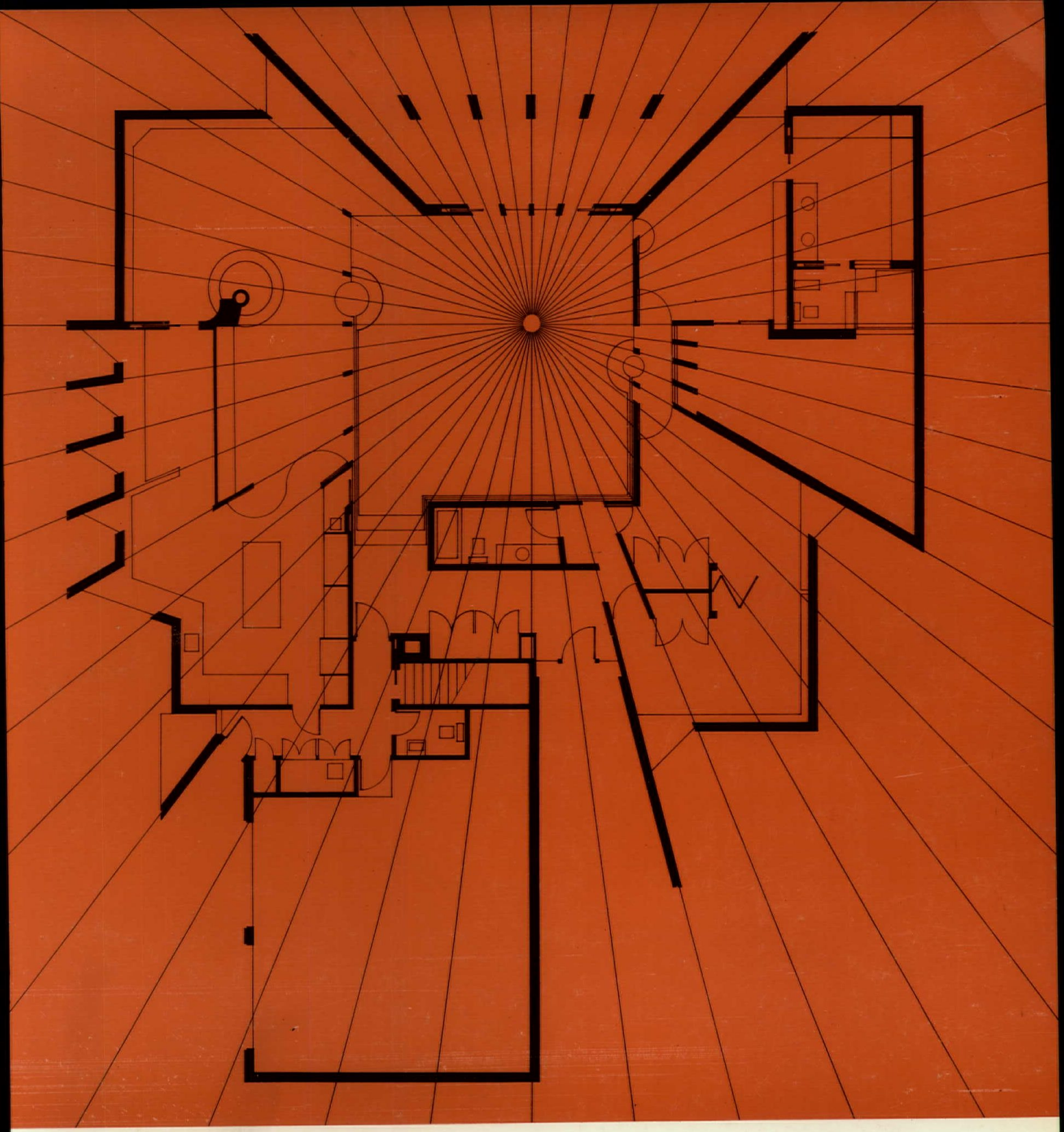

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A NEW OFFICE BUILDING FOR BOSTON'S FINANCIAL DISTRICT

BUILDING TYPES STUDY: HOTELS, MOTELS AND RESORTS

FULL CONTENTS ON PAGES 4 AND 5

ARCHITECTURAL RECORD

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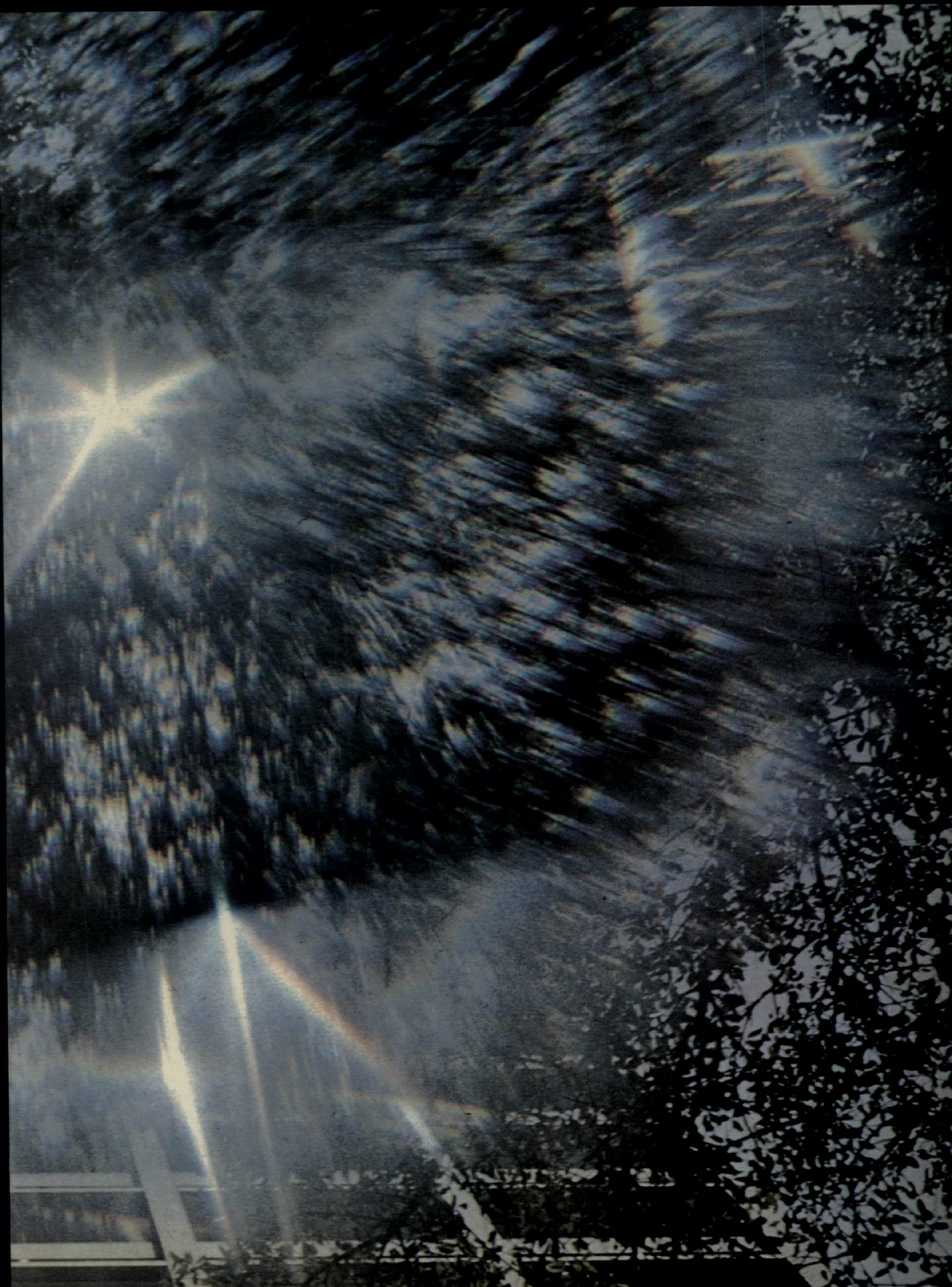

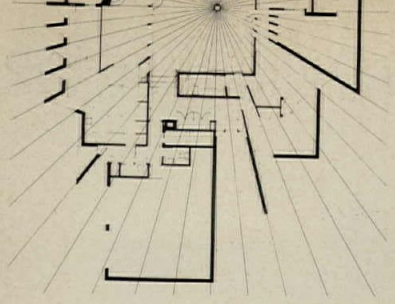

Cover: Radial plan for an atrium house
Grand Rapids, Michigan.
Architects: Gunnar Birkerts and Associates.

FEATURES

Warren Reynolds

BUILDING TYPES STUDY 361

Julius Shulman

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ARCHITECTURAL RECORD

CONTENTS: AUGUST 1966

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As the push to expand higher educational facilities continues, the technological complexity of the various special building types involved continues to increase. Next month's Building Types Study on College Buildings includes a special section on libraries and the implications of computer technology for library planning.

NEW GLAMOUR FOR THE OLD MET

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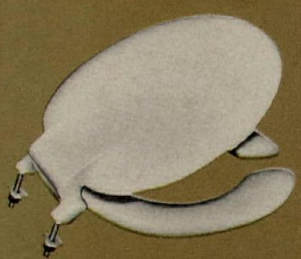

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DO YOU UNDERSTAND YOUR NEW CLIENTS?

Let's get a little closer to the practicalities of "The New Age of Architecture; The New Role of the Architect," to which we devoted our 75th anniversary issue last month. Who are the clients, and how are we to serve them?

Let me give you some answers from William L. Slayton, director, Urban Policy Center, Urban America, Inc. Slayton was with the staff of I. M. Pei when Pei was doing so much urban housing, was later Commissioner of the Urban Renewal Administration. He knows the problems of urban renewal, and he knows about architects.

In a recent talk at an A.I.A. workshop meeting Mr. Slayton made five points about the great potentials awaiting architects in city renewal and the things the architect must remember if he is to participate in the program:

1. The architect must adjust to a new type of client, the public official.
2. This public client offers more to the architect than more familiar clients.
3. The architect must understand the restraints put upon the project, and upon the architect.
4. The architect must curb his propensity for criticism.
5. He must accept the design approach the job calls for.

Some abstracts:

"The opportunity for the architect to play a creative role in urban design is very great. . . . But it means that the architect must adjust himself to a client somewhat different from the private client.

"Actually the opportunity of the architect to be more influential is greater with the public client than with the private client. The limitations are different. With the private client . . . the limitation is basically dollars, particularly in speculative building and in housing. In the case of the public client, the opportunity for being able to do something more is greater. It is not the test of economic return but the test of public acceptance.

"The architect must recognize that in dealing with public clients he is dealing with a public function. He must know the restraints of the public development process, and he must recognize that the design produced must undergo the rigorous scrutiny of public debate. The architect must know the limits of the public official's development powers as well as knowing the development tools available to the public client. . . .

"The first thing the architect must do is recognize that as designer of a specific item, such as a school, a public building, or a private structure, he must be willing to accept some design guidance from the public official who is charged with the responsibility of creating an urban design for the area. This should also mean, of course, that the public official is also a client dealing with an architect—a designer—concerned with the design of the entire area. We are not going to have urban design if each architect insists upon being completely free within the zoning envelope or program to design as he sees fit. . . .

". . . The architect-designer must understand, and be sympathetic to, the social as well as the physical objectives of the urban design. He must understand the working of a city and its inhabitants intimately. He must design with more than formal plan objectives in mind. In effect he must create the urban environment for the urban dweller, and thus he must know something of, or respond intuitively to, the needs and desires of the urban dweller."

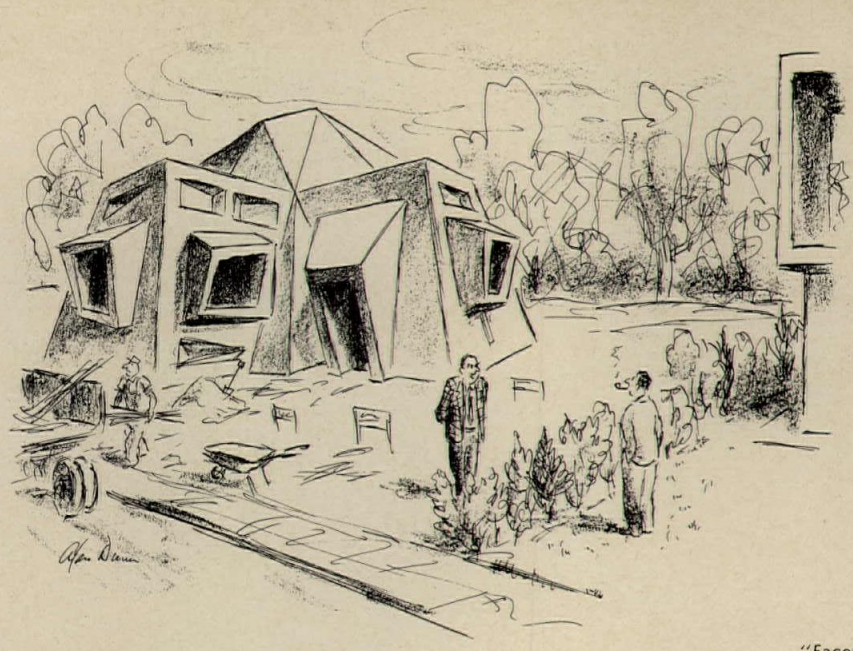
And Mr. Slayton had some remarks to make (next page) on the architect's habit of criticizing, and then gave the architect a bit of his own:

"This is the prescription. It doesn't sound all that difficult, but past experience has shown it not to be easy. . . . The role of the architect has been to ignore or give lip service to urban design. He has been unwilling to accept his place, his role, in an urban design plan. His ignorance of public procedures and his shrill criticism of nearly everything produced place him in the role of impeder rather than participant."

How many times have architects, as members of some municipal commission, protested some action or proposal in the highest dudgeon, then resigned from the body in a huff? Thus leaving whatever commission it is to go ahead with some sort of plans without *any* representative of the architectural approach.

—Emerson Goble

Drawn for the RECORD by Alan Dunn



"Facets! That's what's new, Mr. Jones."

Yes, criticism does harm but what would you do?

Having just quoted William Slayton on the deplorable habits architects have of criticizing quite freely, I find the next item on the list is a protest from A.I.A. President Morris Ketchum, who let fly at the Bureau of Public Roads. I should certainly have to agree with his point, but his resignation from the highway beautification commission may or may not have been an effective action.

He wrote to Secretary of Commerce Connor saying that Federal policies on the design of highways in cities are producing "disastrous results" and are in "direct opposition to those of President Johnson."

The A.I.A., Ketchum wrote, "is deeply concerned . . . that although standards for design between cities are well developed and in general well utilized, these same standards are blindly applied to highway design within cities with disastrous results.

". . . I believe the American Institute of Architects is being inadvertently placed in a position of tolerating, or even approving, policies of which it disapproves. . . . I, therefore, regretfully offer my resignation, effective immediately, as a member of the National Advisory Committee on Highway Beautification of the Department of Commerce."

The architect criticizes and then trouble starts

Here is a little straight shooting at architects, from one who knows them well, former Urban Renewal Commissioner William L. Slayton. He was telling architects how to get into the urban renewal program (page 9), and then warning them about their well known fondness for criticism:

"Frequently the architect does disservice to the public official who is trying to produce good urban design. The tendency of the architect to be extremely critical of the design of whatever is produced frequently leaves the public official feeling that regardless of his effort, regardless of his attempts to produce design, it always results in adverse architectural criticism. In his criticism the architect should distinguish between the design of a structure or an area and the mechanism that produced it. Frequently, because he dislikes the design produced, he criticizes the system that is aimed at cranking design into public development.

"When I was Urban Renewal Commissioner, I knew that after a design competition for a renewal project had been held and the developer-designer selected, I would hear criticism from the losers, either to me directly or stated publicly—criticism on the mechanism employed. They were challenging the design selecting process because they happened to be unsuccessful under it. If we have many such loser-critics in design competitions, we may well end up with cities rejecting developer selection mechanisms based on design. The hyperbolic criticism by the architect can damage seriously the objective he is trying to obtain." One supposes that his use of the word "hyperbolic" was intended to soften his remark. But if architectural criticism is frequently hyperbole, and thus easily forgiven within the family, remember that the press and the public may not understand and forgive.

"Make no little plans" not a bad idea today

Still with Mr. Slayton, and his charge to architects for the future:

"And I would suggest that we go back and review the design plan created by Burnham. Today there is a tendency to be supercilious toward Burnham and the city beautiful plans created in the early part of the century. This is a mistake. We should recognize that these plans—particularly Burnham's—reflected a sense of scale and esthetic perception of the city as a whole, or a major part of the city, that is today largely lacking in most city plans. Even though Burnham and his contemporaries were weak in knowledge of urban ecology and functional factors of city growth, they did have a high appreciation of, and a sensitivity to, a design image for the American city. Daniel Burnham knew how to use parks, public buildings and major thoroughfares to create a design plan for the city. With these tools, it is amazing what he was able to achieve. His Grant Park, his Wacker Drive, his Lakeshore Drive—these gave central Chicago its design character. If one looks today at the beautiful renderings of the Burnham plan, at the grand design and his parks and boulevards, one can only gasp in admiration at the great concept and be amazed at the extent of his success. . . . It is this kind of vision, this concept of the grand design, that we seem to lack today.

"And today we have much broader development tools than did Burnham. Sometimes I think we have forgotten how to use our open spaces, our public buildings, our streets, as design tools."

—E. G.

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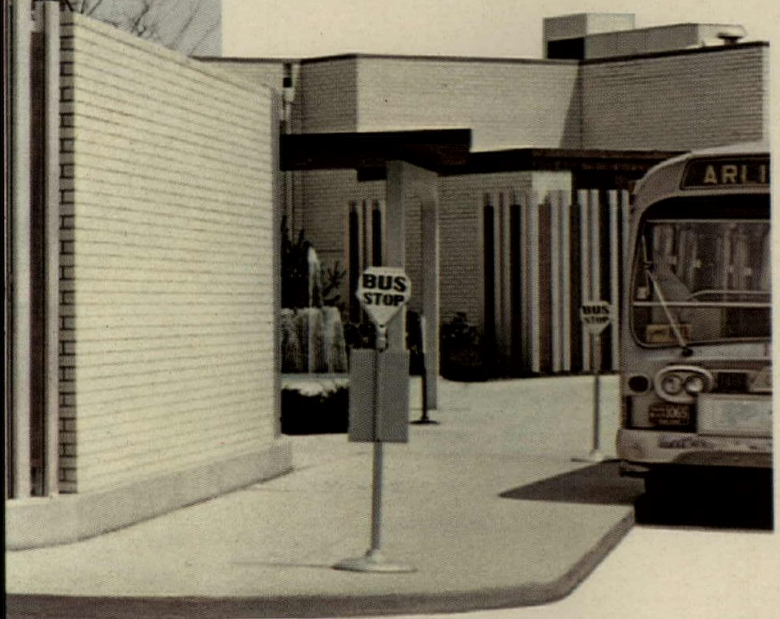

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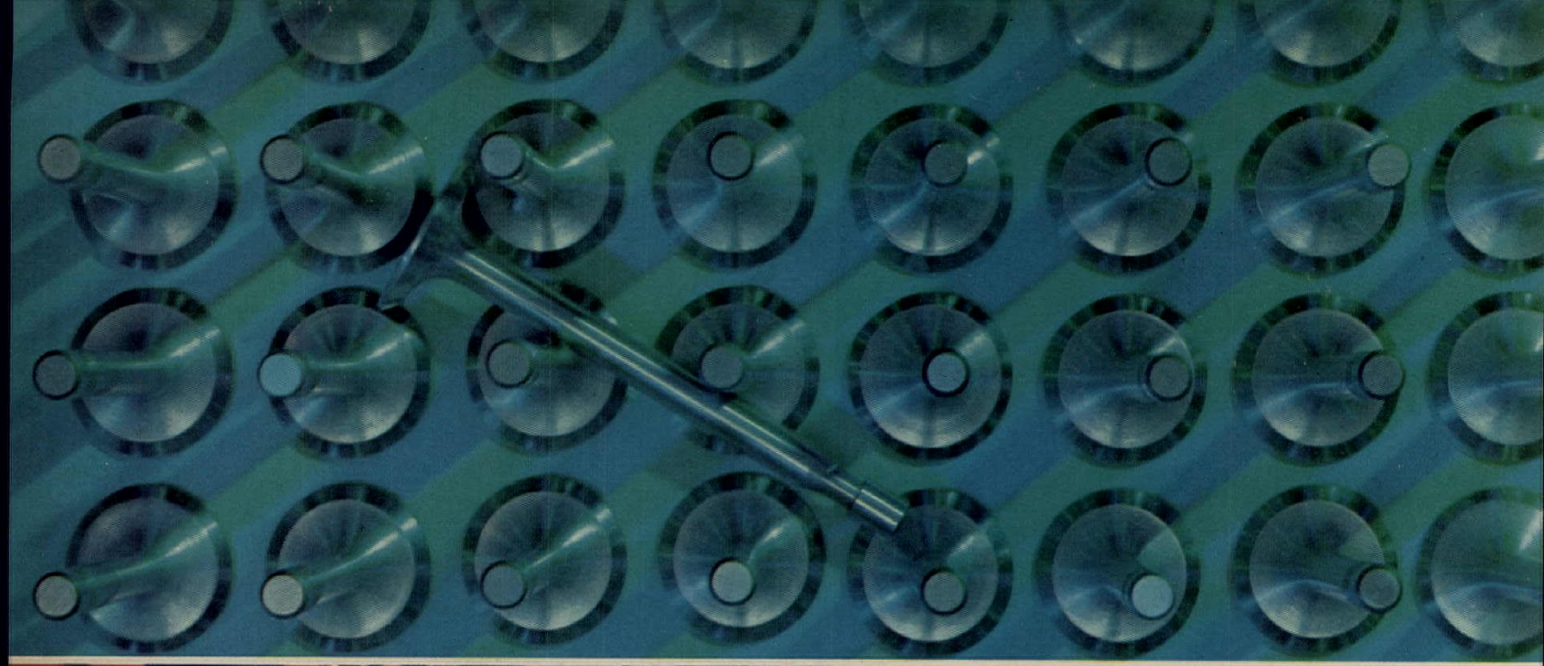

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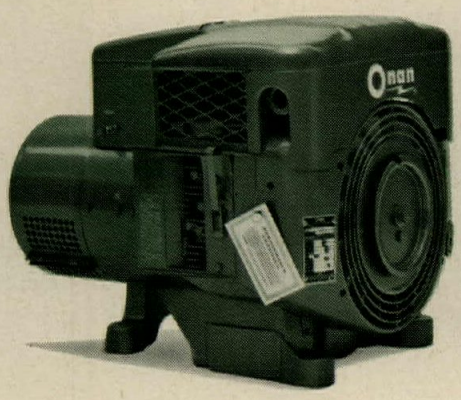

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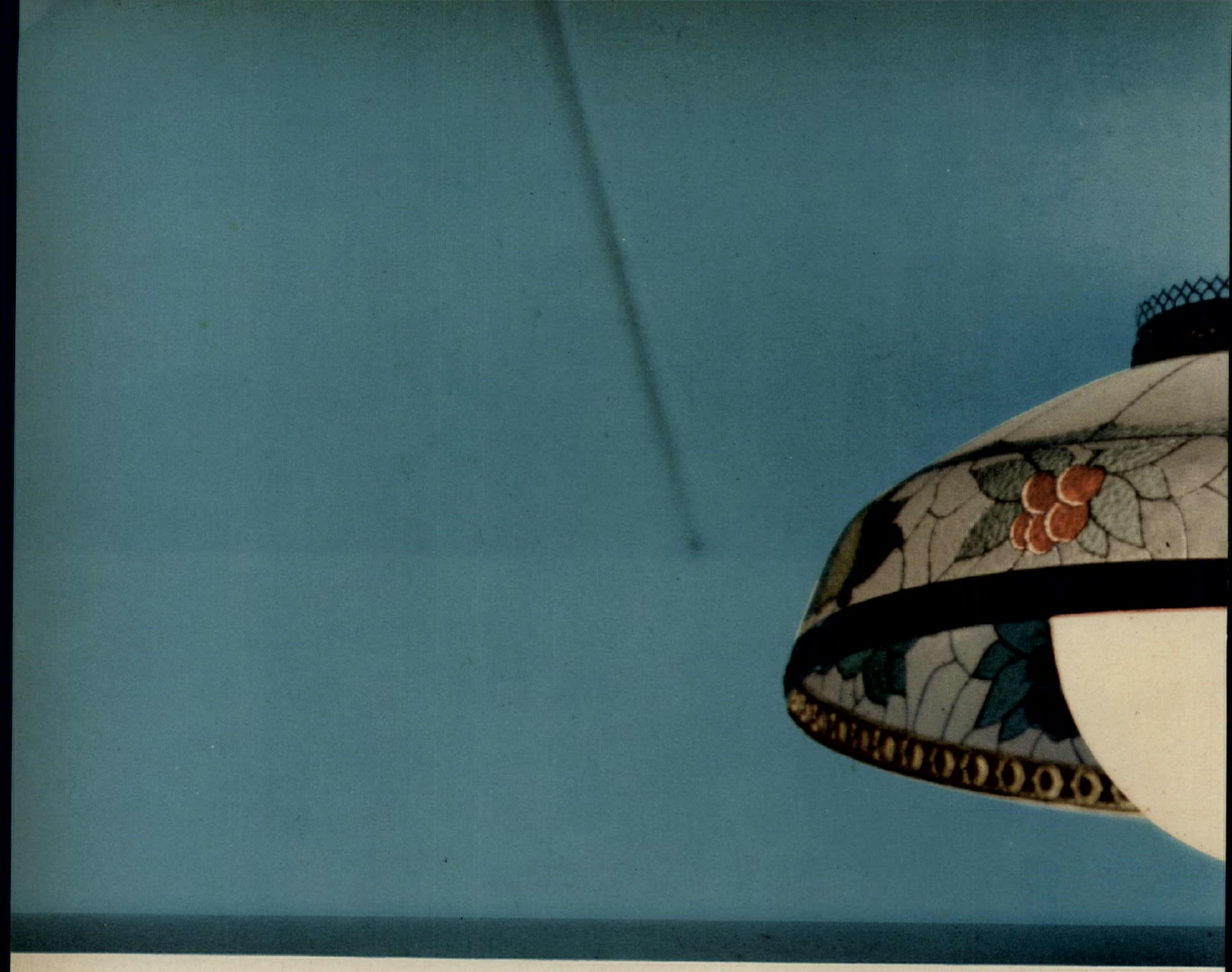

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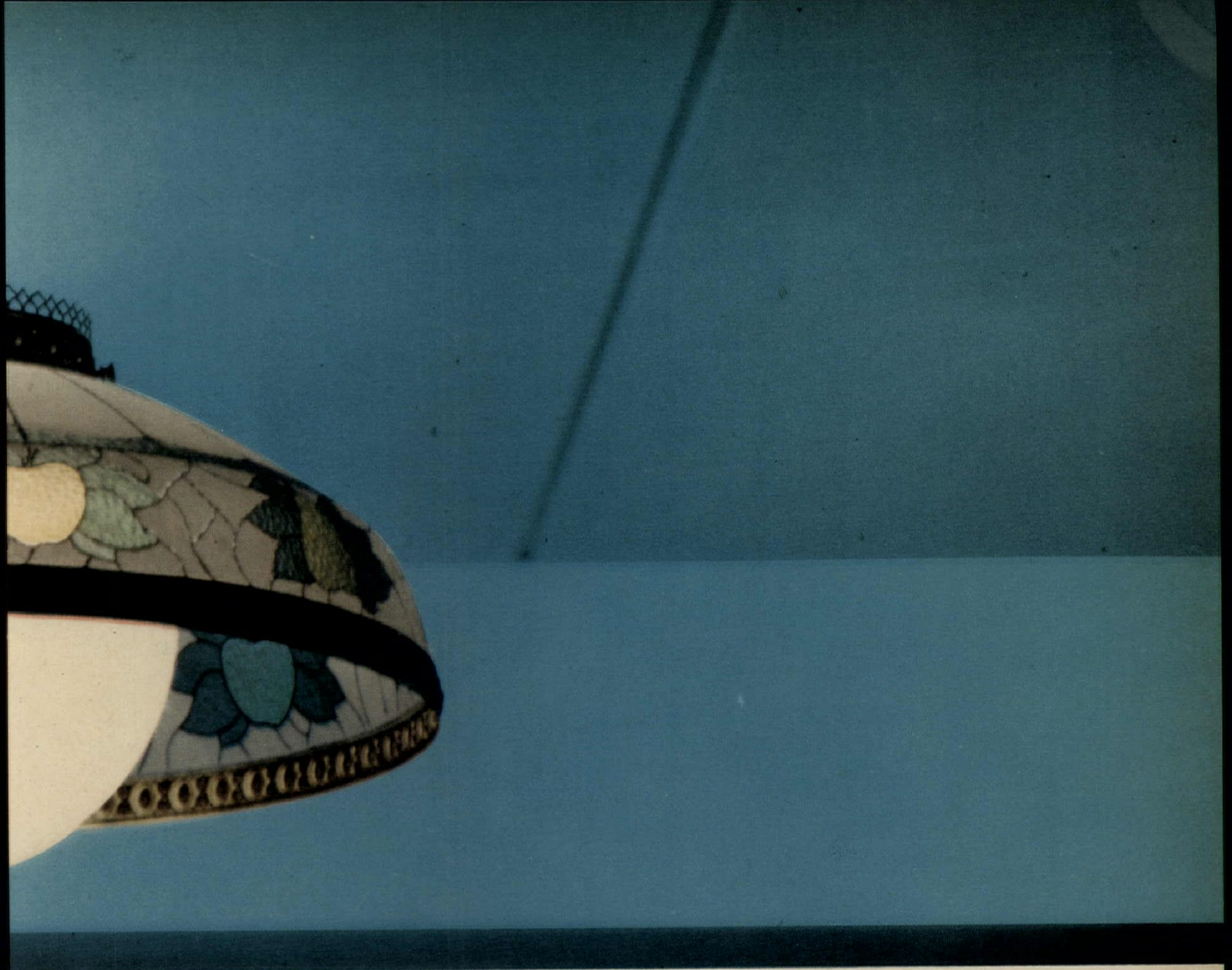

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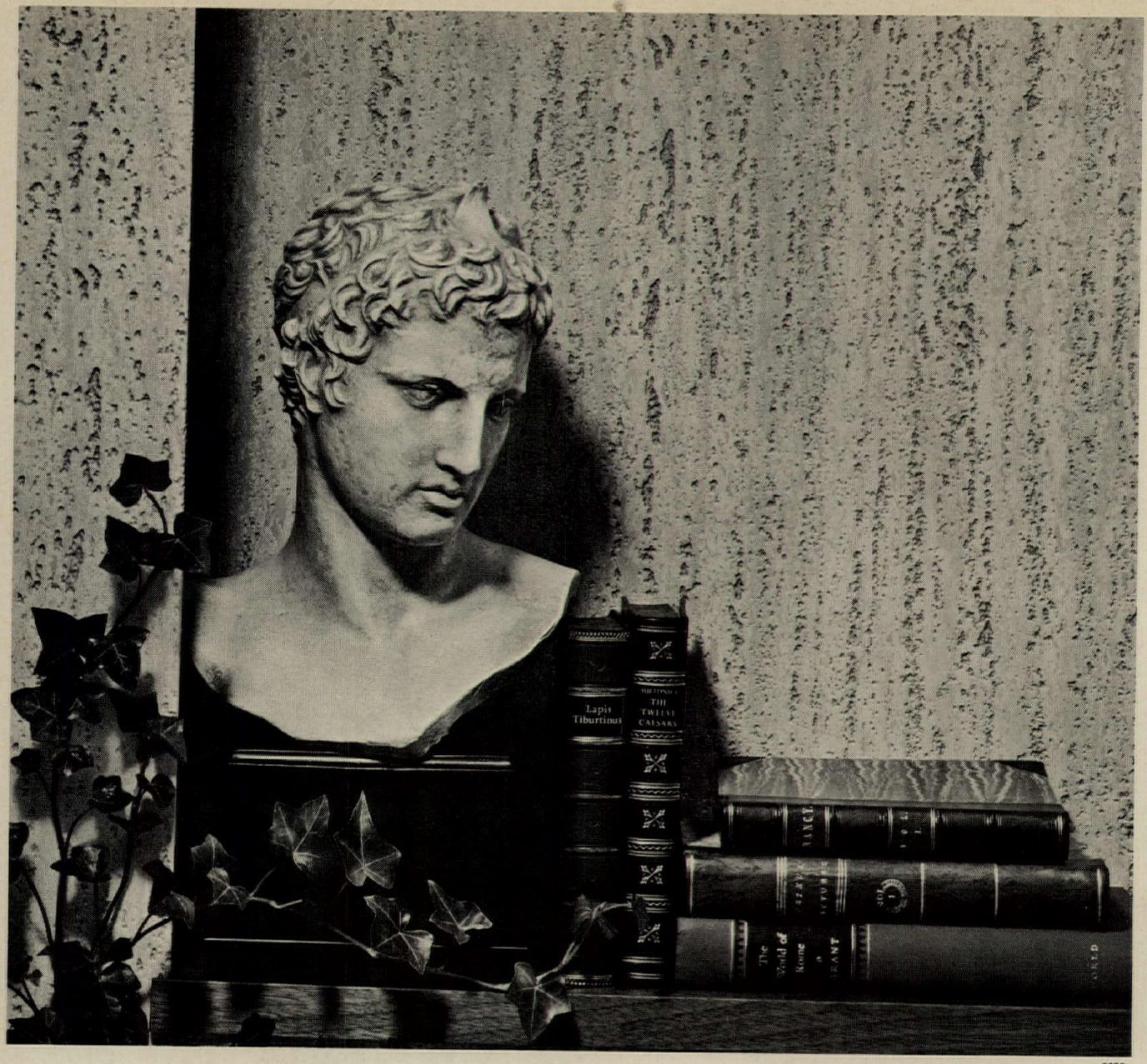

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Textured Travertine Marlite captures all the warmth and luxury of rare, imported marble. You can feel every surface detail characteristic of this costly stone.

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Create more beautiful interiors by using Marlite, the Decorator Paneling. Consult Sweet's File or write Marlite Division of Masonite Corporation, Department **805**, Dover, Ohio.

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Would you be satisfied with just any new lock with a lever handle? No. Would it be enough to produce one that just does hard work? No. But what about one that does hard work and looks beautiful too? Ah!

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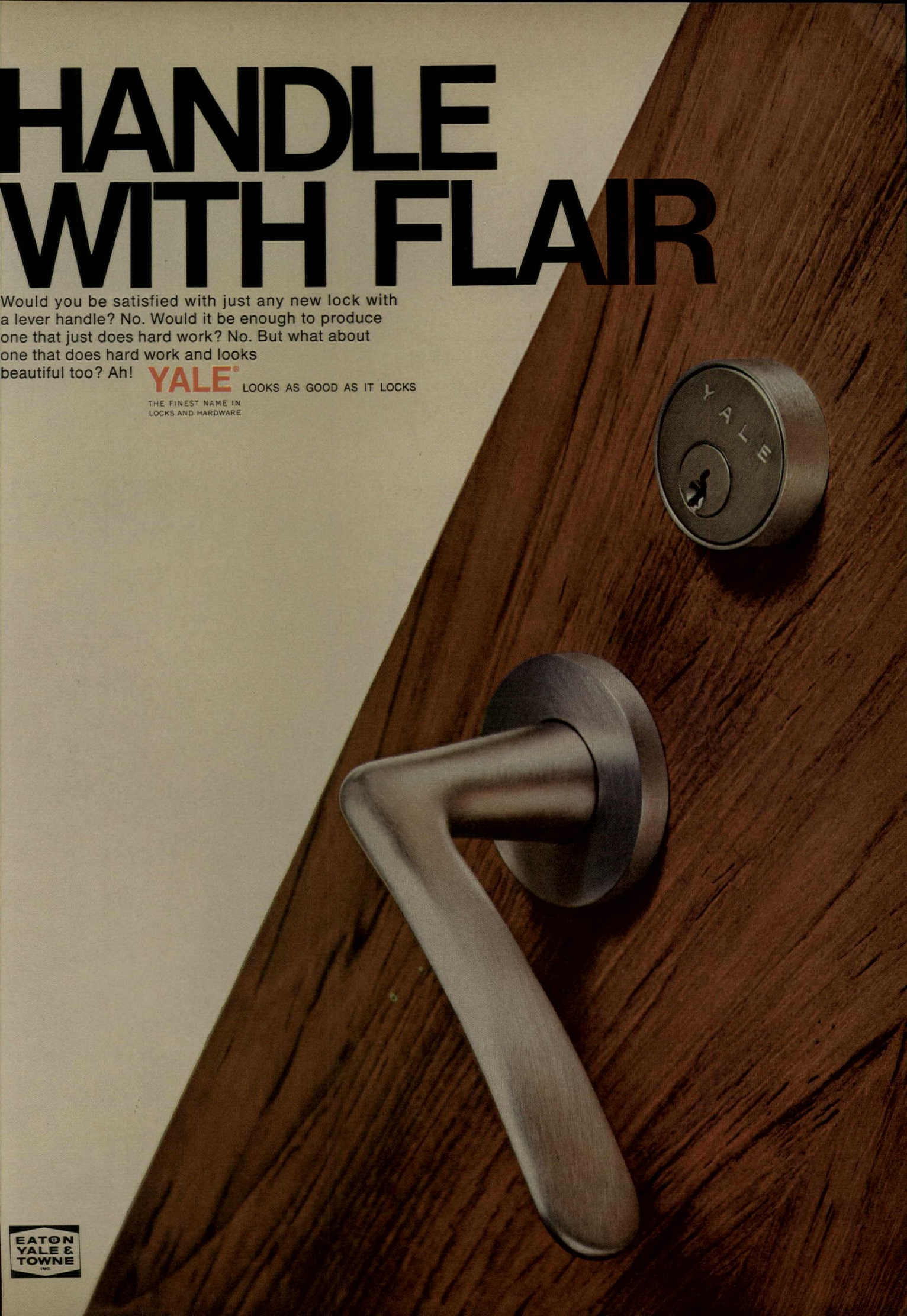
THE FINEST NAME IN LOCKS AND HARDWARE



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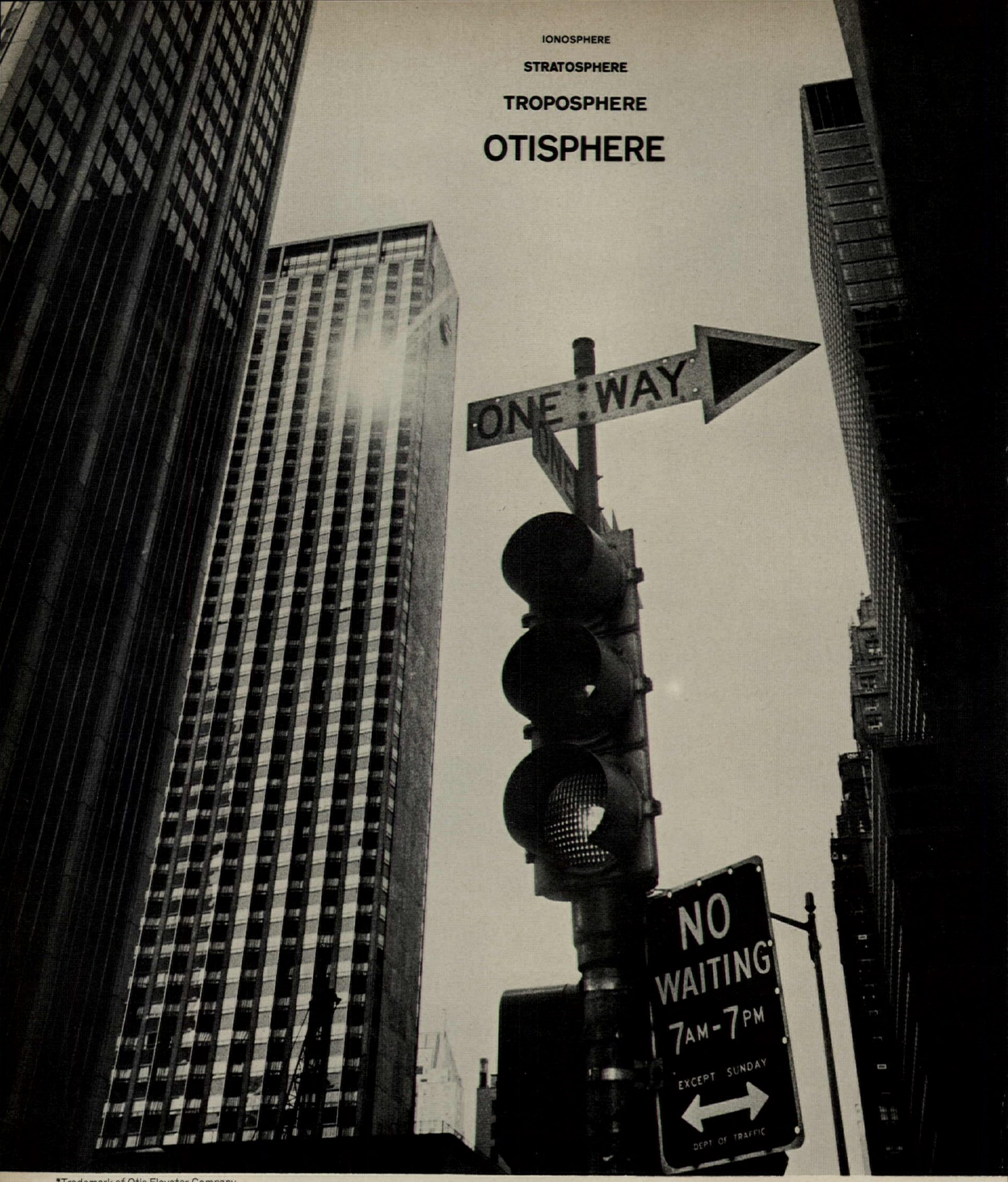

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This remarkable V.I.P. system of electronic controls automatically adjusts elevatoring service to any traffic needs. Anticipates service demands and instantly dispatches cars to where they're needed.

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How to divide and conquer noise...with Lead

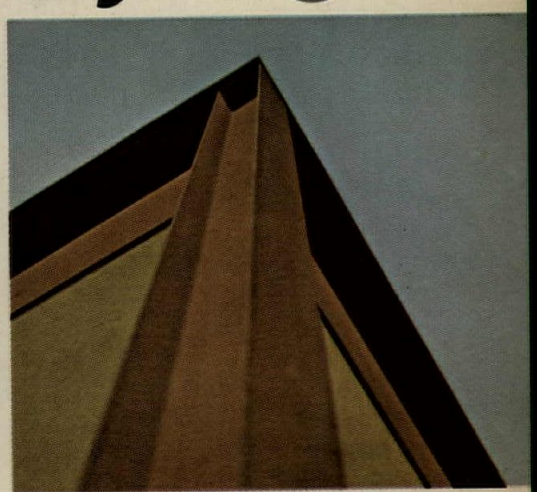
Can you imagine trying to explain wrestling techniques to a class while a volley ball game is going on in the same gym? Instructors faced with this problem found it impossible even though the gym was visually partitioned by a heavy canvas curtain. The shouts and whistles were just too much competition. ☐ In Akron's new Harvey S. Firestone High School, the problem is eliminated by a leaded vinyl curtain which divides the large gym into two acoustically-separate units. The main curtain consists of two separate sheets with a 12 inch air space between them. Either or both can be raised or lowered electrically. Secondary curtains which move on overhead tracks like draperies close off the bleacher sections along the walls. ☐ All the curtain material is leaded vinyl coated on a durable fabric backing and was supplied by the Duracote Corp. of Ravenna, Ohio. A pleasing turquoise color and an embossed pattern give it an attractive appearance. ☐ Noise annoys everyone. It destroys privacy and impairs efficiency. Conquer it with lead.

Expose it. Don't paint it.

Photographs above taken after 2 months of weathering.

It's Bethlehem's Weathering Steel: Mayari R

Let it weather. Naturally.



Photographs above taken after 12 months of weathering.

Nature wraps Weathering Steel in a maintenance-free protective coating . . . and provides a rich, earthy beauty in color and texture that lends itself to distinctive architecture.

The longer it weathers the richer this steel's deep-brown oxide coating becomes. And what a remarkable coating it is. Closely grained and tightly adherent, it builds up to about the same thickness as a coat of paint. It inhibits further corrosion of the steel. It heals its own wounds.

The full potential of this material can be realized only by careful design considerations. We will be happy to review these with you when you plan to use Weathering Steel. Simply call or write our nearest sales office.

BETHLEHEM STEEL
BETHLEHEM STEEL CORPORATION, BETHLEHEM, PA.

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(Left Page) BRANCH BANK, CHESAPEAKE, VA., VIRGINIA NATIONAL BANK.

Architect: Oliver & Smith.
Engineer: Fraioli, Blum & Yesselman.
General Contractor: W. B. Meredith, II, Inc.
Roofing Contractor: Virginia Sheet Metal & Roofing Company of Norfolk, Inc.
Steel Fabricator: Globe Iron Construction Company, Inc.

(Right Page) FRENCH CREEK VALLEY ELEMENTARY SCHOOL,

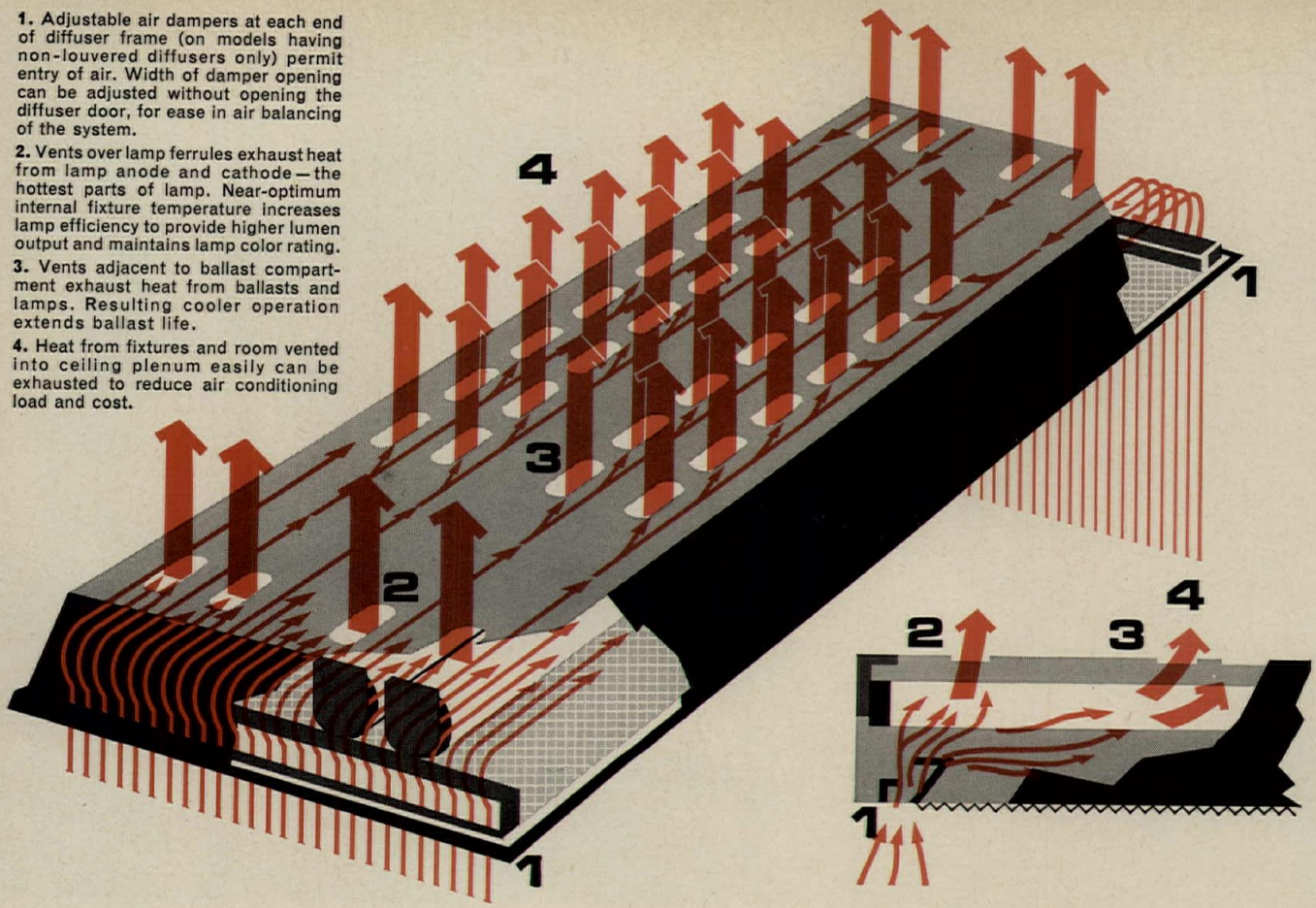
Coventryville, Pa. Owen J. Roberts School District.
Architect: Wolf & Hahn. *Engineer:* Quentin Bowers.
General Contractor: H. C. Grau Co.
Steel Fabricator: W. H. McArdle & Son.

1. Adjustable air dampers at each end of diffuser frame (on models having non-louvered diffusers only) permit entry of air. Width of damper opening can be adjusted without opening the diffuser door, for ease in air balancing of the system.

2. Vents over lamp ferrules exhaust heat from lamp anode and cathode—the hottest parts of lamp. Near-optimum internal fixture temperature increases lamp efficiency to provide higher lumen output and maintains lamp color rating.

3. Vents adjacent to ballast compartment exhaust heat from ballasts and lamps. Resulting cooler operation extends ballast life.

4. Heat from fixtures and room vented into ceiling plenum easily can be exhausted to reduce air conditioning load and cost.



Reduce air conditioning cost and increase lighting performance economically and simply with proven LPI heat-removal troffers.

LPI heat removal troffers reduce heat load from both the working area and from the luminaires by providing an efficient, economical means of exhausting heat into a ceiling plenum. Without adding to fixture installation cost, the same lighting layout can produce higher lumen levels (up to 15% increase) resulting from cooler operation of ballasts and lamps. And, by exhausting room heat and fixture heat into the ceiling plenum where it easily can be pumped out, air conditioning installation and operating costs can be reduced. Plenum heat may also be used with an air conditioning heat exchanger or, in winter, as an auxiliary heat source.

LPI's broad experience producing fixtures for air-handling systems has resulted in efficient designs for every need. LPI heat-removal troffers incorporate the quality features basic to all LPI fixtures, such as exceptional rigidity, light-tight construction, ease of installation, and simple maintenance. LPI heat-removal four-foot troffers are available for flange, lay-in and other types of installations. Two sizes fit most requirements: one-foot-wide two-lamp luminaires or two-foot-wide four-lamp luminaires. They can be installed individually or in continuous rows.

We offer a complete selection of diffuser types: plastic or metal louver; glass panels; and prismatic or Polrized* lenses. Troffers with non-louvered diffusers have adjustable air dampers at each end of the diffuser frame for fine adjustment of system air balance without opening the diffuser door. (Louvered troffers require no air dampers.)

The heat-removal troffer series is just one of a number of LPI air-handling troffers. We can supply an air-handling luminaire to meet every lighting and air conditioning requirement. Models compatible with the systems of major air diffuser manufacturers are offered. For complete information and technical data, call your LPI representative, or write.

LPI® FLUORESCENT LIGHTING

Lighting Products Inc., Highland Park, Illinois 60035

*T.M.— Polrized Panel Corporation of America.

LPI-8-814

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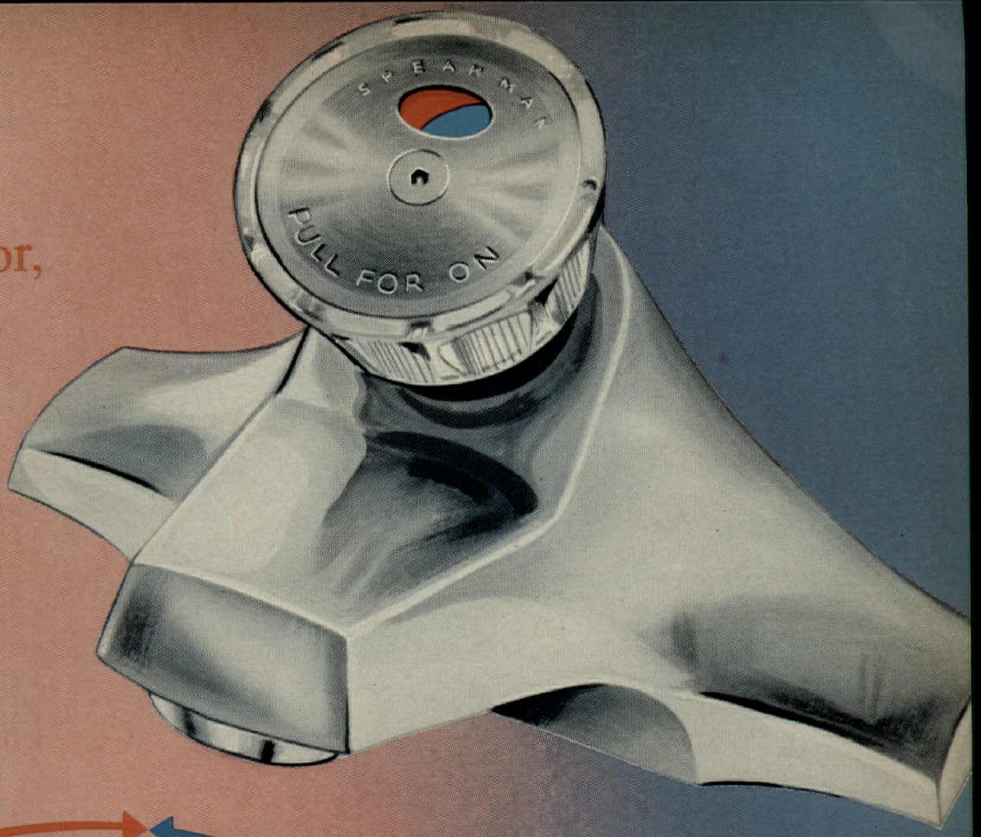
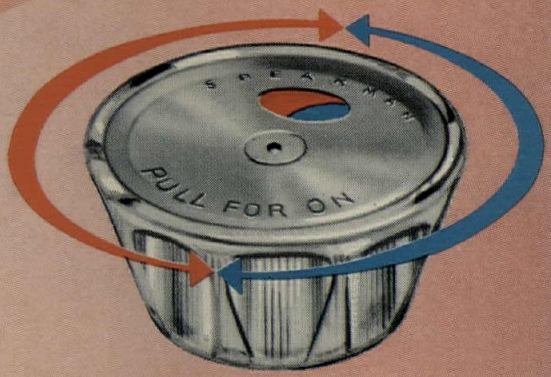
SPECIFY EXCITEMENT!

This exciting new way to control water, with color, makes other single control valves old-fashioned!



LEFT FOR HOT



RIGHT FOR COLD

SPEAKMAN

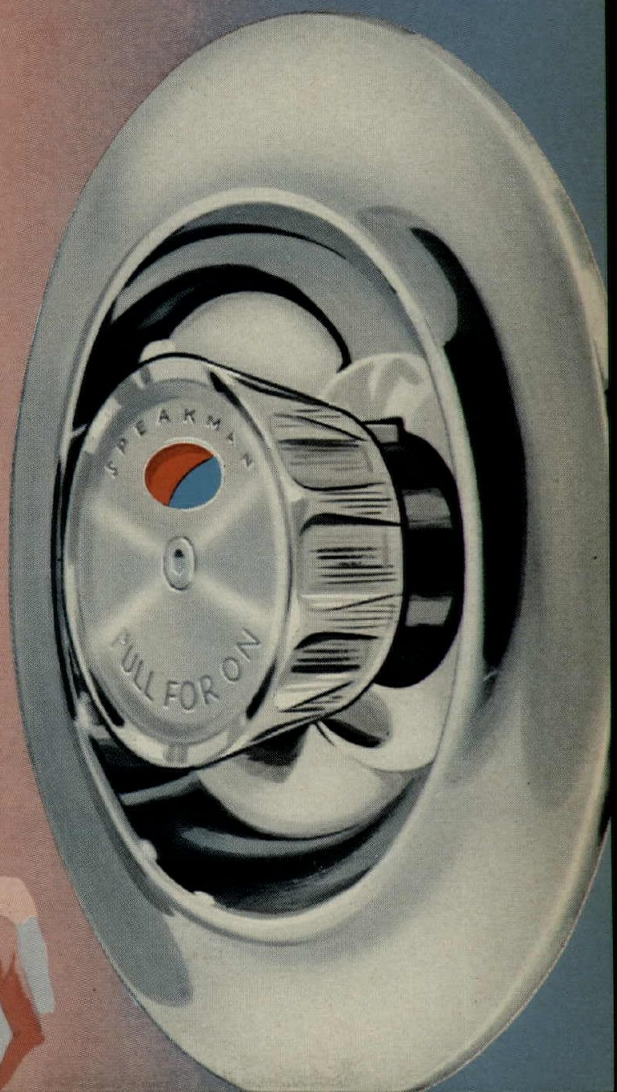
colortemp®

for lavatory, shower and bath

Dial left to full red for hottest water. Dial right to full blue for coldest. In-between for exact temperature desired.

This remarkable push-pull faucet brings new beauty and functional luxury to the lavatory, bath or shower. The Colortemp dial, a Speakman exclusive, shows water temperature *in color* merely at the turn of the dial. The cartridge push-pull faucet controls water flow so easily children never forget and leave the water running. An extra plus is the advanced styling in solid brass with beautiful chromium finish.

When you specify Colortemp faucets you specify a new cartridge concept that eliminates lubrication needed by ordinary gliding cylinders. Yet Colortemp gives longer wear . . . after one-half million "on-off" tests the patented Speakman cartridge cylinder still operated with smooth silent ease. One reason is Du Pont "Teflon" at friction points, the same remarkable material that prevents sticking in cooking utensils. For complete details and specifications see the new revised Speakman master catalog.



SPEAKMAN® COMPANY
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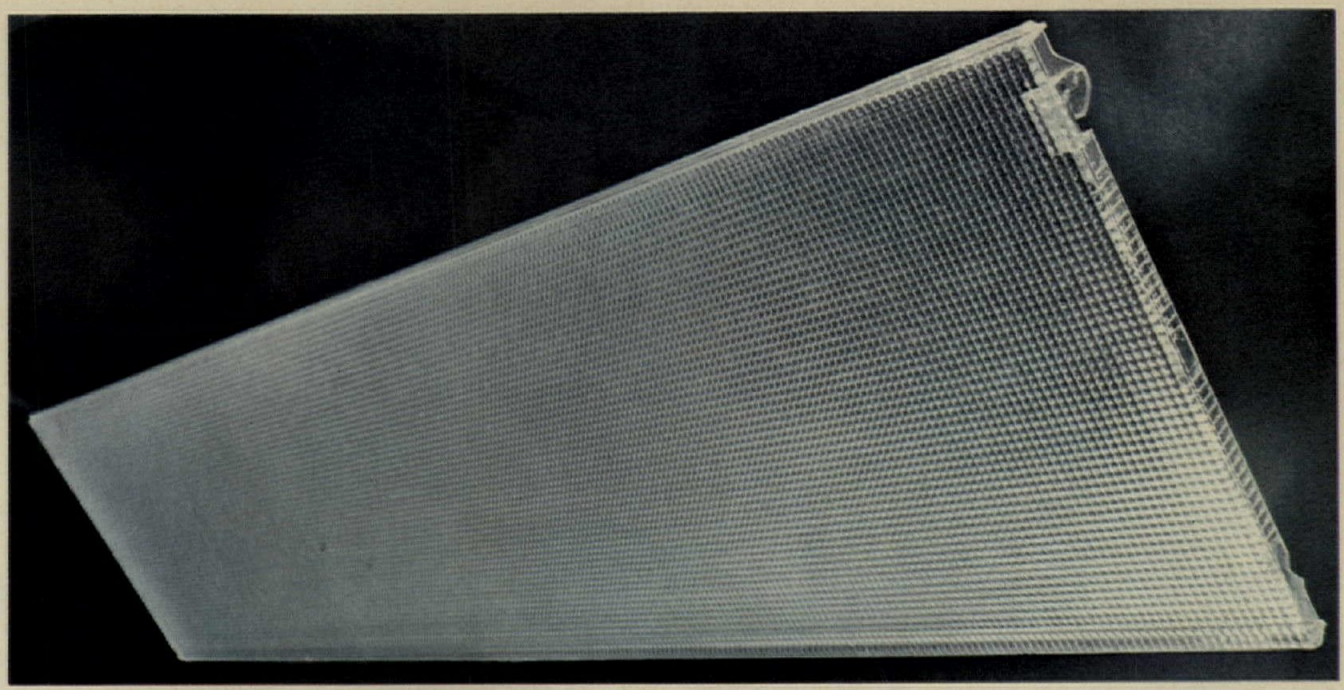
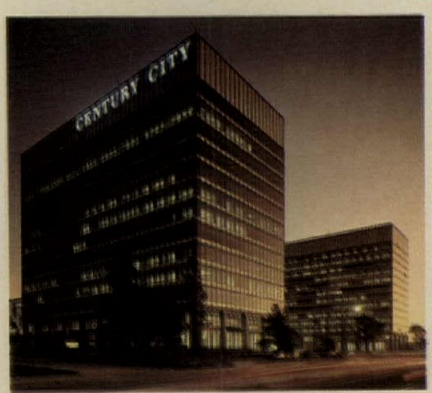
GATEWAY WEST



At bold new Century City

Holophane frameless lenses provide low brightness, high output illumination



More than ten thousand Holophane frameless lenses were specified to bring efficient, prismatically-controlled illumination to the new Gateway East and Gateway West buildings in Los Angeles. These 14-story twin office buildings mark the first stage of Century City, a monumental development which will eventually include more than six million square feet of office buildings and extensive apartment, shopping and recreation facilities.

At Century City, as in hundreds of new buildings throughout the country, Holophane frameless lenses provide lighting of optical excellence, low brightness and high output. The precision-engineered prismatic structure of the lens gathers and redirects light to provide comfortable, glare-free illumination. And there are no lamp streaks at usual angles of view. High pressure injection molding and rigid quality control guarantee the uniformity and accuracy of each Holophane lens. One-piece design is clean-lined and trim. There are no visible latches or hinges.

For complete information about Holophane's extensive line of frameless lenses, write: Dept. H-4, Holophane Company, Inc., 1120 Avenue of the Americas, New York, N.Y. 10036.

Architect: Welton Becket and Associates

Luminaires by Columbia Lighting

Owner: Aluminum Company of America

Frameless Controlens® by **HOLOPHANE**

LOCKWOOD Hardware Graces PHILADELPHIA'S NEWEST COMMUNICATIONS COMPLEX

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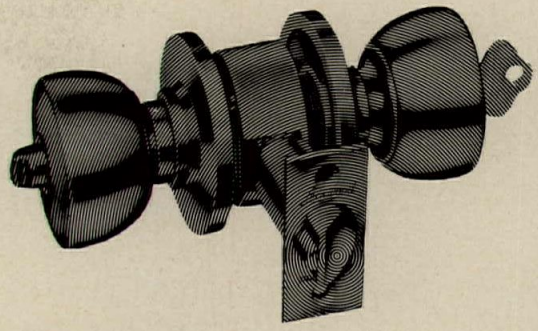
From 4100 City Line Philadelphia, Radio—TV Station, WFIL, beams its signal to an audience of millions. A newly constructed building, as up to the moment as tomorrow's news, serves as the headquarters for the complex which has been called one of the outstanding broadcasting facilities in the world.

In a Radio—TV Station, or in any building where split-second schedules must be met, every consideration must be given to quality of construction. The door hardware was of particular importance to the architect, and Lockwood's Heavy Duty Cylindrical Locks more than met the requirements of design, dependability and functionalism.

There is a Lockwood lock to meet the specifications for that building on your boards right now. May we discuss it with you?



LOCKWOOD

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Fitchburg, Massachusetts

Architect: Vincent Kling, AIA
Contractor: John McShain, Inc.
Hardware Supplied by: Taylor Davis, Inc.

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You have to be present to win

When the showdown comes, are you there? The answer is alas, no. Architects and allied professionals are not there.

Where? Why, at the public hearings which determine decisions on local ordinances, code changes and administrative procedures, the decisions which dramatically affect the *total environment* in which you live and work.

Oh yes, to be sure, you do attend such meetings when the legislation at issue specifically touches a job on the boards. And you speak out for your client when it touches what he would like to do. The old saying holds: What affects the pocketbook draws the crowd.

But wouldn't it affect your pocketbook even more if your community's total environment had a finer quality?

Any community's chances for becoming finer and more beautiful are slim without the support of its citizens — in particular those citizens who can understand the effect of code changes, ordinances, standards of performance in regard to the physical environment. Your support can influence improvement—and your non-support can influence worsening—of your community's environment.

Are you there when your commissions—planning, for instance, or art—and your city council seek opinions on a sign ordinance whose controversial provisions, designed to better the appearance of the city, can become law only if sufficient citizen support is clearly evident? Are you there when your park commission recommends property acquisition to increase open space in your city—a proposal which invariably needs widespread public support? Are you there when a master plan review is held—even though you have no vested interest other than that you live in the community? Are you there when zoning changes are under fire on which your long range view is essential?

Do you familiarize yourself with the study drafts of proposed ordinances so that you can make specific recommendations for or against their provisions? Even one slight recommendation, born of informed opinion and stated in clear specific terms, is worth more than all the high-level sentiments that can be conjured up in vague and general terms. The architect, who uses his citizen's privilege to indicate as no one else can do where a city or a country can achieve a greater good, not only benefits the public but himself as well.

This is not to suggest that architects should think of themselves as, or should try to become, power lobbies. They should not. Their power lies in their special training and special knowledge, and in their voluntary use of these skills *in the service of their communities*. This is their own best public relations, just as the quality of their buildings is their best advertisement.

It is a hard fact of life today that time, energy and money have to go into fighting for the things which, it should be self-evident, are for the good of a community and for the public itself. Things that make a city more attractive, that give it an individual quality, that rectify old mistakes and look toward prevention of deterioration: these things must be fought for now though in time to come they will seem to have been obvious things to do.

When an architect acts as a responsible citizen in regard to matters affecting the environment, he acts—in effect—as the defender of the public's rights, though the role is not so recognized. His whole concern is the public interest, his every word and all his effort are toward a better environment for every citizen, not for himself or his selfish interest.

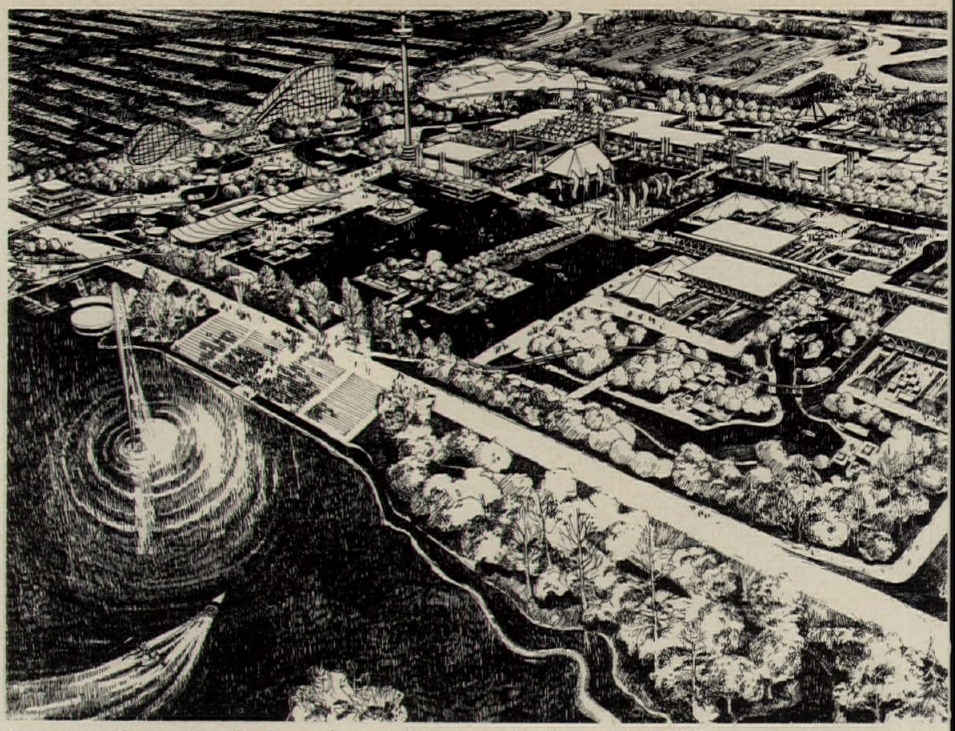
If the war on ugliness is truly to be won, it must prevail in the skirmishes which are these moments of local decision. If as architects we accept our duty as citizens and make it our business to be there when the interest of the community is at stake, we make victory possible.

And in the long run, this responsibility as a citizen in a democracy is the means to participating in the greatest design challenge of all: the opportunity to show that great and beautiful cities can come about through a people's will as well as through a despot's command.

Elisabeth Kendall Thompson

THIS MONTH'S WESTERN REPORTS:

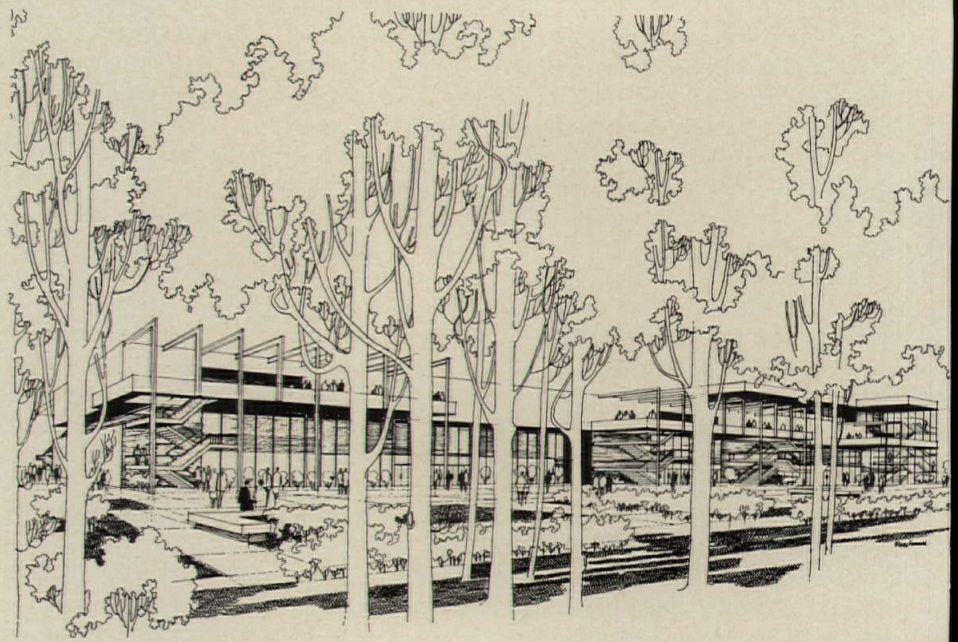
WESTERN BUILDINGS IN THE NEWS



Exposition Center, for displays of state's history and culture, fair buildings, recreation park

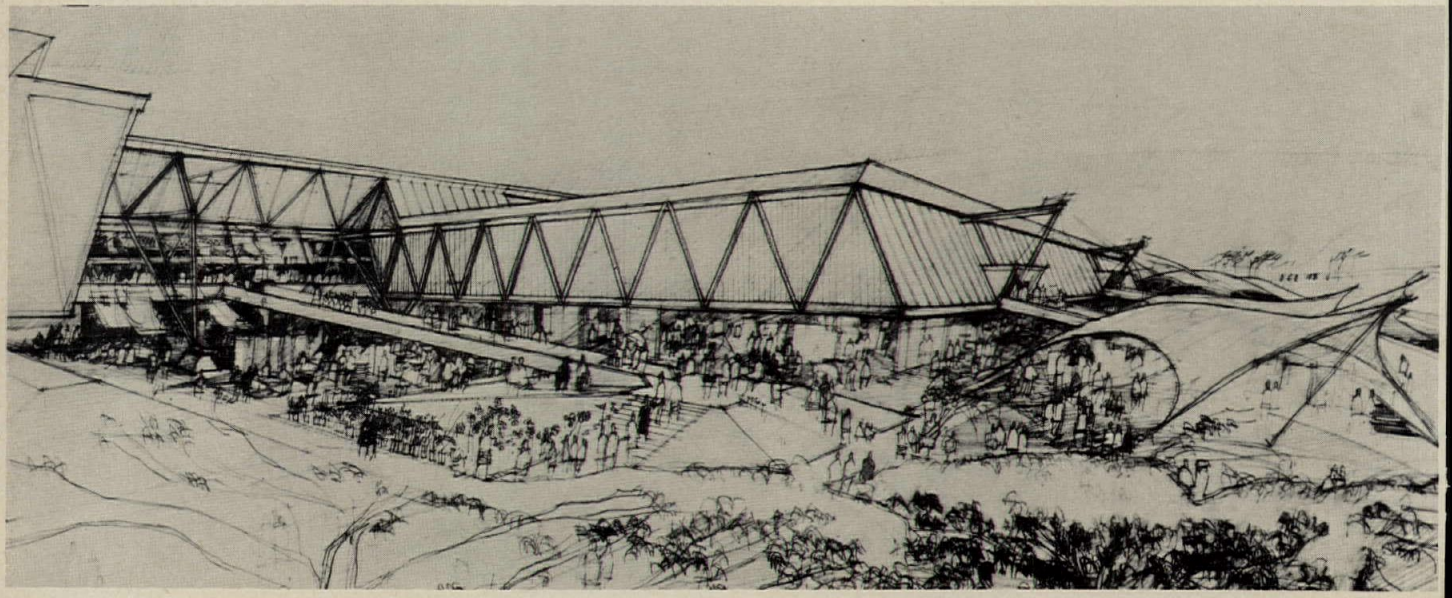
California to have permanent all-year state exposition

By mid-1968, a new California Exposition grounds will be ready for all-year operation on a 630-acre site on the American River at Sacramento. This "showplace of the Golden State" will incorporate the 108-year-old State Fair in a continuing program of educational, recreational and promotional attractions. The master plan shows five major areas of activity: the nine-acre Exposition Center; the Fair Activities complex; the Industrial Exhibits area; a race track; and a recreational park which includes two golf courses. Site clearing and grading will start this summer; construction is expected to get under way by early fall. Co-ordinating architects, master plan: Wurster, Bernardi & Emmons and Lawrence Halprin & Associates. Project architects: Activities complex, Callister & Payne; recreation park, Smith & Williams, Randall Duell & Associates, and Linesch, Reynolds & Evans; race track, Arthur Froelich & Associates; administrative and service facilities, Raymond R. Franceschi and Starks, Jozens and Nacht. Exhibit designs: Herb Rosenthal & Associates.

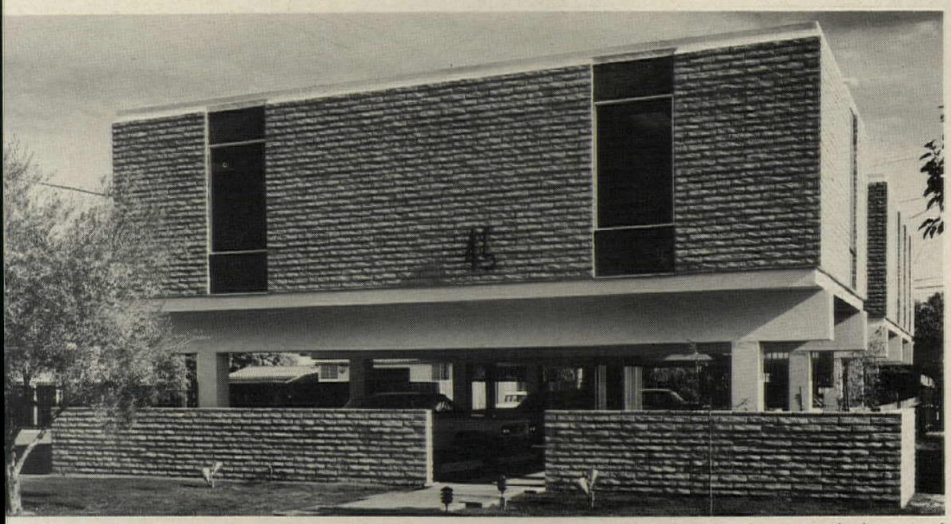


Race track grandstand

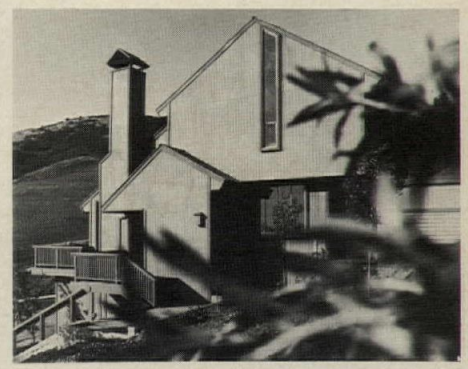
Fair activities complex



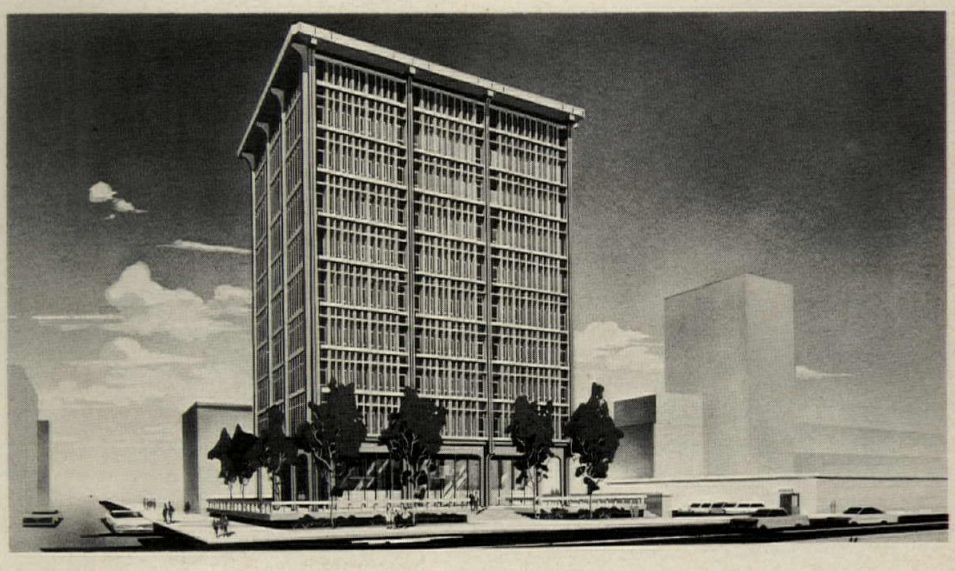
A metropolitan office complex in a suburban location, the Palo Alto Office Center includes a 15-story office tower, a three-level underground garage for 550 cars, and six low-rise buildings for various types of tenants (bank, restaurant, offices). These elements of the complex are situated on a block-size site in downtown Palo Alto not far from Stanford University. The buildings are disposed about two landscaped plazas. Architect: Tallie B. Maule.



The Monterey Way Office Building in Phoenix, Arizona provides adequate parking for its tenants, and an outlook for the office floor, by raising the building on stilts. The small and narrow lot could not otherwise have accommodated the needed rental space for investment return. The building is concrete framed, with precast concrete slab floor and roof deck units. Architect: P. E. Buchli; contractor: H. Holmes.

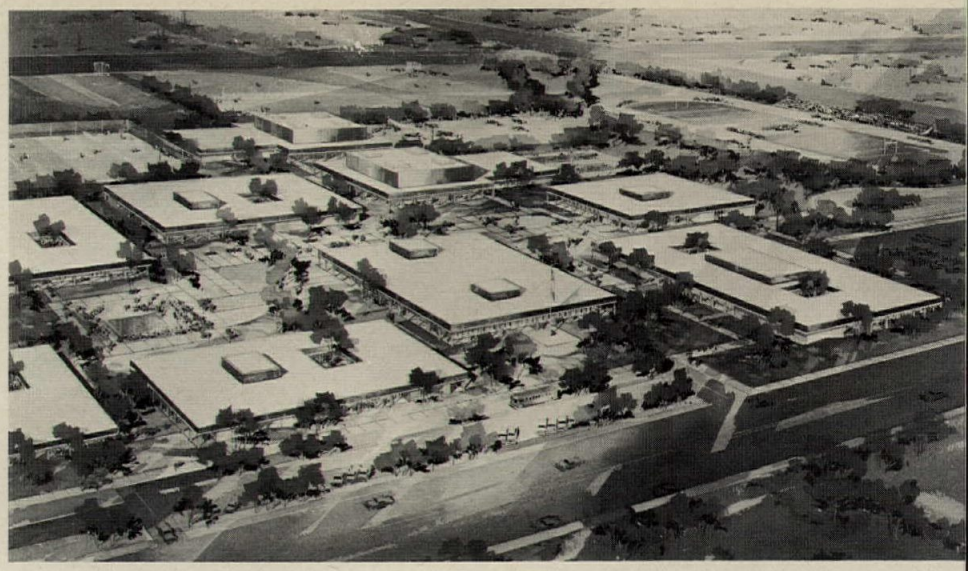


One of eight model units recently completed at Hiller Highlands, a condominium cluster-plan community in Oakland, California, this house is a prototype for the hillside development's first phase. The $20-million, 67-acre village in the Berkeley Hills, overlooking San Francisco Bay, will include single-family houses, duplexes and triplexes, and a recreation center with clubhouse, pool, tennis courts and other facilities. Architects: Callister & Payne — John Payne, architect; landscape architects: Royston, Hanamoto, Mayes and Beck; civil engineers: Bryan and Murphy; developers and builders: joint venture, Weldwood Structures Division of U.S. Plywood, Moana Development Company and Bothin Real Estate Company.

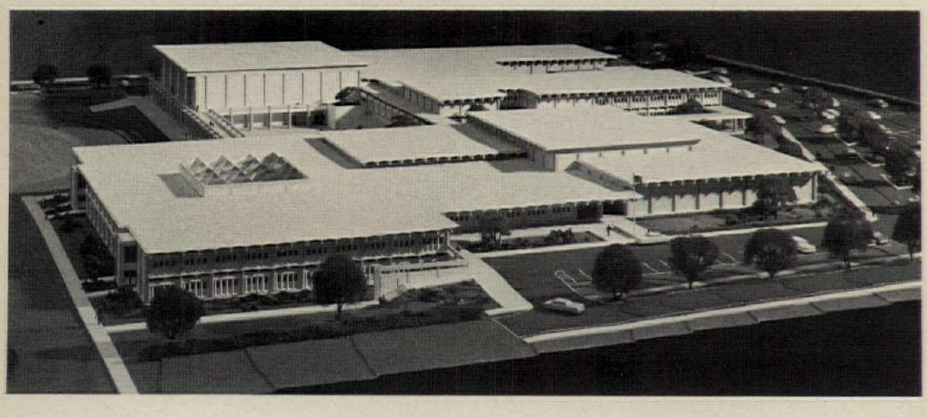


The City Bank of Honolulu recently completed this 10-story headquarters office building in Honolulu's financial district. The bank will occupy the first three floors and basement; the remaining floors will be for rental. The building is steel framed, with precast concrete sunscreen to protect windows on nine floors. A landscaped plaza marks the main entrance. Architects: Takashi Anbe and Walter K. Tagawa; contractors: Reed & Martin International, Inc.

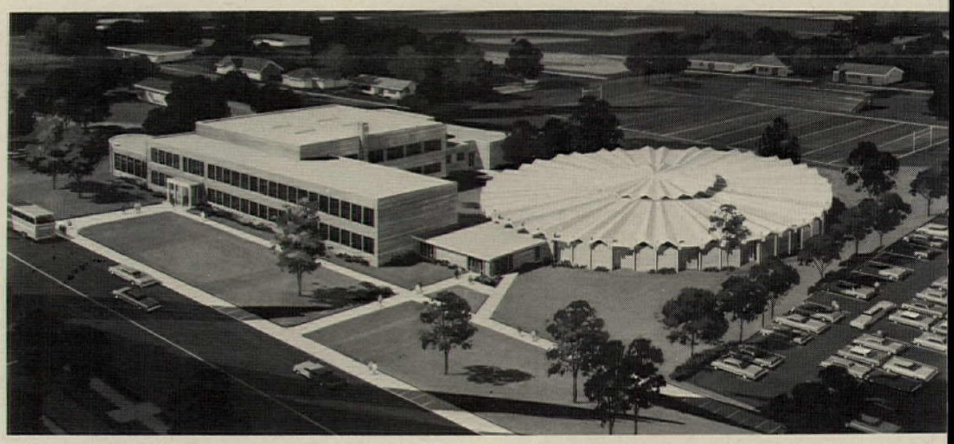
Four new schools



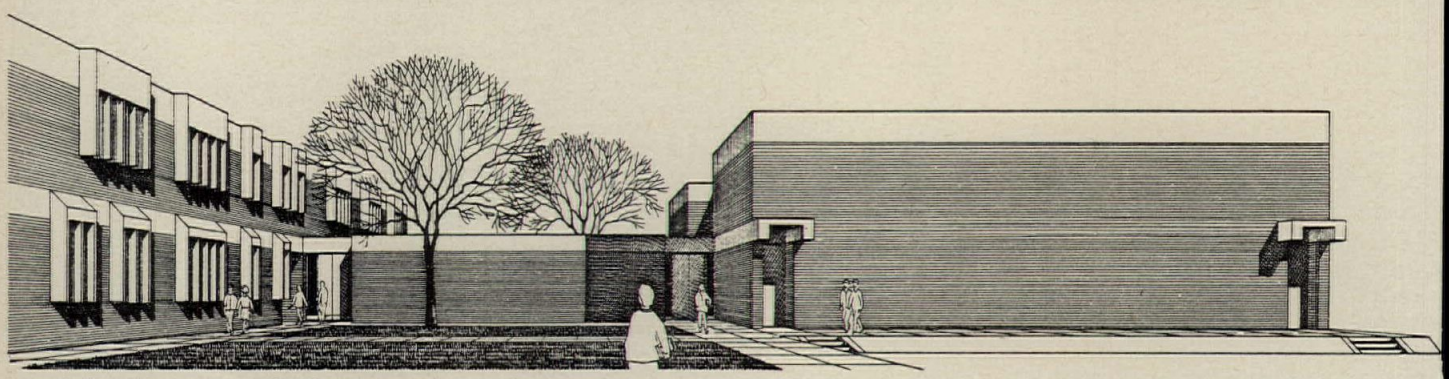
Five buildings comprise the first phase of construction for the new Apple Valley, California senior high school: administration-library; humanities, arts and sciences; cafeteria; gymnasium; and applied arts. All are scheduled to be completed by Fall 1967. Located on a 67-acre site, the buildings are grouped around a plaza; classroom clusters have their own interior courts. Architects: Albert C. Martin and Associates.



The 2,000-student John Adams High School in northeast Portland, Oregon manages to fit into the residential area in which it is located by skillful use of its sloping site, adjacent to a large park. A grade change of 15 feet from one side to the other permits placement of tall elements on the low side to preserve the residential scale; other units are one-story high. The two-story academic building overlooks the park. Architects: Hewlett & Jamison — James L. Atkinson, project architect; structural engineer: Dirk N. Looijenka; mechanical engineers: W. Bruce Morrison & Associates; electrical engineer: Harry E. Beik.

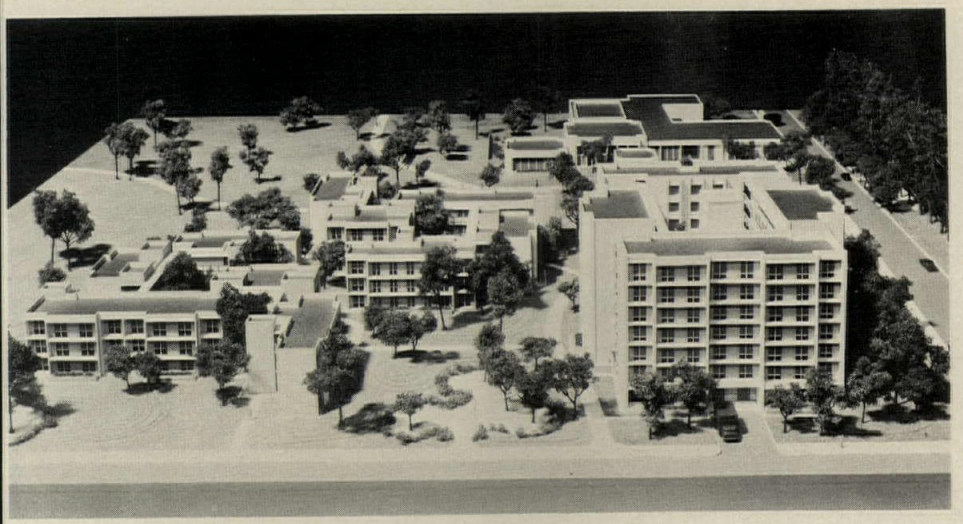


A $590,000 addition to the Wolf Point, Montana high school will provide 15 new classrooms, a resource center, cafeteria and kitchen, music department and administrative offices. Architects: Cushing, Terrell & Associates—Robert E. Fehlberg, project architect.

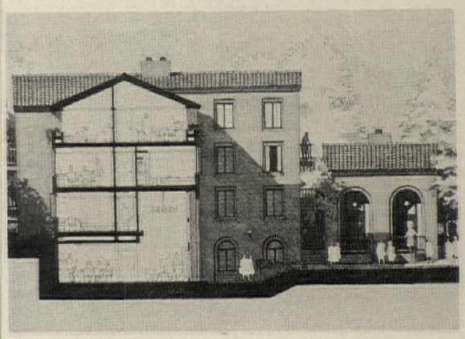


Bear Valley Elementary School will provide the Denver School District with nine new primary classrooms and two kindergarten rooms in one long wing (at left in sketch). A shorter wing (right) containing auditorium, gymnasium and cafeteria is joined to the classroom wing by a gallery with a protected interior court. Administration offices open onto the court but are directly related to classrooms and the principal entrance to the school. Architects: Baume, Polivnick and Hatami.

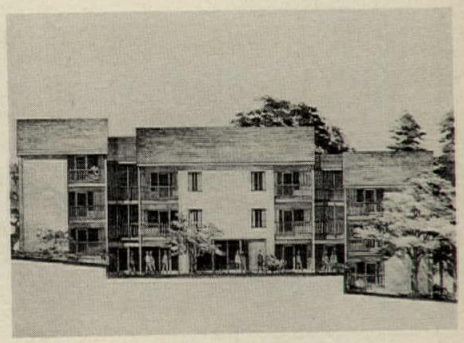
Western universities add more residence halls



First phase of new residential facilities at the Santa Barbara campus of the University of California will include one seven-story tower for women, two five-building complexes for men and a dining commons, which both men and women will use, to accommodate 400 at one sitting in 200-, 100- and 50-seat rooms. Residence halls will have a variety of living arrangements: women can live in single or double rooms or in four-, six-, or eight-student suites. Men's halls will follow present accommodations (most have double rooms). Ultimate development of San Rafael Residence Halls, shown here, will house 2,400 students. Architects: Charles Luckman Associates.



Stanford University's first coed residence halls will be ready for use by Fall 1968. Separate living wings for men and women will be provided, but dining rooms, lounges and seminar rooms will be common to both. The four "houses"—planned with 70-student sub-units—will also have classrooms, making the residence units an unusual experiment in "a new kind of mixed academic plan." Architects: Jacks House (left), Ernest J. Kump & Associates; Moore House (right), John Carl Warnecke and Associates.



WESTERN TOPICS

Waterfront traffic in the historic section of Monterey, California will be channeled through a tunnel under the Custom House urban renewal project as a result of Federal funds just approved for constructing the tunnel. This routing will preserve the unity of old and new sections of the city. Wurster, Bernardi and Emmons are architects for the Custom House renewal project, with Lawrence Halprin, who proposed the tunnel, as landscape architect.

A $12-million hotel will be one of the buildings which Crow-Box-Portman and David Rockefeller Associates will build in San Francisco's Golden Gateway redevelopment project. John Portman of Atlanta is the architect member of the developer group. The site—at the foot of Market Street overlooking the Bay—is one portion of a five-block parcel recently bought by the developers, who will also build office and commercial structures and possibly a theater.

The California Supreme Court's ruling that Proposition 14—the controversial initiative passed in 1964 which nullified existing fair housing legislation—is illegal was the basis for immediate freeing of some $120 million in urban renewal funds. The money—and the projects— had been frozen since November 1964.

Award-winning Ghirardelli Square in San Francisco has been so successful that its owners will expand it to incorporate other of the neighborhood's old buildings. The power house will be used either as small theater or as a restaurant; the woolen mill, which anteceded the Ghirardelli factory, will also be preserved, and a pilot chocolate plant, using the original equipment, will be maintained.

New materials and technology are not being used in house construction to the extent that they should be, said Portland (Oregon) architect Donald Blair at the third annual Forest Industries Marketing Conference held at the University of Oregon in Eugene. "Modular assembly of manufactured parts, components using new materials for thin cores, better sound and temperature control, skin materials with a permanent finish, a high degree of machined parts, better moisture control, power fastening and electronic gluing—these will make the house of the future a far better product than anything we have today," he concluded.

WESTERN EVENTS

AUGUST

11-12 "Private Profit-motivated and Non-profit Sponsorship of Low and Moderate Income Housing," lecture and workshops, sponsored by the Redevelopment Division of Urban America, Inc. Hotel Claremont, Berkeley, California.

14-18 "Part I: Optimum Environment with Man as the Measure," national conference, American Institute of Planners. Portland Hilton, Portland, Oregon.

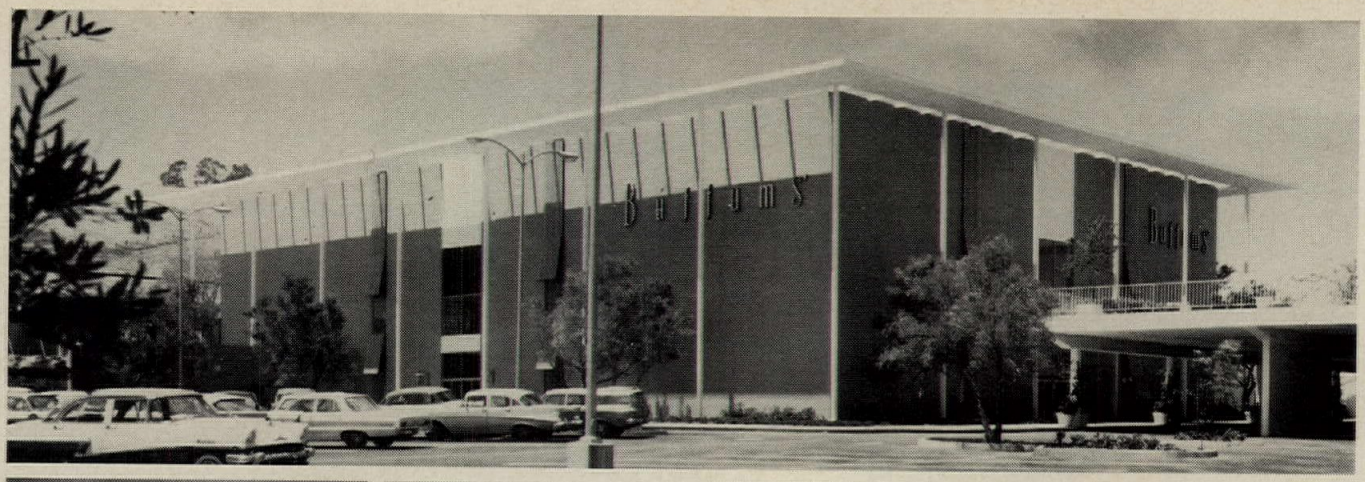
22-26 Conference on "Stability and Performance of Slopes and Embankments," sponsored by the University of California Extension, Berkeley, California.

26-September 5 21st Los Angeles Home Show. Pan Pacific Auditorium, Los Angeles.

SEPTEMBER

7-9 Fourth National American Society of Civil Engineers Conference on Electronic Computation. University of California, Los Angeles.

10-15 National conference, American Institute of Interior Designers. Fairmont Hotel, San Francisco.



ALL-ELECTRIC BUILDING AWARD

Buffums' Department Store
Peninsula Center
Palos Verdes Peninsula,
California

Architect:
Killingsworth, Brady
and Associate, A.I.A.

Buffums' completes fourth (plans fifth) All-Electric building

In retailing and in building, Buffums' knows value; and they stay with it!

Buffums' new Palos Verdes store has won the All-Electric Building Award for their fourth all-electric department store. The fifth is on the drawing boards.

By going all-electric, Buffums' achieved a greater flexibility of design, permitting wide aisles and high ceilings that give a smart, modern appearance. Savings in space alone provided enough square feet for a complete shoe department.

Lighting, designed as a subtle tool for merchandising, also helps heat the store. High capacity heaters are not needed.

Like to hear more about all-electric building? Write Marketing Engineering, P.O. Box 62, Terminal Annex, Los Angeles 90051.

SCE

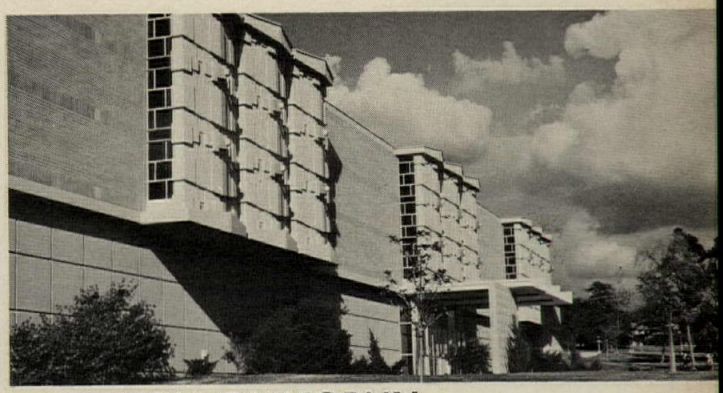
Southern California Edison

For more data, circle 21 on inquiry card

THESE ARE SIX OF THE WEST'S OUTSTANDING COLLEGE LIBRARIES...and Ames is there!

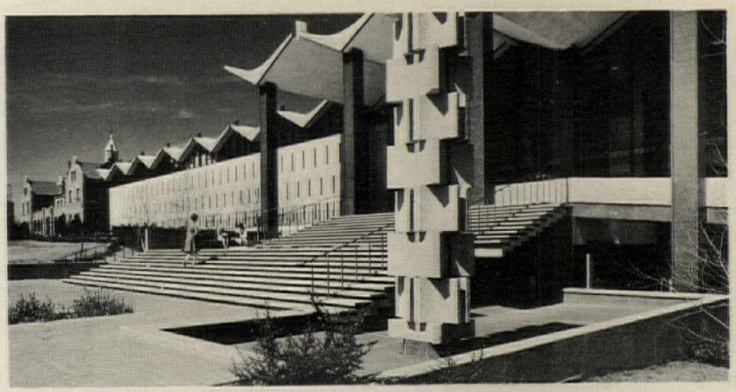
NORTHERN CALIFORNIA

Dominican College, San Rafael, California.
100,000 Volumes. The Archbishop Alemany Library.
Architects: Schubart and Friedman, San Francisco.



SOUTHERN CALIFORNIA

Mount San Antonio Library, Walnut, California.
100,000 Volumes.
Architects: Austin, Field and Fry, Los Angeles.



NEVADA

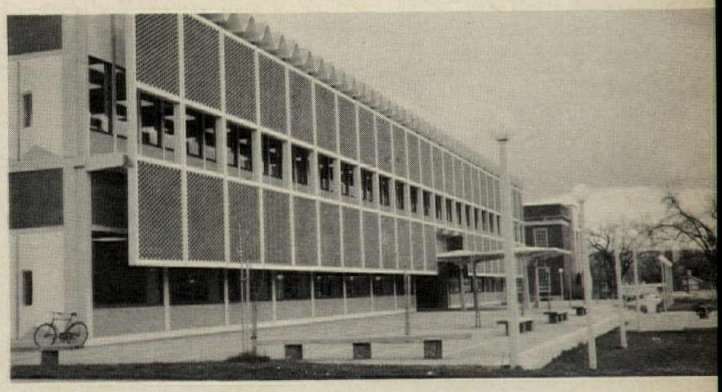
University of Nevada, Reno, Nevada.
400,000 Volumes. The Noble H. Getchell Library
Architects: David Vhay, Reno; Robt. E. Alexander, Los Angeles.

OREGON

Oregon State University, Corvallis, Oregon.
510,000 Volumes. The William Jasper Kerr Library.
Architects: Martin & Hamlin, Eugene, Oregon.

UTAH

Brigham Young University
1,000,000 Volumes.
Architect: Lorenzo S. Young, Salt Lake City, Utah.



WASHINGTON

Central Washington College of Education, Ellensburg, Wash.
225,000 Volumes.
Architects: Bassetti & Morse, Seattle, Washington.

AMES

In thousands of colleges and schools in the Western States, Ames Library Shelving is specified. For complete information on concepts, designs and colors in modern Steel Library Shelving, write Department A.

W. R. AMES COMPANY • SHELVING DIVISION

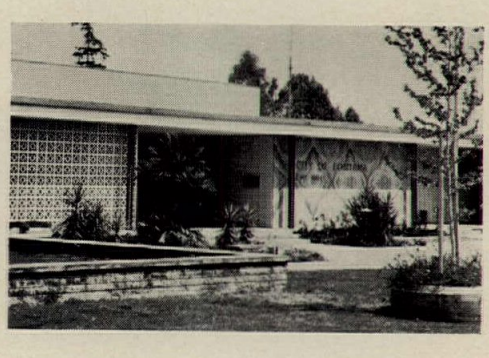
1001 DEMPSEY ROAD • MILPITAS, CALIFORNIA 95035 • (408) 262-1000

For more data, circle 22 on inquiry card

11¢/SQ. FT.

The annual operating cost of heating and cooling the Fontana City Hall electrically

Fontana City Hall
8353 Sierra Avenue
Fontana, California
Architect
Grover W. Taylor
Engineers
Tharaldson, Matthewson, Argebright and Doby, Consulting Mechanical Engineers;
Ted Stuhl, Consulting Electrical Engineer



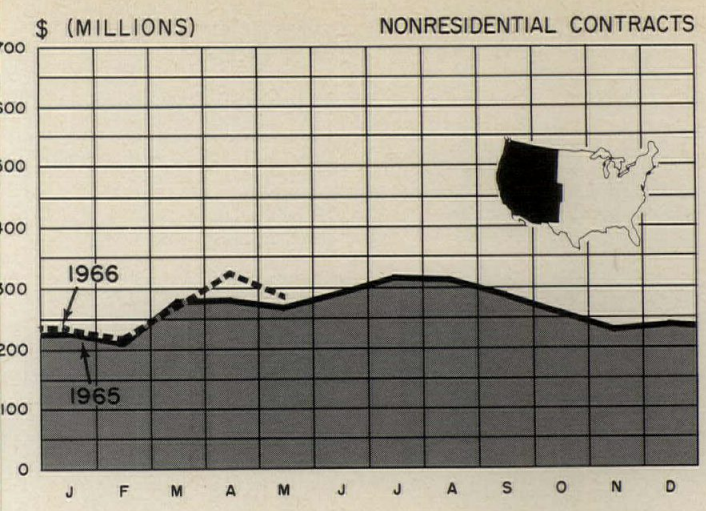
Only 11¢. And that's for both heating and cooling.

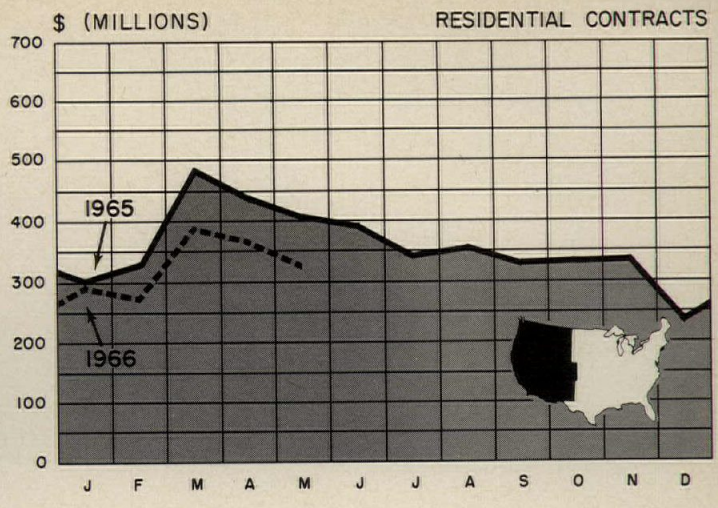
Electric space conditioning *is* economical. And it's practical. Only one source of power is needed.

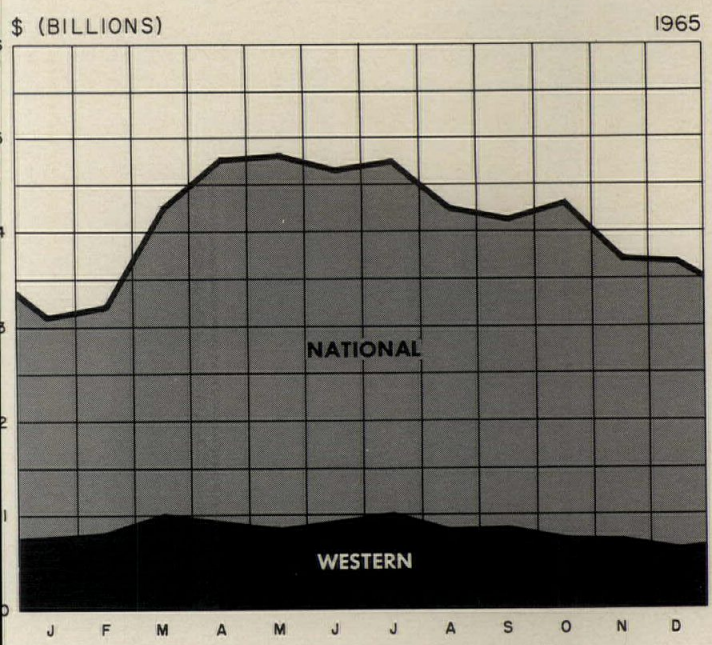
Drop by an Edison office and see for yourself. We have records like this for hundreds of Southern California buildings.

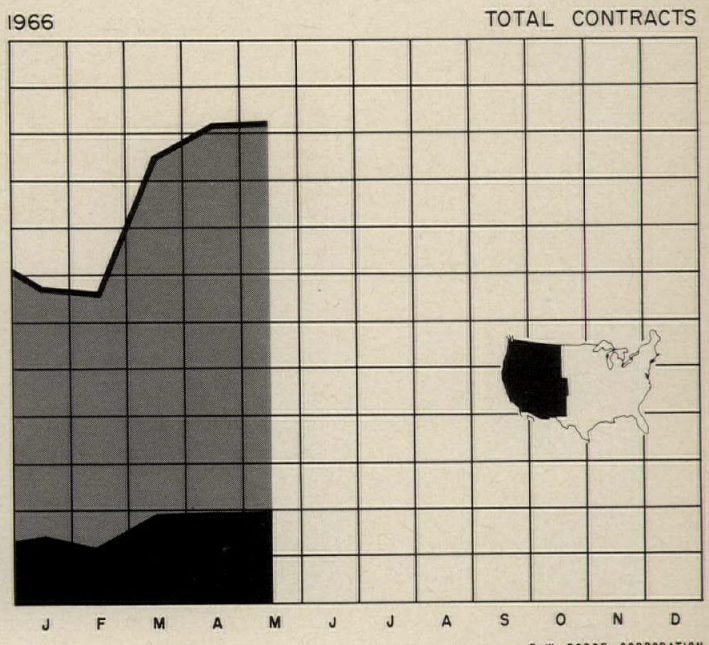
Southern California Edison SCE

For more data, circle 23 on inquiry card









F. W. DODGE CORPORATION

Total contracts include residential, nonresidential and non-building contracts

Western construction trends

FOR ANALYSIS OF CONSTRUCTION TRENDS NATIONWIDE SEE PAGE 44

May brought an abrupt end to the string of monthly declines that have been plaguing Western construction activity since the beginning of the year. Over $995 million worth of projects entered the contract stage during the month, a figure 11 per cent above May 1965's performance, and the largest amount recorded so far this year, *both* in actual dollars and on a seasonally adjusted basis.

The source of May's strength is not difficult to find. Contrary to the 1965 pattern, the flow of large ($10 million and above) nonbuilding projects, little more than a trickle during the first quarter of 1966, gathered considerable momentum during the second, reaching a $167-million torrent in May. The primary contribution to this amount—also of interest because it stands as the largest single construction contract awarded in the 11 Western states since June, 1957—was the $101-million contract for the 630-foot-high Bullards Bar dam in California's Yuba county. The effect on the total nonbuilding category was considerable; a figure of $383.5 million was recorded for the month, a full 72 per cent above the May 1965 amount.

The nonresidential category, paced by strong gains in manufacturing, public buildings and the educational and science component, turned in $290 million in contract value during May, 7 per cent above the 1965 amount.

While, on a cumulative basis, Western nonresidential building shows a solid 6 per cent increase over the first five months of 1965, a comparison with the booming 16 per cent gain for the nation as a whole reveals that there is still some room for improvement in this category. Although Western manufacturing, public building and hospital contracts are ahead 51 per cent and 36 per cent and 30 per cent respectively, the cumulative behavior of a few other nonresidential components reflects a mixed pattern. The large educational component stands 2 per cent off 1965's pace for the period and commercial building, with both stores and offices in the red, trails the first five months of 1965 by 6 per cent. In addition, the social and recreational component, up against a strong year in 1965, remains a full 39 per cent in the red.

Although the second half should see some improvement in the weak categories, it is unlikely that the three high flyers can maintain their current pace.

May brought a sharp seasonally-adjusted decline in residential building, as builders and home buyers alike remained in the grip of tight credit conditions. Accounting for as much as 50 per cent of total Western construction activity in the boom years of the early 1960's, residential building fell to slightly less than one-third of the total in May.

James E. Carlson,
Associate Economist
F. W. Dodge Company
A Division of McGraw-Hill, Inc.

Estimator's Guide: Seattle and The Northwest

The Estimator's Guide alternates monthly among four Western areas. The prices at right are compiled from average quotations received by LeRoy Construction Services for commercial work of approximately $100,000-$250,000 total value. Except as otherwise noted, prices are for work installed including all labor, material, taxes, overhead and subcontractors' profit. Material prices include local delivery except as noted, but no state or local taxes.

EXCAVATION

MACHINE WORK IN COMMON GROUND

Large basement .....CY .90-1.20
Small pits .....CY 1.50-2.00
Trenches .....CY 2.00-2.75

HAND WORK IN COMMON GROUND

Large pits & trenches .....CY 8.75-13.00
Small pits & trimming ....CY 12.00-16.00
Hard clay or shale, 2 times above rates.
Shoring, bracing & disposal of water not included.

SEWER PIPE MATERIALS

VITRIFIED

Standard 4" .....LF .33
Standard 6" .....LF .66
Standard 8" .....LF .96
Standard 12" .....LF 2.03
Standard 24" .....LF 8.27

CLAY DRAIN PIPE

Standard 6" .....LF .33
Standard 8" .....LF .48

Rate for 100 LF FOB Warehouse

CONCRETE & AGGREGATES

GRAVEL, all sizes .....TON 3.75
TOP SAND .....TON 4.00
CONCRETE MIX .....TON 4.10

CRUSHED ROCK

¼" to ¾" .....TON 4.00
¾" to 1½" .....TON 4.00
Lightweight aggregate .....CY 10.75
Expanded Perlite .....30# Sack 1.45

ROOFING GRAVEL .....TON 4.10
SAND (#1 & 2) .....TON 5.00

CEMENT

Common, all brands (paper sacks)
Small quantities .....Per Sack 1.40
Large quantities .....Per Bll 4.45
Atlas White .....Per Sack 3.70

Concrete Mix

6 sacks in 5-yd loads.....Per Yd 15.65
Lightweight 6 Sacks .....Per Cy 21.25

CURING COMPOUND

Clear, 5-gal drums .....Per Gal 1.45

STEEL MATERIALS

SHEETS

Hot rolled .....LB .115
Cold rolled .....LB .125
Galvanized .....LB .125

PLATE .....LB .115
STRIPS .....LB .135
STRUCTURAL SHAPES .....LB .12

BARS

Hot rolled .....LB .115
Cold finished .....LB .156
Reinforcing .....LB .11

REINFORCING MESH

6 x 6" #10 x #10 .....SF .04
6 x 6" #6 x #6 .....SF .07

2000# FOB Warehouse

STRUCTURAL STEEL

$365.00 and up per ton erected when out of mill.
$395.00 and up per ton erected when out of stock.

BRICK & TILE

COMMON BRICK

Common 2½ x 3¾ x 8¼" .....M 49.00
Select 2½ x 3¾ x 8¼" .....M 63.00

FACE BRICK

Standard .....M 78.00
Roman .....M 84.00
Norman 2½ x 11½ x 3½" .....M 127.00
SCR 2½ x 5½ x 11½ .....M 182.00
2½ x 7½ x 11½ .....M 255.00

HOLLOW TILE

12 x 12 x 3" .....M 160.00
12 x 12 x 4" .....M 176.00
12 x 12 x 6" .....M 240.00

MANTEL FIRE BRICK

2½ x 9½ x 4½" .....M 135.00

GLAZED STRUCTURAL UNITS

2 x 6 x 12" Furring .....SF .60
4 x 6 x 12"–1 side .....SF .91
6 x 6 x 12"–1 side .....SF 1.32
4 x 6 x 12"–2 sides .....SF 1.00
Add For Color .....SF .25

CONCRETE BLOCKS

4 x 8 x 16" .....EA .25
6 x 8 x 16" .....EA .32
8 x 8 x 16" .....EA .34
12 x 8 x 16" .....EA .52
Add for color .....EA .02

BRICKWORK & MASONRY

BRICK WALLS

Back Up Common 8" .....SF 2.75
Back Up Common 12" .....SF 3.90
S.C.R. 6" .....SF 2.10
S.C.R. 8" .....SF 2.55

CONCRETE BLOCK, REINFORCED

6" walls .....SF 1.35
8" walls .....SF 1.50
12" walls .....SF 1.95

GLAZED STRUCTURAL UNITS

Facing 2" .....SF 2.30
Partition 4" .....SF 2.80
Partition 6" .....SF 4.55

BRICK VENEER

4" Select Common .....SF 1.70
4" Roman .....SF 1.85
4" Norman .....SF 1.75

STONE WALLS

Veneer 4" .....SF 3.45-4.20
Walls 8" .....SF 7.00-8.50

BUILDING PAPERS & FELTS

BUILDING PAPER

1 ply per 1,000-ft roll 4.30
2 ply per 1,000-ft roll 6.80
3 ply per 1,000-ft roll 8.80
Sisalkraft, reinforced, 500-ft roll ... 9.50

SHEATHING PAPERS

Asphalt sheathing, 15-lb
324 SF roll 2.20
30-lb 216 SF roll 2.95
Dampcourse, 216-ft roll 3.30

FELT PAPERS

Deadening felt, ¾-lb, 50-yard roll.. 3.00
1-lb, 50-yard roll 3.50

ROOFING PAPERS

Standard grade, smooth surface
432 SF roll,
Light, 45-lb 2.30
Medium, 55-lb 2.65
Heavy, 65-lb 2.95
Mineral surfaced 216-ft Roll 3.50

LUMBER

DOUGLAS FIR

Construction 2x4-2x10 MBM 94.00-102.00
Standard ...2x4-2x10 MBM 90.00- 96.00
Utility .....2x4-2x10 MBM 75.00- 82.00
Economy ...2x4-2x10 MBM 57.00- 68.00
Clear, air dried .....MBM 200.00-230.00
Clear, kiln dried .....MBM 280.00-400.00

REDWOOD

Foundation grade .....MBM 150.00
Construction Heart .....MBM 140.00
A Grade .....MBM 300.00
Clear Heart .....MBM 325.00

PLYWOOD (DOUGLAS FIR)

¼" AB .....MSF 95.00
¼" AD .....MSF 75.00
¼" Ext. waterproof .....MSF 81.00
⅜" AB .....MSF 109.00
⅜" AD .....MSF 99.00
⅜" CD .....MSF 75.00
½" AB .....MSF 145.00
½" AD .....MSF 124.00
½" CD .....MSF 96.00
⅝" AB .....MSF 160.00
⅝" AD .....MSF 141.00
⅝" CD .....MSF 108.00
¾" AB .....MSF 184.00
¾" AD .....MSF 165.00
¾" CD .....MSF 140.00
⅝" Plyform .....MSF 170.00

SHINGLES

Cedar #1 .....Square 15.00-18.00
Cedar #2 .....Square 12.00-14.00

SHAKES

Cedar
½" to ¾" butt .....Square 18.00-21.00
¾" to 1¼" butt .....Square 20.00-23.00
Redwood
¾" to 1¼" butt .....Square 21.00-24.00

INSULATION & WALL BOARD

FOB Warehouse

FIBRE GLASS INSULATION

foil backed	Per MSF
½" thick	41.00
2¼" thick	49.00
3⅝" full thick	59.00

SOFTBOARDS–wood fiber

½" thick 60.00
¾" thick 128.50

ALUMINUM INSULATION

35# Kraft paper with alum. foil
1 side only 24.00
2 sides 30.00

GYPSUM WALLBOARD
⅜" thick 51.00
½" thick 62.00
⅝" thick 86.00

HARDBOARDS—wood fiber
⅛" thick, sheathing 58.00
3/16" thick, sheathing 73.00
¼" thick, sheathing 85.00
⅛" thick, tempered 80.00
3/16" thick, tempered 110.00
¼" thick, tempered 130.00

CEMENT ASBESTOS BOARD
⅛" flat sheets 135.00
3/16" flat sheets 182.00
¼" flat sheets 238.00

ROUGH CARPENTRY

FRAMING
Floors .....BM .26-.32
Walls .....BM .33-.39
Ceilings .....BM .35-.44
Roofs .....BM .28-.34
Furring & blocking .....BM .44-.68
Bolted framing, add 50%

SHEATHING
1 x 8" straight .....BM .23-.29
1 x 8" diagonal .....BM .26-.32
5/16" plyscord .....SF .20-.25
⅜" plywood CC .....SF .28-.33

SIDING
1 x 8" bevel .....BM .47-.52
1 x 4" V-rustic .....BM .52-.62
Bolted framing add 50%

DAMPROOFING & WATERPROOFING

MEMBRANE
1 layer 50# felt .....SQ 10.00
4 layers dampcourse .....SQ 15.00
Hot coat walls .....SQ 10.00
Tricosal added to concrete .....CY 1.00
Anti-Hydro added to concrete..CY 1.50

ROOFING

STANDARD TAR & GRAVEL **Per Sq**
4 ply 17.00-21.00
5 ply 19.00-24.00
White gravel finish—Add 2.00- 4.00
ASPHALT COMPO. SHINGLES 20.00-24.00
CEDAR SHINGLES 24.00-28.00
CEDAR SHAKES 27.00-33.00
REDWOOD SHAKES 33.00-38.00
CLAY TILES 50.00-80.00

ROOF FLASHINGS
18 ga galv steel .....SF .85-1.30
22 ga galv steel ..... SF .75-1.20
26 ga galv steel .....SF .65-1.10
18 ga aluminum ..... SF 1.35-1.85
22 ga aluminum .....SF 1.15-1.30
26 ga aluminum .....SF 1.05-1.15
16 oz copper ..... SF 1.90-2.45
20 oz copper ..... SF 2.20-2.65
24 oz copper .....SF 2.30-2.95
26 ga galv. steel
4" OG gutter .....LF 1.15-1.40
Mitres and Drops ..... EA 2.25-4.25
22 ga galv. louvers .....SF 3.00-4.00
22 oz copper louvers ..... SF 3.75-5.25

CHIMNEYS, PATENT

6" .....LF 1.45
8" .....LF 2.05
10" ..... LF 2.85
12" .....LF 3.50
Rates for 10-50 LF

MILLWORK
All Prices FOB Mill

D.F., clear,
air dried S4S.....MBM 220.00-250.00
D.F., kiln dried S4S.. MBM 280.00-400.00

DOOR FRAMES & TRIM
Residential entrance ..... 17.00 & up
Interior room entrance ..... 9.00 & up

DOORS
1⅜" hollow core ..... 8.00 & up
1¾" solid core .....19.00 & up
1⅜" Birch hollow core ..... 10.00 & up
1¾" Birch solid core .....22.00 & up
Prefitted doors, frames
& trim .....13.00 & up

WINDOW FRAMES
D/H singles .....SF .90
Casement singles .....SF .90

WOOD SASH
D/H in pairs (2 lts) .....SF .55
Casement (1 lt) .....SF .65

WOOD CABINETS
¾" D.F. plywood with
¼" plywood backs:
Wall hung .....LF 10.00-15.00
Counter .....LF 12.00-17.00
Birch or maple, add 25%

FINISH CARPENTRY

EXTERIOR TRIM
Fascia and molds .....BM 48-60
Bolted Framing—Add 50

ENTRANCE DOORS & FRAMES
Singles ..... 60.00 & up
Doubles .....100.00 & up

INTERIOR DOORS & FRAMES
Preset .....17.00 & up
Singles .....36.00 & up
Pocket sliding .....45.00 & up
Closet sliding (Pr.) .....55.00 & up

WINDOWS
D/H sash & frames .....SF 2.00 & up
Casement sash & frames ....SF 2.25 & up

SHELVING
1 x 12 S4S .....BM .40-.50
¾" plywood .....SF .45-.65

STAIRS
Oak steps, D.F. risers
Under 36" wide .....Riser 14.00
Under 60" wide .....Riser 19.00
Newel posts and rail extra

WOOD CASES & CABINETS
D.F. wall hung .....LF 17.00-20.00
D.F. counters .....LF 18.00-30.00

HARDWOOD FLOORING MATERIALS

OAK 25/32" x 2¼" T&G
Select .....M 245.00
#1 Common .....M 190.00
MAPLE 25/32" x 2¼" T&G
#1 Grade .....M 305.00
#2 Grade .....M 280.00
#3 Grade .....M 200.00
NAILS—1" FLOOR BRADS ....KEG 18.00

HARDWOOD FLOORS

Select Oak
Filled, sanded, stained and varnished
25/32" x 2¼" T&G .....SF .75- .90

MAPLE
2nd grade and better
Filled, sanded, stained & varnished
25/32" x 2¼" T&G .....SF .70-1.00
Wax finish, add .....SF .11

RESILIENT FLOORING MATERIALS

Linoleum, standard gage ...SY 2.65-2.85
Linoleum, battleship .....SY 2.95-3.10
⅛" Asphalt tile, dark .....SF .10- .11
⅛" Asphalt tile, light .....SF .14- .16
.080 Vinyl Asbestos tile .....SF .19- .23
⅛" Vinyl Asbestos tile .....SF .23- .32
.080 Vinyl tile .....SF .67- .70
4" base .....LF .12- .14
Rubber treads ..... LF 1.60-2.30
Linoleum paste .....GAL .85- .95

RESILIENT FLOORING

⅛" Asphalt tile, dark colors..SF .22- .25
⅛" Asphalt tile, light colors SF .25- .28
⅛" Rubber tile ..... SF .60- .70
.080 Vinyl asbestos tile .....SF .32- .40
⅛" Vinyl asbestos tile .....SF .42- .52
.080 Vinyl tile .....SF .65- .75
⅛" Vinyl tile .....SF .85-1.05
Linoleum, standard gage ....SY 3.75-4.25
Linoleum, battleship .....SY 5.25-5.75
4" Rubber base, black .....LF .25- .35
Rubber stair treads .....LF 2.25-2.75

LATH & PLASTER MATERIALS

METAL LATH
Diamond 3.4# copper-bearing ...SY .49
Ribbed 3.4# copper-bearing .....SY .53

ROCK LATH
⅜" thick .....SY .36

METAL
¾" Standard channel .....LF .038
1½" Standard channel .....LF .053
3¼" Steel studs .....LF .088
4" Steel studs ..... LF .098
Stud shoes .....EA .026

PLASTER
Browning, hardwall .....Sack 1.58
Finish, hardwall .....Sack 1.75
Stucco ..... Sack 2.60
Expanded Perlite .....30# Sack 1.35

LATH & PLASTER WORK

CHANNEL FURRING
Suspended ceilings .....SY 2.90-3.20
Walls .....SY 2.90-3.30

METAL STUD PARTITIONS
3¼" studs .....SY 3.05-3.40
4" studs .....SY 3.20-3.60
Over 10-0 high, add .....SY .25- .35

3.4# METAL LATH & PLASTER
Ceilings .....SY 4.40-5.20
Walls .....SY 4.50-5.25
Keene's cement finish, add..SY .45- .65

ROCK LATH & PLASTER
Ceilings .....SY 3.35-3.80
Walls .....SY 3.45-3.95

WIRE MESH & ⅞" STUCCO
Walls .....SY 4.80-5.65

STUCCO ON CONCRETE
Walls .....SY 3.40-3.90
Metal accessories .....LF .25- .55

DRYWALL CONSTRUCTION

METAL STUD PARTITIONS FOR DRYWALL
1⅝" .....SF .28
2½" .....SF .31
3⅝" .....SF .37

GYPSUM BOARD FINISH
On Wood ½" .....SF .12
⅝" .....SF .15
On Metal ½" .....SF .14
⅝" .....SF .17
Taping joints .....SF .05
Texturing .....SF .03

TILE MATERIALS
FOB Warehouse

CERAMIC TILE
4¼ x 4¼" glazed .....SF .72
4¼ x 4¼" hard glazed .....SF .74
Random, unglazed .....SF .72
6 x 2" cap .....EA .19
6" cove base .....EA .31
¼" round bead .....LF .18

QUARRY TILE
6 x 6 x ½" red .....SF .51
6 x 6 x ¾" red .....SF .53
9 x 9 x ¾" red .....SF .65
6 x 6" cove base .....EA .23

TILE & TERRAZZO WORK

CERAMIC TILE, stock colors
Floors .....SF 2.00-2.30
Walls .....SF 2.05-2.30
Cove base .....LF 1.40-2.00

QUARRY TILE
6 x 6 x ½" floors .....SF 1.80-2.20
9 x 9 x ¾" floors .....SF 1.95-2.35

TERRAZZO
Terrazzo floors .....SF 2.15-2.65
Cond. Terrazzo floors .....SF 2.30-2.80
Precast treads & risers.....LF 3.60-4.60
Precast landing slabs .....SF 3.00-4.10

WINDOWS

STEEL SASH
Under 10 SF .....SF 2.50 & up
Under 15 SF ..... SF 2.00 & up
Under 20 SF .....SF 1.50 & up
Under 30 SF .....SF 1.00 & up

ALUMINUM SASH
Under 10 SF .....SF 2.75 & up
Under 15 SF .....SF 2.25 & up
Under 20 SF .....SF 1.75 & up
Under 30 SF .....SF 1.25 & up
Above rates are for standard sections and stock sizes, FOB Warehouse

GLASS—CUT TO SIZE
FOB Warehouse

DSB Clear, aver 7 SF .....SF .28
SSB Clear, aver 4 SF .....SF .17
Crystal, aver 16 SF .....SF .35
¼" Polished plate, aver 50 SF.....SF .90
⅛" Obscure, aver 7 SF .....SF .35
⅛" Ribbed, aver 7 SF .....SF .45
⅛" Rough, aver 7 SF .....SF .45
¼" Wire plate, clear, aver 40 SF..SF 1.90
¼" Wire plate, rough, aver 40 SF..SF .90
⅛" Heat absorbing, aver 7 SF.....SF .90
¼" Tempered plate, aver 40 SF...SF 3.60
½" Tempered plate, aver 40 SF...SF 6.40

GLASS BLOCKS
6" .....EA .85
8" .....EA 1.35
12" .....EA 3.45

GLASS & GLAZING

DSB Clear .....SF .85
SSB Clear .....SF .60
Crystal .....SF 1.00
¼" Plate .....SF 2.00
⅛" Obscure .....SF .85
⅛" Heat absorbing .....SF 1.35
¼" Tempered plate .....SF 4.75
½" Tempered plate .....SF 9.00
¼" Wire plate, clear .....SF 2.80
¼" Wire plate, rough .....SF 1.50

PAINT MATERIALS
All prices FOB Warehouse

Thinners 5-100 gal .....Gal .63
Turpentine 5-100 gal .....Gal 1.59
Linseed oil, raw .....Gal 2.36
Linseed oil, boiled .....Gal 2.43
Primer-sealer .....Gal 3.12
Enamel undercoaters .....Gal 5.54
Enamel .....Gal 5.58
White lead in oil .....LB .36
Red lead in oil .....LB .36
Litherage .....LB .32

PAINTING

EXTERIOR
Stucco wash, 1 coat .....SY .52
2 coats .....SY .85
Lead & Oil, 2 coats .....SY 1.18
3 coats .....SY 1.72

INTERIOR
Primer-sealer .....SY .48
Wall paint, 1 coat .....SY .58
2 coats .....SY 1.04
Enamel, 1 coat .....SY .70
2 coats .....SY 1.22
Doors & trim .....EA 15.00
Sash & trim .....EA 17.00
Base & molds .....LF .20
Old work, add 15-30%

VENETIAN BLINDS

RESIDENTIAL .....SF .45 & up
COMMERCIAL .....SF .55 & up
VERTICAL SF 1.25 & up

PLUMBING

Lavatories .....EA 275.00-350.00
Toilets .....EA 320.00-420.00
Bath tubs .....EA 390.00-450.00
Stall shower .....EA 215.00-260.00
Sinks .....EA 260.00-320.00
Laundry trays .....EA 130.00-200.00
Water heaters .....EA 120.00-375.00
Prices based on average residential and commercial work. Special fixtures and excessive piping not included.

HEATING
Furnaces—Gas-Fired, Average Job

FLOOR FURNACE
25,000 BTU .....EA 155.00-175.00
35,000 BTU .....EA 160.00-185.00
45,000 BTU .....EA 175.00-200.00
Automatic control,
add .....EA 30.00- 40.00

DUAL WALL FURNACE
25,000 BTU .....EA 175.00-190.00
35,000 BTU .....EA 180.00-220.00
50,000 BTU .....EA 210.00-240.00
Automatic control,
add .....EA .45.00- 60.00

GRAVITY FURNACE
75,000 BTU 440.00-550.00
85,000 BTU 460.00-570.00
95,000 BTU 520.00-675.00
Forced Air Furnace, add.... 85.00-150.00
Automatic Control, add.... 30.00- 40.00

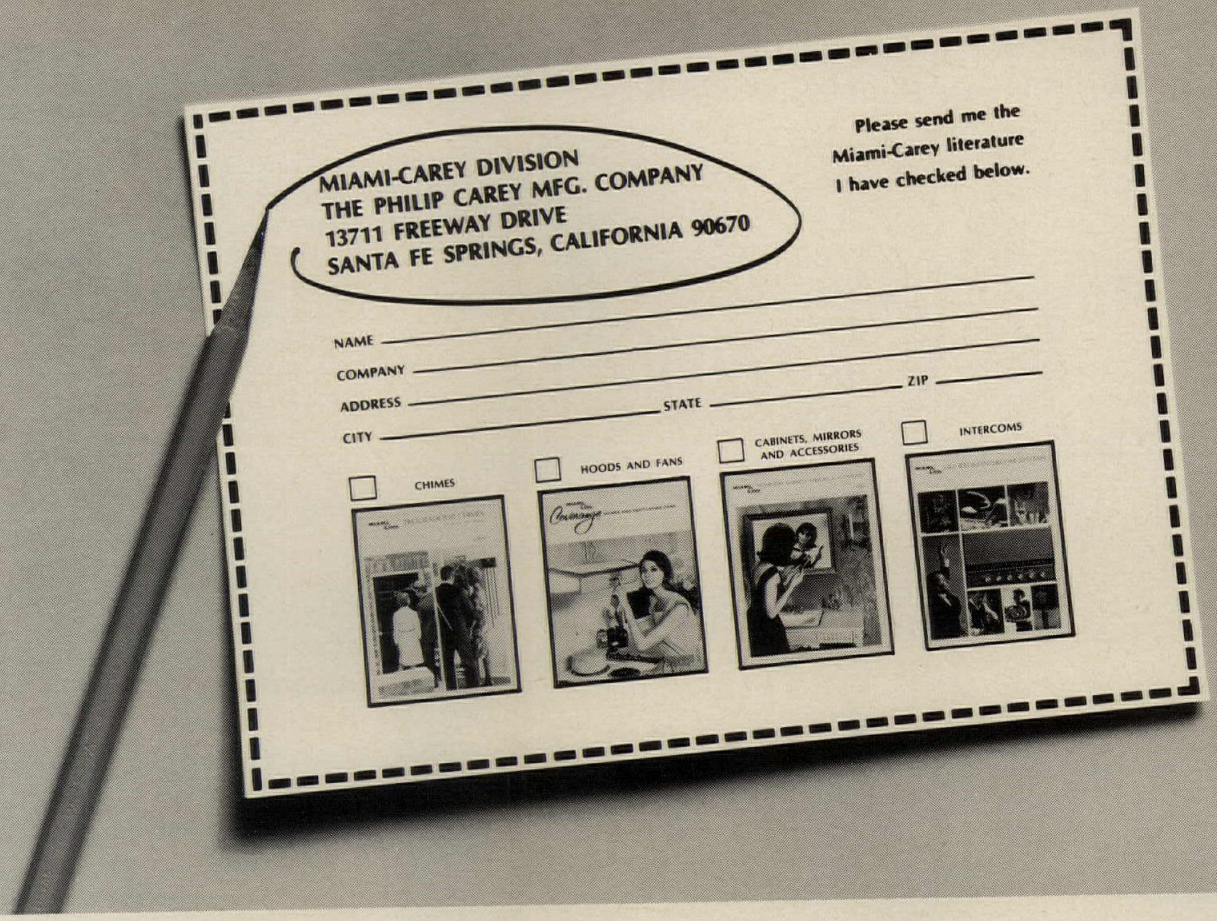
HEAT REGISTERS
Outlet 18.00-36.00

ELECTRIC WIRING
Per Outlet

Knob & Tube .....EA 12.00
Armor .....EA 20.00
Conduit .....EA 25.00
110-V Circuit 3 wire .....EA 29.00
220-V Circuit Range .....EA 108.00

ELEVATORS & ESCALATORS

Prices vary according to capacity, speed and type.
Consult elevator companies.
Slow speed apartment house elevators including doors and trim about $3,500 per floor.



Miami-Carey is now producing in the West. (If you don't have complete product information, just use the coupon.)

Popular models of Good Housekeeping guaranteed Miami-Carey Bathroom Cabinets and Range Hoods are now coming off the assembly lines at our new western plant at Santa Fe Springs (Los Angeles), California. This offers advantages to both of us. You get a close-at-hand source for a quality line that has already gained wide acceptance in the West. And we can give you the prompt service you need in today's competitive market. The coupon will get you complete information on our entire line of Cabinets, Hoods, Door Chimes and Radio-Intercom Systems. We hope you'll use it. And look for Miami-Carey advertising on all of these products coming up soon in *Sunset*.

We'll be serving you better from this new Miami-Carey plant at Santa Fe Springs, California.

If product or performance defective, Good Housekeeping guarantees replacement or refund to consumer

MIAMI Carey®

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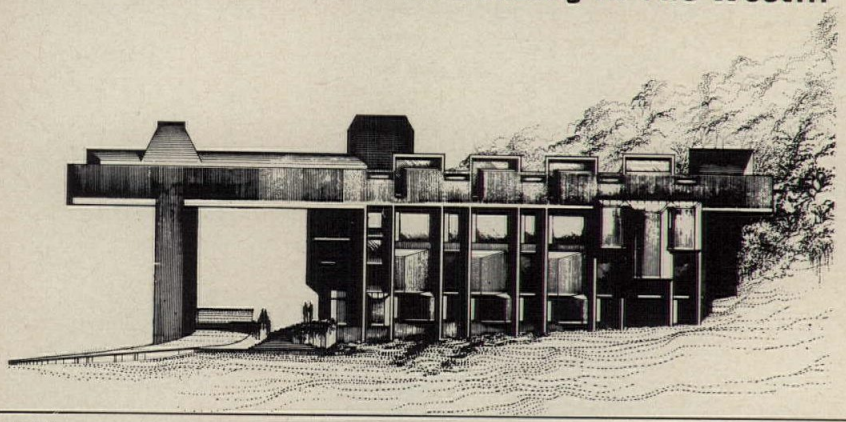
Over 85% of Architect-Planned Building In The West...



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For a complete report on the Record's top verifiable market coverage in the West and the rest of the country, write to: Architectural Record, Box 10, 330 West 42nd Street, New York, N. Y. 10036.

SUNBRELLA® DARES TO BE DIFFERENT

Different enough to be attention-getting. Different enough to start consumers thinking the modern way is to use more canvas outdoors. Fabricators, like the Miami Beach Awning Company, who designed and made the installation shown here, dare to be different, too. We're proud they use Sunbrella. No other fabric lends itself to imagination better. No other fabric has the weather-ability. Or the rich, non-fade colors. Or a 5-year fabric guarantee. Woven of 100% Acrilan* acrylic fiber. Frankly better looking. Easy to sell. Because it lasts so long, it's extremely economical. Reprints of this ad are available if you'd like to mail the picture to clubs, motels, hotels, architects and builders. Please write. Glen Raven Mills, Inc., Glen Raven, North Carolina. *Reg. TM of Chemstrand

Glen Raven

ACRILAN acrylic fiber CHEMSTRAND

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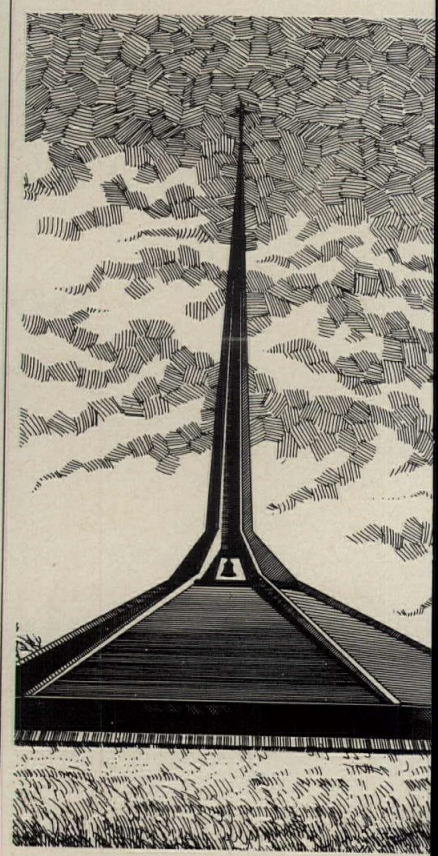
Architecture's Best-Read Publication...



...is Architectural Record, according to the results of 213 independently sponsored readership surveys which have been conducted among architects and engineers since 1937.

It is best-read because, through its important information sources, it best serves the needs of its readers in terms of work actually on their drawing boards.

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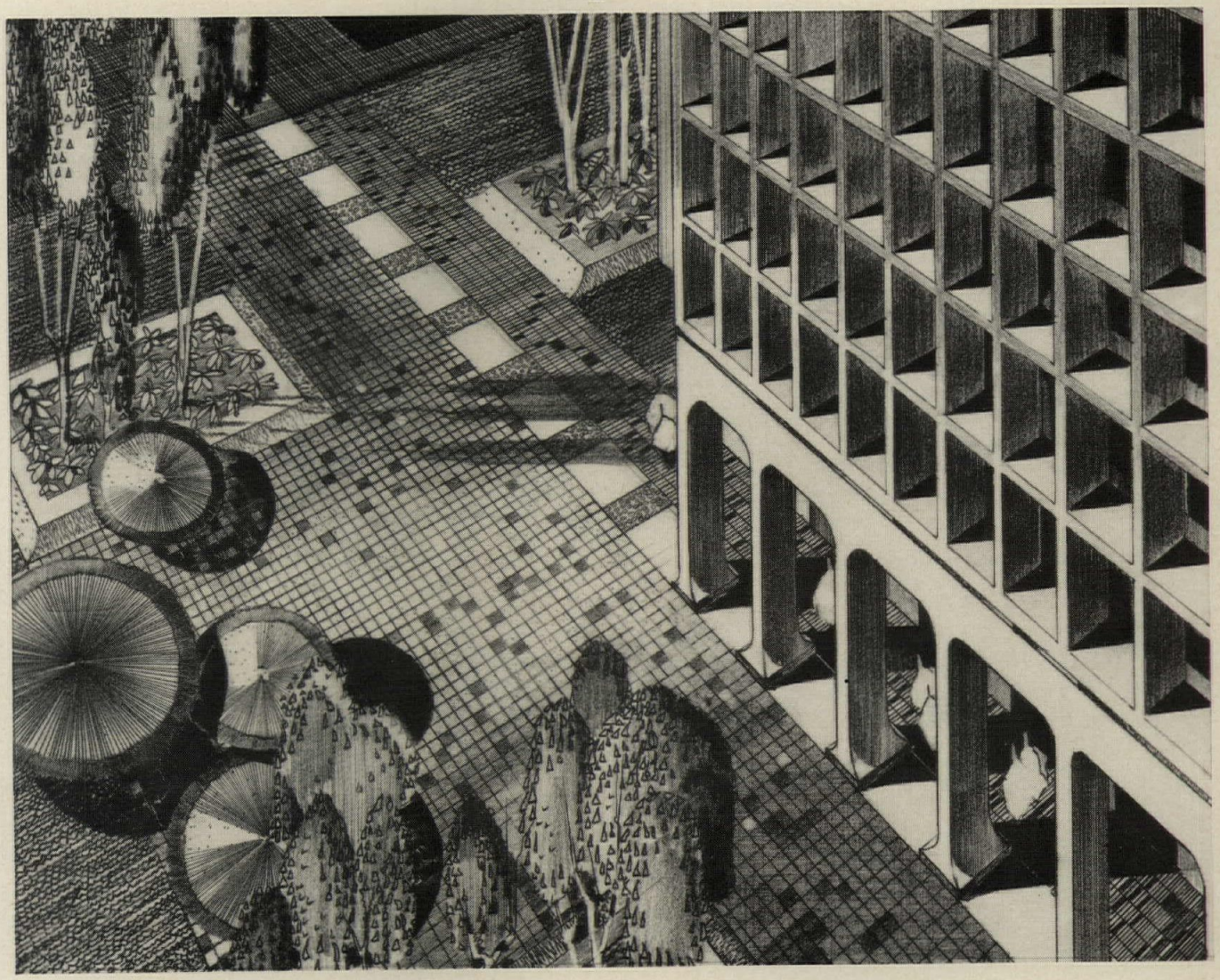
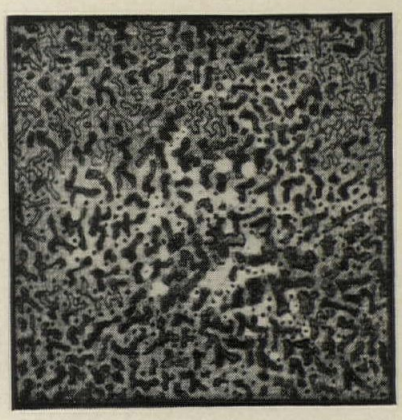
WHAT'S NEW IN ARCHITECTURAL CERAMICS ?





This pattern:
Pebble with Flashed Walnut Glaze.

Here's a *new* answer to the challenge presented by floor areas in commercial and industrial structures. Franciscan® Terra Floor™ gives you ceramic flooring with an authentic burned-earth look... plus textured patterns in bold ceramic colors. It relieves that bare, bleak appearance, adding warmth and dramatic appeal to your designs. Yet it is not too intrusively ornamental. This distinctive new floor tile is both bold—a nominal 12″ x 12″—and beautiful. It is frost-proof, and has all the advantages inherent in glazed-surface ceramics. There is an excellent assortment of patterns and colors from which to choose, with harmonizing grouts available. Since Franciscan Terra Floor costs less than many vinyls, you will find it useful in commercial, industrial and residential structures of many types. For samples and complete details, see the man from INTERPACE.

INTERPACE
INTERNATIONAL PIPE & CERAMICS CORPORATION

Los Angeles · San Francisco · San Diego · Sacramento · Santa Clara · Portland · Seattle · Spokane · Salt Lake City · Denver · Phoenix · Honolulu (American Factors)

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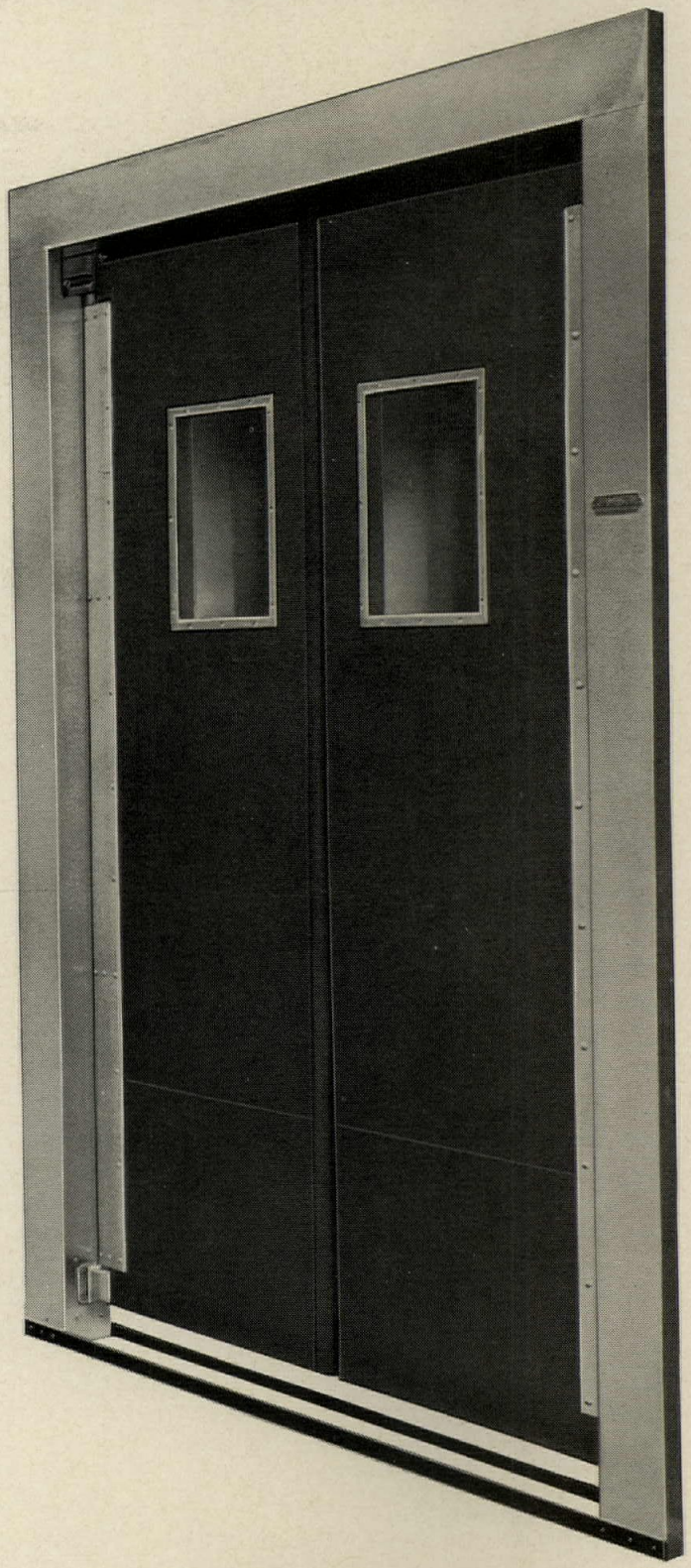
NEW from Jamison...



RUBBAIR*

flexible doors

- □ SHOCK ABSORBING
- □ SILENT
- □ FULLY FLEXIBLE

Rubbair doors, the flexible doors developed to provide virtually unlimited service life in high traffic locations, are now available for cold storage application through Jamison Cold Storage Door Co.

HARDWARE

Unique Jamison parkerized top Cam-N-Ball, two-way gravity hinges and galvanized bottom bearings respond quickly and silently. Enclosed housing, equipped with grease fitting and centering adjustment.

DOOR CONSTRUCTION

Unitized construction—neoprene reinforced with two-ply fabric outer surfaces bonded to 60 durometer, H-beam extruded separators. Core is filled with shock-absorbing resilient material.

NOSING

Half round nosing of high tensile strength neoprene reinforced with two-ply fabric offers safety and flexibility.

WEAR PANEL

Each door is equipped with 24 inch high wear panels on both sides of door to provide extra protection at the heavy abuse area encountered in forklift operation.

Proved through years of demanding field operation, Rubbair door's shock absorbing, flexible construction, with tough reinforced rubber facing, withstands the toughest pounding of motorized equipment—requires only minimum maintenance.

Rubbair doors are available: as a vestibule unit, as a unit complete with frame, as a unit for frame already in place. Rubbair doors can be furnished to meet the requirements of the Meat Inspection Division of the U. S. Department of Agriculture.

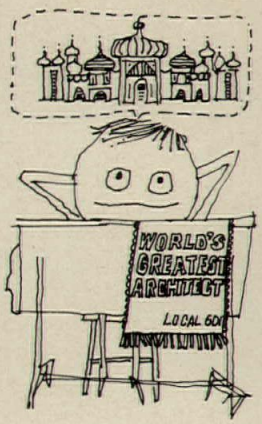
**Rubbair is a trademark and product of STIC-KLIP MFG. CO., INC.*

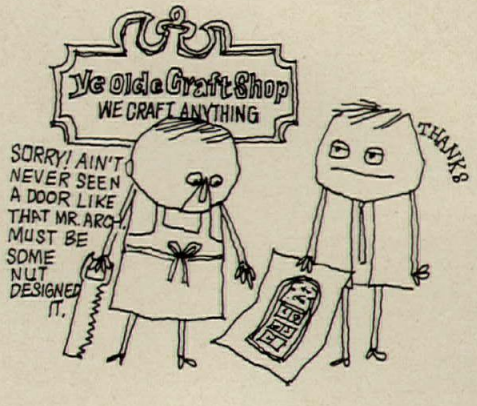
For complete information, contact your local Jamison representative or write Jamison Cold Storage Door Company, Hagerstown, Maryland 21740.

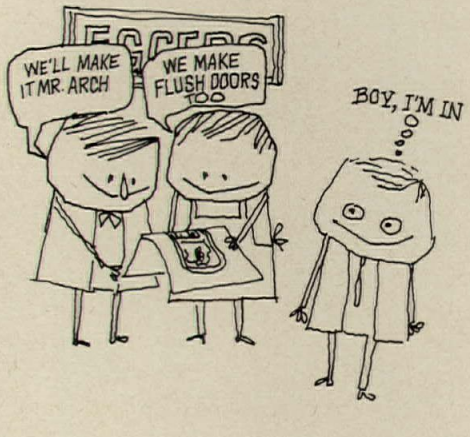
JAMISON
COLD STORAGE DOORS

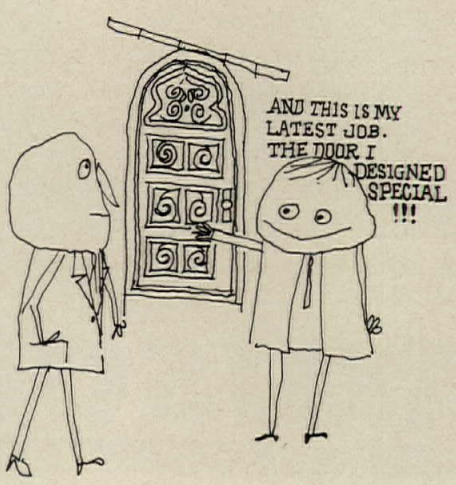
For more data, circle 29 on inquiry card

More stile than rail









Regardless of the kind of architectural door you want — flush, stile and rail, particle core, acoustical, fire, lead lined, etc. — Eggers will make it to your exact needs. Write for our new catalog.

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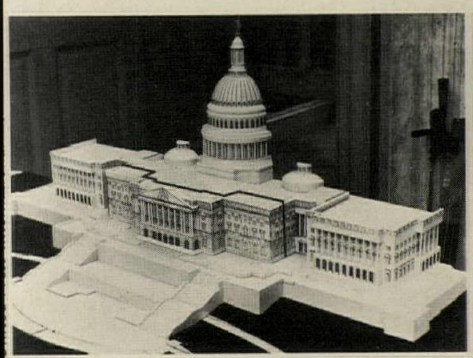
Gold Medal: Institute's highest honor was awarded to Japanese architect Kenzo Tange who accepted the tribute as a "heavy responsibility" in ceremonies at the annual dinner and ball on July 1. Also invested at this gala occasion were 60 fellows and 10 honorary fellows.

Chain of command
Outgoing President Morris Ketchum Jr., with assist from Mrs. Ketchum, presents President's Medal to his successor Charles M. Nes Jr., in investiture ceremonies at annual ball. Robert L. Durham of Seattle *(right)* was elected first vice president and president-elect.

West Front: controversy!

The main "controversy" and only real thunder of a very peaceable convention centered about the proposed $34-million extension of the West Front of the Capitol in Washington. The redesign, a joint venture of Roscoe DeWitt, The Office of Alfred Easton Poor, Albert Homer Swanke and Jesse M. Shelton, was prepared under contract for J. George Stewart, the engineer who is "Architect of the Capitol." The extension would add approximately 163,000 square feet. Responding to an impassioned plea by Paul Thiry *(below, top)*, an architectural consultant to George Stewart, that an original resolution calling for rejection of the extension proposal should be rejected because it was "a breach of etiquette and ethics," the delegates tabled the issue. Then at the second business session George Vernon Russell of Los Angeles *(below)*, agreeing in principle with Mr. Thiry, presented a second resolution supporting legislation presented in Congress on June 29 calling for establishment of a Commission (of professionals), which would approve construction on the Capitol grounds, which was passed with two dissenting votes. Finally the delegates approved the Board Report which stated opposition to the West Front. At a later news conference, President Nes emphasized that the A.I.A. was "against the plans, not the architects."



New A.I.A. Board (at post convention meeting). Front row *(from left)* Executive Director William H. Scheick, First Vice President and President-elect Robert L. Durham, President Charles M. Nes Jr., Secretary Rex Whitaker Allen, and Treasurer Daniel Schwartzman. Second row: Regional Directors George F. Harrell, *Texas,* Donald Q. Faragher, *New York;* Vice Presidents George E. Kassabaum, Harold T. Spitznagel, Samuel E. Homsey; and Regional Director Dan C. Cowling Jr., *Gulf States.* Third row: Regional Directors Charles J. Marr, *Ohio,* H. Samuel Krusé, *Florida,* Walter Scholer Jr., *East Central States,* Philip J. Meathe, *Michigan,* and James M. Hunter, *Mountain States.* Fourth row: Regional Directors Bernard B. Rothschild, *South Atlantic,* David N. Yerkes, *Middle Atlantic,* Jules Gregory, *New Jersey,* Cabell Gwathmey, *California,* and G. Harold W. Haag, *Pennsylvania.* Back row: Regional Directors Robert B. Martin, *Northwest,* Rex L. Becker, *Central States,* Willis N. Mills, *New England,* Victor C. Gilbertson, *North Central States,* and Jack D. Train, *Illinois.*

ARCHITECTS WEIGH ROLE IN NEW AGE OF ARCHITECTURE

98th A.I.A. Convention draws 2662 to Denver... Tange awarded Gold Medal... Nes becomes new president

The broadening role and responsibility of the architect in coping with today's rapid technological, economic and social change and the new scale of the environment emerged as the main concern at the 98th convention of The American Institute of Architects held in Denver from June 26 to July 1. Charles M. Nes Jr. of Baltimore, in succeeding Morris Ketchum Jr. of New York as president of the Institute on the last evening of the convention, summed up this concern by questioning whether the architect is prepared and capable of serving today's clients—"business and government"—in meeting the problem of "explosive urbanization . . . the challenge of our time." Mr. Nes placed "effective education of our students and ourselves as a most pressing and profound need . . . if we are to be truly prepared to meet the needs of our growing and increasingly urbanized society."

Durham becomes president-elect

In a closely contested election, Robert L. Durham of Seattle defeated Llewellyn W. Pitts for the office of first vice president and president-elect. From a field of five candidates for vice president, three were elected: George E. Kassabaum, St. Louis (for his second term); Samuel

continued on page 36

Honorary Fellows: Being invested by President Ketchum at annual dinner are *(top from left)* Aarne Ervi of Finland, Hilario Galguera of Mexico, Denys Louis Lasdun of England and Rafael Norma of Mexico. Also receiving honorary fellowships were Jacob B. Bakema of the Netherlands, Ralph Erskine of Sweden, Alfred Roth of Switzerland, Harry Seidler of Australia, Gerard Venne of Canada, and Bernard Henri Zehrfuss of France.

Medalists: Receiving medals at the first business session are *(above top from left)* Alexander Girard, Allied Professions, Harold Balazs, Craftsmanship, Ben Shahn, Fine Arts, and *(above from left)* Gideon Kramer, Industrial Arts, and Morley Baer, Photography. William W. Eshbach *(above right)* was recipient of the Edward C. Kemper Award.

1 2

3

Honorary Memberships: Receiving honorary membership from President Ketchum at the inaugural session June 27 were Dr. Albert Bush-Brown (1), John G. Flowers (2), Harold Bismark Gores (3), Edward J. Logue (4), and the late James J. Rorimer, accepted by Mrs. Rorimer (5). Receiving honorary membership before the convention was Henry F. du Pont. Also, the Museum of Modern Art, New York, received the A.I.A.'s Citation of an Organization.

4 5

Awards luncheon: Recipients were *(top)* Theodore Bernardi of Wurster, Bernardi and Emmons, Award of Merit and the Award for Collaborative Achievement in Architecture; and Donald Condon of Keyes, Lethbridge and Condon, an Honor Award and an Award of Merit; *(above)* Joseph N. Lacy of Eero Saarinen & Associates, the Henry Bacon Medal for Memorial Architecture and two Honor Awards; and Viennese architect Hans Hollein, the $25,000 R. S. Reynolds Memorial Award, presented by A. H. Williams Jr. (at podium) of Reynolds.

1966 A.I.A. Convention—continued from page 35

E. Homsey, Wilmington, Delaware; and Harold Spitznagel of Sioux Falls, South Dakota. The other candidates were Robert H. Levison, Clearwater, Florida, and William G. Lyles, Columbia, South Carolina. Rex Whitaker Allen of San Francisco defeated the incumbent Oswald H. Thorson of Waterloo, Iowa for a two-year term as secretary. Seven new regional directors were unanimously elected: Rex L. Becker of St. Louis—Central States; Jules Gregory of Lambertville—New Jersey; Cabell Gwathmey of San Francisco—California; G. Harold W. Haag of Jenkintown—Pennsylvania; George F. Harrell of Dallas—Texas; H. Samuel Krusé of Miami—Florida; and Jack D. Train of Chicago—Illinois.

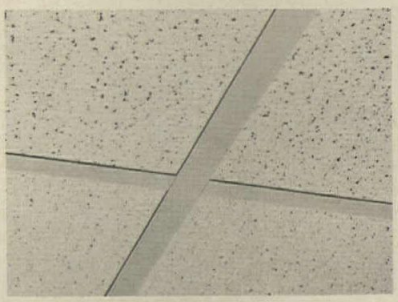
Institute will purchase Lemon Building

In the two business sessions a series of resolutions were passed with general agreement. The sole furor: the West Front "controversy" (page 35). The delegates voted to purchase (for $678,000) the Lemon Building adjacent to the present headquarters site in Washington, thus adding 11,300 square feet to the A.I.A. property. The national-competition-winning architects for the headquarters, Mitchell-Giurgola Associates, will thus design an enlarged structure for the new site. In a related action, the delegates voted to authorize the sale of the Octagon to the A.I.A. Foundation, thus, according to President Nes, "freeing needed capital of the Institute for its activities in advancing the interests of the profession." A second favorable vote on the issue at next year's convention is needed, due to by-laws, to complete the transaction.

The delegates passed a series of resolutions backing legislation to provide historic architecture preservation commissions, to develop Pennsylvania Avenue in Washington as a national historic site, and to include the Demon-

continued on page 40

Sure our new ceramic ceiling material is moisture resistant, but don't stop there.



We didn't.

We've been getting a lot of playback on that moisture resistance. It's true Ceramaguard™ panels won't sag, even when soaking wet. So it's also true that Ceramaguard can be installed whether your building is closed or not; whether wet work is going on or not; without special precautions for ventilation or drying.

But that's only part of the Ceramaguard story. Ceramaguard offers exceptional rigidity and span strength. It can be washed easily, repeatedly (its special acrylic finish has five times the scrub resistance of standard paints). It can't be hurt by freezing or thawing. It's even highly resistant to chlorine atmosphere (hence a number of successful swimming pool applications).

Put all these characteristics together and you come up with yet another. Permanence. And *that's* the real plot. Ceramaguard is just about the longest lived material ever developed for fabricated acoustical ceilings.

But don't stop yet. Ceramaguard offers excellent acoustical efficiency (NRC Specification Range, .60 to .70, Average Attenuation Factor, 40 decibels). Light reflectance is unusually good (84% average). Installation is fast (easy-to-install gridwork, easy-to-handle 2′ x 2′ or 2′ x 4′ lay-in panels). UL Fire Hazard Classification—Class I (noncombustible). UL Time-Design Rating on floor/ceiling assembly—2 hours (with suitable floor). Design—the popular and versatile Travertine pattern.

Did we leave anything out? Armstrong, 4208 Rock St., Lancaster, Pa.

Ceiling Systems by **Armstrong**

For more data, circle 1 on inquiry card

What's on your drawing board for our 18 million senior citizens?

Maybe a self-contained retirement community. Or a housing project that gives them a special place alongside their juniors. Either way, you want to surround them with more comfort. More warm when it's cold. More cool when it's hot. Barrett Urethane Roof Insulation can help.

It's thinner. Twice as thin as any other insulation with low K factor 0.13. Extends your design to the roofline. And gives maximum thermal efficiency. Through all the Decembers.

Interesting? It gets more so. Write us at: Barrett Division, Dept. AR-8, 40 Rector St., New York, N.Y. 10006.

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Sheathing
Shingles
Siding
Urethane

For more data, circle 31 on inquiry card

F. W. Dodge party at Buell estate opens convention festivities

To celebrate its 75th anniversary and that of ARCHITECTURAL RECORD, and the 60th anniversary of Sweet's Catalog Files, McGraw-Hill's F. W. Dodge Company was host to the convention at a party held Sunday afternoon at the estate of Mrs. McIntosh Buell. The A.I.A. saluted the anniversaries in a special citation presented during the party by President Morris Ketchum Jr. At left, Dodge President Wallace F. Traendly as he accepted citation, with Mr. Ketchum, President Phillip Berg of Photronix, Inc., H. Victor Drumm, vice president—operations for Dodge Publishing Services, RECORD Editor Emerson Goble, and A. W. Kitchens, vice president—operations for Dodge Construction Information Services, looking on. At right *(top to bottom)*: Donald C. McGraw, chairman of the board of McGraw-Hill, Inc., and Mr. and Mrs. Traendly; Emerson Goble of the RECORD with the A.I.A.'s outgoing and incoming presidents, Morris Ketchum Jr. and Charles M. Nes Jr.; U.C.L.A. Architecture Dean George Dudley with Mrs. A. Quincy Jones of Los Angeles, Elisabeth Kendall Thompson of the RECORD and Mr. Jones.

From left: Michigan Regional Director Philip J. Meathe, Grosse Point, and VP George Kassabaum, St. Louis; Willard S. Hahn, Allentown, Pennsylvania, Henry Wright, Los Angeles, Robert A. Little, Cleveland, and Daniel Schwartzman, New York; Dahlen K. Ritchey and Mrs. Ritchey, Pittsburgh, Ronald Allwork, New York, and Mr. and Mrs. Goble.

A day's outing at the Air Force Academy: architecture and nature

The entire convention spent June 29 touring the Air Force Academy (interior of chapel at right) designed by Skidmore, Owings & Merrill. After a reception and luncheon at the Officers' Club, President Nathan M. Pusey *(far left)*, of Harvard University, delivered the Second Annual Purves Memorial Lecture in Arnold Hall. At left, Dr. Pusey talks with Nathaniel Owings of Skidmore, Owings & Merrill.

1966 A.I.A. Convention—continued from page 36

stration Cities Program in the Housing and Urban Development Act of 1966. Other resolutions urged President Johnson to convene a White House Conference on Transportation as a first step in formulating a national policy on transportation, deplored the proposed expressway across the river front of New Orleans' French Quarter, commended the people of San Francisco for turning from highway construction to development of a mass transit system, commended Mayor Richard Lee of New Haven, and strongly urged the preservation and restoration of the historic Old Mint in San Francisco.

Program events and speeches

Program highlights included three addresses on the subjects of "Technology, Environment and Man," the theme of the convention, with panels of distinguished commentators discussing each speech. The keynote speaker was economist John Kenneth Galbraith and the Second Annual Purves Memorial Lecture was delivered (during a day-long outing and tour of the Air Force Academy) by Nathan Marsh Pusey, president of Harvard University.

A series of ten workshops devoted to important facets of architectural practice were held on two afternoons, drawing a total attendance of 1,300. Participating in the 10 workshop sessions were a total of 41 panelists, 30 of whom were architects.

Beauty versus economics

Presenting the keynote address at the opening session, Dr. John Kenneth Galbraith, of Harvard University, said that with the growth in economic output, three main social problems are created: Economic growth does not 1) provide the public services that are required by a higher level of private consumption; 2) help those who because of educational and other disadvantages are unable to participate fully in the economy and in its gains; and 3)

A night at Central City and the president's reception

On the evening of June 27 buses transported conventioneers to Central City, a picturesque and quaintly preserved mining town located an hour away from Denver high in the Rockies. An entire hillside street had been roped off, and it seemed to be open house at every building on the hill. Halfway up the street was the Old Teller House Garden where President and Mrs. Ketchum *(below left)* greeted their guests at the President's reception *(below second from left)*. After the reception the host chapter took over, providing a beef and buffalo barbecue under a tent at the top of the hill. After dinner 795 people went to a performance of the opera "Carmen" in the Teller Opera House. Those not attending the opera easily found other diversions in old saloons at the bottom of the hill.

John L. Webb

Events in Centre Theater: environmental happenings

The Centre Theater, seen below in all of its magnificence against a backdrop of I. M. Pei's Denver Hilton, the convention hotel, provided a somewhat incongruous setting for the inaugural session and the theme sessions on "Technology, Environment and Man." The interior, seen below during the opening ceremonies, continued the motif so strongly expressed on the facade. Each of the sessions started at 9 A.M. and had to be ended promptly at 11:30 so that patrons could purchase their popcorn to see "Stagecoach."

Top *(from left)*: Speakers Galbraith, Rabi, Wood and McMurrin. Above: Rex W. Allen, moderator, Dr. Wood, Editor Peter Blake of Architectural Forum, Walter F. Wagner Jr., executive editor of the RECORD, and Lee Johnson of Denver, commentators on Dr. Wood's speech.

solve the problems of our environment and especially our urban environment. Amongst solutions to the second problem, Dr. Galbraith called for consideration of supplying a guaranteed minimum income. Dr. Galbraith called for solution of environmental problems on three broad fronts: "First, we must explicitly assert the claims of beauty against those of economics. That something is cheaper, more convenient or more efficient is no longer decisively in its favor. . . . Second, effective management of environment will require far more effective planning and control of land use. . . . Third and finally, the city is the key unit in the management of environment. In the past, the family, the business firm, and the nation have been our basic units of economic and social account." Therefore, said Mr. Galbraith, government must be stronger and "cities must be run by stronger, more imaginative, and, needless to say, less larcenous, men."

New human scale

Dr. Isidor I. Rabi, physicist from Columbia University, in addressing the delegates on the theme topic of "Technology," described a new human scale, an expanding scale "measured only by human imagination and spirit. To the Western man the human scale is now the expanding universe which stretches from deep in the subatomic structure of matter to the endless reaches of the most remote galaxies. The task of translating this image . . . into circumstances of daily life . . . is in your hands . . . Each age and clime has to find an architecture appropriate to itself," said Dr. Rabi, and, "we are on our own and the past is no guide to an age of accelerating change under the irresistible urge of an expanding science and technology." The architect is not entirely blameless for what Dr. Rabi considers to be bad planning, and he suggests "something like a Hippocratic oath for

continued on page 42

(1) Dean DeVon Carlson, University of Colorado; A.C.S.A. Directors Dean D. Kenneth Sargent, Syracuse University, Dean Henry Kamphoefner, North Carolina State University and Marcus Whiffen, Arizona State University; A.C.S.A. President Walter Sanders, University of Michigan; and A.C.S.A. Treasurer Henry Jandl, Princeton University. (2) Winston Elting, Chicago, Charles Sappenfield, Ball State University architecture chairman, and Frank Montana, Notre Dame architecture head. (3) Fay Jones, Fayetteville, Arkansas, C. E. Stousland, architecture chairman Miami University, Ohio, Mrs. Jones, and Anderson Todd of Rice University. (4) Mr. and Mrs. Gustave Keane, New York.

(1) David Todd and Michael Radoslovich, both of New York. (2) Samuel Inman Cooper, Atlanta, and Paul Thiry, Seattle. (3) Mr. and Mrs. James Scheeler, Champaign, George A. Thorson, Denver, and A. Richard Williams, Champaign. (4) Mr. and Mrs. Victor Lundy, New York. (5) Mrs. Harry Seidler of Australia, Vladimir Ossipoff, Honolulu, and Mr. Seidler. (6) RECORD Assistant Editor John Margolies and critic Reyner Banham.

(1) Myron Goldsmith, Chicago, and RECORD Associate Editor Jonathan Barnett. (2) Alfred J. Nelson and Leonard W. Anderson, both of St. Paul. (3) Illinois Regional Director Ambrose Richardson, Champaign, new Director Jack D. Train, Chicago, and Willard S. Hahn. (4) Fotis Karousatos, executive secretary, Florida Chapter, Hilliard Smith, Lake Worth, Florida, with J. Winfield Rankin and M. Elliot Carroll, both of the A.I.A. staff. (5) H. Samuel Krusé, new Florida director, and Worley K. Wong, San Francisco. (6) Fine Arts Medalist Ben Shahn and Mrs. Shahn.

(1) Mrs. Robert Elkington, St. Louis, Edwin B. Morris Jr., New York, Mr. Elkington, and Mrs. Robert M. Little, Miami. (2) Benjamin Thompson, Harvard's architecture chairman, and President Albert Bush-Brown, Rhode Island School of Design. (3) Llewellyn Pitts, Beaumont, Texas. (4) Dean Olindo Grossi, Pratt Institute, Mrs. Grossi, and Henry Kamphoefner. (5) George Agron, San Francisco, and RECORD Senior Editor Elisabeth Kendall Thompson. (6) A.I.A. Past President Arthur G. Odell Jr., Charlotte. (7) Norman J. Schlossman, Chicago, and the new president, Charles M. Nes Jr.

1966 A.I.A. Convention—continued from page 41

architects to strive for the health and beauty of our environment."

Interdisciplinary efforts needed

The Second Annual Purves Memorial Lecture, this year on the topic "The Needed New Man In Architecture," was delivered by Nathan Marsh Pusey at the Air Force Academy on June 29. "Clearly," said Dr. Pusey, "we have come to a time when no one person, or single kind of person, can possibly meet the professional demands with which those who work in your field will be confronted . . . Men with the broadest kind of education are now needed in your profession and a more advanced kind of professional education must be devised to provide them." Dr. Pusey called for the strengthening of our schools of architecture; the increased requirement of talented young people to the profession, and the undertaking of "vast interdisciplinary efforts. . . . We need not create a socialism but we surely need to socialize our wants and aspirations. This is what I mean when I say that building now calls for a new kind of man."

New order of magnitude

Robert C. Wood, Under Secretary of the Department of Housing and Urban Development, in discussing the theme topic "Environment," identified two characteristics which "are the beginning of wisdom for modern architecture today"—changes in order of magnitude, and a new clientele. Referring to the first characteristic, Mr. Wood said, "I think we have come now to the point where this environment, urban and big, that was reached primarily by innovation and technological change, that is a distinct part of our culture, is supportable, imaginable and not to be regarded or elevated in terms of panic or outcry. . . . The question is quality, the question is potential . . . the question is—if we are going to rebuild our pres-

(1) RECORD Publisher Eugene E. Weyeneth and A.I.A. Past President Glenn Stanton, Portland, Oregon. (2) James Sudler, Denver, David L. Williams, East Lansing, Michigan, and Harold Carver and Ralph Peterson, both of Denver. (3) President-elect Robert Durham, Seattle, and W. Bolton Kelly, Baltimore. (4) Mrs. Theodore Bernardi, San Francisco, Rex Whitaker Allen, San Francisco, and Mr. Bernardi. (5) A.I.A. Past President J. Roy Carroll Jr., Philadelphia, and VP Samuel Homsey, Wilmington, Delaware. (6) Edgar Tafel, New York, and Walter F. Wagner Jr., of the RECORD.

(1) Kenzo Tange and RECORD Managing Editor Jeanne Davern. (2) John Fisher-Smith, San Francisco, and Henry Wright of Kansas State. (3) New Yorkers Max O. Urbahn, chapter president, Mrs. Margot Henkel, chapter executive secretary, and H. Dickson McKenna, chapter executive director. (4) Linn Smith, Birmingham, Michigan, and University of Kentucky Dean Charles P. Graves. (5) Dr. and Mrs. Albert Bush-Brown and Dean Sam T. Hurst of the University of Southern California and Mrs. Hurst. (6) A.I.A. Executive Director William H. Scheick and Director Walter Scholer Jr.

(1) Mr. and Mrs. Preston Bolton, Houston. (2) DeVon M. Carlson, Boulder, and Dayl Larson and William C. Muchow, both of Denver. (3) Honorary Fellow Aarne Ervi and Mrs. Ervi. (4) Mr. and Mrs. H. D. Gluckman, West Orange, New Jersey, Mrs. E. A. DeMartin, Lyndhurst, New Jersey, and John J. Trich, Oradell, New Jersey. (5) RECORD Associate Editor William B. Foxhall and Norman W. Patterson, San Francisco, of the firm Stone, Marraccini & Patterson. (6) Mr. and Mrs. Edward A. Killingsworth from Long Beach, California.

(1) Robert F. Hastings, Detroit, and Walter Scholer Jr. (2) Jeanne Davern of the RECORD, Mr. and Mrs. A. Quincy Jones, Los Angeles, and Walter Wagner of the RECORD. (3) Donald L. Hardison, San Francisco, and C. Day Woodford, Los Angeles. (4) James A. Clark, Lexington, Kentucky, Donald E. Schnell, Louisville, and Norman Chrisman Jr., Lexington. (5) Immediate Past President Morris Ketchum Jr. and Edgar I. Williams, Rutherford, New Jersey, president of the Henry Bacon Memorial Foundation. (6) Mr. and Mrs. Sidney L. Katz, of New York City.

ent inventory—where we will put it and what we can do about making central cities more livable, more coherent, more efficient."

The new clientele, his second characteristic, "is public and is democratic. . . . And this is another fact of adjustment to face the architect."

In terms of these characteristics, the role of government "moves now to the concern of the total environment, moves now to the concern of how one holds together physical and social planning, of how people in general relate to space, of how community interstructure and services are melted together when people's aspirations rise."

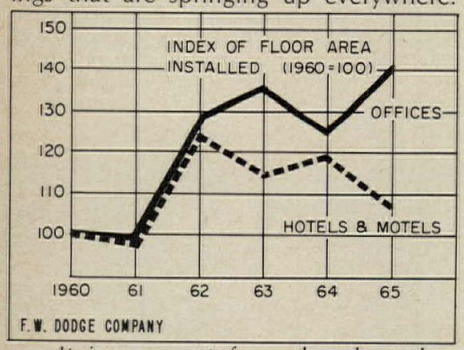
Preservation of the individual

Dr. Sterling M. McMurrin, E. E. Ericksen Distinguished Professor of Philosophy at the University of Utah, addressed the delegates on "Architecture and the Crisis of Our Culture" as the theme seminar on "Man." "The great question which faces us as a nation and which weighs heavily upon your profession is whether the ends of equality, equity and material well-being can be achieved without the insinuation into the social structure of various kinds of collectivism and regimentation which will violate our individualism and destroy the personal quality of life which is so precious to us. . . . The individual person is the sole ground upon which we must now construct and reconstruct the edifice of our values, whether private or social.

"It is the architect more than any other who must accept the large responsibility of in some way bringing art, statesmanship, and engineering together in a supreme effort to secure the individual and his personal values in a society of genuine strength and integrity. . . . His is the difficult task of reconciling in practice the autonomy of art with the necessities imposed by social and private fact and physical condition . . . because it [art] is a humanizing force of great power."

Urban building: hotels vs. offices

Last month, a few more first-rate hotels —New York's world-famous Astor among them—checked out their last guests, closed their doors and waited for the wrecking crew to begin its work. Like many fine establishments before them, these latest casualties are making way for change in the form of new office buildings that are springing up everywhere.



It is apparent from the chart that the construction of office buildings has been growing at a faster pace than hotels and motels since 1960. With the exception of 1962, when several regional phenomena (the most important of which was the New York World's Fair) brought a peak in hotel and motel contracts, they have shown little in the way of growth. Office buildings have been the dominant species in urban construction since 1960.

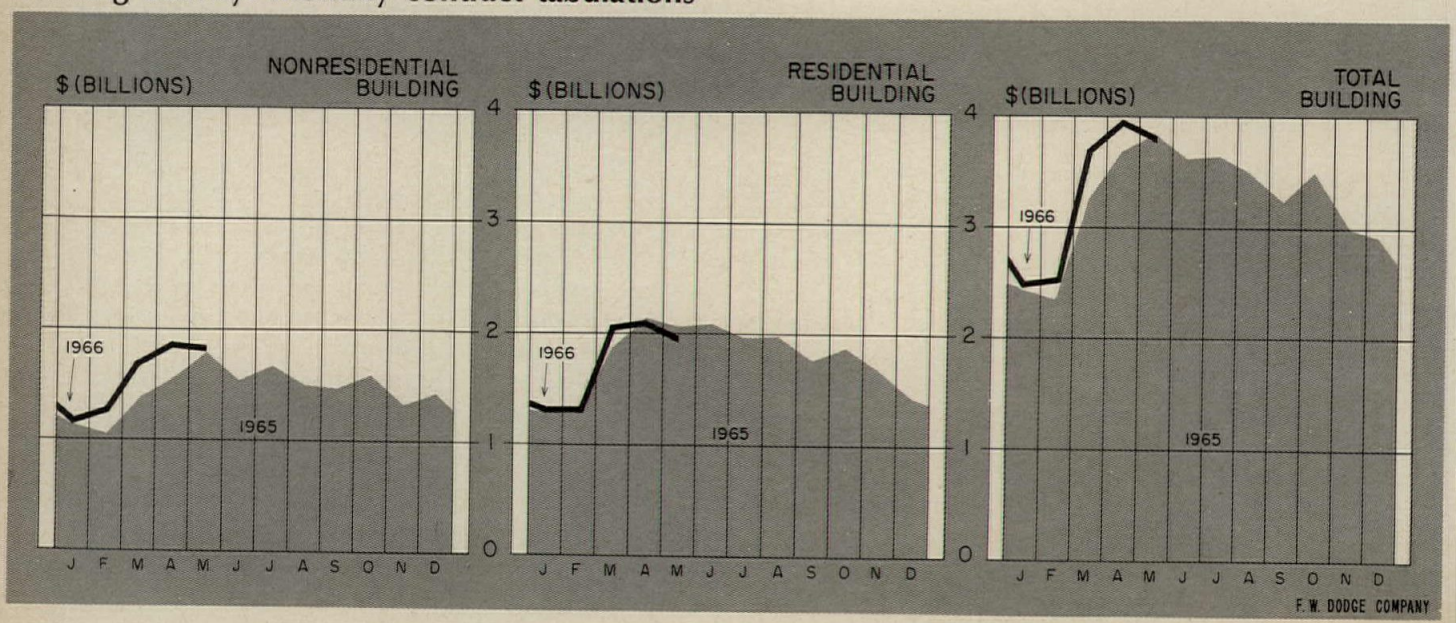
The play of economic forces has put the hostelry business at a comparative disadvantage in recent years. Changing conditions have robbed it of many potential patrons. Number one on every innkeeper's "ten most wanted" list is the jet plane. The business trip, a bread and butter item with hotel owners, has been shortened considerably with the advent of jet travel; many overnight stays being eliminated entirely. Jet travel cannot take the whole blame; however, improved highway networks, faster trains—in fact, anything that shortens travel time between two points —work to the hotel owner's disadvantage. The belief that such transportation improvements would bring about an increase in the number of travellers great enough to offset the effects of a shorter length of stay has not as yet materialized. This possibility carries hope for the future, however.

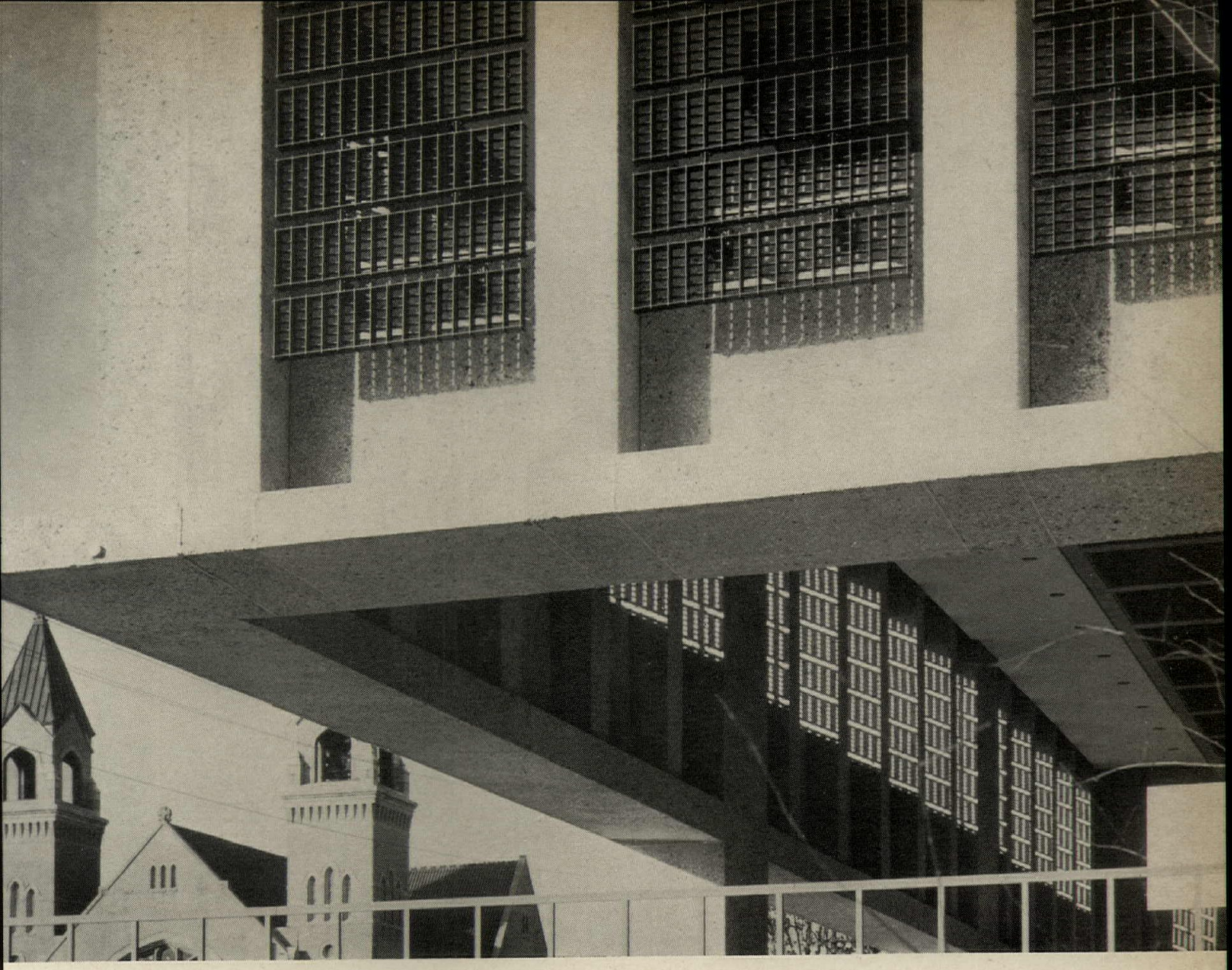
The demand for office space, on the other hand, has been buoyed up by several prominent factors. The remarkable post-war growth of finance, insurance and similar industries with operations that require the services of a large number of white-collar workers, has continued on into the sixties. The need for additional workers to handle the more complex record-keeping requirements of industry and the rise of large research and development staffs are also ongoing phenomena. In addition, the rise in the proportion of technical and professional people in the office force and the introduction of complex electronic machinery to the office routine have been operating to increase office space requirements *per worker*. The increased importance of fringes such as company libraries, cafeterias and lounges, and the prestige value of "trading up" to newer, more modern quarters have also had their effect on current demand. These factors have kept available space, as measured by office vacancy rates, at a premium.

No structure will be built on an urban site without plenty of sound economic reasons behind it. The huge initial investment involved is nearly always an effective barrier to speculative building. The keen competition for urban land, however, has made it increasingly apparent that any building, no matter how glorious its past, must constantly justify its reason for being. Unless its design is unique and worthy of saving for historical reasons, a strong self-perpetuating economic rationalization is the only defense a structure has against the "thump" of the wrecking ball. Currently, offices appear to have a monopoly on the best arguments.

George A. Christie, *Chief Economist*
F. W. Dodge Company
A Division of McGraw-Hill, Inc.

Building activity: monthly contract tabulations





BORDEN DECOR PANEL: Custom Design Screening

The North Carolina Mutual Life Insurance Co. building in Durham, North Carolina, is shown here. Designed by Welton Becket, F.A.I.A., Architect, of New York City, this multi-story structure utilizes custom designed screening of Borden Decor Panel in rich Kalcolor Bronze finish.

Created to complement and enhance the character of the building, the Decor Panel screens were custom designed and specified, individually fabricated, and tailored for special erection methods—all within a fixed budget. The savings effected by Borden's fabrication and erection techniques made it possible for the architect to use the handsome bronze finish as well—still within the initial budget.

Sturdy, lightweight aluminum Borden Decor Panel, in both custom and standard designs, is a versatile architectural medium, widely used for facades, screening, sunshades, dividers, partitions, grilles, etc. It is particularly valuable for refacing of existing buildings. For more detailed information on custom and standard Borden Decor Panel:

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BUILDING CONSTRUCTION COSTS

The information presented here indicates trends of building construction costs in 21 leading cities and their suburban areas (within a 25-mile radius). Information is included on past and present costs, and future costs can be projected by analysis of cost trends.

William H. Edgerton
Manager-Editor, Dow Building Cost Calculator, an F. W. Dodge service

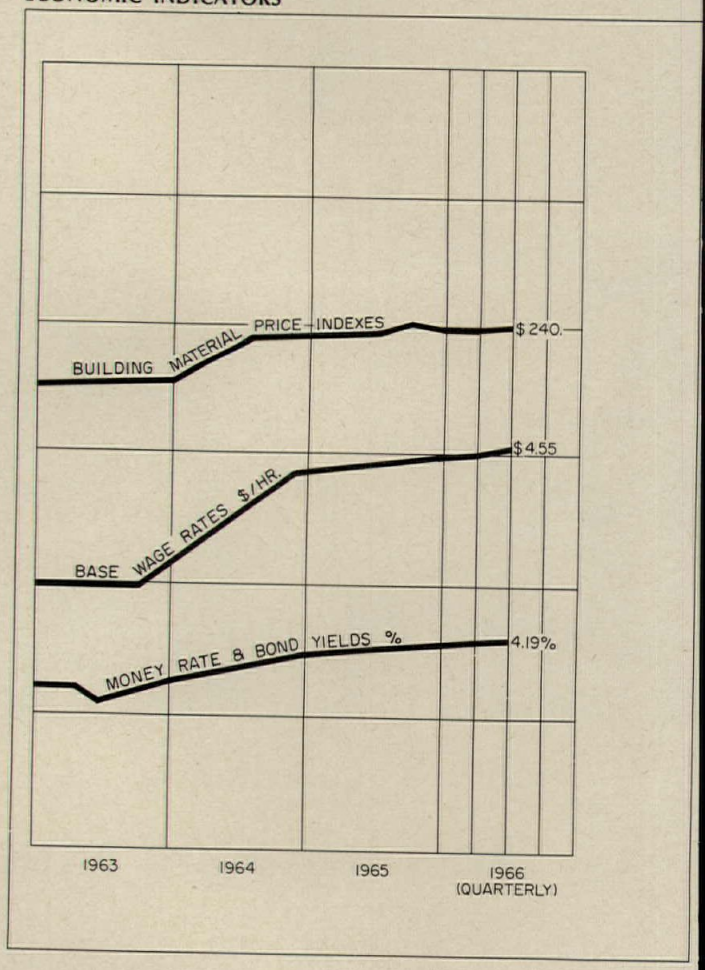
APRIL 1966 BUILDING COST INDEXES

1941 averages for each city = 100.0

Metropolitan area	Cost differential	Current Dow Index residential	Current Dow Index non-res.	% change year ago res. & non res.
U.S. Average	8.5	274.2	292.1	+2.29
Atlanta	7.2	309.0	327.8	+1.70
Baltimore	7.7	277.4	295.1	+3.06
Birmingham	7.5	253.2	272.2	+1.55
Boston	8.5	249.0	263.5	+2.81
Chicago	8.9	303.0	318.7	+2.08
Cincinnati	8.8	263.3	279.9	+2.07
Cleveland	9.2	281.1	298.8	+3.77
Dallas	7.7	257.0	265.4	+1.86
Denver	8.3	281.7	299.4	+2.56
Detroit	8.9	276.8	290.5	+2.68
Kansas City	8.3	247.6	262.1	+2.46
Los Angeles	8.3	279.6	305.9	+3.17
Miami	8.4	269.6	283.0	+1.38
Minneapolis	8.8	273.1	290.3	+1.16
New Orleans	7.8	247.2	261.9	+1.93
New York	10.0	284.6	306.2	+1.60
Philadelphia	8.7	272.7	286.3	+2.28
Pittsburgh	9.1	257.5	273.7	+2.04
St. Louis	9.1	271.4	287.6	+2.60
San Francisco	8.5	353.5	386.8	+2.97
Seattle	8.4	250.4	279.8	+2.29

Differences in costs between two cities may be compared by dividing the cost differential figure of one city by that of a second; if the cost differential of one city (10.0) divided by that of a second (8.0) equals 125%, then costs in the first city are 25% higher than costs in the second. Also, costs in the second city are 80% of those in the first (8.0÷10.0=80%) or they are 20% lower in the second city.

ECONOMIC INDICATORS



HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL BUILDING TYPES, 21 CITIES

1941 average for each city = 100.00

Metropolitan area	1952	1959	1960	1961	1962	1963	1964	1965 (Quarterly) 1st	1965 (Quarterly) 2nd	1965 (Quarterly) 3rd	1965 (Quarterly) 4th	1966 (Quarterly) 1st	1966 (Quarterly) 2nd	1966 (Quarterly) 3rd	1966 (Quarterly) 4th
U.S. Average	213.5	255.0	259.2	264.6	266.8	273.4	279.3	279.5	281.0	288.7	284.9	286.3	287.3	–	–
Atlanta	223.5	283.3	289.0	294.7	298.2	305.7	313.7	313.9	317.9	320.6	321.5	322.2	323.3	–	–
Baltimore	213.3	264.5	272.6	269.9	271.8	275.5	280.6	280.5	281.0	284.7	285.7	288.6	289.6	–	–
Birmingham	208.1	233.2	240.2	249.9	250.0	256.3	260.9	261.2	264.1	264.9	265.6	267.1	268.1	–	–
Boston	199.0	230.5	232.8	237.5	239.8	244.1	252.1	251.7	252.6	256.3	257.8	258.5	259.6	–	–
Chicago	231.2	278.6	284.2	289.9	292.0	301.0	306.6	306.5	307.3	310.2	311.7	312.6	313.7	–	–
Cincinnati	207.7	250.0	255.0	257.6	258.8	263.9	269.5	269.4	270.2	272.9	274.0	274.7	275.7	–	–
Cleveland	220.7	260.5	263.1	265.7	268.5	275.8	283.0	282.3	283.4	290.8	292.3	293.0	294.1	–	–
Dallas	221.9	237.5	239.9	244.7	246.9	253.0	256.4	256.9	257.9	259.5	260.8	261.7	262.6	–	–
Denver	211.8	257.9	257.9	270.9	274.9	282.5	287.3	287.3	288.2	292.7	294.0	294.6	295.5	–	–
Detroit	197.8	249.4	259.5	264.7	265.9	272.2	277.7	277.7	279.3	283.5	284.7	285.5	286.5	–	–
Kansas City	213.3	239.6	237.1	237.1	240.1	247.8	250.5	251.2	252.0	255.0	256.4	257.3	258.2	–	–
Los Angeles	210.3	263.5	263.6	274.3	276.3	282.5	288.2	288.9	289.7	295.8	297.1	298.0	298.6	–	–
Miami	199.4	249.0	256.5	259.1	260.3	269.3	274.4	274.4	275.4	276.6	277.5	278.4	279.2	–	–
Minneapolis	213.5	254.9	260.0	267.9	269.0	275.3	282.4	283.4	283.6	283.9	285.0	285.7	286.6	–	–
New Orleans	207.1	237.5	242.3	244.7	245.1	248.3	249.9	250.5	253.1	255.1	256.3	257.1	258.0	–	–
New York	207.4	260.2	265.4	270.8	276.0	282.3	289.4	290.2	294.0	296.0	297.1	297.8	298.7	–	–
Philadelphia	228.3	262.8	262.8	265.4	265.2	271.2	275.2	275.5	276.4	279.5	280.8	281.7	282.6	–	–
Pittsburgh	204.0	241.1	243.5	250.9	251.8	258.2	263.8	264.0	264.9	265.9	267.0	268.9	270.1	–	–
St. Louis	213.1	246.9	251.9	256.9	255.4	263.4	272.1	272.9	276.1	279.9	280.9	282.2	283.2	–	–
San Francisco	266.4	321.1	327.5	337.4	343.3	352.4	365.4	366.6	366.9	367.7	368.6	376.2	377.7	–	–
Seattle	191.8	232.7	237.4	247.0	252.5	260.6	266.6	265.1	266.3	267.8	268.9	271.1	272.1	–	–

Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if the index for a city for one period (200.0) divided by the index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than the costs in the other. Also, second period costs are 75% of those in the first period (150.0÷200.0=75%) or they are 25% lower in the second period.

continued from page 62

tion to international building progress.

Reports on materials were profuse and detailed. Points of general information about materials can be summarized: "The most extensive progress toward industrialization of building has been made with traditional materials such as reinforced concrete, brick and clay tiles, steel, wood, etc. We have learned, through much research, to use these older materials in new and more effective ways. Meanwhile, truly new materials have played a much smaller, though important, role. This has been especially true when we consider the versatile synthetic plastics with their wide applications as protective coatings, as adhesives and as insulation. The production of materials, both new and traditional, is already highly industrialized. It is in their use, both singly and in combination, that more progress toward industrialization can and will be made."

The Congress took note of functional and human requirements in building, reporting that valuable work in several countries has been done but that much work remains to be done with an intensified international application. The industrialization of building in developing areas of the world and the communication of new knowledge were the final areas surveyed by this noteworthy congress.

BOOKS RECEIVED

YEARBOOK OF THE AMERICAN BUREAU OF METAL STATISTICS. *By the American Bureau of Metal Statistics, 50 Broadway, New York, N. Y. 10004. 147 pp. Paperbound, $4.00.*

PLAIN AND REINFORCED CONCRETE ARCHES, *American Concrete Institute Bibliography No. 6. American Concrete Institute, P.O. Box 4754, Redford Station, Detroit, Mich. 48219. 34 pp. $4.00.*

PROCEEDINGS OF THE AMERICAN CONCRETE INSTITUTE, 1965. *From the Journal of the American Concrete Institute. American Concrete Institute, P.O. Box 4754, Redford Station, Detroit, Mich. 48219. 200 pp., illus. Paperbound, $4.50.*

FIVE-YEAR INDEX TO ASTM TECHNICAL PAPERS AND REPORTS (1961-1965). *By the American Society for Testing and Materials, 1916 Race St., Philadelphia, Pa. 19103. 152 pp. $6.50.*

SIGNIFICANCE OF TESTS AND PROPERTIES OF CONCRETE AND CONCRETE-MAKING MATERIALS—STP 169A. *By the American Society for Testing and Materials, 1916 Race St., Philadelphia, Pa. 580 pp. $12.00.*

VANE SHEAR AND CONE PENETRATION RESISTANCE TESTING OF IN-SITU SOILS—STP 399. *By the American Society for Testing and Materials, 1916 Race St., Philadelphia, Pa. 19103. 52 pp. $2.25.*

PLANNING ASPECTS AND APPLICATIONS. *By Melville C. Branch. John Wiley & Sons, Inc., 605 Third Ave., New York, N. Y. 10016. 333 pp., illus. $10.95.*

URBANIZATION IN NEWLY DEVELOPING COUNTRIES. *By Gerald Breese. Prentice-Hall, Inc., Englewood Cliffs, New Jersey 07632. 151 pp., illus. $4.95.*

CORROSION AND ITS PREVENTION IN WATERS. *By G. Butler and H. C. K. Ison. Reinhold, 430 Park Avenue, New York, N. Y. 10022. 281 pp., illus. $12.00.*

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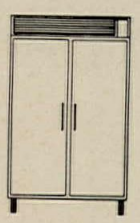

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Effective design teamwork

We were very pleased with your write-up of Redwood Shores and particularly with the emphasis on the broad aspect of teamwork which was brought to play in the evolution of this plan. As you know, many approaches were developed before we arrived at the approved master plan, but each of these approaches was tested against the range of participating consultants. We had an especially close dialogue with Larry Smith & Company, market real estate consultants, in relation to the mix of single-family, low-rise and high-rise housing, location of shopping centers and other facilities.

We feel that this kind of approach is sounder and more helpful in execution than the single image which an architect by himself might produce.

Norman C. Fletcher
The Architects Collaborative
Cambridge, Mass.

. . . but

Your Redwood Shores story was a provocative presentation. Alas, the name of our esteemed client, Leslie Salt Company, and the subsidiary developer, Leslie Properties, was nowhere to be seen. They have been extremely farsighted in their willingness to undertake a project of this scope. We would like to credit them as prime movers.

Elizabeth Fitzgerald
The Architects Collaborative

Record Houses: pro and con

Being a new subscriber to your ARCHITECTURAL RECORD, I have just received your Mid-May 1966. Wonderful! Such articles are of incredible value to our profession.

Architect Diego Lopez Echandi
P.O. Box 717
San Jose, Costa Rica

There is nothing more useful, pleasant and refreshing than good contemporary design, but the buildings which you have collected for Record Houses are just completely un-original, pathetic strivings to be different. They are all about 40 years old, as you will readily see if you go back into the work done in Europe in the twenties. The test after all is what will a thing look like 40 years from now when it has been left untended, unpainted, unlived in. Will it make you think that something really great was once done or will you wonder where the old mine shaft went to which that building must have been the hoist house?

Henry van Loon
Manchester Center, Vt.

Record Houses this year is the finest quality architectural writing that I have ever seen; it shows a sensitivity and an amazing insight into design seldom seen on any kind of building. Nothing is trite and there are no gimmicks. In short, although I rarely am able to finish anything written on architecture because I can't bear the way it is written, I read with the greatest pleasure the Mid-May from front to back.

Donald Roark, A.I.A.
Denver

"A Report on Residential Interior Design" by George O'Brien in *Record Houses* of 1966 is one article to which I would like to say "hear hear!" It should be reprinted in every shelter magazine and the home section of every newspaper in the country.

Most interior designers, including a great number who work for architectural firms, are really just downright lazy and dull when it comes to interior spaces. If they can't find the piece of

continued on page 75

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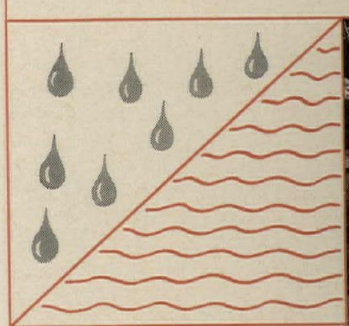

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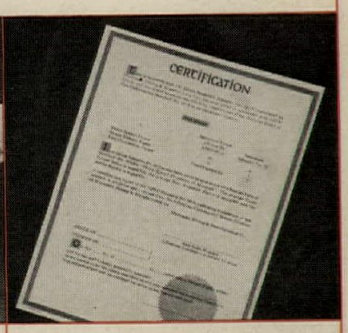

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Townhouse development, San Rafael, California
Architects: Bushnell, Jessup, Murphy & Van de Weghe
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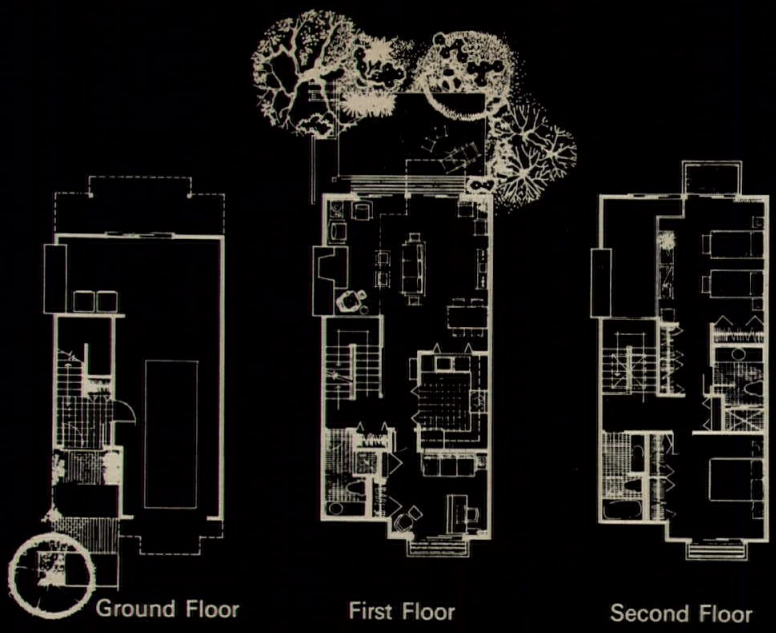

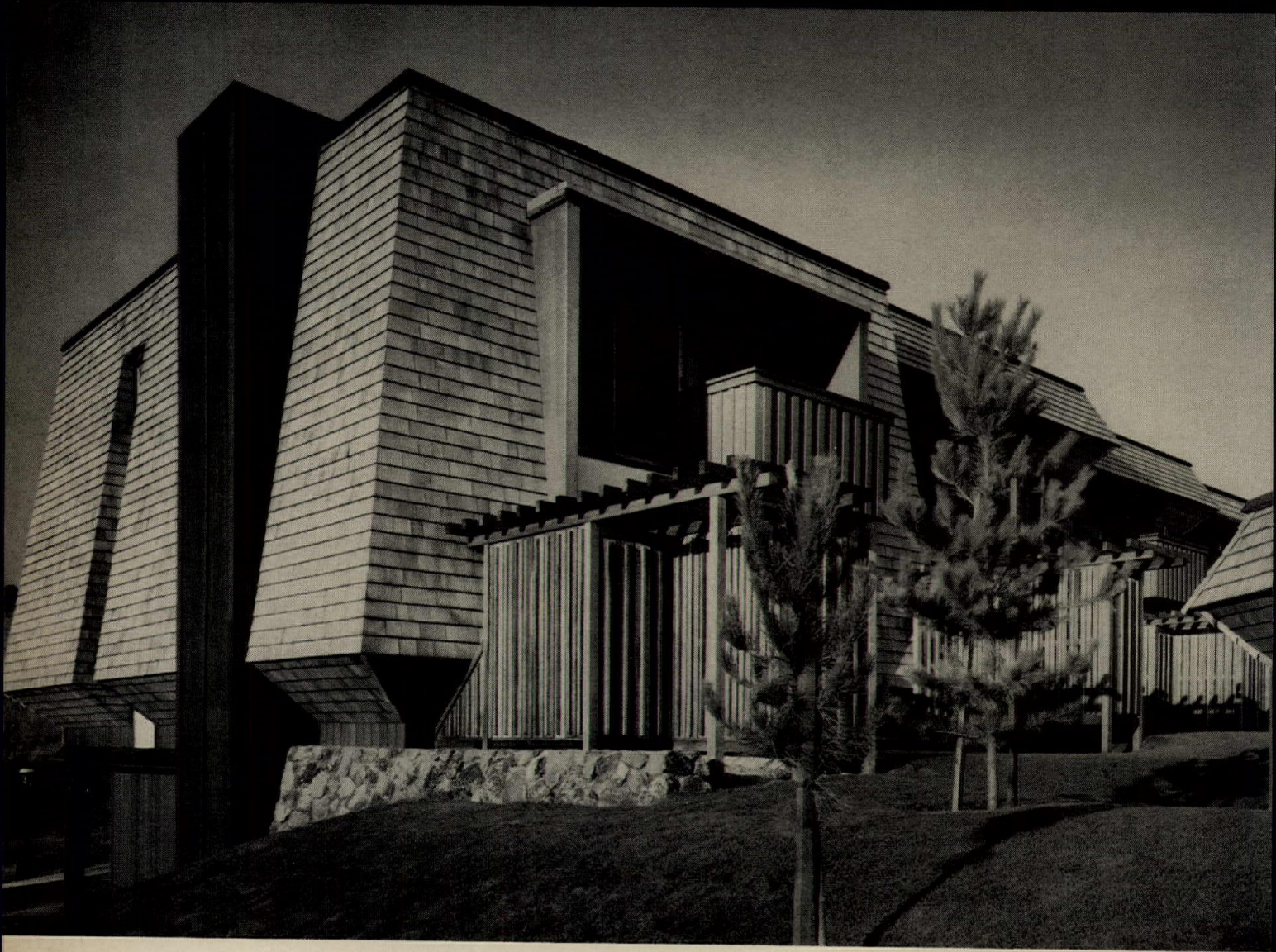

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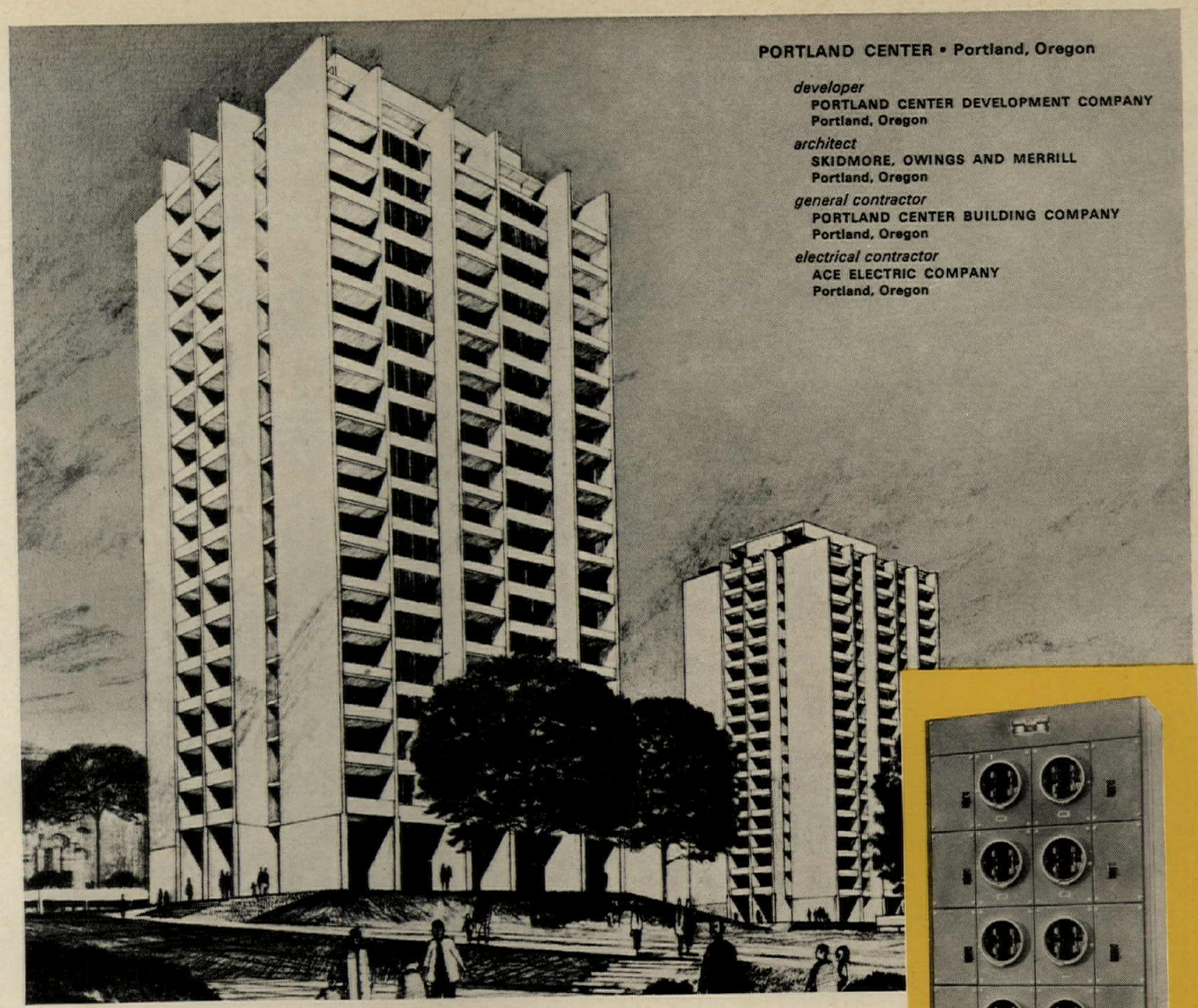

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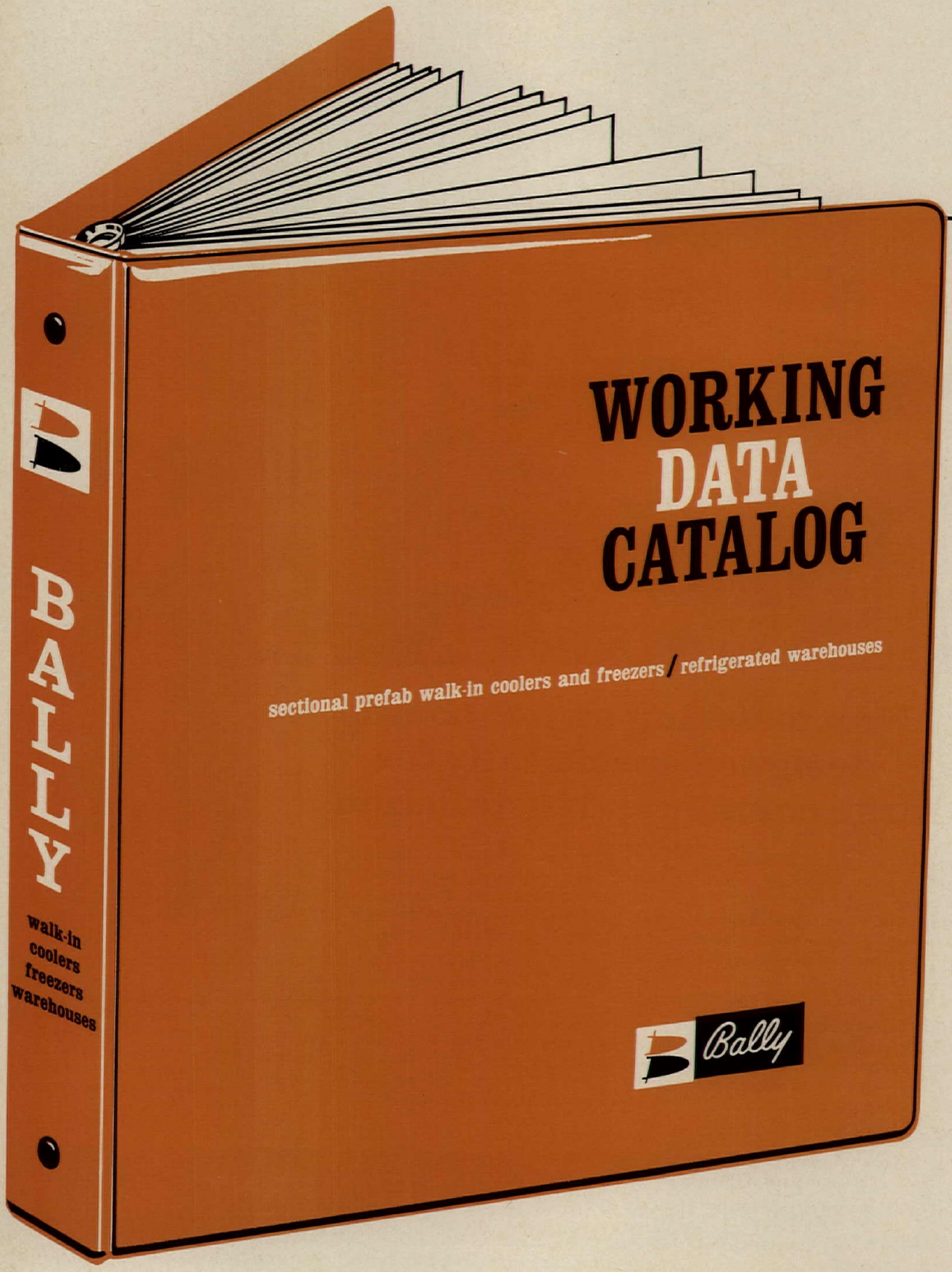

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INDEX

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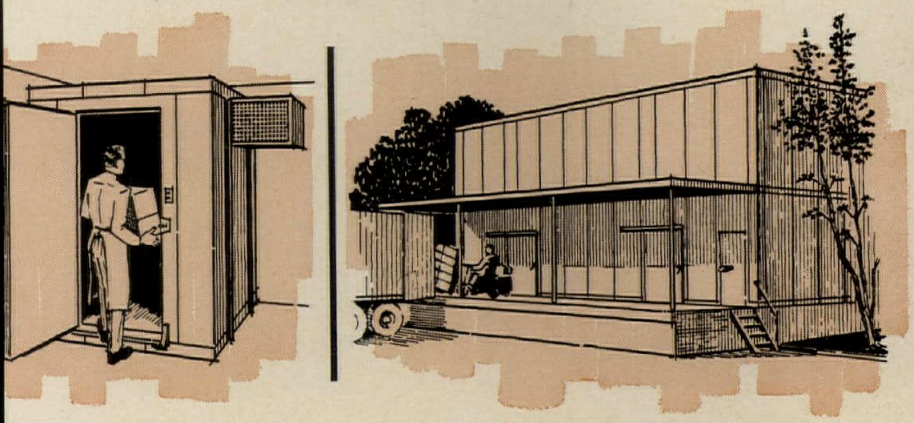

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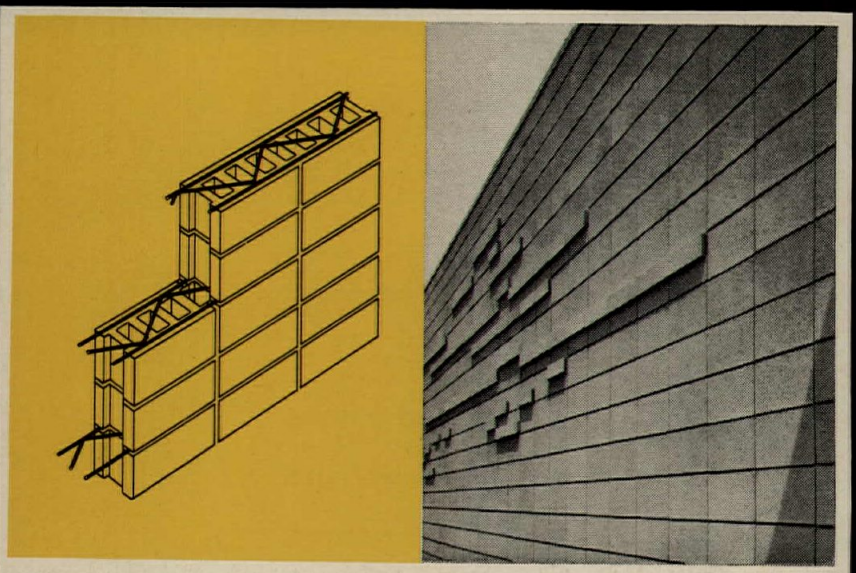

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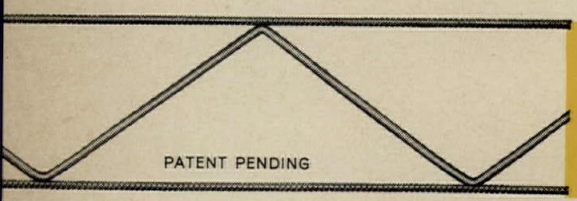

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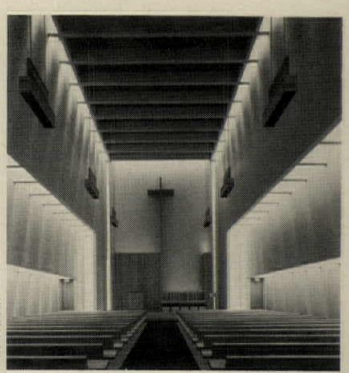
s he developed the following projects— nd several earlier ones — architect Birkerts ad a chance to consolidate some of his deas about architecture and arrive at a hilosophy. Not a full-blown, mature one, erhaps, but an emerging synthesis and rystallization that have served to clarify his pproach and guide his design work. In he text below, Birkerts sets forth some of is leading ideas on design:

NEWEST PROJECTS OF GUNNAR BIRKERTS

illustrate an architecture characterized by ingeniously integrated natural light, unusual forms, and cornerless spaces

My aim is not to design stylized, anonymous containers for human functions, nor to provide endless areas of characterless commercial space. Architecture should convey—visually and emotionally—its purpose and meaning. Architecture should be *specifically appropriate*. In searching for a proper expression, I look for the unique and difficult aspects of a problem. If recognized, they can become the character generating ingredients that will give the architecture individuality.

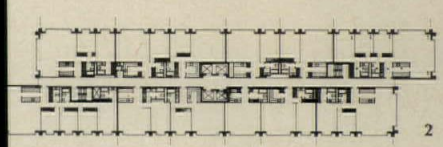


Balthazar

1

The Columbus School *(overleaf)* can serve as a case in point. Since the classrooms will be artificially lighted and air conditioned, and the aim is to eliminate as many distractions as possible for the children—both inside and outside the building—the ideal parti would seem to be a structure with blank walls. These factors weighed heavily in deciding on the actual introverted expression as it stands; corner windows, tree ring, etc.

These notions may be labeled 19th-century romantic by some, but I believe they are valid today, and will remain so—provided architecture is to inspire as well as serve. The only danger I see here is that one might go to extremes in implementing a good idea.



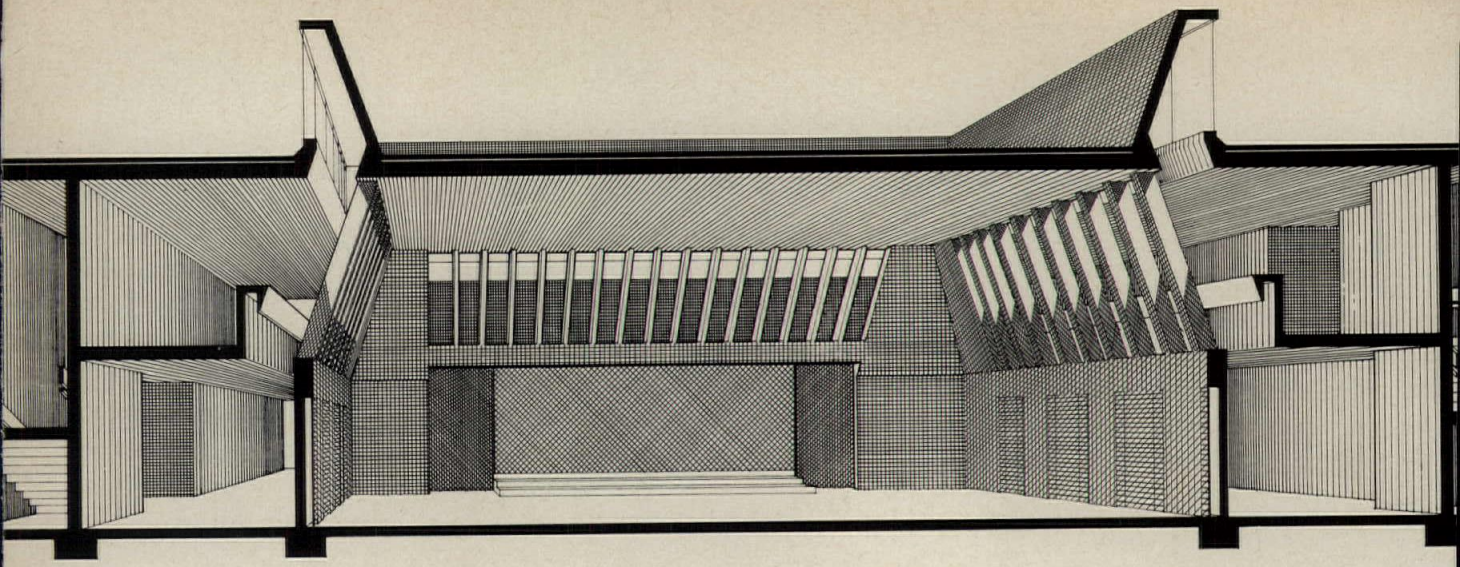
2

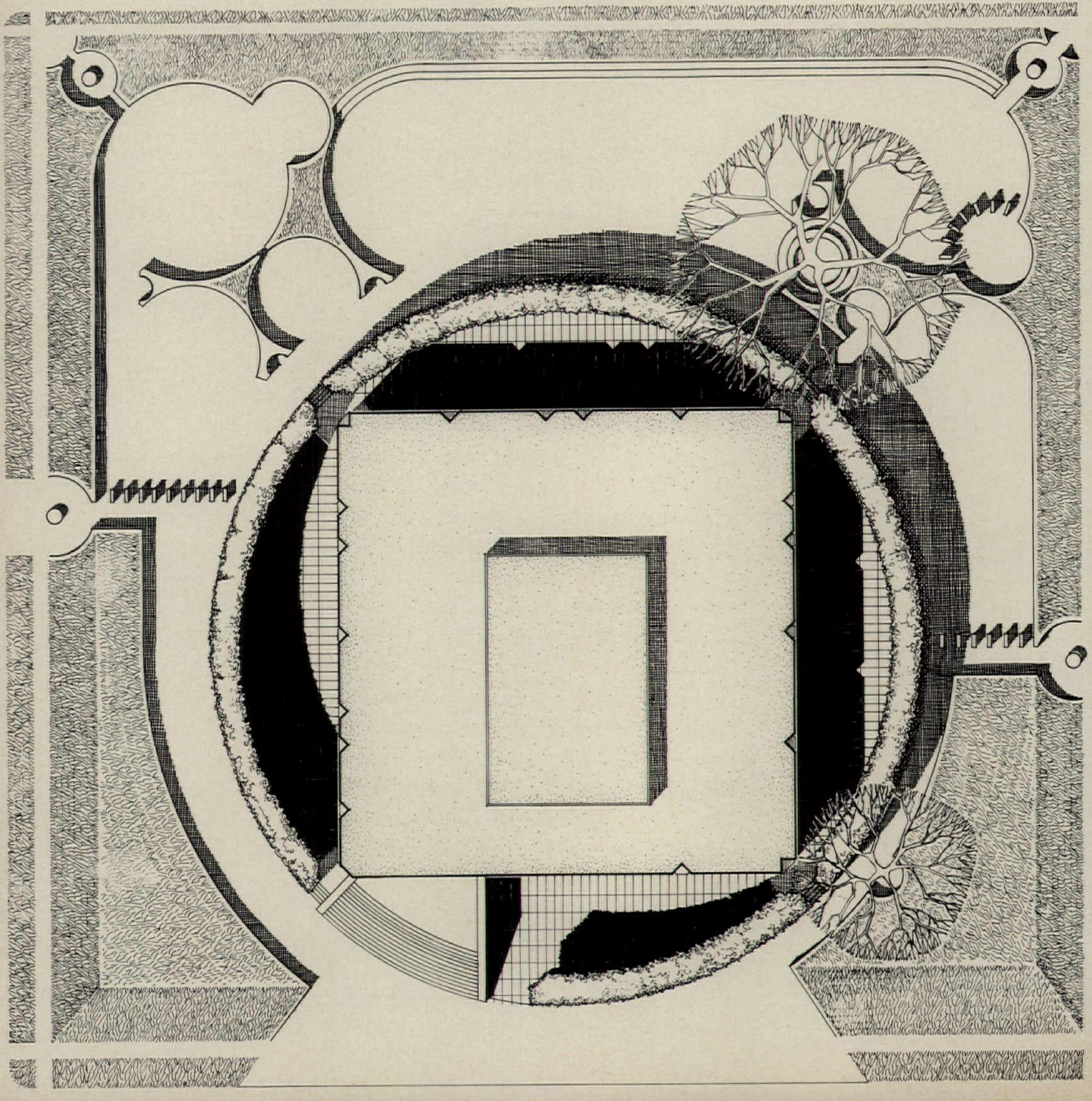
Structure

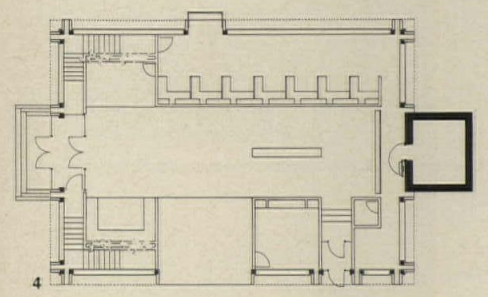
The problem of arranging structural elements so the system can be recognized by the observer begins as an ethical or moral one, involving truthfulness. After it has been made evident how the loads reach the ground, the problem then becomes a visual one. Enclosing planes sometimes serve as structure, but separated structural elements can more often be used to establish order, set rhythms, and define proportions. Structure thus becomes an important—though secondary—design element. The University Reformed Church in Ann Arbor, 1, is an example of plate construction clearly and simply expressed. There is nothing tricky here; it is evident how the loads are carried down to the ground. Natural light serves as emphasis.

3

Although certain disciplines are necessary in establishing order, I try to avoid the restrictive dogma of inflexible structural systems. The Lafayette







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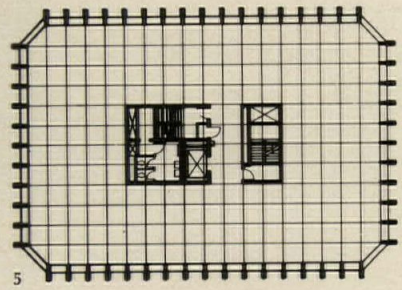

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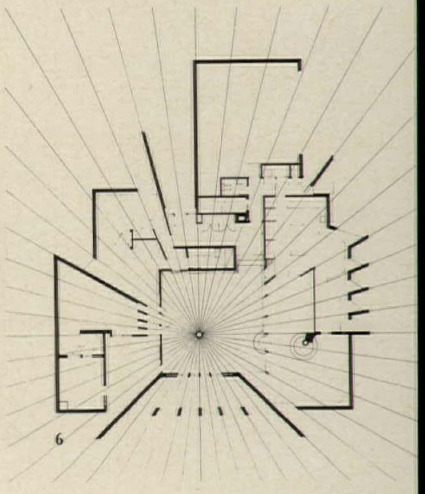
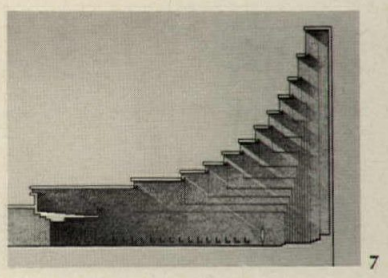


6

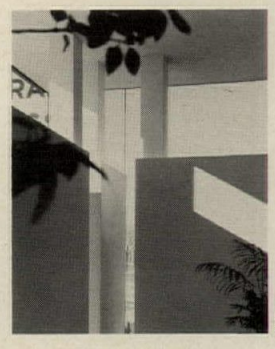
apartment building, 2 and 3, has random column spacing on exterior walls, determined by dividing walls inside; the Royal Oak Bank, 4, has columns spaced to frame vertical openings rather than to follow an arbitrary pattern. In the Fisher Administrative Center for the University of Detroit, 5, however, columns are spaced to follow a modular grid for both functional and esthetic reasons. If a modular grid develops during the design process, it becomes a desirable result, but not an objective nor a beginning. In the design of the house, 6, the aim was to achieve a more versatile order for plan and form and structure by the superimposition of a radial pattern over a conventional rectangular grid.



7

Space

To me, a primary design consideration is space, whether exterior or interior, functional or inspirational, large or small, light or dark, flowing or static. No function can be contained without defining its spaces by some sort of enclosure indicative of the function.



8

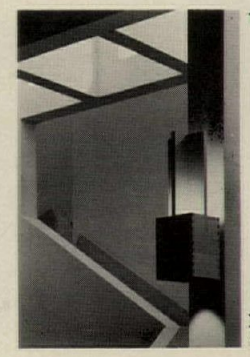
Exterior and interior expressions of the same space can sometimes be most appropriately contradictory. This belief stems from a consideration of the basic conflict that often occurs between the building exterior and the environment on the one hand, and corresponding interior needs on the other. In relating (or opposing) a building to its surroundings, bulk or large scale may be called for, while function may require smaller-scale interior spaces and handling. Motion can also play a part: the speed of the viewer driving past in an automobile versus the static or slowly moving occupants inside the building. The library, pages 103, 104, and 105, is an example.

9

Natural Light

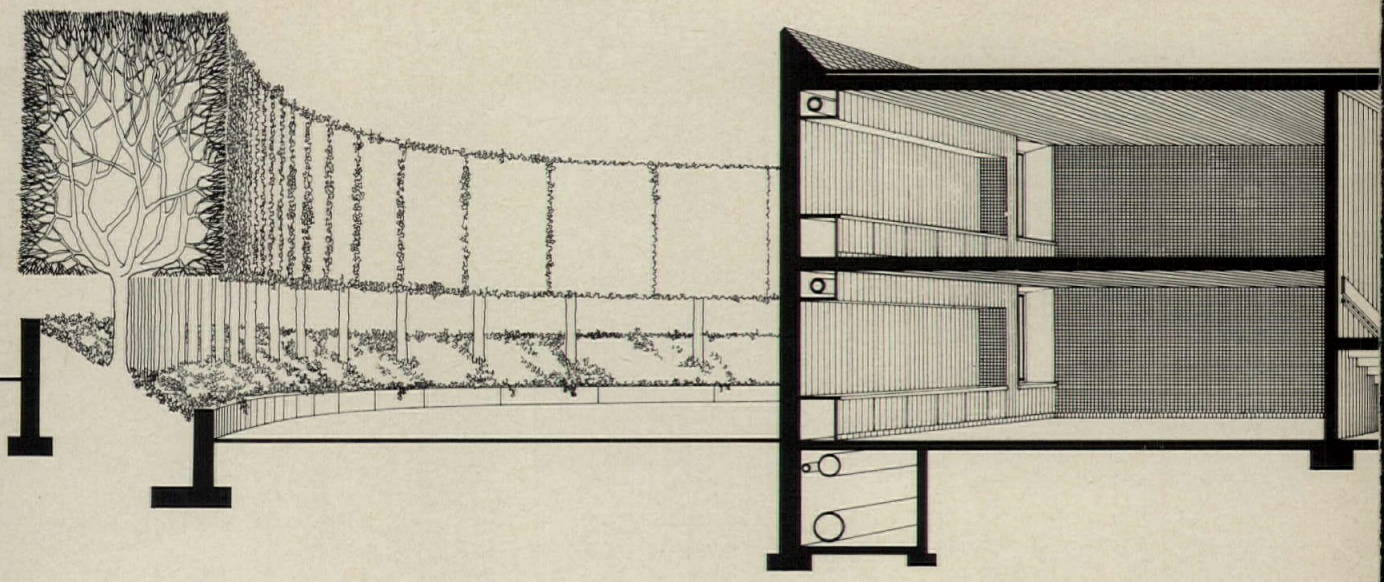
We are surrounded by daylight—universal, unrestricted, and there for us to use. To me, it is a design element with many unexplored possibilities. The quality of its lighting lends quality to a space—not the light that comes through windows or vision panels, but light as design element; reflected, diffused, or directionally washed over an enclosing plane. Different amounts and values of natural light can give enormous richness to an otherwise simple, uninteresting space; light can add a further dimension. Examples of light as design element: for a church, 7; at the corner of the Royal Oak Bank, 8; in a school, 9; as an integral part of a stair, 10. My aim is not to design stylized, anonymous containers...

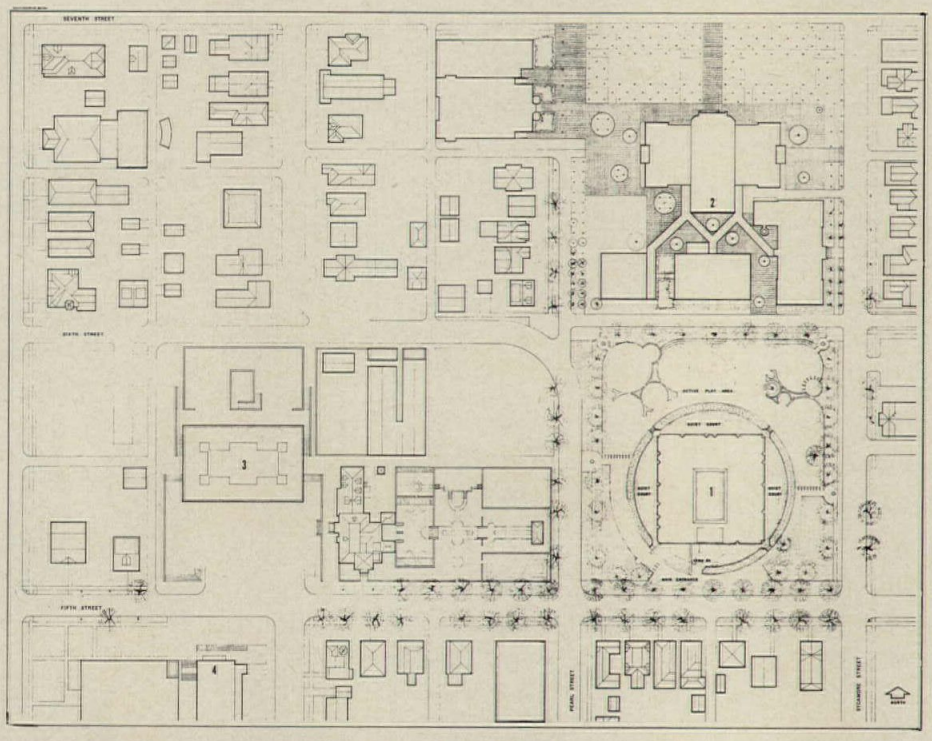
—Gunnar Birkerts



10

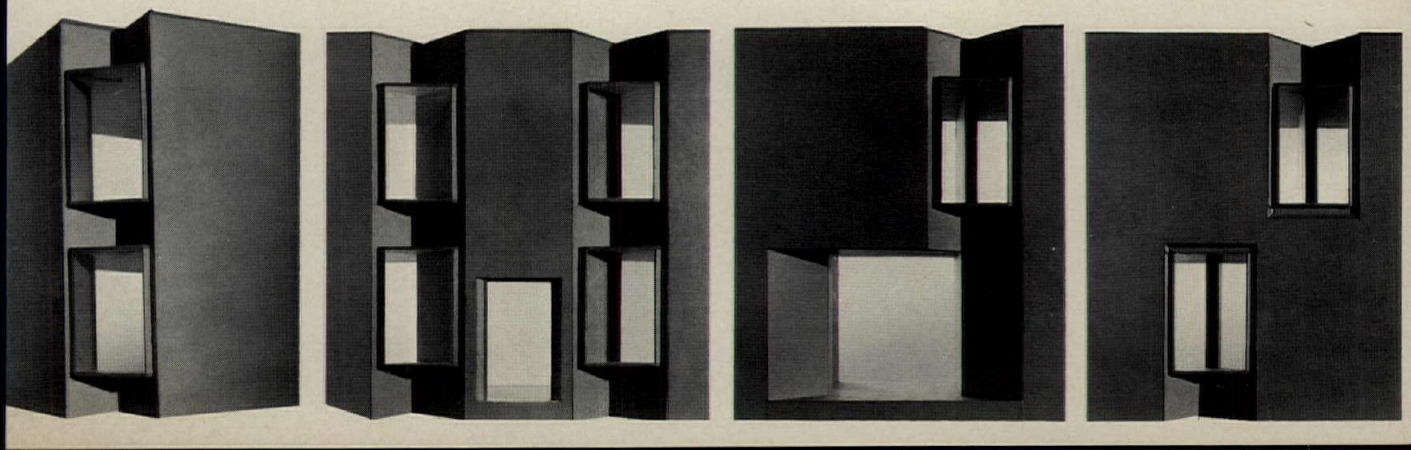
Balthazar

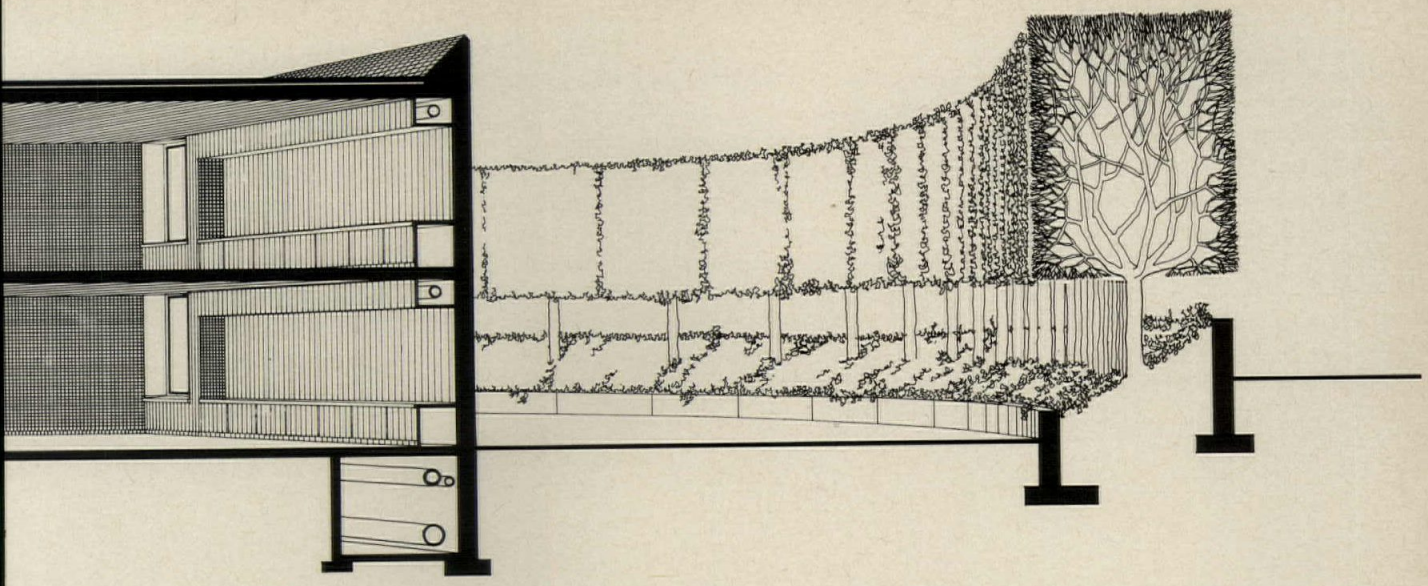




NEIGHBORHOOD OF SCHOOL IN COLUMBUS, INDIANA

1. Lincoln Elementary School, Gunnar Birkerts and Associates, architects (under construction)
2. Central Junior High School, William Tinsley, architect, 1859; Elmer E. Dunlap, architect of 1904 addition
3. Cleo Rogers Memorial County Library, I. M. Pei and Partners, architects (under construction)
4. Tabernacle Church of Christ, Eliel and Eero Saarinen, architects



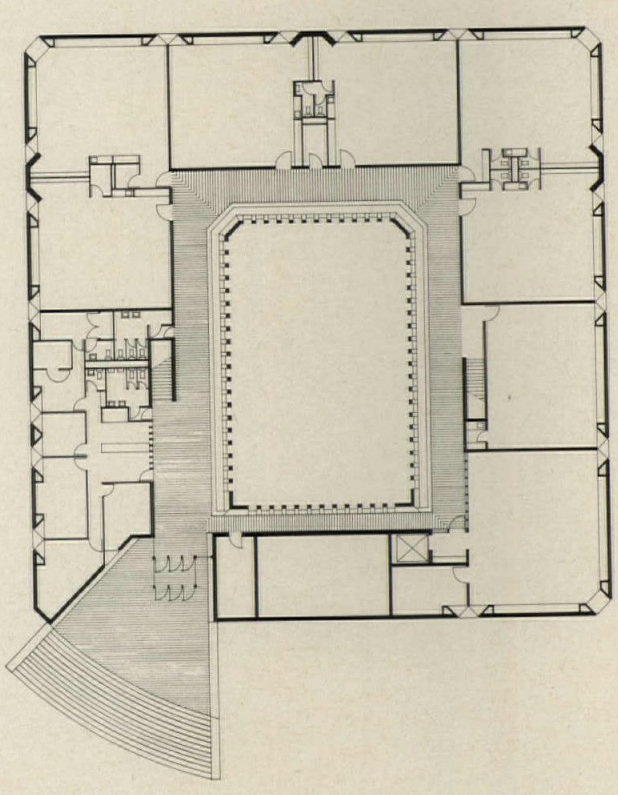


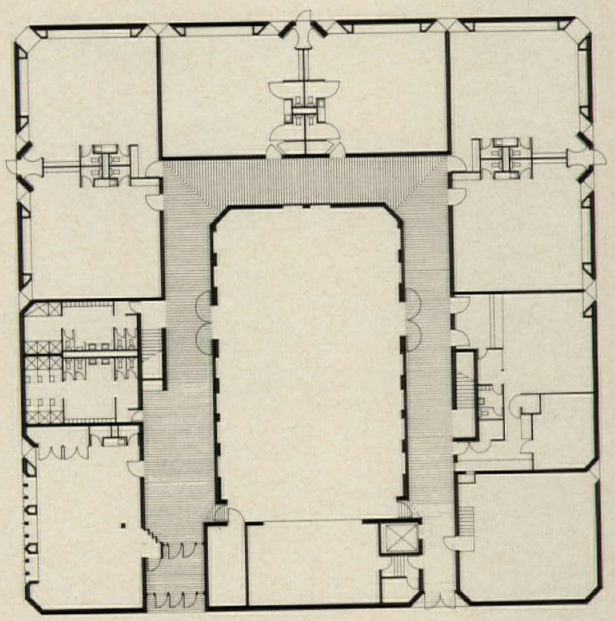
CIRCLE AND SQUARE FOR AN INDIANA SCHOOL

The new Lincoln Elementary School in Columbus, Indiana will consist of a two-story square building set within a circle of trees—on a downtown plot developed in a manner akin to sculpture. Architect Birkerts says of the concept, "a ring of pleached, trimmed trees —as high as the building itself—forms a screen between the noisier and quieter spaces. It also becomes the visual facade of the enclosed school space: green, dense, sun-shielding in summer; sheer, lacy, creator of sun patterns on the walls in winter. Spaces between the hard walls and the ring are intimate and small in scale for kindergarten outdoor activity; active spaces for the older children lie outside the tree ring.

"The inner curb is raised three feet so a grass berm separates street and play areas, eliminates fences, keeps children and their playthings off the street. The curb turns and swirls to enclose sunken spaces for activities and play (Johnson, Johnson and Roy, landscape architects).

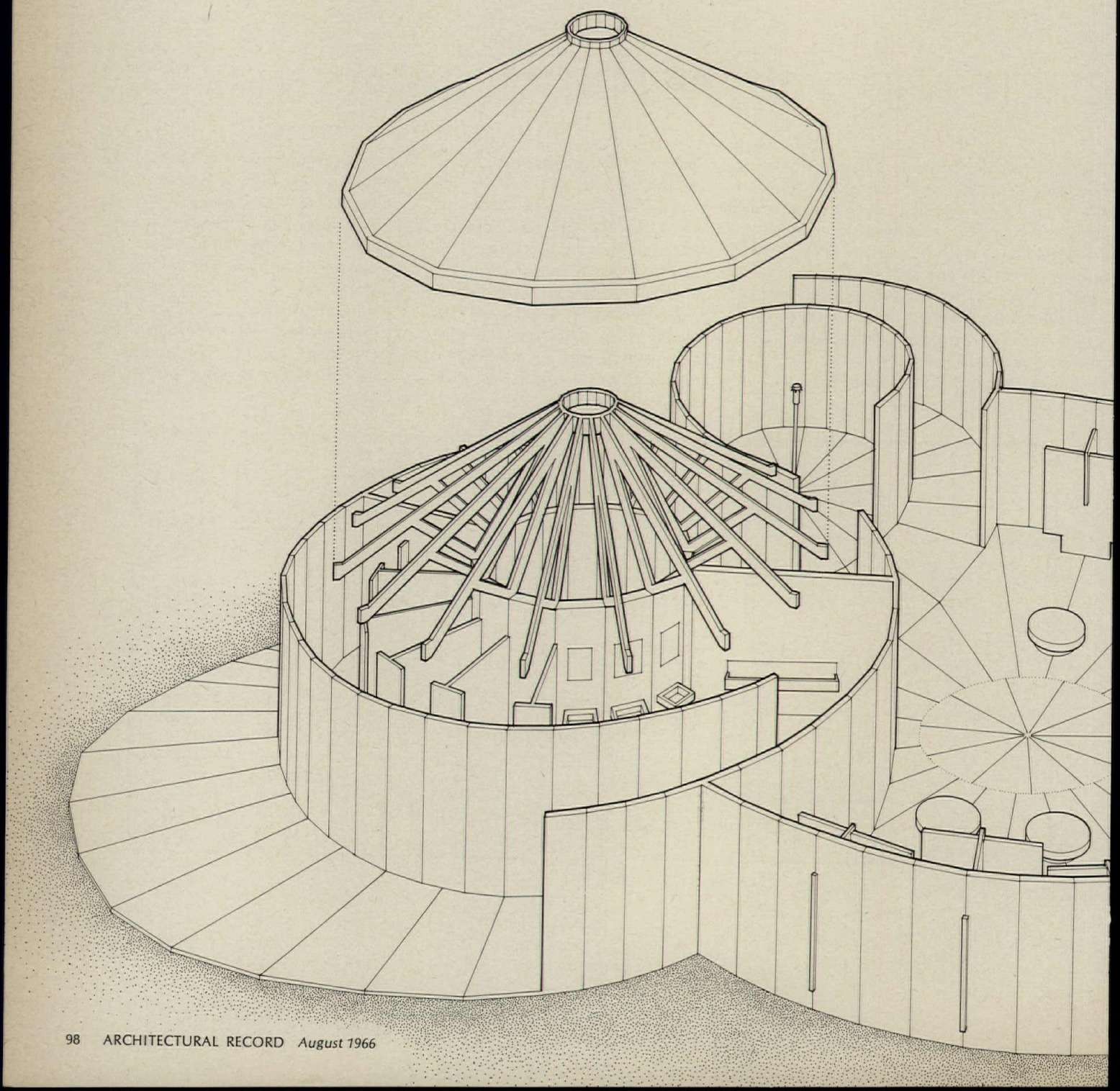
"The building centers on a multipurpose space, daylighted from above —as are the corridors. To minimize heat transmission, classrooms are cornerlighted from shared openings." Photos at extreme lower left show study models of various fenestration patterns that were considered as the design evolved.

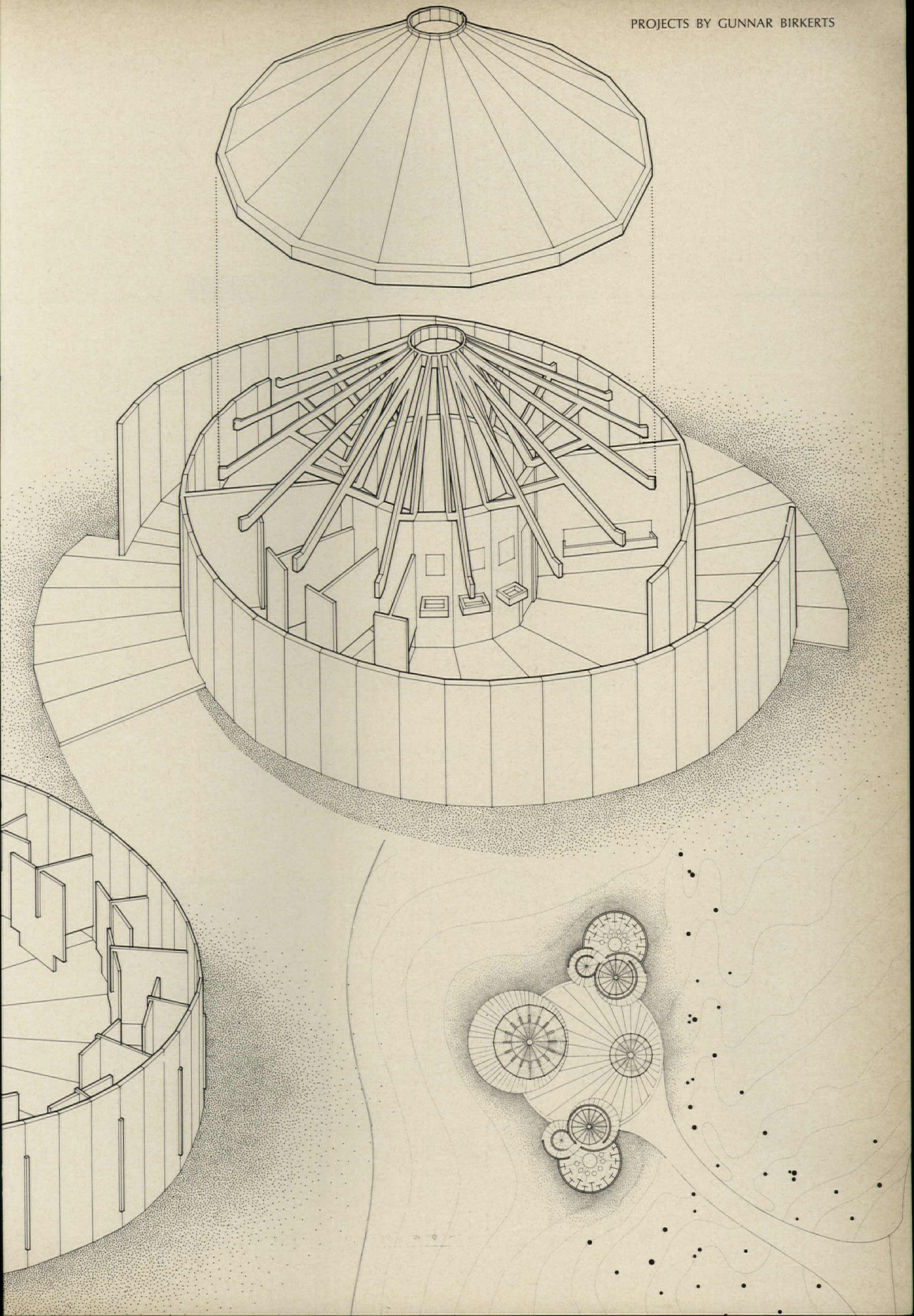


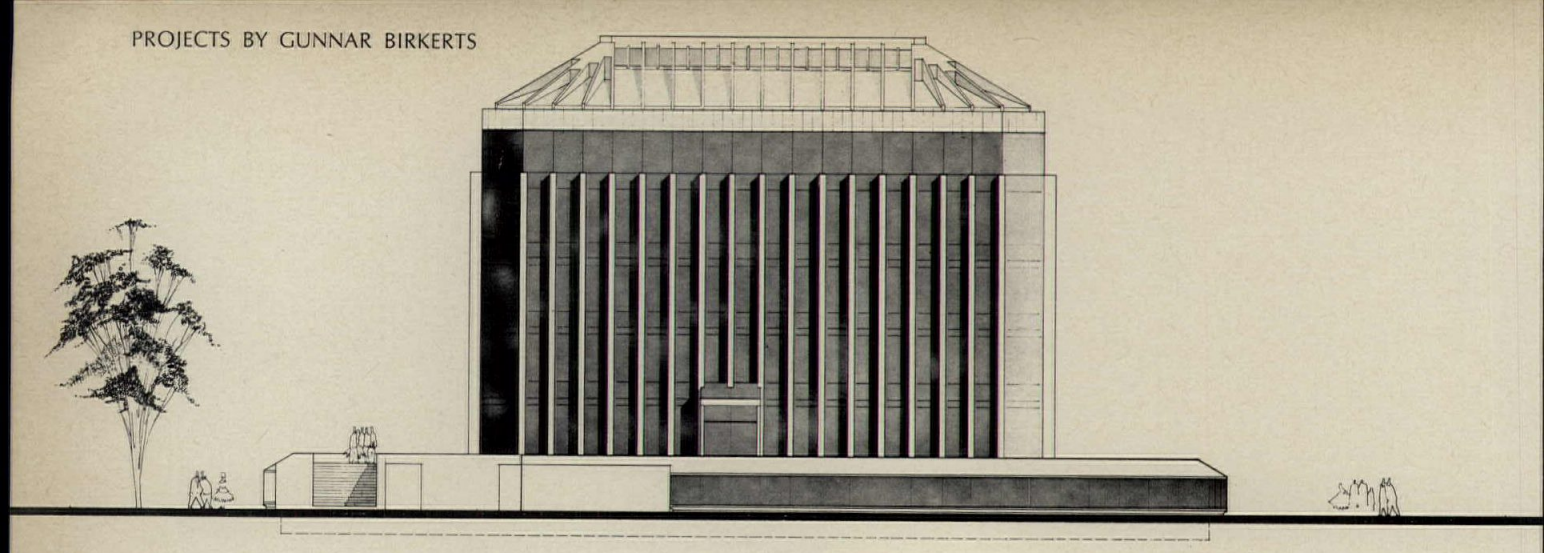


PARASOLS AND SPIRALS FOR A MICHIGAN PARK

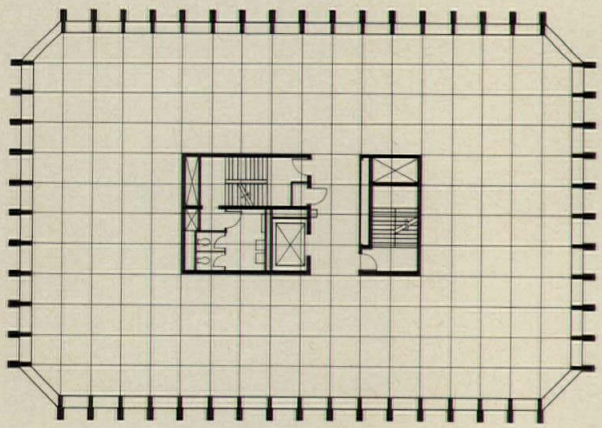
These appropriately lighthearted buildings are representative of the structures architect Birkerts has designed for the Bald Mountain Recreational Area, 30 miles north of Detroit. Johnson, Johnson and Roy were the planners and landscape achitects. Shown below are a bathhouse and toilet unit, and opposite page, a comfort station. A typical grouping of two bathhouses, a concession stand, and locker building is shown in the plot plan at bottom right. The design idea is that all the buildings—except for the concession units—be treated as open spaces bounded by walls that become fences, sheltered by free-hanging roofs that act and look like parasols. With permanence and indestructability as objectives—as well as good looks—only three basic materials were chosen; precast and *in situ* concrete, wood, and copper. The enclosing fences are of precast concrete plank, while the parasol-roofs — cantilevered from the central cores—are framed in timber and clad with sheet-copper roofing. The toilet building cores are of poured concrete, while the toilet stall partitions are precast and cantilevered from the cores. All doors are of heavy oak plank. Dressing stalls in the bathhouses, arranged with staggered baffles, are constructed of precast elements.

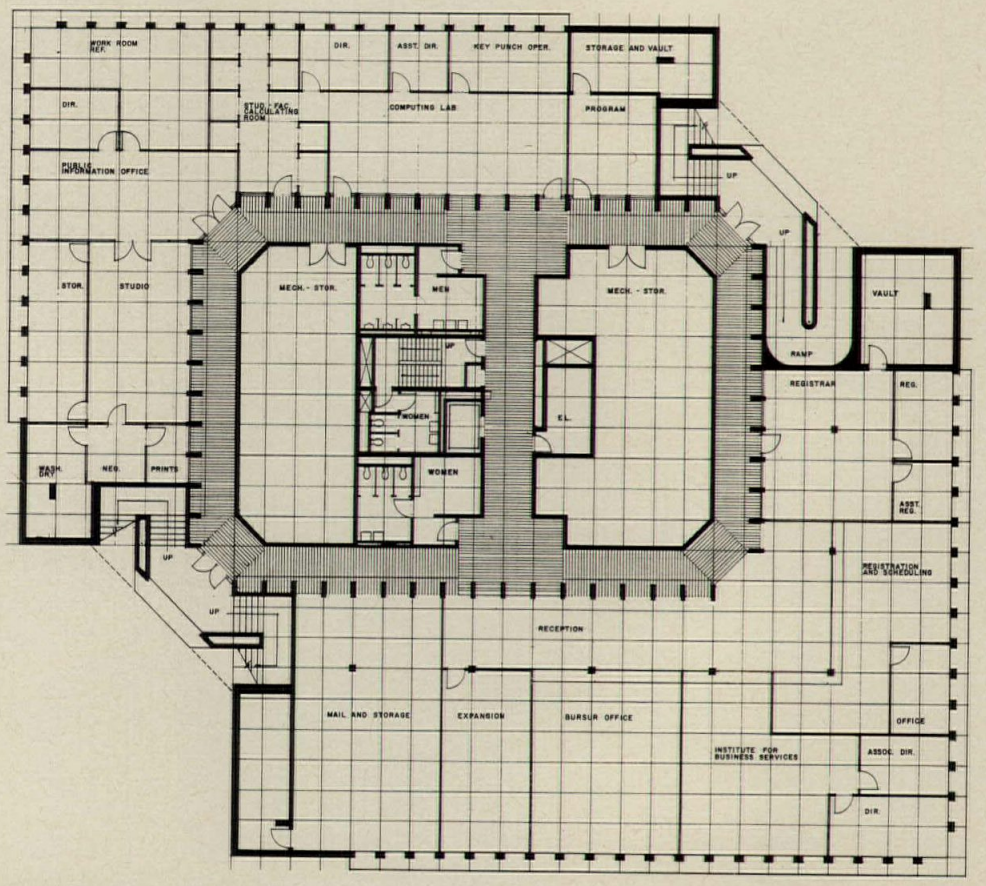






COLUMNS SUPPORT WALLS—ROOF IS





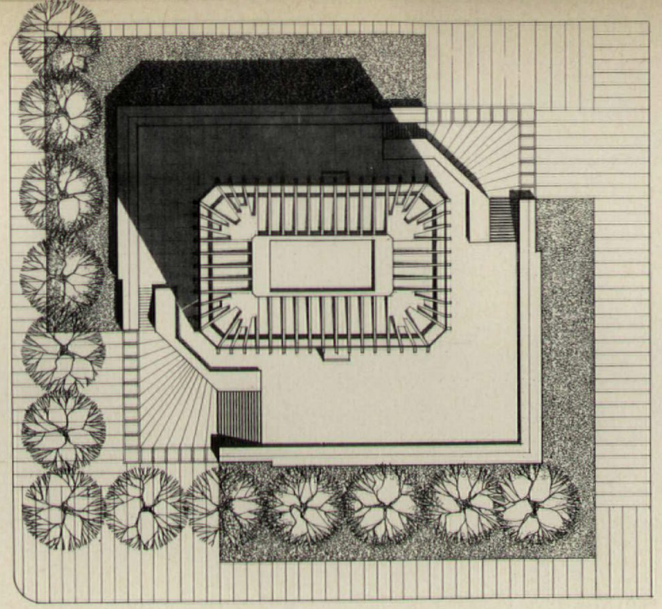
SUSPENDED

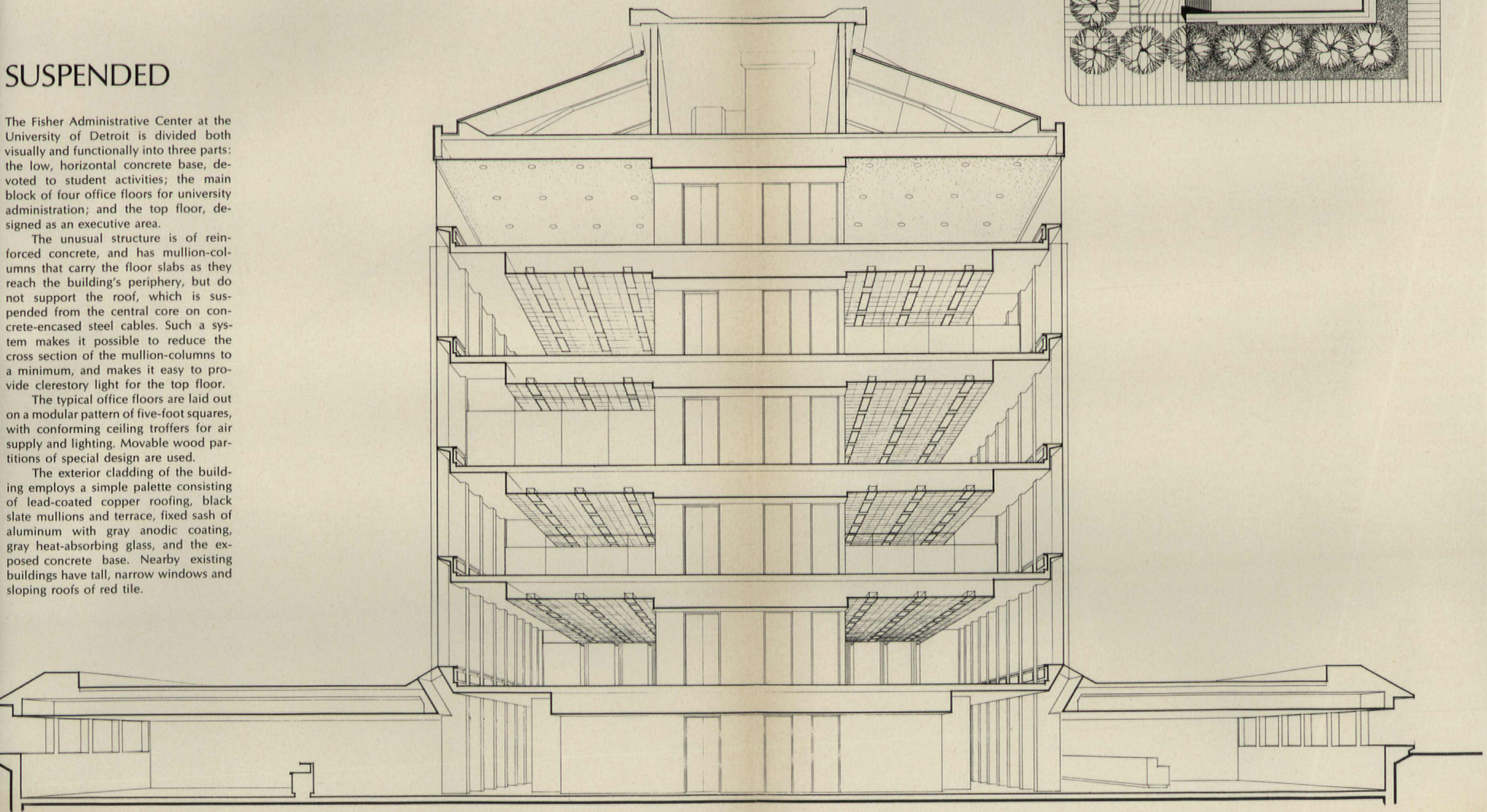
The Fisher Administrative Center at the University of Detroit is divided both visually and functionally into three parts: the low, horizontal concrete base, devoted to student activities; the main block of four office floors for university administration; and the top floor, designed as an executive area.

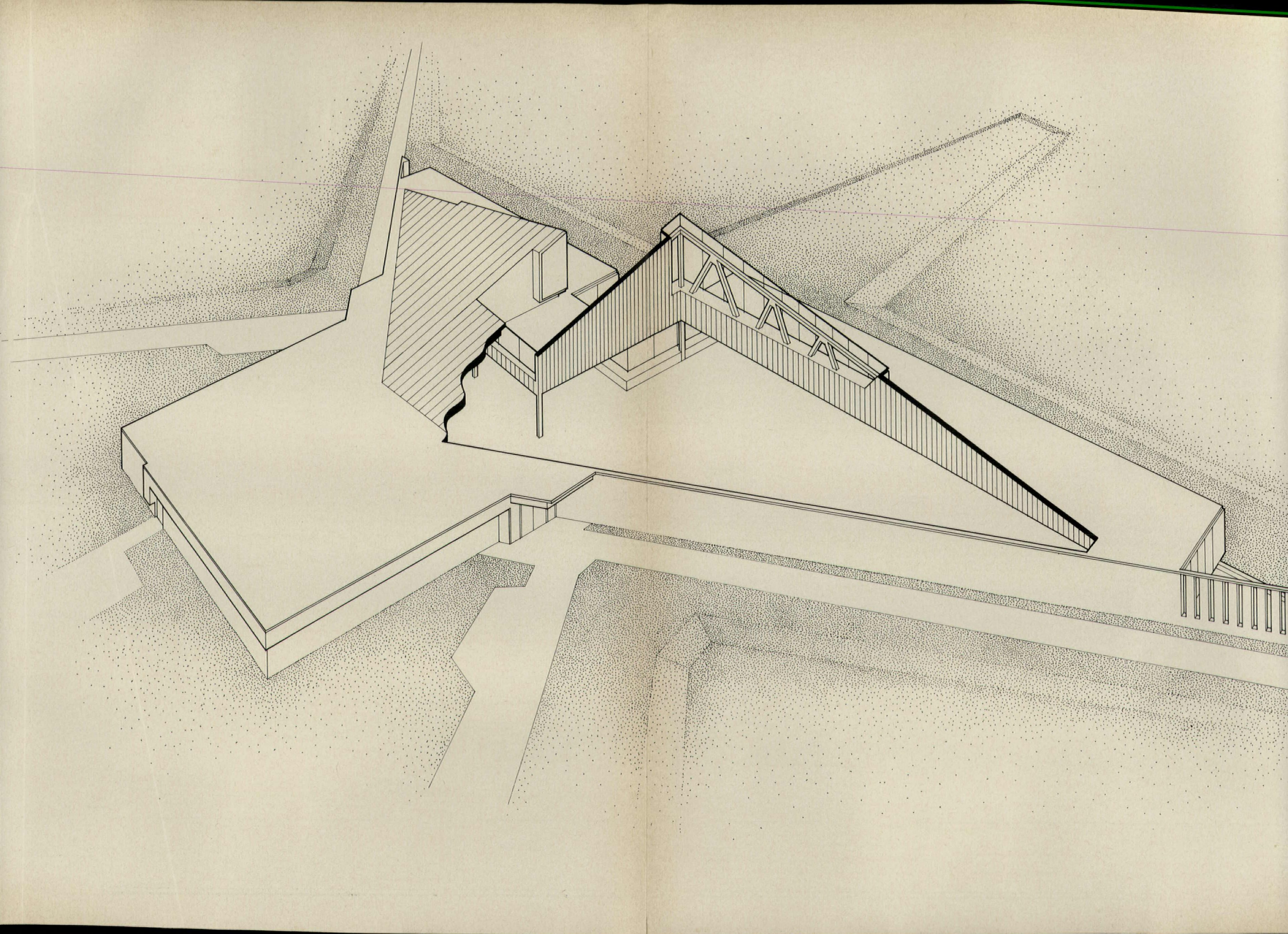
The unusual structure is of reinforced concrete, and has mullion-columns that carry the floor slabs as they reach the building's periphery, but do not support the roof, which is suspended from the central core on concrete-encased steel cables. Such a system makes it possible to reduce the cross section of the mullion-columns to a minimum, and makes it easy to provide clerestory light for the top floor.

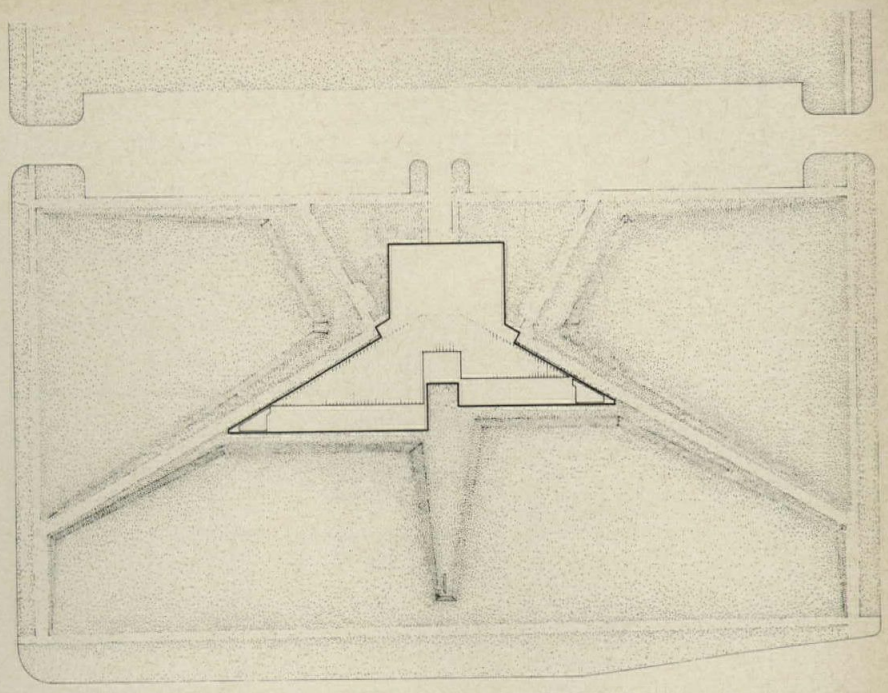
The typical office floors are laid out on a modular pattern of five-foot squares, with conforming ceiling troffers for air supply and lighting. Movable wood partitions of special design are used.

The exterior cladding of the building employs a simple palette consisting of lead-coated copper roofing, black slate mullions and terrace, fixed sash of aluminum with gray anodic coating, gray heat-absorbing glass, and the exposed concrete base. Nearby existing buildings have tall, narrow windows and sloping roofs of red tile.



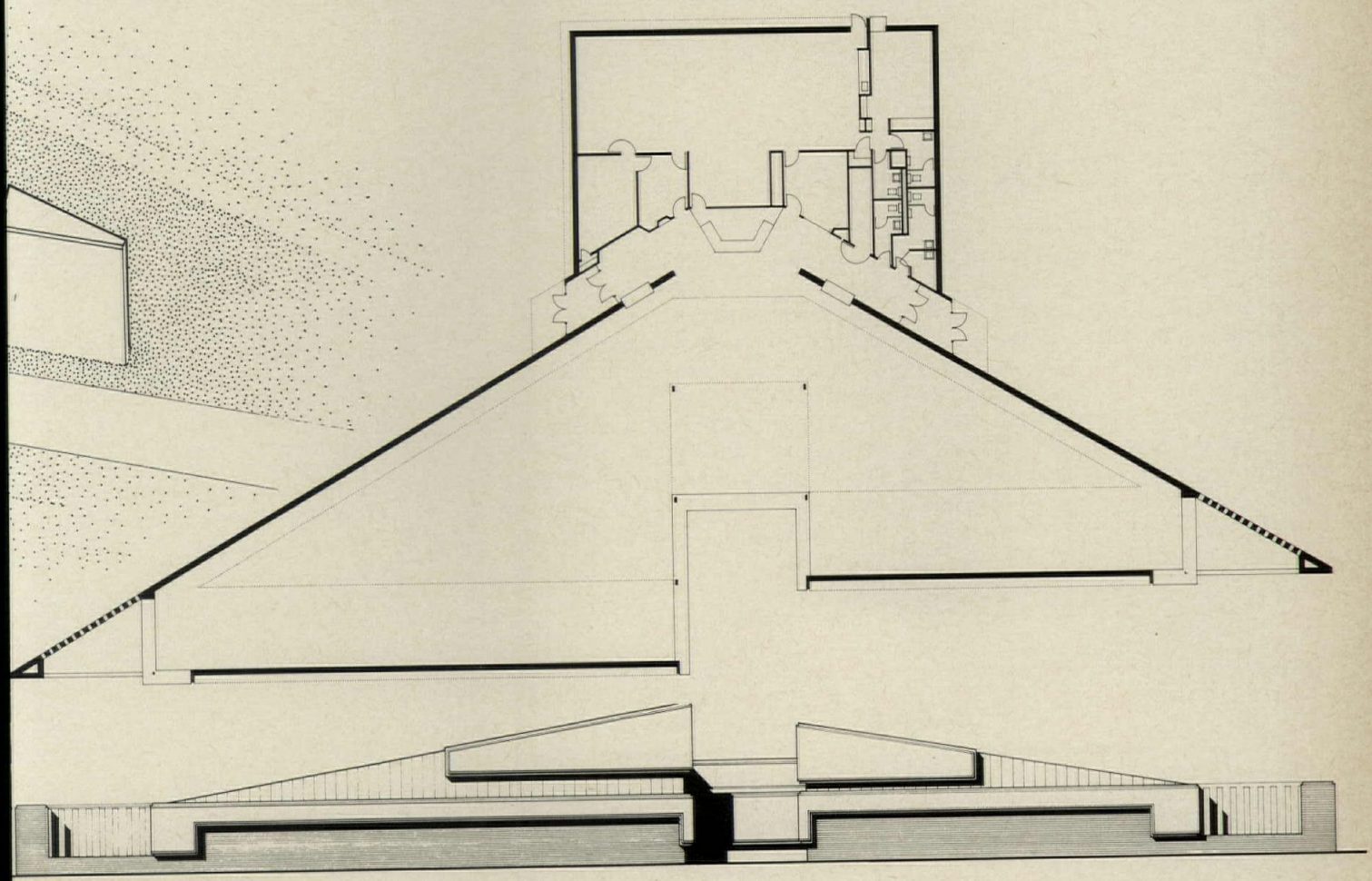


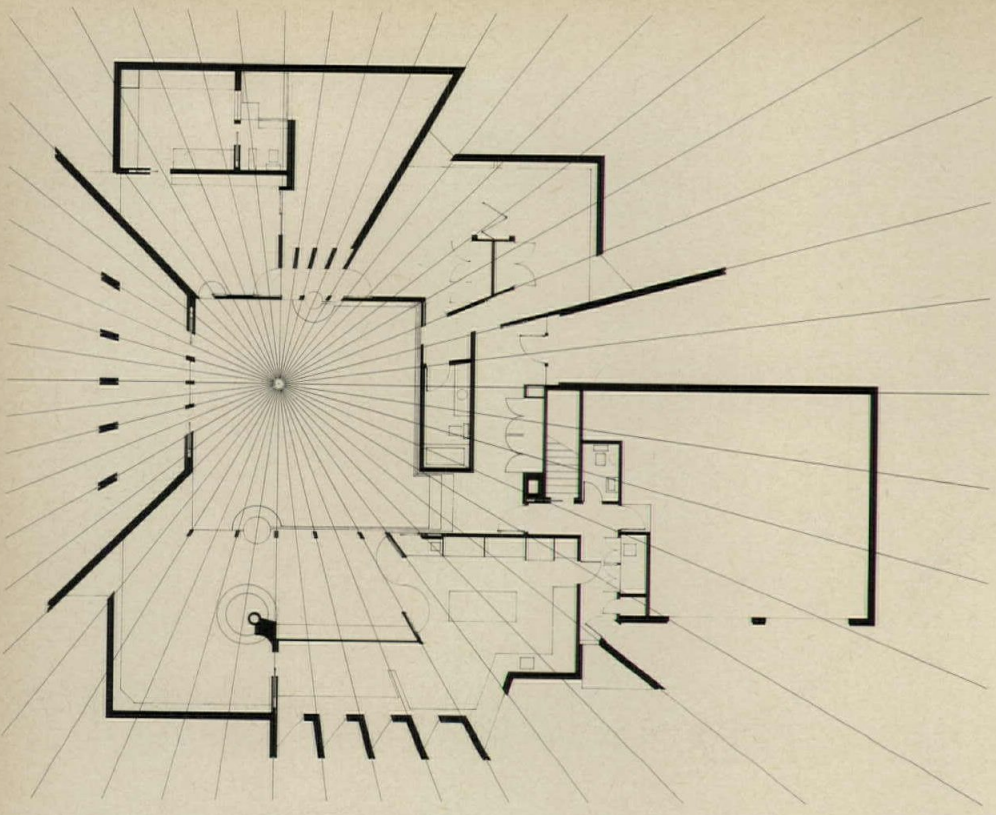


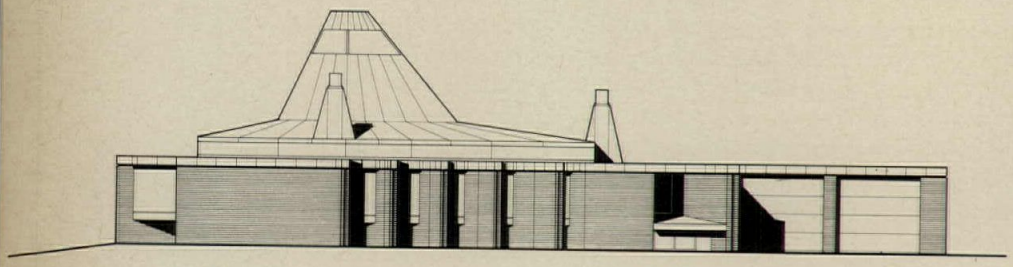


TOPLIGHTED, PROTECTED SPACES FOR READING

The unusual form of this branch library stemmed from two considerations: the need to insulate the main reading areas from the distractions of the street, and simultaneously provide natural light for them; and the wish to make an architectural statement strong enough to hold its own on a busy street of buildings architect Birkerts describes as "insulting." Thus, the stack areas are placed against the north walls—which face the street—to provide visual and acoustical shielding for the large reading areas. The projected glass plane is lifted above eye level over the stacks; adult and juvenile reading areas are located under the high toplighted center section; no south light is admitted to the principal spaces, those within the triangular plan. The desk is located to provide optimum control over public areas, entrances, and exits; a work area and offices occupy the block to the south (or rear) The unsymmetrical plan—and accompanying height differentials—resulted from dissimilar area requirements for adults' and children's sections.





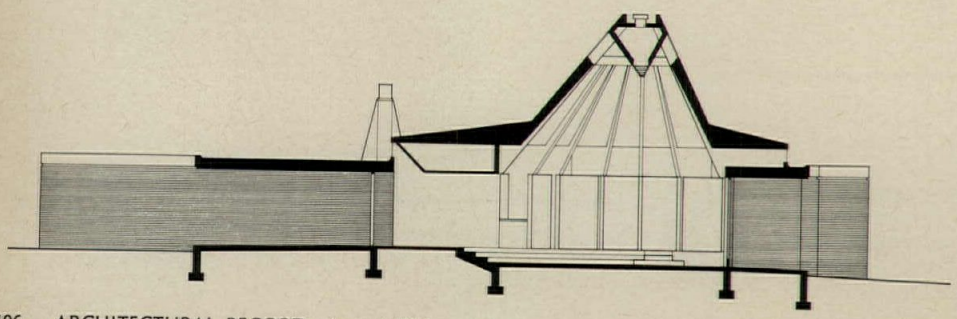


RADIAL PLAN FOR AN ATRIUM HOUSE

The plan of this house—now under construction in Michigan—evolved from the owner's desire to turn the spaces inward to an atrium. In Birkerts' developed scheme, all the surrounding rooms radiate from an eccentric center in the atrium and open to it in varying degrees. Living and dining areas open permanently to the court, but bedrooms and kitchen can be closed off by hinged panels. Exterior glazing aligns with atrium panels to provide limited or expanded vistas, increasing the richness of one's visual experience within the house. Glazing panels do not permit a direct outside view into rooms, but do provide reflected natural light from angled walls.

The radial concept is strengthened by the roof construction, in which the sloping beams converge above the same center-point. Outside glazing at the apex will provide reflected daylighting.

Architect Gunnar Birkerts points out that these men, who work with him, should receive credit for their contribution in the design and development of the projects shown in this article: design associates Harold Van Dine, Keith Brown, and John Hilberry; and designers Paul Chu Lin and William Nowysz.

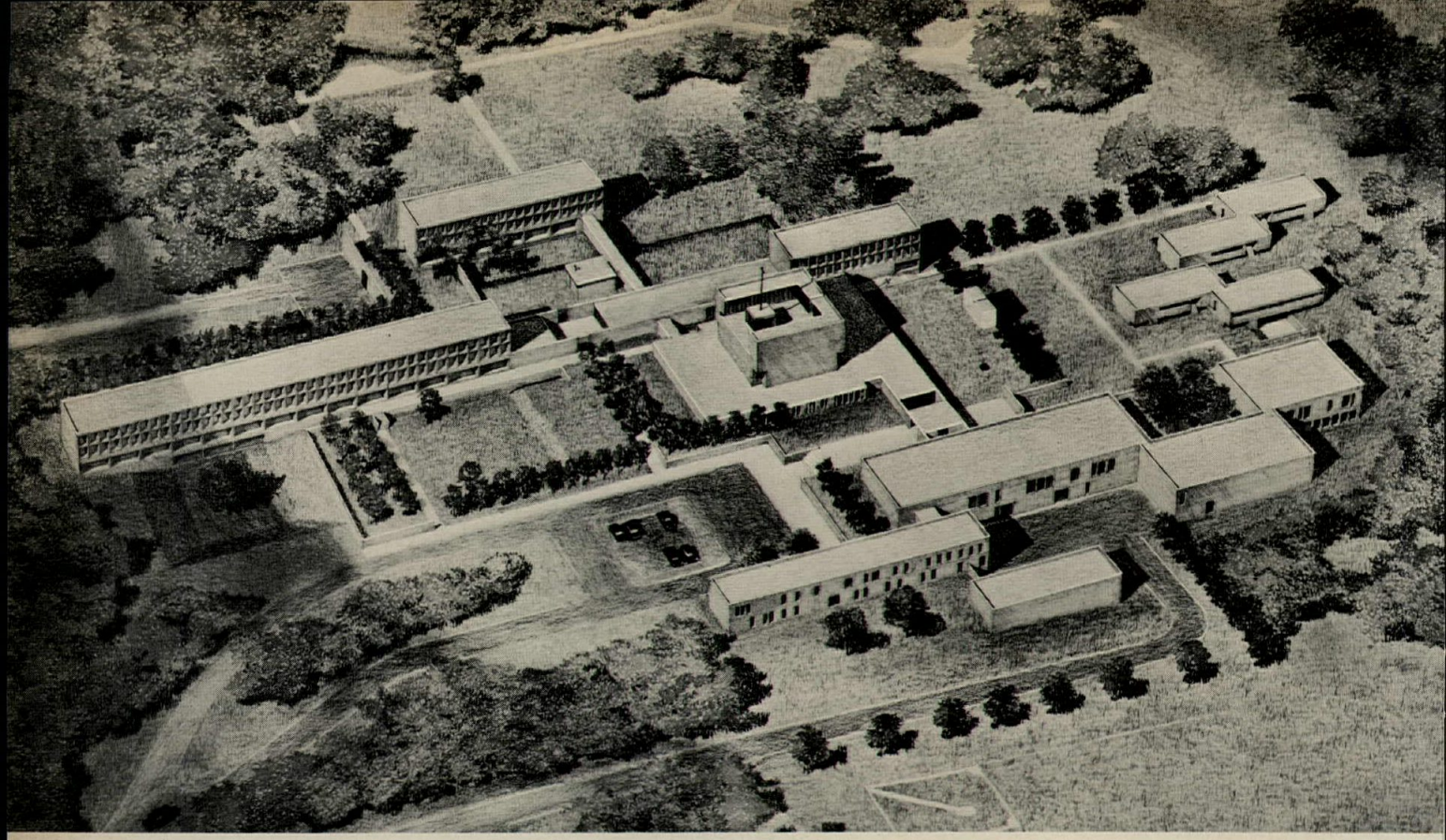


What the most appropriate form, or symbolism, for religious architecture should be today is currently a topic of much discussion and debate in both professional and theological circles. In these four new religious centers, architects Hammel Green and Abrahamson Inc. make a clear stand for forthright honesty and simplicity, lifted to great strength by an imaginative interplay of the massing.

FOUR RELIGIOUS CENTERS GAIN STRENGTH FROM BOLD MASSING

St. Bede's Priory, Eau Claire, Wisconsin (see also page 112)

Warren Reynolds/warren reynolds & associates photos



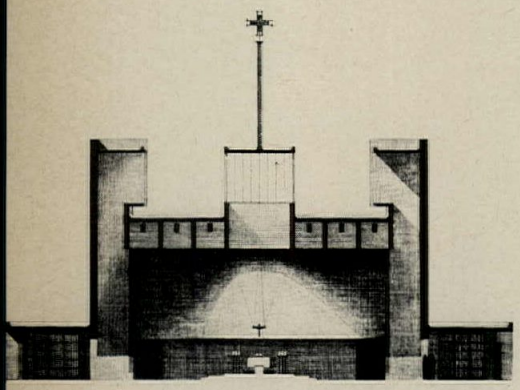
CONVENT AND HOME FOR GIRLS

Podiums, walls and gardens are used in this new Home of the Good Shepherd to weld its four, assymetrically arranged elements into an extremely visually interesting complex. Now in its first phase of construction in a northern suburb of St. Paul, the home will provide living and working spaces for about 75 girls and 150 nuns. While the convent has a formal, disciplined character, the quarters for the girls (at right in the rendering above, and in the sketch below) are more informal and relaxed, and organized into group living units, with 12 to 15 girls assigned to a group mother.

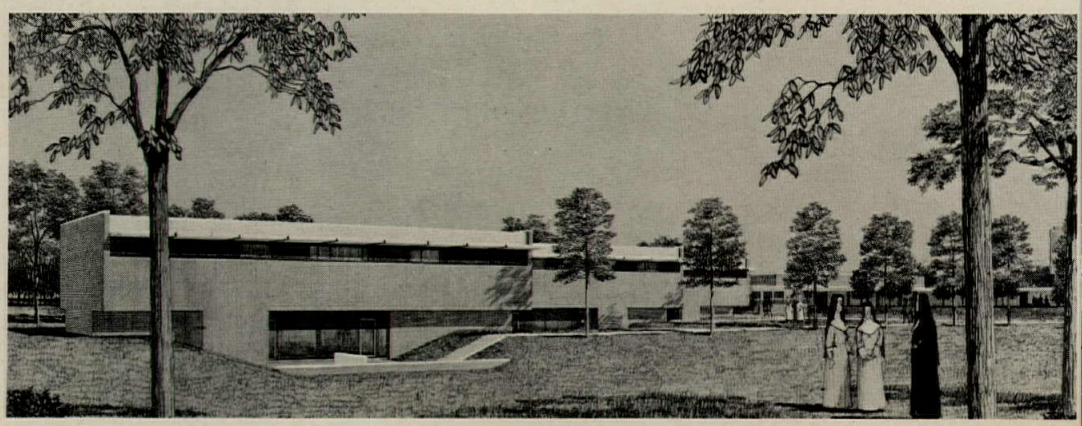
As shown in the rendering above, the concept focuses on a simple, massive chapel on a raised terrace. Flanking this, and closely linked to it, are the buildings for the convent (at top) and the school buildings (below the chapel).

The nuns are divided into three distinct and separate groups: 1) the local Sisters of the Good Shepherd, whose basic purpose is to help problem girls find their way back to a useful life in society; 2) a Provincialate which trains and administers the nuns in a Province covering a number of states; and 3) the Sisters of The Cross, which is a fully cloistered group of nuns relating to the local house.

HOME OF THE GOOD SHEPHERD, North Oaks, Minnesota. Owners: *The Sisters of the Good Shepherd*. Architects: *Hammel Green and Abrahamson, Inc.*



The concept of the chapel emphasizes the use of natural light, but posed the problem of providing it, without glare or distraction, around the central altar. This was achieved by a shielded skylight directly over the altar, and "reversed" clerestories at the sides.

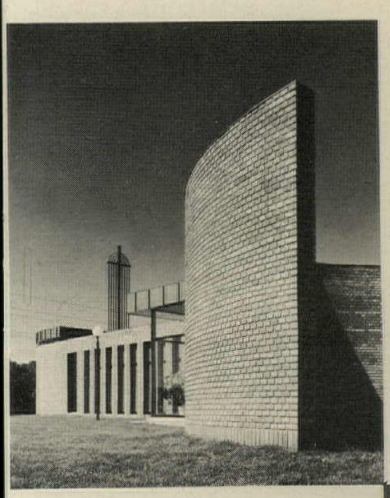


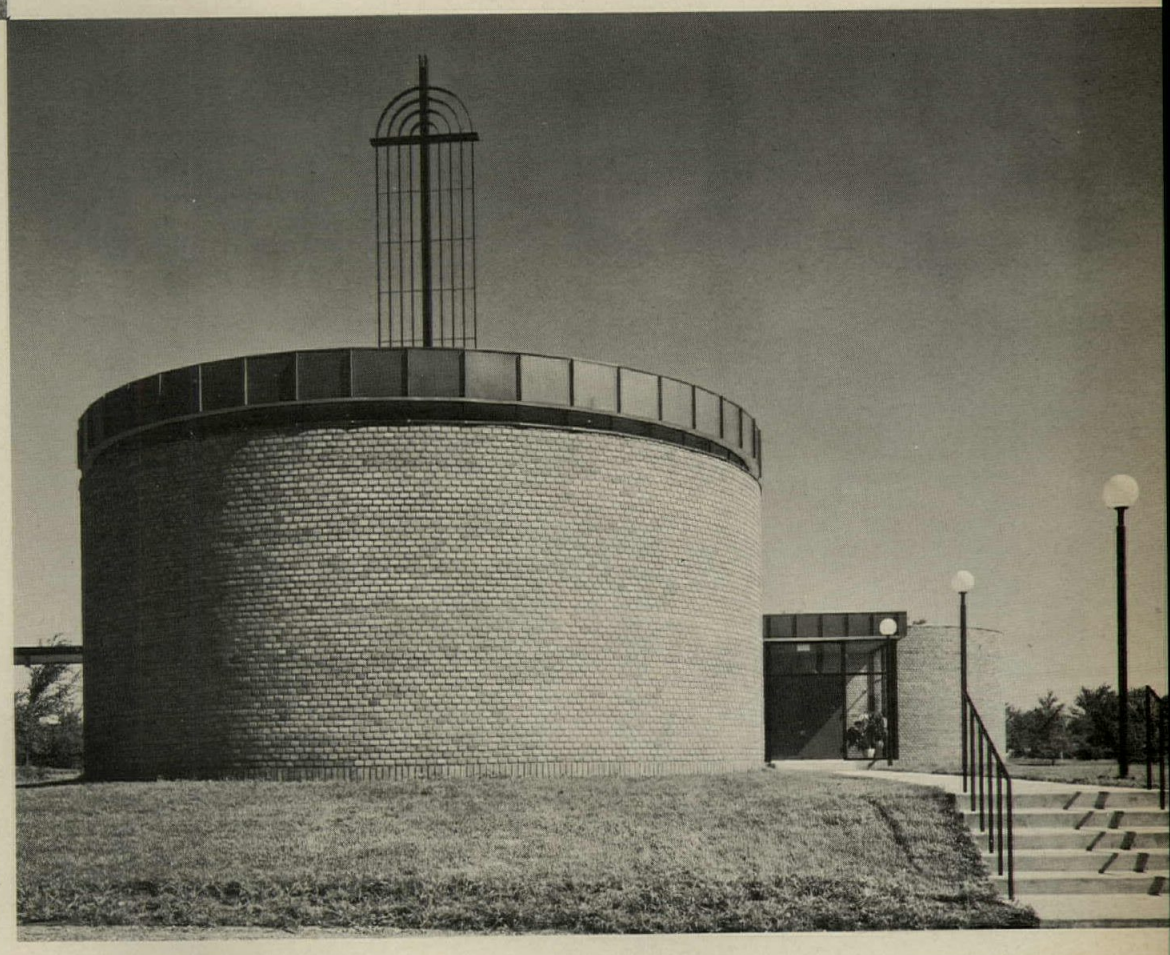
FIRST UNIT FOR A NEW LUTHERAN CHURCH

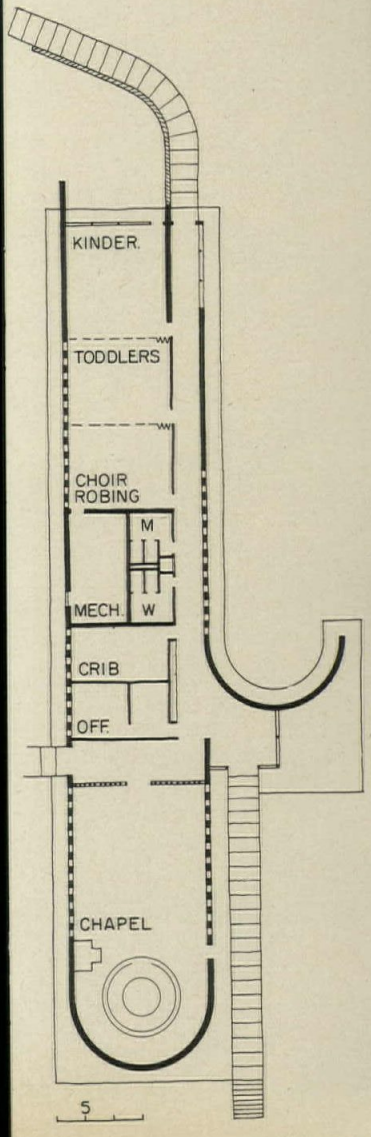
Curving, brick-masonry bearing walls sweep out to give considerable character to this first unit for a growing young church, and are planned to help its integration into the other phases of construction to come. The little building, which will ultimately become a parish hall for the final church, was designed to provide initial worship space, Sunday school space, and an office for the pastor. Folding partitions permit the Sunday school spaces to be opened for social uses.

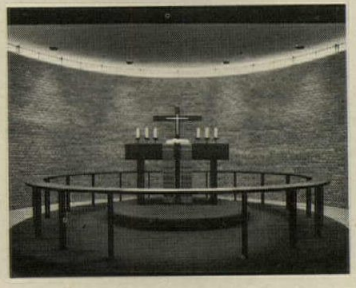
The architects state that "at the time of design study, the Board of American Missions of the United Lutheran Synod had established certain mandatory requirements relating to the design of their buildings. Total building cubage is determined by the evaluation of the financial capability of the congregation before the architect is hired. The architect cannot vary from this cubage figure. Worship space shall have no side aisles and a maximum of seven people to a row. The result is a nave with a fixed width of about 30 feet. Also, the Board of Missions expressed the philosophy that too grand, large and comfortable a first-unit worship space would hamper the desire of the congregation to continue to work towards the ultimate church." This simple, adaptable building is the result.

ST. STEPHEN LUTHERAN CHURCH, White Bear Lake, Minnesota. Architects: *Hammel Green and Abrahamson, Inc.* — partner-in-charge: *Bruce Abrahamson;* structural engineers: *Johnston and Sahlman;* general contractor: *George Siegfried Construction.*

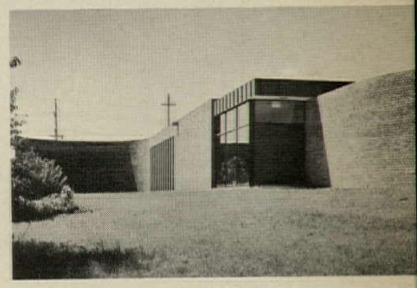








The simple chapel achieves great dignity from its curved, clerestory-lighted apse, and from ranks of tall windows along its sides. Partitions in the building, which may be moved in the future when the unit becomes a parish hall, are wood stud and plaster.



A SEMINARY FOR A BAPTIST COLLEGE

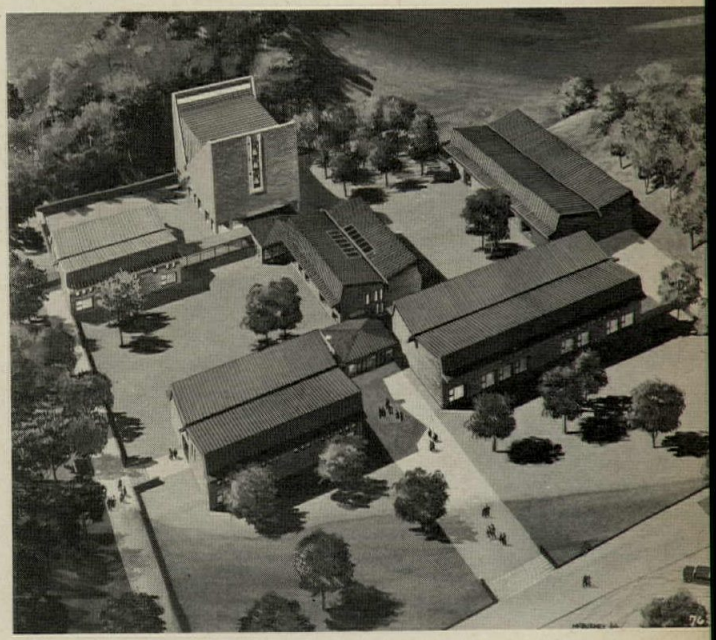
With four buildings completed, and two more under construction, this seminary marks the first phase of a master campus plan for a small Baptist college of 1,200 students. The six two-story buildings are linked by low, pyramidal-roofed "lobbies," and provide a chapel, administration unit, classrooms, library and a social center for the graduate students.

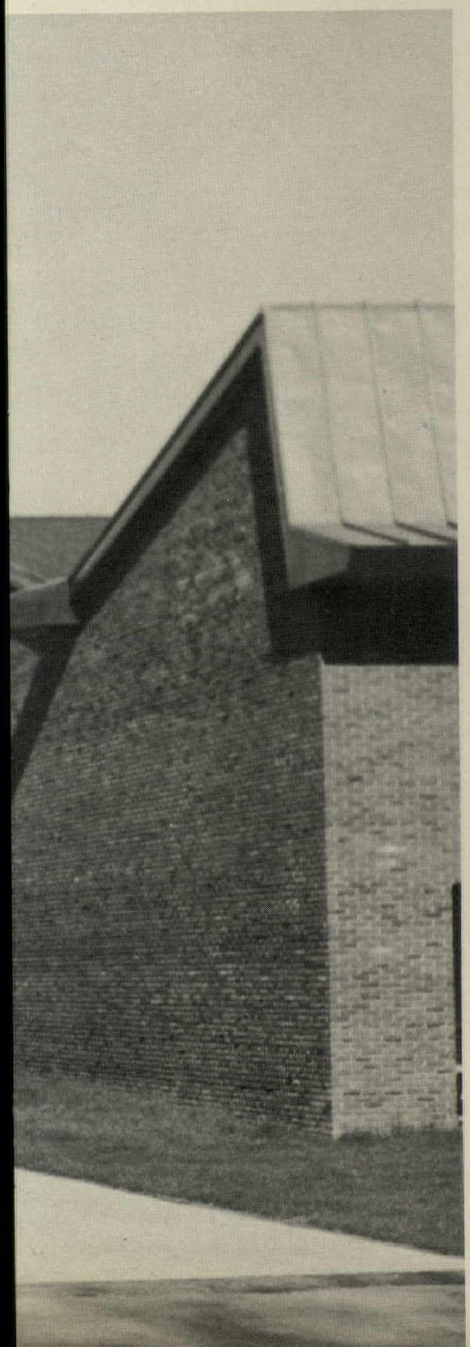
The architects note that "the philosophy of Bethel Seminary is to provide a community feeling for the purpose of encouraging the close faculty-student relationships that will best carry out the objectives of the school. The design attempts to de-institutionalize the complex with a composition of small, varyingly-sized buildings. The concept of building only in the valleys of the suburban site of wooded, rolling hills, and the use of a series of small buildings, creates the feeling of a small community. The pitched roofs and simple brick exterior walls are used to unify and enrich the total complex."

The pitched roofs are more-or-less "V" shaped, a motif which becomes the major design element for the largest building, which houses the chapel on its second level.

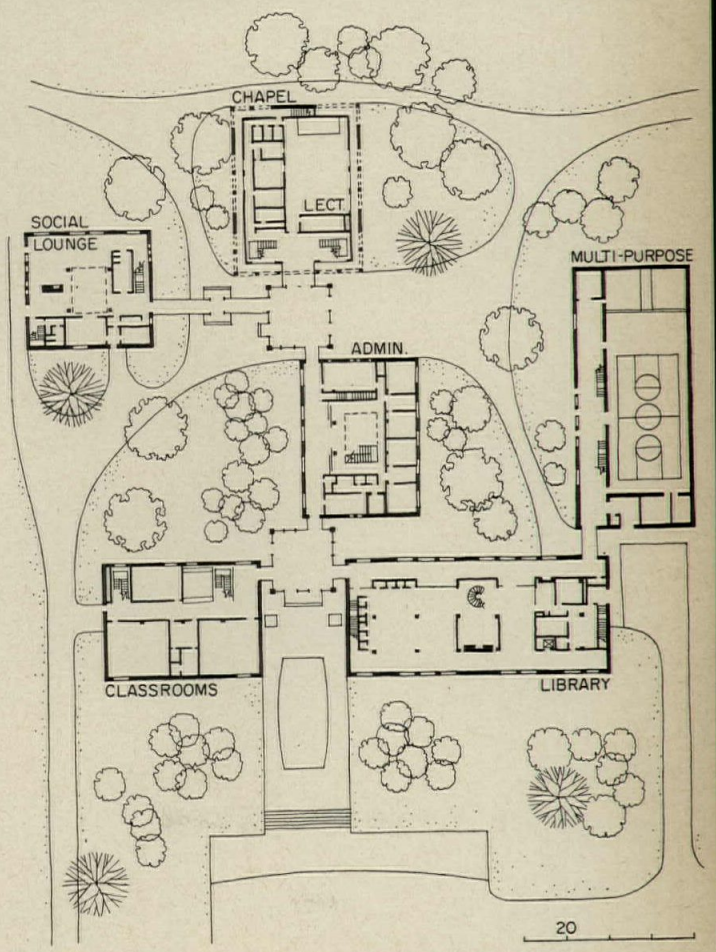
BETHEL COLLEGE AND SEMINARY, Arden Hills, Minnesota. Architects: *Hammel Green and Abrahamson Inc.* — partner-in-charge: *Curtis Green;* project designer: *Douglas Baird;* landscape architects: *Sasaki, Dawson, DeMay, Associates Inc.;* structural engineers: *Johnston and Sahlman.*

The interiors of the seminary echo the simplicity of the exteriors: simple materials and architectural shapes form the major "adornment." A reading room is shown above, and the administration building is shown at left. The latter centers on a two-story, skylighted central space, surrounded by ranks of offices for faculty and administration on each level. This building forms the central hub of the entire complex.





The view of the main entrance of Bethel Seminary, at left, shows three of the four completed buildings grouped around one of the low, glassed-in lobbies. The completed units include buildings for administration, classrooms, multi-purpose uses, and the library; the chapel and the social building are now under construction. On the second levels, the classroom unit has two seminar rooms, two classrooms, a mechanical room, and a conversation lounge; the social unit has lounges for students and faculty.



A COMMUNITY FOR BENEDICTINE SISTERS

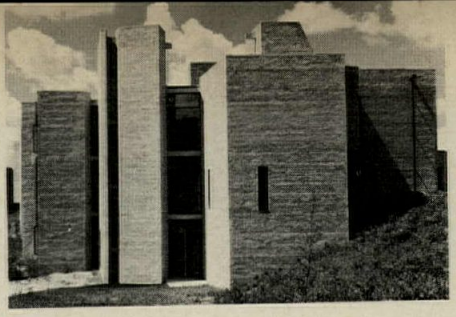
A free interplay of undulating walls, changing floor levels, stair towers and small courts gives a highly individual, relatively timeless character to this new Catholic Motherhouse for a small community of Benedictine Sisters.

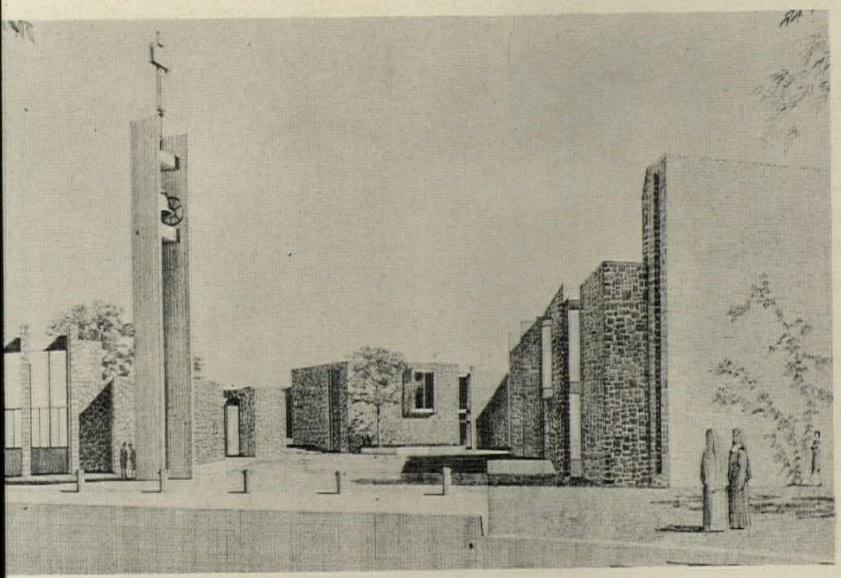
The village-like complex is divided into three major sections: a three-story convent for 60 sisters; a two-story student-residence wing for 54 girls connected to a three-story academy for 150 girls; a one-story building housing convent administration, a temporary chapel and future main dining room, smaller dining rooms, kitchen and utilities.

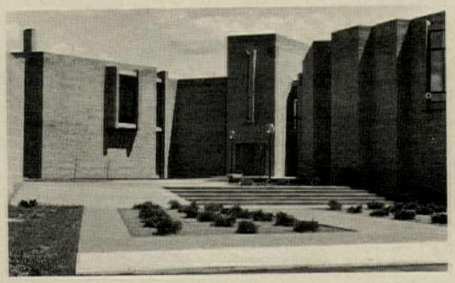
The irregular informality of the plan was specifically devised to permit easy future expansion of any or all of the facilities of the community. To allow maximum flexibility in the interior planning for so many differently-sized rooms, a structural system of reinforced-concrete floor and roof slabs on brick-masonry bearing walls was used to eliminate interior columns. Other exterior materials include steel windows and etched concrete paving made with a local aggregate. The structural materials are all left exposed as interior finishes.

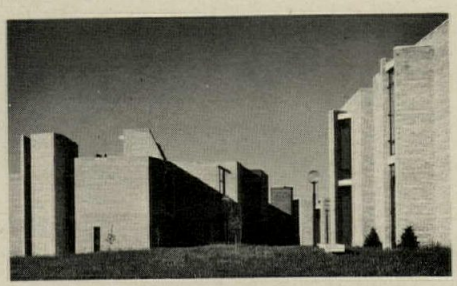
ST. BEDES PRIORY, Eau Claire, Wisconsin. Owners: *Sisters of the Order of St. Benedict.* Architects: *Hammel Green and Abrahamson Inc.*—partner-in-charge: *Curtis Green;* job captain: *Ted Butler;* structural engineers: *Johnston and Sahlman;* contractor: *L. G. Arnold Inc.*

The main entrance of the Benedictine community has something of the air of a medieval village plaza, sketch below. The entrance to the chapel is to the left, and to the academy and residence hall to the right (also shown in the photo center right).

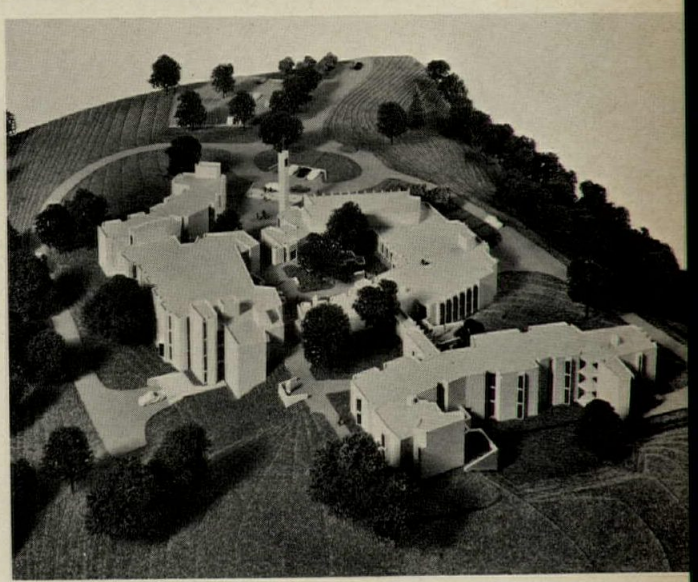




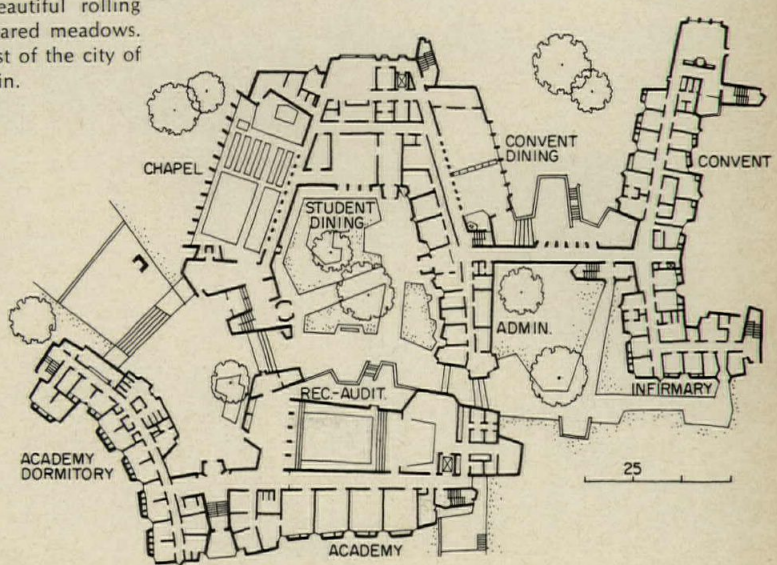




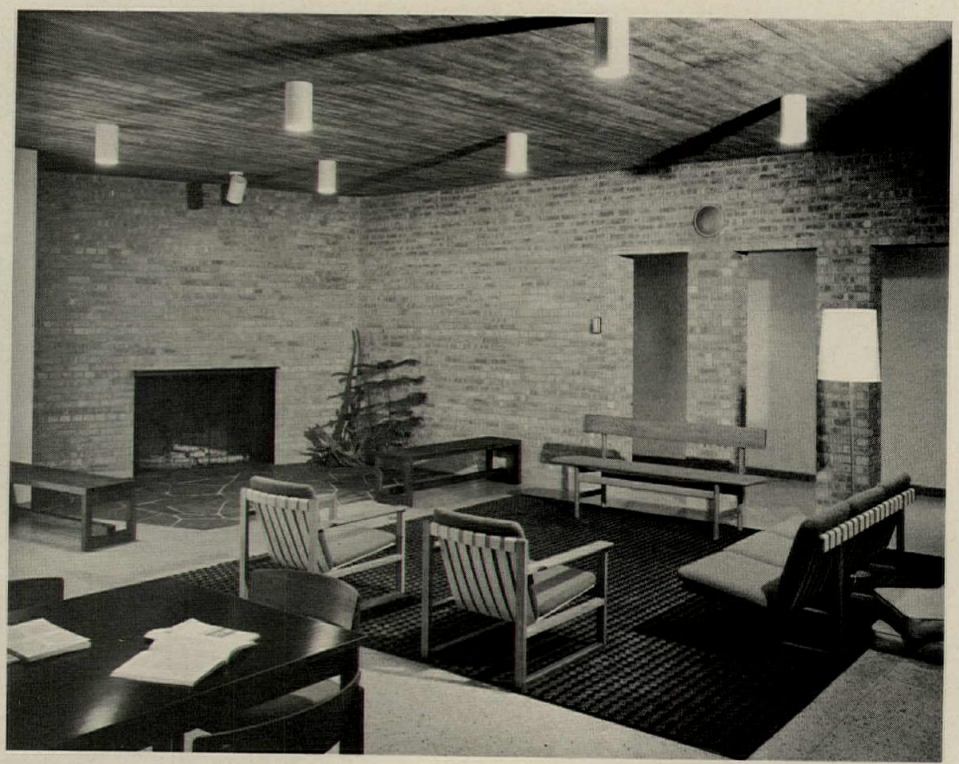
The varied interest that has been achieved with simple forms and materials is readily seen in the detail views of the academy and the convent, top and bottom photos above right. The convent itself, though linked to the central building, is set apart at the back for privacy and seclusion.



In addition to simplifying expansion in any direction, the irregular arrangement of buildings and rooms gives almost every window a different vista or view over the community's 75 acres of beautiful rolling hills, woods and cleared meadows. The site lies just west of the city of Eau Claire, Wisconsin.



The chapel, above, and right in photo below, is a temporary one, which will be converted into a main dining hall when the academy is expanded in the future. (The bell tower shown in the rendering on the preceding page has not yet been constructed.) Exposed-brick walls and the unpainted-concrete ceiling give a considerable strength to the completely simple interior. Floors are terrazzo made with the same aggregate as the exterior walks.



The administration and general activities building, photo left, forms a "U" shape with the chapel around a central court, and has its main entrance there. In addition to the previously noted facilities, the building also contains a lounge for the Sisters, above, which adjoins their dining hall. In the total complex are about 79,547 square feet of enclosed building space, and the construction cost was approximately $1 million.

BOSTON'S STATE STREET BANK BUILDING

Architect Frederick A. Stahl saw the need, chose the land, found the money and successfully promoted the first privately financed office building to be developed in Boston since the 1930's. He produced an excellent design, even if some of his early and highly original design concepts did get lost along the way.

Phokion Karas photos

"It was all Tad Stahl's idea"

This has been freely acknowledged by everyone concerned, including Hugh Stubbins and William J. Le Messurier, his partners in the joint venture to design and engineer the building, and the three friends who helped him launch the scheme, real estate man Jay Schochet, Richard R. Wood of Hunneman and Company, realtors, and lawyer John K. Dineen. In the four years which have elapsed since the initial steps were taken, architect Stahl, now 36, stands out among his architectural contemporaries in the degree to which he has mastered the complexities of large-scale real estate entrepreneurship. He also has a 34-story skyscraper to his credit, a commission he would have been unlikely to receive at the age of 32, had he not created it for himself.

Stahl's feat is well known in Boston architectural and real estate circles, and a detailed account of his promotional venture appeared in the October 1962 issue ("Working with Commercial Developers," pages 157-164). In brief, Stahl—in starting his practice in Boston—made a point of learning as much as he could about the real estate market. He came to believe that Boston's commercial prosperity should be reflected in new office space in the downtown financial district, particularly since the office buildings in this area suffered from overcrowding, obsolete facilities and depressed rents.

Stahl and his fellow entrepreneurs found an ideal site, occupied for the most part by run-down commercial structures, and proceeded to search for a developer.

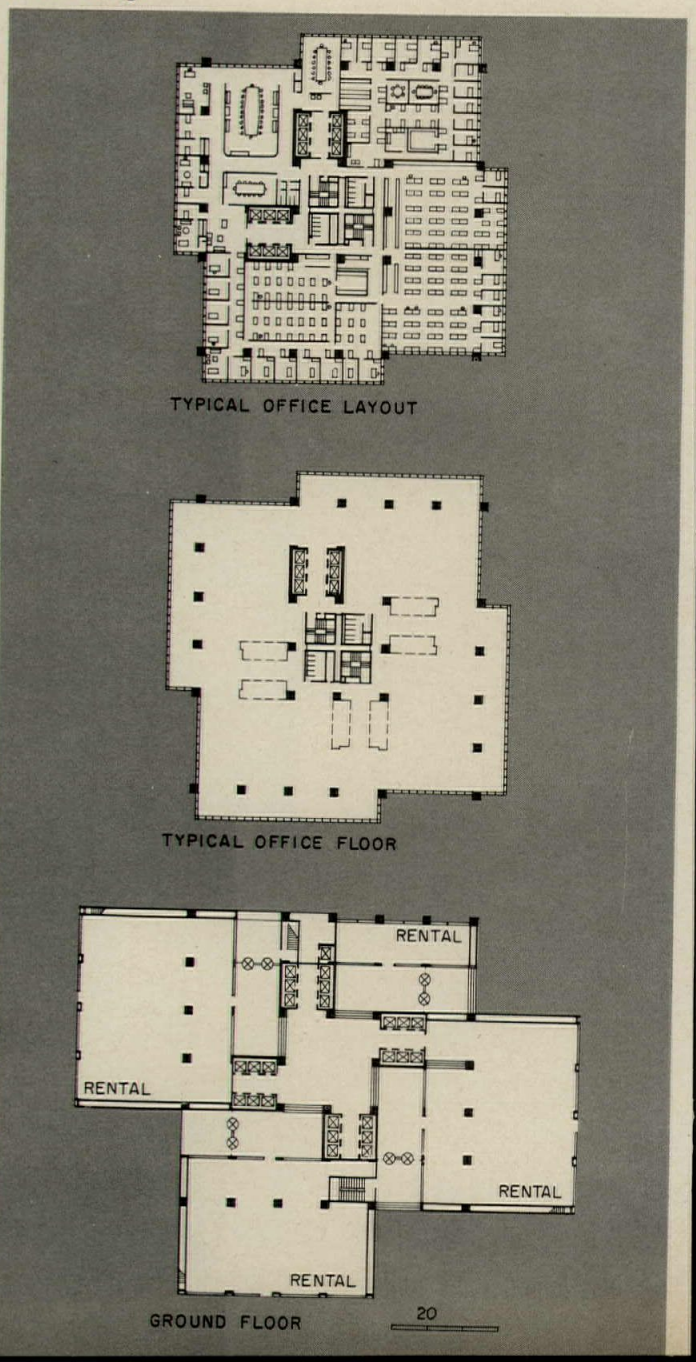
After long effort on the part of Stahl, his friends, Boston Mayor John F. Collins, and the then newly appointed administrator of the Boston Redevelopment Authority, Edward C. Logue, and at a point at which—due to rumors of intended development—the costs of assembling the site had begun to rise, the necessary backing was found. Barnett Shine and John B. Rubens, joint managing directors of Central and District Properties Ltd., one of London's largest publicly owned real estate investment companies, agreed to acquire the necessary land parcels. With E. Alec Colman, the London developer first interested, they formed Boston British Properties Inc., a Massachusetts corporation. This corporation then became the clients of Pearl Street Associates, the name Stahl, Le Messurier and Stubbins have given their joint venture. Hunneman and Company was named rental agent.

The first design

Stahl was not just eager to build an office skyscraper, he had a particular skyscraper in mind. In an article which appeared in the British magazine, Architectural Association Journal, for May 1965 he deplores the lack of progress in office building planning, criticizes the almost universal 'in-line' core scheme and sets forth the arguments for an original planning configuration of his own which had been developed for the Boston site and tentatively approved by his client, Boston British Properties Inc., but which was later to be summarily rejected by their major tenant, the State Street Bank. Wrote Stahl: "Apart from purely technical developments, very little meaningful evolution has occurred [in the high rise office building] since the initial successes of the modern movement, and virtually no criticism of a constructive nature has penetrated beyond a consideration of the superficial appearances of efficiency, in materials and in methods of construction. It may be said fairly that few areas of our architecture are cast in so rigid a mold of orthodoxy...."

To illustrate his point he compared the plans of the RCA building in Rockefeller Center designed in the late twenties, and the Time & Life Building, Rockefeller Center Extension, designed in the late fifties, as examples of "the lack of development in conceptual grasp of the essential nature of the office building over the past 30 years." Both buildings are of the 'in-line' core and slab-block configurations. The plans of these buildings and many other office towers have in common a multiple-zone elevator system set within a central core into which are placed elevator landings, escape stairs, sanitary and utility services and HVAC duct and pipe shafts. As the lower elevator zones terminate on upper floors, space becomes available for both additional office area and alternative locations for toilets and other service elements. Spaces between express elevator shafts, which on higher floors function as elevator lobbies, also become, on the lower floors, alternate spaces for service elements or office areas. Stahl asserts that although such use of these spaces "must have appeared to enhance efficiency, [it in turn requires] rather painful transitions at each elevator-bank termination, involving a loss of space and flexibility for that floor and increasing the general

The first design



complexity [of mechanical services] and cost. The structural discontinuity at this juncture also involves difficulties.... In addition to this type of problem, the 'in-line' core scheme tends to generate a large perimeter of both circulation and enclosure relative to area, and almost inevitably implies undifferentiated space and core connections to space, lacking any positive organization for use, and arbitrarily varying from zone to zone."

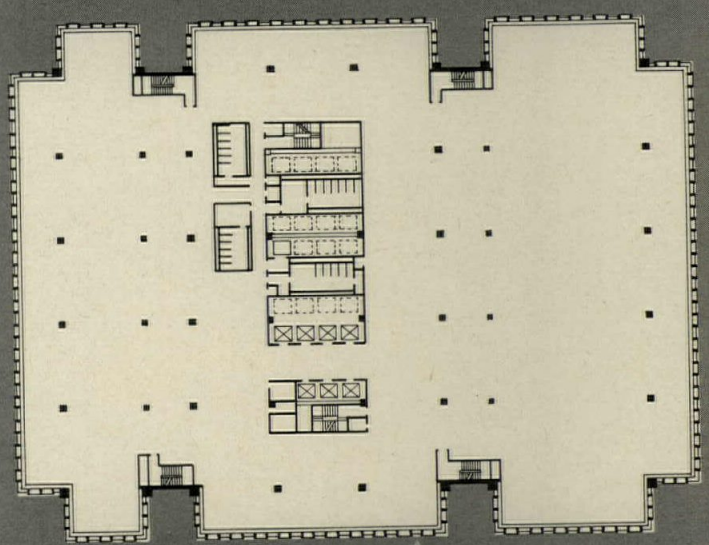
Stahl's original scheme for the State Street Bank, shown on page 116, is one of several efforts by leading architects to break away from the prevailing stereotype just described. As the plans show, Stahl groups the typical service elements—stairs, toilets, HVAC shafts and utility cabinets—to establish a constant core element without offsets. Stahl explains that "in order to minimize perimeter, a square form was ultimately selected although a number of other possibilities exist. . . .

"A minimum necessary public circulation space surrounds this constant element. The corridor provides access to all necessary junctures of the constant facilities; the principal variable elements (elevator shafts, lobbies and machine rooms) naturally occurring outside. The distributive function of the

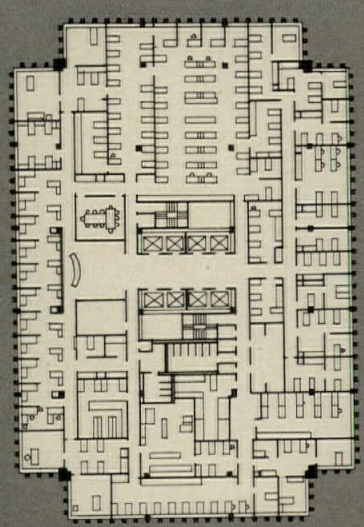
The final scheme

The building, shown in the plans below, was designed primarily as a new home office for the State Street Bank & Trust Company. It consists of two levels of parking and mechanical space below grade and a third level below grade devoted to motor entrance and safe deposit and vault functions for the Bank.

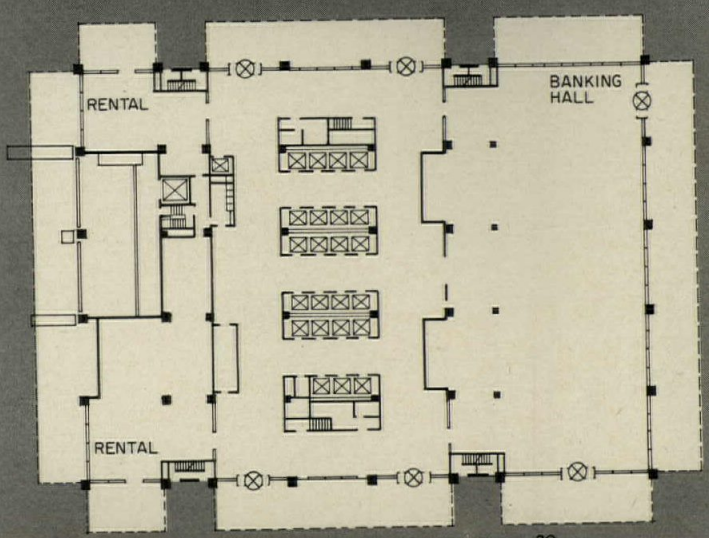
The tower of 34 stories is composed of a ground-level public entrance and main banking hall, three floors of approximately 50,000 square feet devoted to trust, credit and executive functions of the bank, a fifth floor and roof terrace level for personnel, exhibition, meeting room and auditorium functions, and 27 typical office floors partially occupied by the bank but generally available for multiple tenancy.



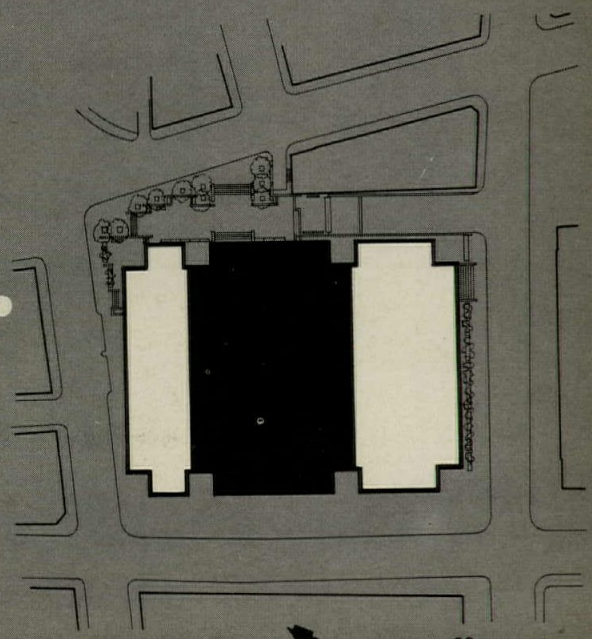
SECOND-FOURTH FLOORS



TOWER FLOOR

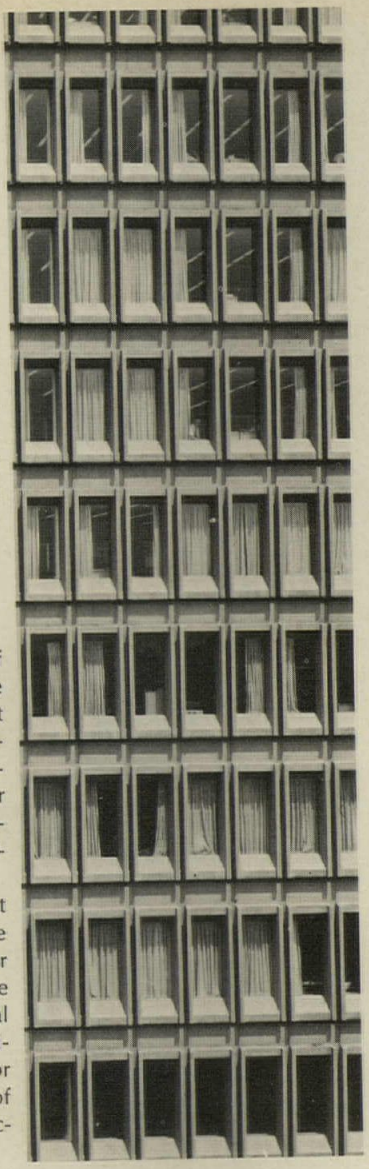


FIRST FLOOR



STATE STREET BANK BUILDING, BOSTON, MASSACHUSETTS. Owner: *Boston British Properties, Inc.* Architects: *Pearl Street Associates, a joint venture of F. A. Stahl & Associates, Inc., Hugh Stubbins & Associates, Inc. and William J. Le Messurier & Associates, Inc.;* structural engineers: *Le Messurier Associates, Inc.;* mechanical and electrical engineers: *Consentini Associates and Eitingon & Schlossberg;* landscape: *Frost & Higgins;* general contractor: *Gilbane Building Company.*

The structure is steel frame with 17-foot cantilevered exterior spans in the typical floors above grade, as shown in the photograph at the bottom of the opposite page. Concrete pan-system floors are used below grade. Foundations under the 34-story tower element are placed at the level of the lowest basement floor and consist of a six-foot mat; columns supporting the lower base element of the building rest on spread footings at generally higher elevations. The soil conditions for bearing did not entail unusual or costly foundation construction, and no unforeseen difficulties were encountered in this portion of the construction.



The typical floor system is of metal deck and fill on steel. The standard provision for tenant areas utilizes electrical and telephone ceiling spaces to floor receptacles, but allows a cellular distribution deck at tenant's option without disturbing the standard structural system.

The exterior wall, shown at right, is of precast concrete frame elements supported at each floor level and glazed directly from the inside with plate glass. No metal is exposed to weather in the typical wall section. Ground floor and terrace-level glazing is of bronze anodized aluminum sections and plate glass.

elevator system called for a radial orientation with respect to the constant core element, and the differentiation of service distribution (i. e., main ductwork vs. elevators) dictated the eccentric alignment resulting in the rotational symmetry of the plan. . . . A proper integration of the standard elements of the core seemed to occur with a gross floor area of about 33,000 square feet. . . . The elevator banks, occurring in theoretically prime-rental areas, automatically return prime-rental space at no additional cost. Their orientation with respect to the core and the space incorporates the landing lobbies into either the circulation pattern or the tenant office pattern, whichever is appropriate to the specific need, thus removing only net shaft space from desirable use. The basic ratios of core and full public circulation to gross area are: low rise, 16.8 per cent; in the first intermediate area, 15.2 per cent; in the second intermediate area, 13.5 per cent; high rise, 11.9 per cent."

The final scheme

Stahl's original scheme, as the percentage of core to gross areas just cited clearly indicates, represents a major effort to design an office tower of increased economy and efficiency. The final scheme as built represents somewhat less favorable ratios of core and circulation to gross: low rise, 23.4 per cent; intermediate area, 17.6 per cent; high rise, 14.3 per cent. Stahl points out that "real-estate associations . . . have helped make inefficiency pay. The 'Standard Method of Floor Area Measurement' of the New York Real Estate Board, which applies to both full- and part-floor occupancies, defines rentable area as including elevator lobbies, toilets, ducts and shafts serving the floor and the proportion of remote mechanical areas on other tenanted floors serving the floor in question. On a divided floor each tenant shares a proportionate amount of these facilities. . . . Inasmuch as all space is quoted on the same basis, it is held that no problem exists, but the fact of the matter is that as soon as the area of mechanical spaces enters the calculations for the area upon which rent is paid, and the cost to construct mechanical areas (space only) is considerably less than occupied space, any motive for real efficiency is deeply undercut."

Since developer-constructed office buildings often don't get built until a major tenant is found, the latter is frequently in the position to insist that the building be designed to order. The major tenant acquired by the British developers was Boston's State Street Bank and Trust Company. The bankers opposed Stahl's basic scheme because its main floor plan did not provide the large banking room they desired. They also preferred the more conventional 'in-line' core scheme. The architects had to start from scratch to accommodate these requirements. The plans as built, shown on page 117, achieve a more efficient ratio of core to gross than most schemes of this type, and relocation of services at elevator-bank terminations was carefully planned for economy.

The final scheme preserves the re-entrant corners of the first plan and the positioning of the columns supporting the cantilevered interior bays. The depth of the cantilever is 17 feet, providing 15 feet of depth for perimeter offices, a logical module. The bank wished the tower columns to continue to the ground in appearance as well as in fact and hoped to avoid the image of a tower supported by a base. The re-entrant corners help articulate the four corner columns and provide four extra corner offices per tower floor.

The public lobby, shown at right and below, is finished in teak and travertine. Floors are slate and elevator entrances are bronze anodized aluminum.

Tenant areas, as can be seen in the typical office in the photograph above, are furnished with a modular ceiling and lighting system having a ¾-inch mineral acoustic foil backing tile and continuous lighting channels related to the window module and providing 80 footcandles, maintained in open areas. Tenant partitions are metal stud and drywall having a 40-decibel rating for sound isolation. Doors and hardware are 1¾-inch solid-core walnut veneered in pressed metal frames with European-pattern lever handles set in cast aluminum.

An agreement that design should exert its influence on society through involvement and participation, not detachment and superior wisdom

ART AND LIFE AT ASPEN MEADOWS

This year's International Design Conference at Aspen, Colorado took place in its customary rarified atmosphere, but at a vastly increased scale, with more than 1,200 people attending sessions that had originally been planned to be both intimate and informal.

What saved the meetings was the quality of the speeches, the sense that the participants were discussing matters on the frontiers of their own thinking. Instead of the carefully balanced and unexceptionable statements so frequently made at conferences, one had the sense that the speakers had added to and changed what they had to say right up to the last moment. A sense of participation was preserved, in large part because the audience could feel that it was involved in the formation of new concepts.

Another factor which helped to give the conference a feeling of unity was the atmosphere of Aspen itself. Situated in a green bowl surrounded by the spectacular scenery of the Rocky Mountains, Aspen is both self-contained and isolated from the cares of the work-a-day world. Once a gritty mining town, Aspen today is a lush resort, with shops filled with those baskets and ceramics that are on sale from Rockport to Sausalito, and plenty of nightspots where the conference participants could test Marshall McLuhan's theories about the re-tribalization of western civilization.

In keeping with Aspen's combination of Wild West atmosphere and ample creature comforts, the conference sessions were held in a large and well-appointed tent. The first speaker was the English art historian, Reyner Banham. An old Aspen hand, Mr. Banham is so well versed in popular culture that he sometimes gives the impression of having invented it. However, when he strode to the rostrum in a dark suit of conservative cut and an orange-and-black Batman button about four inches in diameter, he was striking exactly the right note.

Design and the designer: four major areas of concern

The ostensible theme of the conference was the "Sources and Resources of 20th Century Design," but the real topic turned out to be the place of the designer in society today. The conference speakers, with surprising unanimity, saw the designer as a central figure with an active role in shaping the future of society, rather than as a spectator or interpreter of events.

The program seemed to center around four major areas of concern: a re-evaluation of the historical context of today's design, a highly critical investigation of the kind of education offered to the designer, and particularly the architect; a discussion of the responsibility of the design profession to society; and an evaluation of the new role that the designer and architect could play.

Modernism is out of date

The historical context was provided, appropriately enough, by Mr. Banham and by Edgar Kaufmann Jr., who delivered the closing address. Both speakers made essentially the same point, although in rather different ways: that most of what is generally considered modern art and architecture isn't really modern any more.

Mr. Banham's premise was that "the tradition of worrying about the state of the art" and the elevation of the private conscience of the designer over public needs and public taste, although they had both been considered characteristic of the modern art revolution, were really derived from a 19th-century vision of the artist as a free spirit responsible only to himself: "Far too many of the great unquestioned assumptions of modern design have begun to peel and flake of late; neither they nor their advocates appear to be quite such stainless representatives of a shining new world as once we thought."

Mr. Kaufmann expressed the opinion that the commonly accepted history of modernism was essentially a myth, and one for which there was not "the remotest possibility" of substantiation. He felt that the ideas attributed to "pioneers of modern design" like William Morris actually had their genesis in an 18th-century world totally different from the situation in which design finds itself today, a situation which required a new definition of the meaning of art: "I most deliberately and purposely am not trying to talk about design as a creative activity. I am not very sure it is one. In fact, I believe that creativity is something that can happen in any field, and fortunately does. But no field *per se*, and that includes the fine arts, is really by definition a creative field. There are only creative people working in it."

Thus both speakers felt that in a world of artificial materials, disposable products, and a new balance between large-scale organizations and the personal world of the individual, the old concepts of modernism and the nature of design were very much out of date.

How do you teach creativity?

The idea of the artist as a being set apart from the rest of society also came under heavy attack when the conference approached the subject of design education. Julian Beinart, a South African architect and planner, described a series of

"City planning is obsolete. What's needed is global planning so Earth may stop stepping like an octopus on its own feet."

experimental classes with Africans in various parts of the continent which seemed to indicate that design ability is a quality innate in almost anyone, rather than a special gift reserved for very few. If design ability is innate, and creativity a process common to all fields of endeavor, what of today's design education with its propensity for weeding out the "untalented" and the "uncreative?" There were very few kind words for it. Reyner Banham called the studio system of design instruction a "tribal longhouse" and a "Lord of the Flies situation," devoid of the academic privacy considered essential in other fields of teaching.

Tomás Maldonado, director of the Hochschule für Gestaltung in Ulm, decried the existence of what he called methodolatry, the idolization of an abstract design methodology, divorced from the social sciences and an understanding of human values.

Together, Messrs. Maldonado and Banham seemed to be able to define what design education should *not* be; that is, they felt it should partake of neither the unstructured "group therapy" of the studio system, or the "methodolatry" of a series of abstract principles. The truth that no doubt lies somewhere between these two polarities remained more elusive. One point was clear, however, although not everyone would agree with Reyner Banham's somewhat picturesque wording of it: "A lot of things have happened since the Bauhaus was young; things like junk sculpture, hand-held movies, Batman, action painting, Op art, and like that. As a result, people have become more visually sophisticated and far less visually prejudiced. They clearly need a very different type of education from the mystical and high-minded peasants who crawled out of the Biedermeier woodwork to join Gropius at Weimar."

Does design have a social responsibility?

Two different views of the nature of art itself were presented to the conference by Douglas MacAgy, director of the Dallas Museum of Contemporary Art, and Gyorgy Kepes, professor of visual design at M. I. T.

Mr. MacAgy presented a defense of the "op" and "pop" art that dominates large segments of the art world today, calling it an art of immediacy and impersonality and a reflection of society rather than a shaping force. The only one of this year's Aspen speakers to take an essentially negative view of the social involvement of the artist, Mr. MacAgy constructed an argument so elliptical, and so filled with quotations, that it was difficult to determine whether he himself felt that "instant art" should be "public art."

Gyorgy Kepes provided a much broader definition of a work of art as something that fulfilled three basic conditions. First, it should open up a new aspect of seeing or feeling; second, it should have relevance to the world around it; and, the third point, it should possess intrinsic validity. Relevance to the world around the artist is a two-way situation, Professor Kepes reminded his audience. Fundamental concepts can reinforce each other, and intercommunication between disciplines can create things that are helpful to both.

Society as the product of design

Richard Farson, the director of the Western Behavioral Sciences Institute, spoke to the conference about the "basic human rights which have to do with the achievement of the good life—with the realization of our potential as human beings." The rights he mentioned were to such qualities as leisure, health, beauty, truth, intimacy, travel, education, love, altruism, and the ability to be different, all to be equally available to each segment of the population. People will come to demand all these rights, Mr. Farson maintained, within a very few years; but such rights could only be guaranteed in our increasingly complex society if that society could somehow be "designed." The paradox lay in the fact that such a design must be self-regulating and self-determined: "We must make use of the people, who are the components of the system, as the designers of the system itself. That's the tricky part. How do we do that? I don't know how you do that, but I think it is a fundamental prerequisite."

Benjamin Thompson, architect and chairman of the department of architecture at Harvard, put the same problem in a somewhat different way, in a plea for a design approach based upon thinking, feeling, and the involvement of all the senses, not just visual perception: "There is no such thing as an absolute master plan, if we believe in man's dynamic unpredictability. . . . Our architecture must be fertile ground for growth, so a million individual lives may take root and grow, like the yearly celebration of spring grass."

John Cage, the musician, probably made the conference's strongest statement on the need for a "designed society" in one of the avowedly random aphorisms that composed his talk: "City planning is obsolete. What's needed is global planning so Earth may stop stepping like an octopus on its own feet." But it was Tomás Maldonado, perhaps paraphrasing Pope, who spoke the words that really conclude the discussion: "When all is said and done, man is not only the subject but also the object of all design pursuits." —*Jonathan Barnett*

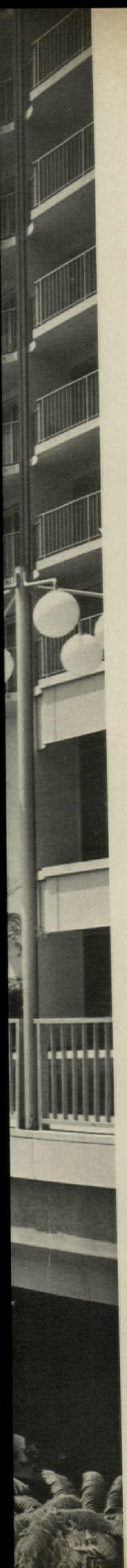
Photo by Julius Shulman

BUILDING TYPES STUDY 361

HOTELS MOTELS RESORTS

More leisure, more mobility, more prosperity and more people, especially in the Western states. For the "hospitality industry" this is good news, and the West's new buildings in this field are evidence of the traveling, vacationing and business that Westerners are doing. The new buildings derive from the old but are subtly modified by changing conditions and needs; in fact, at least one new type — "boatel" — has evolved. Increasingly important in planning and design are the conventions and conferences and the large community social and charity events. The examples which follow reflect some of the ways in which this old industry has adapted to the changing times.

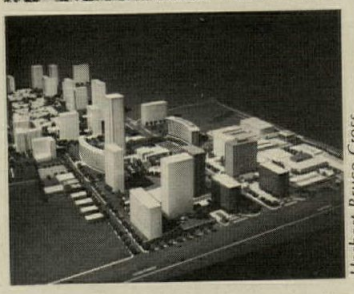

CENTURY PLAZA
CAFE PLAZA



THE CENTURY PLAZA: A RESORT IN MID-CITY

The Century Plaza Hotel is a glamorous paradox, a luxury resort on a mid-city site, designed to attract conventions and large events without interfering with the relaxed atmosphere of a resort. The site is exceptional: a six-acre plot in Century City, Aluminum Corporation of America's unique city-in-a-city development on a former movie studio lot, once far from the center of Los Angeles, now completely surrounded by the city. Of the six acres, the hotel occupies three; the rest are used for handsomely landscaped grounds and resort facilities. The marked drop-off of the site from the boulevard accounts for the hotel's deceptively simple solution to the complex problem of segregating activities: from the lobby out to the terrace and swimming pool and up through 13 floors of rooms, the emphasis is on the individual guest; below the lobby are two floors designed specifically for the diverse activities of people in groups. The Plaza level flows out to an open court and becomes a lively part of the hotel's dramatic entrance. The 20-story, 800-guestroom building is a steel frame and post-tensioned concrete structure with exterior walls of anodized aluminum panels, precast concrete and cement plaster finish. The architectural contract did not include selection of interior colors and furnishings.

CENTURY PLAZA HOTEL, Century City, Los Angeles, California. Architects: *Minoru Yamasaki and Associates;* structural engineers: *Worthington, Skilling, Helle and Jackson;* consultants: acoustics—*Bolt, Beranek & Newman, Inc.*, electrical—*Oldman, Inc.*, lighting—*Wheel-Garon, Inc.*, elevators—*Jaros, Baum & Bolles;* interiors: *Donald A. Robbins* for Western Supply and Service Co.; landscape architect: *Robert Herrick Carter;* contractor: *George A. Fuller Company.*

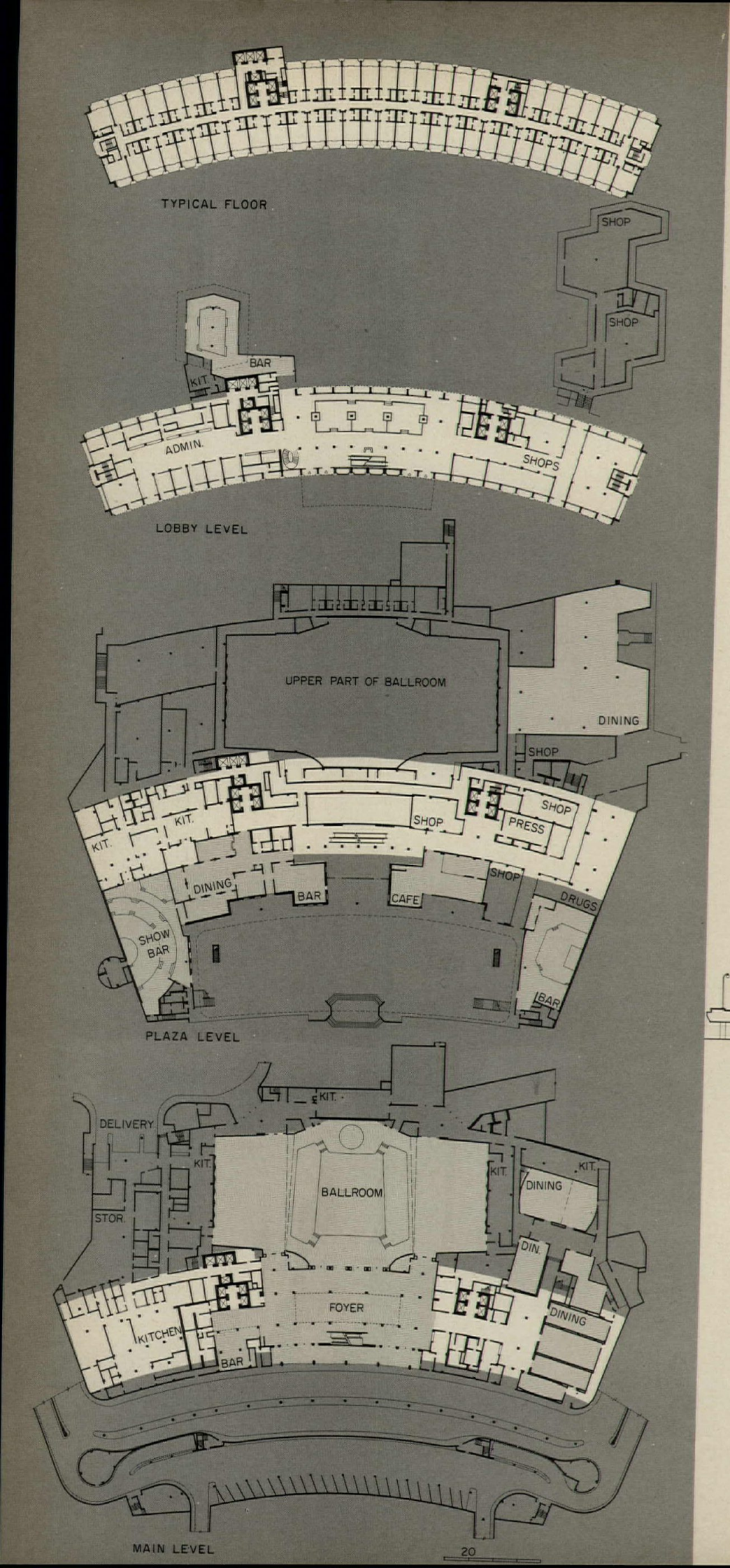


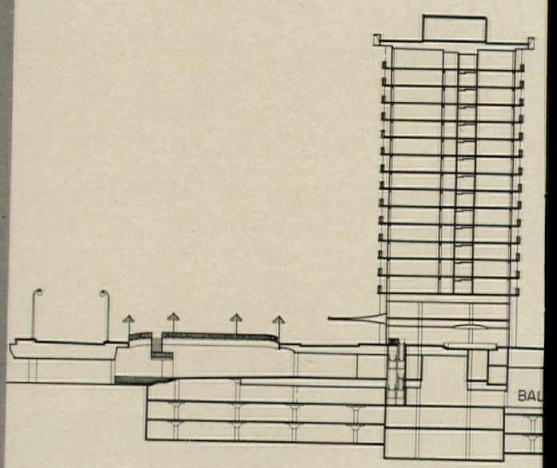
Herbert Bruce Cross

The hotel is on a six-acre site in Century City, the huge new city-in-a-city being developed by Alcoa on the former Twentieth Century-Fox lot in Los Angeles. Already neighbors of Century Plaza are two office buildings (in distance, top), two completed apartment buildings and two under construction (far right and center, middle), a shopping center and several smaller office buildings. The master plan by Welton Becket & Associates and the most recent study model (bottom) by Charles Luckman Associates indicate eventual development. Few city hotels have had so open a site or so splendid a view: to the Pacific Ocean on the west, over the panorama of Los Angeles to the east.

Photos by Julius Shulman (except model and construction shot)

Lobby is 24-feet high, daylighted from two sides, and opens out to a garden terrace with lake and fountains. Lounge area is recessed below lobby level. Registration desk is in arcade beyond lobby.

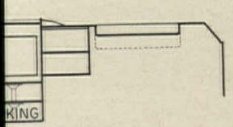


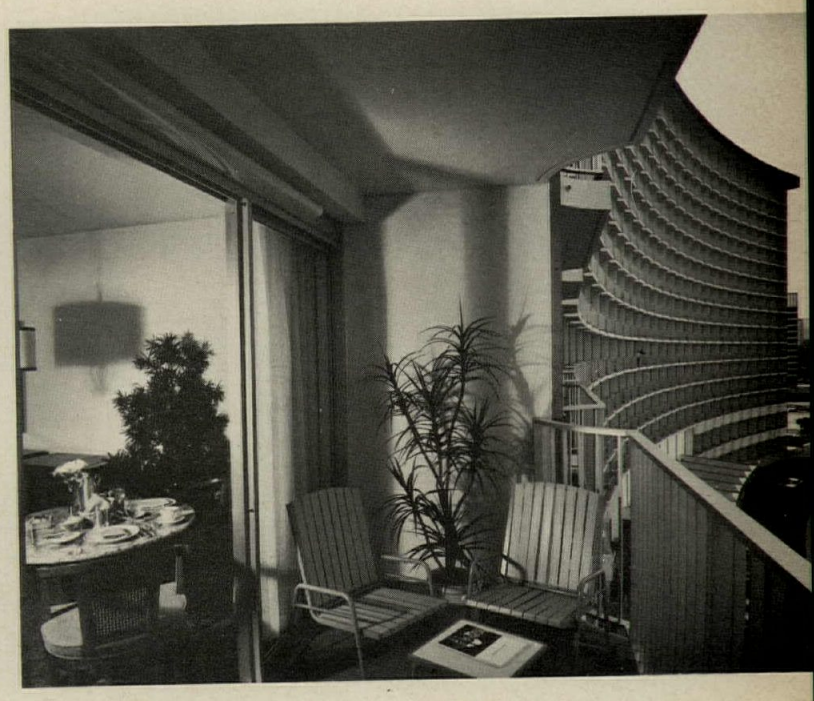


Century Plaza does what many other hotels cannot do: it separates the individual guests and the conventioneer (or special-event guest) without stigmatizing either. Yamasaki says "the hole on one side of the main north-south boulevard through Century City was the key" to the ingenious solution which places all convention meeting and exhibit rooms, and the grand ballroom, on the California floor, one level below grade, and provides a handsome motor entrance direct to the ballroom foyer. Two floors of parking provide spaces for 1,000 cars. The ballroom—largest in the West—can be partitioned into three large rooms. The center section contains a large stage and orchestra pit; seating in this section is in tiers.

Photos by Julius Shulman

The garden side is all resort hotel: lake with islands for table service from the Garden Bar (below, left), a glass-walled pavilion whose roof cantilevers from graceful columns; swimming pool and putting green; park-like landscaping and specialty shops. Guest-room design also suggests a resort: rooms are large enough to provide a parlor area next to the 16-foot-long balcony.

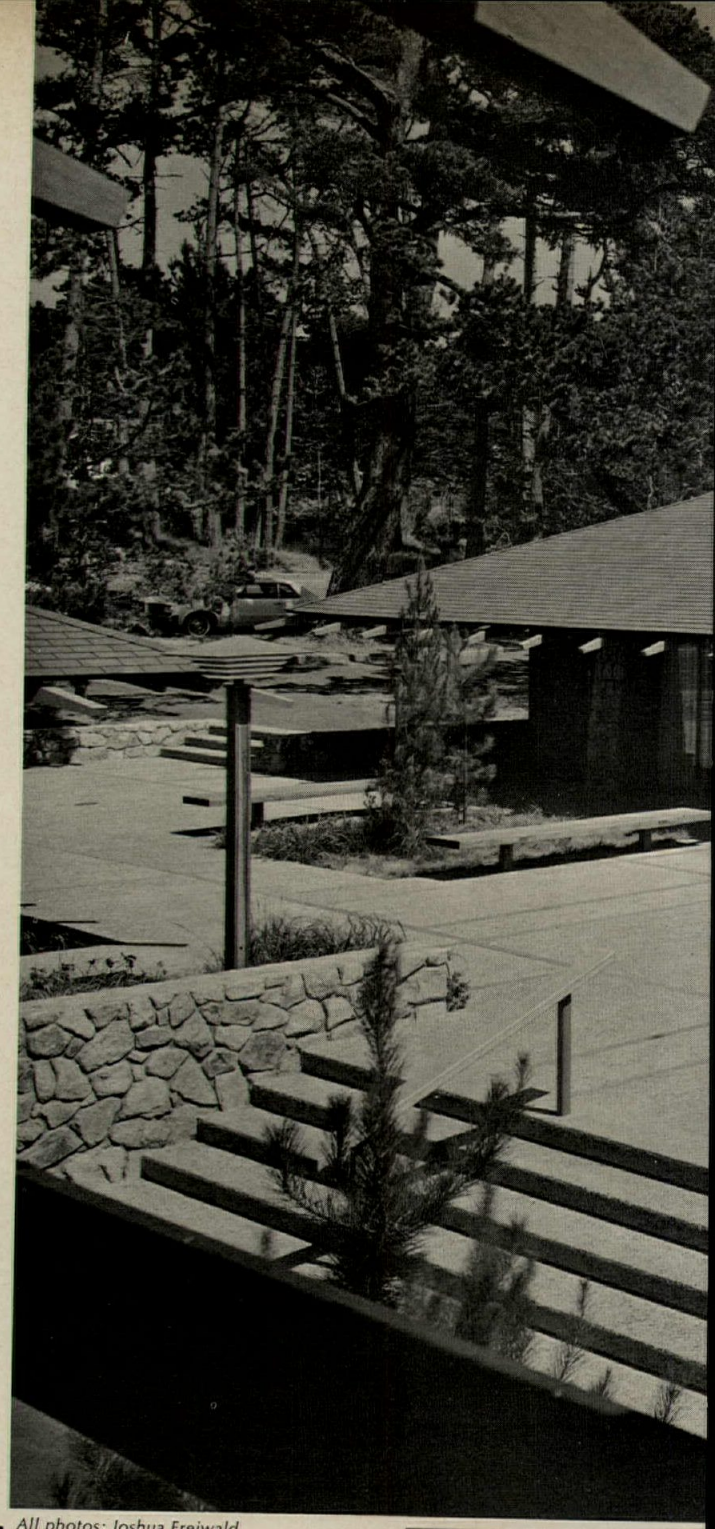




CONFERENCE CENTER IN A RESORT SETTING

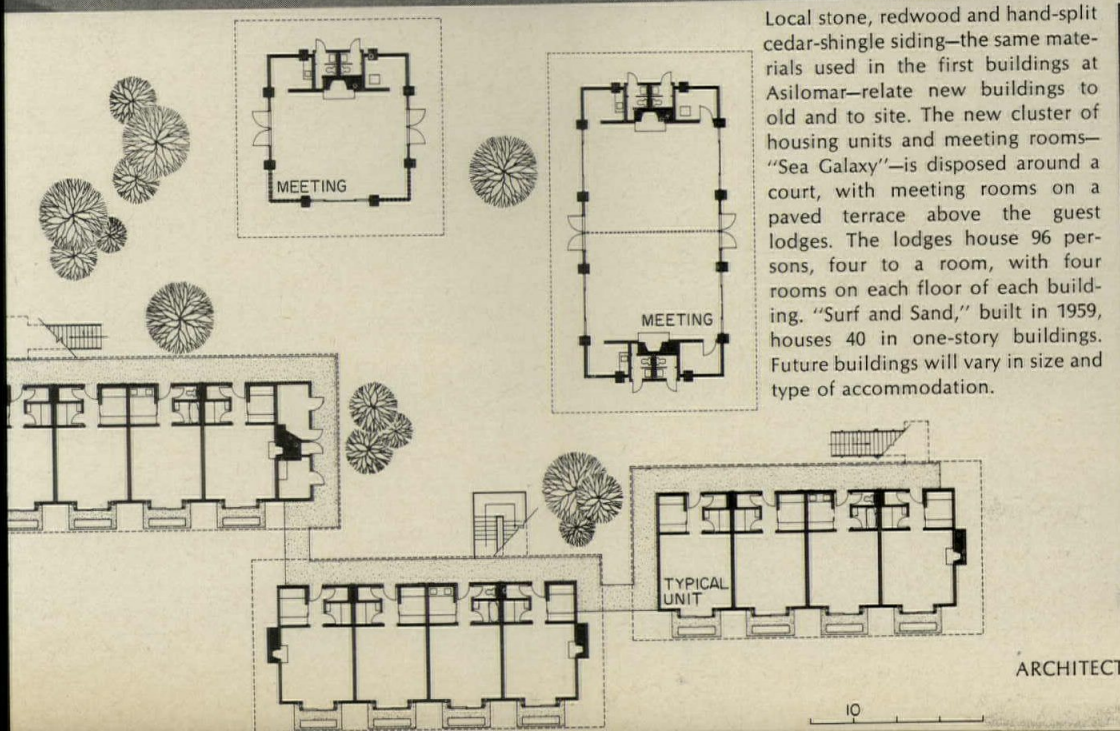
Conference and meeting facilities came first at Asilomar, established by the YWCA over 50 years ago; the hotel operation is recent, dating from the State of California's acquisition in 1956 of the buildings and grounds as a unique part of its chain of beaches and parks. But the early emphasis on conferences has continued to influence plans for Asilomar's growth. The most recent new buildings are three guest lodges and two meeting rooms designed, as were earlier additions and replacements, to fit into the beautiful natural environment with unaffected simplicity and to harmonize in scale and character with the first buildings on the site, for which the late Julia Morgan was the architect. Rooms in the guest lodges are designed to stimulate formal discussion and exchange of ideas: each accommodates four persons; furnishings permit day use as living rooms, and some units have fireplaces. The upper units have balconies, the lower units, decks; all look out to the Pacific Ocean. For larger group discussions and meetings, Triton (for 50 to 75 persons) and Nautilus (150 to 175 persons) are separate buildings equipped for lectures and talks or for lounging. These buildings are closely related by a paved terrace to the guest lodges in accordance with the master plan. (For earlier units, see ARCHITECTURAL RECORD, March 1960 and May 1962.)

ASILOMAR HOTEL AND CONFERENCE GROUNDS, Pacific Grove, California. Architects: *John Carl Warnecke & Associates;* structural engineer: *Stefan Medwadowski;* mechanical engineers: *Eagleson Engineers;* electrical engineers: *Edward S. Shinn & Associates;* landscape architects: *John Carl Warnecke & Associates—Michael Painter,* partner in charge; contractor: *Hampshire Construction Company.*



All photos: Joshua Freiwald

The master plan, drawn up in 1958 by the same firm of architects and periodically reviewed and updated, aims at using the site to its ultimate capacity without diminishing its natural and architectural beauty. Hence more small buildings rather than a few large buildings, for minimum disturbance to trees and site and for preservation of the original scale. Hence, too, important principle of including separate buildings for group meetings in each cluster of housing. Triton (left) and Nautilus (above) are the latest in such facilities. Nautilus, the larger of the two, can be divided by an airwall to provide greater flexibility of use.

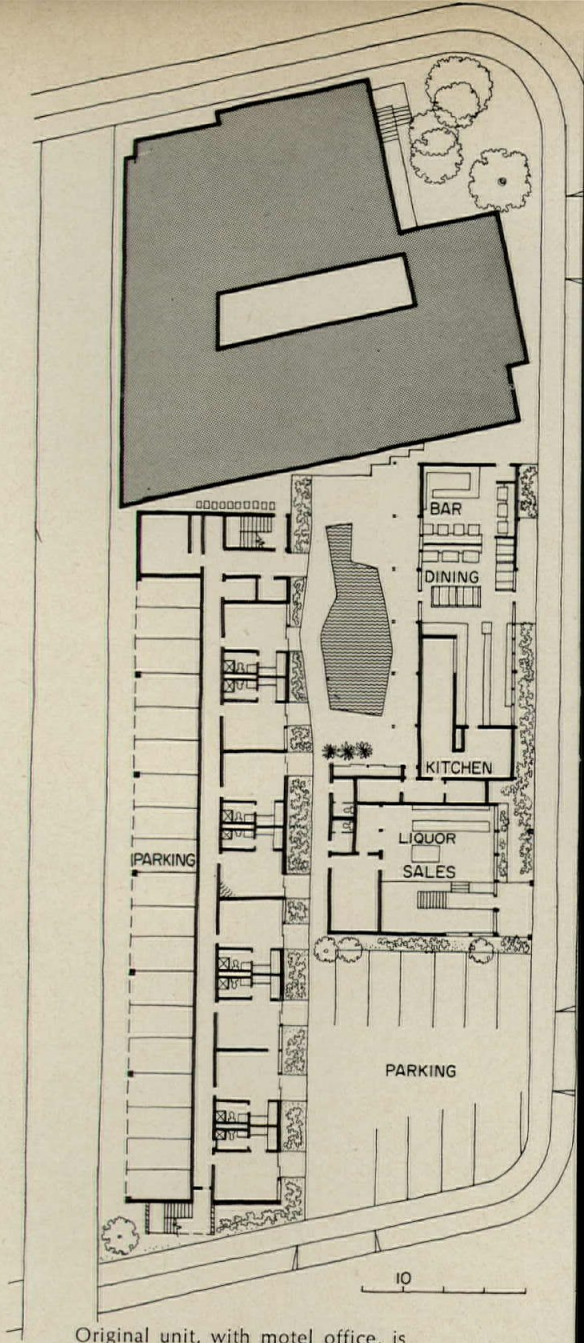


Local stone, redwood and hand-split cedar-shingle siding—the same materials used in the first buildings at Asilomar—relate new buildings to old and to site. The new cluster of housing units and meeting rooms—"Sea Galaxy"—is disposed around a court, with meeting rooms on a paved terrace above the guest lodges. The lodges house 96 persons, four to a room, with four rooms on each floor of each building. "Surf and Sand," built in 1959, houses 40 in one-story buildings. Future buildings will vary in size and type of accommodation.

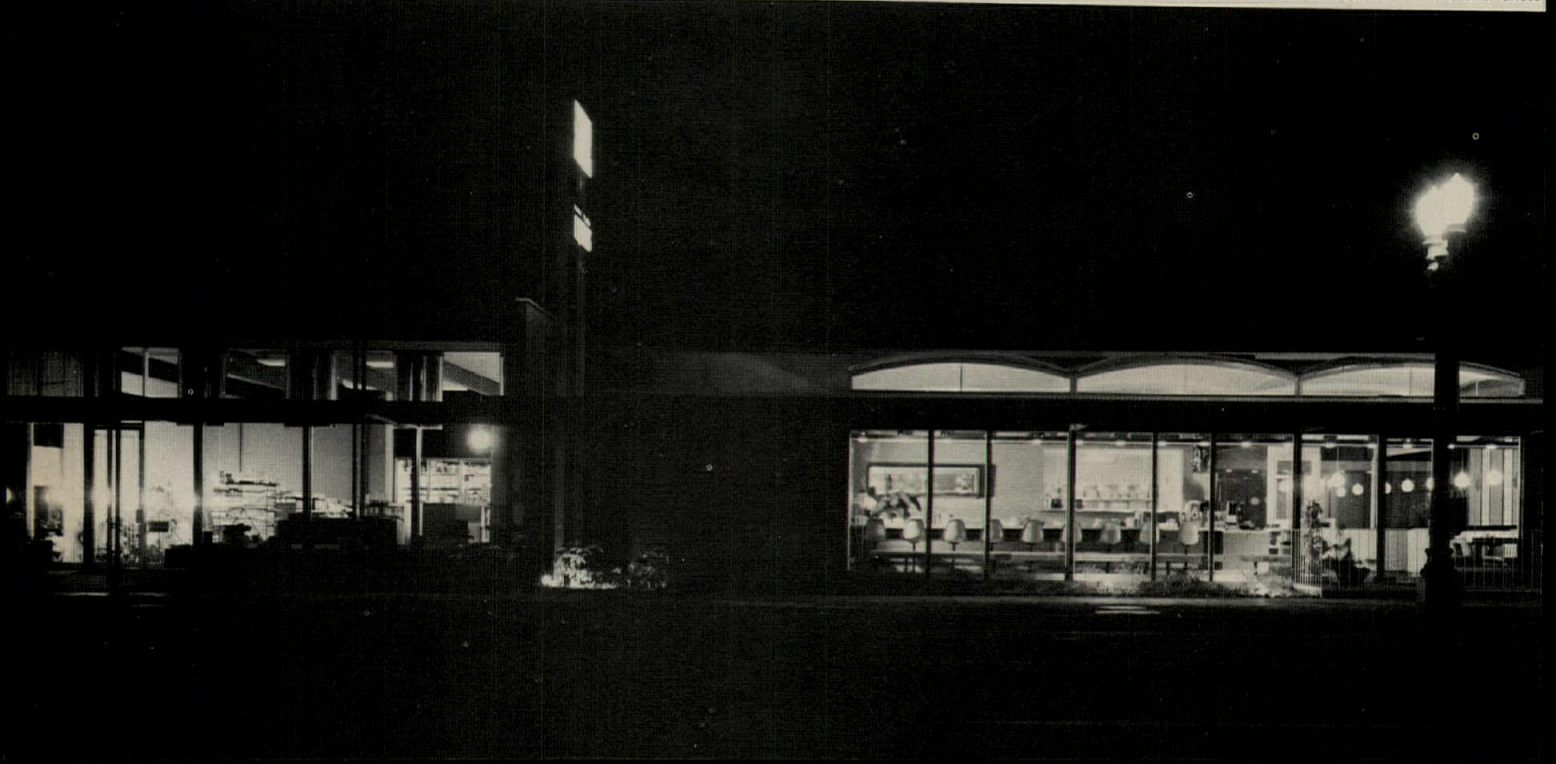
MOTEL AND RESTAURANT ON BUSY CITY CORNER

Dining facilities and specialty and convenience shops as integral or adjacent parts of motels are no longer a rarity, whether the location is in-city or on the perimeter of a city. This motel, designed to reflect its in-city location on a corner lot which fronts on two busy streets in Los Angeles, incorporates a pleasant and unpretentious restaurant, bar and liquor shop as part of its latest addition which also includes 25 rooms and a swimming pool. The original motel, completed eight years ago (ARCHITECTURAL RECORD, July 1960), contained 26 rooms and the motel office. Already designed is the next unit, two floors with 34 additional guest rooms. The most recently completed unit is a two-story concrete structure with brick filler walls. Access to first-floor rooms is direct from the walkway; to second-floor rooms, by individual stairway. Parking requirements were solved by using an alley at the rear of the new unit, with stalls under the rear half of the second floor, backed up to the first floor rooms. The restaurant building is wood framed with exterior finish walls of heavy-textured, brown plaster. The three buildings form a protective wall around the court of which the swimming pool is the feature. The cost for the latest additions was $285,000.

PARK PLAZA LODGE, Los Angeles, California. Architects: *Richard Dorman & Associates;* structural engineer: *Woodward Tom;* mechanical engineer: *Ira Tepper;* landscape architects: *Richard Dorman & Associates;* general contractor: *Noxon Construction Company.*



Original unit, with motel office, is indicated at top of plan. The new restaurant, bar and liquor shop building, located along the principal street front, invites customers and acts as a buffer for rooms at rear. *Richard Gross*



Dining facility includes both a restaurant and a coffee shop as well as a bar and, next door, a liquor shop. By night the attractive interior is visible to passersby; by day the building is effective in its simplicity. Landscaping chosen for easy maintenance by the architect links new and original units.

Richard Gross photos

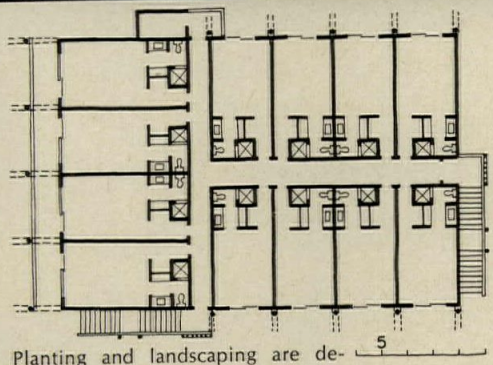
CONVENIENT BOATING FROM MARINA MOTEL

This water-oriented motor hotel—or "boatel"—at a marina on the island of Alameda in San Francisco Bay is both destination and starting place for sports sailors. Sailors from other parts of the Bay Area dock at its piers after a day of sailing, dine at the adjacent restaurant (designed by the same architects; ARCHITECTURAL RECORD, July 1961) and spend the night or the weekend. Others keep their boats at the marina, drive to (and stay at) the boatel, using it as a base for weekend sailing. The buildings are designed to attract boatsmen rather than motorists, for the location is actually remote from any highway, but provision is made for parking cars of those who keep their boats at the marina. Simple, easily-maintained materials—wood frame, pressure-treated poles, resawn redwood siding, stained—make a virtue of their necessity: the buildings point up the value of design. Since the site is fill, piles were used, and the heavily reinforced concrete foundations were tied to the piles. Room sizes and spaces were not designed by the architects; the owners leased the buildings to a motel chain which required that its specifications be used.

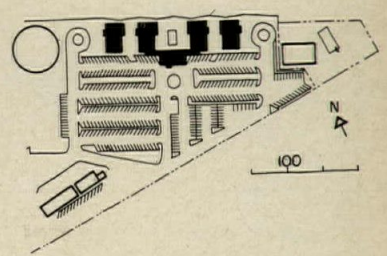
TRAVELODGE MOTEL, Pacific Marina, Alameda, California. Architects: *Campbell & Wong and Associates;* mechanical and electrical engineer: *Daniel Yanow;* general contractor: *Pacific Bridge Company.*

The three buildings were sited so they form an enclosed court both for privacy and to shield the pool area from wind which is a problem in this locality. Not all of the units have terraces or decks; for those which do not have this amenity, protected individual sunning units are provided near the pool. The fence around the pool area permits a view through to the marina and boat moorage. The city of Oakland is in the distance.

Photos: Morley Baer



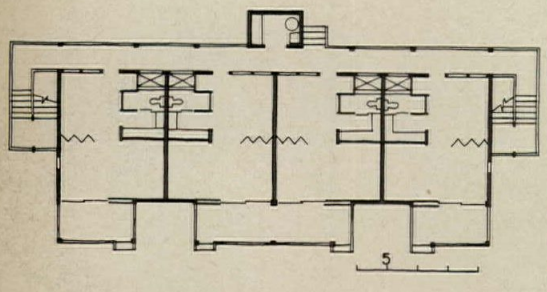
Planting and landscaping are designed for easy maintenance. At this end of the pool, a paved walk is between rooms and sunning areas which face toward the pool; at opposite end rooms open directly to the pool. Access to upper rooms in each of the units is by an open stairway with a simple redwood screen at the landing. The master site plan allows for additional units beside each of the present units.



RESORT HOTEL ON BEACH

Lower jet fares to Hawaii and a tourist boom have created a demand for hotel facilities of all types, not only on the main island (Oahu) but on "neighbor" islands (Maui, Kauai and Hawaii) as well. Older hotels and resorts, like the Waiohai at Poipu Beach on the southern tip of Kauai, the "Garden Isle," have also felt the pressure of increasing business. Additions and alterations at the Waiohai so far have been carried out piecemeal, a program which interfered with neither the existing landscaping nor the relaxed atmosphere of the place.

WAIOHAI RESORT HOTEL, Poipu Beach, Kauai, Hawaii. Architect: *Vladimir Ossipoff*, F.A.I.A.; interior designer: *Marion Sox* for *Ansteth, Ltd.*; contractors: guest cottages, *Kauai Builders; T. Kure* and *T. Maeda;* service quarters and manager's cottage, *S. Honjiyo.*



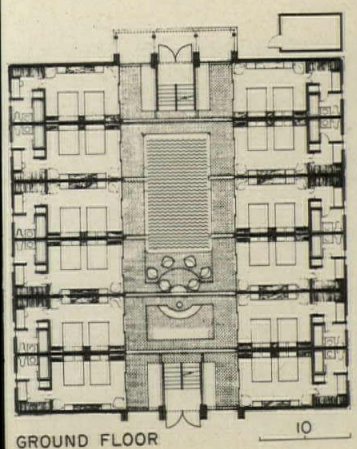
The new buildings are one-and two-story frame structures on concrete pedestals, with base walls of lava rock at building ends. Bleached redwood board-and-batten exterior walls, balconies for access to units, and wide lanais (or porches) for each unit are reminiscent of early Island architecture but sophisticated detailing and individual treatment mark the buildings as completely contemporary.

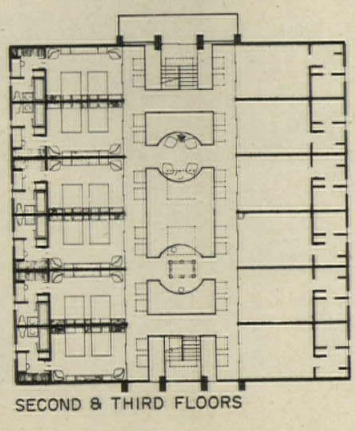
Photos: R. Wenkam

MOTEL IN A MOUNTAIN RESORT

The Applejack Inn is a downtown motor hotel in the resort town of Aspen, Colorado, a skier's paradise in winter and a cultural mecca in summer. The Inn is designed to attract and cater to both kinds of patrons. An enclosed court or mall separates the two buildings of which it consists, and walkways overlooking the mall give access to all rooms. The skylighted mall with its all-year swimming pool creates an environment as conducive to after-ski parties as to post-session discussions. The exterior walls are of rough-sawn redwood siding. Exterior expression of floors and major partitions recalls similar details on nearby Victorian buildings. Cost was $181,000.

THE APPLEJACK INN, Aspen, Colorado. Architect: *Donald R. Roark;* structural consultants: *Robert Voiland & Assoc.;* electrical consultants: *Sol Flax & Assoc.;* contractor: *Newstrom-Davis Construction Company.*





Tubular steel railings painted white —a sophisticated treatment of turn-of-the-century bannister rails—accent the three levels of the mall area and define the "conversation areas." Twenty-seven skylights flood the interior with daylight.

Photos: Milmoe

Roy Flamm

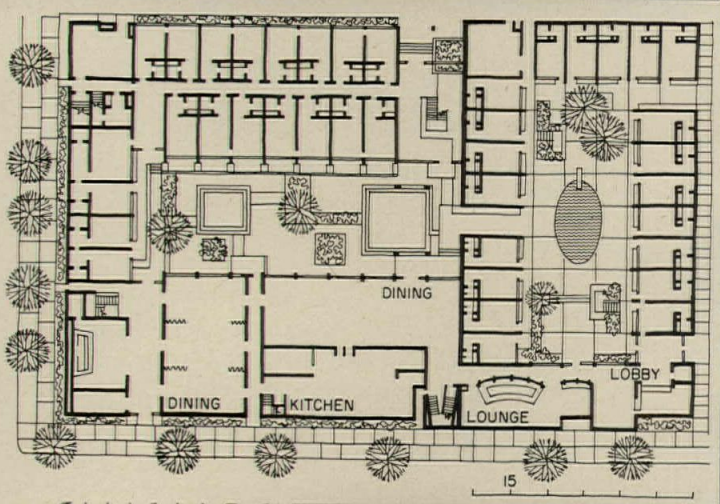
INN AT CITY CROSSROADS

Strategically located in downtown Sacramento near the state capitol, directly across from the governor's mansion (for which it is named), and at the intersection of a U.S. highway and a major city thoroughfare, Mansion Inn is designed to attract travelers, tourists and group meetings. Public rooms (restaurants, cocktail lounge, registration lobby) are on the highway side of the building. Built in two stages, the Inn turns away from traffic noise to two handsomely landscaped interior courts. Basement level has banquet facilities.

MANSION INN HOTEL, Sacramento, California. Architects: *Dreyfuss & Blackford;* mechanical engineer: stage one—*Leonard Stecher,* stage two—*Daniel Yoshpe;* landscape architect: *Robert Danielson;* general contractor: stage one—*E. A. Corum & Son,* stage two—*Charles F. Unger Construction Company.*

Phil Fein & Associates

Simple materials (steel and wood frame, plaster and concrete block finish painted buff) and landscaping make main entrance inviting and dignified in keeping with governor's mansion opposite (far left, photo at left). Success of first 52-room unit around a swimming pool led to 66-room addition with new restaurant, banquet room and more parking.



HOTELS AND MOTELS REFLECT A CHANGING WORLD

HOTELS

By Harry Mullikin, Vice President
Western International Hotels, and
Managing Director, Century Plaza Hotel, Los Angeles

There will always be a need for hotels because, as some one has said, "The leading hotel is a reflection of the entire community and visitors to a community regard it as only as good as its best hotel."

This is a pleasant thought to contemplate—especially if yours is the best hotel in town—but running a hotel has its problems; and the main problem in the industry today is the high cost of labor. Anyone who designs a hotel today should keep that clearly in mind.

Another problem that is allied to high labor costs is that many older hotels, faced with newer competition and with high maintenance costs, are losing their occupancy and consequently their income. Six or seven years ago I would have said that there were many cities in this country where more hotels were needed—New York City and Portland, Oregon, for instance—but today such cities have not only overcome their shortage but are overbuilt, and some of their older hotels are being torn down.

Actually, there is no city that I know of—and this is a personal opinion—which needs a new hotel. That is not to say that more hotels won't be built. The only adverse factors that I would think would affect building of more hotels would be increasing construction costs and poor rates of return on the investment as compared with other ventures.

Land costs and building costs are always in competition with each other. It is cheaper to build a two-story walk-up hotel or motel unit than a high-rise, but the walk-up requires more land. It is cheaper to have adjacent surface parking than to build underground parking where construction costs are very high. We have found, incidentally, that the relationship between number of rooms and number of parking spaces is not always a good yardstick, since banquet and restaurant guests use a surprising number of parking spaces.

Although Western Hotels is building a hotel at the airport in Detroit as an integral part of the airport terminal, we have not gone in for this kind of location as a rule. And normally we would pick a site downtown where a luxury hotel with convention facilities would fit in profitably. In Century City, however, we had an unusual opportunity both in being able to have such a location in-a-city and yet with much open space around, and in being able to select the site, determine the size of site we needed, and grade it to meet our needs. Usually a site is pretty well defined and the hotel has to fit on it. At Century City, we were able to do some site shaping.

From our experience, we believe that the number of rooms in a hotel should be at least 300-plus as a minimum, and for a substantial property, 800. The public facilities within the hotel building must be balanced not only as to restaurants but also as to meeting rooms, with adequate space for meetings, exhibits and meal functions to be handled simultaneously. The needs of the community must also be taken into account in determining the size of the ballroom.

We have noticed that recent trends in hotel planning indicate a reduction in size of guest rooms and bathrooms. Some are as small as 10 by 12 feet. At Century Plaza our minimum bedroom size is 14 by 16 feet, plus balcony, bath and foyer. Our rooms have conventional beds rather than foldaway beds, or day beds, although we do incorporate such furnishings in the parlors of corner suites.

One of the corners that is often cut in hotel construction is sound control between rooms, horizontally and vertically, and between corridors and rooms. At the Century Plaza, we asked our architect and the engineers to work out a solution to what we feel is an important problem. Two separate stud walls, with acoustical blanket between, are used between guest rooms. All electrical outlet boxes, radio, television and telephone bosses are separate as well. Around the solid core walnut door from the corridor is rubber weather-stripping, and a neoprene wiper is set into the bottom of the door to close against a marble threshhold. Individual fan units are located 10 feet from the duct into the room, and the result is so quiet that we had to install a red light to show when one is on.

I find recent hotel architecture dismaying. Most of the new buildings are difficult to distinguish from office buildings. Exterior and interior must be exciting, indeed, but the guest should have a feeling of being warm and welcome, not cold. Minoru Yamasaki felt that his biggest challenge in designing the Century Plaza was to make the building look like a hotel. This we feel he achieved.

MOTELS

By Stephen W. Brener, Motel Consultant
Vice President, Helmsley-Spear, Inc.

New travel habits, especially in business, new travel patterns due to the jet airplane and the Interstate Highway System, and increased leisure and vacation time, are changing the locations, sizes and services of motor hotels. Today, the average motor hotel contains at least 100 rooms; 10 years ago few had as many as 40 rooms. Only yesterday, it seems, motor hotels were replacing small hotels; today they are replacing even some of the grander hotels.

The motel came into being on the highway, and highway accommodations still account for a good deal of motel business. But increased air travel and rental cars mean that fewer travelers will use highway accommodations in the future; the high-speed road will get them more quickly to their destinations. The highway accommodation of the future will be found increasingly concentrated on prime sites near Interstate interchanges, not strung out the length of the road.

This does not mean that motels are on the wane. It does mean, however, that they must adapt to changing conditions, and that as land costs increase, high-rise motels will become more numerous. It is a simple matter of economics.

Three kinds of motor hotels, recognizing the changes, are on the increase, two of them phenomena of very recent years: the perimeter and the in-city motel are products of the 1960's. The resort hotel is not a new type, and it faces tough competition, but it may have the best future of all.

Perimeter motor hotels are located on the outskirts of cities, near airports or at the intersection of a city's arterial highways with the Interstate, or sometimes near industrial or commercial developments. With less expensive sites than those in-the-city, these motels tend to be low-rise (one- or two-story, and more often two-story) buildings.

The *in-city* motor hotel, on the other hand, is situated on a relatively small and expensive piece of downtown land strategically located for a profitable enterprise. Since its land costs are high, it is a high-rise building, generally with at least 100 rooms, a pool, on-site parking, facilities for food and beverage and all the services of a hotel.

Resort motels, catering to the growing number of vacationing Americans able to enjoy the new leisure, are usually located in places of scenic beauty or special significance, historical or otherwise.

Today most motel operators expect their guests to use their rooms for more than sleeping. Commercial men use them for work, conference, and as display showrooms; vacationers use them for entertainment. As a result, room sizes have undergone a change from the small room of the 1920 motel. A commercial man, for instance, wants a double bed though traveling alone. A couple wants a room with two double beds. This means that double bedrooms will be classed as singles and rooms with two double beds will be classed as doubles. The two-double-bedroom is flexible: it can accommodate not only a couple but a couple traveling with children.

Present room sizes start with the usual 12-foot width, but this dimension will, I believe, soon reach 14 feet and room length will be 18 feet. These will be minimum dimensions—250-square-foot room size, exclusive of bath, closet or any other ancillary space. In resorts, however, rooms are larger. Since the room is used as a vacation home (often it includes a kitchenette) and provides complete living and dining facilities, its size has increased to 350 square feet.

But today's motel is more than a place to spend the night or a base for vacation activity. Convention and meeting business is very important to motels because it augments room business during slow week ends, as in commercial locations where the main business is Monday-to-Friday. Today the public is convention-prone, and the motor hotel is an easy choice for such events and for sales and professional group meetings because it offers parking for cars, rooms for meetings, facilities for banquets, and pool and resort-type surroundings for out-of-meeting hours.

Restaurant and cocktail lounges are also important, especially in conjunction with conventions, package tours, business meetings and similar large-group patronage. But today's non-business traveler, and the non-meeting guest, also expect some sort of eating establishment in or at least adjacent to the motel. An old rule of thumb for commercial development was 100 square feet per room unit, but this has now become more nearly 140 to 150 square feet.

Numerous factors influence the size of a motor hotel and the facilities it should offer. These can best be ascertained, like room sizes, by a market survey. This is a new word to the hospitality industry but it is increasingly prevalent and apparently destined to direct expansion of the industry. There is no perfect number of units (rooms) for a given type of motel but there is a minimum range. Due to the cost of land and of construction, most good sites will require a minimum of 60 rooms for economic feasibility; for absentee management, 100 rooms minimum are recommended. And in the end, the best type of motel is one that can expand its facilities as its business increases. This means providing not only a site but initial lobby and office dimensions which will permit addition of more rooms. For high-rise buildings, this premises, of course, addition of more floors.

Although good design is beginning to be recognized as a necessary ingredient for repeat business—a very important factor in success—and individuality of design is effective in attracting attention, the motor hotel developer and the architect-designer have a long way to go before they are truly compatible. This is a hard business which fights for pennies and therefore requires architectural treatment that can withstand constant abuse and changing times, facilities that operate simply and effectively, without gimmicks and gadgets. It needs structures that have a built-in potential for changes by means of lighting, or landscaping or some inexpensive means other than remodeling. It wants its buildings to express hospitality, not an esthetic abstraction.

Major problems face the motel industry. Inability to create financing and the tendency to over-finance are prime problems. And this reacts on the designer, for it definitely puts a crimp on design and development. Much of the time that should be put on market research, planning and development now goes into financing. The present tight money situation may prove to be as much blessing as bane if it eliminates amateurs and favors responsible operators.

But there have been notable advances. The motel industry is more aware of the essentials of good quality: good materials; good lighting, especially in corridors; new and better air-conditioning and communication methods; acoustical control between rooms; recognition that you cannot cram important administrative and service functions into left-over space. There are still needs. Labor costs are high, and labor-saving means, especially at the point of design, would benefit motels.

The architect and the motor hotel field have much to gain from each other, but each must understand the other.

ARCHITECTURAL ENGINEERING

More light on the subject: general plus local lighting

People who feel that they can work better with a local light source over their tasks are probably right, recent research has shown. Studies at the British Building Research Station indicate that a person's attention is held more easily and distraction avoided if the task is selectively lighted.

Lighting design for work environments has gone through two phases based on the desire to provide improved illumination, and consequently higher work efficiencies. Consulting architect John E. Flynn of Cleveland, writing in the June issue of Light, points out that in the first phase, when electric lighting was expensive, selective illumination on the task was the only satisfactory method of lighting—with the light source placed very close to the task. Then as electric light became less expensive, engineering convenience produced an attitude in which general lighting for the whole space became standard practice.

But now, two different studies by two British scientists suggest that both "preferential" lighting for the task and good general room lighting are desirable. The scientists, R. G. Hopkinson and J. M. Waldram, both emphasize that it is the subjective impression that determines the visual impact of a task, and the idea of a space. Hopkinson states that work lighting designed as selective illumination of the task is necessary to give the work focus. He stresses that he is not calling for greater use of "untidy" lamps placed on desk or bench but built-in preferential work lighting. It has also been found by a German scientist, Bodmann, that the subjective limit on brightness levels is affected by the size of the room—with lower brightness levels being preferred in smaller rooms.

Waldram has developed a design method which attempts to bridge the gap between the art and science of lighting. His method, Flynn reports, is to begin with the architect's concept of the lighted space and then work backwards to determine the direction and intensity of illumination required. Flynn lists two drawbacks to the method. First, he suggests that architects and engineers find visualization or communication of a building in terms of light and shade to be difficult, particularly where the visual activity is complex. The second drawback is the time required to make the calculations, which may on occasion become quite involved because of the large number of variables.

Engineers to review underground distribution

A Special Technical Conference and Exposition on Underground Distribution will be held September 26-29 in Chicago, sponsored by the Power Group of the Institute of Electrical and Electronics Engineers. Among the seven technical sessions of interest to consulting engineers will be "Underground Distribution for High-Rise Buildings," "Replacement of Overhead Distribution Facilities," "Research on Methods and Equipment," and "Underground System Components." This is the second such conference, the first one having been held in St. Louis two years ago.

On another front, a task group of American Standard Committee C2 will review the safety rules for underground lines as contained in the National Electrical Safety Code.

THIS MONTH'S AE SECTION

The architect must guide industrialized building

"The enemy is lurking around the corner," said British structural engineer Ove Arup, on the occasion of being awarded the Royal Gold Medal for Architecture 1966. "There is nothing wrong with industrialized building or systems of building for mass production," he continued. "But building technique has its own economic logic. It imposes its own discipline which, left to itself, will take no account of art or true amenity. That is the danger. This discipline must be fused with artistic and functional discipline.

"We have the power to get the environment we would like to have, instead of one that is forced on us by expediency, or by economic forces which we fail to control—if we could only find out how to use that power. It is no good relying on chance—although that has worked sometimes. It needs the imposition of artistic discipline. And that has to be done by an artist. That is the case for having architects in control of building operations affecting our environment—in the hope that they may be artists.

"But architectural design is much more complicated than an engineering design. This is mainly because engineering structures cater for the force of

gravity and other natural phenomena, whereas buildings cater for people. The engineer need not bother about the purpose of the design—he is told what is required. The architect bothers very much. He must study human needs, human reactions to environment, human ways of life, humans at work and play, their need for privacy and social contacts. This is both a complicated and a controversial subject. Because he caters for human beings, the artistic organization becomes so much more important. And even the technical data which have to be considered tend to be more numerous and varied.

"Architects vary enormously in their appreciation of sensible building. Most of them are very keen on it, and many are very good at producing it. But what worries me is that great architecture is often produced by people who don't care a damn about sensible building. Many of the greatest architects are not famous for their contribution to building. Architectural reputations are built on art, not technology.

"Somebody has spoken about the division of architects into the art-boys and the system-boys. What I am worried about is that at the two extreme ends, the system-boys have no art, and the art-boys have no system. I don't so much mind art without system—in a one-off case it may be justified, if the money is there. But I do mind system without art. I realize only too clearly that in a competition between the two, that is what we are going to get."

State agency shows concern over utility promotions

Signs of some uneasiness over utility promotional practices are showing up in Illinois, where the Commerce Commission started public hearings August 1 to determine whether it should regulate these activities. The commission has said that, in an attempt to induce developers and builders to use gas or electricity, some utilities or their subsidiary companies make cash payments for promotional expenses, grant or guarantee loans, make gifts or donations, install equipment at less than cost, grant discounts and make allowances to potential customers.

James W. Karber, Commission Chairman, has said that promotional payments are not necessarily harmful or discriminatory, but the commission wants to determine how far such practices can go before they hurt the general public.

The issue of promotional payments by utilities came to light in June after Peoples Gas Light & Coke sought Commission permission to make a $3-million loan to a Chicago developer to help finance a proposed 80-story apartment building. The petition is contingent on his use of gas for all energy requirements in the building.

The gas company petition contends it was forced to act because the Commonwealth Edison Company had offered loans totaling $5 million. Hearings on that petition opened in July.

Windowless classrooms get a vote of confidence

While a windowless environment appeared to have only small affect on the learning achievements, attendance records and attitudes of children in a study conducted by the Architectural Research Laboratory at the University of Michigan, teachers showed a definite preference for windowless classrooms.

The study, sponsored by the Educational Facilities Laboratories and now published as a 110-page report, presents a documentation of research conducted over a four-year period in two existing primary schools in Wayne, Michigan. This case study was intended primarily as a pilot operation in an effort to develop techniques of investigation for evaluating the effects of environment on the learning process. But nonetheless, it will provoke some thought about the specific functions of windows in schools. The report states that some educators have questioned whether the elimination of outside distractions is always to be desired, and that an "exterior happening might provide a fruitful stimulus." Such might be the case for kindergarteners who do not have a strict set of learning tasks.

In rebuttal, other educators state that most school work has a definite educational focus, and that few classrooms would find "much educational advantage accruing through windows."

The investigation covered three periods: (1) a school year with both schools intact; (2) a school year with all the windows in one school blacked out; (3) a full year with the windows in the test unit restored. In spite of miscellaneous complaints having to do with privacy, noise or ventilation, it was found that, without exception, all teachers regarded the absence of windows as an advantage. Their reasons had to do with the lack of distraction, improved control of lighting, increased wall space, and improved heating. The children also expressed a strong liking for their windowless classrooms, mainly because of the bulletin boards, and bright colors on the walls and floors.

Changes in learning performance of the students are reported in detail, but do not show consistent patterns of loss or improvement.

Since only the viewing function of windows is of importance, the report continues, windows should be ports or apertures permitting occupants to have a view in any desired direction at any desired time. Even window screening devices of the sort used in rooms which employ closed-circuit TV systems might do the trick. In short, the publication asserts, an entirely new approach to the design of school house fenestration is called for.

"The Effect of Windowless Classrooms on Elementary School Children" is available from the Architectural Research Laboratory, Ann Arbor, Michigan, for $2 a copy.

Fire chiefs cite fire control problems in the vertical city

Skyscrapers are creating grim fire control problems, two veteran fire chiefs charge. Former Chief of the New York City Fire Department Edward P. McAniff says that "architects are not designing these buildings with a full realization of the fire problems that have occurred and will continue to occur." In his recent talk to the annual meeting of the National Fire Protection Association, McAniff proposed that the N.F.P.A. originate a High Rise Study Committee to work both for improved fire protection and fire fighting.

Chicago's Chief Marshall Curtis W. Volkamer told of complicated problems of water supply, of water-soaked automatic elevator controls failing, and of firemen vainly trying to find a key that would provide manual control of elevators. Among his recommendations for an N.F.P.A. study committee were:

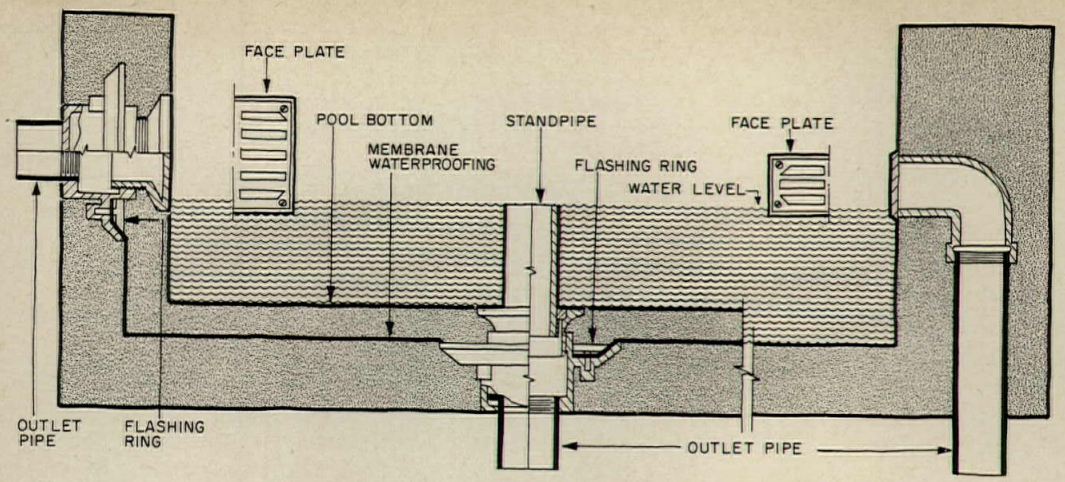
1. Refuges where building occupants may safely congregate without having to look for elevators or descending stairways.
2. Arrangement for elevators/stairways to discharge into public halls free of burnable materials, and vented to outer air by large openings.
3. Shafts designed to prevent spread of fire, smoke and gases over great distances.
4. Communications built in for emergency conditions.
5. Elevator systems with standby power, fully controllable by the fire department in emergencies.
6. Adequate sprinkler systems to supplement a standpipe system in all danger areas above the sixth floor.
7. Special alarm and smoke removal facilities, particularly for upper floor restaurants and ballrooms.

GREATER DESIGN FREEDOM FOR DECORATIVE FOUNTAINS

BY RICHARD E. DeCEW *The author is president of Fountains Incorporated, New York City, consultants in fountain design and engineering.*

The architectural fountain, experiencing a renaissance in the past few years, is taking new forms in terms of both fountain patterns and pool construction—giving at once greater appropriateness and improved performance. The popular jets and mushrooms are still fittingly used in many applications, but architects are experimenting with new water forms to obtain effects that are especially complementary to buildings and their sites. More pools are being designed for year-round use, so that the fountain space is not barren during the winter. And pools are being designed to provide more flexibility in fountain design, so that fountains can be added later in low-budget jobs, or so that adjustments can be made in the design of the fountain even after the pool has been installed.

▪ One of the most forward-looking uses of water—in especially good context—is the application of playful horse-tail jets and fan jets in the Riis Park project in New York City. These jets, which spray out over a recessed amphitheater, are designed to be played in by children and to wash down the steps—which quickly get dirty from the city air. All orifices of the jets are neatly hidden so that children will not stumble over them. The fountain water collects in a pool located at the bottom of the steps. The water is recirculated after being filtered and chlorinated so that it will be as safe as it is fun.



Either side-wall or standpipe type overflows may be used to limit the height of pool water. (With membrane pool waterproofing, a flashing ring is required.) But water level must be maintained high enough for skimmers and fountain equipment to operate properly.

At another location in the park another form of water is provided, intended to be played in—water troughs which gush out from atop masonry mounds. The Riis Park project was designed by Pomerance & Breines, architects and Paul Friedberg and Associates, landscape architects.

▪ Special attention to pool design for safety requirements and year-round operation is illustrated in the Gadsby Urban Renewal Project, Alexandria, Virginia. The pool is stepped so that at the perimeter the depth is only 8½ in. but 2½-ft deep in the center. The fountain effects required the 2½-ft depth at the center for the location of submersible pumps, large spray ring and larger jets, but the shallower depth at the perimeter minimizes the danger to children and cuts the total volume of water to less than one-third of that required with the whole pool at 2½ ft.

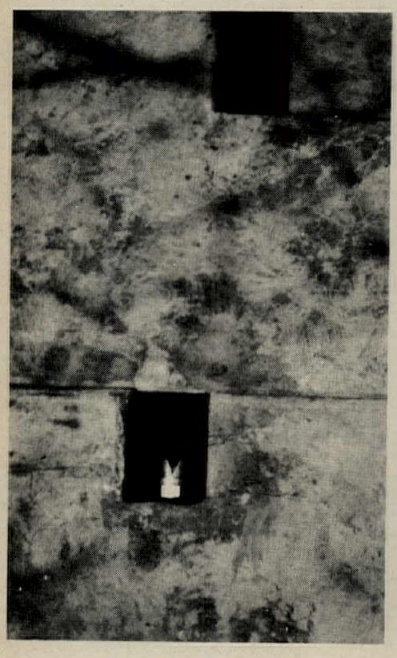
The recirculated water, introduced at the perimeter walls, will flow at a rapid rate in the shallow area, drawing some of the dirt toward the center of the pool. Provisions have been made to install later a small platform in the center of the pool, so that water from a single jet operating in the winter will land on the platform and create an ice sculpture. Architects: Neer & Graef.

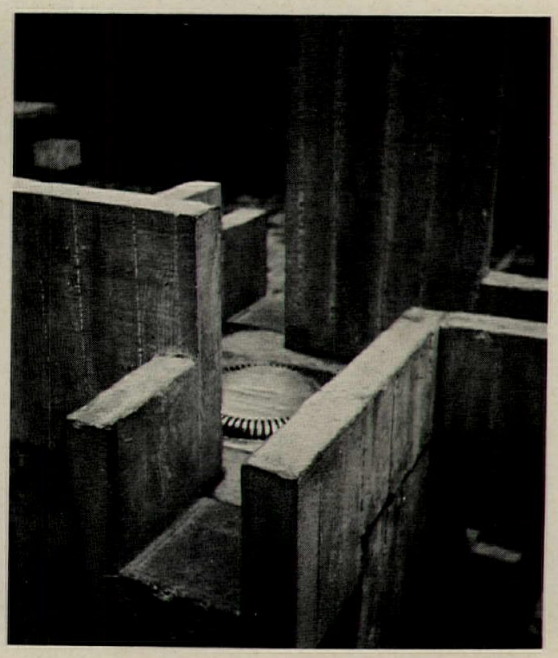
▪ It may on occasion be necessary to build the pool before the fountain design can be established. Such was the case with the Kennedy Center for the Performing Arts by Edward D. Stone. The pool was designed deep enough so that all of it could work as a sump. This sump will be covered with a heavy grating which will have the effect of creating a pool bottom while still providing total flexibility of piping and pump location below the grating. There will be perforations in the grating at those points selected by the architect at the job site. Lighting fixtures can be located and set on top of the grating after the placement of the jets. The electrical connections for the lighting fixtures will be made to junction boxes below the grating. Another function of this perforated false bottom will be to act as a strainer for all large debris that might be thrown into the pool.

▪ On occasion, vast quantities of water are required to produce impressive effects, especially when the fountain is out in the open spaces. Also, on occasion, it is possible to draw on water used for air-conditioning cooling water as a source for the fountain. Both of these situations exist in connection with the design of the world's largest air-conditioning plant for the South Mall project in Albany. When the full capabilities of the station are not required, water is diverted to the 100-ft-long fountain. Its shape is that of an inverted saddle, created by parallel streams of water on 3-ft centers, each throwing 1,000 gpm 100 ft into the air.

On special occasions, there will be a display of colored lights over the water effects. Each of the 33 jets will have a red, green, blue and white light directed into the jet. The beams of light will be concentrated so that there will be a beam spread of only 4 degrees. In this way two unique effects may be accomplished. The architectural form of the water can be illuminated in one total color, or sections of the streams can be different colors. By varying the voltage of the lights, any color in the rainbow may be obtained.

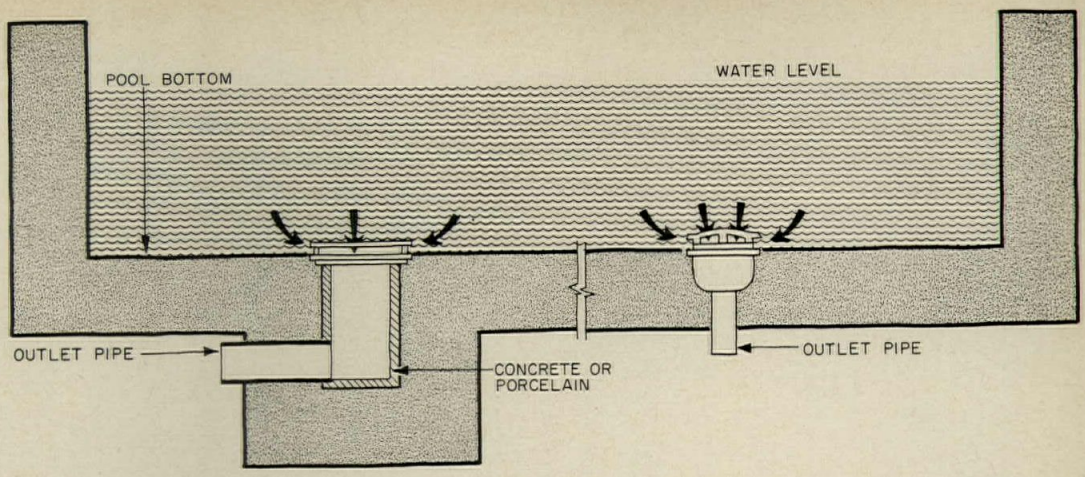
Two fountain details used in the Riis Park project: left, a horsetail jet concealed in a recess of a step, and right, a vortex suppressor to limit height of water supply for a series of concrete troughs.





How much water for an effect?

Two of the major problems in fountain design are to determine: (1) the volume of water needed for the fountain to be in scale with the architecture; and (2) the appropriate form of the fountain. Even though a fountain may have the right shape, if not enough water is



Suction outlets serve two functions: (1) to return pool water to the filter system; and (2) to cause a circulation of water at the bottom of the pool, pulling dirt along with it to be taken out by the filter. An anti-vortex plate is needed to prevent air being drawn into the pump.

moved it will not have the needed effect, especially in large, open spaces.

The best way to evaluate proper volume is to see various fountains in action. The next best way is to see photographs, but this does not convey a number of qualities that are inherent in fountains, such as the noise and feel of the sprays. An exterior fountain generally requires a greater mass of water in order to be compatible with the greater space—so that there is a proper sense of scale. Conversely, in a confined interior area such as a courtyard, it is possible to use a delicate spray, relying on form for effect.

The volume of water moved is directly related to the cost of a fountain since it determines the size of most of the components, and increasing the size increases both the material and labor costs.

While jets are commonly used in fountain design, it should be pointed out that the original circular jet was designed by an engineer who wanted the maximum volume in the smallest area. So although jets are excellent for efficient moving of water, they should be considered as only one of the many possible devices for creating fountain forms. Flat or elliptical sprays fill a greater visual area with the same quantity of water and so create a larger form with the same volume.

Basic pool equipment

Maintaining a constant water level in the pool is important in order to: (1) help assure that the pool is kept free of dirt; (2) permit fountain spray elements (such as aerating jets) to work properly; and (3) protect lights (which could burn out if not covered by water).

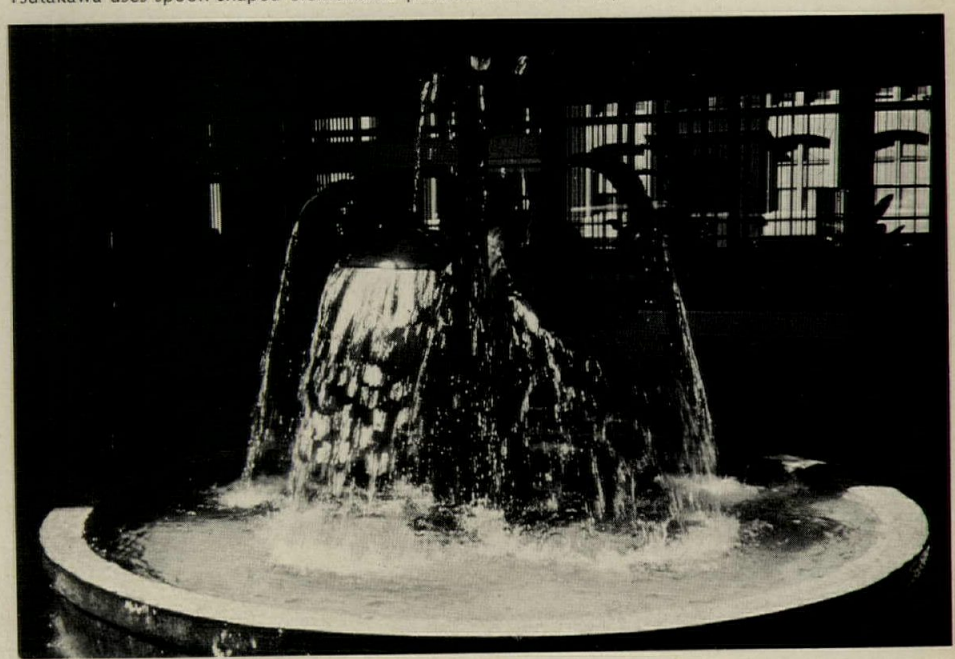
Pool level is maintained and filtration aided by the following equipment: a) a main drain; b) a supply line large enough to fill the pool quickly; c) an automatic make-up line which keeps water at its design level—generally a ¾-in. line with flow controlled by a ball float, electronic probe, or remote ball float at the same water level as the pool; d) an overflow fitting or fittings which prevent water from going above a predetermined level. This can be a side wall fitting (least obvious) or possibly a standpipe.

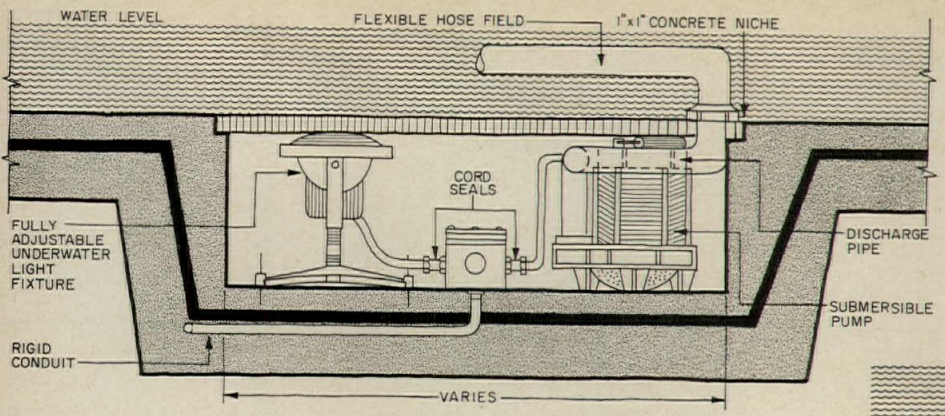
Filtration. First, debris must be taken off the surface of the water by means of surface skimmers or overflow weirs. In both cases water is drawn into the filtration system from the surface before it sinks into the body of water. Diatomaceous-earth, direct in-line, or sand and gravel filters may be used—selection depending upon pool conditions and volume requirements. A filter system should have a line strainer or strainers to protect the pump of the filter system from large debris. Water should be returned from the filter at points that will produce good movement and circulation, but installed below water level so that they are not seen. In some cases a split system of feeding water to the filter has been adopted: part of the water goes through surface skimmers, and the other part is returned through the floor of the pool. This second submerged system causes a flow of water across the pool bottom, drawing the dirt from the floor of the pool into the suction outlets where it can be picked up and eliminated by the strainer and / or filter.

A vacuum system for periodic cleaning of the bottom of the pool requires electrical outlets within a reasonable distance of the pool and vacuum fittings located below water level to return dirty water to the filter system.

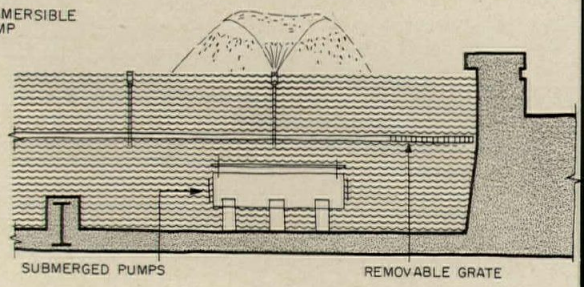
A dirty pool not only will look unsightly but will affect operation of fountain devices. Thus if there is a limited budget a properly designed reflecting

Exciting effects do not necessarily depend on tremendous volumes of water. Sculptor George Tsutakawa uses spoon-shaped elements to produce flat streams; pressure adjustment is very critical.





Use of submersible pumps and adjustable lights permits the fountain to be designed even after the pool has been installed. A submersible pump may also save on piping. The drawing, left, shows a small sump. The pool shown below was designed with enough depth so that it could serve as a sump throughout.



pool should be provided first, and provisions made for a fountain to be installed later.

Pump selection

A decision which can affect the complete design of the fountain is whether it is to be operated by a dry pump or a submersible pump. The virtue of a submersible pump is that it is generally of more rugged construction than a dry pump. The additional initial cost for a submersible pump is balanced by its longer life and lower maintenance. Also, a submersible pump recirculates water in the existing pool and eliminates the necessity of piping required by a dry pump. A submersible pump should be located in a sump which is designed to hide all the necessary mechanical equipment servicing it. A grill over the pump will hide the mechanical equipment, and also act as a debris strainer and vortex plate. A vortex plate is a flat device located over the inlet to the pump so that air cannot be drawn from the surface and make the pump cavitate.

A dry pump can be used to advantage when it is located directly next to or under the pool so that the piping is at a minimum. A dry pump is also used to advantage in those more complicated applications which require a series of programed controls. In general, submersible pumps are the most desirable for small pools, and also in large pools when there could be expensive long runs of piping to a dry motor.

Perhaps the most important argument for a submersible pump, however, is that it is possible to design the pool and then install a fountain later on. The design will be limited only by how much electrical power has been provided, which will fix the allowable size of the pump and the number of lights.

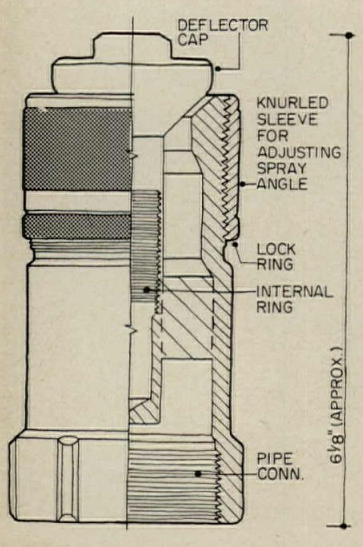
Why not year-round use?

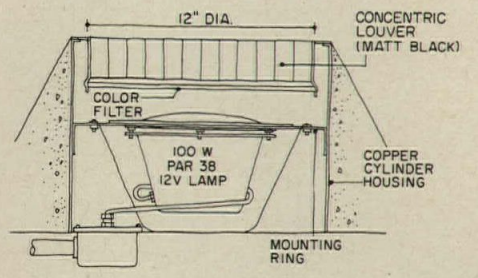
When the pool is being designed, the architect should consider the possibility of running it on a year-round basis. Normally, at the end of the season the pool and all the pipes must be drained before closing down. The jets must be removed and/or moth-balled for protection against ice and snow. The underwater lights can only be used when they are submerged because of the heat they produce, and so they must be removed from the junction boxes.

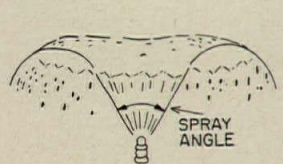
In order for a fountain to operate through the winter the following steps are necessary: (1) the fountain jets, pipings, underwater lights and pumps must be protected against freezing; (2) the pool circulation system must be so laid out that it will operate year-round; and (3) the structural elements in the pool must be sized to support any ice loads created as part of the design. By inserting a heat-exchanging method into the filter system, it is possible to inject warm water into the pool only during those periods of the winter when the water approaches freezing. A mechanical temperature probe in the water will sense the approach of 32 F. This will activate a valve which injects heated water into the filter system. This water is distributed near the jets and lights so that water will not freeze at those points and the equipment will not be damaged.

In large pools where the heat loss might be excessive, it is possible to design the pool so that the major body of the water not near the equipment may freeze. This freezing of perimeter waters is completely compatible with the successful operation of the pool if it is designed properly. The pool drain and suction system must of course be located at the lowest point of the pool near the circulating water to assure continuous flow of water to the pumps.

The esthetic benefits to be derived from a year-round pool system are many. At those times when the temperature drops below freezing, steam will rise from the pool— with an effect somewhat similar to a lake at dawn. Another effect that has not been developed to full potential is the controlled freezing of water on the sculptural elements in the pool.







The fountain nozzle, left, is adjustable so that it can produce a range of effects between a jet and a spray, as shown in the sketches. In all fountains lights should be directly under the water stream and shielded by a louver.

Changes in food service technology —and how they affect design

By Elmer G. Daniels

New standards of area allocations for food storage, preparation and service are required where menus are based on the growing use of pre-portioned, pre-cooked and frozen-food techniques. New equipment for quick-heating prepared portions and for automatic vending of both hot and cold meals is changing the aspect of service areas and encouraging new attention to amenities and traffic patterns of dining areas.

The development of new food service systems is a concerted effort by three basic groups engaged in the industry: (1) those serving the consumer at point of sale; (2) food processors who formulate, process and package food products; and (3) equipment manufacturers. We might add to this list packaging designers and fabricators, whose role is becoming increasingly important.

The first category—those serving the consumer at point of sale—can be divided into two distinct methods of food services: the conventional, manual service, either in cafeteria or by waitress; and the more recent, automated service of food dispensed through vending machines—an important trend with which architects should be familiar.

In recent years, escalating labor costs, shrinking labor markets, advancing food technology and a number of other factors dealing with the unpropitious economic climate of the food service industry have caused some rather dramatic changes.

Convenience foods affect layout

Consider first the evolution that has taken place in the modern, well-stocked supermarket—the boil-in-bag vegetables, the wide variety of pre-portioned, pre-cooked and frozen items, the dehydrated and freeze-dried products. These are known in the food service industry as "convenience foods," and many of them are now available to commercial establishments.

If we expand this "convenience foods" concept into the larger kitchen of an industrial plant, a college or a hospital, it becomes obvious that less on-site preparation is required, hence less labor, less preparation equipment and less space to accommodate raw ingredients. If circumstances permit, it may be desirable to use completely disposable paper or plastic table service. The dishroom is eliminated with its expensive dishwashing equipment, as well as the attendant labor force. There is, of course, an increase in the disposal problem.

Conventional food service with on-site preparation requires a considerable number of support areas, including a receiving area, holding boxes for refrigerated and frozen products, dry-storage and vegetable preparation area, cooking area, salad preparation area, dishroom, and possibly a garbage room or other special service areas. The "back of the house" space and equipment varies from the simplest to the most elaborate, depending on the menu, the number of people served and the frequency of service.

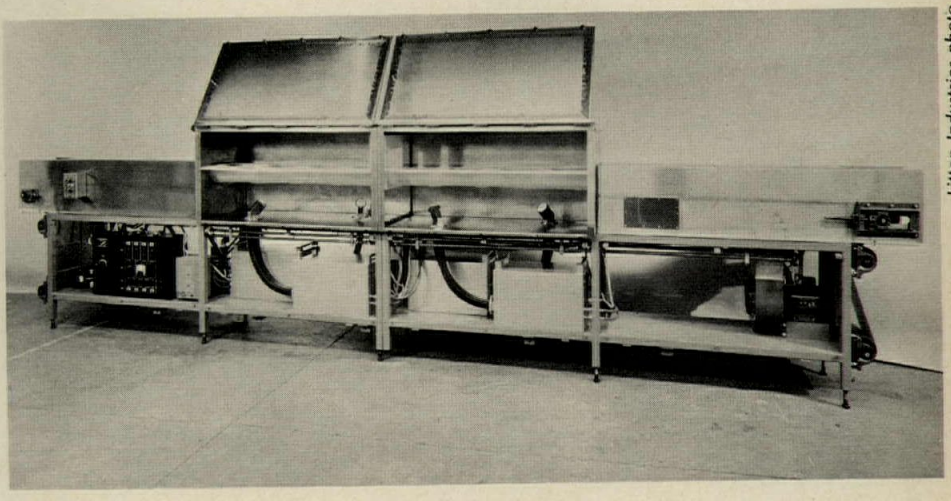
Tailored menus reduce space needs

The menu is the end product of food-service planning, and the design of the production equipment, as in other industries, is determined by the product, i.e. the menu, to be produced.

The important point here is that there is a trend today to tailor menus to make use of more of the convenience foods: consequently reducing the space requirements in the food preparation areas and reducing variety and quantity of equipment. Since less work is required, fewer personnel require less in the way of accommodations—washrooms, lockers, etc. The extent of this reduction should be checked with a food-service consultant and with the vendor of the dispensing equipment.

It is foreseeable that in some types of food-service installations the cook may be entirely eliminated, with the food preparation under the supervision of a production manager. To achieve maximum benefits in labor utilization, the transition must be complete and decisive. That is, the complete menu should be planned around convenience foods and preparation area should be designed with corresponding make-ready equipment and holding devices.

Elmer G. Daniels is vice president & director of technical services, Automatic Retailers of America, Inc.



Litton Industries photo

A 12-ft conveyor belt carries prepared, frozen meals through a microwave chamber where they are rapidly heated to serving temperature. Front-closure panels of chamber, shown raised, would be closed during operation. Customer would select balance of meal along line while heating portion moves through chamber.

New equipment takes advantage of new preparation processes to save space and cut expenses

However, even partial utilization of convenience foods has some effect on cost of supporting areas and personnel, and these effects should be carefully determined at the start of design.

New equipment cooks and serves

A transition is taking place in equipment used in the kitchen areas. Dry-storage areas have been reduced in size, since the nature of the products stored there has been changed. Cans or boxes of processed potatoes, pre-prepared onions, cake mixes, pancake mixes, puddings, and pie fillings, toppings, soup bases, canned soups and vegetables and many other formerly bulky items have been reduced to neat, compact packages. The actual preparation areas have been reduced, but because there is the increased use of frozen and refrigerated products, the equipment used to store them must be more commodious.

This trend to convenience foods—since it minimizes equipment and space requirements, and the equipment is simple and attractive—allows the make-ready function to be moved to the serving area, thus eliminating the back-of-the-house cooking. New equipment such as quartz-ovens, microwave ovens and electrically actuated pouch-pack heaters, which are relatively new developments, are used. If disposable paper/plastic table service is used, numerous convenient trash containers must be provided, and disposal equipment must be considered.

The microwave of the future

New conveyorized, microwave heating devices could have some definite use in the future. In units manufactured so far, the microwave equipment is built into a covered conveyor, approximately 12 ft long. In one application, the customer selects a frozen meal of entrees and vegetables and places it at the start of the conveyor. As the customer walks along the cafeteria counter selecting the other items for the meal, the frozen food is being brought to eating temperature. When the customer reaches the cashier, his complete meal is ready. The theory here is that a wide and varied menu selection would be possible while cooked left-overs would be eliminated, reducing both food and labor costs.

Equally as important as the trend to convenience foods is the expanding use of automatic vending equipment to feed large groups of people. After an extended period of testing, this economical method of service has proved to have many advantages.

Automated service

Automated food service is different from conventional service in its operating structure. The capital equipment investment for automated service is made by the food-service contractor rather than the client. The food products placed in the machines for sale to the consumer are usually prepared in the food-service company's kitchen or commissary and the food company has full responsibility for the operation. The leading food-service companies are engaged in both automatic and manual food catering and are equally expert in both types of service. The client's needs dictate which type of service is to be rendered. The food-service companies also have qualified facilities-planning technicians who work with architects to develop practical and attractive plans, based on their operating experience.

In the case of an automatic service, one kitchen or commissary may serve a large number of food-vending installations in a large geographic area, or a single kitchen in a building complex can serve a number of satellite food-vending installations in the complex.

Combination services

If the requirements are such that more extensive hot entrees are planned than can be served practically through a vending machine, then a combination of a small manual service counter, using convenience foods made ready either at the counter or in a commissary, may be a desirable solution. Using this combination of vending and manual counter, it is possible to extend full food service during the periods of greatest demand and discontinue manual service during off-peak periods.

Food service through vending machines or manual-vend combinations has its major usage where the patrons are a so-called "captive" group—people in factories, office buildings, colleges and hospitals. Many colleges, high schools and grade schools are using this service successfully.

Developing an attractive installation is not difficult today, since all new vending machines from major manufacturers are uniform in height and general appearance. An attractive decorative treatment can be achieved by using curtain walls, overhead and divider panels between machines. If more extensive decorative treatment is desired, fronts can be designed to cover the machines. This eliminates the appearance of the individual machines and unifies the entire installation.

Satellite-counter service

Another method of food service—one that has been successfully operated in industrial plants and campuses that are spread over extended areas—requires the use of satellite service counters. These counters are furnished with food prepared and packaged at a central preparation area. This is a variation of vending-machine food service and, in certain circumstances, it has inherent advantages in convenience and economy.

The food is prepared and packaged in individual serving containers at a central kitchen. It is then transported in a suitable, temperature-controlled conveyance to the satellite counters. These counters have hot, cold and ambient compartments to display the food. The counters are self-service, manned only by a cashier. This system provides quick, adequate and easily accessible food service with minimum loss of commuting time from work areas to eating areas.

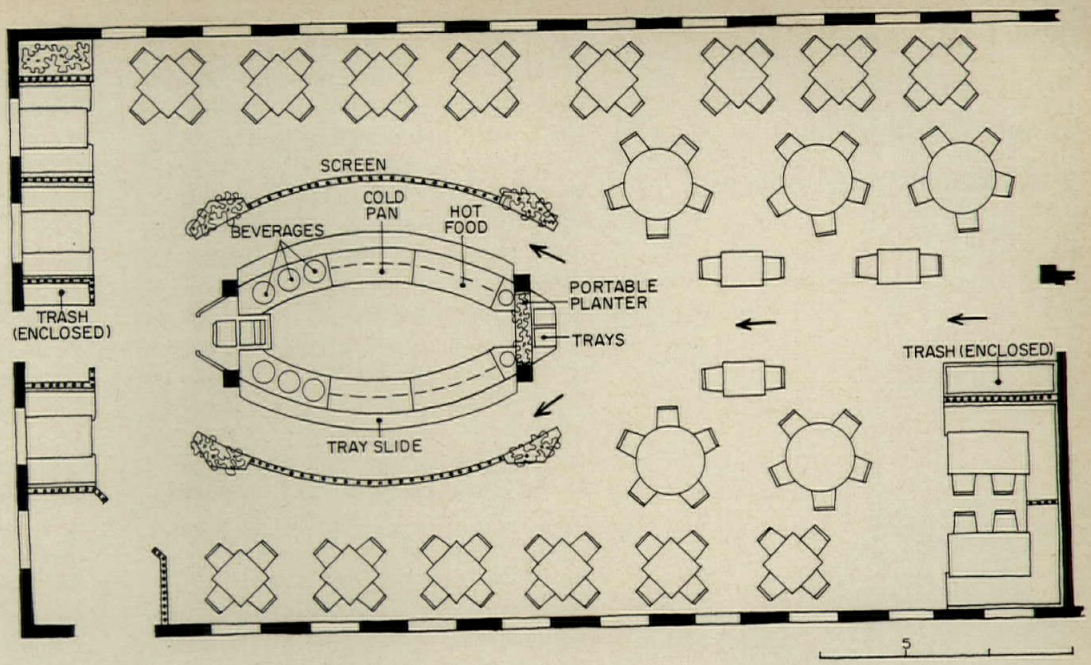
Variety and economy in hospital service

The development of microwave heating devices and high-heat-output ovens has heralded another new system of food service to hospitals and geriatric institutions. Pre-portioned, pre-packaged and frozen meals, all formulated to suit the many varying patient needs, are manufactured by a qualified food processor.

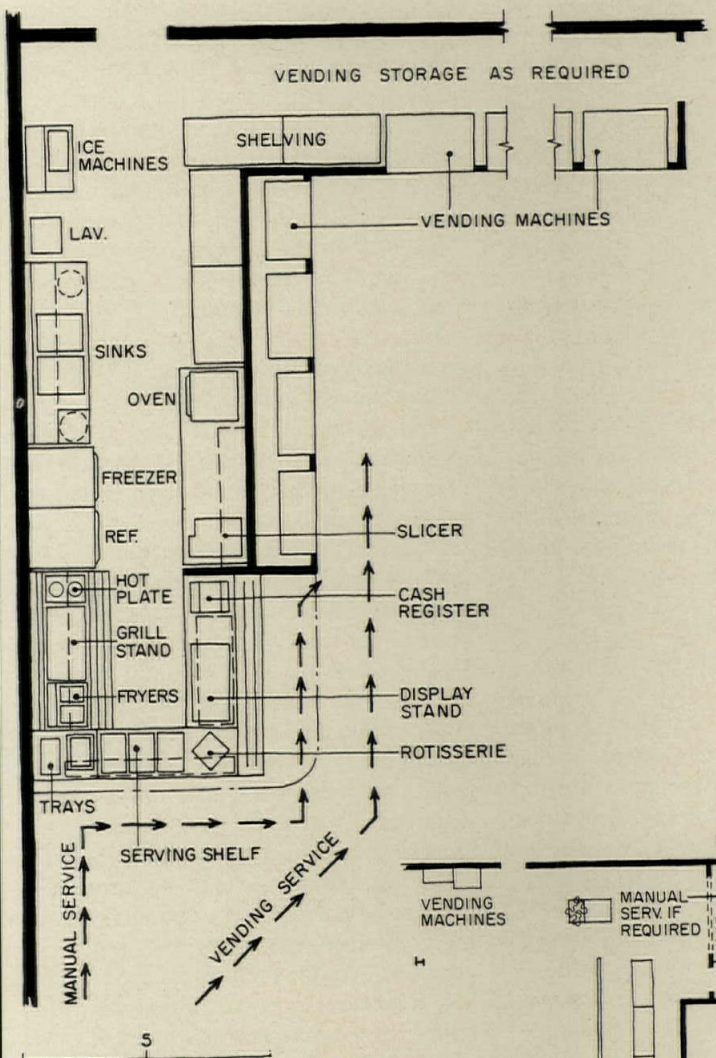
Economies are possible here as with all mass-produced commodities. The meals are held frozen in the institution's facilities and, as the day's menu is planned, are placed in a refrigerated box. The meals are then transported to a marshaling area on the floor being served, where microwave ovens are located. The refrigerated food is then placed in the microwave ovens and brought up to eating temperature in a matter of seconds, then placed on trays and served piping hot to the patient.

Lower costs, better food

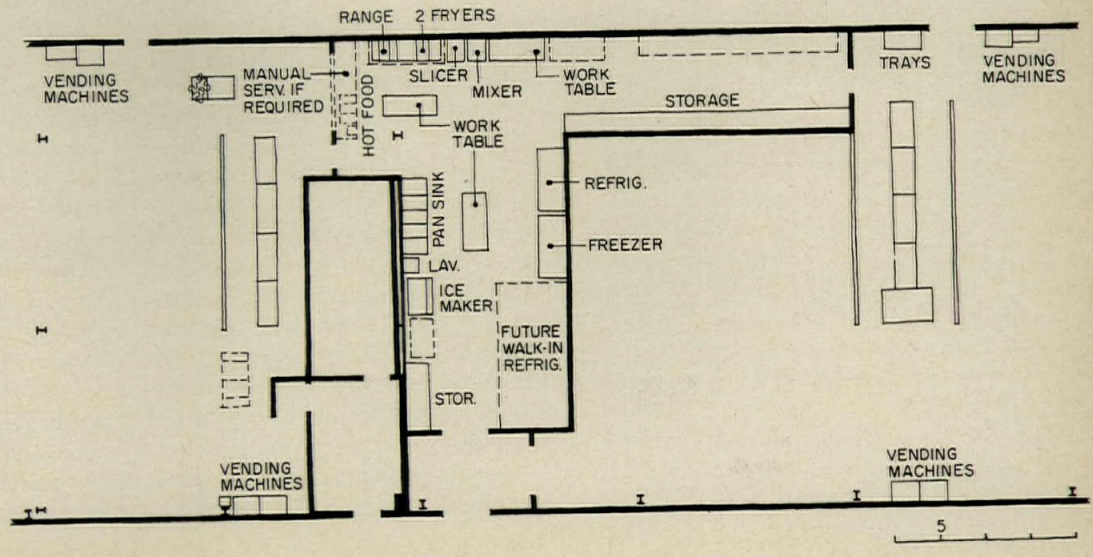
Again, there are the advantages of reduction of on-location labor and waste, increased variety of menu and improvement of nutrient value. Since the food is not kept for undesirable periods of time at high temperatures, it is more



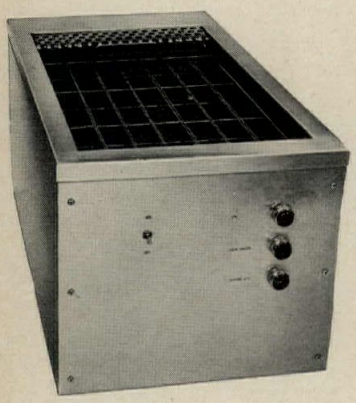
The satellite-counter system of food service at any number of dining centers stocked with prepared foods from a central commissary saves storage and preparation space, reduces the need for service personnel. The system is adaptable to dispersed situations such as large campuses or multi-building industrial or commercial developments.



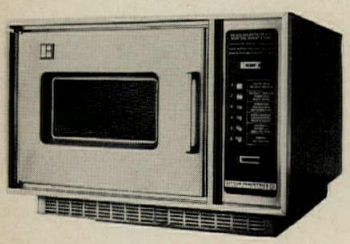
Combined vending machine and manual service, left, takes advantage of convenience foods, requires minimum space, permits off-peak operation of machines only without serving attendant. Portable or mobile dispensing units can be stocked in minimum preparation area, below, and moved at mealtime to stations in multi-use areas.



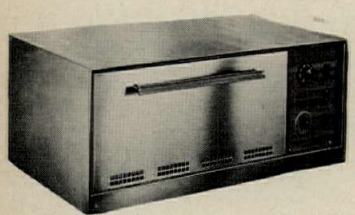
New techniques bring flexibility and variety to industrial and campus food services



Pouch-pack heater



Microwave oven



Quartz oven

New, compact, quick-heating equipment for pre-portioned and convenience foods permits cooking operation to be placed in or near serving area. Pouch-pack heater brings foods prepared in plastic pouches up to boiling or serving temperature. Microwave and quartz ovens bring frozen meals up to serving temperature in seconds.

appetizing and nutritious. This system or a variation of it is being used in a number of institutions with apparent success and satisfaction.

Hospitals have large numbers of people—out-patients, visitors and hospital personnel—whose food needs also must be satisfied. The usual method of accommodating these people during normal working hours (7 a.m. to 5 p.m.) is the conventional cafeteria. However, it is generally not economically possible to furnish this kind of service during the off-peak periods. A complete, full-product line of vending machines, installed in the same cafeteria area, offers the ideal solution. At the closing of the cafeteria line, sandwiches, salads, desserts and entree items on the line can be packaged and inserted into the food-vending machines for sale during the off periods. If this is not practical, then the food-service company can furnish the product from their commissary for the machines. Complete meals, including breakfast items, can be served through refrigerated-automated food-dispensing machines. These items are purchased from the machines by the patron, placed in a patron-operated microwave oven, and brought up to eating temperature in seconds.

In larger hospitals, some thought should be given to the location and physical accommodation of snack-vending equipment—hot and cold beverages—in the smaller waiting rooms that are generally scattered throughout the hospital complex. When planning these areas, alcoves should be designed to accommodate the variety and quantity of vending machines to service the anticipated traffic. Proper utilities and ventilation should be predetermined.

Interior design, an important adjunct

In recent years, increasing importance has been given to the atmosphere and motif of the food-service establishment. Good food, while necessary, is not all-sufficient. The number of successful public establishments designed with a "theme," and their apparent success, attests to the correctness of this conclusion. However, research conducted for such operations as employees' food service, colleges, hospitals and high schools shows that in these markets the objective is one of security of the familiar, rather than the excitement of a new experience. These types of food service have their own psychological requirements. The employee in an industrial plant is more stimulated by conditions that are the antithesis of his normal working environment—he prefers quiet, clean, reasonable, comfortable accommodations.

College dining, a paradox in mass feeding

Food service to students in colleges is not merely an opportunity for students to satiate their nourishment requirements—it is an extension of the educational experience. To many students today, it is an important cultural process. The dining hall provides the opportunity for students to develop their social skills.

In far too many colleges, the dining hall is designed for mass feeding with little consideration for the students' real needs. Here is the continual paradox which confronts the architect when designing a college dining hall: to achieve efficiency and economy, yet remove the impersonality and distraction of mass feeding. This paradox is being resolved in several ways.

One way is to make table service more economical both by designing efficiency into the kitchen and by introducing continuous family-style service, which seats half again as many students in the same space as the cafeteria with lines of waiting students.

To achieve the segmentation of the dining area into more comprehensible social units, the use of different decors, movable partitions and islands of carpeting are some of the obvious solutions.

Sound from the food preparation area should be isolated from the students' service area. The lighting should be controlled, allowing for a variation of light intensity for different occasions. Sound-absorbent ceilings are a must, and lavish use of acoustical wall coverings and carpetings does much to create a more homelike environment.

As an adjunt to the dining hall, and preferably in the same general area, a vending-snack bar, which can be kept open all of the time, provides continual food service for the commuter-student, and during examination periods provides sustenance to all-night crammers.

A great number of the larger colleges and universities that have widely dispersed dormitories and other facilities are using satellite food-vending installations. Locations should be selected that are easily accessible to both students and operator's servicing personnel. A general recommendation is made that the first floor directly inside the entrance be a prime consideration. If possible, a storage room should be provided. The vending-snack lounge which can be kept open at all times should provide a relaxing atmosphere that is bright, pleasant and comfortable.

Food-service technologies available today provide opportunities for planning and design for flexibility and economy that are just beginning to be realized and exploited.

Write these fine DAP products into your glazing specs

for face glazing specify DAP '1012'®

for channel glazing specify DAP '1231'

DAP '1012' saves time because it doesn't require painting. Blends perfectly with the color of aluminum sash.

Specify it for glazing aluminum, steel, bonderized-galvanized and bronze metal sash, outside or inside. Knifes easily. Ready for immediate use. Will not crack, chip or powder. Sets tight and stays semi-elastic to withstand flexing of sash resulting from vibration and thermal expansion and contraction. Meets Interim Federal Specification TT-G-00410c.

DAP '1231' Flexiglaze® is not subject to shrinkage because it's formulated from 100% solids—the finest synthetics and inerts. Adheres to primed wood, metal, glass, porcelain—most any construction material. Documented in-the-field performance proves DAP '1231' is the finest channel glazing that can be specified for jobs requiring a flexible, waterproof seal that isn't affected by normal atmospheric conditions.

DAP®
ARCHITECTURAL SEALANTS

Write for Technical Data Bulletins or see our complete listing in Sweet's File $\frac{3c}{Da.}$

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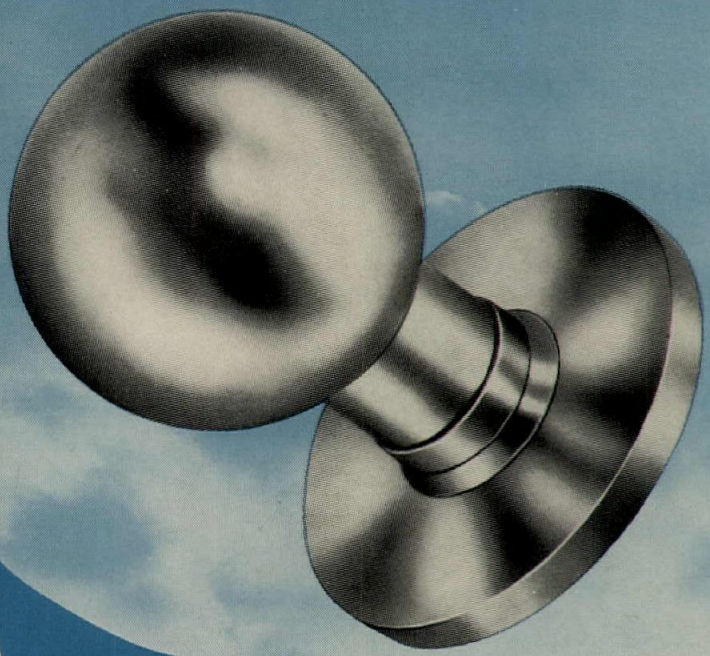
For more data, circle 68 on inquiry card

LOCKWOOD'S New Tempest Design

Takes the World BY STORM



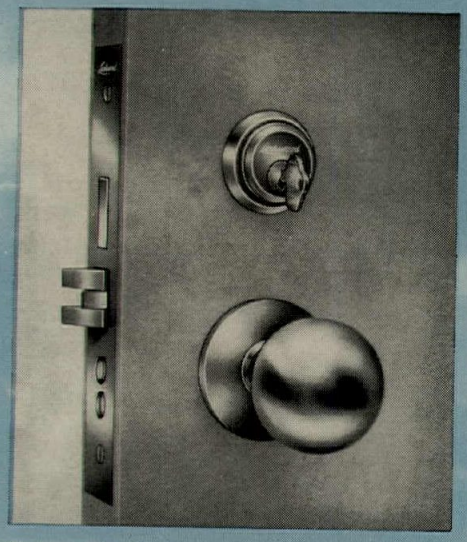
There seems to be something about a perfectly **round** knob and a perfectly **round** rose and a perfectly **round** cylinder that makes architects wild about putting them on a perfectly **SQUARE** door.

Maybe it's because this Tempest trim is an approach to design in builders' hardware that's as fresh as an ocean breeze.

Or it could be that they just like the solid feel of that round knob in their hands.

We like to think it goes deeper than that because underneath that Lockwood trademark is the finest mortise lock ever made.

With or without Tempest trim, it will run circles around any other lock in the world.



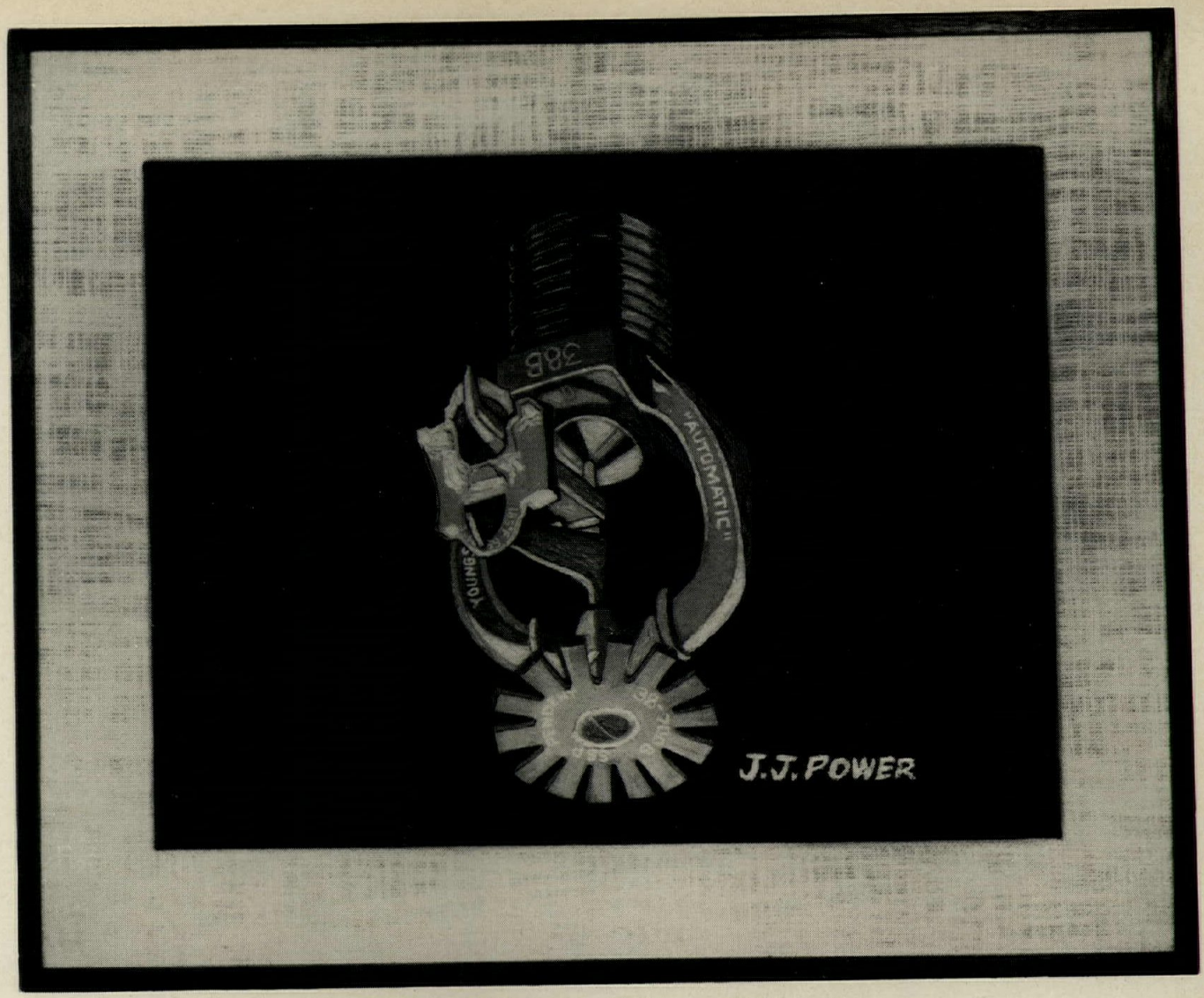
Tempest's big sister, the Sphere Design, features a 2¼" diameter knob.

LOCKWOOD

LOCKWOOD HARDWARE DIVISION

INDEPENDENT LOCK COMPANY IDCO
Fitchburg, Massachusetts

For more data, circle 69 on inquiry card



You call it ugly. We call it art.

The aesthetics of sprinkler heads is a matter of point-of-view. We think we have enough ammunition to make you change yours. Or at least suppress it.

And start installing "Automatic" Sprinkler systems in every building you design.

Here goes:

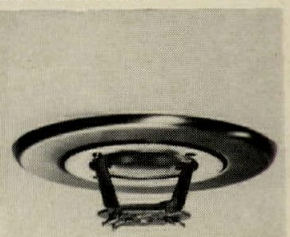
1. *Safety*. A school, hospital, hotel, shopping center, factory, warehouse, auditorium—in fact anywhere people gather or where contents are valued—is not safe from fire unless it has an "Automatic" Sprinkler system. No amount of fire insurance can reimburse the man whose livelihood has gone up in smoke, or who has lost his loved ones. (70% of all businesses that burn down die out. To say nothing of loss of life and property.)

2. *Economy*. You can deliver a sprinklered building to your customers for less money than an unsprinklered building. Because you get a much better break from building codes on your use and location of fire walls and choice of materials. In addition, your customer enjoys tremendous insurance savings on a sprinklered building.

He can cut premiums up to 90%. Just ask your "Automatic" man to work out actual savings with your client's insurance man.

So design freely. Use materials freely. Use space freely. Call or write "Automatic" Sprinkler for any information or specifications. If you like, we'll have a man from one of our 41 offices in your office on the double.

And if you're still aesthetically opposed to sprinkler heads, feast your eyes on this.



Our model 400. A recessed type that fits flush to the ceiling of fancy offices and reception areas.

We think it's pretty enough to install in the Louvre. Or anywhere.

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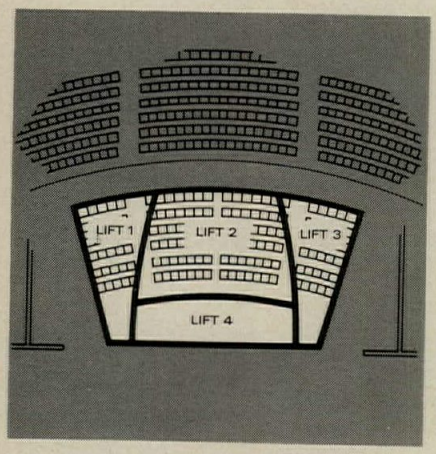
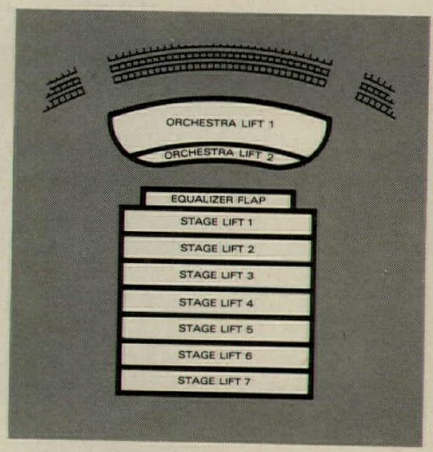
stars of stage, opera, and nightclubs

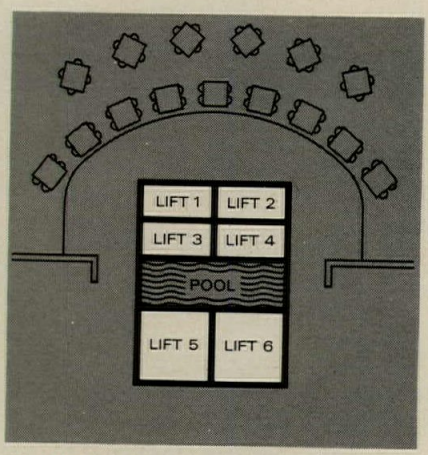
DOVER STAGE LIFTS



Loeb Drama Center, Harvard University—Four Dover Stage Lifts are used to create a theatre that easily converts for three different kinds of staging.



Metropolitan Opera House, New York City—The new home of the Metropolitan is equipped for fabulous stage effects with seven Dover Lifts on stage and two in the Orchestra.



Stardust Hotel, Las Vegas—Six Dover Stage Lifts, operating in combination or independently, bring performers and sets into view from below stage level.

These diagrams illustrate three of the more than 100 entertainment centers equipped for flexibility with Dover Stage Lifts. Dependable, smooth-running Dover hydraulic lifts produce elaborate theatrical effects, save valuable floor space, and help in the design of multi-use halls. There are practically no limitations on platform size, lifting capacity and systems for controlling combinations of lifts. For theatres, concert halls, opera houses, auditoriums, night clubs, wherever you need a rising stage, specify Dover Stage Lifts. Send your preliminary requirements for analysis and recommendation.

DOVER®

DOVER CORPORATION, ELEVATOR DIVISION
Dept. L-4 P.O. Box 2177, Memphis, Tenn. 38102—Toronto, Ont.

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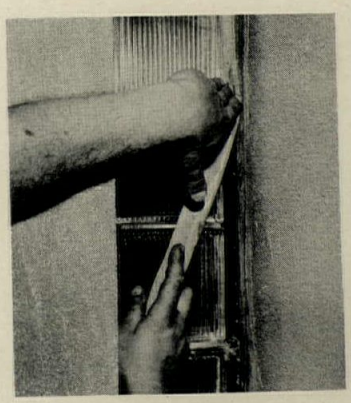
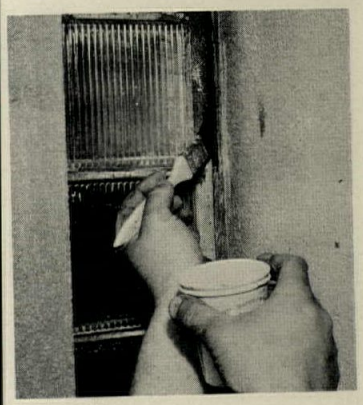
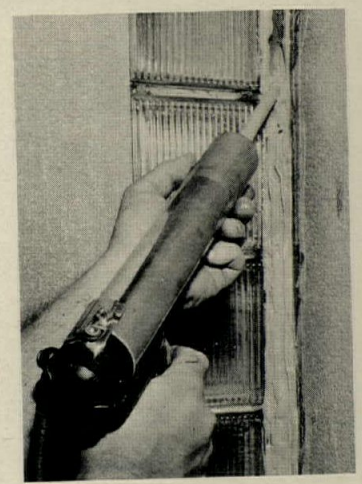
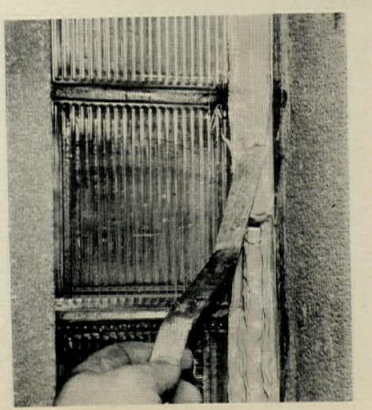








How to specify polysulfide sealants

By Matt Sitter, BFC Division, Essex Chemical Corporation

Polysulfide sealants are being employed in an ever-widening variety of building applications because of their resilience, their imperviousness to water and chemical attack and their tenacious adhesion to surrounding surfaces. But to assure proper performance, the polysulfide formulation must be of proper quality, it must be carefully applied in the field and the correct formulation must be chosen for the job.

Selecting polysulfide sealants

Two considerations are important in selecting polysulfide sealants: quality and proper formula. Sealant formulation demands great care in both mixing control and end product quality control. The customer who does not demand evidence of quality can find he has bought a defective polysulfide sealant. Solid evidence of quality is available from every manufacturer through certification that the product meets either A.S.A. 116.1 or Federal Specification TTS-00227. Thiokol, manufacturer of the basic polysulfide materials, has established a hallmark which may only appear on sealants that meet their high quality levels.

Selecting the proper formulation

Every sealant must function under some combination of several of these conditions: high or low extremes of temperature, immersion in water, high or low extremes in humidity, corrosive acidic or alkaline environment, hostile petroleum, solvent or other chemical environment, extreme expansion and contraction of joints, abrasive or puncture effects of foot traffic, abrasive and vibratory effects of vehicular traffic. Fortunately, all of these conditions are not present in any single situation requiring a sealed joint. But for every probable combination, a satisfactory polysulfide sealant is available. The formulations run from the flexible ones —suitable for caulks exposed to extremes of temperature and joint movement—to the tough, less resilient ones which are suited to abrasive environments and can withstand the puncturing effects of a woman's high heel. As all of the polysulfide sealant formulations, presuming they are properly applied, have a high resistance to immersion in water or corrosive attacks from acids, alkalis, petroleum, solvents and other chemicals, satisfactory formulations for these conditions can be obtained in almost any desired degree of sealant flexibility or toughness.

The first job in selecting a polysulfide sealant formulation, then, is to determine the conditions it must endure. Once these conditions are determined, the user can establish whether he will need a standard formulation or a special one. Because many caulking situations in both new construction and maintenance are similar or identical, most of the large sealant formulators offer standard sealants for these situations. There are, for example, standard sealants for glazing aluminum windows; for sealing aluminum framing to stone, concrete and other materials; for sealing stone or metal facings to curtain walls; and for caulking joints in walkways, drives and swimming pool decks. Where joints of this type must be sealed and need not endure any special conditions, chances are that a standard formula will serve.

Where doubt exists about the suitability of a standard formula or where a sealant is needed for a special situation, the situation and requirements should be described to the manufacturer. The manufacturer will then determine the suitability of the standard formula in question or will prepare a special formulation. Where special formulations are purchased, the user should require the manufacturer to supply both laboratory and test data. Reliable manufacturers, when supplying polysulfide sealants for abnormal or un-

usual applications, will always run both laboratory and environmental tests upon the product before shipping it. Test results are available upon request.

As most standard polysulfide sealants can be supplied in a choice of up to 12 colors, the color needed should be specified along with the other requirements. Where special colors are needed, a query to the manufacturer will disclose whether the color is feasible for the particular formulation.

One final consideration is important in selecting a polysulfide sealant: the choice of the primer to be used with it. Many joints should be primed as recommended by the manufacturer before they are sealed. Choosing the wrong primer can undermine all the care used in selecting the sealant.

Application

Correct application information and practice is essential to proper caulking:

1. *Proper elongation potential*

The properties of sealant chosen should exceed the demands of the application. This is particularly true of the elongation characteristic of the sealant.

2. *Proper adhesive characteristics*

Sealants are highly adhesive and tend to bond tenaciously to many surfaces, but no sealant will bond to all surfaces. As a tight bond to the sides of a joint is essential to a good seal, the sealant selected must be tested for its ability to adhere to the surfaces of the joint. This is not a simple test. Many sealants which appear to have excellent adhesive characteristics will fail under a water-soak or a heat-aging test. The sealant data sheet will define the adhesive characteristics of standard sealants for standard surfaces. Reliable manufacturers will insist on testing the adhesive characteristics of all special formulations and the adhesive qualities of standard formulas for new and unusual substrates. Where a sealant will not adhere alone, the joint must first be primed.

3. *Surface preparation*

The surface receiving the sealant must be free of loose foreign matter, clean and dry. Any traces of asphalt must be removed as they will interfere with adhesion. Where mortar joints are backbedded before the sealant is applied, any mortar clinging to the sides of the joints must be removed. If it is not, then the first time the joint moves, the seal will loosen wherever residual mortar lingers. To prepare such joints for caulking, they should be wire-brushed and then blown out with air.

4. *Bottom bonding*

Sealants should never be permitted to bond to the bottom of a joint. Such a bond will interfere with the expansion and contraction of the seal when the joint moves. The bottom bond will cause the seal to tear at the sides and bottom corners. The continuing effects of this tearing could eventually open the seal and permit water seepage. To prevent bottom bond, a membrane barrier, such as polyethylene film, should be placed in the bottom of the joint before sealing.

5. *Properties of width to depth*

Sealants will not function properly in dynamic joints which are narrower than ⅛ in. because such a joint cannot hold enough sealant to compensate for movement. Joints ⅛-in. to ½-in. wide should have a sealant depth equal to their width. Joints ½-in. to 2-in. wide should have a sealant depth which is half their width. These proportions are also correct for walkway joints, except that walkway joints ½-in. wide should have a ½-in. depth of sealant.

6. *Controlling depth of sealant*

The depth of the sealant can be controlled by using an inert packing material, but the packing should not contain any asphaltic or bitumastic impregnation. Hot sunlight can cause this impregnation to bleed through the sealant and weaken its adhesion. Such inert materials as expanded polyethylene foam, urethane foam and neoprene rod stock are the most satisfactory packing materials. The more rigid neoprene rod stock is the best packing for walkway joints because of the support it gives to the sealant.

7. *Moisture*

A joint must be thoroughly dry before it is sealed. If moisture or frost is present, hot sunlight will draw up this moisture and cause a possible adhesion failure.

8. *Aluminum materials*

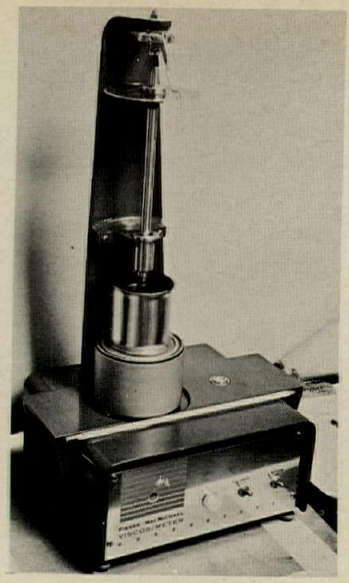
Caulking aluminum requires special precautions because frequently a lacquer is applied to aluminum to protect it during construction. This lacquer must be removed before sealant is applied. If it isn't, the sealant will bond to the lacquer rather than to the aluminum. When the lacquer loses its adhesion, the seal will fail.

9. *Tooling*

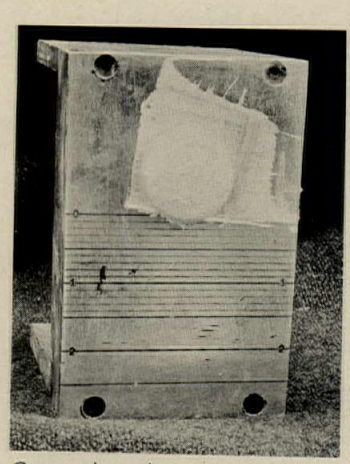
For a satisfactory seal, tooling must force the sealant against the backup material or packing and must also force it to wet the joint surfaces to assure proper adhesion. Often, where sealant is applied with a caulking gun, the pressure is not sufficient to force the sealant to wet the entire joint.

10. *Freshness of product*

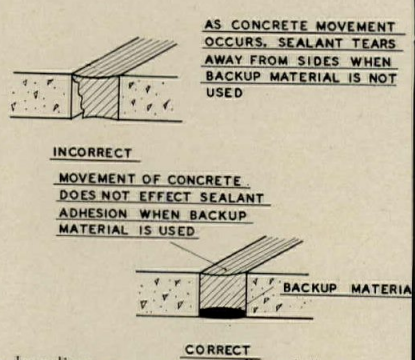
Essential to a good seal is the wetting ability of the sealant. Over-age one- or two-part systems will not wet properly and give maximum cured performance values.



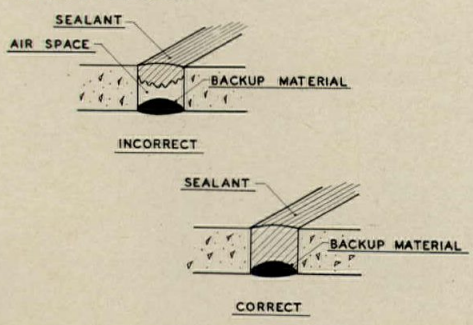
Viscosity of polysulfide sealants is tested to assure that a particular formulation will flow properly from the gun into the joint.



Gun-grade sealants are given a sag test on this gage. Sag should be virtually nil, as shown here, so the sealant will stay in place.

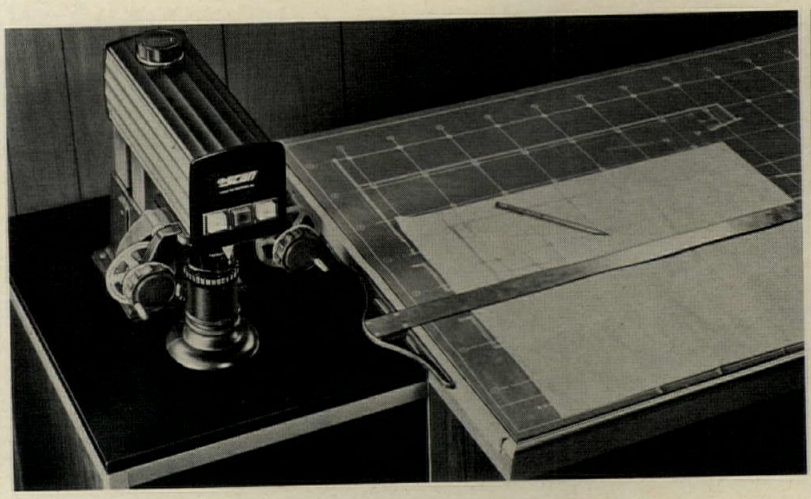


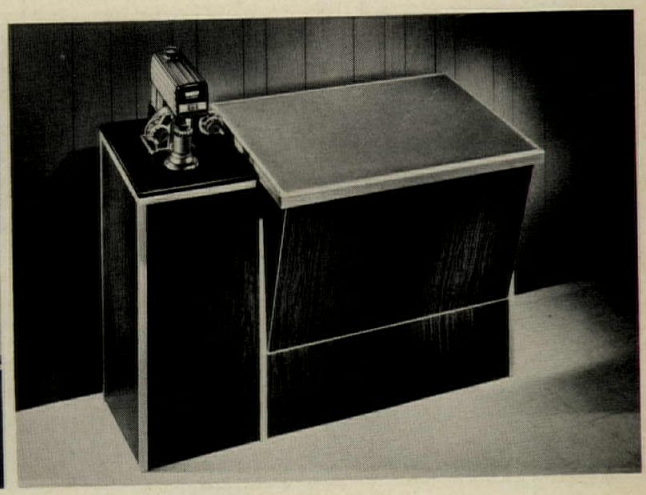
Bottom bonding may cause sealant failure in joints of concrete.



To obtain proper adhesion, sealant should be tooled into the joint.

For more information circle selected item numbers on Reader Service Inquiry Card, pages 203-204.





Microfilm service to assist bidding on construction

The use of microfilm to improve the speed, accuracy and efficiency of the bidding process, has been incorporated in the *SCAN* service, to which interested subcontractors and manufacturers may subscribe.

Architects give permission for drawings and specifications to be microfilmed and in return receive a set of microfilms for their own use. Copies of the microfilmed documents are then sent to the subscribers who make use of a leased scanning machine to take off the relevant information.

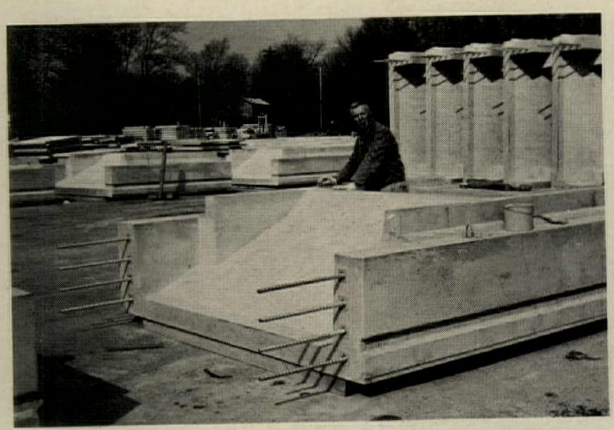
The scanning machine accurately projects drawings at full scale on a plate glass table top and can be used with a projector adaptation unit to allow the showing of several films at once. Recent models are fitted with an adjustment which makes it possible to change the size of the image of the plate to allow for slight discrepancies, thus reducing the dimensional error margin to less than 1/64 in. ■ SCAN, F. W. Dodge/Photronix, St. Louis, Mo.

Circle 300 on inquiry card

Copper shingles

Good appearance, weather resistance and ease of installation at a cost lower than standard copper roofing are some of the reported advantages of this new product. Made from 16-oz. cold-rolled material, the natural-finish copper shingles are simple to install since the lower edge of one shingle hooks into a lock near the upper edge of the shingle course below. ■ Revere Copper and Brass, Inc., New York City.

Circle 301 on inquiry card



Galvanized steel rods reinforce new HUD building

Contract requirements on the new HUD building in Washington have called for all reinforcing steel less than 2 in. from the surface to be hot-dip galvanized after fabrication. This zinc-coating technique will protect the steel rods from corrosion and at the same time protect the concrete and cast-stone exterior of the building from staining and discoloration which can result from rusting of the reinforcing material. In addition the zinc coating on the metal rods will help to create a better bond between the concrete and reinforcing steel. Architects for the building are Marcel Breuer and Assocs., and Nolen, Swinburne and Assocs. ■ American Hot Dip Galvanizers Association, Washington, D. C.

Circle 302 on inquiry card

more products on page 160

OFFICE LITERATURE

For more information circle selected item numbers on Reader Service Inquiry Card, pages 203-204

ROOF AND CEILING SYSTEMS AND HEATING-COOLING COSTS / A calculator that compares the efficiency of various built-up roof installation materials in reducing heating-cooling equipment size and cost of operation has recently been developed. Using winter and summer U-values for roof-ceiling systems assembled from three commonly-used deck constructions (concrete, gypsum and metal), five types of insulation in applicable thicknesses ranging from one to four inches (fiber board, mineral aggregate, foamed polystyrene, cellular glass and Fiberglas) and ¾-in. Fiberglas acoustical tile, the calculator yields corresponding heating and cooling equipment costs and annual fuel costs for three climatic zones. Accompanying work-sheets are provided to enable the designer to quickly determine the most economical thickness of insulation to use. Letterhead requests to ▪ Dept. DE., Owens-Corning Fiberglas Corp., 717 5th Avenue, New York, N. Y. 10020.*

COLORED ASPHALT ROOFING / A range of new colors in heavyweight asphalt roofing shingles are displayed in a recent catalog, which also gives details of the guarantees on maintenance and storm, weather and fire resistance of this product. ▪ Asphalt Roofing Industry Bureau, New York City.

Circle 400 on inquiry card

FIREPROOFING MATERIAL / A brochure is now available which describes the properties and application of *Pyrospray*, a mineral fiber material which can be sprayed beneath steel decking and flooring to give a UL-rated 3-hour fire resistance for floor-ceiling designs. ▪ Baldwin-Ehret-Hill, Inc., Trenton, N. J.

Circle 401 on inquiry card

CLIMATE CONTROL / Central air conditioning in relation to electrically heated houses is the subject of a new two-color brochure. Advantages in terms of installation and operating costs, humidity control, air filtering and air circulation are discussed in the booklet and a number of types of central systems are described. ▪ Edison Electric Institute, New York City.

Circle 402 on inquiry card

DIRECTORY OF AIR CONDITIONERS / The second 1966 Directory of Certified Room Air Conditioners includes more than 1,500 models under 58 brand names. The directory is in two sections —window models and through-the-wall models, and the Association has certified the BTU/hr cooling capacity and the electrical input in amps and watts for all models listed. The new directory remains effective until November 15, but supplements giving details of new models and revisions of ratings will be issued in the meantime. Letterhead requests to ▪ Executive Secretary, Room Air Conditioner Certification Program, National Electrical Manufacturers Association, 155 East 44th St., New York, N. Y. 10017.

STAIR DESIGN / Technical information on the design and construction of prefabricated, steel-reinforced, concrete stairs is contained in a 16-page brochure. All components parts used in the construction of a stair are detailed in the brochure which also describes and illustrates various types of risers and stringers, applications of poured and precast terrazzo and sets out load determinations by means of an accurate stair span table. Intermediate landing supports, methods of connection of flat slab and concrete beam construction as well as structural steel support members are covered in the brochure. ▪ Stairbuilders, McCook, Ill.

Circle 403 on inquiry card

TENT STRUCTURES / Elaborate and simple uses of canvas for outdoor shelters, awnings, sunshades, indoor decoration, and to dress up apartment balconies are colorfully displayed in a new booklet, which shows some 30 different designs. Price 25¢ from ▪ The Canvas Awning Institute Inc., 1918 North Parkway, Memphis, Tenn.

PRECAST WHITE CONCRETE / Examples of the use of precast white concrete panels and window walls are presented in a 24-page booklet which includes examples of a wide variety of building types and sizes from different parts of the country. ▪ Trinity White, General Portland Cement Company, Chicago.

Circle 404 on inquiry card

SCAFFOLDING / The many applications of tubular steel scaffolding and shoring equipment are illustrated in a 20-page catalog which contains some 40 on-the-job photos from all parts of the country. Safety rules, product descriptions, dimensional drawings of *Advance* scaffolding panels which can be rapidly assembled and locked into any required length or height, and data on braces and accessory equipment are all contained in the brochure. Letterhead requests to ▪ Beaver-Advance Corporation, Ellwood City, Pa.

SIGN BALLAST SELECTION / A time-saving aid for the proper selection of 800 M.A. high-output rapid-start ballasts for plastic sign applications is available in the form of an easy-to-use slide chart. The chart can be used for any combination of one to six fluorescent lamps per ballast up to a total lamp length of 36 ft. The appropriate ballast is indicated by catalog number. When the chart is used, the primary ballast selection appears in a window and also a secondary acceptable choice for a higher degree of inventory flexibility. Additional data includes the mounting length of the ballast to assist in the planning of the sign. ▪ Dept. SCH, Universal Mfg. Corp., Paterson, N. J.

Circle 405 on inquiry card

ELECTRIC HEATING CONTROLS / This new brochure is divided into two sections—one covering primary equipment which directly controls the heating load in commercial buildings—the other detailing auxiliary equipment that works with primary controls. Specific devices described include thermostats, temperature controllers, heating relays, contactors, step-controllers, time-proportioning controllers and the new solid-state modulating power controller. A detailed analysis of each device is given as well as sections showing where it is used and how it works, along with complete specifications. A table is included to show how the various instruments operate together. ▪ Honeywell Commercial Division, Minneapolis.

Circle 406 on inquiry card

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

more literature on page 215

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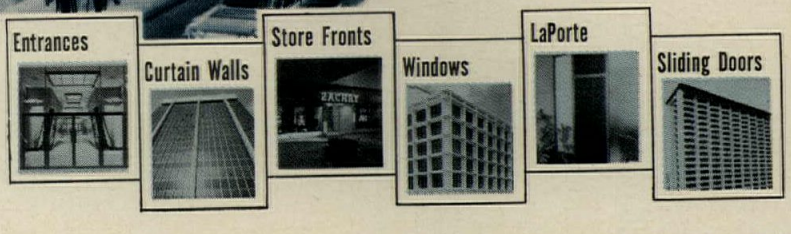

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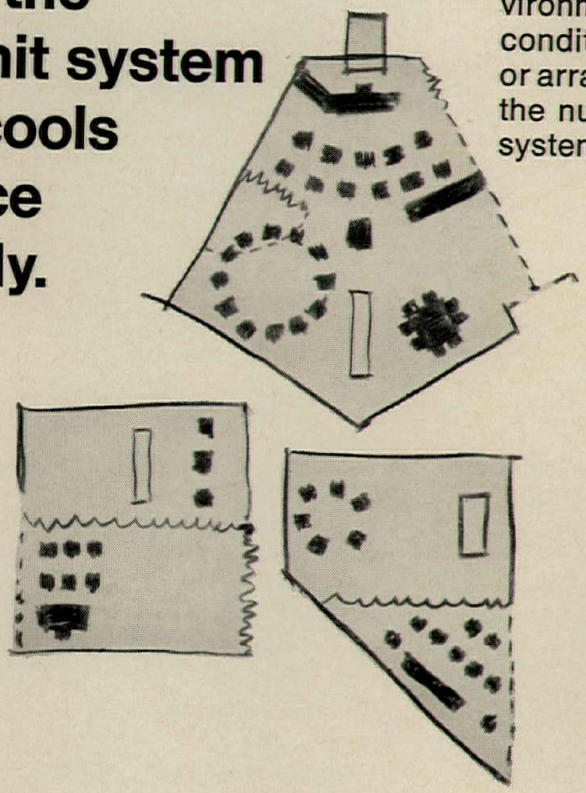
For more data, circle 72 on inquiry card

If you're designing flexible learning spaces for 10, 20, 50 or 100 students, read how the Nesbitt unit system heats or cools each space individually.



This is the new climate control problem created by today's flexible learning spaces—the ideal thermal environment for 100 people is not so ideal for 10. To solve it, the Nesbitt year-round unit system was never more appropriate.

The case for the unit system is this: it allows individual control of indoor environment—heating, ventilating and air conditioning—whatever the shape, size or arrangement of the learning space or the number of students in it. No other system does it so economically.

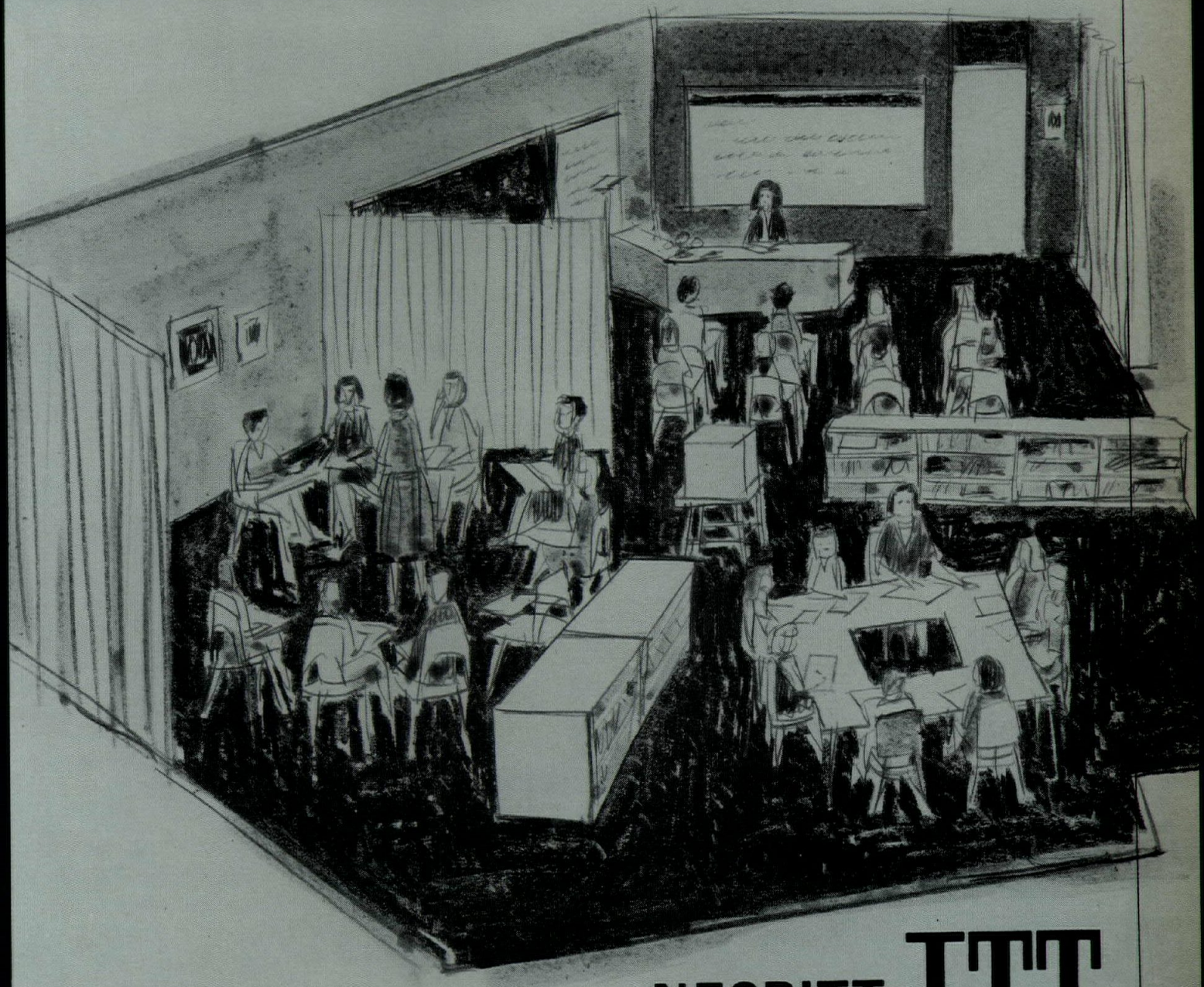
What's more, the Nesbitt unit system looks good. Because small pipes go where large ducts can't, you have the freedom to put the pipe-fed unit ventilator almost anywhere—floor or ceiling—concealed or exposed. What could be more fitting?

Nesbitt is styled to work right along with your designs. Where you want the equipment visible, Nesbitt colors, textures and patterns form an integral part of the line so that each unit blends with the room, with the building, with each other.

It's no accident. The entire Nesbitt line was styled by Paul McCobb, one of America's leading contemporary designers. Now you can organize many arrangements of Nesbitt classroom cabinets, selecting the units that unify all your design elements.

Whether you're designing new buildings or renovating, a Nesbitt representative will tell you the whole story about the versatile unit system that fits with the flexibility and new shapes in modern schools.

Write Nesbitt, Environmental Products Division, International Telephone and Telegraph, Philadelphia, Pennsylvania 19136.

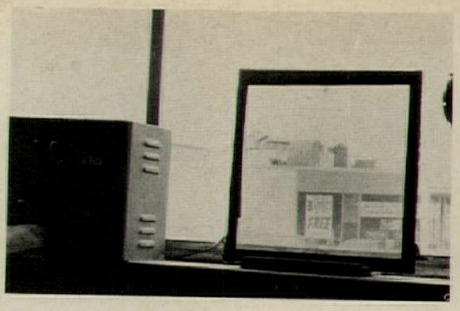


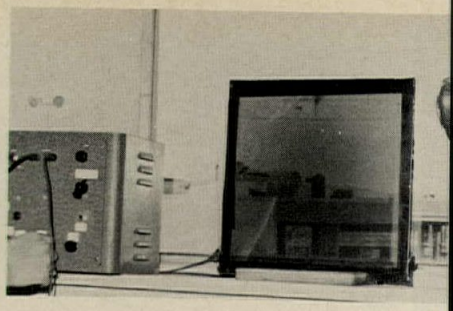
NESBITT ITT

A MEMBER OF THE HEATING AND AIR CONDITIONING GROUP

continued from page 155

GLASS BUILDING PANELS HAVE ADJUSTABLE TRANSPARENCY / The effect of electric impulses upon a newly developed glass building panel can be controlled so as to provide different degrees of transparency and color effect. Known as *Varad,* the new material is described as a sealed glass sandwich with a transparent electrically conductive coating laminated to the inner surface of the glass layers. The "sandwich filling" is a liquid suspension of dipoles (submicroscopic needle-like particles capable of interacting with light). When current is applied through the conductive coating, the electrical field causes the dipoles to align and permit light rays to pass through. By controlling the current, varying degrees of light passage or transparency can be achieved. Although only experimental panels are so far available, the company predicts a growing demand for the product, which can be utilized within the framework of existing construction techniques, for wall, windows or roof-ceiling applications. ▪ Marks Polarized Corporation, Whitestone, Queens, N. Y.





Circle 303 on inquiry card

AUTOMATIC SORTER / Designed for use with the *Xerox 2400* Copier/Duplicator, this new modular sorting device provides from 10 to 50 bins, each of which will receive a complete copy of a multi-page document. The arrangement shown in the photo provides 30 bins, each of which can accommodate 150 pages. ▪ Xerox Corporation, Corporate Communications, Rochester, N. Y.

Circle 304 on inquiry card

PROTECTION FOR WALL CORNERS / New, hard-rubber strips known as *Cornerguards* can be applied wtih adhesive to interior wall corners at doorways, aisle intersections and other areas liable to damage from passing traffic. The unit gives 3-in. protection on each wall from floor to any specified height, and is available in gray, cream or beige in two types—one for 90-deg plaster corners, and another for application on rounded corners, such as over tile surfaces. ▪ Williams Products Inc., Hazel Park, Mich.

Circle 305 on inquiry card

more products on page 165

continued from page 160

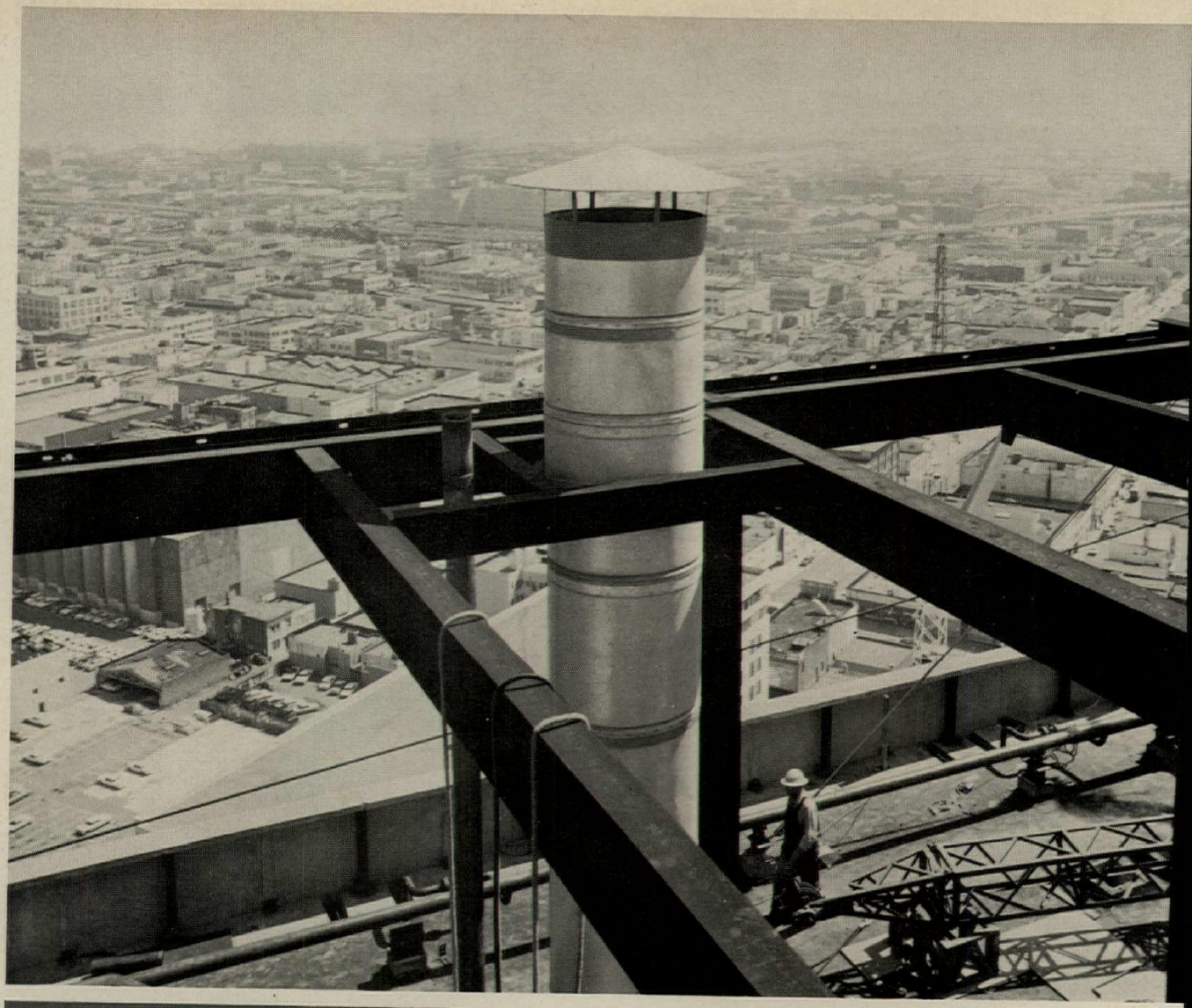
BUILDING PANEL WITH LOW FLAME SPREAD / A flame-spread rating of 30 has been approved by Underwriters Laboratories for this new glass-fiber-reinforced plastic building panel, known as *Alsynite FR 30*. Other advantages of the new panel are said to be low maintenance and good resistance to impact, vibration, rust and corrosion. ▪ Reinforced Plastics Division, Reichhold Chemicals Inc., Cleveland, Ohio.

Circle 306 on inquiry card

NEW USE FOR URETHANE FOAM / High-density *Artfoam* (61lb c/f) provides model-makers with an easily worked medium for simple and complex model projects. The material is extremely lightweight, is rigid and durable and can be painted, hot-metal-sprayed or left in its original state. Mistakes in the model-making process can be easily rectified by pasting a new piece of urethane foam in place. *Artfoam* is available in blocks as small as 3 in. by 3 in. by 6 in., and as large as 8 in. by 24 in. by 24 in. ▪ Strux Corporation, Lindenhurst, N. Y.

Circle 307 on inquiry card

more products on page 169

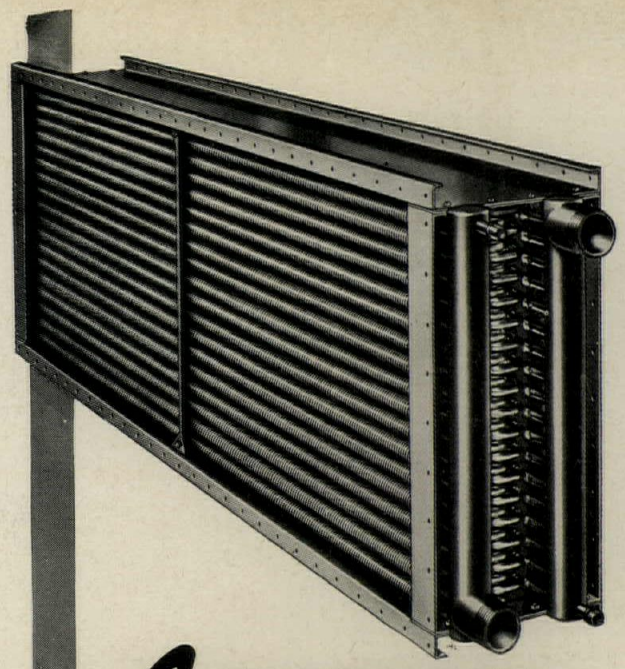


Would you believe...
two men installed this

On San Francisco's new Fox Plaza building, Metalbestos Double Wall Steel was installed to vent two 250 HP boilers optionally capable of burning gas or oil. The stack rises from the thirteenth floor to its termination above the twenty-ninth floor. A journeyman and an apprentice completed the 193-foot job in just five days.

More and more architects, engineers and contractors are specifying Metalbestos DWS stacks because of their superior venting capabilities, lower cost, speed of installation and – more importantly – their minimum space requirements and light weight. Mail the coupon at right for specifics.

THE FOX PLAZA, San Francisco
General Contractor: Cahill Construction Co.
Architect: Victor Gruen Associates, Los Angeles
Sheet Metal Contractor: Guilfoy Cornice Works, Inc.



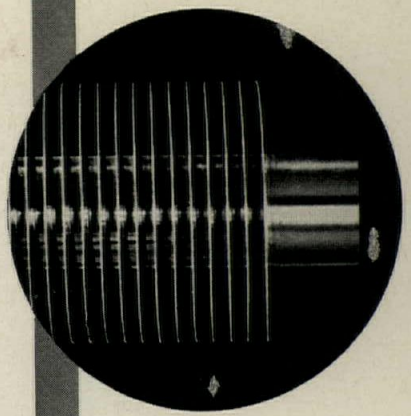
AEROFIN

Smooth-Fin Coils offer you:

Greater Heat Transfer
per sq. ft. of face area

Lower Airway Resistance
—less power per c.f.m.

Aerofin smooth fins can be spaced as closely as 14 per inch with low air friction. Consequently, the heat-exchange capacity per square foot of face area is extremely high, and the use of high air velocities entirely practical. Tapered fin construction provides ample tube-contact surface so that the entire fin becomes effective transfer surface. Standardized encased units arranged for simple, quick, economical installation.



Aerofin is sold only by manufacturers of fan system apparatus. List on request.

AEROFIN CORPORATION
Lynchburg, Virginia 24504
ENGINEERING OFFICES IN PRINCIPAL CITIES

For more data, circle 89 on inquiry card

The best commercial fixtures made come from Wheeler.

The single lamp Ultima II semi-indirect fixture for modular dimensions is made of strong lightweight extruded aluminum. With integral ballast. And plastic louvers (metal louvers, solid acrylic, or prismatic shielding optional). Crevice-free, clean-lined styling for easy maintenance. For 4', 6' or 8' 1500 MA lamps. Easily relamped from above. For information write E. Quintilliani, General Sales Manager, Wheeler Reflector Co., Inc., Hanson, Mass.

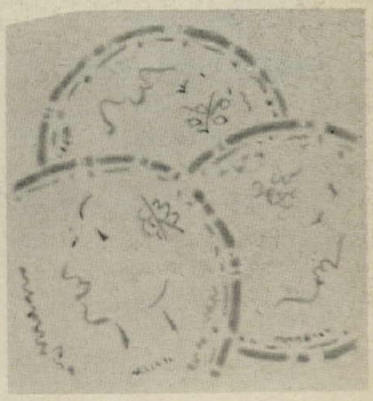
Designed by Paul Lamson
Illuminating Engineer

WR

For more data, circle 91 on inquiry card

ROMAN COINS

one of six



SPIVAK CERATILE® DESIGNS

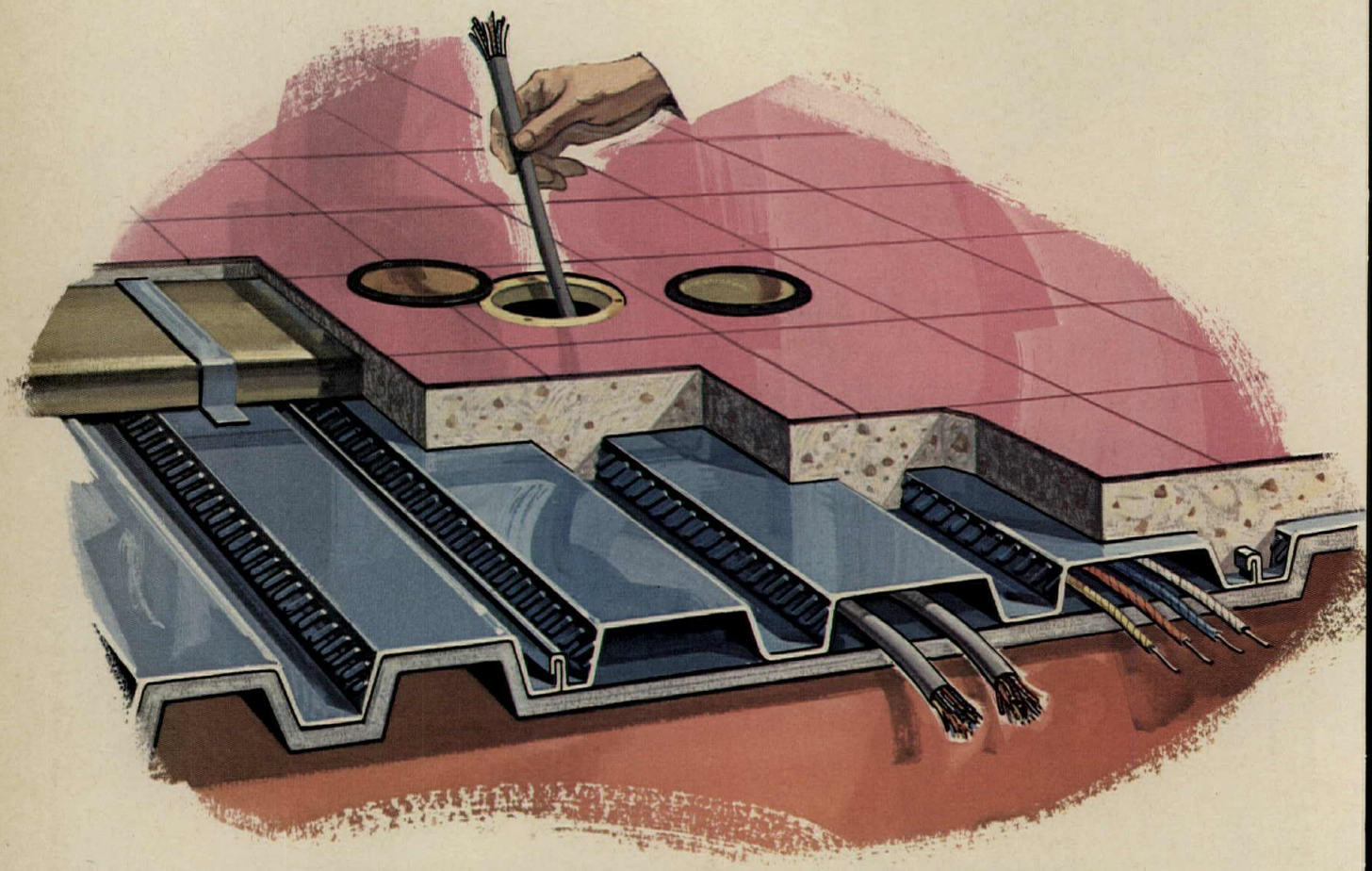
for designers who want ceramic wall tile that is beautiful... exciting...inexpensive

There are six exciting designs to choose from in the complete Spivak series. All have interesting recessed texture and soft, muted colors. In the wall they give an overall effect of tasteful elegance that will please the most discriminating.
For literature and kit of sample tiles write on professional letterhead to Dept. R86.

THE **Cambridge Tile** MFG. CO.
CINCINNATI, OHIO 45215

For more data, circle 92 on inquiry card

Inland has big openings for live wires!



(in its new 1⅝" NF Hi-Bond Celluflor®)

One million square feet of Inland 1⅝" NF Hi-Bond Celluflor will be erected in the new 60-story First National Bank Building, Chicago.

Architects and Engineers: C. F. Murphy Associates and the Perkins & Will Partnership.

General Contractor: Gust K. Newberg Construction Company.

New 1⅝" NF Celluflor has big 9-sq. in. cells. Each 24"-wide 1⅝" NF panel provides greater total raceway capacity. Large 4"-diameter hand-holes make it easy to feed electric power and communications wires into the raceways — easy to pull wires up to connect to service outlets installed anywhere along the length of the Celluflor.

New NF panels are a full 1⅝" deep — and can be blended with any standard Inland 1⅝" deck profile. Space between floors is reduced; savings in building height and weight often are significant.

Hi-Bond lugs formed into the webs of 1⅝" NF Celluflor panels provide a positive lateral and vertical mechanical bond between steel and concrete, producing an exceptionally strong floor system. It is fire-rated by Underwriters' Laboratories, having withstood ASTM standard E-119 floor tests, including both optional hose stream and double-loading tests. Adding Inland shear connector straps provides the extra strength and economy of composite slab/beam construction.

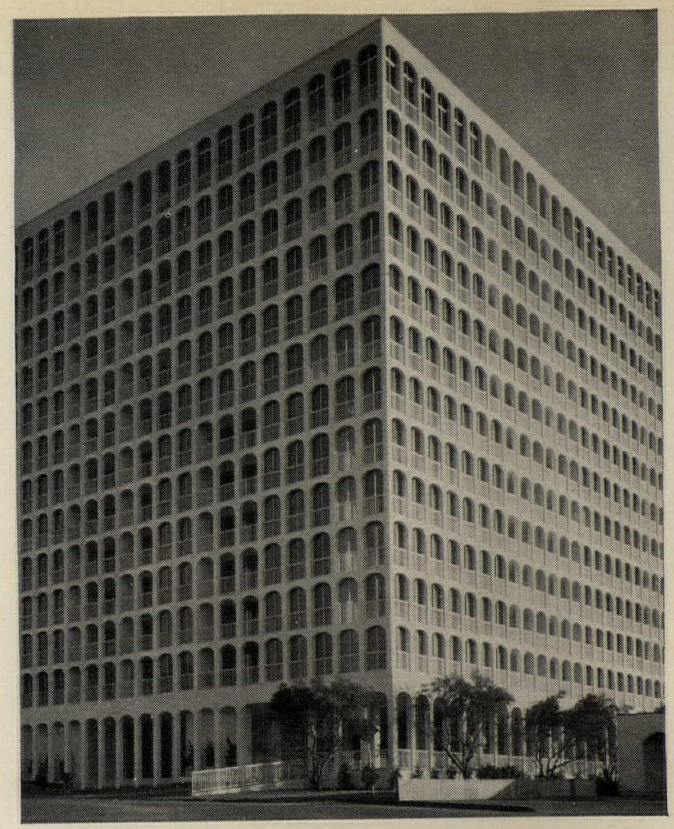
For more information about new Inland 1⅝" NF Celluflor, write today for catalog 273 to Inland Steel Products Company, Dept. H, 4033 West Burnham St., Milwaukee, Wis. 53201.

Inland Steel Products

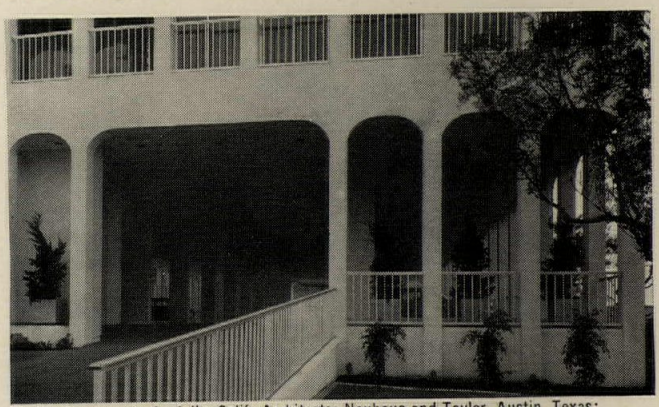
INLAND

For more data, circle 93 on inquiry card

EP-55



HIGH STYLE AT LOW COST:



Seville Apartments, La Jolla, Calif. Architects: Neuhaus and Tayler, Austin, Texas; Assoc. Architects: Livingstone & Brown, AIA.

ANCHOR® RAILING SYSTEMS

Styled for protection, styled to perfection, Anchor Railing Systems can enhance the beauty of your building . . . at low initial cost and with the low maintenance advantages of all-aluminum. Ideal for balconies, divider panels and sun decks.

Whatever style you have in mind, you'll find it in the Anchor line: vertical square pickets, colored panels and Modernmesh®—all beautifully made of rust-proof aluminum.

Anchor's national network of expert erectors will install Anchor Railing Systems anywhere in the United States . . . fast and efficiently.

For style, quality, protection and beauty, be sure with Anchor. For detailed information, call your local Anchor man. Or, for 4-color catalog, write: Anchor Post Products, Inc., 6231 Eastern Avenue, Baltimore, Maryland 21224.

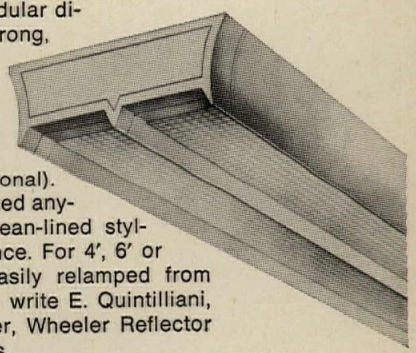
ANCHOR POST PRODUCTS, INC.

Plants in Baltimore, Houston, Los Angeles. Sold direct from factory branches in principal cities.

For more data, circle 94 on inquiry card

The best commercial fixtures made come from Wheeler.

The double lamp Ultima II semi-indirect fixtures for modular dimensions is made of strong, lightweight extruded aluminum. With integral ballast. And plastic louvers (metal louvers, solid acrylic, or prismatic shielding optional). Pendants can be mounted anyplace. Crevice-free, clean-lined styling for easy maintenance. For 4′, 6′ or 8′ 1500 MA lamps. Easily relamped from above. For information write E. Quintilliani, General Sales Manager, Wheeler Reflector Co., Inc., Hanson, Mass.



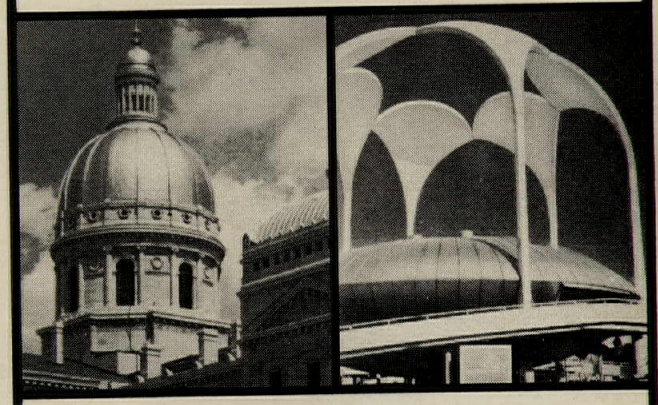
Designed by Paul Lamson Illuminating Engineer

WR

For more data, circle 91 on inquiry card

DURAGOLD®

tarnish resistant golds for exterior finishes

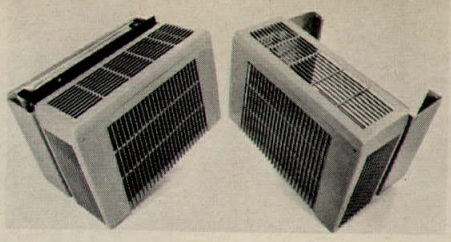


Specify Duragold for bright, economical, durable gold exterior and interior coatings. Shown above, the Indiana State Capitol dome and the Johnson's Wax Golden Rondelle at the New York World's Fair, both covered with coatings containing Duragold pigments. For the names of manufacturers using Duragold, plus a free gold spray can, write or call...

CLAREMONT Polychemical Corp.
39 Powerhouse Rd., Roslyn Hgts., L.I., N.Y. 11577 • 516 MA 1-8800

For more data, circle 95 on inquiry card

continued from page 169



NEW CASES FOR AIR CONDITIONERS / *Lexan* polycarbonate *resin material* has been used for the outer casing of the new *Fashionette 5000* room air conditioner, giving quite a different structure and appearance to the unit. The *Lexan* outer case is reported to have high impact strength, flame retardance and corrosion resistance and to meet required UL standards. The high impact strength of *Lexan* reduces the possibility of damage to the air conditioner as a result of falling ice, tree limbs, work tools and other such abuses. ▪ General Electric, Chemical Materials Department, Pittsfield, Mass.

Circle 310 on inquiry card

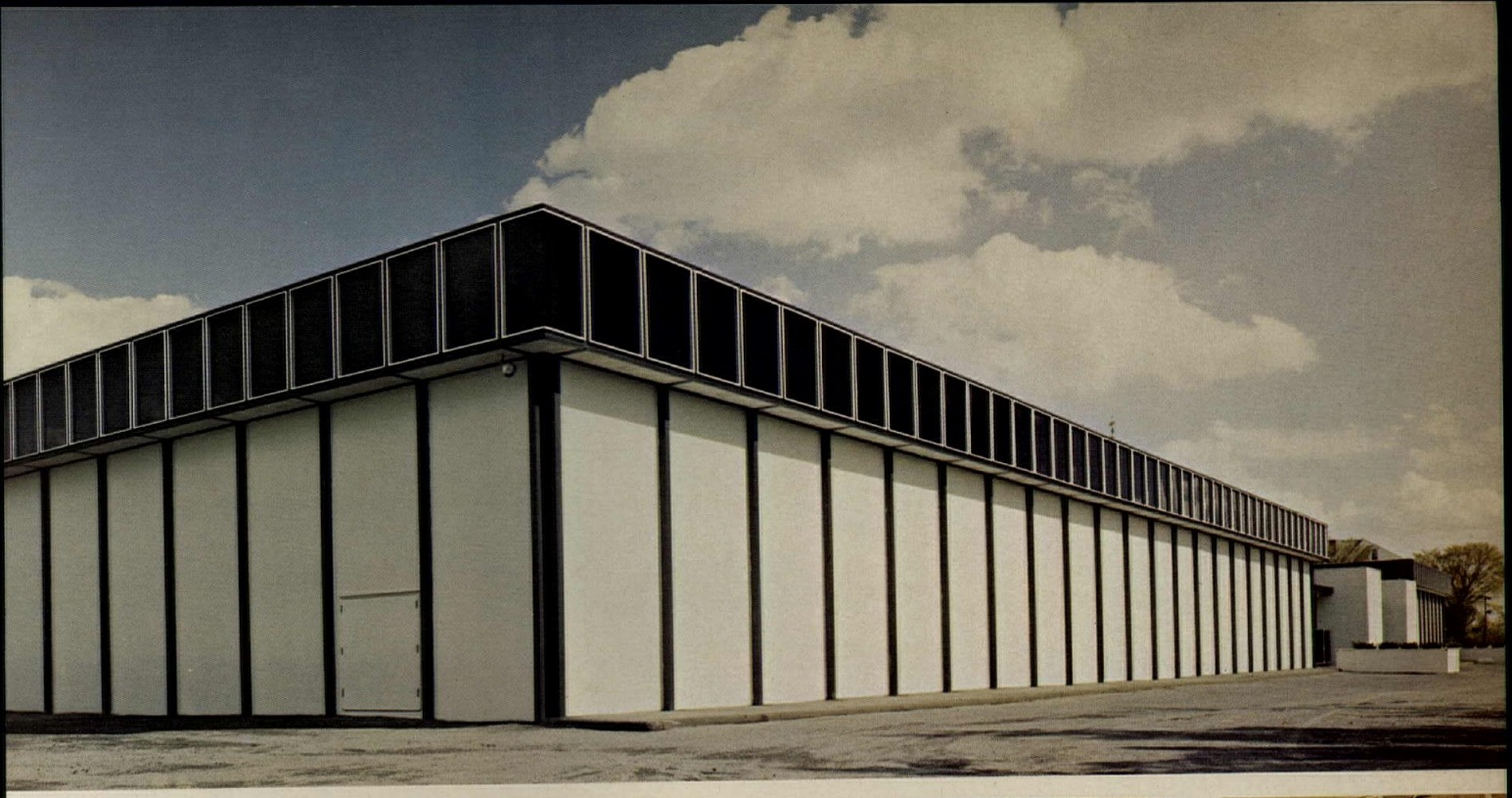
OFFICE FURNITURE / An expanded line of contemporary wood furniture includes five new desks, a selection of file cabinet units, occasional tables and a new "L" arrangement for executive suites. The new models in the *Transition* line can be supplied with a selection of different desk and table tops, including black vinyl, plain walnut or quarter-matched butt walnut, Carpathian elm burl and black plastic laminate.

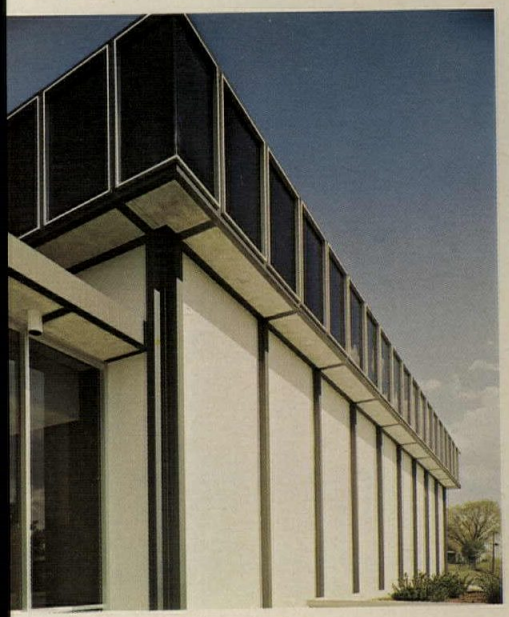
A smaller model of the company's *Bubble* chair has also been introduced with either straight-leg metal base, fixed or revolving pedestal, or swivel on casters. Dimensions of the new chair are 26 in. wide, 25½ in. deep, 33 in. high. ▪ Stow & Davis Furniture Company, Grand Rapids, Mich.

Circle 311 on inquiry card

more products on page 194

For more data, circle 96 on inquiry card





Architects: Donald J. Stephens Associates, Loudonville, N.Y.

Glazed with PLEXIGLAS® for control of breakage, glare and solar heat

The windows in the new athletic building of Albany Academy, Albany, N. Y., are glazed with transparent grey #2064 PLEXIGLAS acrylic plastic, ¼″ thick, framed in aluminum in light sizes of 4′8″ by 6′. The window design and the PLEXIGLAS provide a comfortably daylighted interior environment with low initial, operating and maintenance costs.

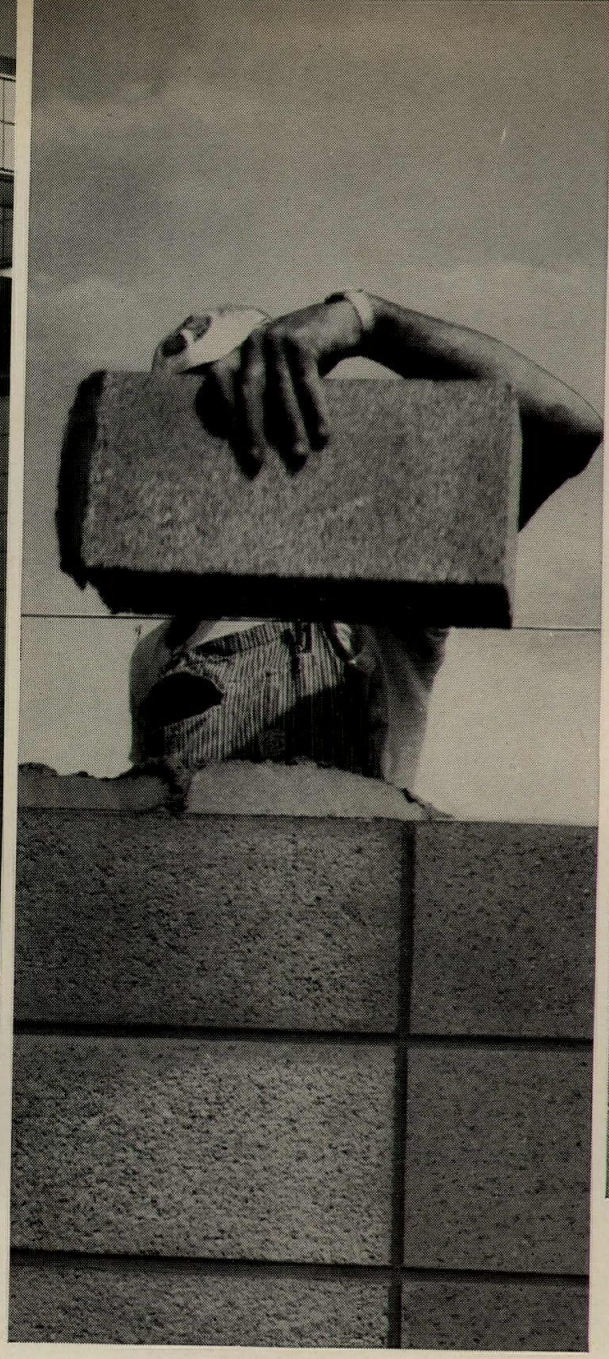
Solar Heat and Glare Control—Grey #2064 PLEXIGLAS transmits only 44 per cent of total solar energy with a light transmittance value of 27 per cent. The light filtering characteristic of this acrylic plastic reduces sky and solar glare with the effectiveness of sunglasses.

Breakage Resistance—One-quarter inch thickness PLEXIGLAS has nearly *twice* the breakage resistance of tempered glass in the same thickness, based on falling ball tests. Test data available on request.

To Get Further Information—For technical, specification and installation data on the full range of transparent PLEXIGLAS tints to suit varying solar energy and light transmittance values, just write to us for our new catalog, "PLEXIGLAS in Architecture, PL-688".

ROHM AND HAAS
PHILADELPHIA, PENNSYLVANIA 19105

®Trademark Reg. U.S. Pat. Off., Canada and principal Western Hemisphere countries. Sold as OROGLAS® *in other countries.*



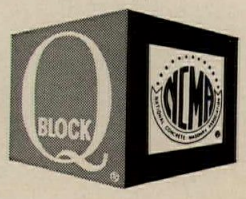
The Q BLOCK® Program stacks everything in your favor

WHEN you're working with quality, things just naturally fall into place. Take the new Q BLOCK program for example. It wasn't long after block producers across the country adopted this national quality control program that building professionals were also eyeing its advantages.

These new standards, set forth by the block industry itself, give architects and builders the opportunity to design and build with maximum assurance of product quality. They have demonstrated their acceptance by *specifying* concrete block produced under the Q BLOCK quality control program—as it reflects all the high standards that modern research and technical development can provide, backed up by regular product testing to guarantee that these standards are consistently maintained.

Concrete block, made to Q BLOCK specifications, is concrete block at its best. And better concrete block will always mean wider opportunities and more confidence for the modern user of building products.

Members of the National Q BLOCK program are identified by this registered mark. Look for it wherever you specify or use concrete block.



National Concrete Masonry Association · 2009 14th Street, North · Arlington, Virginia 22201

When beauty is just as important as the lighting . . .

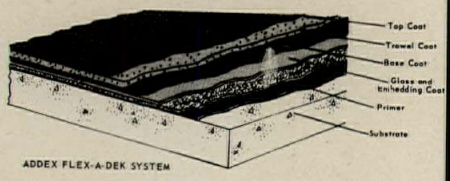
. . . that's when you suggest Hadco to your clients

This distinctive "Copenhagen" model is available in 12 lovely finishes, and with either clear or opal glass. And its rich beauty will endure because it is made of *cast* metal, cast aluminum. The "Copenhagen" fixture shown here is big enough to add real drama to your design. (From spire to bottom of scroll, this 3500 series is 36″ high, and Hadco offers both larger and smaller fixtures in the same design to meet any size requirement.)

Want more information on the "Copenhagen" and on the hundreds of other Hadco fixtures for indoor and outdoor lighting, including the revolutionary new Hadco low voltage lighting fixtures? Write Hadco Products, Inc. (a subsidiary of Esquire, Inc.), Dept. 22A-25, P. O. Box 128, Littlestown, Pa. 17340.

Lighting by **HADCO**®

continued from page 190



ADDEX FLEX-A-DEK SYSTEM

DECK SYSTEMS / Recommended for use over concrete or plywood roof decks, access walks, sun decks, balconies or porches, the new *Flex-A-Dek* elastomeric system can be applied in four easy stages to produce a 3/16-in. flexible, synthetic rubber deck. Advantages claimed for the new system are high resistance to abrasion, weathering and chemicals, a non-skid surface and easy repair and maintenance. ▪ Addex Manufacturing Co., Wickliffe, Ohio.

Circle 312 on inquiry card

NEW LOOK FOR DOOR HARDWARE / *Trend* door knobs combine the rose and knob into a single unit, thereby eliminating the friction normally generated by a hand rubbing against a stationary rose as it rotates the knob. This has the dual advantage of providing a comfortable grip and reducing wear on the mechanism. Because the continuous contour of the design eliminates dirt-collecting joints and angles, *Trend* is said to be particularly suitable for use in medical centers or hospitals, where sanitary conditions are important. Knob diameter is 2 3/32 ins. ▪ Schlage Lock Company, San Francisco, Calif.

Circle 313 on inquiry card

COLOR POSSIBILITIES IN CARPETS / A new *Zefkrome* acrylic fiber, which receives its color during the fiber-making process, is said to produce clearer tones than conventionally dyed acrylics, and to make possible a very wide range of color blends. Carpets made from *Zefkrome* fiber are also said to have built-in resiliency, to wear well, to resist staining and to react well to all accepted carpet-cleaning techniques. ▪ Dow Badische Company, New York City.

Circle 314 on inquiry card

For more data, circle 100 on inquiry card

For more data, circle 101 on inquiry card

For example a modern school must be able to add, move or eliminate walls at the drop of a subject.

Why? So that today's lecture hall can become three classrooms tomorrow, if needs change. This is true in any building you design—industrial plants, office buildings, clinics—wherever space cannot be static.

What makes this possible? Movable walls, of course. But more importantly, the Lennox DMS heating-air conditioning system.

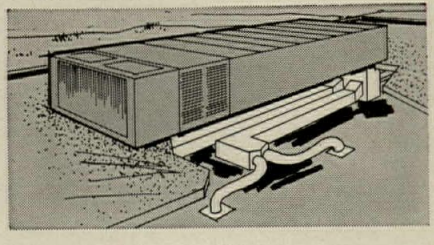
Its flexible ducts plug (or unplug) anywhere into the ceiling, and move around as the walls move!

Before Lennox DMS, it was hard for comfort to follow changing space. Heating and air conditioning were "locked" to the floor.

Lennox DMS is many ways unique. It nestles 42" low on the roof. It can heat, cool, ventilate at the same instant. It can provide, if required, 12 different air temperatures to 12 different rooms simultaneously.

The unit arrives completely assembled and wired, including controls. Just one source of responsibility!

For detailed information, write Lennox Industries Inc., 682 S. 12th Ave., Marshalltown, Iowa.



LENNOX®

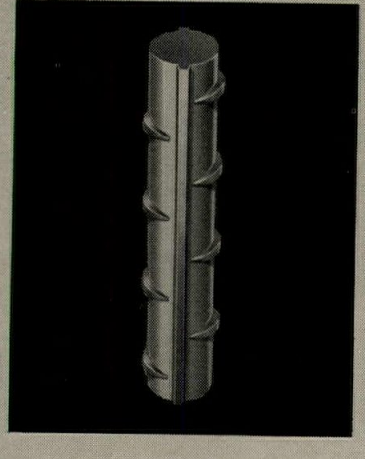
AIR CONDITIONING • HEATING

For more data, circle 115 on inquiry card

high strength steel reinforced concrete buildings are

on the rise! everywhere

■ Yes, it really is high! The 1000 Lake Shore Plaza Apartment Building, Chicago, has set a new height record for monolithic reinforced concrete construction. It towers over 600 feet from sidewalk to rooftop. ■ A-432 steel, one of the new reinforcing steels having 50% greater yield strength, made this building possible in concrete. Using high strength steel reinforcement, the designers achieved slimmer columns . . . greater usable floor space . . . the reduction of overall construction costs. Modern flat slab design also provided a record number of stories within the total height. ■ On your next building, consider the advantages of reinforced concrete construction. There is no more economical, versatile, or creative material for buildings, high or low. Ask your consulting engineer, too, about the many other benefits of using new A-432 steel in modern reinforced concrete building designs.



CONCRETE REINFORCING STEEL INSTITUTE

228 North La Salle Street • Chicago, Illinois 60601

8-65

1000 Lake Shore Plaza Apartments, Chicago, Illinois
Developer: Harold L. Perlman
Architects: Sidney H. Morris & Associates
Structural Engineers: William Schmidt & Associates

continued from page 215

CONCRETE ADMIXTURE PAMPHLETS / Four booklets describing the properties imparted to concrete by liquid *Placewel* water-reducer and *Retardwel* set-retarder are now available. Each booklet is illustrated with graphs, charts and photographs showing the results of performance tests on plain concrete as compared with concrete treated with these products. ▪ Union Carbide Corporation, Chemicals Division, Long Island City, N. Y. *Circle 411 on inquiry card*

DORMITORY FURNITURE / Complete specifications and additional information on a coordinated line of dormitory or institutional furniture is presented in the form of a file folder. Individual data sheets show typical arrangements of units with dimensional perspective drawings. ▪ Uniline Corporation, Grand Rapids, Mich.

Circle 412 on inquiry card

INDUSTRIAL FANS / A wide variety of types and sizes of Lehigh Type IE fans are described and illustrated in a 26-page bulletin, no. L-5A. Information on the structural design and operating characteristics of the various models is included as well as the relevant data for calculating capacity and performance curves. A tabular section provides complete fan rating data relative to operating pressures for fan sizes 110 I.E. through 470 I.E. ▪ Fuller Company, Catasauqua, Pa. *Circle 413 on inquiry card*

COUNTER SHUTTERS AND ROLLING DOORS / Two brochures give details of steel and aluminum counter shutters specially designed to harmonize well with a wide range of building materials, to operate easily and provide adequate vandal protection. One brochure covers the range and application of available shutters, while the other describes the power operator. ▪ The Kinnear Manufacturing Company, Columbus, Ohio.* *Circle 414 on inquiry card*

GYMNASIUM EQUIPMENT / Detailed information on telescopic, electrically operated, portable and mobile seating, basketball backstops, gymnasium accessories, dividing curtains, locker benches and volleyball equipment is set out in an illustrated brochure. Dimensions, seating capacities and notes on installation and operation are clearly presented. ▪ Berlin Seating, Inc., Waupun, Wis.* *Circle 415 on inquiry card*

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

Why wait?

You can have new G-E Super Powerflood® luminaires for Lucalox™ or Multi-Vapor™ lamps today

You don't have to wait for the increased light output and improved color rendition new lamps can give for parking lots, outdoor storage areas, railroad yards, truck terminals, building exteriors—or 1000 other outdoor-lighting applications.

Get more light—better light—right now with new G-E Super Powerflood luminaires.

You and your customers benefit from a General Electric system-engineered unit that's built to last. A unit made of sturdy, weather-proof, die-cast aluminum. A unit with a clear cover glass that is heat and shock resistant and gasketed with a high-temperature, catalyzed elastomer. A unit that is easy to aim. A unit with optional, built-in photoelectric control.

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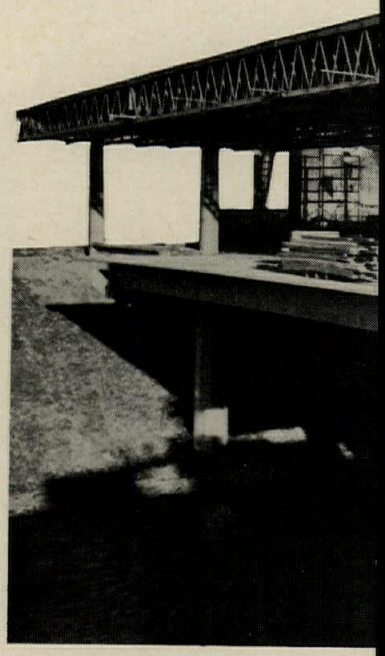
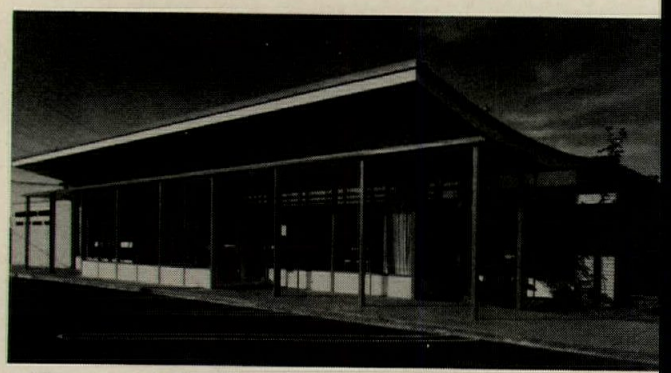
Flat or curved. Cantilevered. Concave. Snow loads, wind loads, seismic loads. Spans to 100 ft

There's nothing this plywood and open-web joist system won't do— at rock-bottom cost.

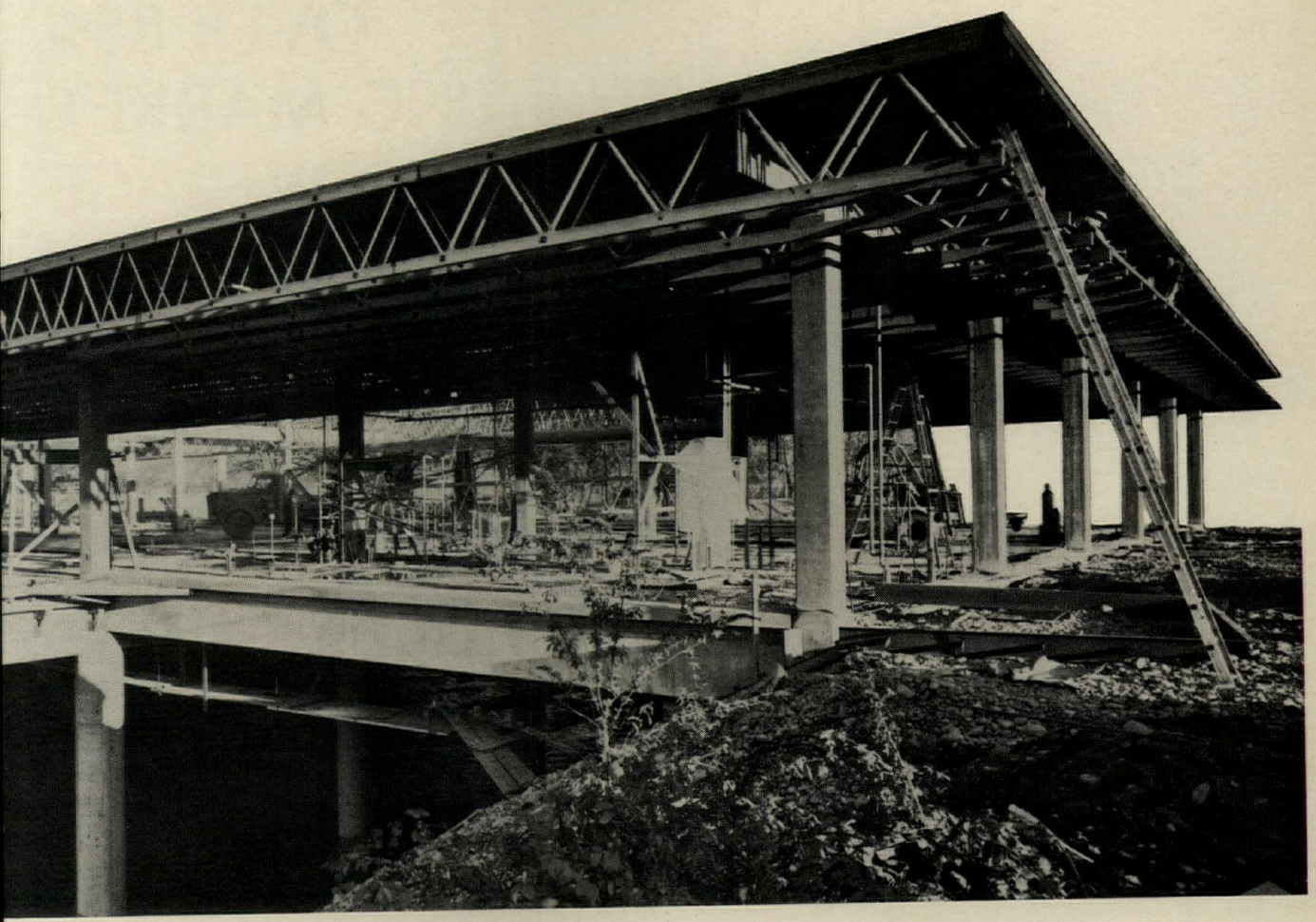


For example:

This new, fast roof system has just two basic components: *One*, long-span joists with tubular steel webbing and scarfed lumber chords. (Shown below are Trus-joists®—there are several other similar systems.) *Two*, plywood roof decking, nailed to the joist's top chord.



Because of the joists' light weight, and the ease w which plywood is fastened to lumber chords, only carpen labor is needed. Other key advantages: ready availabil of plywood. High strength and stiffness for long spa Adaptability to dozens of different roof profiles. Open we for duct work, wiring and plumbing. Built-in framing direct application of ceilings. And quick delivery tim even for custom-fabricated joists.



he demountable branch bank (left) shows what the em can do for a roof. The building had to be low-cost, distinctive. Architects Wilkins & Ellison, A.I.A., Seattle, cified 43-foot Trus-joists, bowing downward two feet ard center at a constant radius.

Nothing but plywood roof decking was considered for job," says Jesse Wilkins, Jr. "Plywood goes down fast, pts to unusual shapes, and has superior diaphragm ngth."

Plywood and Trus-joists were also the most economical ution to the unique, over-a-river design of the Renton, sh., public library above. Architects Johnston-Campa-a and Co. decided on the 80-foot river span for aesthetic sons, and to conserve land area for a parking lot.

These are only a few ways the system is proving itself, over the country. And not just for roofs. In Chicago, example, Alschuler, Wolfson and Associates recently igned an apartment house using Trus-joists and plywood all three floors as well as the roof deck.

If you'd like more facts – either on this roof system, or on other plywood construction systems, including floors and walls as well as roofs – see the coupon.

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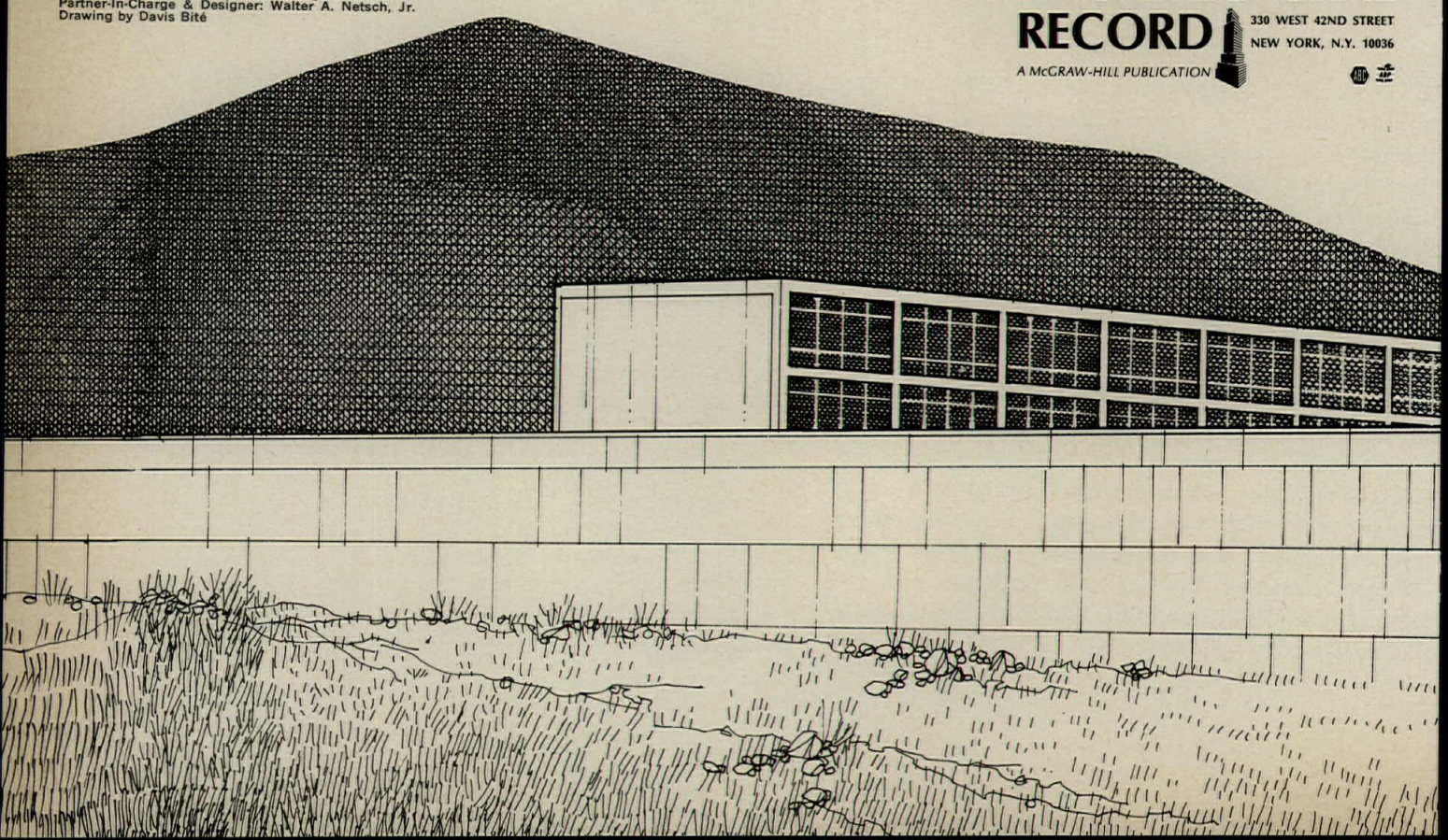

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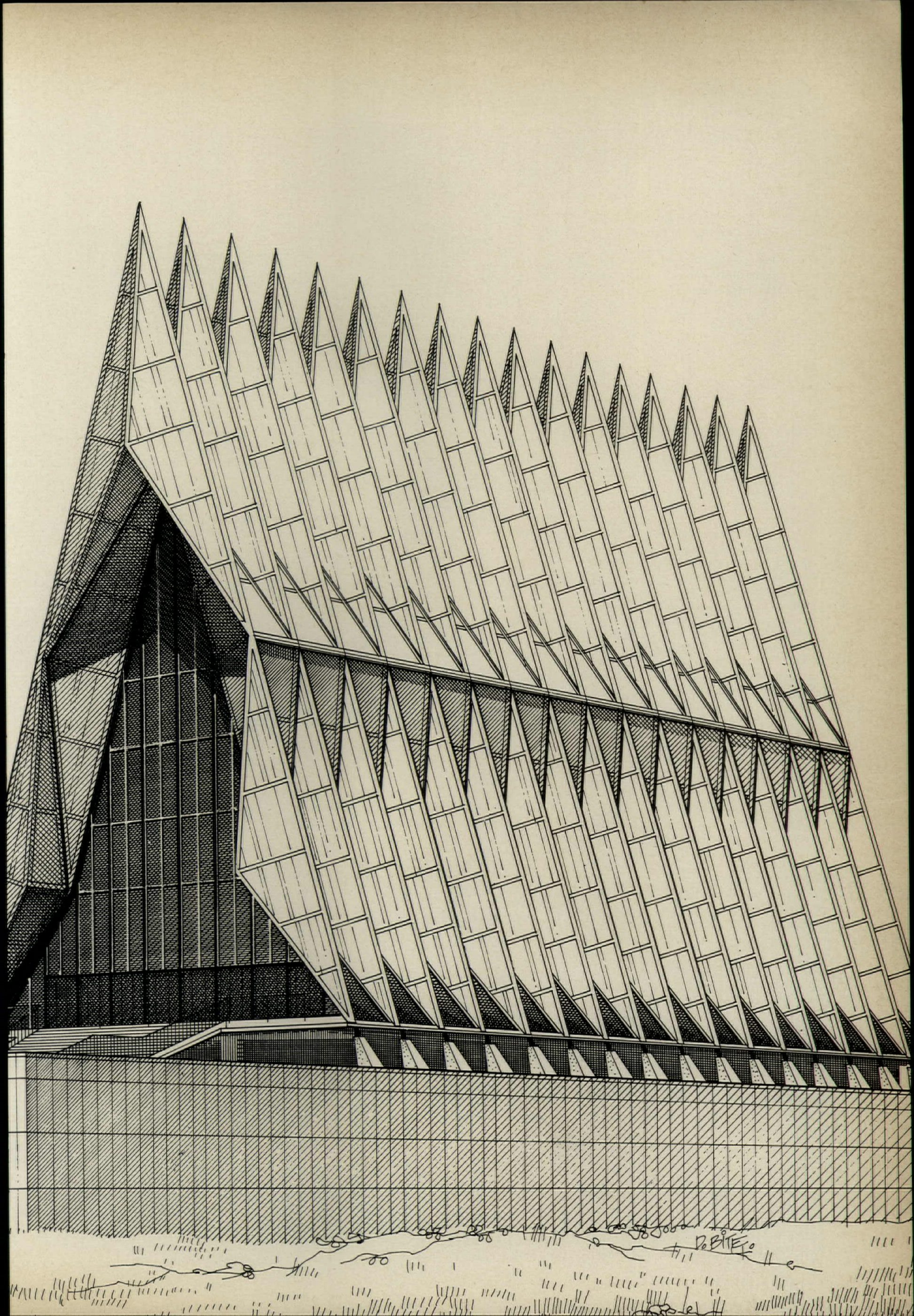

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