investment. To my mind, store fronts are the catalysts which turn window shoppers into customers and as such are a vital part of the retailer's selling equipment. As an architect who has spent many years in the store field, I feel that nothing contributes more to the quick and continued recognition of a retailing establishment by the public than the store front."

Morris Lapidus

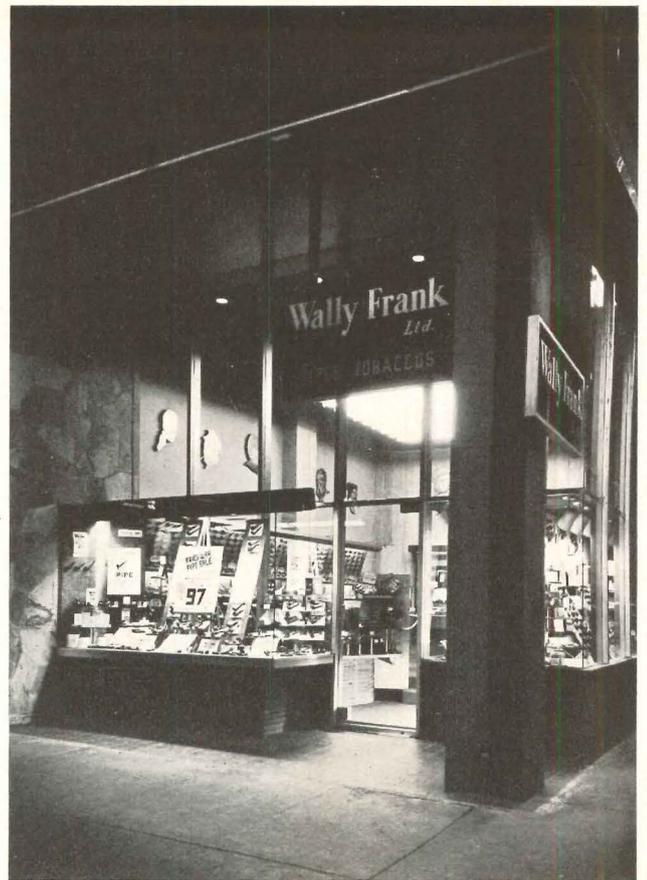
Roger Sturtevant



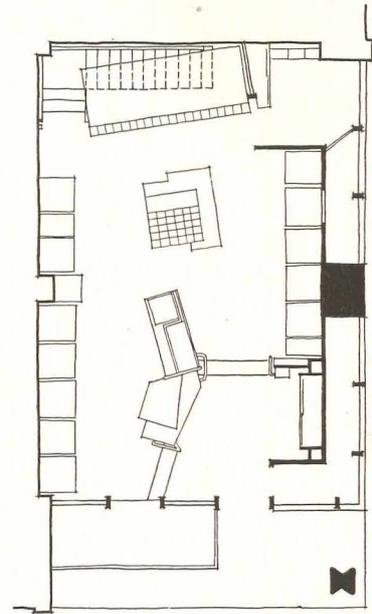
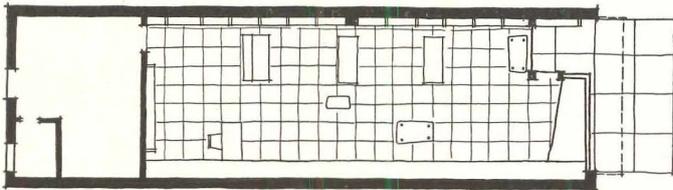
Above: Thos. Tenney Shop, Berkeley, Calif.; Roger Lee, Architect



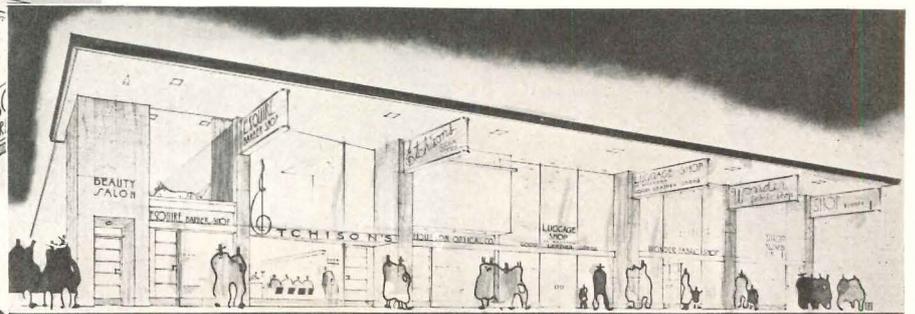
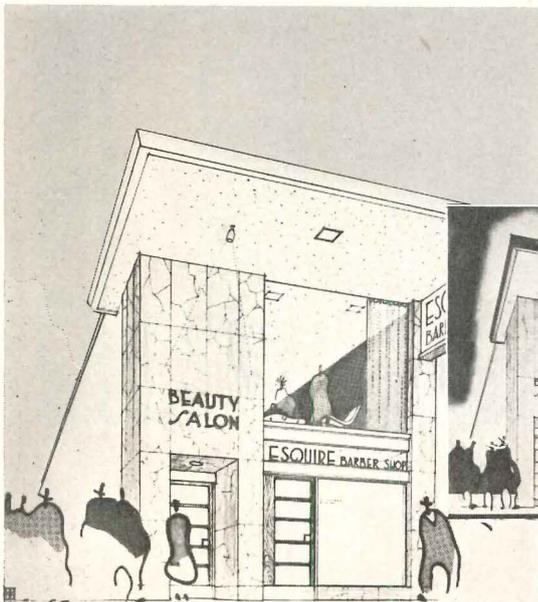
Courtesy of the Kawneer Co.



Gottschö-Schleisner



Above: *The Little Shop*, Niles, Mich.; Ketcham, Giná & Sharp, Architects. Door set at right angle gives total glass front area for display. Right: plan and photo, *Wally Frank Ltd.*, New York City; Morris Lapidus, Architect. Below: *The Rusk Shop Building* in Houston, Tex., by MacKie and Kamrath, Architects, is a successful design for unified store group



store fronts

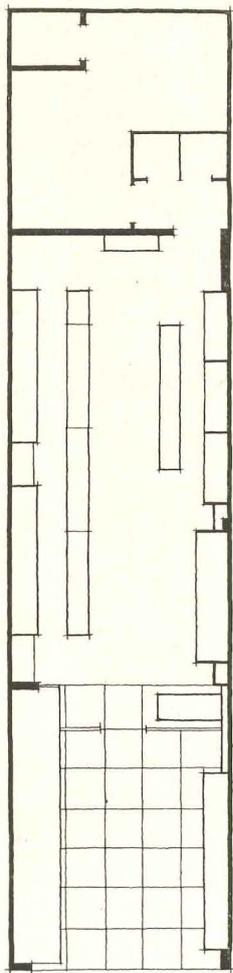


Roger Sturtevant

Cargoes Inc., San Francisco, Calif.; Skidmore, Owings & Merrill, Architects; John L. King, Partner in charge; Don R. Knorr, Designer

The store itself acts as a showcase: its entire contents are the window display. Color and simple baffle walls are cleverly used to subdivide the space into various departments, yet allow the windowshopper to see into almost the full depth of the store. Yellow, a soft brown and orange-red predominate. Each color is used in relation to the merchandise which will be displayed against it. The photo to the right shows an interesting use of stock light fixtures. The casework is noteworthy for simplicity of design



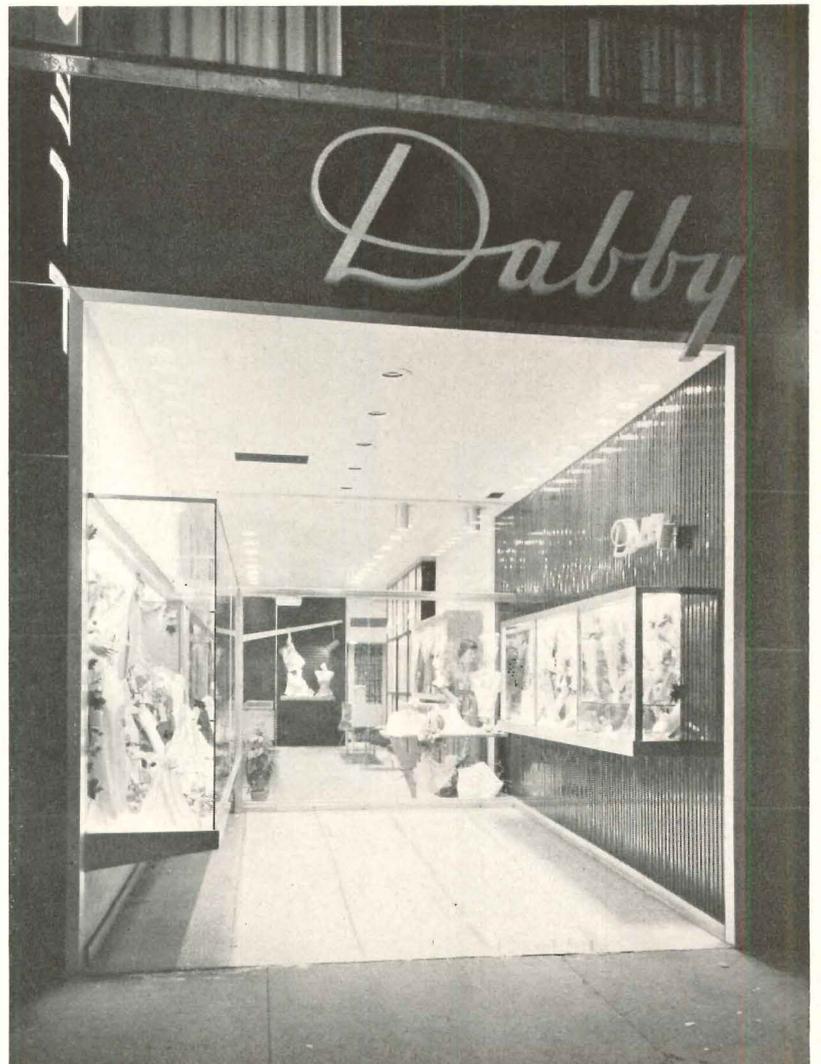
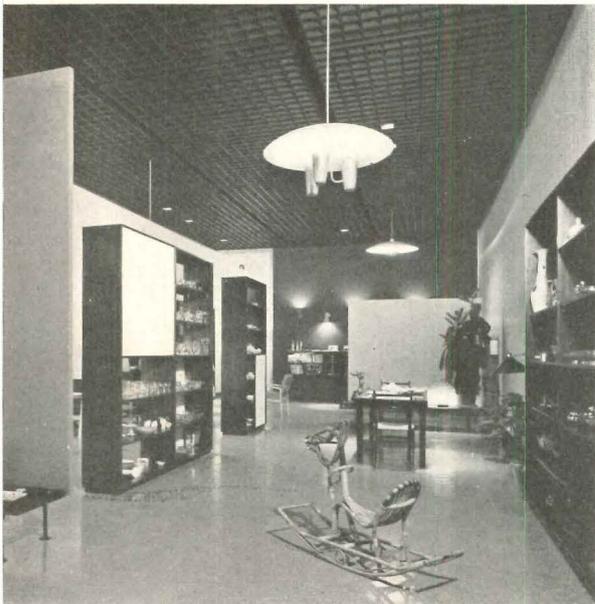


Robert C. Cleveland



Above: Renee's Flower Shop, Beverly Hills, Calif.; Paul R. Williams, Architect; Robert Kliegman, Associate Architect. Overhang shades front, controls glare. Outdoor planting boxes help identify shop

Below: Dabby Shop, New York, N. Y.; Seymour R. Joseph, Architect. Display cases along sides of deeply set-in entrance lead passerby into store (see plan, left)

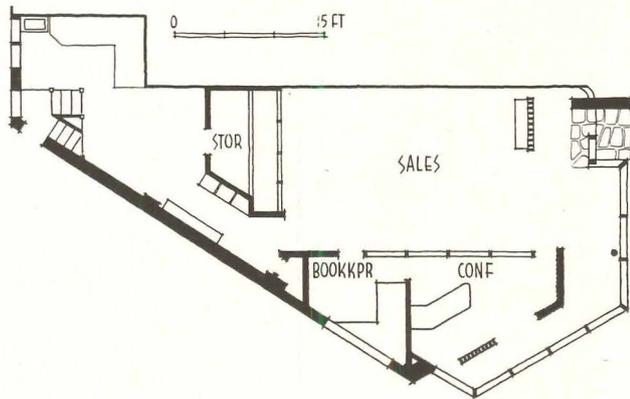
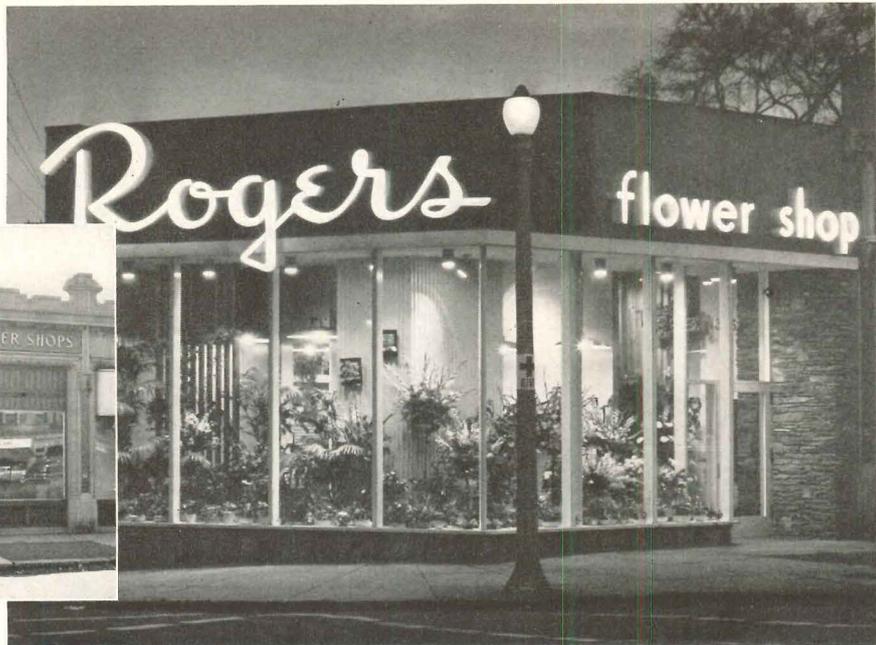


Ben Schnoll

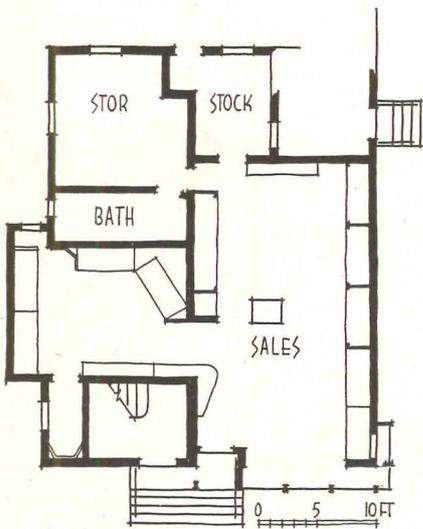
store fronts



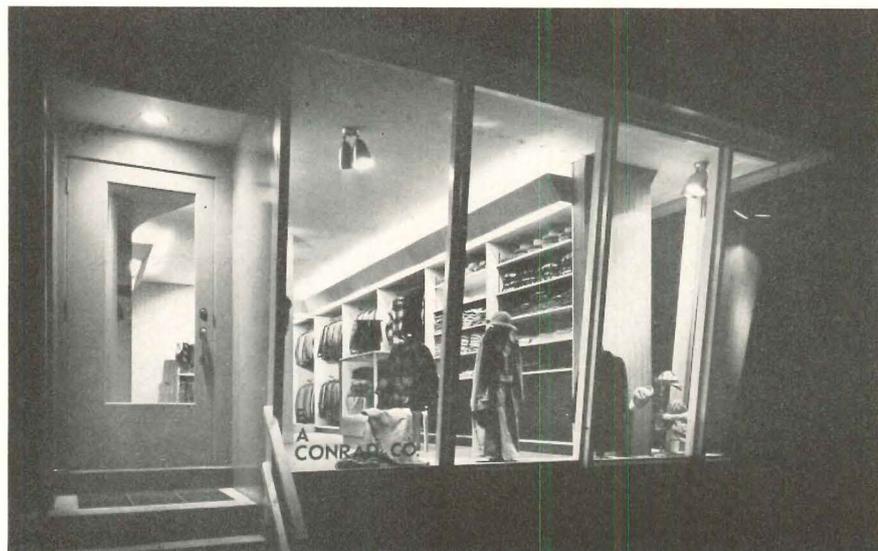
George M. Cushing, Jr.



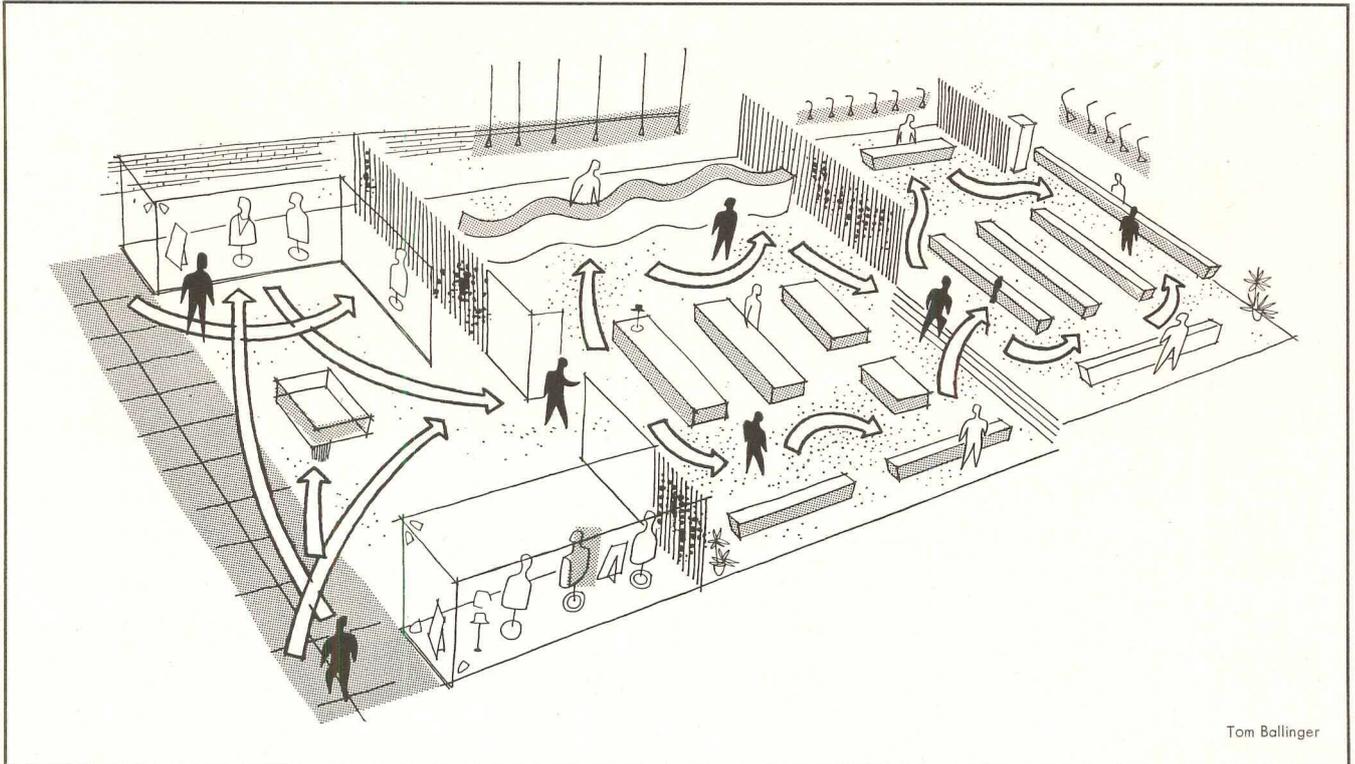
Above: Rogers Flower Shop, Brookline, Mass.; William Riseman Associates, Designers. Alteration opens up shop, gives identity



George M. Cushing, Jr.



E. A. Conrad Co., Beverley, Mass.; Constantin A. Pertzoff and Louisa V. Conrad, Associated Architects. Shop serves two age groups, each with separate sales areas. Slanting bay windows reduce sky reflection



Tom Ballinger

comprehensive planning

b

Circulation

Departmental organization

Parking facilities

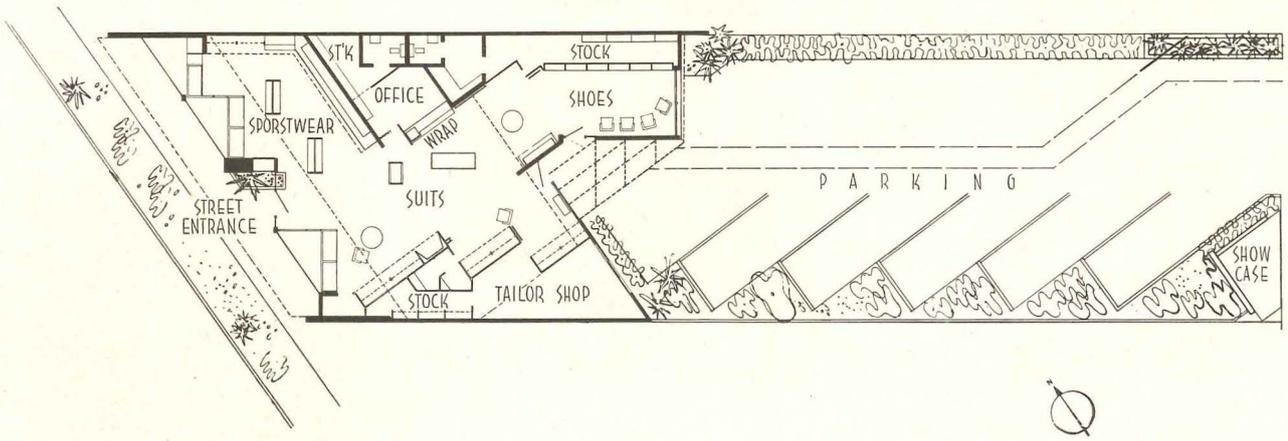
"The first step in comprehensive planning for small stores is setting up a program of overall requirements. This requires all the steps of research, survey and planning skill that one uses in programing the design of any complicated public project and consists of: a study of the needs, habits and buying potential of the public in the area; the ratio of dollar volume of yearly business to sales area to be occupied by various types of merchandise within the store; and, finally, the business background, philosophy and aptitude of the merchant who is to operate the store. The architect can then begin to intelligently plan the store and to interpret this data into proper area and volume allocations of the store. He must also provide for non-selling functions which are essential to proper customer service, comfort and store operation. This includes proper control of interior lighting and temperature. The last step is to promulgate a final layout for the store, based on a certain degree of flexibility in the plan and fixture details to provide for changes in buying trends, population shifts and other unpredictable factors which may affect business."

Daniel Schwartzman

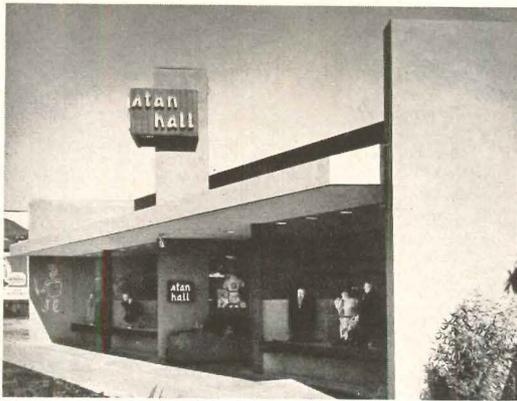
"The most important factor in the existence of the suburban store and the one probably most closely related to sales is more and better parking facilities. Indeed, a new suburban store which does not provide these is extremely vulnerable to present and future competition and therefore represents a poor investment. Here are some criteria of what constitutes ample and convenient parking: a sufficient number of parking stalls as related to expected shopping volume rather than area of the store. It can be roughly estimated that one parking stall should be provided for a business volume of \$8,000 to \$12,000. Self parking shall be easy; angle parking is preferable. Parking stalls shall be of ample width and depth so that car doors can be opened and merchandise stored without hitting the neighboring car. Parking lots shall be well surfaced, clearly marked and well lit for night business. Landscaping and trees should be introduced to avoid a bleak appearance; these shall be well curbed or raised. Service traffic (deliveries, garbage collection) shall be strictly separated physically and visually from customer areas. Parking should be free."

Victor Gruen

comprehensive planning



Stan Hall, Los Angeles, Calif.; Victor Gruen Associates, Architects; Rudi Baumfeld, Designer



Store layout uses full depth of irregularly shaped city block. It fronts on both streets, with parking lot entrance as important as sidewalk entrance. Interior circulation is controlled by clever use of baffling

Garber Sturges



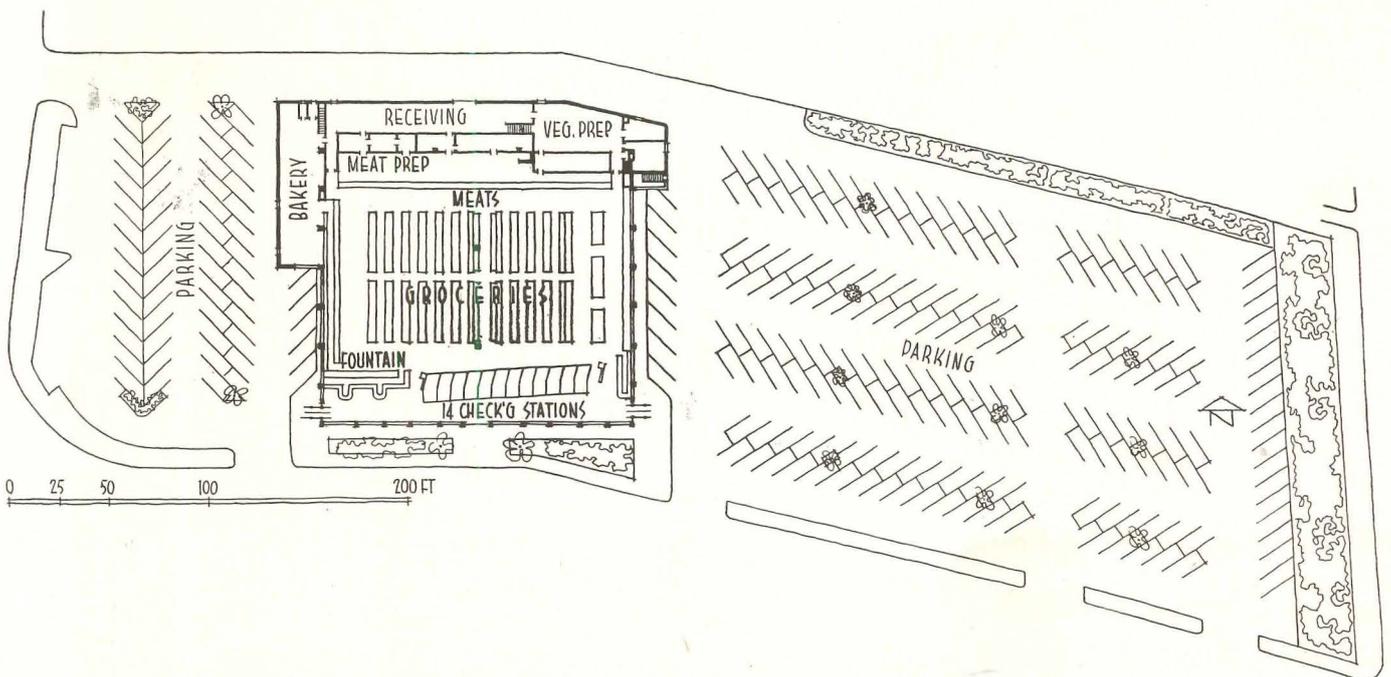


Bettendorf's Market, Clayton, Mo.; Kenneth E. Wishmeyer, Architect

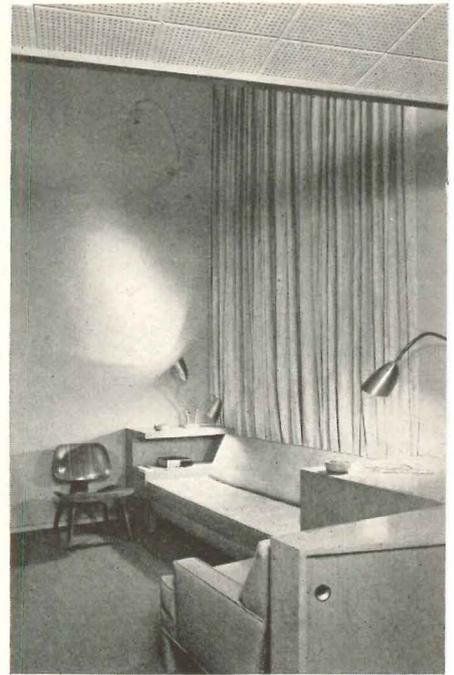
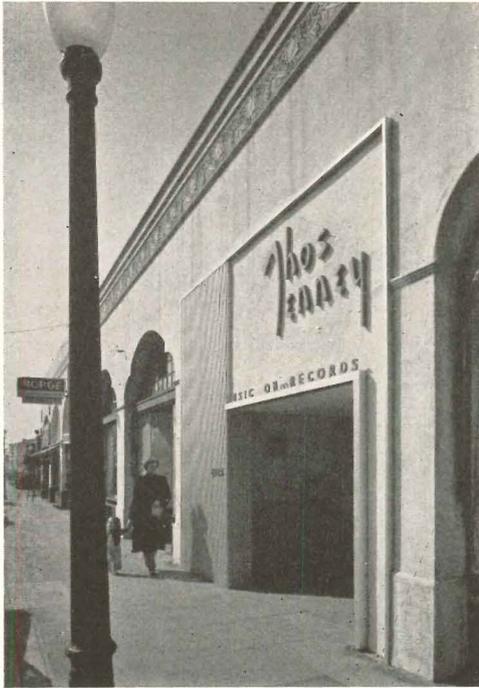
This supermarket with front and side parking features clear spans, clean-looking sanitary materials, incandescent lighting, summer or winter ventilation, well proportioned interiors. Noise control, ease of maintenance, pleasing color are other plus items. Materials handling was a prime design consideration



Arteaga Photos



comprehensive planning

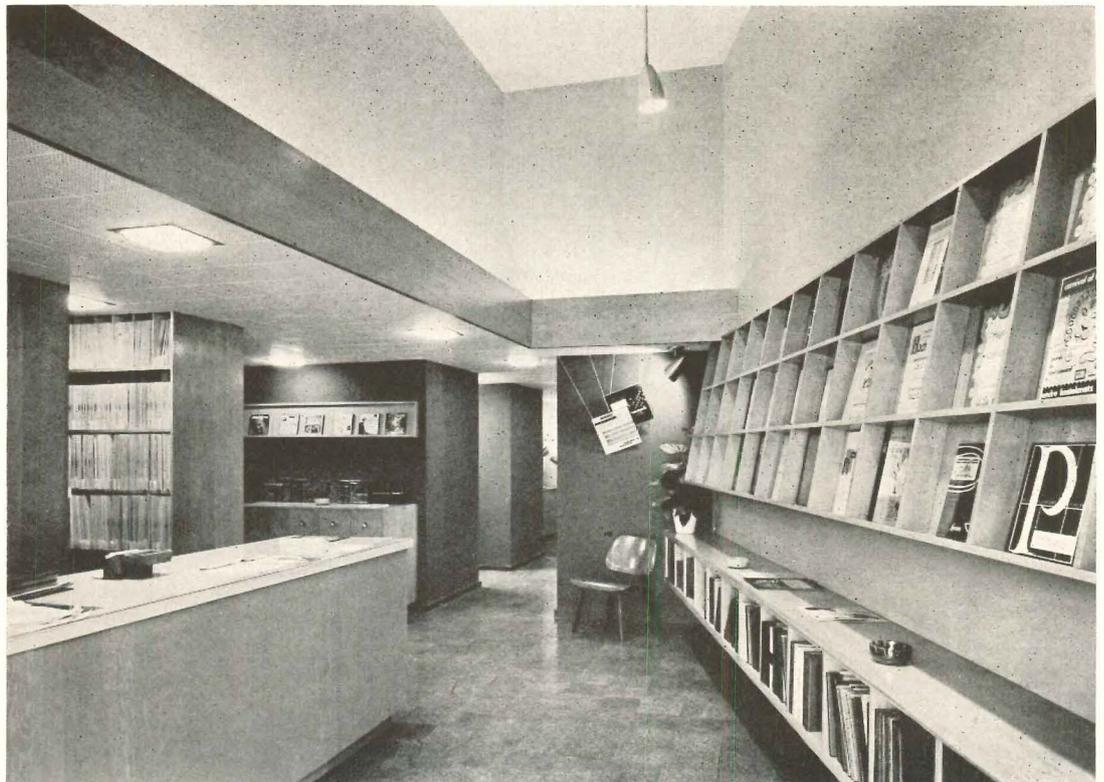
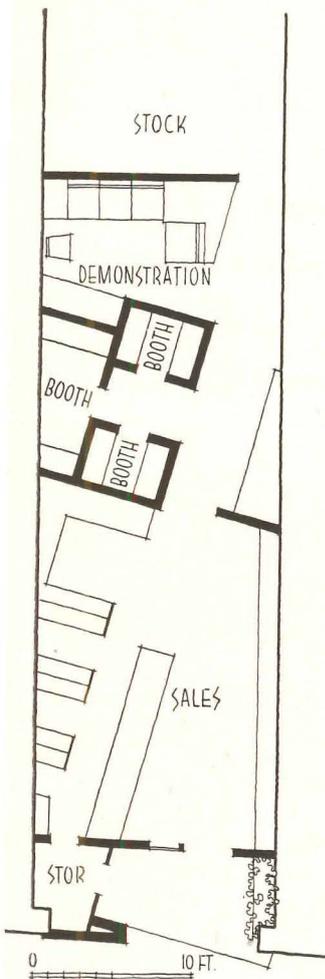


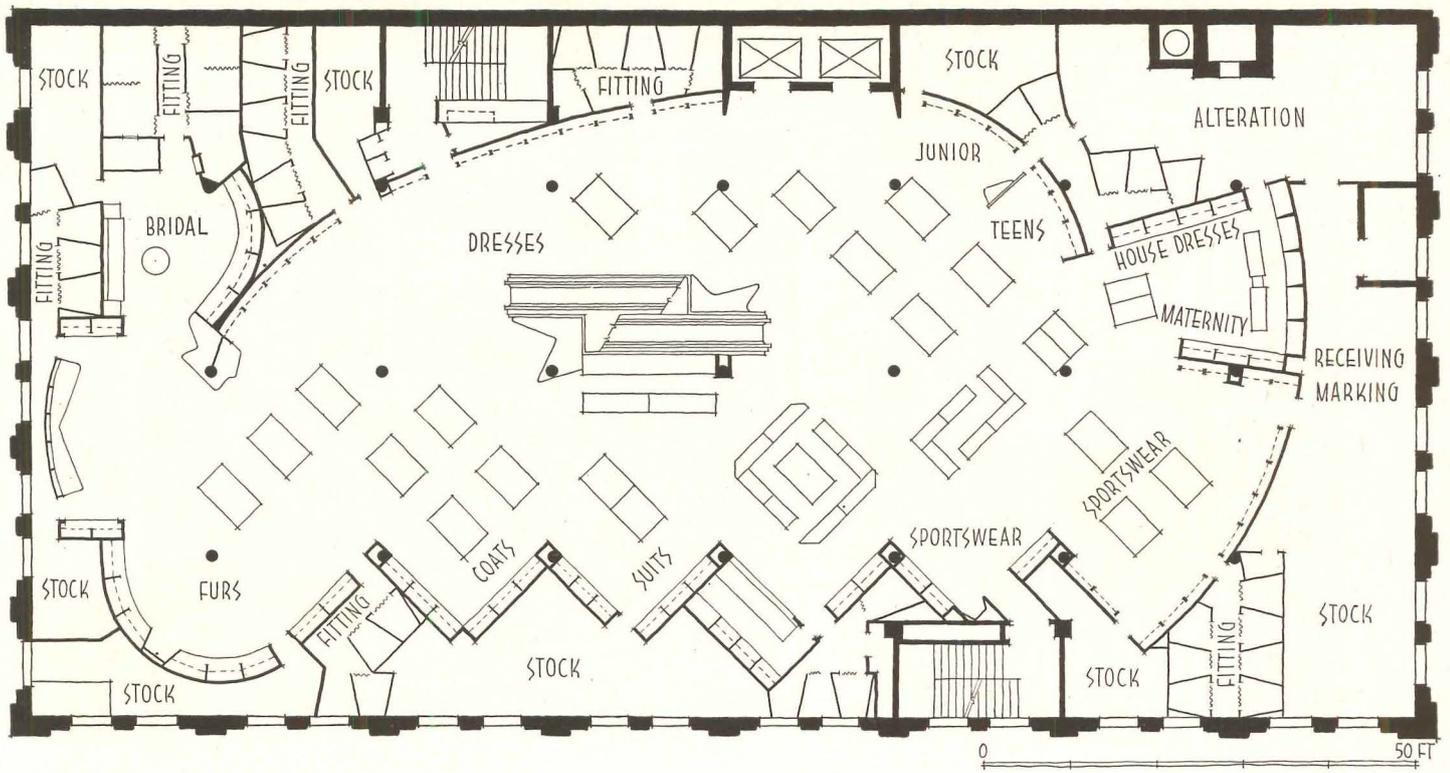
Roger Sturtevant

DIAGONAL WALLS CONTROL INTERNAL CIRCULATION

Thos. Tenney, Music on Records
 Berkeley, Calif.
 Roger Lee, Architect

INTERNAL space is quite confined in width as well as depth, yet the architect handled the space so cleverly that the customer is not aware that it is really very small. Location of the LP record rack opposite the listening booths makes for easy customer selection. Use of acoustical material on both ceiling and floor add to customer comfort. In the demonstration room at the back, a customer can relax and listen to various combinations of equipment and recording devices.





MERCHANDISING SEQUENCE DETERMINES LAYOUT

THIS PLAN SHOWS, to quote the architect, a logical sequence of customer traffic, starting near the highest traffic area with merchandise that has quick appeal, high unit profit and fast turnover and is bought on *impulse*, then proceeding with location of other merchandise lending itself to related selling or logical association, then to areas which ordinarily get the least traffic and to merchandise which is scarce or staple and therefore is bought on *demand*.

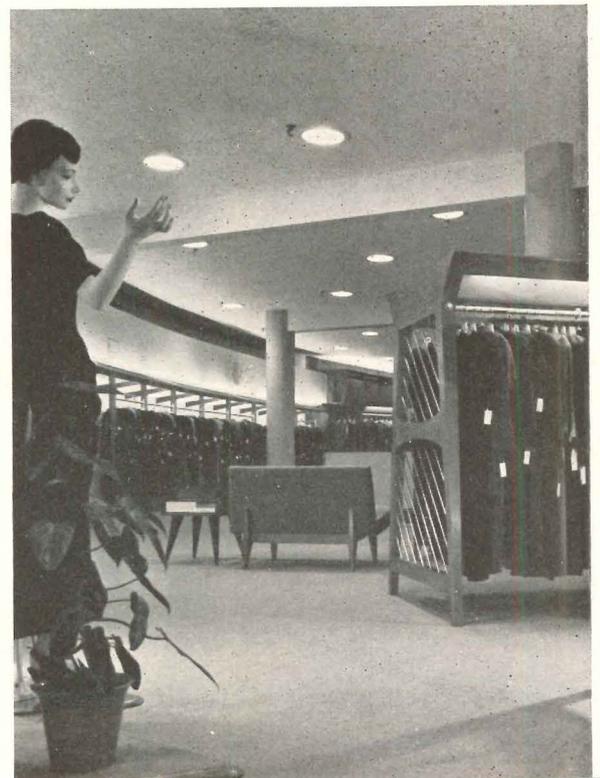
Trask, Prescott and Richardson

Erie, Pa.

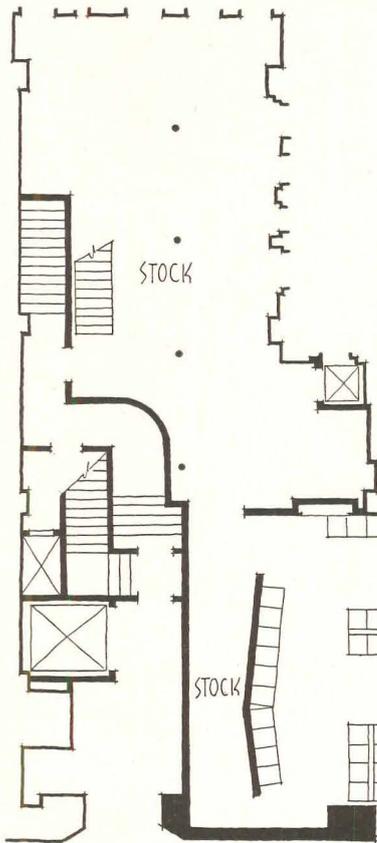
Daniel Schwartzman, Architect

Meyers and Krider, Associated Architects

David Royter



comprehensive planning



View from men's shop shows full depth of store. Floor racks of black wrought iron repeat design of other fixtures. Wall paneling is of juanacosta, floor is brick and tile. Color scheme is blue, cocoa brown and beige

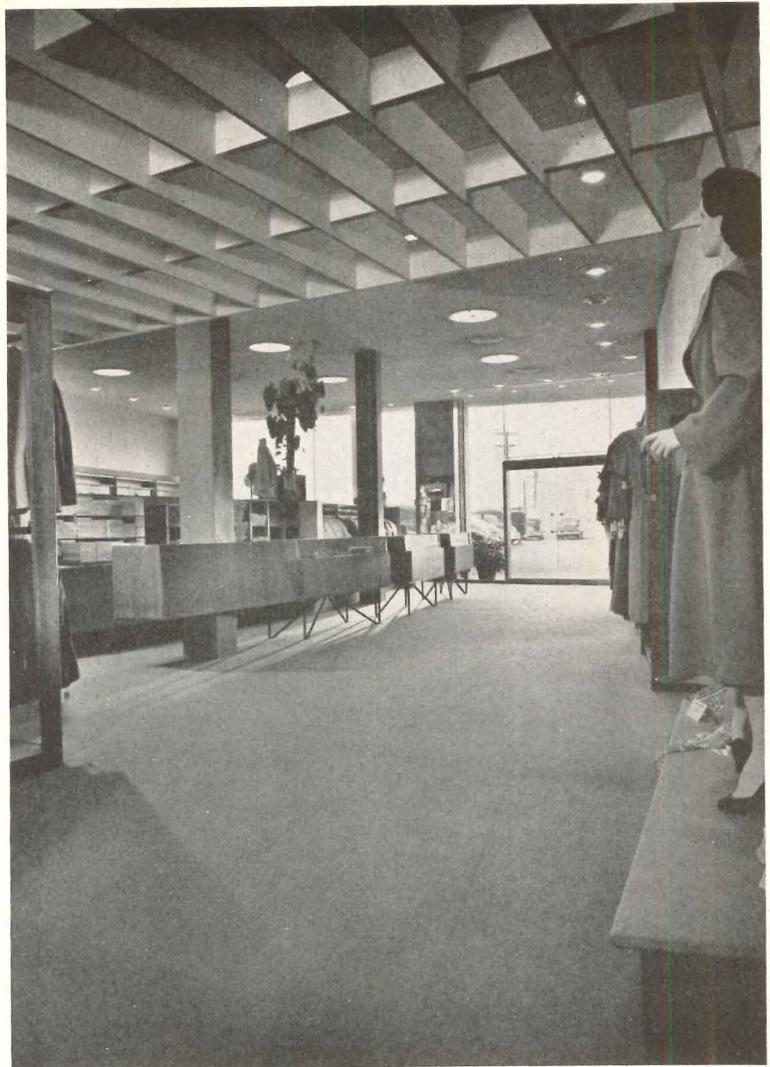


A SIMPLE FLEXIBLE LAYOUT

Miles Shoes, New York, N. Y.
Furno and Harrison, Architects

←

THE PROBLEM was to not discourage low income sales by an overplush interior. The floor plan features three areas — display in store front area, intermediate area for accessories and impulse buying, and main sales area. Stock is kept off to one side, the entrance to it concealed by a decorative baffle wall in the rear. Mirrors increase the apparent width of the front area. Flexibility is the keynote of both sales areas. Lighting and cases hanging on mirror wall are interesting details.



Above: women's department is carpeted; fixtures are pastel woods rather than wrought iron, and colors, including yellow and turquoise, are more feminine than in the men's department

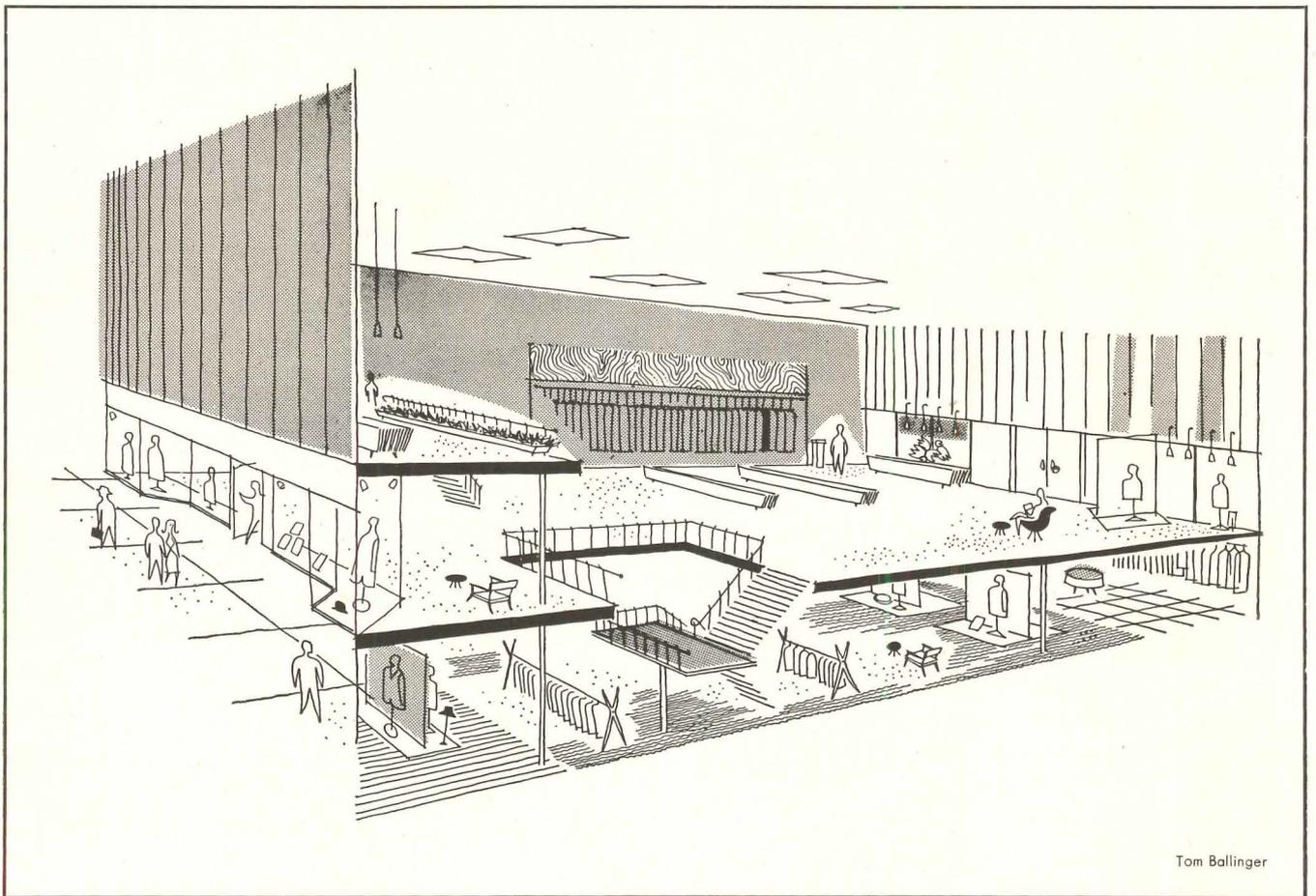
STORE WITH TWO ENTRANCES

Foreman and Clark, Los Angeles, Calif.
Welton Becket and Associates, Architects

SEPARATE men's and women's departments are incorporated within the confines of a narrow rectangular site. Both entrances, one on Wilshire Boulevard and the other opening onto the parking lot, are given equal importance. The store is divided in the center by dressing rooms and executive offices. Distinction between men's and women's departments is further emphasized by using different decorative and color schemes. Area limitations are circumvented by an open merchandising plan. Floating racks of stainless steel suspended from the ceiling by wrought iron members, floor racks, and egg-crate counter fixtures are all light in design to increase feeling of space.



Julius Shulman



Tom Ballinger

C levels

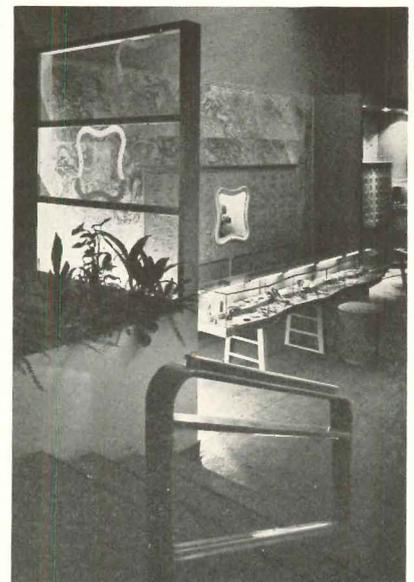
“**V**ARIED sales floor levels represent an opportunity — not a handicap — to the store planner. He can use them to lead customer attention and customer traffic, by easy stages, from one selling level to another. Varied sales levels are thus visually integrated with one another, and, at the same time, stairways can take the place of elevators and escalators, thus lowering both initial cost and maintenance.”

Morris Ketchum, Jr.

“**E**VEN in supermarkets, where single level operations, other than help’s lockers and toilets, restrooms, boiler rooms, compressor rooms and similar units of this type, are the most efficient and inexpensive when site adequacy permits, there are many successful (financially) examples of two-level operations.”

Kenneth Wishmeyer

*Below: Balch Price Store,
Brooklyn, N. Y.
José A. Fernandez, Architect*



Goitscho-Schleisner



Lionel Freedman

NEW TRENDS IN THE USE OF LEVELS

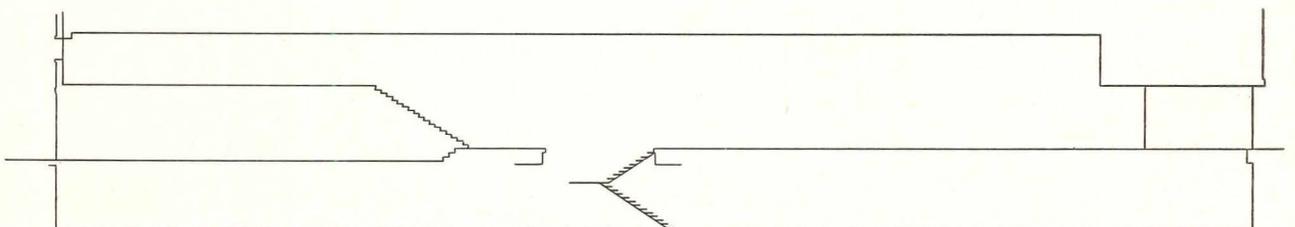
Wallach's, Jamaica, N. Y.

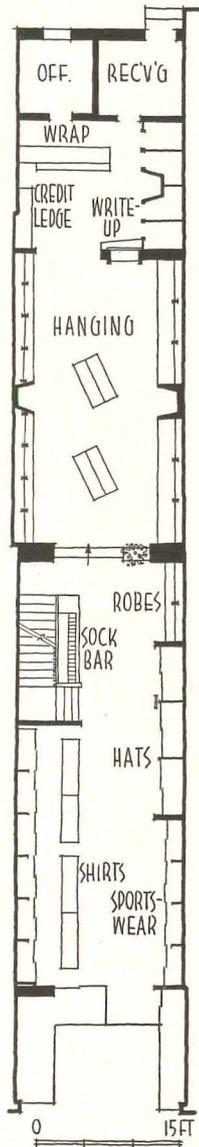
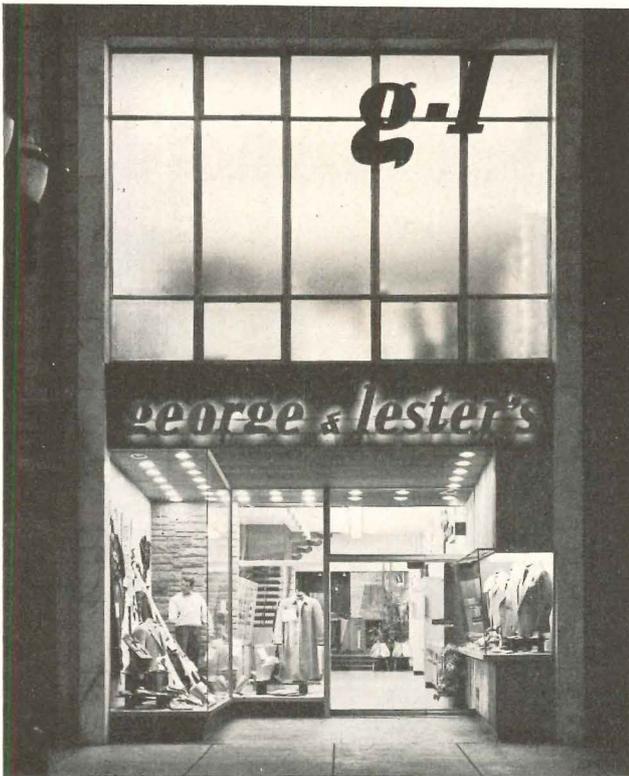
Ketchum, Giná & Sharp, Architects

EXPLORING THE DESIGN POSSIBILITIES inherent in levels presents a new challenge to the imagination and skill of the store architect. A shift in levels by a short flight of stairs has been used quite often in specialty shops and many types of retail stores to set off demonstration areas, accentuate departmental layout and highlight settings for special sales appeal. Now the true multi-level plan is becoming increasingly popular in all types of stores, including the suburban store and even the supermarket, which ordinarily is considered as a one-

level operation. This trend toward levels in suburban stores and shopping centers is encouraged by the need to increase parking space in relation to shopping area. Thus, multi-level parking with direct entrances to various store levels is being introduced in some of the newer shopping centers.

Wallach's, above, is an outstanding example of multi-level design in which levels expand and segregate sales areas, yet also give a feeling of overall unity and allow the customer to see all the merchandise in the store.





DESIGN EMPHASIS ON LEVELS

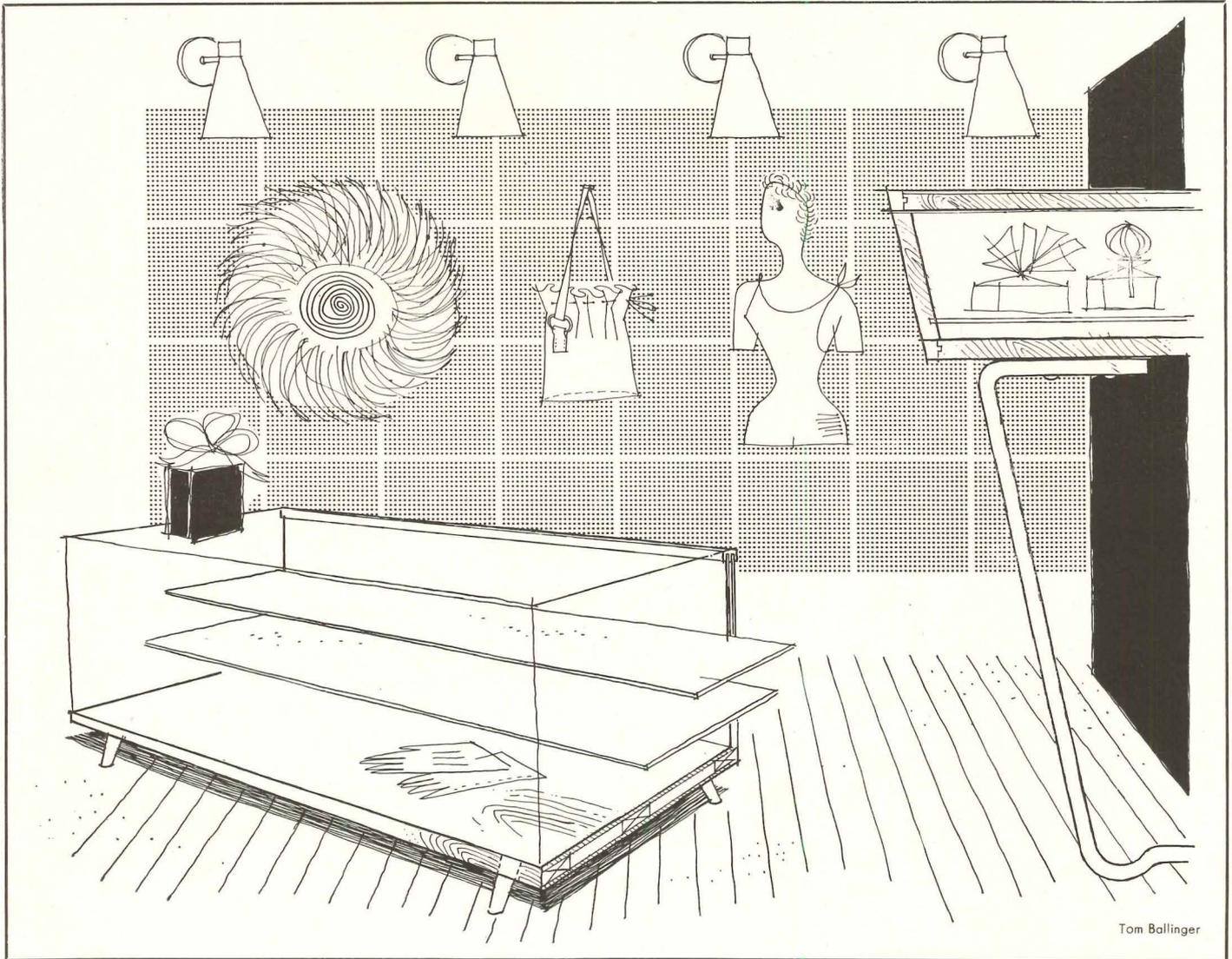
George & Lester's, Racine, Wis.
 Morris Lapidus, Architect

THE DESIGN of the store front dramatizes both levels. The staircase, which leads to fitting rooms and space for future expansion, instead of being unobtrusive, is a dominant feature of the interior. The suit department in the rear of the store is raised slightly and a soffit is introduced to create a clearcut space division and a more intimate sales atmosphere. A fireplace and controlled lighting in this area heighten the personal effect desired by the owner.

Hedrich-Blessing







Tom Bollinger

d store fixtures and display

"**F**IXTURES are designed solely to display and sell consumer goods. They are a part of whatever atmosphere the architect is endeavoring to create and should never overpower the customer. Fixtures should be integrated as well as possible with the structure and lighting. In fact, the fixture work often is the store architecture and should be as unobtrusive as good architecture."

Daniel Laitin

". . . and 'What is the best possible fixture design for any specific purpose?' The answer is, 'No fixtures at all.' In other words, the ideal is to maintain merchandise at the proper levels for inspection and handling without the aid of the present opaque, perishable and expensive fixturing methods. Most designers are now working toward that goal and doing everything possible to eliminate the bulkiness and insistent appearance of their fixtures."

Daniel Schwartzman

Victor Loczi



Record Shop, Pittsburgh, Pa.
John Schurko, Architect

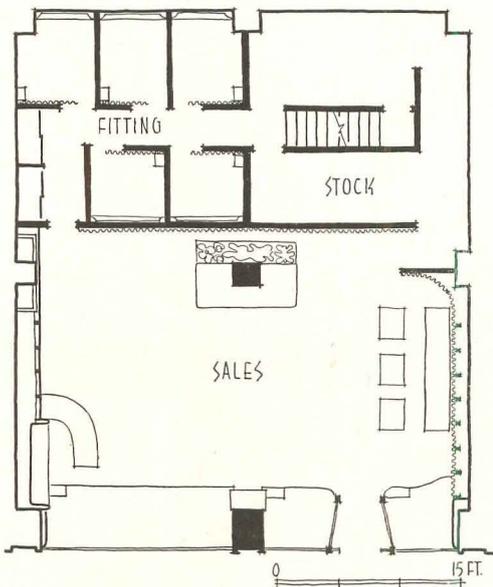
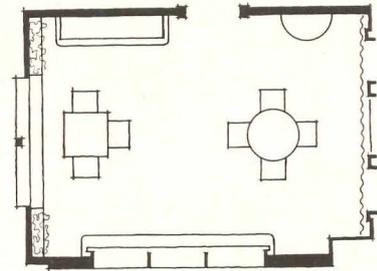


Hugh Stern

WHOLESALE DISPLAY—SALES ROOM

Cobblers of California, New York, N. Y.
Gerhard E. Karplus, Architect

THE PROBLEM HERE is simple, quick-to-grasp display of the entire available stock in cases where it is accessible for examination by the buyers. This scheme is also adaptable for retail shoe display and sales in a limited area in a small store.



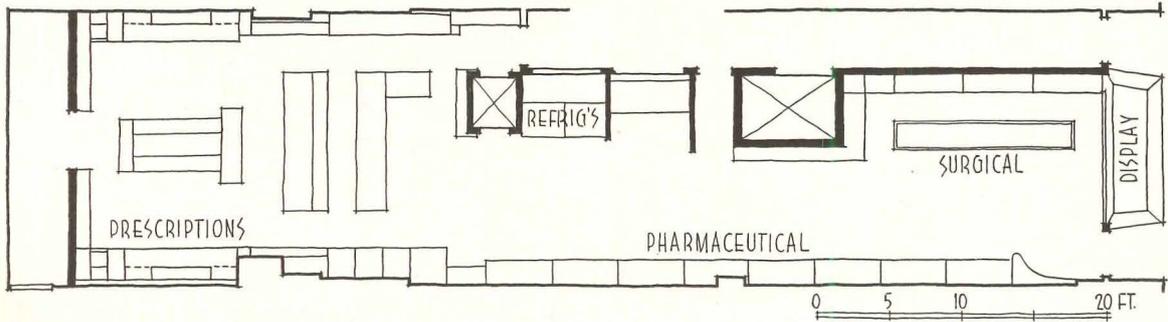
Dana Festive Fashions, New York, N. Y.
Ketchum, Giná & Sharp, Architects

Focal point in this Madison Avenue dress shop is the casual, easily changed display area. Background colors are neutral to show off merchandise



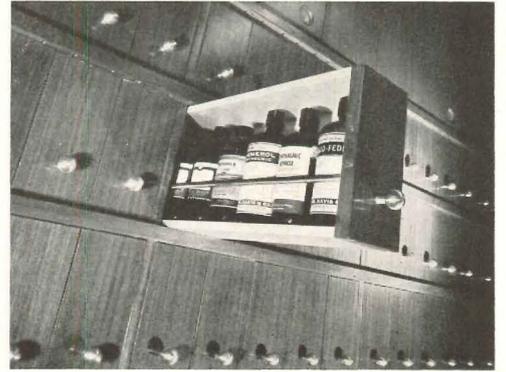
Salvatore C. Valastro

store fixtures and display

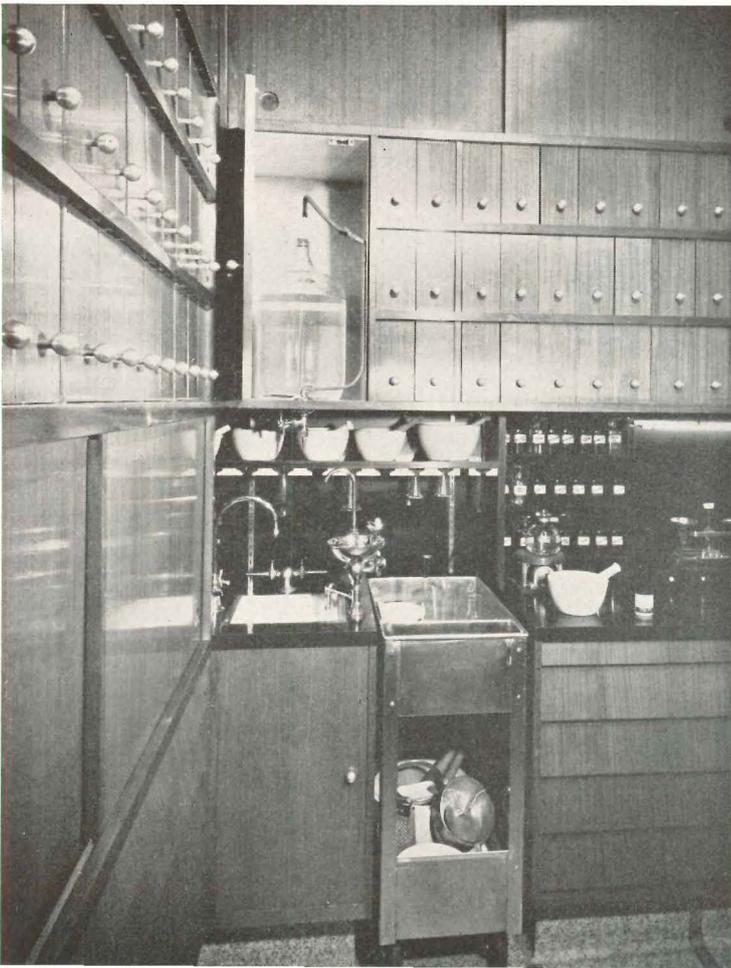
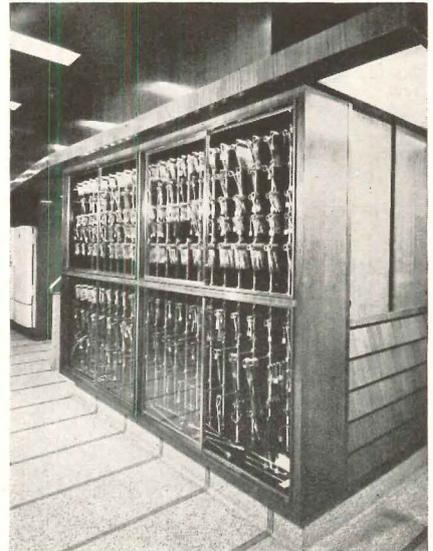


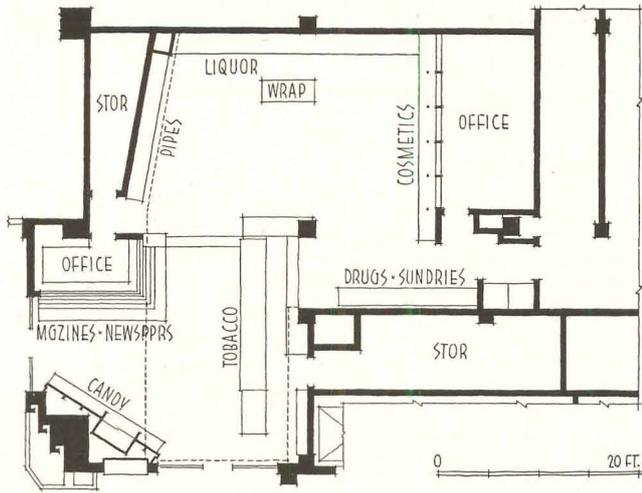
**William Radoff Pharmacy,
New York, N. Y.
Seymour R. Joseph, Architect**

In an ethical pharmacy, design is much more functional, unadorned and, in this case, handsome. Flexibility in its usual sense is not important. The result is a logical plan, cleancut handling of fixtures, especially in the prescription department (below left). Drawers and display cases are tailored to fit special items of fairly constant stock.



Ben Schnell



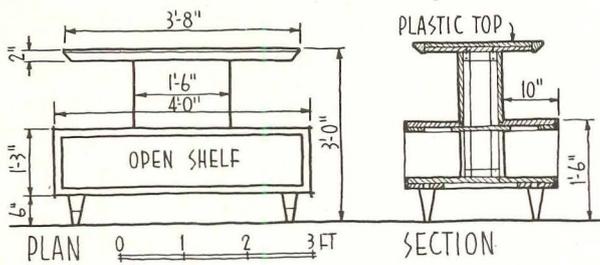


Bercu's Tobacco Shop, Los Angeles, Calif.
Welton Becket and Associates, Architect

Custom fixtures for smoker's needs include walk-in glass humidor for imported cigars and counters for cigars, cigarettes, candy, dry drugs, magazines and liquor



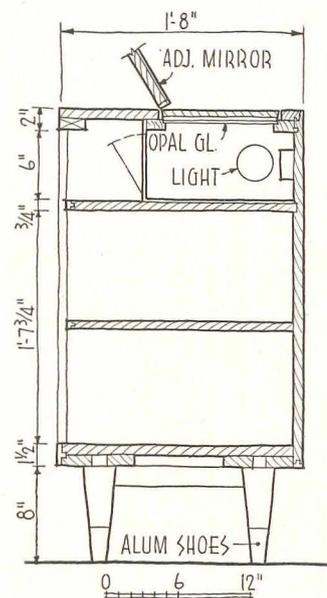
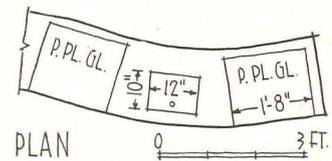
Julius Shulman

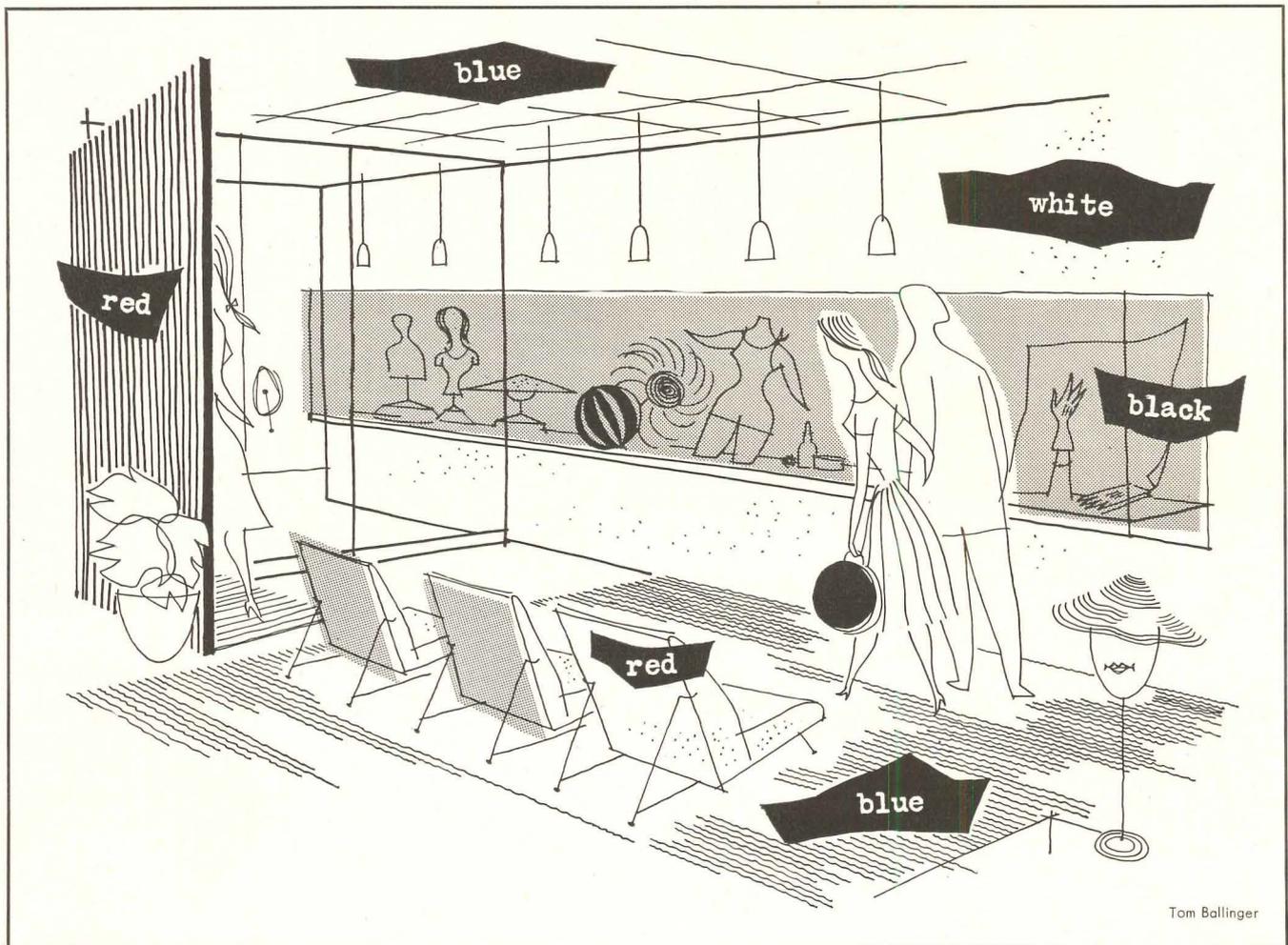


Dorothea Pharmacy, Mt. Vernon, N. Y.
Daniel Laitin, Architect

Left: Detail of center island counters for sundry impulse-buying items. Below: Detail of cosmetic unit with lift-up mirror located in serpentine counter at left of photograph

Lionel Freedman





Tom Ballinger

e color

"**MORE** can be accomplished with color and much more color can be used in the store than is generally realized. But its full use requires taste, skill and experimentation. There are really no hard and fast rules except that vivid colors are unsuitable on areas where they might detract from the goods, but can be used in combination with brilliant lighting to draw attention to merchandise on special display. Of course, the store colors should always suit the type of merchandise sold. For example, millinery requires a somewhat monotone background, jewelry a muted background, men's clothing a dignified and, shall we say, soothing background. Whatever colors are used, they should never at any time be more important than the goods on display. Color can also be very useful in modifying undesirable architectural features which cannot be otherwise corrected. The long narrow store can appear much wider by the careful use of color. Different, harmonizing or blending colors can be used for identifying and separating adjacent departments in the store. In general, we can expect from color in the store the results we are now obtaining in the home."

José A. Fernandez

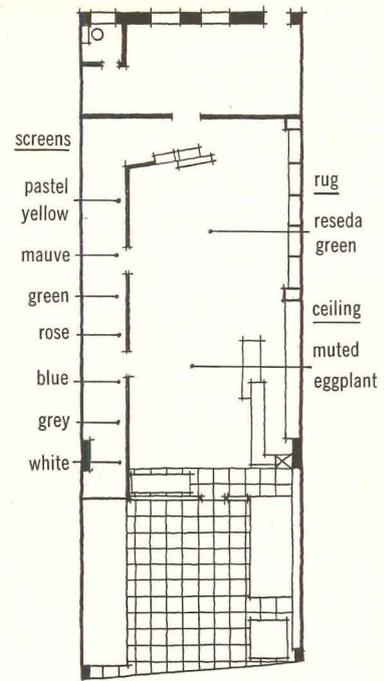
Oppenheim Collins, Huntington, N. Y.
Adolph Novak, Architect



Ben Schnall



Screens, painted seven harmonizing colors and supported by floor-to-ceiling black metal rods, partially hide stock



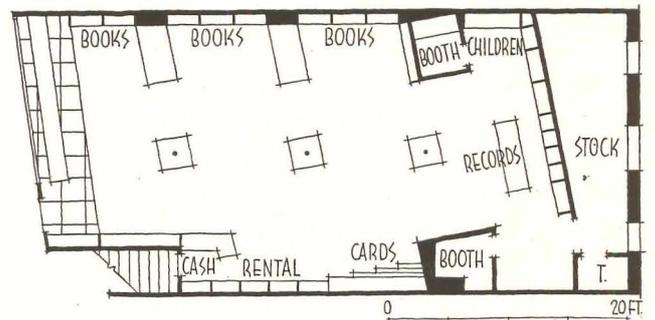
TWO COLOR SCHEMES FOR STORES

Above: Golub's Shoe Store, Bronx, N. Y.

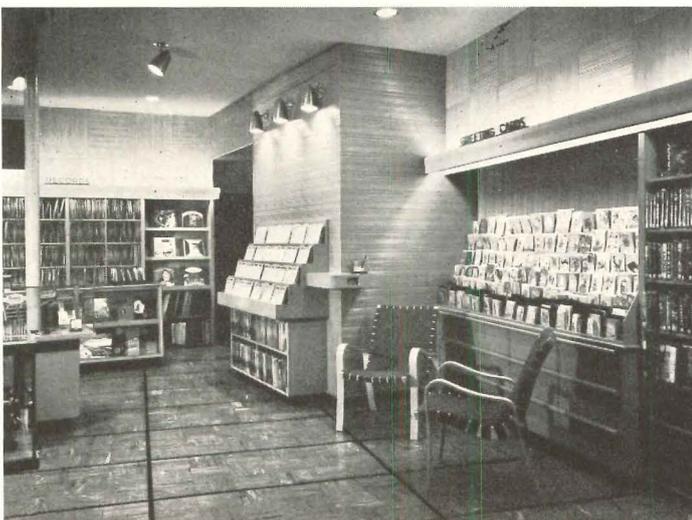
Below: Mary Elizabeth Shop, Pelham, N. Y.

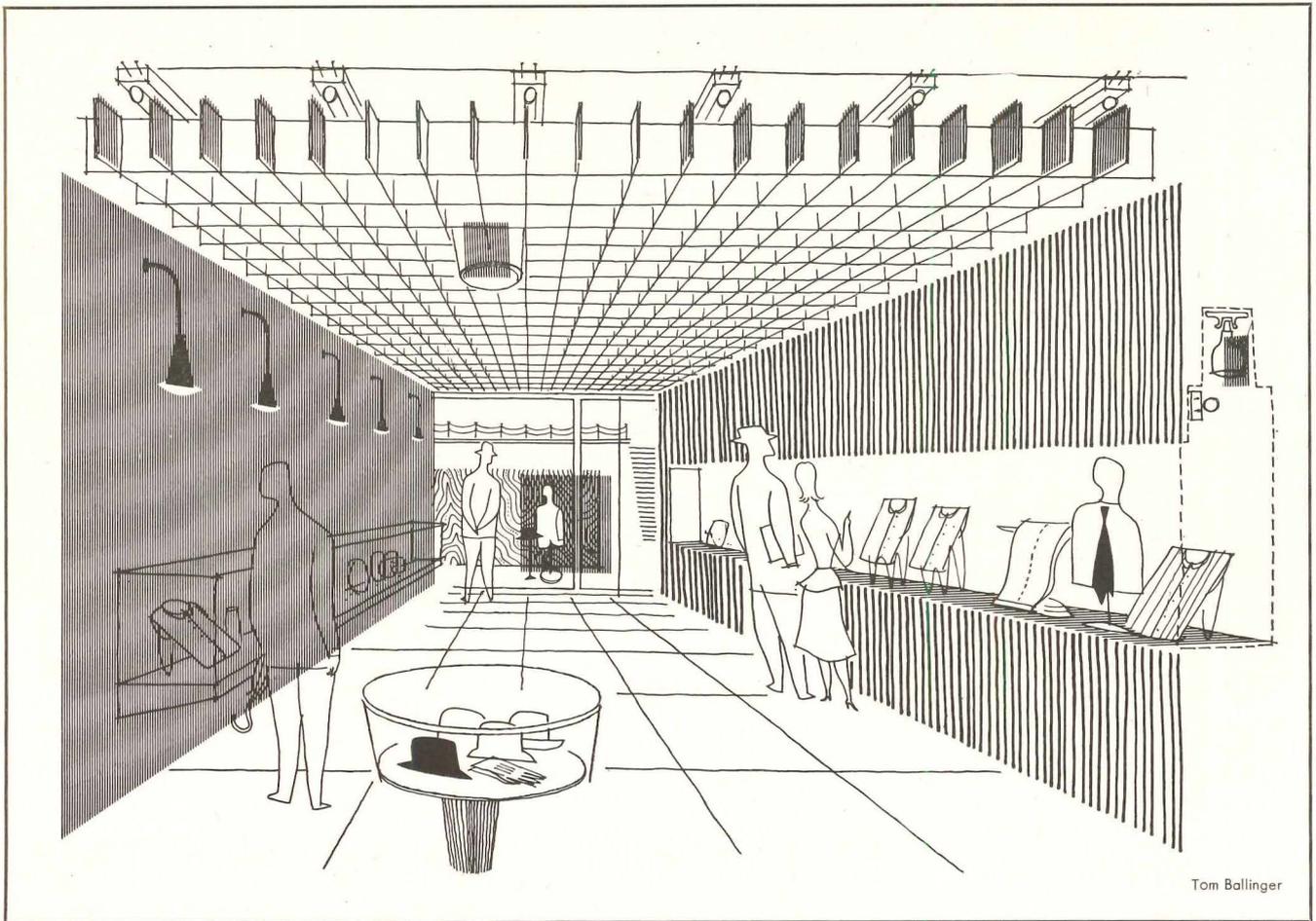
José A. Fernandez, Architect

WARM colors are used in entrance to store below, cool ones in interior as non-distracting background for stock. Street door and ceiling of front display area are of mahogany, sign is dark green, floor is green terrazzo, long display shelf and other small ones are hung from poles of four different colors. Inside, floor is gray and dark green, checkerboard walls and wood moldings are off-white, horizontal-grain panels are blue-gray, directional signs are dark blue-green.



Gottschö-Schleisner





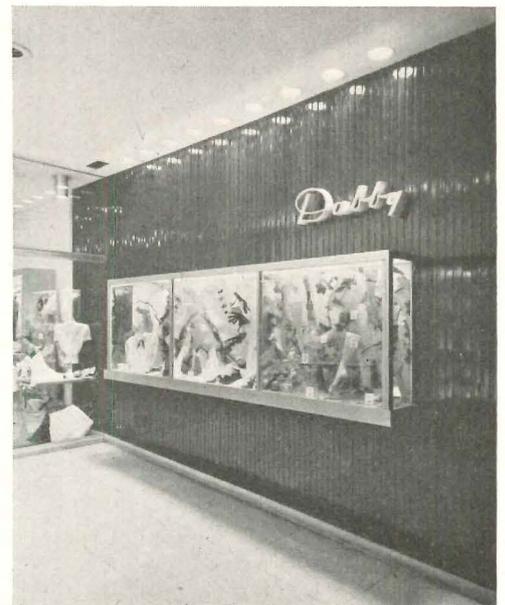
Tom Ballinger

f store lighting

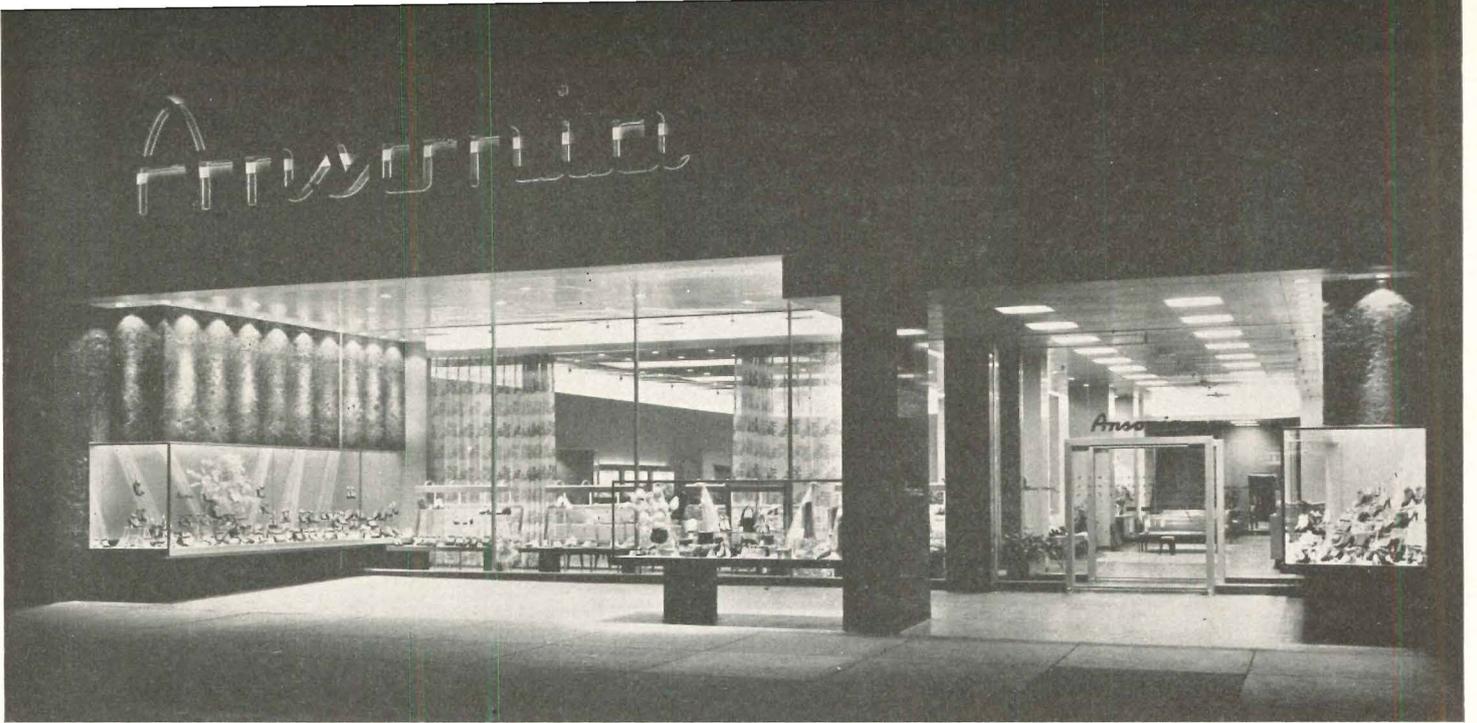
"STORES in the past few years have stepped up their general lighting level to five or six times the prewar intensities. This shows that they are aware of the selling power of light. But, in using this new selling tool, they have created a sea of light which is also a sea of monotony. What is lacking is not the engineering know-how, but the taste and skill of the designer. Lighting, like any other creative effort, must be interesting. To achieve this, it must be used with due consideration to contrast, perspective and color as well as foot candle power. In other words, there must be design as well as engineering."

Abe Feder
Lighting Consultant

Ben Schnell



Dabby Shop, New York, N. Y.
Seymour Joseph, Architect

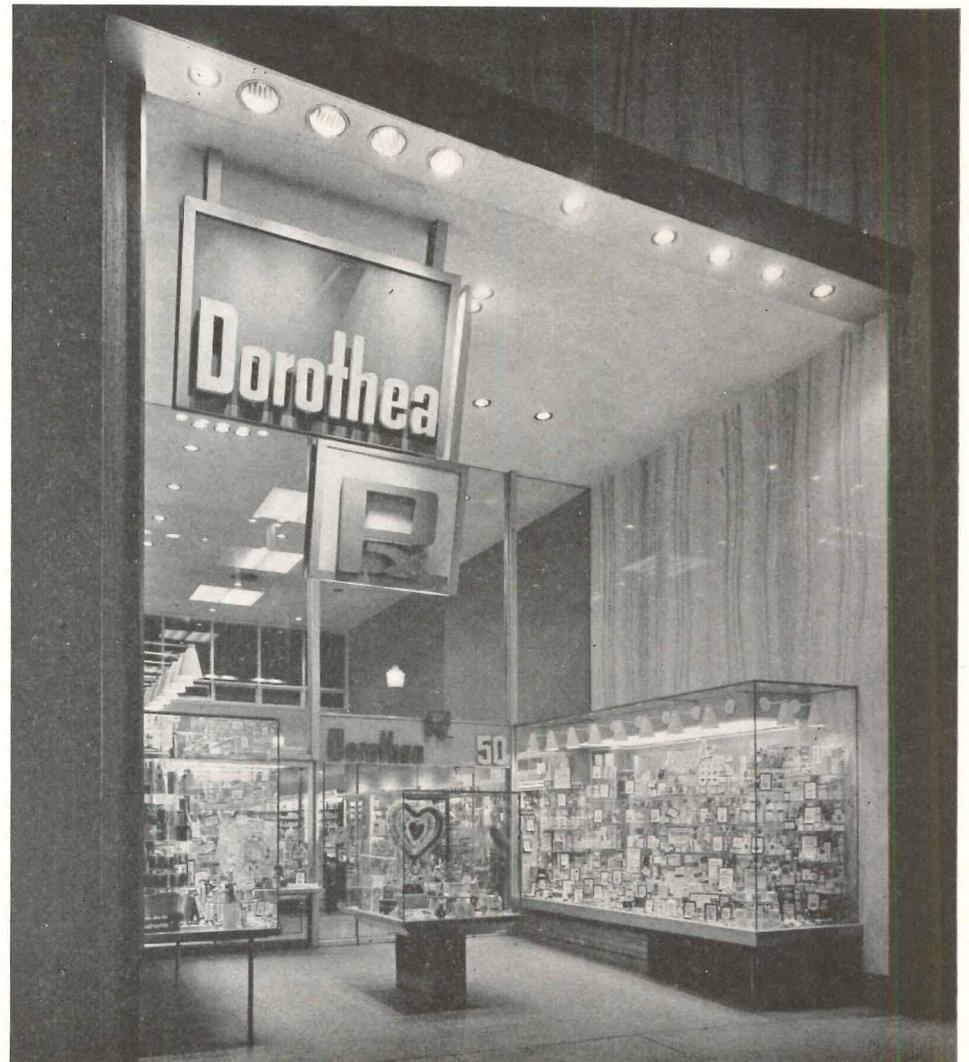


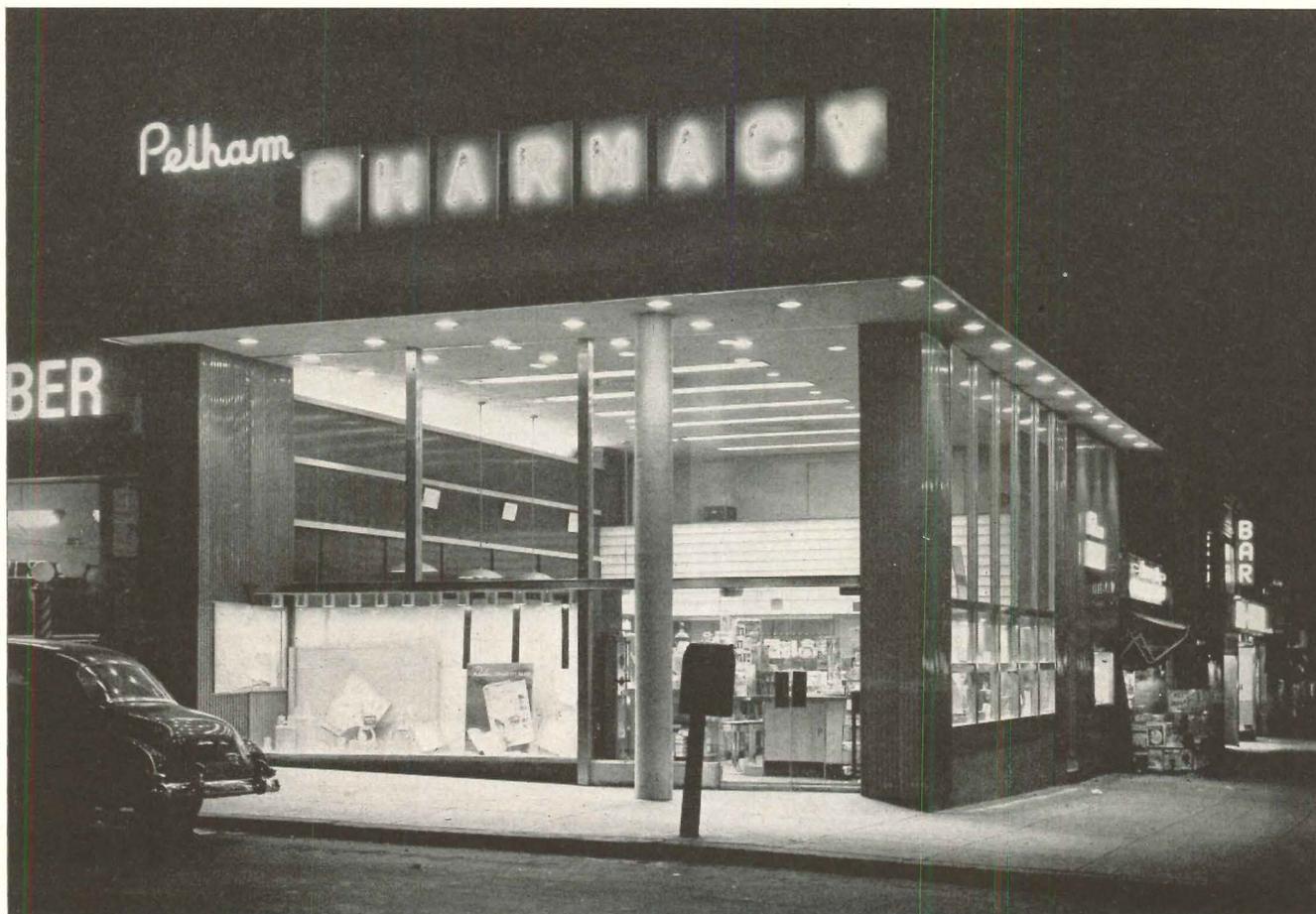
Jacob Stelman

Lionel Freedman

Above: Ansonia Shoes, Philadelphia, Pa. José A. Fernandez, Architect, and the Ballinger Co., Associated Architects. Sign is of aluminum with concealed white fluorescent tubing which reflects on polished granite surface to give striking effect. Arcade type front continues lighting design of interior. Note ceiling illumination glass panels, set flush, and use of incandescent spots

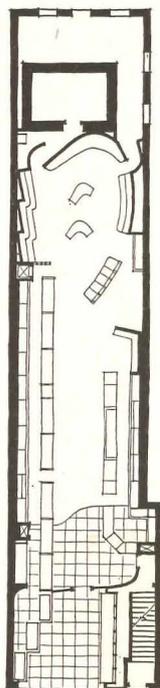
Below: Dorothea Pharmacy, Mt. Vernon, N. Y.; Daniel Laitin, Architect. Store sign and front are carefully integrated into lighting design. Sign is of porcelain enamel, in two parts. Top part, a little in front of bottom one, is lit by spotlights in store front frame; attached to back of this sign are spotlights for lower sign (see interior photograph, on page 175)





Ben Schnall

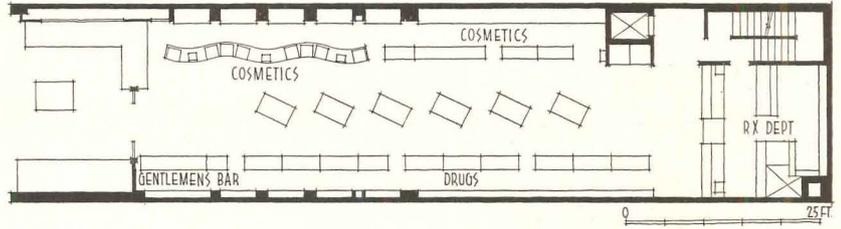
Above: Pelham Pharmacy, Pelham, N. Y.
Joseph and Vladeck, Architects. Be-
low: Photo Art Shop, Trenton, N. J.
José A. Fernandez, Architect



Directional lighting through incandescent spots over counter, also gooseneck reflectors over picture display on right wall and over book display case



Cargoes, Inc. (above) is interesting contrast in lighting approach, with single spotlighted letter as only identifying sign on this stage-set type of store without conventional display



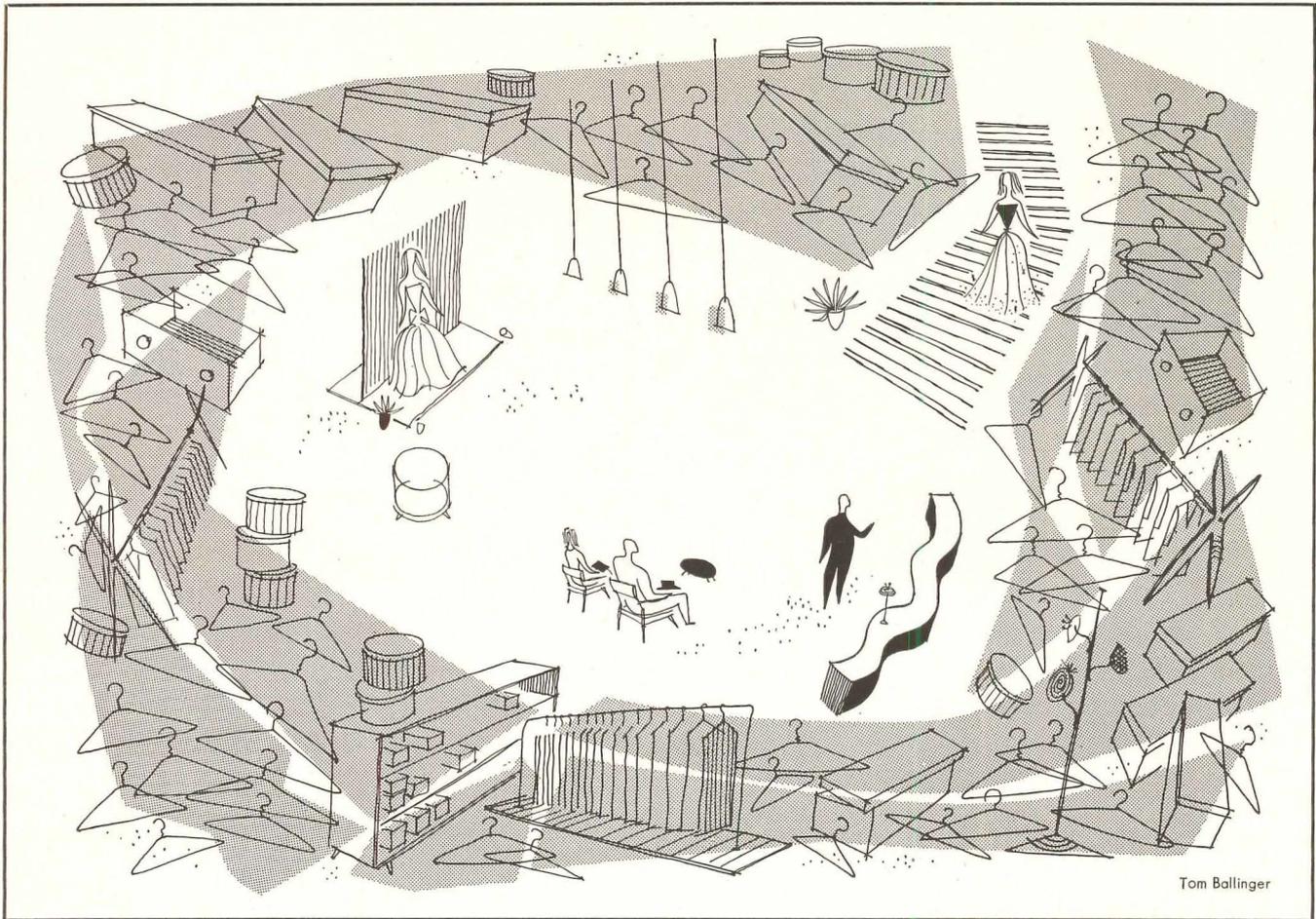
Below: Dorothea Pharmacy, Mt. Vernon, N. Y. Daniel Laitin, Architect. Plan above of general layout indicates diverse lighting problems of pharmacy with much display and many types of lighting

Lionel Freedman



Above: Detail of interior lighting of Photo Art Shop. Note neat appearance of fixtures





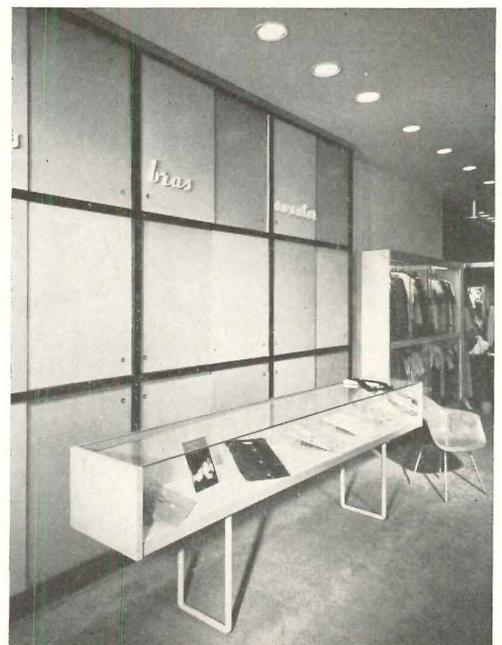
storage

“**S**TORAGE can be broken down into three classifications — (1) direct selling storage, (2) forward storage, which would include stock rooms directly back of the selling fixtures and perimeter stock areas, and (3) bulk and general storage, which would include the balance of all merchandise necessary to store operation in general. The bulk storage should be adjacent to receiving and marking areas and directly connected to selling departments; it should also be provided with adequate vertical transportation whenever necessary.”

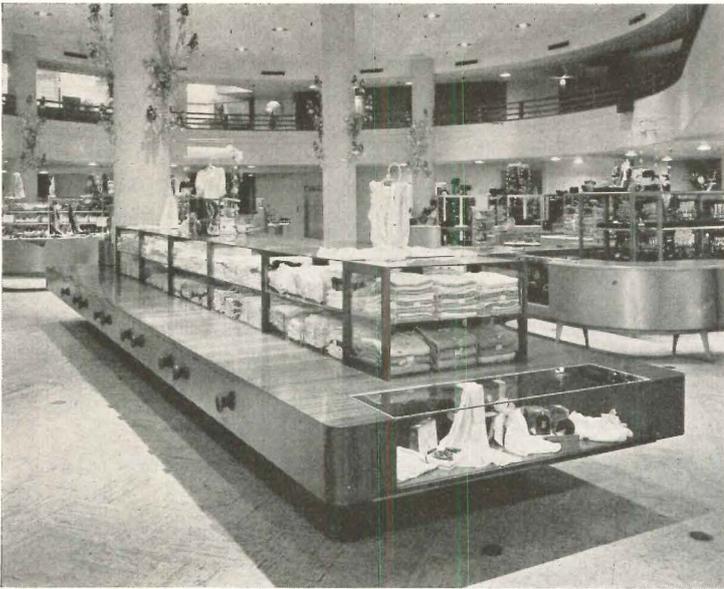
Alvin L. Weidt

DIRECT selling storage includes both *exposed* stock in showcases, on countertops, in open shelving or hanging on racks, and *concealed* stock in showcases, counters, drawers and behind cabinet doors. Some of the many techniques of combining these types of storage are shown in the following photographs, ranging from no storage at all, with the entire merchandise exposed for customer selection, to storage in hidden stock areas of all stock except that on display.

Ben Schnall



Dabby Shop, New York, N. Y.
Seymour R. Joseph, Architect



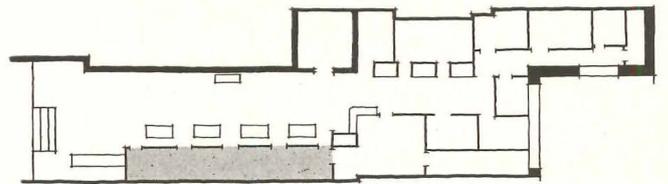
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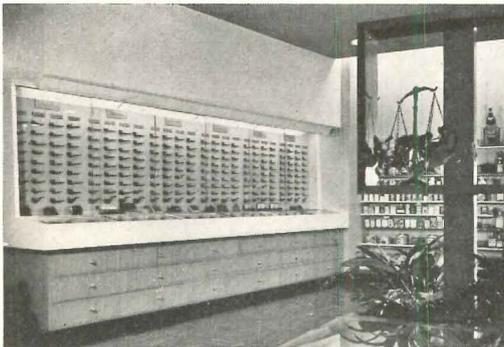
1. Spear's, Pittsburgh, Pa.; John Schurko, Designer
2. Foreman and Clark, Los Angeles, Calif.; Welton Becket and Associates, Architects
3. Corsetorium, New York, N. Y.; José A. Fernandez, Architect
4. Bercu Tobacco Shop, Los Angeles, Calif.; Welton Becket and Associates, Architects
5. Armstrong's, Cedar Rapids, Iowa; Alvin L. Weidt, Architect

PHOTOGRAPHERS

1. Rembrandt Studios
2. Julius Shulman
3. Gottscho-Schleisner
4. Julius Shulman
5. Vern Thompson



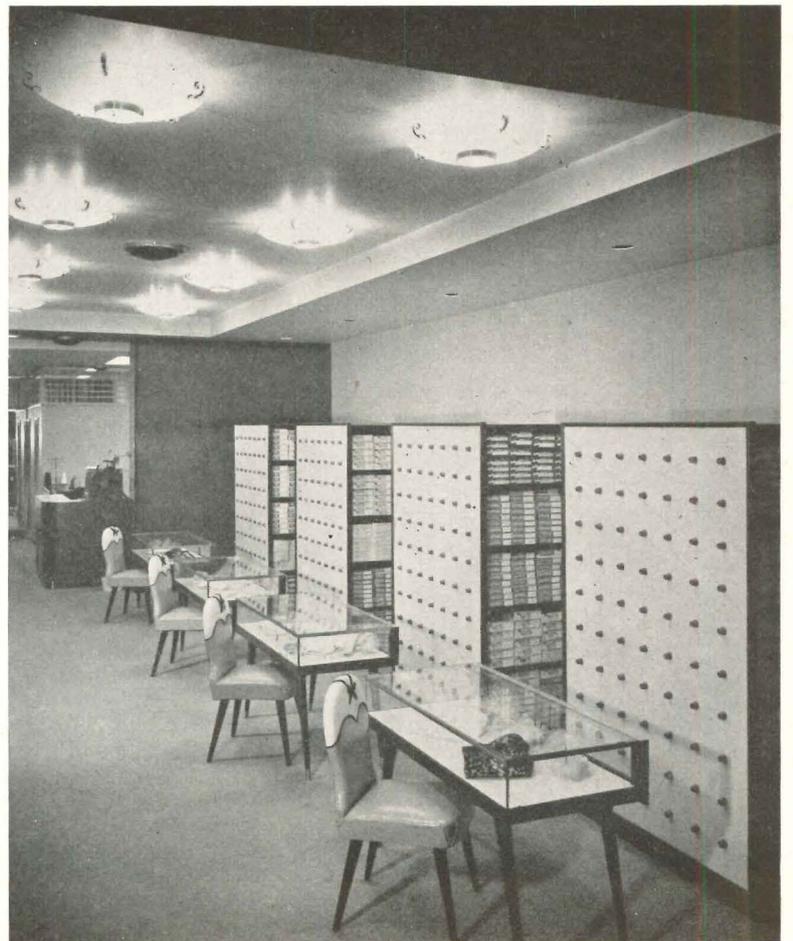
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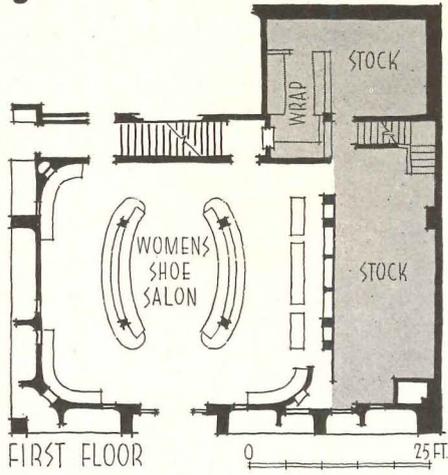
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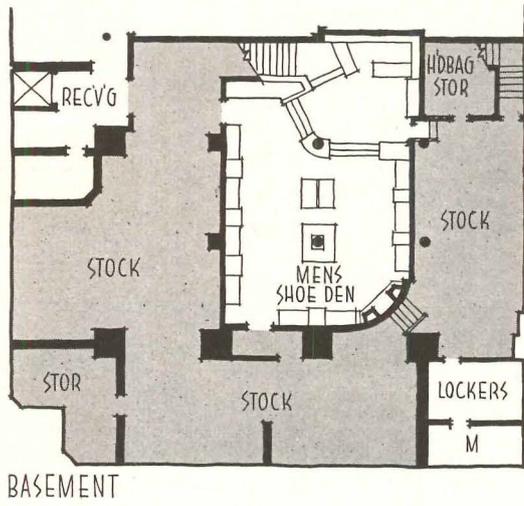
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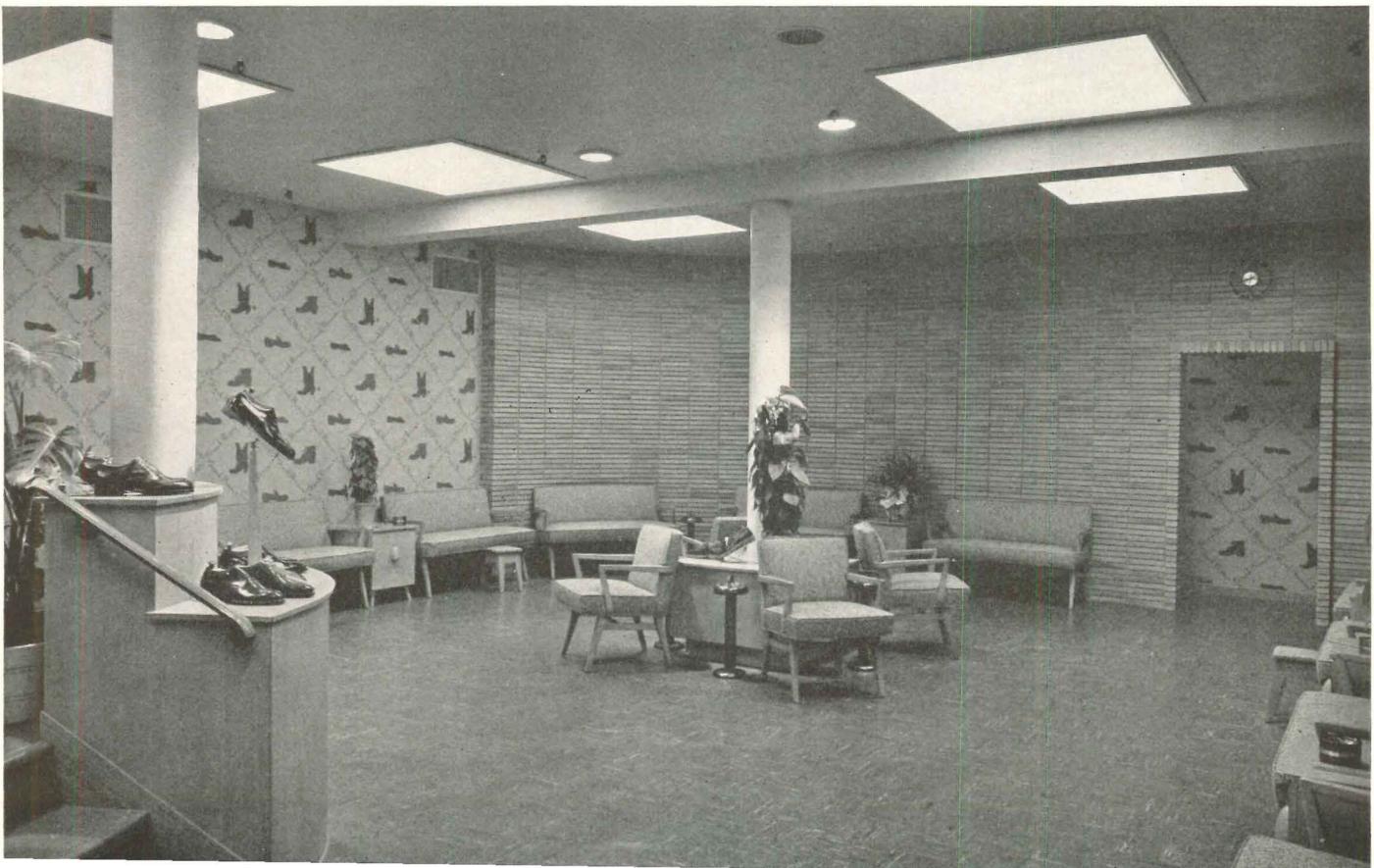
storage



Philip Fein



Salon type of layout where most merchandise is concealed: Frank Werner Co., San Francisco, Calif.; Hertzka and Knowles, Architects; Elizabeth Banning, Color Consultant; Dorothy Liebes, handwoven draperies



ANALYSIS OF TESTS ON HOUSE HEAT PUMPS



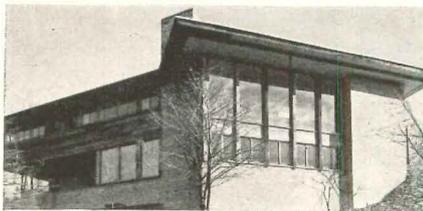
Kingsport, Tennessee



Abingdon, Virginia



Roanoke, Virginia



Coshocton, Ohio



South Bend, Indiana

For the assumed house used in the graph, heated by a 3-hp heat pump, there will be sufficient heating capacity to compensate for the heat loss at 20F. Above this temperature, the heat pump is oversized, and below it, the heat pump must be supplemented by storage or electric resistance heating

The results of one and a half years' investigation in five houses, purposely chosen for their variety of size and climate, and a study of chemical heat storage point the way for more economical installations, both in first cost and in operation

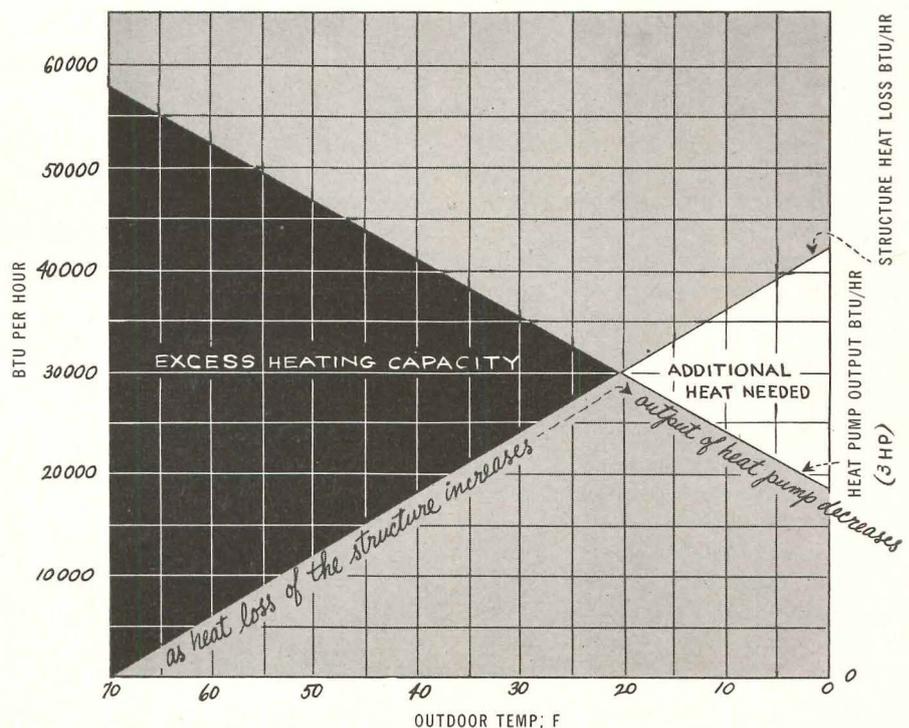
ALITTLE over three years ago, heat pumps were installed in five newly constructed houses in a field test program sponsored by the American Gas and Electric Company and its subsidiaries and in cooperation with the home owners and designers. The residences are located in Kingsport, Tenn.; Abingdon, Va.; Roanoke, Va.; Coshocton, Ohio; and South Bend, Ind., providing a wide range of climatic conditions to give comparative value to the test results.

At that time much data was available on heat pumps in office and commercial buildings, but practically nothing on them in houses. The American Gas and Electric Company wanted to get a better idea of the operating costs and practicability of residential heat pumps; and, in order to obtain the necessary data, equipped the houses with recording devices which would indicate the heat losses of the structures, amounts of heating and cooling supplied by the heat pumps, power consumption of the heat pumps and electrical appliances, and operating characteristics of the pumps.

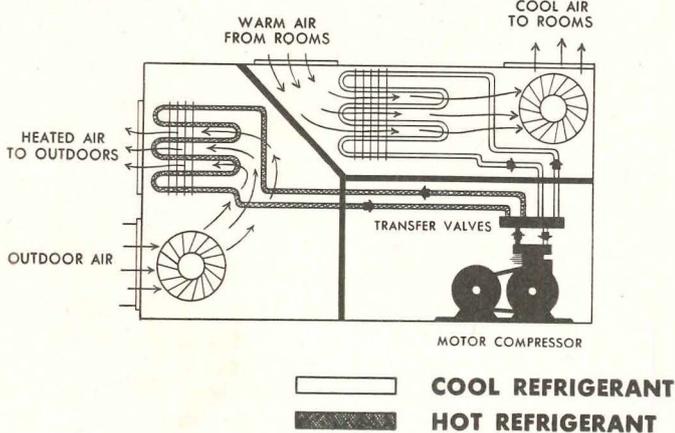
The five houses and their heat pump installations were described in ARCHITECTURAL RECORD, May, 1949. The following article covers the highlights of approximately one and one-half years of field testing in the five houses, and discusses the potentialities of reducing the size, initial cost and operating cost of the heat pump by the means of storing up heat in a "reservoir" of chemical salts.

Characteristics of The Heat Pump

The characteristics of the heat pump for application to comfort conditioning are particularly appealing. The same refrigeration equipment that cools the house in summer, heats it in winter by utilizing the heat that would have been discarded had the space been comfort-cooled. The heat pump has most of the advantages of electric space heating such as elimination of dirt, soot and ashes; furnace labor, chimney or flue, and at the same time raises the over-all efficiency of electric heating from three to five times by extracting heat from relatively low-temperature sources such

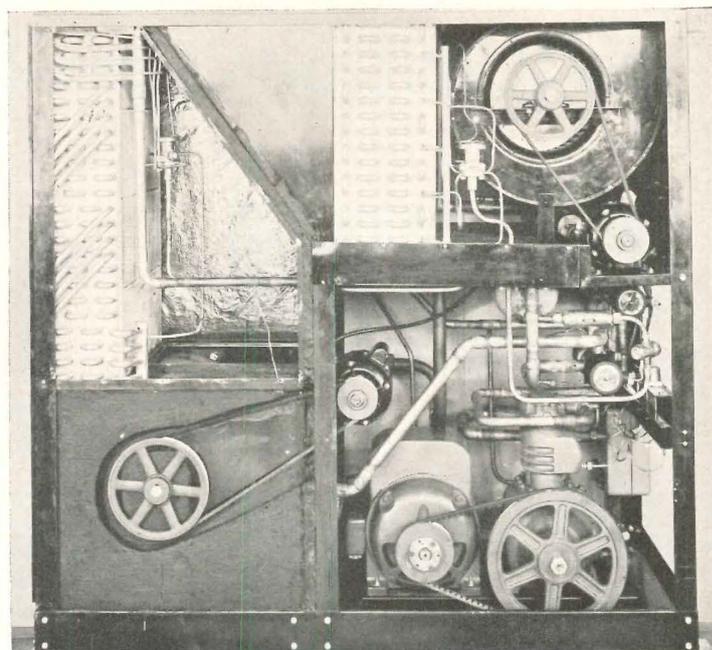
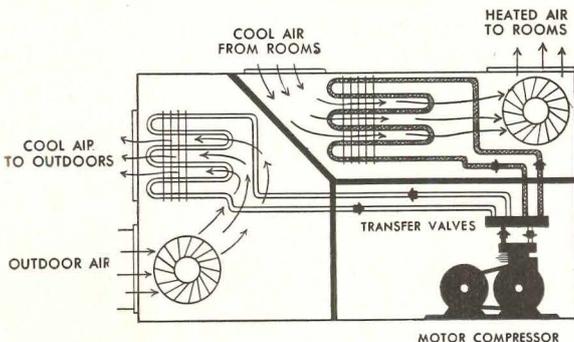


COOLING OPERATION



Diagrammatic sketches above and below show how the heat pump at right uses air as a heat absorber in summer and as a heat source in winter. The rooms are conditioned by the circulation of air

HEATING OPERATION



A commercial heat pump placed in production recently has the panels off to show the three thermally isolated sections: (1) outdoor air circuit; (2) indoor air circuit; and (3) compressor and its motor. Air flow remains the same in both cycles, but valves change the refrigerant paths

as the outside air, the ground, or well water and raising it to a higher temperature for space heating. (Three to five times as much heat is made available than if the electrical energy alone were converted into heat.)

In addition, the combination of heating and cooling in a single system results in a minimum use of space. The equipment can be placed practically anywhere — utility room, basement or garage. In one package, it provides automatic heating in winter, cooling and dehumidifying in summer; air filtering, circulation and ventilation.

The research reported here takes on added significance because of the current excitement in residential air conditioning or — to use a better term — comfort cooling for medium-cost houses, and even for some low-cost houses. Perhaps a reason for this is that manufacturers have answered the demand for small, packaged air conditioning units for small businesses and offices, and have demonstrated that it is just as feasible to have air conditioning in the average home. A measure of this interest is the fact that at the annual meeting of the American Society of Refrigerating En-

gineers last month, a whole day was devoted to a seminar on this subject.

Another sign that the residential heat pump has come of age is that one manufacturer has two models in quantity production using air as the heat source, and at least four other companies are producing a wide range of units using water or the ground as the heat source. The packaged heat pump now available comes in 3- and 5-hp sizes when using outside air as a heat source and 2 to 20 hp when using the other heat sources. Air is being favored as a heat source particularly in the warmer areas because it is cheap to use, accessible, and relatively predictable. Design objectives in heat pumps are: (a) automatic control and switch-over from heating to cooling, (b) high efficiency, (c) no more than routine maintenance, (d) factory assembly to reduce cost of installation, (e) minimum first cost and physical size, (f) easy access to all components, and (g) quiet operation.

Factors Affecting Design of Heat Pump System

If a heat pump had all the capacity it needed to heat a house at the lowest

temperature expected, it would be oversized for most of the heating season. For example, a heat pump in a Chicago residence sized for an outside design temperature of zero degrees would need the total heating capacity for only 1.3 per cent of the season, and three-fourths of the heating capacity for only 15 per cent of the heating season. The sizing of a heat pump based on a particular outdoor design temperature must be carefully considered, particularly when air is used as the heat source. From a first cost standpoint, it appears that the heat pump should be sized only for 78 per cent of the heating capacity required to meet this design temperature. In this case its output will be exceeded from 12 to 15 per cent of the season, and the additional heat can be supplied by a storage system or some other form of supplemental heating.

The relationship between the capacity of the heat pump required at various outside temperatures, and the duration of these temperatures for typical heating seasons in Chicago, Ill. and Roanoke, Va. are given in the graphs and table on page 183.

It is interesting to note from the

graphs and table that the percentage of time various heating capacities are required are approximately the same for both Chicago and Roanoke. If this tendency is found to be true after further investigation and study, it may permit a fairly standard design procedure for quite a large section of the country.

Engineers, manufacturers and utilities have for some time recognized the possibility of decreasing the required size of a heat pump system, and also the operating cost of such a system, if an economical method of storing heat could be found which would build up a supply of heat and then release it as it is needed.

Storage to meet peak demand has been practiced for a long time in commercial and industrial refrigeration, but only to a limited extent in residential comfort heating and air conditioning systems. The principal reason is that water, which has been the only readily available medium, requires more space than can be economically justified.

It is believed by some engineers that storage combined with the heat pump would result in many practical and satisfactory installations, if a substance were available having a considerably larger heat storage capacity per unit volume than water. One possibility is a salt which melts when heated, and soaks up a tremendous amount of latent heat (called the heat of fusion) when it changes its state. With certain salts, it would be possible to reduce the storage space from one-fourth to one-fifth of that required for water.

To illustrate the relative amounts of water or salt required for storage, assume that, during the coldest weather, a house would require 490,000 Btu for one day in addition to that produced by the 3-hp heat pump. A 1500-gal. tank would be required for water to provide sufficient storage; and approximately a 375- to 450-gal. tank for salt, depending on the salt used.

Storage may make the heat pump employing air as a heat source much more practical for the northerly sections of the country, because storage compensates for the condition of the heat source being at the lowest temperature when the heating requirements are greatest.

From the standpoint of availability and cheapness, air is the best heat source known. Unfortunately, many areas in the U.S. not only experience wide fluctuations in outdoor temperature, but the temperature drops quite low during certain periods of the year. The advantage of using storage under such a

condition is illustrated on page 179.

The other two sources of heat — the ground and well water — have a fairly constant temperature; there would not be any sudden drops as occur with air. But these sources have their limitations. Practical limitations of pipe coils placed in the ground to extract its heat are: the installation expense; the many variables involved such as soil composition and moisture content; and the time and cost of designing each ground coil for the soil conditions of a particular site.

Well water is a good heat source, but it is not available in many locations. Drilling a well of sufficient capacity and reliability often proves prohibitive cost-wise. City water would be expensive and wasteful to use.

One of the simplest ways to reduce the size of heat pump required is to incorporate electrical resistance heaters as part of the equipment. The heaters will supply the extra capacity needed on the very cold days. In such an ar-

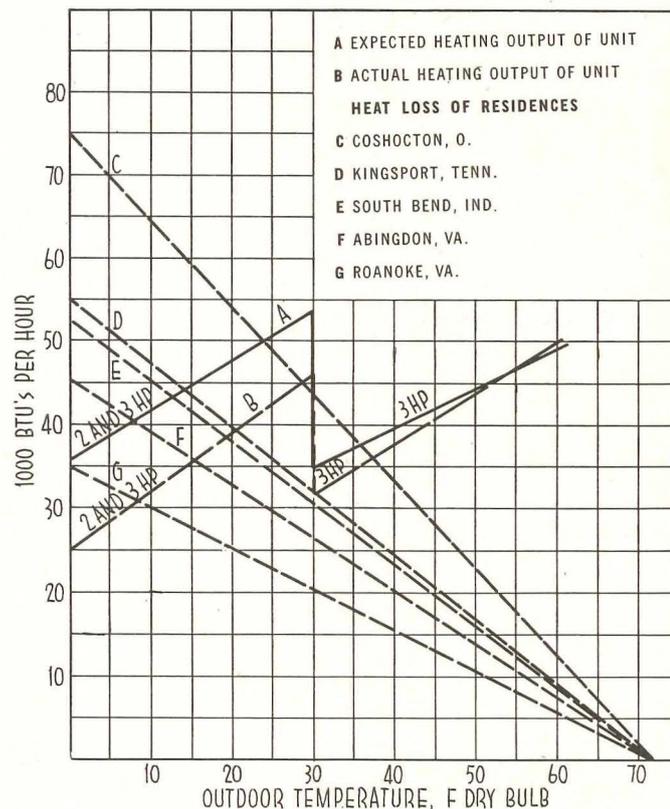
angement, it has been suggested that the house electrical system ordinarily will be controlled so that the resistance heaters will not go on simultaneously with an electric range, hot water heater and lights during the periods of peak power usage. This suggested arrangement may not be too practical to install however, and because there is no apparent way available to the utilities for serving such a load (high demand with low usage factor) at reasonable cost to the user, this type of system will probably not receive wide public acceptance.

The initial cost of resistance heaters is less than for storage. Storage, on the other hand, makes it possible for the consumer to use electricity during off-peak periods at a lower cost than average, as is now allowed for hot water heaters.

Chemical Storage—Principles and Advantages

The American Gas and Electric Com-

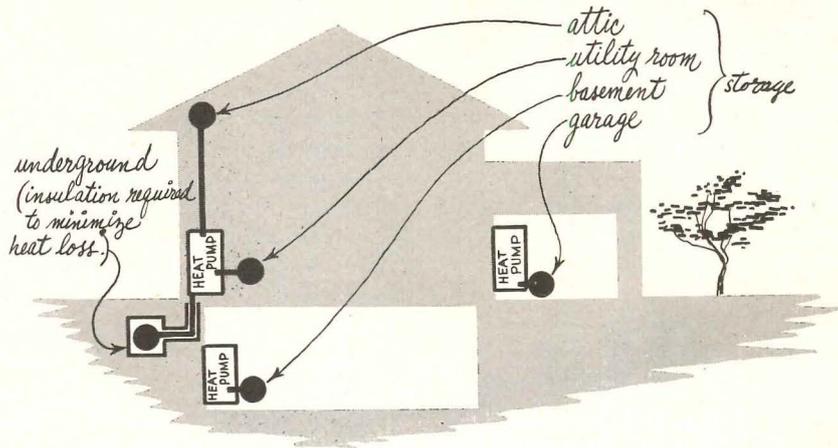
EXPECTED HEAT PUMP OUTPUT AT VARIOUS OUTDOOR TEMPERATURES



The expected and actual heating outputs of 5- and 3-hp, air-to-air heat pumps are given here. The vertical line at 30F indicates that a 5-hp unit is not needed for any of the houses above that point. The temperatures above which the heat pump has excess capacity and below which it needs more capacity can be found at the intersections of the output and heat loss lines

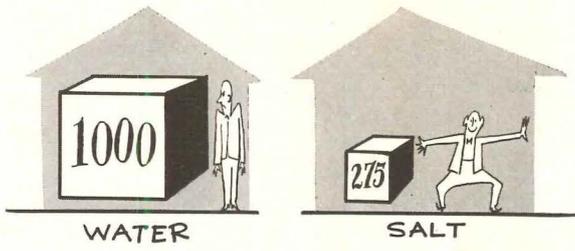
CHARACTERISTICS OF CHEMICAL HEAT STORAGE AND HOW IT WORKS

The idea of chemical heat storage is to reduce the size of heat pump required. The heat pump and its storage system can be located almost anywhere

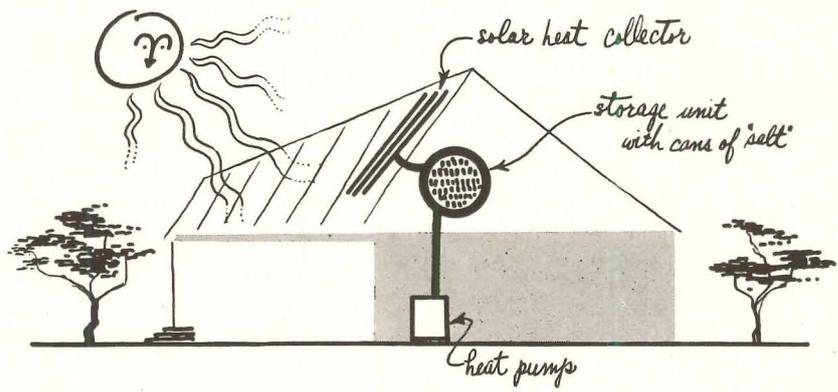


Sketches by Sol Ehrlich

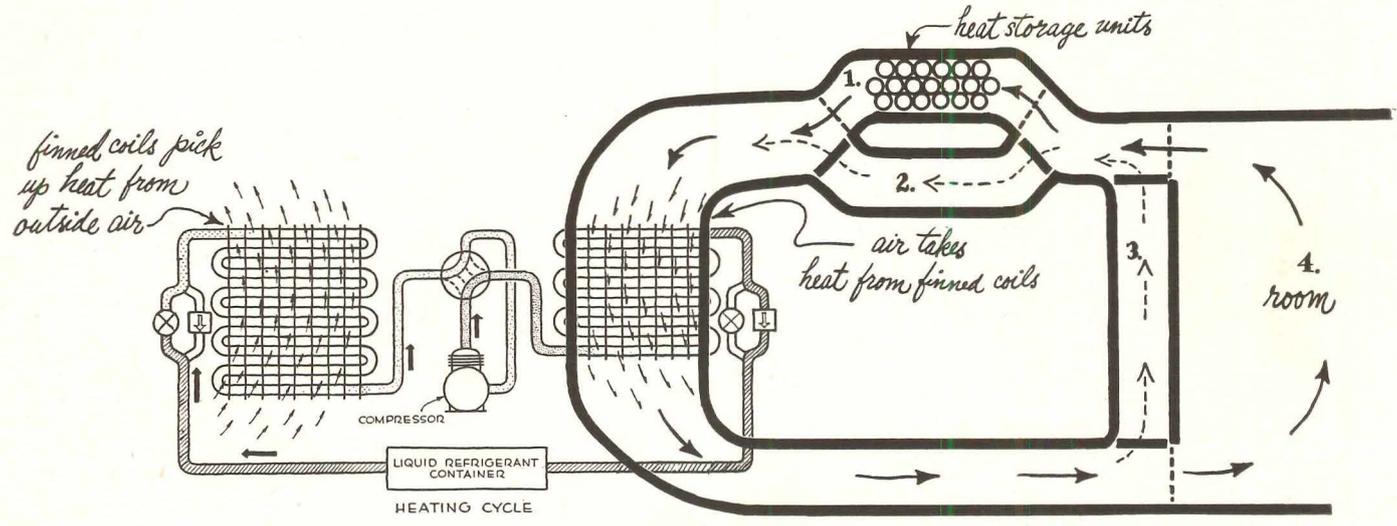
For a long time, water was about the only available storage medium, but it took too much space. Chemical salts now under test would take only 1/4 as much room



Salts have already been used for a solar heated house, and it would be possible to combine solar heating, the heat pump and storage



A schematic representation of how the heat pump can be augmented by chemical heat storage. Air is used here, but water as well could circulate over the cans of chemical salts (shown here in duct). When no stored heat is needed, the room air flows through the by-pass (2) and over the coils. When no heat is needed in the room, air picks up heat from the coils, by-passes the room (3) and passes over the salts (1). When the heat pump does not have sufficient capacity, the room air moves over the canned salts (1) and over the coils



pany, with Dr. Maria Telkes as consultant, concluded early this year a series of laboratory tests on the use of chemical salts for heat storage. There has been considerable study to find a suitable material in which would be combined a relatively high latent heat of fusion and a melting point of approximately 100F-120F (a little lower than the operating temperature of the heat pump so as to insure complete melting of the material).

Heat storage using the heat of fusion principle is not new, having been employed before in solar heating installations. (A solar heating system using Glauber salts for storage, developed by Maria Telkes for a house near Boston was described in the March 1949 ARCHITECTURAL RECORD). However, this type of heat storage in conjunction with the heat pump is relatively new.

A question some people have had about salt storage is whether the salt would melt and "freeze" consistently at

nearly the same temperature over a long enough period to make it practicable. To help answer this question, the American Gas and Electric Company ran 100 cycles of melting and "freezing" tests on a sodium phosphate salt (chemical name, disodium phosphate dodeka-hydrate) and found that it has considerable potential. One hundred cycles is the equivalent of from three to five-years' service. Other chemical compounds of sodium, calcium, magnesium and iron also offer possibilities.

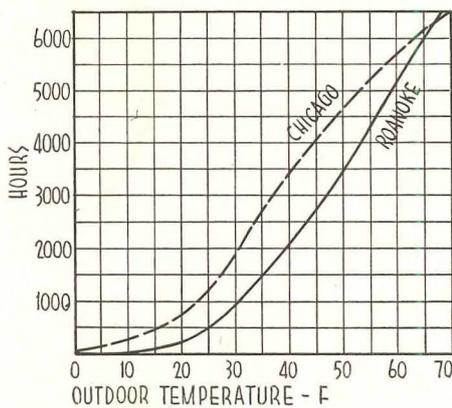
Present plans call for eight field installations in which 50,000 cans of salt are to be used, each $2\frac{1}{8}$ in. diameter and $2\frac{7}{8}$ in. long. One of these, in the Roanoke, Va. residence, has a 3-hp heat pump and a storage system consisting of 6000 of the cans housed in two 275-gal. tanks. Water is circulated over the cans and through the condenser and water conditioner coils of the heat pump.

The most effective and practical size, shape and volume of container needs further investigation, but it appears

that the larger the volume, the longer the melting-freezing cycle. "Baby food" cans of the size mentioned above were selected in order to obtain a large exposed surface per unit volume, and because of their reasonable cost due to quantity production methods already developed. The cycle with them is on the order of four hours for melting and four hours for freezing when they are heated by a fluid at 110F and cooled by an 80F fluid.

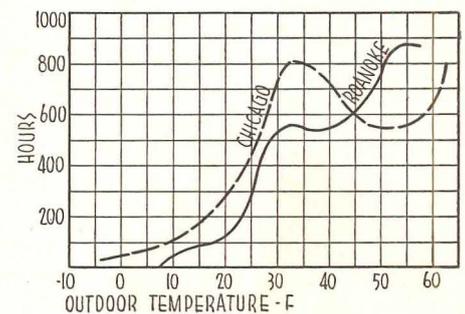
Apparently a critical factor in consistent solidification of the salt is a "seed crystal" which will trigger the whole crystallization process. This is analogous to the seeding of rain clouds with dry ice to make them give up their moisture. Maria Telkes experimented with the use of etched glass as a "seed," and in the tests, floats of cellular glass were used; but study is still being made since there is no assurance that this material will withstand continued melting and solidifying for as long as would be desired.

ACCUMULATIVE TIME OF OUTDOOR AIR TEMPERATURES FOR CHICAGO, ILL. AND ROANOKE, VA.



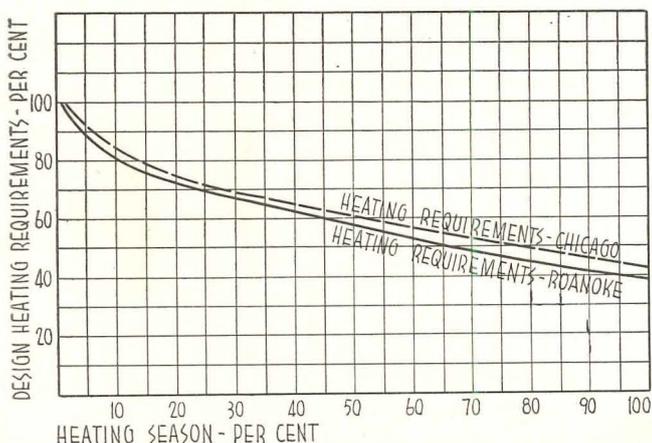
Graphs to the right and left show how nearly alike are the heating seasons in Chicago and Roanoke. All the curves on this page show that the maximum capacity (at normal design temperature) is required a relatively small period of time

DURATION IN HOURS OF OUTDOOR AIR TEMPERATURES FOR CHICAGO, ILL. AND ROANOKE, VA.



It is interesting to note from the graph (below left) and from the tabulation (below right) that the percentage of time that the various capacities are required is about the same for Chicago and Roanoke. This may mean a fairly standard design procedure for much of the country

RELATIONSHIP BETWEEN HEATING CAPACITY REQUIREMENTS AND OPERATING TIME (PERCENTAGE OF HEATING SEASON)



Roanoke, Virginia

100% of heating capacity is required 1.3 of the season
 94% or more of the heating capacity is required 2.8% of the season
 87% or more of the heating capacity is required 5.7% of the season
 79% or more of the heating capacity is required 11.8% of the season
 73% or more of the heating capacity is required 21.0% of the season

Chicago, Illinois

(Heating equipment sized for OF outdoor design temperature)

100% of heating capacity is required 1.3% of the season
 95% or more of the heating capacity is required 3.6% of the season
 85% or more of the heating capacity is required 9.5% of the season
 78% or more of the heating capacity is required 15.3% of the season
 71% or more of the heating capacity is required 24.4% of the season

KILOWATT HOURS FOR HEAT PUMP, RESISTANCE HEATING, AND APPLIANCES

| Total May 1949–April 1950 Kingsport, Tenn. | |
|---|--------------|
| Heating | 16153 |
| Heat Pump: | |
| Cooling | 4179 |
| Auxiliary Heating | 7759 |
| General Appliances | 7709 |
| Total | 35800 |
| Abingdon, Va. | |
| Heating | 8651 |
| Heat Pump: | |
| Cooling | 3060 |
| Auxiliary Heating | 4337 |
| General Appliances | 10803 |
| Total | 26851 |
| Roanoke, Va. | |
| Heating | 9429 |
| Heat Pump: | |
| Cooling | 2715 |
| Auxiliary Heating | 3050 |
| General Appliances | 3246 |
| Total | 18440 |
| Coshocton, Ohio | |
| Heating | 16145 |
| Heat Pump: | |
| Cooling | 3326 |
| Auxiliary Heating | 16897 |
| General Appliances | 7593 |
| Total | 43961 |
| South Bend, Ind. | |
| Heating | 15640 |
| Heat Pump: | |
| Cooling | 2612 |
| Auxiliary Heating | 6351 |
| General Appliances | 8607 |
| Total | 33210 |

It is believed that this salt has an upper temperature limit which should not be exceeded — around 120F. After 100 cycles of tests the cans were opened, and only small discoloration was found. Theoretically the particular salt used has a heat fusion of 114 Btu per lb.

Cost of Salt Storage

To give some idea of the cost of salt storage an example is given here of an average six-room house from 10,000 to 13,000 cu ft and with a 40,000 Btu per hr heat loss at an outdoor design temperature of 10F. A 5-hp heat pump using air as the heat source could carry this heating load alone and would cost about \$3500 installed. However, a 3-hp heat pump, costing about \$2700 installed, would have to be supplemented by two tons of salt with a probable cost of \$400, excluding the tank. The total cost would be about \$3300, resulting in a slight saving of about \$200 or so. This saving in installation cost has a good chance of increasing as application technique is improved and cost is reduced with continued research and investigation.

Cost of Operation

The heating season performance factor (heating output ÷ electrical energy input) for four of the trial installations

averaged 22 per cent below the expected factor of 3. This could have been caused by a number of mechanical difficulties and insufficient insulation between outdoor and indoor air components or perhaps peculiarities of the refrigerant.

If the expected performance factor of 3 had been obtained, the average operating cost (based on 1½ cents per kwh) would have been about 7 per cent higher than coal costing \$18 per ton; about 13 per cent lower than oil costing 13 cents per gal.; and 38 per cent higher than natural gas, costing 55 cents per 1000 cu ft.

But due to the low performance factor, the actual average operating cost was about 37 per cent higher than coal, 18 per cent higher than oil, and 80 per cent higher than natural gas (same unit prices apply). For more detailed information on power consumption and costs see the table below.

The annual heat pump consumption (heating and cooling) varied from 13,365 to 26,231 kwh with an average for the five installations of about 20,000 kwh. The annual electric load (excluding auxiliary heating) ranged from 16,611 to 33,824 kwh with an average of about 27,000 kwh. These average figures show that the annual energy consumption of

(Continued on page 264)

Below left: The installation of a heat pump and chemical storage improves the electrical load of the utility considerably, and may make more favorable rates likely. As will be noticed, the heat pump fills in some of the valleys, but the peaks caused by the general appliances still appear. Daily load factor = actual kwhr consumed ÷ connected load of electrical equipment × 24 hr. Note the peaks at 7 a.m., noon and 6 p.m.

GENERAL APPLIANCE AND COMBINED ELECTRICAL LOAD WHEN HEATING

COSHOCTON, OHIO, MARCH 31, 1950

MAXIMUM OUTDOOR TEMPERATURE — 52F

MINIMUM OUTDOOR TEMPERATURE — 20F

AVERAGE OUTDOOR TEMPERATURE — 36F

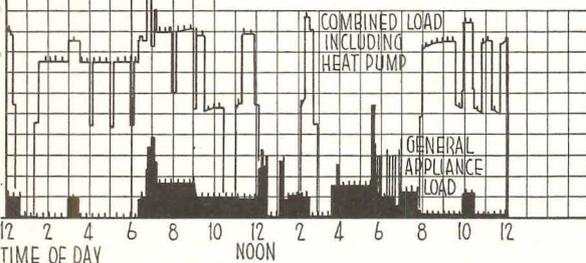
KWH USED BY HEAT PUMP — 109

KWH USED BY TOTAL OTHER LOAD — 21

LOAD FACTOR:

Without Heat Pump — 25%

With Heat Pump — 57%



HEAT COST COMPARISON OF HEAT PUMP AND FUEL BURNING EQUIPMENT

| | Actual Building Heat Loss Btu/hr | Estimated Heating Requirements in Millions of Btu's (Sept. thru May 273 Days) | Cost Estimates | | | |
|---------------------------|----------------------------------|---|--------------------------------|-------------------------------|--------------------|------------------------------------|
| | | | Coal 12,000 Btu/lb \$18.00/Ton | Oil 140,000 Btu/gal. 13c/gal. | Gas 55c/1000 cu ft | Electric Heat Pump Avg. CP* of 3.0 |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Kingsport, Tenn. | 55,000 | 100 | \$140.00 | \$169.00 | \$106.50 | \$ 97.50 |
| Abingdon, Va. | 45,500 | 95 | 134.00 | 162.00 | 102.00 | 139.00 |
| Roanoke, Va. | 35,000 | 69 | 102.00 | 122.00 | 79.00 | 101.50 |
| Coshocton, Ohio | 75,000 | 178 | 238.00 | 291.00 | 179.00 | 261.00 |
| South Bend, Ind. | 53,000 | 151 | 205.00 | 249.00 | 154.00 | 222.00 |

NOTE: 1. In the coal, oil and gas figures a \$15 estimated cost was included to cover the heating system fan and other electric auxiliaries, since they are included in the heat pump costs. Also, a burning efficiency of 60 per cent was assumed for these conventional heating systems.
 2. Estimated heating cost based on average indoor temperature of 72F.
 3. Actual heat loss (column 1) is based on field test results.
 4. Regular electric rates for the respective territories were used.
 * CP = heat output ÷ electrical energy input. A CP of 3 is normal, but actual test operation was lower due to reasons outlined in the article.

ARCHITECTS DESIGN A BOMBED-OUT TOWN

McLeod and Ferrara, Architects

C. Warren Bogan & Assoc., John G. Loehler, Consulting Engineers

Joseph B. Bahen Construction Co., Contractor



Two-Story frame house



Row house



Above left: Steel apartment building



Above right: Concrete office building



Theater building

THIS SUMMER the Federal Civil Defense Administration will have a brand new "bombed-out" town at Olney, Md., a few miles from Washington, D. C., on which to practice its fire-fighting and life-saving techniques.

It is putting it mildly to say that the architects had a unique assignment in determining how various kinds of buildings would be damaged by bombing, and then to design five of these buildings in bomb-damaged condition so that rescue training operations could be conducted safely and in realistic fashion.

The architects worked out a complete program of requirements for the design

and development of a "Rescue Training Facility." Although the facility at the FCDA Staff College in Olney is the only one now under construction, locations in Oklahoma and California have been considered for Federal schools, and several states and large cities have shown interest in the program. The findings and designs of the architects should be of interest to architects country-wide because they may well be asked to participate in local and state civil defense programs.

The architects cooperated with the FCDA agency and other federal agencies in their effort to incorporate into the designs the results of studies of high-

explosive bombings in Great Britain and Germany and effects of the atomic bombings of Nagasaki and Hiroshima in Japan. The architects even studied a translation of a German manual called the "Systematics of Damaged Sites and the Rescue of Buried Persons" written by an engineer who headed the German Technical Emergency Service.

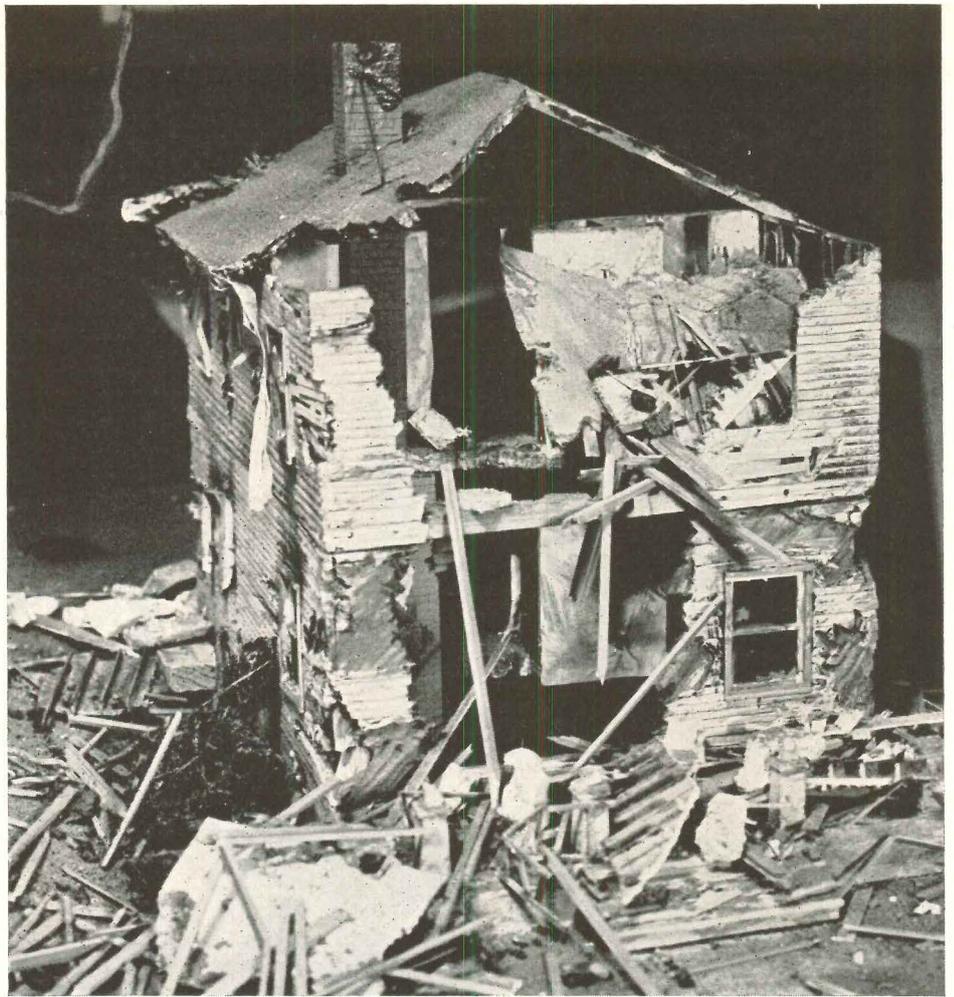
It is believed that damage to American buildings from atomic blast would consist mainly of twisted steel columns, dislocation of cross beams and the falling away of walls between them. The outside frame would probably remain pretty well intact. It is on these broad assumptions that the planning of the

rescue street went forward and on which construction now is based.

The Bombed Buildings

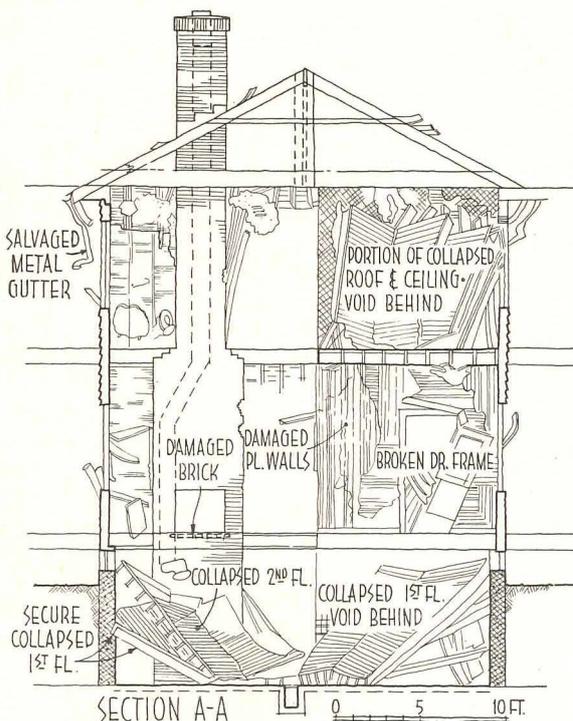
The rescue street will include an outdoor demonstration area for advanced training in use of rescue tools, a two-story and basement wood-frame house, two-story and basement row house, two-story office, store and theater building, three-story and basement steel apartment building, and a five-story reinforced concrete building.

Agency spokesmen say that a new approach to rescue work is demanded. This stems from the fact that many of the city dwelling structures in Britain and Germany bombed in World War II were older than U. S. buildings. The mortar used in their brickwork was not as strong. The conclusion is that walls of U. S. buildings would not disintegrate into small bits as readily as those in Europe, but would break up into large sections with the side walls collapsing, or "pancaking" into horizontal layers. These layers would be held apart by debris, furniture and other objects.



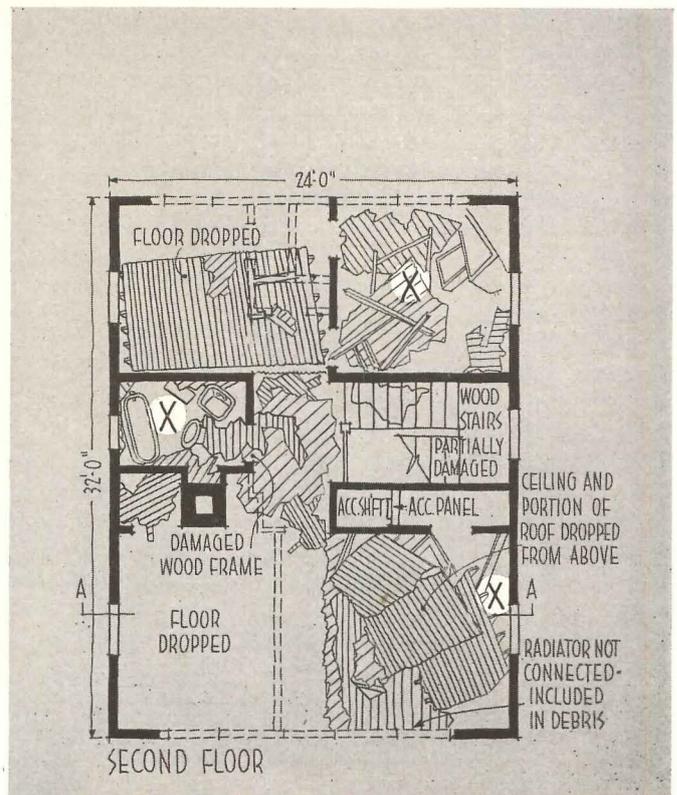
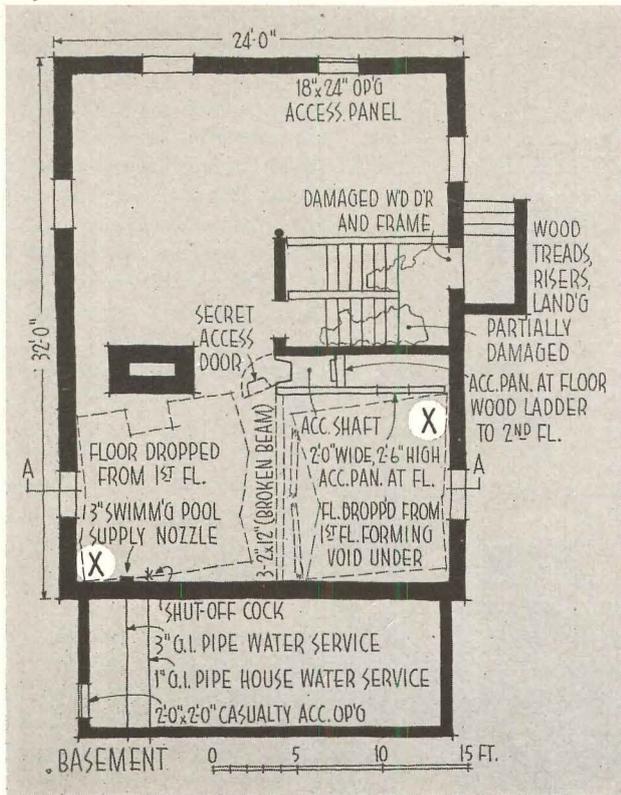
This two-story frame house is typical of dwellings found in the industrial areas of the East and Midwest. These buildings usually collapse in fairly large panel sections; walls, for example, would come apart in the form of panels, not as loose boards. Wood frame buildings also would be

racked (distorted), resulting in wall panel failure and collapse of floor and roof framing. Many protective voids would be formed in the debris. This and other buildings simulate damaged areas on the fringe of the completely devastated areas



The Ideal Plot Plan

The "Rescue Street" was originally conceived as a "T" shaped connection within the area bounded by the peripheral roadway, but the site at Olney and the budget did not permit the ideal plan on page 188. It serves, however, as a model for any further such facilities. This arrangement permits exercises to be carried on within the Rescue Area without interference from service traffic, as well as permitting flexibility in the rescue problems. The "T" shaped street formation also provides street intersection problems and exercises. Furthermore, this street arrangement will permit the erection of additional structures, such as: a community bomb shelter, a fire tower, or other training "sets," if conditions should, at any time, call for an expanded training program.



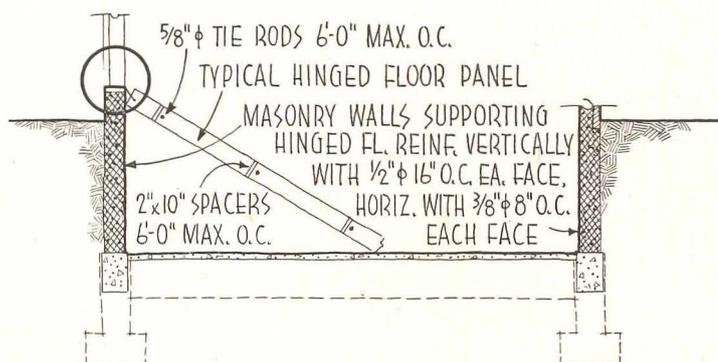
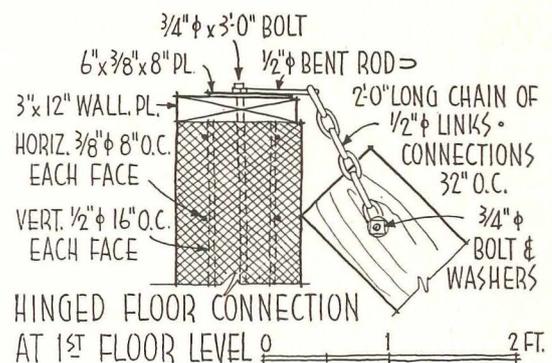
The buildings are designed so that rescue operations can be conducted with a great deal of realism, and at the same time under safe conditions. Secret accesses are provided so that "live" casualties (X) can creep in behind "fallen" floors and ceilings without being noticed. This creates forceful realism which cannot be duplicated by using dummies, and also insures careful workmanship on the part of the trainee. Fallen panels are

fastened to stationary, solid sections by means of chains so that when the "rescuers" try to move the panels, there will be realistic movement to put them on guard, but there will be no danger of the "fake" casualty being hurt. In case the rescuers begin to prod too vigorously, the casualty can crawl back into the access. Panels are reinforced so that they will not be damaged after many training periods

Type of Damage Portrayed

In designing the bomb-damaged structures, it was of paramount importance to decide the extent of damage to portray in order to provide the optimum training potential in each "set." Realism is, of course, the prime consideration, for without it no training course yet devised could prepare for the real thing.

For any given situation, the extent of damage would depend on the distance from the center of explosion, or as it is expressed in terms of the atomic bomb, the distance from ground-zero. Thus, since the objective of rescue training is to provide first-hand experience in practical rescue operations, it would be of little value to portray training "sets" so completely demolished that the finding of live casualties would be a remote possibility.



Carrying this thought into the design of the training "sets," it was decided that the buildings portrayed should simulate those damaged areas on the fringe of the completely devastated areas, at the same time providing a degree of realism closely paralleling conditions most likely to confront the rescue worker.

The five simulated bomb-damaged structures were based on careful investigation of the most common types of structures to be found in the United States. Every attempt was made to provide as realistic a "set" as construction methods and safety permit.

All masonry wall panels left standing or inclined are properly secured or reinforced to avoid inadvertent dislocation. The floor and roof panels used in lifting, shoring or jacking exercises are adequately reinforced, so as not to break up with constant rough usage. Portions of the buildings where attachments for block and tackle, well pullies, etc., may be made, are designed to avoid failure. Wherever masonry wall openings are to be cut, specific masonry markings will show permissible locations and lintels are placed over them. Wherever slabs, beams, columns, rods or panels are to be cut, special markings show limits. Shoring and tunneling members are of selected timber, checked frequently for damage.

The Outdoor Demonstration Area provides supplementary training in fun-

damental rescue skills as a necessary prerequisite to actual exercises on the training "sets." Classrooms are located in the basement of the office and apartment building. Various building services displays will be used for familiarization training. It will be practicable to carry out many elementary training exercises in this area, particularly during periods of inclement weather.

Destruction in the Five Buildings

Two-Story House. The two-story basement wood-frame house is the most common type of dwelling found in American cities, particularly in the industrial areas of the East and Midwest.

Analysis of the effects of bombing in Japan and the effects of explosion damage in this country indicated that wood-frame buildings generally collapse in fairly large panel sections; walls, for example, would "come apart" not so much in the form of loose timber and boards but in panels composed of studs and siding, or floor boards and joists still somewhat intact. These buildings would be racked laterally (distorted), resulting in wall panel failure and collapse of floor and roof framing. Many protective voids would be formed in the debris. By translating these facts into the training "set" the damage will be portrayed with some degree of accuracy and realism.

Row House. The two-story row house

also is recognized as a type found in large numbers in cities of 30,000 population and over. This is the house built in the period from 1890 to 1920 and often found in downtown areas of older cities.

The construction of a row house is, typically, the framing of single span wood joists between masonry party walls. The weakening or destruction of these side walls would cause the floor panels to collapse in a horizontal or "pancake" manner.

Office and Apartment Building. For the office and apartment structures, the architects followed the 1920-1930 period when steel skeleton construction began to replace wall-bearing types, and structural steel was gaining favor over wood-joist framing. Many of the urban-area buildings in this country today are of this type.

The exterior walls of these structures are generally brick-faced, with hollow clay tile back-up. Floor slabs are usually reinforced concrete over light beams. Partitions are built of hollow clay tile or gypsum blocks, plastered.

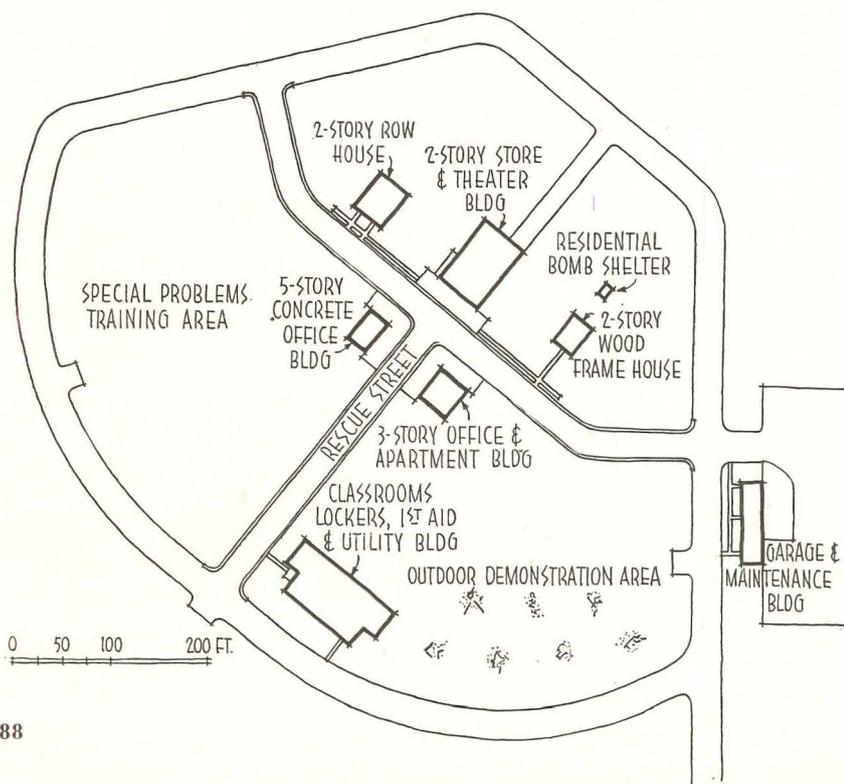
From data on bomb and explosion damage (particularly the one which occurred in Texas City, Texas) it can be predicted that considerable racking and twisting of the steel skeleton will result. Since the exterior walls are light in weight and serve merely as a skin-covering, a large quantity of rubble will be present. Floor panels will also collapse if the racking and twisting is severe enough to break the connections. Partitions and plaster will fill each level with debris.

Theater Building. The office-store-theater-type building in the Olney plan, two stories high in front with a high-ceilinged garage or workshop in the rear, is typical of some of the city school buildings and other places of public assembly.

This type, said FCDA, is not well-suited to withstand the effects of an atom bomb explosion. The big danger is from disintegration or movement of the walls, causing collapse of roof and floors.

Reinforced Concrete Structure. The five-story reinforced concrete building has been designed to be typical of most large business, institutional and public buildings today. Offices, banks, hospitals and schools fall in this category. Columns, beams, floor slabs, roofs and sometimes exterior walls are of reinforced concrete. The problem of extricating persons from damaged buildings of this type arises from the number of stories through which the rubble falls and accumulates.

An ideal plot plan and facilities for a rescue training program

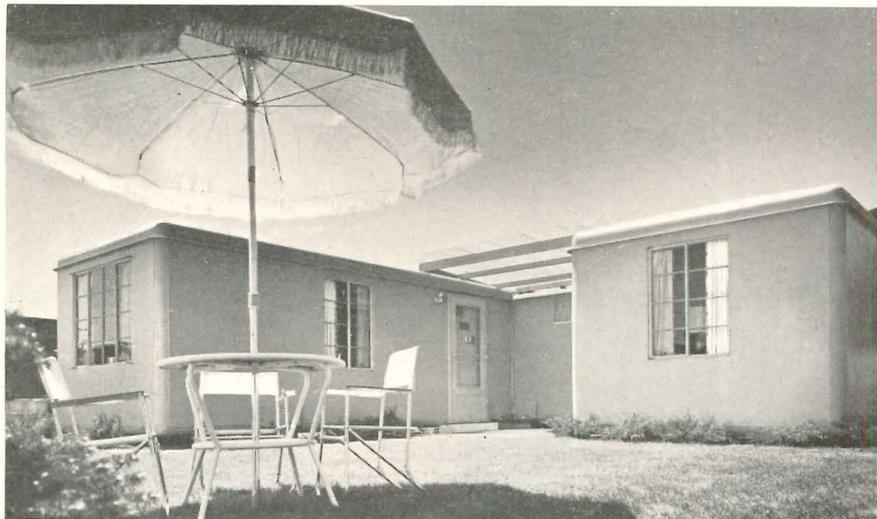


Demountable House Uses Non-Critical Materials

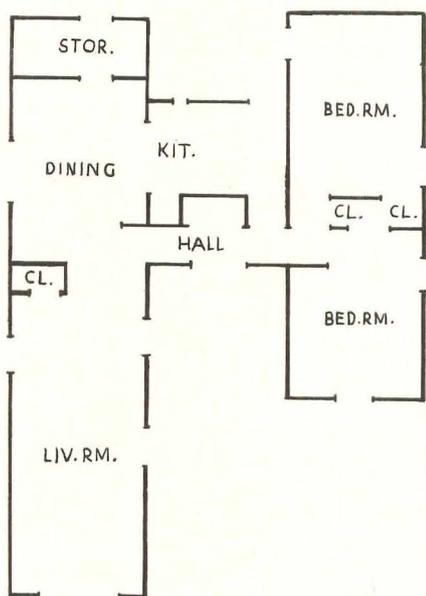
A permanent, mobile-demountable house, the *Unishelter* is a five room and bath, three-unit, factory-assembled package which reportedly can be easily transported, assembled and demounted in a minimum of time. In a test held recently before Federal housing and defense officials, one of the houses was taken from the assembly line, transported one mile to a cleared and landscaped site and re-erected in less than 1½ hrs.

The units are built entirely of sheets of stressed-skin plywood laid grain against grain and laminated with special plastics under many tons of pressure and 50,000 w radio frequency heat to a soft-core center into which insulating material is packed. Known as Unicel, this method of construction is reported to

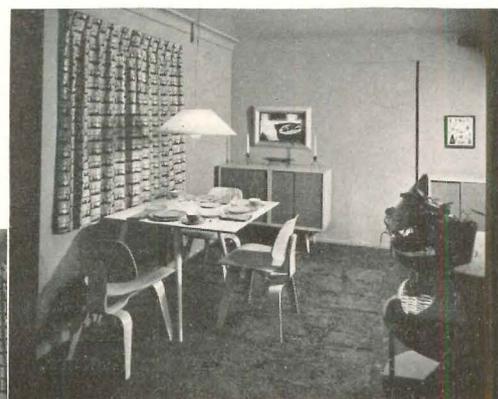
(Continued on page 202)



House is ready for occupancy after being transported and reerected in less than 1½ hrs

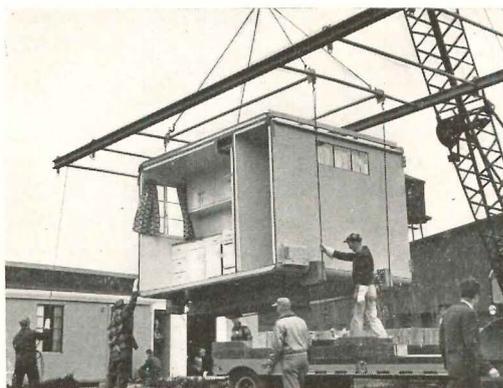


Plan, left, is one of many varied arrangements possible with component units of demountable house

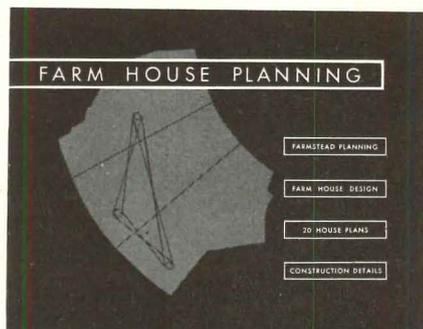


Interiors, as in living room, left, and dining room, above, are compact without being cramped or cluttered

Typical scenes in assembly process: at left, living-dining unit is being lowered in place over foundation; center, kitchen-utility unit is swung into place; right, workman tightens fittings connecting two units



LITERATURE FOR THE OFFICE



Farm House Planning Guide

Farm House Planning. Comprehensive booklet outlines in detail considerations concerning the planning of houses and farmsteads. A general introduction is followed by specific sections on planning of kitchen, utility room, living room, sleeping, bathing, dressing and storage areas. Detailed case studies of 20 model designs, with perspective drawings and plans, are presented. The booklet is completed with a brief but thorough introduction to problems and methods of construction. 88 pp., illus. Planning Research Centre, School of Architecture, University of Manitoba, Canada.

Oil-Hydraulic Elevators

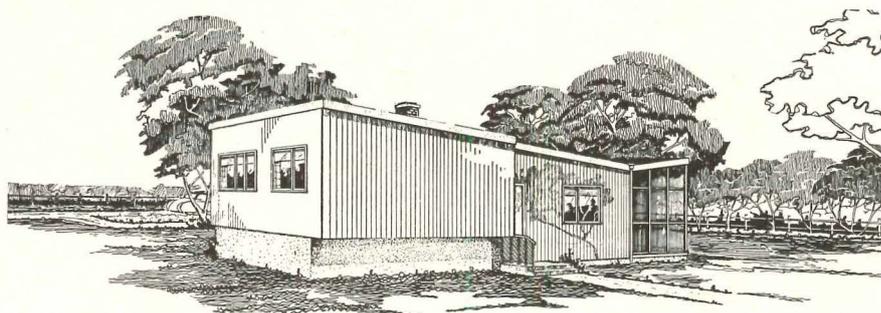
Globe Oilift Elevators. Catalog illustrates the manufacturer's line of oil-hydraulic elevators for freight and passenger service, covering a wide range of installations from small apartment houses to heavy duty industrial areas. Photographs of various types and sizes of cars are included, together with diagrams and illustrations of component parts and special equipment. 11 pp., illus. Globe Hoist Co., East Mermaid Lane at Queen St., Philadelphia 17, Pa.*

Zinc For Building

Zinc for Architectural Uses. Booklet describes ways in which rolled zinc may be used by the architect and builder. A list of suggested applications is included. 6 pp., illus. American Zinc Institute, 60 E. 42nd St., New York 17, N. Y.

* Other product information in *Sweet's File, 1952.*

Booklet, left, contains suggestions for planning farms and farmhouses. Typical suggested house, below, is compact, neat



Self-Sticking Markers

Brady Self-Sticking Industrial Products. The manufacturer's complete line of wire markers, pipe markers, safety signs, "scotchlite" reflective signs, masks and stencils, and printed roll tape is described and illustrated in this catalog. Specifications and suggested applications are included, together with a price list for stock labels. Each section of the catalog is separated and tabbed for easy reference. 28 pp., illus. W. H. Brady Co., Dept. 77, 1630 E. Spring St., Chippewa Falls, Wis.

Floor Coverings

1952 Sloane Catalog. Book is divided into five categories, including Linoleum, Tile, Printed, Wall Covering and General. The sections devoted to floor coverings contain textual descriptions of various patterns and show with full page illustrations the detail and color of each. Decorating suggestions for effective color schemes are also included along with instructions for installing and estimating the requirements of linoleum flooring. Descriptions, installation and estimations are also given for wall coverings, and the "General" category lists adhesives and contains a table of gauges and shipping weights. 195 pp., illus. Sloane-Blabon Corporation (A Div. of Alexander Smith, Inc.), 295 Fifth Ave., New York, N. Y.*

Drafting and Engineering Equipment

The Copyflex Process (Booklet A-2008). Brochure describes new system of making accurate duplicates of practically anything that has been drawn, written, typed or printed. Functions of the Copyflex machine are given and a brief description on how to make a Copyflex print is included. Photographs show several of the available machines, giving information on the various sizes of reproductions that can be made, and diagrams illustrate the exposure and developing action of the machine. 7 pp., illus. Charles Bruning Company, Inc., Teterboro, N. J.

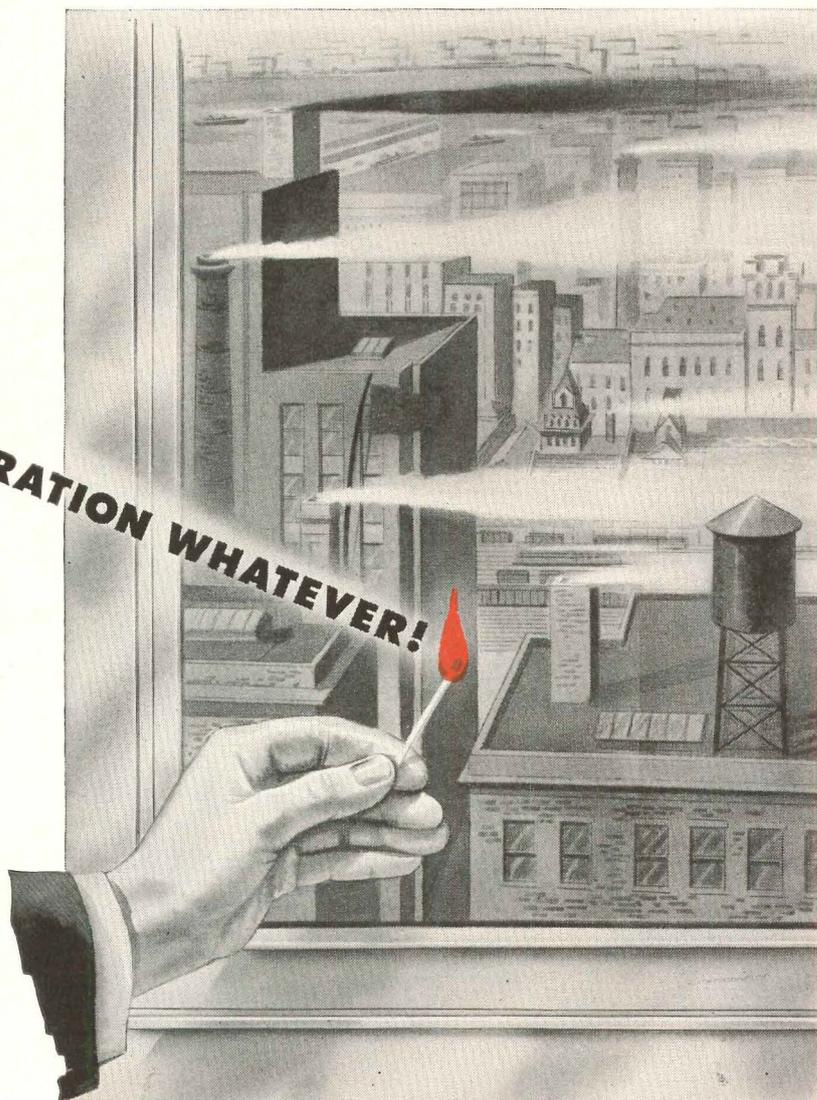
Exterior Masonry Paint Guide

Masonry Painting Handbook. Catalog illustrates field-tested painting techniques for 37 masonry surfaces, including concrete, stucco, block, brick, asbestos siding and miscellaneous masonry walls. Problems caused by specific surface conditions such as density, porosity, cracking, scaling, peeling and previous painting are also dealt with. Information on surface preparation, application techniques and coverage is furnished and specifications are included. 11 pp., illus. Wesco Waterpaints, Inc., Dept. MPH, Trenton 7, N. J.*

(Continued on page 256)

a sixty-mile wind outside

BUT NO AIR INFILTRATION WHATEVER!



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Aluminum windows
give weather-tightness

This steady match-flame is one visible proof of the weather-tightness of ADLAKE Aluminum Windows... weather-tightness which lasts for the life of the building!

ADLAKE's exclusive combination of woven-pile weather stripping and patented serrated guides guarantees a sure and lasting seal against wind, rain and cold. Tests prove that ADLAKE's weather seal prevents air infiltration with winds as high as 120 miles per hour—and this weather seal, as well as ADLAKE's finger-tip control, lasts through more than one million operations! Every ADLAKE Window not only meets

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ONLY ADLAKE ALUMINUM WINDOWS GIVE YOU ALL THESE "PLUS" FEATURES:

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- No Warp, Rot, Rattle or Stick
- Ease of Installation
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Veterans Memorial Building, Detroit, Michigan

Architects: Harley, Ellington & Day, Inc.

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PORCELAIN ENAMEL—2: Fabrication Limitations

Prepared by Harold Edelman, A.I.A.,
Instructor at Pratt Institute

Architect's Drawings and Shop Drawings

Architect's drawings should show overall sizes, panel back-up materials (if any), wall construction, type of furring (if any), required colors (from manufacturer's standard color numbers) and required profiles of special shapes, sign letters, etc. Drawings should not be over-dimensioned or over-detailed as this may limit work to bids of one manufacturer or force him to make special shapes or connections when his standard details may, to all intents and purposes, be the same. If the joints are an important feature of the design, the panel sizes and rough details should be established with a manufacturer during the early stages of the work. Otherwise these sizes may be left to be shown on the shop drawings. Drawings and specifications should clearly call out whether such items as electric signs, flashings and furring are to be provided by the porcelain enamel contractor.

All manufacturers will provide the architect with thorough and careful shop drawings as well as samples of edge details, clips, connections, colors, etc. whenever these are required.

Fabrication Limitations

Colors: Each manufacturer has stock colors related to a system of color cards or chips. Any color can be made except metallic tints such as silver, bronze or aluminum. Special colors involve extra cost since color comparisons can be made only after firing test samples. Any design or decoration can be made, from a simple geometric design to a mural. Repetitive designs are usually brushed on by hand through stencils although some have been made using the silk screen process.

"Brushing" or "edging" is the process of removing the finish enamel from certain areas, especially those in close proximity to other parts of the assembly, exposing a black or dark colored base enamel, which being much thinner is more nearly proof against damage in shipment, assem-

bly and use. Usually used so as to be invisible when erected, it has inherent decorative possibilities.

Finishes: Can be glossy, semi-matte or mottled at no extra cost. Dead matte is not practicable where dirt is a problem. The desired degree of reflection should be carefully considered. Some manufacturers produce three qualities of finish: 1 — regular; 2 — weather resisting; 3 — acid resisting. The latter is extremely non-porous and is to be recommended for extreme weather, smoke or smog conditions as well as more obvious applications.

Weight: For approximate weight calculations use a figure of 3 lbs per surface sq ft for porcelain enamel without back-up materials.

Size: Determined by strength required by use, desired degree of flatness, type and design of enamels used, number of firings required, ease of

handling, etc. Any size panel up to 48 by 120 in. can be handled by most equipment. Repetitive rectangular shapes should be based on stock metal sheet sizes which are 30, 36, 42 and 48 in. wide and 96, 120 and 144 in. long. Face panel dimensions should be designed to use stock sheet size reduced by twice the flange depth or other joint detail. (Thus a 48 in. wide sheet with 1 in. flanges on each side would give a face panel dimension of 46 in.) This will eliminate the need for using the next larger sheet size and cut down on waste. Flange depths depend on panel sizes and are usually 1 in. or 1 1/8 in. although on small panels they may be as small as 3/8 in., with the fabricator's consent. Maximum sizes for economical fabrication and handling are between 2 sq ft and 12 sq ft (see "Shapes and Forms"). There is no standardization of sizes or details in the industry.

TYPES OF FORMED EDGES



The following is a table of stock sizes produced by one manufacturer, with 3/4 in. flanges, 16 gauge iron

| height | width | height | width | | |
|--------|-------|--|-------|----|----|
| 10 | 16 | 34 | 34 | | |
| 10 | 22 | 34 | 40 | | |
| 10 | 28 | 34 | 46 | | |
| 10 | 34 | Stock sizes of a second manufacturer using the same gauge & same material | | | |
| 10 | 40 | | | | |
| 10 | 46 | | | | |
| 16 | 22 | | | 24 | 24 |
| 16 | 28 | | | 24 | 27 |
| 16 | 34 | 24 | 30 | | |
| 16 | 40 | 24 | 33 | | |
| 16 | 46 | 24 | 36 | | |
| 22 | 22 | 27 | 27 | | |
| 22 | 28 | 27 | 30 | | |
| 22 | 34 | 27 | 33 | | |
| 22 | 40 | 27 | 36 | | |
| 22 | 46 | Stock sizes of a second manufacturer using the same gauge & same material | | | |
| 28 | 28 | | | 30 | 30 |
| 28 | 34 | | | 30 | 33 |
| 28 | 40 | | | 30 | 36 |
| 28 | 46 | | | | |

Rubber tile or plastic... **Fremont** has it!

We've added a Complete
New Line of Vinyl Plastics!

VINATOP

and **VINATILE**

in 10 Permanent Colors



ANYWAY YOU FIGURE IT,
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You have a floor choice—rubber or plastic! Fremont, the "name" in rubber tile, has now added a complete new Vinyl Plastic line for floors and topping. VINATILE IN 9" x 9" individual tiles and VINATOP in roll goods, gives your rooms permanent, new matching colors without buying special materials. They're made of tough vinyl plastic over felt base backing—designed for easy cleaning, color permanence at a cost figure that makes any job inexpensive. Specify both on the next set of plans.



**NO TRICK TO INSTALLING.
SHE CAN DO IT HERSELF!**

Let her do it! Fremont VINATILE or VINATOP are very easy to install . . . save your client both time and money. Full instructions, tools, etc. are available at your Dealers.

**SUGGEST NEW PATTERNS!
SEE YOUR DEALER, OR WRITE . . .**

Fremont Rubber Company

309 McPherson Highway, Fremont, Ohio

Dept. 20, Fremont Rubber Co.,
309 McPherson Highway, Fremont, Ohio

Gentlemen:

Please send me details on Fremont VINATILE and VINATOP.

Name _____

Firm Name _____

Street Address _____

City _____ State _____



RUBBER
TILE



VINYL PLASTIC
COVE BASE



SPONGE RUBBER
RUG CUSHION



RUBBER
STAIR TREAD



PLASTICS



FOAM RUBBER

PORCELAIN ENAMEL—3: Fabrication Limitations

Prepared by Harold Edelman, A.I.A.,
Instructor at Pratt Institute

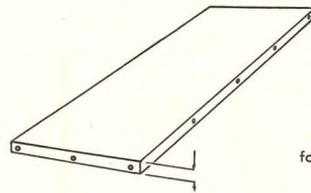
Thickness of Metal: 16 or 18 gauge usually used. 20 gauge to 24 gauge may be used if panel is small and proper precautions are taken to insure rigidity. 16 gauge reduces possible warping troubles but is expensive if gas-welded connections are required. For sign letter gauges see later sheets. Fastening clips are usually 26 to 30 gauge if stainless steel, otherwise two gauges thinner than the face metal. Manufacturers should be consulted on each specific problem. (For further data on clips see "Methods of Attachment".)

Chart A may be used as a guide for the design of parts of small size where only moderate rigidity and flatness are required. All parts larger than those shown should be 18 gauge or heavier.

Back-up Materials: Back-up materials provide additional stiffness, heat insulation and sound deadening qualities. There are three general types:

1. Plywood or insulating board attached to the back of the porcelain enamel by adhesives.
2. 1/8 in. of tacking applied to the back by spraying.
3. Cement base materials cast in the wall panel creating an integral unit obtainable in thicknesses of 1 to 8 in. or more. This material is installed in exactly the same manner as a comparable thickness of any other masonry material. These units can be load-bearing, are set on a mortar bed, and can be equipped with lifting hooks, anchors and stainless steel edgings as desired. (See "Fastening Methods".) Insulating concretes are used in this manner.

Shapes and Forms: All required shaping, forming, cutting, welding, punching, drilling, etc. should be done before firing. The sheets may be corrugated, fluted, reeded, bent or embossed with an all-over pattern to provide additional stiffness if using lighter gauge metal and to decrease the appearance of waviness.



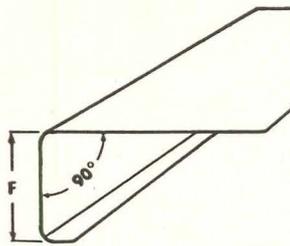
TYPICAL PANEL

corners welded and ground smooth

for flange depth see "Size"

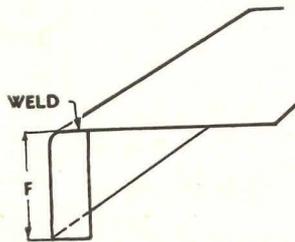
**FIG. 1
FLANGE DESIGN**

flange corners



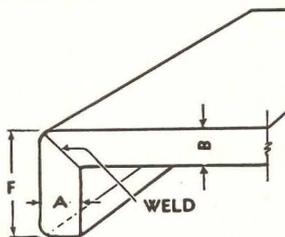
POOR

flange 'F' will change angle during firing

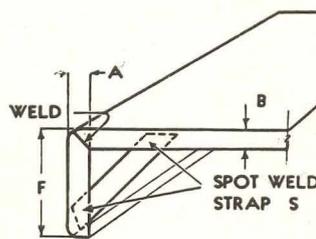


POOR

inadequate support at end flange

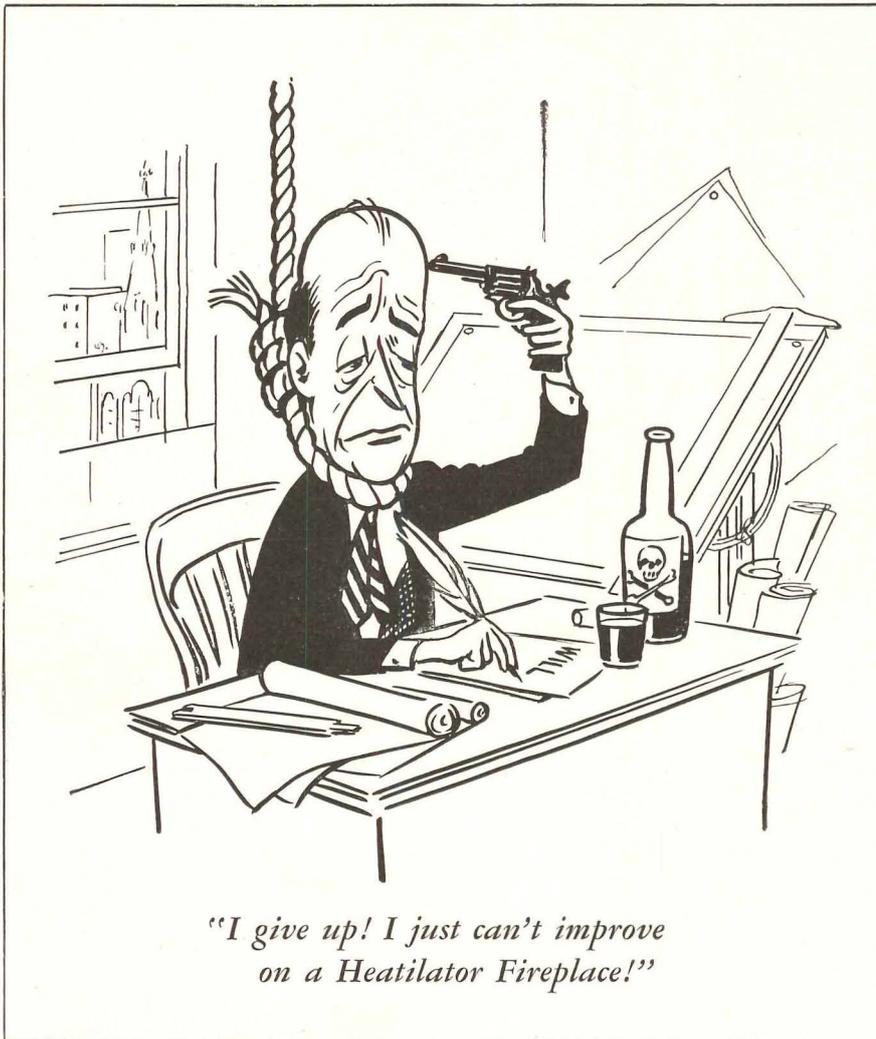


**GOOD:
A-B-1/3F**



GOOD*

*If A & B are less than 1/3F additional support provided by strap S



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THREE REASONS FOR SPECIFYING THE HEATILATOR* FIREPLACE:

1. You know in advance every fireplace will work properly. The scientific design of the Heatilator unit protects you against rule-of-thumb building methods . . . assures smokeless, trouble-free operation . . . reduces the need for constant on-the-job supervision.

2. Construction is simplified. Each unit comes complete with firebox, throat, down-draft shelf, damper and smoke dome . . . fully assembled. Only the decorative masonry is needed to complete the installation.

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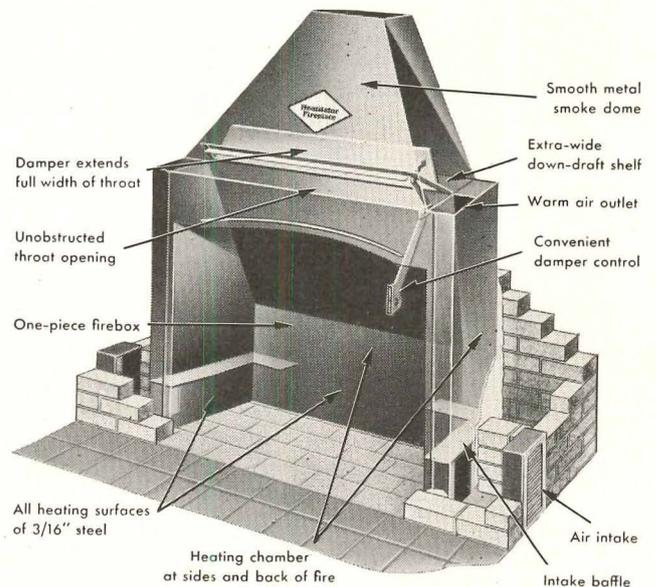
The Heatilator Fireplace puts no limit on mantel design or use of materials . . . gives you complete freedom of architectural expression. It's ideal for basement rooms . . . a must for summer camps or cottages . . . and as a supplemental source of comfort during service interruptions or emergencies. The leader since 1927, the Heatilator Fireplace has been proved in actual use by hundreds of thousands of satisfied owners. It will pay you to specify a Heatilator Fireplace in your next home or group of homes. Heatilator, Inc., 387 E. Brighton Ave., Syracuse 5, N. Y.

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PORCELAIN ENAMEL—4: Fabrication Limitations

Prepared by Harold Edelman, A.I.A.,
Instructor at Pratt Institute

| CHART A—METAL THICKNESS | | |
|-------------------------|----------------|--------------------------|
| Gauge | Width (inches) | Total Area (square feet) |
| 24..... | 6..... | 1/2 |
| 24..... | 12..... | *3 |
| 24..... | 18..... | *5 |
| 22..... | 6..... | 1 |
| 22..... | 12..... | 3 1/2 |
| 22..... | 18..... | *6 |
| 22..... | 24..... | *8 |
| 20..... | 6..... | 1 1/2 |
| 20..... | 12..... | 5 |
| 20..... | 18..... | *8 |
| 20..... | 24..... | *10 to 15 |

**Should be embossed, flanged or otherwise suitably reinforced.*

Any shape which can be made in sheet metal can be made in porcelain enamel provided the following restrictions are met:

1. *Material* — Only enameling iron or steel should be used to preserve shape, strength and proper adhesion under the firing temperature.

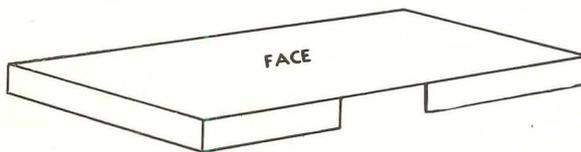
2. *Holes* — should be drilled and cutouts for lights, doors, etc. made 1/32 in. oversize in each direction (1/16 in. total) to allow for fill-in of the glass coating.

3. *Bends* — sharp corners are hard to cover with enamel which may form a heavy edge bead. Bends formed on too powerful a brake may fracture slightly and be hard to cover evenly. Where possible a radius of 1/8 in.

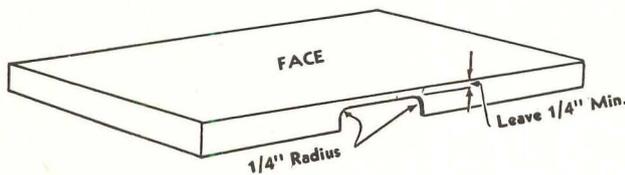
(minimum) or 3/16 in. (usual) should be used for right angle bends which may be made to 93° or 95° for tight fitting flange joints.

4. *Flanges & Formed Edges* — (See "Sizes" for dimensions.) Flanges are required for stiffening and fastening and should *never* be notched, drilled with excessively large holes or be incomplete along one side except as shown in Figure 1. All these conditions set up stresses that may cause damage to the porcelain enamel surface. Stiffener braces should *never* be welded across the back of the panel as the extra thickness of the material will create different rates of expansion under firing and cause the sheet to buckle. Flange corners should be welded and ground smooth.

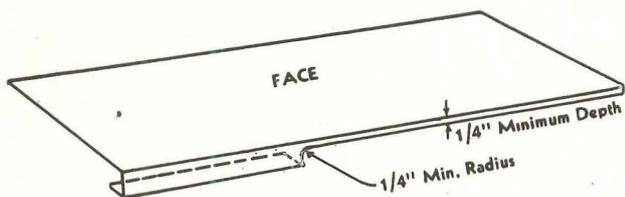
FLANGE CUTS



POOR— shipping and hairline will occur on face near cutout



GOOD—

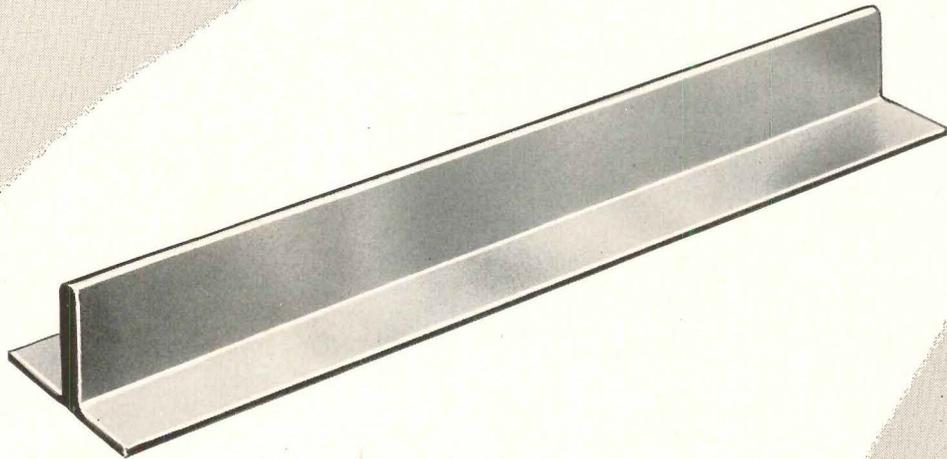


NOT RECOMMENDED— hairlining & shipping may occur

* Securitee Systems

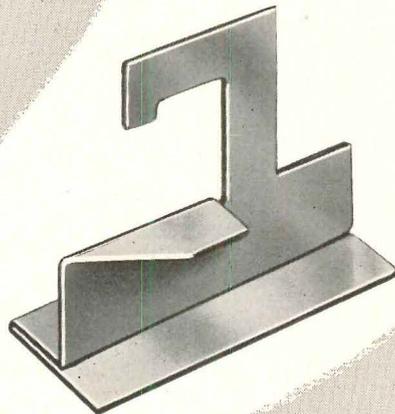
the Quality suspension system for acoustical tile installations.

Engineered for the construction industry.



Securitee Tee-bars and Clips are accurately fabricated of **24 gauge** rust resistant steel. ★ Tee-bar flanges and web are of **extra** width and height, assuring proper support for a true and level ceiling.

★ Securitee Clips are fabricated with a patented pressure flange that automatically locks against supporting channel for **additional rigidity**. ★ To prevent sagging acoustical ceilings, specify and insist on Securitee, the suspension system designed to give **outstanding structural strength**.



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PORCELAIN ENAMEL—5: Fabrication Limitations

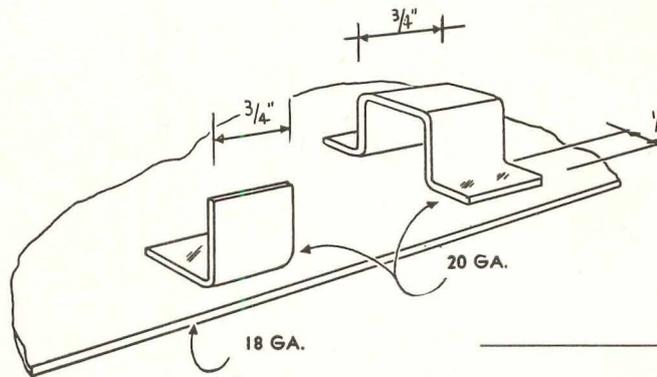
Prepared by Harold Edelman, A.I.A.,
Instructor at Pratt Institute

5. *Welding*—is used to build up the required shape and for securing clips and fastenings to the back of the sheet. Gas welding is the easiest and safest for continuous welds and should be done either by flowing the two pieces together or by adding a piece of the same material. It must be used only with light gauge material to prevent heat warping and excessive labor costs. Arc welding has only limited use because foreign ma-

terials in the welding rods make enameling difficult, gauges of material are too light to withstand the weld, and spatter results which must be cleaned off or it will show through the enamel. It is used for welds that will not show on the surface and then usually in tack or intermittent welds. Spot welding or other resistance welds are commonly used to attach flanges, lugs or clips to the back. Spots should be spaced about 1 in.

apart. All welds should be designed to allow uniform expansion and contraction of large areas. Brazing cannot be used because enamel will not adhere to brazing materials. Soldering cannot be used because solders melt below firing temperatures.

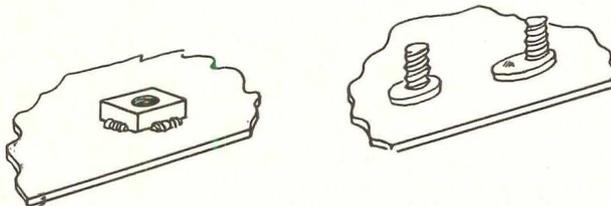
Porcelain enamel sheets have been formed for use as: copings, sills, bulkheads, columns, pilasters, spandrel facings, louvers, wainscoting, bathroom walls, suspended ceilings, etc.



SPOT WELDING

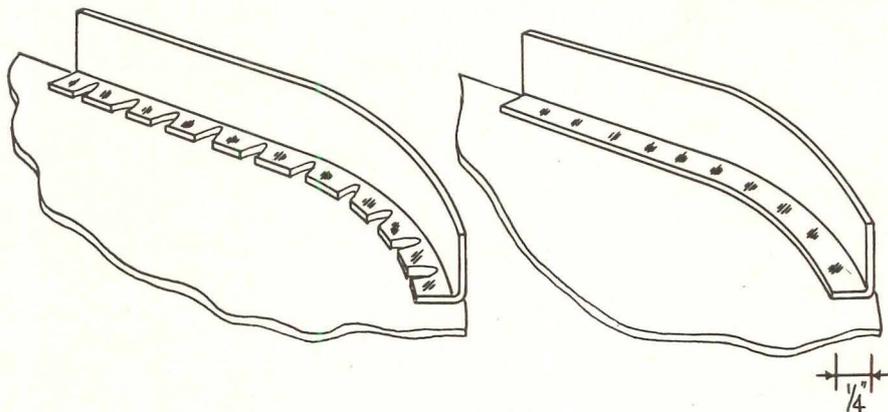
SPOT WELDED CLIPS

Proper method of attaching clips to rear



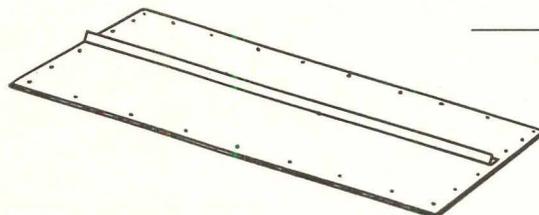
WELDED NUTS

Satisfactory only with small nuts



SPOT WELDED FLANGES

Proper method of attaching to rear



SPOT WELDED STIFFENER BRACE

No good

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

AIR CONDITIONING THE MODERN AUDITORIUM

by Samuel R. Lewis, Consulting Mechanical Engineer,
Samuel R. Lewis and Associates, Chicago, Illinois



SAMUEL R. LEWIS is a practicing consulting mechanical engineer in Chicago. He is past president of the American Society of Heating & Ventilating Engineers. He is a member of the American Society of Refrigerating Engineers, Chicago Association of Consulting Engineers,

Western Society of Engineers and National District Heating Association. He has designed the successful air conditioning plants for many places of assembly, such as theaters, auditoriums and places of worship. He is author of several text-books covering the design of complete air conditioning systems.

Church auditoriums, school assembly halls, theaters and other public meeting places generally require mechanical ventilation. To insure comfort, nearly all structures of this type now make use of some means of removing excess heat and moisture from the air.

Since heat from each occupant of a structure approximates half as much as that from a lighted candle (about 650 Btu per hour at 70°F.), temperature and relative humidity build up rapidly in crowded rooms. For example, the adjusted total heat gain based on normal percentage of men, women and children is estimated at from 330 to 350 Btu/Hr in occupied theaters. Unless corrected, this condition may cause such discomfort that the result may restrict use of the place.

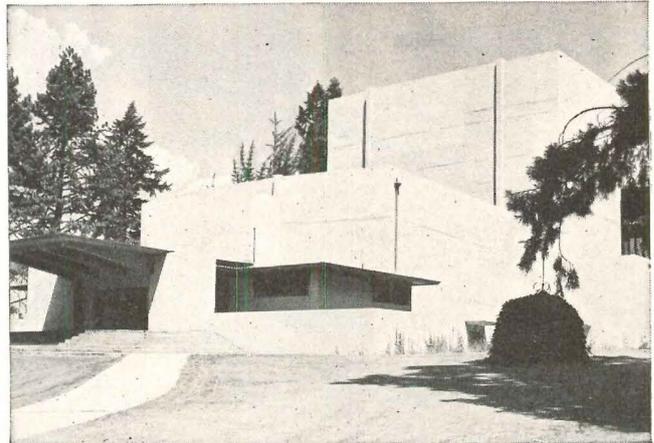
In theaters where the performance is continuous, audience changes are gradual. There is little or no opportunity for periodic aeration. The same is true of most auditoriums, concert halls and the like. It is somewhat less true of school assembly rooms, churches, clubs and other gathering spots in which recesses or intermissions may allow some measure of ventilation at fairly frequent intervals.

IMPORTANT FACTORS

There are many factors to be considered in planning an effective air conditioning system: floor area of the auditorium, building height, total cubage, seating capacity, doors, windows and their exposure, roof construction and the possible effect of solar heat. Heat gain from lights, projection booths, motors and other equipment may necessarily influence the type and size of air conditioning system required. Areas adjacent to the main auditorium, such as offices, rest rooms, corridors, foyer, dressing rooms, refreshment stands, storage rooms and

the stage itself often present a problem that must receive special consideration. In some instances, supplementary equipment may prove most satisfactory; in others the better plan may be an over-all central-system installation. It is generally best to discuss with a refrigeration engineer the relative merits of both systems.

A central system will require a suitable machine room in the basement or other available space, whereas unit air conditioners may be placed in strategic locations throughout the structure. Water, drainage and power facilities must also be considered, as the availability of these services may affect plumbing and wiring installations and their cost.



Speech Theater, University of Oregon, seats 400. A completely air conditioned auditorium of modern design.

ESTIMATING REQUIREMENTS

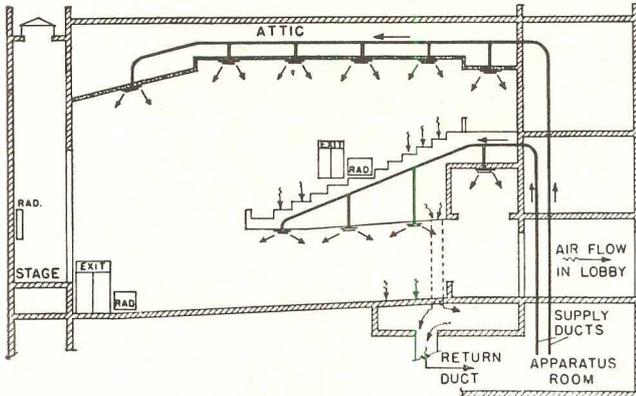
An auditorium with a seating capacity of about 500 persons, situated in a zone of normal average temperature, will probably require year-round air conditioning. To provide for peak loads during hot seasons, a 35-ton central system might be indicated. On the other hand, two or more air conditioning units totaling 30-ton capacity may prove entirely adequate and might affect a saving both in equipment and installation costs.

In either case, early plans should include the possible arrangement of ducts required, intake and exhaust vents, blowers, cooling fans, and suitable housing for such equipment.

In whichever type of plant is used, provision should be made in the architectural design for air supply and exhaust ducts and for diffusers and grilles intelligently located in the walls, ceiling and floor. Space must be allotted for the machinery, particularly with consideration of noise and vibration from compressors, fans and pumps.

LOCATING DUCTS, VENTS

Location of air-supply inlets and spent-air outlets from the rooms is exceedingly important to provide proper air distribution. Experience has shown that persons in an auditorium will become draft-conscious and will voice complaints if air at appreciable speed presses against their backs. Similarly, there should be no strong air currents cooler than average environmental temperature flowing at floor level.



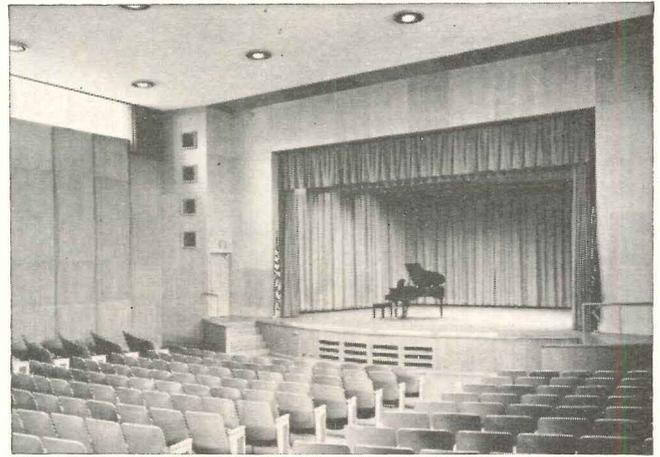
Section through typical well-cooled moving-picture theater, showing downward-diffusion system of air circulation . . . from the 1950 Refrigerating DATA BOOK, Applications Volume, by courtesy of the American Society of Refrigerating Engineers.

Reception of ventilating air generally is most beneficial if it enters the auditorium through diffusers in the ceiling or walls that allow the air to move toward the faces of the audience. Air-exhaust openings should be at low velocity and may be located in the floor under seats or around the side and rear walls. Outlets may also be constructed overhead. In hot weather, particularly, rising warm air encounters heavier cool air which falls slowly toward the floor. In cold weather, however, it may be more desirable to exhaust warm air at floor level rather than overhead.

An auditorium may be so located that passing traffic of one kind or another creates a noise problem. This may necessitate a choice between closed windows with risk of overheating, or open windows and unacceptable sound communication from exterior sources. In such cases, installation of a complete air conditioning system becomes more attractive psychologically and financially than to seek another location for the structure.

No physical difficulties will be encountered, as a rule, in extending an existing mechanical ventilating system (which is only partially an air conditioning plant), into a complete system. Air generally is cooled by contact with a surface or substance less warm than the air. This may be a liquid, such as water, or tubes of metal such as aluminum, steel or copper, with expanding refrigerant such as "Freon" on the side of the tube not exposed to air. As the temperature of the air is reduced, its volume becomes smaller. The water vapor that is part of the air condenses on the cool surfaces or increases the volume of chilled water in the cold liquid sprays that sometimes are employed.

It follows that air condensed in volume by refrigeration and introduced into the room must be expanded without restoring its original moisture. Air too cool for human comfort must be reheated to a comfortable temperature warmer than the dew-point temperature, without losing the ability of the air to evaporate moisture. This dew-free air may be warmed a few degrees before it enters the room without restoring the invisible water vapor that fell out as dew. The dry air, still cool, then



Air conditioned auditorium at New Canaan (Conn.) Elementary School also has seating capacity of 400.

removes excess heat from the room. Heat to expand the air after it has been condensed, may come from part of the warm air in the auditorium that otherwise would be exhausted outdoors, or it may come from steam, hot water or electricity.

No inflexible rules can be given for air conditioning any entire auditorium. Requirements differ in every case. However, analysis of the individual problem should help determine the total refrigeration needed and should indicate whether the system should be of the central or multiple-unit type.



Whatever the job of air conditioning or refrigeration, there are now available many excellent units of equipment. Selections can be made that will exactly meet almost every specific requirement. The machines are made by well-known manufacturers, and their representatives will gladly cooperate with architects and engineers on any problem of this kind . . . offering complete information about various models of equipment.

It will generally be found that most machines recommended for the air conditioning and refrigeration needs of structures serving the public are charged with "Freon" refrigerants. This is important for the reason that these refrigerants are safe . . . noncombustible, nonexplosive, virtually nontoxic . . . and harmless to fabrics, finishes and furs. In addition, "Freon" refrigerants are scientifically produced by laboratory-controlled methods of manufacture that insure their chemical purity. This, in turn, contributes to the economical, and trouble-free performance of the system over a long period of time. It is a plus value that represents added protection for the owner. It safeguards his investment in the property.

Still another important reason for specifying "Freon"-operated equipment is that these refrigerants meet all building-code and safety-code requirements, such as B9.1—1950 ASA Standard. You can always render a real service to your client by recommending such systems. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.



150th Anniversary

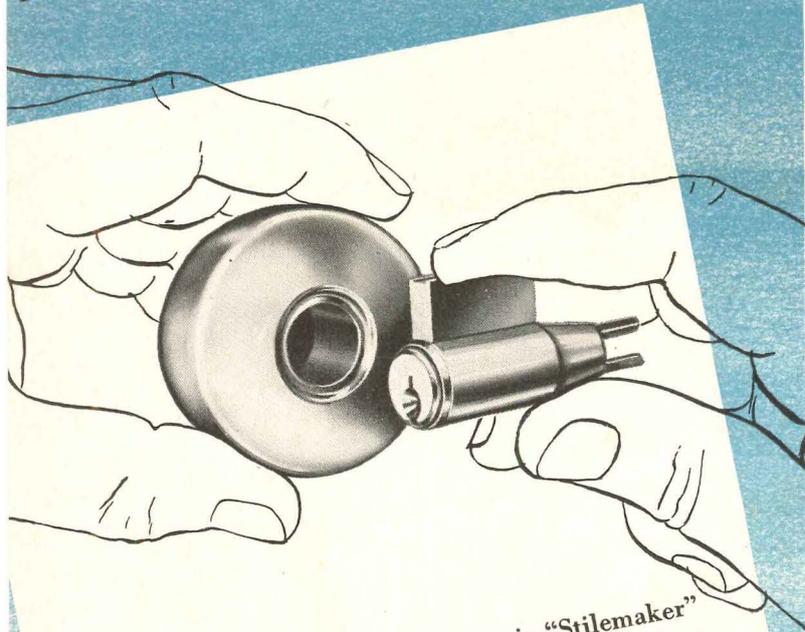
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

"FREON" SAFE REFRIGERANTS



"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon refrigerants

Here's "Top security" lock construction for your clients



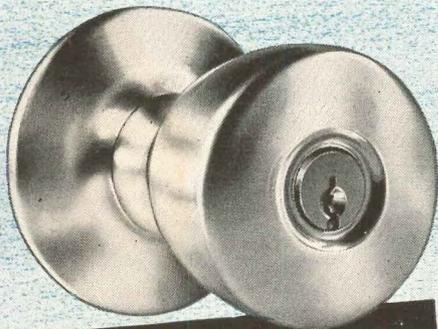
In removing the cylinder of a Russwin "Stilemaker" heavy-duty Cylindrical Lock for re-keying, no key is needed . . . an extremely desirable feature in "top security" installations.

"Top security" lock construction is only one of many "Stilemaker" advantages that assure client satisfaction over the years. Complete data on Russwin "Stilemakers" is available from your Russwin Distributor. Russell & Erwin Division, The American Hardware Corp., New Britain, Conn.

Engineered to
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BY THE MAKERS OF THE ORIGINAL KEY-IN-THE-KNOB LOCK

Architectural Engineering

PRODUCTS (Continued from page 189)

cut heating costs and keep the interior cooler in summer. All exposed surfaces of the house, inside and out, are treated with phenolic resins for additional protection.

Designed primarily to help meet the changing needs of defense production areas by providing an alternate to both trailer-camp living and fixed-to-site housing, the houses employ no critical materials and, according to the manufacturer, present no site foundation or erection problems. The units are delivered from factory to site with everything in place. Kitchen and bath plumbing and power facilities can be easily connected to master pipes and lines at the site. Foundations may be either wood post or concrete.

Equipment furnished with the houses includes range with four burners and oven, 4.2 cu ft refrigerator, sink, water closet and tank, lavatory, tub and shower combination, 20 gal. gas-fired hot water heater and semi-automatic washing machine. Heating is from a bottled gas control forced hot air furnace.

The three component units of the house can be arranged to permit many floor plans and exterior designs to suit individual tastes of occupants. Pressed Steel Car Co., Inc., 6 No. Michigan Ave., Chicago, Ill.

New Summer Carpet Line

Alexander Smith, Inc. is presenting an assortment of new carpet colors, designs and patterns for the summer markets. The new colors, chosen as a result of a survey of dealers and consumers, are madeira brown, Florentine red, aquatone, nocturne gray, limefrost green, greige and copper rose. They will appear in Dominion, Shoreham and Twist qualities.

Two fabrics made in carpet rayon are being introduced and reportedly will be moderate in price. New patterns have been added to Smith's Riverdale and Dominion qualities and to the Princess Cotton group, and Dalistan, a new collection of three domestic Orientals, will be available. Alexander Smith, Inc., 295 Fifth Ave., New York, N. Y.