

ARCHITECTURAL RECORD

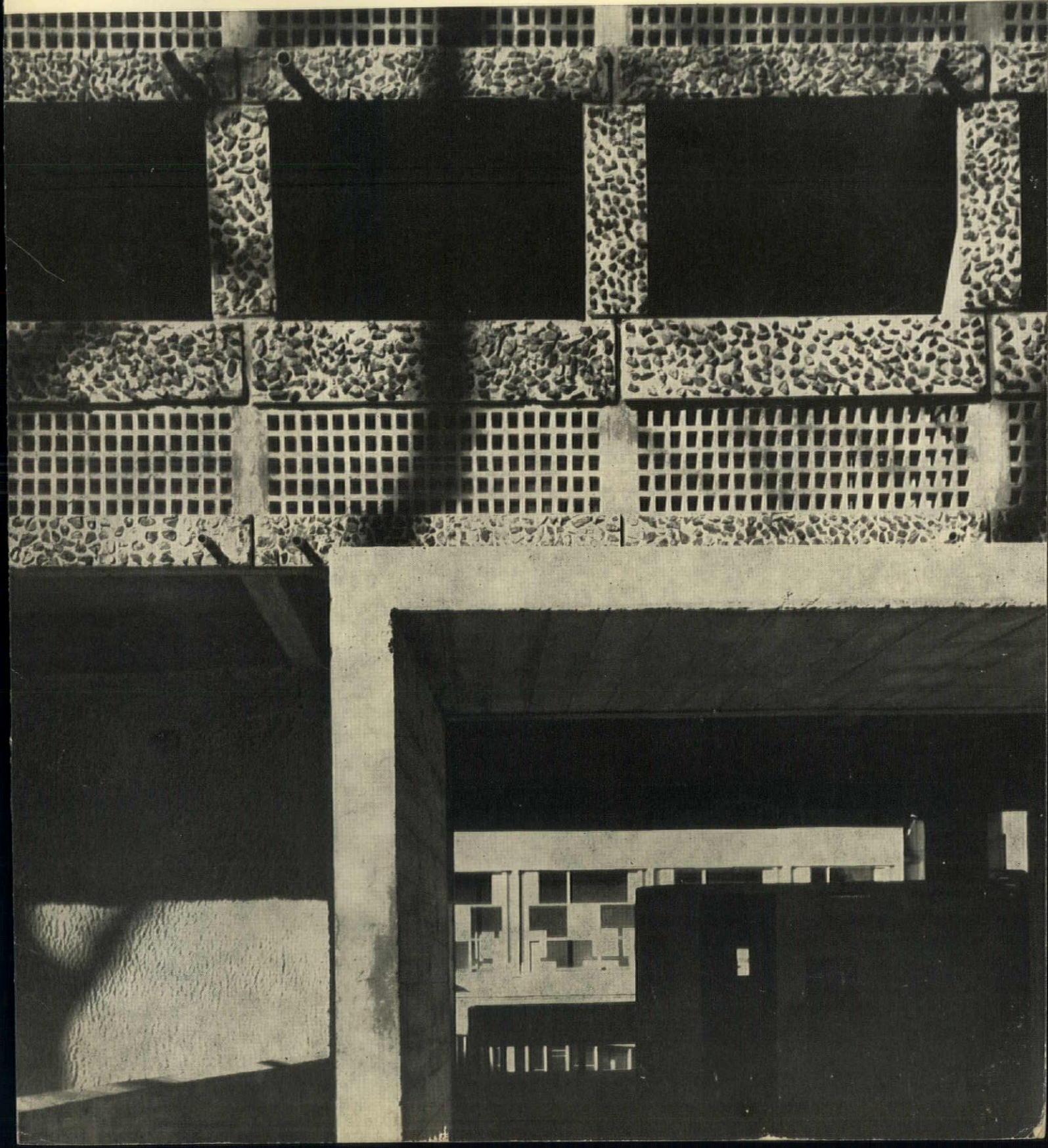
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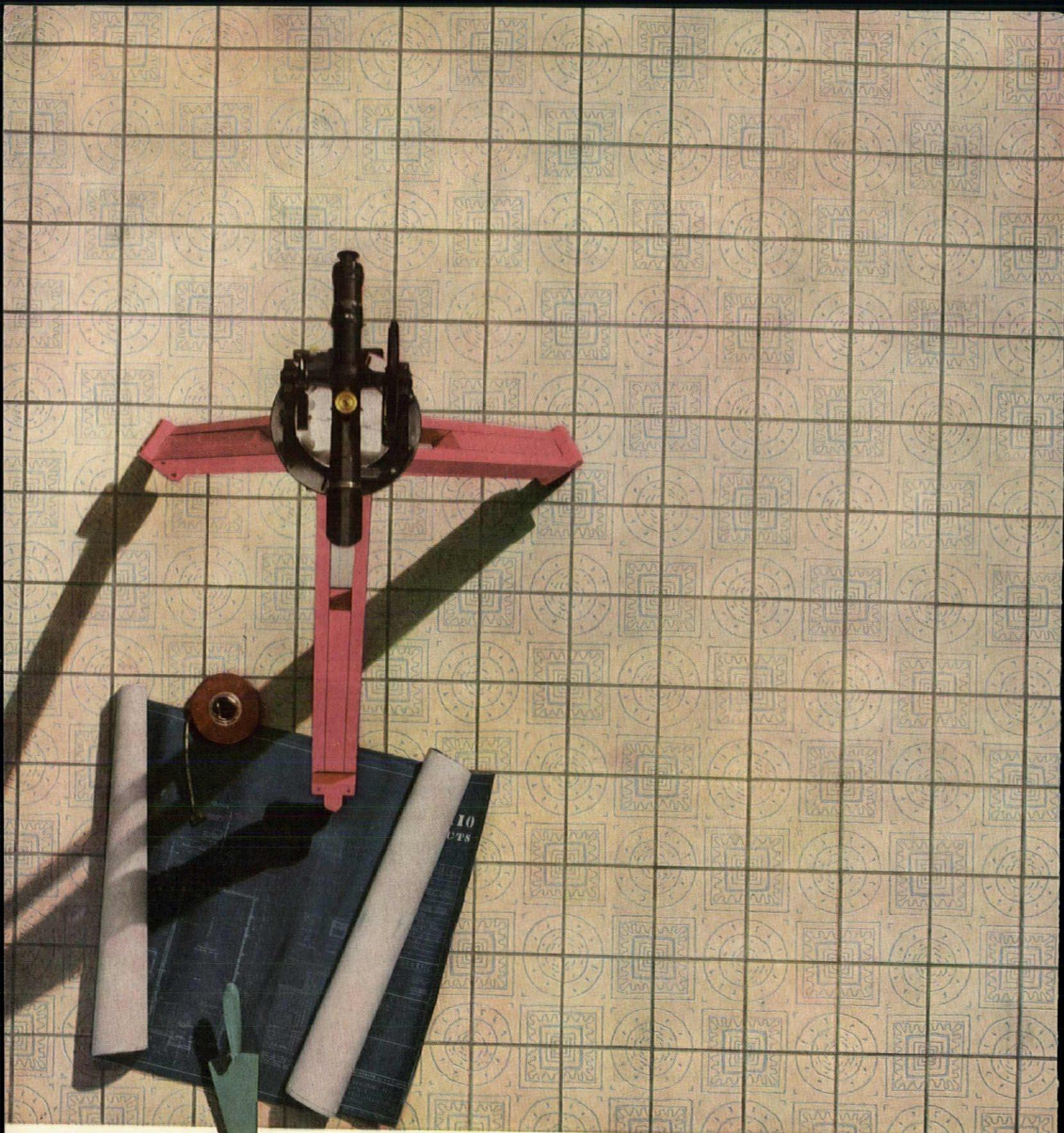
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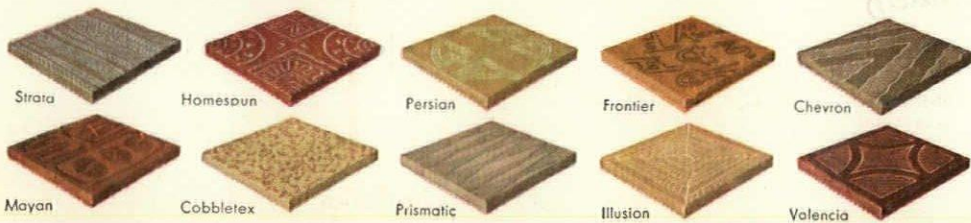


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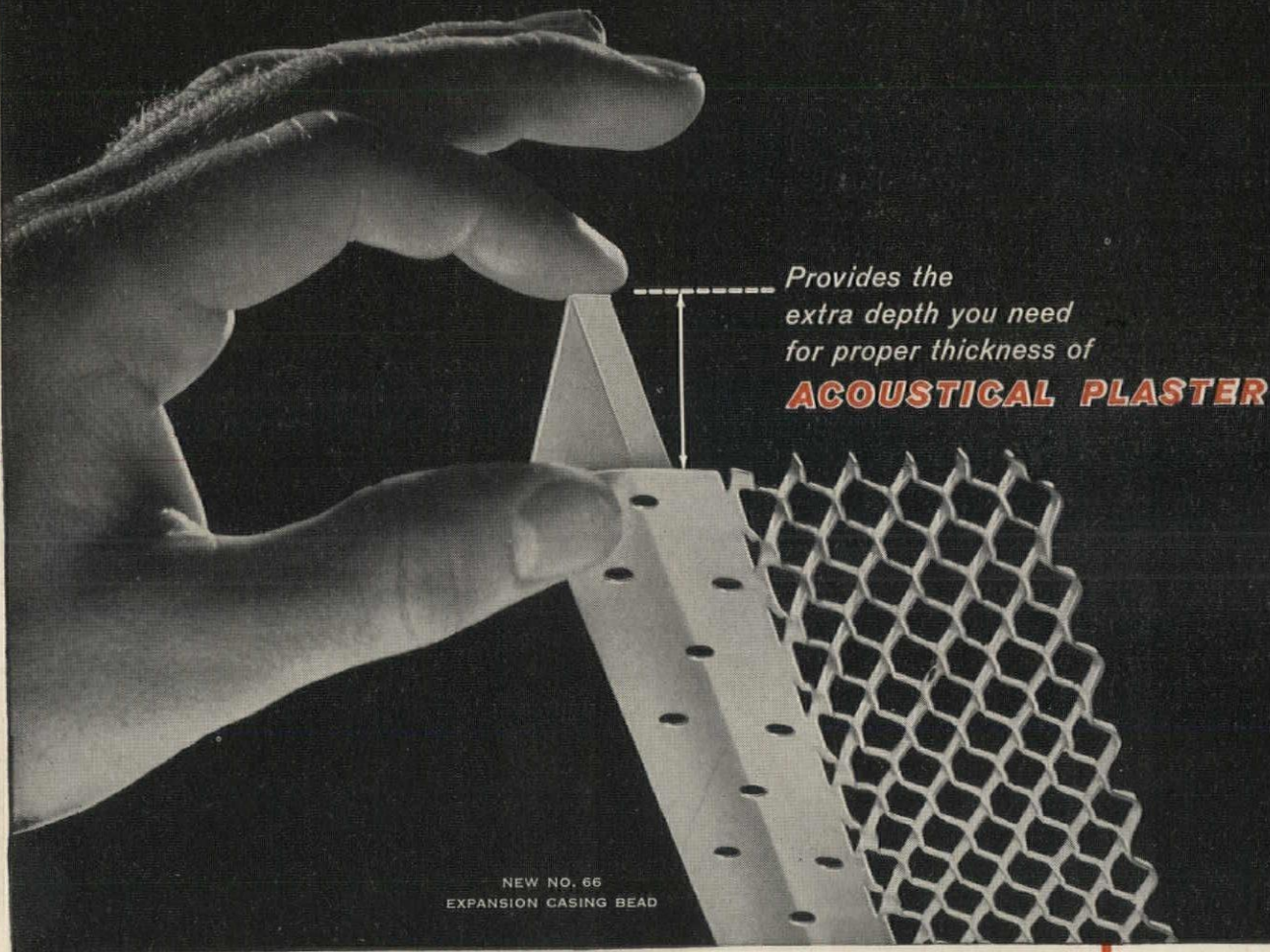


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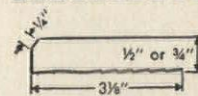
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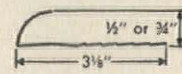
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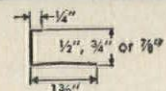
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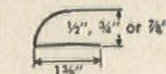
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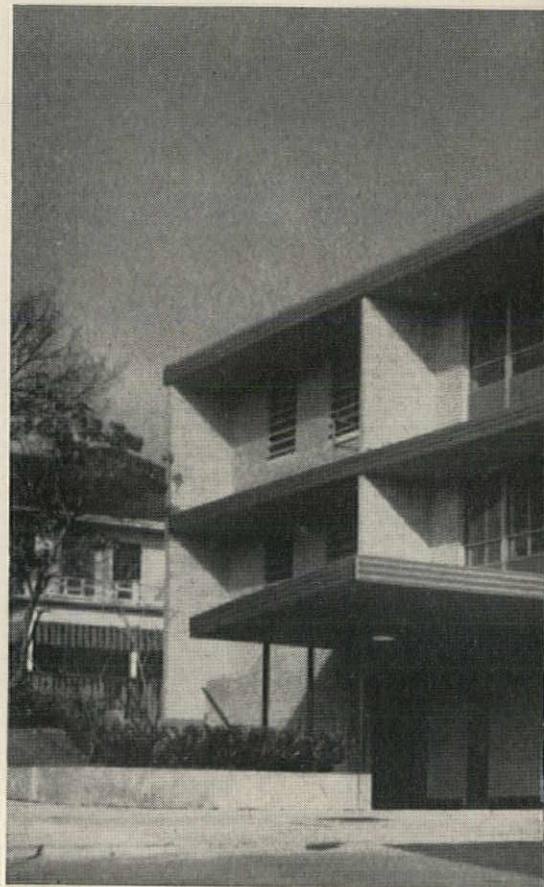
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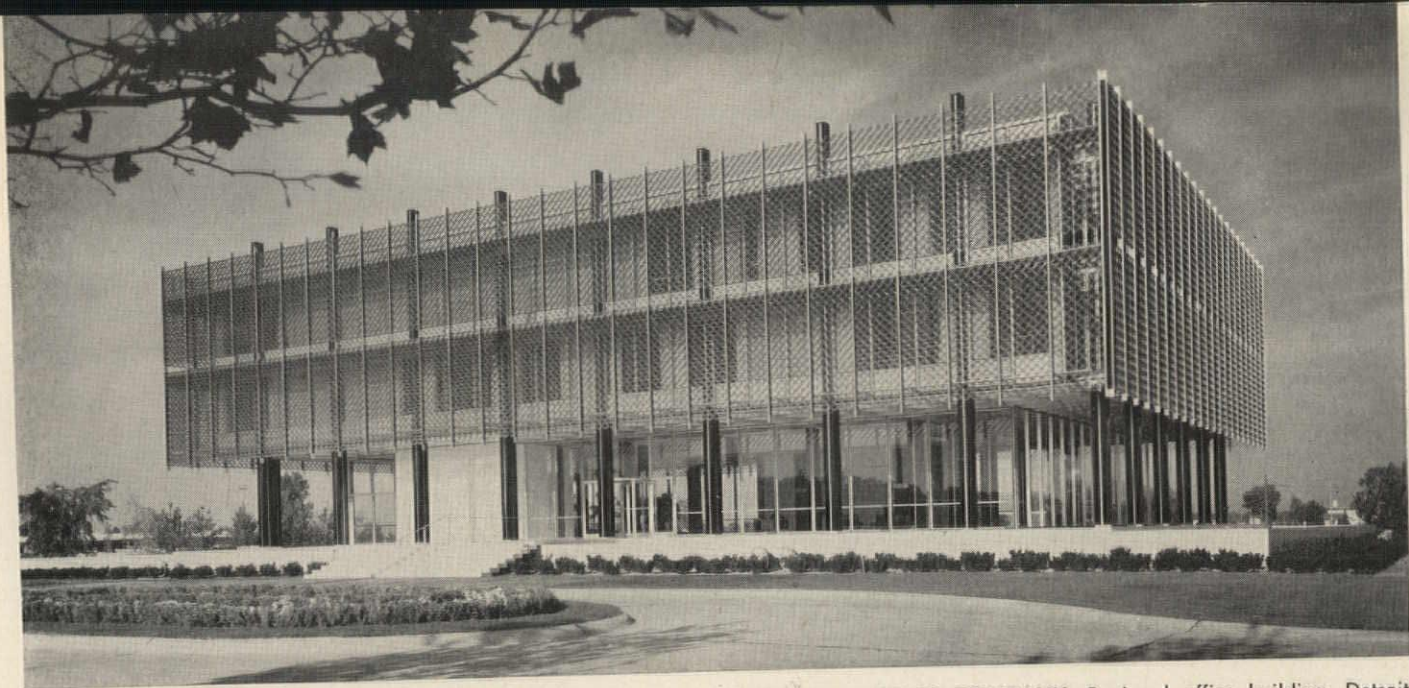
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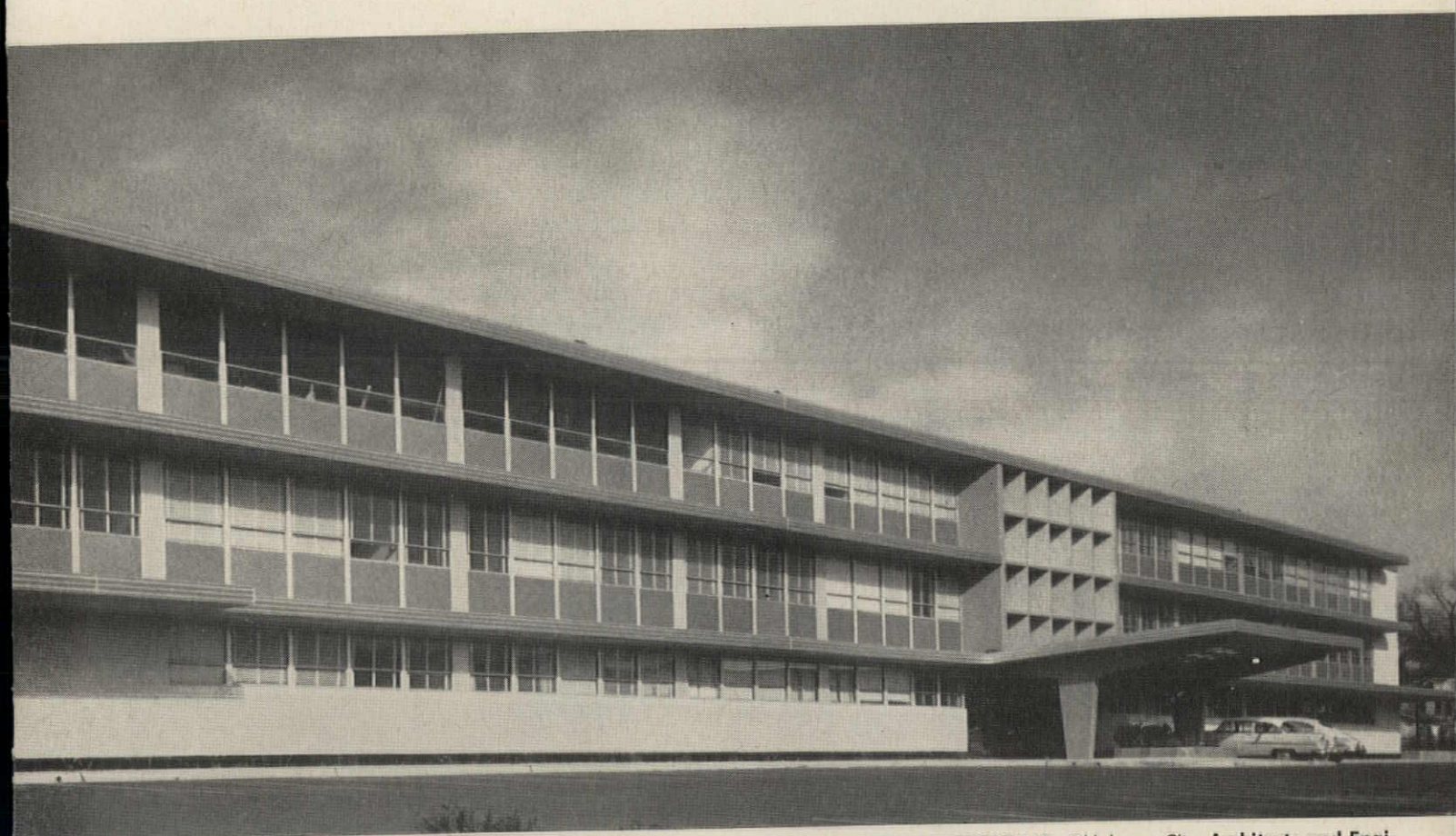
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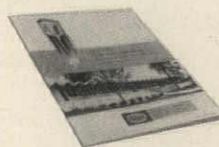


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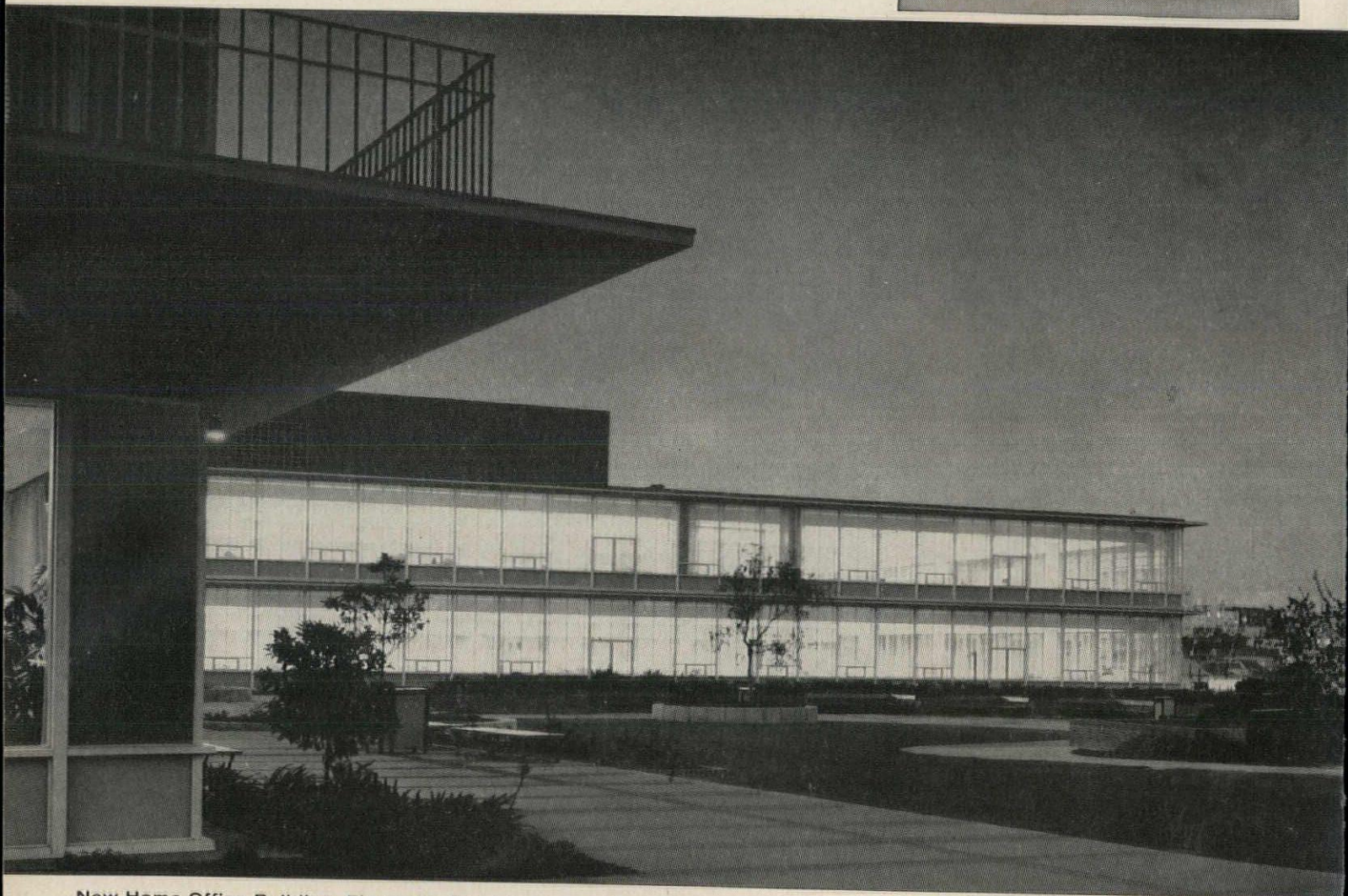
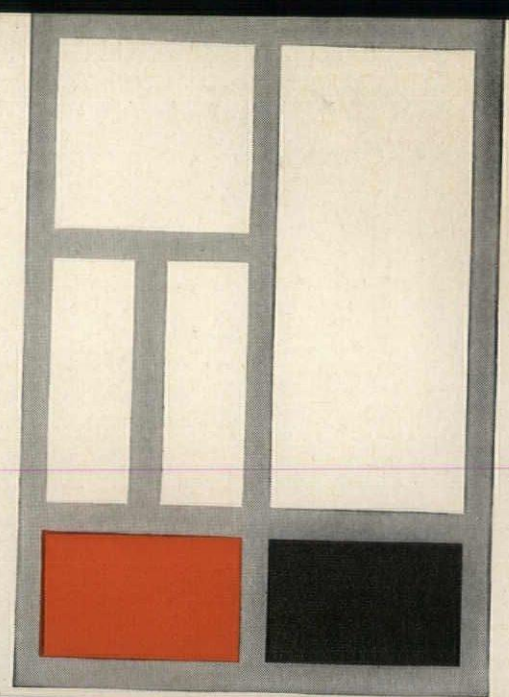
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La Tourette, Dominican Priory, Eveux - Sur - Arbresle, France. Le Corbusier, architect. Photo by Marc Neuhof.

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Coming in the Record

LOGIC AND ART IN PRECAST CONCRETE

This was the title of the RECORD's first article (September 1959) on Louis Kahn's Medical Research Laboratory for the University of Pennsylvania, and the completed building (to be occupied in the fall) is eloquent testimony to the architectural success of the combination. The forthcoming article will report on an architectural achievement.

DESIGNING SCHOOLS FOR TV TEACHING

The new possibilities and the new problems offered by TV as a teaching tool will be considered in next month's Building Types Study on Schools. Leading off will be an article summarizing design data developed for a comprehensive new study just published by the Ford Foundation's Educational Facilities Laboratories; a major feature will offer the first comprehensive presentation of the recently completed Boonsboro, Md., High School, third of John McLeod's schools designed for TV teaching. Also in the study: a group of new schools considered especially for the impact of various kinds of equipment on design.

EXPANDING SERVICE TO CLIENTS

Another in the RECORD's series on the Image of the Architect IN PRACTICE will describe the organization which has been developed by one large architect-engineer firm, Smith, Hinchman and Grylls of Detroit, to increase the scope and effectiveness of their service to clients. There will be special interest in their approach to phasing of services (unusual in its emphasis on the early stages) and their organization of engineering aspects.

OTHER F. W. DODGE SERVICES: Dodge Reports—Dodge Construction Statistics—Sweet's Catalog Services—Dodge Books—Dodge Mailing Service—The Modern Hospital—The Nation's Schools—College and University Business—Hospital Purchasing File—Chicago Construction News—Daily Pacific Builder (San Francisco)—The Daily Journal (Denver)—Real Estate Record & Builders Guide—Dow Building Cost Calculator.

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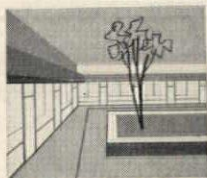
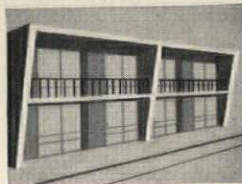
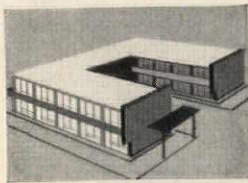
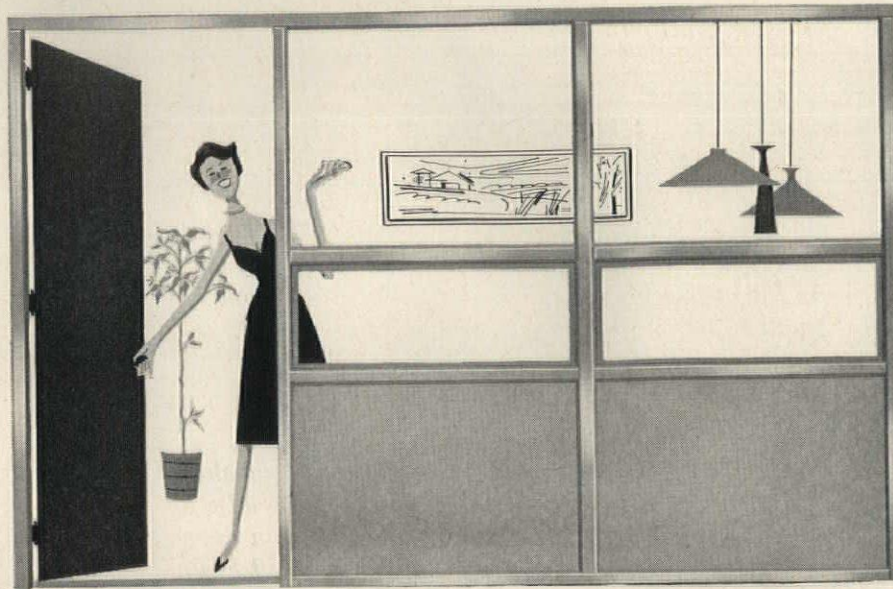
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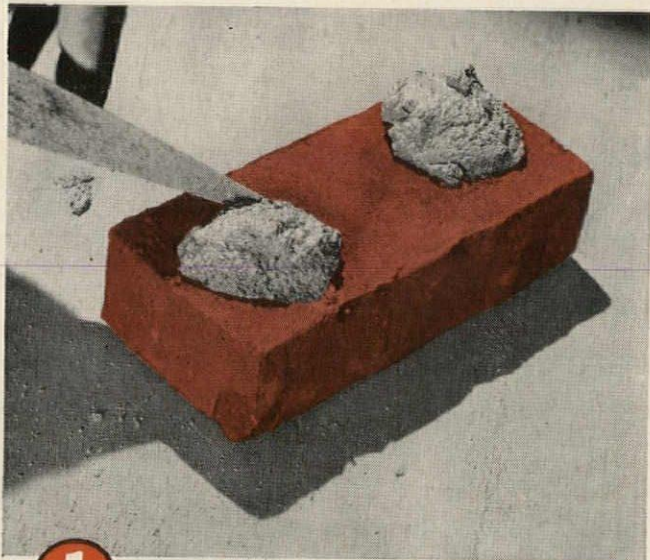
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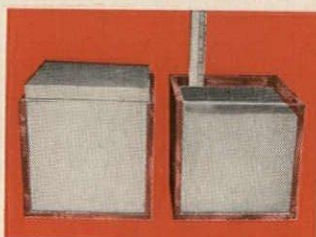
It is this combination of advantages that makes Brixment superior to any mixture of portland cement and lime—and which also accounts for the fact that Brixment has been the leading masonry cement for over 40 years.

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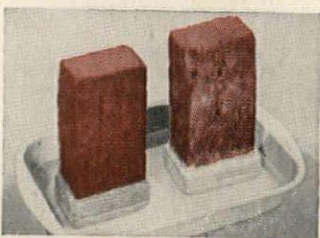
YIELD



BOND



STRENGTH



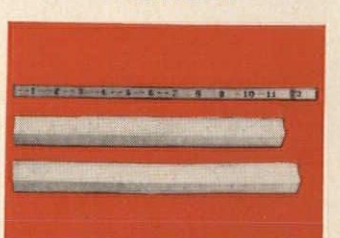
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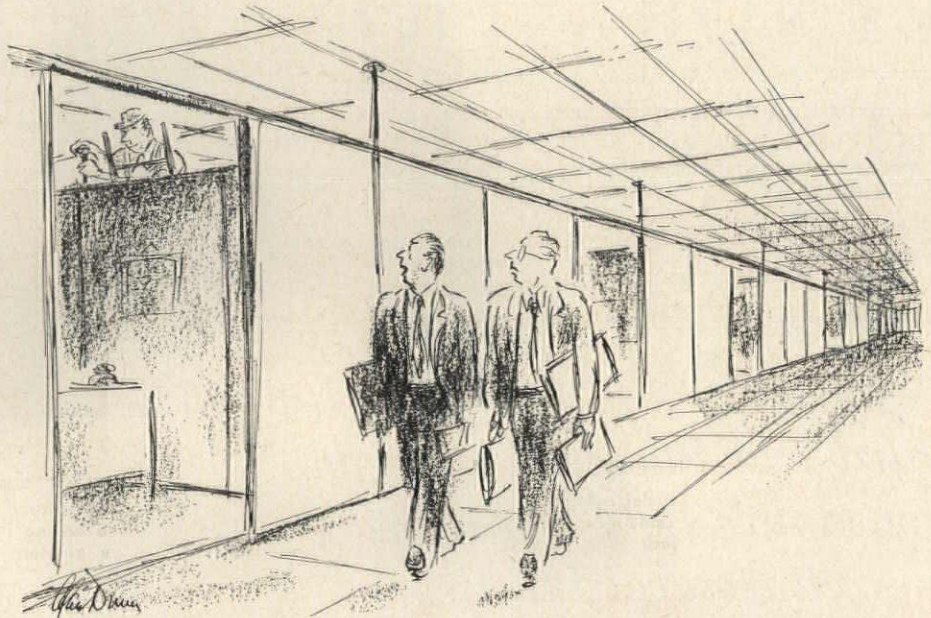
IMPERMEABILITY



DURABILITY



SOUNDNESS



—Drawn for the RECORD by Alan Dunn

“They’re widening his office by one modular unit—I think it’s a promotion—”

On the Future of Design

All the various fields of design must communicate with each other, Architect Robert A. Alexander of Los Angeles told graduates of the Rhode Island School of Design in a Commencement address last month. “In the world of your future we cannot afford isolationist art. We in the design professions must furnish the senses of the people. We must have the eyes that see, the ears that hear, the nose that smells, the mind that dreams of what could be, not what is. Ours is the training and the responsibility to imagine what is not there, but what could be. Ours is the obligation to change the goals of the people, picturing more desirable goals—things worth living for. This is no job for one man, nor for one profession, nor for weaklings. It will take the concerted efforts of everyone trained in design. . . . I think of the architect as concerned with the total environment of man. In my view he can and must become the ecologist of man’s surroundings, and since this task is so complex, requiring so many diverse talents, it requires a creative coordinator to fit the pieces together. The architect, as I see it, is trained for this particular task. I hereby invite every one of you to join with us, whatever instrument you play, in creating the greatest

symphony of form and color and sound and texture and sweet, clean smells and movement in which man has ever dwelt.”

“Why Can’t Americans Win?”

Like the jury for the award, an article in a recent issue of *Reynolds Review*, employe publication of the Reynolds Metals Company, blames “archaic building codes” for the failure of a U.S. entry to be selected for any of the first four annual R. S. Reynolds Memorial Awards (May 1960, pages 10-14) for “significant and creative use of aluminum.” The article reports on a recent spot check of various cities on the question “Do building codes in this city prohibit or inhibit use of aluminum?” Not surprisingly, the survey showed that “the various codes are inconsistent with each other in their treatment of aluminum and other new building materials” and also “inconsistent with themselves.” The same issue of *Reynolds Review* offers a “Program for Tackling Code Problem” by Albert M. Cole, former Administrator of the Housing and Home Finance Agency and now executive vice president of the Reynolds Aluminum Service Corporation of Virginia. Mr. Cole suggests a four-point program: “1. Before undertaking further ac-

tivities, we must be sure we understand the political, legal, social and economic base upon which the codes rest. Lack of understanding has been the rule, rather than the exception. 2. A program of nationwide activity should be sponsored to put power behind the natural interest of the consumer. A recent meeting in Washington, under the sponsorship of the American Institute of Architects, the National Association of Home Builders and the National Society of Professional Engineers, presented a practical and intelligent approach. We tend to underestimate the consumer’s potential contribution. Too often we try to get him on ‘our team.’ More often industry should get on ‘his team.’ 3. The consumer approach should be supplemented by effective coordination of industry, public interest, the building code organizations and government agencies, Federal, state and local. 4. A simple goal should be selected. This goal can be the adoption by each locality of one of four model building codes now available.”

What We All Need

The title of one H. G. Worley, at the Winston-Salem works of Western Electric Company, is “Engineer, Results.”

VINDICATION OF A VISION...



Third-Year Success Report on Monsanto's Bold Experiment in Architectural Plastics:

Monsanto's Inorganic Chemicals Division Research Center in suburban St. Louis, conceived as an expression of confidence in the plastics industry, is itself a *research project*. The sleek 3-story, 72,000-sq. ft. structure embodies over 80 different decorative and utilitarian uses of architectural plastics...with many first-time applications, and altogether more than any other building.

CONSTRUCTION COST

...despite the use of many *prototype* structures... was not much greater than with conventional materials of comparable quality. Savings in routine maintenance have offset much of this cost differential...interior-design flexibility is a definite bonus... and predictable gains in durability further underscore economy.

SCOREBOARD

Of the newer uses, thoroughly evaluated from conception to date by consultant architects and Monsanto architects, engineers, chemists, and cost analysts, 43 are complete successes, 10 revealed minor flaws (all easily corrected), and only 6 proved to be inappropriate applications. Especially successful are the extensive uses of versatile polyester plastics.

REMARKABLE ADVANCES IN POLYESTER PLASTICS TECHNOLOGY

now provide sturdy, colorful, dollar-stretching structures for a multitude of imaginative func-

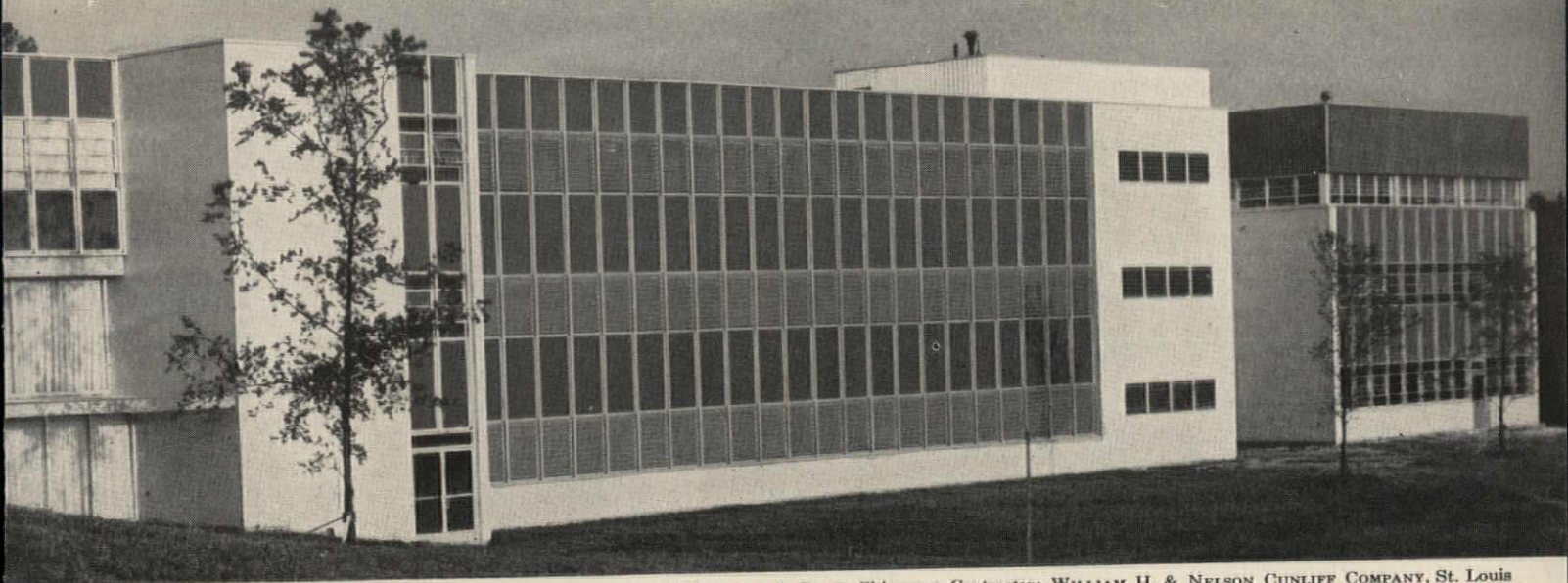
tional uses... all "climate-proof" and virtually *maintenance-free*. And, while the average price of structural polyesters has *dropped 25%* since 1954, prices of conventional construction materials have *increased 10 to 30%*. During this period, annual use of polyesters in architecture has jumped from 5 to 36 million pounds.

General Properties of Reinforced Polyesters

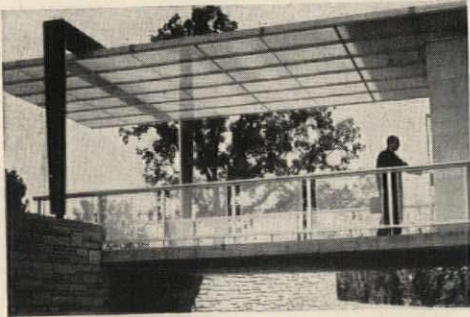
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- Limitless colors, textures, patterns

FOR FURTHER INFORMATION

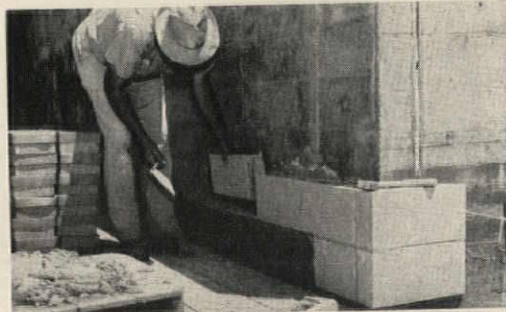
May we arrange to show you our film, "Architectural Uses of Plastics" (16-mm, color, sound), featuring the concept, design, and construction of this Research Center? Would you like a copy of our illustrated booklet "A Forward-Looking Laboratory"... lists of reinforced-plastics processors and fabricators... complete answers to specific performance evaluation of architectural polyester applications? Just write on your letterhead to: *Monsanto Chemical Company, Organic Chemicals Division, Dept. 2735-A, St. Louis 66, Missouri.*



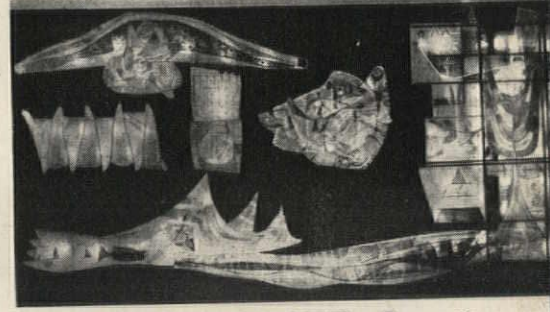
Architect: HOLABIRD & ROOT, Chicago • Contractor: WILLIAM H. & NELSON CUNLIFF COMPANY, St. Louis



STURDY AND STREAMLINED. Laminated-polyester entrance-canopy support has done its job perfectly... with no observable distortion, deflection, or discoloration.



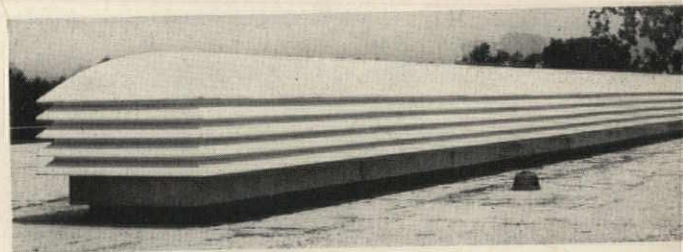
BEAUTIFUL BARGAIN. Polyester-faced concrete blocks, used extensively indoors and out, have retained their ceramic-like finish without trace of deterioration. For exterior use, a clear acrylic lacquer prevents yellowing.



UTILITARIAN BEAUTY. Decorative lobby screen of stained glass embedded in polyester... a strikingly beautiful wedding of medieval art and modern technology. (Artist: Robert Harmon, Arcadia, Mo.)



PANEL PANOPLY. The performance of the reinforced-polyester/styrene-foam "sandwich" panels, covering more than 50% of the exterior surface, has been outstanding. Reveal no weather erosion, no dimensional change. They're amazingly strong, yet featherweight for rapid installation. (Only 3 lbs. per sq. ft. versus 12 for metal-sheathed type... with the insulating effectiveness of a 16-inch brick wall.) The hundreds of interior polyester panels are still like new, too. The easily movable partitions simplify space problems. And what an attractive way to diffuse restful, glareless light!



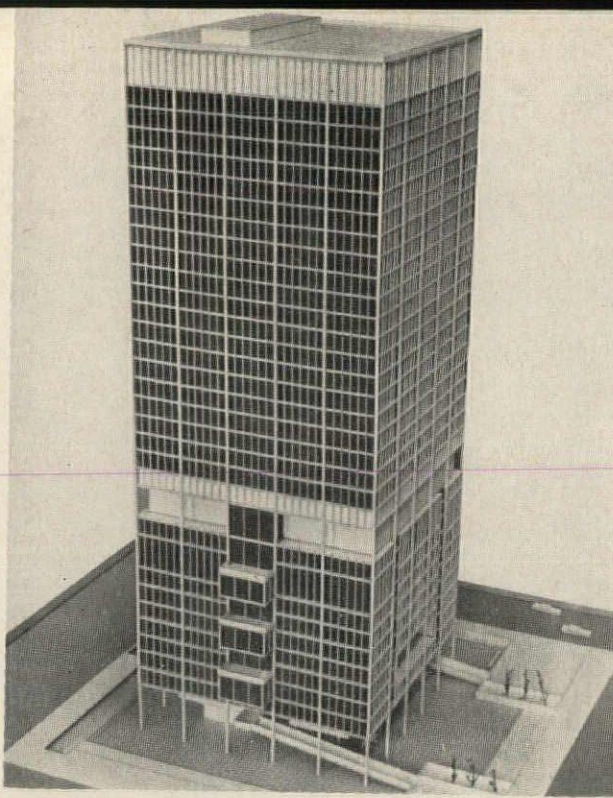
LOOK, NO "PENTHOUSE." Costly fabricating, such as welding and riveting, was eliminated by use of reinforced polyester for this 100-foot-long ventilating-system housing. Shows no weathering or discoloration after 3 years' constant exposure. It shelters a battery of 27 molded-polyester exhaust fans (each delivering 1050 cfm). All polyester parts are in excellent condition... require no maintenance despite corrosive fumes from 40 laboratories.



Monsanto supplies a wide variety of quality raw materials (such as fumaric and adipic acids and maleic and phthalic anhydrides) that are essential to the manufacture of architectural plastics... but we do not process or fabricate plastic products.

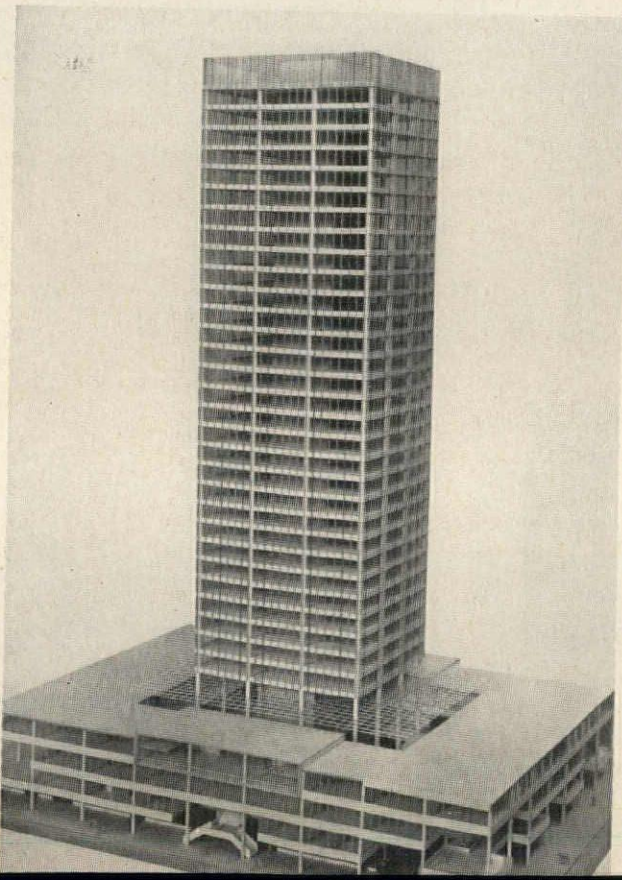
WHERE CREATIVE CHEMISTRY WORKS WONDERS FOR YOU

The City School:



Above: Commercial High School with Office Building; design team—Bakanowsky, Martin, Ticknor and Sobin. School occupies tower up to the clearly marked two-story division, which contains auditorium; carefully researched elevator system calls for facilities shared by students and office workers, with a skip-stop arrangement for school floors; building includes space for underground parking

Below: Commercial High School with Office Building; design team—Beyer, Winstersteen, Shaw and Chermayeff. School is housed in four floors of tower base; the building is designed in view of the possibility that school might eventually be abandoned, in which case lower floors can become shopping center by removal of school partitions, the use of below-grade parking space for storage, and the retention of the school's auditorium as a theater



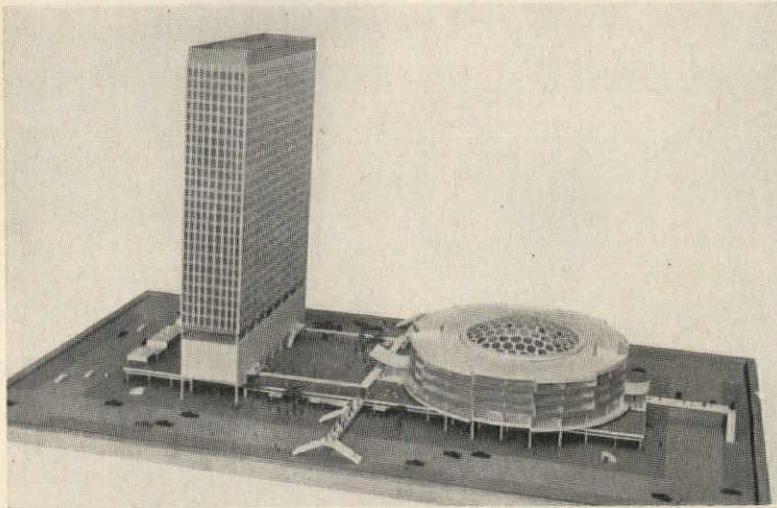
Since the end of the war, school design has progressed rapidly in the suburbs, while both building and theory has lagged in the cities. Not only urban education, but the cities themselves have suffered as a consequence of the move to the suburbs—a move prompted partly by a search for better public schools. Such is the situation described in a study undertaken by Harvard University's Graduate School of Design, aided by Ford Foundation's Educational Facilities Laboratories, Inc., to define the problem and to suggest some possibilities of solution.

The problem, as Harvard sees it, lies mostly in the scarcity of suitable urban sites, and in the high cost of land. The program given to the six teams of students who designed these projects indicated the possibility of defraying some costs of school building by the utilization of air rights, by sharing property with income producing facilities, by using land over expressways, or by any other means the teams might devise.

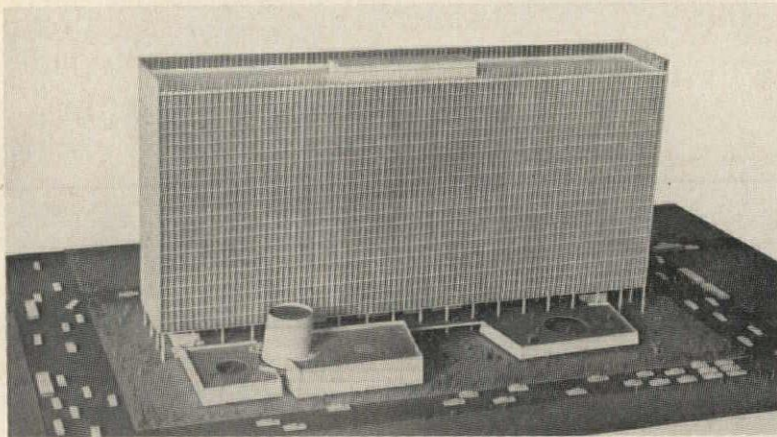
Following the completion of the student projects, Harvard and E.F.L. held a conference of practicing architects and educators in Cambridge on April 28 and 29. Prof. Walter Bogner was in charge both of the student project and the conference. The invited participants discussed the implications of the student designs and in general "The School in the Urban Environment."

Speakers and panel members included Dean Jose Luis Sert, Professor Bogner, Prof. Charles Eliot, all of the Graduate School of Design; Prof. Charles Haar, of Harvard Law School; Prof. Cyril Sargent, Harvard School of Education; Harold B. Gores, President, E.F.L.; British architect and planner Percy Johnson-Marshall; Edward Logue, Development Administrator of New Haven, Conn.; Herbert Landry, director of a study of school building types for New York City's Board of Education; Archibald Shaw, editor of *Overview*; educational consultant Stanton Leggett; and architects John C. Harkness, William Brubaker, William Caudill, Arthur Davis, John McLeod, John Lyon Reid, Stanley Sharp, Sumner Gruzen and Herbert Swinburne.

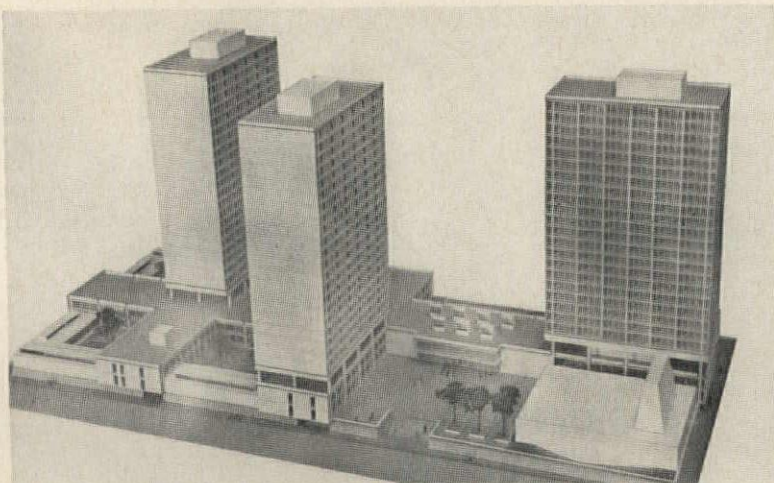
Students and Professionals Examine Some Possibilities



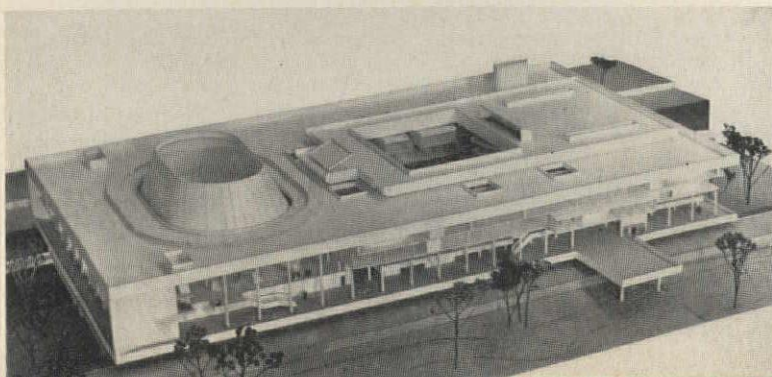
Left: Commercial High School with Stores and Office Building; design team—Broadhead, Lew, Shenefield and Hollander. Circular building contains laboratories, lecture rooms and gymnasium, with the auditorium located in windowless floors of tower; platform between the buildings provides outdoor athletic facilities; retail shops and the entrance to offices are at street level



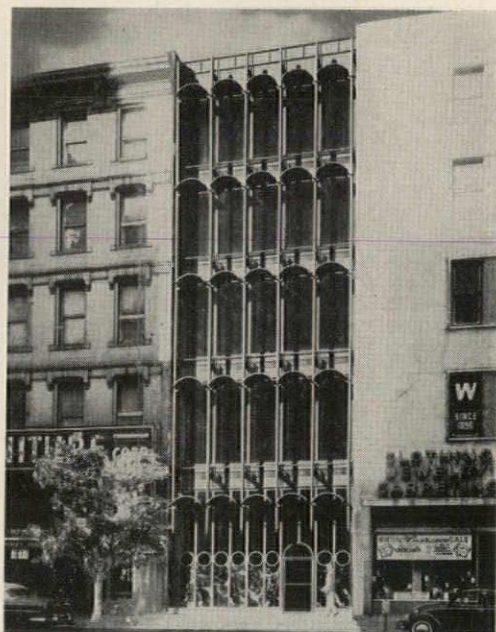
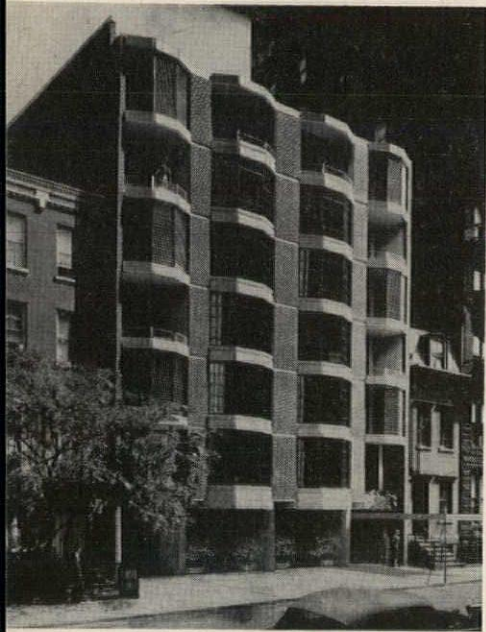
Left: Commercial High School with Office Building; design team—Bolgil, Kashian, Reynolds and Coletti. Classrooms are located in the first two floors of the office tower, while other school facilities—auditorium, cafeteria, and special classrooms—are located in two-story platform which extends under and beyond the building; two floors of underground parking are provided



Left: Comprehensive High School with Apartment Buildings; design team—Joslin, Chafee, Lincoln and Law. School facilities, including small academic college, use the two levels of the base, as well as space, for shops, on the lower parking level; a number of open courts creates a compact campus plan; apartment blocks contain one- and two-bedroom apartments and efficiency units



Left: Comprehensive High School over Expressway; design team—Christie, Loverud, Sobel and Drake. By utilizing space theoretically unusable, and already tax-supported, the design of this school relieves other urban sites for more productive building, and relieves the school from the necessity of sharing its facilities; a first-floor parking level acts as a sound buffer



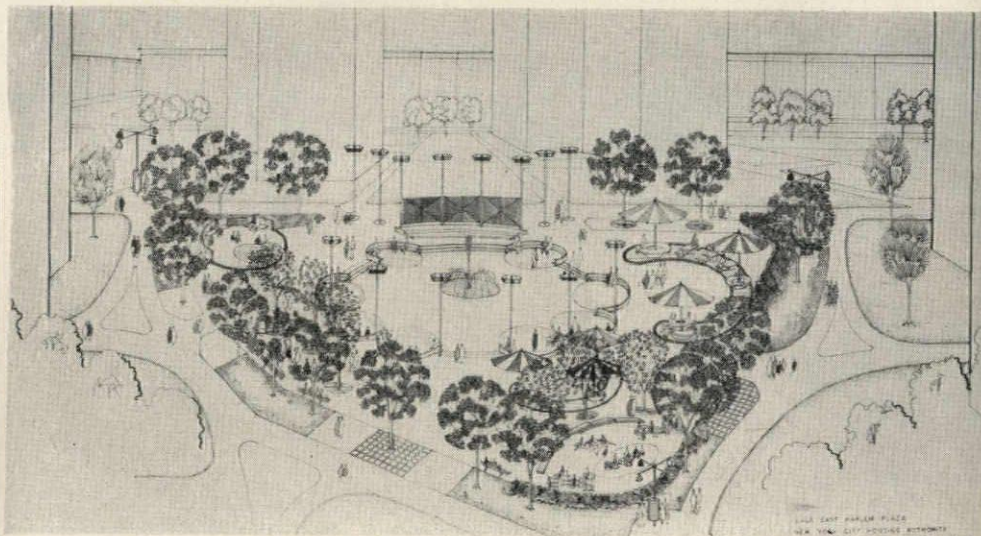
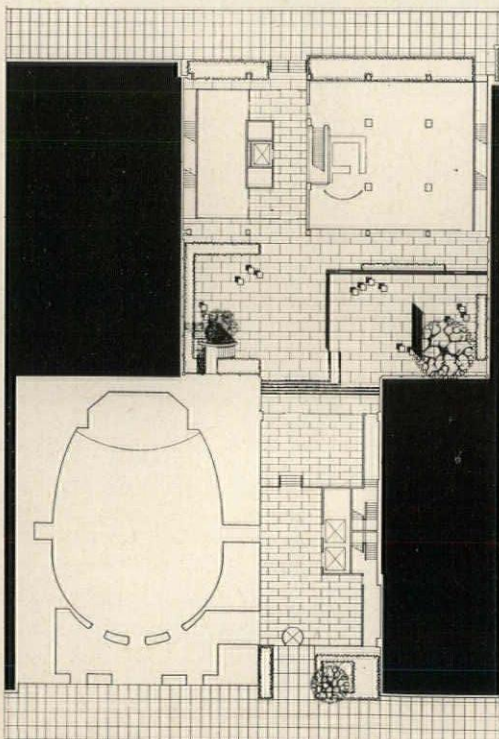
The Architect, The City, And the Nature Of Function

To indicate ways in which architects can participate in the design of the whole city—from large multi-building projects through small buildings in crowded neighborhoods—the New York firm Mayer, Whittlesey & Glass recently assembled an exhibition, "Elements of a City," on view this spring at Pratt Institute.

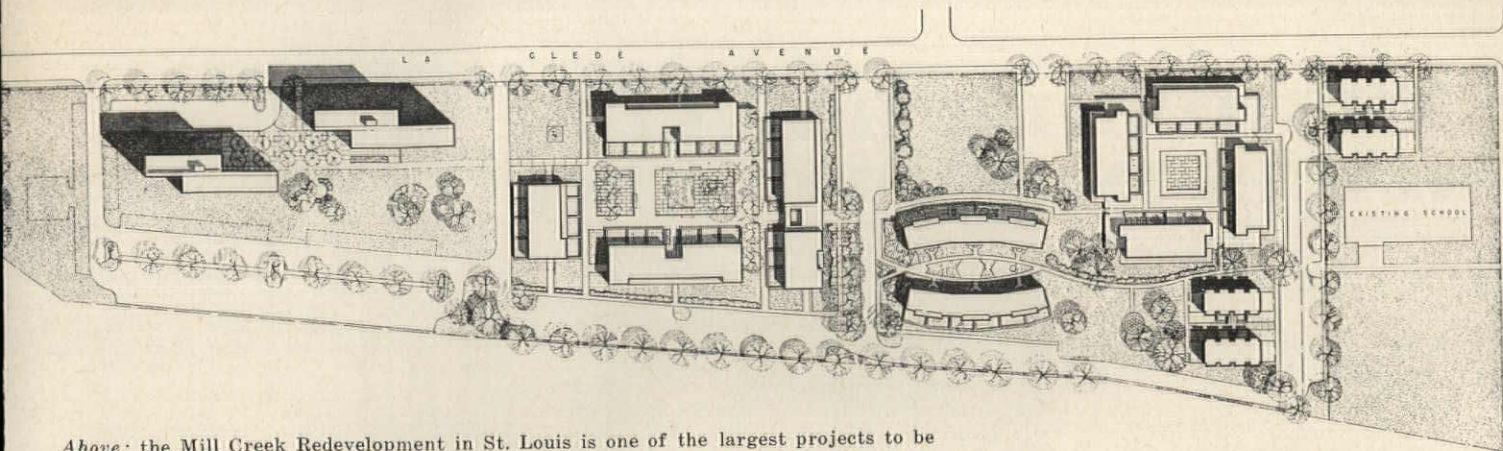
In its introduction to the exhibit, the firm observed that functionalism has many facets: "The first function of every urban building is to play a constructive role in the city. The external function—the needs of the urban environment—plays a more decisive role in determining form than does the internal function. An urban building cannot stand alone. It lives only in so far as its neighbors live."

The firm's efforts to practice what it preaches were illustrated by the projects shown on these pages.

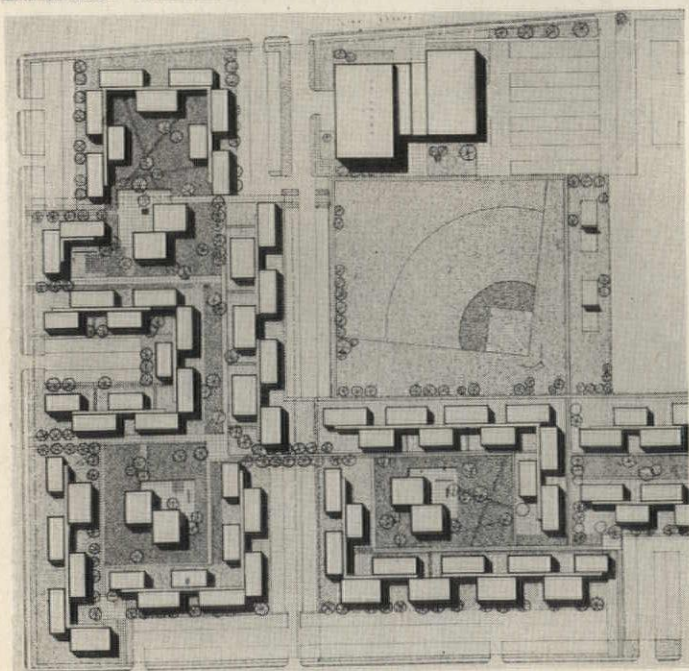
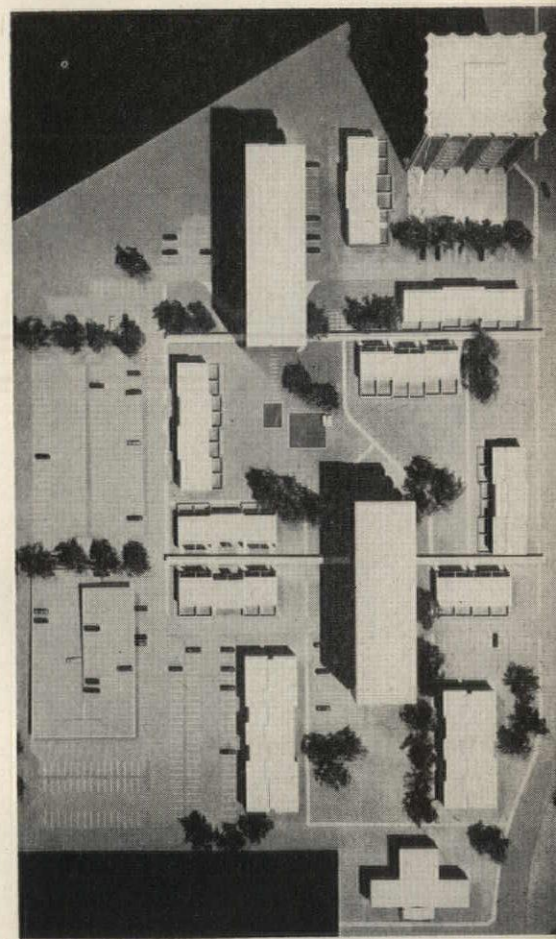
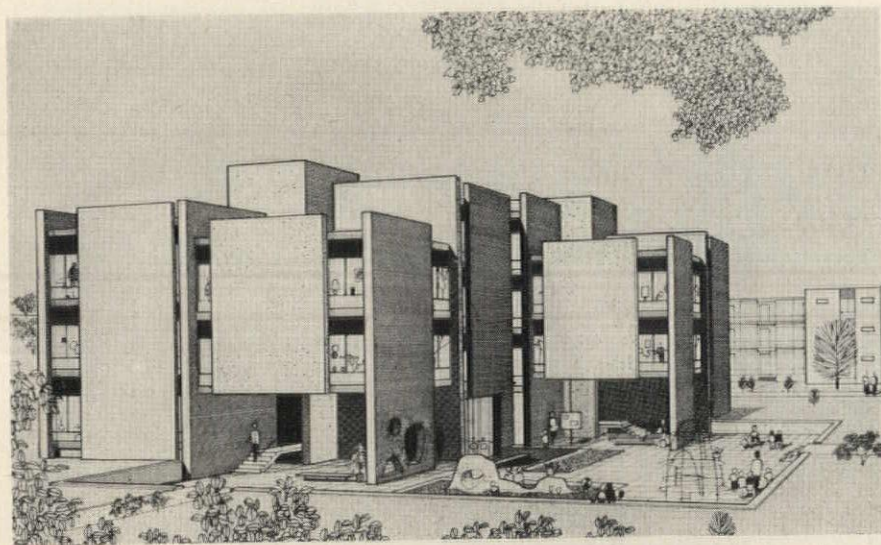
Above, left: much of the local quality of New York's Greenwich Village is imparted by bay windows, used by Mayer, Whittlesey & Glass for a two-part Village apartment house—six stories on one block, 12 stories on the lot backing this one. The ground floor is left free, and includes a walk connecting the two buildings, and leading through an enclosed garden with fountains, a paved piazza and mosaic pools. Construction will be completed about May of 1961. *Above, right:* New York's 14th Street is a generally run-down shopping street, plagued by haphazard remodeling and advertising. The Painting Industry Welfare Fund Building, now under construction across the street from one of 14th Street's old cast-iron-front loft buildings, will have a "double" curtain wall: the inner one of bronze and glass, the outer one of bronze mullions supporting catwalks (for cleaning purposes) and arched sunshades. Street floor will be faced with green marble, round insets of crimson glass



Left: space need not be large, nor even unenclosed, to invite the pedestrian. This piazza—paved, landscaped and provided with sculpture and seating—separates two new buildings, also designed by Mayer, Whittlesey & Glass, for New York's New School of Social Research. It is intended for the use both of the student and the visiting pedestrian. *Above:* believing that "the lawns that surround the typical isolated buildings of our cities' public housing projects are anti-urban and useless," the firm designed this paved plaza for the James Weldon Johnson Community Center, to serve a low-income housing project in upper Manhattan. Equipped with fountains, seats, chess tables, umbrellas, play equipment and street furniture, and intended to be used for concerts and dramatic events as well as for relaxation, it is hoped that the plaza will give a "sense of identity, social stability and responsibility" in the neighborhood



Above: the Mill Creek Redevelopment in St. Louis is one of the largest projects to be planned under Title One. In terms of urban design, the project is tied together by a walk which connects the high-rise housing at the west end, with shops on the ground floor, to the existing school at the east end. Along the way, the walk leads the pedestrian through a variety of residential squares. Construction is scheduled to begin this year, to be completed in 1962. Mayer, Whittlesey & Glass, coordinating architects; Leo A. Daly, and Schwarz and Van Hoefen, architects

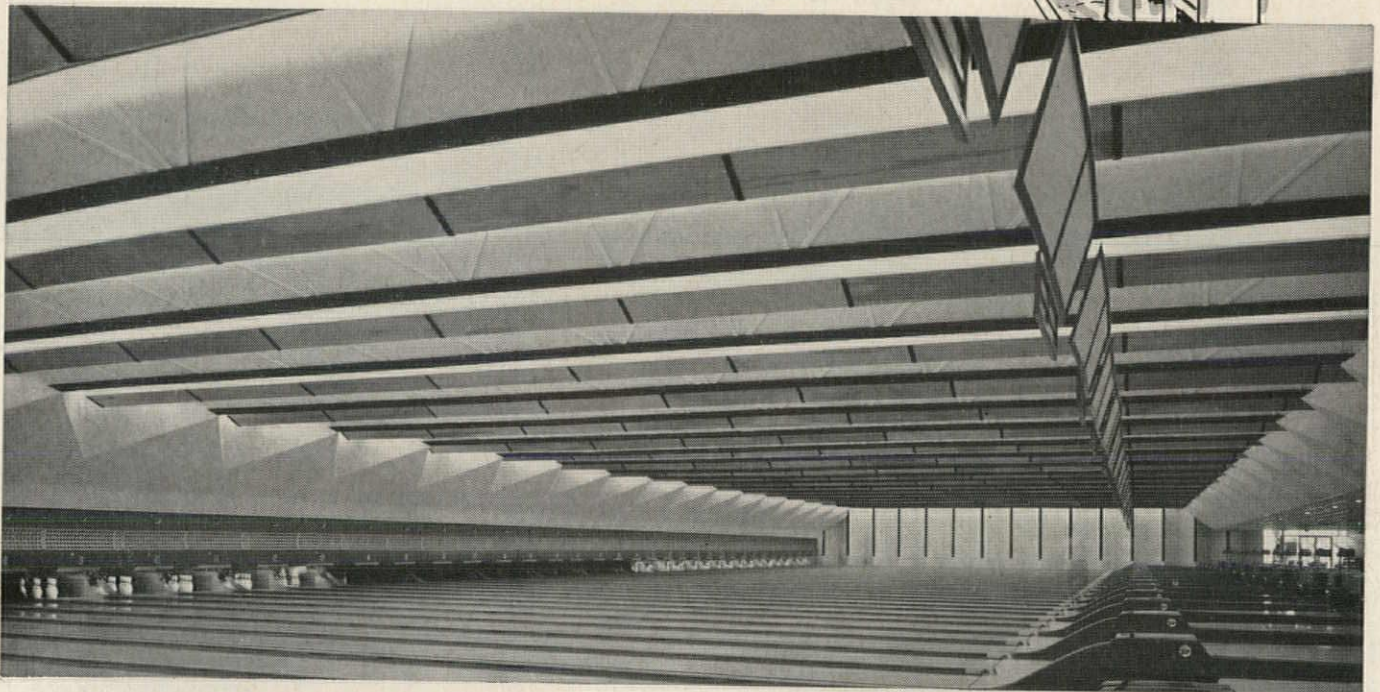


Left: a Title One project designed for the Midland Redevelopment Corporation of Cincinnati comprises two types of buildings for low-income rental: three-story Walkway apartments—walk-ups connected at all levels by walkways—and the Quadrilevel—a “sculptural” building eliminating corridors by giving access to apartments directly from stairways. Mayer, Whittlesey and Glass, and Pepinsky, Grau, Schrand & Shorr, architects. Above: another Title One project, for Brookline, Mass., exhibits firm’s belief that “the most lively and successful parts of cities are those that are not restricted to a single economic class or to a single function.” Project would include public walk-up housing, middle-income town houses and apartments, and a high-rent tower building. Neither of these projects will be built

NO WONDER BOWLING GAINS IN POPULARITY



*Fairlane Bowling Alley, Madison Heights, Mich.
Architects: Hawthorne & Schmiedeke, Detroit
Contractor: Thomas Built Homes, Detroit
Tectum Erector: Wolverine Roofing & Supply Co., Ann Arbor*



Architects have been quick to adapt dramatic new shapes for roof deck structures as typified by this folded plate design. These interesting new shapes offer functional values for this type of recreational building that could be achieved in no other way.

Tectum, in folded plate design, traps sound effectively by exposing maximum acoustical surface. Tectum also insulates, is easily cut to unique shapes, is firesafe and structurally one of the best. Its textured surface is light reflective and may be used painted or unpainted.

Tectum sidewall material adds to the acoustical control of the building and is used in a unique tilted pyramid form over the approach to the alleys and the pinsetting area. These interesting shapes were fabricated at the job site. Versatile Tectum permits the designer to apply all the elements of good sound control with identical materials of different thicknesses.

Tectum is now Fiberguard protected against water absorption — a better board for more applications at the same low price. Complete information on request.

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...an entrance that's sealed against wind and weather, heat and cold, odors and insects—*against everything but people!* It's that imaginative innovation in architectural engineering, the American Air Curtain.

A gentle curtain of air, thermostatically controlled, separates and insulates spaces with different temperatures, atmospheric pressures or humidities.

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AT LAST! A THROUGH-THE-WALL AIR CONDITIONER

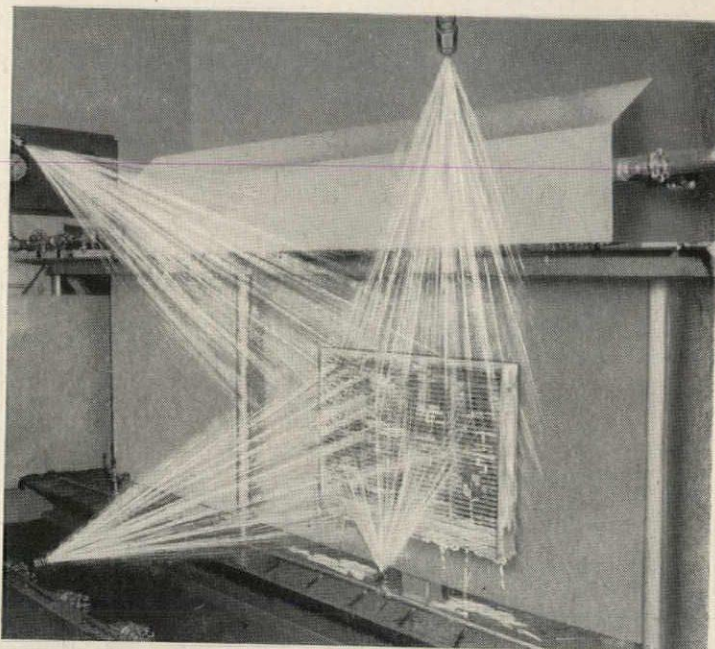
NEW WIND 'N WATER BARRIER SLEEVE DESIGNED TO OVERCOME WALL INSTALLATION PROBLEM

It takes more than good workmanship to install equipment that must be open to the weather on one side...and to living areas on the other, in the wall of a building. Wind and rain and all the unforeseen extremes of weather that will occur during the lifetime of a building, will circumvent the most painstaking installation procedures. Real protection from wind and water can be achieved only in the basic engineering design of the equipment itself. That's where you'll find it in the new WIND 'N WATER BARRIER sleeve which Fedders has just perfected for its through-the-wall air conditioners.

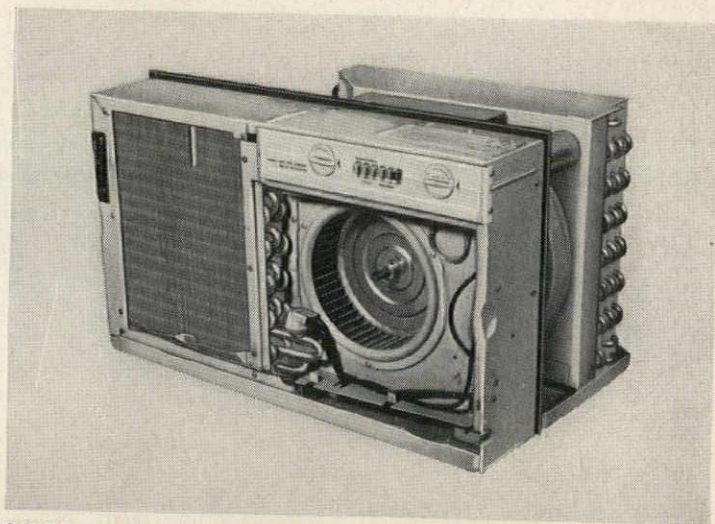
PROTECTION AGAINST WATER: Perfect side-to-side and front-to-back leveling of the air conditioner chassis, which is so necessary for proper drainage of condensate and infiltrated rain, is assured by two chassis levelers built into the new sleeve. In addition to the sump and water disposal systems in the chassis base pan, the new sleeve incorporates its own overflow drainage system—a wall-to-wall water barrier that leads overflow water through cleanable drainage channels to the outdoors. Under Fedders' brutal Wind 'N Water test (see illustration), this newly engineered system disposed of every drop of water. Even water introduced into the indoor grille to simulate extreme humidity conditions, was completely expelled.

PROTECTION AGAINST WIND: Three flexible rubber gaskets, built into Fedders' Wall-Fit chassis as an integral part, hug the sides and top of the sleeve. A similar gasket on the bottom of the sleeve seals out wind on the fourth side. Metal seals on the decorative indoor grille provide additional protection from drafts. Even the small amount of wind that can infiltrate through the drainage outlet holes is diverted and rendered harmless through widely spaced ports. Temporary front and rear sealer plates are provided as standard equipment to prevent drafts before the chassis is installed.

When you specify Fedders Wall-Fit Air Conditioners, this step-by-step engineering solution to through-the-wall installation problems ends water damage and wind leakage in your new building.



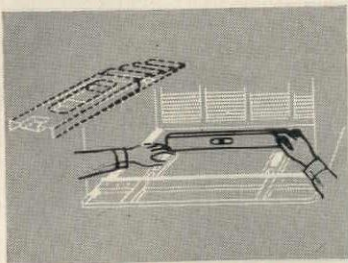
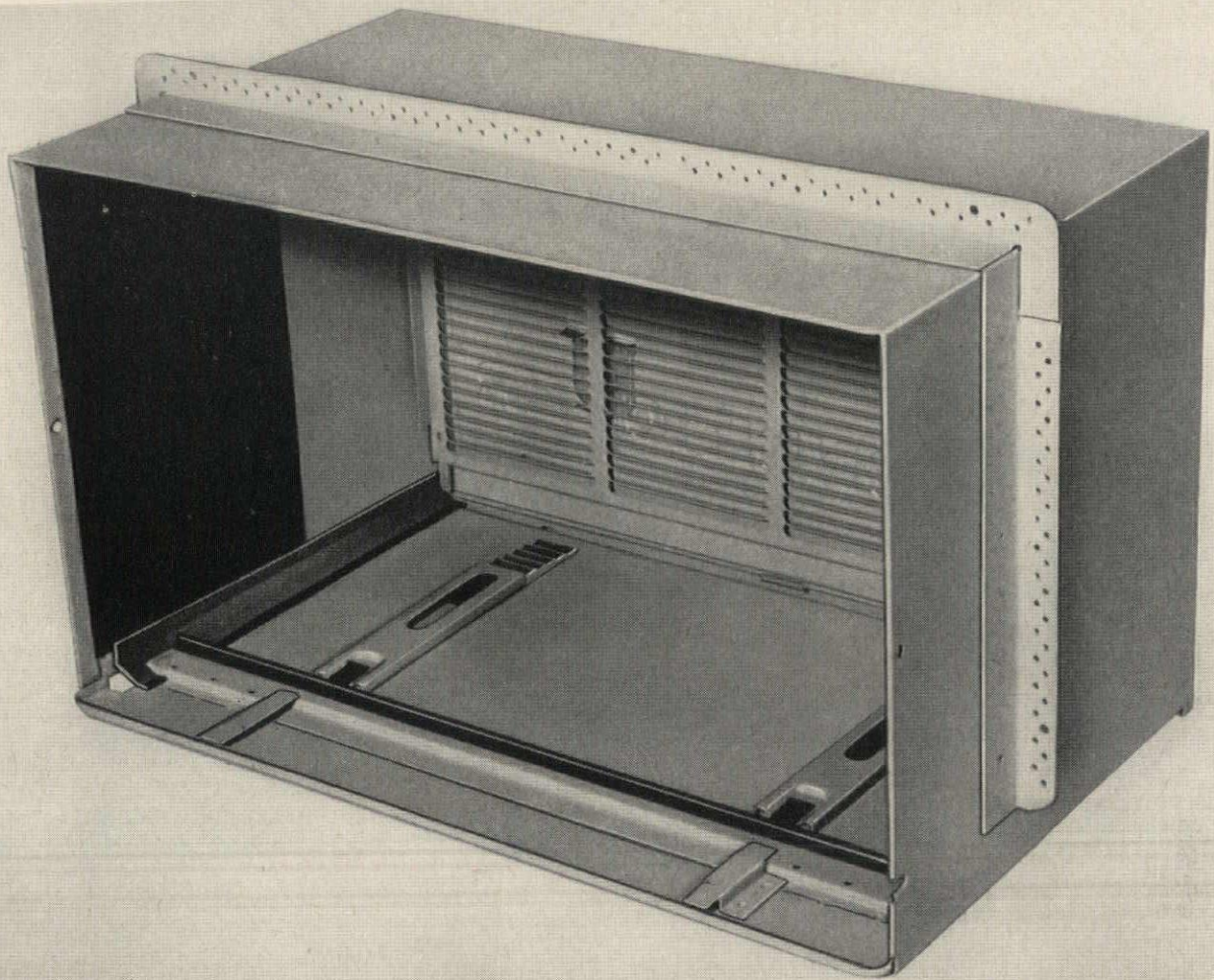
AMAZING WIND 'N WATER TEST: In a special test chamber, the equivalent of 15 inches of rain was driven from all directions against the outdoor louvers of the Wall-Fit sleeve...with gale force of 50-mile winds. Hour after hour, the brutal test went on. Results—no moisture leakage indoors or into walls.



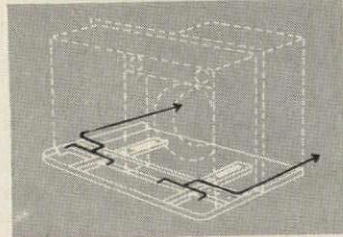
MODELS FOR EVERY REQUIREMENT: To meet the special requirement for efficient through-the-wall air conditioning which makeshift window air conditioners cannot cope with, Fedders builds 20 different Wall-Fit Air Conditioner models that heat as well as cool...models for every size room...for every type of current...for every wall thickness.

FEDDERS WALL-FIT AIR

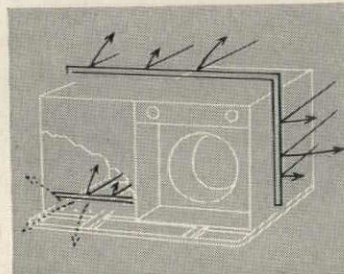
SPECIALLY ENGINEERED TO KEEP OUT THE WEATHER!



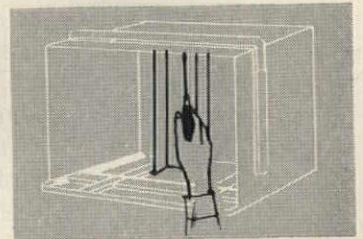
EXCLUSIVE CHASSIS LEVELERS: For perfect chassis alignment necessary for good drainage, two built-in leveling devices in the sleeve permit adjustment side-to-side and front-to-back in increments of .06 inch.



OVERFLOW DRAINAGE PROTECTION: Overflow from chassis drainage system moves through special channels to well at bottom rear of outdoor louvre. Overflow condensate is trapped inside leading edge of sleeve which extends beyond chassis underneath the decorative front grille.



TRIPLE WIND BARRIER: Gasketing on chassis and bottom of sleeve, seals off drafts on all four sides. Wind infiltrating through drainage holes is diverted and dispersed through separate ports.



FOUR SQUARE STRUT: Heavy metal structural member supports top of sleeve at point of greatest stress during construction. Removable in minutes before installation of the chassis, it assures tight but smooth fit. Eliminates possibility of leakage through warped sleeves.

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FEDDERS CORPORATION DEPT. AR-7, MASPETH 78, NEW YORK

Please send full details on Fedders Wall-Fit Air Conditioners, including architect's specifications; Have representative call

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Consulting Engineers Consider Varied Practice Problems

Delegates from 31 state and regional associations of the Consulting Engineers Council gathered in Gearhart, Ore., in May for the fourth annual meeting of the C.E.C. Board of Directors. The variety of matters discussed, all relating closely to the common practice problems of consulting engineers, was testimony to the active program developed by the Council in its brief existence.

Besides electing officers (see cut) and adopting bylaws and budget, directors received, discussed and approved four new C.E.C. "Engineer-Architect" and "Principal Engineer-Associate Engineer" forms of contract. (Already available to C.E.C. members are recommended forms of contract for use in owner-engineer and architect-engineer agreements.)

C.E.C. Treasurer Lester L. Bosch of Cincinnati presented the first draft of a proposed C.E.C. indexing system for manufacturers' catalogs and technical literature.

Copies of the just-published "You and Public Relations," a guide to individual consulting firms' public relations programs, were distributed; and the Pacific National Advertising Agency of Portland, Ore., was retained to expand the C.E.C. public relations program.

Also distributed at the meeting were first copies of the C.E.C. "Manual of Practice for Consulting Engineers." Object of the Manual is to assemble in one volume—for engineering students, manufacturers and clients as well as practicing consultants—"the general mechanics and recommended principles of performance that should be used as a guide in the conduct of a successful consulting engineering practice." The nature and extend of consulting services are discussed along with criteria for engineering perform-

ance. Handling of bids, free engineering, kickbacks, "moonlighters," and the problems of engineer-constructors, are covered in detail. The manual includes a section of organization and operation of a consulting practice.

Other matters included in a crowded agenda were professional liability insurance, accounting systems for consulting offices, opposition to public encroachment on private engineering, package deal and turnkey operators, legislation affecting consultants, registration, consultants' responsibilities in disasters and inter-professional practice.

A.I.A. Elects Woodbridge To Succeed LaFarge

Frederick J. Woodbridge, of the New York architectural firm of Adams and Woodbridge, has been elected president of the New York Chapter of the American Institute of Architects. Mr. Woodbridge succeeds L. Bancel LaFarge, of LaFarge, Knox and Murphy, who has been president for the last two years. Other new officers: David L. Eggers, of Eggers and Higgins, vice president; Peter S. Van Bleom, of Voorhees Walker Smith Smith & Haines, secretary; and Michael M. Harris, of Harrison & Abramovitz, treasurer.

Ryner Succeeds Lamb as C.S.I. Executive Secretary

Ronald S. Ryner has been appointed executive secretary of the Construction Specifications Institute, succeeding George Lamb of California, who has resigned to enter private practice. Mr. Ryner, formerly director of Region 5 of the Structural Clay Products Institute, will assume his new duties July 1 in Washington, where C.S.I. headquarters are located in 632 Dupont Circle Building.



Frederick J. Woodbridge, N. Y. Chapter, A.I.A.'s newly elected president

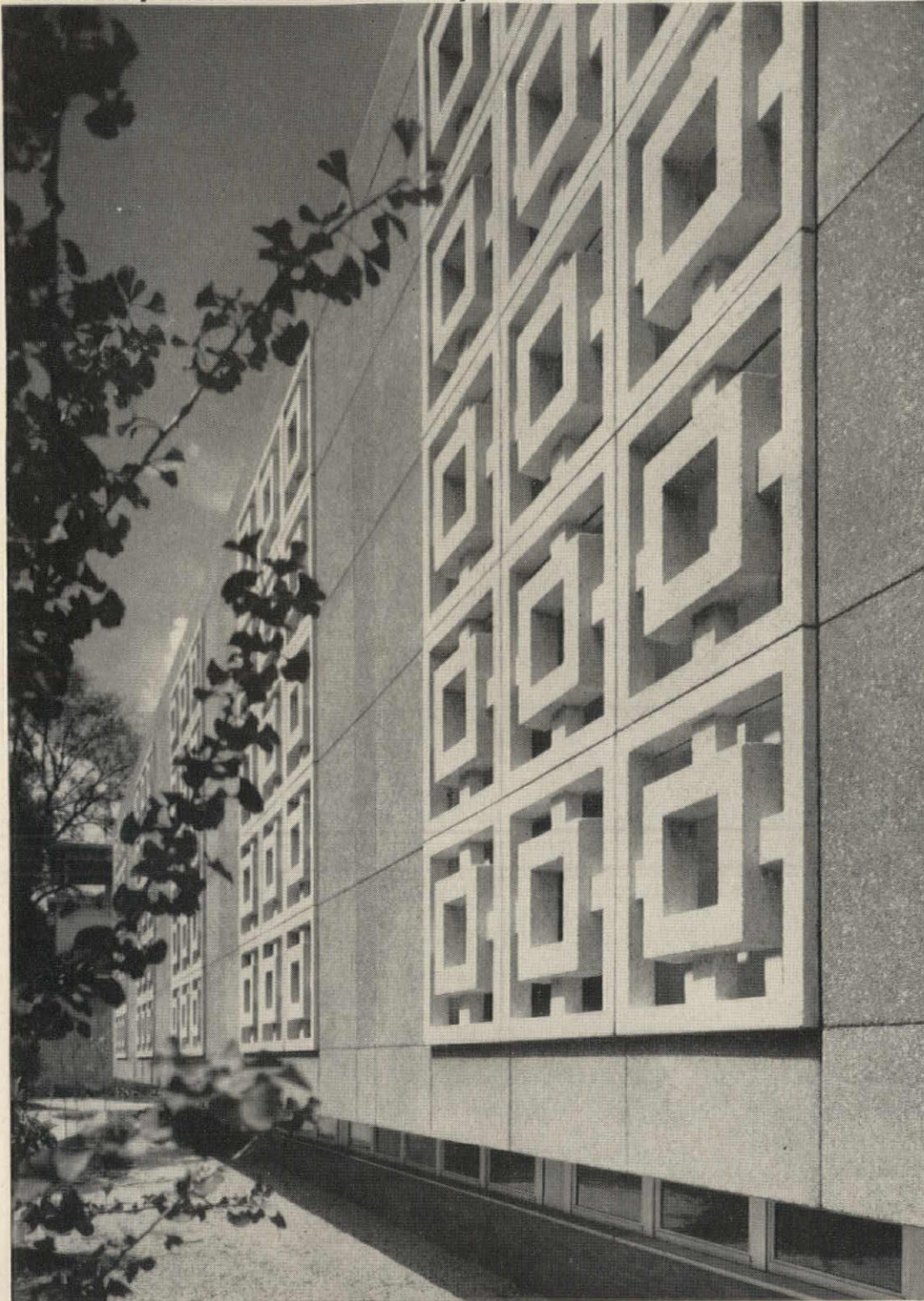


Consulting Engineers Council's new officers, elected at Gearhart, Ore., annual meeting, are (seated left to right): George J. Toman, secretary; Houston M. Smith, president; Harold P. King, first vice president; Frederick K. Stell, second vice president; and (standing left to right): Lester L. Bosch, treasurer; and Ralph M. Westcott, immediate past president



Construction Specifications Institute has new executive secretary, Ronald S. Ryner, formerly C.S.I. regional director

Concrete panels made with Trinity White—the whitest white cement



Building: Montgomery County (Ala.) Courthouse

Architects: Pearson, Title & Narrows

General Contractors: Bear Brothers Inc.

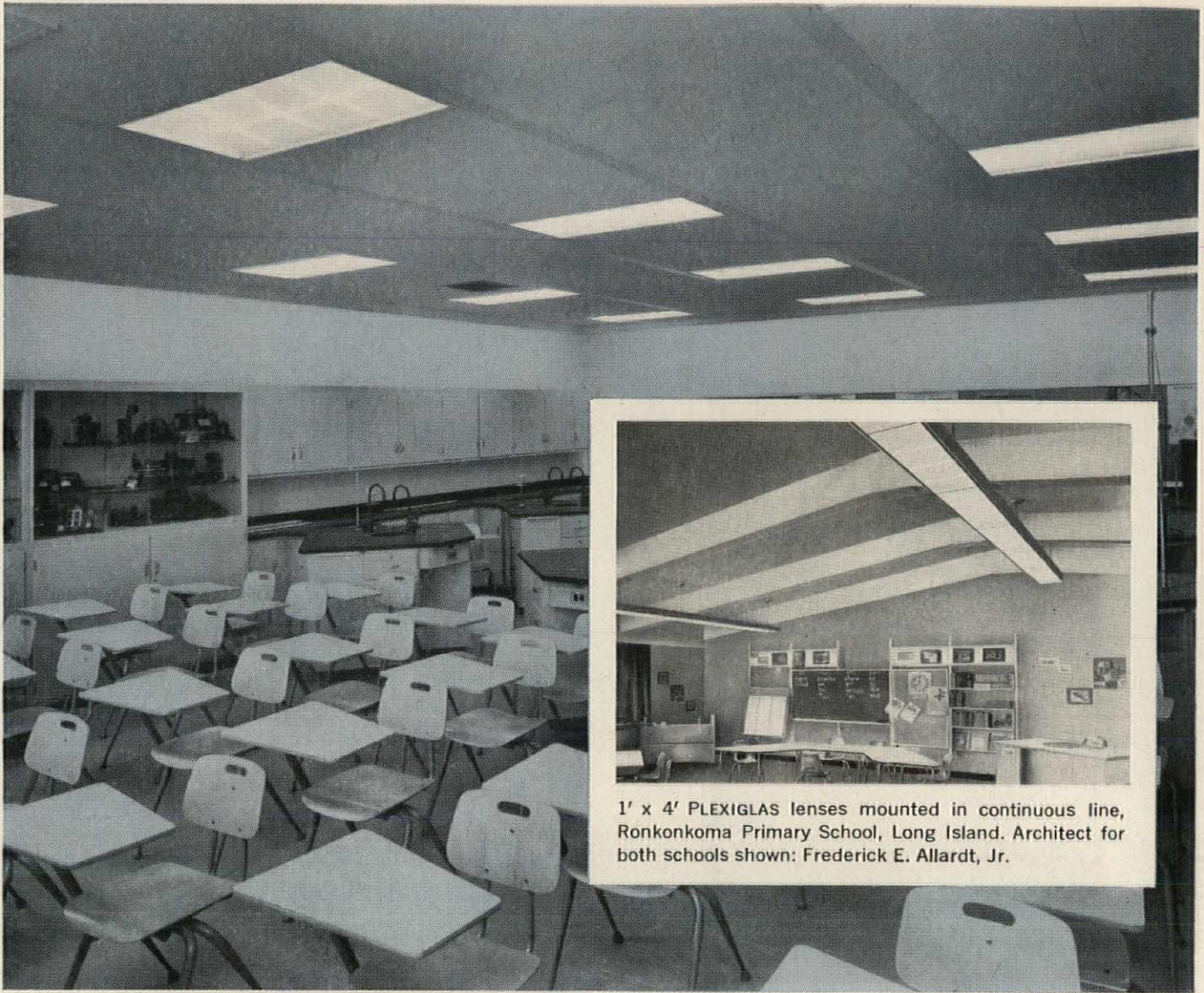
Panels Made by: Jackson (Miss.) Stone Co.

The white decorative panels were made with 100% Trinity White portland cement. The darker panels were made by combining 50% Trinity White with 50% standard gray cement.

Trinity White
PORTLAND CEMENT

A product of GENERAL PORTLAND CEMENT CO.
CHICAGO • CHATTANOOGA • DALLAS • FORT WORTH
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2' x 2' PLEXIGLAS lenses mounted in pairs, Southampton High School, Long Island.

1' x 4' PLEXIGLAS lenses mounted in continuous line, Ronkonkoma Primary School, Long Island. Architect for both schools shown: Frederick E. Allardt, Jr.

PLEXIGLAS

for lighting that stands out and stands up

When lighting equipment includes control lenses molded of PLEXIGLAS® acrylic plastic, the result is illumination of the highest quality—because PLEXIGLAS is:

- molded accurately to the lens pattern, to produce a precisely designed optical element which achieves functional quality illumination. With lenses of the types shown in the installations above, light rays are "bent", providing complete freedom from glare at any normal viewing angle.
- impervious to discoloration from years of exposure to fluorescent light.
- strong and rigid yet light in weight, resulting in safety overhead and ease of maintenance.
- crystal clear, assuring full utilization of light with complete visual comfort.

Full details on PLEXIGLAS as a lighting material are contained in our new technical bulletin, "PLEXIGLAS for Lighting". We will be glad to send you a copy.



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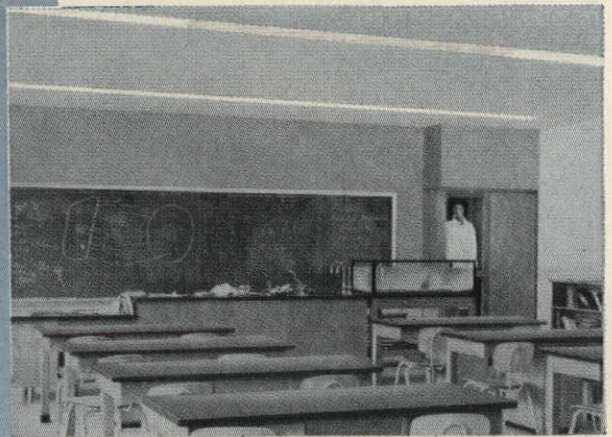
In Canada: *Rohm & Haas Company of Canada, Ltd.,
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ACRYLIC PLASTIC...The Proven Material for Modern, Prismatic Light-Controlling Lenses...

4-Foot-Long
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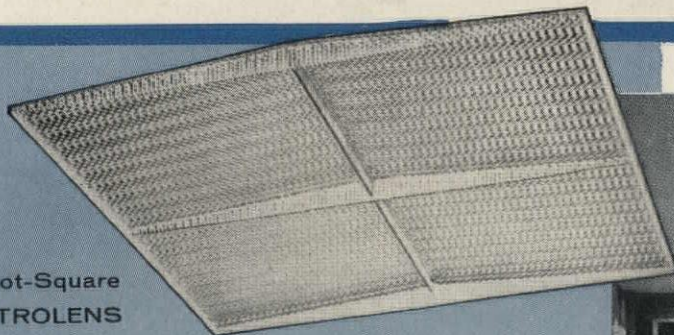
Wherever the PRISMALUME CONTROLENS has been used it has delivered consistently superior performance: high level illumination with the utmost visual comfort. Its prismatic construction provides effective light control with the best "hiding-power" to conceal light sources. The use of crystal-clear acrylic plastic produces a CONTROLENS that is light in weight, shatter-resistant, free from discoloration and altogether different in its distinctive, quality appearance. Reinforcing struts assure great dimensional stability... Available in a variety of shapes for a wide range of fluorescent applications.



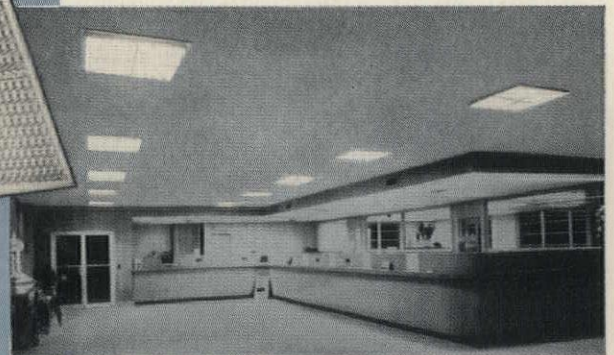
4-Foot-Long CONTROLENS, singly or in continuous runs, are advantageously used in classrooms, offices, banks, showrooms, libraries, stores, lobbies and laboratories.

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THE HOLOPHANE CO., LTD., 418 KIPLING AVE. SO., TORONTO 18, ONT.



New space-saving ideas with Vivant cantilever units

Help yourself to these new ways to make rooms more modern and attractive... and to save space and cut costs.

Vivant wall-hung cantilever units may be combined in a variety of ways—with 1- or 2-drawer sections, and with tops furnished in lengths desired. They may be assembled with vanity or desk areas, or simply as storage units.

For guest-appeal, Vivant radiates new beauty and warmth in the wood-finish Fibresin or Park-Panel fronts and high-styled, matching Textolite tops. For

utility and savings to you, finishes are mar- and burn-resistant, and the enduring steel understructure means low replacement, ease of maintenance and long-run low costs. Room cleaning becomes easier with no legs to work around—units are securely bracketed and bolted to walls.

Teak or walnut wood-grained finishes match Vivant free-standing beds, dressers, night tables and chairs.

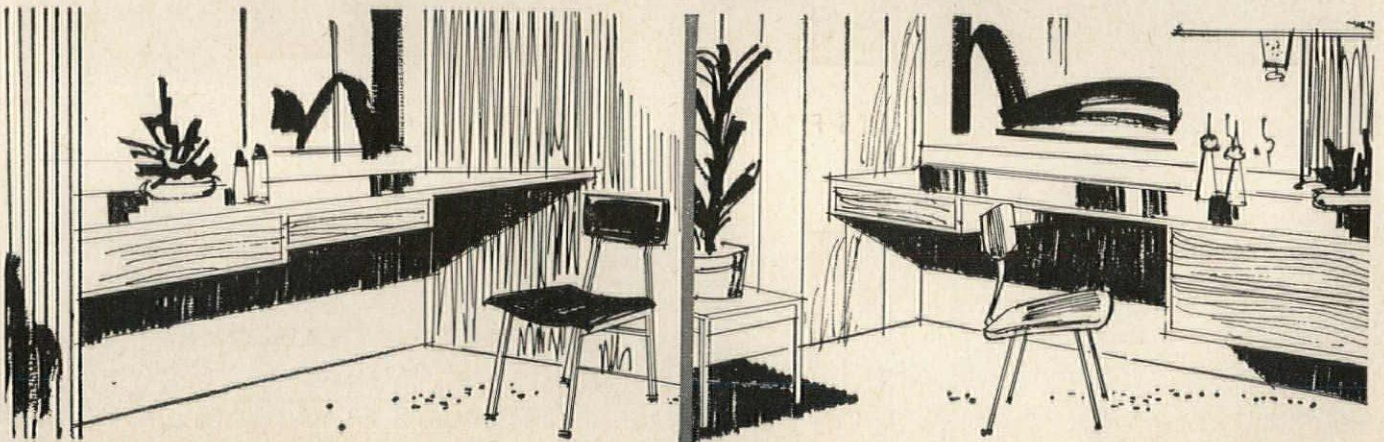
If you haven't investigated Vivant cantilever storage units, be sure to do so soon.

DISPLAY ROOMS: Chicago • New York • Atlanta
Dallas • Columbus • San Francisco • Los Angeles

Merchandise Mart • Chicago 54, Illinois



SIMMONS COMPANY
CONTRACT DIVISION



100

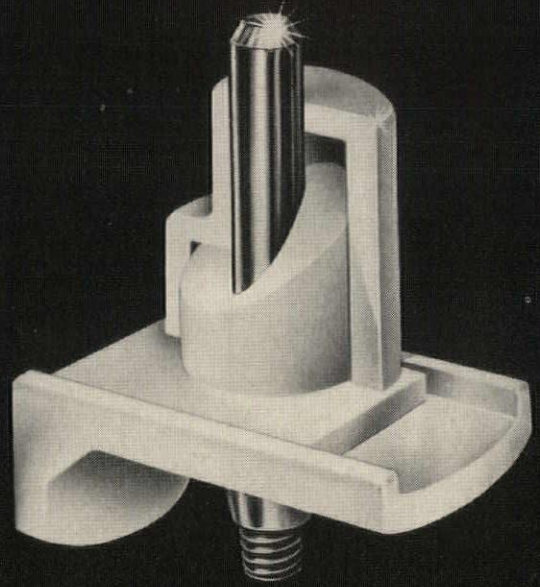
YEAR HINGE KEEPS TOILET COMPARTMENTS YOUNG

Friction-Free Forever . . . Made of Du Pont Zytel*
It's a FIAT *exclusive!* Accelerated 100-year cycling†
proves this gravity-closing hinge a perfect
performer forever! Impervious to chemical, fungus,
insect or heat attack, the Zytel Nylon frictionless
bushing and stainless steel pintle assure a
smoothly quiet hinge. Fully concealed in the
door, for it never needs maintenance!

†1,000,000 cycles—100 years of service at rate of more than 25 times per day.

*Du Pont Trade-mark

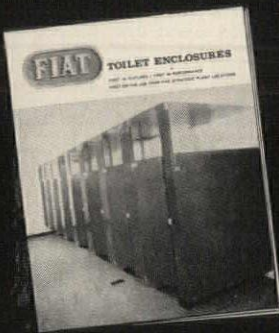
FIAT.



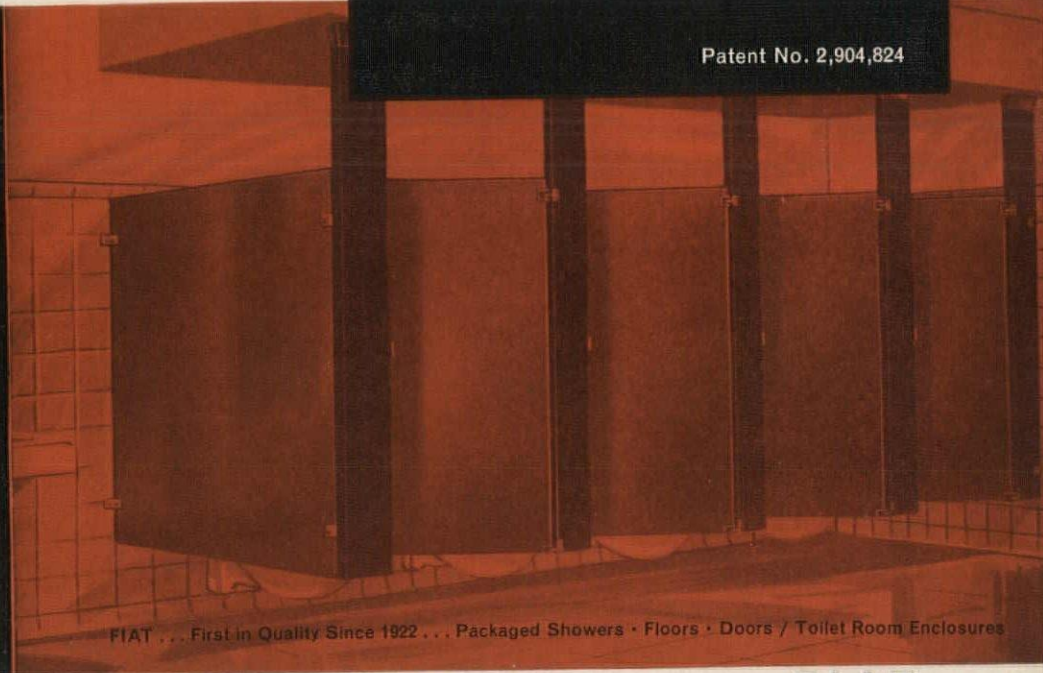
Friction-Free Forever . . .

*Made of DuPont Zytel**

Patent No. 2,904,824



Send for new Brochure: "Fiat Toilet Enclosures" to get the facts about the FIAT line, as well as architectural details and specifications.



FIAT . . . First in Quality Since 1922 . . . Packaged Showers • Floors • Doors / Toilet Room Enclosures

5

STRATEGICALLY LOCATED PLANTS FOR FAST DELIVERY AT LOWER COST!

FIAT
METAL MANUFACTURING CO.
9301 Belmont Avenue,
Franklin Park, Illinois

Los Angeles, California

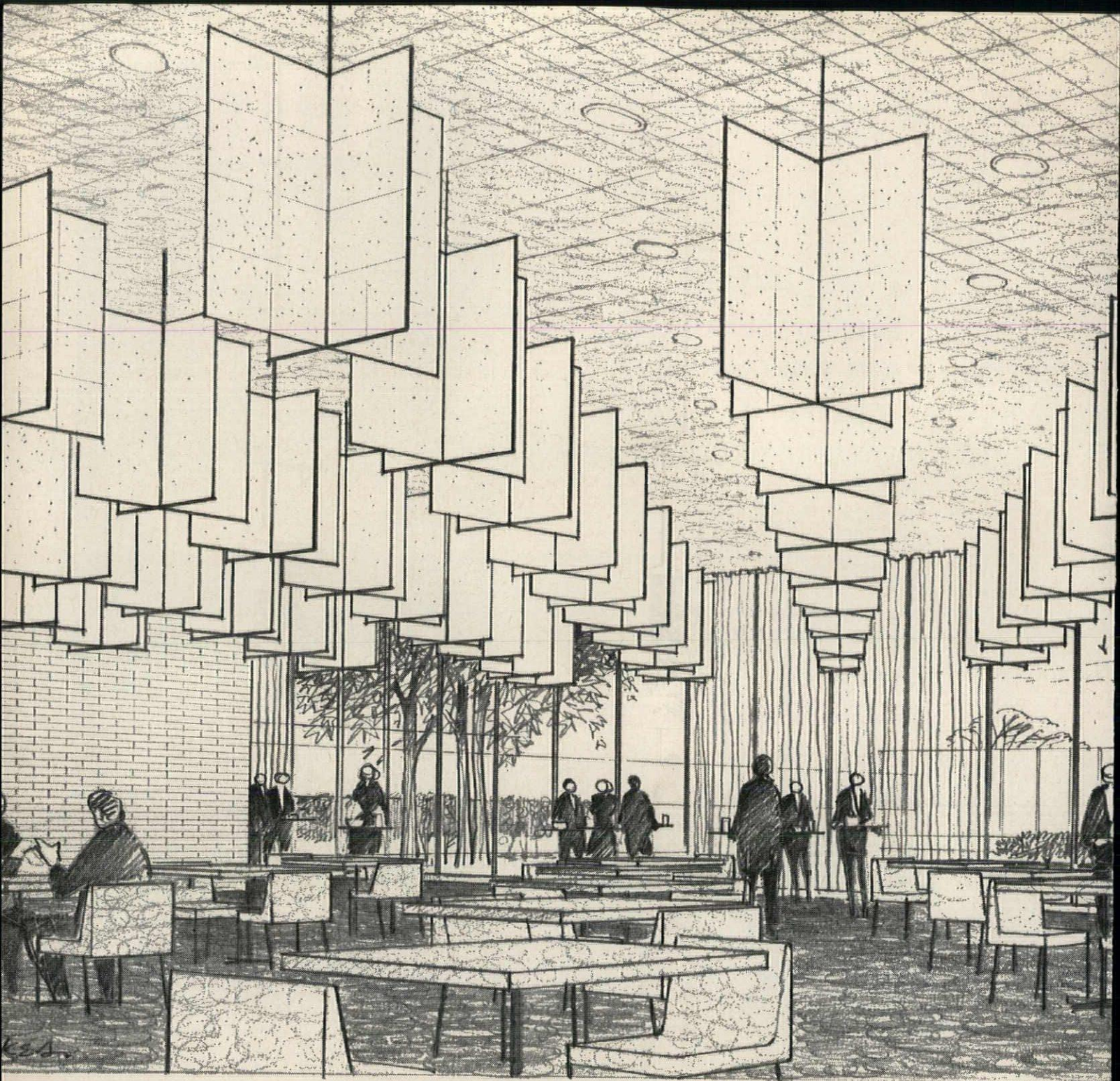
Franklin Park, Illinois

Orillia, Ontario, Canada

Albany, Georgia

Plainview, Long Island, New York





How a matchstick dart and an efficient acoustical tile created visual interest in a cafeteria

Plan by Smith-Hinchman & Grylls, Detroit

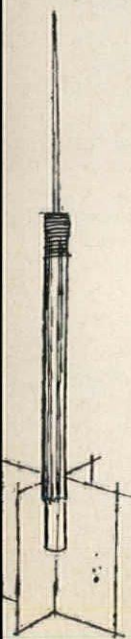
AN unusual ceiling design for the cafeteria of a large utility firm was inspired by a childhood memory: the matchstick dart.

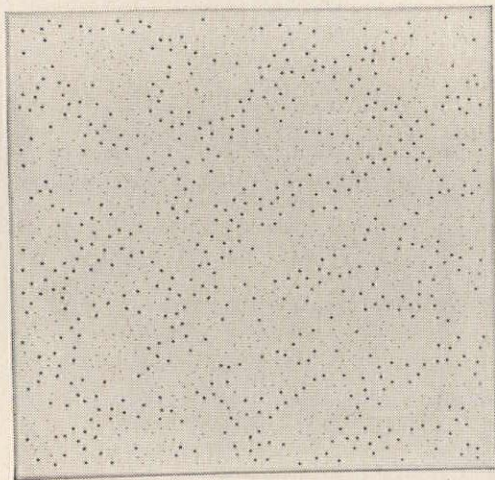
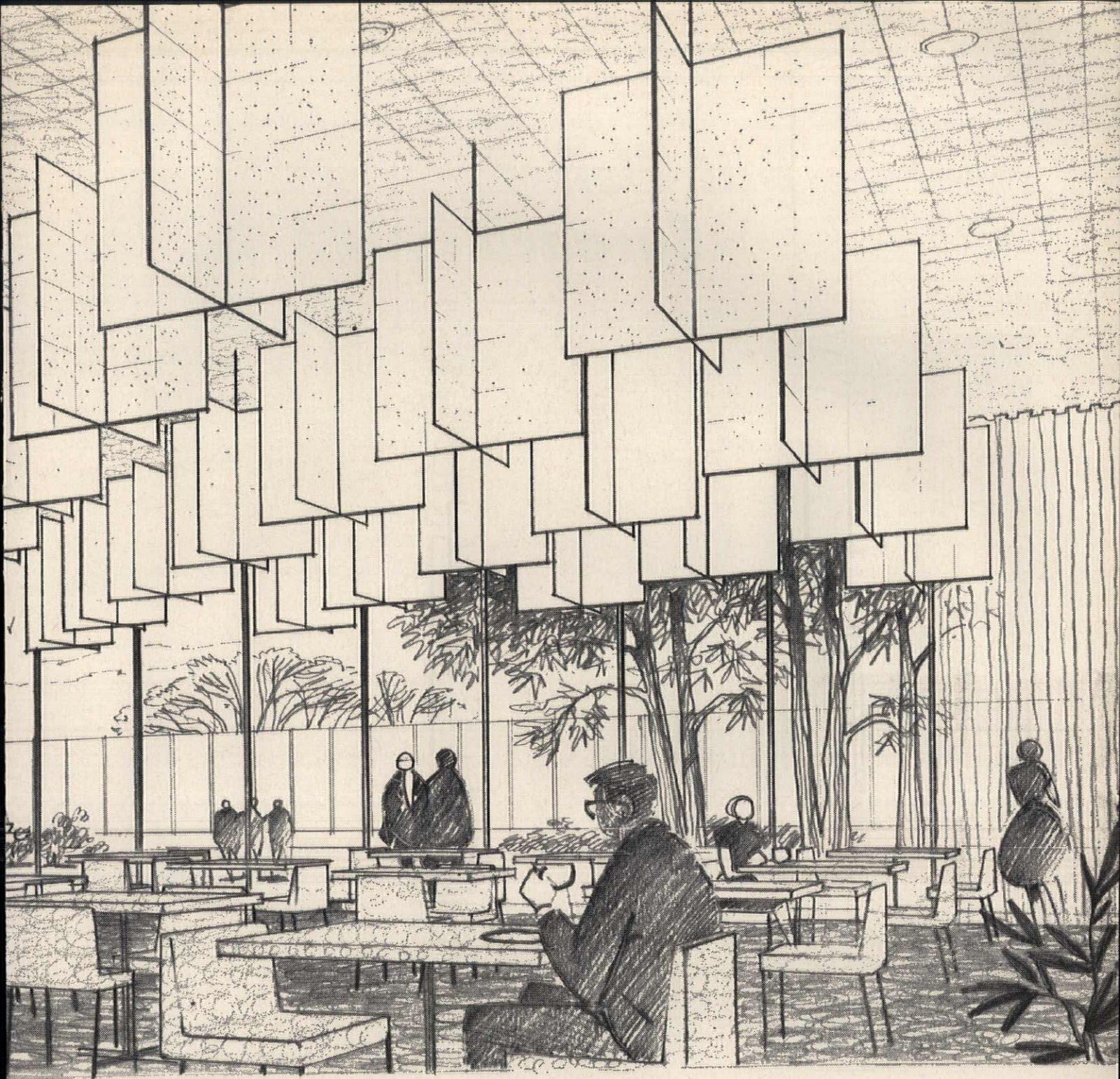
"The cafeteria presented two problems. The first was the monotony created by the room's rectangular shape and three walls of glass. The second was sound reflection from the hard floors, walls, and furniture.

"The dart idea solved both. The fins suggested dual intersecting baffles. The shaft suggested a pen-

cil rod suspension. Not only would the units break up the monotony, but the baffles—covered with additional acoustical tiles—would increase the sound absorption.

"We chose Armstrong Classic Minatone for both the ceiling and the panels. Its high sound absorption counteracted effects of sound reflection. At the same time, the delicate surface pattern created a sharp change in texture."





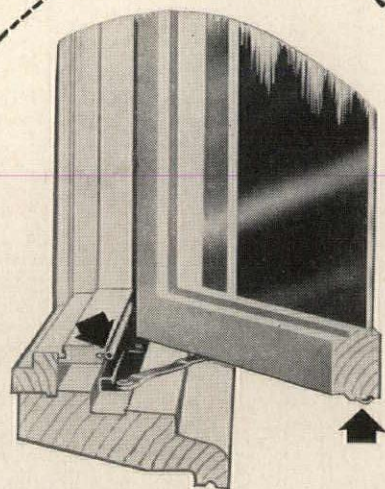
Armstrong Classic Minatone is a highly efficient mineral fiber acoustical tile. It has a lace-like design of perforations. Available in $\frac{1}{2}$ " and $\frac{5}{8}$ " thicknesses, it has a noise-reduction coefficient specification range of .55 to .70. Minatone is incombustible, repaintable, and easy to install by cementing or by mechanical suspension.

For further information and complete specifications, call your Armstrong Acoustical Contractor or your nearest Armstrong District Office. Or write to Armstrong Cork Company, 4207 Rock St., Lancaster, Pa.

Armstrong ACOUSTICAL CEILINGS

1860-1960 *Beginning our second century of progress*

another first from **Bilt-Well**
by **Caradco**



The one and only stainless steel and vinyl double-weatherstripped casement window available.

The BILT-WELL Casement Window, engineered for maximum operating efficiency, has tubular gasket type weatherstripping on stops and stainless steel spring leaf on all four edges of sash.

Bilt-Well Casements

...unsurpassed for efficiency and low heating and cooling costs

Sleek, trim BILT-WELL Casements consistently show weathertightness far beyond the FHA minimum standards. That's because they're double-weatherstripped. Where FHA commercial standards permit .50 cubic feet per minute infiltration per lineal foot of perimeter at 25 m.p.h. wind speed, BILT-WELL Casements, in test after test, admitted only .12 cubic feet per minute. Proof of unusual efficiency and economy.

The BILT-WELL Line of Building Woodwork—WINDOW UNITS, Double-hung, Awning, Casement, Basement. CABINETS, Kitchen, Multiple-use, Wardrobe, Storage, Vanity-Lavatory. DOORS, Exterior, Interior, Screen and Combination.

Manufactured by **CARADCO, Inc.** Dubuque, Iowa

For ultimate design flexibility specify

BILT WELL
WOOD WORK by Caradco
INC. U.S.A. OF

Look for these BILT-WELL Casement features

1. Unitized construction facilitates groupings
2. Concealed, tamper-proof hinges and locks
3. Nylon bearings, stainless steel track, cadmium plated steel hinge arm
4. Three widths of sash—16", 20" and 24" glass
5. Gold-tone hardware and screens
6. Angle and radial bays from stock parts
7. Harmonizing rigid vinyl storm panels
8. Single or double insulating glass
9. Dove-tailed frame joints



Owens-Illinois Paper Products Division Plant, Chicago

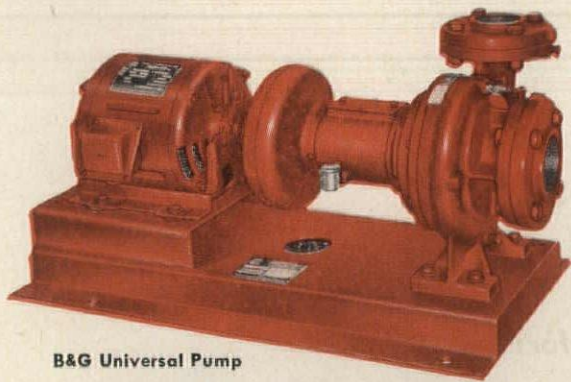
Architects-Engineers: Skidmore, Owings and Merrill, Chicago, Illinois

Associates: Owens-Illinois Engineering Department

General Contractor: G. C. Luria Engineering Company

Heating Contractor: National Heat and Power Company, Chicago, Illinois

AUTOMATED CONTAINER PLANT HEATED BY B&G *Hydro-Flo*[®] FORCED HOT WATER SYSTEM



B&G Universal Pump



B&G "SU" Steam Converter



B&G
Booster
Pump



The high manufacturing efficiency of this 225,000 sq. ft. automated plant is matched by the efficiency of its heating system. Both office and factory workers are kept comfortable by a forced hot water system using B&G pumping and other *Hydro-Flo* equipment.

The selection of B&G Booster and Universal Pumps was dictated by the record of these units for quiet, vibrationless and dependable operation. They are not ordinary commercial centrifugal pumps, but are specifically designed and built to meet the exacting requirements of circulated water systems. Over 3,000,000 are operating today in heating and cooling systems.

Other B&G products installed in this outstanding building include "SU" steam-to-water converters, an Airtrol System for the positive elimination of air from the system and expansion tanks.

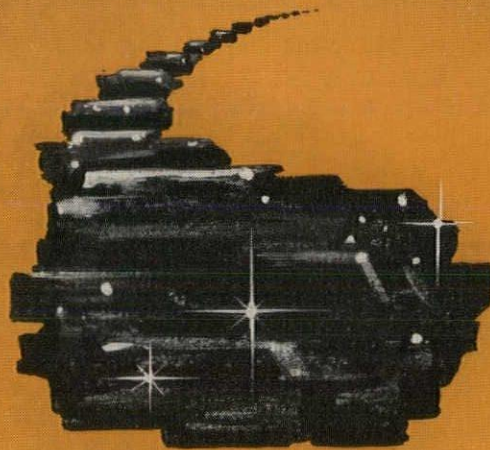
BELL & GOSSETT

C O M P A N Y

Dept. GG-32, Morton Grove, Illinois

Canadian Licensee: S.A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

REDISCOVER



Dependable, safe delivery from a modern fleet of 68,000 coal cars and the constant vigil of CLIC, C&O's Car Location Information Center. Year after year, mines located on the C&O are assured of an adequate supply of coal cars.

ER COAL!

COAL IS CERTAIN - available for centuries in quality and quantity

In Chessie's coal basin alone, the tremendous recoverable reserves point out the basic good reason for coal's steady growth in utility, metallurgical and industrial markets. For coal is certain—the one fuel offering a stable, economic supply for centuries, not decades.

Today's mines, and tomorrow's, are rich in high quality bituminous coal . . . economically available through modern mechanized mining technology . . . transported dependably and at low cost by Chesapeake & Ohio . . . capable of producing peak BTU efficiency in advance-design combustion equipment.

It will pay anyone faced with the problem of modernization to *rediscover coal* in terms of reliability, economy, efficiency, and convenience. Today, or centuries from now, there will be ample supply to outlive the life span of the finest combustion plant.

Chesapeake and Ohio Railway

Terminal Tower • Cleveland 1, Ohio

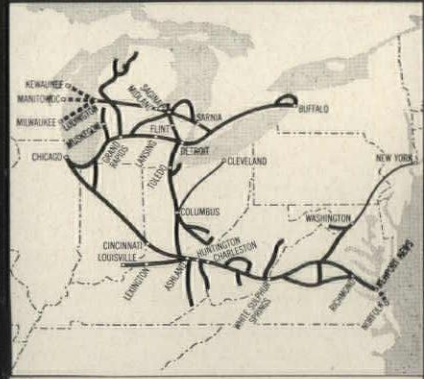
Outstandability in Transportation



Coal is clean as well as economical for modern institutional heating. Advancements in handling and combustion equipment, electrostatic precipitators and other devices to prevent air pollution make coal the ideal fuel.



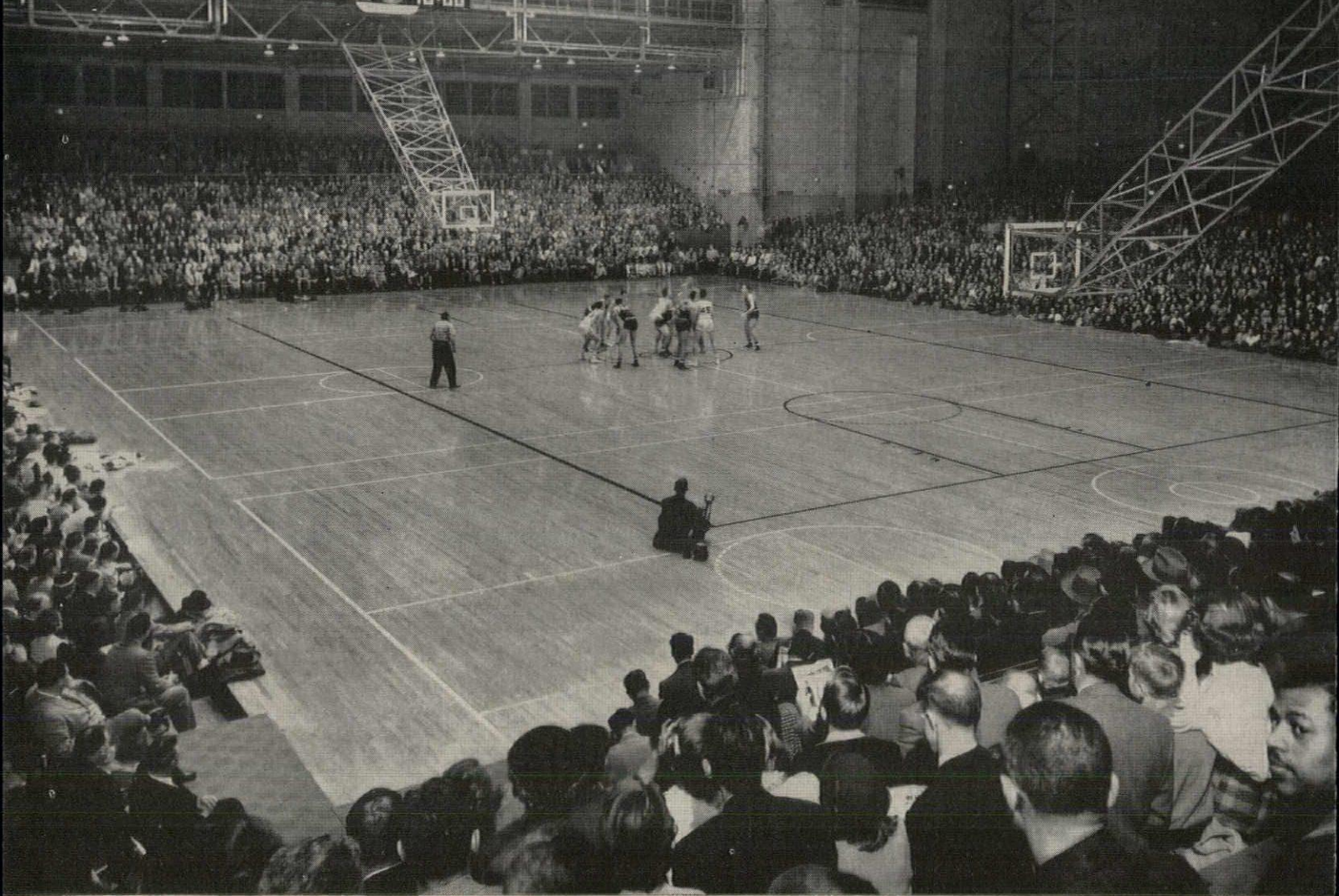
C&O Fuel Service Engineers offer free consultation in C&O's market areas on any problem of combustion, application, equipment or plant arrangement. Write to: R. C. Riedinger, General Coal Traffic Manager, at the address above.



Chessie's 5100-mile Route directly serves over 300 fine bituminous coal mines. C&O's vast coal operation includes transshipping terminals at Presque Isle at Toledo, Ohio and Newport News on Hampton Roads, Va.

CHESSIE SERVES THE COAL BIN OF THE WORLD

SLIP-RESISTANT



For slip-resistant floors, specify Seal-O-San!®

Planning a gym? The *coach* will be vitally interested in the seal you specify! He knows that good basketball calls for fast footwork . . . and a player's footwork can be no better than the floor permits.

A Seal-O-San finished gym floor provides good footing because the seal is resilient. The surface *gives* a little so the shoe sole holds its position, doesn't

slip. Footing is sure, action becomes smooth and fast.


Seal-O-San offers the primary advantage of slip resistance, plus durability, light color, easy application, simple maintenance and protection for long floor life. It will serve your client, *and his coach*, well. Ask your Huntington representative, the Man Behind the Drum, for more information.

Write for details and specifications on Seal-O-San gym floor finish. Please use your firm letterhead and give your name and title.



HUNTINGTON

... where research leads to better products

HUNTINGTON  LABORATORIES • HUNTINGTON, INDIANA • Philadelphia 35, Pennsylvania • In Canada: Toronto 2, Ontario



Trowel points to Wide Flange Rapid Control Joint, a companion product used with Dur-o-wal

Two sure ways to better block construction

Dur-o-wal Reinforcement—Wide Flange Rapid Control Joint

More and more, architects and engineers are specifying this combination to assure permanent masonry wall construction.

Dur-o-wal Reinforcement, fabricated from high tensile steel with deformed rods, lays straight in the mortar joints with all of the steel in tension and working together as a truss. This is the basic engineering principle that makes for maximum flexural strength.

And the Rapid Control Joint, with its wide neoprene flanges, automatically assures the flexibility that lets a wall "breathe" under various natural stresses, provides a tight weather seal with minimum caulking.

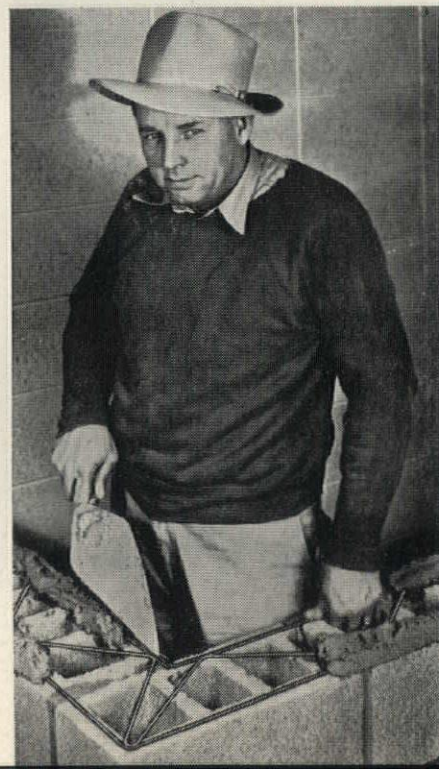
For technical data, write to any of the Dur-o-wal locations below. Over 8000 dealers across the country are ready to serve you. See us in Sweet's.

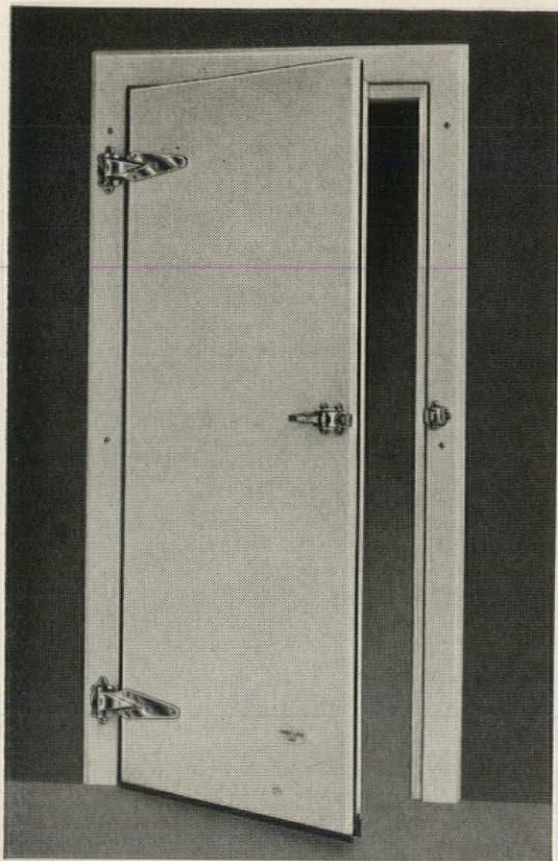
DUR-O-WAL®

Masonry Wall Reinforcement and Rapid Control Joint

RIGID BACKBONE OF STEEL FOR EVERY MASONRY WALL

Dur-O-wal Div., Cedar Rapids Block Co., CEDAR RAPIDS, IA. Dur-O-wal Prod., Inc., Box 628, SYRACUSE, N. Y. Dur-O-wal Div., Frontier Mfg. Co., Box 49, PHOENIX, ARIZ. Dur-O-wal Prod., Inc., 4500 E. Lombard St., BALTIMORE, MD. Dur-O-wal of Ill., 119 N. River St., AURORA, ILL. Dur-O-wal Prod. of Ala., Inc., Box 5446, BIRMINGHAM, ALA. Dur-O-wal of Colorado, 29th and Court St., PUEBLO, COLO. Dur-O-wal Inc., 165 Utah Street, TOLEDO, OHIO



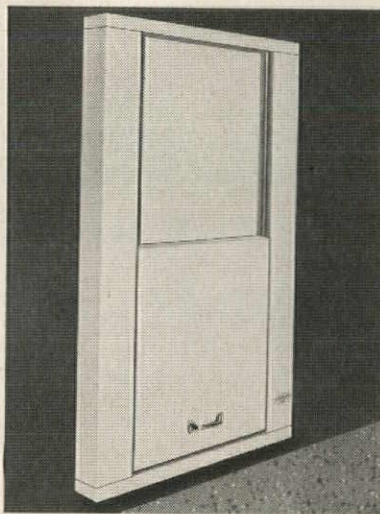


new
 Lightweight
 Plastic Doors
...JAMISON
JAMOLITE®
for coolers and freezers

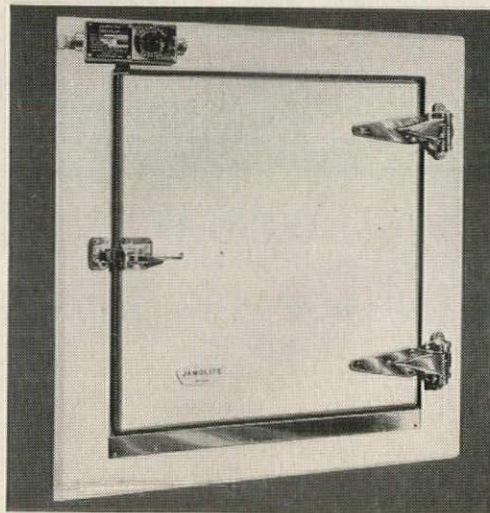
- improved appearance
- easier cleaning
- lower cost



JAMOLITE HORIZONTAL SLIDING...



JAMOLITE VERTICAL SLIDING...



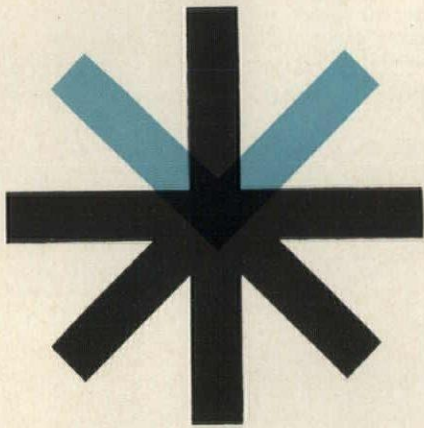
JAMOLITE REACH-IN FREEZER DOOR—
*Jamison FROSTOP® is applied to head, sides
 and sill of freezer door to prevent ice formation.*

NOW—FOR THE FIRST TIME—an entirely new concept in cold storage door design and construction. Lightweight, attractive, flush-fitting plastic doors with cost-saving, practical advantages for many types of installations:

- smooth, easy-to-clean surface
- rigid, one-piece construction
- impervious to vapor and moisture
- will not warp
- available in white and other colors
- insulated jamb
- superior insulating efficiency
- low cost installation

Investigate this brand new Jamison door development today. JAMOLITE Doors can be used for replacement or new construction. Write for all the facts to Jamison Cold Storage Door Co., Hagerstown, Md.

JAMISON
COLD STORAGE DOORS



A new line of
office furniture
as flexible as
your imagination!

The * 4000 Line by ALL-STEEL EQUIPMENT INC. 

Aurora, Illinois

Write today for your free catalog



Construction Cost Indexes

Presented by Clyde Shute, Director of Statistical Policy, Construction News Div., F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assoc., Inc.

Labor and Materials: U.S. average 1926-1929=100

NEW YORK

ATLANTA

PERIOD	RESIDENTIAL		APTS., HOTELS, OFFICE BLDGS.	COMMERCIAL AND FACTORY BLDGS.		RESIDENTIAL		APTS., HOTELS, OFFICE BLDGS.	COMMERCIAL AND FACTORY BLDGS.	
	Brick	Frame	Brick and Concrete	Brick and Concrete	Brick and Steel	Brick	Frame	Brick and Concrete	Brick and Concrete	Brick and Steel
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
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	246.6	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	274.9	271.8	212.8	214.6	204.2	202.8	205.0
1952	278.2	274.8	271.9	265.2	262.2	218.8	221.0	212.8	210.1	214.3
1953	281.3	277.2	281.0	286.0	282.0	223.0	224.6	221.3	221.8	223.0
1954	285.0	278.2	293.0	300.6	295.4	219.6	219.1	233.5	225.2	225.4
1955	293.1	286.0	300.0	308.3	302.4	225.3	225.1	229.0	231.5	231.8
1956	310.8	302.2	320.1	328.6	324.5	237.2	235.7	241.7	244.4	246.4
1957	318.5	308.3	333.1	345.2	339.8	241.2	239.0	248.7	252.1	254.7
1958	328.0	315.1	348.6	365.4	357.3	243.9	239.8	255.7	261.9	262.0
1959	342.7	329.0	367.7	386.8	374.1	252.2	247.7	266.1	272.7	273.1
Feb. 1960	348.8	335.1	374.0	391.1	379.7	259.5	254.2	274.9	281.3	281.0
Mar. 1960	348.8	335.1	374.0	391.1	379.7	258.1	252.8	273.1	279.9	279.6
Apr. 1960	348.8	335.1	374.0	391.1	379.7	258.1	252.8	273.1	279.9	279.6
Apr. 1960	182.4	173.8	186.1	193.2	191.8	199.1	204.2	187.2	187.4	195.2
	% increase over 1939					% increase over 1939				

ST. LOUIS

SAN FRANCISCO

1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.6	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
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1	243.1
1952	259.1	253.2	249.7	255.0	249.6	250.2	245.0	245.6	248.7	249.6
1953	263.4	256.4	259.0	267.0	259.2	255.2	257.2	256.6	261.0	259.7
1954	266.6	260.2	263.7	273.3	266.2	257.4	249.2	264.1	272.5	267.2
1955	273.3	266.5	272.2	281.3	276.5	268.0	259.0	275.0	284.4	279.6
1956	288.7	280.3	287.9	299.2	293.3	279.0	270.0	288.9	298.6	295.8
1957	292.0	283.4	295.2	307.1	302.9	286.3	274.4	302.9	315.2	310.7
1958	297.0	278.9	304.9	318.4	313.8	289.8	274.9	311.5	326.7	320.8
1959	305.4	296.4	315.0	329.8	323.9	299.2	284.4	322.7	338.1	330.1
Feb. 1960	310.9	300.6	320.8	335.5	330.5	306.1	290.6	332.7	347.8	339.9
Mar. 1960	310.5	300.2	320.3	335.1	330.1	304.9	289.4	331.2	346.6	338.7
Apr. 1960	310.5	300.2	320.3	335.1	330.1	304.9	289.4	331.2	346.6	338.7
Apr. 1960	181.8	180.6	169.8	179.7	177.4	188.7	191.4	182.1	184.3	190.7
	% increase over 1939					% increase over 1939				

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.



ARCHITECTS—INSURE CORRECT FIT AND PLACEMENT OF FLOOR GRATING EVERY TIME

Cut costly field corrections—specify Borden. . . .

1. A shop drawing of the job is submitted to the customer for approval, when necessary. This plan shows the size and shape of the grating area—how grating clears all obstructions.
2. Each finished panel is carefully checked for accuracy of dimensions.
3. Each panel is plainly marked with its number to insure quick, easy installation.
4. The entire platform is laid out on our shop floor. Over-all dimensions and obstruction openings are checked against shop drawings.
5. Erection diagram showing panel mark numbers is supplied for field installation.

BORDEN METAL PRODUCTS CO.

Gentlemen:
"Please send me NEW 1960 BORDEN Catalog"

NAME.....
 TITLE.....
 COMPANY NAME.....
 ST. AND NO.....
 CITY AND STATE.....

Write today for *free* 16-page catalog showing all basic types of grating; more than 30 dimensional drawings of sub-types; eight safe load tables for steel and aluminum grating.

BORDEN METAL PRODUCTS CO.

"Greatest name in gratings"

822 Green Lane Elizabeth 2-6410 Elizabeth, N. J.
 Plants at: Union, N. J. — Leeds, Ala.
 Conroe, Texas — Beeton, Ontario



TO BE DESTROYED!

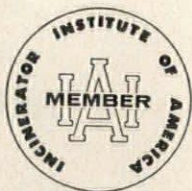
... IN A *Donley* **INCINERATOR**

Once it was a delicious red apple; now it's a garbage problem! But garbage and rubbish can be deposited any time and destroyed almost immediately in a Donley Incinerator. To eliminate large accumulations of garbage and rubbish, Donley Automatic Safety Burners provide frequent small fires at regular intervals. This Donley principle of frequent burning minimizes smoke, odor and fly-ash. It also avoids the destructive heat of large fires that damages incinerators and flues.

Donley incinerator designs and equipment meet operating standards established by leading fire insurance companies, testing laboratories and most municipal building codes. Write today for your Donley Incinerator Catalog or see it in Sweet's.



Trouble-free Donley Incinerators were specified for this large residential development in Philadelphia.

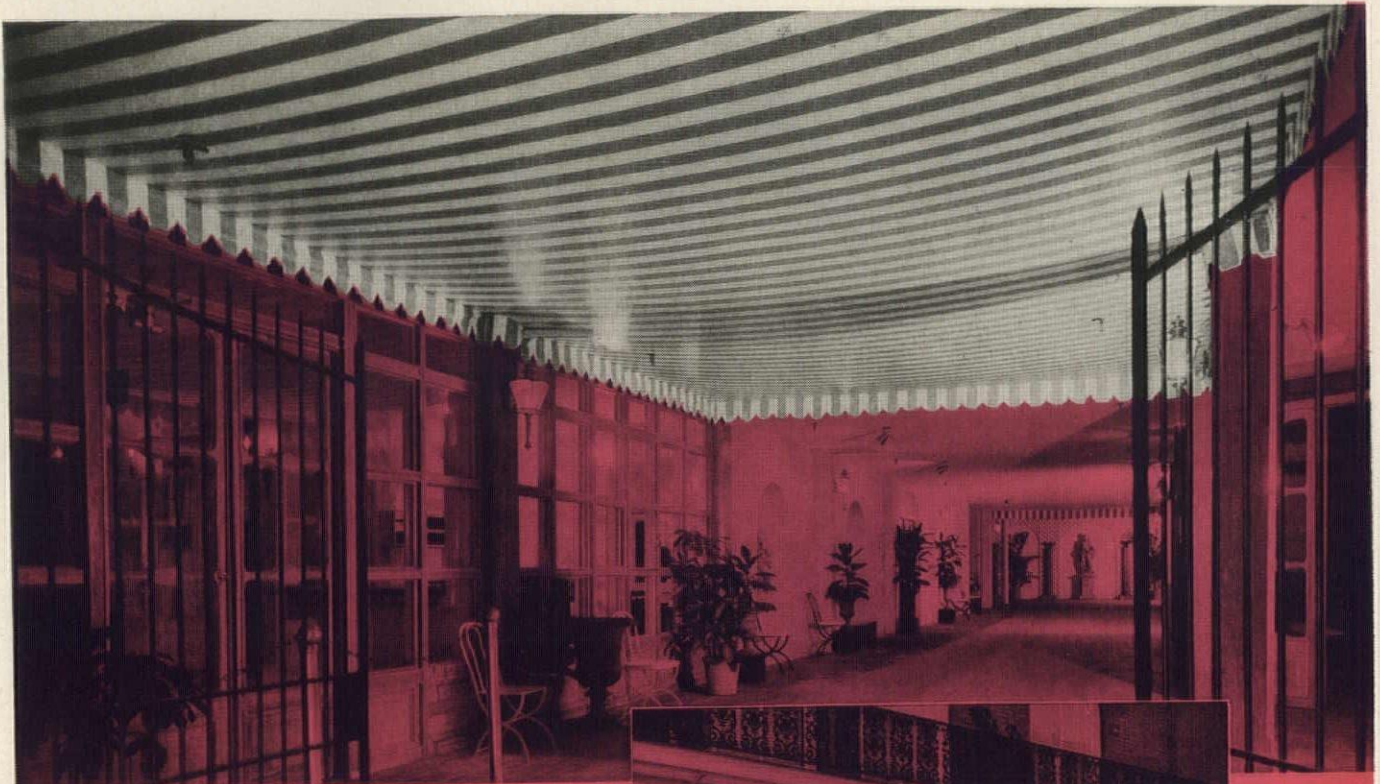


THE *Donley* BROTHERS COMPANY

13972 Miles Avenue

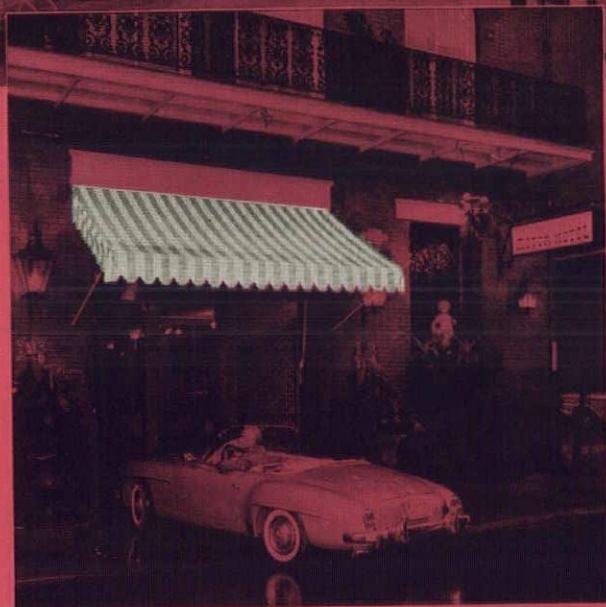
Cleveland 5, Ohio

8239-DB



FOR SHOW OR
FOR SHADE

CANVAS AWNINGS



■ To match the fun-loving mood of New Orleans' French Quarter, Prince Conti Motor Hotel decorates and protects interiors with canvas in a gay, flamboyant stripe.

Canvas is a smart choice for a number of reasons. Long, dependable service is one. Thanks to amazing new advances in textile chemistry, this sturdy fabric now has a color fastness and weather resistance never before possible.

Versatility is another. Use canvas to protect entrances from sun and rain, to keep sun heat off window glass, to shade pool-side areas, or simply to add color, texture, and a festive flair indoors or out.

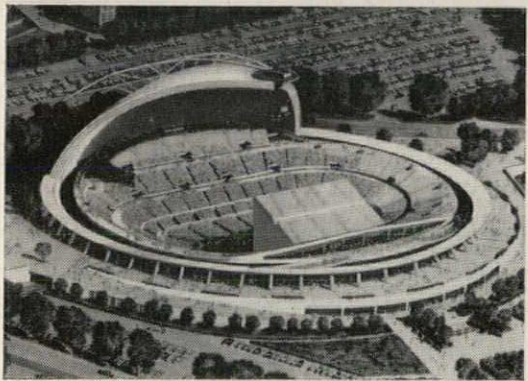
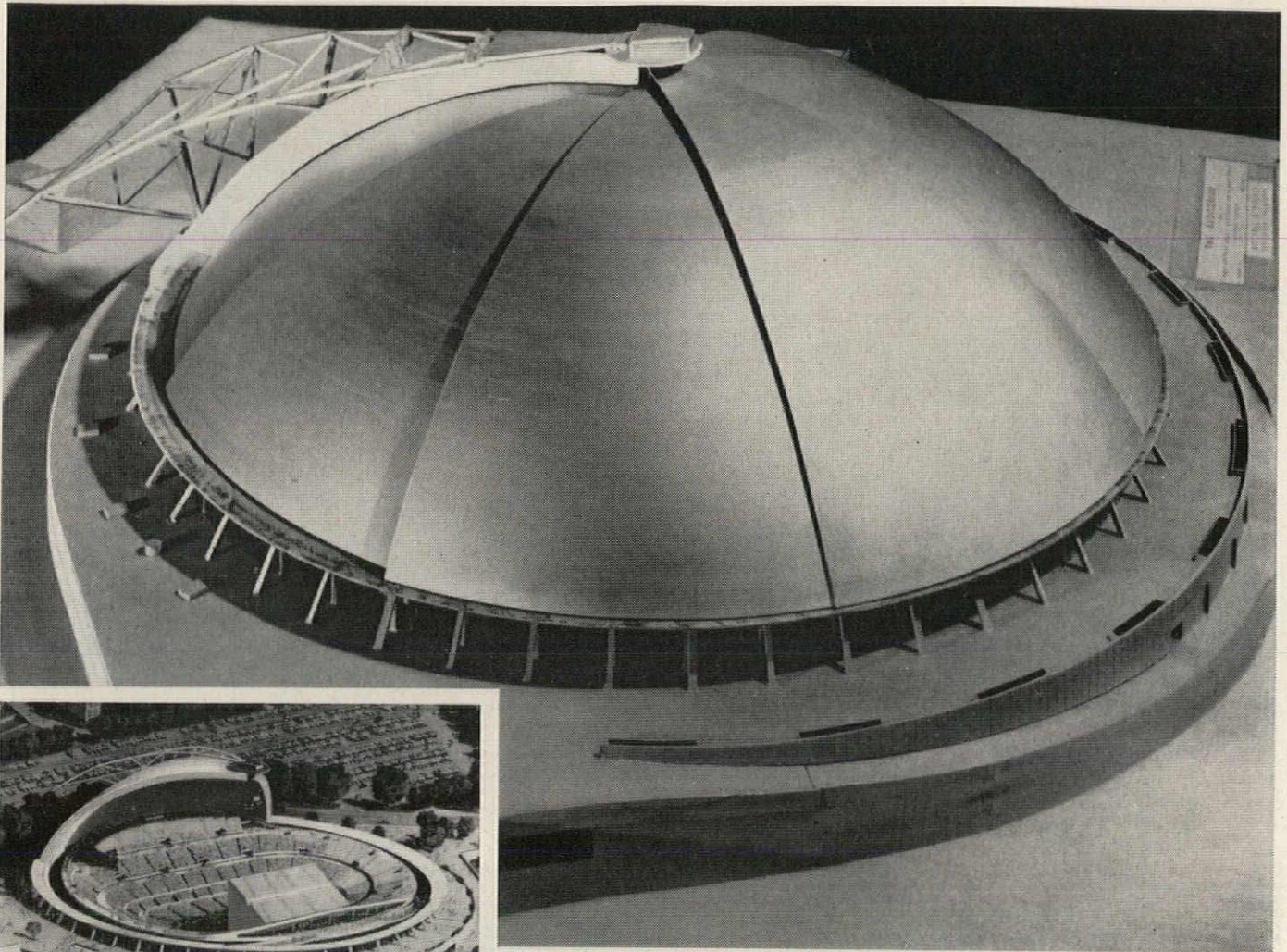
Whatever your requirements, you'll find your nearby canvas products manufacturer well qualified to carry out design specifications and recommend from a wide assortment of colors and patterns, the type canvas best suited for the job.

See our catalog 19e | Ca
in Sweet's Architectural
Catalog or write
for a free copy.
It contains original
and practical ideas plus
helpful information
for specifying canvas.



CANVAS AWNING INSTITUTE, INC. and NATIONAL COTTON COUNCIL

P. O. Box 9907 / Memphis 12, Tenn.



All-weather auditorium in Pittsburgh will be covered by a 415-foot diameter Nickel Stainless Steel

dome. Largest of its kind in the world, the dome will protect an audience of more than 13,000.

"Push-button umbrella roof" of stainless steel gives Pittsburgh a new all-weather auditorium

Watching a play or listening to music under the stars heightens the enjoyment. That is, until a passing shower comes along to wash out the fun. But now comes a new idea in auditoriums. In this one, an umbrella roof of Nickel Stainless Steel will close at the first drops of rain — and on with the show.

It's a simple concept, but a daring one. Eight huge sections nest together when the dome is open. Push a button, and six of these sections glide quietly together around an outside track.

They looked into all sorts of


sheathing materials in designing the dome before choosing Type 302 Nickel Stainless Steel.

For stainless with Nickel in it is one of the most weatherproof metals there is. It is corrosion-resisting all the way through — in salt air as well as industrial atmospheres. What's more, it's virtually self-cleaning — rainfall alone keeps this metal clean.

No wonder you can expect to see Nickel Stainless Steel wherever long life and handsome appearance are called for! The high tensile strength and modulus of elasticity of Nickel Stainless permit safe, economical

use of thinner gauges than other metals. Nickel Stainless is compatible with other architectural metals. And it resists the corrosive action of alkalis present in lime and mortar.

For fresh new ideas on how you can use Nickel Stainless . . . along with basic data on this durable and attractive architectural metal, write for ARCHITECTURAL USES OF THE STAINLESS STEELS.

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

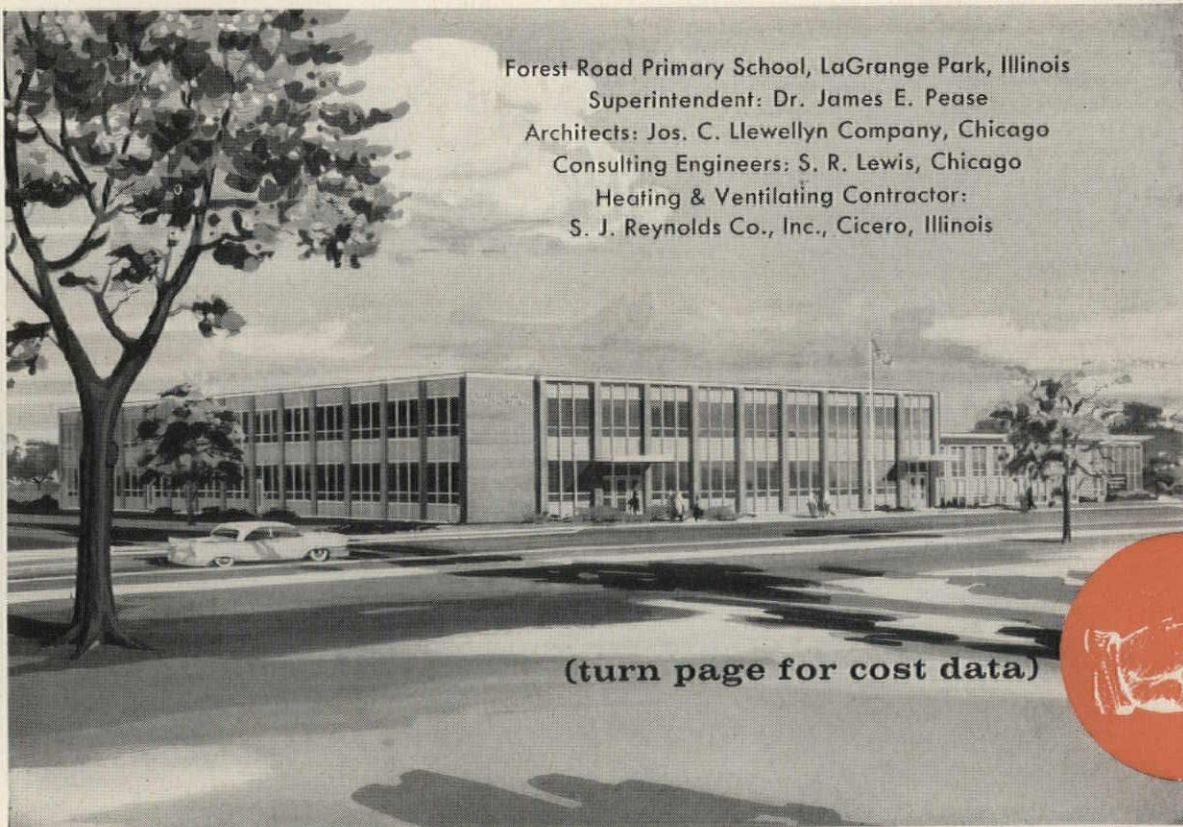
INCO NICKEL

NICKEL MAKES ALLOYS PERFORM BETTER LONGER

507th SCHOOL

selects herman nelson
“now or later”
air conditioning

FOREST ROAD PRIMARY SCHOOL



Forest Road Primary School, LaGrange Park, Illinois
Superintendent: Dr. James E. Pease
Architects: Jos. C. Llewellyn Company, Chicago
Consulting Engineers: S. R. Lewis, Chicago
Heating & Ventilating Contractor:
S. J. Reynolds Co., Inc., Cicero, Illinois

(turn page for cost data)



New architecturally styled *hermel-cool III* offers:

OPTIONAL COLOR,
OPTIONAL FUNCTION,
OPTIONAL AIR CONDITIONING
and Nelson flexibility brings
the cost within any school budget

Herman Nelson—the company that made air conditioning economically practical for schools by providing for it on an optional, “now or later” basis—now offers brand new unit ventilator styling with optional color and optional function, too!

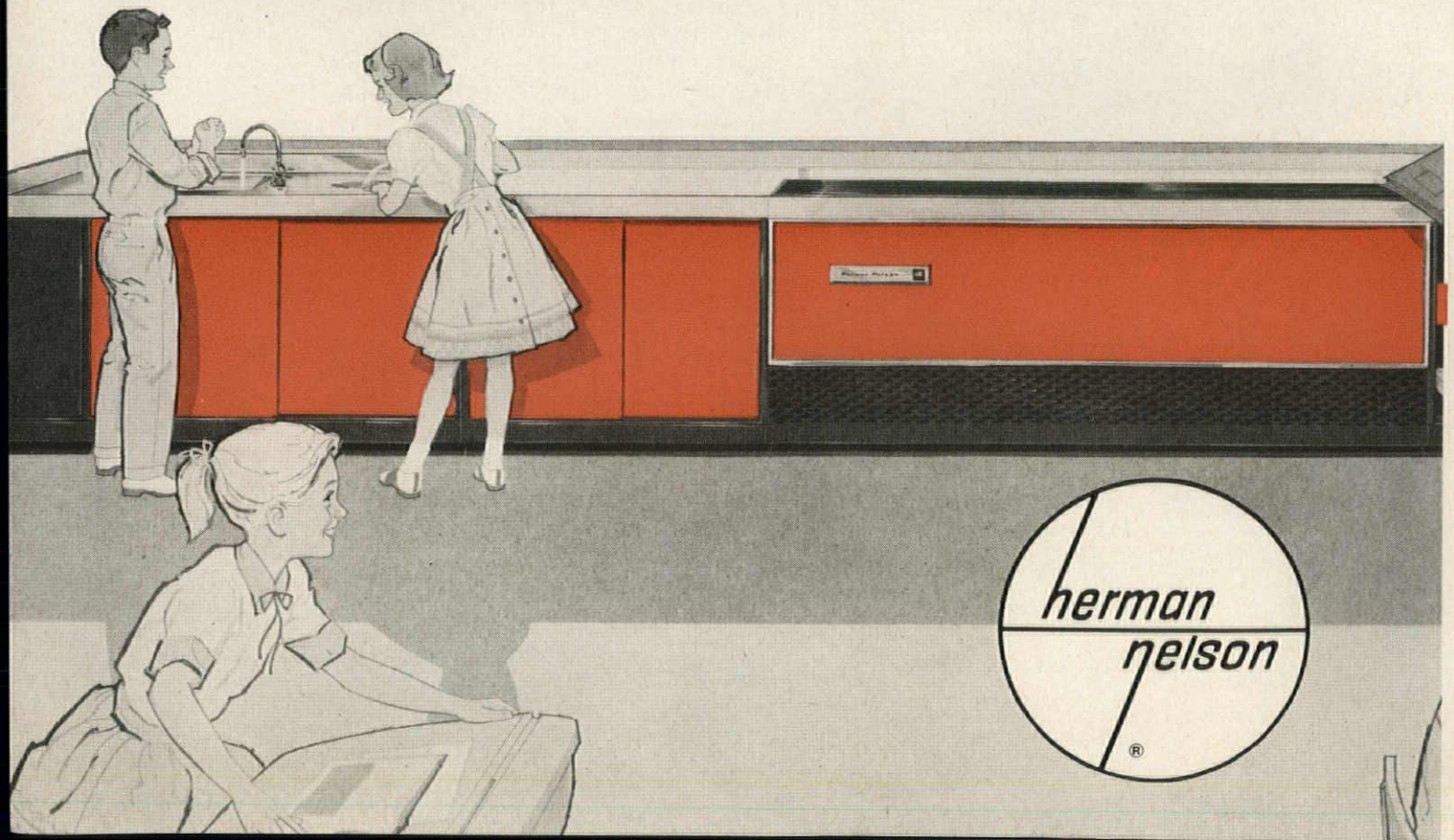
OPTIONAL COLOR! Six new accent colors: Flame Red, Kentucky Green, Topaz Blue, Brushed Orange, Sunset Yellow and Neutral Gray.

OPTIONAL FUNCTION! Your unit ventilator companion equipment can include (1) sink and bubbler unit, (2) sliding door cabinets, (3) open shelf

cabinets, (4) magazine racks, (5) cubicle cabinets and (6) 10- or 20-tray tote tray cabinets. All units, except sink and bubbler and magazine racks, are available in either stationary or mobile models.

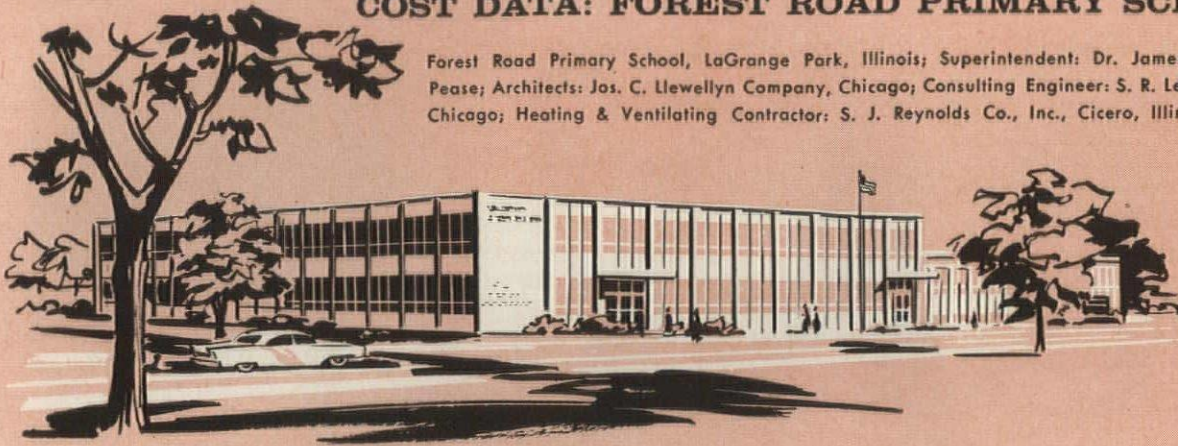
And Herman Nelson options (*optional component equipment, optional air conditioning*) make it easy to tailor your system to fit your school budget.

This new-color, new-function architectural styling is available with *all* Nelson unit ventilators—whether they provide for air conditioning or for heating, ventilating and natural cooling only.



COST DATA: FOREST ROAD PRIMARY SCHOOL

Forest Road Primary School, LaGrange Park, Illinois; Superintendent: Dr. James E. Pease; Architects: Jos. C. Llewellyn Company, Chicago; Consulting Engineer: S. R. Lewis, Chicago; Heating & Ventilating Contractor: S. J. Reynolds Co., Inc., Cicero, Illinois.



at this price, can you afford not to provide for air conditioning?

All 13 classrooms in the new Forest Road Primary School are equipped with HerNel-Cool III unit ventilators for future air conditioning. Herman Nelson multizone units and a Herman Nelson Packaged Liquid Chiller provide year-round air conditioning for the school's administrative wing.

Partially air conditioned, partially prepared for air conditioning at anytime—and the entire school was constructed for only \$15.49 per square

foot. This cost is in the same range as that for schools in this area that have *not* provided for year-round air conditioning.

Now, more than 507 schools have taken advantage of Herman Nelson's "now or later" air conditioning idea. They installed HerNel-Cool units at little or no extra cost, can air condition later at a great saving. At this price, can you afford *not* to provide for air conditioning?



Mail coupon for **FREE** herman nelson **FACT KIT** on school air conditioning

Includes information on (1) how air conditioning affects the learning environment, (2) the cost of school air conditioning (including rule-of-thumb estimates you can use in your own planning), and, (3) the equipment for school air conditioning.

herman nelson

SCHOOL AIR SYSTEMS DIVISION OF

AAI American Air Filter
COMPANY, INC., LOUISVILLE, KENTUCKY

School Air Systems Division, Dept. 259
American Air Filter Co., Inc.
215 Central Avenue, Louisville, Kentucky

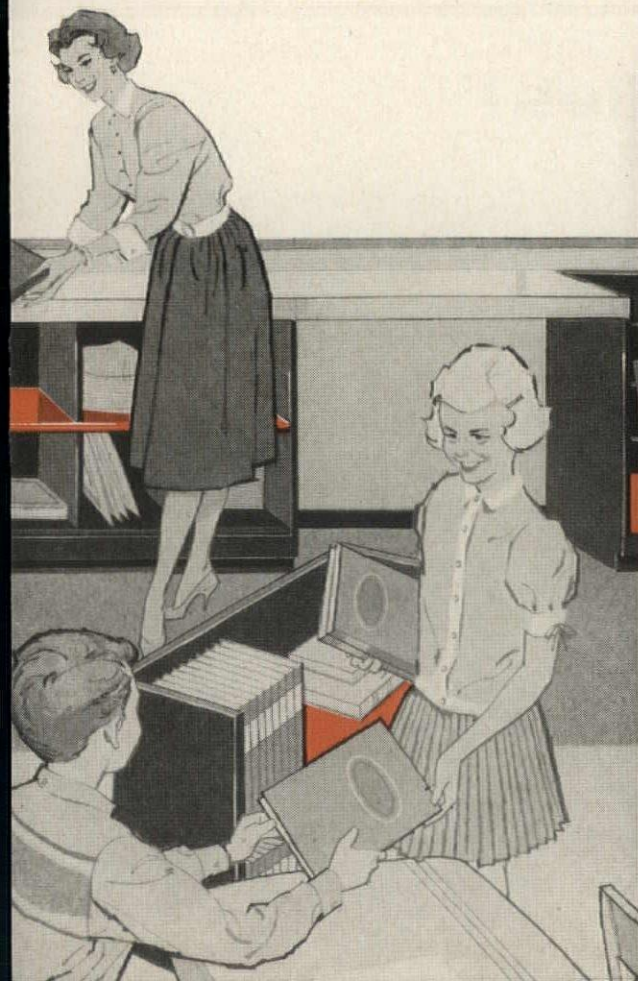
- FACT KIT on school air conditioning.
 Booklet: The case for air conditioned schools.

NAME _____

TITLE _____

ADDRESS _____

CITY _____ STATE _____



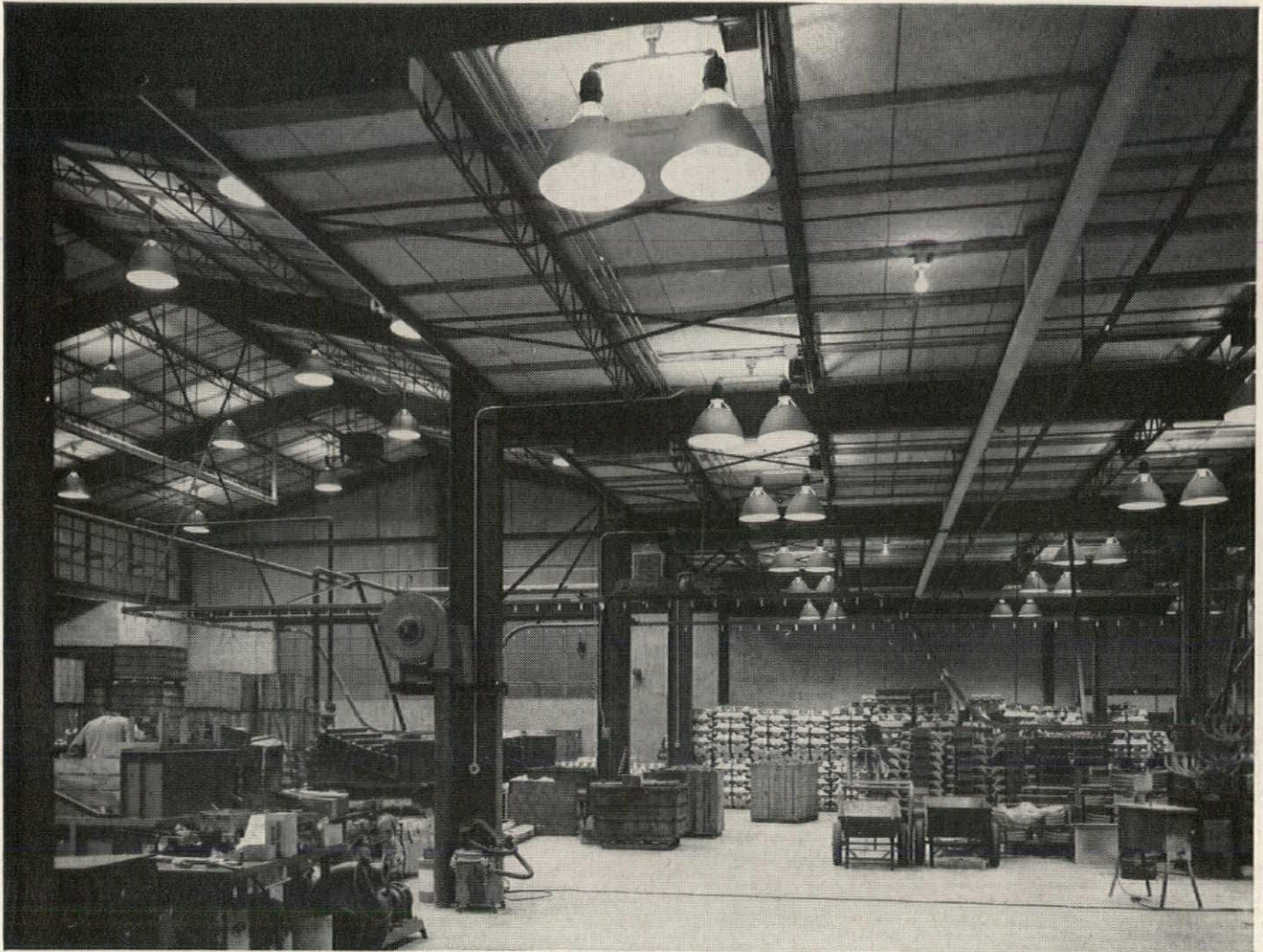
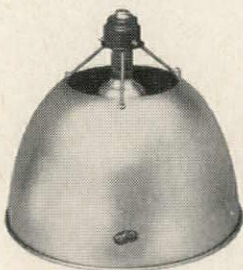


Photo courtesy of Aluminum Casting and Engineering Company, Milwaukee, Wisconsin

225 footcandles!



INSTALLATION DATA

Low bay—Twin-mounted Abolite HMFAU-1800 fixtures with 400 watt color-improved mercury lamps. Mounting height 14', with 13' x 12' spacing. Average footcandle level: 225.

High bay—Abolite HMFAU-2400 fixtures with 1000 watt color-improved mercury lamps. Mounting height 24½', with 13' x 12' spacing. Average footcandle level: 180.

Consulting Engineer:
Trestler Engineering Co.

Electrical Contractor:
Bentley-Jost Electric Corp.

Abolite lifts the lighting level—This company makes intricate aluminum permanent mold castings. They wanted a higher level of lighting in their foundry to increase worker efficiency. They got it using Abolite fixtures in what some lighting engineers call the most outstanding mercury lighting installation in the country.

In the low-bay area, there's an average footcandle level of 225, yet there's no glare—both vertical and horizontal surfaces are lighted evenly without any deep shadows. The Abolite fixtures give 35° shielding to lamp, direct 18% of light upward through open top to wash out deep ceiling shadows.

Most important, this system costs less than a comparable fluorescent system because fewer fixtures are needed. Maintenance costs are less, too, because the chimney effect of Abolite's open-top design prevents dirt from collecting on lamp and reflector surfaces. Why not try this system with Abolite fixtures on your next job? For full information, write *Abolite Lighting Division, The Jones Metal Products Company, West Lafayette, Ohio.*

ABOLITE
Lighting

THE JONES METAL PRODUCTS COMPANY
West Lafayette, Ohio

update your "specs"

ON

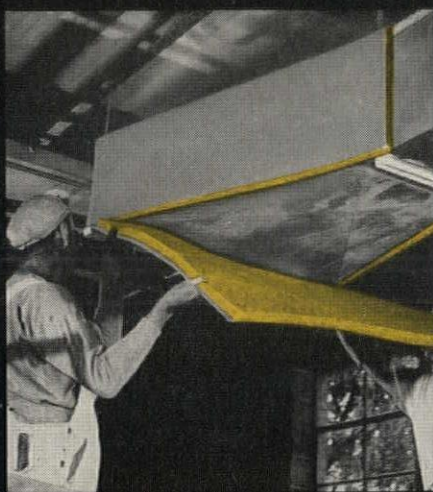
G-B GLASS FIBER INSULATIONS

Technical bulletins on the Gustin-Bacon glass fiber insulations shown here, including complete specifications, have been revised and reprinted from time to time. To be sure your literature file is up-to-date, simply fill in the coupon below, check the information you need, and mail.



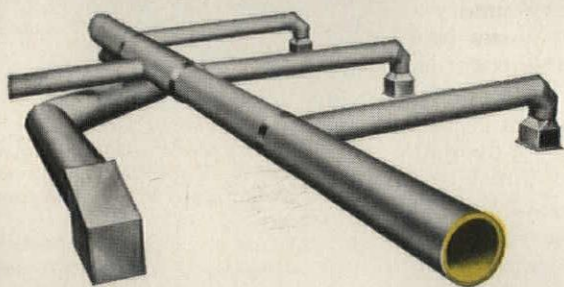
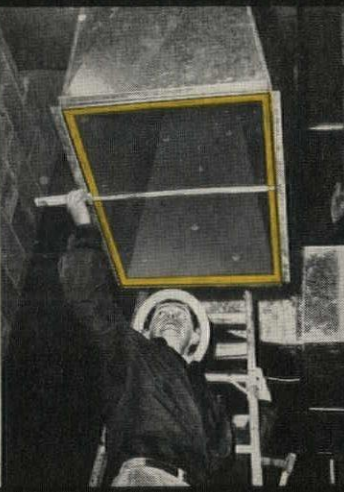
G-B SNAP*ON® pipe insulation

Second to none in insulating efficiency among all general purpose pipe insulations is G-B SNAP*ON—the original one-piece pipe insulation molded of fine glass fibers. In one simple motion G-B SNAP*ON snaps over cold or hot lines up to 350°, indoors or out, to provide truly efficient and permanent thermal protection. Check **G-B SNAP*ON Brochure** in coupon below.



G-B ULTRALITE® for duct wrap and lining

For life-long thermal efficiency, try ULTRALITE—the original insulation made of long, strong textile-type glass fibers. As a duct liner (right), ULTRALITE puts an end to objectionable cross-talk and air rush noises . . . never flakes off into the air stream. And its coefficient of friction is essentially the same as bare sheet metal. Uniformly thick ULTRALITE duct insulation (left) provides full insulating efficiency at rock-bottom costs. For further information, check **ULTRALITE Duct Liner & Insulation Brochure** in coupon below.



new "prefab" glass fiber duct — G-B DUCT

G-B DUCT—the round, prefabricated duct made entirely of glass fiber insulation—absorbs cross-talk noises usually associated with air conditioning systems in motels, medical centers, retail stores, etc. G-B DUCT is high in thermal efficiency, too! Just check **G-B DUCT Brochure** in coupon at right for further information.

CHECK BROCHURE DESIRED

- G-B SNAP*ON BROCHURE
- ULTRALITE DUCT LINER & INSULATION BROCHURE
- G-B DUCT BROCHURE

NAME.....

FIRM.....

ADDRESS.....

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

GUSTIN-BACON Mfg. Co. 

224 West 10th St., Kansas City, Mo.

Thermal and acoustical glass fiber insulations . . . Molded glass fiber pipe insulation . . . Couplings and fittings for plain and grooved end pipe.

Laboratory for Future Cities: HHFA's 30 "Demonstration Grant" Projects

\$5 Million Aid Fund Available to Develop Techniques For Solving Common Urban Renewal Problems

The demonstration grant program of the Housing and Home Finance Agency is moving along in its unobtrusive way, making a cumulative contribution to urban renewal and development. With 30 projects on the activated list, its true measure in offering guidance by example is starting to be felt throughout the country.

About a year ago officials charged with the responsibility for administering this testing of method became convinced that Urban Renewal Administration headquarters in Washington, D. C., should relinquish much of its control to the district offices of the parent Housing and Home Finance Agency. The philosophy motivating this move stemmed from a conviction that housing officials on the ground in each locality were better able to judge projects and to work directly with local public agency people who have to carry them out.

Washington did not abdicate authority, however; it must administer the program that Congress approved and still passes upon projects submitted by the regionals. The HHFA Administrator, of course, must sign the final report.

New Rules Guide Proposals

This move turns over operating responsibility largely to the regional office, where officials are operating under a new set of instructions for submission of proposals for demonstration grants.

The purpose of the program is to increase the effectiveness of methods and techniques for renewing and improving cities. Under a Congressional authorization of \$5 million, funds are granted to public bodies for their use in trying out and reporting on means of urban, neighborhood, or housing development which give promise of being more effective, faster, or less costly. The Federal grants can cover up to two-thirds of the cost of the project.

This program is in the happy situation of operating under a continuing authorization from the Congress, removing the necessity of annual visits to Capitol Hill to ask for additional funds and to air details of operation.

To date, about half of the total authorization has been used in financing, in the prescribed proportion, the studies selected.

"Useful Techniques" the Key

The submission sheet states that "each project should demonstrate useful techniques to other communities in a position to benefit from them. It is not expected, however, that every demonstration will necessarily produce complete answers." Eleven of the 30 projects completed and in the pipeline have been published, half a dozen other reports have been completed and as many more are approved as ideas and will go forward as soon as details have been worked out.

Applications for funds are flooding in to the HHFA offices. If all were to be honored, officials said, the program could have used more than twice the \$5 million authorization.

But selectivity is necessary, duplication of effort must be avoided and the machinery of administration will move only so fast.

How to Apply for Grants

Any public body considering application for a demonstration grant should first submit to the HHFA regional office an initial proposal in the form of a two- or three-page letter with original and three copies. If the review is favorable, HHFA notifies the public body to prepare a formal application. No such formal applications should be submitted until requested by HHFA, it is stressed.

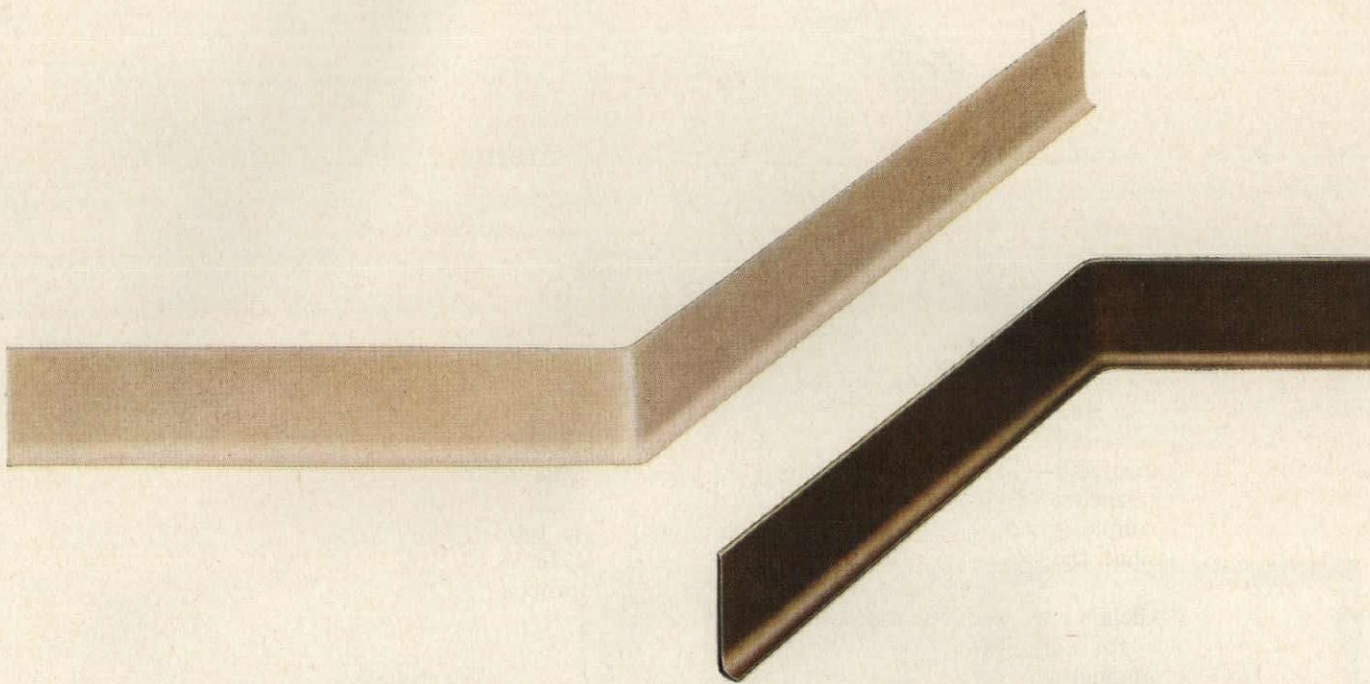
The letter containing the initial proposal should cover six points:

1. Objectives of the project; re-

continued on page 240

HHFA Advisory Committee for Demonstration Grant Program

- Herbert J. Bingham, Executive Secretary, Tennessee Municipal League, Nashville
Charles A. Blessing, Director, City Plan Commission, Detroit
William H. Dyer, Executive Vice President, Perpetual Building Association, Washington, D. C.
Robert P. Gerholz, Gerholz Community Homes, Inc., Flint, Mich.
John F. Havens, Havens Realtors, Columbus, Ohio
Ralph J. Johnson, Head, Construction Department, National Association of Home Builders, Washington, D. C.
Charles W. Liddell, Executive Director, Federation of South End Settlements, Boston
D. E. Mackelmann, Commissioner, Community Conservation Board, Chicago
Martin Meyerson, Vice President in Charge of Research, American Council to Improve our Neighborhoods, Cambridge, Mass.
Richard L. Nelson, Real Estate Research Corporation, Chicago
James W. Rouse, James W. Rouse & Co., Inc., Baltimore
Herman Schmidt, Private Developer, Washington, D. C.
George N. Seltzer, Chairman, Urban Renewal Committee, National Association of Home Builders, Cleveland
David C. Slipper, Webb & Knapp, Inc., New York
Dr. Coleman Woodbury, Professor of Political Science, University of Wisconsin, Madison
Paul Ylvisaker, Executive Associate, Ford Foundation, New York



KENCOVE VINYL WALL BASE

ANOTHER DISTINCTIVE PRODUCT FROM

KENTILE FLOORS

KenCove® Vinyl Wall Base provides the perfect finishing touch to any room. Because corners can easily be formed right on the job, installations are quicker, more economical. (Factory-molded corners also available.) And, for flush-to-wall door buck installations, special KenCove pieces are provided with smoothly tapered ends. For information, see Sweet's File, or call your Kentile Representative for samples.*

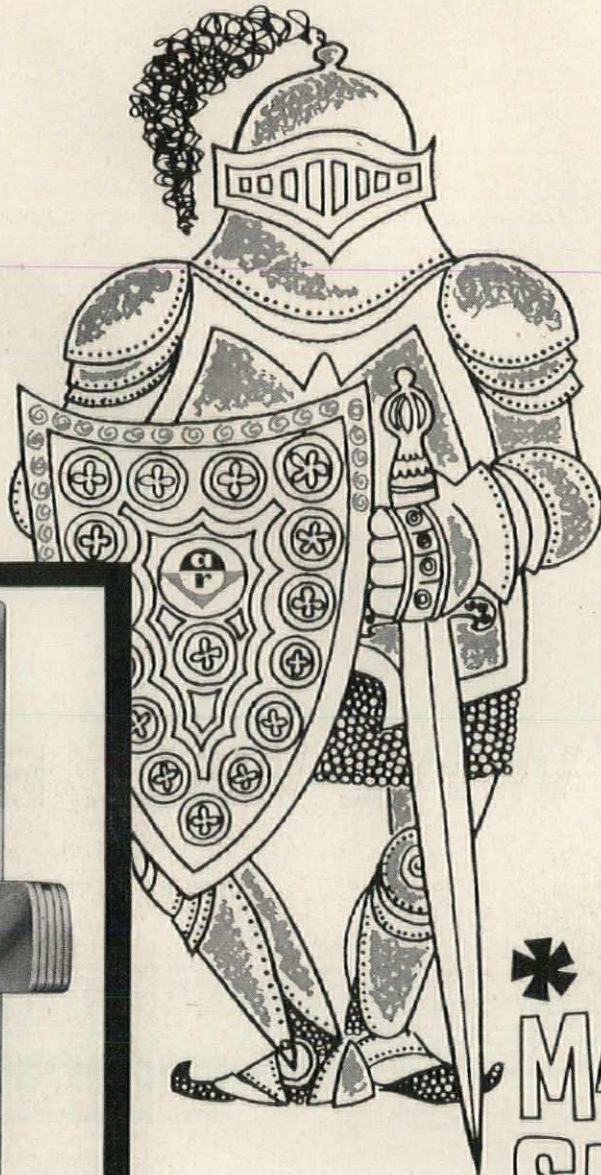
*In New York, visit the Kentile® Floors Showroom, Suite 3119 (31st Floor), Empire State Building, 350 Fifth Avenue.

SPECIFICATIONS

SIZES: 2½" height in 48" lengths, 96-foot rolls; 4" height in 48" lengths, 96-foot rolls; 6" height in 48" lengths only.

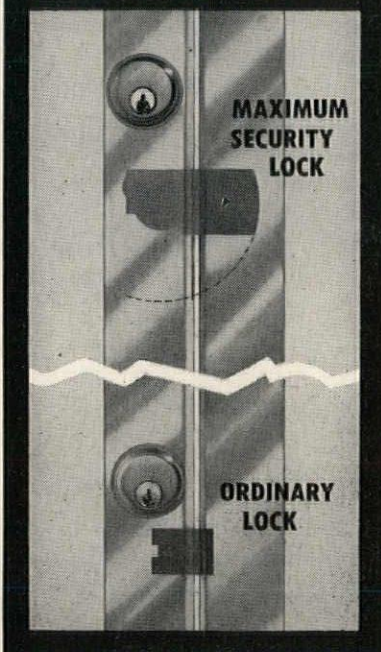
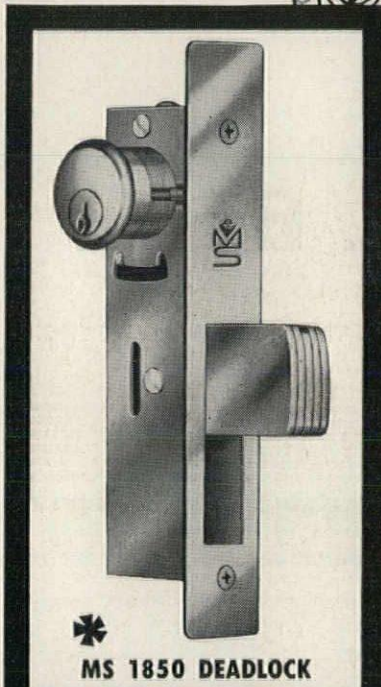
COLORS: (as illustrated above, top to bottom) Beige, Brown, Sumac Red, Black, Gray, Green, White and Russet. (White and Beige not available in 6" height or 96-foot rolls.)

Kentile, Inc., Brooklyn 15, N. Y.



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WITHOUT

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**MAXIMUM
SECURITY**



ADAMS-RITE's exclusive **MAXIMUM SECURITY** for narrow stile doors is accomplished by bridging the opening between the lock stile and the strike with a bolt of laminated steel—measuring a full $1\frac{3}{8}$ " from a backset as short as $\frac{7}{8}$ ". As much of this bolt is retained within the lock stile as is projected, making forced entry impossible without complete destruction of the door channel. Compare the Adams-Rite MS lock—with its protective long bolt—with ordinary locks and you'll see why adequate security means **MAXIMUM SECURITY**. Write today for complete specifications and information.

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OR WRITE FOR COPY



**ADAMS-RITE
MANUFACTURING COMPANY**

540 West Chevy Chase Drive, Glendale 4, California

Climate by Chrysler



South Carolina Archives Building, Columbia, S. C. **Architect:** G. Thomas Harmon, and Assoc.; **Consulting Engineer:** Watson Engineering Co.; **General Contractor:** Atlantic Building Co.; **Air Conditioning Contractor:** Columbia Heating and Cooling Co.

Chrysler Air Conditioning controls humidity within 2% to preserve treasured archives

Some old, some new—but of South Carolina's historical records and documents available you'll find many of them in the state's new Archives Building. All are preserved for future generations in climate created by Chrysler.

The air conditioning divides into two separate air systems: a high-pressure system for comfort cooling—a low-pressure system for humidity control in storage areas. A 60-ton Chrysler Radial Chiller cools with a flexibility that allows an accurate 50% relative humidity so necessary in eliminating the deterioration and brittleness which age brings to paper. Control is so precise, humidity never varies more than 2%.

Total installed cost of the entire air conditioning system: only \$1.40 per square foot of area. (Actually, cost was 8% below original expectations!)

Economy is reason enough for choosing Chrysler Air Conditioning, but only one of many advantages. Another is the cooperation given consulting engineers and contractors by Chrysler engineers. For the whole story, for information on Chrysler equipment and engineering assistance, write today.



Airtemp Division, Chrysler Corporation, Dept. M-70, Dayton 1, Ohio
In Canada: Therm-O-Rite Products, Ltd., Toronto, Ontario

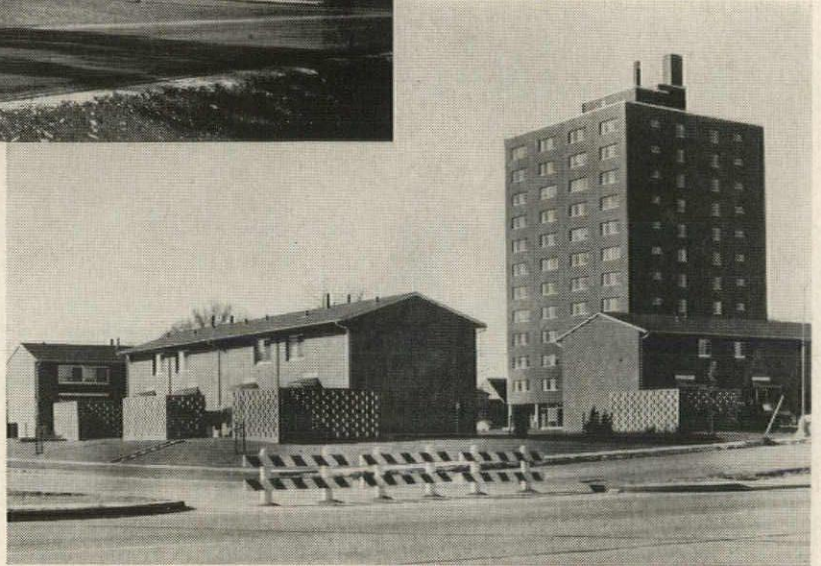


FOR ALL 3 PROJECTS:

Mason Contractor: Axel H. Ohman, Inc.
Dealer: Wunder Klein Donohue Co.
 both of Minneapolis, Minn.

U. S. Department of Interior, Bureau of
 Mines Building, Minneapolis, Minn.
Architect: Bettenburg, Townsen, Stolte &
 Comb, St. Paul, Minn.
Contractor: Maurice Mandel, Inc., Min-
 neapolis, Minn.

LEHIGH MORTAR CEMENT



Lyndale Homes Housing Project, Min-
 neapolis, Minn.
Owner: City of Minneapolis
Architect: Thorshov & Cerney, Inc., Min-
 neapolis, Minn.
Contractor: Johnson, Drake & Piper,
 Inc., Minneapolis, Minn.

“... meets our requirements to the utmost”

• Eight years ago mason contractor Axel Ohman reported that . . . “The economy and workability of Lehigh Mortar Cement convinces us that it meets our requirements to the utmost. It has good bonding qualities along with absence of shrinkage. We are not alone in this opinion as owners, architects and inspectors have also made favorable comments.”

That Mr. Ohman still prefers Lehigh Mortar Cement is proved by its use in the three recently completed quality masonry projects pictured here.

You can approve Lehigh Mortar Cement with the assurance that it helps masons achieve the appearance you want in structures you design, and that it exceeds the most rigid Federal and ASTM specifications. Lehigh Portland Cement Company, Allentown, Pa.



Southdale Medical Building, Edina, Minn.
Owner: Southdale Management, Inc.
Architect: Victor Gruen & Associates,
 Los Angeles, Calif.
Contractor: C. F. Haglin Construction
 Co., Minneapolis, Minn.

LEHIGH CEMENTS

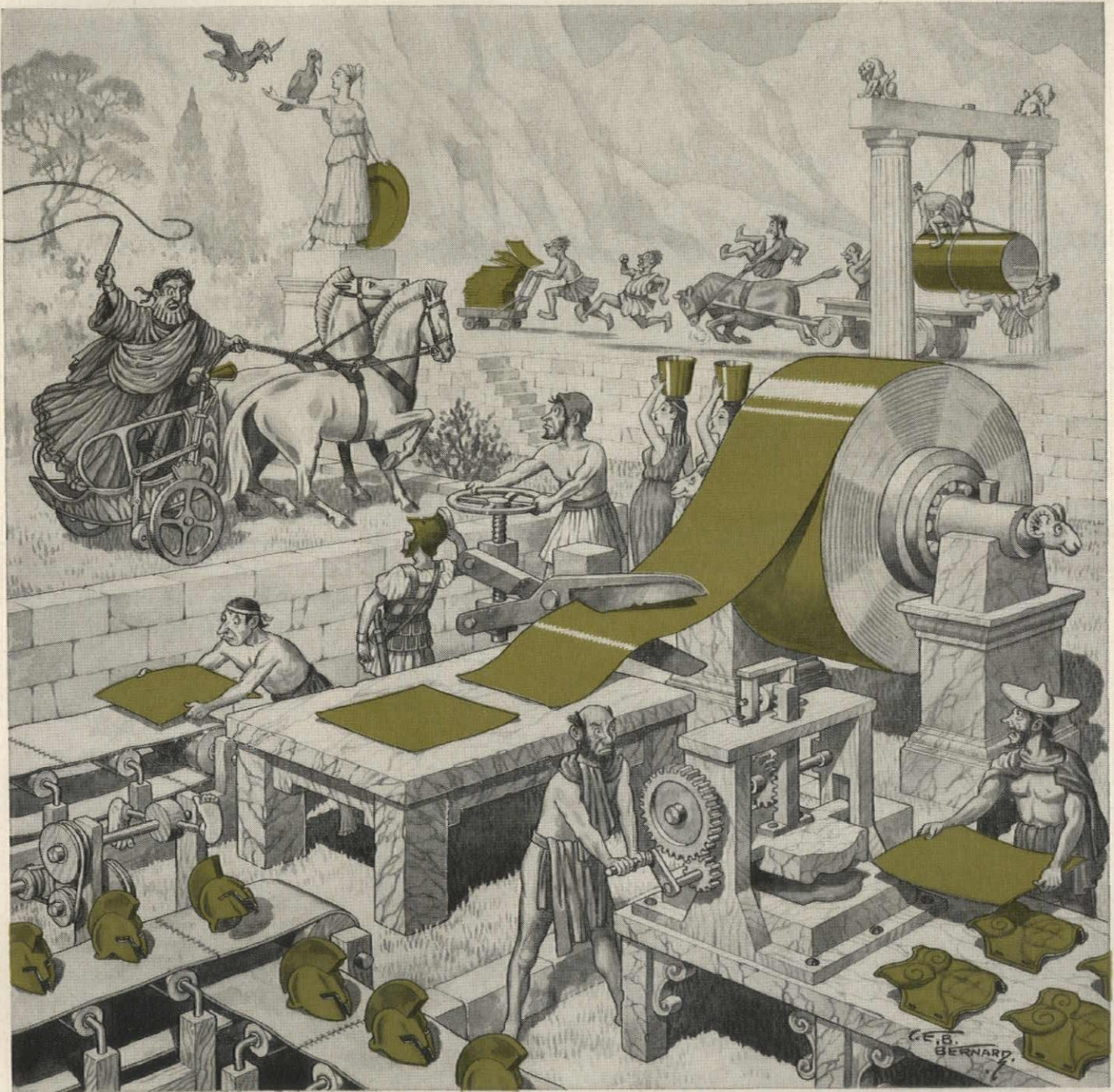
LEHIGH MORTAR CEMENT • LEHIGH EARLY STRENGTH CEMENT • LEHIGH PORTLAND CEMENT • LEHIGH AIR-ENTRAINING CEMENT

Now it can be told

This engraved marble tablet recently uncovered in one of the long-lost Phrygian caves shows how Midas fooled the public. This stuff wasn't 14-karat at

all. The "Midas Touch" is nothing but a myth. Midas used ColorRold* Stainless Steel, developed by Washington Steel Corporation. Gotta give the old charlatan a lot of credit though—he knew a good thing when he saw it.

MIDAS SPECS: 2 cubits × .025' ± .001' × coil, Type CCCII (302), Rb 82 max. Sunbrite gold, 50 glossimeter, 1 mil, paper interleaved, skidded for open oxcart only. 12 × 10⁶ drachma max. wt. per coil.



*ColorRold, an organic coated stainless steel, comes in eleven harmonizing colors, can be formed and drawn or textured and highlighted in an infinite number of designs and effects, now available for your architectural or product needs.

WASHINGTON STEEL CORPORATION
and ColorRold®

PRODUCERS OF *MicroRold*® STAINLESS STEEL

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Detroit's Magnificent **COBO HALL**

World's Largest Convention Exhibit Building



Giffels & Rossetti
Architects-Engineers

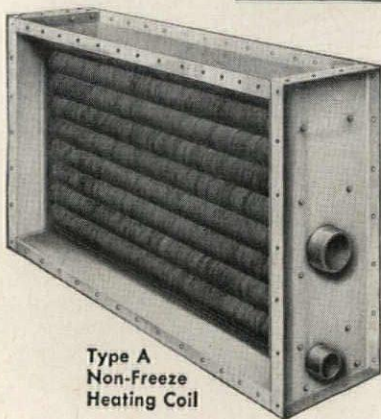
The O. W. Burke Company
General Contractor

Stanley Carter Company
Mechanical Contractor

Robert Irsay Company
Sheet Metal-Ventilation

Detroit Free Press
Photo by Tony Spina

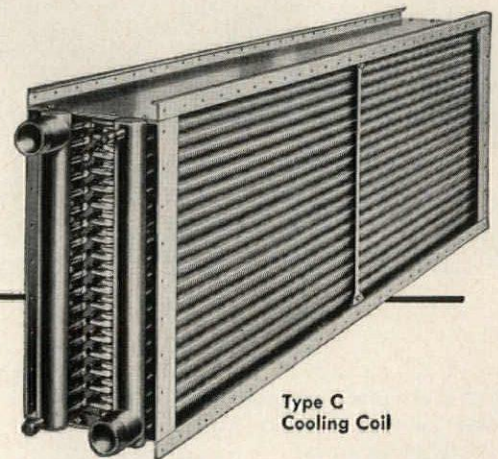
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Type A
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Modern smooth-fin design of Aero-fin coils permits ample heat-exchange capacity in limited space—permits the use of high air velocities without turbulence or excessive resistance.

Aero-fin performance data are laboratory and field proved. You can safely specify Aero-fin coils at full published ratings.



Type C
Cooling Coil

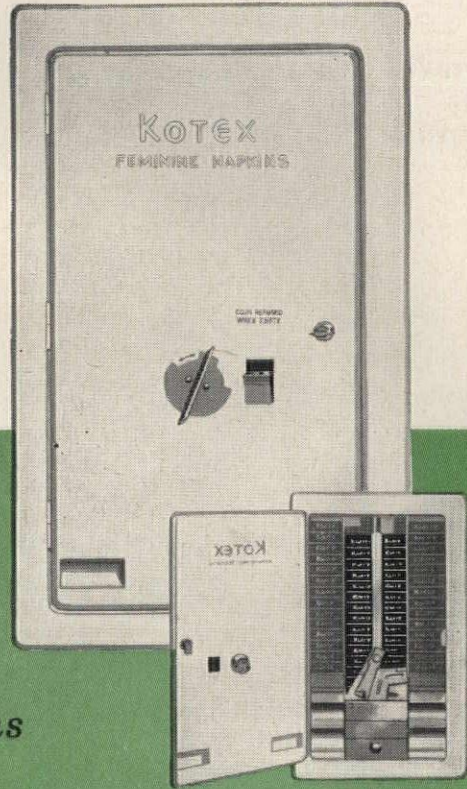
AEROFIN CORPORATION

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Aero-fin is sold only by manufacturers of fan system apparatus.

List on request.

ENGINEERING OFFICES IN PRINCIPAL CITIES



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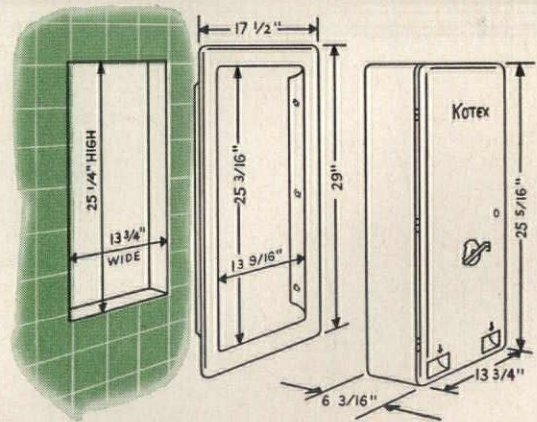
RECESSED VENDORS

for **KOTEX** *feminine napkins*

TO KEEP PACE with the latest architectural designs, Kimberly-Clark has styled a brand new recessed dispenser for Kotex feminine napkins for rest room use in schools, offices, stores; industrial and public buildings. This unobtrusive, built-in vendor holds 63 individually boxed napkins. 33 vend from a single loading, 30 are held in storage.

These streamlined, sturdy, pilfer-proof vendors add a much appreciated service to any public building. They are available with either a five-cent or ten-cent coin mechanism.

Available in durable white enamel, satin chrome, gleaming polished chrome and stainless steel. Matching frame for recessed installation. (Other vendors that can be surface mounted are also available.)

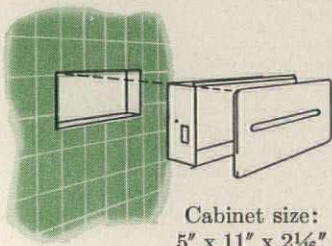


RECESSED DISPENSERS FOR KLEENEX TISSUES

Holds full box of Kleenex 200's. Dispenses one tissue at a time. Mirror-chrome finish. Holes in back and side make it easy to fasten to studding.

For further details on how these attractive new dispensers can fit into your plans, see Sweet's 1960 Architectural File Cat., Section 19a/Ki. or write to Kimberly-Clark Corp., Dept. AR-70, Neenah, Wisconsin.

KOTEX and KLEENEX are trademarks of KIMBERLY-CLARK CORPORATION



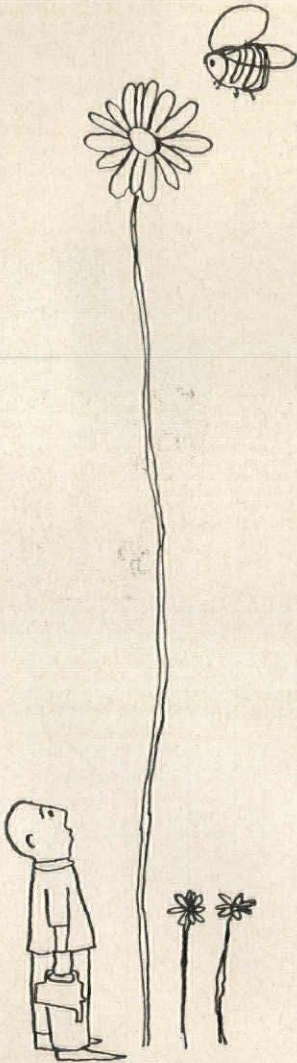
Cabinet size:
5" x 11" x 2 1/16"



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Balfour
rolling doors

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automatic rolling fire doors
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rolling steel grilles

Details in Sweet's or write for catalog.

Walter Balfour & Co. Inc.
Brooklyn 22, N. Y.

The Record Reports

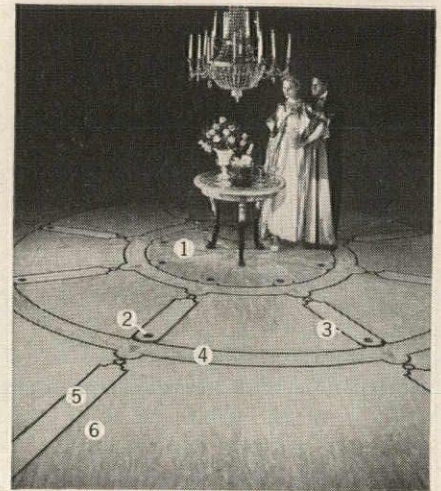
WHO'S WHO: A ROUNDUP OF ELECTIONS, APPOINTMENTS

Dr. Eric A. Walker, president of the Pennsylvania State University, has been elected president of the AMERICAN SOCIETY FOR ENGINEERING EDUCATION; Dean Melvin R. Lohmann of Oklahoma State University and Prof. Newman A. Hall of Yale University, vice presidents; and Wendell W. Burton of Minnesota Mining and Manufacturing Company, treasurer. . . . The ARCHITECTURAL PHOTOGRAPHERS ASSOCIATION has elected Scott Hyde as president; Lionel Freedman, vice president; Charles N. Pratt, secretary; and James Vincent, treasurer. . . . Leroy K. Wheelock has succeeded Esworthy K. Lange as secretary of ENGINEERS JOINT COUNCIL. Mr. Wheelock, since 1956 assistant secretary of E.J.C. and more recently executive secretary of the Engineering Manpower Commission, is a mining engineer and practiced until 1956. Mr. Lange resigned to become executive secretary of the American Institute of Industrial Engineers. . . . Dudley Newton of Detroit has been elected president of the MICHIGAN ENGINEERING SOCIETY. Other new officers: Russell E. Harrison of Detroit, vice president; Alfred K. Martin, Jackson, secretary; William C. Gibson, Ann Arbor, treasurer; Wardwell B. Montgomery, Battle Creek, director at large; Joseph E. Wilbur, Lansing, past president. . . . Bradford N. Clark, partner in the architectural firm of Eggers and Higgins, has been reelected president of the NEW YORK BUILDING CONGRESS. . . . H. S. Parkinson has been promoted to the post of manager of central engineering for MINNESOTA MINING AND MANUFACTURING COMPANY. Mr. Parkinson joined MMM in 1950 as an architect and has been for more than three years chief project manager for Central Engineering. . . . R. D. Thomas Jr., president of the Arcos Corporation, has been elected president of the AMERICAN WELDING SOCIETY. He takes office June 1. . . . James Kirk Merrick, artist and teacher, has been appointed executive director of the PHILADELPHIA ART ALLIANCE. Mr. Merrick, who takes office August 15, succeeds Dorothy Kohl.

more news on page 80

Note how this
Amtico Vinyl Floor
creates smart effects
in a practical way

as illustrated on the facing page



The Flooring:

Amtico Renaissance Vinyl

The Colors:

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|------------------------|------------------------|
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Renaissance® Flooring Data:

Amtico Permalife Vinyl $\frac{1}{8}$ " . . . all-vinyl, color throughout thickness • Standard tile sizes . . . 9" x 9", 12" x 12" • Special sizes . . . 9" x 18", 18" x 18", 9" x 36", 24" x 36", 36" x 36" (Other sizes available by special order) • Feature strips . . . up to 1" wide, 36" long.

Amtico Flooring Facts:

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drama...
and glamour...
and beauty...



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flooring

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at Lockheed . . .*

Architect: Aeck Associates



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permanently* shock-resistant Nucite glass chalkboards



Nucite glass chalkboards are tempered for exceptional shock resistance

Nucite chalkboard consists of a vitreous enamel writing surface permanently fused to *tempered* polished plate glass $\frac{1}{4}$ " thick. It's similar to the porcelain panels used in curtain wall construction. The tempering process gives Nucite exceptional shock resistance — far greater than that of natural slate or composition chalkboards, or ordinary plate glass. And because the fused writing surface becomes an integral part of the glass, moderate impacts will not cause chipping nor flaking as they do when porcelain is bonded to less compatible surfaces. It's the finest writing board available . . . incomparable for writing ease, legibility, erasing. Impervious to moisture, which makes it washable, stain-resistant and warp-proof, of course. Five sight-engineered colors. Cost? Less than that of high-grade, heavy gauge steel chalkboards. Send for sample . . . or see Sweet's ^{23e}Ne Agents and distributors in all principal cities. Write for the name of the one nearest you.

Apex Cork bulletin board is plastic impregnated for exceptional ease of maintenance. Fingermarks,

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* In more than 20 years and 25,000 installations, we have never been called upon to fulfill the following guarantee: **the surface of Nucite glass chalkboards is guaranteed for the life of the building against fading, warpage, or becoming slick or shiny under normal classroom use.** ● Should any Nucite glass chalkboard break within 20 years after installation, outside of willful or accidental damage, it will be replaced free of charge.

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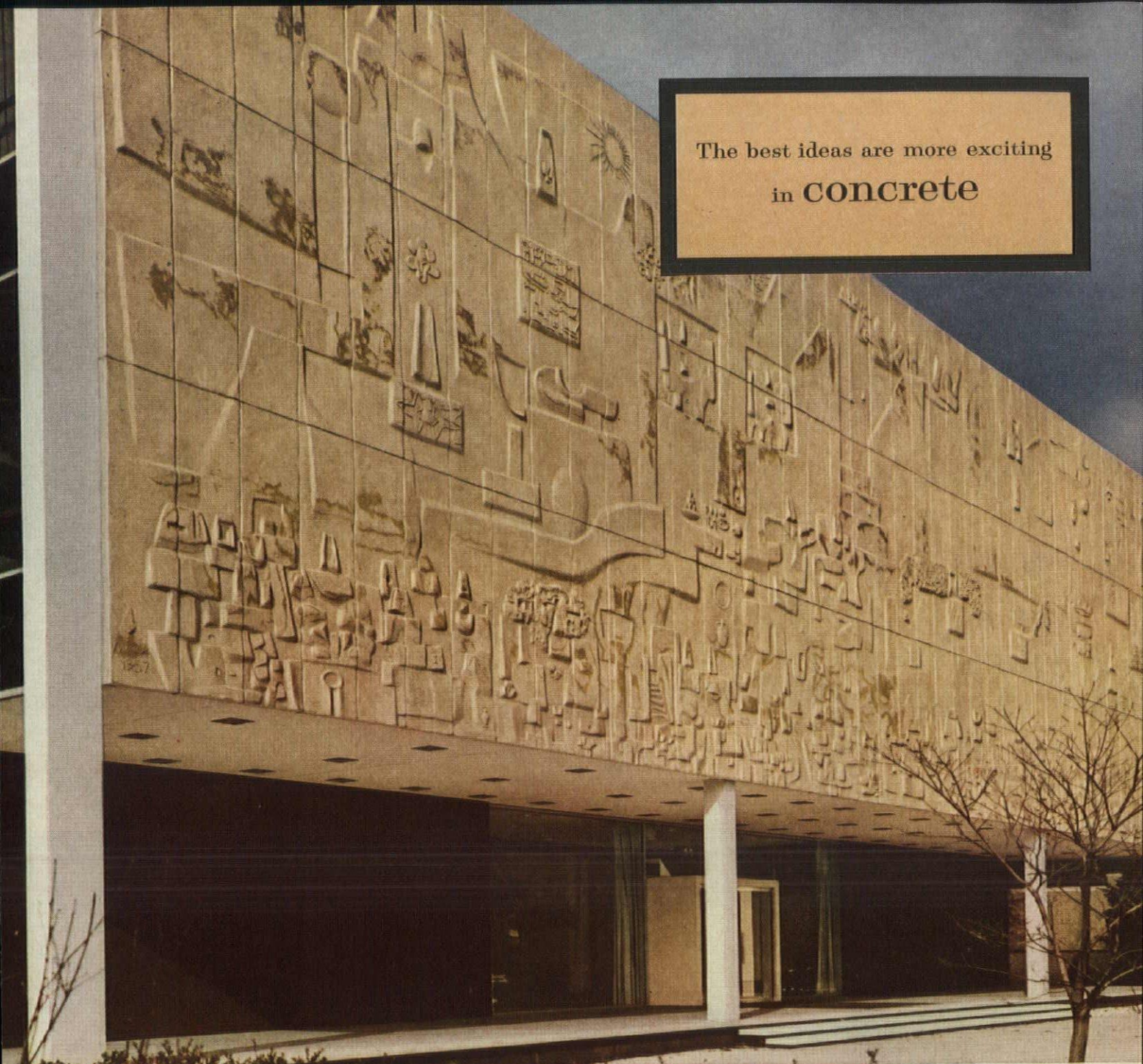
Here's the latest in fully-finished wall materials . . . soilproof paneling that offers almost unlimited decorating possibilities! New Marlite Random Plank is available in six exclusive Trendwoods® styled by American Color Trends for any room, anywhere. Danish Birch, English Oak, Swedish Cherry, Italian Cherry, Swiss Walnut, American Walnut capture the beauty and warmth of fine hardwoods to complement any decor. Each tongued-and-grooved.

plank (16" x 8' x 1/4") goes up over furring strips or existing walls without muss or fuss. And Marlite with its baked melamine plastic finish needs no painting or further protection; resists scuffs, stains, and dents. An occasional damp cloth wiping keeps Marlite new-looking for years. Get full details from your building materials dealer, or write today, Marlite Division of Masonite Corporation, Dept. 705, Dover, Ohio.

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The best ideas are more exciting
in **concrete**

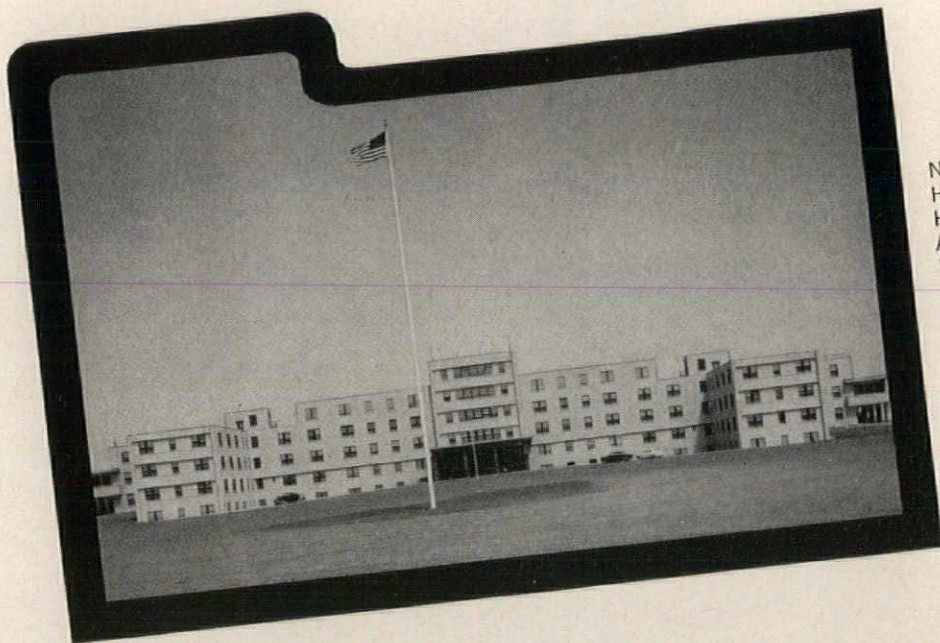
Impressive new home office of Mutual Insurance Company of Hartford, Hartford, Conn. Architects: Sherwood, Mills & Smith, Stamford, Conn. Structural Engineers: Werner-Jensen & Korst, Stamford, Conn.

Only in precast concrete... curtain walls of sculptured beauty!

To achieve the striking design effect pictured here, the architects chose precast concrete. With it they turned the fronting wall of the building into an heroic bas-relief.

Famed sculptor Costantino Nivola "carved" the designs in damp sand. Cast directly from these sand molds in 132 panels, the concrete captured all the detail and rich texture of the original sculpture. Color variations on buff-toned background increase the feeling of depth.

This is just one example of how today's architects are using concrete to create outstanding decorative effects in buildings of every purpose, every size and type.



New Jersey State
Hospital at Ancora,
Hammonton, N. J.
Architects:
Epple and Seaman

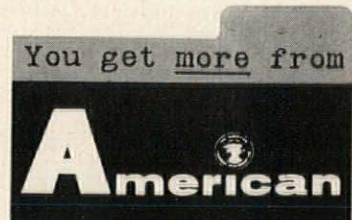
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E. H. Wiehe,
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WALL COSTS CUT FOR CITY HALL WITH WELDED STEEL TUBING

Here's a sharply-defined example of welded steel tubing in today's architectural use. Because this structure was *designed with tubing in mind*, the taxpayers of San Jose, Cal. reaped a double benefit: lean, clean beauty in their city hall—tax money saved because welded steel tubing is one of the most economical structural materials available for low-rise buildings.

With round, square or rectangular tubing, large wall sections can be shop-fabricated. Window and door frames fit easily into place on the job. Tubing may be exposed for decorative value, in bright stainless or carbon steel finished as desired.

Investigate welded steel tubing as a cost-saving, eye-appealing material for schools, churches, institutions, commercial and government buildings . . . even residences. Write directly to the Formed Steel Tube Institute, or to any of the member companies listed below.

LC-601



FORMED STEEL TUBE INSTITUTE, INC.

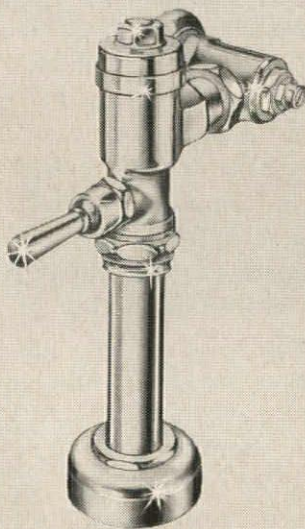
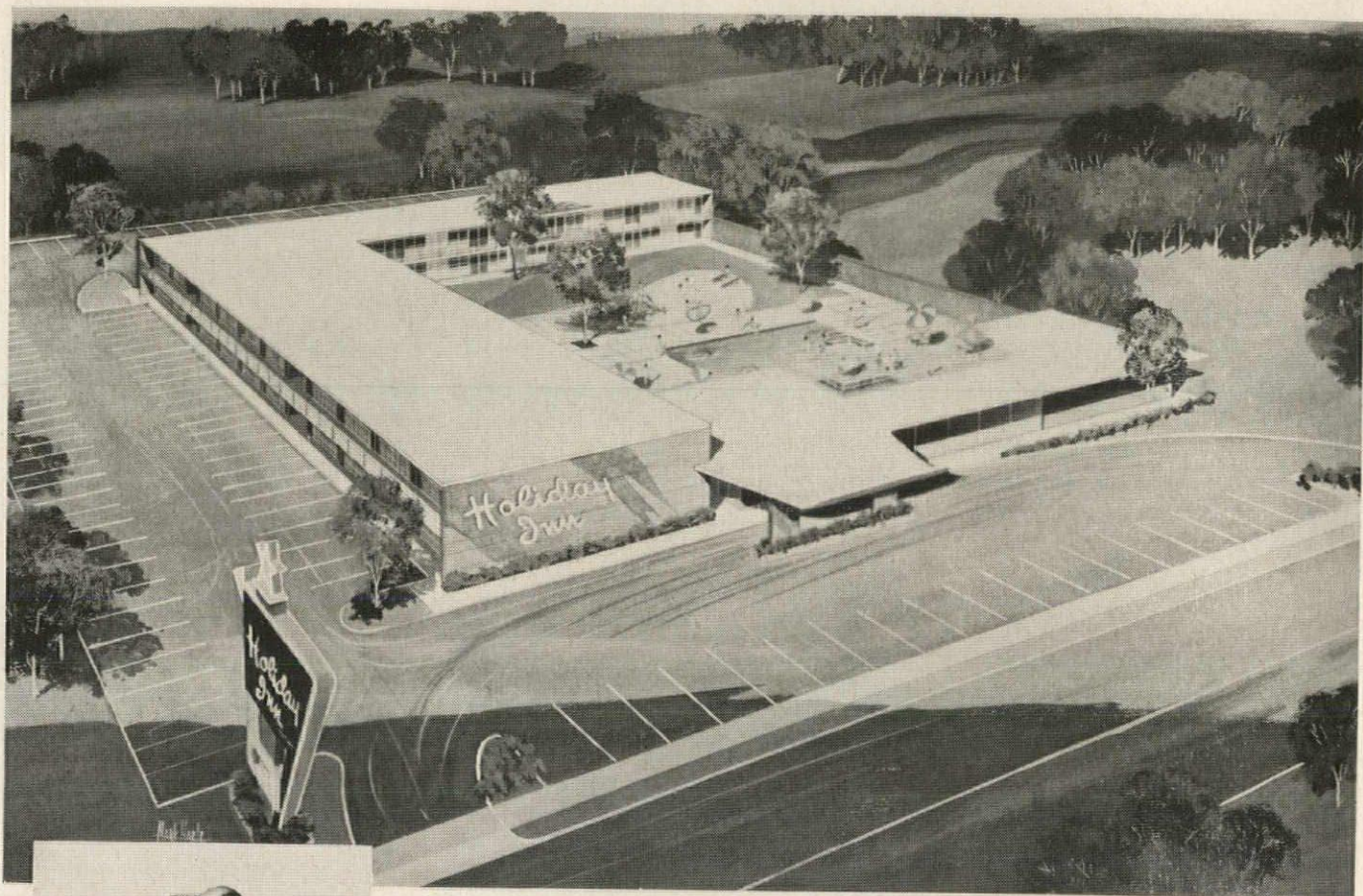
1604 Hanna Building

Cleveland 15, Ohio

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Problems take a holiday

HOW PLUMBING PROBLEMS AT HOLIDAY INNS
WERE SOLVED BEFORE THEY HAPPENED BY
SPECIFYING FLUSH VALVES BY IMPERIAL WATROUS



Series 400 piston-type flush valve provides the quality and features that make it ideal for Holiday Inn applications. For flush valve specifications, write for Catalog No. 459.

Complex problems must be solved in developing the design, plans and specifications of *just one* installation like this. For a chain of them that extends from coast to coast, these problems are drastically multiplied.

Take the subject of water, for example. Both the availability and the disposal problem will vary from one location to the next. Imperial Watrous flush valves helped solve this with a Water Saver adjustment that saves as much as one gallon per flush by a simple adjustment.

Other features, too, such as self-cleansing by-pass and self-tightening handle

packing, provide continuous high performance with a minimum of attention and maintenance.

Holiday Inns have a reputation that's based on consistent quality. Mr. Kemmons Wilson, Chairman of the Board for Holiday Inns of America, Inc., states it simply: "... To provide the best in accommodations and facilities for our guests... we must build and equip with the best." Their specifications prove that Imperial Watrous quality measures up.

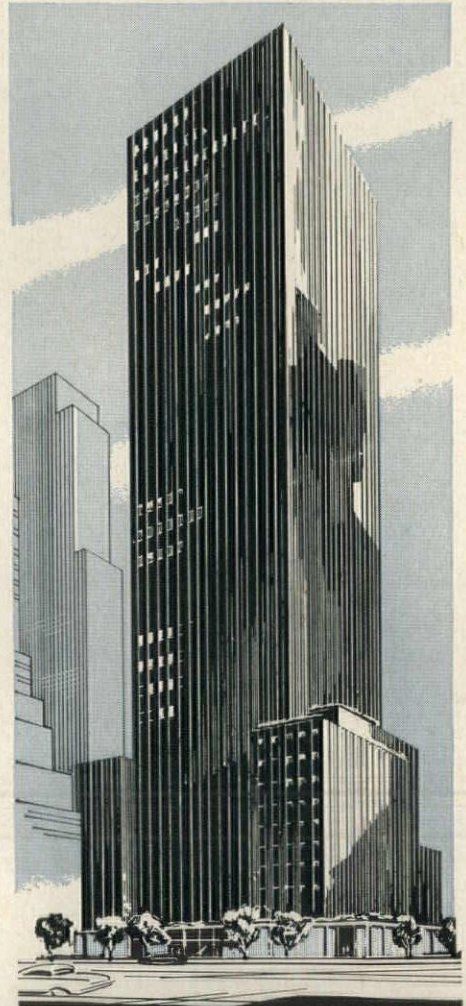
Look into the high standards of these flush valves. See for yourself how Imperial Watrous quality measures up.

IMPERIAL **Watrous**

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HANLEY makes the difference

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Location: 633 Third Avenue, New York
Owner: Galbreath-Ruffin Realty Co., Inc.
Architect: Harrison & Abramovitz
General Contractor: Turner Construction Co.
Glazed Brick: Hanley Company, J Series No. 592

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NEWS FROM THE CAMPUS: SUMMER PROGRAMS, FELLOWSHIPS, FACULTY NOTES

Keeping Up: Summer Programs Offer Varied Opportunities

Subject matter ranging from city planning to design of atomic shelters will be covered in special summer programs scheduled by many architectural schools as short courses for practicing architects and engineers.

Among such programs recently announced:

MASSACHUSETTS INSTITUTE OF TECHNOLOGY: Theory and Criticism in Architecture and City Planning—week of July 11; City and Regional Planning—weeks of July 18 and 25; week of August 22—Noise Reduction. M.I.T. scheduled earlier programs on Strength of Plastics and Glass (week of June 20); Scientific and Engineering Reports (week of

June 20); Modern Developments in Heat Transfer (weeks of June 27 and July 4) and Fundamentals of Adhesion (week of June 27). For information about future programs: M.I.T., Cambridge 39, Mass.

PENNSYLVANIA STATE UNIVERSITY: Atomic Shelter (architectural and engineering planning aspects)—July 10-22; Atomic Shelter (structural engineering and radiation shielding aspects)—July 24-August 5; Technical Report Writing—Sept. 19-30. For further information: Continuing Education Conference Center, Pennsylvania State University, University Park, Pa.

CASE INSTITUTE OF TECHNOLOGY: Plastic Design in Steel—July 11-15; and Thin Shell Concrete Structures—July 18-22.

13 New Fellowships Set Up In Architecture at Penn

Thirteen new \$1000 fellowships for graduate study in architecture have been established at the University of Pennsylvania's School of Fine Arts.

Sponsors of the fellowships are 11 Philadelphia and two New York architectural firms. The Philadelphia sponsors are: The Ballinger Company; Carroll, Grisdale and Van Alen; Eshbach, Pullinger, Stevens and Bruder; The George Ewing Company; Harbeson, Hough, Livingston and Larson; Howell Lewis Shay and Associates; Vincent G. Kling; Martin, Stewart and Noble; Nolen and Swinburne; Thalheimer and Weitz; and Trautwein and Howard. From New York: Alfred Easton Poor and Daniel Schwartzman.

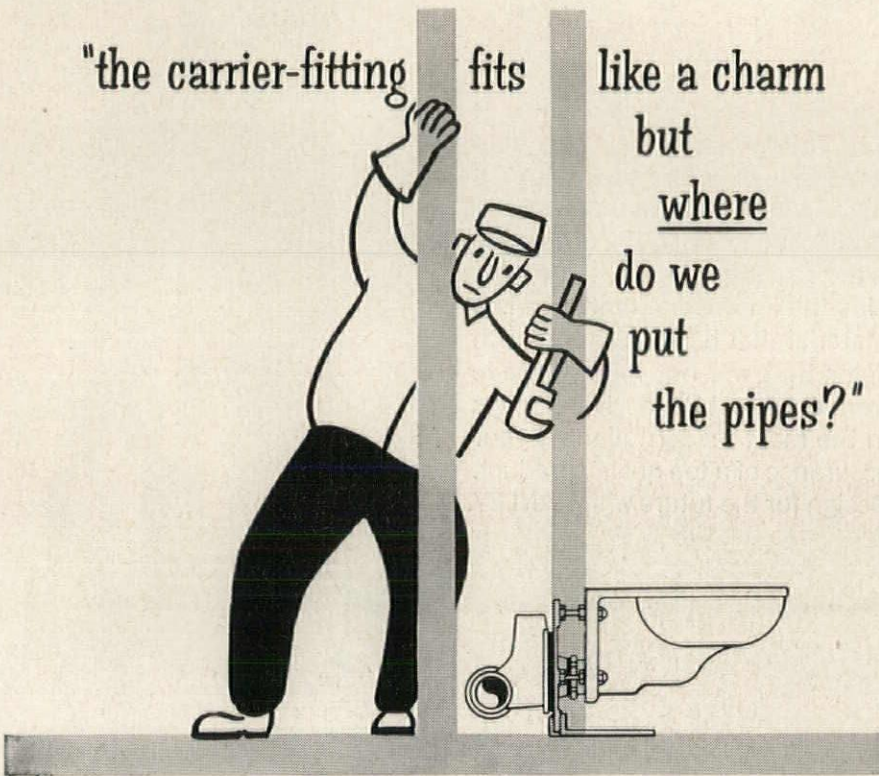
Establishment of the fellowships was suggested by sponsorship in 1958 of a fellowship by Thalheimer and Weitz and in 1959 of one fellowship by Thalheimer and Weitz and one by Harbeson, Hough, Livingston and Larson.

Faculty Appointments

At CLEMSON, Lothar Kallmeyer as associate professor and George Englert as assistant professor in the School of Architecture. . . . At HARVARD, Sidney J. Greenleaf as assistant professor of construction in the Graduate School of Design; William Alonso as assistant professor of regional planning in the University.

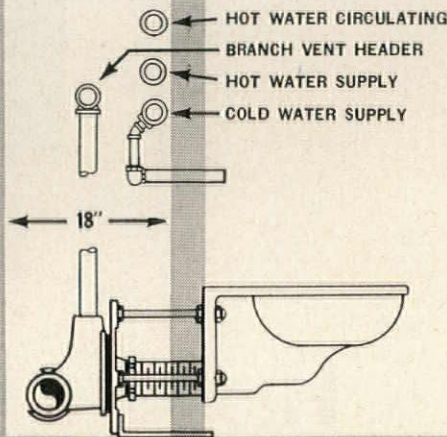
more news on page 90

"the carrier-fitting fits like a charm but where do we put the pipes?"



THE ANSWER:

Leave at least the space shown at right for the many trades using the pipe chase—plumbing, heating, air-conditioning, ventilating. A little extra space means a lot of extra savings—in time, labor, materials, maintenance.



DON'T be space wise and dollars foolish. Write for Wade Carrier-Fittings Dimensional Standards Charts.



WADE MANUFACTURING CO.—ELGIN, ILLINOIS



LE CORBUSIER'S
LA TOURETTE

"Profile and contour are the touchstone of the architect . . .
Profile and contour are free of all constraint . . .
Profile and contour are a pure creation of the mind;
they call for the plastic artist . . ." LE CORBUSIER

The structure is of raw reinforced concrete with certain elements covered with a thick rough plaster. The cement slabs which frame the balconies have a textural accent of crushed local stone. Inner balcony walls and window jambs are painted in bright pure colors

NAME: *Couvent d'Etudes (La Tourette)*

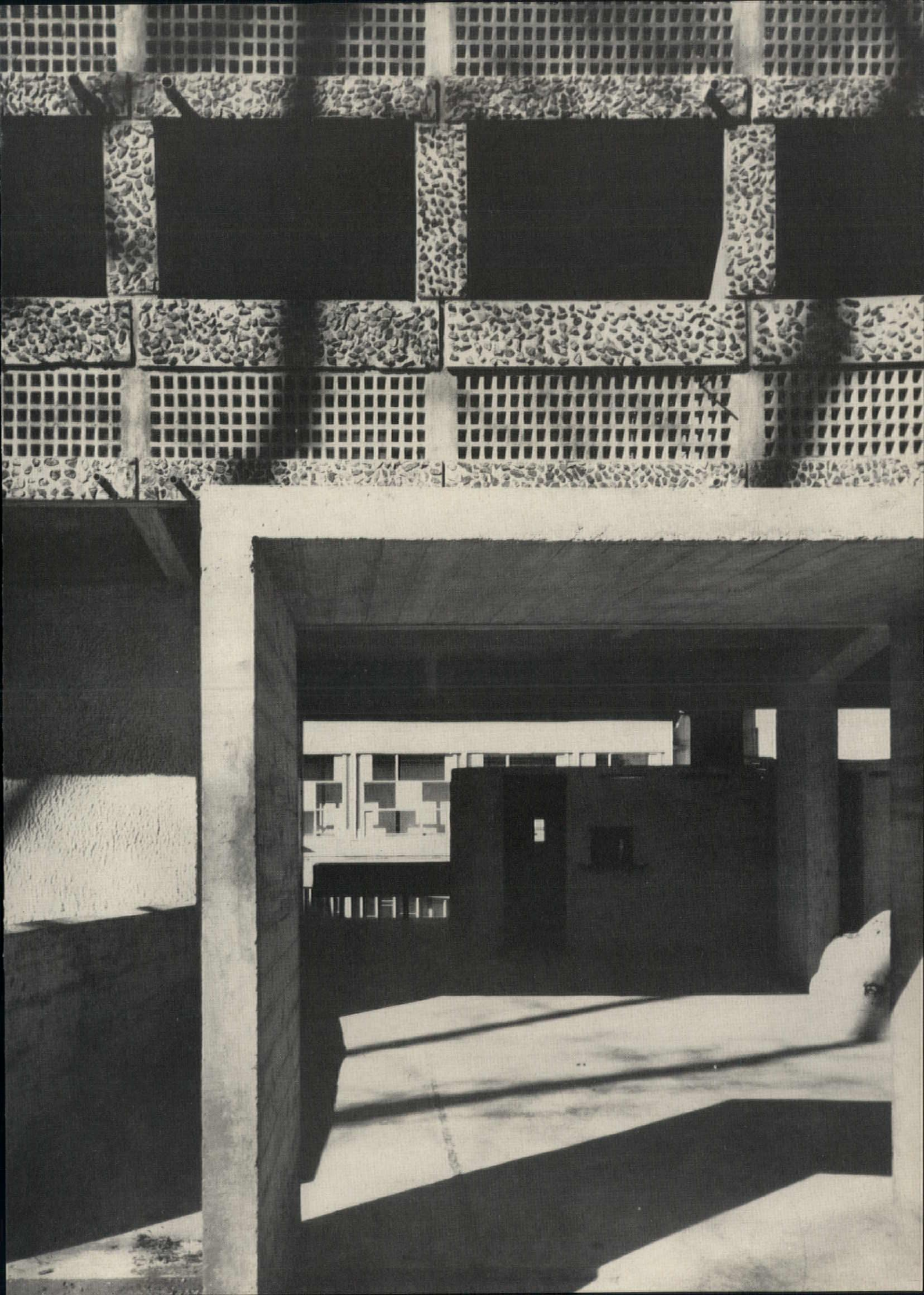
LOCATION: *Eveux-Sur-Arbresle near Lyon, France*



All photographs except where noted by Marc Neuhoj

Any building by Le Corbusier is a great architectural event, and he has made nearly every type of structure he has ever designed seem singularly appropriate to his genius. It is to be expected, therefore, that *La Tourette* should proclaim that Corbu of all architects should design a monastery. The chance was given to him by the late Father Couturier, a Dominican priest and publisher of the controversial Dominican magazine *Art Sacre*. His efforts in behalf of the reform of liturgical art caused several of France's leading artists to be selected to enrich the church at Assy, Matisse to be given the opportunity at Vence, and Corbu the challenge at Ronchamp.

Le Corbusier's architecture, in its grand principle, is in harmony with Dominican thought, and is appropriate to the daily life the monks share together; a life of individual solitude and communal activity, of poverty and silence, devoted to meditation, prayer, teaching and study. A major theme of Corbu's work has been the expression of the individual cell within the collective complex, as well as the assertion of the separate collective character. The apartment structures at Marseilles and Nantes were ordered according to this principle. He has written: "Arrangement is the grading of aims, the classification of intentions." At *La Tourette*, as in earlier structures of Corbu, his spaces which belong to the communal life are noble, those which belong to the individual are as small, compact, and austere as possible. In 1925 he wrote in *L'Esprit Nouveau*: "Human needs are very few; they are identical in all people, since all people have been cast in the same mold since the earliest times we know of . . ." Perhaps all his collective dwellings are in essence for monks.

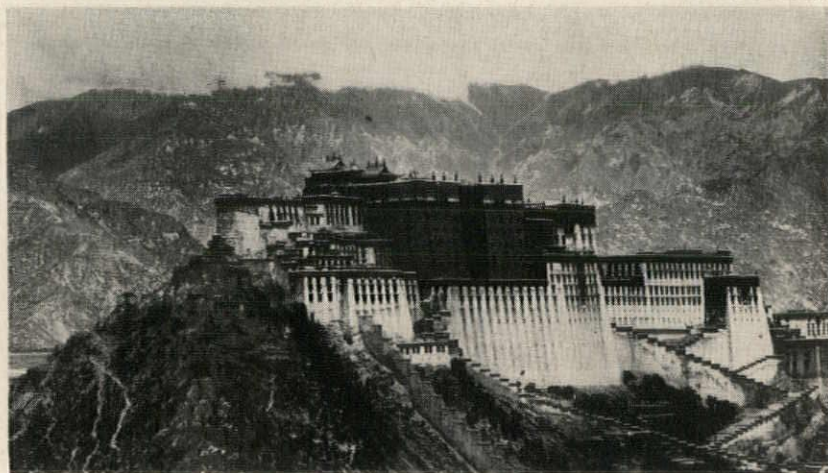




Ewing Galloway

In the Dominican order superfluous decoration is strictly forbidden. This is in harmony with Corbu's early assertion: "We have passed from the elementary satisfactions (decoration) to the high satisfactions (mathematics)." Painting and sculpture are considered by the monks to be contrary to the spirit of humility and poverty required by their rule. Of the arts only architecture is sanctioned. Corbu has always used painting and sculpture sparingly in his architecture.

For the Dominican monks at Eveux, poverty is a fact as well as a way of life, and the monastery had to be built cheaply. Raw reinforced concrete construction, unfinished except for a thick rough coating on occasional surfaces, is typical of much of Corbu's work and always expresses necessary economy, but at *La Tourette* it is more than ever a part of the language of austerity, shared by Le Corbusier and the Dominicans, and the common source of their inspiration.



In the rigor with which it faces the Lyonnaise countryside and the world, *La Tourette* suggests the Tibetan monastery at Lhasa

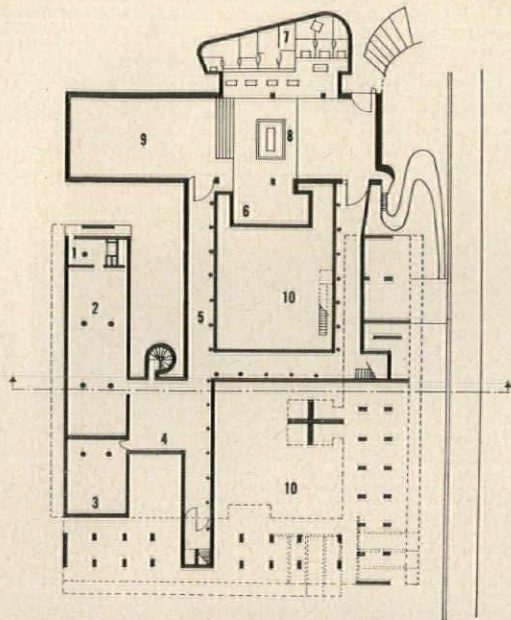
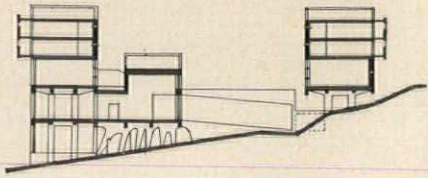
The monastery is carefully scaled to man. Le Corbusier's *Modulor*, the double scale of proportions based on human dimensions, was used to calculate all the elements of the structure including the placement of the slender vertical concrete ribs in the glass wall shown in the photograph at right. Called the "musical glass wall" it was arranged as an architectural equivalent of the proportions of a musical composition based on the *Modulor* called "Metastasis," the work of an engineer-musician named Xenakis, a collaborator of Le Corbusier

"The exterior is always an interior . . . in architectural ensembles, the elements of the site itself come into play by virtue of their cubic volume, their density and the quality of the material of which they are composed, bringing sensations which are very definite . . . (wood, marble, a tree, grass, blue horizons, near or distant sea, sky). The elements of the site rise up like walls . . . walls in relation to light, light and shade, sadness, gaiety or serenity . . . Our compositions must be formed of these elements." LE CORBUSIER

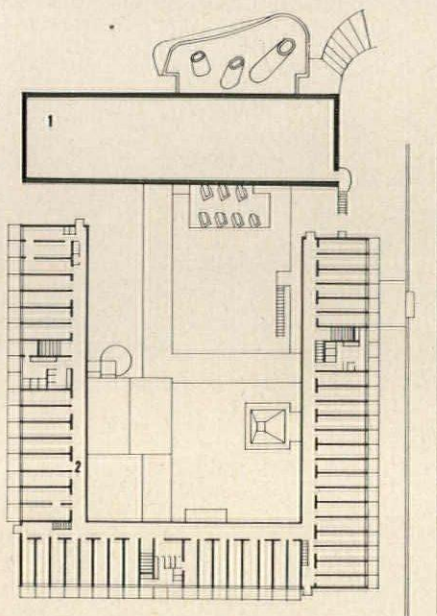
The sloping untterraced site made the traditional monastery cloister plan impossible, and required a tightly organized structure of several stories on different levels. The roof has been planted with grass, an old rural custom which waterproofs the structure and provides a promenade for the monks in place of the walks of the cloister. The distant building in the photograph at the left is the old convent used as a meditation center for lay brothers



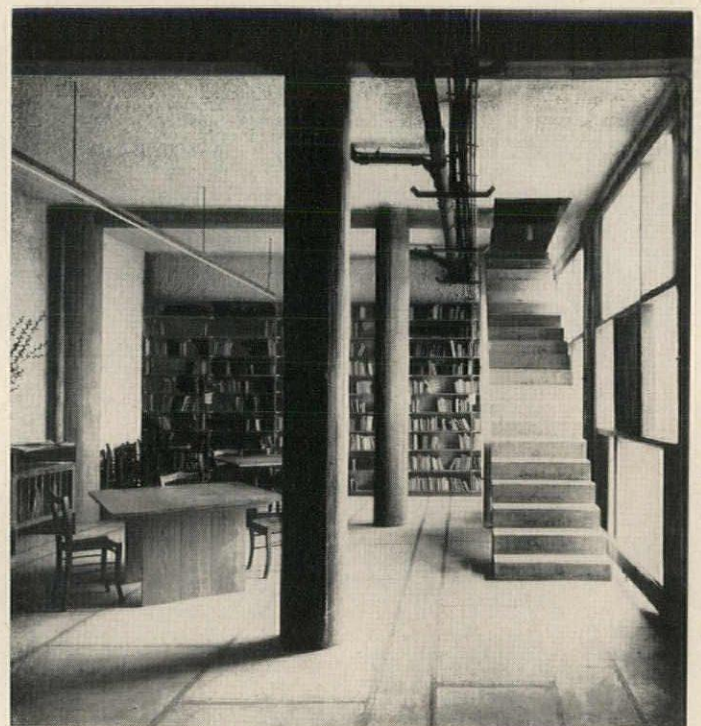
“. . . cubes, cones, spheres, cylinders or pyramids are the great primary forms which light reveals to advantage; the image of these is distinct and tangible within us and without ambiguity. It is for that reason that these are beautiful forms, the most beautiful forms. Everybody is agreed as to that, the child, the savage and the metaphysician.” LE CORBUSIER



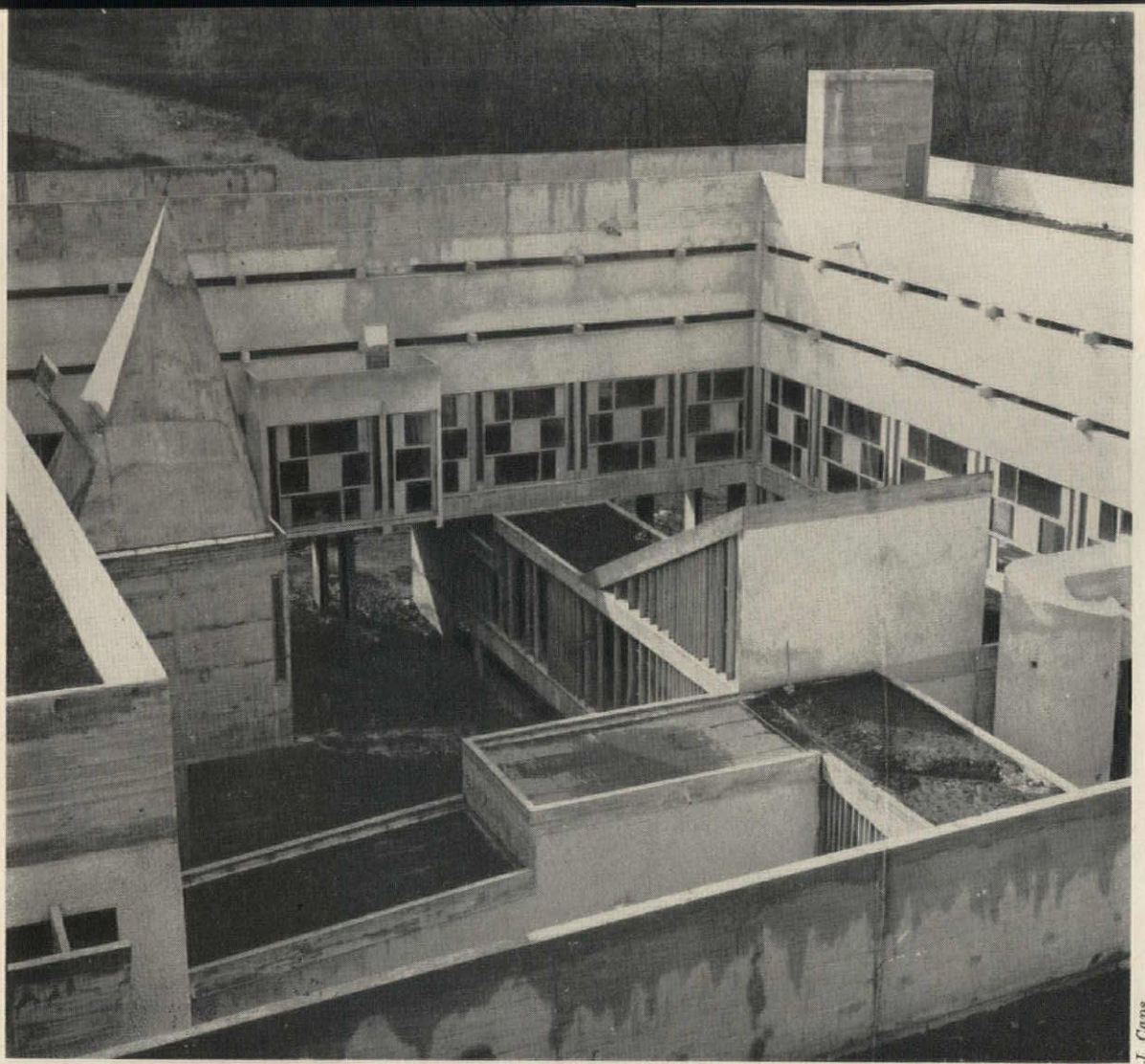
Plan at intermediate level. 1. office 2. refectory 3. chapter house 4. entrance hall 5. corridor leading to church 6. south altar and sacristy 7. north altar 8. main altar 9. church 10. court



Plan dormitory floor. 1. church 2. cell units

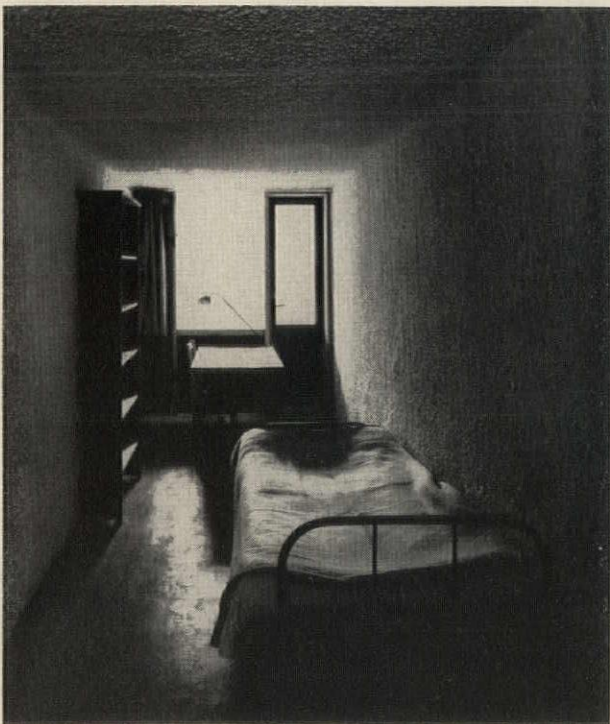


Library



J. Coops

Horizontal slits in the top two stories in the photograph above are at eye level and light the halls. The rectangular pattern at the lower level consists of reinforced concrete slabs and fixed glass with vertical slots for ventilation each fitted with a pivoting shutter. View is from the church roof toward the enclosure which will eventually become a sloping garden. Element with pyramid roof is the oratory, circular element to right a stair. Other elements are connecting corridors



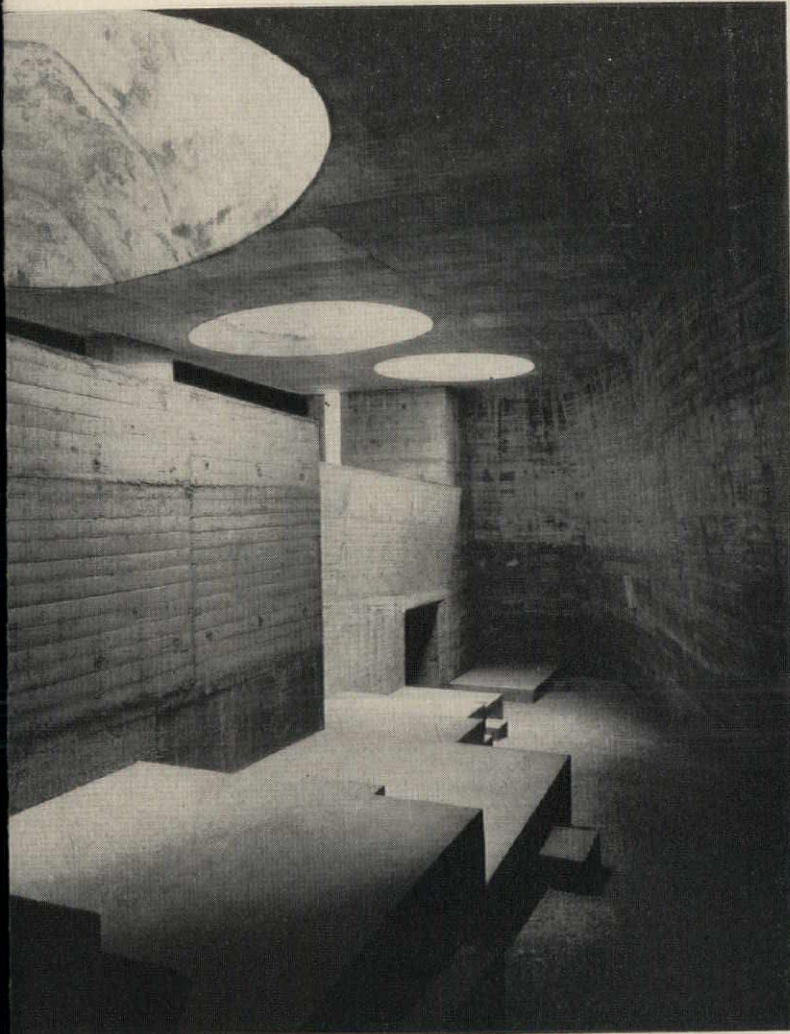
Typical cell

Le Corbusier: La Tourette

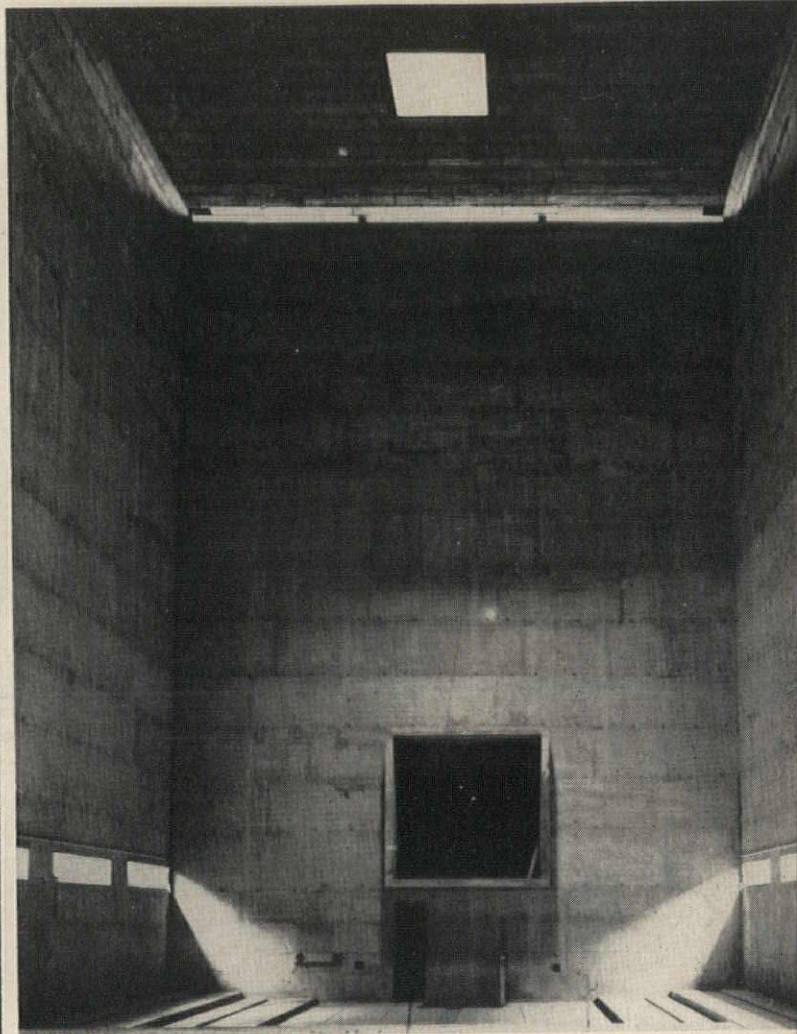


*"To erect well-lit walls is to establish
the architectural elements of the interior.
There remains to achieve proportion."*

LE CORBUSIER



Interior of north altar. There will be altars on each level



Main church interior. View from main altar toward nave

Left: view from main entrance toward church. Roof monitors light the south altar and sacristy. The concrete mound in the foreground is a permanent sculptural element, the foot-bridge beyond the chimney connects the monastery to the church roof. It is planted with grass like the roofs, and is part of the roof promenade

Refectory



All statements by Le Corbusier are from his book *Vers Une Architecture*, Paris, Editions Crès, 1923. Translated by Frederick Etchells, *Towards a New Architecture*, London, The Architectural Press, 1927; New York, Frederick A. Praeger, 1946.

A PARABLE VIA MILANO AND ROMA

by John Burchard

A good many people go to Ravenna every year, and a few to Pomposa. Many pass through Assisi but fewer through Gubbio or Arezzo. Touring Italy is common enough, but the Grand Tour, which is not to be confused with the Grand Itinerary, is out of fashion. The Itinerary can be checked off from bus windows—the Tour demands stopping-places and situations where the place conquers the schedule. How many hours or days, for example, should be allotted to the Forum Romanum?

Even the Grand Itinerary is scarcely fashionable for the newer generations of architects and architectural students. But it is less sophisticated to shun the great old things than it is to visit and revisit them. Anyway, that is what we thought when we set out last autumn to “do” Italy, large and small, from San Remo to Venice, from Cortina to Rome.

Such a trip provokes many reflections. One may learn how to maintain respect for an ancient environment without obeisance to it; how it is possible to live with history instead of repudiating it; how the past is not a liability unless, as in Venice, there is really no present. Even Assisi and Florence have a life beyond the tourists; it teems in Vicenza and Verona, and it reaches a peak perhaps in Rome but especially in Turin and Milan. One's observations may go farther. The forms and the spaces the architects produced at Sant'Ambrogio or San Vitale were quite as brilliant, quite as self-sufficient, as any modern architect has ever made; yet both profit by the opulence of the other arts displayed in them. What conviction does this lend to modern architects who assert something else? Are they doing more than demonstrating their own poverty?

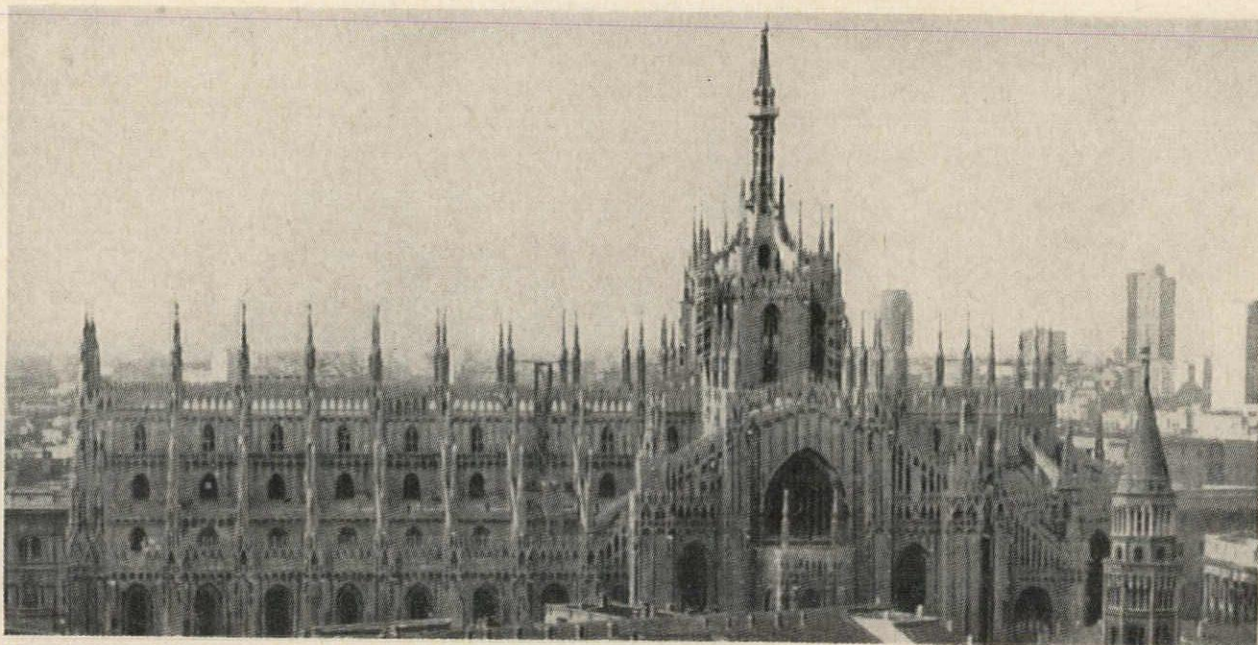
These would provide enough general reasons to justify a review of Italy. But in this moment of architectural time there may be another. For there is a general sense of malaise. Italy has been widely signaled as the country where this is most manifest. To be sure, most of the signaling has been done by the English, whose critical pens are more provocative than their drafting pens. But Italians are concerned, too. Men like Alfieri think there is a crisis both for craftsmanship and for spontaneous architecture, and that both may well disappear. It might be a good idea to look for oneself. So we looked. We found things to support any conclusion one might prefer to draw. In short, chaos.

One has to try to understand the country anew. Not, of course, the familiar topography, the familiar verdure, the familiar sky. But one needs to be reminded that the life of the street is important to Italy, that balconies are an essential part of apartment living. One needs to recall how sharply the city stops and the country begins, even in the environs of Rome—how close the ox-turned furrows are to the factories of Olivetti. One needs to be reminded again that the old is always present and that ever since Bramante added to Santa Maria della Grazie Italians have wanted to accommodate the present to the past. Out of the past come brick and cement, and Italy is still a country of concrete, though it has lost its taste for brick. Indeed, no other people understands concrete so

Part I

An American critic looks at some of Italy's recent architectural successes, and at her sadly large number of failures, and concludes that, as Italy falters in the face of architectural temptations, she may “but hold a mirror to the Western world.” The two-part article, another of Burchard's contributions to the RECORD's continuing series of architectural criticism at the professional level, will be concluded in our August issue.

*"... in Milan ... extreme versions
of what elsewhere might have been current and choice."*



The Duomo, Milan

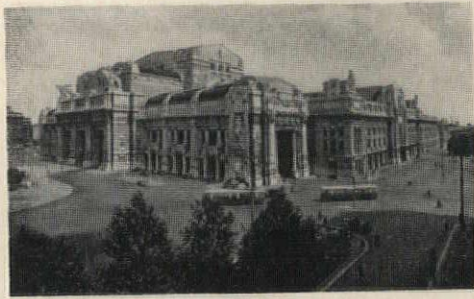
"... in Rome ... order and above all monumentality ..."



Piazza San Pietro, Rome



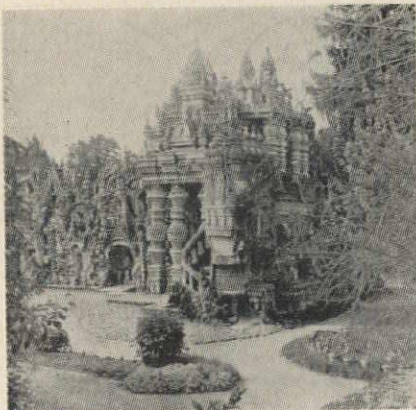
Arch of Constantine, Rome



Central Station, Milan



Galleria Vittorio Emanuele, Milan; Mengoni, architect



Ideal Palace, Hauterives, France; built by Ferdinand Cheval

well. And one needs always to recall how important color is to Italy. Our black-and-white photographs do not tell us the architectural truth, for it is a truth that embraces more than form.

One must remember, too, that magnificent exuberances are not to be found in Italy. Exuberance, yes, but fantasy almost never. For the Italians, like the French, are hard-headed and leave the extraordinary nightmares to the men of the north. So in the strange Italian work the ultimate escape from reality will seldom be found as it has been in the long line of people from the *facteur* Ferdinand Cheval and his Ideal Palace of 1879-1912 through Gaudi, Finsterlin, Mendelsohn, Rodilla, Goff, Poellzig and even Wright. The Torre Velasca might have gained from more fantasy. Finally, we also need to see and remember that the traditions of taste on the Mediterranean, unlike those on the Baltic, concern only certain social classes, differently constituted perhaps than in another day, but in no sense the masses. There may be room at the top, but only a sophisticated few manage the esthetics. You will notice the gap very sharply in the field of home decoration, for example. In Copenhagen, the break between the income groups is hardly noticeable; in Rome, it is extreme.

Inside this larger framework, the individual cities lay their impress. Milan has always been extravagant and vulgar, and proud of it. The Duomo, the Stazione Centrale, the Galleria, even the Sforzesco Castle, are extreme versions of what elsewhere might have been current and choice. But you will not find Milan very derivative. There are few examples there of the imitativeness of American work characteristic of England today and which in England is supplying, as Hitchcock says, much of the best work. Milan is sensitive to change, very alive, determined that its past shall co-exist with its future, but that neither shall conquer. Hence one feels good in Milan if he is a little impure himself and does not mind confusion. He is annoyed if he seeks serene urbanism or if he is doctrinaire. And it will matter very little what his doctrine is, for Milan will not adhere to it. Milan is rich and busy and full of half-completed experiments abandoned for new ones.

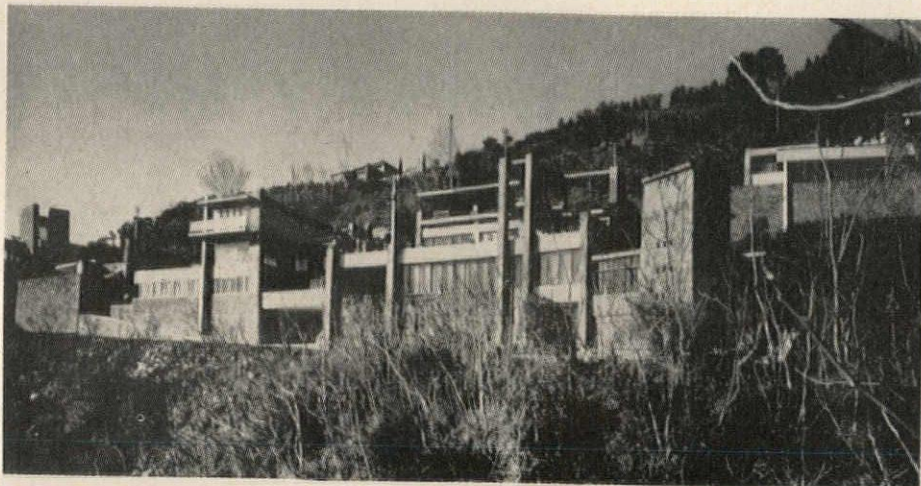
Rome on the other hand lays order and above all monumentality on all its people. Romans can scarcely think in other terms. Even the modest Nervi, repudiating the bathos of overdone scale, is nonetheless moved by it. Nervi belongs to Rome and is Rome. You cannot say that so clearly of any one Milanese.

One arrives in Milan armed with copies of *The Architectural Review* and a basket of terms. Where, you ask, can I find Subtopia, Wirescapes, examples of Brutalism, of Ornamented Modern? Where was Banham walking when he discovered "Neo-Liberty"? The Italians shrug. The British, they say, are skillful at phrases. Perhaps sometimes work like Ricci's in Florence seems to be the enemy of form, and if Art Brut is Brutalism, all right, but they smile. They see no reason why a building should not occasionally deny or conceal technology, or why seeking an enriched environment needs to be labeled obsession with façade and thus "ornamented modern." They design buildings, but scarcely join the Smithsons in trying self-consciously to "build at the scale of the genuine machine from which the parts are made." The parts are at the service of the whole, not the other way around. Will you name the neo-libertarians, you ask? They do not know because they are not sure what neo-liberty is. For some it is nothing more than an architecture which finds form without structural or other functionalism. For most it is used to cover a number of buildings all quite different save in the common quality of trying to be non-conformist and suc-



“Milanese architecture

Marchiondi Institute, Milan; Vittoriano Vigano, architect



La Pietra housing, Florence; Leonardo Ricci, architect

ceeding only in becoming graceless. They profess to see no reason to accept the British dictum that neo-liberty is only an effort to fit buildings into an environment dominated by older structures of strong architectural character. Nor do they necessarily accept the British conclusion that respect for the site and local conditions have been "talked down in an excuse for characterless and gutless architecture in recent years." They do fear a return to Art Nouveau, and a few are aware of the dangers of an "eclecticism of inspiration," whether it comes from Wright or the Middle Ages or Mondrian. All this resistance to the phrase and to being cataloged is admirable. Modern buildings *are* plagued by too much categorization. But to rebuke the phrases should not lead to an easy acceptance of the architectural results. Milanese architecture *is* in trouble if there are any durable standards whatever for measuring architecture, and Milan but holds a mirror to the Western world.

It is not all bad. It does not run the entire range of the possibilities. Indeed, it avoids some modern excesses. You will not find decoration so extravagantly, so wholeheartedly, applied or with such refinement as Stone and Yamasaki now offer. You can find no such extremes of sculptured engineering as Eero Saarinen sometimes permits himself. There are no buildings in Milan that look like the automobile fenders of yesteryear. You will not find the purity and abstraction of forms and the austerity of planning that Mies cultivates. There are no fantasies so extreme as those of Bruce Goff or even Wright of the Guggenheim. So in a sense the range is not so great as in America and the buildings out on the extremes are less earnest examples of their theories, but it all presses on you in Milan as it seems not to do anywhere else—as yet.

In the middle ranges, there are more familiar things—many efforts to marry commerce and art, plenty of mannerism à la Rudolph, and even some of the Venetian languor of much of what seems presently to be proposed for the Lincoln Center.

What all this means is that the whole field is in ferment, and that a good many things that are propelled to the surface do not seem to be fine things. It suggests that contemporary architecture has lost its directions and that its convictions are shattered. Gone is the sobriety and the sense of atonement that seemed to govern much of the Italian housing built soon after the fall of the Fascists. Streets in Milan have seen fantastic changes in too short a time. There is evidently the disease that makes every architect seek to produce a thing for all to wonder at each time he builds, and that assumes that no building can be a thing of wonder if it is simply a refinement of an earlier building. We cannot say that this is a disease against which our own architects have been successfully inoculated. But the risk that architecture may degenerate solely to fashion (it always has had fashionable aspects, of course), the chance that it may be most important as a subject of salon discussion, all this is more obvious, at least to an American, in Milan than it is in New York or Chicago. It is clear that such attitudes do prevail in decoration. The sure way to damn a work in Milan is to say that it is beloved by the bourgeois. In Europe (and in New York, Cambridge, and San Francisco) the bourgeois can never have taste, just as intellectuals cannot quite have common sense, though the latter, like Shmoos, are quite lovable and even to be admired and collected.

Though the range is not as long as ours, it may be wider. It goes from the ugliness of some of Vigano's work, through the systematic doctrine of Vittoria, through the grace of Gardella, to the suavity of Ponti. Weaving through the whole pattern is the catholicity of BBPR.

is in trouble . . ."



Maison de rapport, Via Pola, Milan; Donatelli, Malaguzzi-Valeri, Sgrelli, architects



Siemens Building, Milan; Rusconi-Clerici, architects



Torre Velasca, Milan; Belgiojoso, Peresutti and Rogers, architects

In this work, then, there are things that can only be called ugly, many that are strained but also simple, and finally graceful things. It may help to pause on examples of each.

THE UGLY WORK

The most dramatically ugly building to be found almost anywhere is Vittoriano Vigano's l'Istituto Marchiondi at Baggio in the outskirts of Milan. It is sometimes called the first Italian Brutalism because Zevi so named it. Those who want to praise it say it is a very functional expression of a difficult problem, a school for the re-education of children often delinquent but anyway of abnormal psychology. It was an interesting opportunity, as the effort of this institute was in a pioneering direction of freedom from the old jail-like environments that had characterized previous Italian institutions of the type. I have no doubt that the plan is a careful engineering solution of the movements of pupils and teachers—and it is widely advertised as a collaboration between architects and psychologists. I do not know what kind of architectural environment the hostile child needs and perhaps the psychologists do. But I do know that the frowning rigor of the buildings denies the freedom of the adjacent fields, and it seems incredible that the child will thrive best in the midst of a coarse, assertive, bustling, even hostile, esthetic. Yet that is exactly what Vigano's enormous beams, projected concrete boxes, overheavy vaults, provide. It is said of Vigano that he always questions what he has done before just as he questions everything everybody else has done before. This is an admirable trait if the questioning does not result in a consistent rejection of all precedent including its own—for that way no refinement is possible. If there is anything in the inventions of the Marchiondi, which I doubt, they need a lot of refinement.

Leonardo Ricci's La Pietra dwellings arrayed on a side hill near Florence, to the justified consternation of most Florentines, are often cited as another example of Italian "Brutalism." There is evidently a strange conflict going on in Ricci, for he is sensitive to the slopes and snuggles the planning into them, his colors belong to the landscape and a pair of the houses are charming. But the rest are an unrestrained obtrusion of enormous blocks of concrete, rude juxtapositions of materials, unnecessary elements and superfluous details which, unlike Stone's screens, cannot claim to embellish. It is a sad thing to contemplate this work of a talented man (so is Vigano talented) in comparison, for example, with Sölleröd Park in Denmark. Here the Koppels achieved sensitive dignity, produced charmingly human arrangements, some quite new but well anchored in Danish tradition, and never aimed at innovation for innovation's sake. The same sad contrast can be drawn between Ricci's Florentine housing and Jörn Utzon's (Sydney Opera House) Kingo Houses near Elsinore. But of course not many American projects will stand this comparison, either.

One more example will suffice, although many more can be adduced. This is Donatelli, Malaguzzi and Valeri's *maison de rapport* in the Via Pola. It is not as extreme an example, but dating back to 1952 as it does, it shows that this trend is not something that has developed overnight. Well before this, Mies had discovered that the unfinished sides or ends of some Chicago building, with their exposed concrete framework and their brick filler panels, might be the basis for a whole new esthetic. With great care (and success) he set out to refine the proportions. Now the refinement

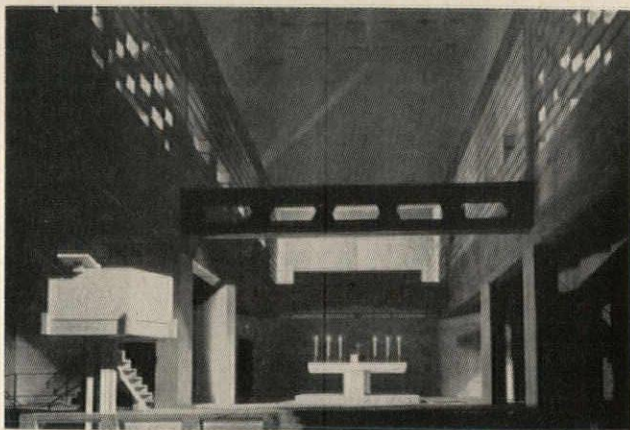


Maison de rapport, Rome; Romolo Donatelli, architect

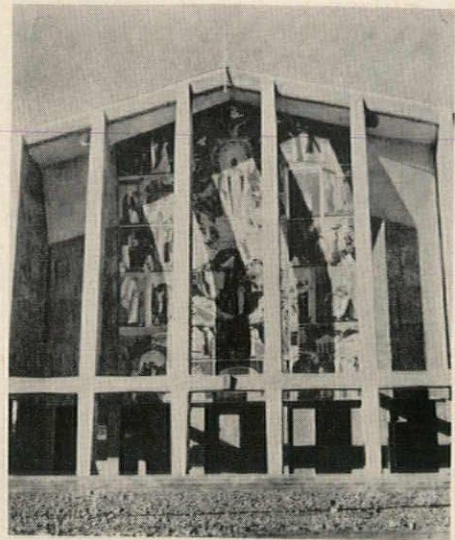
was quite as important as the arrangement of the two materials. In the Via Pola building, Donatelli and his team added other elements, some sloping roofs to provide terrace apartments, some balconies, and then exposed the concrete not only as framework for panels, but also as roof members in a number of competing planes. These men had considerable taste, as all have demonstrated later, notably Donatelli in his *maison de rapport* at Rome of 1958. So the result in the Via Pola was not catastrophe as it has been when done elsewhere. Concrete has been the greatest friend and the greatest enemy of Italian architecture, and there is a chain from the concrete rafters of Donatelli in the Via Pola through the props that Rusoni-Clerici used for their overhanging floors on the Siemens Building in the Via Tempesti to the disastrous outcome at the hands of BBPR on the Torre Velasco.

Le Corbusier is able to use concrete in a virile way and march at least to the edge of beauty. He has shown it again and again, and in ways as different as the freedom of Ronchamp and the rigor of La Tourette. But very talented others have their difficulties, as Eero Saarinen demonstrated in the Milwaukee County War Memorial Center. The Italians have not found this key, either, save in the very different approach of Nervi, which never admires a concrete element for its own sake.

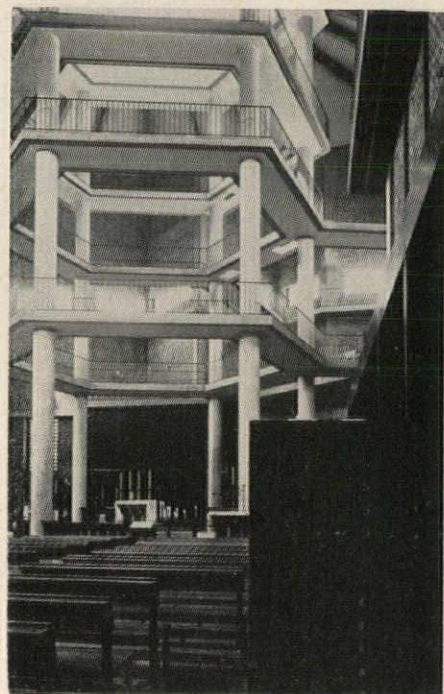
The same difficulty, somewhat toned down by the program, seems to me to have infected many of the new Italian churches, including works by men who are otherwise often among the most sensitive designers. You can see it at work, for example, in Figini and Pollini's church in the Via Forze Amate; in Edallo's heavy concrete grid façade placed before an enormous mural at Vialba; and in De Carli's extraordinary set of columns of the church in the Piazza Chiesa. None of these concrete churches lacks interest or vigor, but they seem to imply that the purposes of a Catholic church have changed as I cannot conceive they really have. They offer a drama that challenges the drama of the Eucharist; they are diversionary, not unifying; dispersing, not concentrating; and they remind one simultaneously of Piranesi, Chirico, and *The Cabinet of Dr. Caligari*. It may be that these architects have caught the spirit of what the church means today in the life of a dweller in the quarters, but, for my taste, we can be prouder of the church work of Belluschi and the Saarinens than the Italians can be of any of theirs, even the most distinguished.



Church, Via Forze Armate, Milan; Figini and Pollini, architects



Church, Vialba; Amos Edallo, architect



Church, Piazza Chiesa, Milan; Carlo De Carli, architect

PHOTO CREDITS: Galleria, Milan—The Bettmann Archive; Central Station, Milan—Italian State Tourist Office; Torre Velasca—Casali. All other photographs reproduced through the courtesy of the publication *Milano Oggi* and the magazine *Zodiac*.



Dearborn-Massar Photos

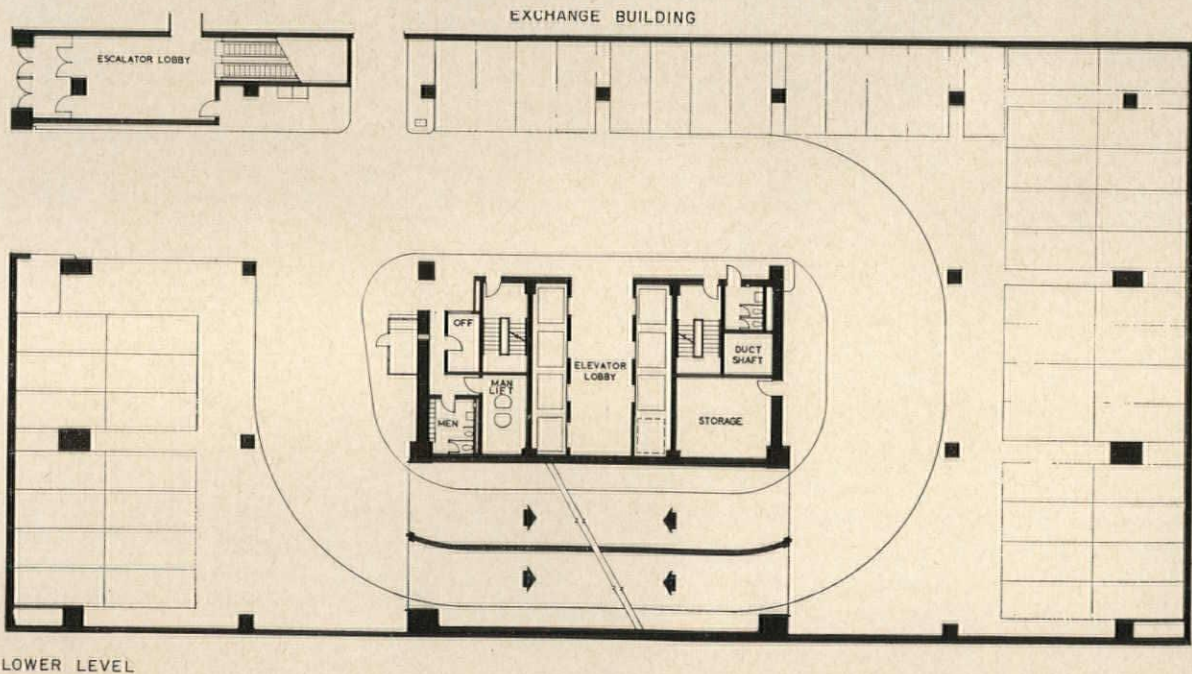
THE NORTON BUILDING

Seattle, Washington

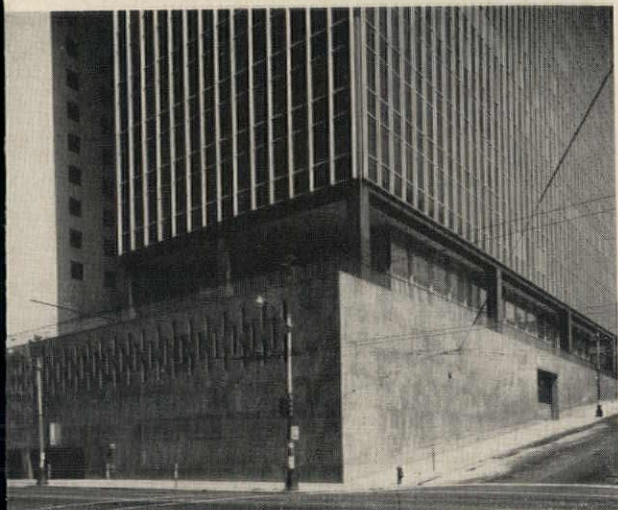
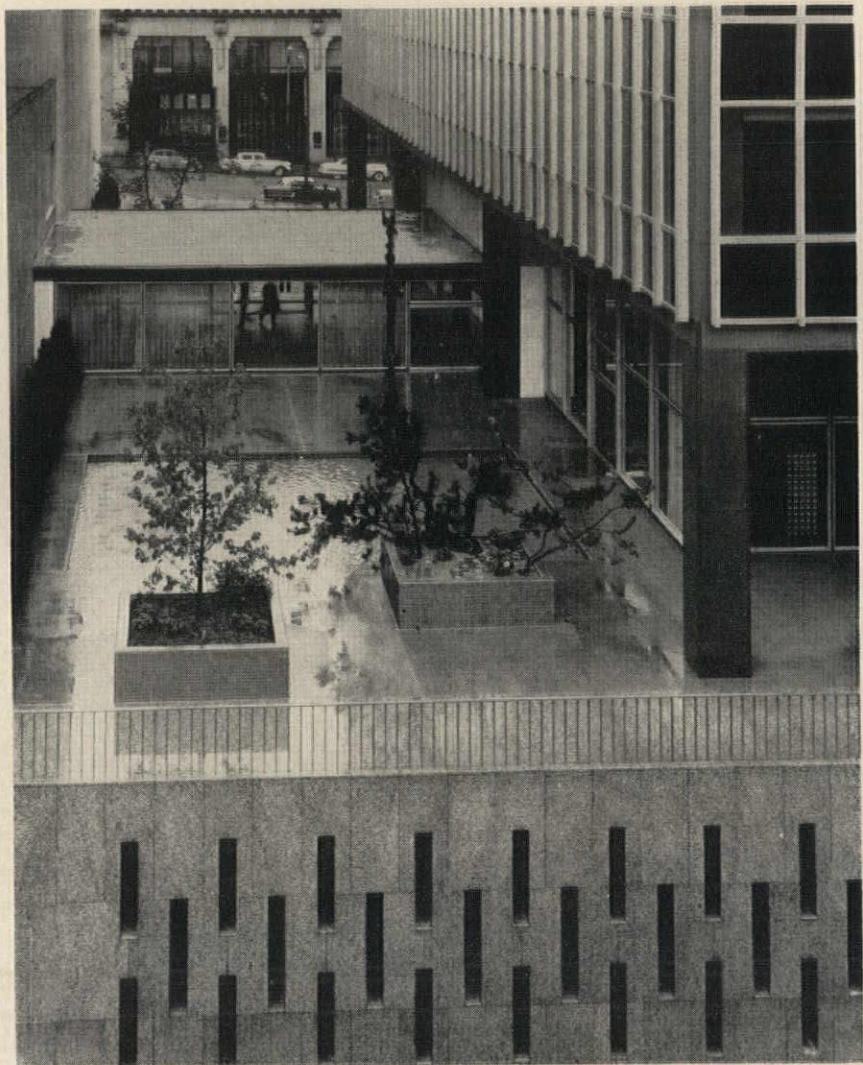
Bindon & Wright, Architects; Skidmore, Owings & Merrill, Consulting Architects. Bouillon, Griffith & Christofferson, Mechanical Engineers. Consultants: Anderson, Birkeland & Anderson, Structure; T. Y. Lin & Associates, Prestressing. Howard S. Wright Construction Company, Inc., General Contractors.

The Norton Building

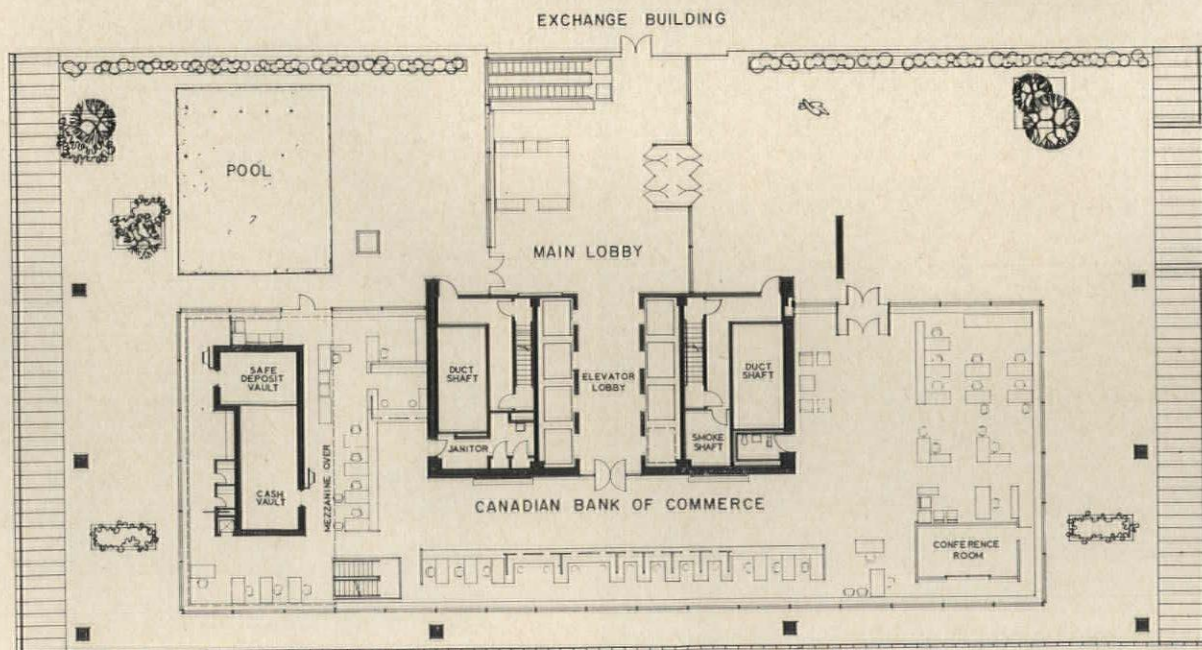
Seattle's first tall building since the late 1920's is a 21-story dark gray-and-silver office tower set beside a landscaped plaza on a corner site in the city's downtown district. Rising clear of its nearest neighbor, the tower exposes all four sides to view—a calm statement of the curtain wall nature of its design—to gain prominence on the skyline and along the street. The steep slope of the site has advantages which the building uses: the mechanical floor is located below lobby level in the building's base, with air intake openings some 20 ft above street level on the west side toward Puget Sound, two blocks away; under this are three floors of parking, two above grade. The program required a building designed for 100 per cent rental; the column-free floor area on the tower's 17 floors is completely flexible space—the ultimate in rental desirability. (Details of the structure that makes this possible appeared in *ARCHITECTURAL RECORD*, April 1959, pp. 170-171, and March 1960, p. 225.) Entrance to the building's lobby is at street level, across the landscaped plaza between the Norton and Exchange Buildings; the lobby connects both buildings. Moving stairs from First Street provide a direct connection with the garage in the basement. The lobby is a one-story pavilion outside the building proper; elevators are located in the structurally-important core, seven for passengers, to handle heavy between-floor traffic expected with full occupancy.



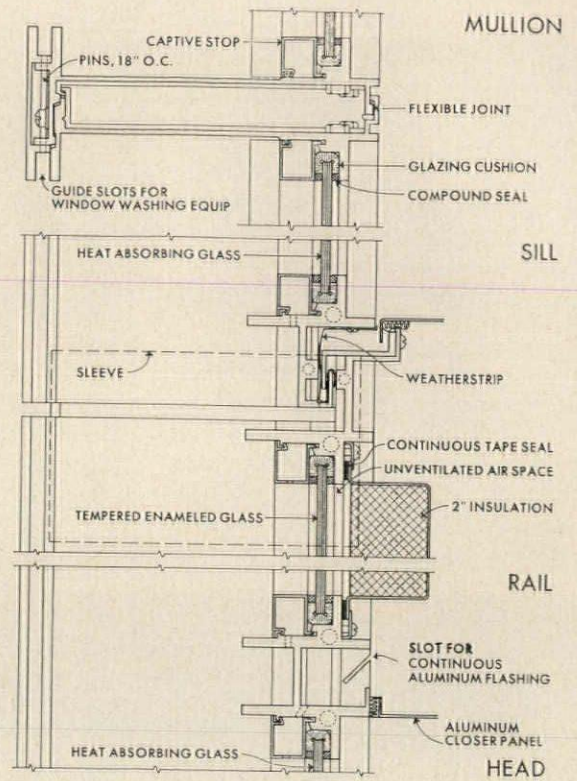
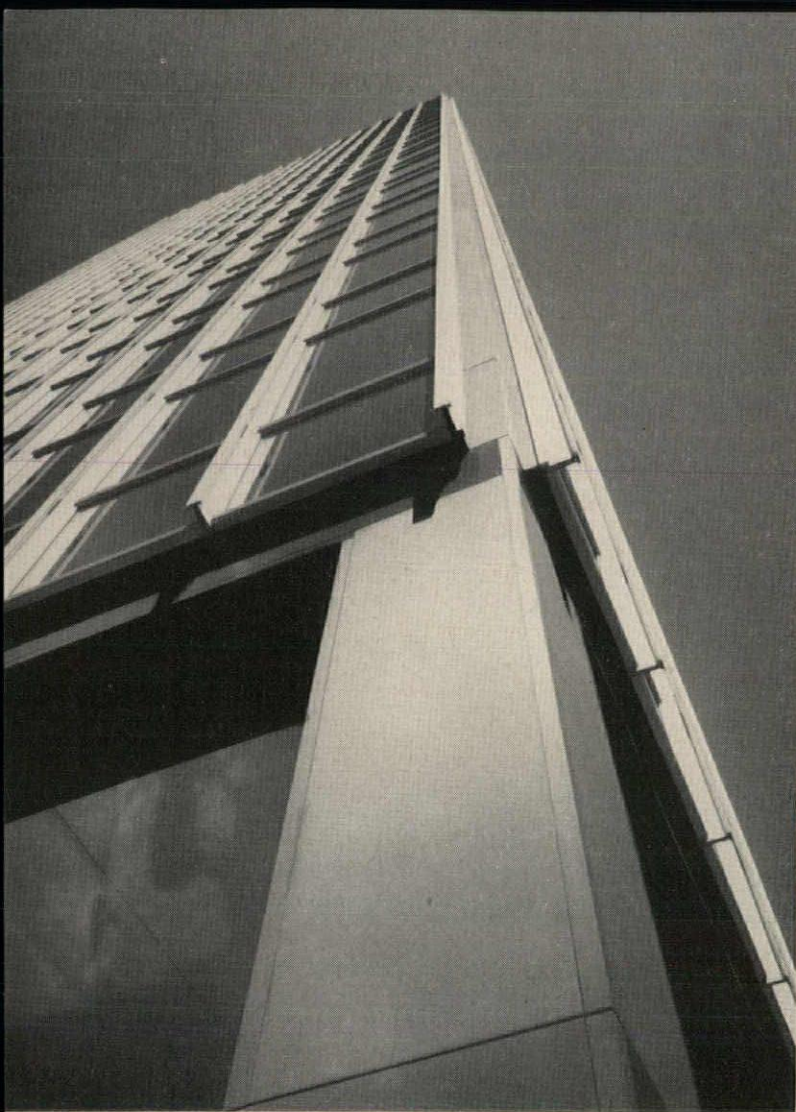
LOWER LEVEL



The lobby, a glass-walled pavilion set between two paved, landscaped plazas, connects Norton with the existing Exchange Building. Entrance is at street level from Second Street; on the west side, the plaza is three floors above street. Openings in granite-faced base are air intakes for mechanical system

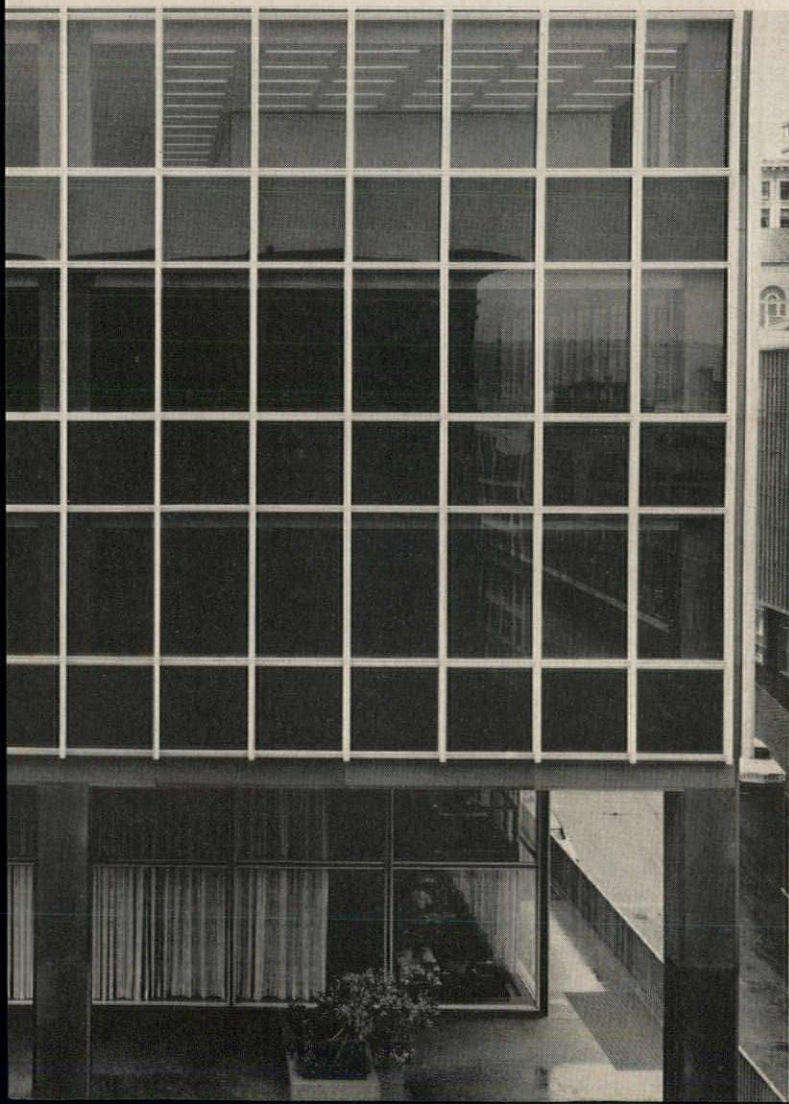


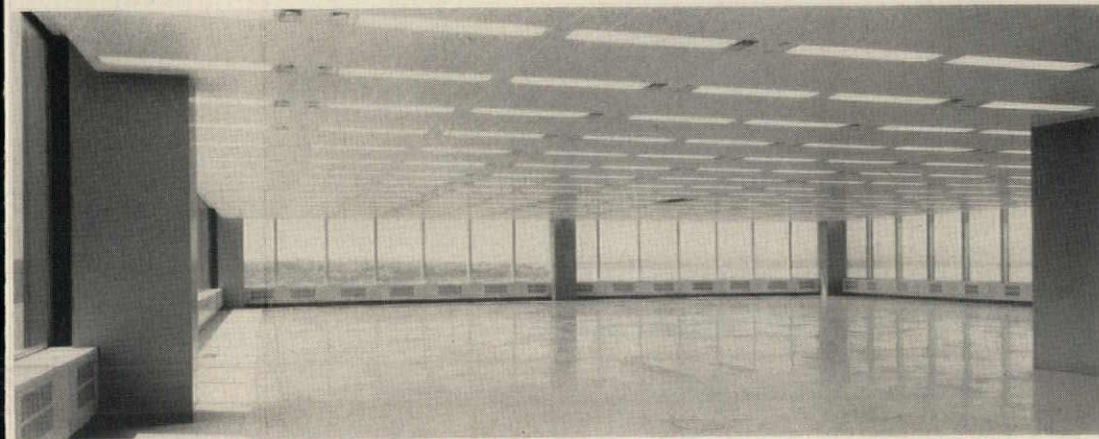
PLAZA LEVEL



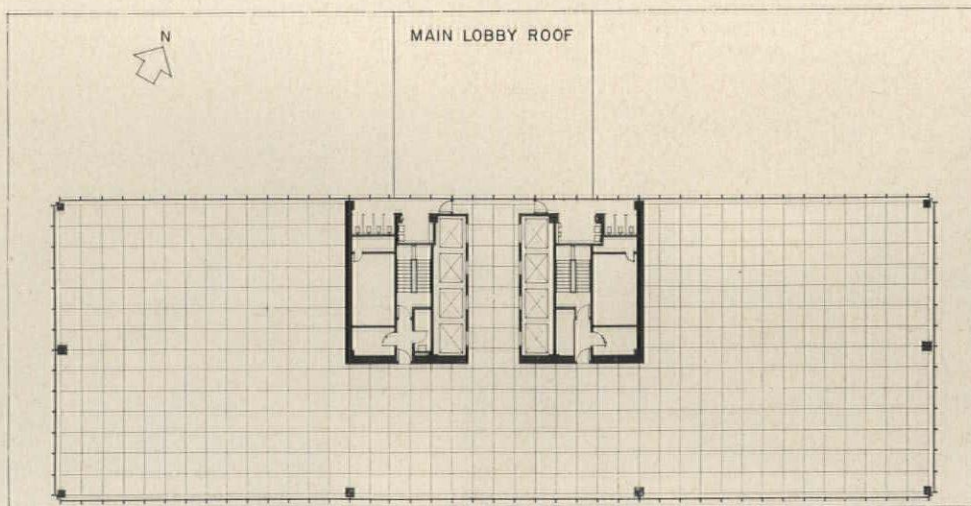
The Norton Building

Norton's curtain wall panels were completely shop-assembled—gray heat-absorbing glass, metal-backed tempered glass spandrel and insulation in anodized aluminum frames—and installed on the job as a unit. The design, worked out by architects and manufacturer together, capitalized on mechanical methods and assembly, and on the materials used. Instead of more common welding, elements are bolted together. Pre-glazing netted both economy and precise detailing and installation. To relate the building's structural columns, exposed at lobby level, to the other metal used on the exterior, aluminum plates treated with a special anodizing process are used as facing material.

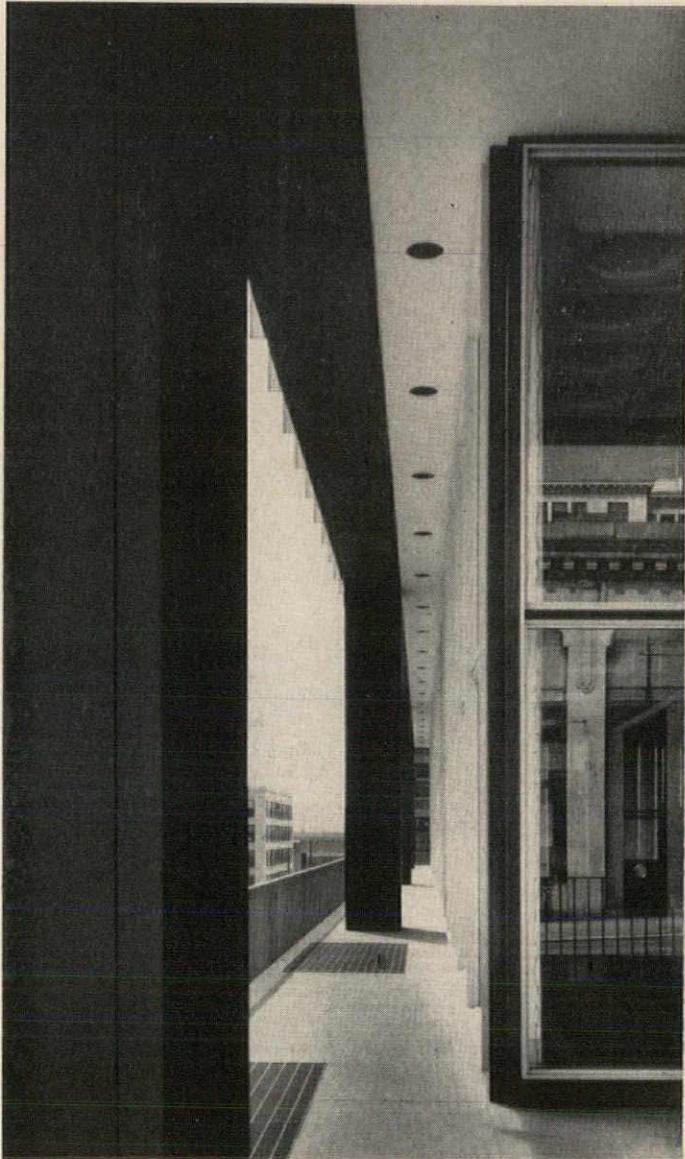




The building's special feature—the complete flexibility of its column-free interior space—derives directly from its program requirement of 100 per cent rental area, and is made economically feasible by its unusual structural system combining 70-ft prestressed concrete beams with a steel column-girder frame. The 5-ft module was selected because of the usual dimensions of an office desk; minimum partitioned space would be 10 by 10 ft. Services to each module include light, heat and air conditioning. Movable partitions, designed for this building in conjunction with a national manufacturer, can be located anywhere on the module lines. Span between column at left and corner is 70 ft clear

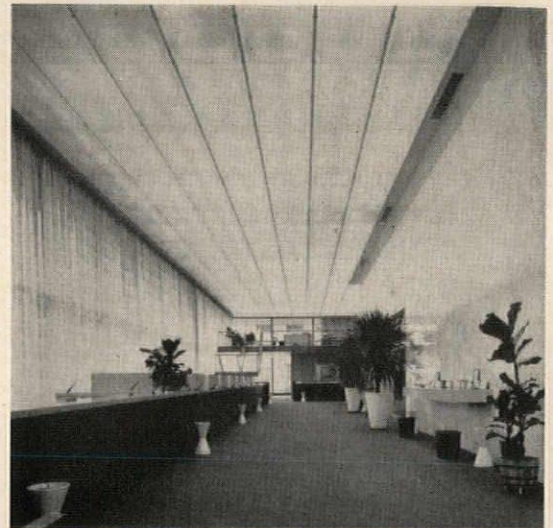
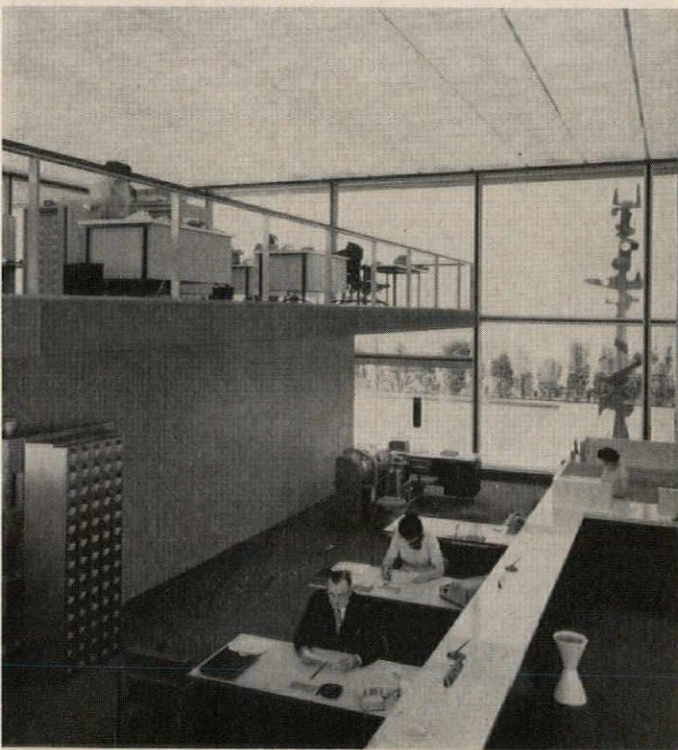


TYPICAL FLOOR

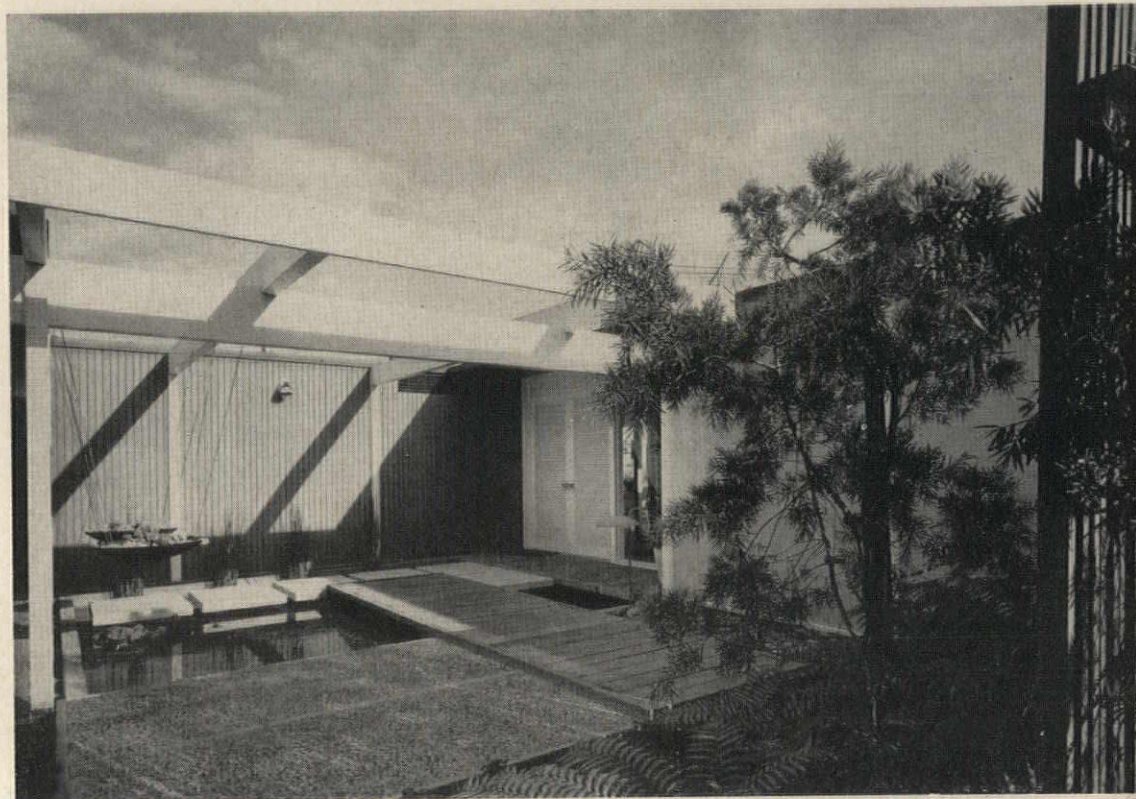


The Norton Building

The plaza-level glass box which surrounds three sides of the building's core is rental space, occupied by the Canadian Bank of Commerce. Since the enclosed area is completely free of the structure, the space can be partitioned or divided as needed. At the west end is the vault, which the program required to be visible from inside the bank and from the plaza. The top of this free-standing structure provides mezzanine work space. Gratings in the floor of the walkway outside the bank are exhausts for the mechanical floor beneath

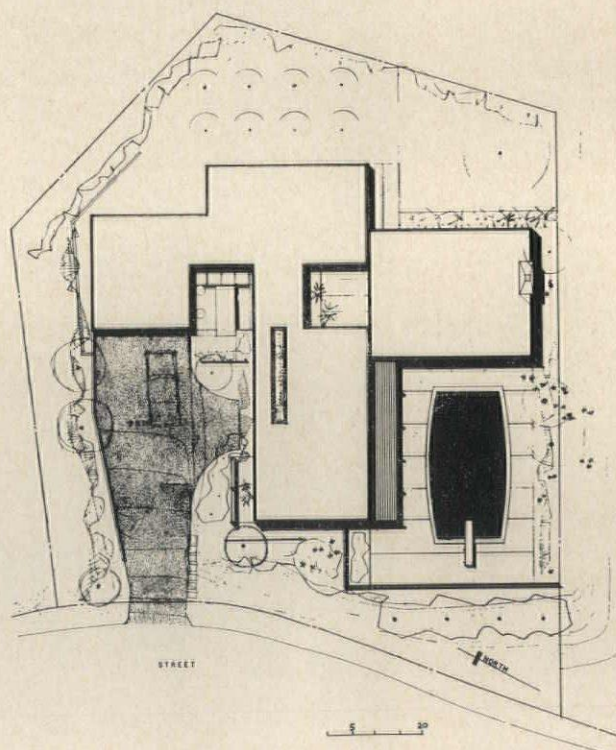


House Makes Full Use of Limited Site



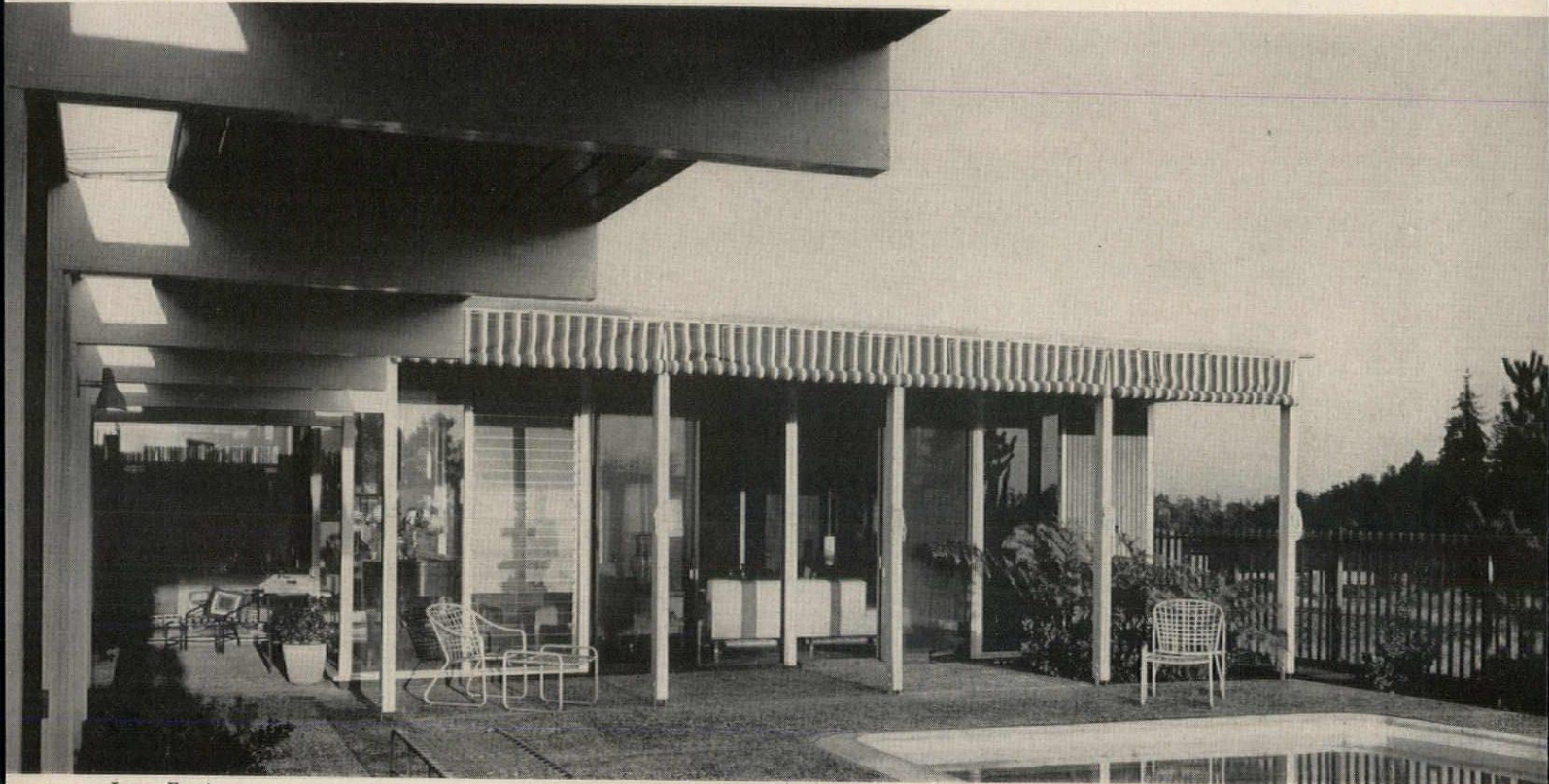
Larry Frost

OWNER: *Mr. Stanley Siegel*
LOCATION: *Los Angeles, California*
ARCHITECTS: *Richard Dorman and Associates*
ENGINEER: *Robert Marks*
CONTRACTOR: *George Schenecker*



A modular post and beam structure, interspersed with planned outdoor spaces, gives maximum living area for the site

Siegel House

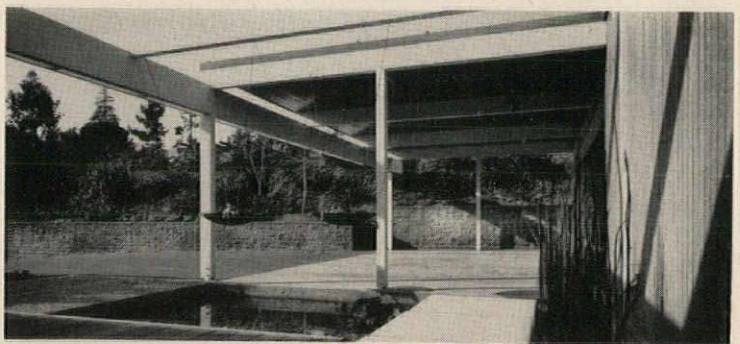


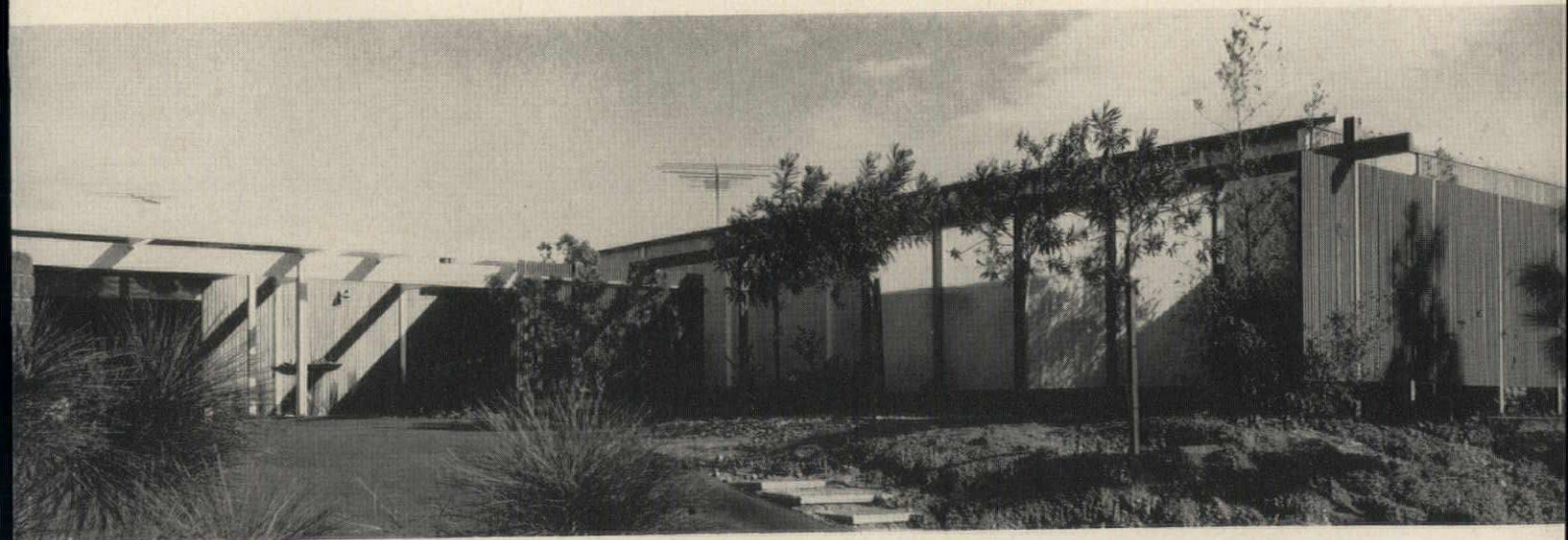
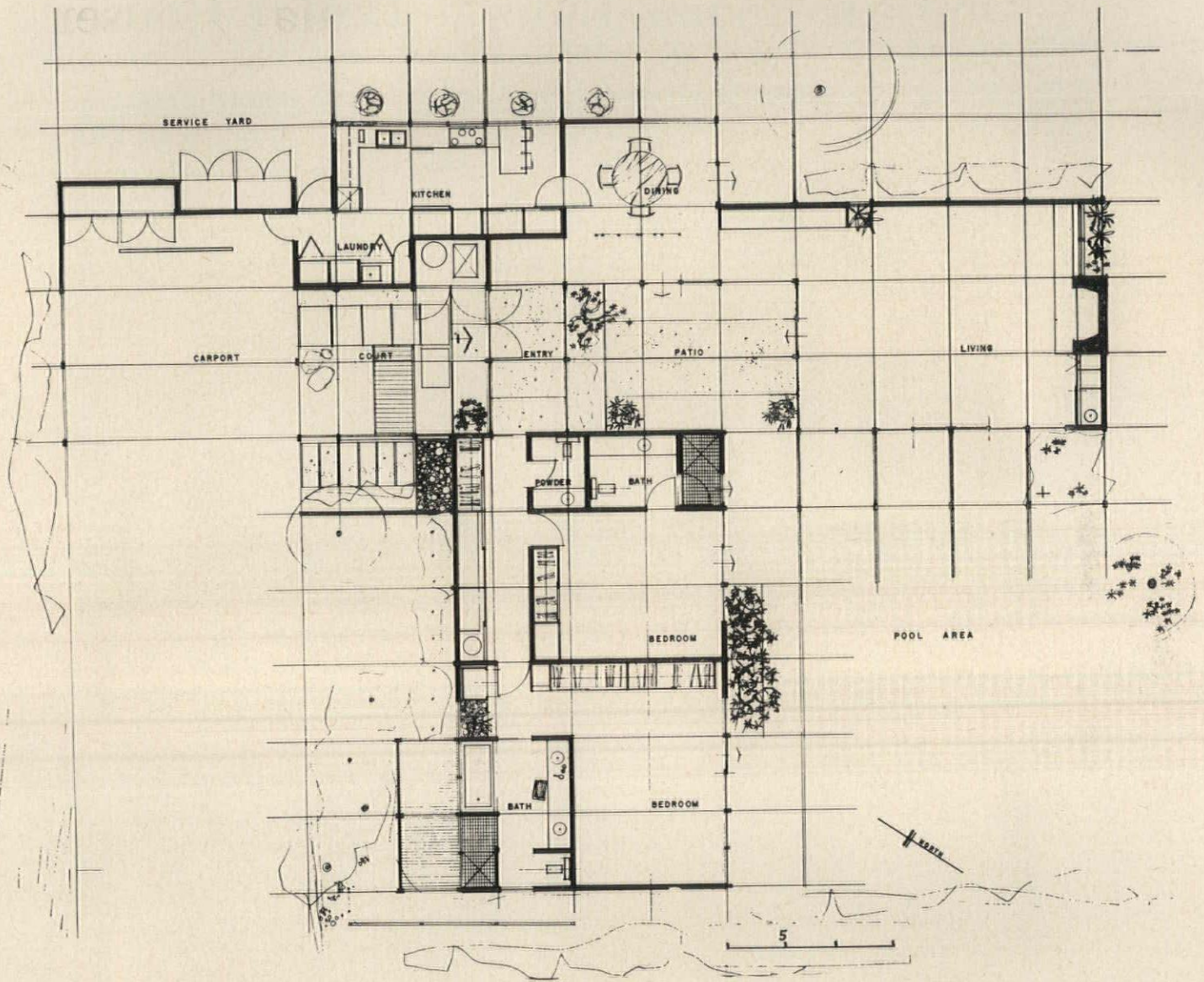
Larry Frost

The playful, yet dignified atmosphere of the Siegel house results from a conscious planning objective, and was achieved by such items as the striped canvas awnings and a careful integration of the landscape scheme with the indoor areas. It is emphasized by carrying open court areas through the center of the house.

The plan was designed to provide a maximum of independence for the owner and his mother; each has a separate bedroom suite with private bath and outdoor access. Living areas are separated from the bedroom wing by courts and a glazed gallery.

The wood frame of the house is set on a reinforced concrete slab, and enclosed with exterior walls of painted stucco, redwood and glass. Interiors are plaster and walnut. Heating is forced warm air.

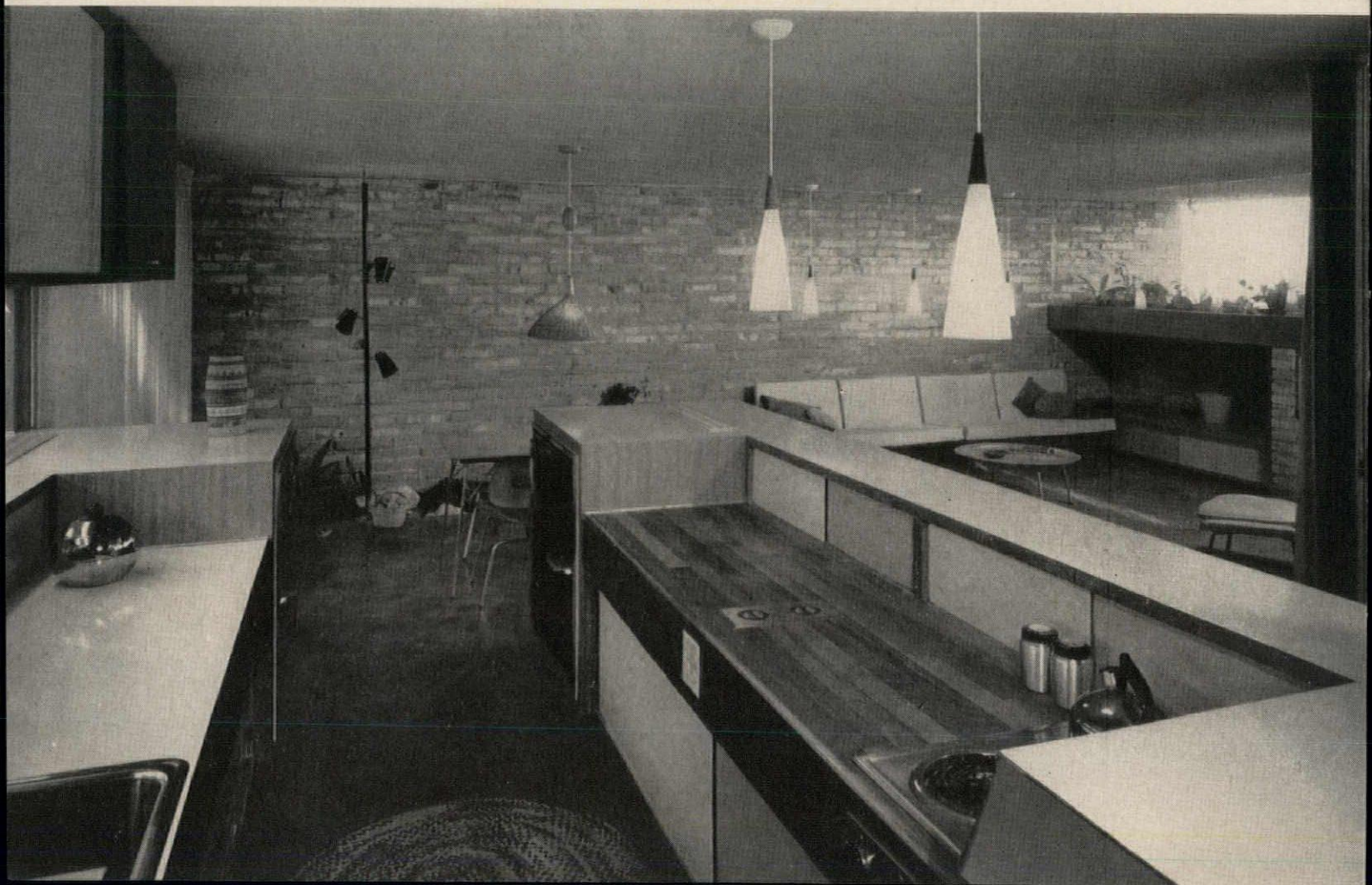


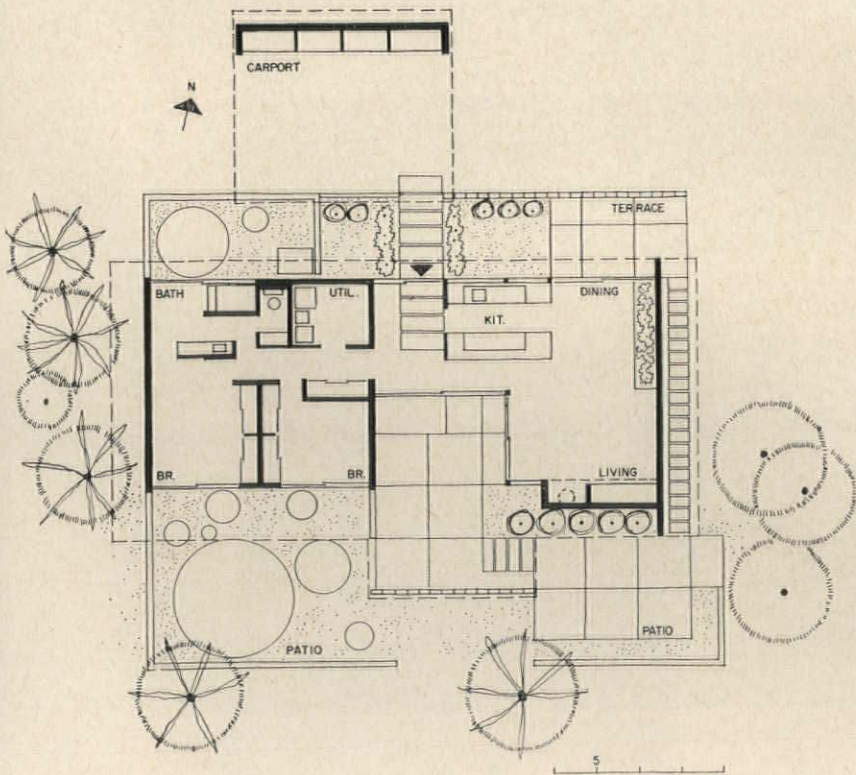
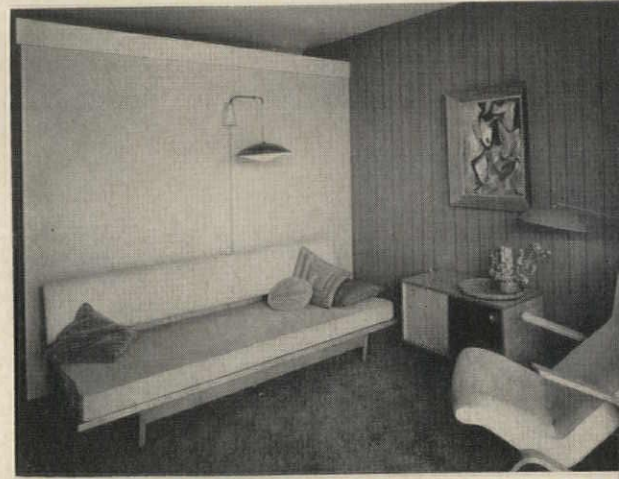


Outdoor Rooms Enlarge Desert House



Stuart Weiner





OWNERS: *Mr. and Mrs. H. O. Peterson*
 LOCATION: *Phoenix, Arizona*
 ARCHITECT: *Robert J. Peterson*
 ENGINEER: *William E. Peterson*

The sense of space and privacy is all too seldom found in a house built on a fairly limited budget. Here three devices have been used in the plan to provide a pretty luxurious atmosphere for about \$26,000 (excluding lot, landscape and furnishings).

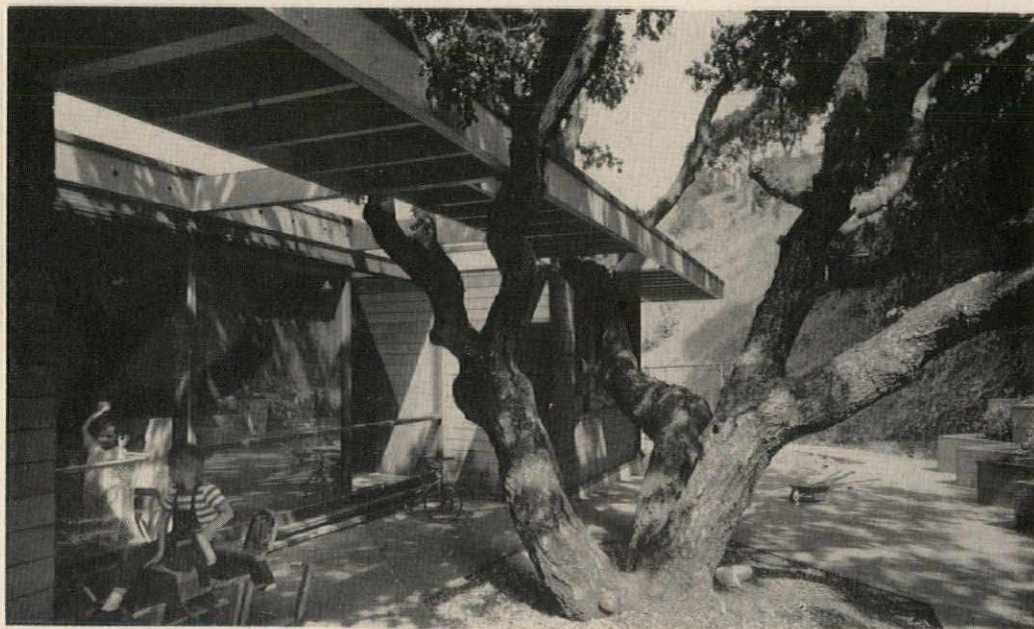
A bi-nuclear scheme divides sleeping and living areas for privacy; all living areas, including kitchen, have been opened into one big and comfortable space; and each room and area (including the bath) has its own walled-in outdoor patio for extra room and privacy from neighbors. The bath patio is for sun bathing.

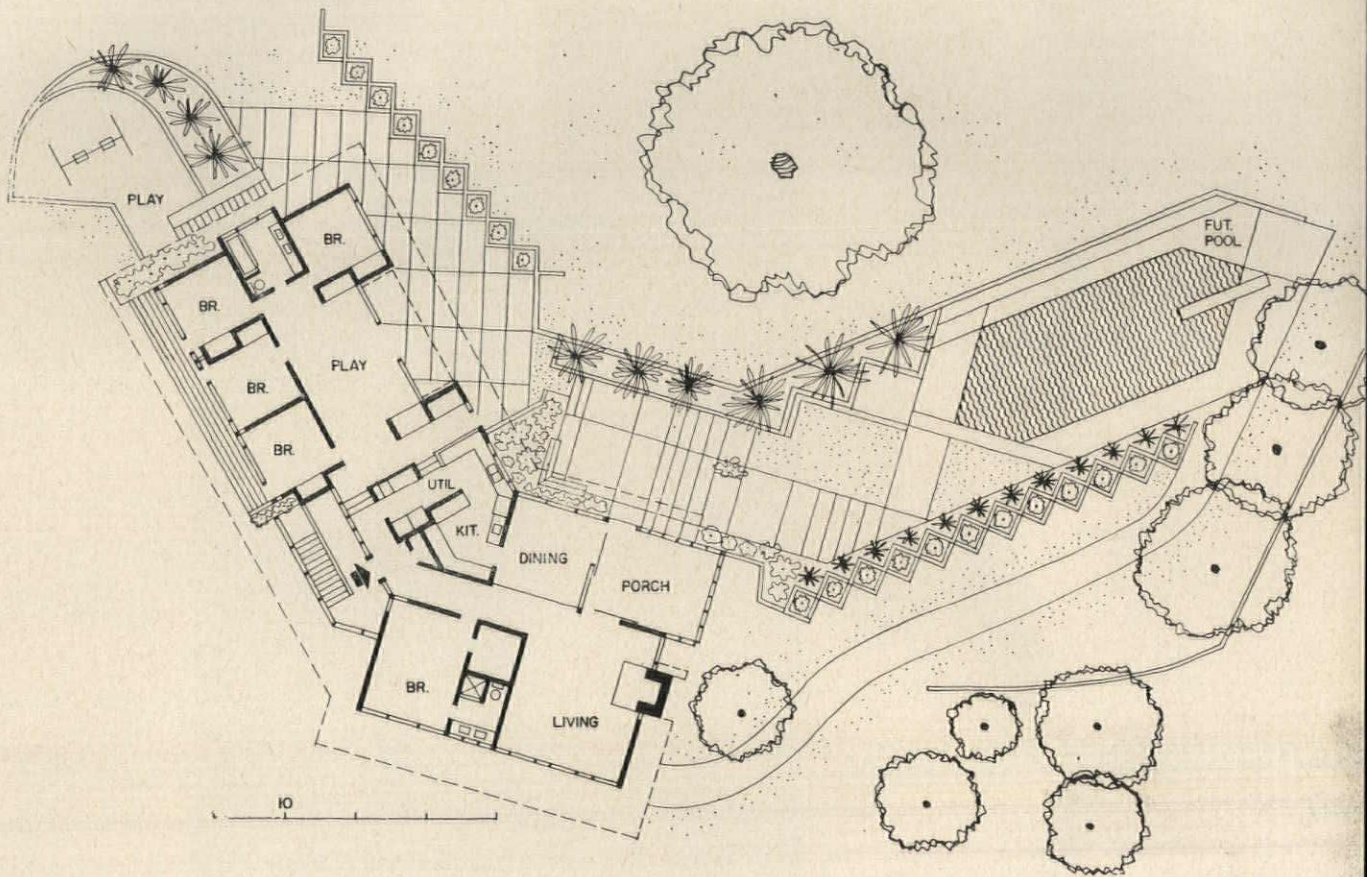
Exterior walls are adobe block, textured plywood, sliding glass doors and hardboard panels. Interior walls are mahogany, plaster, plywood and adobe. Floors are colored concrete.



Roger Sturtevant

Hillside House Follows Land Contours

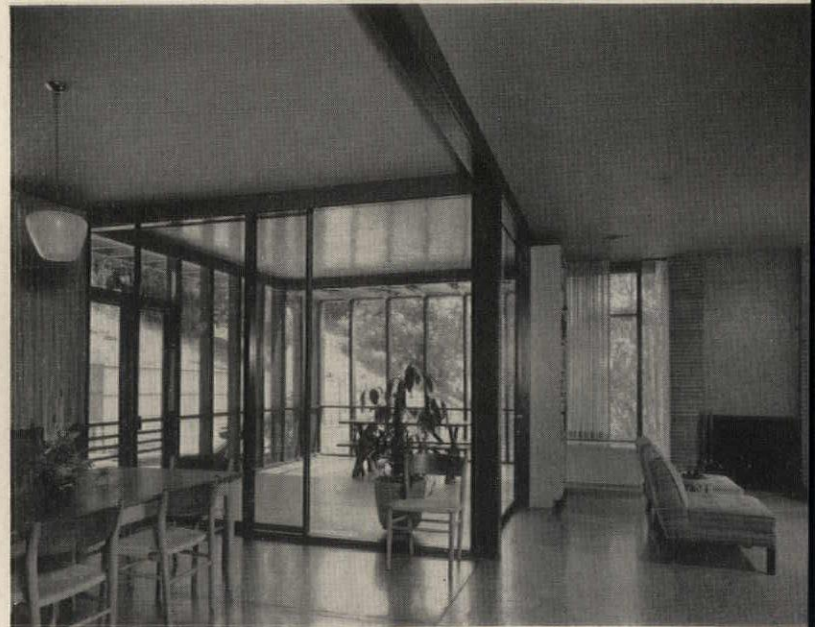




OWNERS: *Mr. and Mrs. Lawrence Luchetti*
 LOCATION: *San Rafael, California*
 ARCHITECT: *Henry Hill*
 ASSOCIATE ARCHITECT: *John W. Kruse*
 HEATING ENGINEER: *H. Gilman Smith*
 CONTRACTOR: *McKinnon & McGee*
 LANDSCAPE ARCHITECTS: *Eckbo, Dean & Williams*

The steep uphill site, which the Luchetti House is built on, offered much in the drama of views and trees, but little level area for structure and terraces. By following the land contours, the architects devised a scheme with sufficient area and a good orientation. Most rooms face the view, and a large eucalyptus grove shades the house from the hot West sun.

The plan is essentially a one-floor scheme for living areas. Where the ground slopes, lower level space was provided for carshelter, shop and storage. The house has a fir frame, and exterior walls of stucco and redwood siding. Interiors are plasterboard. Floors are cork.

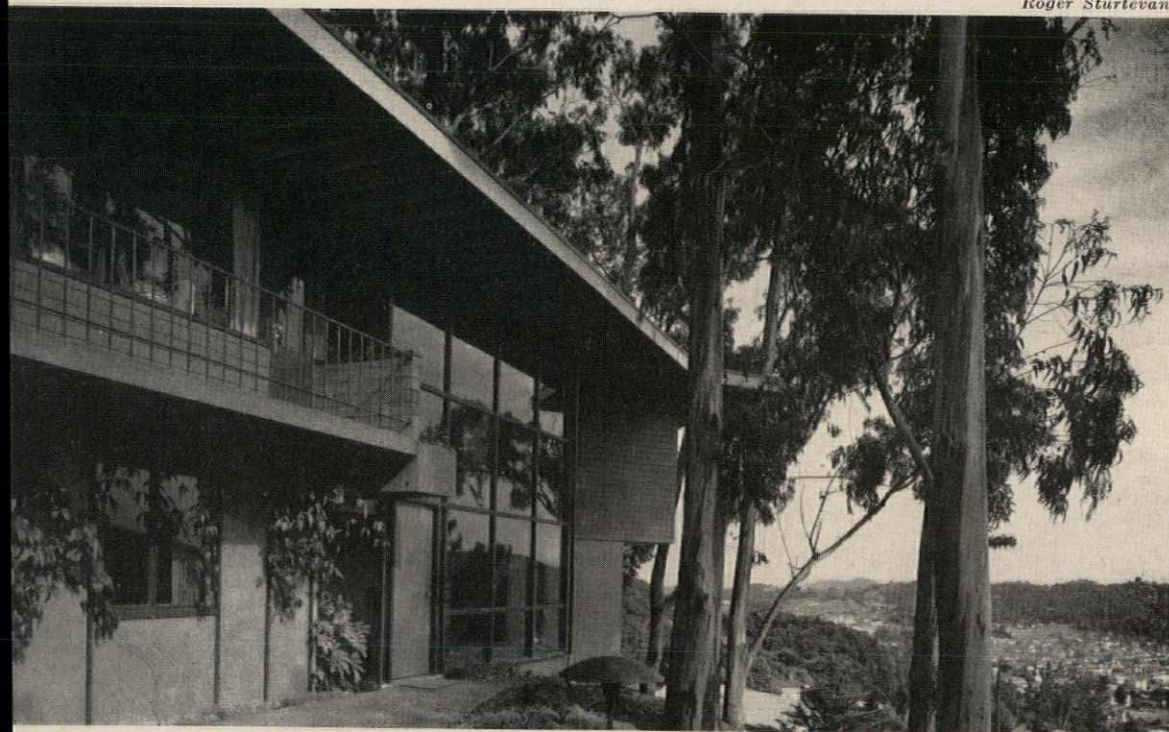


Luchetti House

The house has a lower level entry, with a stair to the main rooms. As winter wind and rain come from this direction, the entry is protected by a glass screen. A special "zone" was created in the plan for the family's four children. Each child has a very small individual sleeping area, and all open on a generous-sized playroom. The master bedroom is semi-separated from this area and is kept with the general living space



Roger Sturtevant



The Activity Picture

by George Cline Smith

Vice president and chief economist, F. W. Dodge Corporation
and Economics consultant to ARCHITECTURAL RECORD

It will come as no surprise to anyone that motor hotel building is undergoing a great boom, but the extent of the boom may surprise even the experts. According to the Dodge figures on construction contracts, motel building volume has just about doubled in a two-year period: from \$161 million in 1957 to \$316 million in 1959. By comparison, this puts motor hotels in about the same order of magnitude as public administration buildings or non-electrical utilities, and far ahead of their ancestral structure, the downtown hotel.

Statisticians, of course, are having their share of headaches in trying to compile the figures. There has been a rather rapid fusion of features, so that in many cases it is

difficult to determine whether a new structure should be called a motel, a hotel, or a motor hotel. It may well become necessary, sometime in the future, to solve the problem by default and lump them all into one category for statistical purposes.

The changes are quite apparent to anyone who travels on a speech circuit. More and

MOTOR *Building Types Study 284* HOTELS

more conventions are being held in motels, because more and more motels have convention facilities—meeting rooms, bars, and kitchen facilities capable of handling large crowds. The motel is rapidly wiping out the image—still lurking in the minds of some long-time-travelers—of a row of shabby cabins served by a pair of outhouses. And the development of nation-wide reservation services is removing one of the last drawbacks the motor hotel possesses for the business traveler.

Having come of age in the past few years, the motor hotel promises to continue as one of the outstanding types of "growth" building. In the decade of the 1960's, somewhere in the neighborhood of \$75 billion will be spent on highway construction—much of it on new super-highways of the Interstate System. Relocation of traffic flow alone could be counted on to stimulate the building of a vast number of motor hotels and other new roadside facilities, including stores; as well as highway-oriented industries. On top of this, it is a well-known fact that newer and better highways are traffic generators. Between now and 1970, the number of car-miles driven will increase even faster than the number of motor vehicles increases.

Not all the motor hotels to come will be in rural areas, by any means. Downtown is not dead, and intercity auto travel is even now producing motor hotels downtown as well as in suburban areas. Increased air travel and rising use of rental cars are making airport motel locations popular and commercially successful.

In 1959, the sharpest increases in construction contracts among all the major building types were in hotels (including motor hotels), up 84 per cent over 1958; and in motels and motor courts, up 41 per cent. The record so far in 1960 has not been spectacular, but it is clearly apparent that these building types are going to soar in the Sixties.

The Architectural Picture

Considered as a building type, the motor hotel is rapidly assuming a character of its own which is hybrid in nature, and which brings together features traditionally associated with either the downtown hotel (banquet and meeting rooms, dining room, bar, room service) or the classic motel (free parking near one's room, informal registration, self service if desired). We see motor hotels invading both large and small cities; find that conventions and meetings are being held in motor hotels in suburban areas. There will of course continue to be a certain number of pure motels—but probably in decreasing number—yet all indications seem to emphasize that any future downtown hotel must provide free parking convenient to one's room or an elevator, together with the chance to register informally without traipsing through a monumental lobby in the clothes worn for driving.

Thus, a peek around the bend would probably disclose this new hybrid in three manifestations—determined by *location* rather than by *function*. First, the downtown motor hotel—probably in high rise form due to a small lot and high land cost; second, the suburban motor hotel with complete facilities; and third, the highway or resort motor hotel—a type which is building up a thriving weekend and vacation business that was formerly non-existent. The second type may appear as a combination of horizontal and several-storied forms, while the third will probably be horizontal in expression due to cheaper and more readily available sites for building.

In this study we present 10 finished motor hotels and 8 projected ones as an indication of what is happening across the country in this field. As Mr. Smith points out on the preceding page, there is widespread activity and great opportunity in the motor hotel field. Architecturally, there is the challenge to achieve the best possible kind of design within a commercial situation with its inevitable restrictions and demands.



L. A. Lucas

In-Town Economy and Amenity

*Motel de Ville
Denver, Colorado*

*Colbert-Lowery-Hess-Boudreaux, Architects
James T. Dent, Associate*

The problem was to provide 60 rental units, an office and registration area, parking for 30 cars, a 20-seat coffee shop, and a swimming pool on a smallish downtown plot. A limited budget also demanded basic economies in construction.

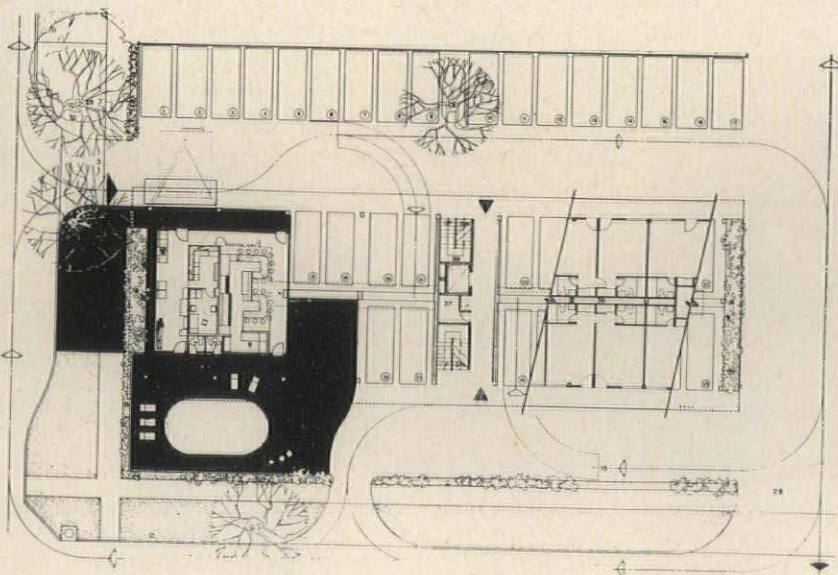
The regular, 3-story rectangular plan made possible a simple concrete column and beam system with slab floor spans. Exterior walls are 6-in. block; partitions are 4-in. block. Providing access from exterior galleries and a central elevator-stair core meant that rooms could be arranged back-to-back and a central plumbing and utilities spine could thus be created, and serviced from a basement mechanical room. Hot and cold water systems to individual room blowers provide year-round air conditioning.

Exterior surfaces were sprayed with a white plastic coating; interior partitions are plastered; ceilings are of acoustic plaster; floors are carpeted. The gallery railings are 1-in. square steel tubing with stressed airplane cables; the grille facing the highway is of 1/4- by 4-in. aluminum ribbons.



*Ogle-Rosenbohm-Hall,
Structural Engineers*

*Guillot, Sullivan & Vogt,
Electrical and Mechanical
Engineers*





Baltazar Korab

An Attractive "In-Betweener"

*Park Plaza Motor Hotel
Detroit, Michigan*

Krebs & Fader, Architects

Milton Baron, Landscape Architect

Richard H. McClurg, Structural Engineer

Migdal & Layne, Mechanical Engineers

Finsterwald Co., Interiors

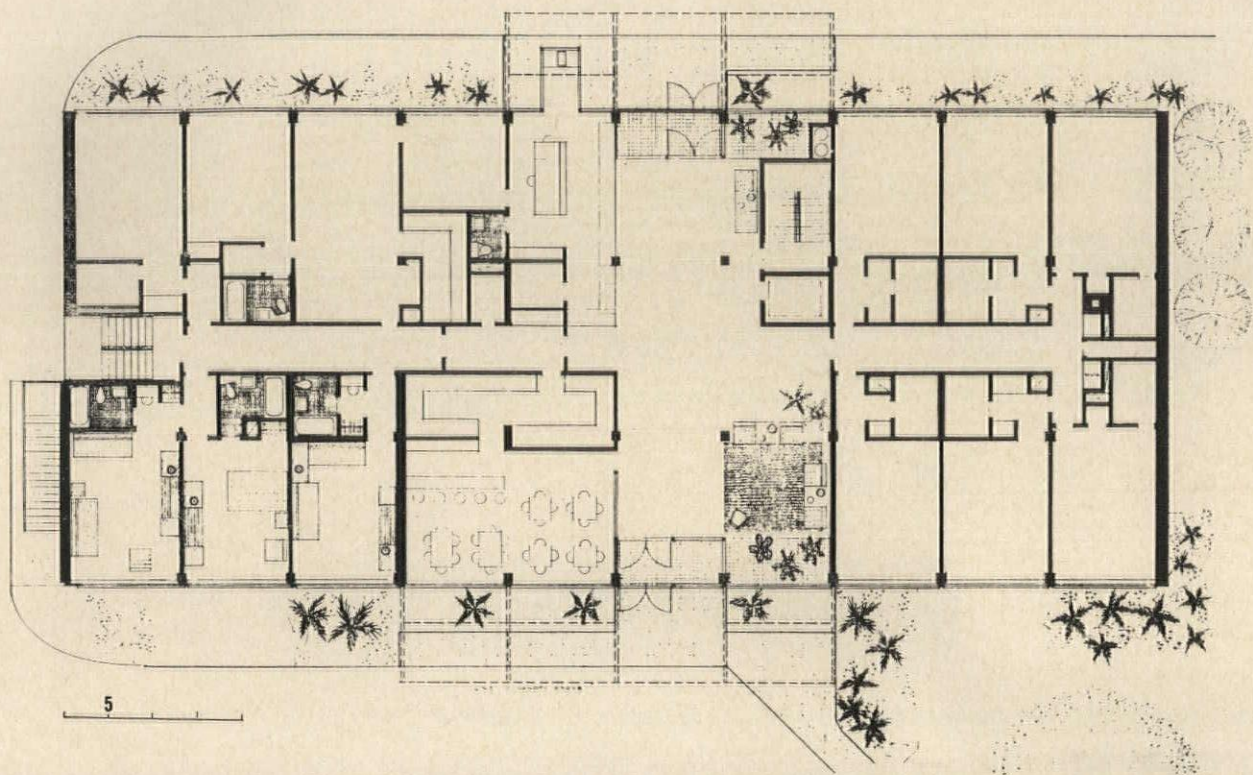
A. J. Etkin, General Contractor

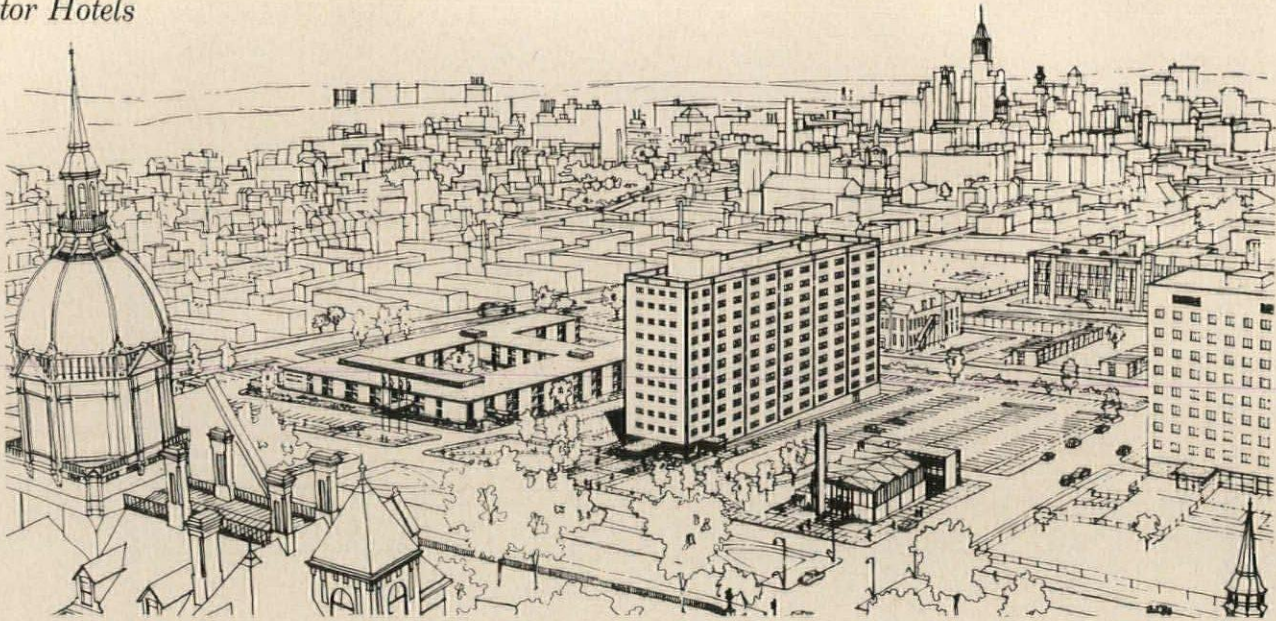
An early example of what is now becoming a trend, this nearly downtown hotel-motel is calculated to combine hotel service with the convenience and economy of a motel. The site was carefully selected as convenient to, but not on, main highways; as close to, but not in, the heart of Detroit. The incoming guest (if a motorist) can register at the rear of the building before he parks; or if not a motorist, at the front desk. He can either carry his own baggage or ring for a bellhop.

The four-story, brick and aluminum faced building is based on a simple double-loaded corridor scheme, is served by a 55-car parking area, and faces north to a park. It contains 67 generous-sized guest rooms (nine of which have kitchenettes), an office, lobby, lounge, coffee shop, and manager's suite.

The structure is steel, with open-web joists and concrete slabs on corrugated steel decking. Walls between units are plaster on lath applied with resilient clips for sound reduction. The building is completely air conditioned from a central plant.







Part of an Urban Renewal Scheme

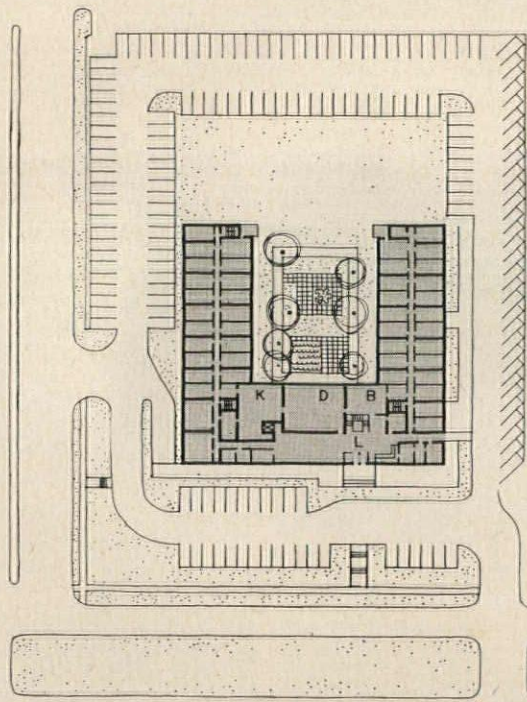
Sheraton Baltimore Inn, Baltimore, Maryland

Cochran, Stephenson & Wing, Architects

Van Rensselaer P. Saxe, Structural Engineer

Henry Adams, Mechanical Engineer

Morros Brothers, General Contractor



- K. Kitchen
- L. Lobby
- D. Dining
- B. Bar

This nearly completed motor hotel in Baltimore—Sheraton's third—is interestingly situated. It forms an integral part of a 40-acre urban redevelopment scheme; is across the street from Johns Hopkins Hospital and thus designed to serve hospital visitors and outpatients as well as the public; and is on a plot adjacent to a heavily traveled east-west highway, US 40.

The two-story building forms a U about an attractively landscaped court, contains 150 air conditioned guest rooms, a ground floor meeting room that will seat 200, a second floor restaurant and cocktail lounge, and is serviced by a parking area for 160 cars. The project was jointly sponsored by the hospital, the Sheraton Corporation, and the city redevelopment agency. The structure is of masonry bearing walls, with precast concrete plank floors and roof. The exterior is brick, aluminum, and glass; typical rooms are carpeted, with plaster walls and ceilings; baths have structural glass walls.





David R. Kitz

Suburban Parking Court Scheme

*Birmingham House Motel
Birmingham, Michigan*

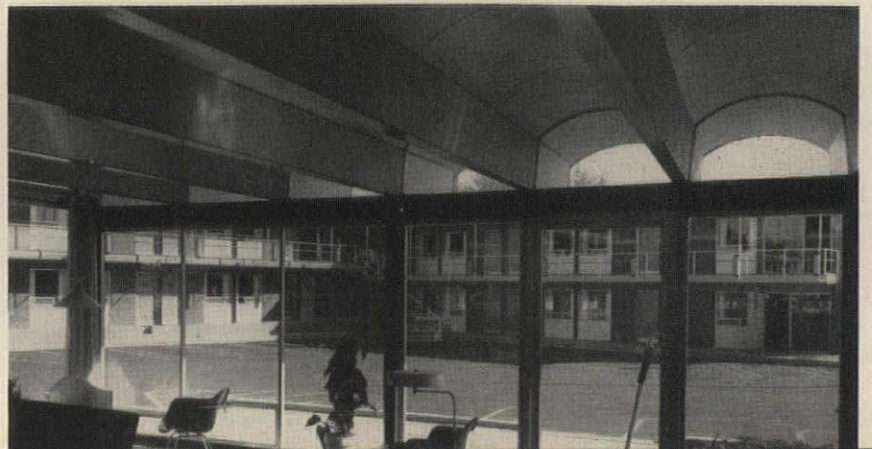
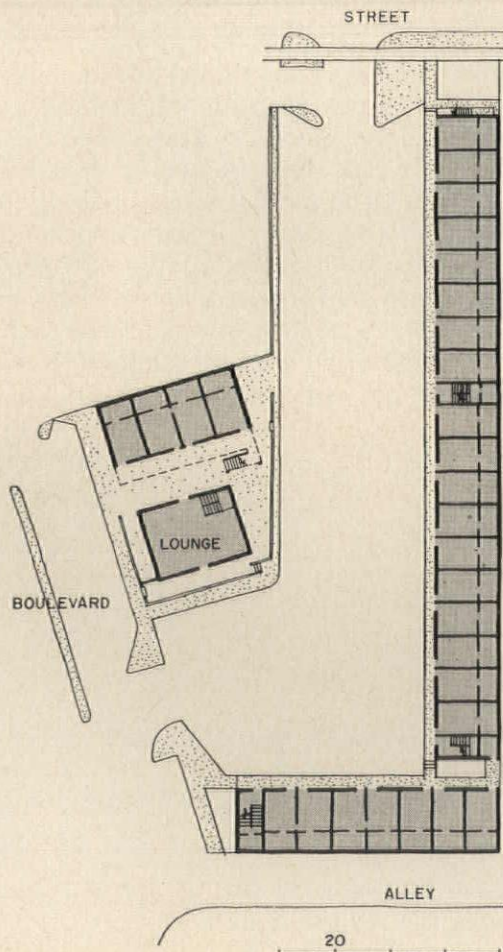
*Louis G. Redstone, Architect
Avner Naggar, Associate Architect*

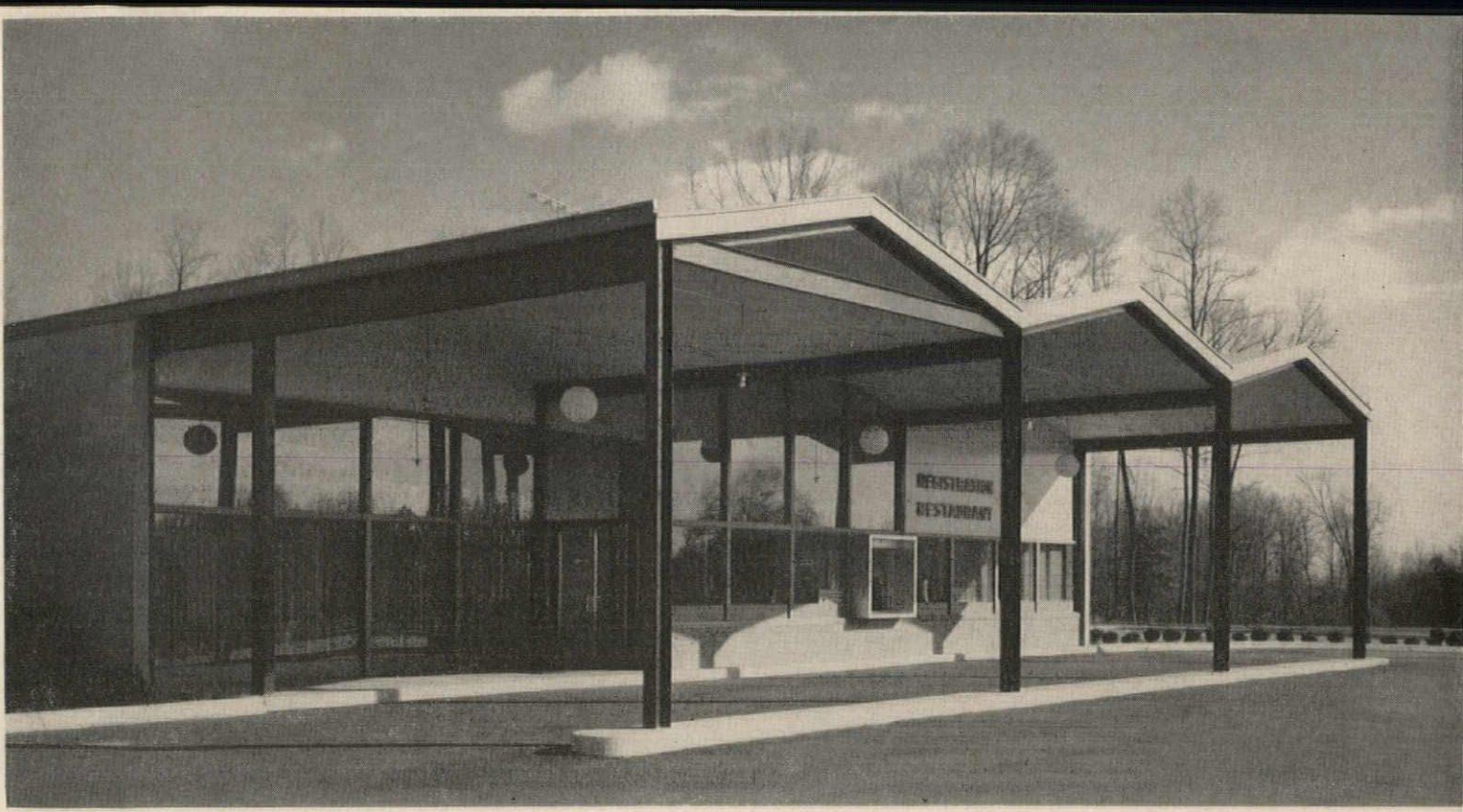
Perron Construction Co., Builder

The plan for this 58-unit motor hotel in Birmingham, Michigan, was determined by the convenience and informality that a central parking court affords, since such an arrangement permits the traveler-guest to park his car practically at his door. Located on a highway, the group comprises three two-story guest room buildings and an office-lounge-meeting room building. Seven of the suites are parlor-bedroom combinations. All the buildings are air conditioned, with individual room controls.

The structural system consists of concrete and masonry bearing walls, steel lintels, and precast concrete floor and roof decks. The one-story office building is roofed by a series of 1-in. preformed, prefinished birch plywood barrel vaults.

Exterior materials: brick, marble-chip plaster window panels; projected aluminum sash; painted steel fascias and railings. Interior: vinyl wall fabrics over plaster walls; carpeted floors; ceramic tile in dressing and bath areas; walnut wardrobes.





Cluster Arrangement For Amenity

*Charterhouse Motor Lodge
Annapolis, Maryland*

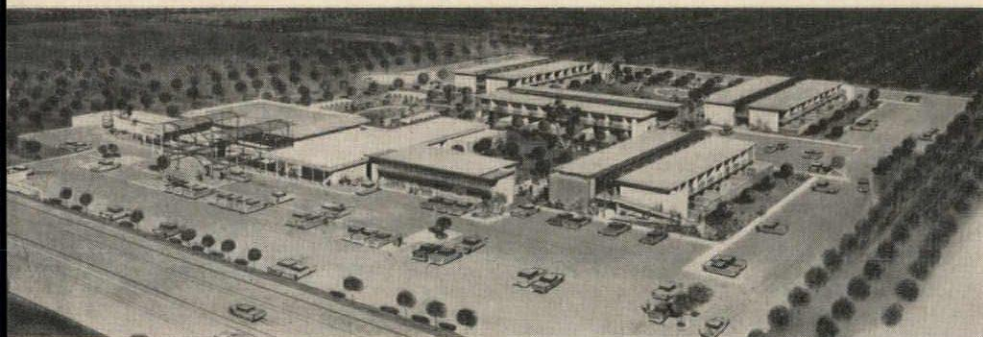
*Victor Gruen Associates, Architects & Engineers
Rudi Baumfeld, partner in charge
James B. Lim and Gene Tannen, coordinators*

Howard Engineering Co., Contractor

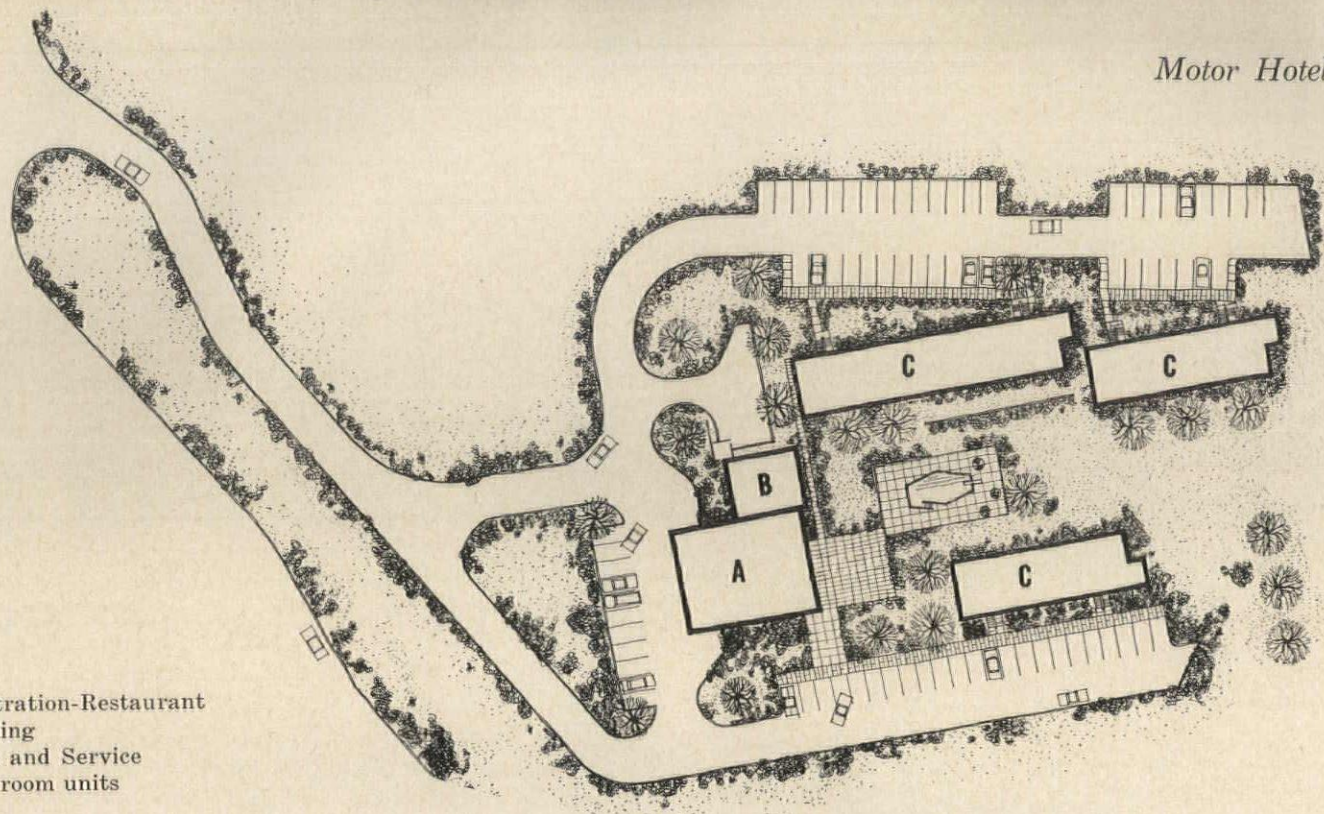
Designed within the framework of a prototype study architect Gruen made for the Hotel Corporation of America several years ago (ARCHITECTURAL RECORD, April, 1958), this example in Annapolis was recently completed. Another in Anaheim, Calif., will soon be under construction.

The basic principle of this scheme lies in strictly separating (and hiding) automobile traffic and parking from the central park-like area, toward which all rooms face. Entrance to any of the two-story guest room buildings is from the peripheral traffic U; parking is arranged at a split level so guests traverse only a half flight either up or down to reach their rooms. The cluster comprises three units containing 56 rooms, plus a registration and restaurant building located closest to the entrance drive. Incoming guests may register under the entrance canopy (above) without leaving their car.

The interior courtyard contains a swimming pool, outdoor cafe, dining terrace, and play area.

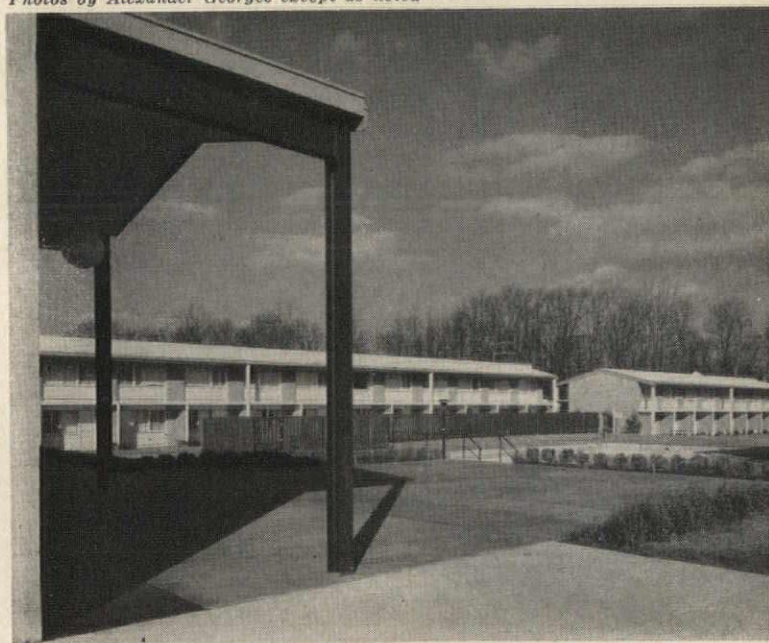


Another Charterhouse Motor Hotel, left, also designed by Victor Gruen, is soon to be constructed in Anaheim, Calif.

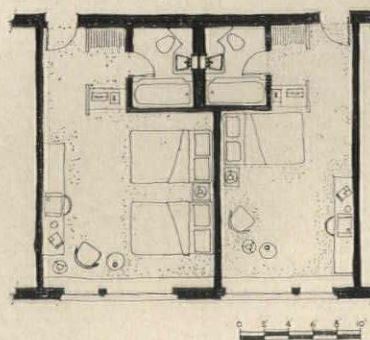


- A. Registration-Restaurant Building
- B. Stores and Service
- C. Guest room units

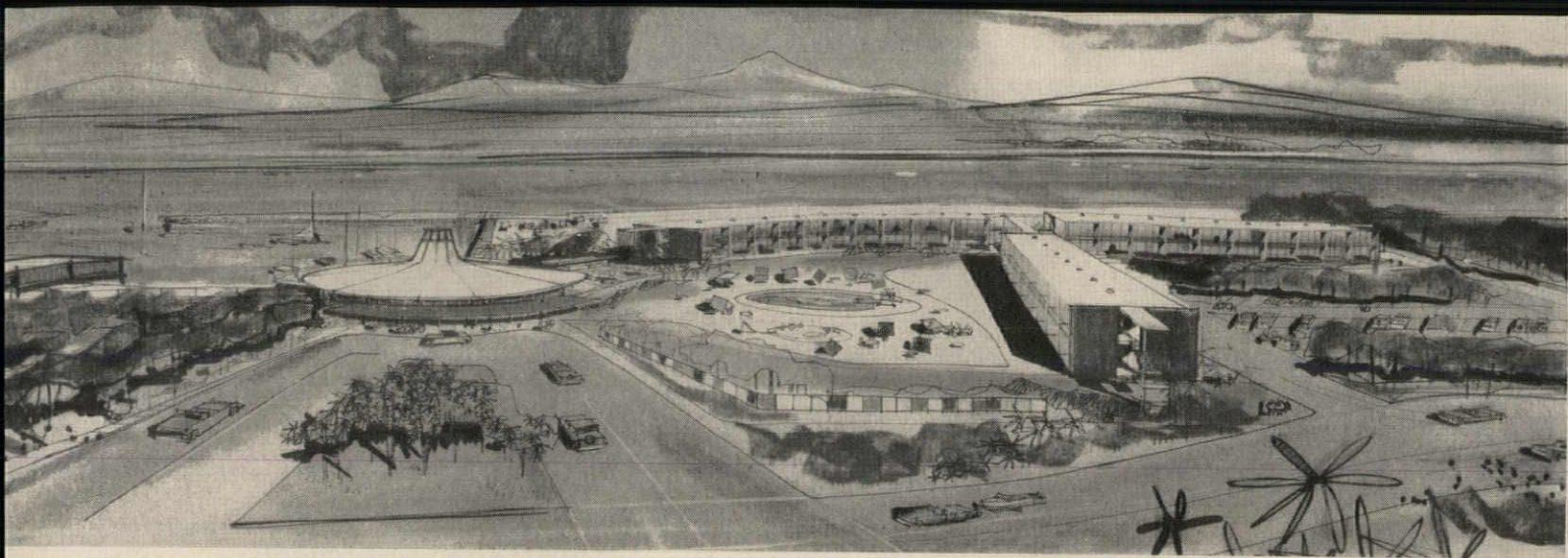
Photos by Alexander Georges except as noted



Marc Neuhof



The detailed plan above shows a typical double room, left, and a typical single room, right



Two Motor Hotels On the Shore

*Salton Riviera Hotel and
Salton Bay Yacht Club
Salton City, Calif.*

*South Lake Center
Lake Tahoe, Calif.*

Richard Dorman & Associates, Architects

For the Salton Project:

Woodward Tom, Structural Engineer;

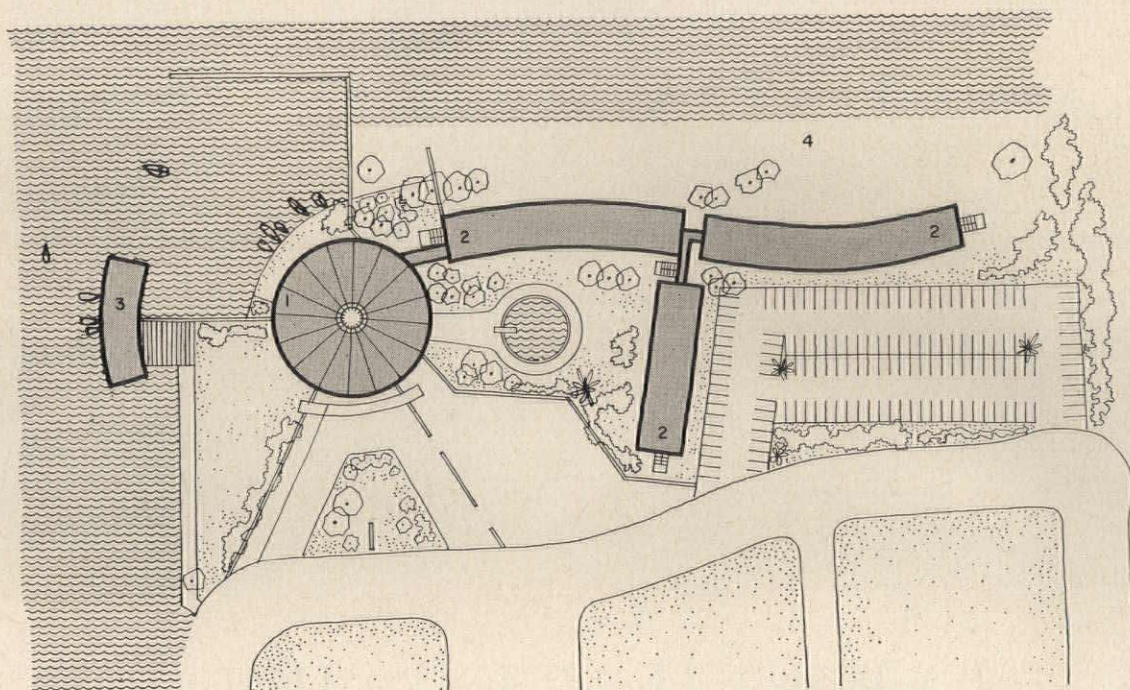
Stuhl & Lee, Electrical Engineers;

David Baer & C., Mechanical Engineers

The Salton Riviera Hotel—above, left and right—consists of a T-shaped block of rooms adjacent a patio containing a pool and other recreational facilities. The circular, 2-story restaurant unit, known also as the Yacht Club, will be constructed of laminated beams and a folded roof. Located directly on the water, it will house a restaurant for 200, a coffee shop, a mezzanine cocktail lounge, and a large yacht club lounge overlooking the 150-boat marina and the sea beyond.

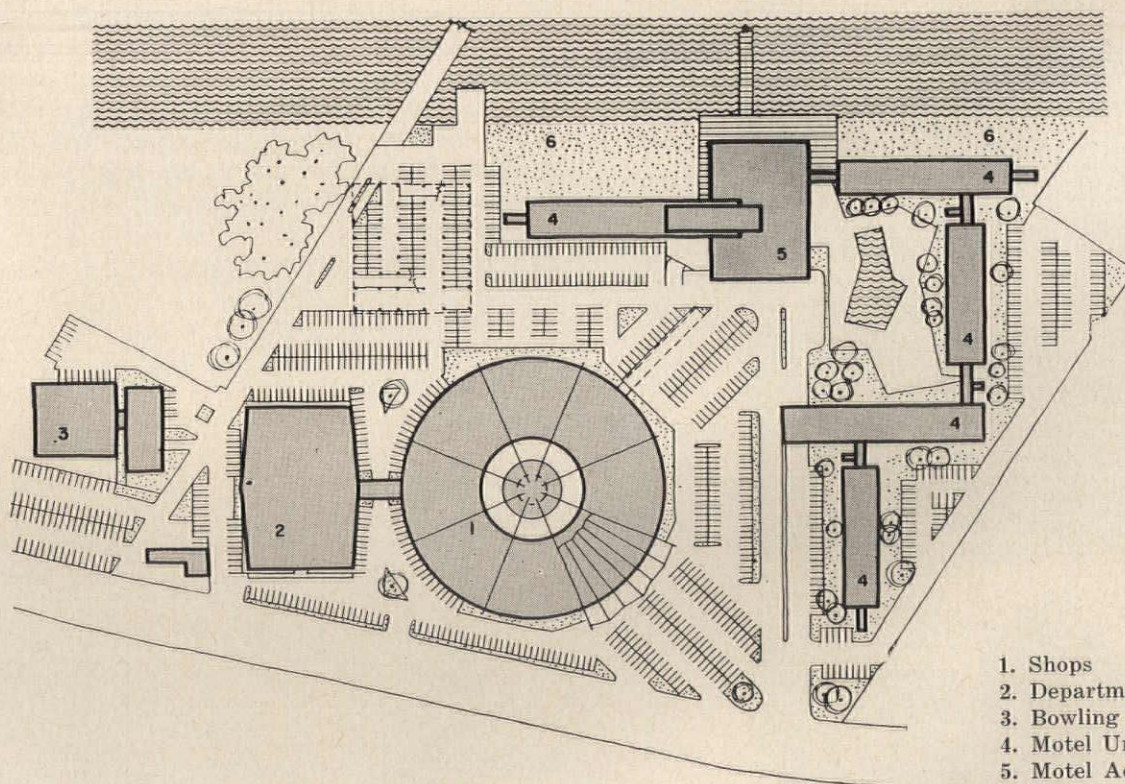
The Lake Tahoe Center—below, left and right—comprises a 300-room motor hotel, shopping center, bowling alley, marina, and yacht club. The 4-story main hotel building will contain a dining room, coffee shop, banqueting rooms, barber and beauty shops, and a "Sky Room" bar at the top. The marina will feature a floating gazebo with dining facilities. The circular shopping center will contain radial stores and be connected to a nearby major store. The bowling alley adjoins the retailing area.





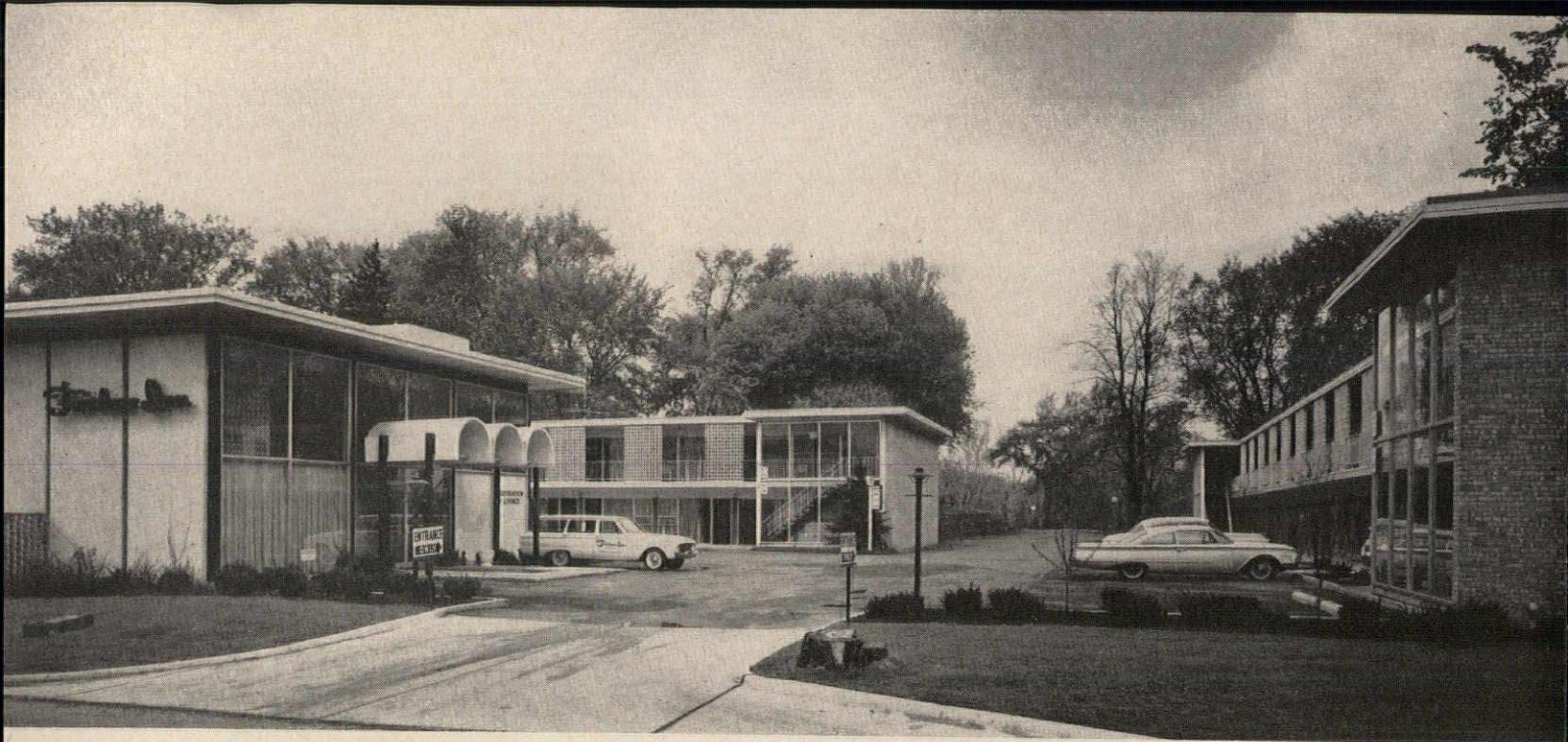
Salton Riviera Hotel and Salton Bay Yacht Club
Salton City, Calif.

1. Administration & Shopping
2. Motel Units
3. Boat House
4. Beach



1. Shops
2. Department Store
3. Bowling Lanes
4. Motel Units
5. Motel Adm. & Dining
6. Beach

South Lake Center, Lake Tahoe, Calif.



Lens-Art Photos

Motor Hotel In an Historic Setting

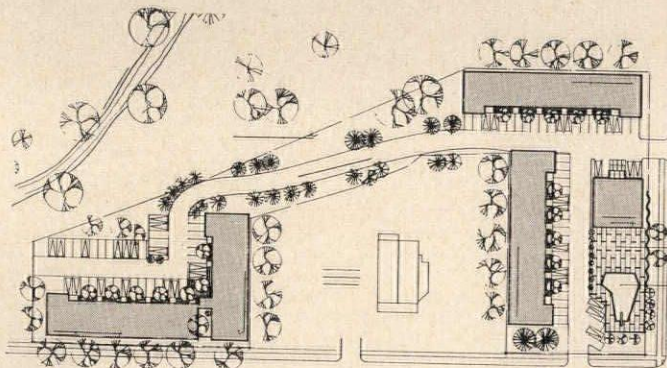
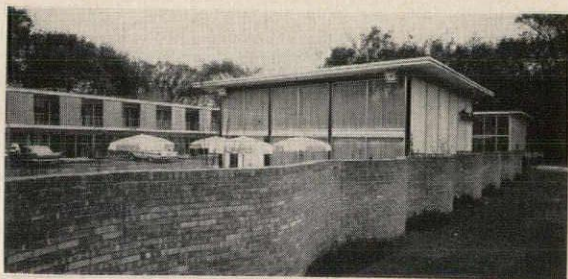
*Fairlane Inn
Dearborn, Michigan*

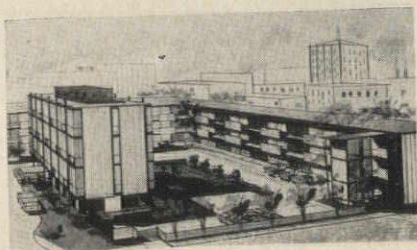
*King & Lewis, Architects
Wah Yee, Chief Designer*

A. J. Etkin Construction Co., Contractor

The site for this inn adjoins the Ford estate, and is near, and designed to serve visitors to the Greenfield Village Museum and the Dearborn Historical Museum. Thus, an attempt was made to bring the new hotel into a character sympathetic with the environment. The generous site—wooded and rolling—made possible a random, dispersed type of plan, with the 100 guest rooms in four units set at various levels. The nature of the site seemed to divide the buildings into two groups—pleasingly linked by a drive bordering a heavily wooded ravine (bottom photo, left). Brick for the new buildings is in keeping with that of the neighboring historic buildings. The new structures are steel framed and of fire resistive materials; the only exterior colors are white, black and natural masonry.

The separate registration building contains a lobby, lounge, restaurant, and three meeting rooms. It opens to a paved terrace adjoining the swimming pool, recreation area, and garden.





Harlan House
Detroit, Michigan

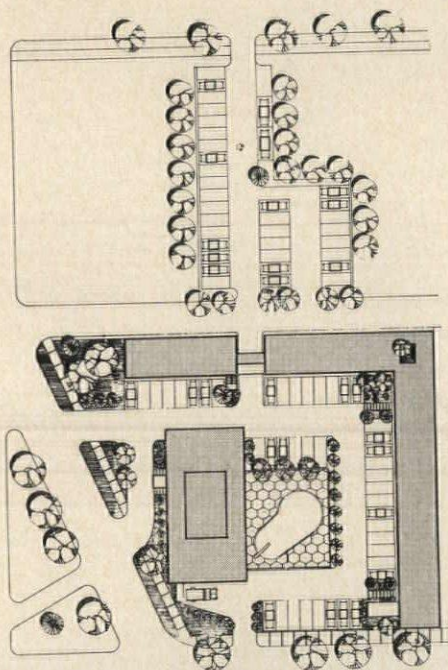
King & Lewis, Architects
Wah Yee, Chief Designer

Adler Schnee & Associates, Interiors

Taubman Construction Company
Contractors



Combination Scheme For Downtown

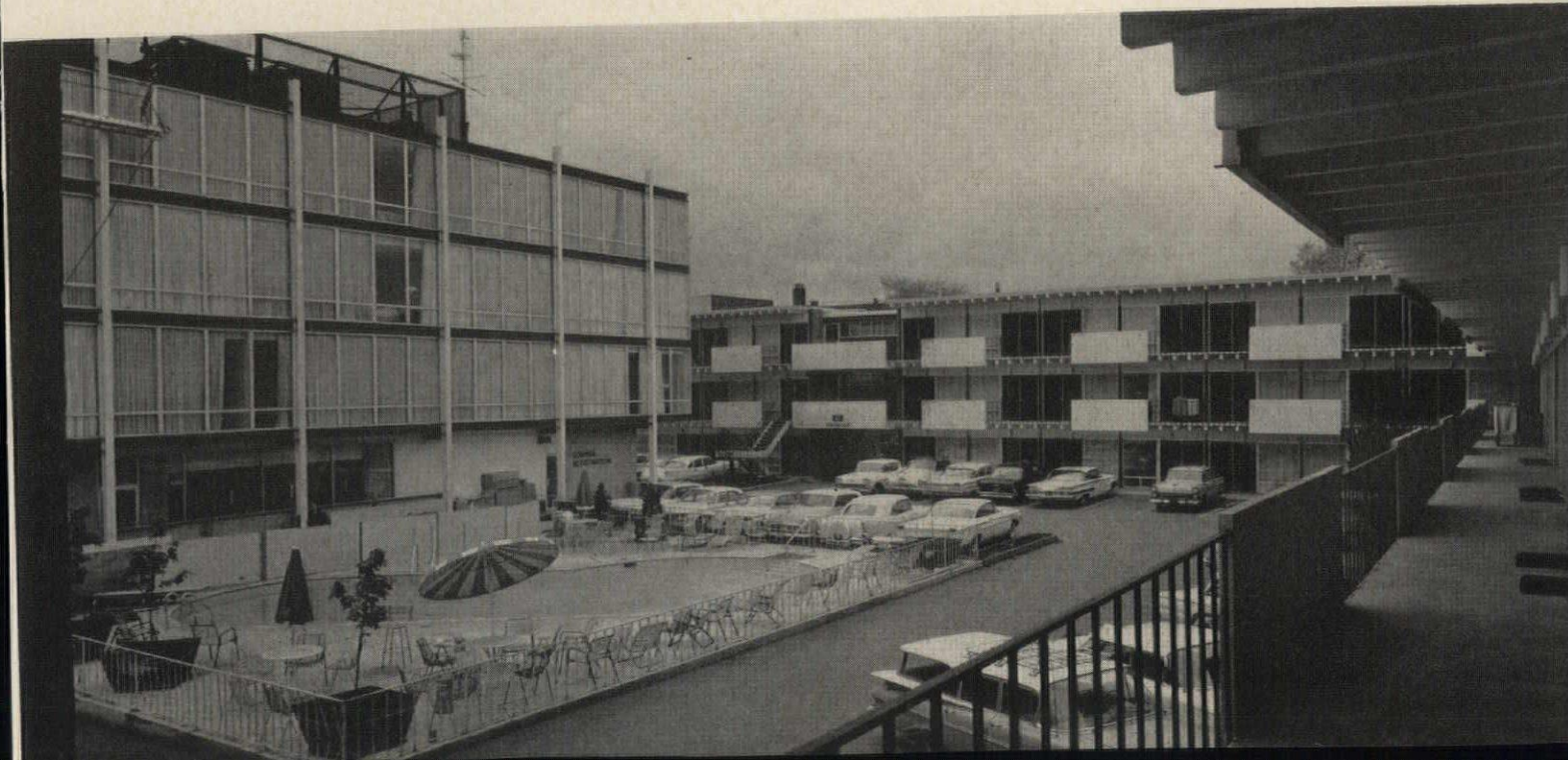


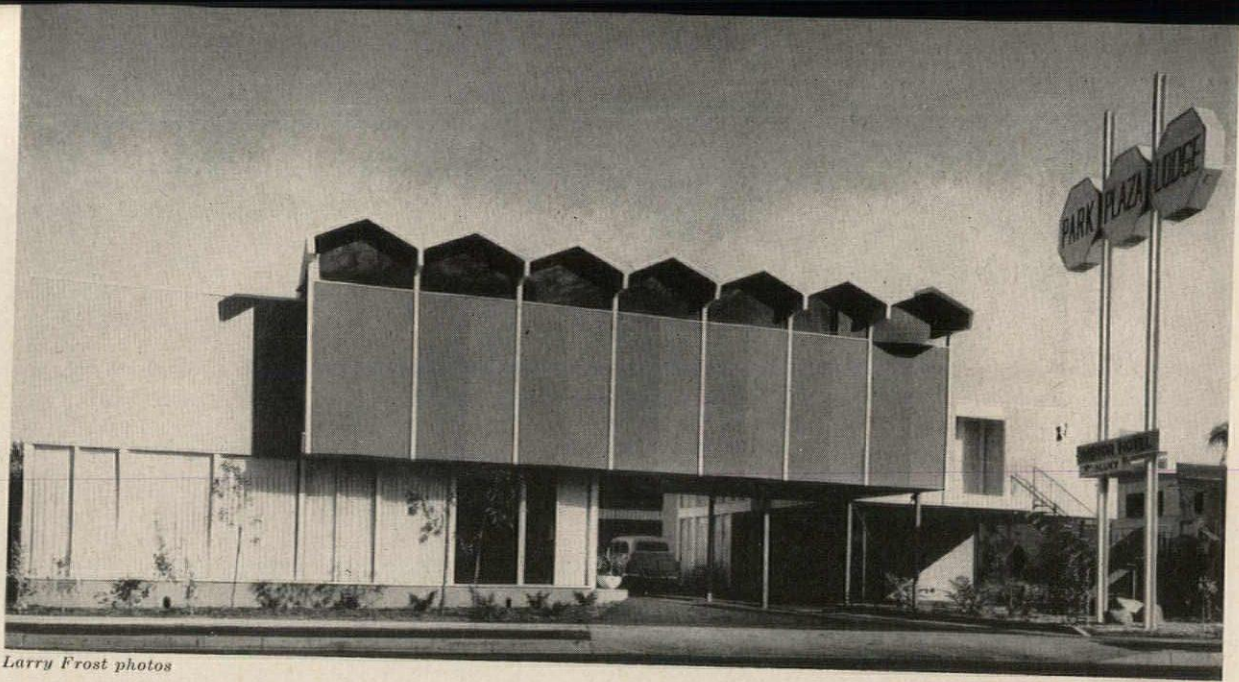
This recently completed complex in central Detroit combines a four-story high-rise building containing 45 guest rooms with two lower, horizontal wings containing 81 guest rooms. The project occupies a relatively small site near several large office buildings and a hospital; is used by businessmen, engineers, doctors, and others visiting the area.

The restricted site and the requirement of 100 per cent parking, together with the effort to get the most out of the plot, led to the multi-story solution. The lobby, office, cocktail lounge, and dining room are located on the ground floor of the four-story building, which contains rooms for non-driving guests. The combination of high and lower elements makes possible a variety of room types and sizes.

The structure is a steel frame, with precast concrete plank floors and roof decks. Exterior colors are black and white; the ground floor of the four-story unit is faced with hexagonal-shaped ceramic tile.

Lens-Art Photos





Larry Frost photos

Small Hotel Designed For Growth

*Park Plaza Lodge
Los Angeles, Calif.*

*Richard L. Dorman & Associates
Architects*

*Albert A. Erkel & Associates
Structural Engineers*

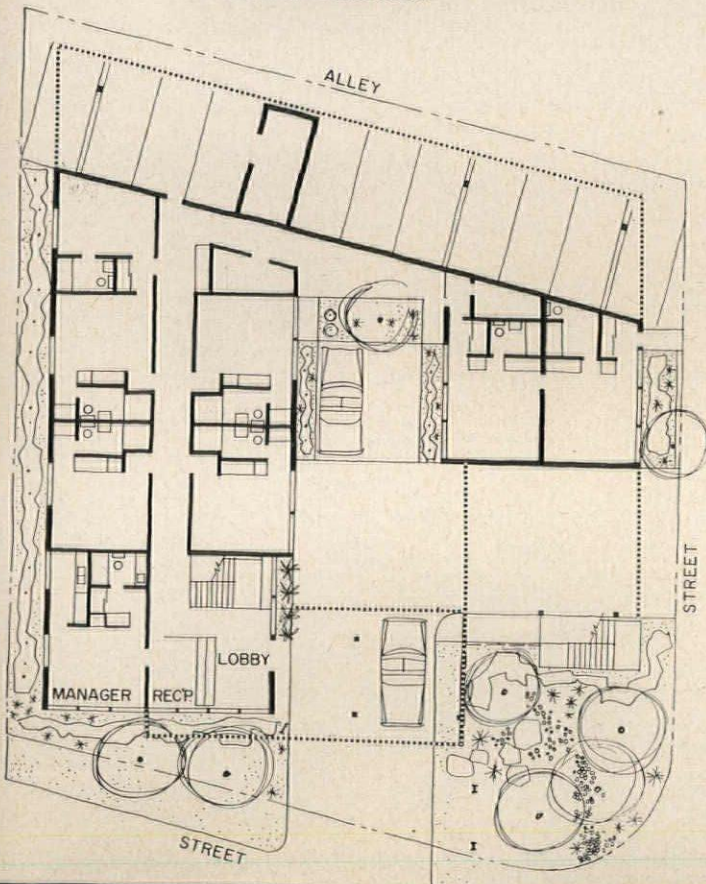
*David H. Baer & Company
Air Conditioning*

*Norman Levenson & Associates
Electrical Engineers*

*Perry Feder
General Contractor*

This 25-guest room motor hotel is the first phase of a project which will cover the entire block, half of which is shown in the plan below. The adjacent addition will be an elevator-served five-story building of 85 rooms built about a patio with a swimming pool, and will incorporate a restaurant at ground level.

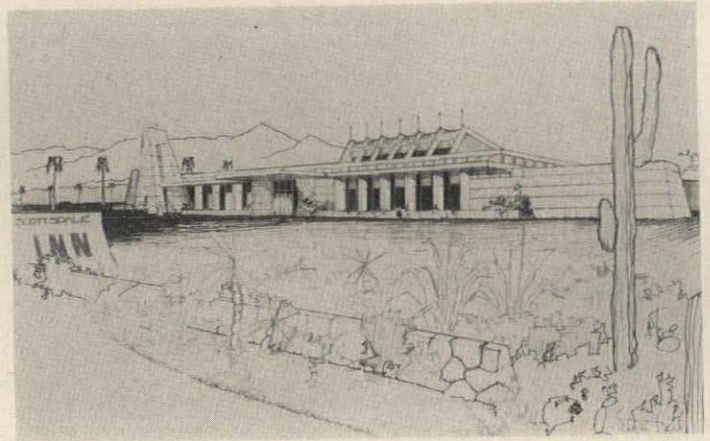
The scheme is based on the double loaded corridor idea, with room sizes repeated as often as possible; bathrooms backed-up where feasible; and built-in kitchens provided in several of the guest rooms. Circulation was handled so that only two stairways were needed; natural light is provided in the second floor corridors by means of plastic sky domes. The folded plate roof at the front is constructed of plywood on normal 2-by-4 joists framed between 4-by-12's on a 7-ft module. The entire project is air conditioned, with individual room controls.



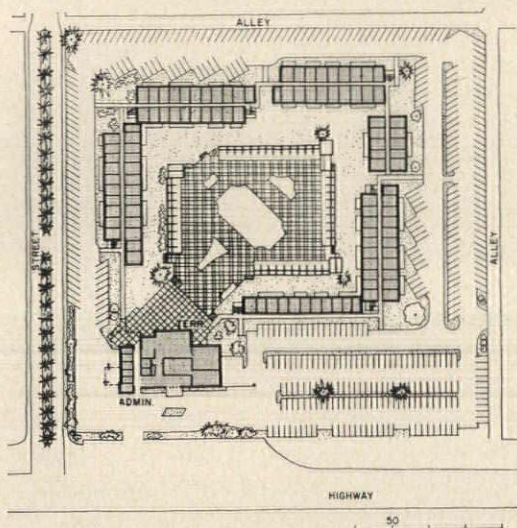
*The Scottsdale Inn
Scottsdale, Arizona*

*Edgar Tafel Associates
Architects*

*Gonzales & Ludlow
Associate Architects*

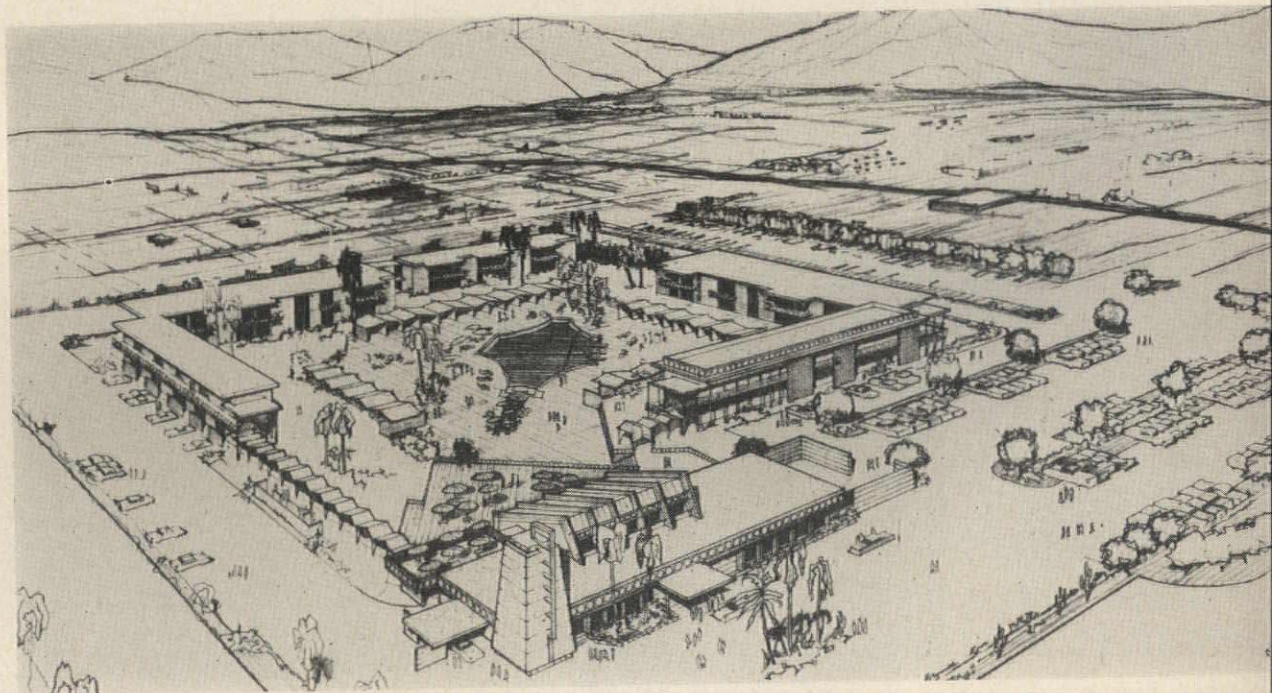


Perimeter Circulation and Parking



Located in the hot sun and heat of Arizona, this motor hotel—which focuses on a cool oasis containing a swimming pool and cabañas—sharply separates motor traffic and parking from pedestrian traffic and the central patio. The complex will include administration, drive-in registration, cocktail lounge, dining room and outdoor dining terrace, coffee shop, 43 rental cabañas, 146 guest rooms dispersed in six two-story buildings, and parking for 375 automobiles.

The design, which shows a strong Frank Lloyd Wright influence, will be constructed of precast floor and roof slabs on bearing walls of concrete block. All public and private rooms will be air conditioned, with individual controls. Construction is expected to be under way by the time this article appears.





Gottschow-Schleisner

A Resort Motor Hotel In Jamaica

Arawak Hotel
Ocho Rios, Jamaica

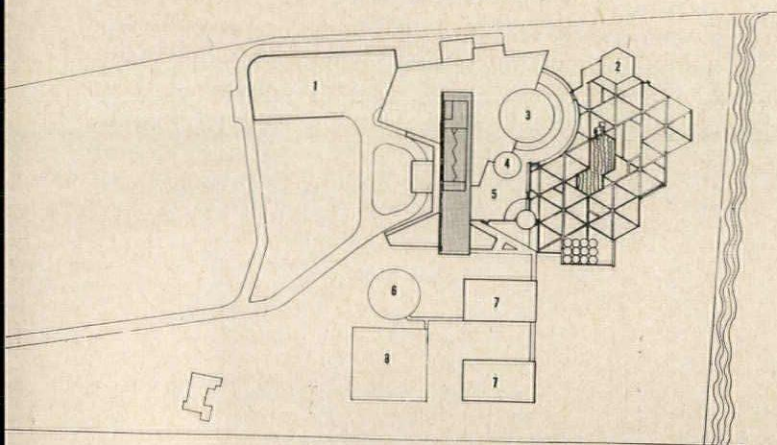
Morris Lapidus, Kornblath & O'Mara
Architects & Engineers

Higgs & Hill
General Contractors

Since this resort hotel is located in an underdeveloped area in the middle of Jamaica, it must be reached by car, and thus assumes all the characteristics of a motor hotel. Many visitors rent cars at the airport or at Montego Bay.

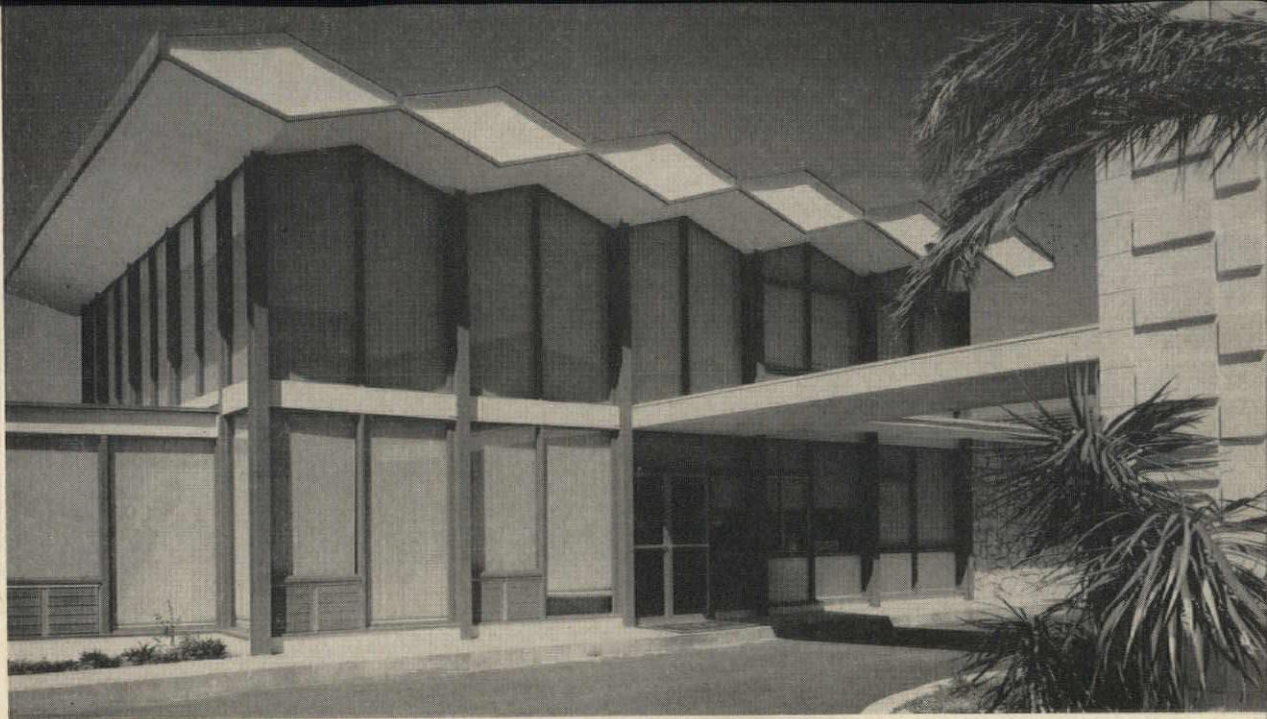
The concrete structure features a lobby open on two sides, and guest rooms of two types. Rooms in the main building have native tile floors, white-washed brick walls, furniture of mahogany and cane (made on the island). Each room has a balcony, which most guests use for breakfast.

In the two-story cottage or lanai arrangement, all rooms can be reached by covered walks; while the rooms proper are separated from the outside corridors by means of bamboo screens. A degree of privacy not usual in such a scheme is thus achieved.



- Shaded Area Indicates Main Hotel Block
- | | |
|--------------------|------------------|
| 1. Parking | 5. Terrace |
| 2. Beach House | 6. Putting Green |
| 3. Dining Room | 7. Lanai Rooms |
| 4. Cocktail Lounge | 8. Tennis Courts |





Two-Story Arrangement of 100 Rooms

Colonial Plaza Motel
Orlando, Florida

Morris Lapidus, Kornblath,
Harle & Liebman,
Architects

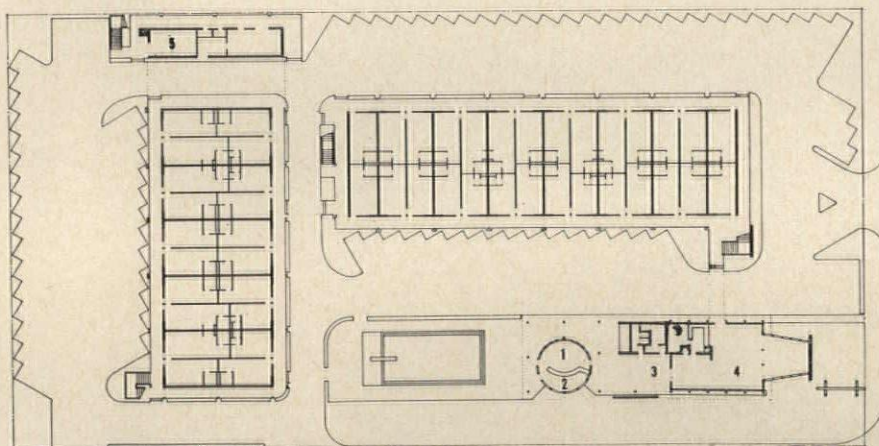
Lambert & Dell'Abate
Consulting Engineers

Joseph Bressman & N. Feder
Mechanical Engineers

Basker Building Corporation
Contractors

The Colonial Plaza is an example of a small motor hotel which incorporates the classic elements (swimming pool, coffee shop, lobby) and is in good balance costwise. The cost per room—completely furnished and including pool and restaurant—was slightly over \$6000.

Of the design, architect Lapidus says, "a motel must be a billboard and a salesman, and thus the design must sell the passing motorist the idea that here is a cheerful, attractive, well-kept place. Thus the pitched roof silhouette, the circular coffee shop, and the unusual roof at the entrance. Color also plays a part; the frame is black, the doors yellow and turquoise, the remainder of the building white."



1. Coffee Shop
2. Kitchen
3. Terrace
4. Lobby
5. Mechanical and Housekeeping Stores

Gellberg-Victor Photos





*Charterhouse Motor Hotel
Bala Cynwyd, Pa.*

*Curtis and Davis
Architects*

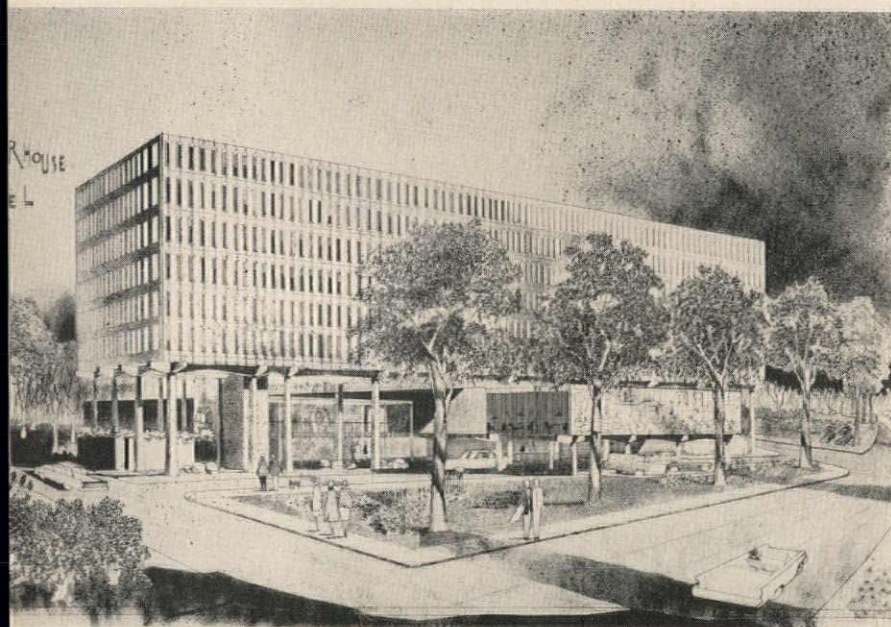
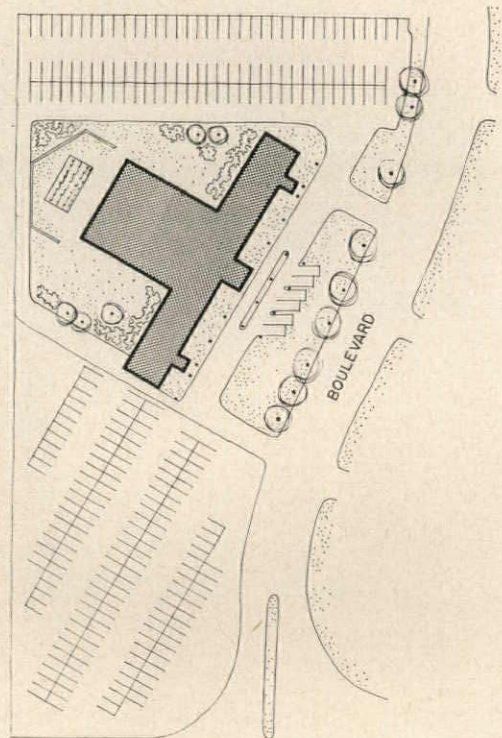
Charterhouse For Philadelphia

This proposed 210-room motor hotel in suburban Philadelphia is shown in two phases of its design: at top, an early scheme with prow-shaped sitting area for the guest rooms; and below (rendering and plan) a later and more conventional arrangement.

In order to cut down the east-west sun, the later design reduces glass areas in the guest room tower and recesses the windows for further protection.

The tower rises from a one-story development devoted to a restaurant, coffee shop, cocktail lounge, and banqueting space in three sections. The registration-lobby area is at a lower level and features a drive-up registration window.

Exterior walls will be precast concrete with exposed marble chip aggregate. The front wall of the restaurant (see rendering), also of precast concrete, will have a relief mural cast into its surface.





Charterhouse for Puerto Rico

El Miramar Charterhouse Motor Hotel

San Juan, Puerto Rico

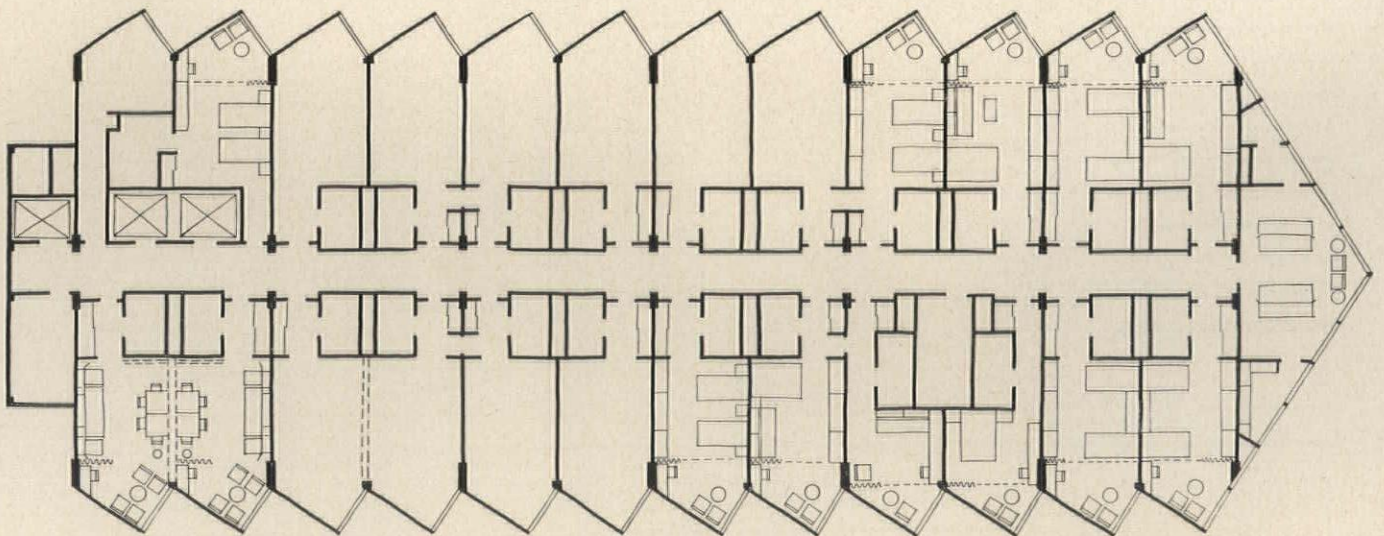
Curtis and Davis
Architects

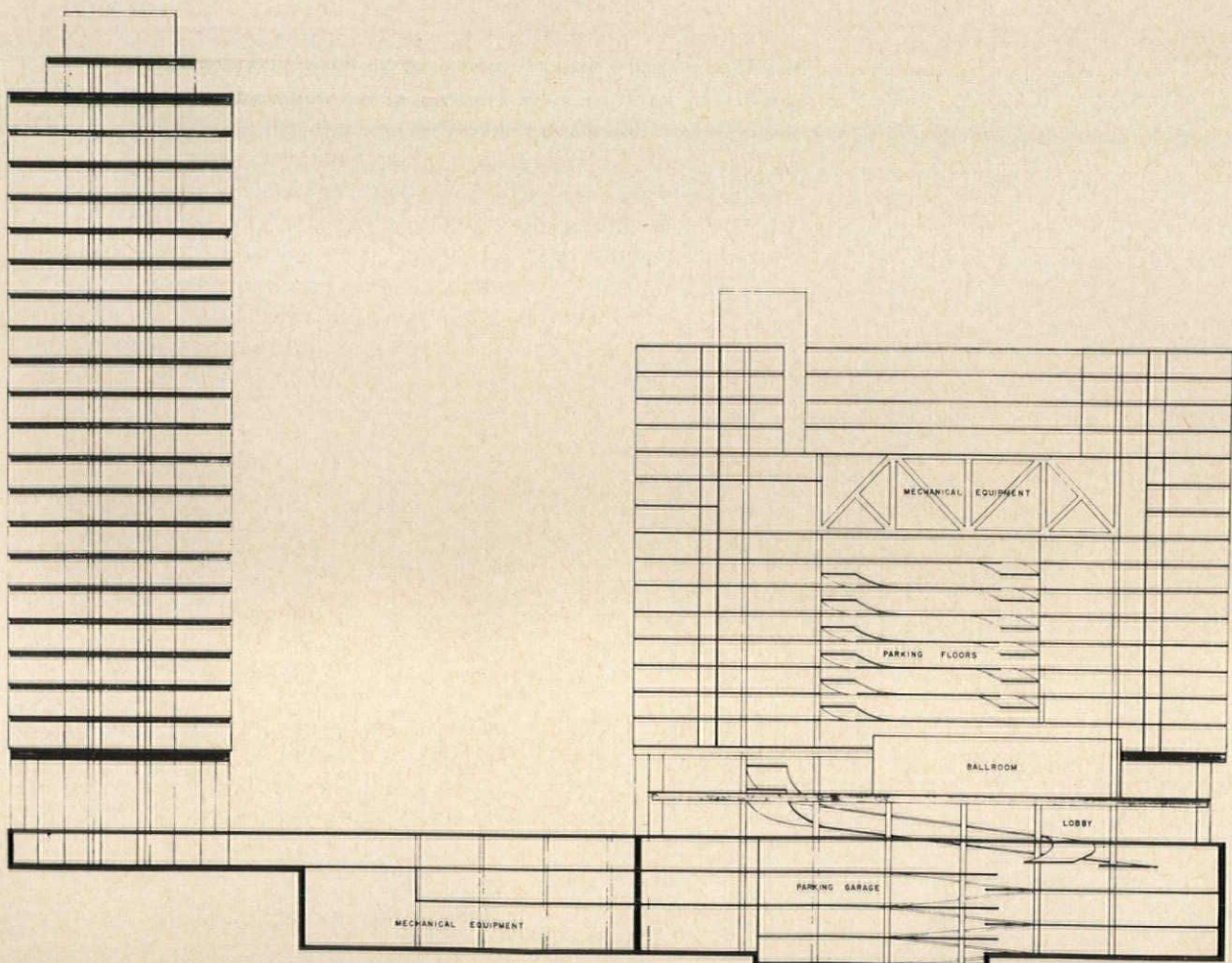
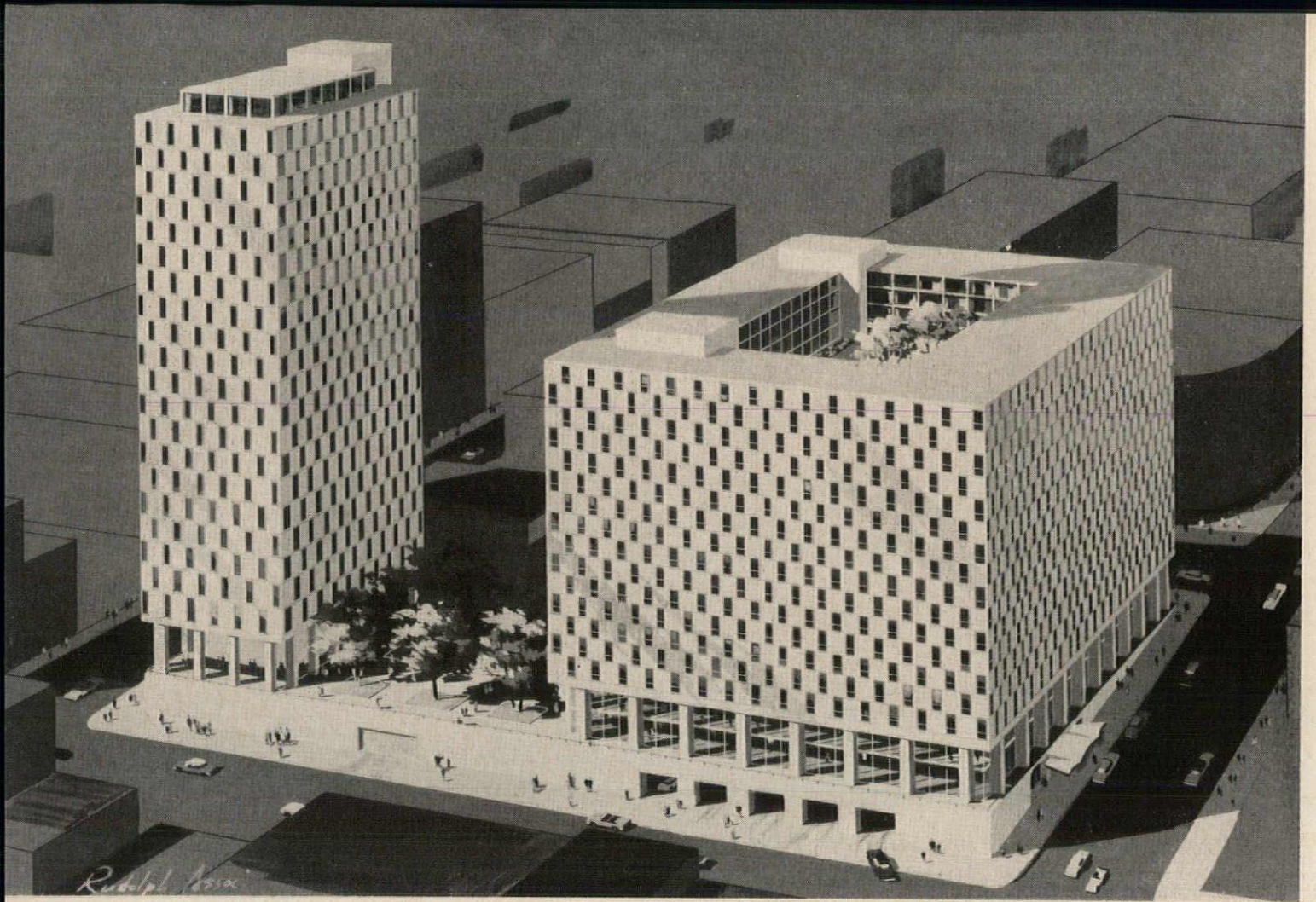
Angel Aviles
Associate Architect

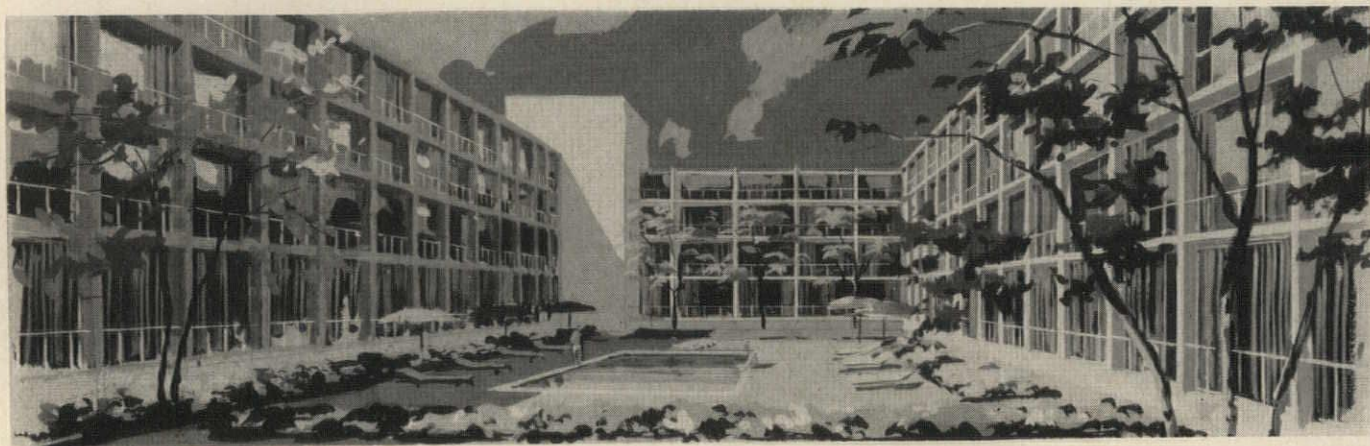
This project—in central San Juan—will provide nine luxury suites as well as 216 guest rooms. The suites will consist of two bedrooms and a central sitting room with an 80-ft glass expanse overlooking the ocean. Typical rooms will feature a prow-shaped sitting area overlooking San Juan harbor.

An enclosed parking garage at lower level will handle 120 cars and connects to elevators and lobby above. At ground level there will be a dining room and adjacent dining terrace overlooking the pool. The cocktail lounge is an open-air but protected area set amidst gardens, and will have separate access from the street. A lobby, lounges, and gardens will also be located at ground level.

A circular rooftop supper club to seat 90 will open out over a landscaped roof garden and reflecting pool to a view over the nearby city to the distant beaches.







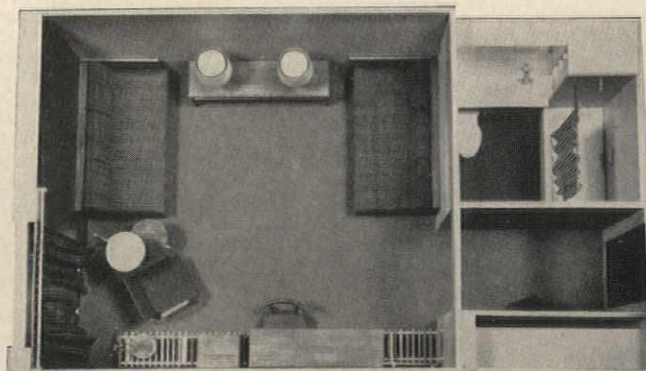
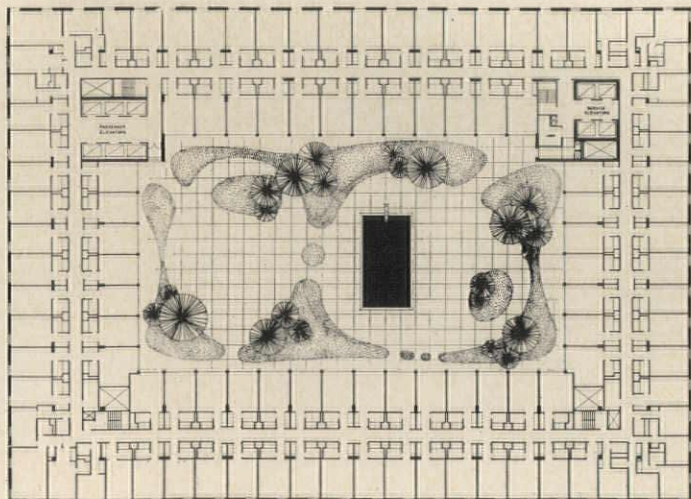
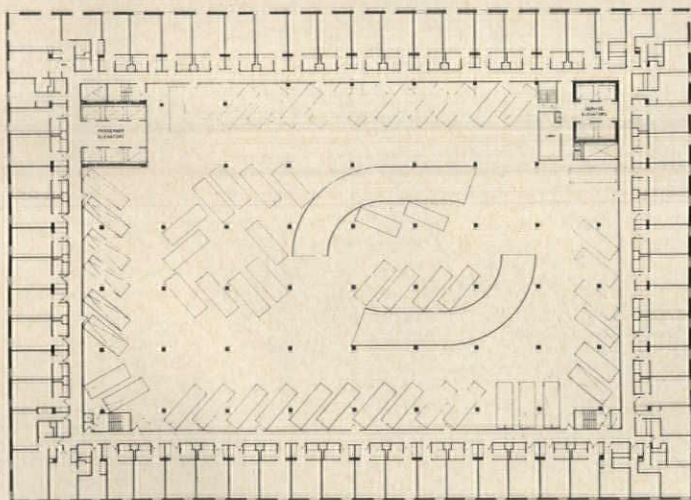
New Kind of Big City Hotel

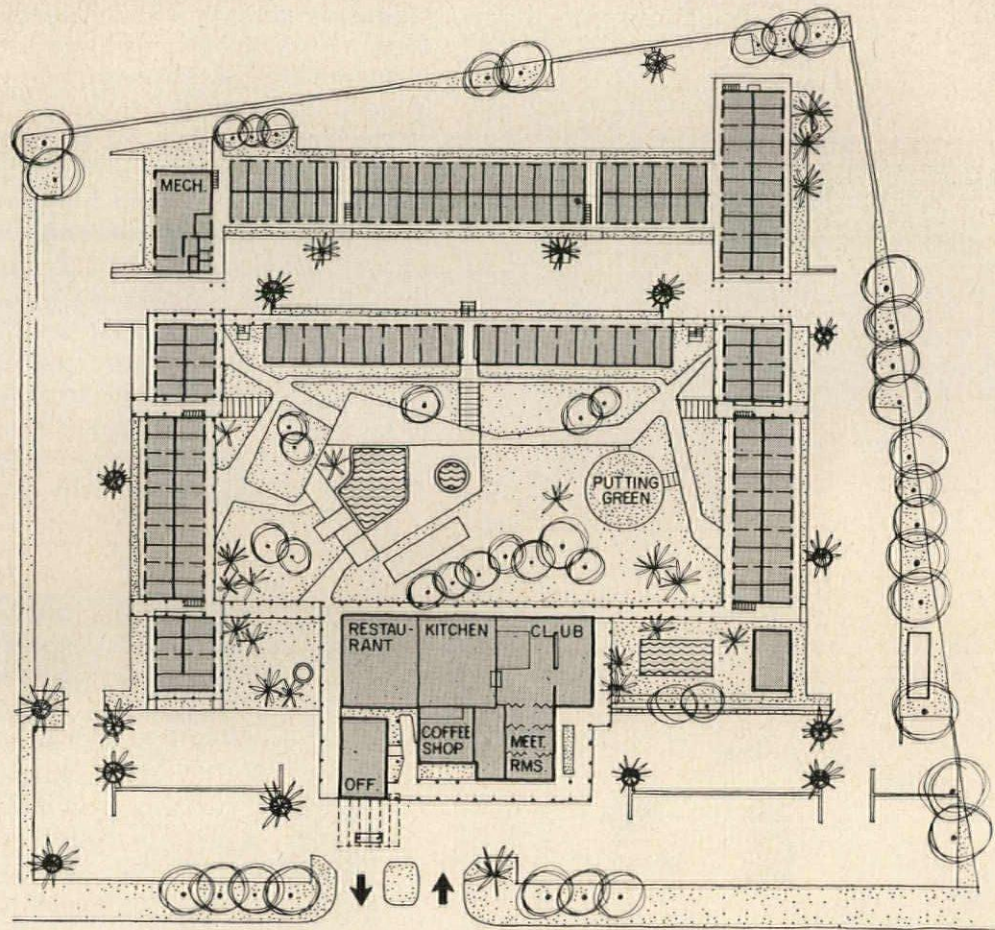
The San Francisco Hilton

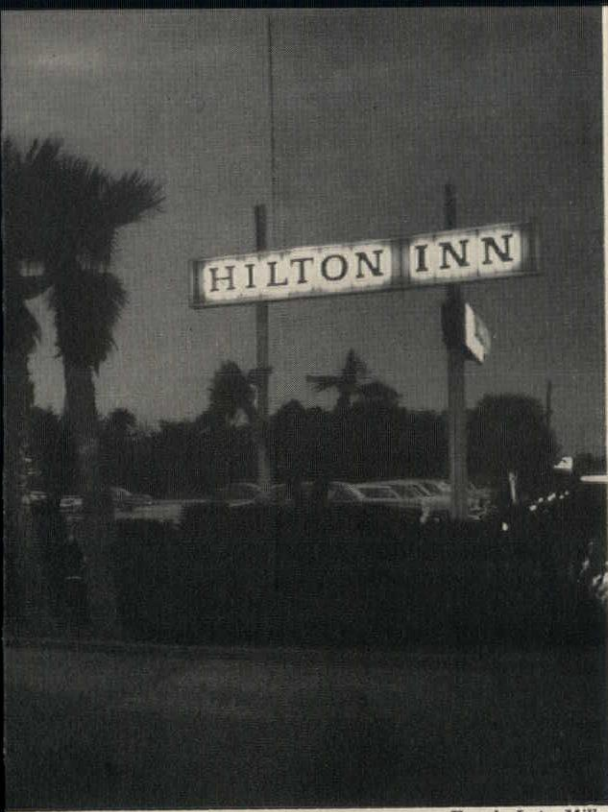
William Tabler, Architect

This pace-setting design will comprise an 18-story hotel containing 1200 rooms, parking for 750 cars, extensive dining and entertainment facilities, and appropriate service areas; a landscaped plaza; and a 22-story office building. Together, the complex will form a notable business and convention center, with a column-free ballroom capable of seating 3000 for a meeting, or 2200 for dining.

The unique feature of the hotel is its combined hotel-motor hotel aspect. Seven floors of guest rooms will be wrapped around a central core of parking, so a guest can walk directly from car to room. The three floors above this will open to a landscaped garden that will roof the parking core. Ballroom columns will be eliminated by means of trusses at the top of the garage (see section). Mechanical equipment, and also maintenance and housekeeping departments, will occupy the space between the trusses. The arrangement of typical rooms has been carefully studied—see photo of mockup below.







Frank Lotz Miller



Motor Hotel Near A Southern Airport

*Hilton Inn
New Orleans, La.*

George A. Saunders, Architect

Walter E. Blessey, Structural Engineer

Edward J. Yoerger, Electrical Engineer

Hogan Bros., Inc., General Contractor

*J. E. Simkins and Edward Podmayer
Consultants for Hilton Hotels Corporation*

This 310-room motor inn—located on 10 acres near the New Orleans airport—has a festive, resort-like character, and focuses on an attractive central court devoted to a swimming pool and other sports areas. Traffic and parking is restricted to the perimeter of the plot. The hotel provides full facilities for conventions, meetings, and the outside restaurant trade, and in addition houses a private club which maintains its own swimming pool on the grounds.

The two-story buildings are constructed above a slab on grade supported on piles, and are built about a light steel frame. The second floor consists of concrete fill on metal decking on open web joists; the roof is gypsum planing on bulb-T's; partitions are steel studs with plaster finish. The guest rooms are carpeted; have walls covered with glass fiber fabric; and feature automatic coffee makers in the dressing area so that each guest can prepare his own coffee upon arising.



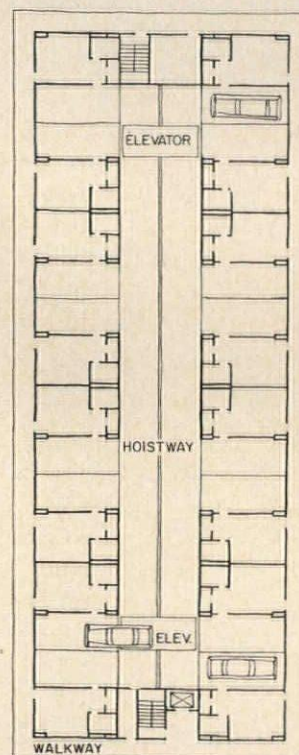
Motor Hotel With A Floating Lobby

This project for a hotel with a "floating lobby"—in which a guest could register as he and his car move upward to his suite—has been devised by Paul C. Bryant, a Texas hotel man, who has applied for a patent on the scheme. The guest would drive to the "floating lobby," which would contain a newsstand and cold drink machine in addition to the other essentials of a front office. The lift would be manned by one clerk, and no bellmen would be required for the checking in process. Upon reaching his suite, the guest would park his car, and the garage door would be locked electronically for safety.

The basic plan calls for 240 guest suites, a coffee shop, swimming pool, and regular lobby at ground level. Self-service elevators would provide vertical transportation for guests not wishing to use their cars. Although the basic plan is for a 12-story building, other structures of up to 20 stories would be feasible, according to the inventor. He expects that during the next several years from 50 to 100 units will be constructed under a franchise arrangement.

*Skyhost Motor Hotel
Dallas, Texas*

*Williford & O'Neal
Architects & Engineers*



Architectural Engineering

Express the Mechanical Environment?

What impact may lighting and other man-created environments have on architectural design? John Flynn, an architect at G.E.'s Nela Park had this to say in commenting on our current lighting series: "We talk of *integration* of mechanical systems—but I wonder if we've ever really analyzed exactly what we mean by this. We don't talk about structural integration, for we naturally assume an inseparable relationship between structure and architectural design. [Why this difference?] I think [the reason] is that integration of structure and materials evolved in the early 20th Century—while mechanical integration is a similar challenge at mid-century. I believe any significant 'direction' that architecture may take in the future must include basic appraisal of the mechanical environment. Is there a more fundamental purpose or concept in building than the extended and complete control of the environment (light, heat, cooling, humidity, acoustics, and sound, etc.)? If glass, steel, and mass production required design expression and assimilation in the early part of the century, the *controlled environment* needs expression today. Our normal approach to the electric lamp has been a need to integrate lighting into the concepts of 'modern' architecture. Perhaps our *real* need is to 'integrate architecture' to express our new ability to control and manipulate light—as well as our ability to control all aspects of the environment. This is perhaps a subtle, yet important, difference in approach."

Structural Design of Plastics

Most of today's applications of plastics are non-structural (flooring, coatings, adhesives, luminous ceilings, laminates, and insulating foam). If there is to be a significant breakthrough in the use of plastics in building, Professor Albert G. H. Dietz of M.I.T. feels this must come in semi-structural and structural uses and also in mechanical equipment. Speaking recently before The Society of the Plastics Industry he listed some achievements the industry must make before the role of plastics can be much enlarged. First, ways must be found of demonstrating convincingly that plastic materials are durable and reliable over the life of buildings. (On the other hand, he asks, why must every part of a building be long-lasting; should not some parts be expendable, such as walls and partitions?) Second, the building industry requires product standards. While many standards for plastics *materials* exist, standards for plastic *building products* are largely non-existent. Third, it is not sufficient for industry to develop a product and expect the designer to find ways to use it. Systems for integrating the product with the rest of the building may be necessary. Fourth, improved channels of distribution must be set up. Fifth, unless building codes provide for the incorporation of plastics, their use will be severely restricted. This problem can be solved if plastics are shown to be reliable, if standards backed by tests and investigations are provided, and if it is shown that plastics do not constitute a hazard. Sixth, a large-scale educational effort is needed to familiarize the building industry with the properties, peculiarities, potentialities and limitations of plastics; and, conversely, for the building industry to let the plastics industry know its requirements.

Plastic Design of Structures

When AR ran an article on plastic design of steel structures in January 1957, there were no known buildings in the United States analyzed according to this method. Now there are 175 in the U. S. and an estimated 1000 in Great Britain. These figures were compiled by Professor Lynn Beedle of Lehigh University and presented by Mace H. Bell of the American Institute of Steel Construction at the recent A.I.S.C. National Engineering Conference. In the U. S., the method has been applied mainly to continuous type spans and gabled single-span frames; in Britain for two-story and multi-story braced frames as well.

This Month's AE Section

LIGHTING FOR ARCHITECTURE, The Lighting Program: 2 The Right Light in The Right Place, p. 170.
PRODUCT REPORTS, p. 182. *LITERATURE*, p. 212.
TIME-SAVER STANDARDS, Threaded Nails, pp. 185, 187.

The Lighting Program: The

- a. Vision: How Do We See?
- b. Visibility: How Much Light?
- c. Visual Comfort: What Kind of Light?
- d. Writing the Program: A Weighted Judgement of All the Factors

a. VISION:

HOW DO WE SEE?

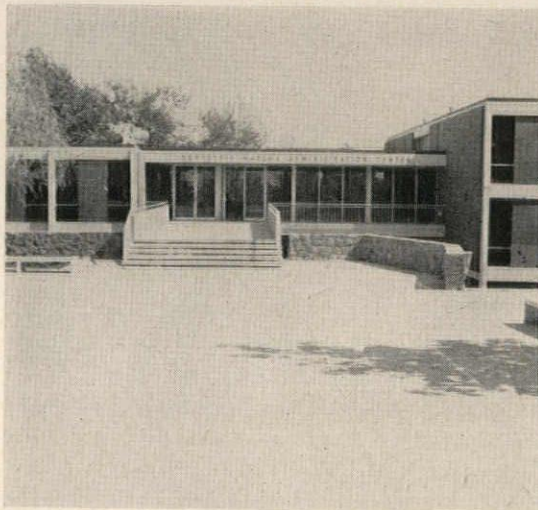
In talking about lighting, footcandle levels are often bandied about as if that were all there is to it. But so far as our eyes are concerned, there is no such thing as a footcandle. We can't see illumination at all—only brightness.

To determine why this is so, we must examine more closely the characteristics of light and of the human eye. The basic facts of light, of course, are no mystery. We all know that light is a form of energy which, when radiated to a given point, produces illumination at that point. The significant fact, though, is that we can't see this light until it is intercepted by our eyes.

Therefore, if we are not looking

directly at a light source, we see only the light retransmitted or reflected by surfaces around us, which thus become secondary sources. But this light is brightness, not illumination. (1 footcandle of illumination falling on a surface with 100 per cent reflectance—or transmittance—produces 1 footlambert of brightness.)

Our eyes perceive that brightness in much the same way as an electric-eye camera. In everyday life, we see



1
Looking at the building from a distance (1) the eyes adjust to the brightness of the pavement (2500 fl) and the blue sky (650 fl) so that the shaded areas



2
of the pavement (250 fl) look relatively dark, and the lobby almost black. As the darker areas become a larger part of the picture (2), the eyes readapt to



3
lower brightness levels, making the shadows seem lighter. As one moves towards the shadows (3), the interior becomes more visible, although the ceiling

Right Light in the Right Place

by William M. C. Lam, Consultant: Coordination of Lighting and Architecture

In the first article, we outlined as the goal of lighting design, the provision not only of enough light to see by, but also of the right kind of light to create mood, to focus attention, to indicate intended use, to complement the structure, and to enhance the space itself.

This article shows that these objectives are not esthetic luxuries. They are as important to how well and how comfortably we see as is the "task illumination" which we usually think of as the sole goal of lighting.

The planning of lighting is not greatly different from the planning

of space, but we continue to believe that good lighting can be plucked from a handbook. Lighting too must take into account varying psychological and esthetic factors, as well as function; yet we continue to think of it in terms of "standard" solutions—luminous ceilings or recessed downlights or hanging globes or what have you. It too is multi-dimensional; yet we continue to specify it by only one of its dimensions: the footcandle.

This single chosen dimension is a useful unit of measure. So is a foot or an acre. But footcandles alone can

no more determine the efficiency and appearance of lighting than square feet alone can determine the efficiency and appearance of a room, or acres the quality of a site plan.

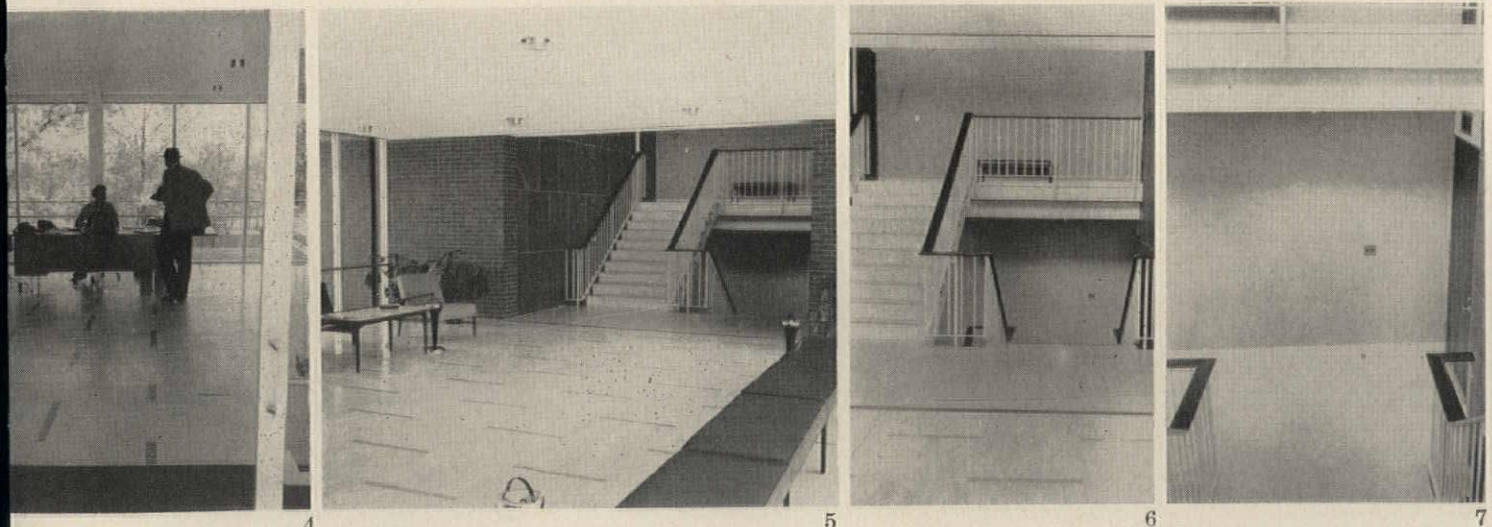
If the effects of lighting are to be truly designed, rather than simply left to chance, lighting, like space, must be understood, planned, and executed in *all* its dimensions. Recommended footcandle levels are not adequate "solutions" to lighting problems, any more than recommended floor areas would be considered adequate solutions to complex problems in building design.

"normal full color pictures" at brightness levels ranging from as low as 2 fl to over 10,000 fl. Above that level, we automatically blink or shut our eyes. Below 1 or 2 fl, we still see "full-color pictures," but they are darker—underexposed. And for brightness levels below about .01 fl, with 30 minutes for adaptation, we switch to night vision, a "black and white film" that can see brightness levels as low as .000001 fl.

This automatic adaptation allows us to see "normally" by candlelight as well as by sunlight, but it also means that while our eyes can and do see a range of brightnesses of 100 million to 1, we cannot "measure" actual brightness levels by eye as we can tell the difference between an inch and a mile. We must interpret what we see in terms of relative brightnesses. Thus, when we say something is "too bright," we are

usually describing an uncomfortable brightness ratio, not an intolerable brightness level.

The photo sequence below, which was taken with the type of automatic camera that so closely resembles our eyes, illustrates how the apparent brightness of an object or surface is modified by comparison with the brightnesses of other objects and surfaces and with the overall brightness of the visual field.



(45 fl) still seems dark. Completely in the shade (4), with less reflection from the glass the interior looks brighter and everything in the room becomes visible.

Inside, turning right (5) so that a brick wall (9 fl) instead of the outdoor scene is straight ahead, the floor and ceiling appear still brighter, and the stairway

walls (5-7 fl) become increasingly brighter as they are approached (6, 7). [Note sharpness of 20 per cent gradation in wall brightness]

b. VISIBILITY:

HOW MUCH LIGHT?

Since we see not light but brightness, footcandle levels must be based on the amount of illumination required to produce brightnesses that will enable us to see our tasks and environment easily and comfortably.

The problem lies not in producing specified brightnesses—which is a relatively simple matter of juggling illumination and reflectance factors according to a precise formula—but in specifying the proper brightness in the first place. And this can be done only if the designer fully understands the complex relationship between brightness and visibility. One of the facts that is basic to such an understanding is shown graphically in Chart 2: what we can see is limited by the contrast between detail and background, and by the size of the detail. As the background brightness of the task increases, visibility increases also—up to a point. But both curves reach a point of diminishing returns above which large increases in background brightness produce only a small increase in visibility. For example, increasing background brightness from 10 to 20 fl increases visibility by 3 per cent; from 50 to 60 fl, by only 1 per cent; and from 100 to 110 fl, by a minuscule 0.1 per cent.

Since, as these curves show, the illumination required for visibility is related to the size and contrast of the task—or, in other words, its difficulty, an evaluation of the relative difficulty of various tasks is helpful in analyzing their particular lighting requirements. One such evaluation, the "Blackwell Report,"¹ has established the comparative difficulty of some sample tasks (Chart 3) based on the illumination required to see them with maximum practical accuracy (99 per cent) at normal speed.²

As might be expected, the range of task difficulties thus arrived at relates closely to the visibility-brightness graph. When contrasts are reasonable, illumination requirements are very low; as tasks become more

difficult, very large increases in illumination are required to compensate.

The extremely wide range of task difficulty, and the correspondingly wide range of illumination requirements, suggests several possible actions other than lighting every office to the level required for reading copy typed with a very poor ribbon. One might, to begin with, make difficult tasks infrequent or eliminate them altogether: typewriter ribbons can be changed. Or, if difficult tasks are really unavoidable, one might provide the full amount called for only where necessary—for example, by using a light table for tracing blueprints instead of providing 5090 fc throughout the drafting room.

Closer examination of the factors which were considered in arriving at the sample task difficulties may suggest other situations in which the corresponding illumination requirements may be modified. One of these is speed of seeing. Blackwell's task ratings were based on a normal reading speed of 5 perceptions per second, meaning that the eye makes five fixations in that length of time, and a field factor of 10. Chart 4 shows that to perform a difficult task as quickly as an easy task requires a great deal more light. But it also shows that the more difficult task *can* be performed with less light if more time is taken. We all know that we can read any typed original, no matter how worn the ribbon, with less than 67 fc. If a difficult task is also very infrequent, it would seem reasonable to assume that it could be performed relatively slowly.

Accuracy too should be considered in determining how much light need be provided for a given task. Since there is a substantial difference in the light required for 50 per cent accuracy and 99 per cent, one might question, for instance, whether the typed copy will be ordinary correspondence or long lists of figures.

Visibility is also affected by the quality and direction of light. Most printing or writing, even on matte paper, is subject to substantial reflected glare because the ink or pencil lines are glossy. The effect of such glare is a subtle loss of contrast between the detail and the background—the equivalent of a light tracing paper overlay. This effect can be corrected by increasing the illumination level to accommodate this "more difficult" task. (Chart 5 shows the increases necessary to compensate for contrast losses caused by

using louvered fixtures as compared to large area, low brightness indirect lighting or a luminous ceiling.) On the other hand, such tasks as inspection may benefit from planned reflection.

All of the factors discussed so far relate to task difficulty. However, the illumination level necessary for task visibility depends on too many other factors to be sensibly specified in relation to task difficulty alone. The fact that our personal experience leads us to question the very high light levels recommended for difficult tasks, and at the same time to doubt that even easy tasks could be performed with speed and accuracy at levels below one footcandle, suggests that the controlling factor is just as likely to be the competing brightness from such very bright areas as windows and lighting fixtures.

Ideally, the task brightness should be about the same as that of the scene. Darker or brighter areas within the visual field can both reduce task visibility when the eye adjusts to them, but since brighter areas result in the task's seeming darker, this is usually the worse situation.

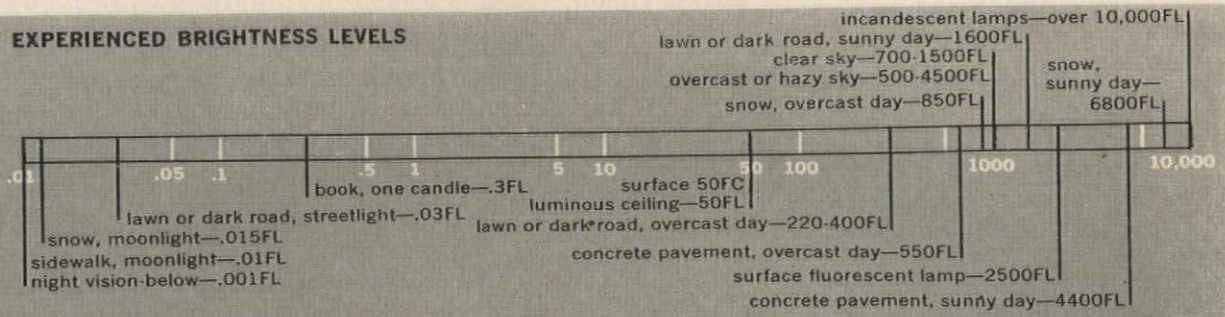
The loss of visibility caused by competing field brightness decreases as contrasting areas become more removed from the line of sight or become smaller in relation to the whole visual field, but it remains substantial. The magnitude of the reductions can be indicated by a single example. With a task brightness of 25 fl and surrounding field brightness of 125 fl—a ratio of 5 to 1—the resulting visibility condition would be equal to that of a task with 1 fl brightness at a 1 to 1 ratio. As overall light levels go up, brightness ratios must go down, or the increased illumination may cause a loss rather than a gain in visibility: a face can be more visible by candlelight across a table than when seen outdoors, silhouetted against the sky.

A similar situation is found when people move between spaces, in which case the light they need to see by is affected by the previous brightness level. We have all experienced this transitional brightness effect when coming out of a matinee or entering a tunnel, but it is only of real significance where safety and speed are involved, as in tunnels, industrial areas with moving vehicles, and perhaps parking garages. In such cases, the brightness requirement may be more related to the previous adaptation than to the task difficulty.

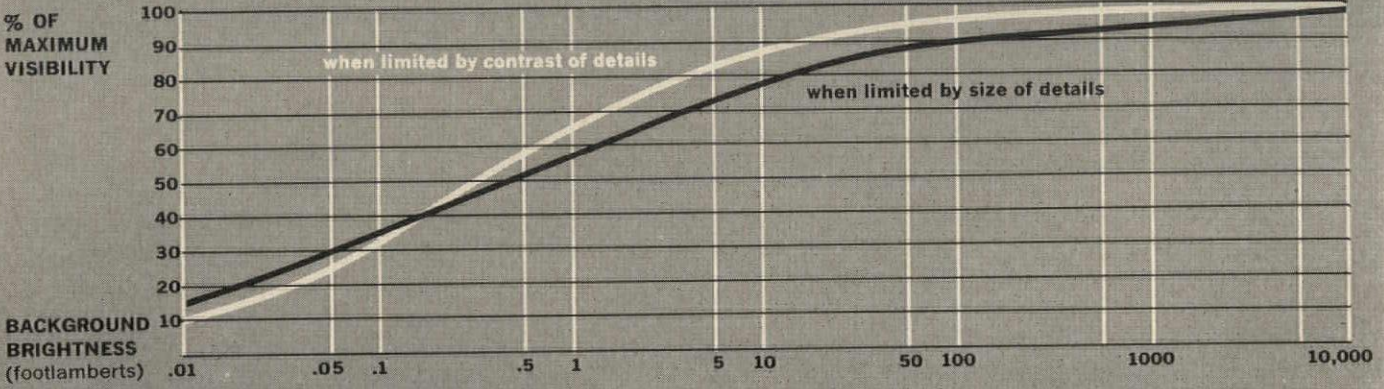
¹ "Development and Use of a Quantitative Method for Specification of Interior Illumination Levels," H. Richard Blackwell, *Illuminating Engineering*, June 1959

² A "field factor" of 15 was used to take into account the inevitable differences between laboratory observing conditions and the "common-sense seeing" conditions under which tasks would actually be performed.

1. COMMONLY EXPERIENCED BRIGHTNESS LEVELS



2. BASIC VISIBILITY: BRIGHTNESS REQUIREMENTS



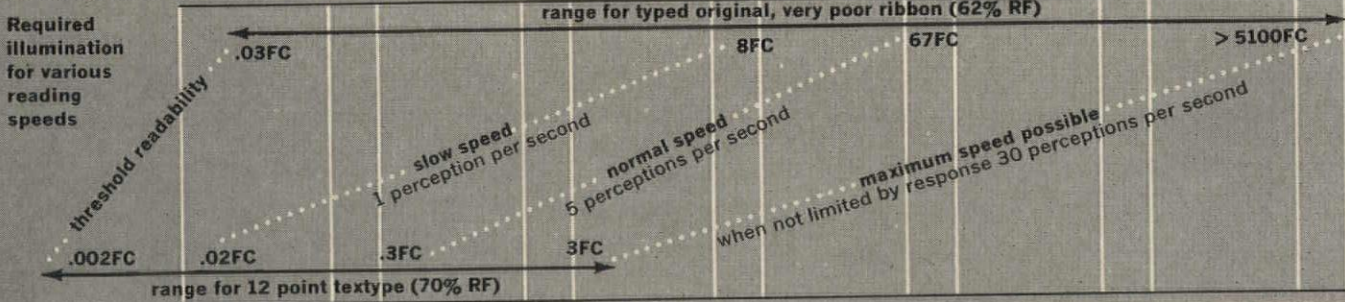
VISIBILITY: EQUIVALENT ILLUMINATION REQUIREMENTS (FOOTCANDLES)

LIGHT TASK 80% reflectance	.0125	.125	1.25	12.5	125	1250	12,500
DARK TASK 8% reflectance	125	1.25	12.5	125	1250	12,500	125,000

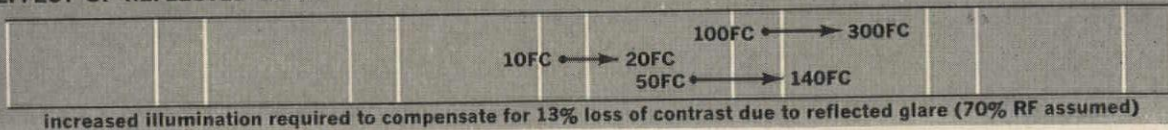
3. VISIBILITY: EFFECT OF TASK DIFFICULTY

EASY TASKS	<ul style="list-style-type: none"> • .6FC 12 pt text type (70% reflectance factor) 42FL • 1FC typed original, good ribbon (62% RF) .6FL • 3FC 6 pt bodoni type (70% RF) 2.1FL • 7FC no. 2 pencil on tracing paper over blueprint (59% RF) 4FL
DIFFICULT TASKS	<ul style="list-style-type: none"> Shorthand copy, no. 3 pencil (79% RF) 77FC • 61FL typed carbon, 5th copy (53% RF) 133FC • 70FL thermofax copy, very poor quality (63% RF) 371FC • 234FL typed original, very poor ribbon (62% RF) 3140FC • 1947FL white lines on blueprint, tracing paper overlay (59% RF) 5090FC • 3003FL

4. VISIBILITY: EFFECT OF SPEED OF SEEING



5. VISIBILITY: EFFECT OF REFLECTED GLARE



C. VISUAL COMFORT:

WHAT KIND OF LIGHT?

Important as they are, visibility requirements are by no means the whole lighting story. Before we can know what visual conditions should be programmed in lighting, we must know what we look at. Obviously, we look at our tasks. But we are also constantly scanning our surroundings in order to orient ourselves.

In effect, our eyes use a double lens system: an out of focus, wide angle lens which "sees" a rough picture and guides the scanning of the central vision; and the central vision itself, a sharply focused lens which darts around the scene, guided by the previous bit of information gained and its relationship with the mind and our other senses. When we have a task, our mind directs the central vision to that task, but even while performing a task, we need to keep in touch with our surroundings and do so unconsciously.

This being the case, it would seem obvious that comfort in viewing the environment is as important as ease in viewing tasks. Except for repetitive tasks, even most working situations call as much for a comfortable environment as for task visibility. And in many situations, there is no task at all—only understanding, and enjoyment, of the surroundings.

Visual comfort has two prime determinants: the brightness ratios and what you are trying to see.

In effect, even when we are merely scanning our environment, we select—consciously or unconsciously—a series of "tasks," which consist of the things we want to see. The brightness ratios comfortable for seeing them are similar to those outlined for seeing more formal tasks. Thus lighting that defines the space, structure or activity we are interested in seeing tends to produce a comfortable environment by making our "task" of orientation easier.

For the most part, the objects by which we keep oriented are on the lower part of the horizon. Since most natural objects (trees, rocks and the like) have relatively low reflectances, on cloudy days the sky is far brighter than they are, and the competitive sky brightness decreases our ability to see the details we are looking for, thus producing visual discomfort. On sunny days, on the other hand, we feel more comfortable because

the ground objects we are looking at are brighter than the sky and we can see their details more clearly.

We are also uncomfortable if what we see does not agree with our other senses or with our expectations. Outdoors we walk happily about in the moonlight; indoors we would probably feel uncomfortable with the same lighting condition. An environment which is romantic at dinner would be depressing at work, even if the only task were thinking.

Thus the information content of what we see influences our comfort, and what we are looking for determines whether the lighting condition is a help or a hindrance. The outdoor scene looked at through a window may have a brightness level equal to that of a luminous lighting fixture, but we are less likely to be uncomfortable with the outdoor view because we are interested in it and therefore focus on and adapt to it. Unless we enjoy looking at the luminous fixture, or it aids our orientation, we are apt to find it disturbing because its brightness reduces our ability to perform the task we have set for ourselves—the interpretation of the space or the structure or the activity at hand. This would be particularly true if the fixture's sharply outlined shape also compelled our attention. An equal brightness on the surface of a vault, if it helped to define the structure in such a way that looking at the structure would become the chosen task, would feel more comfortable.

We can get some useful clues about space definition from outdoor experiences, but we must be careful not to apply these outdoor effects too literally when we get inside. For instance the definition of form produced by shadows from the sun is impossible to duplicate indoors. Since the sun's rays come from such a great distance, they strike all surfaces in a landscape from the same direction. But creating similar shadows indoors is impossible.

In planning the definition of space and structure with light, we must have some measure of the appearance of various brightness relationships in order to know what illumination must be provided on the various surfaces. For instance, how much uniformity in brightness is necessary for a ceiling to appear uniform?

We might start by mentally comparing two samples of white paper. With the samples placed directly adjacent to each other, we can perceive

very small differences between them. If we separate them a few feet they could be ten times different in brightness and still look almost the same. In the first case, both are seen with the same adjustment of the eyes. In the second, the eye, in looking from one to the other, re-adapts for different overall lighting conditions.

On a continuous plane, a long smooth gradient between areas of large brightness differences may make gradients of 10 to 1 or even 100 to 1 seem relatively uniform if the plane itself is large enough. The logic of the light gradient with respect to the structure and the space is also important in achieving an appearance of uniformity. No one notices that during the day most ceilings are many times brighter near the windows than at the far wall, but the same amount of gradient in circular pools on a flat surface would immediately attract attention.

Such efforts at achieving apparent visual conditions are aided by our color memory. We tend to see hue, like brightness, by comparison rather than by absolutes. White paper looks "white" under a wide range of lighting conditions when viewed at different moments. Even if a room were lighted with yellow lamps, we would know we were looking at white paper because everything else in the room would assume a yellowish tinge in the same relationship. But we can detect very slight color variations when objects seen by different light are seen at the same time.

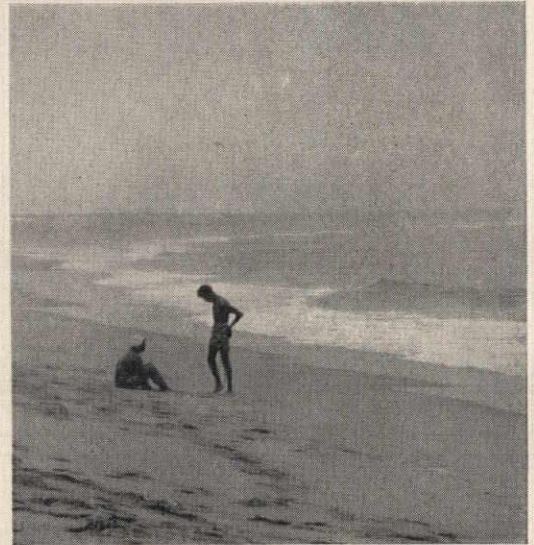
Similarly an off-white color with the same measured brightness as a pure white would appear less bright if directly compared to it. Dark colors must actually be brighter than light colors if they are to appear as bright. This may be capitalized on by defining the planes of a space with a color difference even though the measured brightness on all of them may be the same.

The overall apparent brightness of a scene is largely related to the proportion of the light and dark areas in the visual field. Whether a scene looks dark or light also depends on the expectation and the point of view. If one is looking out the window of a dark-colored room, the room itself may not seem dark. But if the activity is centered in the room, it will. Similarly bright fixtures in a room will make the room seem darker than it would if illuminated to the same brightness, without the brightness of the fixtures for comparison.

Right: Although the lobsterman may be able to see his pots and the rocks, he is probably uncomfortable without a visible horizon to define the level plane, and, consciously or unconsciously, would be constantly scanning for that horizon

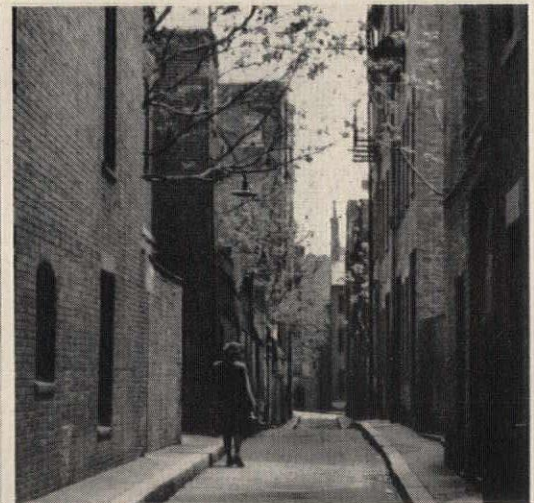
Far right: Indoors, an extended period of attempting to equate the sense of balance and the visual sense may cause as much tension—and hence fatigue—as any difficulty in seeing the task itself

Below: Since most of our outdoor orientation comes from clues in the lower part of our visual field, we are more comfortable on a sunny day because the ground objects (even a dark road) are brighter than the sky, and we can see the increased detail created by shadows



Above right: On overcast days, orientation is more difficult because the sky is usually many times brighter than the ground, and the contrast interferes with our ability to pick up visual clues. In this scene, even the beach is darker than the sky, although the visibility of the horizon adds to visual comfort

Right: A silhouette against the sky can be an easy or a difficult "task" depending on what we want to see. If we are only interested in the outline, the very high contrast is helpful; if we want to examine the detail of the bark, the high surrounding brightness makes this difficult despite the 1000 fc of illumination



Far right: The apparent brightness of a scene depends more on the relative proportions of light and dark areas than on the measured brightnesses. Here a light-colored corridor seems "brighter" than a street with many dark-colored buildings compared to a patch of bright sky



d. WRITING THE PROGRAM:

A WEIGHTED JUDGEMENT OF ALL THE FACTORS

In order to program the lighting for any space, the designer must first understand the many dimensions of light—quantity and quality of task illumination, brightness and apparent brightness patterns, and so on; and their effect on visibility, visual comfort and the appearance and character of the space itself. Then he must relate this information to the problem at hand—after clearly defining its requirements and limits.

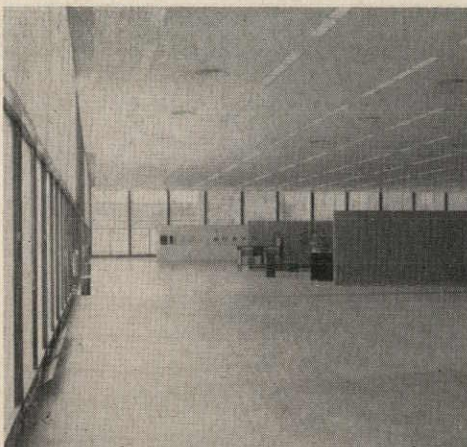
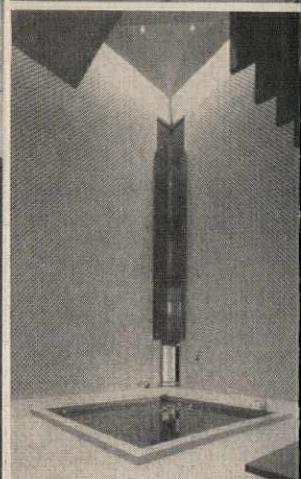
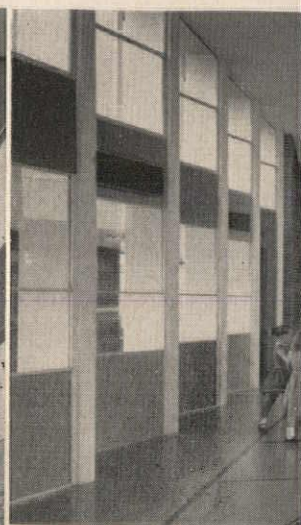
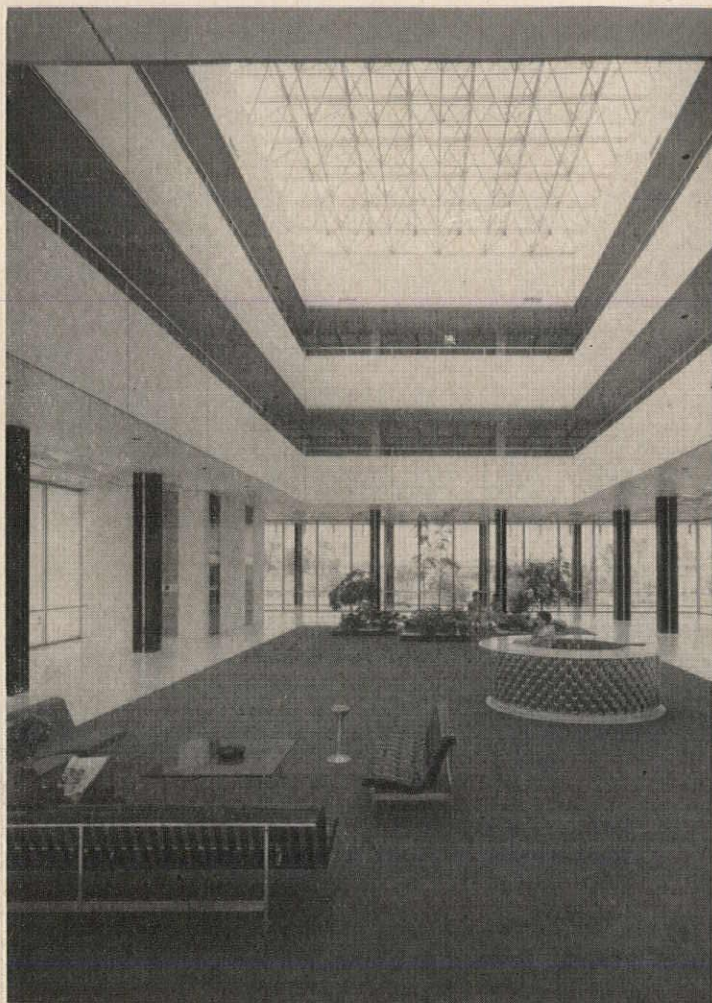
If this seems a complex and indefinite procedure, it is no more so than space planning. For example, even though we all became acquainted with the one-foot ruler in grade school, many architects still have dimensions marked off on their drafting room walls and ceiling so that designers can picture ceiling heights and room proportions in relation to familiar spatial conditions.

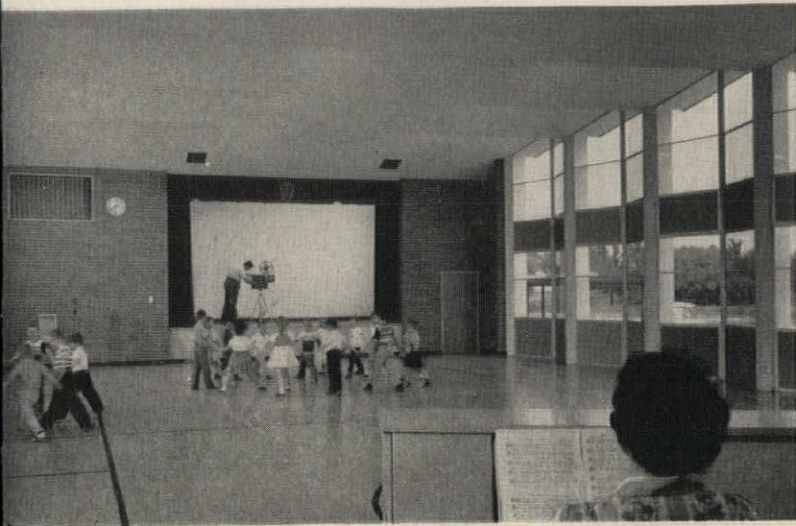
Designers know that one foot added to the length of a desk is more significant than one foot added to the length of a playground. They know that the appearance and usefulness of a given floor area varies with its shape and proportions as its "apparent size" varies with the number of doors opening into it, and the amount of circulation through it. They also know that the volume of a space is as important as its area, if not to its utility, then certainly to its appearance; and that, moreover, even a given volume with a fixed floor area can take many forms with quite different visual and functional results.

Architects and lighting designers must have a similar qualitative feeling for the lighting "dimensions." Marking surfaces in the designers' offices and homes with their daytime and nighttime brightnesses, checking the visibility of tasks under the same footcandle levels with varying conditions of competing brightness and reflected glare, or even habitually observing brightness patterns—with or without the help of a light meter—will quickly demonstrate the magnitude of these dimensions and give some understanding of their effects.

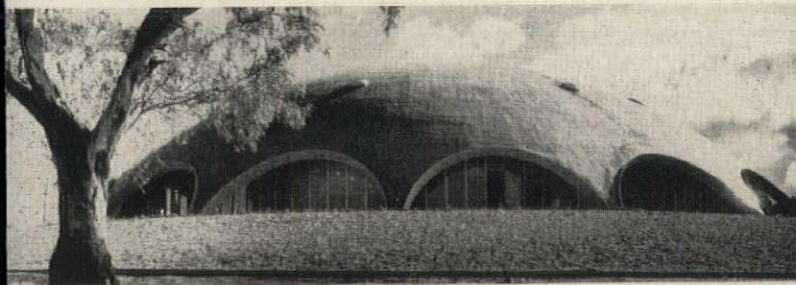
In order to apply this understanding to specific lighting problems, one must also evaluate the purposes of the lighting just as in space planning

continued on following pages





In these spaces, the daylighting design couples indoor and outdoor brightness levels so that artificial lighting would seldom be required even on cloudy days. (At night and on very dark days, illumination can be minimal in any case since it does not need to balance outdoor brightness.) In the building at far left, this is done by glass walls on four sides plus a large skylight and light-colored room surfaces; in the school above, by bilateral daylighting from large window areas, aided by a high ceiling-width ratio and light-colored ceiling. Left: Small windows, well-placed, create relatively bright walls. Areas of maximum brightness (windows) are kept high, away from frequent viewing angles. Light-colored floor highlights "people" level. Right: Clerestory and multilateral daylighting plus light floors raise ambient interior brightness to offset high indoor-outdoor contrast that would otherwise be created by dark walls and ceiling. Without well-planned daylighting, space would need more electric light during day than at night



These spaces do not control daylight sufficiently: normal outdoor brightness requires increased artificial lighting indoors to balance daytime glare. Above and right: Low and comparatively small windows, plus ceiling sloping upward from perimeter, leave interior surfaces dark and provide little horizontal illumination except near the windows. Far left, above: Despite height and expanse of windows, the great width of this space leaves a large center area which suffers from window brightness without getting much light to compensate. Unless the central spaces are screened from view of outdoors, much more artificial light is needed there than near the windows. Recessed lighting also leaves rest of ceiling dark by contrast, requiring increased illumination levels to compensate for contrast losses from reflected glare as well as interference from surrounding brightness. Left: Here too, illumination levels in center of space must make up for interference from window brightness. Larger area sources should require less compensation for reflected glare than recessed lighting above, but strong pattern is distracting. Left, above: Daylight at the end of a corridor makes it necessary to increase brightness of corridor surfaces. Directing light onto dark floor is of little help

d. WRITING THE PROGRAM:

continued from preceding page

one must evaluate the physical requirements of the space.

Knowing the average floor and ceiling height for a type of manufacturing plant, for instance, would serve only as a check—not as a reliable guide for programming a particular plant. Even knowing that a manufacturing operation may involve assembling products 100 feet high is not enough. One must determine how significant that production is. If the operation takes place in only a limited part of the plant, the whole building need not provide 100-foot clearance. If the product could be assembled in another position requiring less height, the cost of doing so should be weighed against the savings in building costs. But if investigation shows that 100-foot clearance is *definitely* required in at least part of the plant, that dimension must be provided: compromising from normal ceiling height to 75 feet will not solve the problem.

In programming lighting a similar procedure must be used, with similar points clearly specified:

1. Is the space to be used principally during the day or at night, and are the functions similar under both conditions?

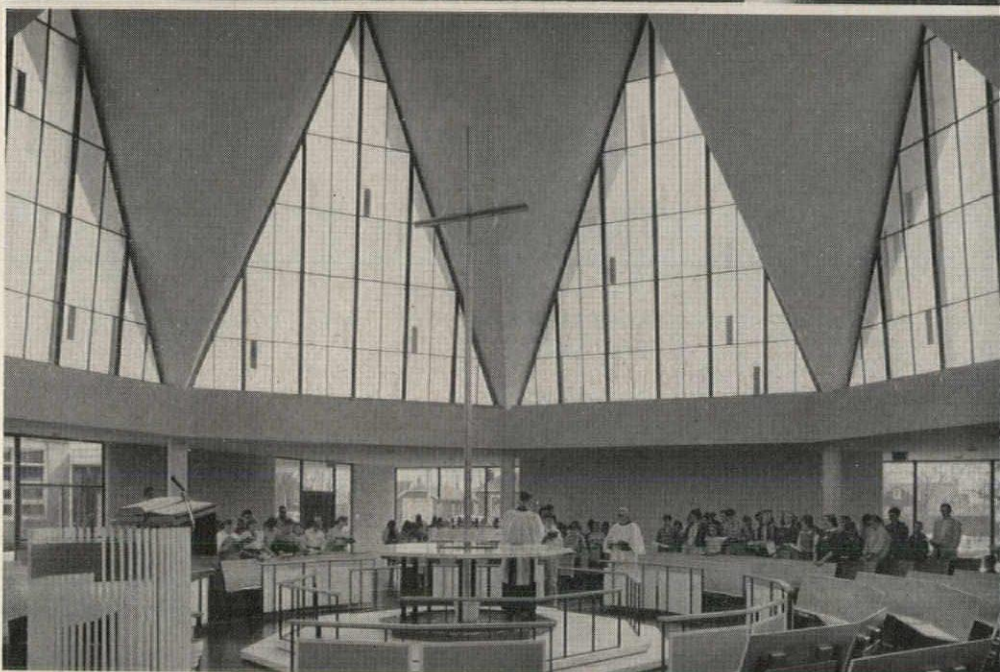
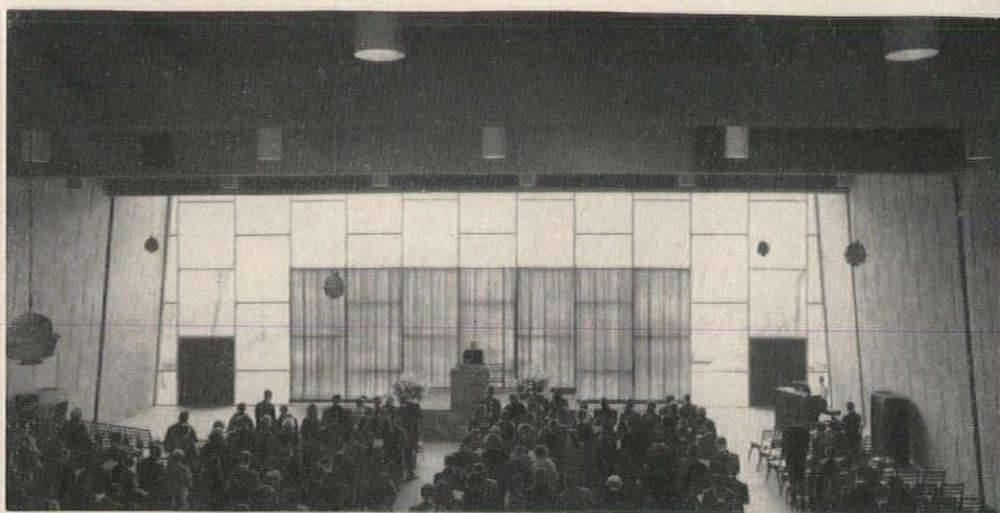
2. What are the tasks? If there are difficult and sustained tasks, where are they performed—locally or throughout the space?

3. If there are sustained tasks, what combinations of quantity (illumination level) and quality (relative size, brightness and position of sources) will provide the desired visibility, taking into consideration the reductions in visibility from reflected glare and field brightness contrasts? These must of course be programmed for each fenestration alternative being considered, allowing for the visibility reduction from daylight as well as its contributions.

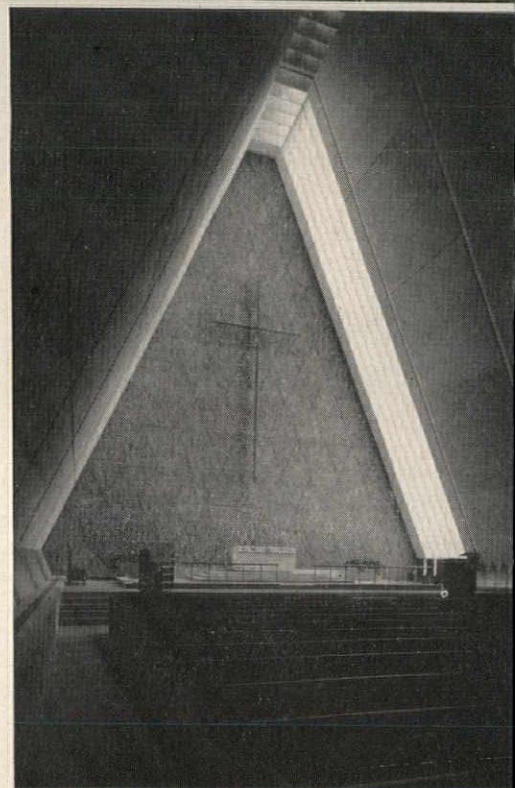
4. In addition to providing good task illumination, outline the orientation objectives in terms of brightness patterns that will define the space, structure or activity in a way appropriate to its psychological and esthetic functions. (Again, consider the effects of daylight as well as artificial light.)

Basic to programming are the assumptions made about what people

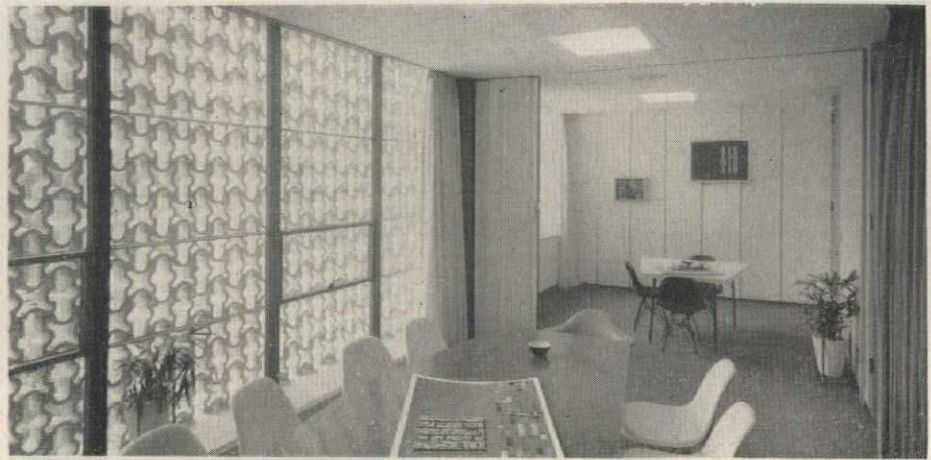
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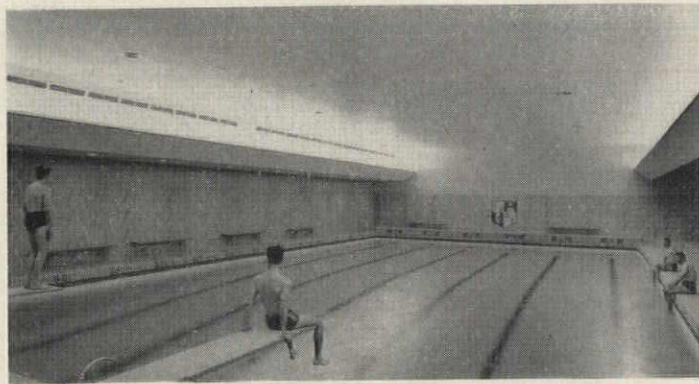
Since tasks in churches are minimal (infrequent and short-time reading of well-printed material), balancing the brightness distribution from windows and lighting equipment to achieve a comfortable and esthetically satisfying environment should be the basis for programming artificial lighting requirements—not task difficulty. Top: In this church, even for as simple a task as seeing the minister, compensation must be made for the interference of the bright outdoor scene. Lighting that increased the brightness of ceiling and walls would help reduce the uncomfortable indoor-outdoor contrast, and also provide enough light for reading tasks. Equivalent visibility of the minister could be provided by candles at night. Above: While the window brightness seen here would be equal to that above, the balance of lighting from other directions would eliminate any need for supplementary artificial lighting during the day. Right: This daylighting scheme also obviates the need for supplementary altar lighting, and tends to frame rather than distract from the service



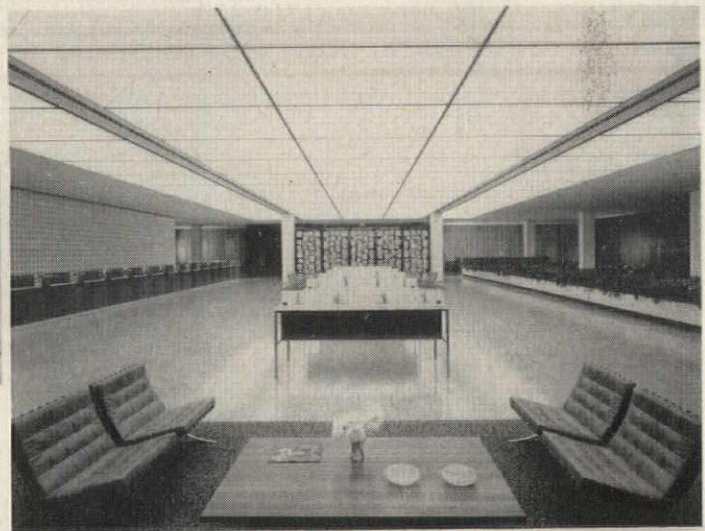
In this museum, every lumen of light introduced through the skylights actually decreases rather than increases the visibility of the paintings since it increases the surrounding brightness far more than the brightness of the surface being viewed. This interference is further increased by supplementary artificial lighting behind the same frosted glass panels. Consequently the very high level of frontal illumination is required merely to compensate for the uncomfortable brightness ratio between dark paintings and white walls



With some orientations, a screening wall can help indoor-outdoor daylighting balance. Left: For first-floor classrooms, interfering outdoor brightness is controlled by dark-colored screen wall while ground reflections provide light deep in the space. Similar visual needs of second floor would require higher illumination levels to balance increased amount of visible sky and reduced help from reflected ground light. Above: Screen redistributes sunlight to advantage, but when sun is not shining on screen wall, brightness visible through grill requires more artificial light than would be needed in a windowless space



When they are not to compensate for daylight interference, the lighting requirements are often to compensate for inherent disadvantages of the lighting fixtures. In most gymnasium and field house activities for instance, tasks are very easy. They also require visibility in all directions. Right: Bright ceiling fixtures against a dark background mean that most of the illumination must compensate for distraction, interference by silhouette, alternate viewing of moving objects against light and dark, and relatively low component of sidelighting. Shadows created from many different sources also tend to confuse, so that the whole lighting scheme is at odds with the constant necessity for orientation in a cheerful environment. Above: A "sunless sky" approach can produce far better visibility and visual comfort at a fraction of the illumination level. Above right: Logical programming would seem to indicate a lighting solution just opposite to—but just as handsome as—the one here. Highest illumination levels and best working light are provided for public spaces, which require little of either; work areas face a large area of competing brightness from which they derive no compensating visual benefit



d. WRITING THE PROGRAM:

continued from preceding page

actually do in a space. Many office lighting solutions, for instance, are doomed from the start by the false assumption that the worker looks only down at his desk and straight ahead, and that neither desk nor worker will ever move, thus allowing a simple, if hallucinatory, "avoidance" of direct and indirect glare.

5. Only after outlining such a program, should one turn to study in detail the possible ways of executing it by combinations of illumination and reflectances, i.e., lighting equipment and room materials. If, in working out the details, some of the assumed conditions change—the daylighting arrangement, for example, or the artificial lighting sources—the program must be revised accordingly.

If economy is a factor, as it almost always is, the lighting requirements should be analyzed even more carefully, in order to achieve each objective most directly.

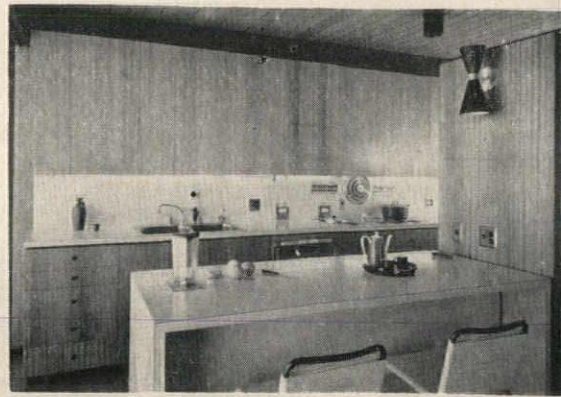
Only by following these steps—or steps very like them—can lighting be successfully designed for the individual space. Since the aspects and interrelationships of lighting are so many and so varied, there cannot be any scientifically "correct" answer to a lighting problem any more than there can be a scientifically proven "best" room size.

Any standard, however complete, must be based on average requirements and, almost by definition, cannot be very accurate for many individual situations. The footcandle standard we use for lighting is far from complete, since it virtually ignores the effect of quality on task visibility. And since the appearance of the light we see—the principal lighting requirement in many spaces—can only be defined in terms of brightness and apparent brightness, footcandle specifications alone are completely meaningless in describing what the space is to look like.

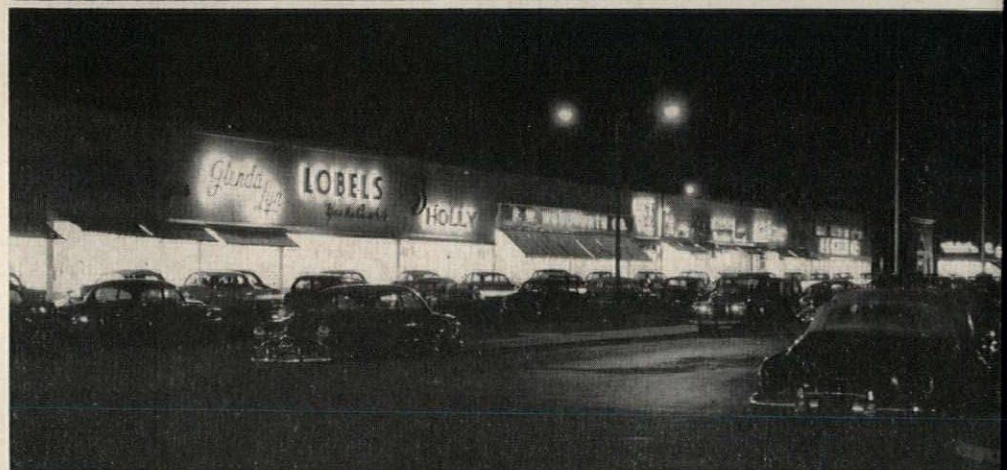
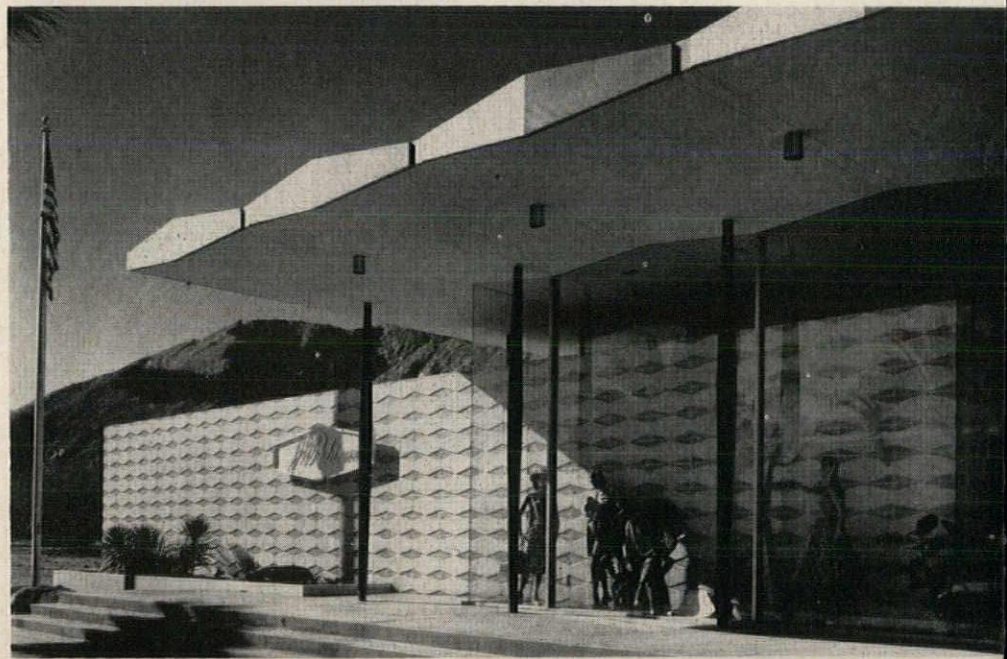
Practically, many projects must conform to existing standards. But in fulfilling or going beyond these standards, it is important that visibility and visual comfort are attained rather than just footcandles.

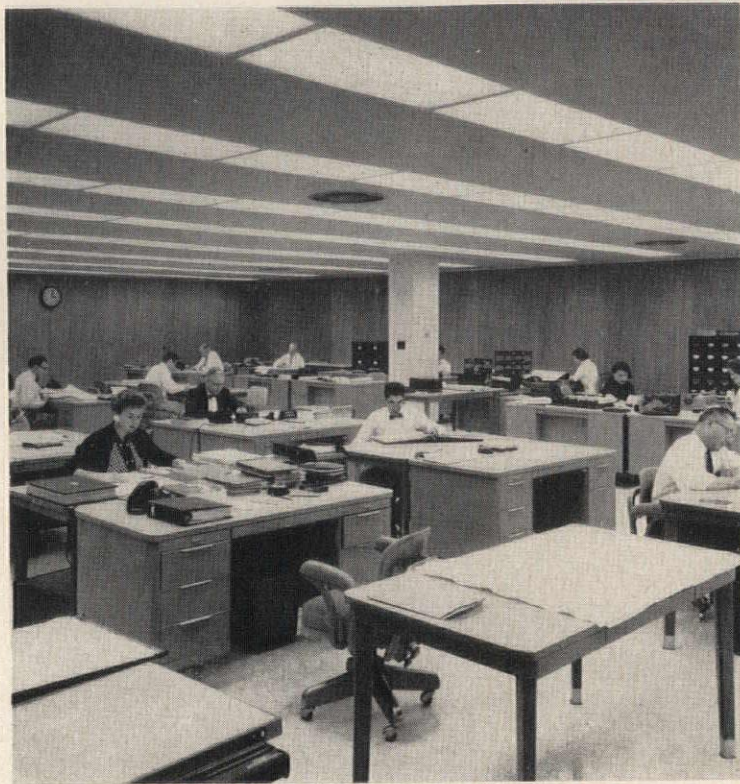
Clarifying the objectives of the lighting program, and controlling the many factors which relate to the problem, is the first step.

See credits page 212



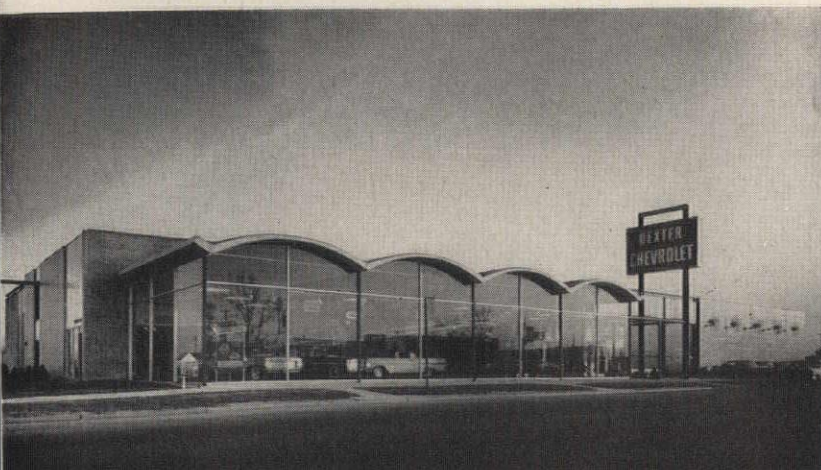
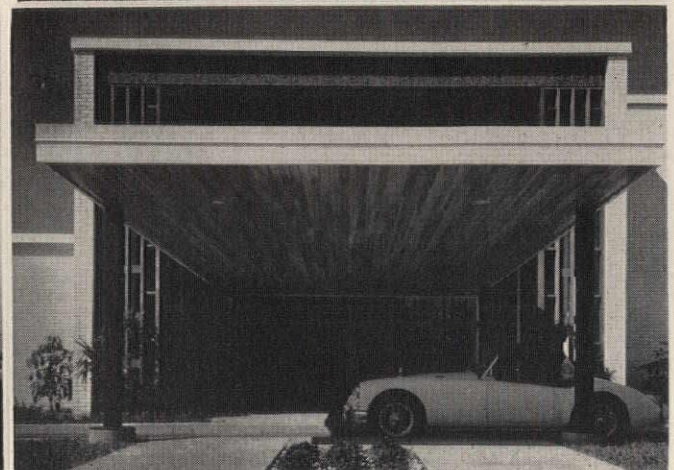
Above: Undercounter lighting can increase visibility on the counter and provide definition of the activity area, but such lighting also increases substantially the amount of illumination and brightness that must be supplied from other sources. Otherwise, the cabinets themselves, and vertical objects on the counter, would be silhouetted. Left: Daylighting of this kitchen is well-solved with high and low windows, and white ceiling. Good nighttime lighting should have similar balance





In addition to maximum footcandles on the horizontal work plane, much current lighting design emphasizes uniformity of footcandle levels throughout the room, on the theory that providing the same level of illumination on each desk gives everyone the same degree of visibility and visual comfort. Actually, equal illumination on the task by no means assures equal visual comfort or even equal visibility. In the uniformly-lighted office at right, for example, the amount of reduced visibility from specular reflection would be different for different positions in the room, and for each direction faced: employees facing a nearby wall would have to combat less glare from the ceiling fixtures than would those having more fixtures in view. The uniformity of the entire visual field is much more affected by the brightness of the walls and ceiling—which are the largest part of the visual field—than by that of nearby desks. Even in the immediate surroundings, the areas seen are more apt to be the vertical surfaces of desks and chairs than the desk tops. Usually daylight's non-uniform contribution to brightness distribution as well as illumination levels is also neglected. But all these factors affect both visibility and visual comfort. One must also decide whether absolute uniformity of visual comfort is any more important than uniform distance from filing cabinets, uniform ambient sound levels, and so forth, or whether a reasonable variation in visual comfort in exchange for other benefits might make better sense

When visibility from the street is important, task difficulty and horizontal footcandle levels are not. Competing outdoor brightness, and window reflections, govern the necessary brightness and placement of lighted interior surfaces. Left: Some visibility of the interior is achieved here by reducing sky reflections with the overhang and placing the light-colored reflecting wall close to the exterior. Right: Covered walkways that reduce competing brightness and sky reflections, aided by lower brightness of storefronts opposite, make possible lower brightness in stores. Below: Added artificial lighting on a light-colored interior backdrop would silhouette the cars on display and erase the blackness of the windows. Increased ceiling brightness would also help draw the eye into the building. Below right: Although a bank is not displaying merchandise, it should look "open" during business hours. With this deep overhang, relatively little light on light-colored wall inside would break up the darkness. Below left: At night, competition is with the surrounding darkness so that very little brightness is necessary for visibility, and lighting should emphasize quality of impression instead of merely "being seen." A large area of moderate brightness would give much more effect of overall brightness than a pattern of glaring fixtures that make the space itself seem darker by comparison



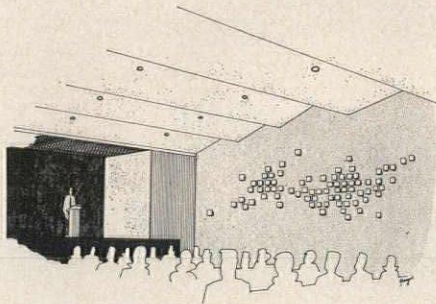
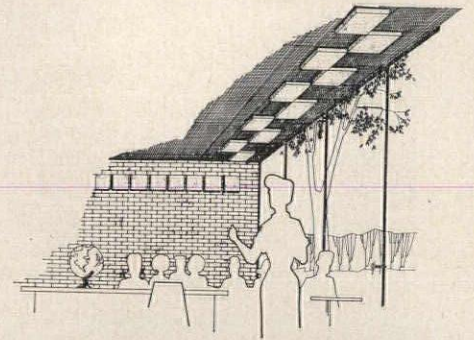
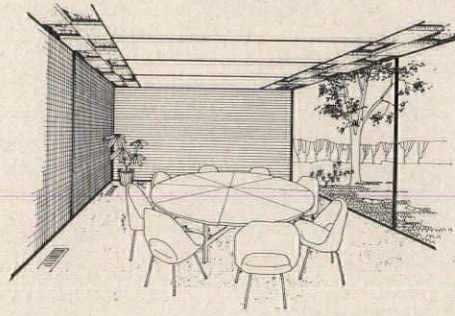
Cellular Glass Sound Absorbers Are Mounted in Scatter Pattern

The closed cells of cellular glass have been "opened up" to transform a material ordinarily used as thermal insulation (*Foamglas*) into a highly efficient sound absorber. Called *Geocoustic*, the new product is designed as a patch absorber; i.e., reverberation control is accomplished by scattering patches of the material on the walls and ceilings of rooms. Thus advantage can be taken of hard room surfaces for desirable sound reinforcement, but annoying delayed reflections are eliminated.

The sound absorptive property is achieved by the nearly 2400, 1/16-in. holes pressed into the front and back surfaces of the unit, and the fact that it is mounted 1/2 in. from room surfaces (face mounting reduces efficiency by one-half in the speech range).

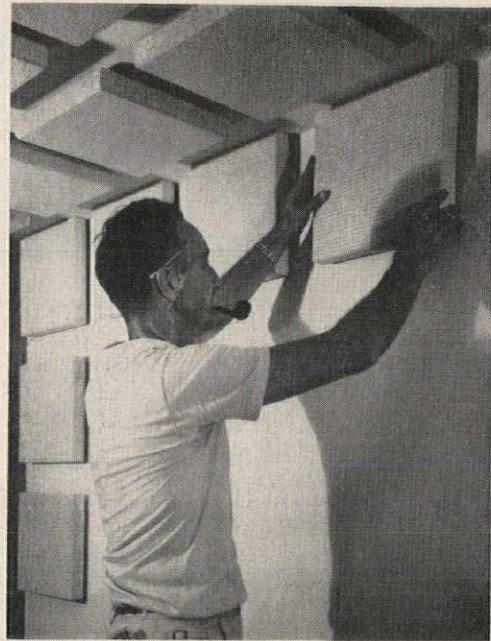
Geocoustic sound absorbers are 13 1/2 in. sq and 2 1/2 in. thick. They have four 1/2-in.-thick mounting pads on the back to provide for the air space. The 13 1/2 in. face dimension is critical acoustically, since this size gives peak efficiency. Application now is by acoustic cement, but mechanical fasteners are being developed.

The absorbers can be mounted 16 to 24 in. o.c. in rows, or grouped in patches 15 to 25 sq ft in area and 5



to 10 ft apart. In noisy areas greater amounts of treatment are suggested. Approximately 50 would be required in a normal classroom.

The units are available in white or gray, but they can be made any color with a non-bridging type of paint. *Pittsburgh Corning Corporation, One Gateway Center, Pittsburgh 22, Pa.*



Transistors Do Thinking in New Supervisory Control Equipment

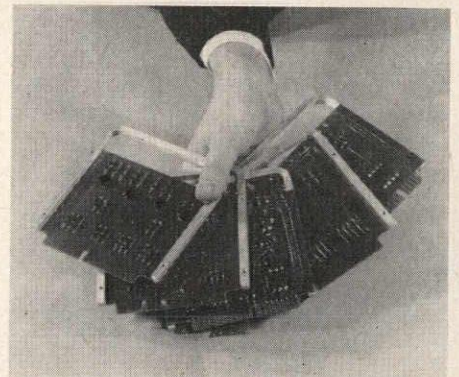
Miniaturization through electronics is one way of characterizing the new *Solid-State Supervisory Equipment* now being made by General Electric for remote control of electrical apparatus. Transistors and diodes have taken over the function of electromechanical relays, resulting in increased reliability plus savings in space, weight and maintenance. Among the applications forseen are: control of lighting and air conditioning in commercial buildings and shopping centers, monitoring and control of industrial power systems, unattended automatic control of chemical processing plants and utility generating systems.

The brain of the system has transistorized "logic elements" which direct and receive operation messages. The master station sends signals to remote stations in the form of pulses and pauses, with operating intelligence carried by the pauses.

Each control point has its own code that cannot be mistaken for another. A point on the master station consists of a grouping of indicating lamps and a key to initiate selection. The lamps show when the code has been established between the master station and the remote station, when action has been initiated and com-

pleted, and provide an alarm indication for each specific point. The impulses can be carried on telegraph-grade telephone circuit, a carrier current or micro-wave radio channel. Control voltage for the logic elements is a 12-volt battery. *General Electric Co., Section 513, Schenectady 5, N. Y.*

more products on page 188



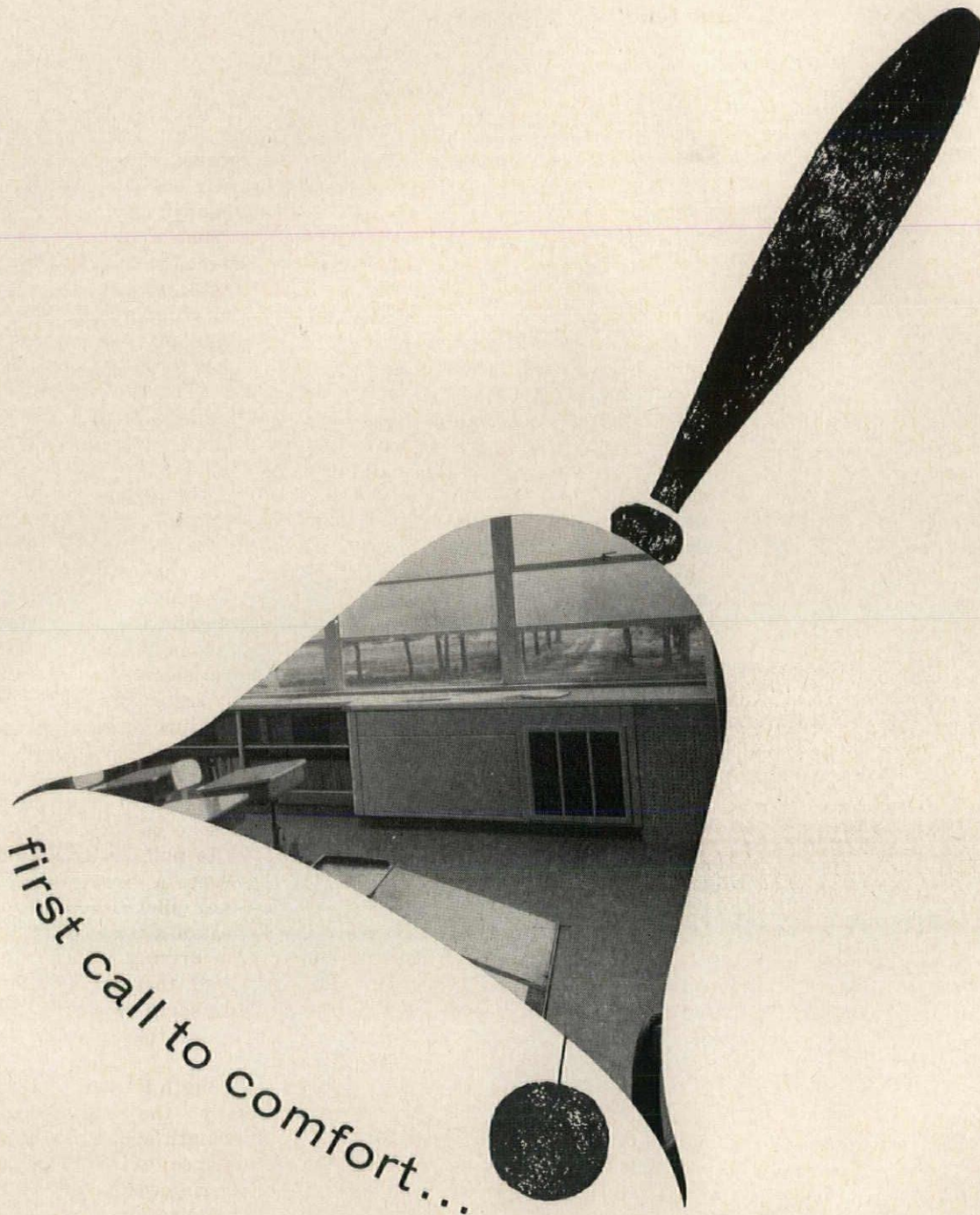


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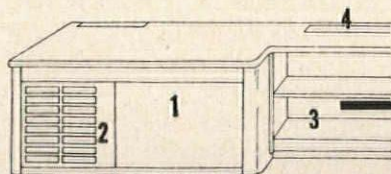
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THREADED NAILS: 1—General Features, Advantages

by Howard P. Vermilya, A.I.A.



Long-lead helical thread



Short-lead helical thread



Annular thread

Nails are the oldest type of metal fastening device for wood joints. They are easily applied and inexpensive. Developments during the last 25 years made possible the mass production of properly designed threaded nails which have retained these qualities and considerably increased their effectiveness as fasteners.

Basic Types

The *helically threaded nail* with medium lead angle (approximately 60° from a plane perpendicular to the nail axis) turns like a screw during hammer driving and forms a thread in the wood similar to that of the nail. The *annularly threaded nail*, with rings perpendicular to its shank, when driven forces the wood fibers over the thread crests and into the space between the thread shoulders so as to greatly resist withdrawal.

Variations

Not only may the heads and points be of the many types now available with common wire nails, but the pattern of the thread may be varied to adapt it most effectively to the specific problem. In common with plain-shank wire nails, the wire size, metal composition and finish of threaded nails may be varied. Heat treating and tempering can provide added strength and stiffness.

Uses

The threaded nail has demonstrated its merit in a number of applications. The *gypsum wall-board nail*, the heat-treated *hardwood flooring nail*, the *plywood*

sheathing nail and the *roofing nail* are only a few of those that are recognized as doing a superior job.

A further contribution is the application of threaded nails to *nailed trussed rafters*. The superiority in double shear and the stiffness of the high-carbon steel, heat-treated and hardened, helically threaded nail make it possible to build an all-nailed trussed rafter practically as stiff and equally as strong as a nail-glued one, with only two and one-half times as many nails and without the attendant problems of gluing either in the plant or in the field.

The development of threaded nails and the recognition of their advantages by users are the result to a great extent of the comprehensive research program sponsored over the last decade by the Independent Nail and Packing Company at the Virginia Polytechnic Institute's Wood Research Laboratory under the direction of Professor E. George Stern.

Advantages of Threaded Nails

1. When green or partially seasoned lumber is used, the threaded nail retains its holding power as the lumber is subjected to changes in moisture content or temperature. The plain-shank common wire nail, however, may lose up to four-fifths of its initial holding power, in as little as six weeks' time.
2. The threaded nail is not likely to loosen or pop as a result of creep induced by moisture or temperature changes in the wood. This same quality serves to prevent squeaky floors, caused by the loose flooring rubbing against the nail or itself.
3. V.P.I. research demonstrated that hardened-steel threaded nails may be thinner than standard plain-shank nails when substituted for them. These thinner and stiffer nails may be driven faster with less danger of bending and less likelihood of split-

ting. This is particularly advantageous where nails must be closely spaced as in the joints of all-nailed trussed rafters.

4. When plywood diaphragms are fastened to their frames, shorter but thicker threaded nails can be used more effectively than the longer plain-shank nails which makes for easier and faster driving. (The 1½ by 0.135 in. bright threaded nail has 2.8 times the holding power of an 8d, 2½ by 0.129 in. common wire nail and 1.1 times the delayed lateral strength.)

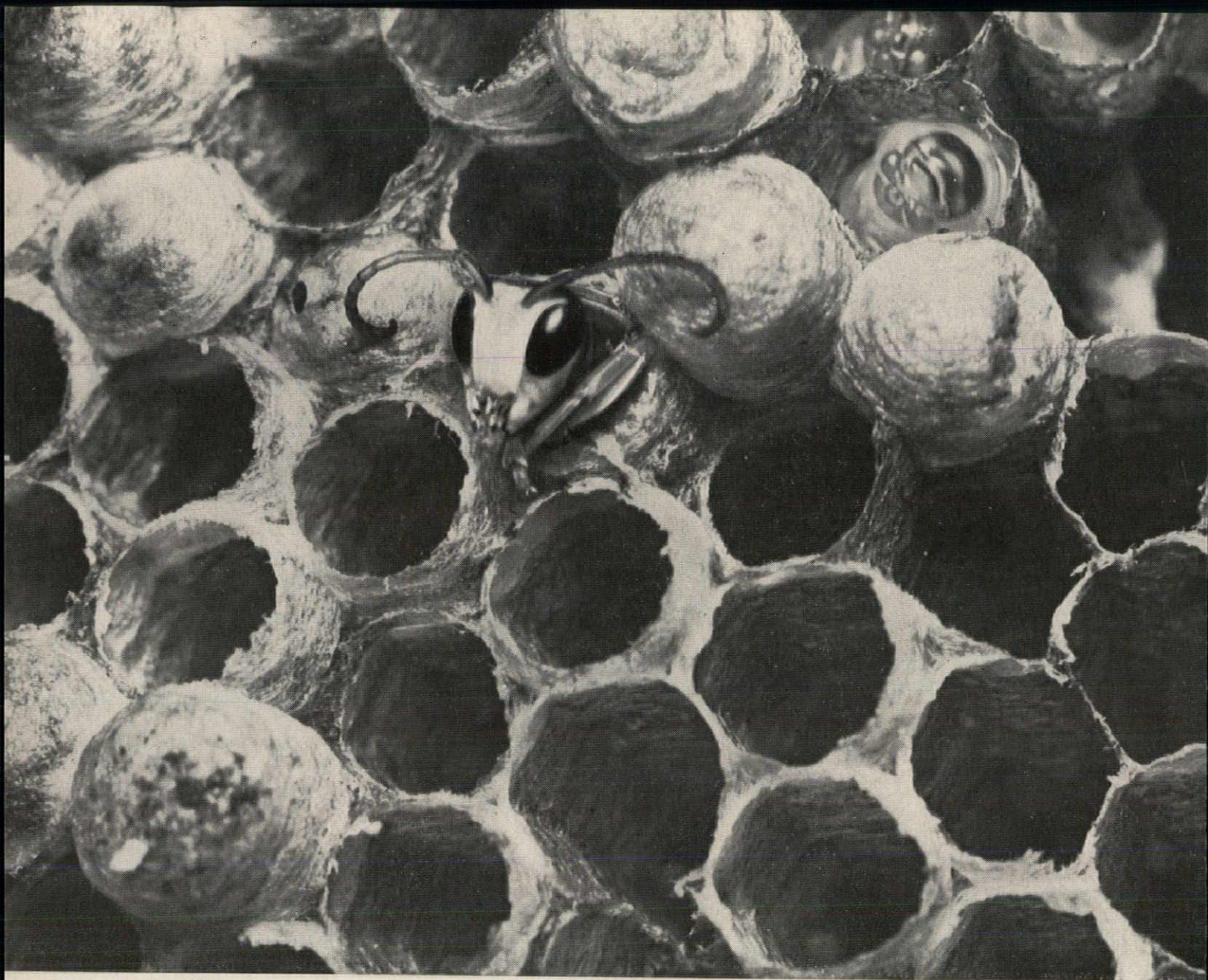
5. The increased holding power of the threaded point end of the nail makes it possible to nail from one side only when nailing joints in single, double and multiple shear. This permits easier and faster nailing. Further, by providing clearance (a plain shank section) between the head of the nail and the threaded portion equal to the thickness of the piece to be fastened, it is possible to pull the two members together. A ⅛ in. to ¼ in. plain shank pilot can be used for the point of a threaded nail to facilitate driving into harder woods. All of these refinements in design serve to add to the usefulness of the threaded nail.

Strength Factors

Both the allowable lateral strength and the withdrawal resistance of threaded nails are determined by the diameter, the configuration and slope of the thread, the composition and temper of the metal wire. Further variables are the amount of penetration and the specific gravity and moisture content of the wood into which the nails are to be driven.

Annularly threaded nails are specially resistant to *axial withdrawal* and provide maximum service as fasteners of sheet materials to plywood or softwood.

Helically threaded nails are particularly *effective in hardwoods* and in providing *resistance* to bending.



Meet an expert in light construction A hornet nest is one of the few geometric structures built by nonhumans. Hornets chew wood fibers to a pulp, then build their nest entirely of this home-made paper. Notice the design of these cells; they're hexagonal for space economy. This hornet nest is light, yet strong enough to protect against the elements. □ To achieve these same features in light man-made structures, we suggest USS AmBridge Steel Joists—both standard and longspan. They provide strong, lightweight and economical construction suitable for most any type of roof, ceiling or floor. AmBridge Joists have an underslung, open-web design for maximum headroom, and to accommodate pipe, ducts and conduit in all directions. AmBridge Steel Joists are easy to install. And once in place, they make a safe working platform. Want more information? Write to our Pittsburgh Office for your free copy of a 40-page catalog.

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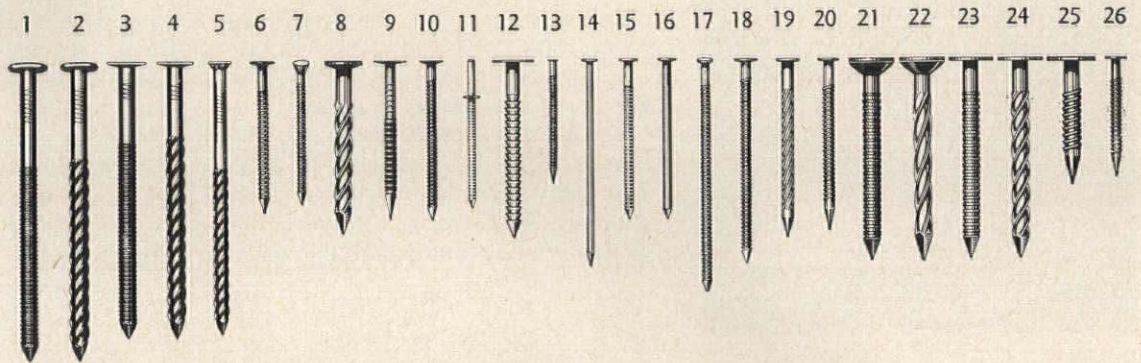
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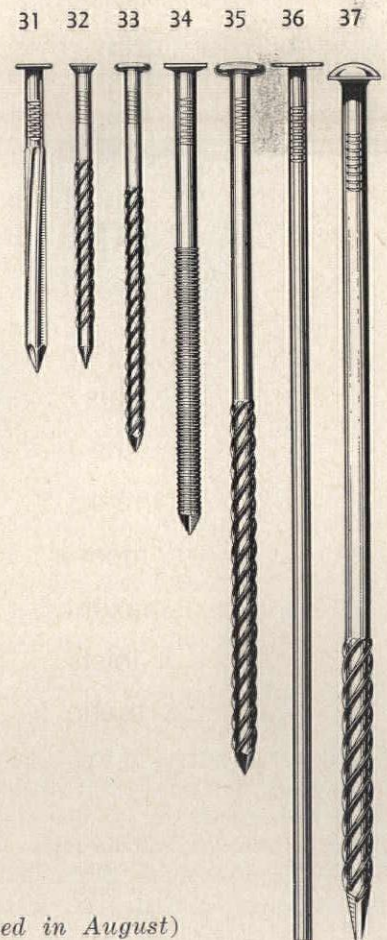
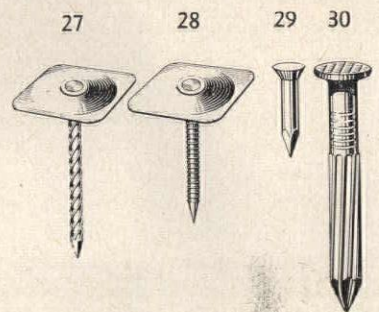


THREADED NAILS: 2—Chart of Types

by Howard P. Vermilya, A.I.A.

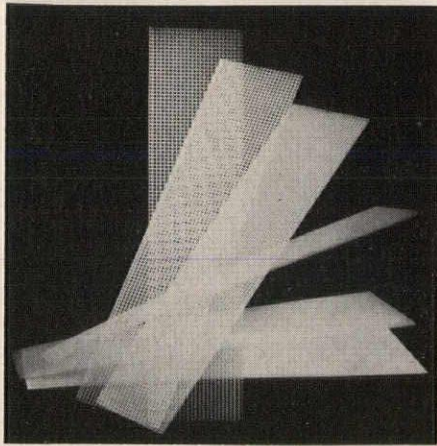


- 1, 2. Annular thread and spiral thread "common nails": for framing and general use.
- 3, 4. Annular thread and spiral thread sinkers: for sub-floors, boarding in, etc.
5. Flooring nails; hardened steel, spiral thread (prevent squeaking).
6. Underlay floor nails (prevent squeaking; eliminate bumps in linoleum, tile, carpeting).
7. Parquet floor nails.
8. Shear-resistant, spiral threaded nails: for fastening plywood diaphragms, gusset plates, etc.
9. Dry wall nails (designed to eliminate "popping and loosening").
10. Asbestos board nails; heat-treated and tempered.
11. Acoustic tile nails (can be driven without marring tile).
12. Ratchet nails: for use with nailable channels.
13. Interior hardboard nails; hardened steel, small head, annular thread.
- 14, 15, 16. Wallboard nails.
17. Wood shingle face nails (eliminate tendency of shingles or shakes to curl).
- 18, 19, 20. Asbestos shingle nails; type "F" thread, annular or screw thread.
- 21, 22. Roofing nails with neoprene washers; annular thread and spiral thread: for application of corrugated or sheet metal material.
- 23, 24. Roofing nails for asphalt shingles; spiral or annular threads; or smooth.
- 25, 26. Roofing and siding nails: for fastening wood, asphalt or asbestos shingles and siding to plywood sheathing; roofing (25), siding (26).
- 27, 28. Built-up roofing nails; annular thread for wood and plywood (28); spiral thread for gypsum decking (27).
29. Concrete stub nail, hardened: for fastening plywood and metal fixtures to concrete.
30. Masonry nails: for fastening mudsills and partition plates to concrete.
31. Masonry nails: for fastening materials to brick, concrete, etc.
32. Exterior hardboard nails (eliminate predrilling).
33. Trussed rafter nails.
34. Roof decking nails: for applying insulating roof decking.
35. Pole-type construction nails.
36. Purlin nails.
37. Gutter spikes.



Drawings from Independent Mail and Packaging Co.

(To be continued in August)



surface on both sides; and an 1/8-in. facing panel with a porcelain enamel surface on the face side, and the new surface as a vapor barrier on the other. *AllianceWall, Inc., Alliance, Ohio.*

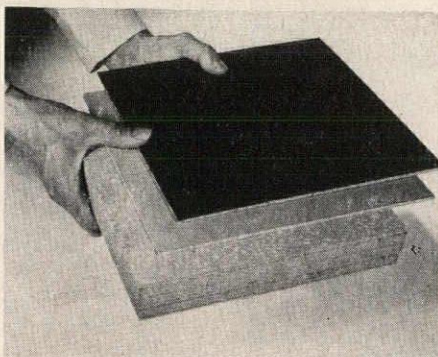
Electrostatic Glass Shields

Electrostatic shields of glass that drain off electromagnetic interference have been developed for use as windows and transparent partitions in laboratories and hospitals and on

computers. The shields, which successfully eliminate static and provide required visibility, consist of a panel of borosilicate glass coated on one side with a thin (1/16 millionths of an inch), transparent metallic film. This conductive coating intercepts radiated interference, which can then be grounded, but it permits transmission of 70 per cent of visible light. The shields come in sizes up to 2 by 6 ft. *Corning Glass Works, Corning, N. Y. more products on page 194*

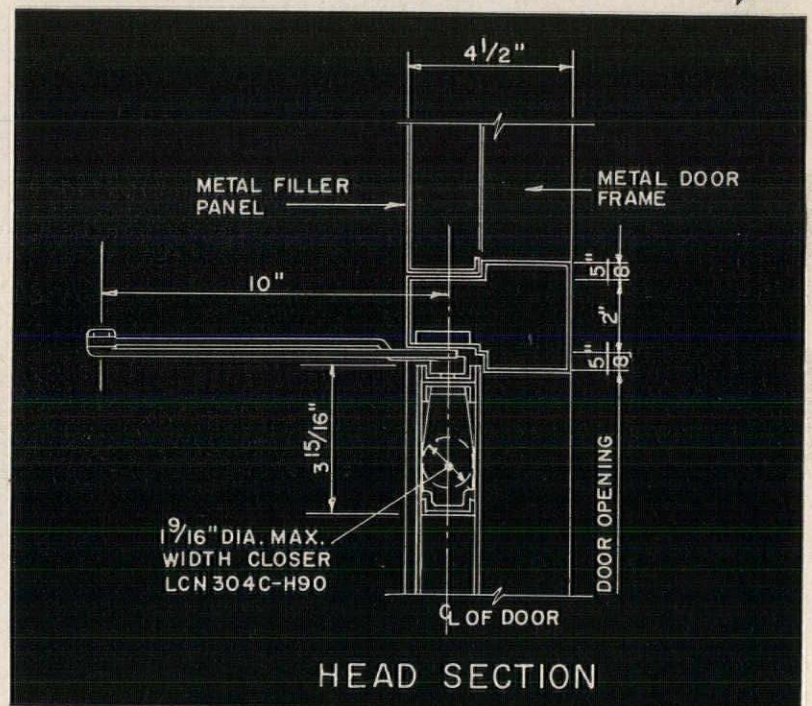
Louver-Diffuser for Lighting

When installed in fixtures or overall ceilings, the new *Mystic Gratelite* changes from an open louver diffuser to a "solid" luminous panel, depending on the point of view. A strong one-piece plastic unit with 3/8-in. open cubicles, it features spear-like tips on longitudinal vanes which cause the cubicles to blend into a luminous surface when seen from an oblique viewing angle. It also affords almost complete lamp hiding power and optimum light diffusion. Two panel sizes are available: 11 by 48 in. or 16 by 48 in. *Edwin F. Guth Co., Box 7079, St. Louis 77, Mo.*



Color-Finished Asbestos Cement

Three new panels finished by fusing color to asbestos cement board through a heat treating process incorporate the fire resistance and other advantages of asbestos cement plus a durable, washable surface in aqua, white, tan, or nine stipple color variations. The *HT-60* surface, which is impervious to water and resists alkali and acid, is available on three panel types: an insulated panel for partitions or outside walls with 1/8-in. asbestos cement board facings over a core of insulation board in various thicknesses; an 1/8-in. asbestos cement panel for soffits, canopy facings, or wall surfaces with the *HT-60*



CONSTRUCTION DETAILS

for LCN Closer Concealed-in-Door Shown on Opposite Page

The LCN Series 304 Closer's Main Points:

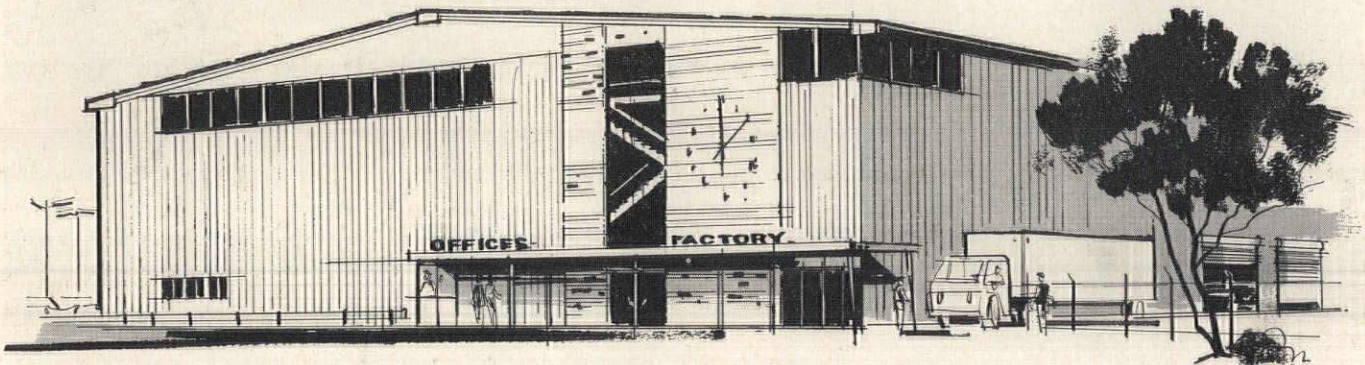
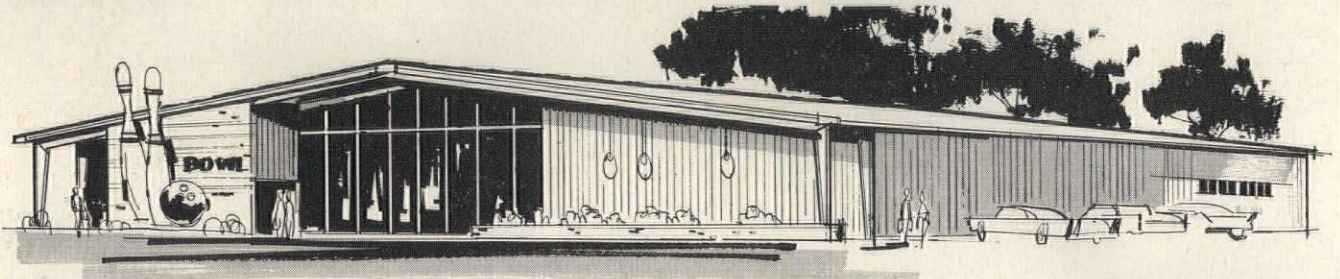
1. An ideal closer for many interior metal doors
2. Mechanism concealed within door; flat arm not prominent, and provides high closing power
3. Door is hung on regular butts
4. Closer may have regular arm or hold-open type, 90-140° or 140-180°, as desired
5. Hydraulic back-check protects walls, etc., on opening
6. Door and frame easily prepared by metal fabricator. Closer can be installed at factory or at job site.

Complete Catalog on Request—No Obligation
or See *Sweet's 1960, Sec. 18e/La*

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Canada: Lift Lock Hardware Industries, Ltd., Peterborough, Ontario

IDEAS...



and ARMCO STEEL BUILDINGS

New Widths and New Heights
Offer Unparalleled Variety

To provide you with even greater flexibility in designing for both function and appearance, Armco Steel Buildings are offered in bigger, wider sizes. Now you can specify modular Armco Buildings in clear-span widths up to 120 feet in a choice of two framing systems and three roof slopes. In addition, wall heights up to 40 feet are now available—featuring the dramatic new Sculptured STEELOX® Wall Panel. These are only a few of the sweeping new features just introduced by Armco. Send for the complete story on all-new Armco Steel Buildings. Clip and use the handy coupon. Armco Drainage & Metal Products, Inc., 7000 Curtis Street, Middletown, Ohio.



New steels are
born at
Armco

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7000 Curtis Street, Middletown, Ohio
Send Details about ALL-NEW Armco Steel Buildings

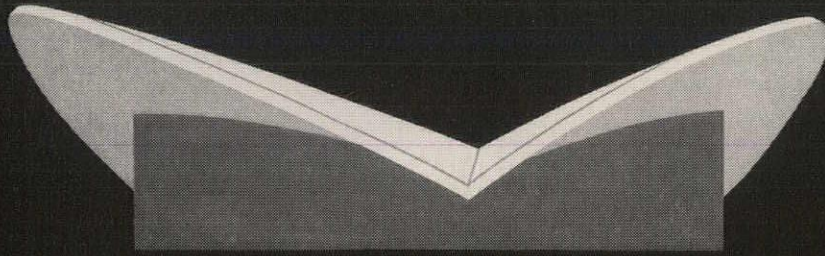
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Firm _____
Street _____
City _____ Zone _____ State _____

ARMCO DRAINAGE & METAL PRODUCTS

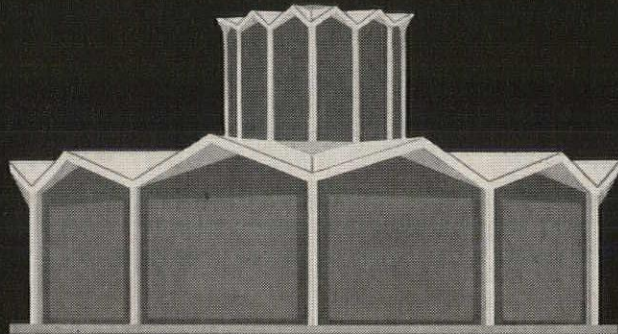


Subsidiary of ARMCO STEEL CORPORATION

OTHER SUBSIDIARIES AND DIVISIONS: Armco Division • Sheffield Division • The National Supply Company • The Armco International Corporation • Union Wire Rope Corporation



FOR
ROOFS
OF
UNUSUAL
GEOMETRY...



Colorful Protective Coatings Based on HYPALON®

synthetic rubber

LONG-TERM PROTECTION. For roofs with varied shapes and pitches, HYPALON-based roof coatings have many advantages over other roofing materials. Most conventional roofing materials are hard, if not impossible, to adapt to steeply contoured roofs. And until the introduction of HYPALON-based roof coatings, departures from the conventional roofing materials too often led to continual repair, loss of protection and poor building appearance.

HYPALON-based coatings can be applied over all commonly used roof decks. HYPALON-based coatings cure into tough, elastic films, which permanently adhere to the roof deck. HYPALON coatings do not require plasticizers, which can migrate and cause local embrittlement. Inherently resilient, HYPALON coatings remain elastic; they stretch when the roof deck expands and recover when it contracts. And they neither soften in heat nor become brittle with cold.

HYPALON coatings have excellent resistance to

sun, ozone, flame, abrasion and strong oxidizing chemicals. In addition, they have a very slow rate of film erosion.

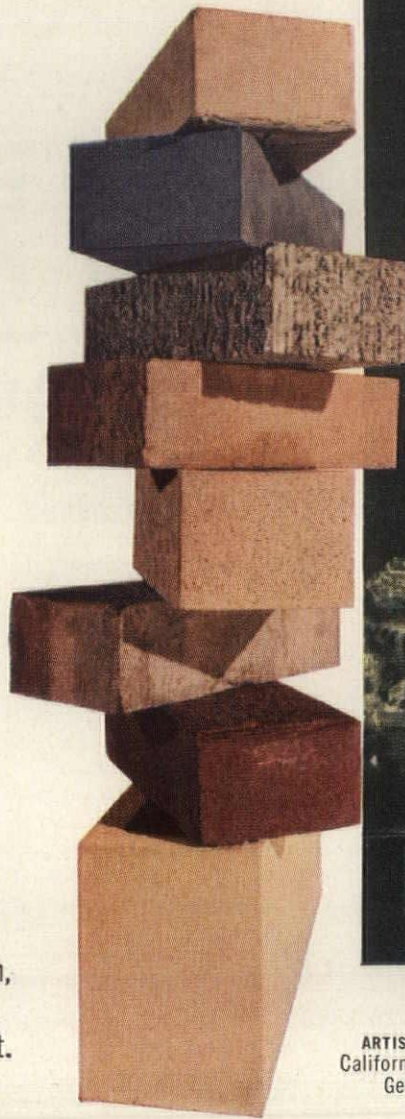
CHOICE OF COLOR. Architects may choose from a wide range of permanent colors—white, pastels and deep shades. This advantage permits color conditioning of the entire building. Too, the load on air conditioning equipment can be reduced by a reflective roof coating of white HYPALON.

MORE INFORMATION. DuPont manufactures only the raw material, HYPALON, and not the coatings themselves. We will be happy to send you our new booklet on elastomeric roof coatings as well as a list of qualified suppliers. Application information, performance data and costs are available from these suppliers. Please write to E. I. du Pont de Nemours & Co. (Inc.), Elastomer Chemicals Department AR-7, Wilmington 98, Delaware.



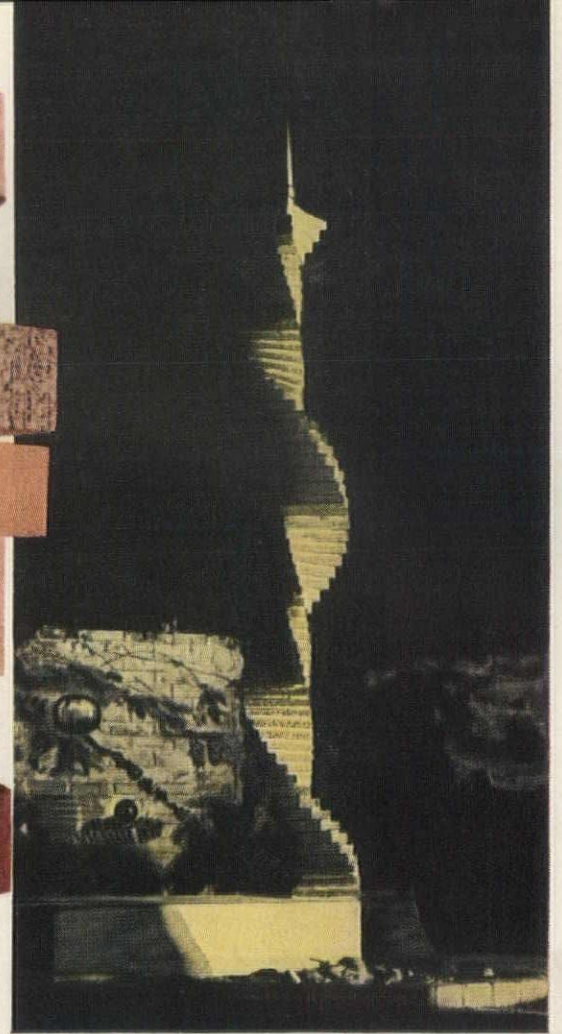
Better Things for Better Living . . . through Chemistry

H Y P A L O N®
S Y N T H E T I C R U B B E R



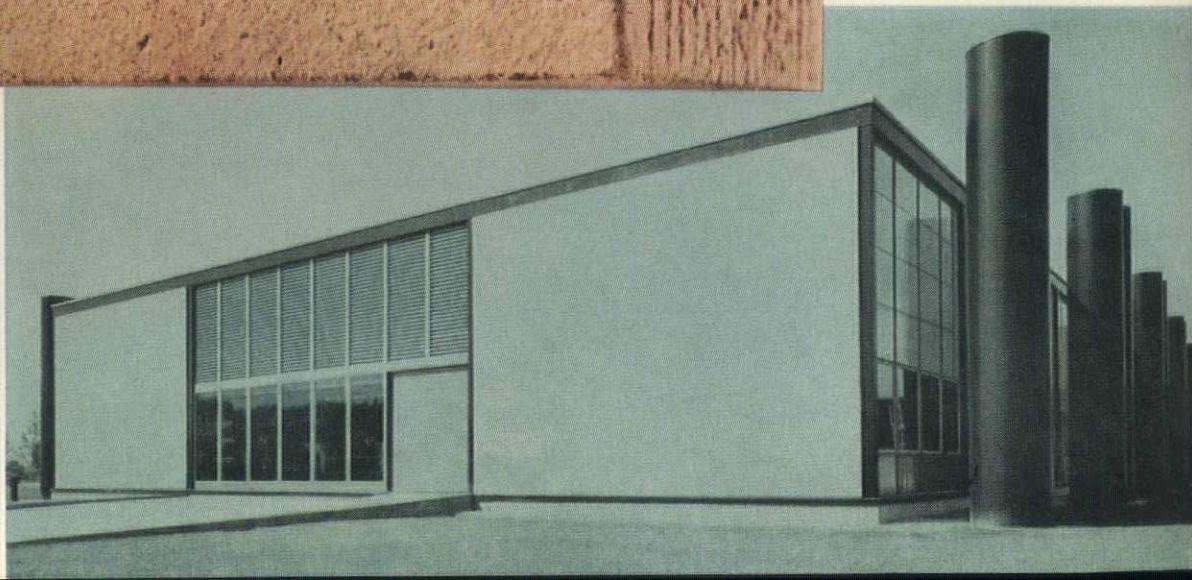
COMMODITY
FIRMNESS
DELIGHT

Commodious as industry, delightful as levitation, the beauty, enduring strength, and infinite flexibility of brick and tile are expressed eloquently through timeless art. Form changes; the Vitruvian principle remains.



ARTISTS AND THEIR WORKS: Free-standing sculpture, California State Polytechnic College, student project under George Hasslein. General Motors Technical Center, Eero Saarinen and Associates, Architects.

Structural Clay Products Institute
1520 18th St. N.W. Washington, D.C.

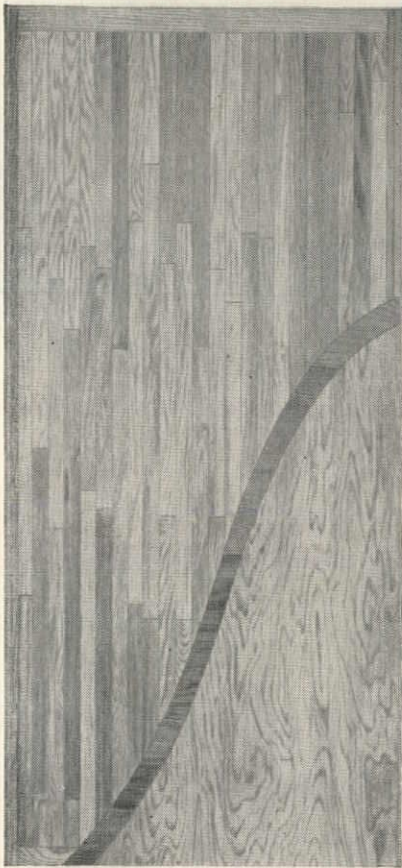


HASKELITE

INSTITUTIONAL AND ARCHITECTURAL DOORS

Now! . . . Everything you need tailored to your needs

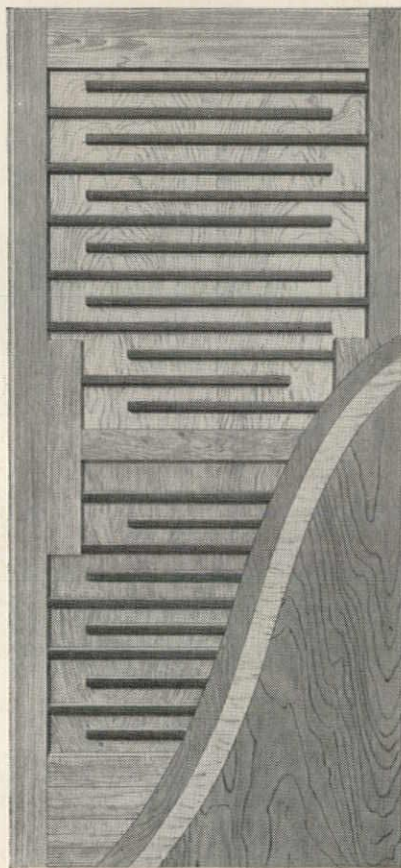
Haskelite doors are available in special lengths and widths to allow the architect greater freedom of design and to simplify installation . . . Haskelite will fabricate, prefit and prefinish doors to your exact specifications. Another advantage of specifying Haskelite doors is the enduring quality of their specially selected face veneers. There's lasting client pride and satisfaction in Haskelite installations.



HASKELITE

BRICK-BLOCK SOLID CORE DOORS

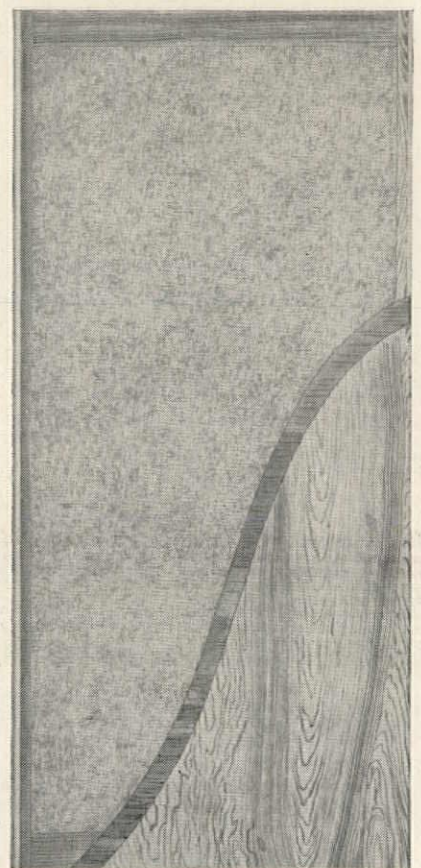
Only carefully dried, selected woods are used for the core, frame and faces—resulting in doors of extra durability with maximum resistance to warping and other defects. All Haskelite doors are available in a wide variety of standard and special faces (including metals, plastics and exotic woods) to meet all architectural requirements of any type modern building construction.



HASKELITE

HOLLOW CORE DOORS

Are precision constructed of the finest materials. Haskelite Hollow Core Doors hang straighter, open and close easier, are easier to install. Seven-ply construction provides peak resistance to distortion—eliminates core and frame show-through. Specially reinforced frame accommodates most special hardware. Backed by a guarantee against delamination.



HASKELITE

PARTICLE-BOARD SOLID CORE DOORS

No other doors offer so many structural advantages at so moderate a price. They combine a substantial, solid appearance with lightness of weight and low sound transmission. Resin-impregnated core has fire-retardant and moisture-repellent characteristics. Specified by leading architects from coast to coast. Like all Haskelite doors, they are fully warranted in writing.

All Haskelite doors are quality built . . . advanced **Thermo-Bonding** process uses pressure and heat to resist distortion . . . **Unitized Frame Construction** provides outstanding structural rigidity . . . **Velvetized Surface** brings out the full natural beauty of face veneers . . . doors can be factory prefit and prefinished per architectural specifications.

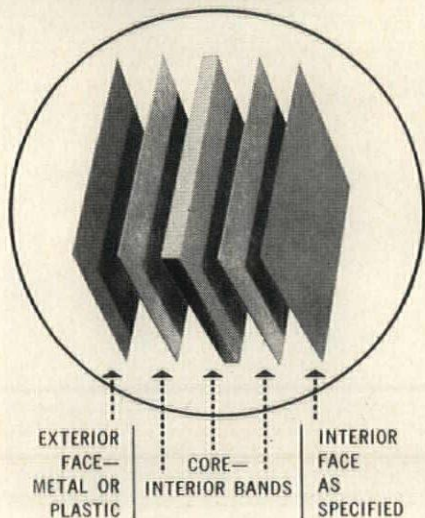
Master Laminators for over 40 years

See Sweet's Catalogue, Architectural File 16C/Has



HASKELITE
MANUFACTURING
Division EVANS PRODUCTS COMPANY
Grand Rapids, Michigan

HASKELITE CURTAIN WALL PANELS



Virtually Unlimited Fabrication to Your Specification

Haskelite Curtain Wall Panels come in a wide choice of faces, cores and colors to provide almost unlimited design and structural freedom. They open up a wide range of design and installation advantages.

Haskelite Curtain Wall Panels:

- ... are light in weight ... cut handling, shipping and installation costs
- ... have high impact resistance
- ... are flat; wave-free surface will not buckle—unaffected by temperature changes
- ... are permanently insulated—have low thermal conductivity, will not absorb moisture
- ... are completely factory-prefinished ready for installation

It will pay you to specify Haskelite Curtain Wall Panels. For complete information see Sweet's Architectural File 3e/Ha or phone or write:

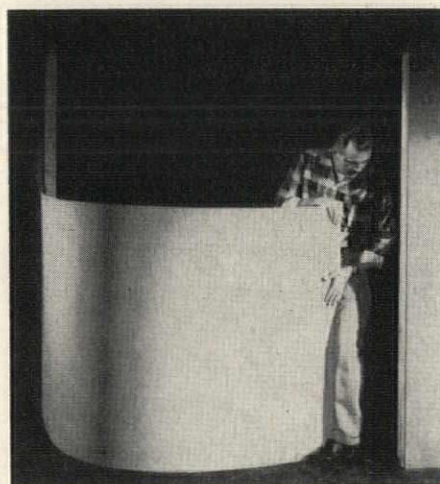


HASKELITE
MANUFACTURING
DIVISION EVANS PRODUCTS COMPANY
Grand Rapids, Michigan

Product Reports

Polysulfide-Epoxy Adhesive

A new concrete adhesive combines separately packaged polysulfide liquid polymer and epoxy resin. When mixed together with a curing agent, they react chemically to form a compound whose adhesive bond exceeds the tensile strength, compression shear strength, flexural strength and impact resistance of concrete itself. Originally developed by the Materials and Research Dept. of the California Division of Highways for use in bonding traffic line markers to cement or asphaltic concrete pavement, the compound has also been used in construction and structural repair work for bonding new concrete additions to existing concrete structures; for skidproofing pavement and floors by bonding abrasive aggregates to them; and as a mortar, with sand or other aggregate, for patching or grouting. The polysulfide liquid polymer is supplied by Thiokol Chemical Corp., Trenton 7, N. J.



Bendable Asbestos Cement Sheet

Kamwall, a new asbestos-cement structural sheet so flexible that it can be bent into a circle as small as 18 in. in diameter, conforms easily to irregular surfaces, making it useful for such applications as interior partitions, soffits, and bases for floor tile. Like other asbestos-cement products, it is fireproof, water-resistant, and rot- and vermin-proof. It can also be nailed or stapled with in $\frac{1}{4}$ in. of an edge and cut with an ordinary handsaw. The paintable 4-by-8-ft sheets come in $\frac{1}{8}$ -, $\frac{3}{16}$ - and $\frac{1}{4}$ -in. thicknesses. *Keasbey & Mattison Co., Ambler, Pa.*

more products on page 208



SPECIFY

Rauland

the very finest in

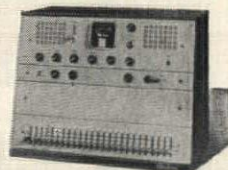
Central Control Sound Systems

for:

SCHOOLS
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designed
to stay modern
for years



your choice of every desirable
modern feature & program facility

RAULAND Central Control Sound Systems are available to fit your exact sound distribution needs. Available features include:

FM-AM Radio—selects any radio program on FM or AM for distribution to any or to all locations as desired

Phonograph—distributes phono program (transcription player or record changer); also available for use with tape recorder

Microphone Origination—selects and distributes sound from multiple microphone locations

Intercom—permits 2-way conversation with any or all locations (up to a total of 220 locations or rooms)

Special—Emergency Switch; all-call; signal clock provision; telephone intercom; remote control, etc.

RAULAND SYSTEMS are available to meet all your sound distribution needs.

Send for FREE catalog and detailed specification sheets.

WRITE TODAY

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RAULAND-BORG CORPORATION
3535-R Addison Ave., Chicago 18, Ill.

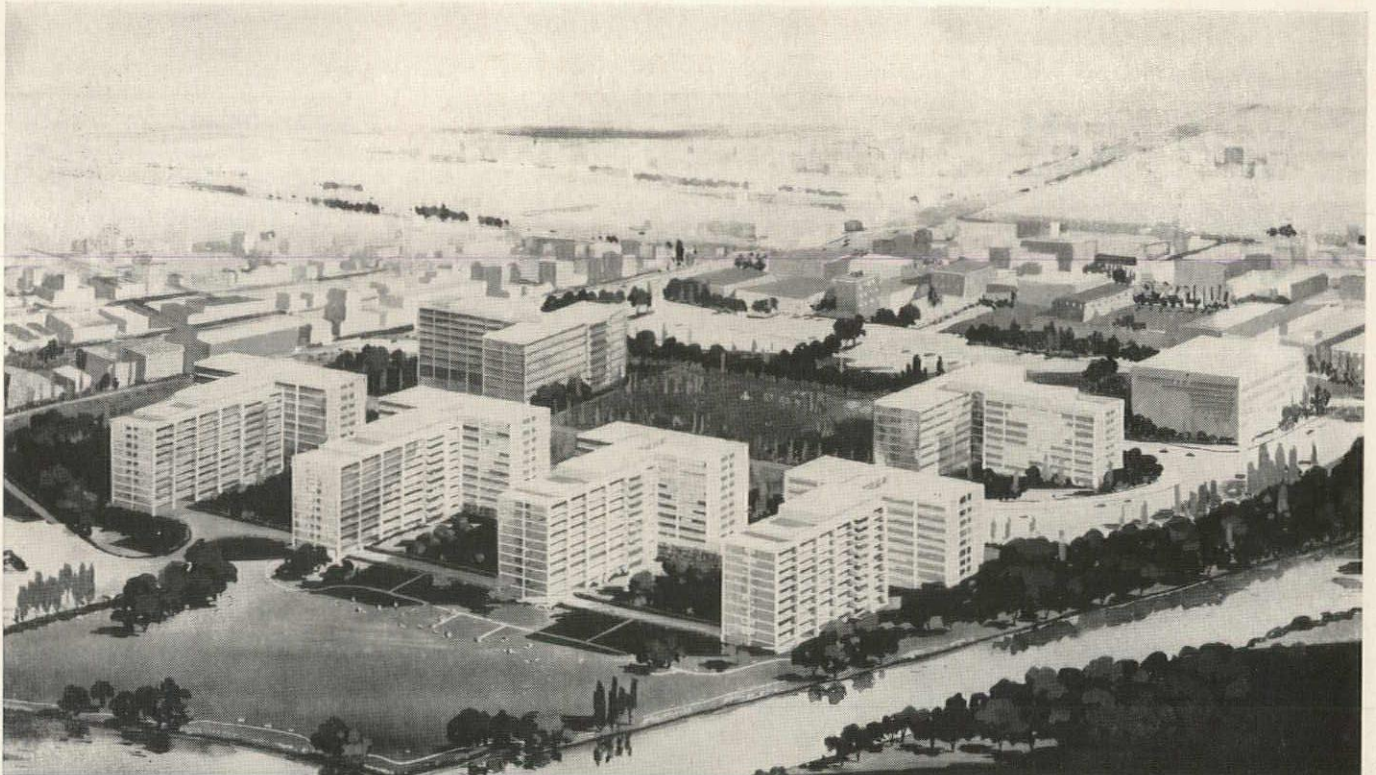
Send full details on all RAULAND Central Control Sound Systems

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Firm _____

Address _____

City _____ Zone _____ State _____



Architect's rendering of Alfred Speer Village, Public Housing Project at Passaic, N. J. Sarcotherm Heating Control Systems

are used in this as well as in the Authority's Vreeland Village. Kelly & Gruzen were architects and engineers for both projects.

"THIS HOUSING PROJECT'S SARCO THERM VACUUM HEATING CONTROL SYSTEM HAS BEEN EXCELLENT IN ALL RESPECTS ..."

Behind this report of complete satisfaction from the Passaic, New Jersey, Housing Authority are the basic reasons why it pays to install a Sarcotherm Outdoor Controlled Weather-Compensating System. These systems not only provide the precise temperature control so critical in housing projects, but are easy to install and operate, and never waste fuel. Sarcotherm's advantages cost no more, and the inherently simple design of the system keeps maintenance costs to a minimum.

This project involved two installations, Alfred Speer Village, heated by steam, and Vreeland Village, heated by hot water. Both were directed by the Passaic Housing Authority and designed by Kelly and Gruzen Architects and Engineers. Sarcotherm engineers cooperated with their architects, engineers and contractors to achieve best results.

On projects like this, Sarcotherm saves time, effort and money. A minimum of wiring is required which makes for simpler, faster hook-ups. In operation, a Sarcotherm system cuts fuel costs through precise metering of delivered heat, yet an exact degree of comfort is provided regardless of outside temperatures. Operating personnel can easily make adjustments to maintain accurate specified temperature levels.

All Sarcotherm components are built to the highest standards in the industry for long-lived reliability. In addition, a Sarcotherm contract brings you the advantages of single-source responsibility: you get your complete control system as well as heating specialties and accessories from a single centralized supplier. Write for Sarcotherm Control Catalog. Specify steam or hot water.

3574

FOR COMPLETE CONTROL SYSTEM CATALOG write Sarcotherm Controls, Inc., 635 Madison Avenue, New York 22, N. Y.

SARCO THERM

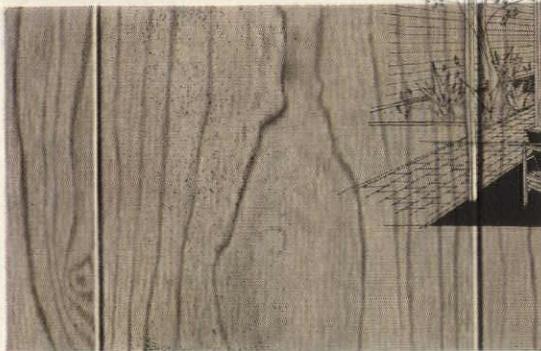
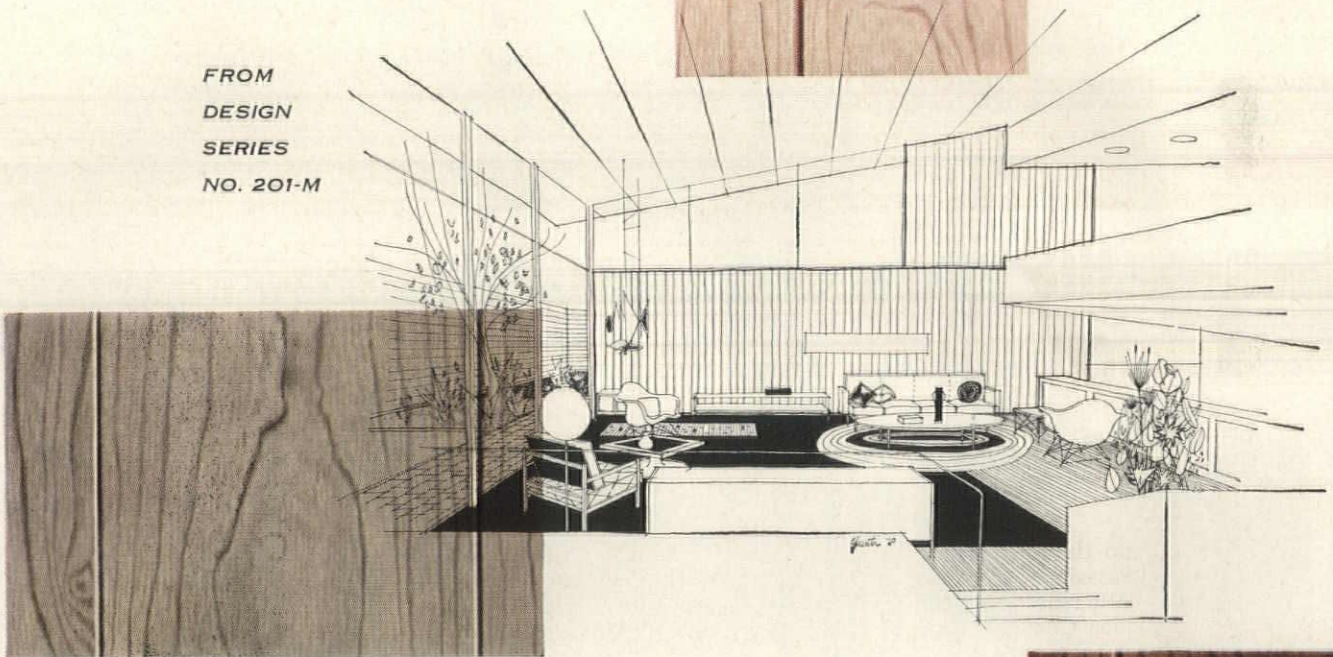
SARCO THERM CONTROLS, INC.,
AN AFFILIATE OF SARCO COMPANY, INC.,
635 MADISON AVENUE, NEW YORK 22, N. Y.
PLANT: BETHLEHEM, PA.

MASONITE
CONTEMPORARY
STUDIES



NATURA CHERRY NO. 400

FROM
DESIGN
SERIES
NO. 201-M



FROSTED CHERRY NO. 401

COLONIAL CHERRY NO. 402



The quiet beauty and warmth you'd expect to find only in natural cherry wood are found in these factory-finished Royalcote Cherry hardboards by Masonite.

An ingenious clip system, combined with 16"-wide by 8'-long tongue-and-grooved panels, makes application simple, fast, permanent. Further information may be had from our architectural files in Sweet's Catalogs. Or write directly to Masonite Corporation, Dept. AR-7, Box 777, Chicago 90, Ill. In Canada: Masonite Corporation, Gatineau, Quebec.

MASONITE 
CORPORATION

©Masonite Corporation—manufacturer of quality panel products for building and industry
Masonite and Royalcote are registered trade-marks of
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windows without lintels doors without jambs...

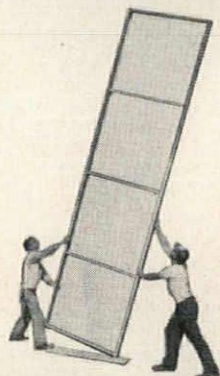
WATERTOWN BUILDS A BEAUTIFUL SCHOOL ON A BUDGET

MARMET Curtain Wall is engineered in many ways to hold down your building cost per square foot . . . without sacrificing character of design or quality of materials.

The cost of installing and "plumbing" many individual frames for windows and doors common to other types of fenestration is saved. Assembly of wall sections is also simplified for savings in erection costs. With Marmet Curtain Wall, Watertown was able to build beautifully on a budget.

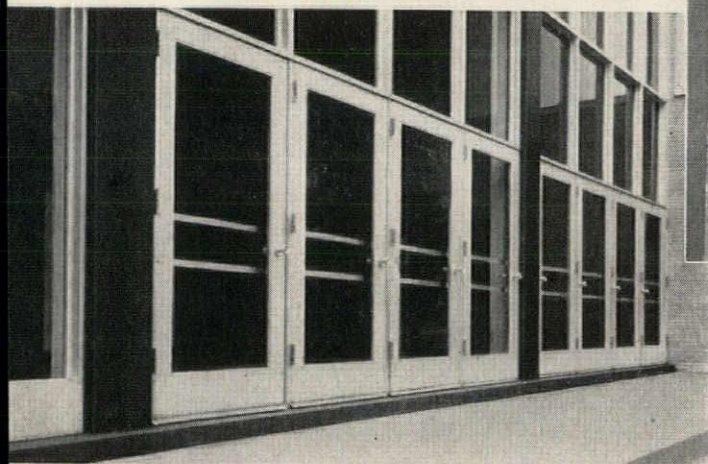
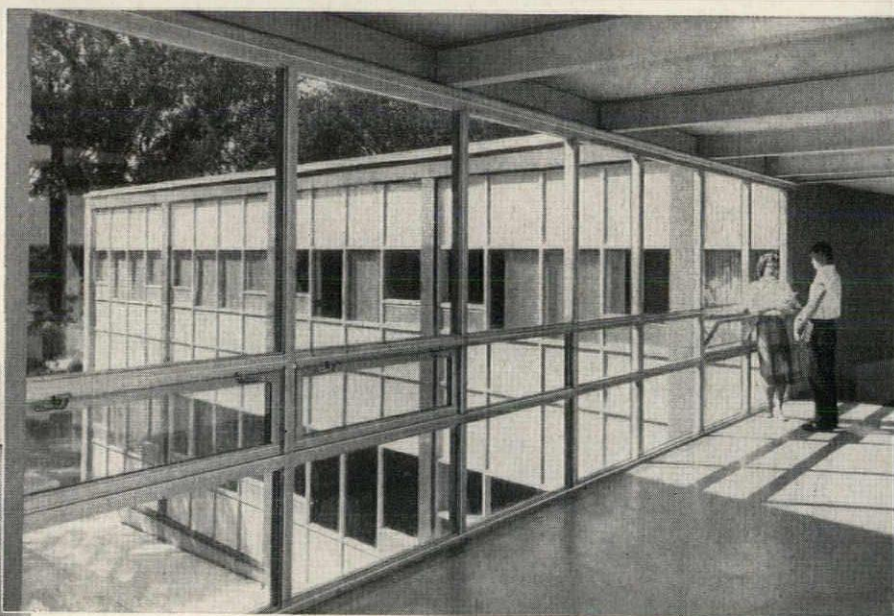
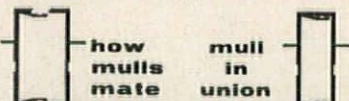


*Watertown High School
Watertown, Wis.
Architect:
Durrant & Berquist
Madison, Wisconsin*



Series 6442-43 for 1 story or multi-story gridwall structures

Large interlocking grids with mating vertical mulls 4½" or 6" deep for varying shadow lines can quickly be erected by two men. Mortise and tenon type joints are connected with bolts, carefully concealed by the glass race. Special expansion joints are employed at the proper intervals.



Notice how the doors in the entrance at left are hung right in the curtain wall section without requiring special, separate framing.

MARMET series 1000 doors are fabricated with tubular sections, bolted and "thru-welded" at each corner leaving no exposed screws, only a neat hairline joint. The doors' handsome appearance is further enhanced by a snap-on, extruded aluminum glazing bead.

Whatever your next curtain wall requirement may be, MARMET'S four different series, including the new insulated 8442 series (in which condensation and/or frost shall form on the glass before forming on the metal) provide beautiful window wall for every purpose . . . all engineered to achieve a more effective result at lower erection cost. For successful execution of your next job . . . specify MARMET.



the man from MARMET

When any unusual site conditions require special technical assistance, the MARMET field engineer is available on 24 hour call to expedite job progress. If you need technical help or information in addition to that supplied by your local MARMET representative . . . write or phone for complete details on this service.

For additional specifications on the complete line of MARMET products — consult Sweet's Catalog File No. 17a or write to MARMET for Catalogs 60-wc and 60-d. Mar.



CORPORATION

300-Y Bellis Street • Wausau, Wisconsin



TOUGHEST LOW-COST FLOOR COVERING—NOW IN COLOR!

Pabco Mastipave steps out with a new look — in color. Colorful new **Deco Tread Mastipave**. Vinyl chips add a bright, decorative effect and make maintenance even easier than before.

It's the same rugged compound that for years has supplied the toughest floors . . . in hospitals, schools, factories, department stores, warehouses, churches, sanitariums, laboratories, offices, public buildings. In many installations it's still going strong after 30 years of hard wear! Good reason why every building needs Mastipave. Lay it anywhere with minimum surface preparation.

Deco Tread Mastipave — Terra cotta with sandalwood and beige chips, black with chips of gray and green; in 3 foot wide rolls, 30 yards long and 9" x 9" tiles.

Regular Mastipave — Terra cotta, black and green; in 3 foot wide rolls, 30 yards long and 9" x 9" tiles.

Grip Tread Mastipave — With exclusive non-slip traction surface, terra cotta; in 3 foot wide rolls, 30 yards long.

For anyone selling or servicing the vast institutional-commercial market, write, on your letterhead, for free folder on the bright profit opportunities available — the Mastipave way.

PABCO MASTIPAVE

PABCO FLOOR COVERING DIVISION
Fibreboard Paper Products Corporation

FREE ILLUSTRATED BOOKLET

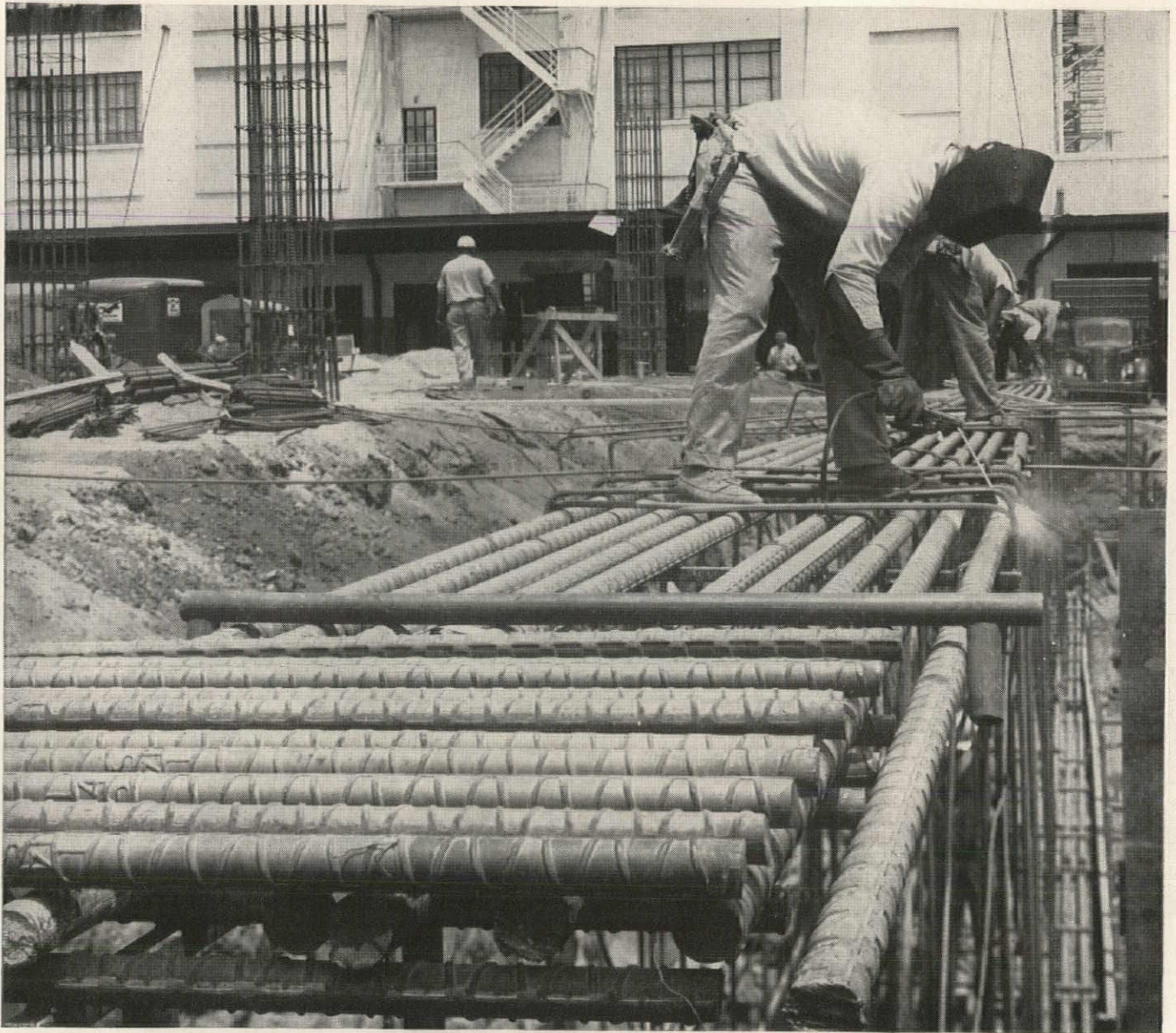
PABCO Floor Covering Division, Fibreboard Paper Products Corporation,
Dept. AR 475 Brannan Street, San Francisco, California.
Please send me a free copy of your informative booklet on how PABCO
MASTIPAVE will help solve my floor covering problem.

Name _____ Title _____

Firm _____

Address _____

City _____ State _____



The new Sears, Roebuck and Co. mail order building was designed and engineered by Bowen and Bowen, Inc., of Los Angeles. General Contractor: Hilp and Rhodes, San Francisco. Bar fabricator: Meehleis Steel Co. of Los Angeles.

Footings for \$3 million Sears, Roebuck building require 1,800 tons of new-billet steel

Some 1,800 tons of Bethlehem new-billet steel reinforcing bars were used in the huge footings for Sears, Roebuck and Co.'s new Los Angeles mail order building. The 4 ft 6 in. by 10 ft beams contain bars ranging from No. 6 ($\frac{3}{4}$ in. round equivalent) up to the king-sized No. 18S (2 in. square equivalent). They extend 361 ft on the north and south sides of the building, 178 ft 6 in. on the east and west. The building will rise

seven stories, with provision made for an additional three.

BETHLEHEM REINFORCING BARS HAVE A KNOWN HISTORY

When bundles of Bethlehem reinforcing bars arrive at a job site, you know exactly what you're using. Certified mill test reports, furnished by Bethlehem, are matched with heat numbers by which the bundles of bars are identified. The customer

who buys Bethlehem bars is assured of composition, mechanical, and physical properties fully meeting all ASTM Billet-Steel Bar Specifications. Bethlehem supplies a complete line of billet steel reinforcing bars, including the extra-large sizes 14S and 18S, in all standard grades. Special grades are also available.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL





HOTEL HABANA HILTON

HAVANA, CUBA

Welton Becket & Associates

—Architects

Rene Portocarrero

—Mural Artist

Ten polychrome Ceramic Veneer panels, composed of 12" x 12" units, were designed in Cuba by Rene Portocarrero. The well-known artist tooled his mural designs in the wet clay and applied the colors at the Federal Seaboard plant.

Delicate art durably emblazoned in
POLYCHROME CERAMIC VENEER

With Ceramic Veneer you can readily combine beauty with function. This versatile material lets you design freely in form and texture and select color from a range far greater than offered by any other building material. Whatever you plan for interiors or exteriors—plain surfaces, polychrome panels, sculpture or grilles—Ceramic Veneer is custom-crafted to faithfully reproduce your designs. Moreover, this time-tested material is moderate in price, economical to install, easy to keep clean. Lasting beauty and long-range economy are assured when you specify Ceramic Veneer, the modern architectural terra cotta. For complete information, write us today. Without charge we will gladly furnish construction detail, data, color guide brochure, advice and estimates on preliminary sketches involving Ceramic Veneer.

FEDERAL SEABOARD TERRA COTTA CORPORATION

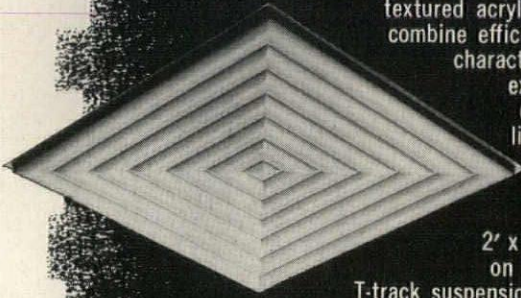
10 East 40th Street, New York 16, N. Y. • Plant at Perth Amboy, N. J.



Product Reports

ACRILUME SOUND-ABSORBING LIGHTING DIFFUSERS

New architectural concepts utilizing sculptured decorative designs for luminous ceilings and other lighting applications are now possible with Acrilume Lighting Diffusers. These pre-formed diffusers of rich, textured acrylic composite combine efficient acoustic characteristics with excellent light diffusion and light stability.



2' x 2' — Install on any inverted

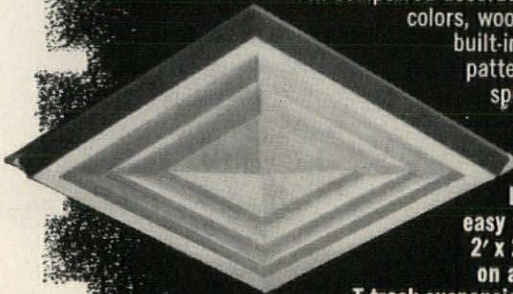
- T-track suspension system
- Other sizes available on special order
- Hi-impact strength — won't crack or break
- Completely washable
- No destaticizing required

comfort takes a NEW form

CONTREX SCULPTURED ACOUSTIC PANELS!

CUSHIONALL OPAQUE ACOUSTIC PANELS

A multitude of original designs in acoustic ceilings and other applications are made possible by Cushionall Acoustic Panels, available in sculptured decorative designs, colors, woodgrains and built-in color-style patterns to your specifications.



Lightweight, easy to handle •
2' x 2' — Install on any inverted

- T track suspension system
- Other sizes available on special order
- Strong and durable won't chip or break
- Completely washable
- Never needs painting or special cleaning

CONTREX

See our catalog in Sweet's Architectural file, or write to Contrex for full information.

Developed for Contrex by Bolt, Beranek and Newman

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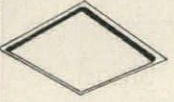
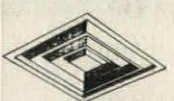
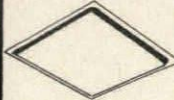
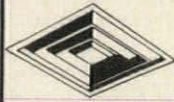
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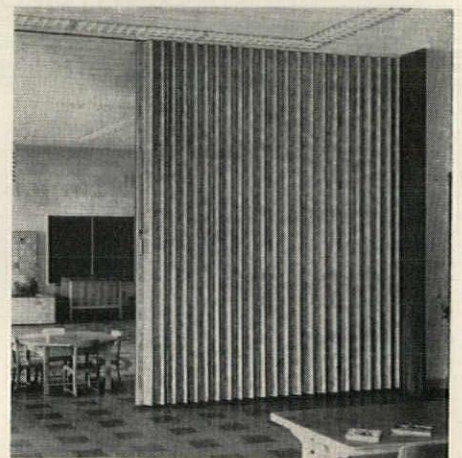
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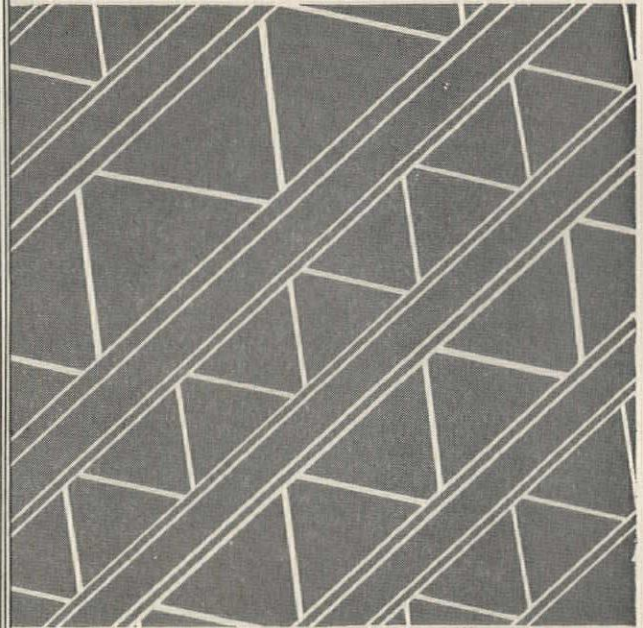
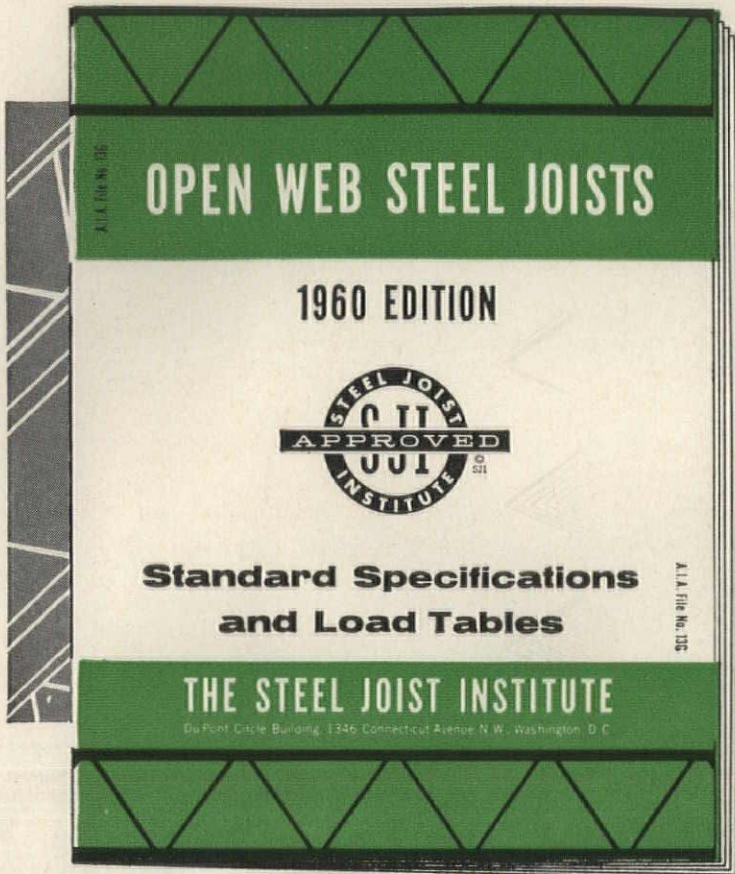
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A new type of ceiling tile, priced at least fifty per cent below other standard ceiling tile materials (10 to 15 cents per sq ft), has been designed for use in suspended grid-type ceilings. Made of white expanded plastic with a striated pattern, it is said to possess good insulating properties and to be exceptionally lightweight, permitting the use of lighter-than-usual suspension grids. The 1-in. thick tiles come in 2 by 2 and 2 by 4 ft modules; can be cut on the job to accommodate vents and irregular ceiling shapes. *General Foam Plastics Corp., Portsmouth, Va.*



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Vinyl fabrics used in *Modernfold* folding doors (above) have been accorded a Class "A" tunnel test fire rating under the Ohio Building Code, following tests by an independent research institute. This means the fabrics, which are also used for *Modern-Cote* wall coverings, are ten times more resistant to surface flame spread than the red oak flooring used as a standard. The tests also showed that the vinyl coverings do not support combustion or "add fuel to the fire." *New Castle Products, Inc., New Castle, Ind.*



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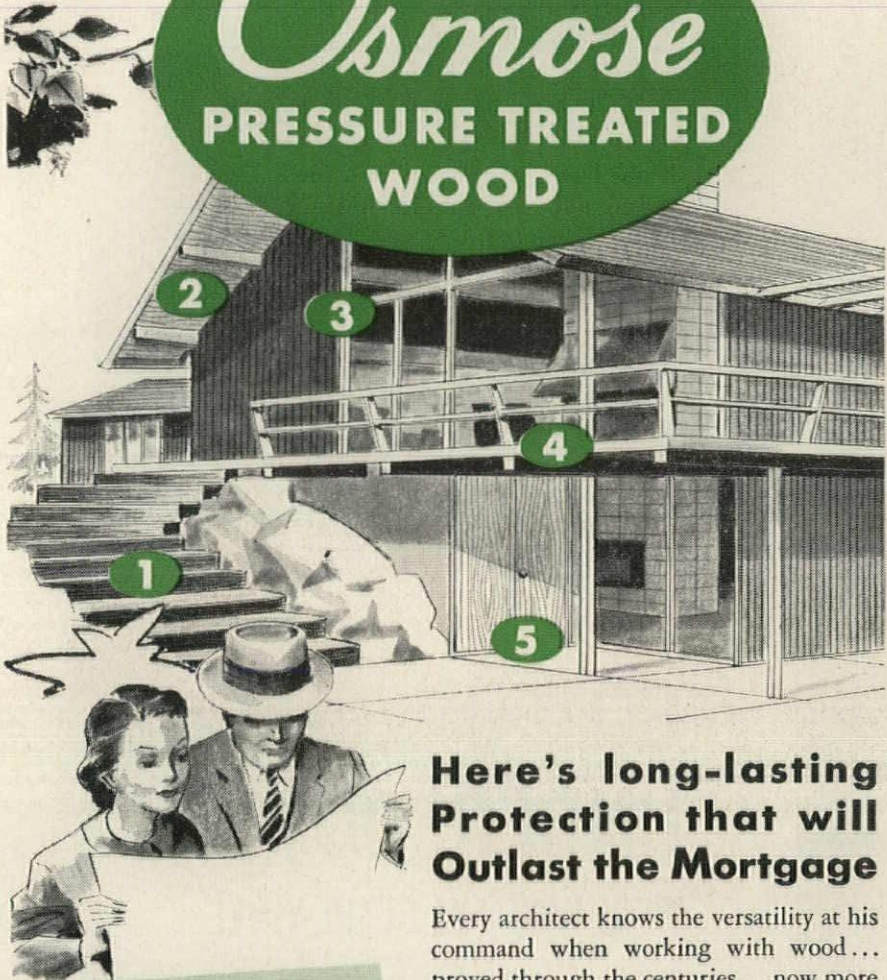


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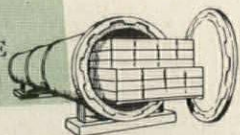
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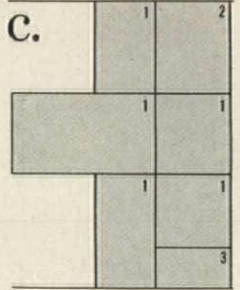
a.



1. Bernstein-Marcus Administration Center, Brandeis University, Waltham, Mass. Hugh Stubbins, Archt. Photos: William M. C. Lam

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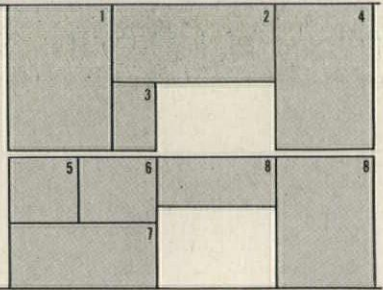
c.



1. Photos: R. P. Jones
2. Solomon R. Guggenheim Memorial Museum, New York City. Frank Lloyd Wright, Archt. Photo: George Cserna
3. William Diamond Jr. High School, Lexington, Mass. Charles H. Cole, Archt.

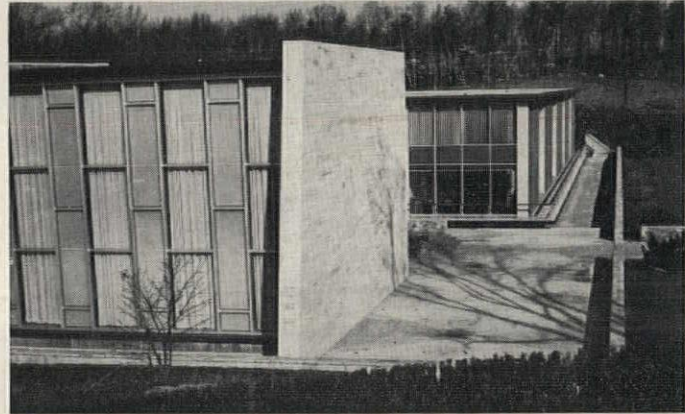
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d.



1. Reynolds Metals Bldg., Detroit, Mich. Minoru Yamasaki & Assocs., Archts. Photo: Baltazar Korab
2. Hickory Grove Elementary School, Bloomfield, Mich. Smith, Tarapata, MacMahon, Archts. Photo: Lens-Art
3. U. S. Embassy, Oslo, Norway. Eero Saarinen & Assocs., Archts. Photo: K. Teigen
4. Frank L. Gilbert House, Seattle, Wash. Paul Hayden Kirk & Assocs. Archts. Photo: Dearborn-Massar
5. S. R. Crown Hall, Illinois Institute of Technology, Chicago, Ill. Mies van der Rohe, Archt. Photo: Chicago Architectural Photographing Company
6. Hilltop Elementary School, Wyoming, Ohio. Charles Burchard, A. M. Kinney, Assocs., Archts. Photo: Joseph W. Molitor
7. Crown Zellerbach Bldg., San Francisco, Calif. Hertzka & Knowles and Skidmore Owings & Merrill, Associated Archts. Photo: Morley Baer
8. Australian Academy of Science Bldg., Canberra, Australia. Grounds, Romberg & Boyd, Archts. Photos: Kenneth Ross & Max Dupain

continued on page 220



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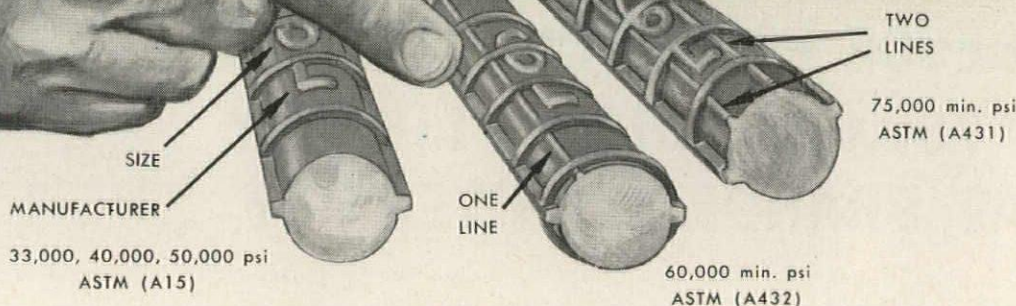
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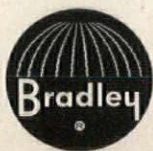
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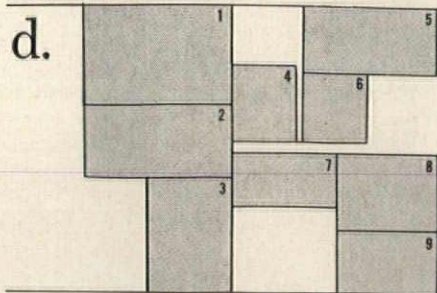
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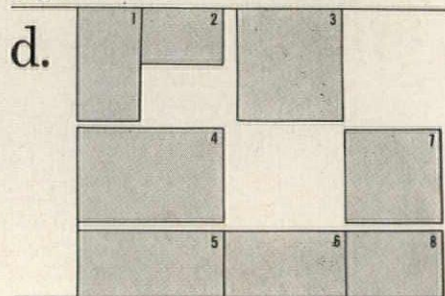
LIGHTING CREDITS (continued)

pages 178-179

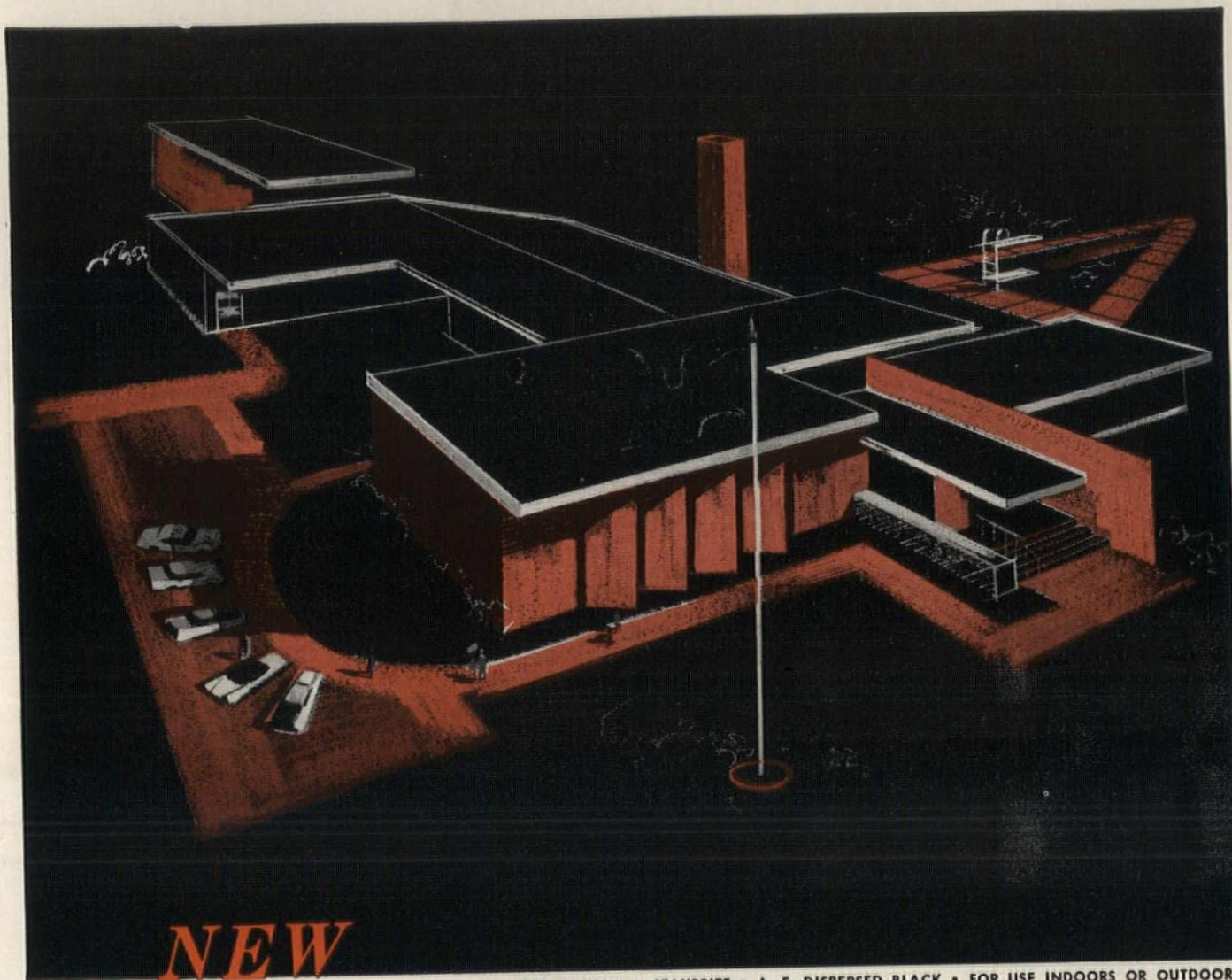


1. Unitarian Church, Evanston, Ill. Schweikher, Elting & Bennett, Archts. Photo: Aaron Siskind
2. St. Peter's Lutheran Church, Edina, Minn. Ralph Rapson, Archt.; Douglas Baird, Assoc. Archt. Photo: Peter Marcus
3. Concordia Senior College, Fort Wayne, Ind. Eero Saarinen & Assocs., Archts. Photo: Alexandre Georges
4. Solomon R. Guggenheim Memorial Museum, New York City. Frank Lloyd Wright, Archt. Photo: George Cserna
5. Caribe Bldg., New Orleans, La. Curtis and Davis & Associated Archts. & Engrs. Photo: Frank Lotz Miller
6. Art School, Society of Arts and Crafts, Detroit, Mich. Minoru Yamasaki & Assocs., Archts. Photo: Baltazar Korab
7. Case Institute, Cleveland, Ohio. Photo: courtesy General Electric
8. First National Bank of Miami, Miami, Fla. Weed Johnson Assocs., Archts. Photo: Lisanti, Inc.
9. Robert E. Lee Senior High School, Tyler, Texas. Caudill, Rowlett & Scott and Bruce & Russell, Associated Archts. Photo: Jay Oistad & Assocs.

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1. Robert Bernhard House, Port Chester, N. Y. Eliot Noyes & Assocs., Archts. Photo: Ben Schnall
2. Victor M. Hunt House, Malibu, Calif. Craig Ellwood, Designer; J. E. Lomax, Assoc. Photo: Marvin Rand
3. Columbus & Southern Ohio Electric Co., Columbus, Ohio. Photo: General Electric
4. J. W. Robinson Store, Palm Springs, Calif. Charles Luckman Assocs. and William L. Pereira, Archts. Photo: Julius Shulman
5. Shopping Center, Levittown, Long Island, N. Y. Photo: Ewing Galloway
6. Dexter Chevrolet, Inc., Detroit, Mich. King & Lewis, Archts. Photo: Baltazar Korab
7. Lennox Square Regional Shopping Center, Atlanta, Ga. Toombs, Amisano & Wells, Archts. Photo: Gabriel Benzur
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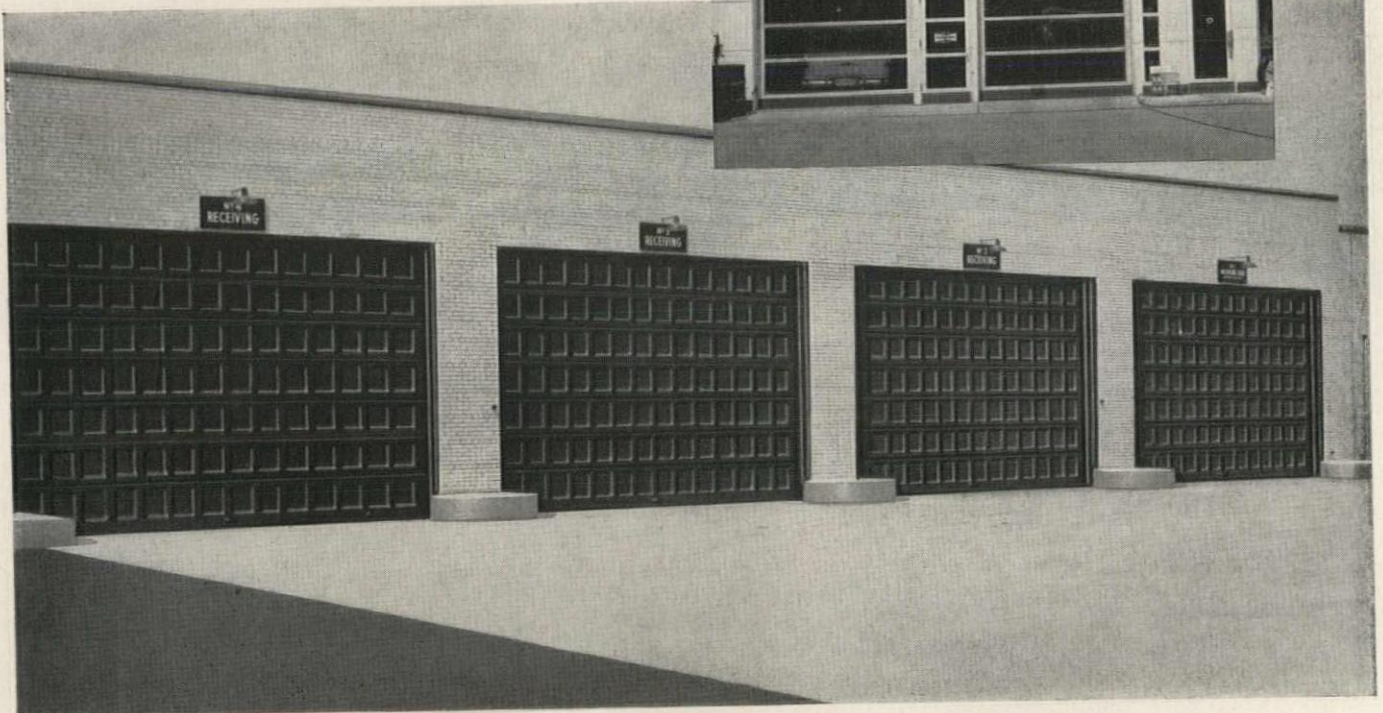
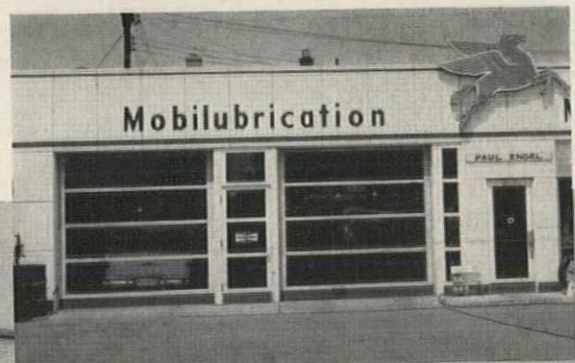
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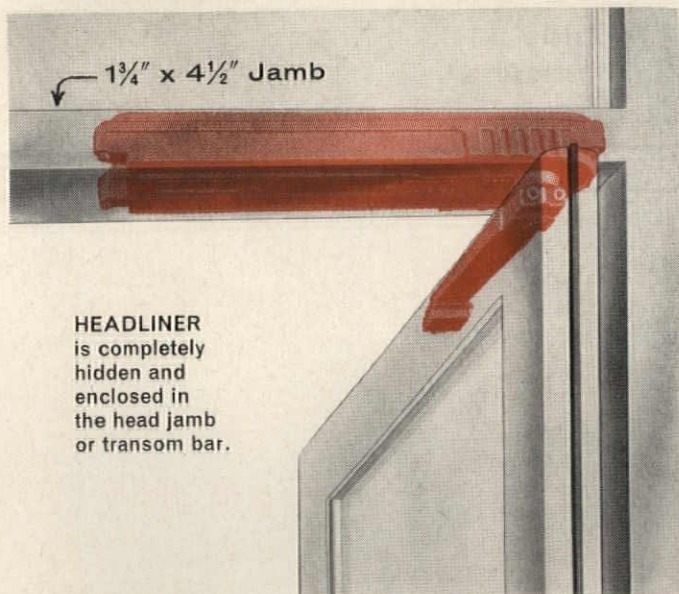
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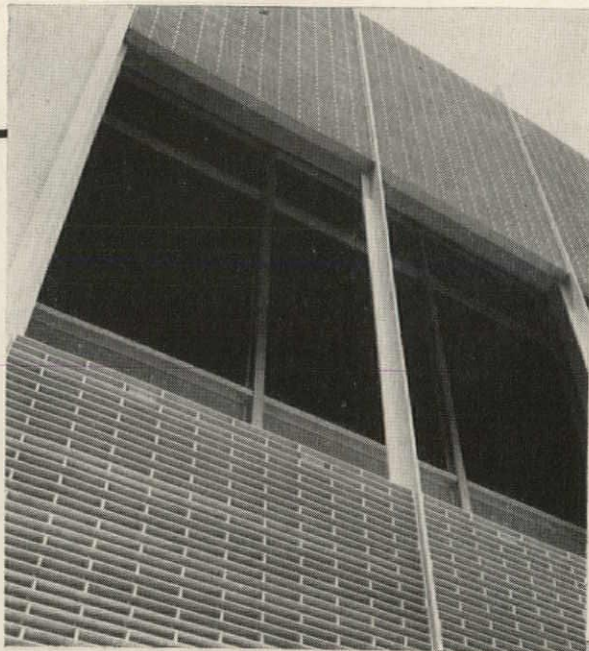
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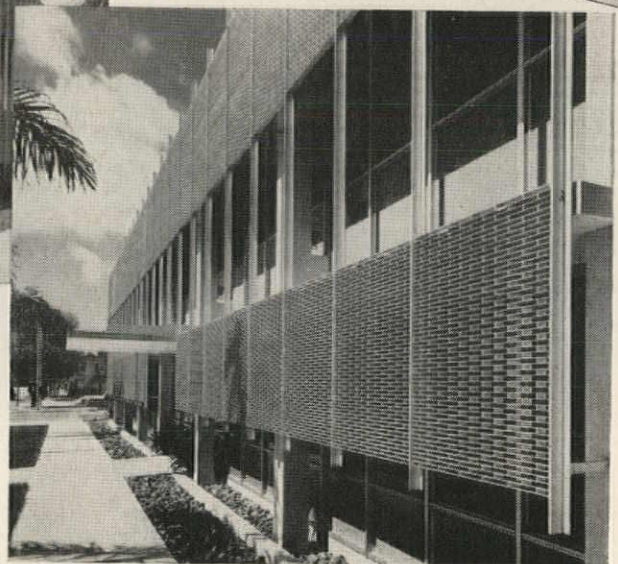
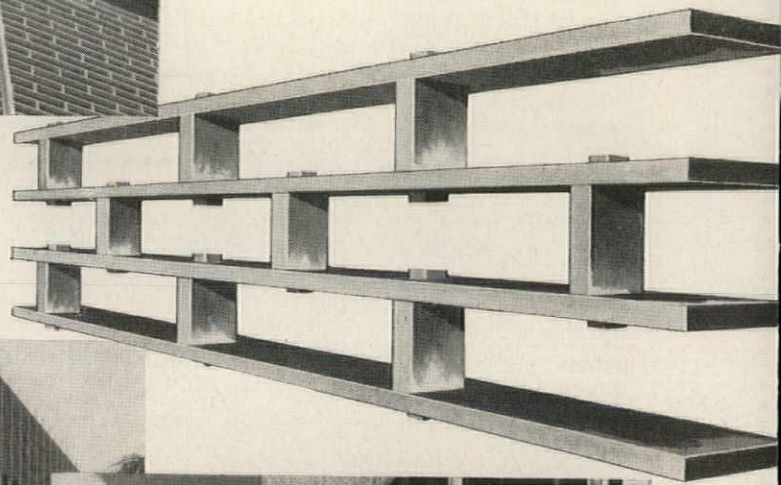
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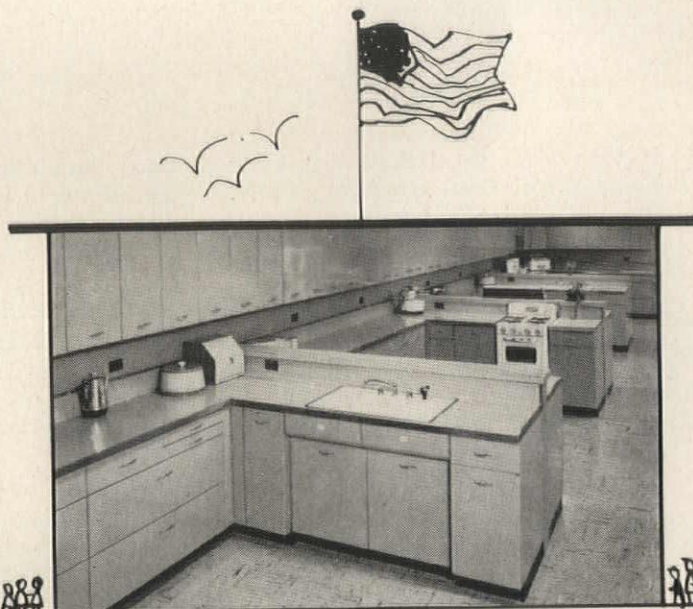
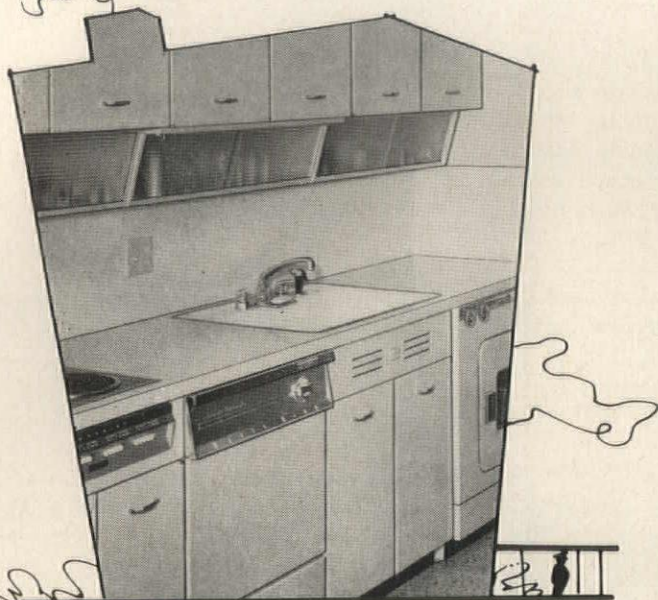


Designed by Pancoast, Ferendino, Skeels & Burnham,
Architects, Miami, Florida.

Complete Information and Specifications available upon request. Write today.

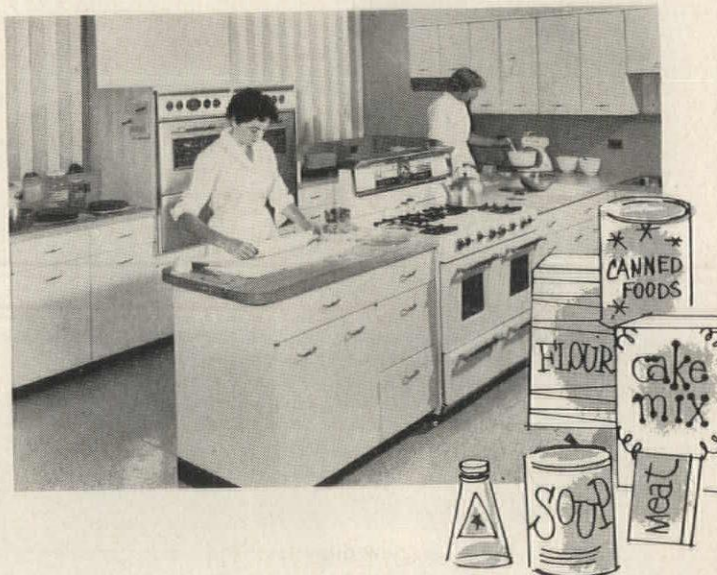
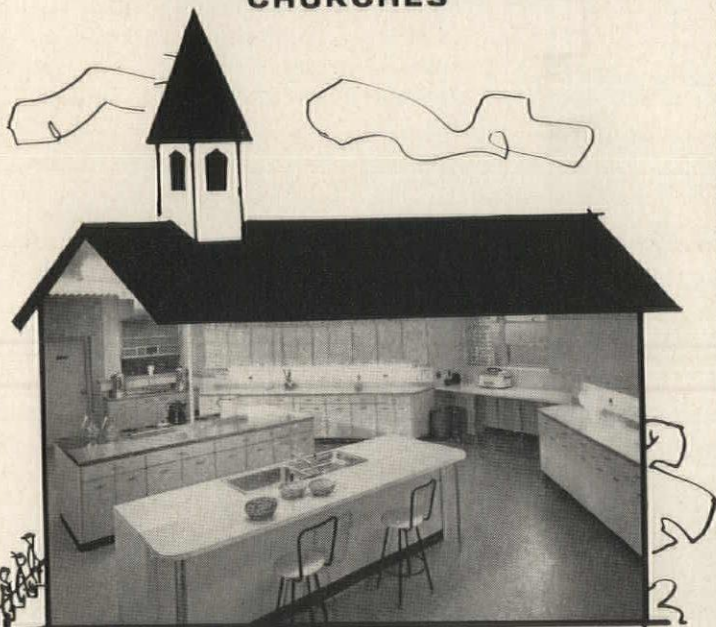
APARTMENTS

SCHOOLS



CHURCHES

COMMERCIAL



**WHATEVER YOUR CABINET OR CASEWORK REQUIREMENTS...
SPECIFY GENEVA QUALITY**

APARTMENTS . . . Owners and managers find Geneva kitchens mean better rents, lower maintenance, lasting beauty.

SCHOOLS . . . Geneva's line of cabinets for Home Arts, Food Laboratories and Arts and Crafts departments permit greater latitude in layout, offer the most advanced design ideas.

CHURCHES . . . A kitchen is basic to the needs of the modern church and Geneva cabinets receive high preference.

COMMERCIAL . . . Test kitchens, laboratories, executive kitchens, efficiency kitchens for the "coffee break" are only a few of the growing applications for Geneva cabinets in business.

For sound counsel on problems of casework layout and installation, consult your Geneva distributor or write the factory.



GENEVA MODERN KITCHENS
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Please send Geneva literature, including specifications covering the following:

- Apartments Schools Churches Commercial

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Address _____

City _____ State _____



GENEVA MODERN KITCHENS
DIVISION OF ACME STEEL CO.
Geneva, Illinois

Water Cooler Specifications

... and Installation Instructions describes features and installation of the Oasis On-A-Wall wall-hung water cooler. *Ebeo Mfg. Co., 265 N. Hamilton Rd., Columbus, Ohio**

Forest Products Information

Partial List of Government Publications of Interest to Architects, Builders, Engineers, and Retail Lumbermen, No. 1081, lists bulletins on such topics as glued wood

construction, mechanical properties and structural uses of wood and wood products, seasoning of wood, wood finishing, wood preservation and protection, and other miscellaneous topics. *Forest Products Laboratory, Madison 5, Wis.*

The Perfect Swimming Pool

(A.I.A. 35-F-2) Describes and illustrates comprehensive line of products for building, improving and maintaining swimming pools. A spe-

cial section on pool care and maintenance discusses water treatment and purification, pool cleaning, painting, winterizing and pool safety. Catalog No. 506, 36 pp. *Paragon Swimming Pool Co., Inc., Pleasantville, N. Y.**

Fiberglas Decorative Fabrics

Describes the uses of Fiberglas drapery fabrics as "window treatment to control heat and sun glare," and includes fenestration data as well as suggestions for sewing and fabrication of Fiberglas draperies. *Hess, Goldsmith & Co., Inc., Div. Burlington Industries, 1400 Broadway, New York 18, New York.*

Mixing Valves . . .

... Thermostatically Controlled gives selection data, including photographs and dimensional drawings of fixtures, on mixing valves for general and professional use. 8 pp. *Simix Co., Inc., 101 Park Ave., New York 17, N. Y.**

Atlas Masonry Cement

Contains information on composition, properties and characteristics of Atlas masonry cement; suggestions for recommended masonry practice and workmanship; reference tables listing mortar mixes and material quantities; and a section on available shapes, sizes and textures of concrete block. 22 pp. *Universal Atlas Cement Div., United States Steel Corp., 101 Park Ave., New York 17, N. Y.**

Translucent Panels

A pair of brochures: one, in eight pages, describing Kalwall's translucent panels and Panel Unit Wall System, including technical details, test data and information on light transmission; the other, in four pages, treating the firm's skylights and translucent roofs. *Kalwall Corp., 43 Union St., Manchester, N. H.**

Facts and Data

... on Resilient Floors. (A.I.A. 23-G). A new edition outlining factors in selection of resilient floors and wall coverings also provides data on product and installation specifications, and preparation of underfloors; tables of properties and maintenance data; and pattern illustrations. 46 pp. *Congoleum-Nairn, Inc., 195 Belgrove Dr., Kearny, N. J.**

*Additional product information in Sweet's Architectural File

more literature on page 232

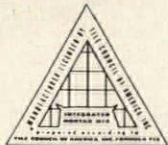


HOTEL FOUNTAINEBLEAU
Miami Beach, Florida. Morris Lapidus, Architect
Stewart Tile Co., Tile Contractors

Revolutionary New Adhesive Mortar Reduces Material and Labor Costs...Cuts Wall Weight up to 60%!

Tile-Mate* is a self-curing, thin-bed mortar adhesive which permits installation of ceramic tile or glass mosaics directly on dry back-up materials. Applied over dry wall board, foam styrene, concrete block or any masonry surface, it eliminates expensive metal lath, provides greater shear and bonding strength than other mortars, in a bed only $\frac{3}{8}$ " to $\frac{1}{8}$ " thick. Tile-Mate mixes with water at the job site. Tile is set and grouted dry. Non-combustible, non-toxic, frost-proof. Use indoors or outdoors ... for swimming pools, too. Write for catalog.

* Mf'd. under license issued by The Tile Council of America.



THE UPCO CO.

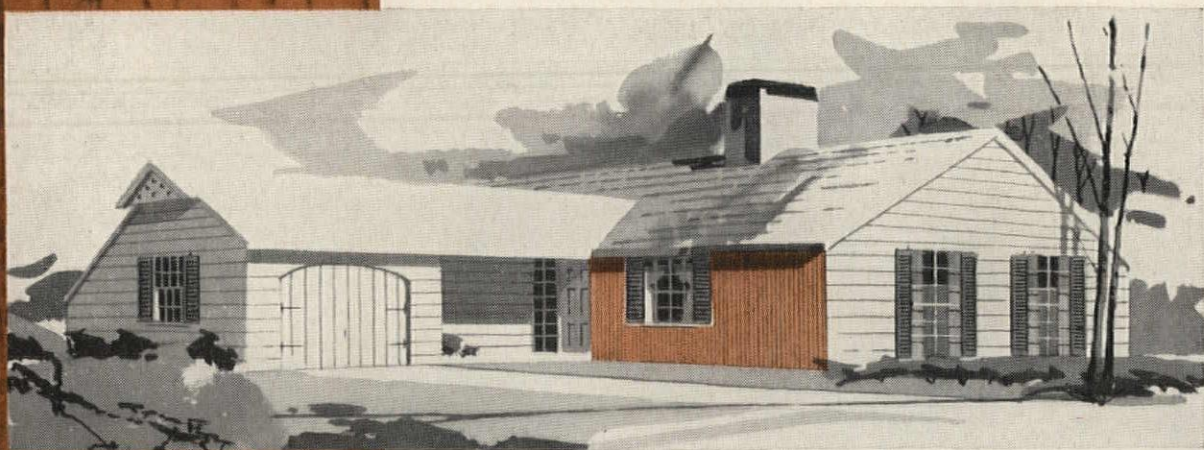
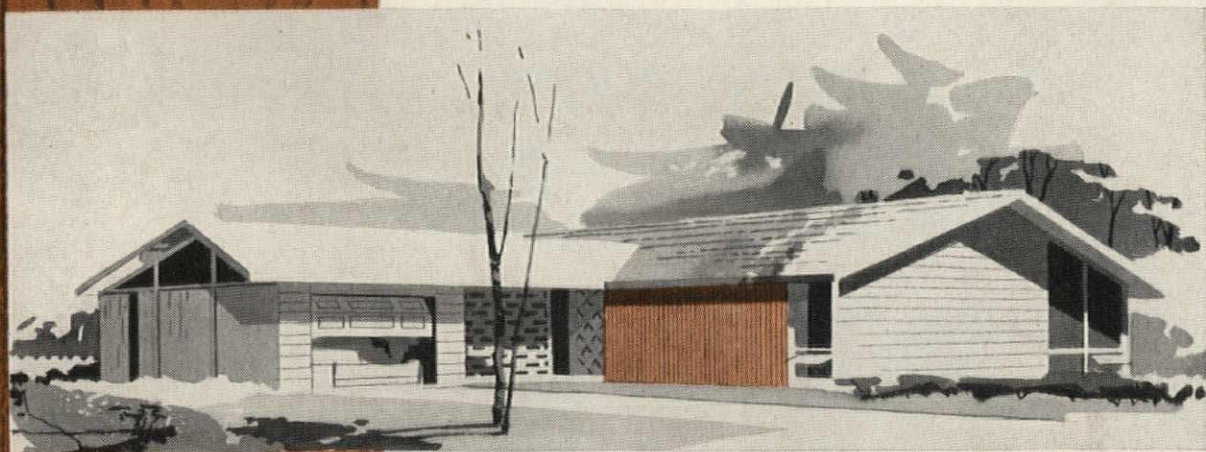
4805 LEXINGTON AVENUE • CLEVELAND 3, OHIO

Manufacturers of Hydroment Joint Filler

In the West, HYDROMENT, INC., 438 Brightwood Ave., Monterey Park, Calif.

STUCCO...

whether you design contemporary or traditional



simple way to walls of color and textural interest, stucco harmonizes well with contemporary or traditional architecture. With stucco, architects can specify scores of decorative patterns, bold or restrained . . . from linear to geometric and sculptured effects. And stucco of white portland cement tints beautifully . . . gives you freedom in color ideas, too. Stucco, with a "combed" surface texture, is one more example of how architects are achieving distinction in home designs with concrete . . . material of modern living.

For the newest in homes . . .

**LIVING
CONCRETE**

PORTLAND CEMENT ASSOCIATION . . . *A national organization to improve and extend the uses of concrete*



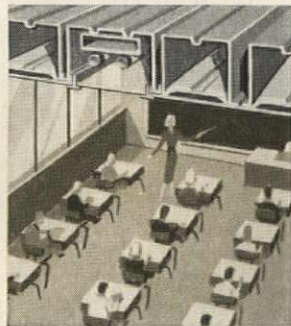
a sound approach to structural ceilings

If students were never noisy, *any* kind of steel panels would be ideal for school ceilings. Steel offers long-span design. It can be painted any color . . . or economically washed. And steel panels never crack, warp, or burn. But, because students *are* noisy, Fenestra pioneered an *acoustical* steel ceiling panel.

This steel acoustical panel costs less to install. It is a perforated modular unit backed up by a patented, pre-formed, arched glass-fiber sound attenuation pad. It performs as many as five different building material functions: acoustical correction, insulation and roofing support, integral lighting, long-span structure, and finished flat ceiling. It spans up to 34', eliminates the need for bar joists.

Costs less to maintain. It can be washed or painted. Nothing to become loose or fall off. And in years to come, Fenestra acoustical steel paneling will still retain its original appearance.

Fenestra has been a pioneer in this better kind of sound conditioning for over 30 years. Can our research and engineering service help you? Call your local Fenestra representative (he's in the Yellow Pages); see Sweet's File 2c/Fe; or write: *Fenestra Incorporated, Dept. AR-07, 2252 E. Grand Boulevard, Detroit 11, Michigan.*



Long-span acoustical "D" steel ceiling panels provide highly efficient noise absorption at all sound frequencies.

PRODUCTS FOR THE NEW AGE IN ARCHITECTURE

Fenestra

INCORPORATED

Steel and aluminum curtain-wall systems

Steel and aluminum residential windows

Engineered windows for industrial, institutional and monumental buildings

Hollow metal doors

Light gauge steel structural systems for floors, roofs, walls, and electrified floors

Accessible Hermetic

. . . *Liquid Chillers* (A.I.A. File No. 30-F-21) is a 20-page catalog showing various types of liquid chilling equipment, and comprising capacity data charts, heat rejection tables and engineering specifications. Also available: another 20-page data book on Chrysler's "W" Series Packaged Liquid Chillers," (A.I.A. File No. 30-F-21) with capacity data charts, condenser capacity and physical data, procedure for selecting alternate

condensers, and engineering specifications; and an 8-page Sweets Reprint Folder cataloging the firm's line. *Chrysler Airtemp, Advertising Distribution Center, P.O. Box 1037, Dayton 1, Ohio.**

Luxtrol Lighting Controls

(A.I.A. File No. 31-F-25), offers general information on types of interior lighting and appropriate fixtures; comprises description, drawings and installation data on *Luxtrol* continu-

ously-adjustable transformers. Bulletin L758W-1, 24 pp. *The Superior Electrical Company, Bristol, Conn.*

Factory-Built Sewage Lift Stations

Engineering data manual contains detailed information, specifications, selection charts, diagrams and installation data on factory-built sewage pumping stations and pneumatic ejector lift stations. 100 pp. A second manual containing similar engineering data on the *Oxigest* sewage treatment plant is also available. *Smith & Loveless Div., Union Tank Car Co., Lenexa, Kansas*

Hornflex Sealant

Includes data on physical properties of *Hornflex* polysulfide synthetic rubber sealant, recommended uses, directions for application and mixing, and suggested specifications. 16 pp. *A. C. Horn Companies, Div. of Sun Chemical Corp., 550 Third St., San Francisco 7, Calif.**

Master Clocks and Systems

Technical Topics give complete technical and design information on the various types of master clocks and clock systems. *Cincinnati Time Recorder Co., 1733 Central Ave., Cincinnati 14, Ohio*

Hydronics Heating Manual

Covers basic hydronics principles, and gives technical data necessary for designing and selecting equipment for residential, commercial and industrial hydronics heating systems. Manual PB-109A, 150 pp. *Permaglas Div., A. O. Smith Corp., Kankakee, Ill.**

Projection Screens Manual

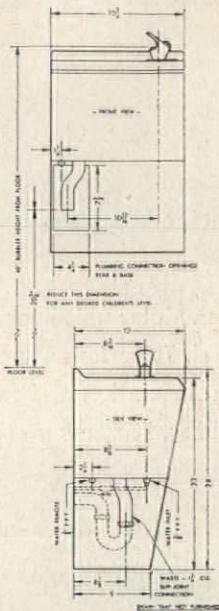
Describes and gives selection and specification data on *Vidio-Master* projection screens for audio-visual installations. *Audio-Visual Dept., Da-Lite Screen Co., Inc., Warsaw, Ind.*

Kwik-Seal Waterstop

Describes, and gives specifications and comparative data on various types of *Kwik-Seal* waterstops; discusses design of horizontal, vertical and expansion joints; and details installation and splicing techniques. 24 pp. *The Gates Rubber Co., Industrial Div., 999 S. Broadway, Denver 17, Colo.**

**Additional product information in Sweet's Architectural File*

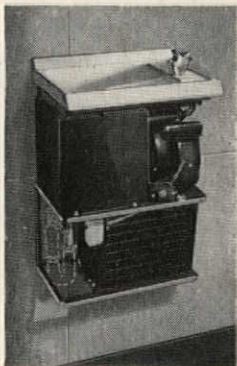
Haws Model HWT-13



CLEAN

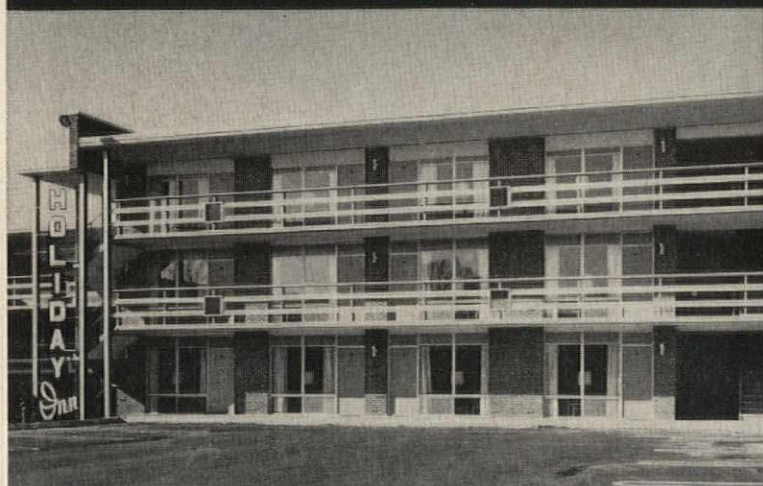
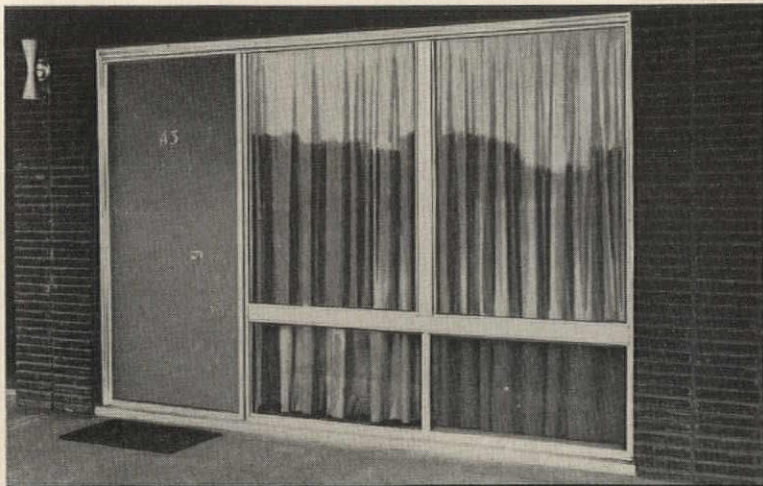
from every angle...

HAWS brilliant new wall mounted electric water coolers are a *clean break* with tradition! Compact design hugs the wall - leaving floor area clear! Crisp, *clean styling* is crowned by gleaming stainless steel - with plumbing and electrical unit completely enclosed. HAWS "clears the deck" for uncluttered maintenance ease and shining *clean floors*. This innovation in water cooler concept and design scores a *clean sweep* for HAWS - leader in the field since 1909! Find out about HAWS' complete line of drinking facilities. See HAWS Catalog in Sweet's Architectural File or write for your copy today.



HAWS DRINKING FAUCET CO.
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Berkeley 10, California

WRITE FOR DATA ON HAWS CAFETERIA AND RESTAURANT WATER COOLERS



Architect: E. K. SHEPPARD & ASSOCIATES, A. I. A.



Architect: RONALD S. SENSEMAN, A. I. A.

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TEXTRON METALS ALUMINUM PANEL WALL

**New Wall Beauty! Lower Maintenance!
Greater Economy! New Flexibility!**

Here is fenestration flexibility that excites the imagination of the architect. Textron Metals Panel Walls are windows, doorway and wall all in one. They admit light, air, view and entrance. This versatile opening allows you greater design freedom . . . use of colored panels, flexibility of window units, and the comfort of insulation and sound-deadening factors.

If you are now planning a motel job, you should get the detailed information on how this new Textron Metals aluminum panel wall drastically cuts initial installation and construction costs, and how they reduce future maintenance and fuel costs to the lowest possible point.



**Get All the Details
Write for FREE
Booklet Today!**

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TEXTRON METALS Co.
Pottsville, Pa.

*Yes, I would like to find out more about
Textron Metals new Motel Panel Wall units.
Please send me complete information.*

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Company _____

Address _____

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Each board in this siding of saw-textured redwood was carefully selected to take full advantage of the decorative color variations. The rustic setting of this church was one of many reasons for the choice of redwood as the prime building material.



Architect: Clark & Beuttler



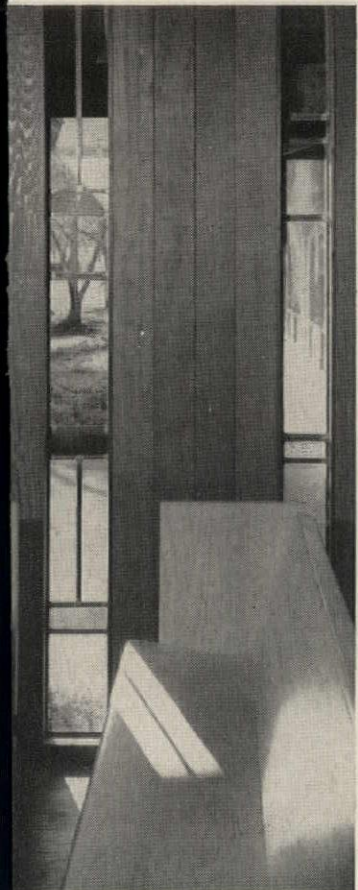
The warmth of redwood is felt throughout this handsome church

A major consideration of the church architect is to design a building that will be completely functional as well as one that conveys an atmosphere of warmth and simple dignity. Many architects of contemporary churches therefore specify redwood, inside and outside, because of its rich, natural beauty and exceptional durability.



CALIFORNIA REDWOOD ASSOCIATION • 576 SACRAMENTO STREET • SAN FRANCISCO • CERTIFIED KILN DRIED REDWOOD

All the wonderful warmth of wood is best expressed in redwood.



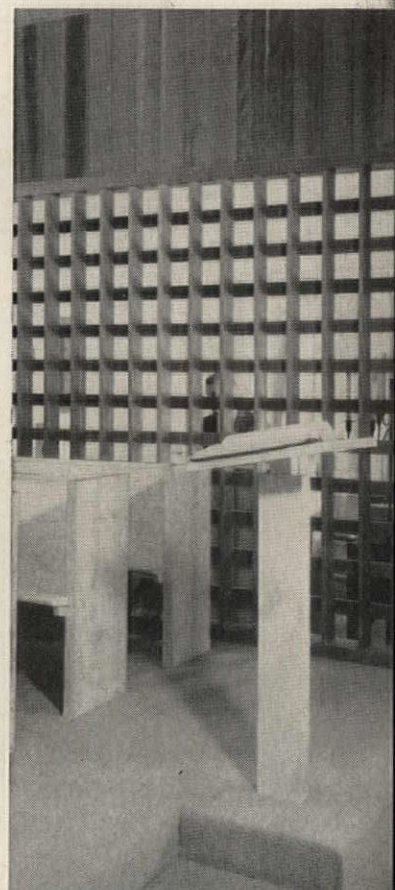
Left to right:

The saw-textured redwood paneling behind the altar was left unfinished to reveal the color variations and decorative grain patterns.

The unfinished redwood paneling used inside the church is in harmony with other materials... naturally relates the interior to the outdoors.

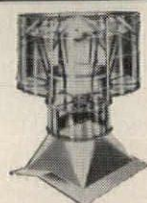
Note how the exterior redwood blends naturally and beautifully with nearby trees and planting.

This decorative redwood grille separates the organist from the choir without completely blocking his view.

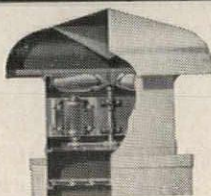


Burt

ROOF VENTILATORS WALL LOUVERS



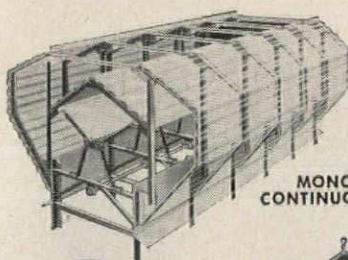
FREE-FLOW FAN



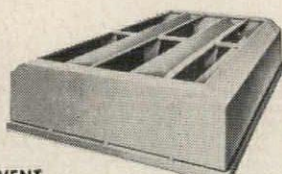
LOW TYPE



FREE EXHAUST FAN



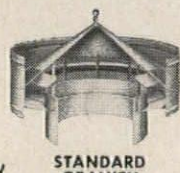
MONOVENT
CONTINUOUS RIDGE



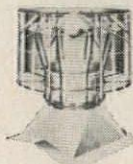
THERMOVENT



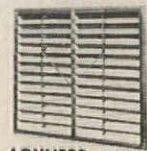
CENTRIFLOW



STANDARD
GRAVITY



FREE-FLOW GRAVITY



LOUVERS



MONITOR TYPE

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BURT'S complete ventilator line includes a type and size to put air to work most efficiently and economically for your specialized needs. BURT'S engineering skill and know-how from more than half a century designing and building ventilators is your assurance of satisfaction. Your inquiry will receive prompt and qualified attention.



FAN & GRAVITY VENTILATORS LOUVERS
SHEET METAL SPECIALTIES

The **Burt** Manufacturing Company

48 E. South St., Akron 11, Ohio

MEMBER AIR MOVING & CONDITIONING ASSOCIATION, INC.

A Washington Report

continued from page 56

sults expected to be obtained.

2. Significance of the results to other communities.

3. Brief outline of the steps involved in carrying out the project.

4. Duration of the project.

5. Lump-sum estimate of the cost, and the prospective source of the local one-third share.

6. Statement that the public body has the legal authority to undertake the project and to contract with the Federal government.

How Projects Are Selected

Selection by HHFA is based on the relative urgency of proposed projects with respect to the objective of eliminating and preventing the growth of slums and blight. And here are the criteria the Federal agency is now using to evaluate each proposal:

1. Whether the project is designed to produce or report on techniques of maximum utility in the solution of problems experienced or anticipated in urban renewal programs.

2. Whether the project covers methods or techniques that can be utilized by other communities within the same regional area or throughout the nation.

3. Whether financing is wholly or partially available through other Federal-aid programs.

4. Whether the readiness and suitability of the public body is such that it can effectively carry out the proposed demonstration.

5. Whether the locality in which the public body is located is a suitable site for the proposed demonstration.

6. Whether the demonstration will make maximum use of existing experience and data.

Emphasis on Use Potential

Those given responsibility for the program realize that its true objective will be served only in relation to the extent of use of its published reports. Final reports filed away on municipal shelves will not aid other localities in solving their urban renewal problems.

Towards more effective use of results, the Washington office has de-

continued on page 248

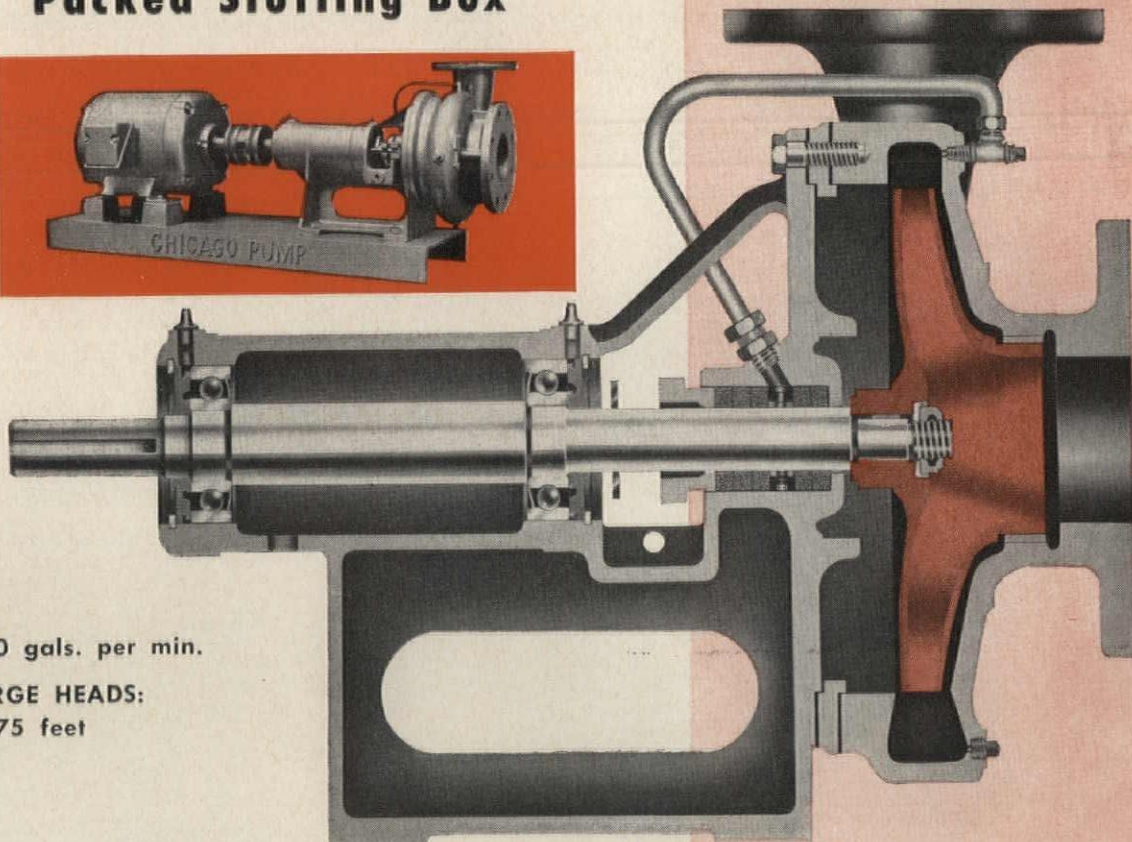
"Chicago"
from

For Hot Water Systems, Cold Water Systems,
Air Conditioning, General Industrial Use

The NEW

FCP
FLEXIBLE-COUPLED PACKED

**CENTRIFUGAL
PUMP with
Packed Stuffing Box**



- 5 to 900 gals. per min.
- DISCHARGE HEADS:
10 to 275 feet

CHECK THESE 5
"Chicago" FEATURES

- 1 Designed for hot water heating systems with temperatures to 250° F.
- 2 Successfully handles impurities normally present in heated and unheated water systems.
- 3 Quiet operation.
- 4 Constructed to give efficient, trouble free operation.
- 5 Backed by more than 50 years experience building quality pumps.

Putting Ideas to Work



FOOD MACHINERY AND CHEMICAL CORPORATION
HYDRODYNAMICS DIVISION

CHICAGO PUMP

622M DIVERSEY PARKWAY • CHICAGO 14, ILLINOIS

Write for Bulletins
107 and 107-H

© 1960—CP—F. M. C.

Another New York skyscraper has been reinforced with USS American Welded Wire Fabric. This is Rockefeller Center's new forty-eight-story Time & Life Building, an outstanding example of contemporary architectural design. The exterior steel columns are encased in stone-faced concrete which project from the walls and serve to accent the vertical sweep of the tower.

The frame supports short span, lightweight concrete slabs reinforced with USS American Welded Wire Fabric. Each slab is 8'0" long and 4" thick. When asked why the fabric-reinforced short-span design was selected for this structure, W. B. Scofield, partner in the structural engineering firm of Edwards & Hjorth, said "This system provides first-class, fireproof construction with a long record of satisfactory service in addition to its proven economy, speed of construction, and occupancy flexibility."

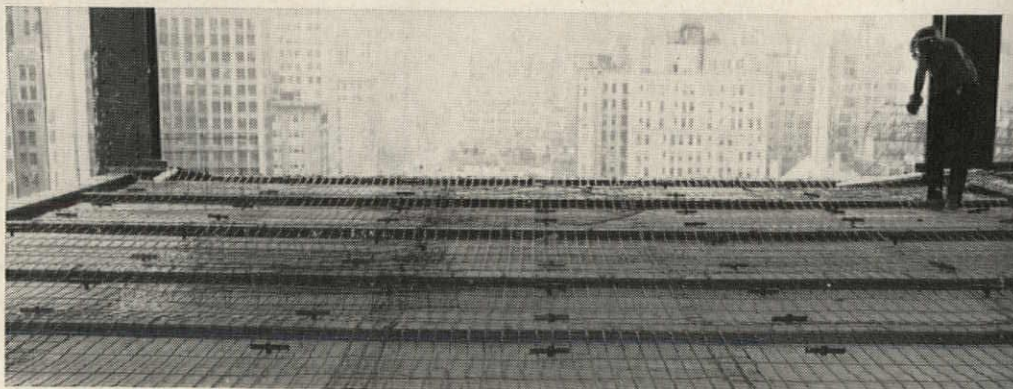
USS American Welded Wire Fabric was also used to reinforce the concrete fireproofing encasement of the columns, girders, and beams. Fabric is excellent for this application because the small, closely spaced members reinforced this thin concrete best. In addition, fabric is easily shaped to fit the contours and is sufficiently rigid to maintain the required shape.

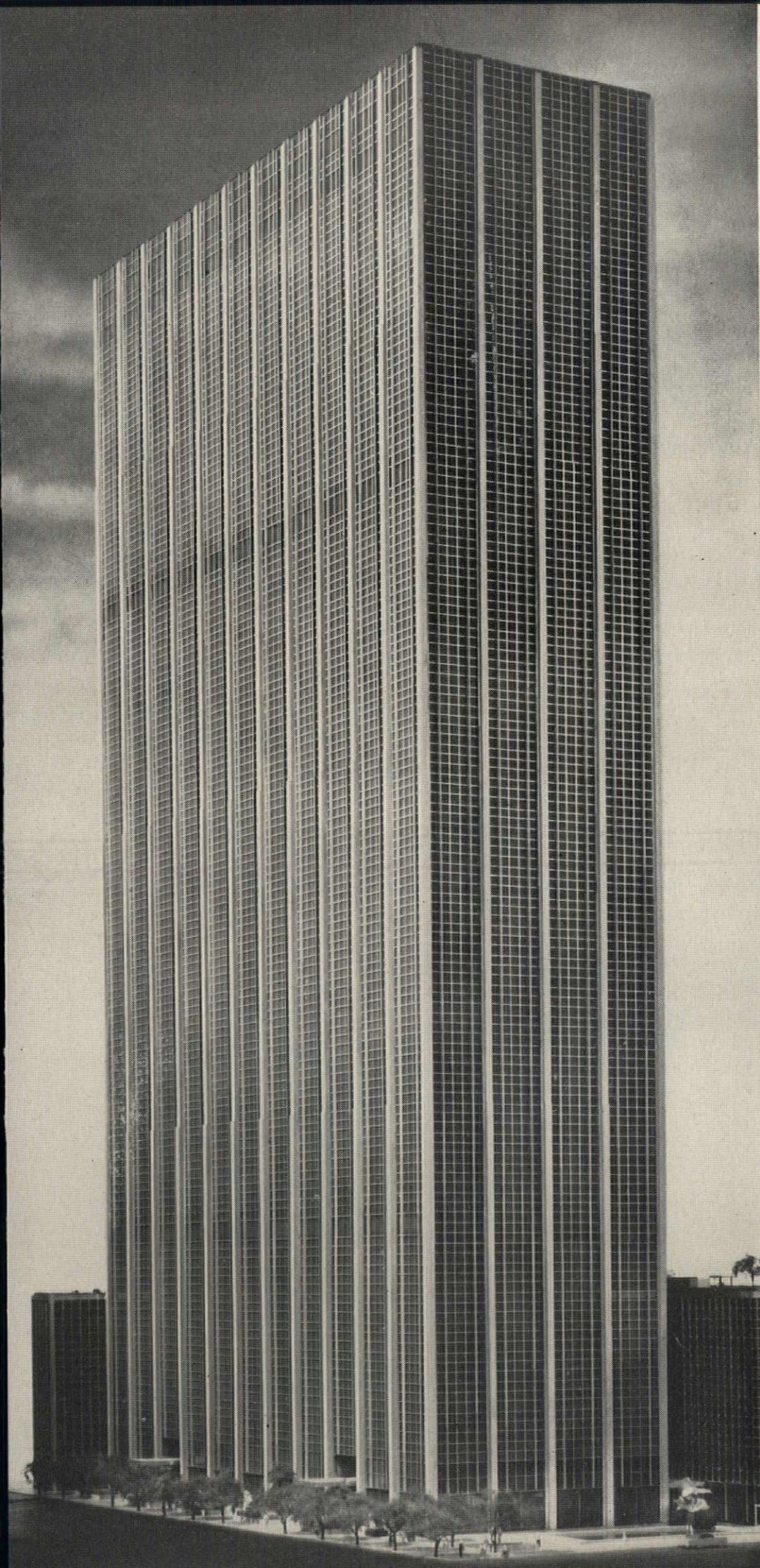
Please write American Steel & Wire, Dept. 0249, 614 Superior Avenue, N.W., Cleveland, Ohio or contact our nearest sales office for complete information on these or any other uses of USS American Welded Wire Fabric.

USS and American are registered trademarks

Short-span fabric-reinforced floor system in Rockefeller Center's Time & Life Building. American Welded Wire Fabric was furnished in long rolls and merely unrolled perpendicular to the beams and on top of the forms. It was draped from the top of the slab over the beams to the bottom of the slab at mid-span. Thus, the reinforcement is in position to best resist both positive and negative moments. The economy of steel placement is apparent. In total, over six million square feet of short-span slabs reinforced with Welded Wire Fabric have been used in New York's Rockefeller Center.

Owners: Rockefeller Center, Inc. and Time Inc.
Architects: Harrison & Abramovitz & Harris
Structural Engineers: Edwards & Hjorth
General Contractor: George A. Fuller Company
John Lowry, Inc.
Fabric Distributor: Fireproof Products, Inc.





**American Steel & Wire
Division of
United States Steel**



Columbia-Geneva Steel Division, San Francisco,
Pacific Coast Distributors
Tennessee Coal & Iron Division, Fairfield, Alabama,
Southern Distributors
United States Steel Export Company,
Distributors Abroad



Colgate University

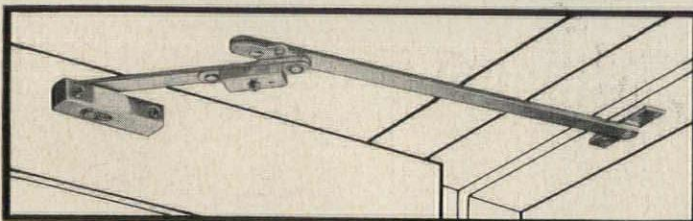
William A. Reid Athletic Center
Hamilton, New York

SELECTED: SG-1480 Series Door Holders.

Use of the folding arm principle allows this holder to be mounted far from the hinges where greater

holding power is exerted. A built-in shock absorber insures resistance to continual hard usage. **FEATURED:** Adjustable tension on the holding pawl to adapt the holding power to varying draft conditions.

Selection of superior hardware always complements superior buildings.



Architect:
OSCAR F. WIGGINS
New York, New York

General Contractor:
BARR & BARR, INC.
New York, New York

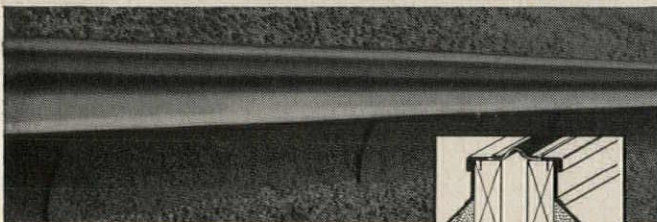
Hardware Supplier:
E. A. DETROYER CO., INC.
Clifton, New Jersey

SARGENT & GREENLEAF, INC.

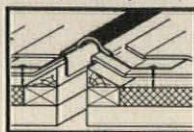
ROCHESTER 21, NEW YORK



Solve Your EXPANSION JOINT Problems with *Expand-o-flash* with the NEOPRENE BELLOWS



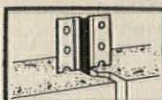
Curb roof expansion joint.



Low profile expansion joint.

Expand-o-flash is made of weather-proof flexible neoprene, bonded mechanically and adhesively to metal edging and is installed with totally relaxed neoprene bellows to allow both sides of the joint to move freely in any direction. Stresses and metal fatigue are eliminated.

Expand-o-flash provides a continuous watertight seal all around the building, both above and below grade.



Expand-o-flash in vertical walls.



Shop fabricated corners and crossovers eliminate errors in the field and reduce the cost • No training needed for installation • Literature, engineering data and sample on request • See us in Sweet's.



LAMONT & RILEY CO.
300 SOUTHWEST CUTOFF, WORCESTER 7, MASS.



National Biscuit Company
Research & Development Bldg.
Fair Lawn, N. J.

Architect: Owner
Contractor:
Walter Kidde
Constructors, Inc.

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Architectural METAL WORK
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For over 100 years, Architects have relied upon Fiske for the widest choice of artistic designs, materials, craftsmanship and dependability. Now, more than ever, Architectural Metal Work by Fiske... in Aluminum, Bronze, Stainless Steel and Iron... represents the finest obtainable.

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J. W. Fiske ARCHITECTURAL METALS, Inc.

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ESTABLISHED 1858



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Nesbitt SILL-LINE
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but never duplicated



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16-gauge enclosures fully braced at least every four feet to equal strength of 14-gauge	✓
The three-sided front locks to a full back panel to form the strongest unit-type assembly	✓
Five styles of enclosure, 11" to 24" heights to meet all requirements of capacity and use	✓
All accessories are expensively die-formed to compliment enclosure design and fit perfectly	✓
Eight-step rust-inhibited baked enamel finish in a choice of six modern decorator colors	✓
Seven stock lengths of enclosure and heating element; any wall-to-wall fit without cutting	✓
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Wide range of capacities, from 700 to 2900 Btu per hr. per lineal ft. (steam)	✓
All ratings approved under the latest edition of the IBR testing and rating code	✓

MEMBER



Sill-Line Radiation is made and sold by
 John J. Nesbitt, Inc., Philadelphia 36, Pa.

LOOK-SEE, my friend! Compare NESBITT SILL-LINE with any other manufacturer's wall fin type of radiation. Decide on the basis of what you can see and feel!

Start with Nesbitt's full one-piece back panel which fits anywhere, even over mullions, wall-to-wall without cutting, insuring perfect alinement and saving of wall trim. Then examine Nesbitt's three-sided front enclosure, die-formed, with turned edges. Note how this front interlocks with the back panel for the *full length of the top and bottom grilles*. Constructed of 16-gauge steel and braced from top to bottom at least every four feet, *this enclosure is as strong as one of 14-gauge — but without extra cost!*

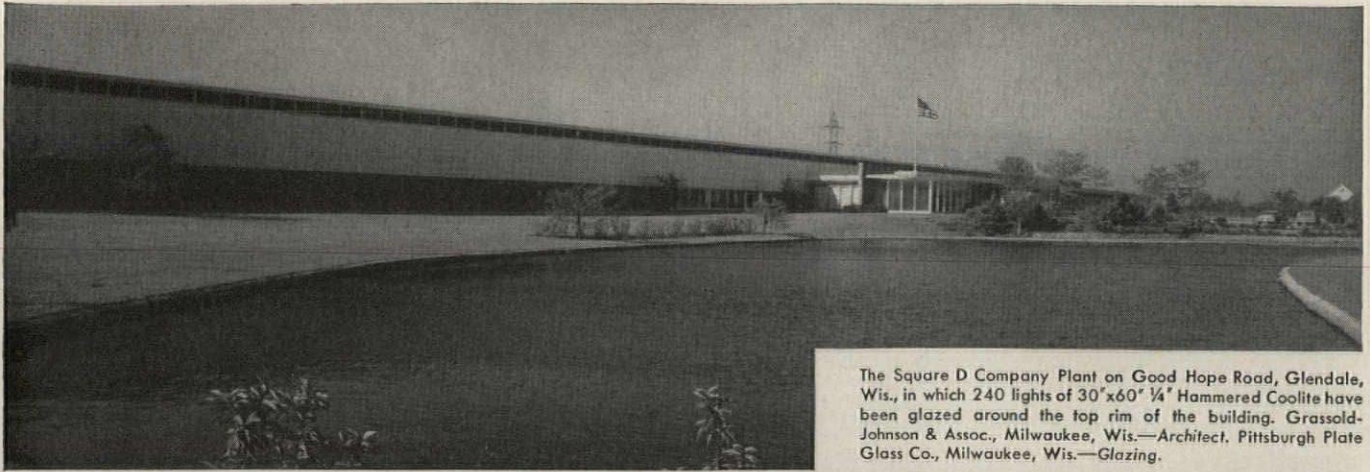
Now examine the Nesbitt accessories — not "after-thoughts," like some accessories, but all smartly designed and expensively die-formed to complete the "world's most beautiful perimeter radiation."

Add Nesbitt's baked enamel finish — flawless result of an 8-step process under strict inspection.

Compare all the Nesbitt features with any others! Remember, like Confucius say: "Chinese copy cost less, worth less, is less. Take real thing, take Nesbitt!"

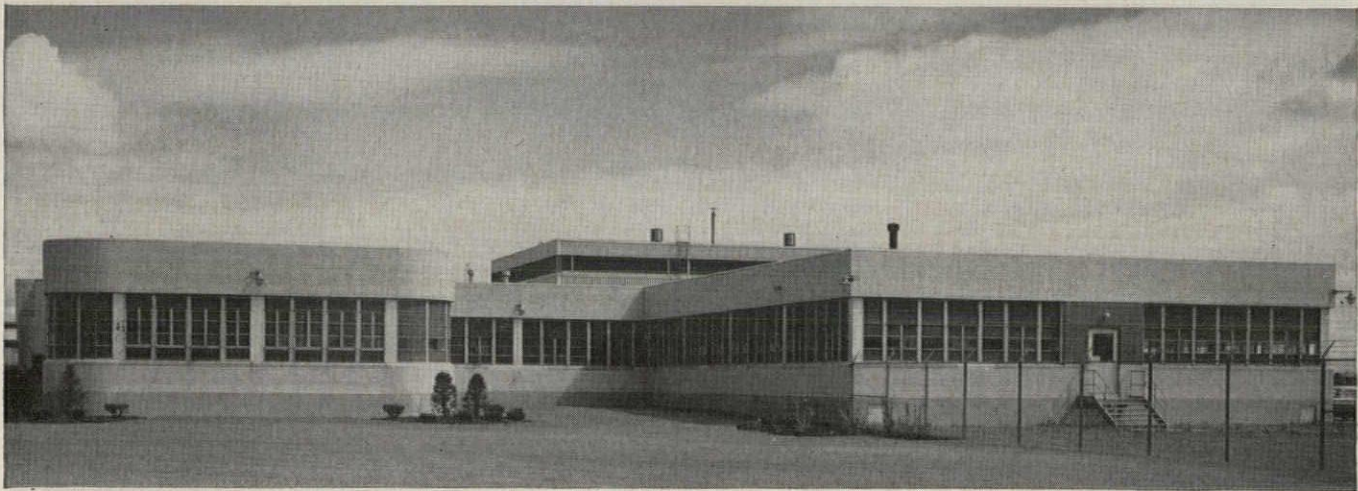
Like to have Nesbitt man bring you sample of Sill-line?
 You write us . . . he come, chop chop!

Nesbitt

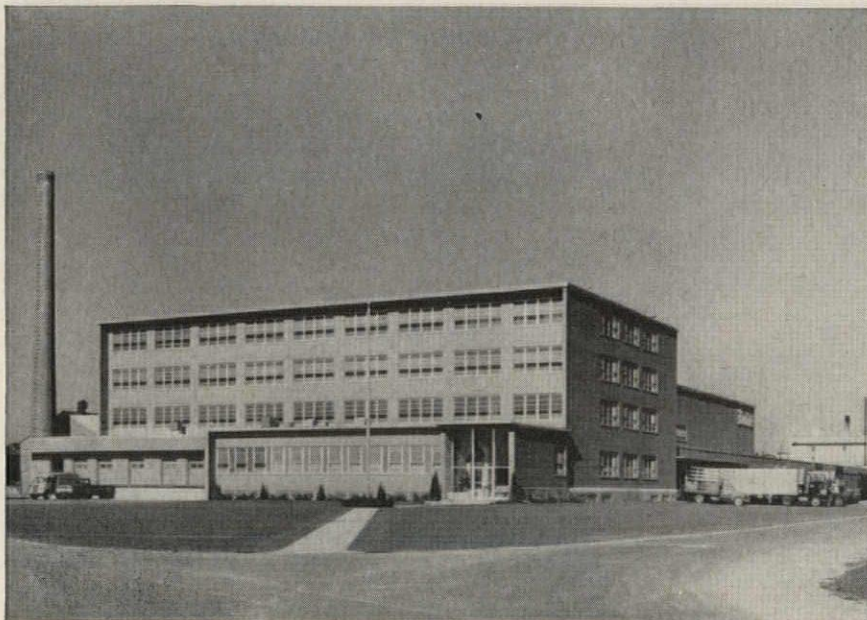


The Square D Company Plant on Good Hope Road, Glendale, Wis., in which 240 lights of 30" x 60" 1/4" Hammered Coolite have been glazed around the top rim of the building. Grassold-Johnson & Assoc., Milwaukee, Wis.—Architect. Pittsburgh Plate Glass Co., Milwaukee, Wis.—Glazing.

MISSISSIPPI GLASS . . .



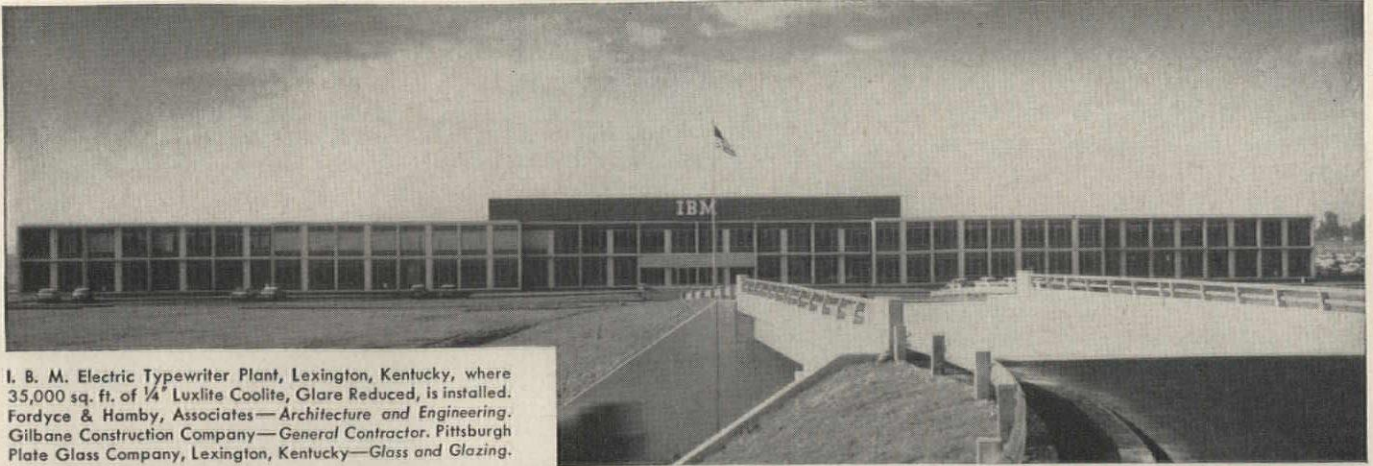
Speer Carbon Company, Niagara Falls, N. Y. Laboratory glazed with 1/8" Luxlite Coolite, Glare Reduced One Side. Pilot house glazed with 1/4" Luxlite Coolite Wire Glass. Otto Preis, New York, N. Y.—Architect. Walter J. Johnson, Niagara Falls, N. Y.—Contractor. United Glazing Company, Buffalo, N. Y.—Glazing Contractor.



Borden Foods Company, Plymouth, Wis. South, east, and west elevations glazed with 1/8" Mississippi Luxlite Coolite, Heat Absorbing Glass. Cowell & Robinson, New York, N. Y.,—Architects-Engineers. McDonough Construction Company of Georgia—Contractors.



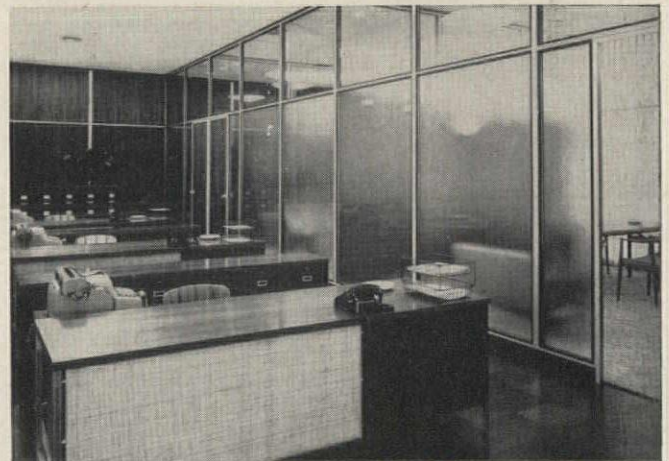
WORLD'S LARGEST



I. B. M. Electric Typewriter Plant, Lexington, Kentucky, where 35,000 sq. ft. of 1/4" Luxlite Coolite, Glare Reduced, is installed. Fordyce & Hamby, Associates—Architecture and Engineering. Gilbane Construction Company—General Contractor. Pittsburgh Plate Glass Company, Lexington, Kentucky—Glass and Glazing.

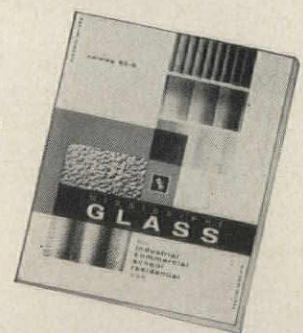
• • IN *Better* BUILDINGS EVERYWHERE

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Partitions of 7/32" Mississippi Factrolite Glass in Mutual Insurance Company of Hartford. Interior by Associated Designers for Interiors, Inc.

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Holiday Inn — "Rilco Laminated Wood Beams Efficient, Economical, Decorative"

"In my opinion Rilco laminated wood beams are an efficient, economical and decorative material for use in a building of any type," states John W. Reilly, contractor for the Holiday Inn Motel, Springfield, Illinois. "The owner is also well pleased with the decor, and we have had many fine comments from the public."

Natural warmth, unlimited design possibilities and low initial cost — all combine in Rilco laminated wood structural members to allow beauty on a budget. Adds Mr. Reilly, "We changed from a prohibitively expensive roof frame to Rilco beams . . . they helped us build the roof before walls and floors thus speeding up the job by several weeks."

Rilco service engineers will be happy to consult with you, without obligation.



Holiday Inn Motel, Springfield, Illinois, constructed with Rilco laminated wood beams up to 31' 9" in length. Architect: G. Wayne Hopper. Contractor: General Contractor, Inc., Springfield.



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A Washington Report

continued from page 240

ecided to start publishing two reports on each completed demonstration; a short resumé condensing the highlights of the findings and setting out the conclusions, and the more familiar bulky technical volume setting out the project in great detail. The first is for busy local public agency officials who would not take time for perusing the technical findings.

Star Project Tests a Method

The most talked-about single project in the program currently is the College Hill demonstration study of historic area renewal conducted and published by the Providence, R. I., City Plan Commission in cooperation with the Providence Preservation Society and the HHFA. (It was this study which resulted in the 1960 Citation of an Organization award being given to the Providence City Plan Commission by the American Institute of Architects at its April convention in San Francisco.)

This College Hill report was the first to come out in two forms, the short condensed version and the complete technical book. It has produced a constant and steady demand for copies, a demand which continues and satisfies URA personnel that they have found an effective method for publicizing results.

The Providence project has stirred unusual international interest. The URA office has handled requests from India, from many European publications, and it reports that Providence itself has had some 200 requests from foreign sources for the study. The domestic demand, too, has been gratifying.

Done up in 213 pages, the document details the survey project and carries a recommended program for preserving historic areas as part of urban renewal.

Studies Coming Up

In projects coming up, urban university localities will receive special study in relation to their inclusion in development, and the initial phases of the use of computers in urban renewal work will be tested in the quest for formulae for financing housing, particularly that for middle and lower middle income groups.

engine power

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NEW COMPACT DIESEL ENGINES AND ELECTRIC SETS

Announcing a new line of Caterpillar four-cycle Diesels that sharply reduce physical dimensions and weight-to-horsepower ratio. Features of durability, fuel economy and dependability, long associated with Cat four-cycle Diesels, are retained.

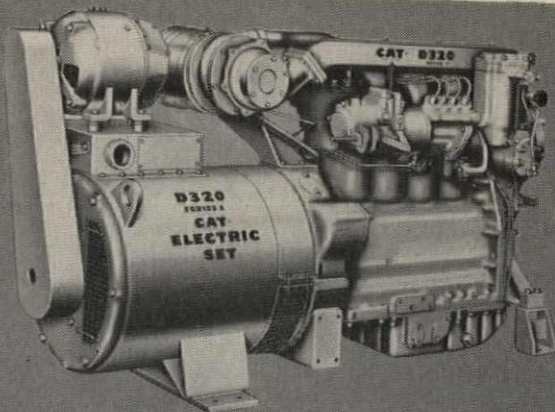
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For complete performance specifications on these new Caterpillar Diesels or on the complete line, see your Caterpillar Dealer. Or, write to Engine Division, Caterpillar Tractor Co., Peoria, Illinois, U. S. A. Ask for the catalog on the complete Caterpillar Engine line.

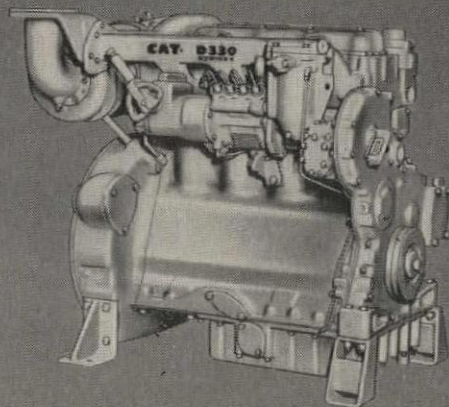
CATERPILLAR

Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

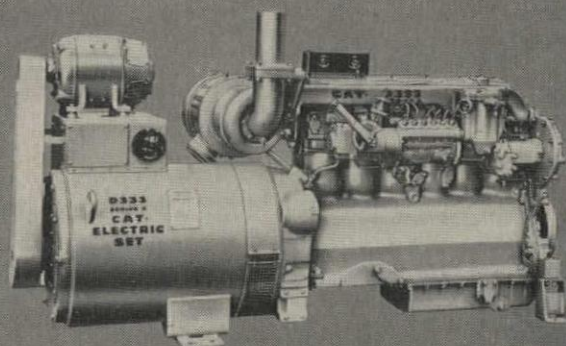
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... REDUCE COSTS

Truscon Insulated Steel Sidewall Panels go up easy, go up fast, speed construction and reduce costs. Economical, architecturally beautiful.

Truscon Panels are constructed by sandwiching a layer of insulating material between two sheets of Truscon 24" Ferrobord® or galvanized ribbed sheeting. Panels are securely interlocked and button-punched for maximum weather-tightness. Panels are furnished painted, or galvanized, in widths of 2'-0", and up to 40'-0" in length.

Truscon Panels assure a savings in erection time, and a neat, trim surface. Interlocking side joints blend with fluted design and provide a pleasing, classic appearance.

Available for immediate delivery. Call your Truscon representative, or write direct for additional data.

Truscon Insulated Steel Sidewall Panels, in long lengths, are easy to apply, reduce construction costs, and cover large sidewall areas fast.



...brick starts clean, stays clean!

Structural Strength Affected?

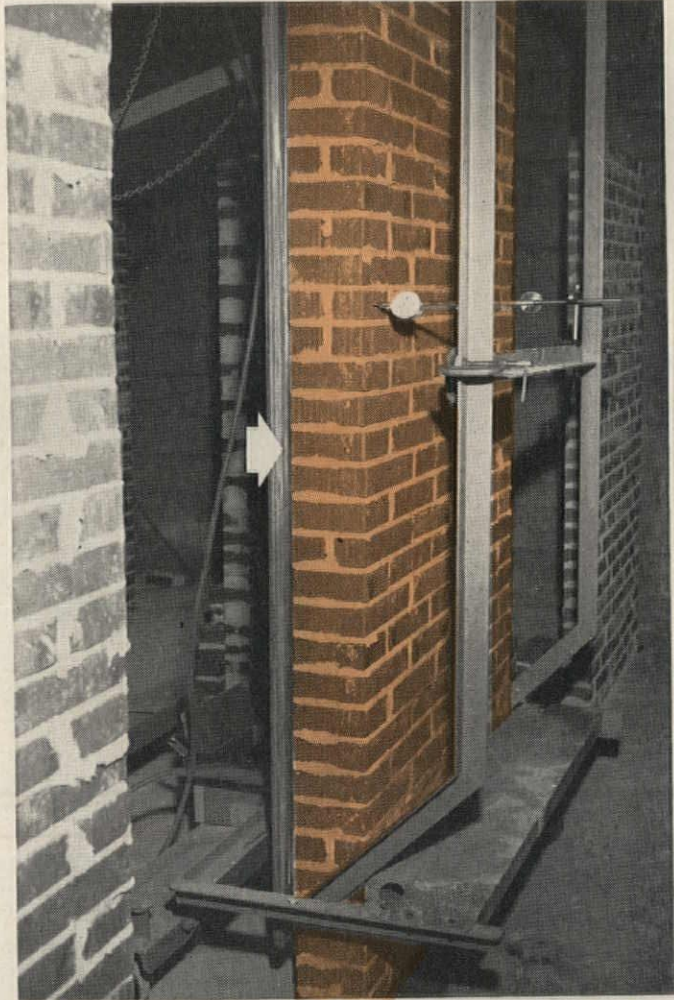
Silaneal is the *only* brick treating material proved safe in both field construction and SCPRF-prescribed wall tests. Over 100 walls have been built and tested under carefully controlled conditions to determine any effect Silaneal may have on structural strength. Photo at right shows test unit at work. These tests have proved that treating the bedding surfaces of brick with suction rates above 20 grams per minute improves wall strength, reduces rain penetration, and eliminates the need for wetting brick before lay-up.

Do ALL Brick Need Silaneal?

In accordance with the recommendations of the Structural Clay Products Institute for unreinforced masonry, brick having an initial rate of absorption or suction greater than 20 grams per minute should have the suction reduced to 20 grams or less for maximum bond strength and minimum water penetration. Brick with a suction above 20 grams should have all surfaces treated with Silaneal. Brick having a suction below 10 grams per minute *should not* be treated on the bedding surfaces to avoid any tendency to "float" during lay-up.

Silaneal Speeds Construction, Cuts Costs:

Brick with Silaneal treated bedding surfaces need no wetting before lay-up. Mortar joints stay workable longer; masons can spread mortar over greater distances, complete more courses before striking joints. Completed walls need only a brushing for clean-up.



Architectural Specifications for Silaneal

From Dow Corning Bulletin AIA File No. 3F.

To receive all the advantages of Silaneal protection, Dow Corning recommends that you use this specification. "Brick having suction above 20 grams per minute (per 30 sq. in. of bedding surface) shall be treated at the brick plant with Silaneal® (manufactured by Dow Corning Corporation). The Silaneal concentration shall be adjusted until the brick pass the following test:

Allow bricks to air-dry 24 hours after treatment. Weigh the brick and place bedding-side-down in $\frac{1}{8}$ -inch of

water. Remove after 60 seconds and weigh again. The average increase in weight shall lie between $\frac{1}{3}$ and $\frac{2}{3}$ gram per square inch of surface tested (between 10 and 20 grams for a nominal 4 x 8 brick having a bedding surface of 30 square inches).

Brick having suction below 20 grams, but which may have a tendency towards efflorescence or other staining, shall be sprayed with Silaneal® on the face and two ends only. Treatment concentration shall be of sufficient strength to control efflorescence and staining."

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2. Place telescoping clothes rod in plate socket



3. X-Pand shelf to desired length — place in position on wall plates. Install rear wall clips.



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- Completely fabricated and packaged.

TYPICAL INSTALLATIONS

Benning Terrace
Washington, D. C.

Architect:
Hogan Egan Wilson
& Corser

Wakefield Garden Apartments
Baltimore, Maryland

Architect:
Benjamin Brotman
Stephen Kornreich, Associate

Proctor Community Hospital
Peoria, Illinois

Architect:
Lankton-Ziegele-Terry & Associates

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Princeville, Illinois

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The Record Reports *continued from page 80*

On the Calendar

July

- 6-8 Conference on civil engineering education curricula, jointly sponsored by Cooper Union, the American Society of Civil Engineers and the American Society for Engineering Education, under a grant from the National Science Foundation—Ann Arbor, Mich.
- 11-18 Second World Conference on Earthquake Engineering—Tokyo and Kyoto, Japan
- 18-19 School Architecture and the Newer Educational Media; the annual A.A. Cleveland School Building Conference—Washington State University, Pullman, Wash.
- 18-29 City and Regional Planning; 22nd annual Special Summer Program—Massachusetts Institute of Technology, Cambridge 39, Mass.

August

- 7-12 Fifth Congress, International Association of Gerontology—San Francisco
- 29ff Annual convention, American Hospital Association; through Sept. 1—Civic Auditorium, San Francisco

Office Notes

Firm Changes

E. L. Christian and W. K. Blake Jr. announce the formation of a partnership for the practice of architecture to be known as Christian & Blake, Architects, with offices at 2919 Highland Avenue, Birmingham, Ala.

Daniel, Mann, Johnson & Mendenhall, Architecture, Planning, Engineering, of Los Angeles, announce the appointment of T. K. Kutay as vice president and member of the executive committee.

Jack McKee, former publisher of the *Charette*, official publication of
continued on page 264

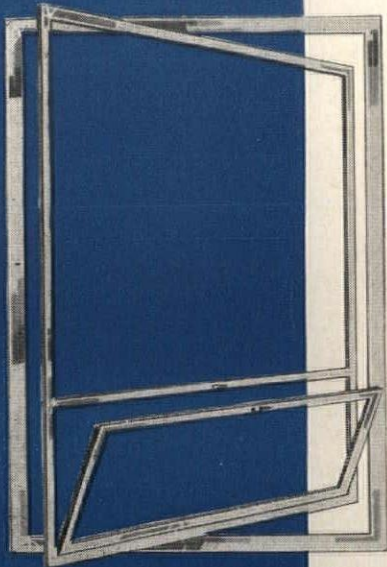
FOR COOPER UNION'S NEW ENGINEERING BUILDING

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ALUMINUM WINDOWS

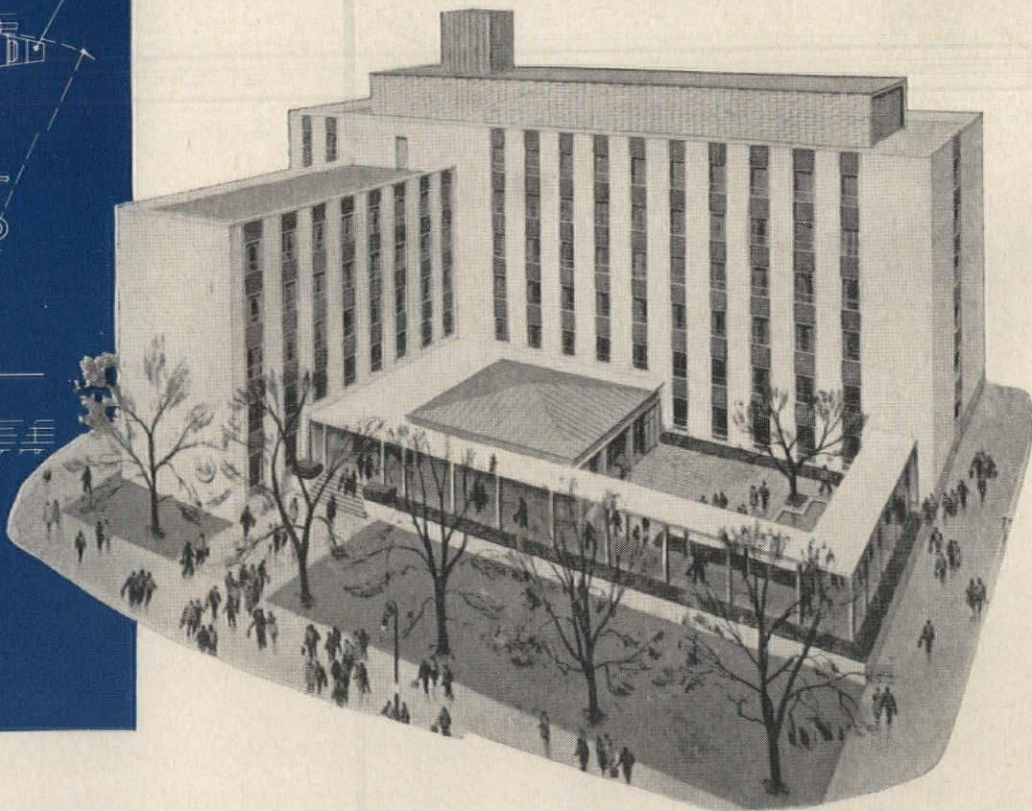
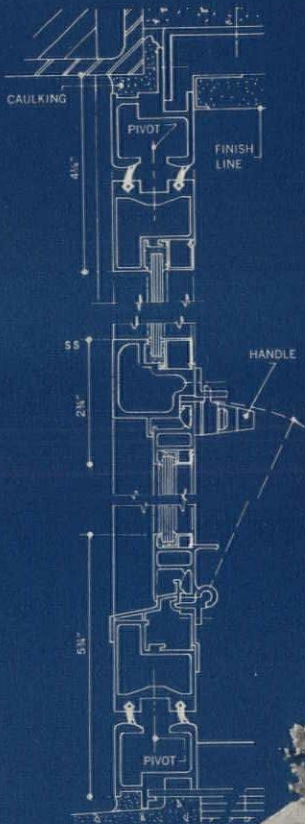
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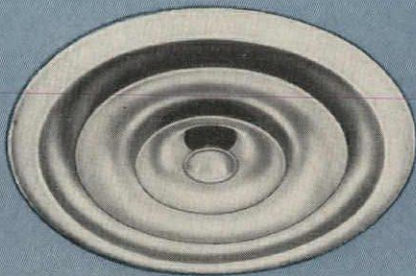
Cooper Union
Engineering Bldg.
New York, N. Y.
Architects: Voorhees, Walker,
Smith, Smith & Haines
Contractor:
Vermilya-Brown Co., Inc.

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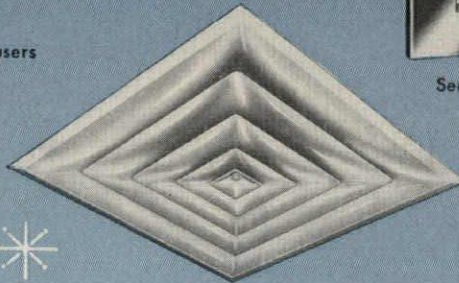
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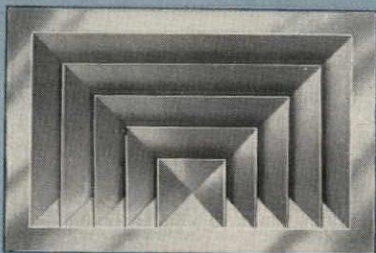
Round & Half-Round Ceiling Diffusers



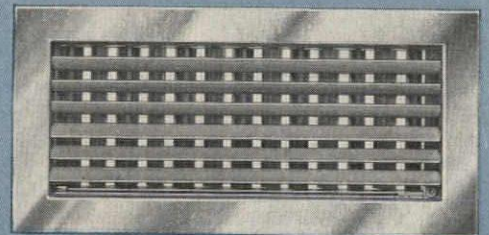
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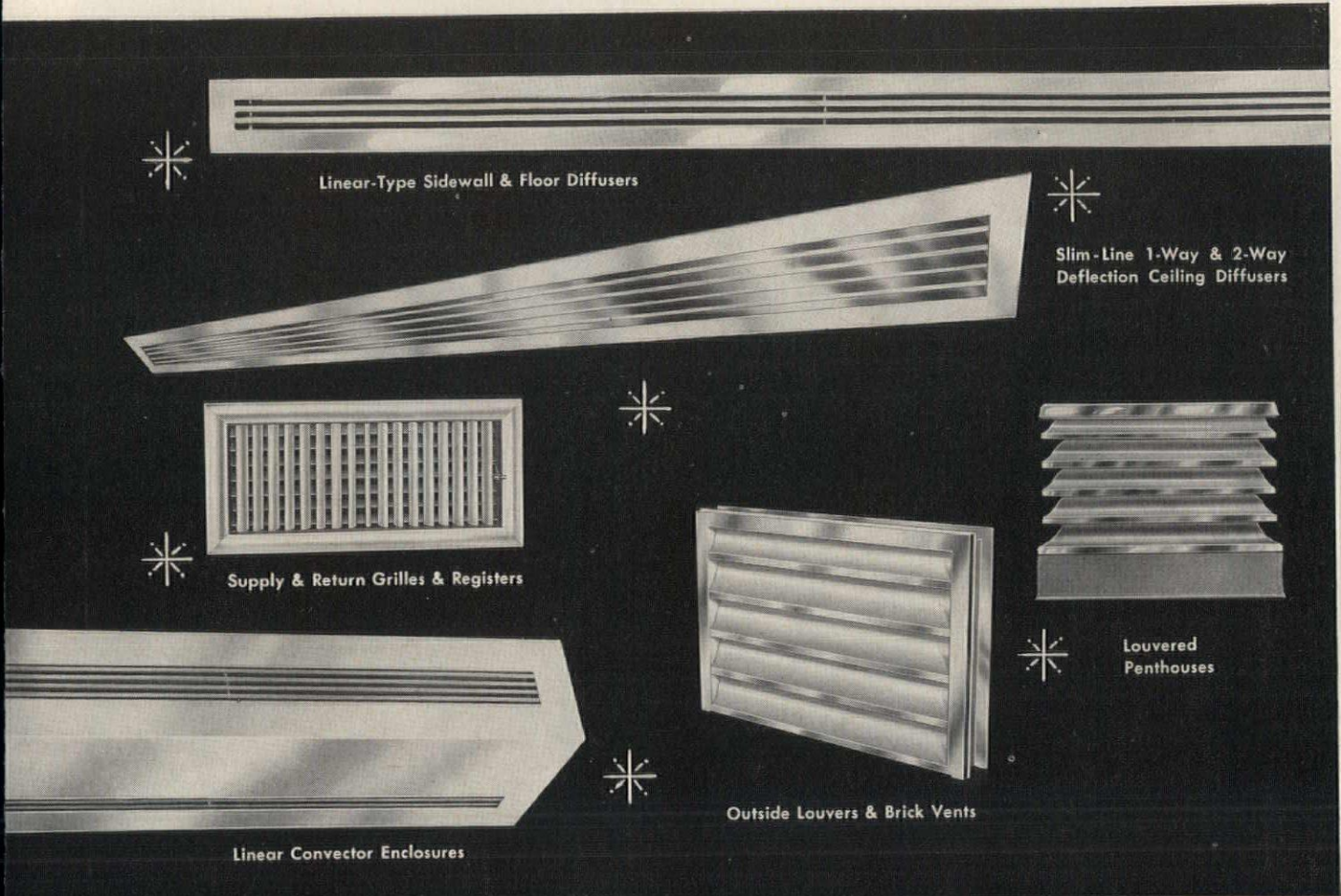
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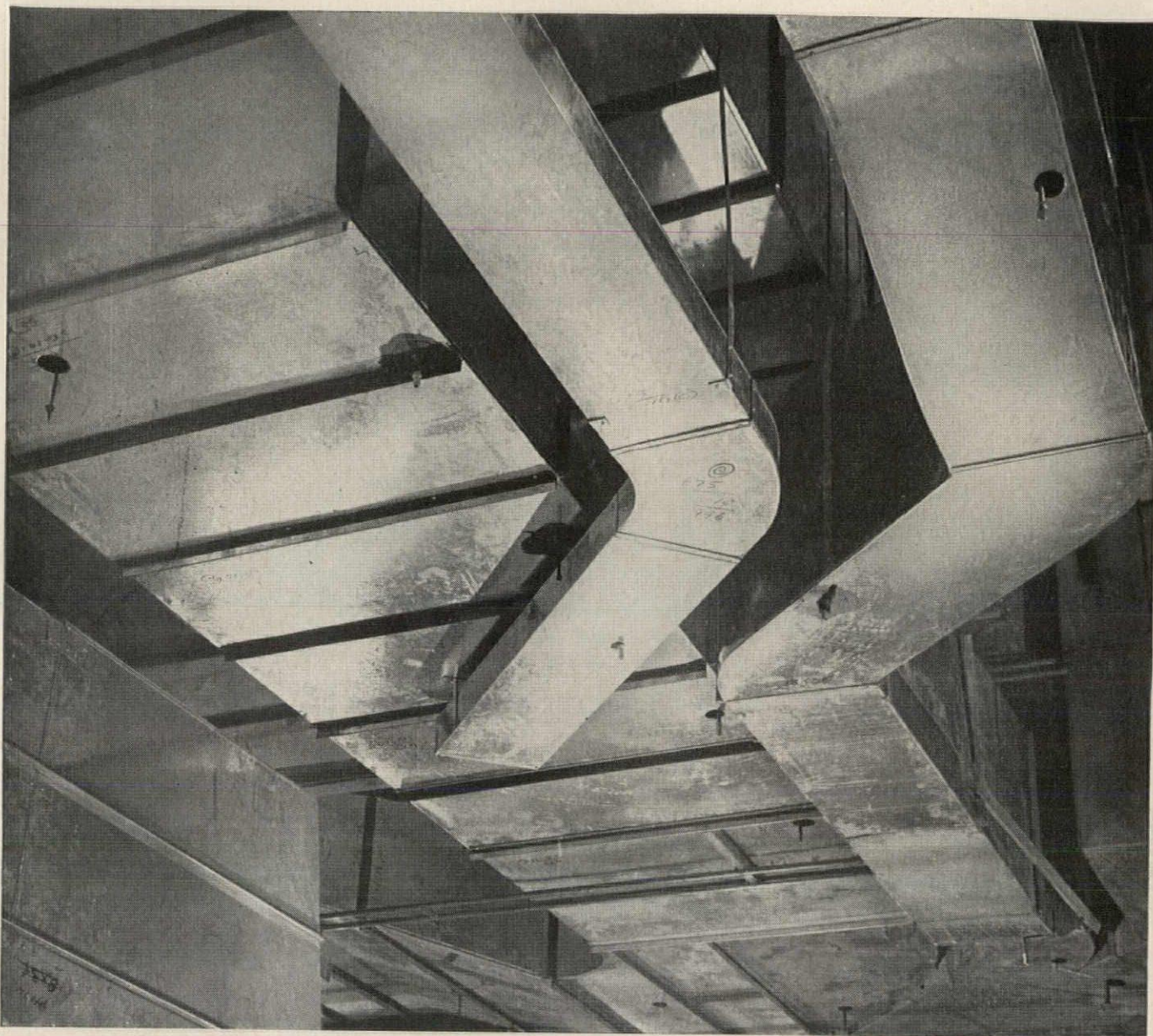
Portfolio of literature on Titus EAGLe-Line extruded aluminum diffusers

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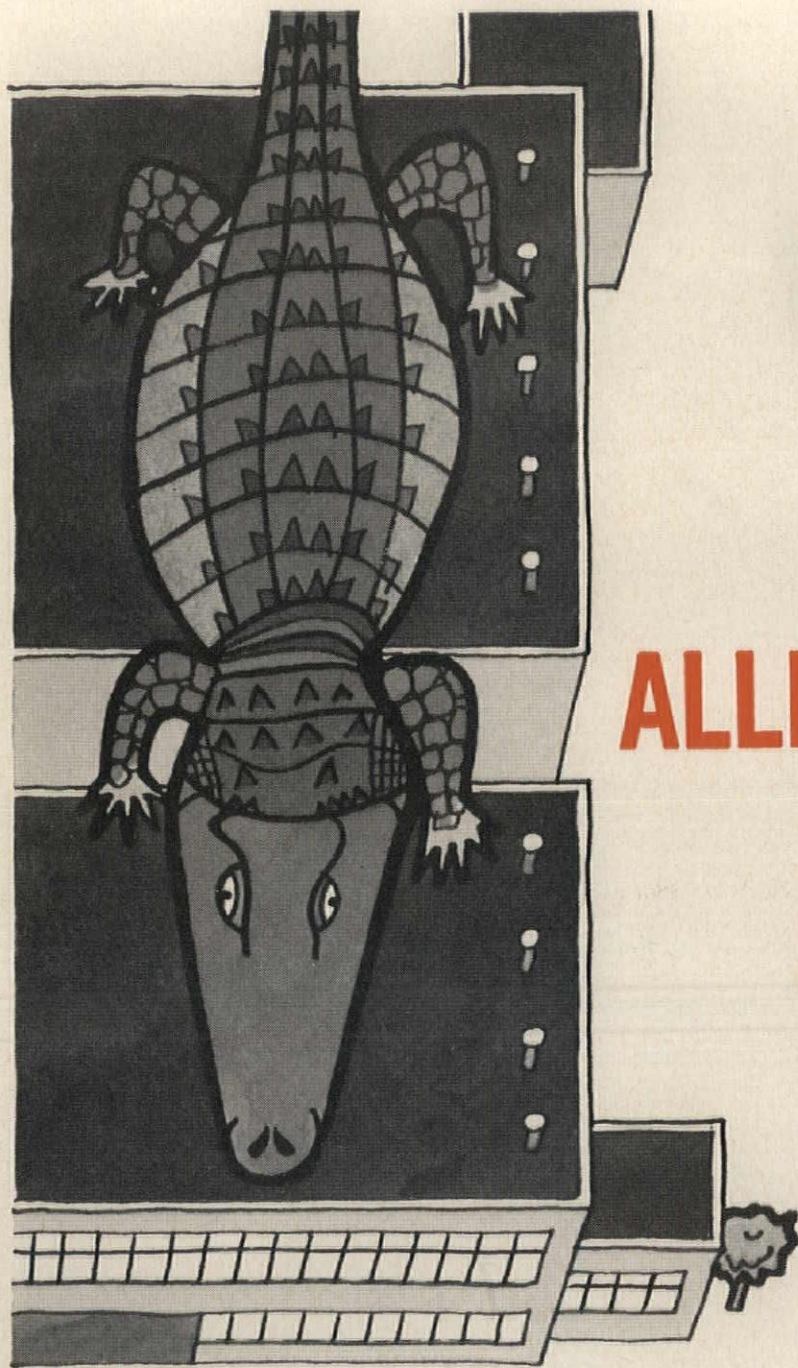


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HOW TO KEEP ALLIGATORS FROM RUINING A ROOF

Cracks that make a built-up roof look like an alligator's back are normal signs of aging due to contraction and expansion of the top "pour coat" of waterproofing bitumen. Water gets in the cracks and may start rotting the paper-roofing felt reinforcement underneath. Eventually leaks may develop and a re-roofing job is required.

Roofing felts called Perma Ply* made of Fiberglas* do not rot. They reinforce the waterproofing in a different way than paper felts because they are porous. The bitumen blends together from one ply to another, forming a solid monolithic weathershield. Alligatoring stops at the first ply. And because Perma Ply Fiberglas felts are porous, they do not trap air or moisture between layers during application . . . the common cause of premature roof failure.

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United States Gypsum introduces five new gypsum drywall systems specifically designed for non-residential partition, ceiling and wall construction. Their low material cost and reduced erection time cut construction cost. Their factory controlled uniformity assures increased fire and sound control—greater strength and durability for longer life and lasting beauty! They open a new era in economy and performance—open the door to newer and more challenging design possibilities for you. For further information, see your gypsum drywall contractor, your U.S.G. sales representative, or write United States Gypsum, Dept. AR-03, 300 W. Adams St., Chicago 6, Ill.



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Any Mounting! Vertical or horizontal — on door or wall bracket, or through-the-wall!

Easy Installation. Simple in-the-field control-wiring to a terminal strip.

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Thermal Protection Against Overload — motor cuts out before damage can occur.

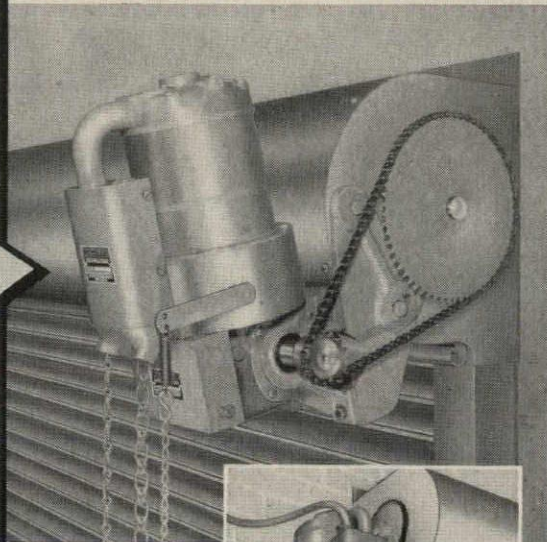
New Worm Gearing for highest efficiency and longest service.

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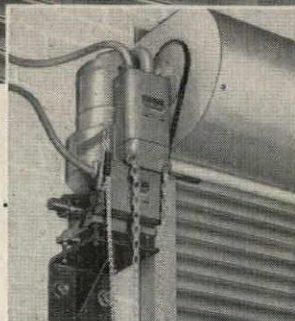
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(OR THROUGH THE WALL)



A new high in door efficiency is reached in Kinnear Rolling Doors equipped with the new Kinnear "Series Three" Power Operator. This is an *all-new* concept in motorization for rolling doors — designed with a single goal in mind — to *reduce to minimum* all chance for troubles from overload, torque shock, constant start-stop action—in a motor that assures easiest installation and maintenance, and permits any type of mounting.

The "Series Three" Kinnear Power Operator, like the Kinnear Rolling Door itself, is the finest achievement today's engineering skills can produce.

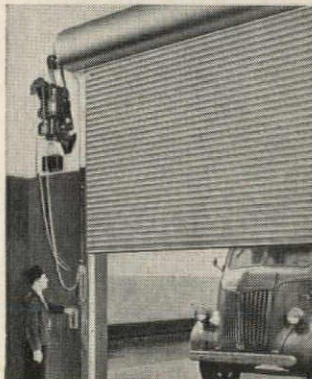
Write for new Power Operator Bulletin

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KINNEAR
ROLLING DOORS
Saving Ways in Doorways



The Record Reports

continued from page 256

the Pennsylvania Society of Architects, has joined the staff of Deeter and Ritchey, Architects, of 3 Gateway Center, Pittsburgh 22. Mr. McKee will act as executive administrator, developing and supervising activities in the areas of program development, public relations and business administration.

Charles G. Gable, A.I.A., has joined the staff of Charles Luckman Associates, Los Angeles planning-architecture-engineering firm, as a project architect.

Victor Hornbein and Edward D. White Jr., Architects, announce the formation of a partnership for the practice of architecture, with offices at 714 Pontiac St., Denver 20.

Raymond J. Detmers and Richard R. Kingscott have joined the mechanical engineering department of A. M. Kinney, Inc., consulting engineers, with offices at 2912 Vernon Place, Cincinnati 19.

Theodore J. Moore, Charles S. Sink and Arthur H. Bush have announced the formation of a new architectural firm to be known as Moore, Sink and Bush, Architects, with offices at 393 Corona St., Denver.

Alfred Easton Poor, Albert Homer Swanke and Robert H. McKay announce that George F. Poehler has been made an associate of the architectural firm of Office of Alfred Easton Poor, 400 Park Ave., New York 22, N. Y., and 425 Thirteenth St., N.W., Washington 4, D. C.

Stevens & Wilkinson, Architects-Engineers, of Atlanta, announce that David James Edwards Jr. has become an associate member of the firm.

Corrections

The RECORD regrets that the listing on page 160 of the Mid-May issue, Record Houses of 1960, gives incorrectly the address for the office of architect Marcel Breuer. The correct address is: 201 East 57th St., New York, N. Y.

more news on page 272

FRANK ADAM

Electrical Equipment

gives life to
mammoth new
department
store project!

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Tishman Construction &
Realty Co., Inc.,
New York, N. Y.

Architect:
Kelly & Gruzen
New York, N. Y.

Electrical Engineers:
Cosentini Associates
New York, N. Y.

Electrical Contractor:
Cucinell Electric Co.
Yonkers, N. Y.

S. Klein Dept. Store
Yonkers, New York

Typical Frank Adam equipment that controls
electric power for S. Klein's new Yonkers store!

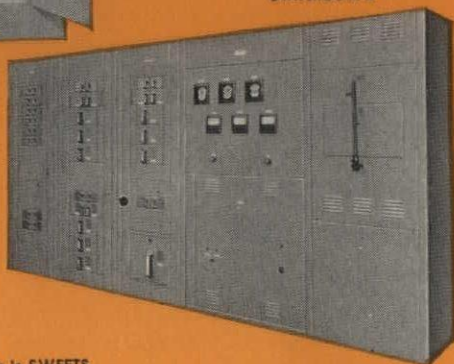


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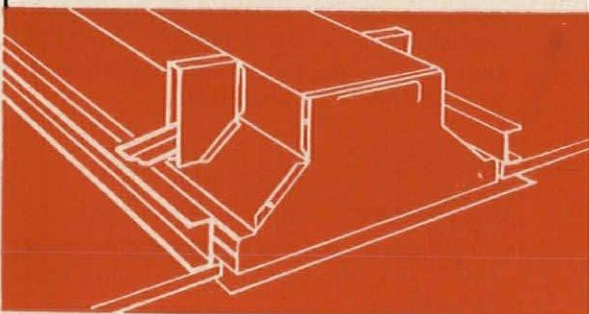
Here's a Sparkling Addition to Sylvania's Popular Troffer Series . . .



Newly installed Sylvania two-foot-wide Troffers with Plastic Lens shielding provide 120 footcandles of quality illumination in the home office of the National Union Fire Insurance Co., Pittsburgh, Pa.

Here's What Sylvania's Troffer Line Offers You

- Only 5½" deep for ideal ballast operation and convenient relamping.
- Broad choice of widths and lengths.
- 2, 3, 4 and 6 lamp units to meet any lighting requirement.
- Concealed hinges and latches.
- Wide selection of shielding media.
- 3 housing types to fit ALL modern ceilings.
- Simple installation in any ceiling.
- Easy access for maintenance.
- 5 types of Accent Units for pattern lighting.



Architect: William B. Simboli & Associates
Consulting Electrical Engineer: Carl J. Long
Electrical Contractor: J. W. Hosick

Sylvania's Troffer Series enjoys tremendous popularity for two basic reasons: (1) outstanding product design together with practical, time-saving features; and (2) an extremely wide range of models to fit all modern ceilings and to suit every individual taste.

Now . . . a NEW addition to the famous Sylvania Troffer family . . . the *Air-Handling Troffer* combining the functions of lighting, heating and cooling into one compact system.

Here is a unit that blends the lighting features and advantages of Sylvania Troffers with the air handling experience of The Pyle-National Company.

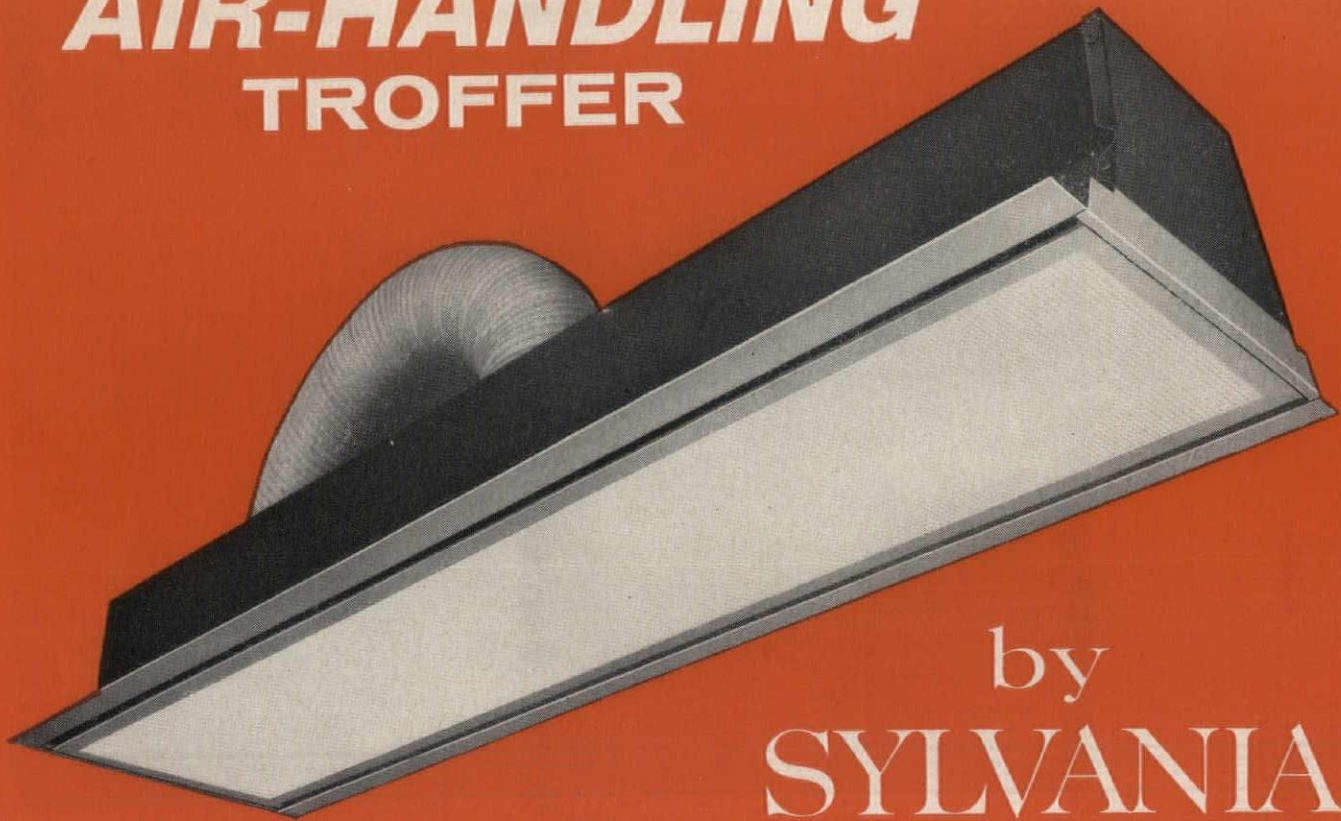
With Sylvania's Air-Handling Troffer you obtain the correct, controlled atmosphere so essential for top effi-

Unique Snap-Up Hanger

The simplest, most effective method of installing troffers in acoustical ceilings and in plaster ceilings with metal framing.

Fixture snaps into place and is supported by toggle arms of Snap-Up Hanger. Positioning and leveling of troffer takes only a few minutes.

The All-New **AIR-HANDLING TROFFER**



by
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ciency working performance. The coordination of mechanical facilities results in excellent overall economy. And uncluttered ceilings, free of separate diffusers, meet the goal of alert designers today.

All of the key features of Sylvania's Troffer Series are incorporated in this new fixture. The air-mixing chamber plus the valve and other air handling accessories combine for a minimum plenum chamber depth for most effective space utilization. The wide selection of fixture sizes, shieldings and number of lamps permits any lighting requirement to be met efficiently and economically.

The low-velocity air-diffusion system provides efficient, uniform air distribution for year-round comfort. Noises,

drafts and soiled ceiling areas are minimized. Because the low-velocity system does not depend on walls or partition locations, room space assignments can normally be changed without affecting the efficiency or operation of the air flow.

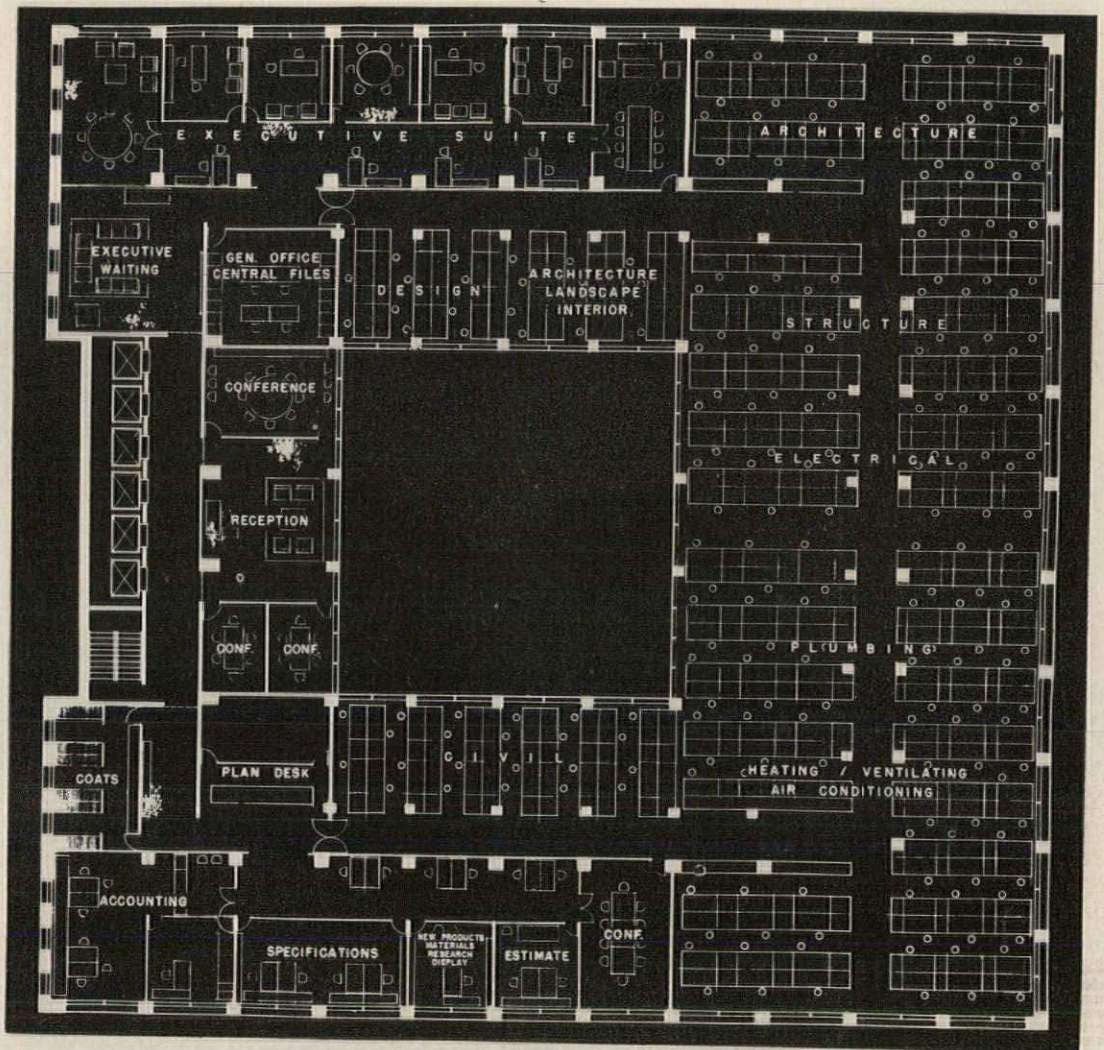
This combination of quality lighting and efficient air-handling fits well with many building or remodeling plans. Perhaps you can use these convenient, money-saving advantages on your next project. Write today for complete information.

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OFFICE PLAN REFLECTS WORK PROGRESSION *at* headquarters of Naess and Murphy, Architects and Engineers, Chicago

A glance at this floor plan shows why Naess and Murphy projects move ahead so efficiently in the firm's newly enlarged and remodeled headquarters.

Start on the left—at the executive offices. Here, original concepts are formulated and projects programmed with the design department. Each job progresses clockwise, around the central light court, through the architectural department and into the various engineering departments.

Naess and Murphy offers complete architectural and engineering service including landscape architecture and interior design. Commercial buildings, both in the U.S.A. and abroad, are its specialty. Today, its staff of 275 specialists works on an impressive list of projects that include Chicago's \$120-million O'Hare International Airport improvement program, the \$67-million Civic Center and the \$44-million Federal Building.

Like so many of the nation's leading architects, Naess and Murphy knows that efficient work progression is aided substantially by its cooperation with the

Dodge Reporter. So, job captains and specification writers continually keep the Dodge Reporter up-to-date on latest developments. They release plans and specifications to the local Dodge Plan Rooms. They also issue complete bidders' lists on all projects to the Dodge Reporter. And they promptly announce contract awards.

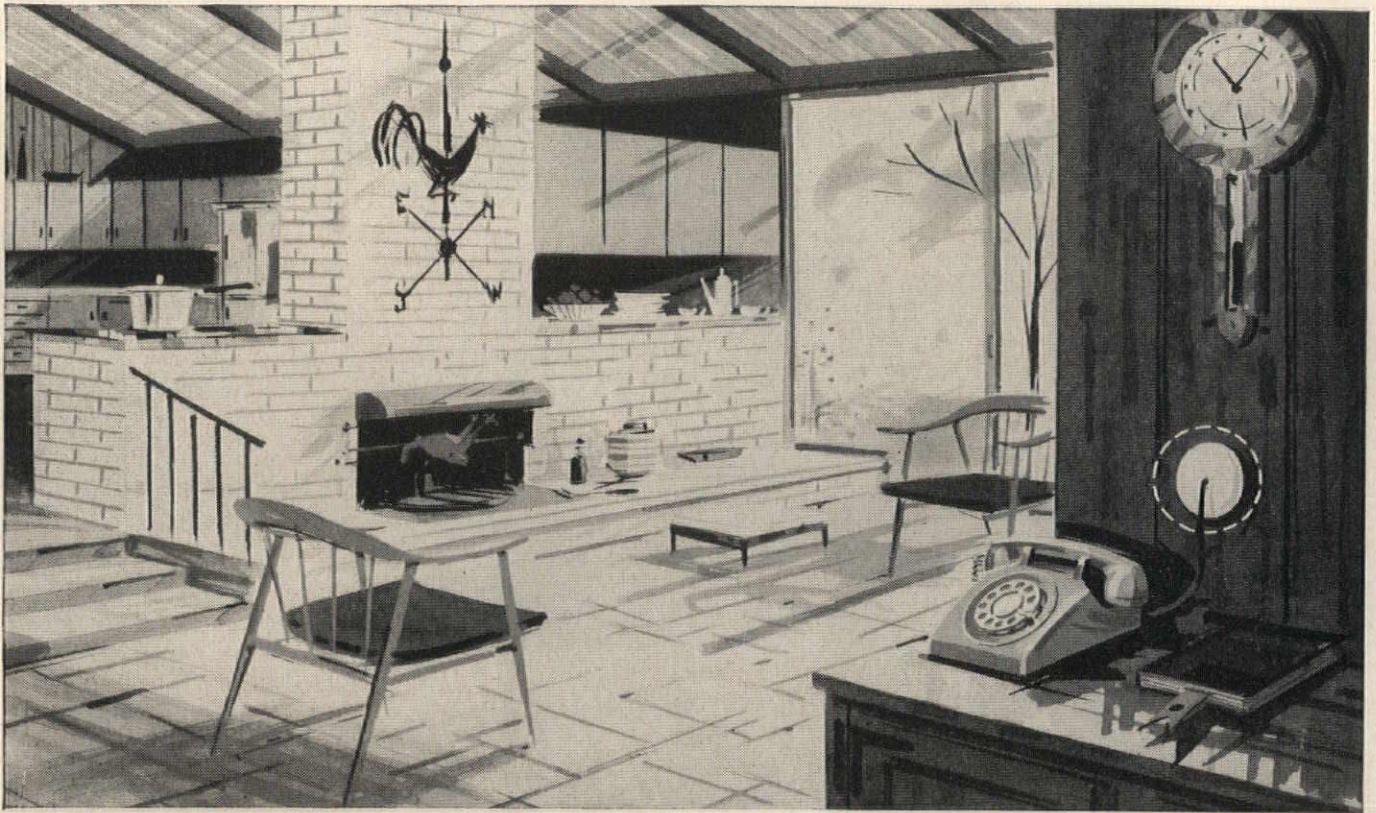
This policy also promotes competitive bidding, which helps Naess and Murphy hold the line on project costs. Its success is proof, again, that **DODGE REPORTS ARE A VITAL COMMUNICATIONS LINK BETWEEN THE ARCHITECT AND THOSE WHO SERVE HIM.**



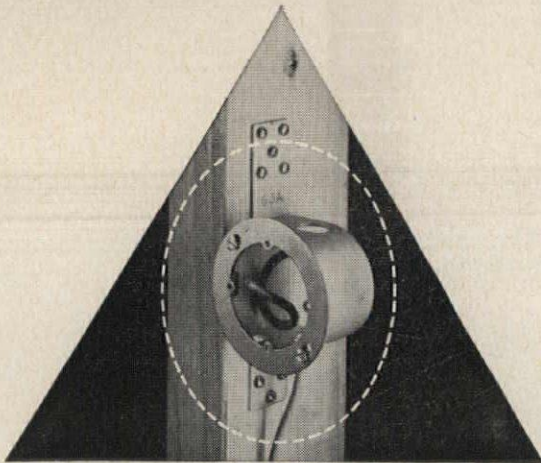
DODGE REPORTS

CONSTRUCTION NEWS SERVICE

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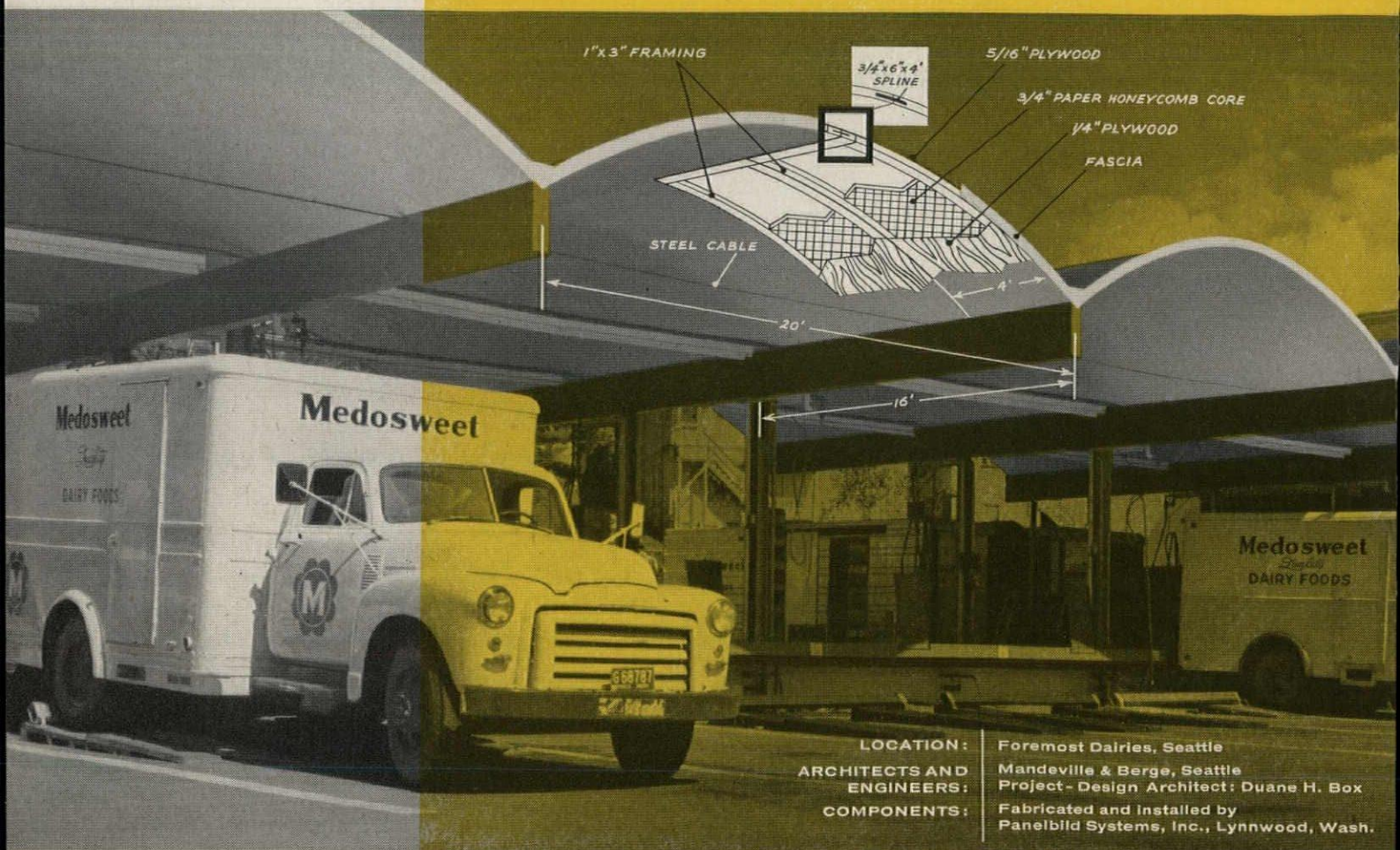
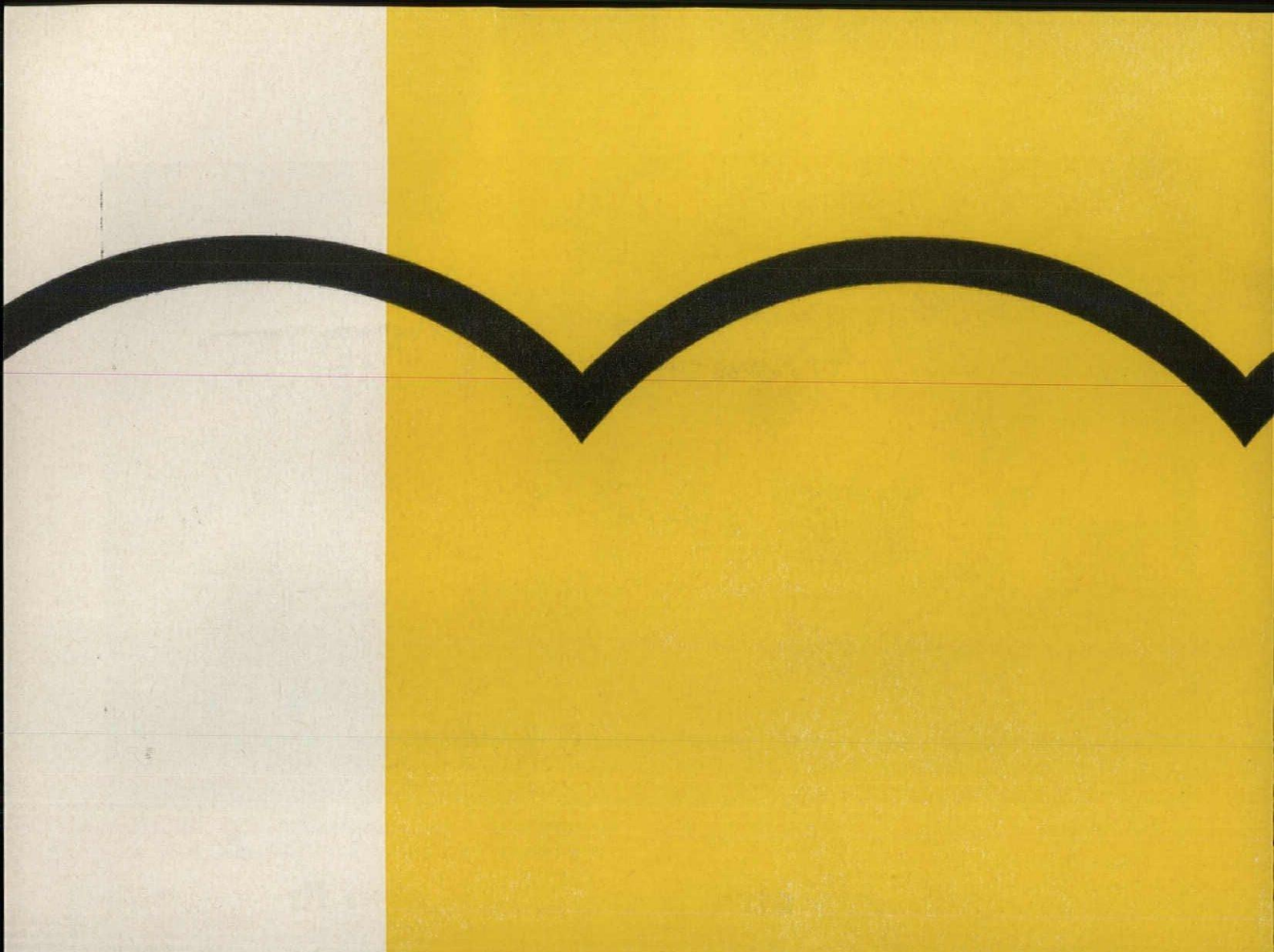
For details of home installations, see
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5/16" PLYWOOD

3/4" PAPER HONEYCOMB CORE

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20'

16'

LOCATION :

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ARCHITECTS AND

Mandeville & Berge, Seattle

ENGINEERS :

Project-Design Architect: Duane H. Box

COMPONENTS :

Fabricated and installed by
Panelbild Systems, Inc., Lynnwood, Wash.



new approaches to structural design with fir plywood



THE GRACEFUL, repetitively curved roof of this loading dock translates an ancient architectural shape—the arch—into today's idiom with modern lightweight fir plywood components.

The floating, airy profile is deceptive. Actually, the roof has extremely high resistance to vertical loading. Construction went fast because of the large size of prefabricated plywood components, and in-place cost was substantially less than thin-shell concrete or a conventionally framed flat roof with the same span.

Capitalizing on fir plywood's high strength and workability, the vaulted roof system offers wide design flexibility through variations in radius, span and number of arches. The distinctive roofline is appearing on more and more schools, commercial buildings and homes.

In this application, 12 bays, 20 x 40 ft., and two half bays shelter 48 loading stations along a 260-ft. conveyor platform. Vault supports are beams and steel columns. Roof components are 4 x 13-ft. curved stressed skin fir plywood panels, used in pairs (spline jointed at midpoint of the vault) to form an arch with a 16-ft. radius and a 2½-ft. rise.

For basic design data on fir plywood or information about fir plywood components, write to Douglas Fir Plywood Association, Tacoma 2, Washington. (Offer good USA only.)



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Aid to School Building Voted By House for First Time

Federal aid for school construction, housing, minimum wage and a few other highly controversial subjects were starring on the Congressional agenda last month as the 86th session pushed toward adjournment before the July political conventions.

The legislators were trying to

make up their minds on just what to do with proposals for aiding labor depressed areas after President Eisenhower had vetoed the Democratic bill which would have authorized \$180 million for aiding the economically distressed pockets—there were 91 of these at latest count—and what to do with other issues involving medical aid for older people, legalizing secondary boycott picketing

for the construction industry and extending the debt ceiling provision.

It was inevitable that much of this important legislation would become enmeshed in the last-minute drive toward adjournment with political pressures somewhat stronger in this election year.

The bill proposing Federal assistance for the construction of classrooms received passage by the House for the first time in history and gave advocates new hope that this might be the year for a concerted program of assistance. A conference committee took up the House and Senate versions to work out a single measure in form acceptable to both branches. A Presidential veto at that time threatened any measure that reached the White House containing authorization for oversized Federal contributions or partial payment of teachers' salaries. The President is on record as being especially opposed to the latter.

The parliamentary problem with the school aid bill was especially complicated by House approval of the Powell amendment, permitting authorized funds to go only to desegregated schools.

The House passed its bill May 26, a four-year, \$1.3 billion measure, on a 206-189 vote after two days of debate. In its final form, this measure provided \$325 million in each of four years with the Federal grants to be matched by recipients in all four years. During the first two years, the matching funds could have come from both state and local sources while in the last two they would have had to come from the states alone.

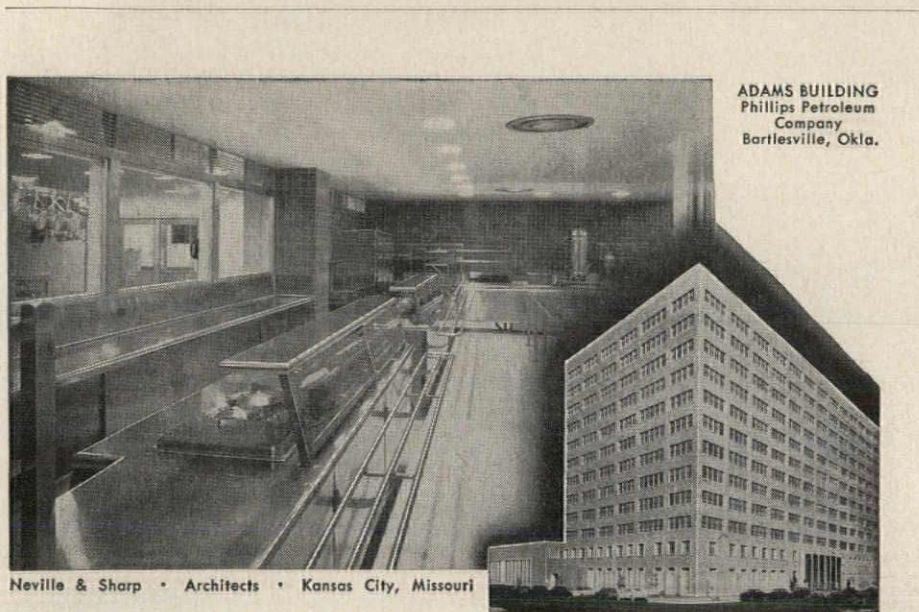
Buildings or Teachers?

The Senate had put through its school construction bill as early as February 4 on a 51-34 vote. This was a two year program involving authorizations of \$1.8 billion and allowed the Federal money to be used either for school construction or for teachers' salaries.

The Senate measure had no segregation restriction as did the House bill, and the House version had no teachers' salaries provision.

As one legislator pointed out, although Federal aid to education had been considered for decades, had been debated for 12 years and had

continued on page 282



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- More than a year ago, employees of Phillips Petroleum Company at Bartlesville, Oklahoma, began to enjoy the many facilities offered in this beautiful and newly constructed Adams Building . . . not the least of which is the Van-equipped food service.
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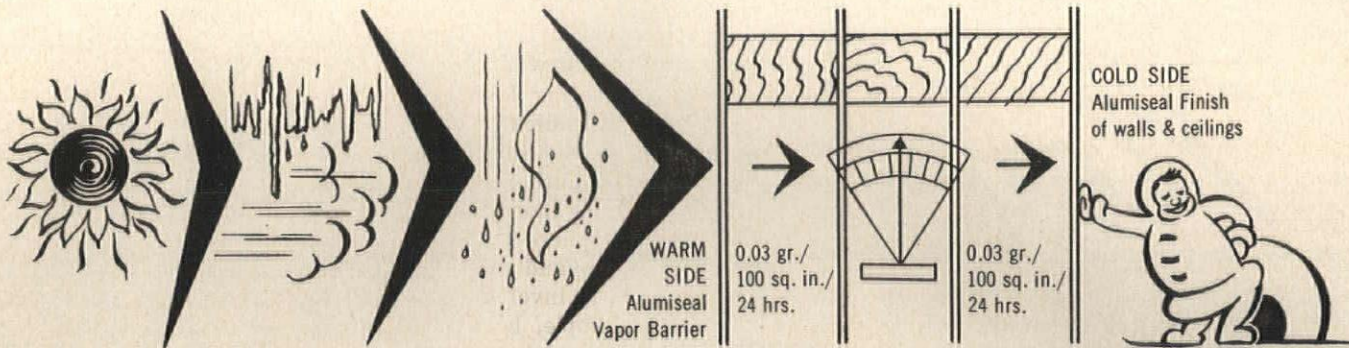
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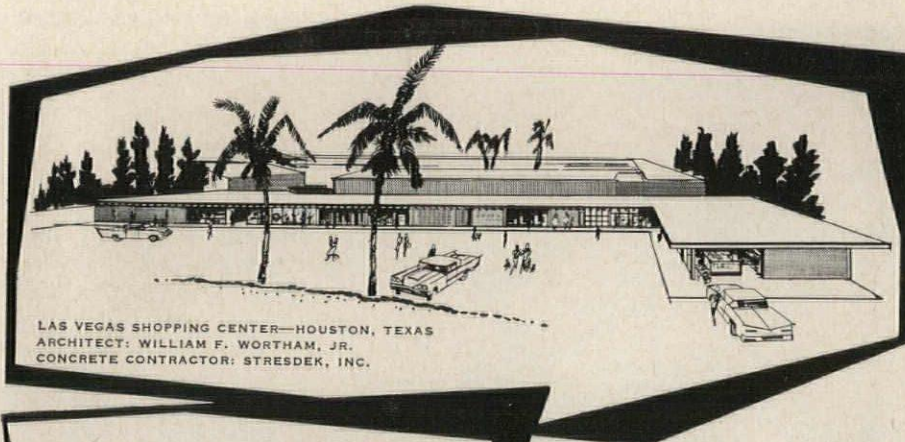
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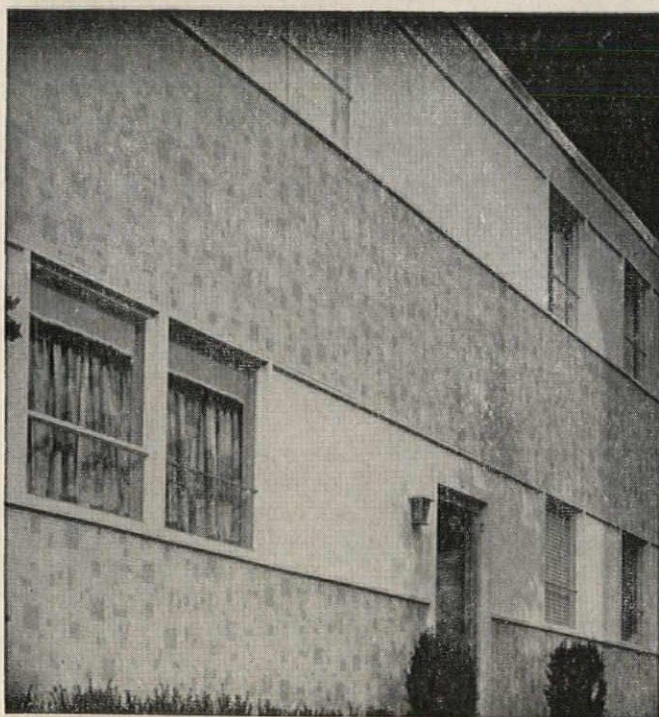
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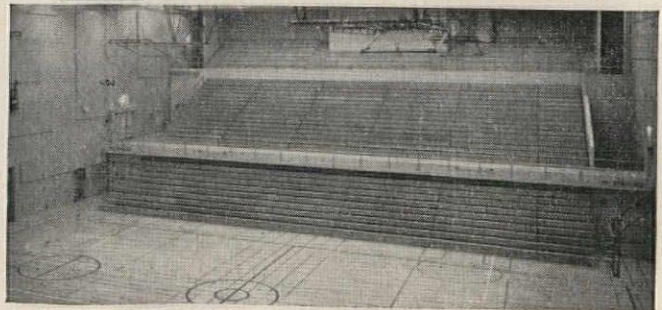


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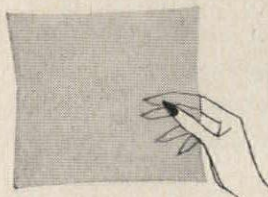
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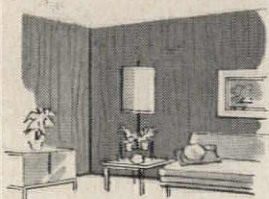
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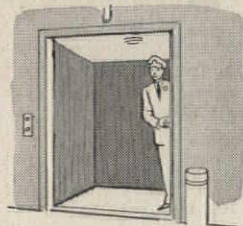
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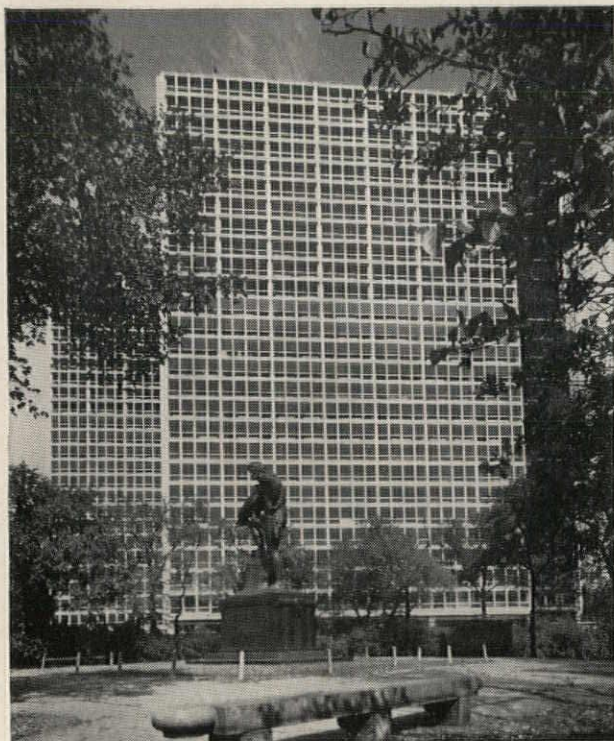
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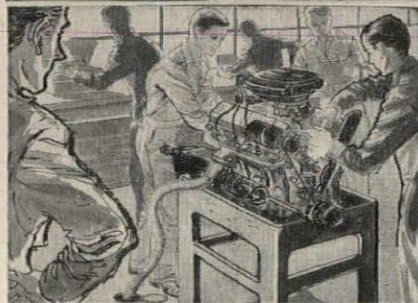
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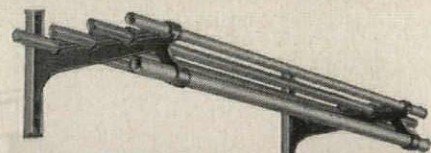
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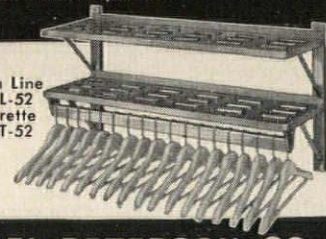
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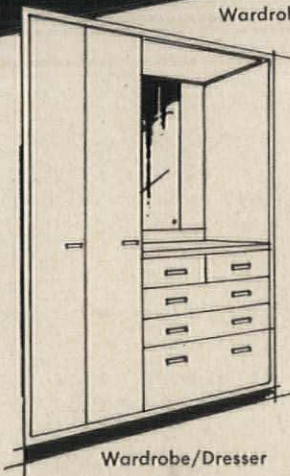
by *St. Charles*



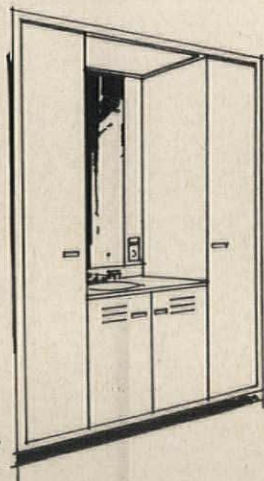
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Medi-Serv Unit



Wardrobe/Dresser



Wardrobe/Lavatory



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Nurses Station. Compact, space-saving "Medi-Serv" Unit includes sink, refrigerator and adequate storage for medicine preparation needs. Custom designed nurses desk includes nurses call unit.

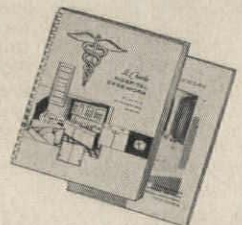
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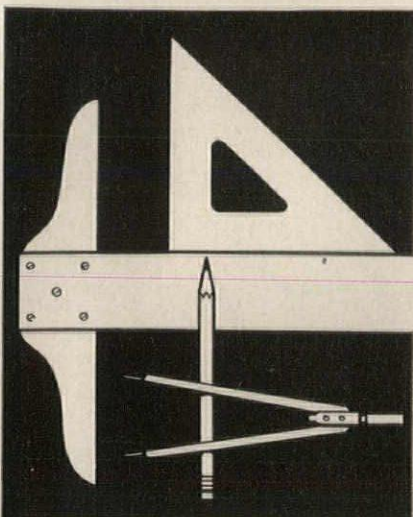
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PAPER

the *personal*
food service

Washington Topics

continued from page 272

received Administration support from time to time, the House had never approved a bill before.

N.A.R.E.B. Makes A Survey

While the National Association of Real Estate Boards has scrupulously avoided taking any position on the subject of Federal aid to education, it announced results of a survey which gave support to opponents of Federal assistance.

H. Walter Graves, Philadelphia, chairman of N.A.R.E.B.'s Governmental Efficiency and Economy Federal Committee, said a survey of real estate board presidents showed 83 per cent reporting that needed expansion in the public school system can be provided by state and local government.

States considered to have special need of Federal aid for public schools are among those that impose the lightest property taxes upon their own citizens, Mr. Graves said.

Case Bill Asks Cabinet Post For Transportation Functions

One of the later bills introduced in the 86th Congress was that of Senator Clifford P. Case of New Jersey, calling for the creation of a new Department of Transportation to which would be transferred functions of the Federal Aviation Agency, the Bureau of Public Roads and other agencies with roles and missions related to the field.

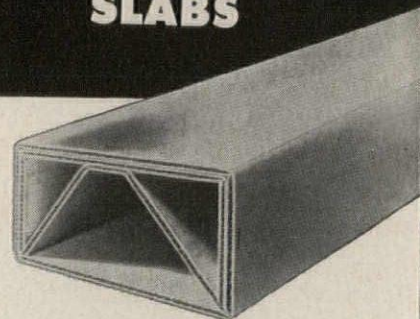
Senator Case contended that the national transportation system, as noted by a Department of Commerce survey, was presently out of balance. He held there was little coordination between the wide variety of Federal programs designed to regulate, subsidize and promote various forms of mass movement throughout the nation.

"The public is not served to the extent it might be," he said, "because of this patchwork of regulations and subsidies which helps to prevent the development of the best in each transportation system."

The Case proposal would transfer promotional and administrative functions of the regulatory agencies to the new Department, leaving them with *only* regulatory duties.

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IT'S A

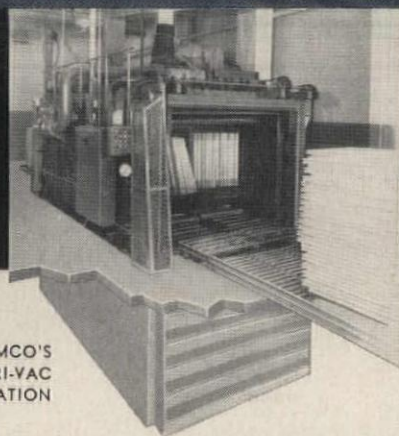
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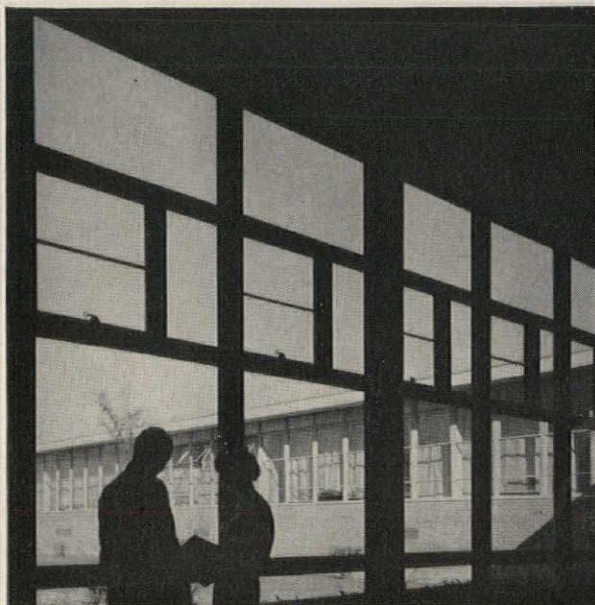
TOTAL MANUFACTURING FOR THE BUILDING INDUSTRY FROM RAW TO FINISHED PRODUCTS

Archbishop Ryan Memorial High School, Omaha, Nebraska. Ceco Curtainwalls of aluminum projected windows with porcelain enameled panels; Leo A. Daly Company, architects; Parsons Construction Company, contractors.

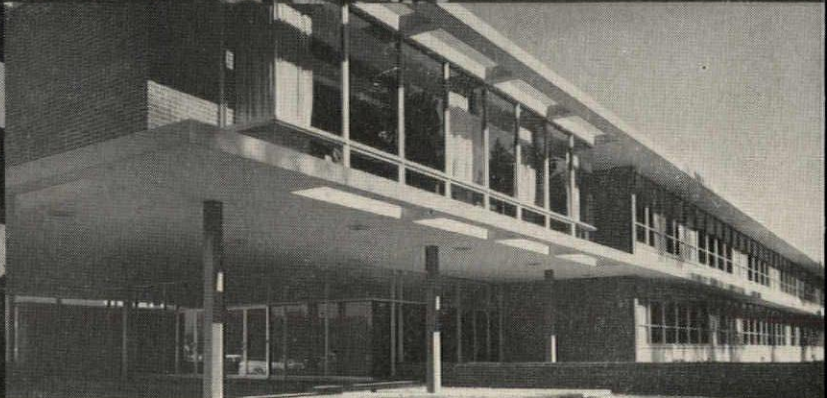
Marmion Military Academy, North Aurora, Illinois. Ceco Curtainwalls of aluminum projected windows with porcelain enameled panels; Belli & Belli, architects; Arnold Lies Company, contractors.

Denver-Chicago Truck Terminal, Denver, Colorado. Ceco Curtainwalls of aluminum projected and fixed windows; Toll & Milan, architects; Gerald H. Phipps, Inc., contractors.

Apartment Building, Cannon Point South, New York, N.Y. Ceco series 60 aluminum double-hung windows: Paul Resnick, Harry F. Green, architects; Blitman & Tischler, supervising engineers.



Talawanda Consolidated High School, Oxford, Ohio. Ceco intermediate projected steel windows: Potter, Tyler, Martin & Roth, architects; Knowlton Construction Company, contractors.



New Greenfield High School, Greenfield, Massachusetts. Ceco series 500 aluminum projected windows: James A. Britton, architect; E. J. Pinney Co., Inc., contractors.

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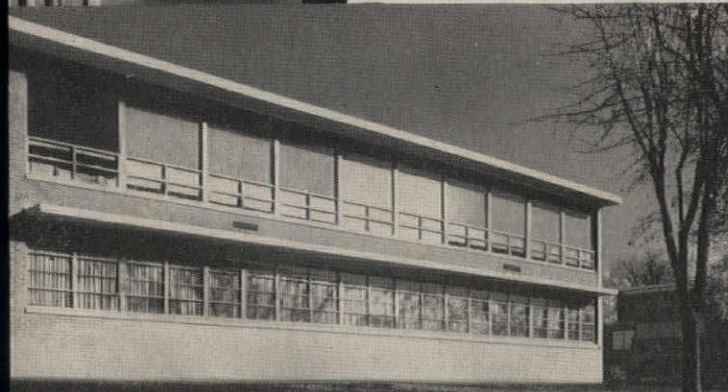
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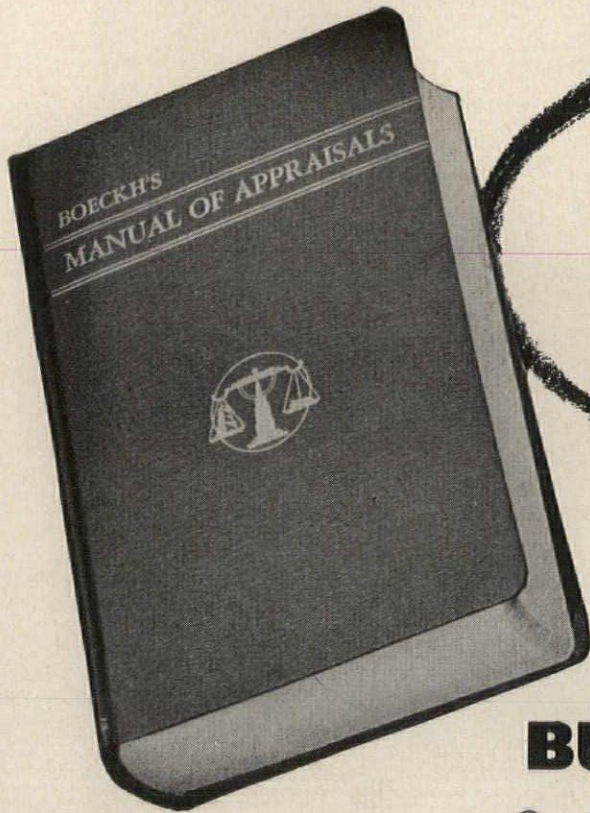
TOTAL MANUFACTURING FOR THE BUILDING INDUSTRY FROM RAW TO FINISHED PRODUCTS



Trinity Lutheran School, Cape Girardeau, Missouri. Ceco heavy intermediate projected steel windows: Fred E. Dormeyer, Jr., architect; J.W. Gerhardt Construction Company, contractors.



Ilmo Fornfelt Ansell School, Fornfelt, Missouri. Ceco commercial projected steel windows: Haywood Snipes, architect; Clinton Construction Company, contractors.



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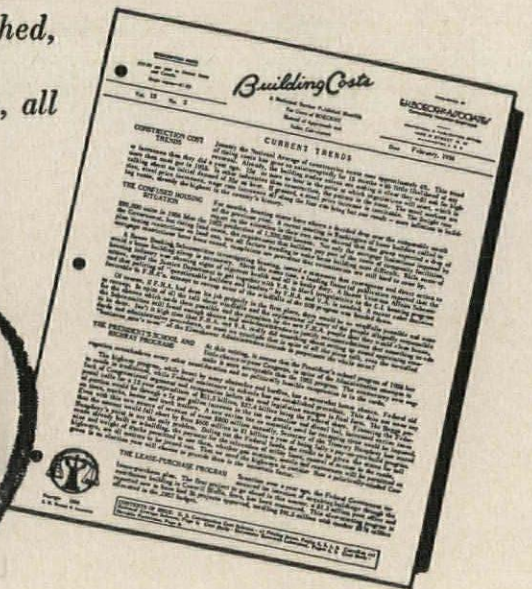
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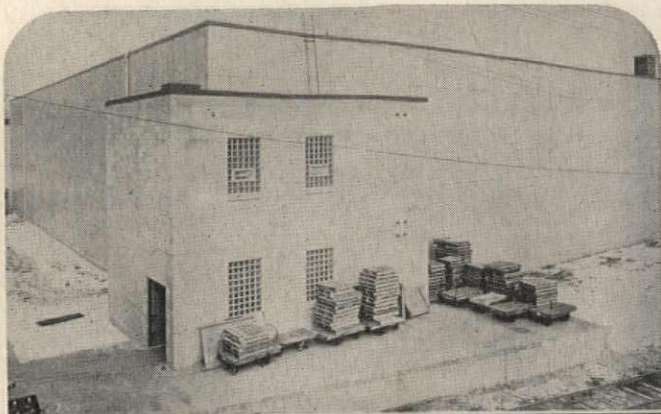


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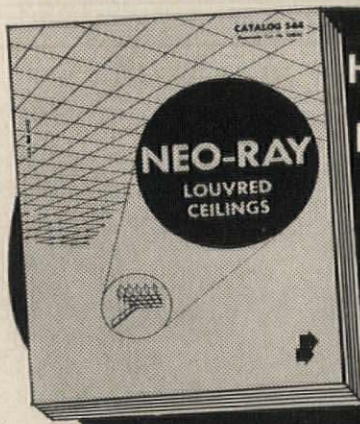
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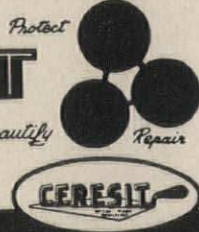
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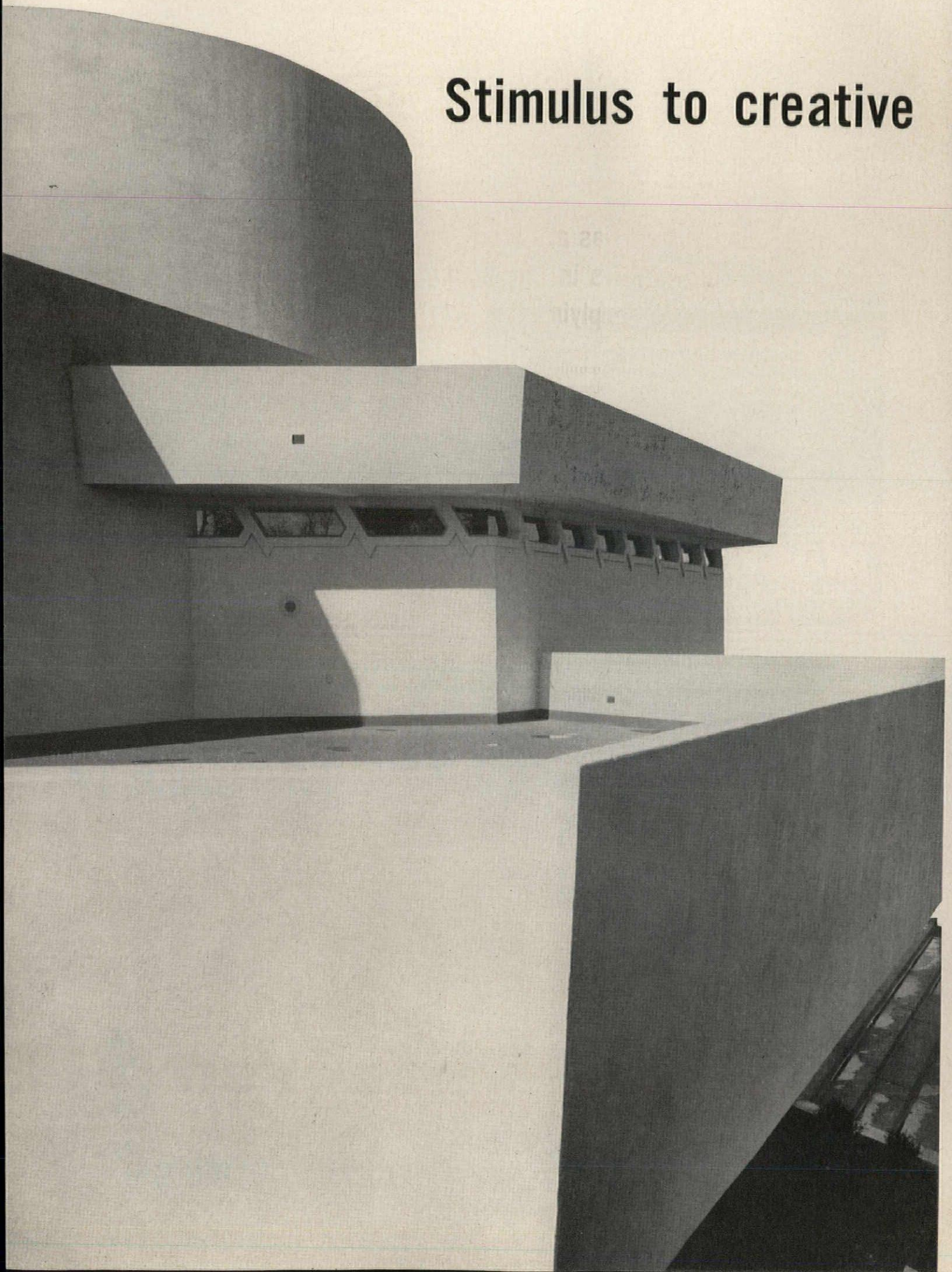


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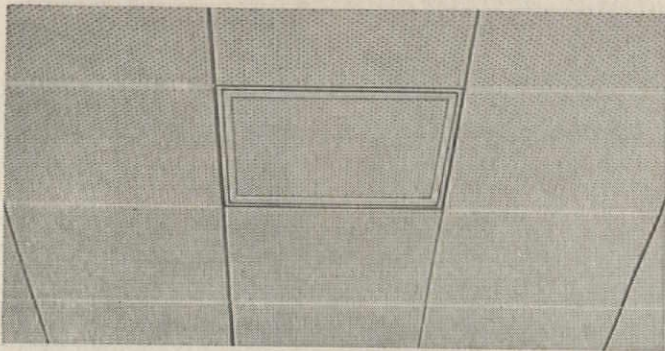
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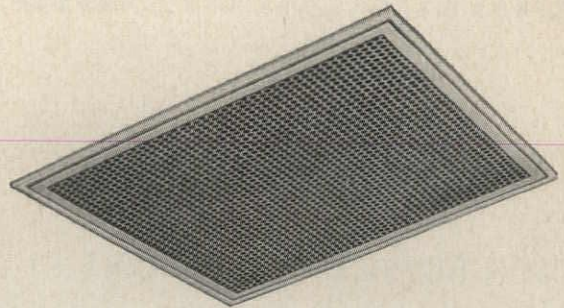
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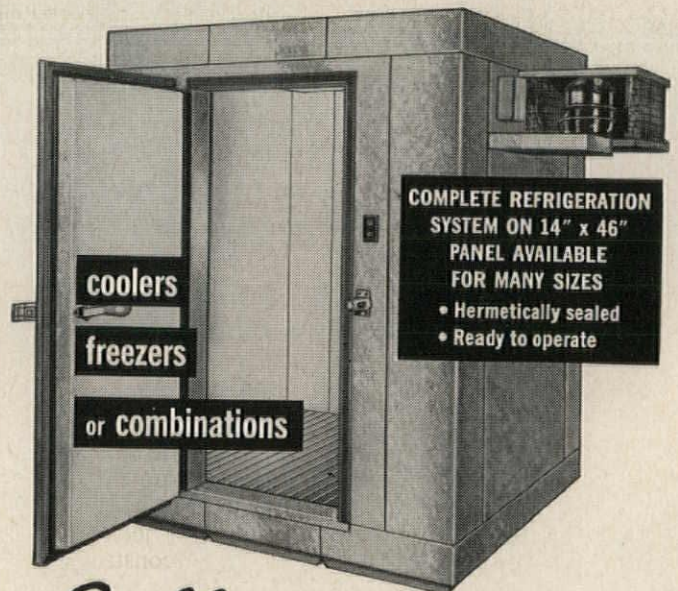
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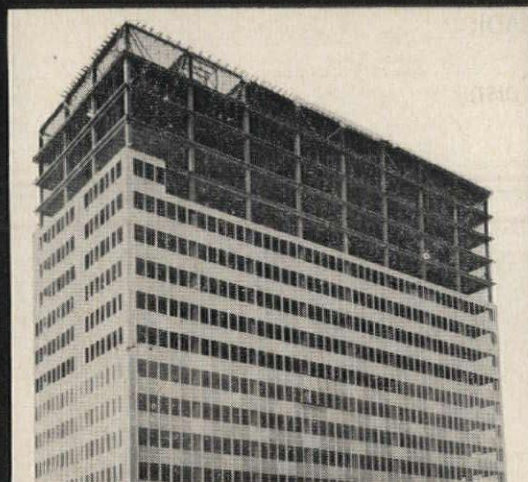
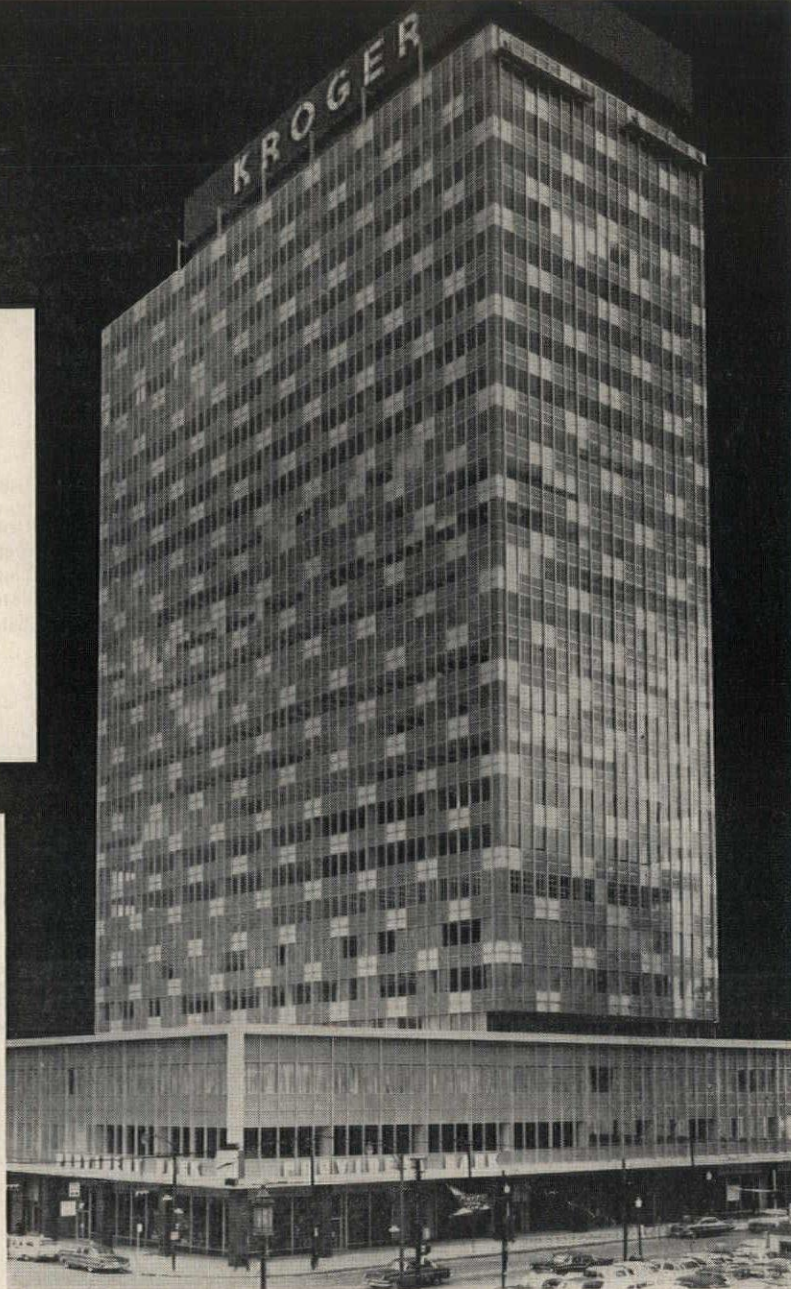
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Concrete Reinforcing Steel Institute
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9-6

Current Trends in Construction

DODGE INDEX HEADS UPWARD

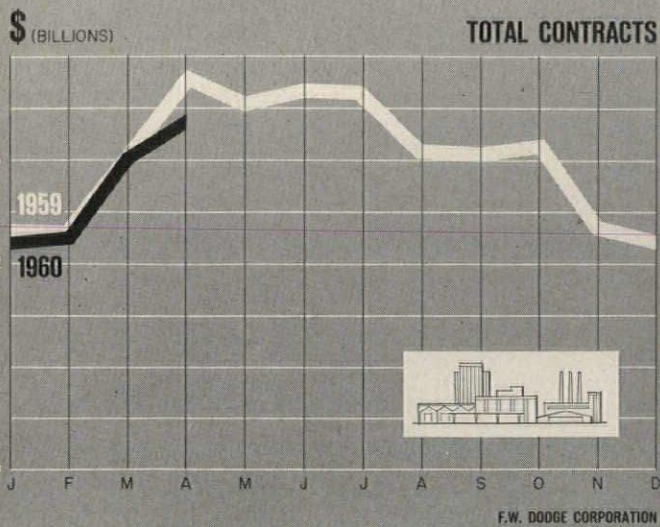
HAVING SAID a few words about the economics of hotels and motels elsewhere in this issue, perhaps there is room here for a non-economic observation or two, from one who spends too much of his life in lodgings for a night. Of all the problems of hotel living, noise continues to rank right at the top. In particular, doors—both connecting and corridor—seem to be weak spots in noise control. Granted that occasionally the conversation in the room next door is fascinating; mostly, however, it is merely sleep-robbing. And there seems to be a propensity, especially on the part of conventioners, to hold social and business meetings in the corridors. Our favorite hotel rooms are those with good, solid walls, no connecting doors, and with the sleeping area separated from the corridor by a bathroom and hall. In fact, there is one ideal hotel (quite old, unfortunately) where there is an inner door between the bedroom and the entrance hall.

MOTELS have a unique noise problem, the Early Rising Upstart, who gets at up 5:30 a.m. and loads his family of six shrieking children into his car, which is parked in front of your door. The loading is generally quite a lengthy process, by the time the last lost doll has been accounted for. The ideal motel design might well be similar to the ideal hotel room, with the sleeping area well insulated from the loading zone.

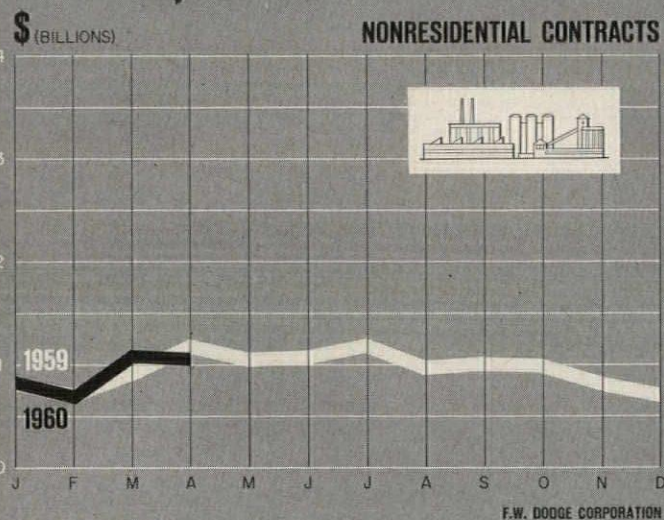
BUT enough of this digression. Back to economics. The construction industry has been bouncing back from the relatively low levels of January and February. The Dodge Index of construction contracts (seasonally adjusted) hit a low spot in the first two months of the year, but it has risen since then, heading toward the high levels of last summer. The brightest spots currently are in nonresidential building, particularly public buildings, offices, schools and factories. Housing has, of course exerted a downward pull on the total, and no real signs of enthusiasm have yet appeared.

THIS brings us to the new Census series on housing starts. Census took over this reporting function from the Bureau of Labor Statistics last year, and has recently come out with a new series which is substantially higher than the old one. The difference is partly in definition—Census includes some things that BLS didn't—and partly in presumably better coverage. One aspect of the new series that hasn't received much attention is this: it is much more volatile than the old one. The old series related almost entirely to planning; in the new series, Census attempts to measure actual starts during a month, as affected by weather, strikes and so on. On the old series, for instance, March and April were at about the same level. On the new series, March was lower and April was sharply higher. The difference apparently reflects postponement of starts due to weather, rather than an economic upturn in housing activity. This is a point to keep in mind in assessing the figures in the future.

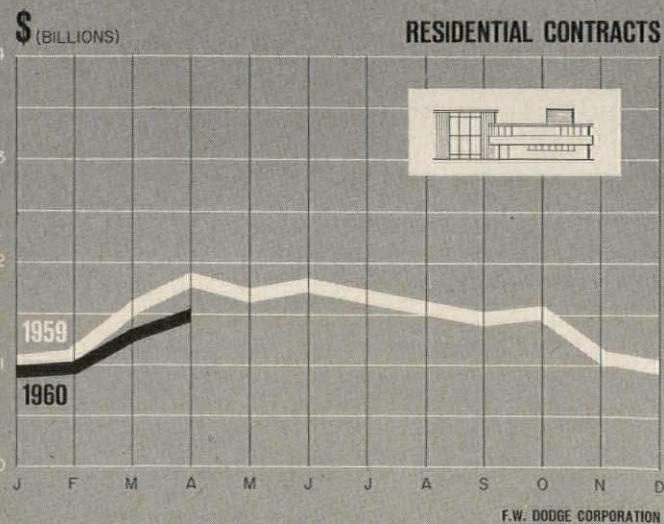
GEORGE CLINE SMITH
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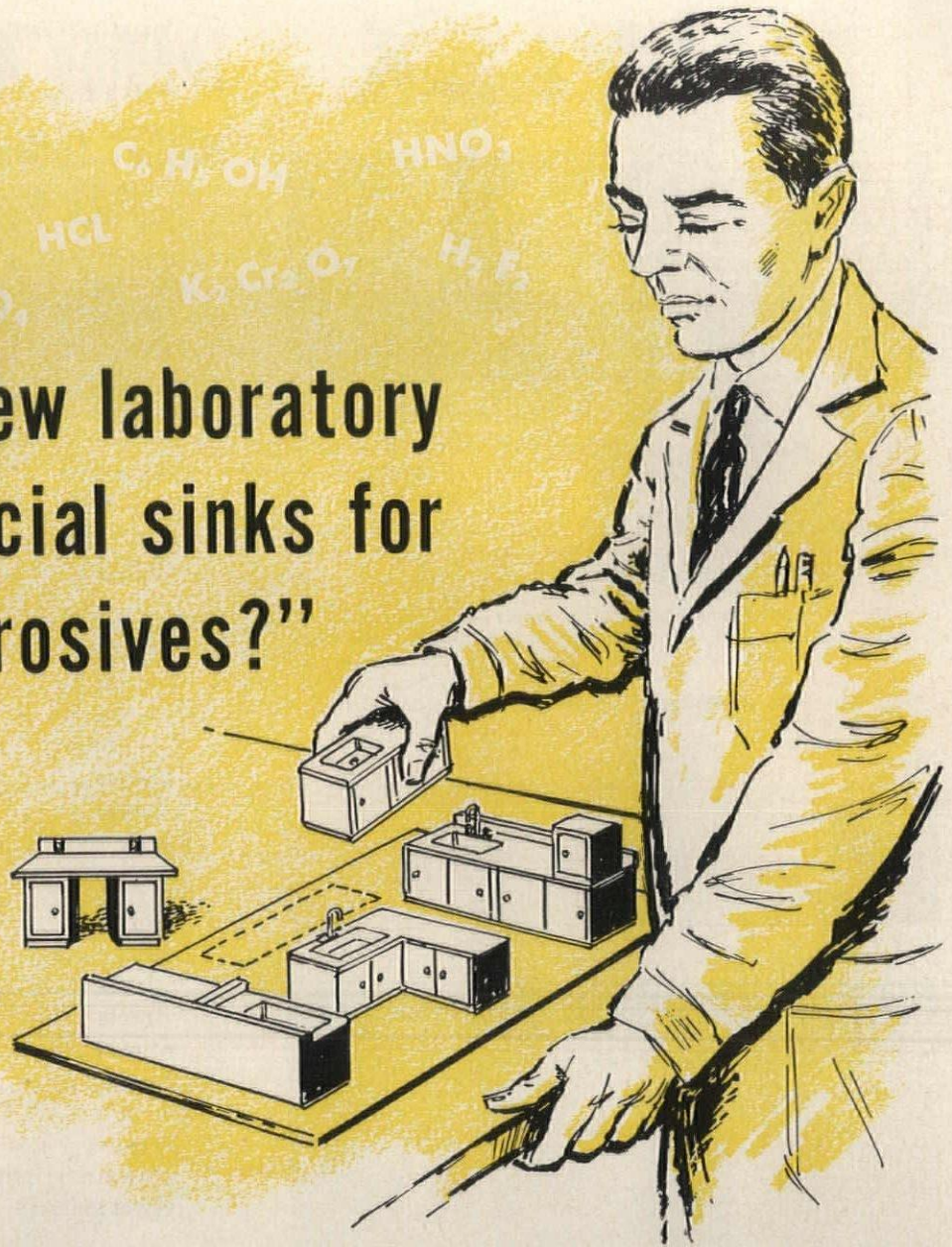
Total contracts include residential, nonresidential, heavy engineering contracts



NONRESIDENTIAL CONTRACTS



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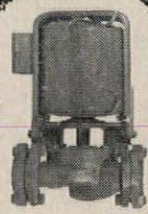
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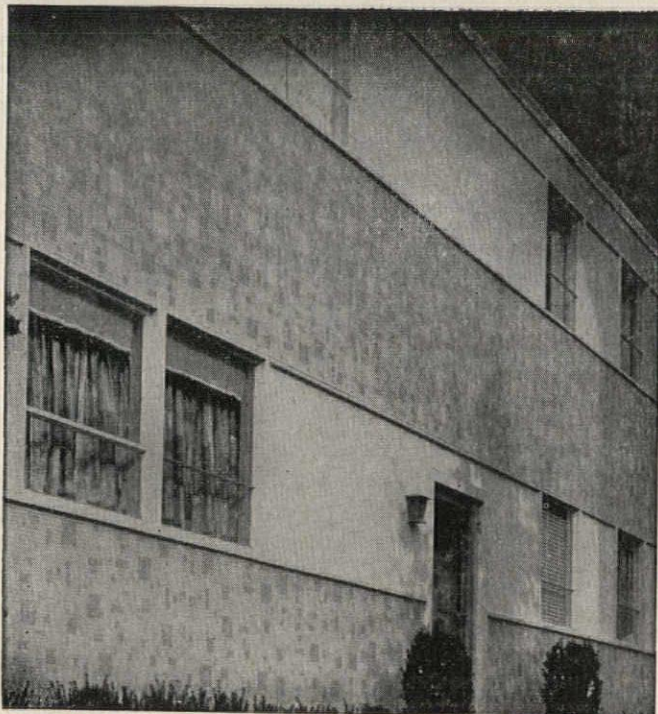
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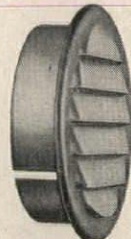


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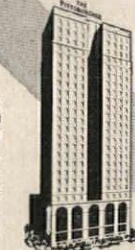
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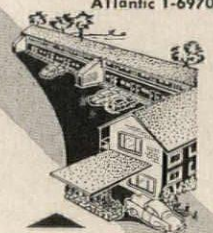
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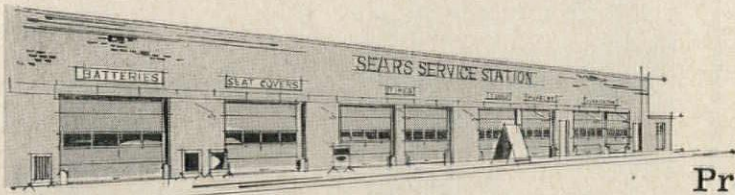
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