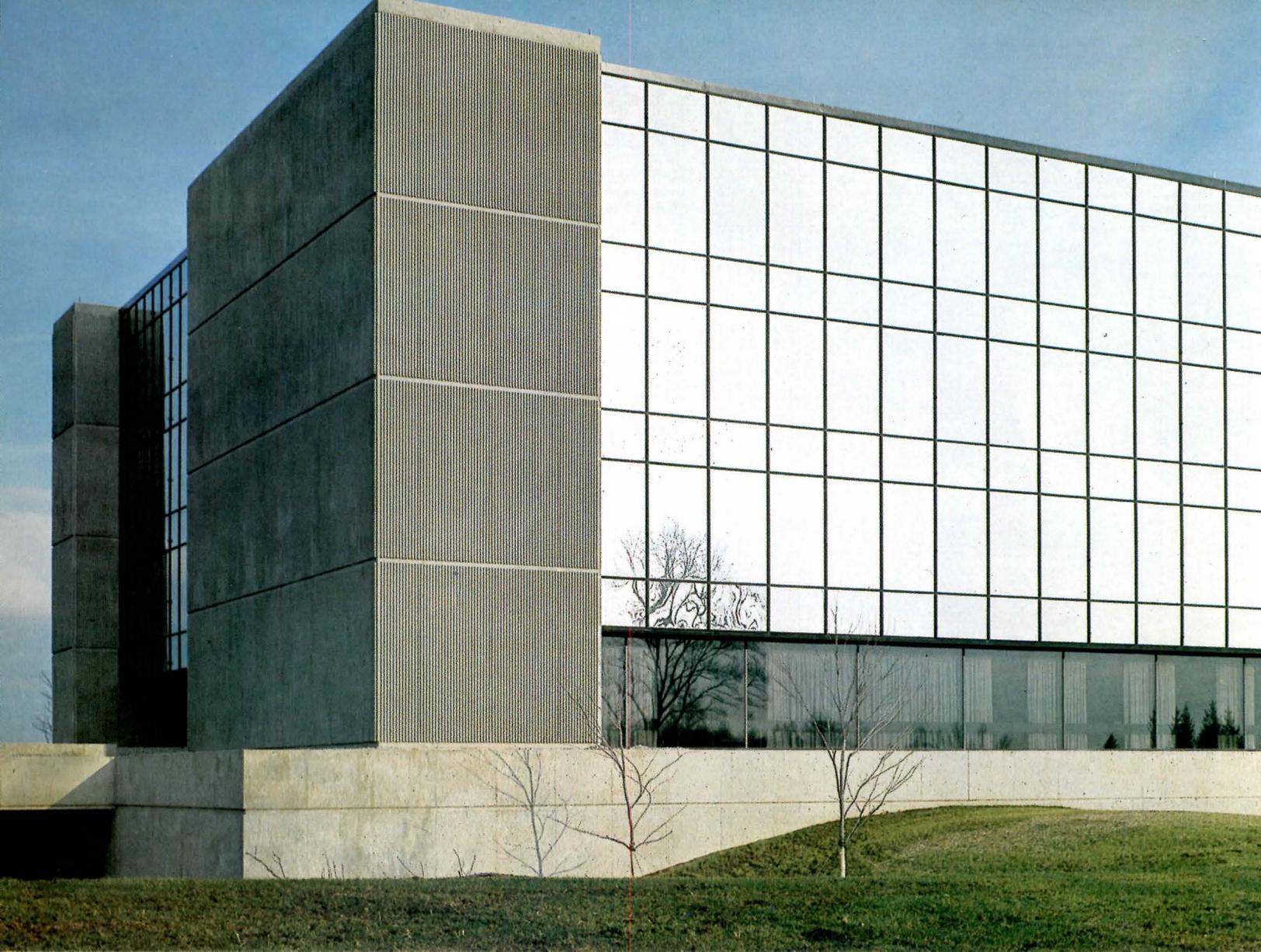




Library of the
Minneapolis
Museum of Art & Design

FORUM



With our help, the Ashland Chemical Co. Headquarters Building reflects the sky, the clouds, the trees, the seasons— minute, second and day.

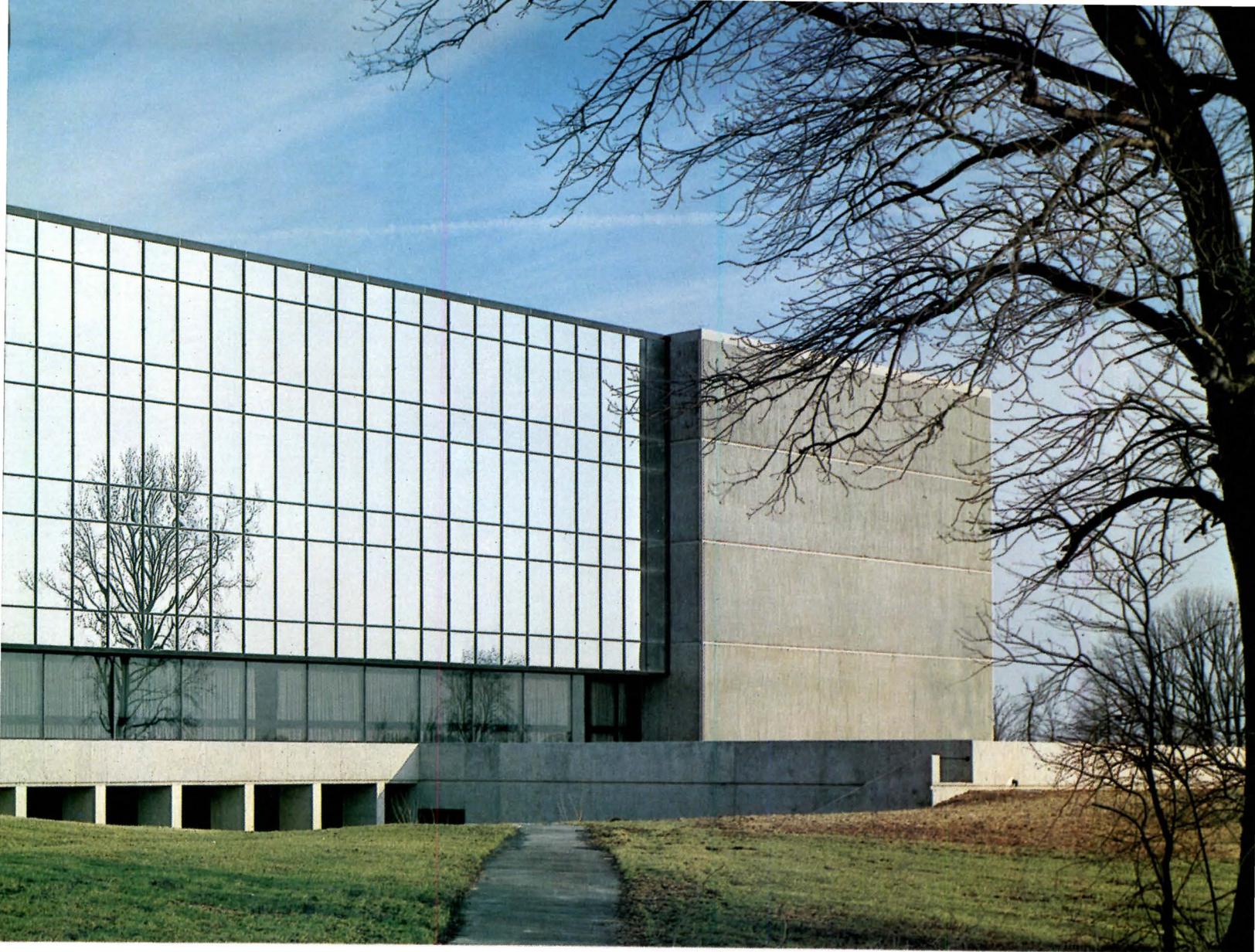
One of the beauties of our Vari-Tran® reflective glass is what it reflects: scudding shreds of cloud; the four seasons of a tree; the color of the sky at dawn, midday and dusk. And as they change, so changes the image in the glass.

Architects Kellam & Foley took full advantage of Vari-Tran's reflective qualities when they designed the Ashland Chemical Co. Headquarters Building. Located on a spacious open tract in Dublin, Ohio, the building presents an ever-changing facade to passers-by.

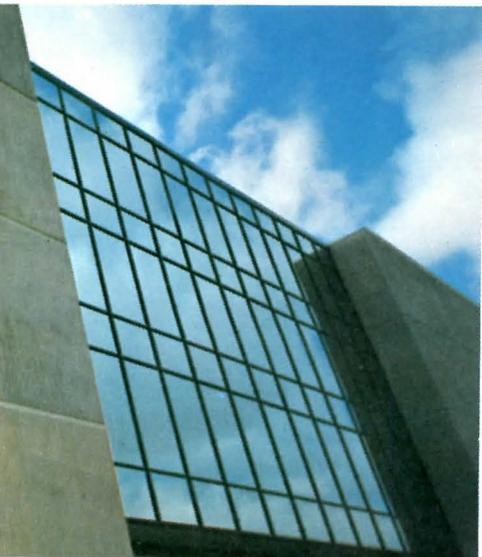
Of course, they also knew that because Thermopane® insulating units made with Vari-Tran reflect the sun's heat and light, they reduce the size of air conditioning equipment needed. To say nothing of cutting operating costs.

Which is to show that in architectural glass as well as everything else—handsome is as handsome does.

We'll be glad to tell you the rest of the story (including the fact that Vari-Tran now comes in gold, silver, grey, blue and bronze tones). Drop a note to Libbey-Owens-Ford, Toledo, Ohio 43695.



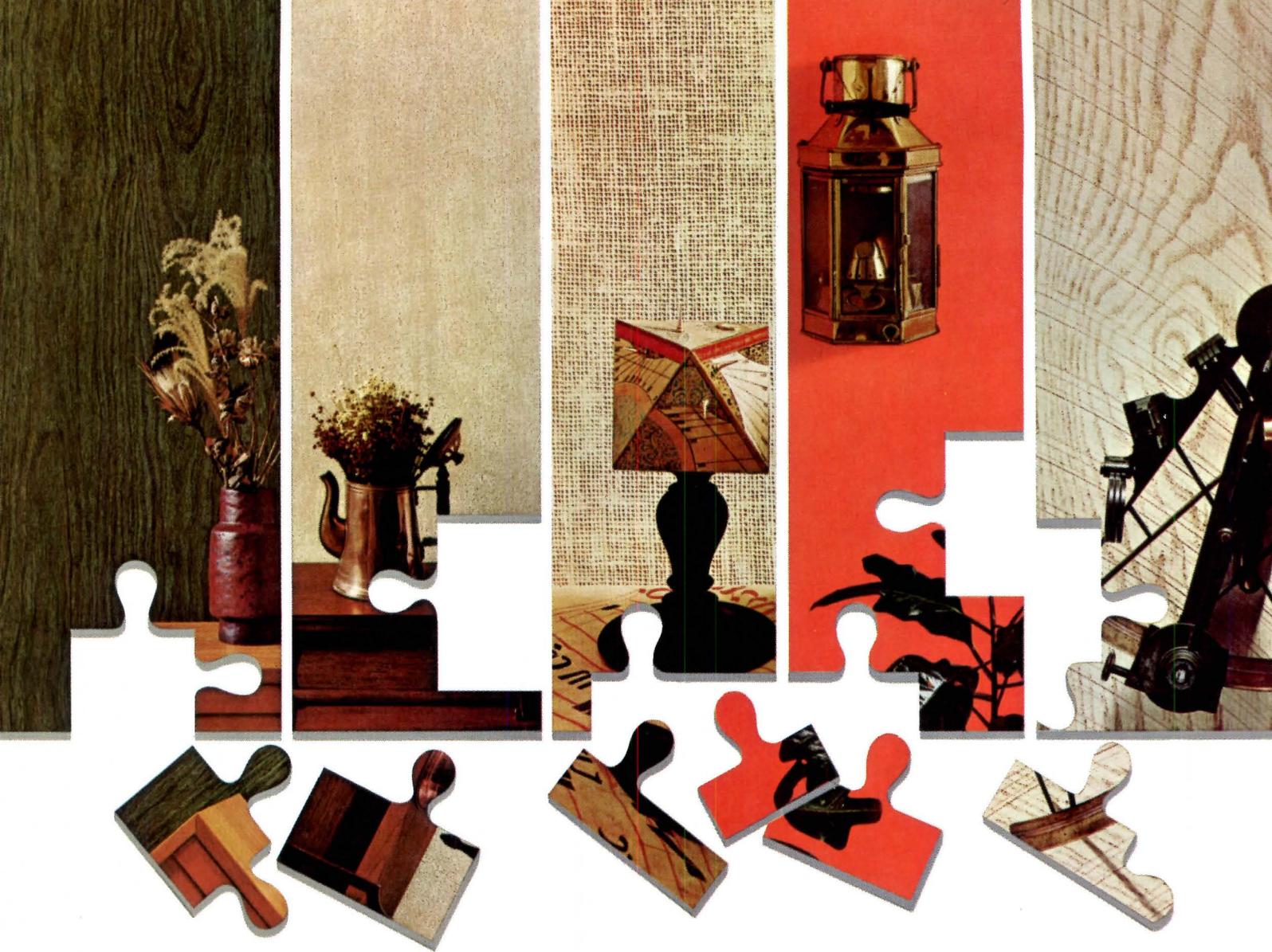
Building changes by the day, hour, with the batting of an eye.



Owner: Ashland Oil, Inc. Architects: Kellam & Foley, Columbus, Ohio.
General Contractor: Martin & Nettrour, Pittsburgh, Pa.
Glazing Contractor: Ohio Plate Glass Co., Columbus, Ohio.

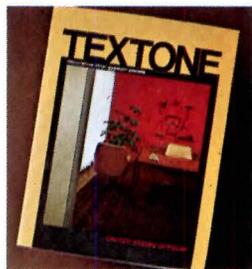


L-O-F making progress...
i architecture.



How to make hard-wear walls handsome.

TEXTONE* Gypsum Panels in new textures and colors put it all together for you. Touch tells the story of deep, deep textures that feel as real as they look. Twenty-seven colors and textures give you the latitude you need to create the unusual in decorator walls for stores, display salons, offices—any commercial application where walls must take a beating. **TEXTONE Gypsum Panels** are made of tough, washable vinyl, prelaminate to **SHEETROCK* gypsum wallboard**. Matching moldings are available. And panels work perfectly with U.S.G. wall systems, including **USG® Demountable Partitions**. New colorful descriptive literature amplifies the exciting **TEXTONE** story. For your copy, contact your U.S.G. Representative; or write to us on your letterhead for sample swatches. 101 S. Wacker Dr., Chicago, Illinois 60606, Dept. AF-52.

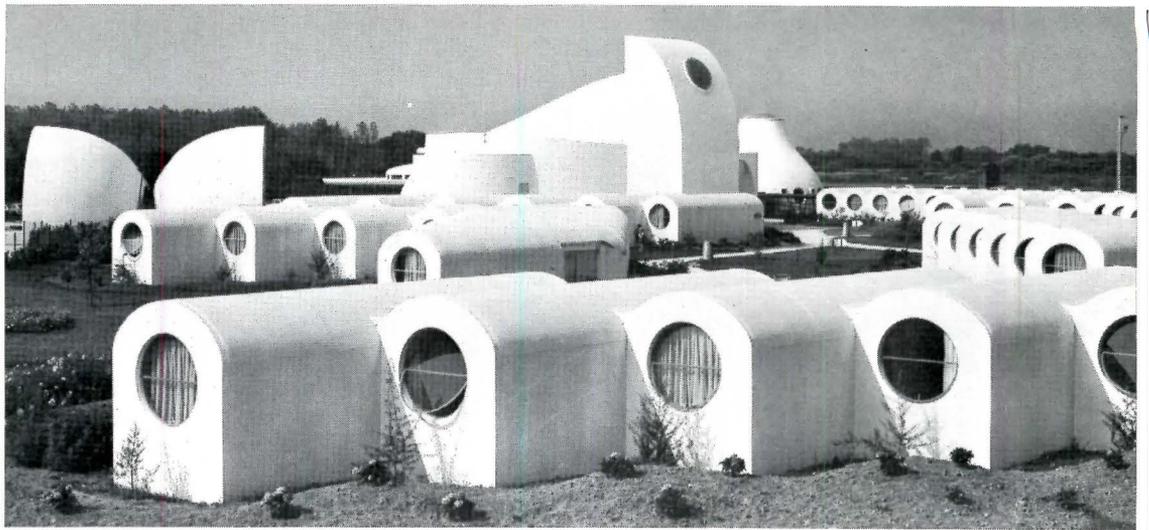


*Reg. U.S. Pat. Off.

UNIT

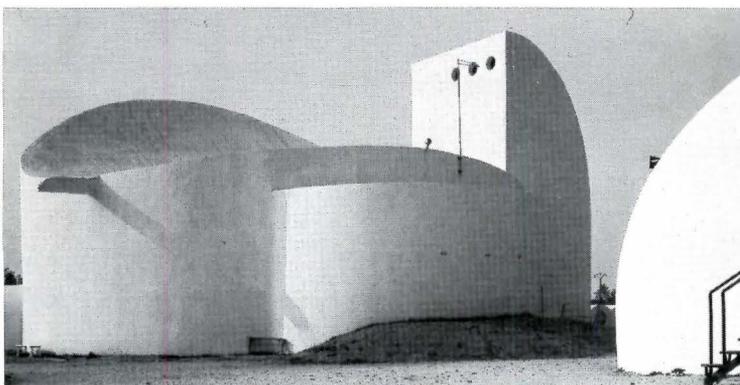
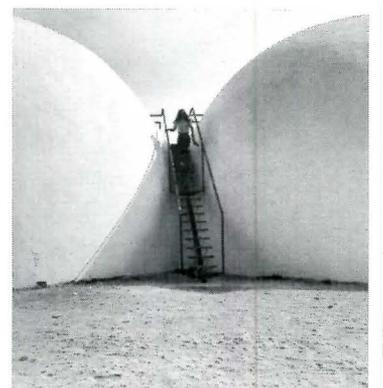
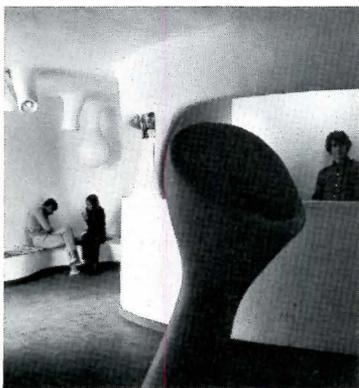
TATE

UM
BUILDING AMERICA

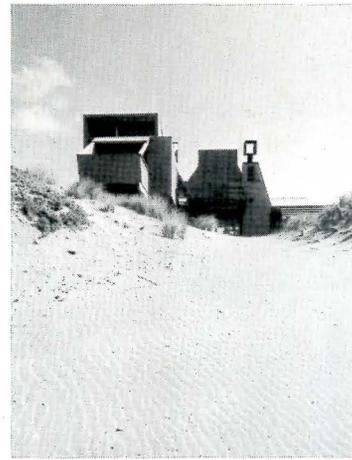


FUN IN FANTASIA

This new resort on the seacoast of Brittany, France, is "Renouveau," a fantasy by sculptor Pierre Szekely, with architects Henri Mouette and Jean-Francois L'Ollivier. Made of concrete applied over wire reinforcing with a pressure gun, the project can accommodate about 800 vacationers. It includes living units (above) that resemble portholed mail-boxes (with two bedrooms and a bath) and common dining facilities (photo left) that resemble nothing so much as an imaginary moonscape. A pub (small left photo) and a sitting area for relaxation (small photo, middle) are complemented by a cultural center (bottom). The



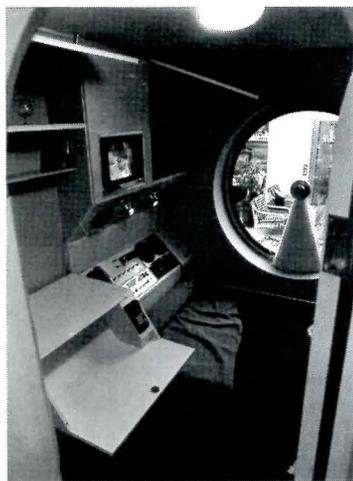
project was conceived in 1964 as a partnership between the arts of sculpture and architecture. The resulting village was to provide not only rest and exercise, but "cultural enrichment and spiritual" renewal. The architects diagrammed the basic spaces and their interrelationships. Combined with the sculptor's sketches, these provided the basis for experimental models. So does Mediterranean architecture find itself on the North Atlantic.



PROFESSOR LETS LOOSE

William Logan (of Neil Noll, Mike Lee Associates) won a \$1,000 award from the American Plywood Association for this vacation home, in the Pajaro Dunes of Monterey Bay, Calif. Designed for a professor and his family, the home provides multi-level living that combines variety with privacy. The highest level is a sleeping alcove 18 ft. above

the master bedroom and living room. The kitchen and dining area are four steps up from the living room. The children's playroom, bedroom, deck and guest quarters are 8 ft. above the living room. Each level of the 2,000-sq.-ft. creation is connected by a spiral stair. Most rooms have a deck and varying ceiling heights for unexpected views of other areas of the house.



BACHELOR PADS

Japan is solving some housing problems with an eye toward the creature comforts of its single (?) men. Designed by architect Kisho Kurokawa, this tower of plug-in, prefabricated capsule apartments has units that each sell for between \$12,338 and \$15,584. Each includes a built-in bed, desk, shower and wine cabinet. A bedside console, whose IBM-like appearance conceals multiple pleasure sources, provides the occupant with television, stereo tape decks, a calculator and, perhaps, a light dimmer.



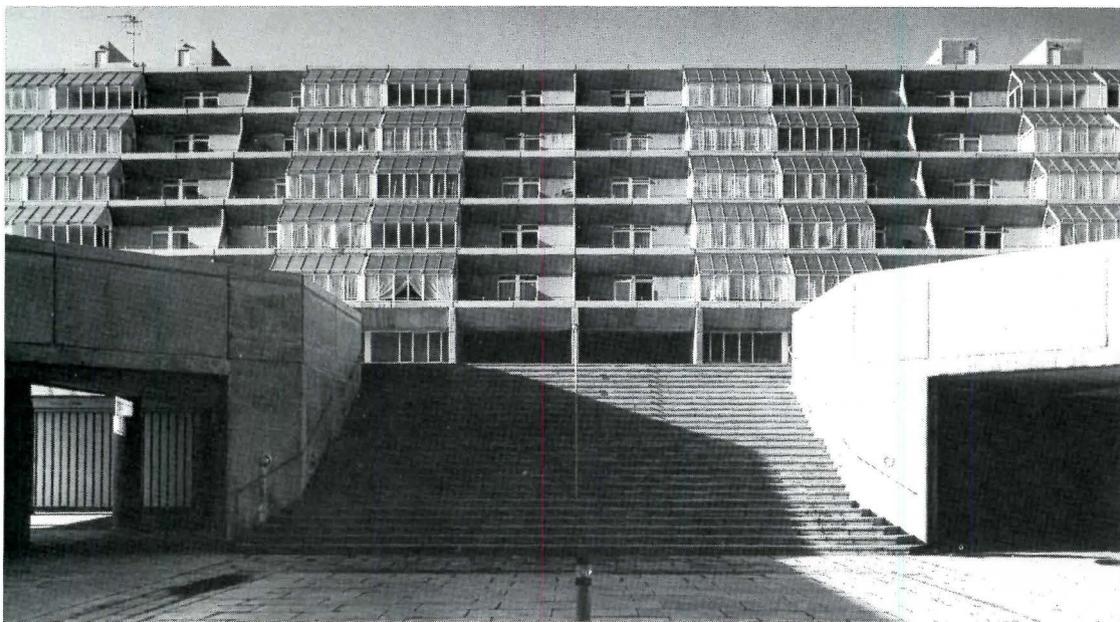
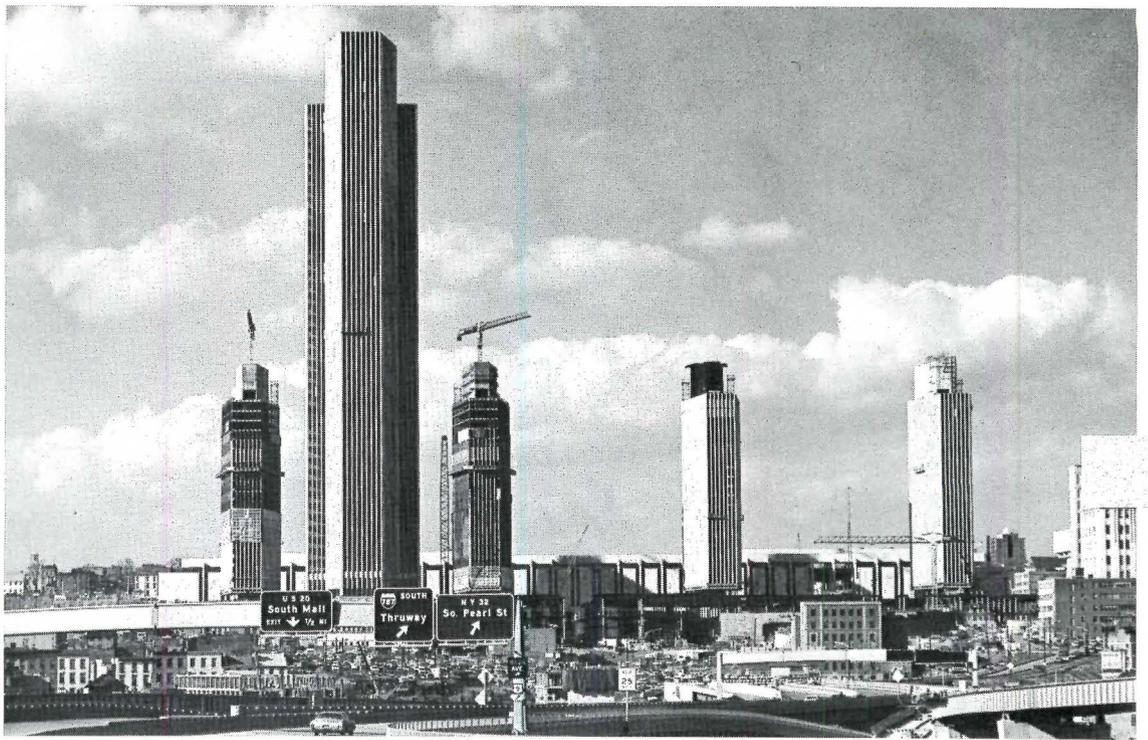
BANK STATEMENT

This bank's statement is one of simplicity and natural dignity. Diagonal panels provide an architectural welcome mat to customers of the New Bank of New Hampshire, in Manchester. Designed by Carter & Woodruff, the two-story structure is anchored between two stair and service towers, which provide the 45-deg. entrance facade. The building is clad in black granite, which is also in the lobby and teller areas. A skylight illuminates the floors below.



TOO MUCH AT ANY PRICE

Governor Nelson Rockefeller (N. Y.) was embarrassed when in 1959 he had to drive the Netherlands' Princess Beatrix through Albany's worst slums on the way from the airport to the Capitol. Now he has new cause for embarrassment: the Albany Mall, which started construction in 1965 as a \$250-million project and is now estimated to cost \$1 billion plus \$500 million in interest before it is completed in 1975. The 100-acre project, for which Harrison & Abramovitz are chief architects, includes a five-level platform, ten office buildings, and stretches over 100 acres. Already it dwarfs the old downtown area structures that remain. The County of Albany is financing the project under an agreement that the state will pay rent equivalent to the cost of the mall, plus interest.

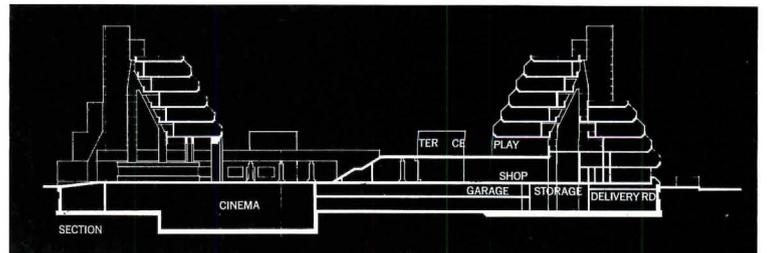


GREENHOUSES FOR LIVING

The Brunswick Centre is a multi-use housing development in London distinguished by enclosed balconies that resemble greenhouses but are actually living room windows. The site is being developed in three phases, with the first completed early this year. It includes 264 housing units, 40 shops, 12 offices, one pub and a theater. The next phase is due for completion in April, 1973, and the last phase is as yet unscheduled. The whole project demonstrates the platform design common to British housing, but unusual in the U. S. The various parts of the buildings are layered, with each part having access to the other. There are two basement levels. The lower level contains parking spaces and stores. The upper basement level has more parking and a movie theater. More shops are at ground level, as are the pub areas. Living areas are above, in four stepped banks. Design architect: Patrick Hodgkinson; consultant architect: Sir Leslie Martin.



PHOTOGRAPHS: Page 5, Pierre Joly and Vera Cardot. Page 7, The New York Times/William E. Sauro (top); Sam Lambert (bottom).



BOOKS

INSIDE THE THIRD REICH. Memoirs By Albert Speer. Translated from the German by Richard and Clara Winston. Introduction by Eugene Davidson. Published by the Macmillan Company, New York. 9½ x 6½. \$12.50.

REVIEWED BY WILLO VON MOLTKE

Inside the Third Reich is a unique historical document of the Nazi era, written by Albert Speer—an insider, probably the most gifted man of the then German government, who was Hitler's architect and later Minister of Armaments and War Production. It gives astonishing insights into the morbid personality of Hitler, into the rivalries of the inner circle and the evolution of national policies which led to the annihilation of millions of innocent victims, to World War II and to the defeat and division of Germany.

This book lays to rest the myths that the centralized power of the Nazis resulted in efficient government and that Hitler had a sense of national mission. The centralized power was made ineffective by Hitler's mistrust of everybody and his constant fear of insurrection. He played the members of his inner circle against each other, using lies or fabrications if necessary, and tolerated the unbridled greed for power and wealth by his *Gauleiters*. He gained control over the army as soon as possible by framing General von Blomberg and General von Fritsch. His fear of insurrection made him unwilling to mobilize the civilian population fully for war production as had been done in England and the United States. He feared that this would be too great a sacrifice for the Germans and preferred to use conscripted slave labor from conquered countries. In this manner all able-bodied young men, who might have started a rebellion, could be sent to the front and thus remain under constant surveillance and control.

Hitler showed utter contempt for Germany and the German people once defeat became obvious even to him. He mobilized the country to attain supreme power, and once it failed him he had no further use for the nation and did his best to destroy it in the hour of defeat.

The utter banality of Hitler's personal life in Berlin and on the Obersalzberg is described with appropriate tedium and was so overwhelmingly boring that Albert Speer considered time spent with the *Fuhrer* a sacrifice, even before he became disenchanted with the chancellor. One motivation for exposing oneself

to this boredom was the fear of falling into disfavor when one showed lack of enthusiasm for these dull gatherings.

The author, son of a prominent and socially ambitious architect in Mannheim, studied in Berlin under Tessenow, who aspired to architecture of great simplicity and stated that pomp should be kept to a minimum. His teacher must have been dismayed at the corruption of his student and assistant by the opportunity to work on Hitler's colossal and pretentious plans and buildings, which lacked any sense of scale and were symbolic of the megalomania of the *Fuhrer*. It is surprising that the same architect showed erudition and sensitivity when commenting on historical architecture and cities, was an admirer of Max Reinhardt, a critic of Cecil B. de Mille, and had a group of friends which included Peter Behrens, Paul Bonatz and Wilhelm Kempff.

One wonders whether this surprising lack of critical judgment by an educated, intelligent, well intentioned and perceptive architect was due to a driving ambition; an overreaction to the bleak professional outlook in the early 1930's; or whether this is a professional hazard which, alas, we can also detect in some of our contemporaries — the tendency to build monuments just because the chance is there.

The author's greatest achievement was a spectacular increase in production as Minister of War Production. In this capacity he showed an unusual gift for organization and management which was not inhibited by ideological considerations; indeed, he introduced advanced management techniques which ran counter to Nazi ideology. He became so efficient a technocrat (and thus important to Germany) that the British *Observer* published, in April 1944, the following characterization of him:

"Speer is, in a sense, more important for Germany today than Hitler, Himmler, Goering, Goebbels, or the generals. They all have, in a way, become the mere auxiliaries of the man who actually directs the giant power machine—charged with drawing from it the maximum effort under maximum strain . . . In him is the very epitome of the managerial revolution.

"Speer is not one of the flamboyant and picturesque Nazis. Whether he has any other than conventional political opinions at all is unknown.

"He might have joined any other political party which gave him a job and a career. He is very much the successful average man, well dressed, civil, non-corrupt, very middle-class in his style of life, with a wife and six children. Much less than any of the other German leaders does he stand for anything particularly German or particularly Nazi. He rather symbolizes a type which is becoming increasingly important in all belligerent countries: the pure technician, the classless bright young man without background, with no other original aim than to make his way in the world and no other means than his technical and managerial ability. It is the lack of psychological and spiritual ballast, and the ease with which he handles the terrifying technical and organizational machinery of our age, which make this slight type go extremely far nowadays. . . . This is their age . . ."

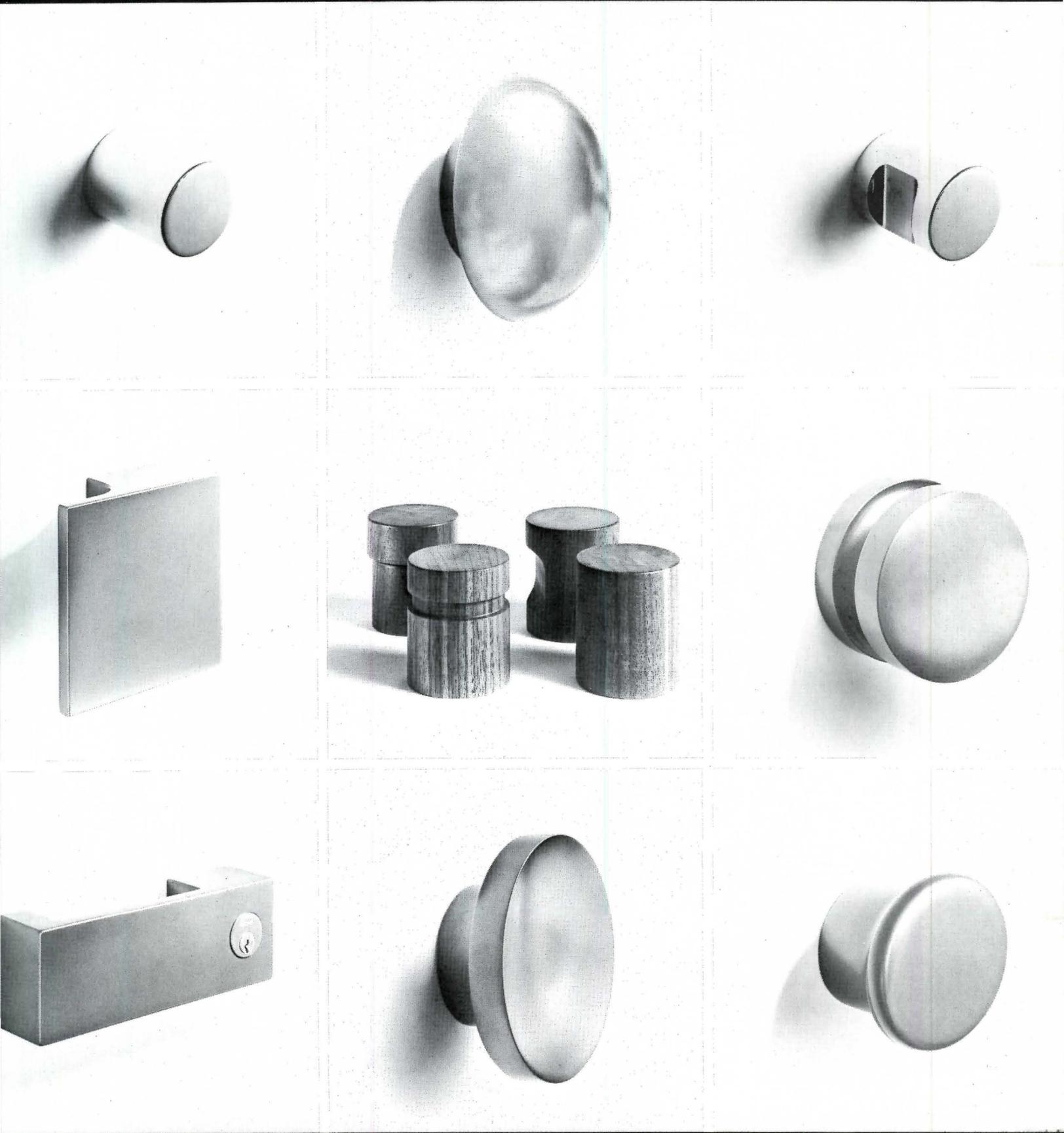
His preoccupation with efficiency and production prevented him from being too much concerned with the fate of the slave labor, which was conscripted from conquered countries for Speer's armament industry. And when *Gauleiter* Hanke warned him against visiting Auschwitz he preferred not to know and to concentrate on his demanding task. It is to the point that Eugene Davidson said that "Speer loved machines more than people."

It is surprising that this capable and intelligent man did not become disillusioned earlier with Hitler's irrational and destructive behavior. He was so completely absorbed by his task and what he perceived to be his mission that he was blind to the nature of the regime until it was too late; indeed, he had been corrupted by the unique opportunities which Hitler had given him.

In spite of a deep reservation against the author, I felt throughout the book that he tried to be objective and sincere—and I found these memoirs fascinating, informative and worth reading as a historical document of a tragic era.

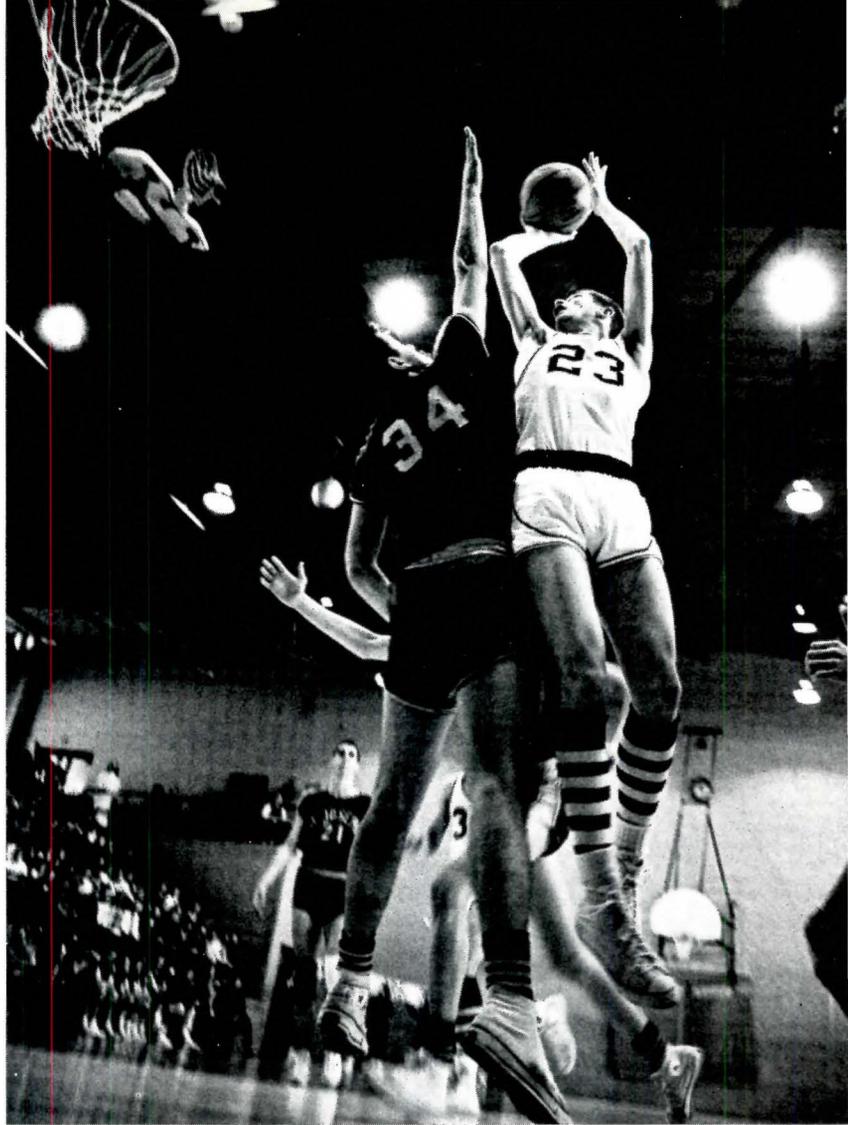
Professor von Moltke was, for several years, associated with the late Eero Saarinen and, subsequently, with the Philadelphia City Planning Commission. He is now Director of Harvard's Urban Design Program. His family was deeply involved in the German Resistance against Hitler.

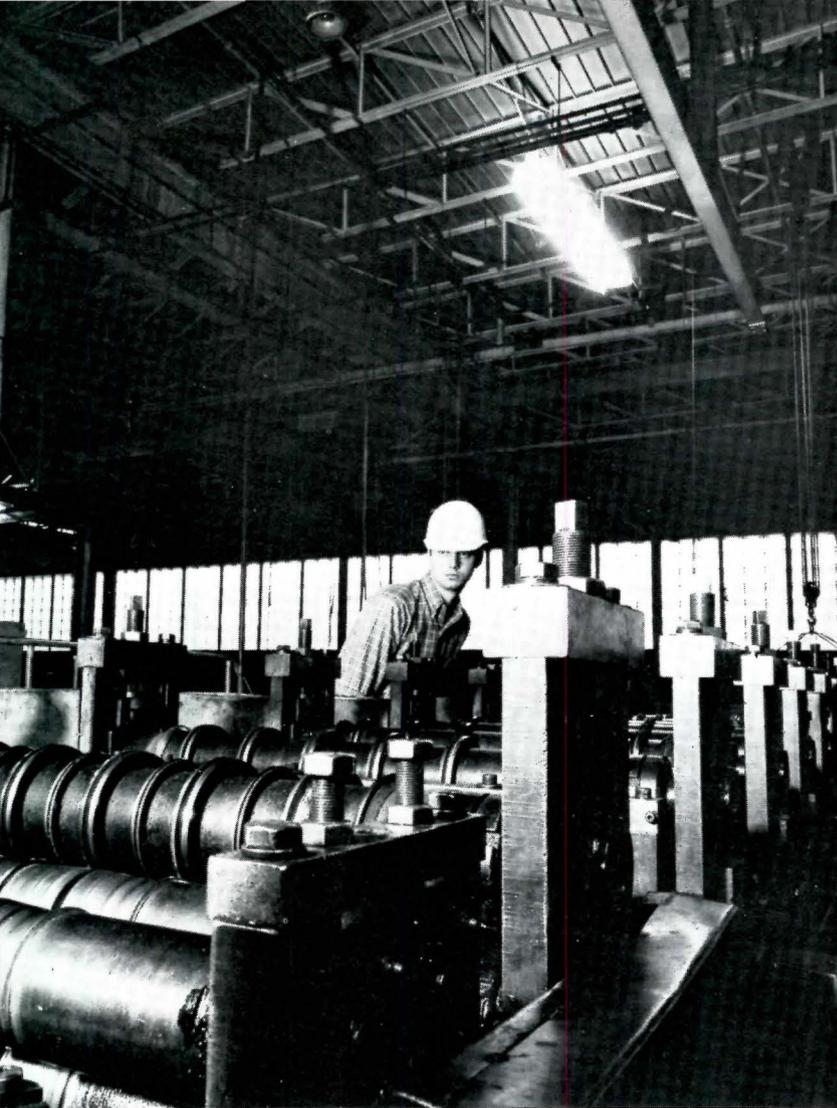
Doorpulls in geometric forms.
Forty new designs for all types of doors.
Bronze, nickel silver or aluminum.
Also oiled rosewood, walnut or teak.
Forms & Surfaces Box 5215 Santa Barbara,
California 93108 (805) 969-4767



FORMS & SURFACES

**noise control
is important
here...**





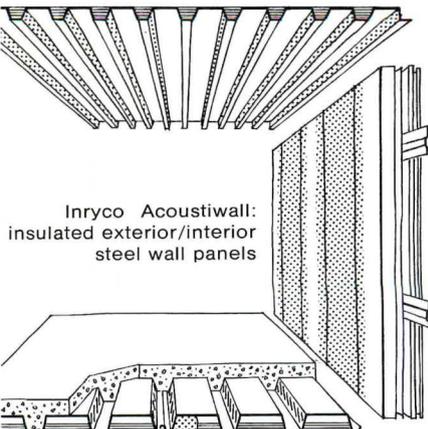
but here, it's required by law.

Excessive noise can be a federal offense. The U.S. Occupational Health & Safety Act limits noise levels in plants to 90 decibels. Most plants today exceed that... even though too much noise can affect employee health. Morale. Safety. Productivity. And therefore, profits.

The time to start an economical sound control program is at the blueprint stage. By designing in Inryco® Acoustideck®, Acoustiwall™ and Acoustiflor™ They absorb sound from all sources, and reduce reverberation. They provide a sound basis for all other elements in an effective noise control program. Yet they add only about 1% to total building costs. They all act as structural as well as acoustical materials.

On your next project discuss noise control with an Inryco engineer. Write for our free booklet, "Reducing Industrial Noise," Catalog 23-8, and for the address of our office nearest you. Inland-Ryerson Construction Products Company, 4031 West Burnham Street, Milwaukee, Wisconsin 53201.

Inryco Acoustideck:
combination roof deck
and acoustical ceiling



Inryco Acoustiwall:
insulated exterior/interior
steel wall panels

Inryco Acoustiflor:
combination structural floor
deck and acoustical ceiling.



INLAND RYERSON

General Offices: Chicago, Illinois
A member of the  steel family

LETTERS

A CLARIFICATION

FORUM: Kenneth Frampton's review of *The Ideal Communist City* (March issue) is articulate and cites telling examples of the kind of proposals being made at this time by the under-forty generation of architects and planners in the Soviet Union. Alexei Gutnov and his colleagues, all at the University of Moscow, are a typical group in this category. Their model of communist society clearly does not conform in either physical or social definition to criteria established by their counterparts, like Kenneth Frampton here or by the older generation of practitioners in the U.S.S.R. Nor, for that matter, to the visionary experiments of the Constructionists.

We sympathize with Mr. Frampton's longing for more of that period's (1917-32) social boldness and accompanying creativity in design today. Both in the U.S.S.R. and the U.S.A.

The Ideal Communist City is a documentary work, its contribution is showing the kind of priorities and planning methodology that govern now in the Soviet Union.

Tomorrow will be different again. We join with Kenneth Frampton in hoping for a significant thaw, one which will unfreeze the groundwork of the twenties and thirties as well as prepare fertile options for the 21st century. Meanwhile, as we present American readers with conditions as they exist in our own and in other societies, a disquieting question arises: Can Americans admit to a world that is not "american"?

MARY OTIS STEVENS
Architect and director, i press inc.
Boston, Mass.

FULLER RESPONSE

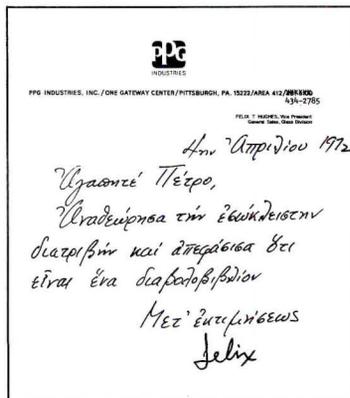
FORUM: The article by William Marlin and the larger feature-length production by FORUM on Buckminster Fuller was phenomenal in its success at practically equaling the breadth and depth of the man himself. One can only imagine the kind of

effort that was required to produce it. It is just that kind of effort that keeps FORUM in its position of leadership among the major domestic architectural journals.

My first experience with Bucky was as an undergraduate with all of two months standing at Berkeley in 1955. He was invited to take over our first-year design studio for two weeks. Each afternoon R. Buckminster Fuller strode onto the stage of the lecture hall, and with a brief "good afternoon" began to talk and write. Within a matter of moments (or so it seemed) he had traversed the entire length of a 20-ft.-long blackboard, making it white with crammed notations on the mathematics of geodesics. He would then immediately return to the left-hand edge and begin again, erasing as he wrote and looking for all the world like a human typewriter carriage! All, of course, without notes.

My most recent experience with Buckminster Fuller was as a member of a large, enthralled audience at INBEC-71, in Louisville, Ky., where he correctly predicted the imminent "coming out" of Mainland China. In between, I, like most of my contemporaries, have followed the perpetual motion of the man. It makes me feel that the FORUM feature article could as easily have been named *The World BY Buckminster Fuller*.

RICHARD SCHOEN
UCLA School of Architecture and
Urban Planning
Los Angeles, Calif.



FELIX T. HUGHES
Vice-pres. Gen. Sales
PPG Industries, Inc.
Athens, Greece

FORUM: I have just finished reading and rereading your issue on *The World of Buckminster Fuller*. A long-time admirer of Fuller—especially of his Dymaxion House, which evidenced the ability you stress of asking

the right questions—I think it fitting that you pay your respects.

But his questions are definitely more useful than his answers. I would be particularly interested if FORUM would at some future time give a voice to some of Fuller's objective critics. I have in mind Lewis Mumford and the late Sibyl Moholy-Nagy. The fact that Fuller has such an uncritical young audience—captive in their need for answers—makes his answer sometimes doubly suspect.

For example, Fuller's schemes to dome-enclose say, Manhattan or East St. Louis. Doesn't it seem appropriate to ask at the same time that such enclosures are proposed: What happens to the pollutants? And what keeps the dome surface transparent? Los Angeles and Phoenix have natural domes, called inversions, and their experience should be relevant. Also, huge megastructures, such as Tetrahedral City, tell me (is it intuition?) that the occupants have been reduced to Wells or Orwell proportions. By contrast, Triton City and the Toronto linear city appear more rational.

One final observation concerning intuitive automobile designers; neither Frank Lloyd Wright nor Buckminster Fuller demonstrated any great contributions in their automobile creations. Fuller's three-wheel concept is demonstrably unstable, and the fact that it went 120 mph is merely a matter of gear ratio.

WILLIAM M. RICE
Architect
Baja, Calif.

FORUM: Mark up another outstanding publishing achievement by the ARCHITECTURAL FORUM. Looking at the issue on Buckminster Fuller gives one the same excitement and pleasure as reading about the Hymenoptera—the bees, wasps and ants and their incredible, delicate and intricate structures.

WALLACE HEATH
Architect
Nyack, N.Y.

FORUM: I've just received your Jan/Feb issue and it recalls for me memories of Bucky Fuller teaching at the Institute of Design in 1948-49. He taught not only design, but truly a new way of looking at things, the world and, most importantly, oneself.

So often today, when one feels battered by life, remember-

ing his teaching and inspiration can give one courage and hope for a better world. Bucky's remonstrance to be "comprehensive" still comes through.

His most beautiful precious humanness, and his brilliance, remain a beacon.

WILLIAM C. ROMAN
Sterling Heights, Mich.

FOR LOOSENING ZONING LAWS

FORUM: I am sure that other letters have been submitted to your publication in support of David Mandel's "Zoning Laws: The Case for Repeal" (Dec. '71 issue). However, the letters published only give negative responses to the article.

As a practicing City Planner, I can appreciate some of Mr. Mandel's arguments. Zoning has gone beyond the intent of providing a "livable environment" for the people. It has been used to exclude the poor via lot size, bulk requirements, height limitations, square footage, etc. and stimulates (and in some cases subsidizes) large development corporations. Our profession has to begin to look at zoning laws with the welfare of all people in mind and not the privileged. I do not agree with Mr. Mandel's premise that all zoning laws should be repealed, but I do think we should loosen some of these restrictions and look for alternative methods of land use controls.

DAVID S. WILLIAMS
Planning Director
City of Inkster, Mich.

FORUM: I have just finished David Mandel's article, "Zoning Laws: The Case for Repeal," and his thesis struck home. Through my years in private industry and in government, I have generally accepted zoning codes as necessary, and perhaps at one time might have been considered a supporter of strong zoning control.

As a resident of the new City of Irvine, Calif., currently organizing a planning commission, I found your article extremely timely. As a civil engineer confronted by misused zoning time and time again, I found the article particularly applicable to my day-to-day practice.

I believe the article should be read by every planning official in our nation. Perhaps if we spent more time planning and less time zoning, we might produce a superior environment.

Tustin, Calif. J.E. VAN DELL

Plan or renew your offices with Modern Office Modules. The possibilities are endless, there is everything to work with! Modern's totally coordinated landscape systems provide acoustically controlled, pre-assembled free-standing panels in different heights and widths; many surfaces — like Videne® wood grains and solid colors — Karpetwall® in colors. Flat and sloping work surfaces. Deep and shallow drawers. Hanging files. Open and closed shelving. Display shelves, tackboards, and chalkboards. Free-standing work and machine tables.

Modern Office Modules are created with credence — Modern's expertise in functional design, sound control, precise production techniques and a flair for freshness. And you can afford the lower cost. Want proof? See your dealer or write Landscape Systems Division / Modern Partitions, Inc. / 553 E. 32nd / Holland, Michigan 49423.



SHOWROOMS:
New York City, Chicago,
Denver, Rochester,
Atlanta, Miami.

ad infinitum



Halsey Taylor's 2-stream projector is prankster-proof. Placing fingers over outlets diverts water through slotted openings without squirting. In addition, Halsey Taylor offers these vandal-resistant features:

- Squirt-proof projector and drain strainer are locked into place to prevent twisting or unauthorized removal.
- Automatic stream regulator valve is located inside cabinet to prevent tampering.
- Heavy gage stainless steel top resists chipping and staining; cabinet is one piece, spot-welded steel construction.

Ask about our complete line of vandal-resistant water coolers, fountains and classroom sinks. HALSEY TAYLOR DIVISION, 1564 Thomas Road, Warren, Ohio 44481.

SQUIRT-PROOF



Halsey Taylor®

KING-SEELEY **KST** THERMOS CO.

MASTER

(continued from page 12)

RIGHT ON

FORUM: While architectural firms are struggling with the sheer business-type problems of staying in practice today, there is another problem being discussed; that of the relevance of the architect's intuition. FORUM does a good job of covering both sides of this issue: the December '71 issue contained both an article by Robert Venturi and Denise Scott Brown, and a book review of *With Man in Mind*. These seem to be representative from both sides of the controversy. To quote from both—"Miss Perin wants the designer to substitute his intuition, his own personal biases, with objective data garnered from the human sciences." While Venturi and Brown criticize totally deterministic approaches and note "the 'intuition,' 'imagination,' 'inventiveness' and 'free and innumerable plastic events' that regulate architecture" and its symbolic nature. I support Venturi's and Brown's efforts and feel they are onto something important. In our technological society we are led to believe that "hard" information is the only information. But just as our vocabulary now contains "hardware" and "software" it should (and soon will) include "hard information" and "soft information." As the anthropologist Leslie A. White has said, "Today we are beginning to realize the fact that the symbol is the basic unit of all human behavior and civilization." I say "right on" to those concerned with symbol and meaning in their work, and let's see more articles concerned with this issue in the FORUM.

WILLIAM BRANDON
Austin, Tex.

FORUM: Hats off to the Venturis; they have seen our national image (articles and architecture). And now 007 too. Just like "The Man from Rio" (had his great chase in that nation's shiny new capital), Bond has most of his latest "Diamonds are Forever" carnival in our architectural inspiration, Las Vegas, at the Circus Circus, the Whyte House, etc. etc.: lights lights cars crash chase

and the ultimate reflection on last flash would destroy Washington but Bond (British) saves us and lets us have our sane capital city unburned. Next adventure in Disneyland? Williamsburg?

OWEN BEENHOUWER
Seattle Lecturer, Univ. of Wash.

FORUM: All right, I read Robert Venturi's articles (Nov. and Dec. '71 issues). While reading them, I was magically caught up in his rhetorical world of symbolism, sculptural ducks, bio-technical determinism and utilitarianistic propaganda. Upon finishing them, I felt as if I'd been tricked. Like being disappointed by a poor ending to an otherwise suspenseful movie, I was bothered by the realization of the end results of the colorful Venturi prose.

In spite of all his explanations I can't understand who would want fire station #4 in his neighborhood, unless, of course it was accompanied by an extensive billboardized exhibition describing the unusual juxtapositions, iconography, and other progressive features of this building, which sounds so good in print but looks so depressing in life.

The man Venturi is far more entertaining than his finished products, which to me resemble the environmental equivalent of U.S. Government information pamphlets: chock full of information, but hard to read and awful to look at. I'd like to read more articles by him, if only to keep him so busy writing that he has no time for building.

MICHAEL KRESK
Providence, R.I.

FORUM: I could easily imagine a person with Venturi's sense of the ironic/comic sitting down and completely fabricating a typical collection of outraged letters-to-the-editor. He could start with one from an indignant Bauhaus liberal, then one from some kind of Taliesiner (preferably with three names, just like the Master), and who knows who. And for the ironic zinger in each letter he could qualify all that moral outrage with "at least Venturi and Brown write well." And then for the super zinger he could get them all published in an issue dedicated to Buckminster Fuller (Jan/Feb '72 issue).

PAUL FISHER
San Francisco Architect

Our expanded line lets lockers breathe.

Your school needs it. Your students need it. A locker that doesn't seal odors in, or seal air out.

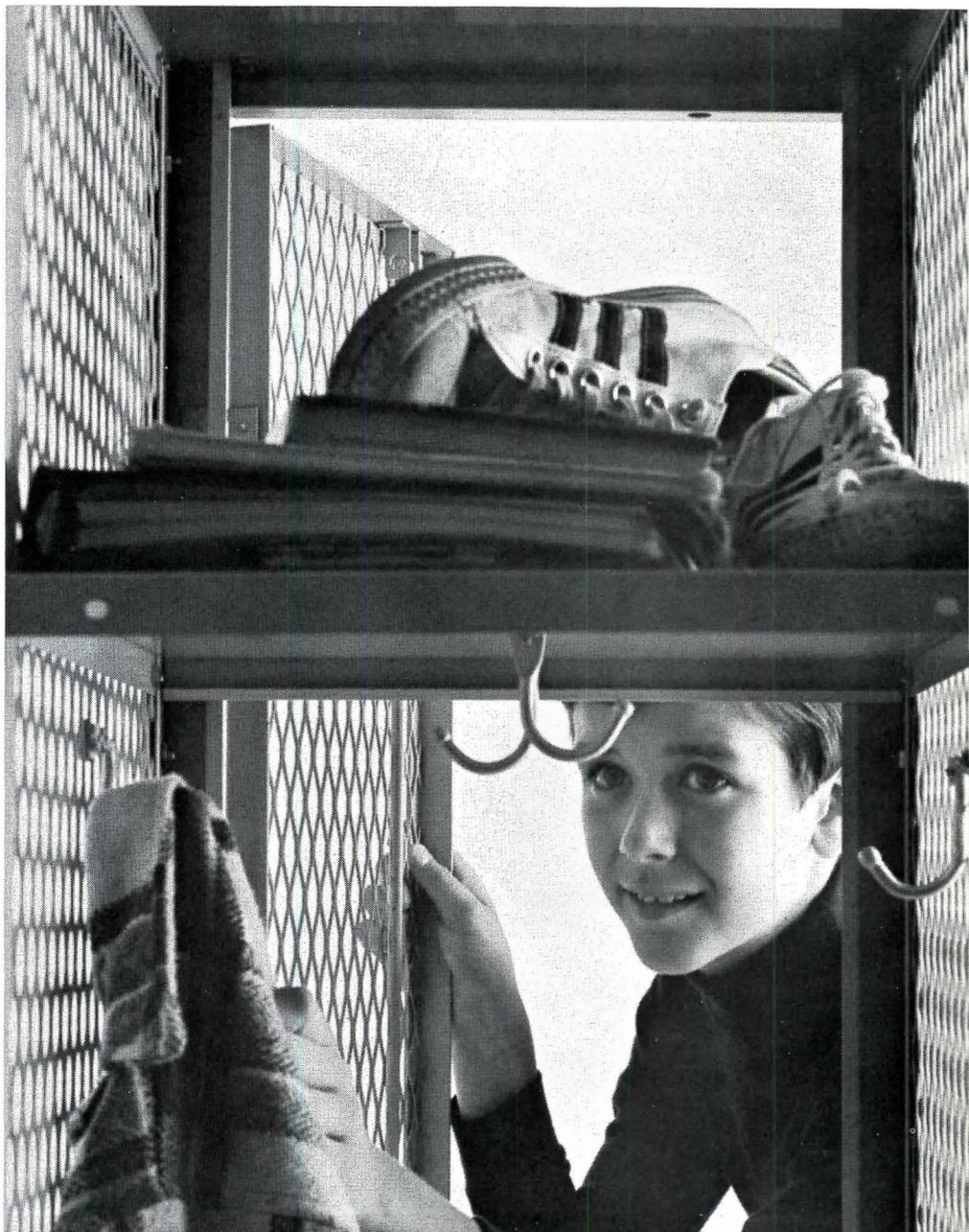
It's the Republic Expanded Metal Locker, especially made for locker rooms . . . with 13-gage $\frac{3}{4}$ " mesh expanded metal on both front and sides. Mesh expanded metal smooths out more problems, too, by eliminating burrs and sharp edges so clothing and hands don't risk damage.

Frames are 16-gage, channel-formed for strength. Bottoms, shelves, and backs are also 16-gage.

Locking mechanism is 3-point design on single, double, and multiple tier units — and the doors will accommodate any standard locker lock you like.

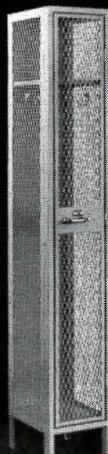
Republic KD Expanded Metal Lockers are available in single tier, double tier, and box types — in 19 standard colors. They're compatible in design and assembly with other standard Republic lockers. And Republic offers the most *complete* locker line, a model for every need.

Write. We'll be glad to supply further information. Republic Steel Corporation, Manufacturing Division, Youngstown OH 44505.

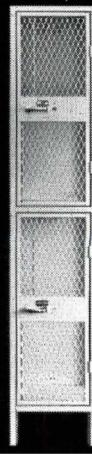


Republic Steel
Manufacturing Division

SINGLE TIER



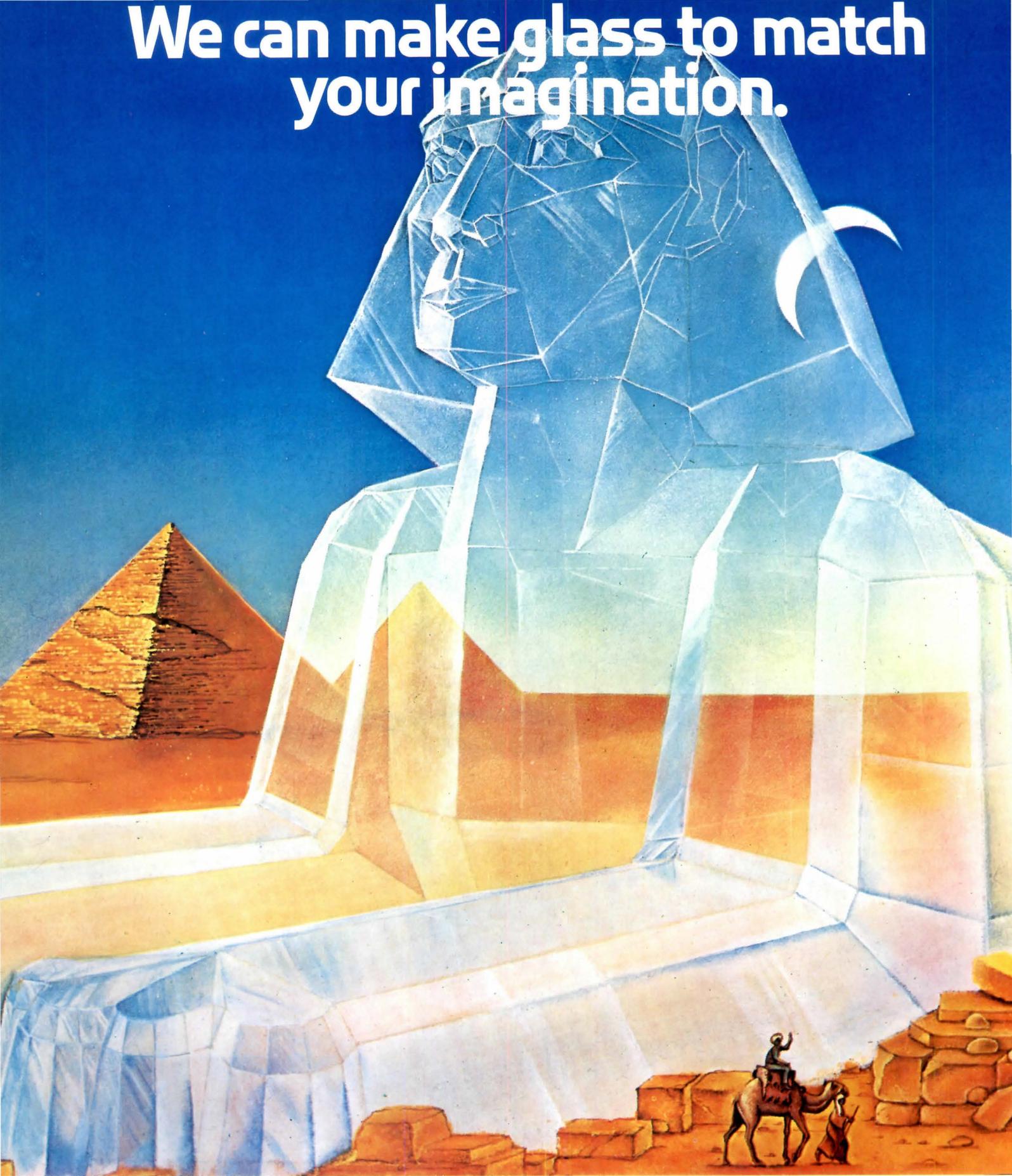
DOUBLE TIER



BOX TYPE



We can make glass to match your imagination.



BSN likes glass, architecture and architects who have imagination.

This is why we have been making glass for centuries at our factory the "Hall à Pots", all kinds of glass. Just ask us, and we can make a glass as

thick as you want, the exact colour you need, the ideal form you have in mind.

It doesn't make a difference where you are either: for example we came to Sydney with our technicians and engineers to help realize the enormous

project of the famous Sydney Opera House. BSN can match the wildest architectural dream. Tell us yours.

BSN Export, 17 bis, bd Hausmann
75-Paris 9^e.

Phone: 770-93-79.

BSN

FORUM

A couple of months ago I pointed out that the N.Y. State Council on the Arts (with an annual budget of \$14.4 million) was doing an admirable job creating new jobs—not only among artists, but among various kinds of hangers-on. The N.Y. State Council on Architecture, an offshoot of the Arts Council, spends a mere fraction of that sum (latest annual appropriation: \$197,000); but it is doing some remarkable things as well. Moreover, it is the *only* Council on Architecture in the U.S.—so it may be setting important precedents for the other 49 states.

The Council on Architecture doesn't just give away money to architects, which would be a commendable activity, of course. Instead, it engages in some highly innovative maneuvers designed to improve the conditions under which public as well as private architecture is produced. One of those maneuvers, as reported last month, is to have the 44 different agencies responsible, in N.Y. State, for public construction adopt a uniform system for all specifications—the one developed by CSI. That seemingly bureaucratic act should do wonders in cutting building costs and wasted architects' time (or, conversely, raising architectural quality in public buildings). Another one of the Council's activities—the establishment of a comprehensive inventory of all the N.Y. State agencies responsible for design, planning and construction—has provided architects with an invaluable tool in the pursuit of public clients. Still another continuing effort on the part of the Council is to mastermind work sessions at which different professionals responsible for design and construction thrash out their problems, and (hopefully) come to specific agreements on such eminently practical matters as fees and uniform general conditions for construction contracts. It doesn't sound very sexy; but anyone who has ever designed a building for a public agency knows that he—and it—can succeed or fail over just such issues. The Council's work on the CSI spec system alone is expected to save the State something like \$2 million p.a. in wasted man-hours. Not bad for an investment of less than one tenth of that.

—PETER BLAKE

PRESERVATION

MEANWHILE BACK AT THE FRONT

It once again appears the venerable West Front of the U. S. Capitol, the last remaining facade of Dr. William Thornton's 1792 prize-winning design, may bite the dust.

Over the years, the Capitol has been gnawed at, added to; but only in this century have these changes been for the worse. The last major one was nonarchitect George Stewart's 1961 extension of the East Front. Now, after years of stri-

dent controversy, the Commission for the Extension of the Capitol, a committee whose name is as ponderous as its perceptions are short, has voted in favor of the wrecking ball, ignoring pleas from the American Institute of Architects, the positive recommendation to restore, in its 1966 study, and the findings of its own engineering research done for \$175,000 by the New York firm of Praeger, Kavanagh and Waterbury.

Both the AIA and Praeger studies found that the West Front, despite the very visible shoring up done in recent years,

is in no danger of collapse; that restoration, given the sophistication of new building technologies, could be accomplished for about \$15 million, a figure which corresponded to one set down by the commission.

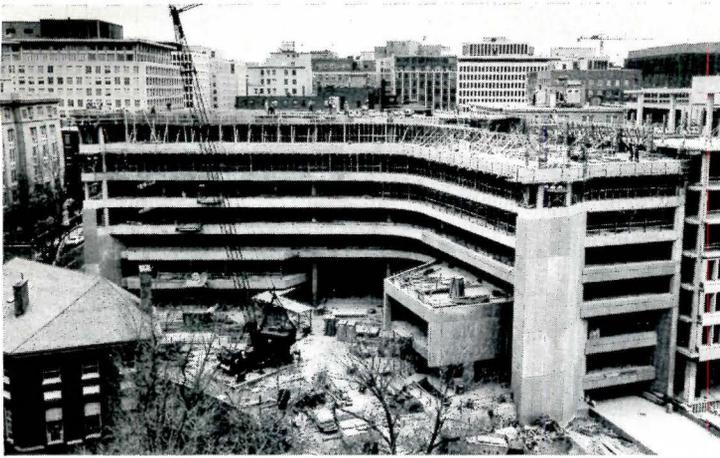
In view of the fact that extension, versus restoration, would cost \$60 million, the decision turns on the desire of congressmen for more offices. To date, however, no long-range study about space needs has been done. There is not even a coherent master plan for Capitol Hill. The same kind of *ad hoc* improvisation which marks (and undermines) so much cure-all legislation coming out of the Capitol, now threatens the Capitol itself. Could it be that our legislators, who carp so much about fiscal responsibility, are culturally bankrupt?

Not all of them, apparently. For some comfort can be taken in the fact that the Senate, at the moment, seems unwilling to grant funds for this \$60-million vandalism of "extension."

Well, what does a nation's culture matter when compared to, say, the need for more offices? Thomas Jefferson, the only architect *and* lawyer to be president, might have explained, better than the lawyers who succeeded him, the need for a structure "dedicated to the sovereignty of the people, embellishing with Athenian taste the course of a nation looking far beyond the range of Athenian destinies." One can only wonder about the destiny of a nation which, 200 years after its founding, prizes making money above making sense and bends to power unchastened by poetry.

The old West Front, its sandstone walls flaking by default, is more than a fragment for the nostalgic. Its present state, the renewed threat to its very existence, demands that the American people and their elected leaders be more responsive to the values which distinguish a true culture from a mere civilization.

A civilization we have been. And a civilization has the capacity for change. A culture we are becoming. A culture has the capacity for leaving some things alone. The United States Capitol will one day attest, for better or for worse, how discerning our power was.



The AIA in hot pursuit of excellence or Octagon's Panopticon

'S & DOWNS

ON SCHEDULE

There is the new AIA headquarters, and it topped out in April.

The Architects Collaborative reports that the basement parking is done, the precast facing is 50 percent in place, glazing will begin in May, while masonry work on the north and east walls is well in hand.

Thanks are due the Fine Arts Commission which, after long debate and delay, finally permitted the AIA to build its own thing in Washington, D. C.

There's nothing like a stylish lobby for a stylish lobby.

ST. LOUIS BLUES

In April 1951, the ARCHITECTURAL FORUM published an elaborate story on what was then a brand new public housing project in St. Louis, called Pruitt-Igoe. We

published Pruitt-Igoe because we thought it was innovative, impressive, and likely "to change the public housing pattern in other cities."

Fifteen years later, in December 1965, we published a second story on Pruitt-Igoe—this one entitled "The Case History of a Failure." In documenting that failure, we admitted our own.

Then, on March 16th of this year, only a couple of decades after this "innovative" housing project of 33 identical, 11-story brick boxes designed to house 12,000 St. Louisians was dedicated, the roof literally fell in: the St. Louis Public Housing Authority, having been reduced during the intervening decades to a state of deep, manic depression, planted sticks of dynamite under the first of about 20 of those brick boxes, pushed the button, and blew all eleven

stories of perfectly good concrete, brick, glass and assorted equipment to smithereens. The Authority also prepared to blow up another 19 or so, and to reduce the remaining 13 to a height of three or four stories. Pruitt-Igoe had become the housing failure of the century—an unmitigated disaster in human, architectural, and now economic terms.

The reasons will be discussed in a forthcoming FORUM story—an ultimate expose of self-debunking. Suffice it to say now that, at Pruitt-Igoe, there is no there, there—and there probably never was. Or if there ever was, it went up in smoke on the Ides of March.

THE CITY OF BROTHERLY LOVE

The Religious Society of Friends plans to build a \$1.5-million office center in Philadelphia using black subcontractors and black labor. The Quaker organization will act as its own General Contractor.

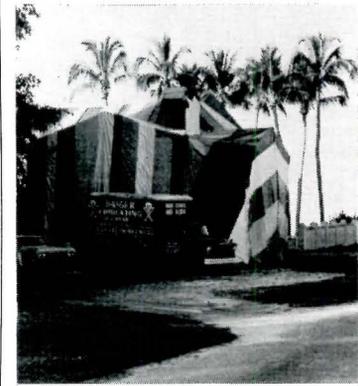
Two existing buildings are to be renovated—Phase I (\$150,000) and Phase II (\$225,000)—and one new building will be built (Phase III \$1.25 million).

Architects Cope & Lippincott have made a comprehensive study of the available labor force in Philadelphia and have searched out black firms whose work has been of consistently high quality. Of thirteen subcontractors engaged, only three categories are non-minority: sprinklers, carpet, and hard-

ware maintenance.

In a further breakdown, only three of the subcontractors are union. Architect Mather Lippincott, partner-in-charge, anticipates trouble from the unions, and both the client and the architects recognize that sufficient pressure from the unions could sabotage their plans to continue to employ minority subcontractors on Phase II and III.

TENT OF MANY COLORS



This is not a small circus troupe, and it is not the traveling van of a visiting sheikh, and it is not Christo on the loose. It is a house in Florida being fumigated.

If it doesn't work out . . .

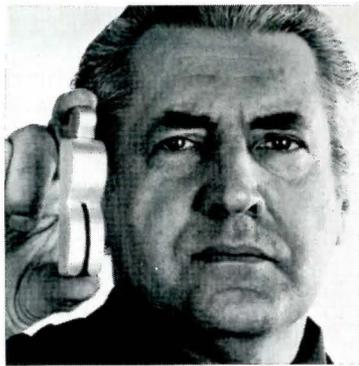
. . . Erase it



MOONDOGGLE

The best-heeled art patron in the western world, it turns out, is NASA. Each time it sends those clean-cut men on one of its excursions, it sends along a Work of Art to keep them company; and they then leave that Work of Art on some dreary satellite, for the edification and enjoyment of the local inhabitants, whoever they may be. It could be a plaque of some sort, showing, graphically, that we on earth are either Men or Women (but failing to show which end is up—an omission sure to baffle those Martians for some millennia to come). Or it may be a piece of aluminum sculpture, approximately 3 3/8 inches long, and depicting a "Fallen Astronaut." That particular Work of Art was left on the lunar surface on August 2, 1971, by the crew of Apollo 15, and it was sculpted by Paul Van Hoeydonck, who is fascinated with space exploration. Duplicates of the 3 3/8-inch Astronaut are currently on display in Washington and New York.

OK. Now supposing for a



Paul Van Hoeydonck and clothespin

moment that something or somebody actually lives up there, and finds this little chunk of aluminum sitting in the midst of all that green cheese—what, precisely, will be the message to the Abominable Moonman or Moonwoman? Will he or she conclude that the Planet Earth is, in fact, inhabited by aluminum clothespins, 3 3/8 inches long, without feet, without arms, without noses, eyes, ears, mouths, belly buttons, knees, pubic hair or, for that matter, any appreciable degree of intelligence; moreover, supine; and, finally, sufficiently dim-witted to have, in at least this one case, permanently abandoned the lush beauties of Florida for the Great Big Green Cheese? Of course he, she, or it will conclude precisely that—and so would you. In short, let's stop paving the heavens with good intentions, or even trite ones.

URBAN TOYS

Haus-Rucker-Co., a group of artists, designers and architects, are back again (June '70 issue),



Nuremberg's no-no

this time with three new toys for grownups: "Walking School", "Big Piano", and "Finger-Post". In a recent outdoor sculpture symposium in Nuremberg, Germany, the local citizenry became so outraged at the 42-ft.-long pneumatic "Finger-Post" (which was rudely

pointed toward the city castle) that one of them, in the dark of night, stabbed it, causing total deflation.

OLD BEAMS, NEW TRICKS

Sculptor Albert Leon Wilson finds steel beams at demolition sites, or buys up scrap metal, and turns it all into works of art. Using a 6,000° oxy-acetylene torch, he creates his sculptures around the scars and colorations of his finds. In six years he has made 4,000 pieces, all of which are now owned by collectors.

A recent show at the Bodley



"Comet" of "Broken Bikes" series

Gallery in New York called "And Chairs And Tables And" was rich with whimsical ladies and gents as chairs and tables.

Another piece just finished is called "Bicycle" and has already been installed on a Manhattan street in a bicycle rack.

BIG PLANS

NYC JOINS THE MAJORS

Gordon Bunshaft and J. Walter Severinghaus will head the SOM design team for the \$100-million New York City Convention Center. Twenty-seven architectural firms were interviewed and six finalists chosen, among them Philip Johnson & John Burgee, I. M. Pei, and C. F. Murphy, before SOM was selected.

"We're very excited to get the job," Architect Bunshaft said. "This is a tremendous facility. We don't want to build a monster that people say spoils the city; we want to enhance the city." Part of the architects' work will be to design the traffic and circulation patterns of the area.

Thomas F. Galvin (an architect!), executive vice president of the nonprofit New York City Convention-Exhibition Center Corporation (the company that will build the Center), says

"The convention center will do something for Manhattan that I've felt we've needed for a long time—it will bring the people back to the waterfront."

The site—40 acres of midtown Manhattan—is on the Hudson River between 44th and 47th Streets. With 750,000 sq. ft., on two levels, the center will be larger than the Chicago and Atlantic City centers which have 500,000 to 600,000 sq. ft.

Completion of the immense project is expected in 1976—bicentennial time.

NEW TOWN ON THE MOVE

Finally, a new town has been planned around a workable transportation scheme, reversing the usual process whereby a town is laid out, then a transportation system superimposed. The new town is New Franconia, recently announced for seven miles south of Washington, D.C. The developer is The Nilsen Group, of New Hope, Pa., with William R. Jenkins, architects.

The new town will be linked to the metropolitan area's Washington Metro by a 24-hour, toll-free, computer-controlled horizontal elevator that will offer rapid access to the entire city area. Residents of New Franconia will have eight-minute access to stations within the 1,800-acre community.

The projected population for the town is 39,000 and will include neighborhoods of high, middle and low-rise housing, arranged in descending order of density around nine transit stations. Thus, 50 percent of the residents would be within 500 ft. and 30 percent within 800 ft. of each station. Cars, say the developers, would be almost superfluous with such a plan.

The Nilsen Group of New Franconia

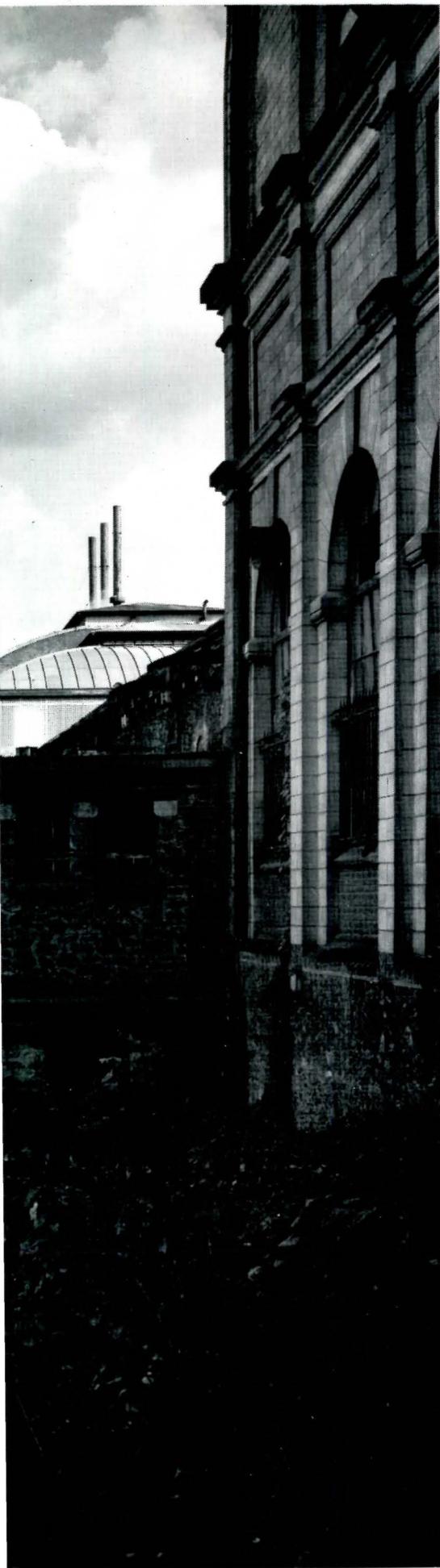


(continued on page 61)



USINE MENIER

PHOTOGRAPHS AND TEXT BY CERVIN ROBINSON

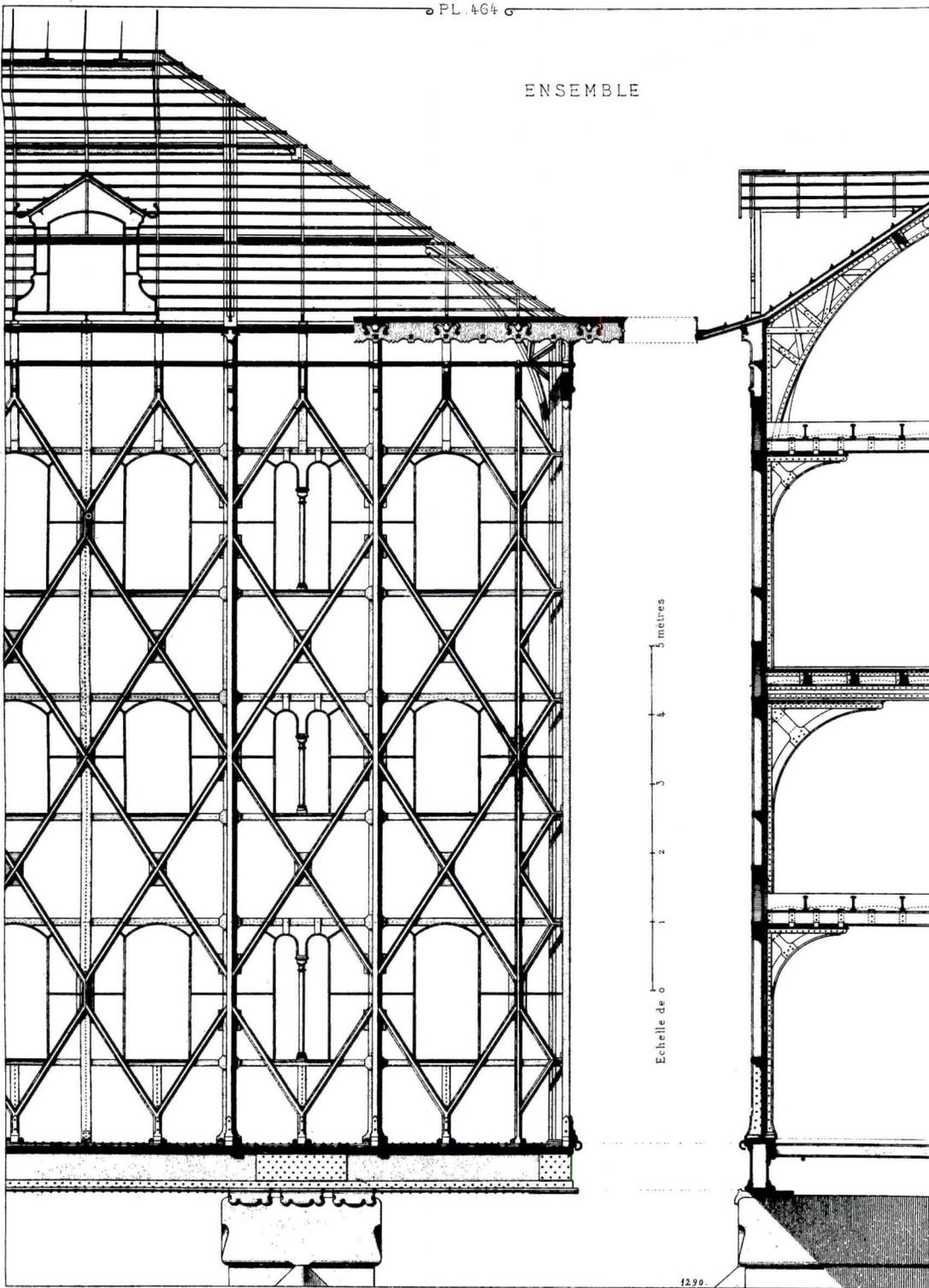


Jules Saulnier's Menier Chocolate Mill at Noisiel-sur-Marne has become familiar to many architects through the pages of Sigfried Giedion's *Space, Time and Architecture*. To the author, in 1941, it was only the building's iron frame that seemed of any significance. But Saulnier clearly meant his facade to exhibit, both in that part of the frame that was exposed, and in its brickwork, something that was beyond plain rationalism. The decorated brickwork was used to suggest structural forces. The lines of diagonal members were emphasized by diagonal bands of brickwork, and each of their joinings by four small crosses made up of bricks enameled black (which, when the iron was painted its original light grey, would have looked less like iron themselves than they do today). Concentrated on those parts of the facade immediately above the mill's four stone piers, clusters of retaining arches carried the eye spinning down, past paired windows, and bouncing and ricocheting off structural members as though in a pinball machine, finally to land by way of a pair of inverted arches on the iron beam which rests directly on the piers.

The building illustrates two of the great concerns of 19th century architects with the appropriate—and expressive—use of structural materials and the applications of color theory. Saulnier wrote in 1877 of the brickwork: "When at its completion I could judge the total effect of this decoration, I was more satisfied than I could ever have hoped. . . . The frame formed by the luminous blue of the sky, the green of the trees, the water with its reflections and its mists, the atmosphere in a word, had a most happy influence on the general harmony; at the distance necessary to see the whole effect well, all the tones mellowed, softened; the designs, even those which were delicate, read clearly, and it almost seemed an immense oriental carpet."

The mill is to be found, outside Paris, some ten miles east of the Porte de Vincennes. It can best be seen from the bank of the Marne just west of the Menier factory buildings.

ENSEMBLE



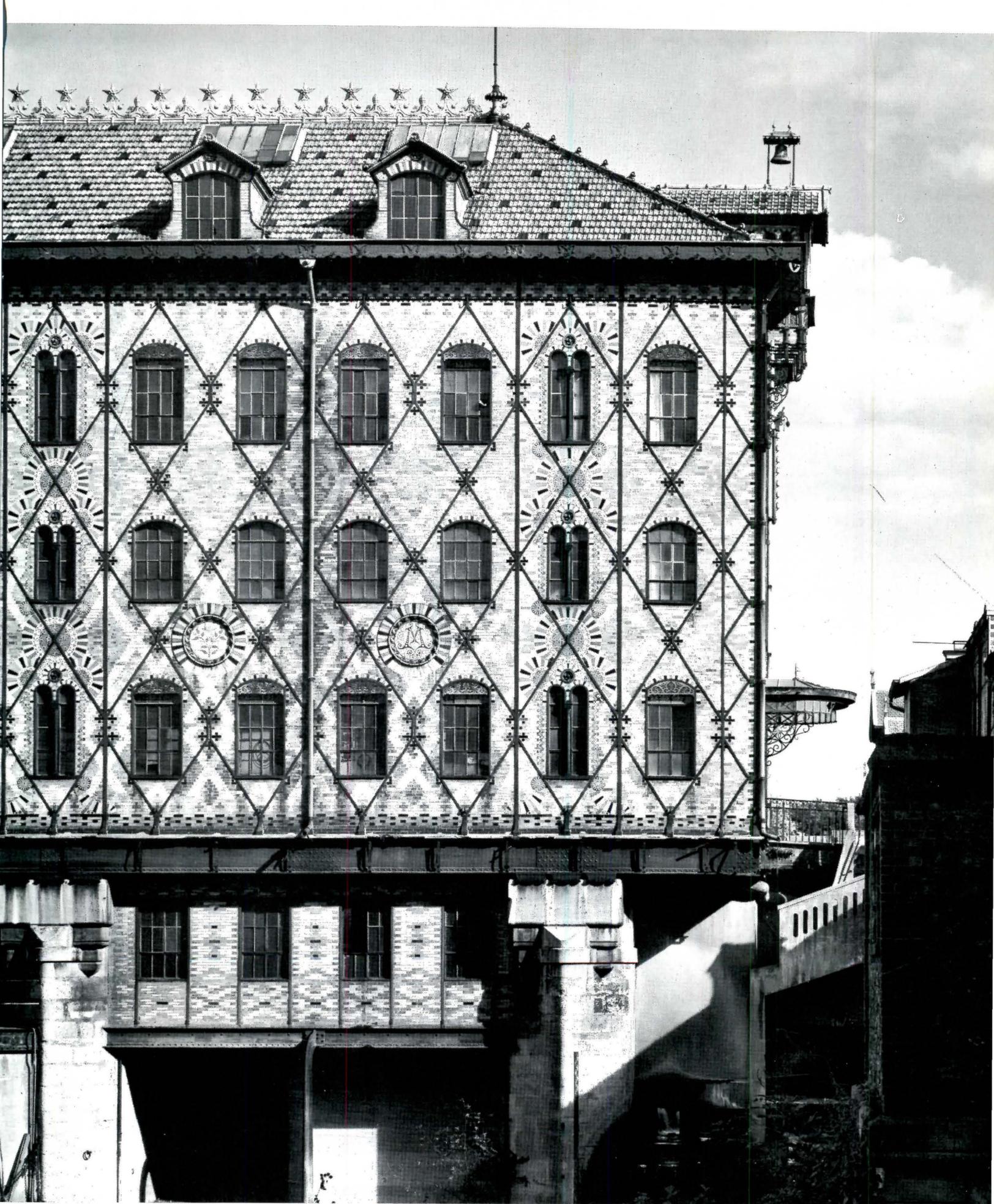
L Calinaud del.

JULES SAULNIER, ARCHT^e

Paul Bury sc

1290

Jules Saulnier described the mill he proposed to M. Menier as "a building completely of iron and hollow bricks, the outside walls arranged like the girders of an iron trellis bridge, and forming themselves a girder." The illustration above and that used for the cover are from the copy of the *Encyclopedie d'Architecture* in the collection of the Avery Architectural Library at Columbia University. They are reproduced here through the kindness of Adolf K. Placzek, Librarian.



AIR

"Trying to unload a 747 through one of today's airports," somebody said recently, "is like trying to unload the Queen Elizabeth through a porthole." That is a pretty good analogy, as several airport operators have discovered to their dismay. Now, some of them are doing something about it.

There is nothing mysterious about what they are trying to do. The problem of loading and unloading a large jet really isn't so very difficult to solve: first, you get the passengers and their baggage from Point A (i.e., home) to Point B (i.e., the airport); second, you separate passengers and baggage, process each differently, and then (hopefully) rejoin the two in the same jet; third, in accomplishing this incredibly complex task, you neither kill the passenger, nor do you lose his baggage. (The diagrams, at right, show some of the ways in which this problem has been tackled.)

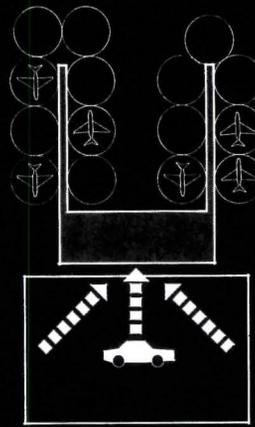
At the other end, you get the passenger out of the plane, and you get his baggage out of that same plane's baggage compartment. Next, you, somehow, reunite the passenger and his bags before sundown (or sunup, as the case may be). And, finally, having succeeded, you dispatch passenger and baggage to their final destination.

This process is not one, precisely, to boggle the mind. For 150 years or so, every major railroad station in every major city has succeeded in handling people, baggage, and their various means of transportation most effectively. They have done it by providing two amenities: one, space—great, vaulted halls for the passengers, that make them feel as if the whole world had opened to them; and, two, proximity—platforms within easy reach of every traveler.

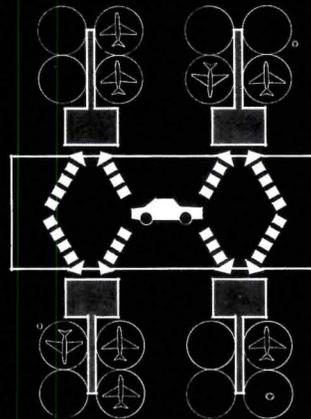
For some reason, our airports have never quite succeeded in solving this simple flow-diagram. Somehow, it has always been difficult to get to the airport; somehow, it has always been difficult to check in and to check your bags; and, somehow, the wait at the baggage claim, at the other end, always seemed to be longer than the flight itself.

Eero Saarinen's Dulles International Airport, outside Washington, and completed a dozen years ago, was the first facility of its kind to address itself to these obvious problems—using the traditional devices of the great 19th century trainsheds, as well as the far-out techniques of 21st century technology, e.g., mobile lounges, capsulated. Even so, Dulles has to be updated. The updating, done with great sensitivity, is shown on the opposite page.

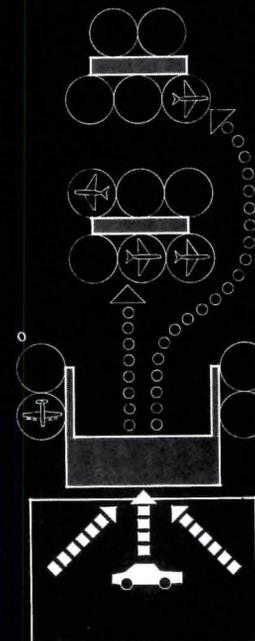
At least two other fascinating new airports are presently under construction in the U.S.: one halfway between Dallas and Fort Worth; the other outside Kansas City. They are shown on the next half-dozen pages. What makes these new airports so interesting is not only their flow-diagrams for human and mechanical traffic; but also the fact that they were designed to accommodate future change.



CENTRAL TERMINAL
long walk from parking
congestion at building
long walks to and from aircraft



UNIT TERMINALS
long walk from parking
congestion at building
long walks to and from aircraft
necessitates interchange shuttle service



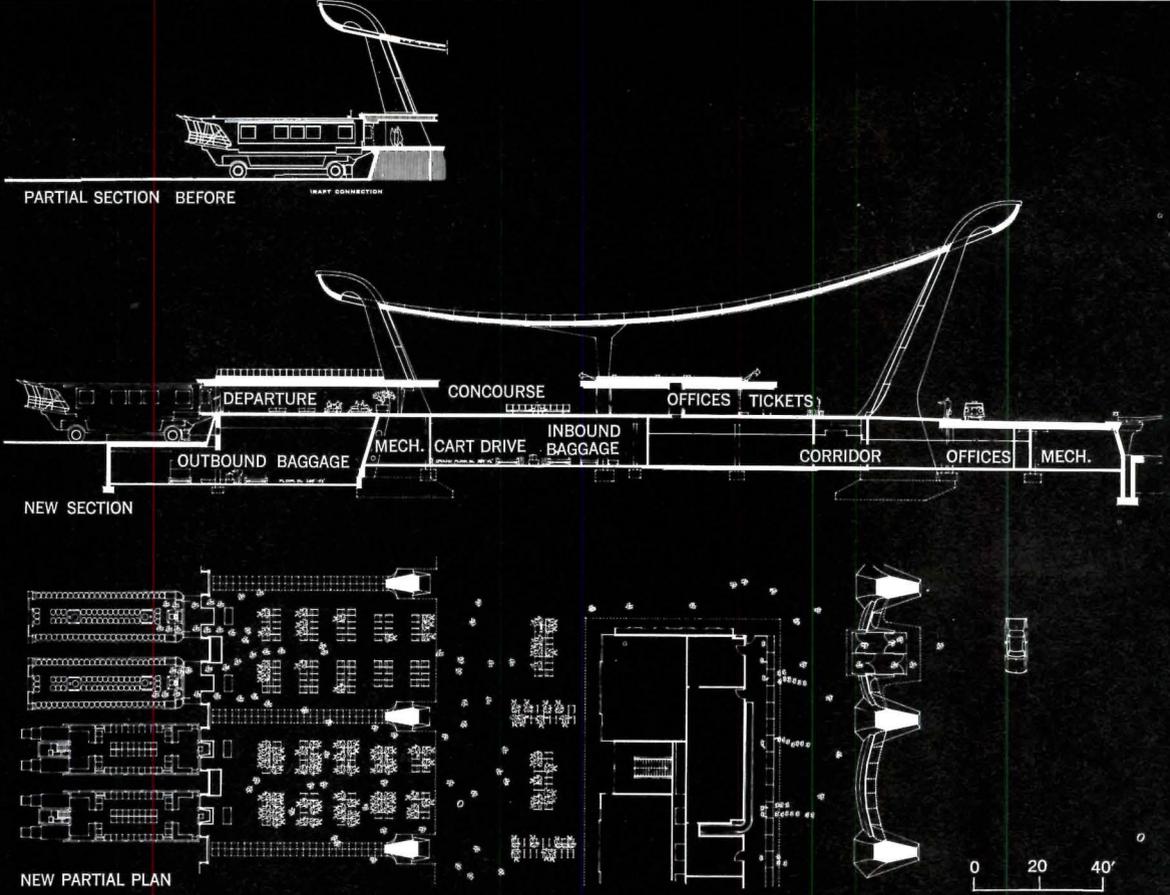
MOBILE LOUNGE
long walk from parking
congestion at building

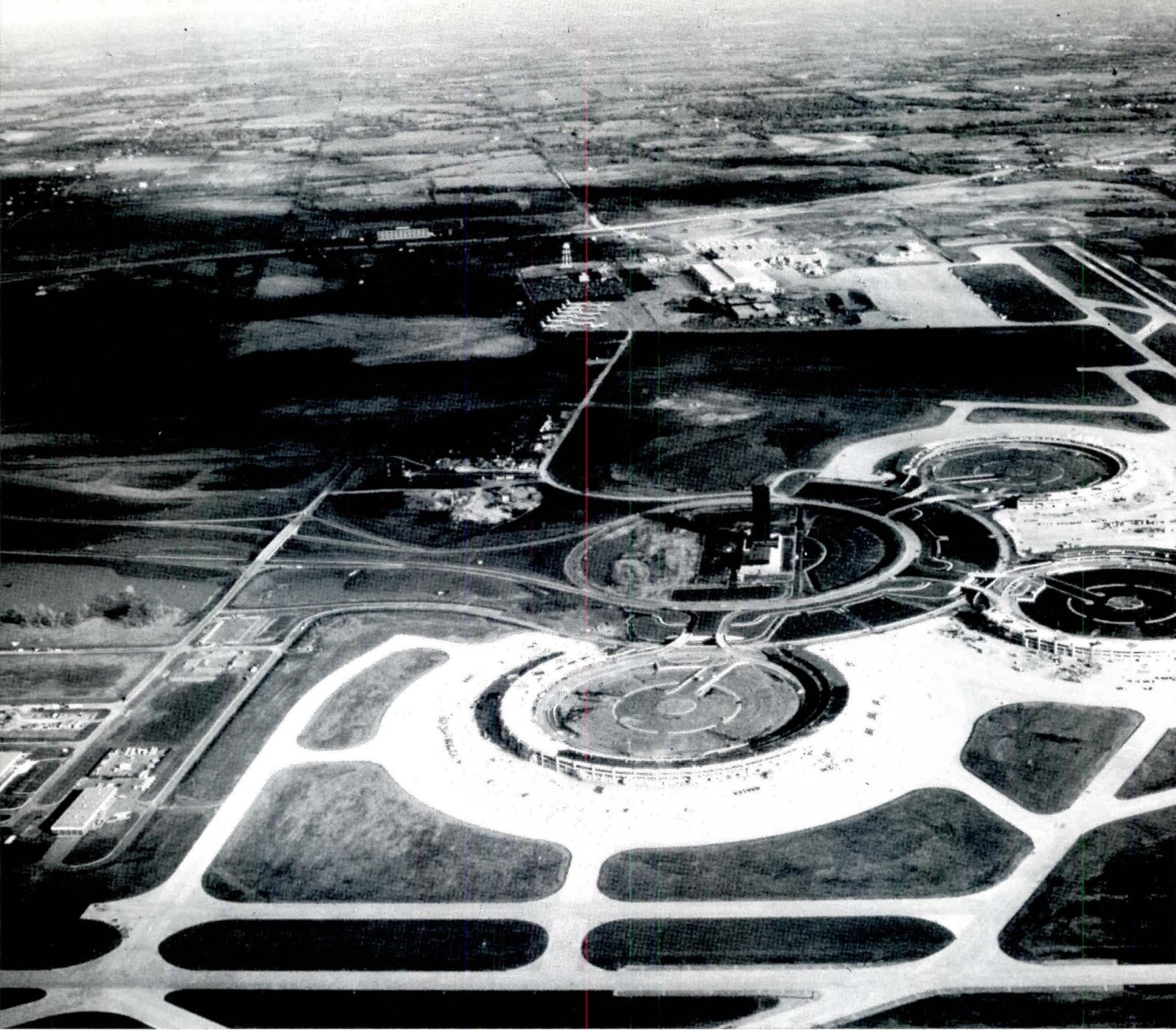
Diagrams at left were prepared by architects for the new Kansas City Airport, to demonstrate drawbacks of several more conventional airport schemes currently in use. Each of the three schemes shown involves considerable travel from curb to plane, either on foot, or by some conveyance such as a mobile lounge. Architects for K.C. Airport rejected all of these schemes.

PORTS

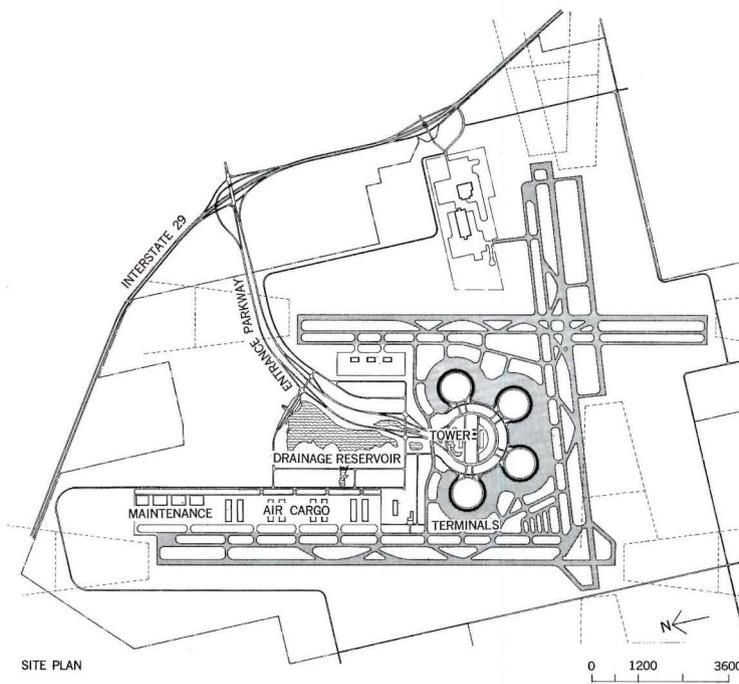
DULLES EXPANSION

Eero Saarinen's Dulles International Airport (top) outside Washington will be expanded in width (by eight bays—below) as well as in depth: because of the huge capacity of the 747s and of future, even bigger jets, the mobile lounges originally designed by Saarinen are no longer big enough to fill up a plane in a single run; so the architects for the expansion, Hellmuth, Obata & Kassabaum, will be adding waiting rooms on the apron side of the terminal, and the mobile lounges will make several trips to pick up passengers from these. Baggage-handling on the lower level will also be expanded (see section of expanded terminal at right). Otherwise Dulles will remain substantially unchanged. Baggage handling facilities, which proved inadequate in the original design, were enlarged by taking advantage of the new basement space under the expanded departure lounges.





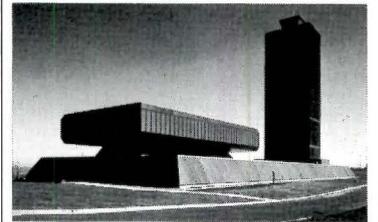
KANSAS CITY INTERNATIONAL



Bird's eye views show KCI's first three rings nearing completion, with the central control tower, power plant, and administrative offices at the center of the clover. Close-up of one of the rings shows the separation of service roads from passenger access roads. The former lead into the basement level of the terminal ring; the latter enter the 1,000-ft. diameter ring at the next higher level—that of the passenger concourse. Initially, all parking will be on grade. Site plan (above) includes the fourth ring, to be constructed when needed.

When KCI is completed, some time in 197X, it will be the biggest four-ring circus in the world. It may not be the most advanced aerial circus by that time (the rate of obsolescence in airport design being what it is); but it will be a significant landmark in the rapid development of the art.

To date, only three out of four rings are being completed. They are impressive, architecturally as well as functionally. The way they work is this: the spur off the main highway from Kansas City heads straight for the center of a sort of four-leaf clover arrangement—the center being the 219-ft. control tower, power plant, and the local FAA offices (below). The highway



spur circles that control tower complex, the way the road around the Etoile circles the Arch of Triumph; and then there are branches off the original spur that lead into secondary circles—three of them now, four of them eventually—and these circles serve the ring-shaped satellites that will form KCI.

They serve those ring-shaped satellites from the inside, and get car-borne passengers to the curbside. Each position along that circular curbside will have been clearly marked as a gate with a specific departure or arrival time. The passenger gets out of the car, checks the baggage at the curbside check-in, and walks through the ring to his pre-assigned gate. Total walking distance: 75 ft. through the "thickness" of the ring, plus length of telescoping tube into plane. (In a conventional airport, this distance may be 1,000 ft.) The return trip (arrival at KCI) is equally simple.

Initially, the 1,000-ft. diameter circles inside each of KCI's satellites will be single-level parking lots, each accommodating 900 cars. Eventually, each circle will be occupied by a six-level parking garage (with valet-parking from and to curbside). Very probably, this sort of arrangement makes eminently good sense. Unhappily, the tall

parking cylinders are sure to dwarf the four satellite terminals they will serve. (Underground parking was rejected because parkers fear basements.) The eventual, multi-level parking cylinders within each KCI satellite will store close to 3,000 cars. The section at right shows the relationship of the future garages to the terminal-ring; and the diagrammatic plan of one of those rings explains the simplicity of the arrival-and-departure pattern.

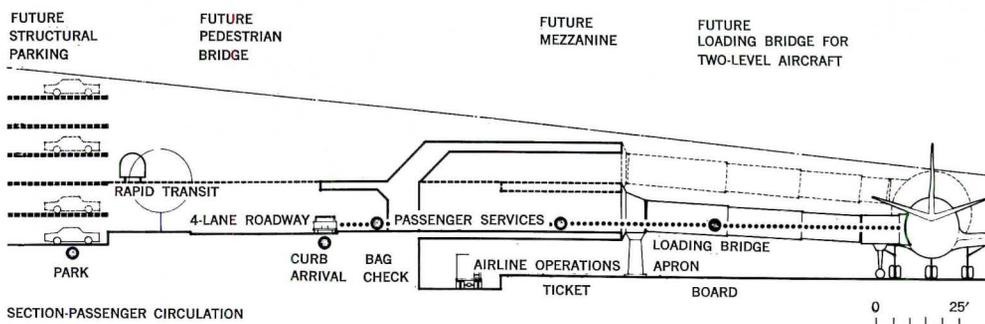
The section also reveals the ingenious manner in which airline operations (including baggage handling) were separated from passenger traffic: by raising the inside grade of each terminal ring 14 ft. above the outside grade of the ramps, passengers are brought in at roughly the level of the plane, and an entire basement level, complete with its own service road and on grade with the ramps, is created to serve airline operations. This separation of functions was thus achieved in the simplest way.

The structure is equally simple: V-shaped columns, 40 ft. high, on the aircraft side; and Y-shaped columns, 26 ft. high, on the landside. Concrete roof bents connect the columns in a "diagonal" pattern, and waffle slabs span between these in a diamond-shaped grid. The concrete was cast in place, and left exposed. A mezzanine level accommodates restaurants and other services to the public.

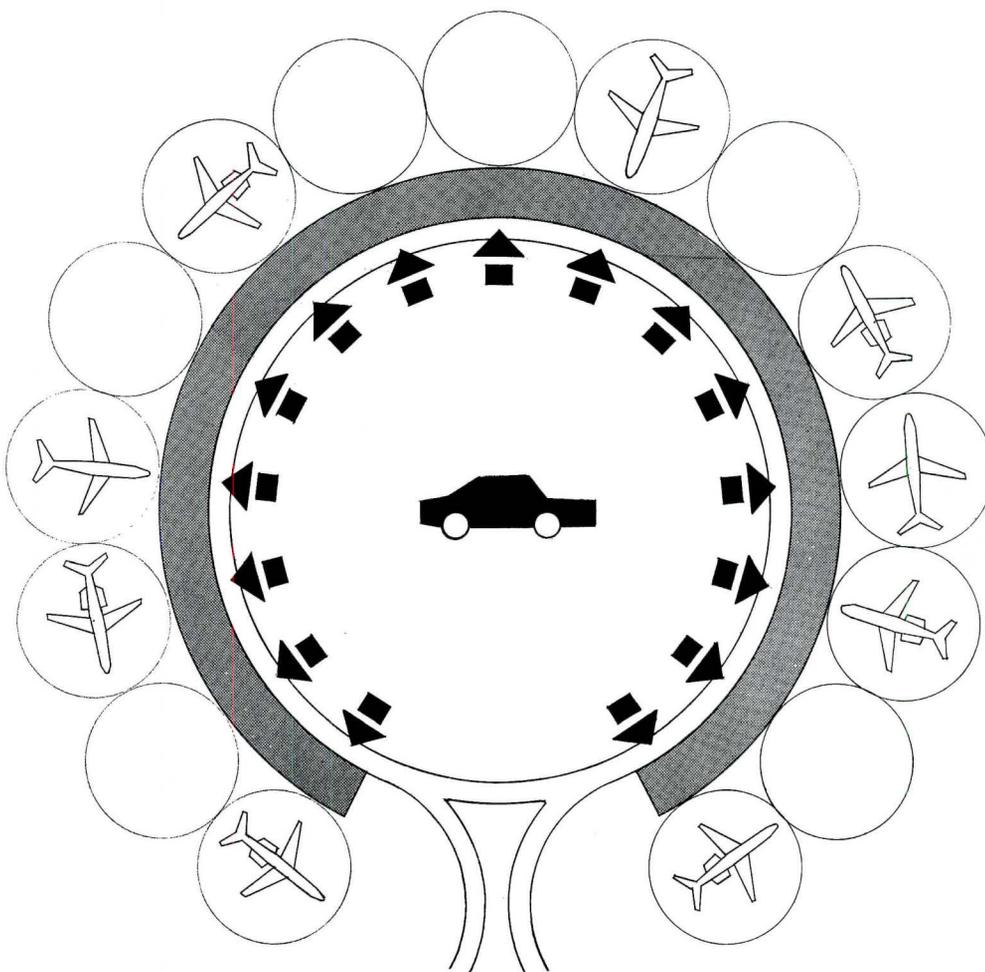
So far, KCI covers 5,000 acres, but there are plans to purchase an additional 5,400 acres, and to build hotels and other facilities that will make this one of the major hub airports in the nation. At first, access from downtown Kansas City will be by bus, car, or taxi; a future rapid transit system is in the planning stage, and an access corridor is being developed to accommodate this. When KCI opens later this year, its capacity will be 10 to 12 million passengers annually.

FACTS AND FIGURES

Kansas City International Airport. Architects: Kivett and Myers (Clarence Kivett, partner-in-charge; Albert F. Rhoads, associate for terminals and central area facilities). Engineers: Burns & McDonnell Engineering Co. Landscape consultants: Sasaki, Walker Associates. General Contractor: Del E. Webb Constr. Co. Area of 3 terminals, 1,008,000 sq. ft. Cost: \$28,947,000. For listing of key products see p. 68. PHOTOGRAPHS: Paul S. Kivett



SECTION-PASSENGER CIRCULATION



TYPICAL TERMINAL PLAN

Diagrammatic section and plan (above) explain the flow of passengers and services within each terminal ring. Each ring can take from 15 to 19 aircraft positions or gates. Photographs on opposite page show (at top) one of the passenger concourses nearing completion, and (at bottom) approach to one of the terminals on a service road. On the airside, each terminal is three stories in height: the lowest level being reserved for airline operations, the two upper ones for passengers.



In some respects, the flow diagram at D/FW is similar to that at KCI: passengers are brought to the curbside of (in this case) horseshoe-shaped air terminals; parking is within the horseshoes, and the gates are located on the perimeters of the terminal buildings. Total walking distance: about 75 ft., depending upon mode of arrival or departure, landside.

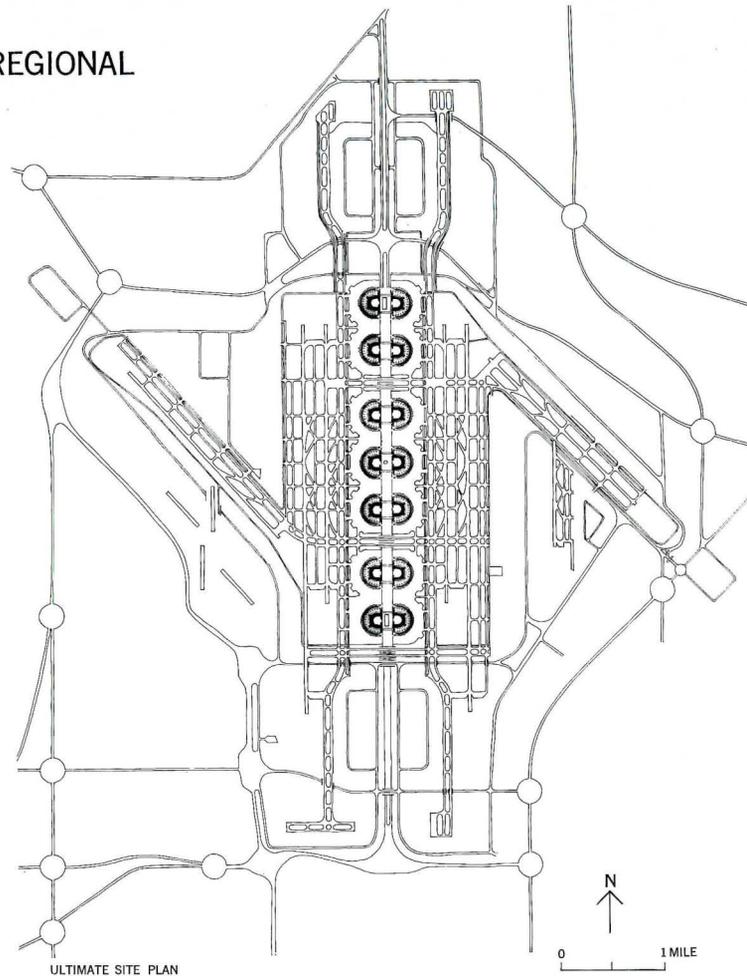
In other respects, however, D/FW is more complex. As the section (at right) shows, enplaning and deplaning passengers are handled on different levels: the passenger arrives at the lower level by car or by automated transit, checks his baggage, rises (by escalator) to the main lobby, and then departs from there. The deplaning passenger reverses this process, but never leaves the main level—a roadway at that level picks him up at the baggage claim area and takes him to his ultimate destination.

Part of the reason for this separation of enplaning and deplaning passengers is the inclusion of an automated transit system in the plans for this vast (17,500-acre) development. The system will provide not only rapid transportation between the 14 horseshoe terminals stretched out along a four-mile long spine (see site plan); it will, eventually, link up this airport with major communities in the region as well.

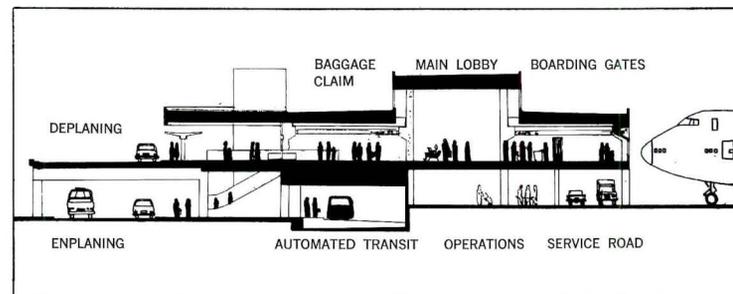
The spine is the key to the plan. It can be entered at either end from one of several State Highways, and it is reserved for passenger traffic. All service vehicles use a separate road system developed within the airport. One portion of that service road system circles the horseshoe terminals at ramp level, as shown in the section at right. At the north and south extremities of the spine, there will be huge air cargo terminals. And in the center will be the FAA control tower.

D/FW is being built in stages, and four horseshoes are at present under construction. When completed—around the Year 2000—it will cover an area larger than that of Manhattan Island, and the facilities will include STOL-ports to hotels, a post office center, a world trade center, and innumerable service structures. Meanwhile D/FW will serve as a prototype for airport planners everywhere.

DALLAS/FORT WORTH REGIONAL

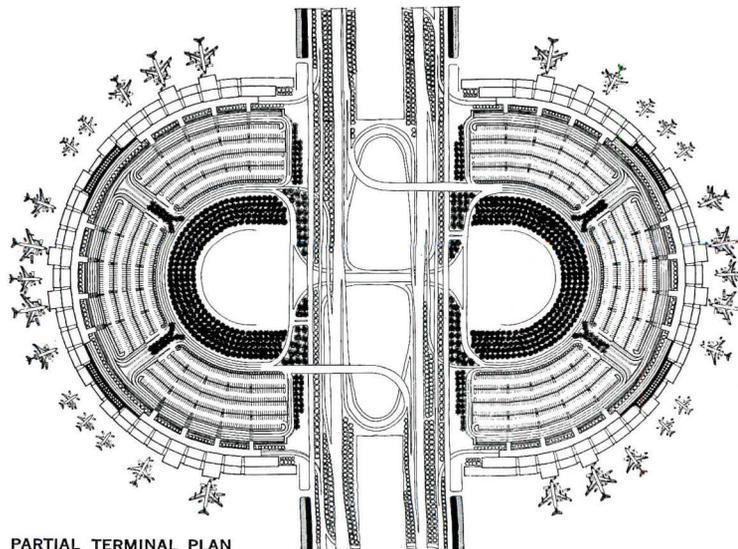


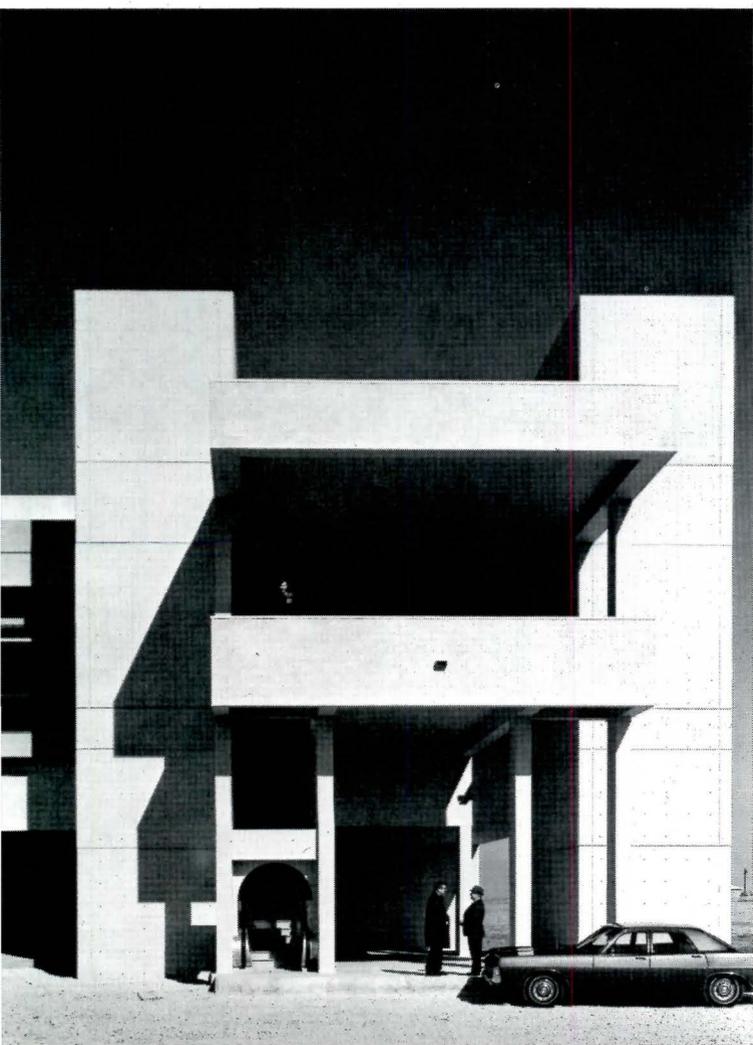
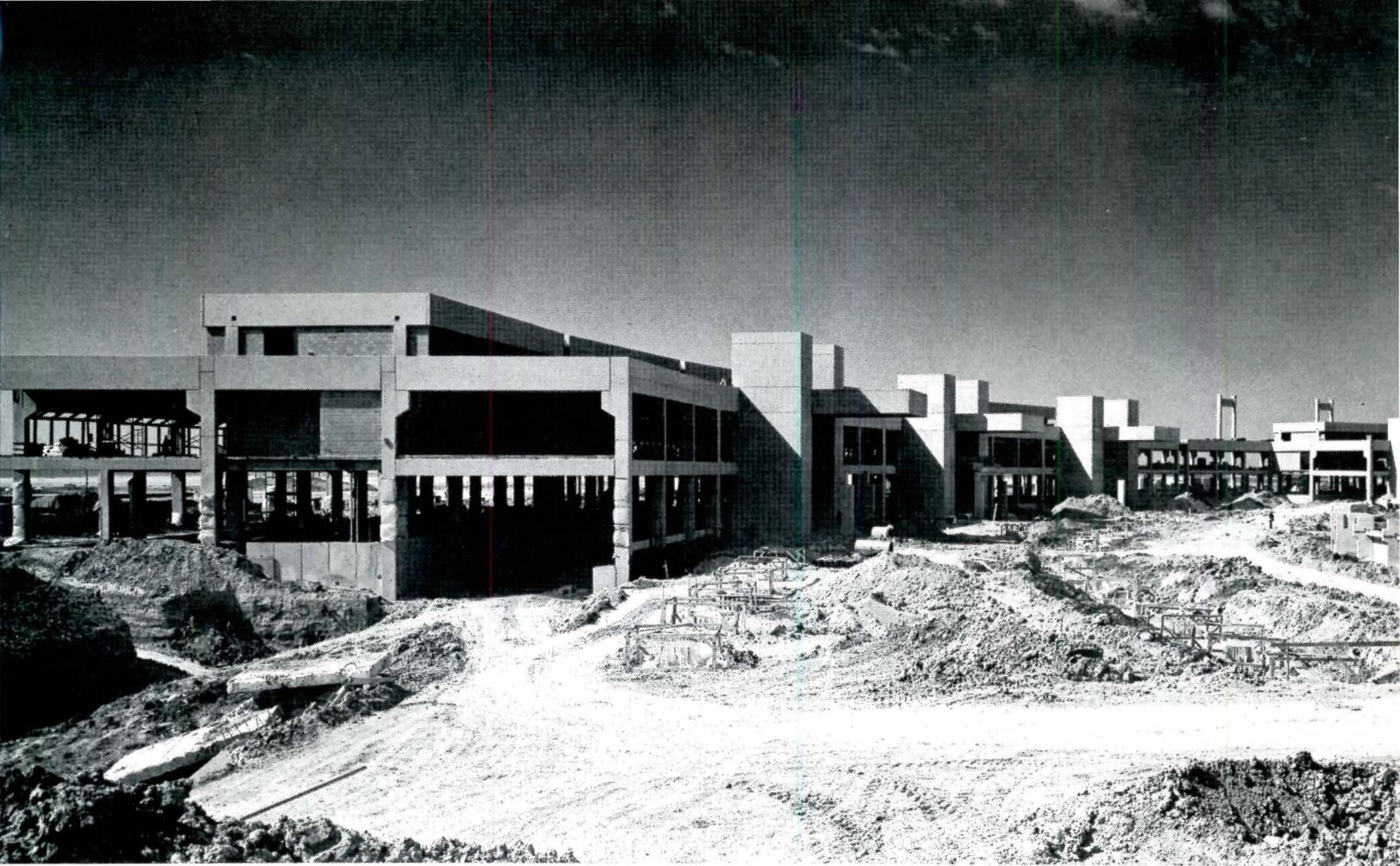
Plan of eventual development at D/FW is shown at top. Typical section through horseshoe-shaped terminal explains separation of enplaning from deplaning passengers, and of all services from both. Plan below details the layout of typical terminals. Each can handle up to 24 planes simultaneously, and each horseshoe has on-grade parking facilities for 1,200 cars. Photos on opposite page show one of four horseshoes presently under construction, and mock-ups of portions of a terminal.



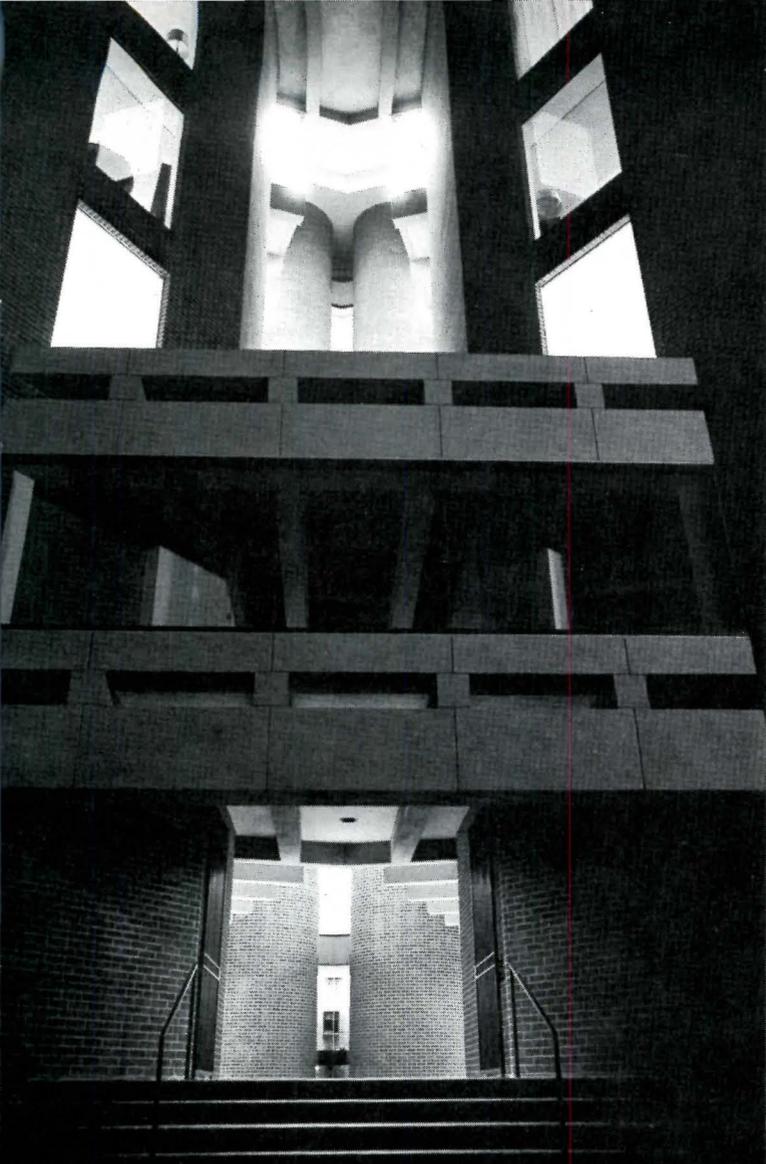
FACTS AND FIGURES

Dallas/Fort Worth Regional Airport. Owner: Cities of Dallas and Fort Worth. Architects: Hellmuth, Obata & Kassabaum Inc./Brodsky, Hopf & Adler. Associate Architects: Preston M. Geren, Jr.; Harrell + Hamilton. Engineers: LeMessurier Associates and Terry-Rosenlund & Co. (structural); Herman Blum Consulting Engineers and Cowan, Love & Jackson, Inc. (mechanical and electrical). Consultants: Joiner-Pelton-Rose Inc., and McCandless Consultants, Inc. (acoustical); Jules G. Horton Lighting Design, Inc. (lighting); Richard B. Myrick & Associates (landscaping); Parsons-McKee (construction management). Building area (4 terminals): 1,693,962 sq. ft. Estimated cost (4 terminals, no tunnels): \$60,322,000. For listing of key products see p. 68. Photographs: Gene Fleming



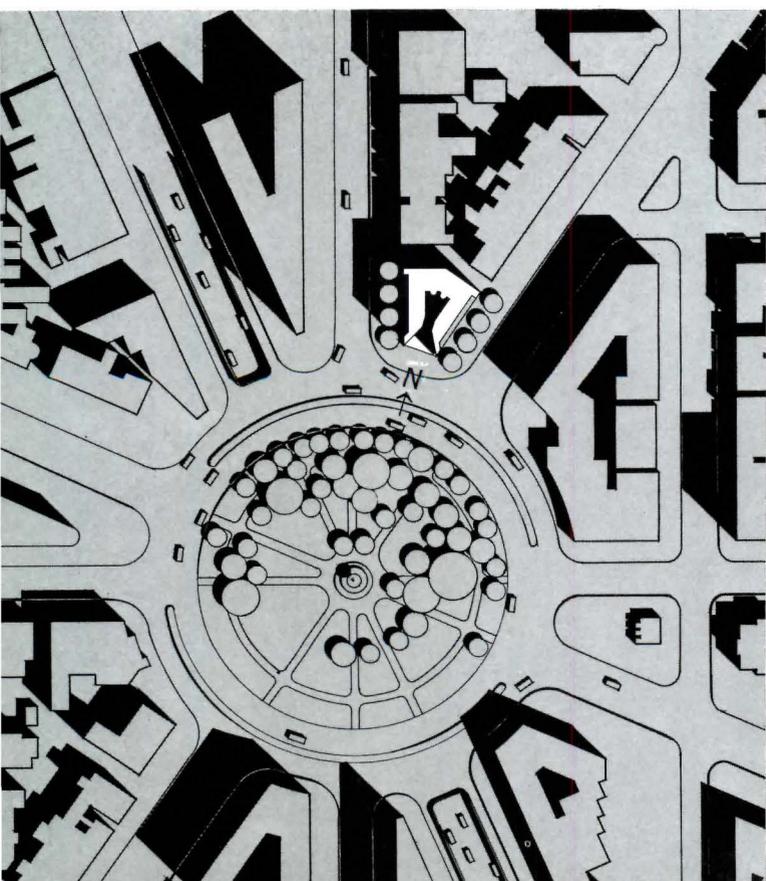






OPE N IN THE WEDGE

Office building on Washington's Dupont Circle is a lively departure from the norm



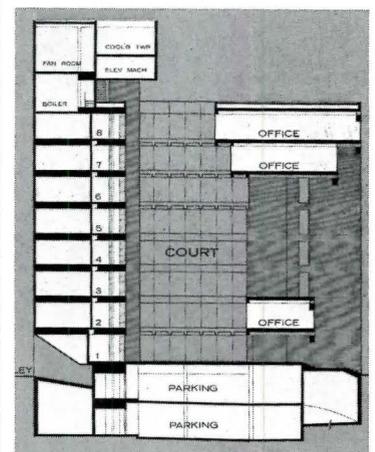
Narrow edge of the Euram Building (opposite page) faces due north. Interior court is visible beyond the tall slot that seems to embrace Dupont Circle and the fountain at its center. Top left: view into the court at night. Pair of brick cylinders contains elevators. Site plan (left) shows the relation of the building to the Circle.

The most interesting new office building in Washington D. C., is this eight-story brick, concrete and glass kaleidoscope at 21 Dupont Circle. It is interesting not only because it resembles no other office building put up in Washington (or anywhere else) in some time; but also because it violates just about every rule-of-thumb that office builders have long considered inviolate.

On an expensive, wedge-shaped site of this sort, the routine plan for a commercial building would have been to pack the core full of elevators, fire stairs, ducts, and other services; and to surround that core with rentable office space, for whatever height the zoning would allow. Instead, architects Hartman-Cox left out the core altogether, and substituted for it a great, triangular court eight stories high and open to the sky (see section).

In a routine office tower on this kind of site, moreover, the corners would have been considered prime rental space; but in this building, for formal as well as structural reasons, the corners are taken up by ducts and other vertical shafts.

And finally, in a routine office tower on Dupont Circle (or any similarly elegant location), as much office space as possible



would have been oriented toward the prestigious view of Daniel Chester French's fountain memorial to Admiral Du Pont; but in this building, only three out of eight floors face the Admiral's fountain—the remaining floors on the Circle side have been omitted, to bring light and air into the tall, central court.

All of which means, of course, that the hero of this building is the client. Not even a team of architects as intelligent and persuasive as George Hartman and Warren Cox could have got

away with such a really un-American building (all that wasted cubage, and all that frontage shot to hell!)—if it hadn't been for a truly un-American client: specifically, Giovanni Zoccoli, the Washington director of the Italian investment firm, Euram. It would seem that Euram felt they should do a little more than plonk down some air-conditioned package on Dupont Circle, and they did: they made a real contribution to Washington's urban scene.

It is, in fact, a curiously Italian building: the kind of solid office palazzo that you might enter, through a portal, from a dignified avenue in Milan or in Rome; and, having entered, come upon a paved and sunny courtyard in the center. And then, ahead, there would be another entrance, this time enclosed, with stairs and elevators that lead to the splendid offices of suave advocates and bankers.

The Euram building has all of that: you enter through the V-shaped portal, a ten-ft. wide "throat," under a nine-ft. clearance of concrete—and then, whamm! there is this 86-ft. tall courtyard, and two cylindrical brick pillars—the elevators—straight ahead. And that, quite obviously, is the real entrance to the building.

The court is lined on two sides with rentable space, obviously prestigious; and the upper floors, off those cylindrical elevator shafts, are just as distinguished: some have packages of 2,500 sq. ft. of space for professional offices that overlook the central court, as well as the side streets (19th to the east, New Hampshire Avenue to the west); others—the two top floors—are Euram's own spaces, with grand offices that overlook Admiral Du Pont's fountain.

The seeming idiosyncrasies of this unusual building turn out to be quite logical upon closer examination. The corner piers that contain most vertical services are, in fact, also the columns—the only columns—that support the floors. On the long sides of the wedge-shaped plan, 80-ft. post-tensioned concrete girders span the full distance. Their dramatic span is further emphasized by the absence of mullions in the glass walls. (Sheets of glass were simply butted together, and the joints were sealed with clear silicone.)



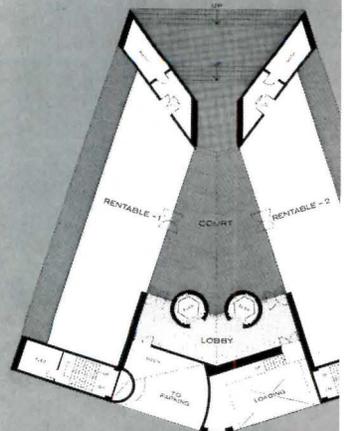
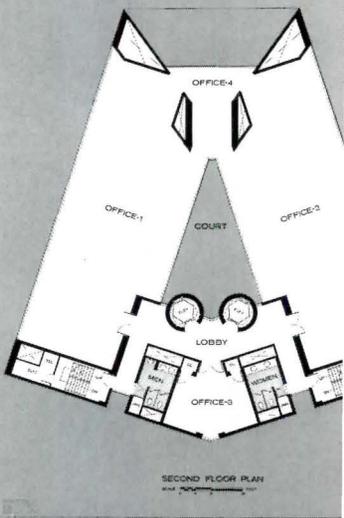
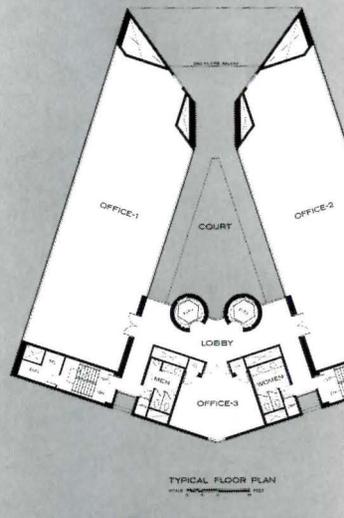
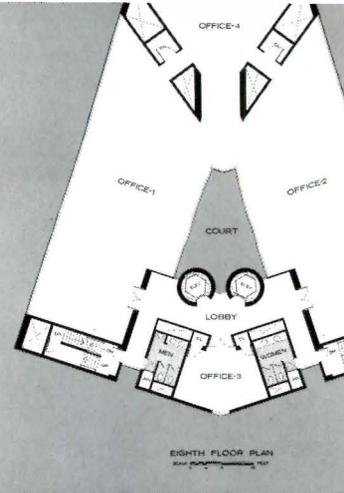
The slots that puncture the facades above the concrete girders are an ingenious, almost tongue-in-check response to an absurd requirement of the Washington code that forces you to have at least three ft. of fire-resistant "vertical or horizontal" construction between glazed openings that are one above the other. These slots appear as glazed clerestories when seen from the inside (as in the office, above), and define the long-span girders and the secondary beams which they support. (Another requirement—the provision of a railing inside a down-to-the-floor glass wall—was waived when the architects demonstrated that their ½-in.-thick glass was strong enough to resist massive horizontal loads.)

This is a small building—only 43,350 net rentable sq. ft. of floor space; and the limitations of a small, wedge-shaped site, of tight zoning restrictions, and unmanageable codes would have defeated lesser architects and forced them into a dull and routine solution. What makes the Euram Building significant is not its size, but the fact that the client and his architects cared enough to make their city better.—PETER BLAKE.

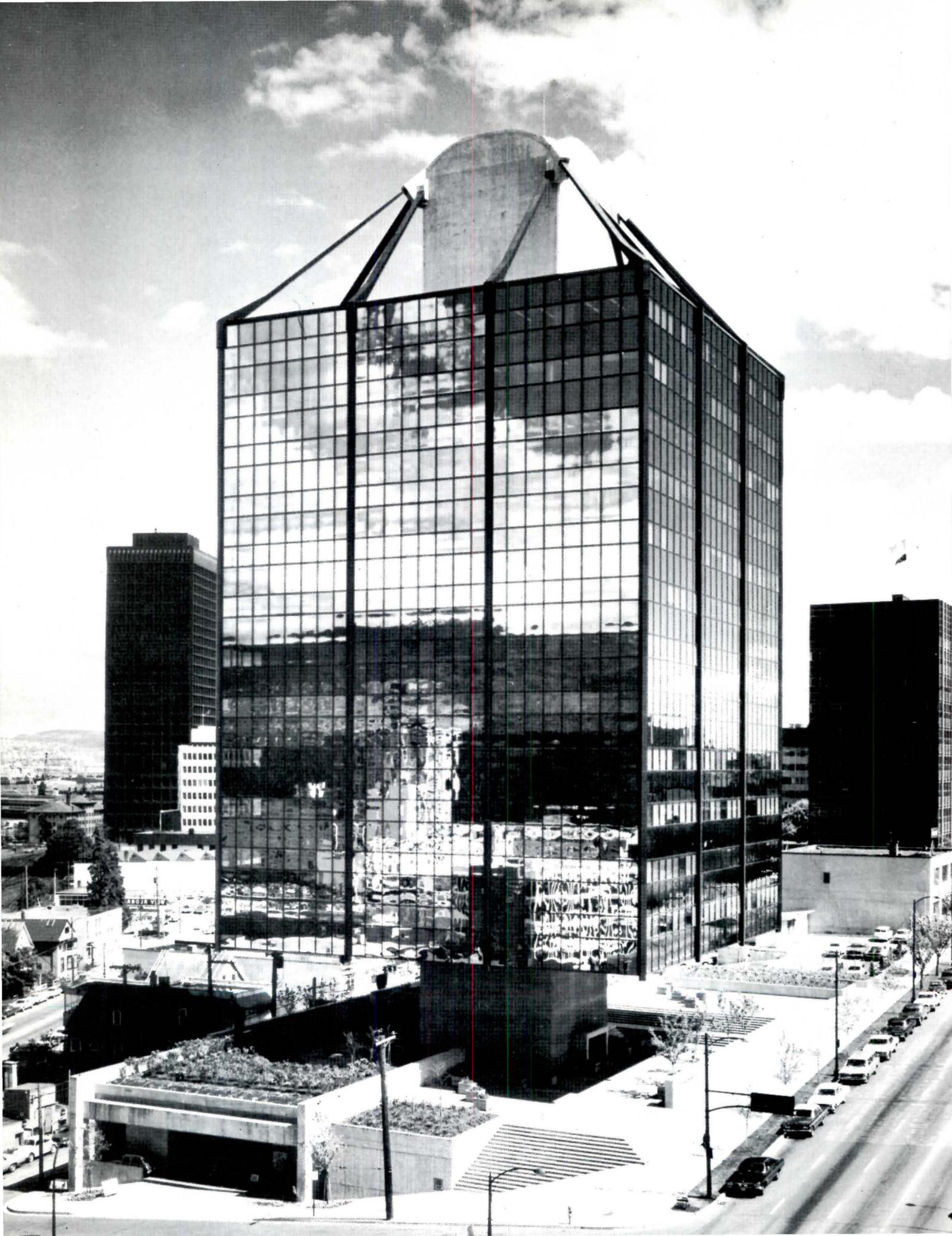
FACTS AND FIGURES

Euram Building, Washington, D.C. Architects: Hartman-Cox. Engineers: James Madison Cutts (structural); Syska & Hennessy (mechanical and electrical). Lighting Consultants: Claude Engle. Contractor: The Maritime Co. Building Area: 75,000 sq. ft. Cost: \$2,500,000. (For a listing of key products see p. 73.) PHOTOGRAPHS: Robert Lautman.

Plans at four different levels show variety in floor space provided. The executive offices that face the Circle open out toward it in dramatic fashion. Opposite page: view of interior court, with kaleidoscopic reflections in glass walls. Translucent vertical blinds were used inside all offices. ½-in.-thick plate glass is untinted.



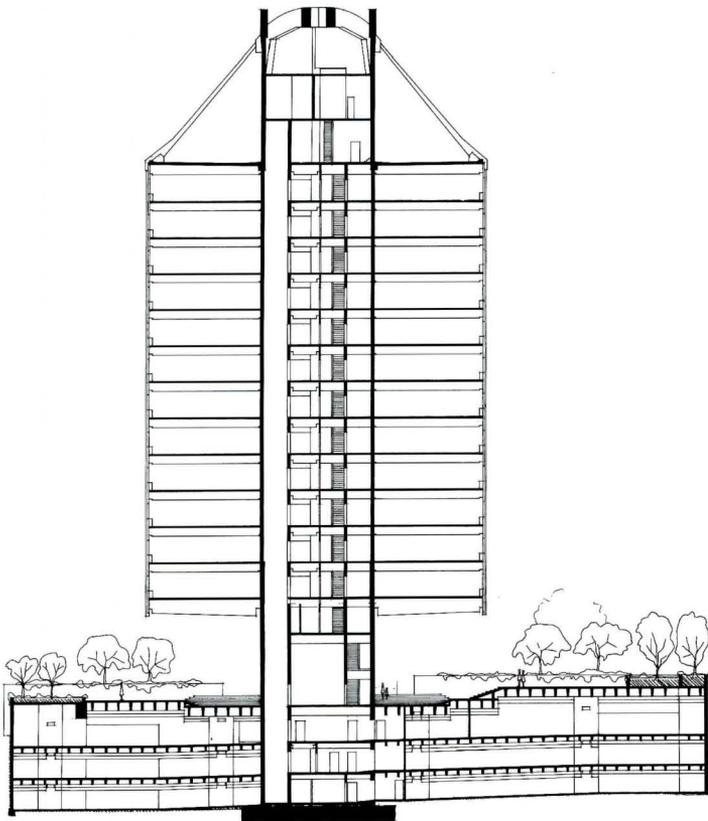




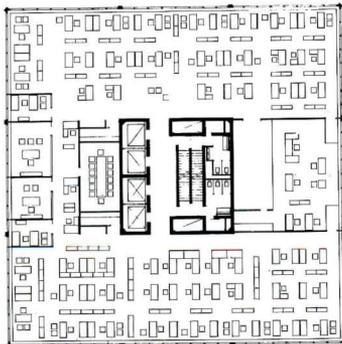
SKYHOOK TOWER

Mirrored prism on the Vancouver skyline is a sure blend of several disciplines

BY ROGER MONTGOMERY



SECTION



TYPICAL OFFICE FLOOR PLAN

Mr. Montgomery is professor of urban design at the University of California, Berkeley, and is a member of the Forum's Board of Contributors.

Technical innovation, responsible urban design, and sure handling of architectural detail seldom come packaged together. When they do it is always worth paying attention. This explains taking a close look at the mirrored glass box Rhone & Iredale have hung in the Vancouver sky for Westcoast Transmission, a Canadian gas pipeline company.

Several factors converged during the early stages of the project to favor the extraordinary tension structure used for the building. Everyone had become sensitive to walling off the central area of the city from its magnificent visual setting of sparkling bay waters and forested mountains. A building which would not block views from Georgia Street, the main drag downtown, would score high points for environmental responsibility. But this point may stand out more clearly in an observer's hindsight than perhaps it did in the minds of the owner and the architects during preliminary design. Other factors determined the decision.

Economic consultants for this project told the designers and their clients that the first three floors would not produce office rents comparable to those from higher floors. Neither would such space find a strong market from prospective retail business. The site lies too far from the city's shopping core, and pedestrian flows past this corner are too small. A feasibility analysis set the stage for a design without any enclosed floorspace except the core below the third floor.

Programming and site studies of various alternatives, along with the cost analyses, suggested twelve office floors of 10,000-plus square feet gross, laid out symmetrically about a central, vertical core. The final plan, a grid of perfect squares, has 36-foot-square steel-framed bays ranged around the 36-foot-square concrete core. The architects and their engineer, Bogue Babicki, also of Vancouver, obviously had been thinking for some time about hanging a steel frame office building from cables slung over the top of a slip-formed concrete core. Such a clear generic idea demanded to be built.

They felt it offered structural and constructural advantages that would offset the costs of its pioneering novelty. They were

right—its final cost was comparable to others in the area. Among the advantages, the core resolves horizontal and dynamic earthquake forces efficiently because the hanging weight of the twelve-story steel box compresses (or prestresses) the core enough to resist buckling. This was important because the city lies in a seismic danger zone.

In developing their design, Rhone & Iredale have handled the idea expressively yet with a nice restraint. They have produced a good-looking building that neatly tells the story of its structural system. From the outside it could not be clearer. A slender concrete tube, visible both top and bottom, holds up the office space volume and, at the same time, obviously contains the vertical services. Taut black tension members spring diagonally downward from its top to carry a nearly weightless-looking mirrored prism. The top of the core is rounded to spread the load from the cables. Expressive fittings mark their point of springing. Fireproofing and a black metal cover substantially increase the visual weight of these tension members. At the bottom they hang down just a bit below the mirrored curtain-wall; to my eye they should have been left another foot longer.

Inside and close-up its architectonic qualities read nearly as well. This seems a considerable achievement given our late Twentieth Century predilections for such visually homogenizing demands as totally controlled working environments and office spaces smoothly adapting to any organizational changes. To enter the building from the street the visitor walks into the one small hole in the bottom of the core. This puts him in a necessarily tiny lobby (see below); as it is within the core, it cannot be larg-





er than the elevator landings on the office floors above. The skimpy dimensions here represent one of the costs of achieving formal clarity with this scheme.

From the lobby the visitor enters a hot orange elevator cab to ascend to the office floors. There he emerges again into the confined area of the core (see above). A distinct portal marks the passage from the elevator landing to the office areas. These, totally columnless and panoramically open to Vancouver's scenic splendors, offer a welcome contrast to the tight core space. In detailing, the architects have enhanced the contrast. While it was still green they had the concrete of the core-tube wire-brushed to expose the aggregate. This heightened the sense of structural strength and space containment within.

Given the small size of the floors, an office landscape approach to their layout and furnishing would have further strengthened the tension between the tough concrete supporting core and the light work areas open to the far-off mountains. This explains why in this building, as in most headquarters office buildings, the executive floors come off best spatially: their openness and lack of clutter gives the architectural design a chance to show through. Does this mean that careful attention to architectonic matters has little or no place in the design of ordinary office space?

Viewed as urban design Rhone & Iredale's building displays some other positive qualities that flow from its constructional idea. For instance, it adds a distinctive silhouette to the Vancouver skyline without looking the least bit "googie." Like other megamirrors it moves throughout the day reflecting every change in light and clouds. Built as it is, it comes out looking even more reflective than if it were conven-

tionally framed. Hung mirrors really look diaphanous.

From the ground level on Georgia Street no one can miss the openness below the main volume. Someday when it is walled in by other structures, as it surely will be, the effect should prove spectacular. At the moment it occupies a position sufficiently away from the actual heart of the city that only parking lots and low, nondescript older buildings surround it. This diminishes the impact of the missing bottom stories.

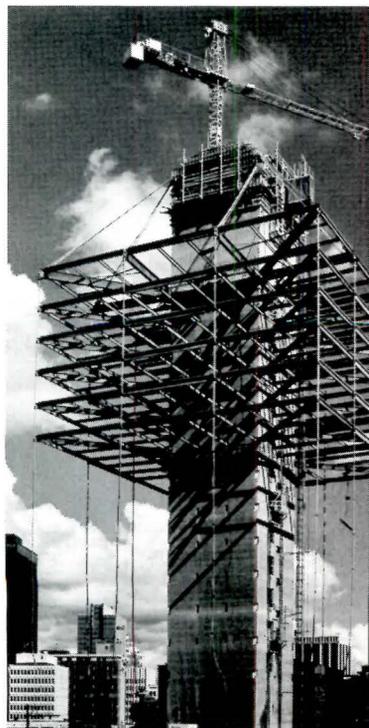
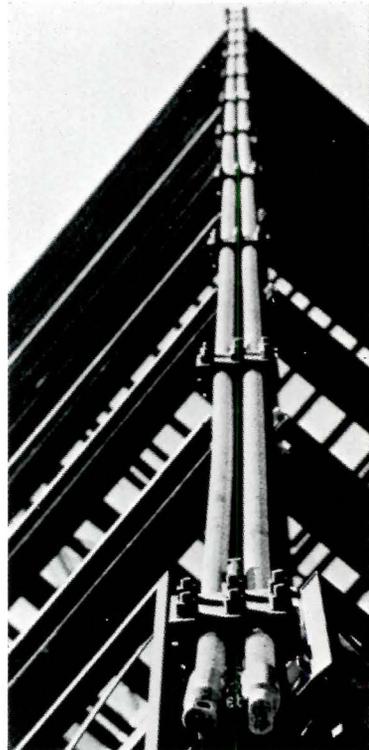
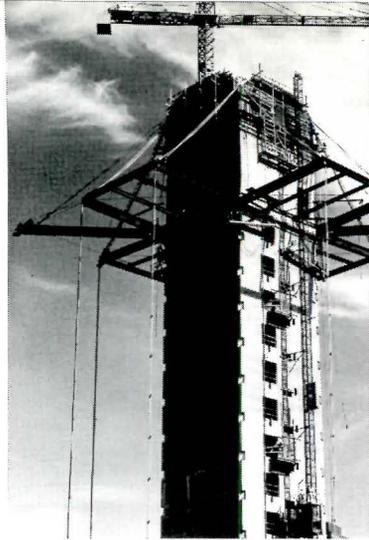
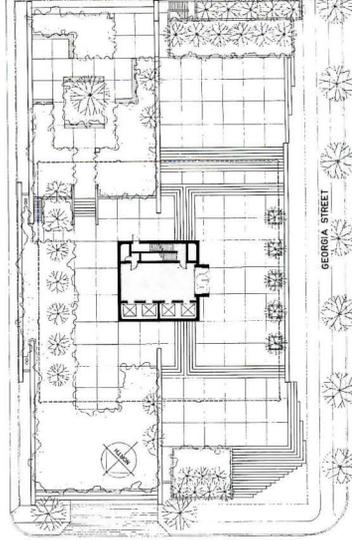
The plaza created by the absence of these enclosed areas poses a few problems. The site slopes sharply, necessitating steps down into, or up onto the space. These get pretty complicated at the principal corner where the steps first go up quite a long way only to go down a bit before finally getting to the plaza. Ideally the back corner should have provided a fine viewpoint from which to overlook the scenery. But no clear path pulls strongly on the passerby; and, once there, he finds a micro-scale pollution problem. The "total energy package", which makes the climate for the building by using WTC natural gas, exhausts its fumes at plaza level. Too bad. Underneath, another of the benefits of the hung structure becomes apparent: it permits a column-free, three-story garage.

The appearance of imitators testifies to the intrinsic value of Rhone & Iredale's work. They have made a handsome and sensible architecture, at the same time that they and Babicki have realized a very intriguing structure. It makes a worthy addition to the small but growing list of fine buildings in downtown Vancouver.

FACTS & FIGURES

Westcoast Building, Vancouver, B.C. Owner: Vancal Properties Ltd. Architects: Rhone & Iredale (William Rhone, partner in charge; Errol Bullpitt, job captain). Engineers: Bogue Babicki & Associates (structural); Phillips, Barratt, Hillier, Jones and Partners (mechanical and electrical). Landscape Architect: Canadian Environmental Sciences Ltd. Contractor: Dillingham Corp. Canada Ltd. Bldg. Area: 156,035 sq. ft. Construction Cost: \$5,100,000 (including landscaping, garage, fees). (For a listing of key products used in this building, see p. 73.)

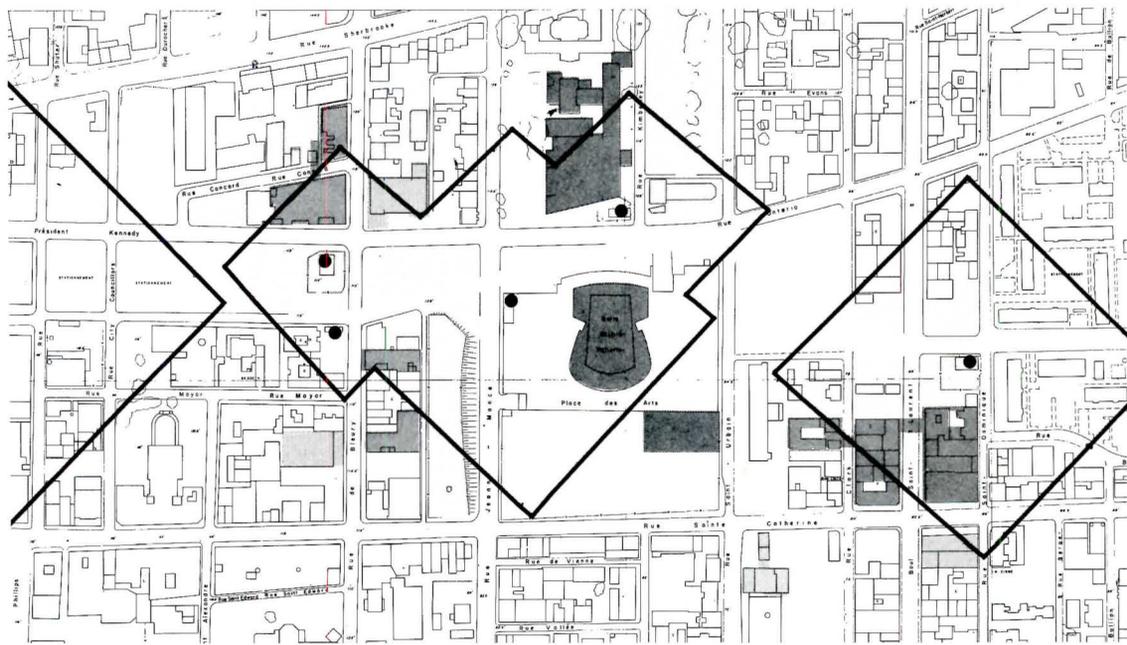
PHOTOGRAPHS: John Fulker, except construction photos by F. Lindner.





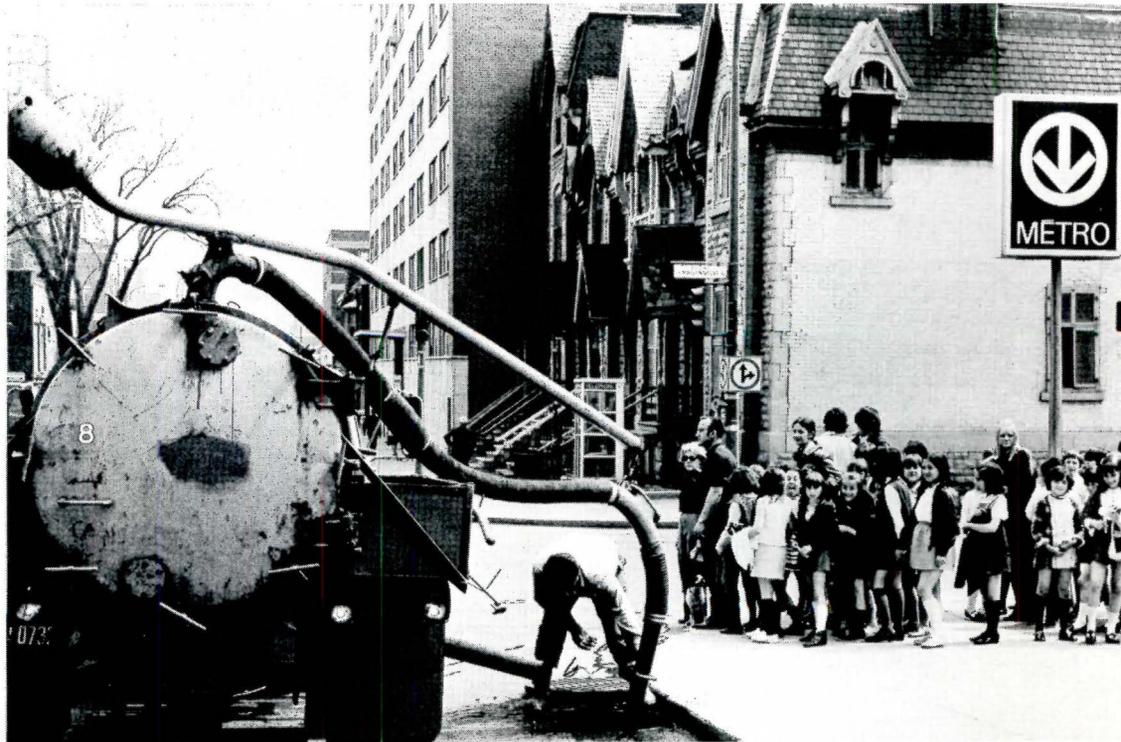
T | VISIBLE CITY

An interview with Richard Saul Wurman on the 22nd International Design Conference at Aspen, June 17-22, and the importance of making visible—everywhere—the invisible city



"Metro Education" makes Montreal's subway the "central corridor" of a new educational system, to exploit the city's underused physical and human resources. Vacant Metro space would provide some educational facilities. The area around each station would provide an "instant resource" of offices, computing centers, arenas, cinemas, shops, restaurants, bookstores, clinics and labs (diagram at right shows five-minute walking radius around several stations). The project is by Michel Lincourt and Harry Parnass of the nonprofit General Urban Systems Corporation (Montreal).

Mr. Wurman is a partner in the architecture and urban planning firm of Murphy Levy Wurman in Philadelphia. He is vice president of GEEI, Group for Environmental Education, which developed *Our Man-Made Environment* for secondary schools (June '69 issue). He is co-producer of *The Notebooks of Louis I. Kahn*, author of *Making the City Observable*, and creator of the *City/2* exhibit (Oct. '71 issue). He is *program chairman* of the forthcoming conference at Aspen.



Q: What is the Invisible City?

Wurman: The Invisible City is the environment as it is unuseable and uncrackable as a place for learning.

Q: In what sense is it "invisible"?

Wurman: It is invisible for three reasons: one, because people aren't aware that it can be used. Two, because things are not available—you can't find out about them. And three, because things are available but not in a form in which you can understand them. For instance, I could tell you that you could go out and talk to a garbage man and learn something from him. But you're not going to, because you don't know what to ask him. And unless you can get over that anxiety, unless you can crack the resources of the city, you can't use them. Even when you truly want to find out about your urban environment, either to participate in the city as a citizen, or learn from it as a student, it's impossible to find out about many things.

Q: What kind of information is particularly inaccessible?

Wurman: I'll give a practical example. I ran a problem at Philadelphia College of Art several years ago. I'm very much interested in people taking on new responsibility, and a new responsibility for graphic artists would be to tell about what goes on in the city—to give urban information. They've avoided that responsibility; they're more interested in Volkswagen ads, or in moving type around, than in saying, there is certain information about the city I can make more understandable by what is understandable visually that is not understandable either literarily or numerically. This is the problem I gave. Each student was to think up a piece of information he wanted to know about the city of Philadelphia. He would then get that piece of information, put it into visual form, and we'd make a visual chart book of the pieces. Almost without exception they couldn't find the information—they wanted to know about the location of firehouses, how many fires each one had, they wanted to find out about housing, about certain facts of population, about

climate and weather in the city, about city ownership of land.

Q: Was the material not available, or were they denied it?

Wurman: I would say 50 percent of the time they were denied it, and 50 percent of the time people couldn't put their fingers on it.

A number of years ago, I made a proposal for an Urban Observatory, a place in each city, in each region, where public information is made public. I'll explain that. Public information today isn't public. When we go to the moon, we have beautiful drawings and maps and simulation movies, and it is quite clear where we are going. But when we put a new highway in the city, you can't find a map in the newspaper, you don't know whether it's going to tear down 30 or 300 houses. Nobody demands that they show us that. Nobody demands, because they don't know that that can be made clear. But it occurs to me that information about the resources of a city, the ownership of these resources, the plans, the aspirations, can all be put in a form that we, the great big we, can understand. And respond to and work with.

The information should not only be made public, it should also be in a form we can understand. I have shelves full of things I don't understand. A favorite story of mine is that several years after we opened the office, I thought we had enough money to get a special magazine I've always wanted—*Urbanistica*. It came quarterly, in those corrugated envelopes, covered with beautiful Italian stamps. We would open it, and gather around, and I would say why can't we do maps like this? After a couple of issues, it hit me—Shazam, like lightning striking—and I said, I don't understand a damn thing I'm looking at. Until then I had always fooled myself. If something looked good, it was good. If a building looked good, it was good. If a map or planning report looked good, it was good. And I hadn't asked two very simple questions: did I understand what I was seeing, and could I tell somebody about it.

Q: Do you see any real efforts to make public information public?

Wurman: There are 100 or so examples in *Making the City Observable*, the *Design Quarterly* publication I did.*

As I got into it, collecting material, I got into some thoughts that were at first perverse to me. For instance, getting on top of a tall building and seeing the city is like a map, and that's not making the city observable. But it is. It's as much making the city observable as a guide book. And then I came across the newspaper ad that ABC television did on the election ballot, translating the bond issues into English. Well, that's allowing us to get in, and making something observable. And a curriculum that turns people toward the environment for learning—like the workbooks we've done at GEE!—also makes the city understandable.

Q: "Making the City Observable" has examples going back to the 16th Century. Yet the problem seems a thoroughly modern one, part of the broader effort to communicate basic ideas in a complex world.

Wurman: Yes, it's also a reaction to the popularization and necessity for communication in advocacy planning. You don't make plans today unless you talk to people. And five years ago, you simply made plans without talking to people. It's really that simple. And we can't talk to people about urban ideas in the way we have in the past. We can't do it just with speeches. We can't do it with the same old visual presentations. We can't do it just in a literary form.

A major part of the problem in communication is our involvement with products rather than with performance. It is so easy to talk in terms of products—nice graphics in the city, nice signs at a campus—but what we'd really like is to be able to learn where we are and where we're going. We'd like to have communication, and communication might not involve signs. There are many other ways of finding out where you are and where you're going—by lights, by painting the streets, by a map. In England, when they don't want you to park they

*A special issue of *Design Quarterly*, published by Walker Art Center and issued simultaneously in book form by The MIT Press, 1971.

paint the curb yellow. If it's striped yellow, you can only park at certain times. There are no signs to tell you that. Another example: *Industrial Design* magazine has light pole contests—they don't have contests for lighting. Yet with a light pole contest, you could never arrive at lighting solutions where perhaps everyone on the ground floor keeps his lights on 24 hours a day, to light the immediate environment and make the street safer and more interesting.

When cities are not safe, people immediately want more policemen, more police cars, more products to solve that problem. We should look at safety instead. And safety might be a combination of performances—of people, and lighting, and of buildings built so you can view people in the street and be viewed, and of hours when places are open. People say the schools are terrible, let's build more schools. But instead we should be looking at learning, which is performance and doesn't necessarily have anything to do with schools. It is so much easier—easier for an administrator, politician, person in the community, architect—to say, I want better facilities, I want more of this product, it's definable, I can describe it, I can communicate it.

And I don't mean functionalism when I say performance. Perhaps it's my own jargon but to me functionalism means moving your bowels; it's necessary but not artful. And when I think of performance, I think of a most artful thing—it's the art of communication, the art of lighting, the art of the theater performance.

When do we ever ask how interesting is it to walk down a street? When is that part of an ordinance that a City Planning Commission gives to an architect or developer? Will you be safe when you walk by the building? When it rains, will you have a place to be out of the rain?

Q: But how do you decide what's "interesting?" Isn't that a subjective decision?

Wurman: I can show you buildings with sheer granite walls from the street all the way up, past eyesight, for 400 ft. along the block. Or the new mint in

Philadelphia, for 600 ft., all the way around the block, so the total is over 2,000 ft. of granite wall, with no interruption except little stairs going inside the building. And this encases a building that does one of the most interesting things in the world—it makes money. I'd say that is uninteresting as an architectural solution, no matter what the building looks like, and the building probably made your magazine as a good building, as the Building of the Month Club kind of thing. [It didn't—Ed.] It is difficult to do what I'm saying, and that's why they haven't done it. It is difficult to talk about interest, about comfort, about communication, or safety, or lighting, or learning. It is easy to talk about light poles, schools, cars, roads, parks, cops, etc. And that's why I say the Invisible City is invisible, because the performances are invisible.

How do I describe places for recreation to a community group? What are the many natures of recreation? I just outlined a book that does that, but it took a lot of thinking. I realized that you could have a spectrum, a continuum for about ten things having to do with recreation. It is a way of understanding performances and physical form. I'll give you an example. There are things you do in recreation as a single person, as a small group, and as a group of many people. There are things you do as a spectator, get involved in a little more, and participate in fully. There are things that need a little space, more space, and a lot of space. There are things done linearly, like running or riding a bicycle, and things that need a large space. When you decide what performances you are interested in, you can start to choose what places for recreation you want.

Q: The Invisible City in general—where is it now more visible?

Wurman: When I thought up this idea for the conference at Aspen—it is not a new idea, by the way, using the urban environment for learning, it's been around since John Dewey, and before that in Athens—I thought I knew of some people who were doing things. I knew of the Parkway Program in Philadelphia, and the Every-

where School in Hartford (April '69 issue); I knew people in certain free schools, alternate schools, who were thinking of using their environment for learning; we were involved in GEE! turning people toward their man-made environment. But now in the last two months, I have found that it's not just a few things, it's thousands.

In doing this conference, I believe I've hit upon the one thread that connects all the alternative educational programs in the U. S. today. I believe this will be the major option in the major school systems in the U. S. in five years—an institutionalized (I hate the word) organized option to allow children, in a major way, to have experiential learning from using their environment. Really using it, not just in field trips—this will be part of our educational scene, it is the next thing. But using the man-made environment means that the man-made environment should be made usable. And there has been no reaction in the schools of architecture, or in the AIA, to the idea that we might have to make cities usable for learning.

Q: Is this because it involves using a lot of old things, and not building quite so much new?

Wurman: Yes, but also, anything you build new should be made this way, too. Whatever we do now, we should be thinking about this, as architects and planners.

Because recently it has been occurring to thousands of people to look to their environment for learning.

For instance, here's an article in *Newsweek* on this college without campus, Minnesota's newest state college, above a drug store in downtown St. Paul. Here are articles on a whole bunch of "universities without walls," open universities, campuses where you get credit for doing jobs. Two years ago this didn't exist. There are universities without walls at Antioch, Goddard, Skidmore, Morgan State, Howard, Loretto Heights, NYU, University of South Carolina. The new campus of the Chicago State University talks about using the city for learning. And there's an open university in Denver, which is having a branch in Aspen. I don't have equal in-

formation on all of them.

There's a group out in San Francisco called Inner Action, and they're running a program called Symbas, in a warehouse. Found space is part of this whole idea, using the city you already have, instead of tearing down warehouses. Building a new school with a fence around it is the antithesis of involvement in a community.

There's a school without walls in New Rochelle, N. Y., in Albuquerque, in Rochester, in Seattle, in Hartford, in New Orleans. In Washington, D. C. there's a You and Me School; in Cambridge, a Turnbridge School; in Daly City, California, a Wilderness School; in San Francisco, a project by Inner Action called Urban Outward Bound, putting kids in the city and seeing if they can survive. There's a bus school called "Wheels" in the Bay Area; there's the Lowell, Massachusetts experiment, attempting to make a whole town into an environmental park; there's the Athenian School, an urban semester in Mt. Diablo, Calif. There's Metro School in Chicago. And many more.

Q: It's happening all across the country, isn't it?

Wurman: Yes. Things are mostly getting solved in the problem cities. When you have a war, you invent a bomb. But you also find things happening in places that aren't in such desperate straits. In some places it's happening out of desperation; in other places, out of inspiration.

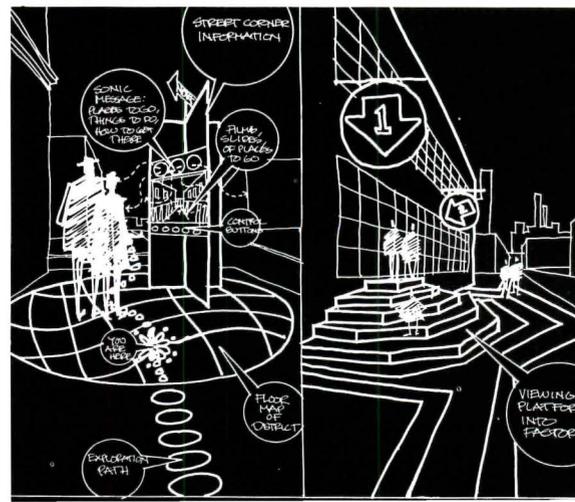
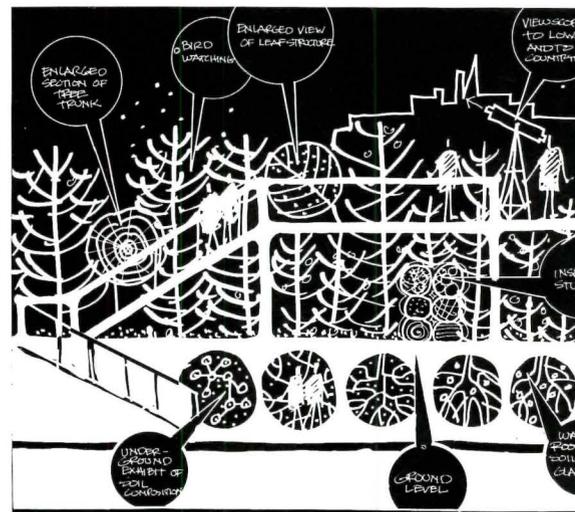
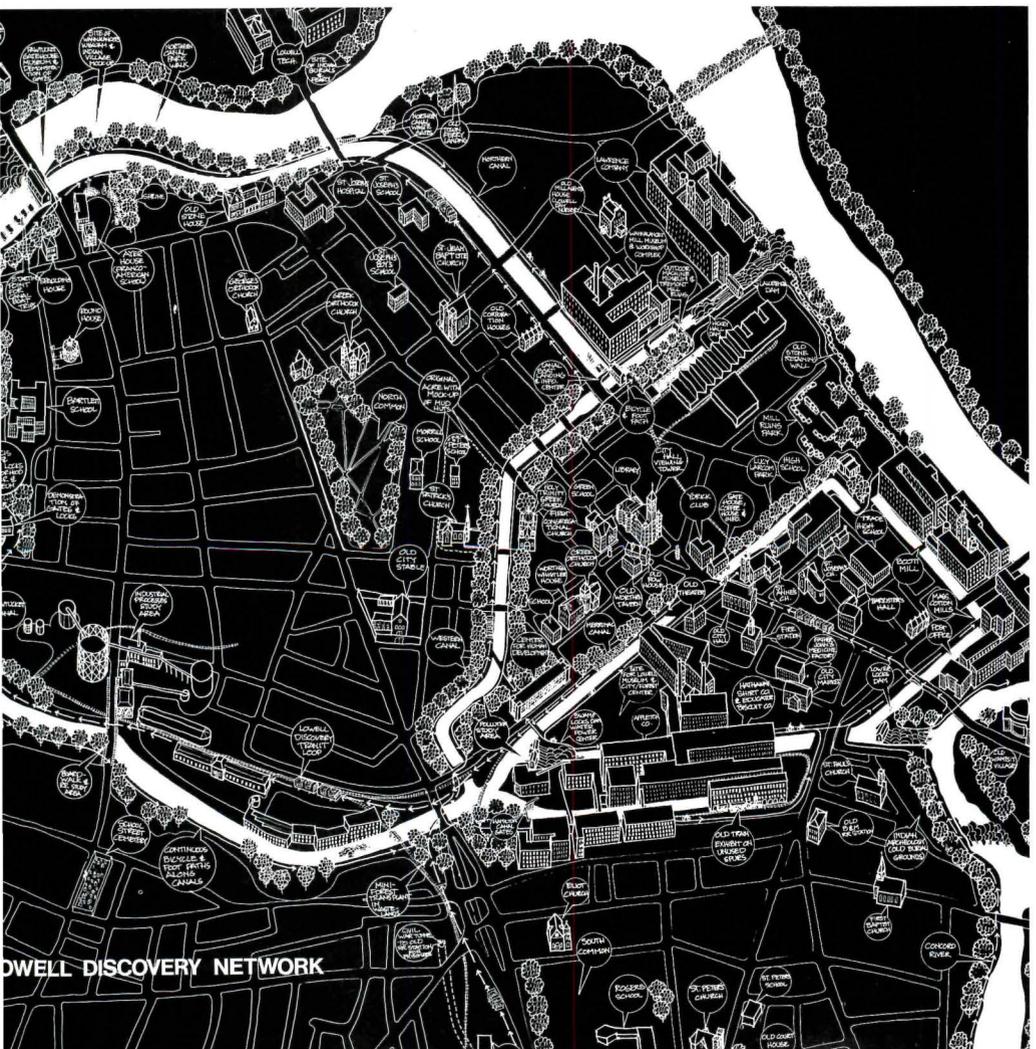
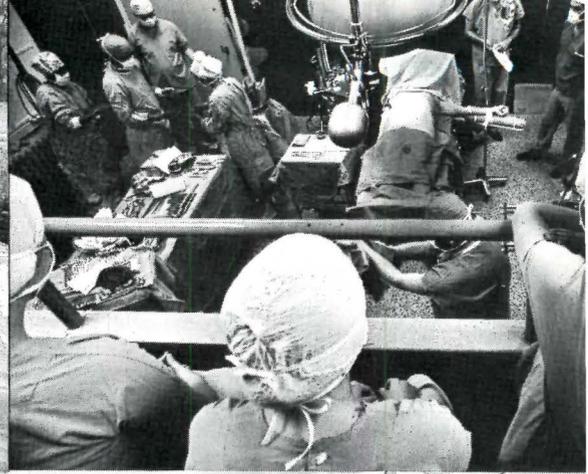
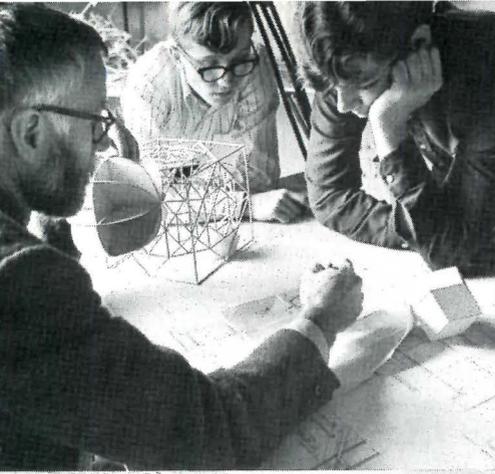
It is a movement without a head. Also without much communication between the people who are moving. Although there are several newsletters springing up [New Schools Exchange, 701B Anacapa St., Santa Barbara, Calif., 93101; and Educational Alternatives Project, School of Education, Room 328, Indiana University, Bloomington, Ind., 47401.]

Q: What does the Office of Education in Washington think about all of this?

Wurman: This very interesting new book by Larry Molloy, *Places and Things for Experimental Schools*, is jointly supported by EFL [Educational Facilities Laboratories] and the

The Parkway Program of the Philadelphia public school system is one of the earliest "schools without walls," dating from February 1969. It now has 800 students, drawn by lottery from among 10,000 youngsters representing all school districts of the city. Students, in turn, "go to school" all over the city, learning in all kinds of noneducational places, and from all kinds of nonacademic persons.

The Lowell "Discovery Network" was designed by Michael and Susan Southworth as consultants to the Model Cities Agency of Lowell, Mass. Community residents originally requested it and have now formed a nonprofit corporation to carry it out. The design concept is based on enhancement of Lowell's existing qualities rather than total renewal. The Discovery Network would provide a continuous regional open space, centered on the historic canal system. A transit experiment would connect tourists and residents with learning centers and points of interest. Numerous "discovery centers" would, by direct experience, communicate the organization of the city, its rich history, its industrial processes, and the operation of the canal system.



Office of Education. That's amazing, too. In my mind EFL was always identified with hexagonal rooms and closed-circuit TV. EFL is now very much involved in the use of the environment for learning. It's a change in times, it's not any particular change in personnel.

Q: Precisely how do you define a "school without walls"?

Wurman: This is Larry Molloy's breakdown: open-plan schools, community schools, reach-out schools, open campus, home-base schools, nonschool schools, resource centers, everywhere schools. There's a continuum from being in a school all day to having no school. Along this continuum are lots of names—open universities, schools without walls, community schools, free schools. There's no good definition of any of them. But it's possible to talk about the various options.

The Parkway Program in Philadelphia, for instance, now has 800 kids in four units, each unit housed in a different kind of place. The unit I'm most familiar with, Gamma Unit, has a teeny little building in a wholesale warehouse on Front Street, a rather crummy part of the city. They have a couple of classrooms there, and a place where you can sit around and read magazines, and a couple of desks where teachers schedule the program. They meet all around the city. One class meets in my office every week. So, although they have that small home base, it's a non-school school.

One proposal, made in Montreal, called Metro Education, uses the subway system as an enormous corridor of a very large high school. This corridor connects up rooms all around the city.

The idea of using the environment for learning is not revolutionary, and there's no new technology; there's just a different concern. The concern is performance—the performance of learning.

The concern is also for the life of the city itself. I feel that the only thing allowing you to participate more with your city, have more sense of ownership with your city, is to use the city for learning. No amount of physical development can do anything but slow down a proc-

ess of deterioration. But the city is being destroyed by apathy, by abandonment, by not being maintained, by not being "owned"—there's no sense of ownership—more quickly than we can possibly build it. You have to hunt for attitudinal changes, if the physical changes aren't going to work anymore.

You can learn from your environment in many ways. I just finished doing a book called *Something More You Can Learn from Your Schoolhouse*, which says, suppose you have to be in your schoolhouse, how can you live the fantasy of learning from your environment while you're still in a building. And that idea is also part of the Invisible City. How can I be in this room and understand the relationship of this room to a city, to a community, to how a community is made, and why it's made, and how it functions, so that when I get in that community I can look at it, and how it functions and how it is made and respond more to it.

Your whole schoolhouse can become an environmental laboratory, because the building has an electrical system, a water system, a waste system, a movement system, it has social interaction, it has groups in spaces, it has a population, it has a neighborhood.

Another idea: what are the options in your immediate neighborhood? What can you learn in a ten-minute walk? What can you learn walking around a block? I've taken walks with high school kids in Parkway, and kids in St. Louis and Tennessee and Minneapolis, and the only rule we have is that they can talk about anything but how it looks. They can only say how it performs.

The importance of these ideas at the moment is not the detail of any one of them. What interests me is discovering, in *Making the City Observable*, that many different levels of things are all part of a bigger thing. When I can see that this guidebook of Philadelphia I'm just doing is really not dissimilar to a piece of curriculum like *Our Man-Made Environment*, and is not dissimilar to getting up on top of City Hall and looking at the city, and is not dissimilar to the Parkway Program—that they're all part of the same thing—it gives me

many other thoughts about how comfortable I feel with the whole idea and why I want to do it. That's what's important.

And that's the reason for having a conference on the subject for designers. Why aren't filmmakers thinking about this, as part of their on-going responsibility of making the environment understandable? Why aren't graphic artists, with all their talent, trying to make the environment understandable? They design the billboards along the highways coming into the city, and then they get lost going into the city. Why don't they start by making their own block understandable. Why doesn't GM tell about road building and traffic and movement systems? The Burlington Mill in New York, and IBM, tell about what their companies are doing. (I have criticisms about both these exhibits, but the intent is there.) At Tad's Steaks you can see them making steaks in the window. If you can possibly make the jump between Tad's Steaks and the Parkway Program, if you can make the jump between the Parkway Program and *The Man-Made Environment*, and if you can make the jump to Michelin, and the ABC ad about making the ballot understandable, if you can make the jump to ask for places for recreation and not just parks, you see that they're all part of the same thing.

The idea of the *City Over Two* exhibit is the same idea, too. The fact that we own half the city is remarkable. It's not a matter of what we can run out and do, but that the next time there's something to do, maybe we'll have a different attitude about it. I was criticized heavily by people who said you didn't show us what we could do in that exhibit. I gave phone numbers but I didn't really tell people what they could do. But it's really enough in this world if you can change somebody's attitude, let alone have them run out and show them what kind of beautiful new bench they can put in. But that's where architects are at this moment; they are urban beauticians, putting urban Edsels all around the place. The Nicollet Mall in Minneapolis is just a collection of nice products—it's better than not having it, but it's not good. How do we make it good? By hav-

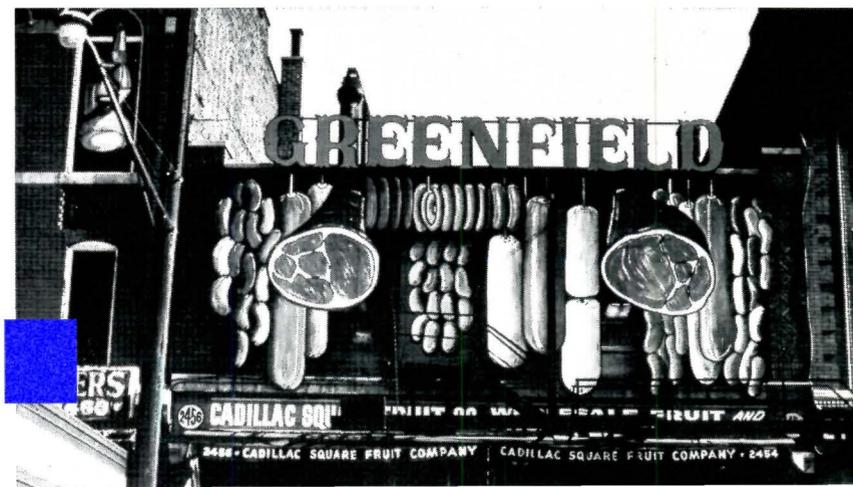
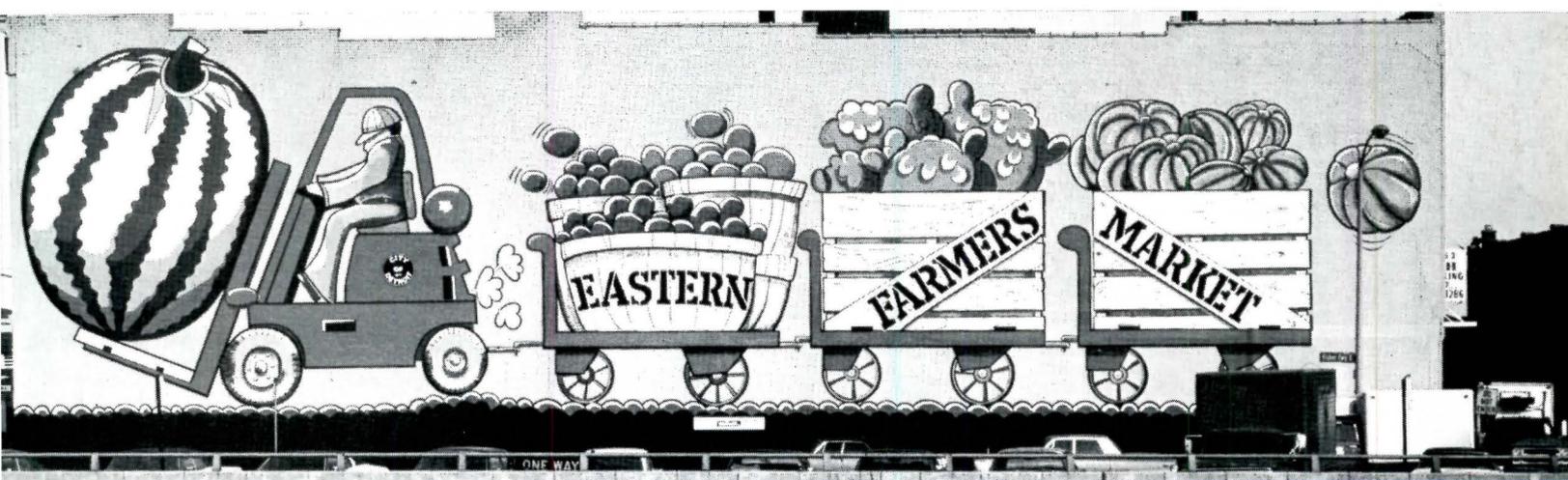
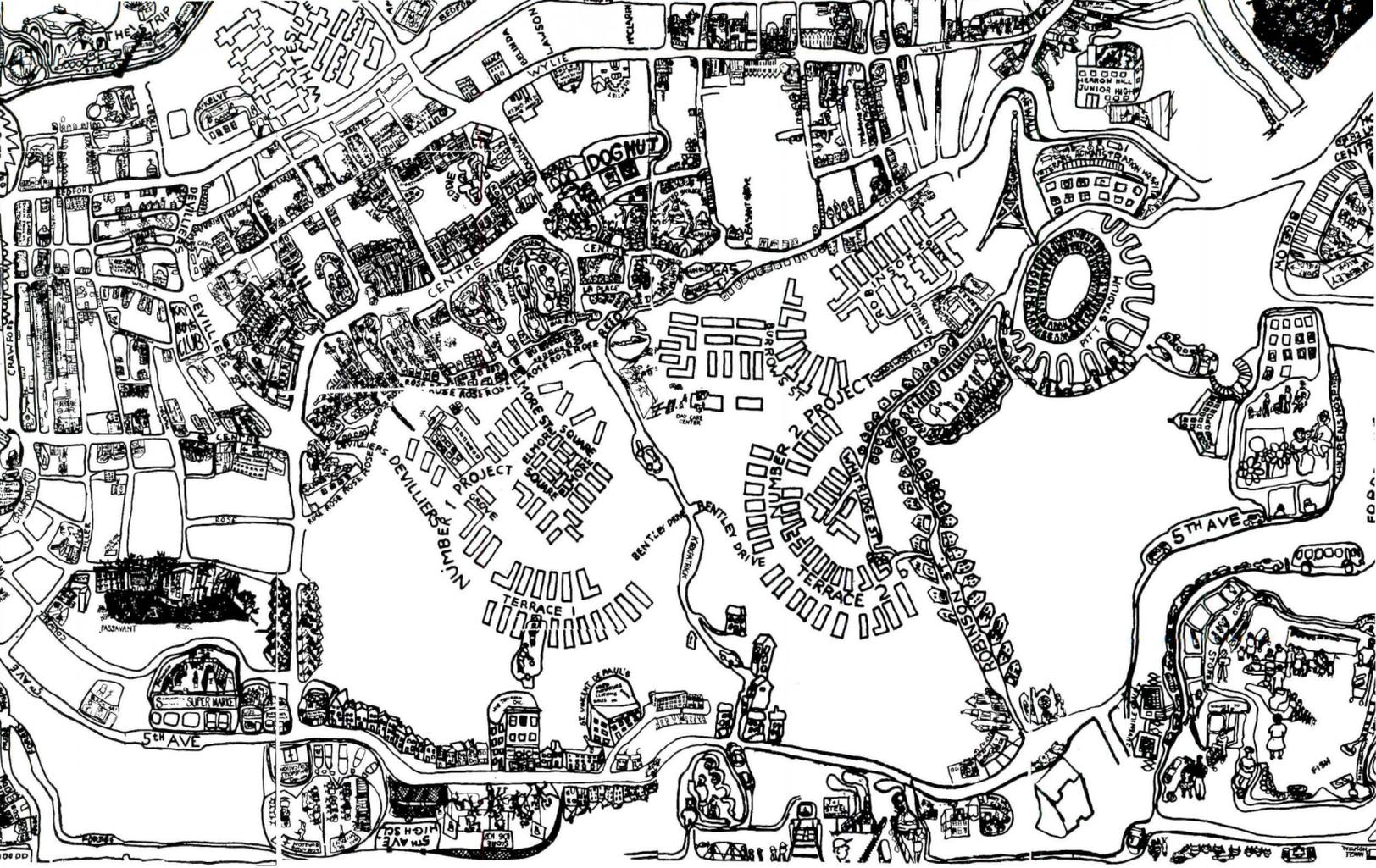


"The Community Map" is the work of Community Design Associates (of Pittsburgh) in conjunction with residents of the Hill District. The map illustrates all the Hill District's neighborhood establishments; the object was "to permit users of the end product to understand and have pride in their community." Says Troy West of Community Design Associates, "It wasn't done as a pretty picture; it was a political thing." It was also huge. All attempts to have the map reproduced by Model Cities for broad local distribution were turned down.

The purpose of the "Design Action Program" of Detroit's City Plan Commission is "to accomplish real physical change directly by seizing upon opportunities and advocating (and selling!) designed change," says Alan Melting, the Commission's Head of Design. In its revitalization of Detroit's Farmers' Market, the Commission's work included the design and execution of murals and signing, placement of awnings, and eventual reordering of market public space. The overall aim, says Melting, "was to open the market to public view through graphics and thereby create an identity that was rich and enticing, and capitalized upon a hidden resource."

PHOTOGRAPHS: Page 40, Pierre Gaudard; page 43, top middle and right by Susan Castellano; other photos by John Nettis.

(continued on page 64)





TT ASIS F R | EWAL

Several blocks of Cincinnati's old basin area scheduled to stay

Cincinnati's Over-the-Rhine is a diverse district and, unless you read census tracts, undefinable.

The most noteworthy section surrounds Findlay Market. Its neighborhood is a close-grained mix of commercial and residential. Call it "living above the store."

Working in one is Architect Evans Woollen. His Indianapolis-based firm opened a storefront across from the old 1852 Market two years ago. His job was to design buildings for the HUB Services of Model Cities (the Pilot Center) and prepare an urban design plan for the "target area" surrounding the Market. Block club charrettes and curbside coffee breaks followed. Call it taking people into their own confidence. Or the real basis for renewal.

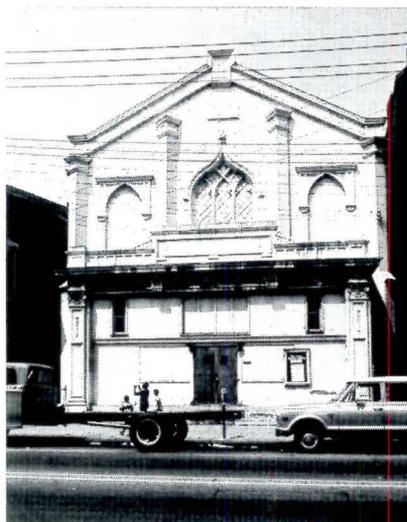
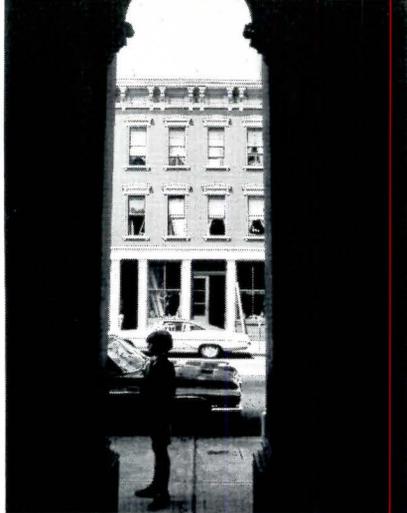
The people here are 45 percent Black, 45 percent Appalachian, ten percent old German stock. The population has decreased 50 percent since 1950, but the housing stock is inadequate. With vacancies at over 20 percent, there is a surplus of blighted, uninhabitable small units, a shortage of larger ones. There are well over 400 units with six or more occupants; less than 200 with six or more rooms. Ten years ago, 30 percent of all units were classified as overcrowded; about a thousand families with six or more members lived in Over-the-Rhine. The demand for family units was never met, and *more than half* the families had to leave the area. Those which couldn't now average an annual income of \$4,500.

The Findlay Market took on the decay and despair which discourages developers from rehabilitation, and the kind which encourages some renewal officials to think that bulldozing an area, relocating the poor, and bringing in the middle class, scourges the cause of blight. What they often scourge is a community's character and scale, its range of things to do and see, its reasons for *being*. This makes as much sense as pulling a plant up by the roots to make sure it's growing.

Instead, the Evans Woollen team including his associates, Planner Harry Forusz and Architect David Niland, are going to be *sinking* roots around Findlay Market before long. The unimag-



Around Findlay Market, people live near the church and above the stores (opposite above). This old-time example of mixed use, carried several steps further by Architect Evans Woollen, will retain the 1848 church tower as a symbol of recovery, plow under asphalt paving for grassy play spaces, provide new infill housing scaled to that being rehabilitated, thus proving that renewal can rub with, rather than against, an existing community grain.



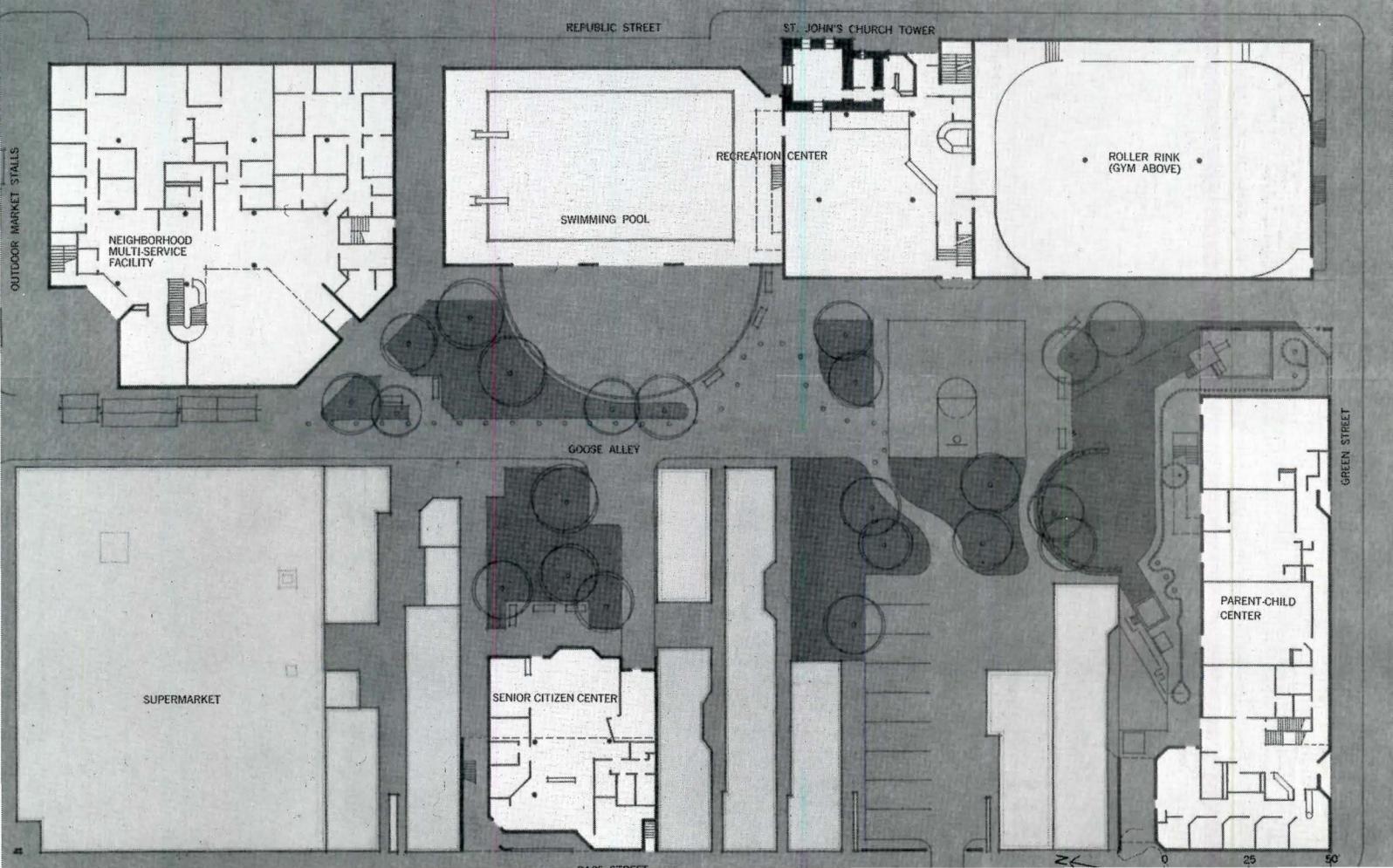
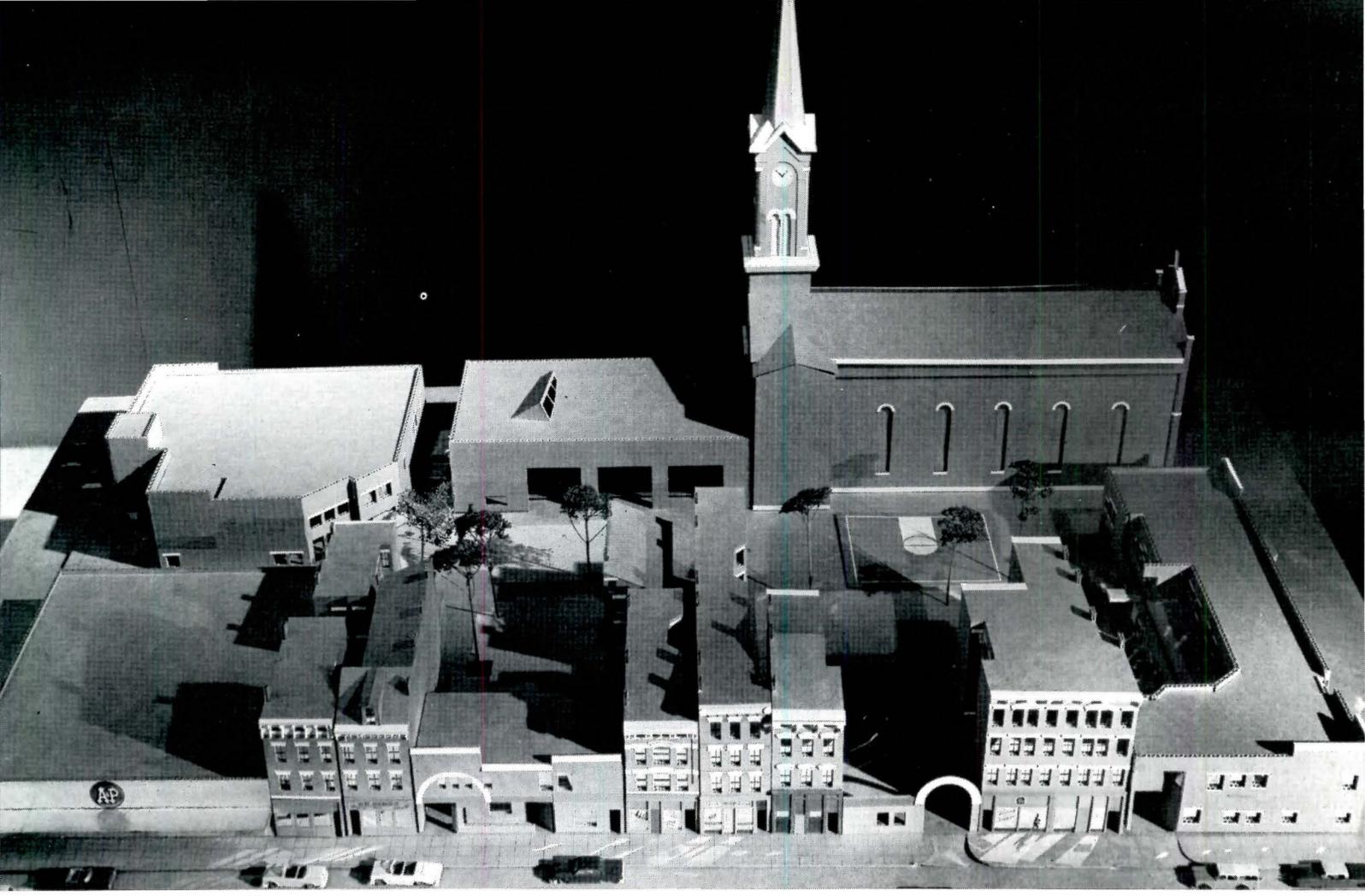
inative logic of slum clearance has been scrapped, and this is the first urban design plan for Cincinnati to do so.

The Pilot Center block, seen here, will house the social and recreational services of the community and is the initial focus of the target area plan. Woollen talks about minimum disruption of the existing fabric, minimum displacement of people, making the center a microcosm of what may be expected for the whole Findlay Market area. For Woollen, that meant saving as many sound dwelling units as possible; 33 were. So was the A & P, on top of which he would like to see apartments built. The St. John's Church tower, built in 1848, will be the time-textured symbol of the Center; St. John's itself is coming down, although the architects had urged the cost-saving course of recycling it as a gymnasium. The city's Recreation Department said something about their "image" and asked for a new one. The other major loss is a parochial school; an indoor pool is proposed for its site. The ragged building profile fronting the interior of the Pilot Center block will enclose a courtyard, as old and new backyards converge as a commons for all age groups.

This will be a true town center, the very visible first step in the architect's "image anchor" strategy to build concentrations of both new and restored units, giving an aura of resolve and recovery to the Findlay Market district. This is what attracts investment. And, for those officials wanting higher income residents, this is what will attract them more surely than a classy tower in a grassy clearing. The ultimate objective is a true mix of income and age. This cannot be imposed by decree or development. It must be modulated by the kind of *design* Woollen has done with the people.

What they (and Cincinnati) are getting is more than a spanking new town in town, but a way of life with roots in the best of their city's past. The 80 percent of the area that was once asphalt will be green. The new and old will rub elbows nearby a restored, *living* Market. And you won't need census tracts to define the character or future of what was once merely the "basin."

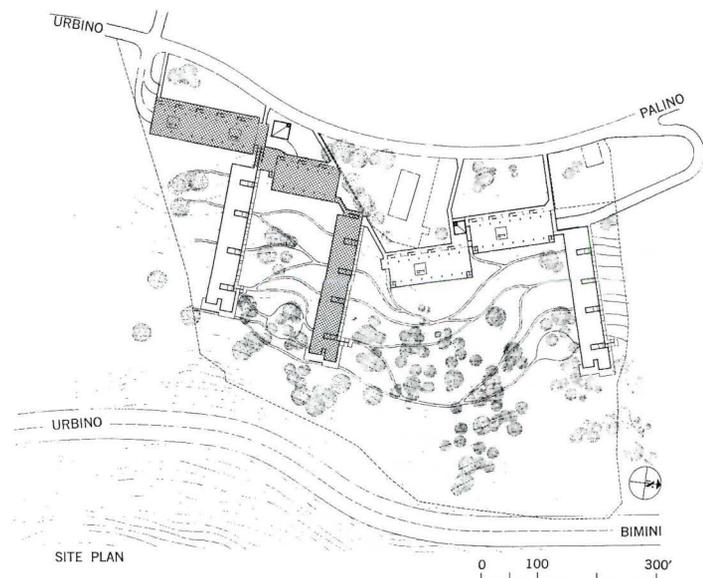
The Pilot Center (opposite) will combine new facilities, containing community services, with rehabilitated structures in an effort to reinforce the rich, close-grained character of the market district (left). Model photo: Balthazar Korab

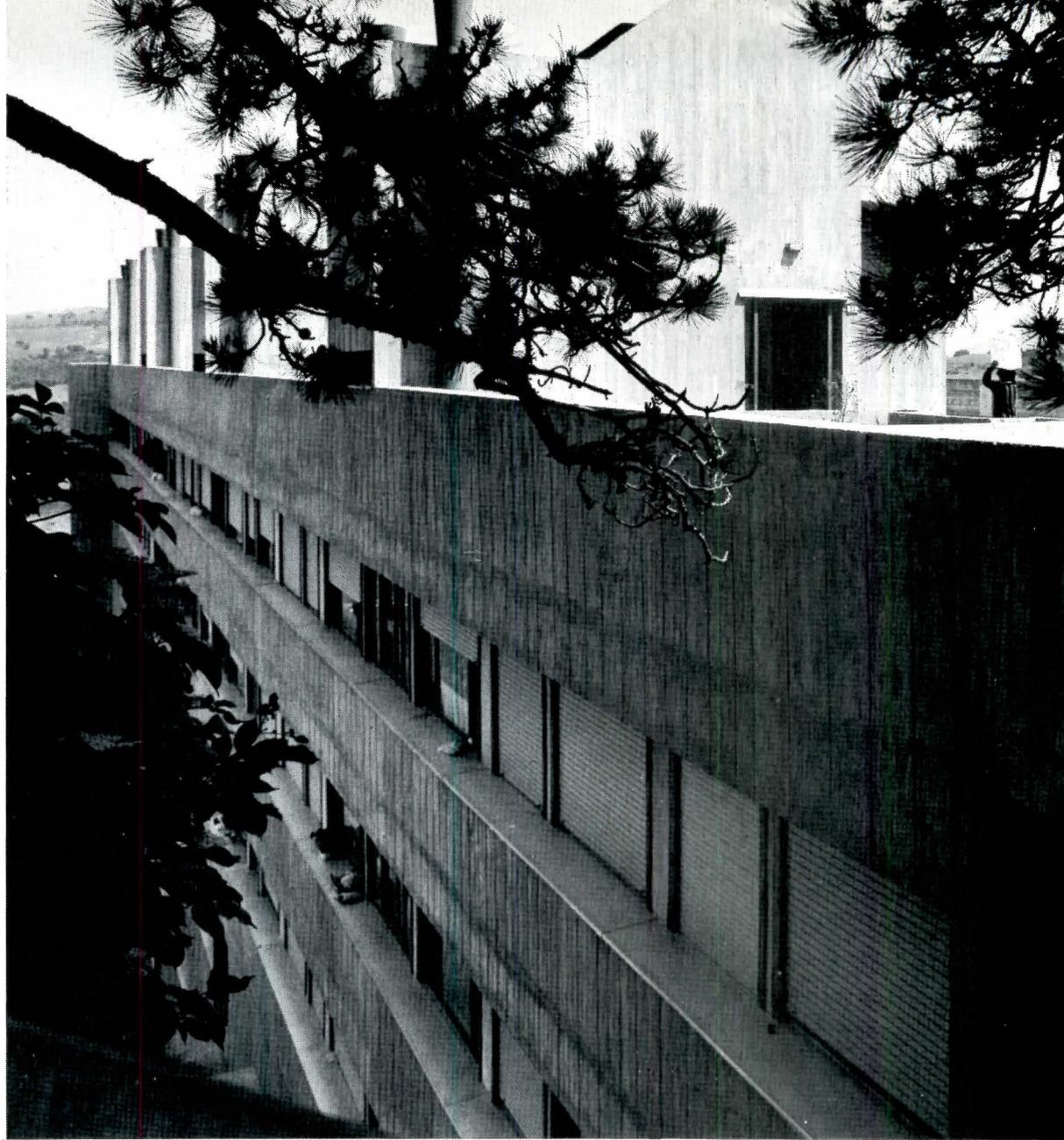




COUNTERPOINT IN CONCRETE

Urbino strikes a strong yet
delicate chord in the Apennine Hills





Urbino, the quintessence of urbanism, was an example for others.

It reared the genius of Bramante and Raphael. The equipoise of poetry and power—so clear in Laurana's palazzo for Duke Federico, compellingly so in Piero della Francesca's "Flagellation"—made the little town a font of the High Renaissance in Florence, 100 miles west.

For years, Urbino summoned pilgrim artist-architects up the Apennine slopes, 1,500 ft. above the Adriatic, sent them back bearing canons of grace and subtle strength, helping shape the structures and cities which commend our homage in a much more hurried time.

Quattro-cento Urbino is a hard act to follow. Especially in Italy. Its flagellations are secular now. Industry lays waste the cities and sea (as in Venice); developers lay waste landscape (as on the outskirts of Rome). Humanist passions (the kind which built Urbino) have been paved over, *Fiat's accompli*.

Those passions still persist at Urbino, informing the work of Milanese Architect Giancarlo De Carlo, whose reconciliation of temporal needs and timeless values came through in his dormitory and commons for the Libera Università (Apr. '65 issue).

Like the ducal palace, built in the 1460s, the *dormitoria* was a city in the form of a struc-

ture; an urbanism, like Urbino, having *universitas* beyond (and because of) its compact but human scale.

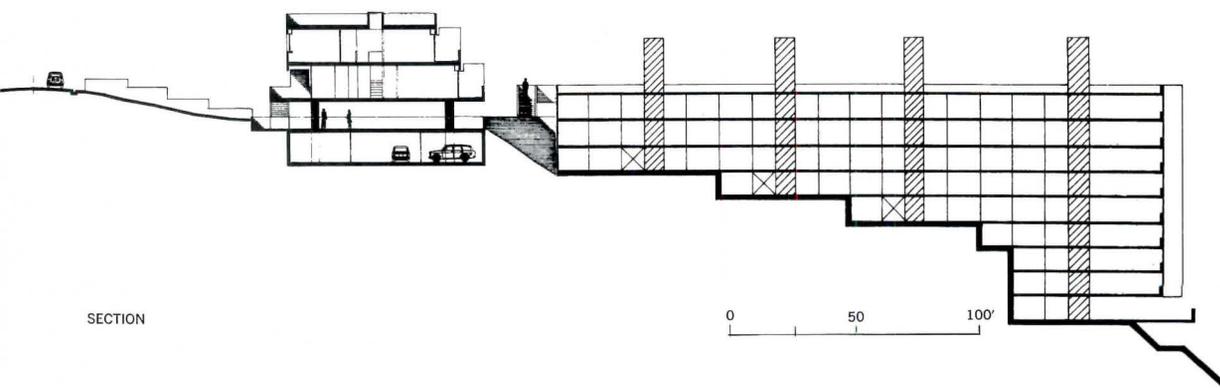
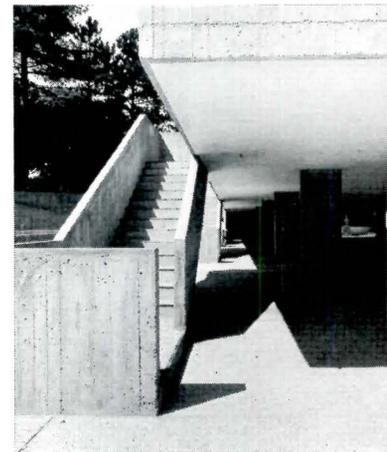
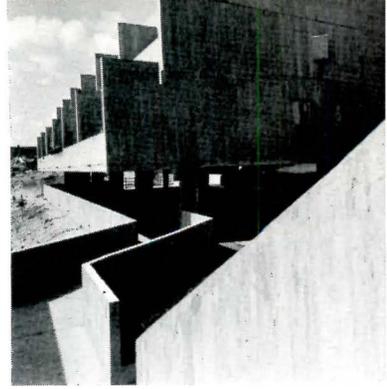
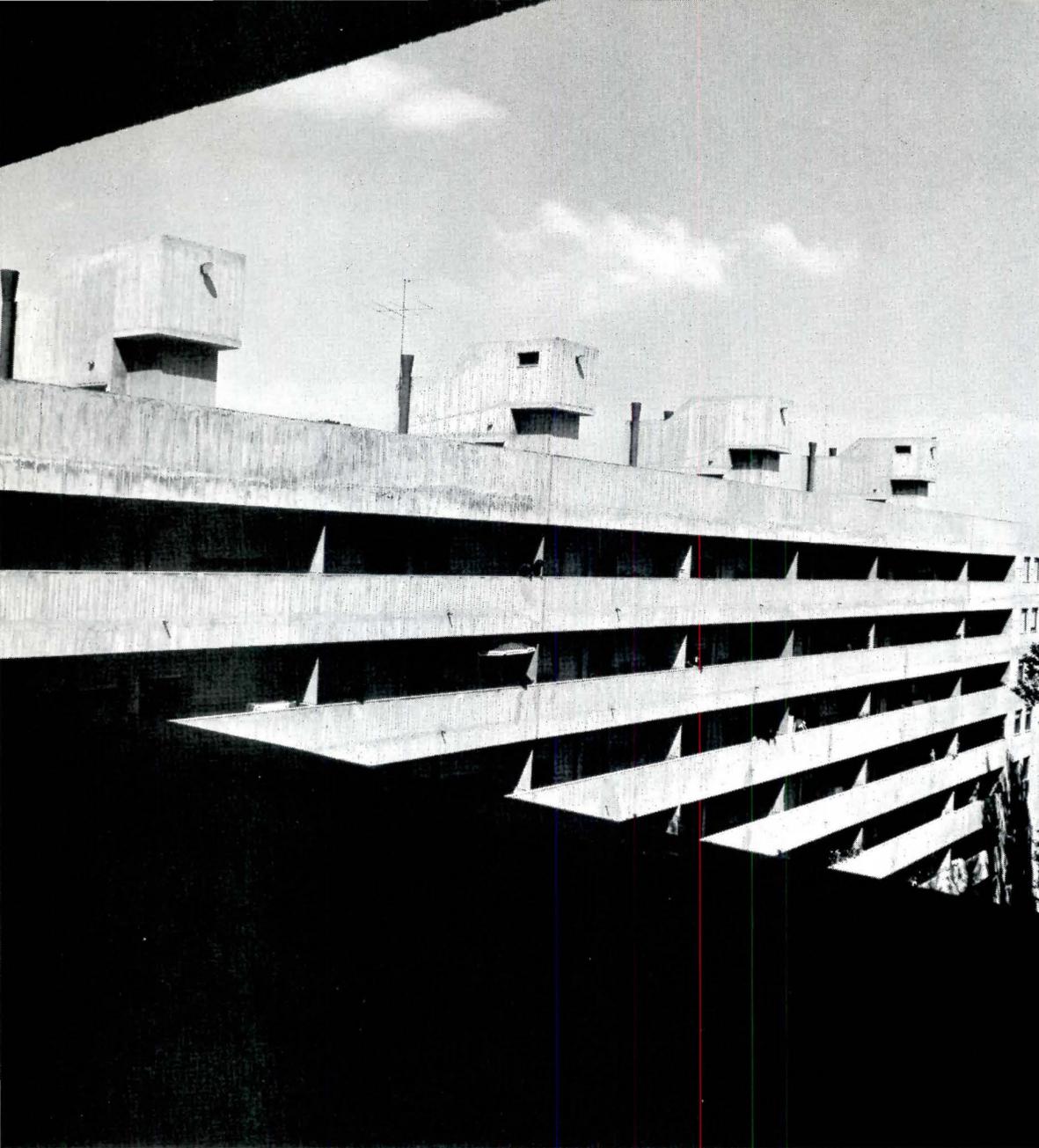
This amplitude of spirit points up the potential of a secular age as conveyed in its architecture. And it helps put De Carlo's latest Urbino work in perspective.

Presently in construction is his "La Pineta," a multi-phase project of low-income housing a little more than half a mile north of the old town center on a provincial road linking Urbino with Palino. Begun in 1968, with construction of the buildings shown here, its final stages will begin later this year.

A new highway from Rimini

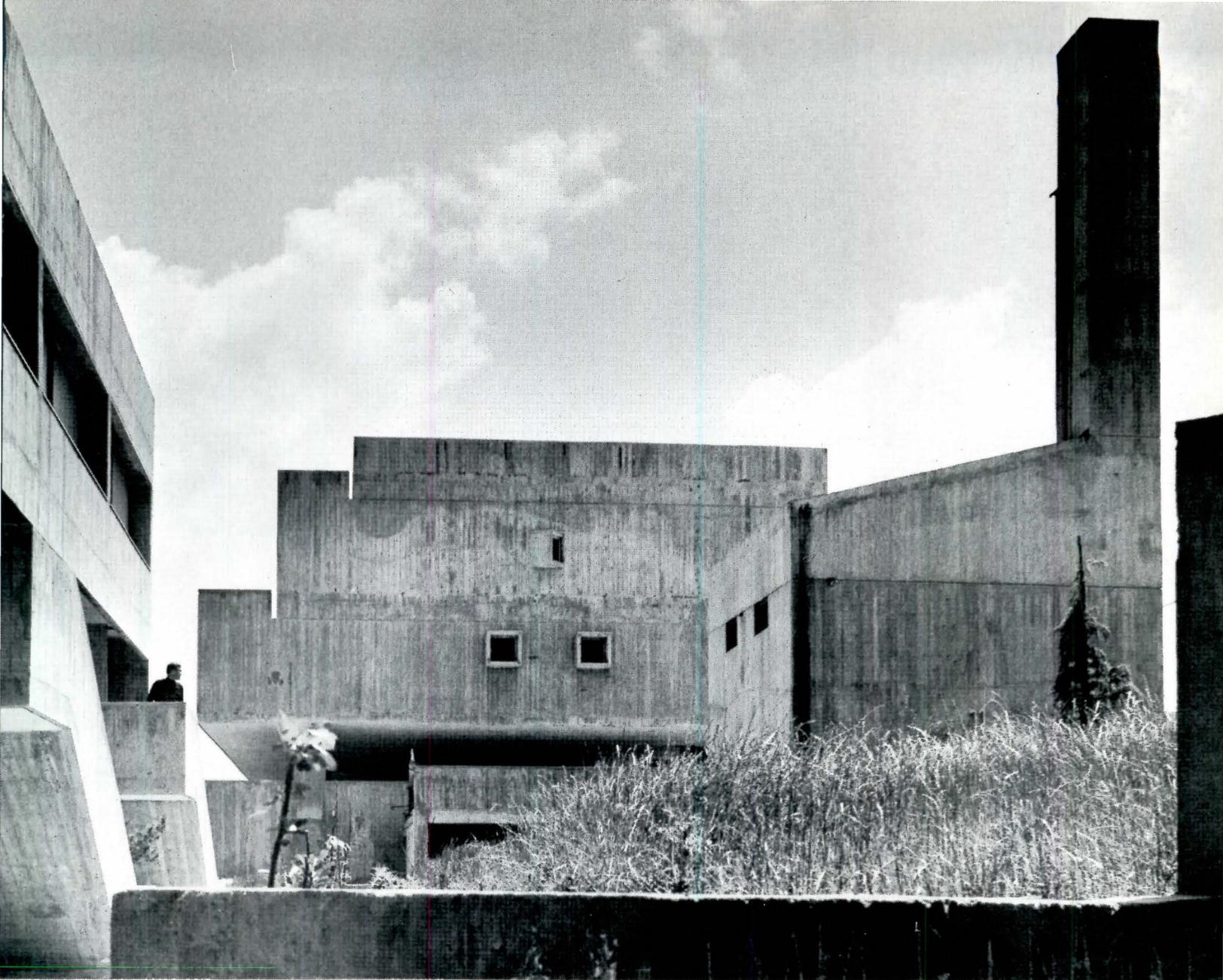
will soon trek the arresting slopes around the project site, making "La Pineta" a foreground feature in the Urbino landscape as you drive in from the north; a 20th century counterpart of the town's Gate of Lavigne.

Because of its location, the project area was brought under strict architectural control by the town administration. Guidelines affecting volume, general layout, landscape and the preferred range of texture, color and form were set down. Before granting the developers a permit to build, they were required to program and plan "La Pineta" within this restrictive design vocabulary. Details



SECTION

The highrise (above left) as seen from one of the hilltop maisonettes (upper), descends a steep slope, its floors perpendicular to the contours (section, left). The low-rise structures are interconnected by walkways to the highrise (middle). Beneath the low-rise porch level (lower), there is a garage for residents (middle).



having to do with the external and public parts of the project were fixed; more leeway was allowed in the layout of apartments. De Carlo, designing as though imposed limitations are an artist's most valuable tools, turned the vocabulary into a language—the abrupt eloquence of poured-in-place concrete.

“La Pineta” has two kinds of housing. The low-rises are alongside the road from Palino. These have generous ground-floor porches which open on an expansive view of the valley beyond.

Beneath the porch level are garages for all project residents; above, on the second and third levels, are maisonnettes.

The highrises are perpendicular to the steep contours of the hillside. Because the roadside roof level is kept constant throughout in both housing types, the heights of the buildings vary from two to nine stories.

Atypically, the highrises do not stick out like soar thumbs. The only things pointing skyward are poplars, left alone to soften De Carlo's stark shapes. Access to highrise apartments is from the roof; elevators take you down the hill instead of into the air.

The various components are interconnected with walkways and footbridges, creating (in the spirit of the earlier *dormitoria*

across town) a sequence of structures with streets, not just halls.

In addition to these roof-level “streets,” there is another pathway running the longer side of the highrises as they descend the hillside. Starting at the porch level above, the pathways terminate as a public space at the base (or, better, top) of each building. These little piazzas, with their cafes and play areas, will open to the nearby town center, creating a gentle, sociable transition between the new and old.

In a more than figurative sense, “La Pineta”—its tree-lined road along the roof—stoops to meet Urbino's tradi-

tion and texture. There is a humility here; a humility so real that it *had* to be more than a parody of historical styles. Formed up in materials of its own time, it becomes a counterpart to that history, so intimately near. This is just *housing*, remember; but, resonantly, a reminder that Urbino is still an example for others.

—WILLIAM MARLIN

FACTS AND FIGURES

Housing at “La Pineta,” Urbino, Italy.
 Architect: Giancarlo De Carlo, Milan.
 Collaborators: Armando Barp, Georg Solms. General contractor: Impresa Brunero Raspanti, Arezzo.
 PHOTOGRAPHS: Giorgio Casali

Elegance of frame provides its own esthetic

Probably few of them realized it, but passengers flying into the Orange County (Calif.) Airport have witnessed a novel construction scene, resulting in the area's most distinguished set of buildings. Consisting of four symmetrically arranged structures (see p. 56), the project is the gateway to the Irvine Industrial Complex and includes two single-story banks and two four-story office buildings.

Architects Craig Ellwood Associates designed the buildings in a straightforward skin-and-bones fashion. The structures enjoy a familiar Miesian esthetic of simplicity and elegance. The lightweight steel frame that lends the building its form, inside and outside, is, however, something new.

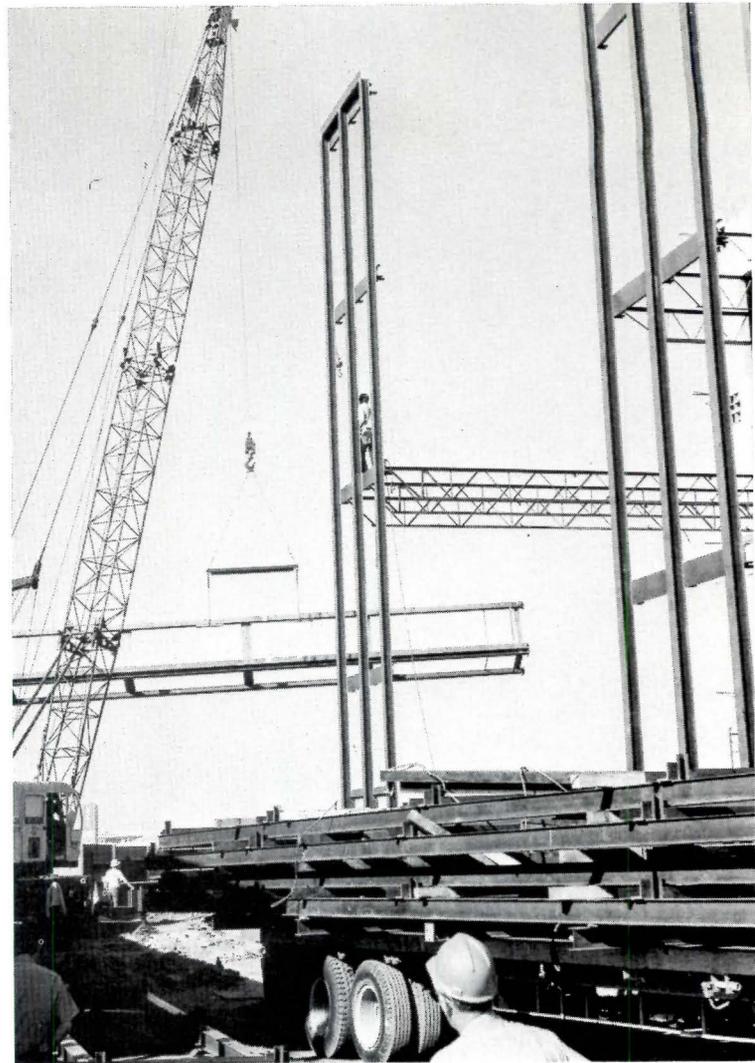
The vertical framing system of the buildings is made of 6-in.-square box-shaped hollow columns of weathering steel. These column assemblies not only carry the vertical load of the buildings, but also serve as mullions for the bronze window walls (with neoprene gaskets) and replace normal fireproofing procedures with a system that circulates water through hollow members.

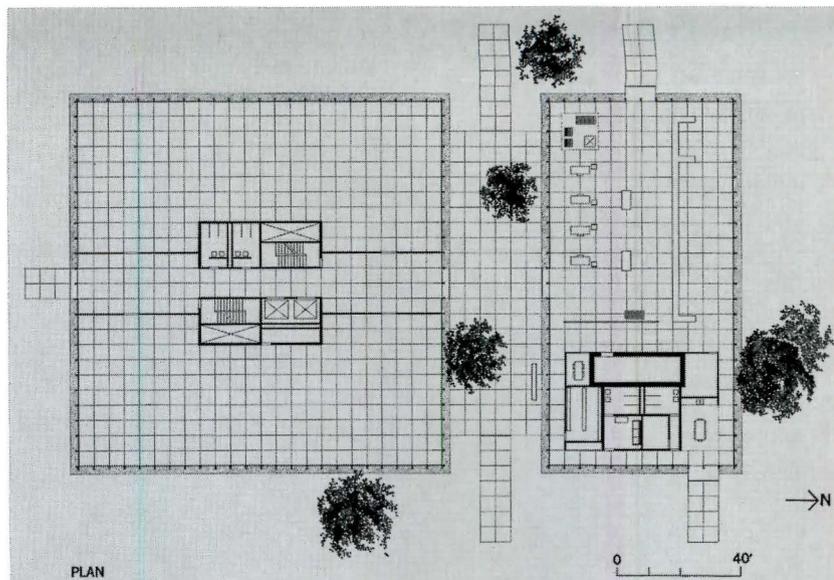
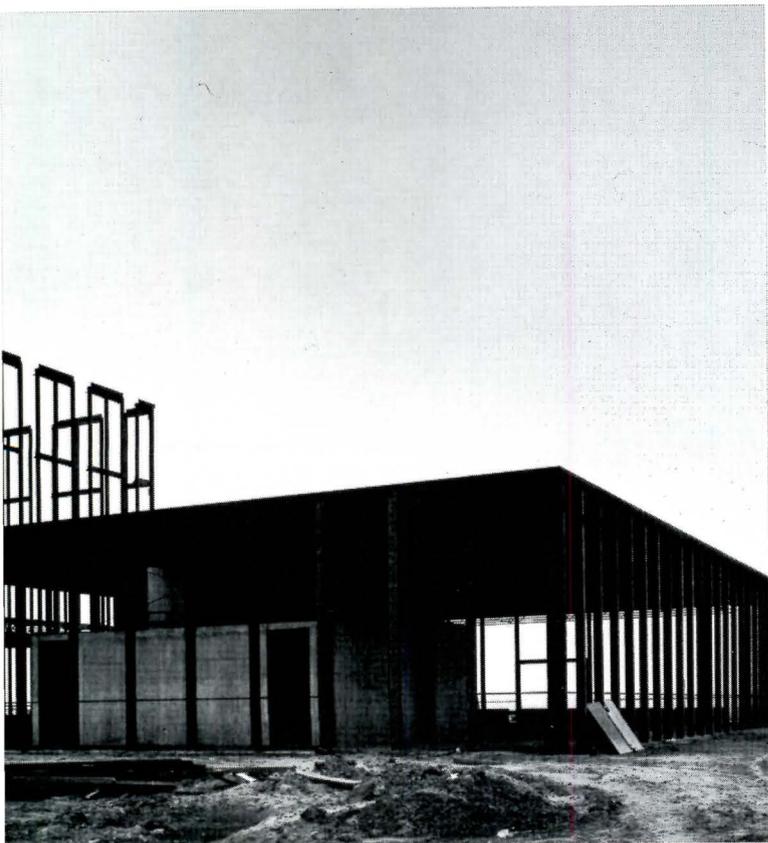
For erection, the column/mullion assemblies were prefabricated in single- and four-story heights. This allowed a crane to position the vertical structure of an entire building in two days (except for the concrete central service core).

The four-story office buildings combine this vertical framing system with a horizontal structural system of bar joists and girders. This scheme is as neat and elegant as the buildings' appearance.

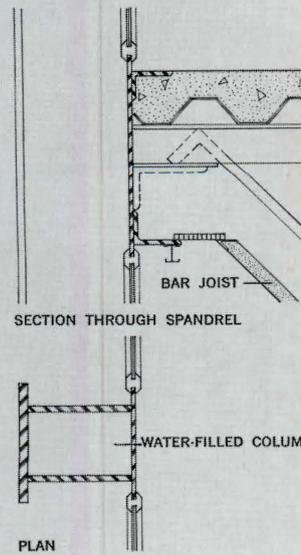
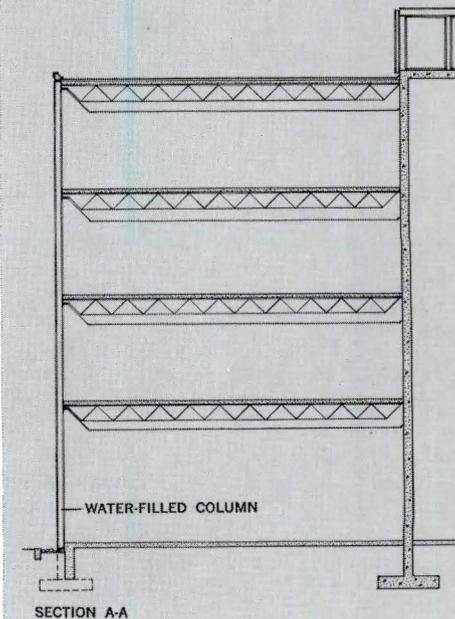
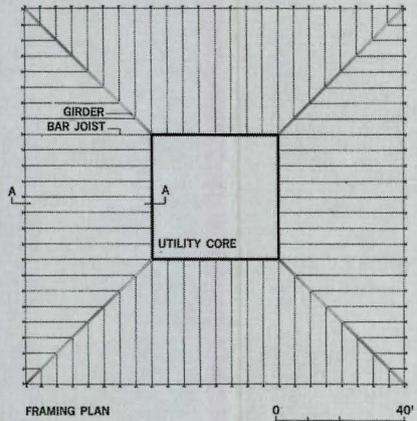
The girders run diagonally from the corner of the central core to the corner members of the vertical frame, which have double column support. (Most Miesian-style buildings have similar double columns in the corners, but this is usually a superfluous detail since the loads at the corners are considerably less than those along the rest of the perimeter.) The Ellwood design fully uses these paired columns. It calls for the bar joists to run parallel from the vertical columns to the core or to the diagonal girders (see plan, middle right), thus increasing the load on the corner columns.

The connections of the bar joists to the vertical framing





The Airport Business Center includes two pairs of buildings. Each set (plan, above) combines a single-story bank and a four-story office structure (at left, above). The horizontal framing pattern (plan, right) for the offices adds the load of some bar joists to the girders that run diagonally from the concrete core to the corner (double) column assemblies of the vertical support system. The soffit design of the office structures slopes with the web pattern of the bar joists (below). This allowed very narrow spandrel details, yet adequate space for mechanical equipment between floor levels.





is one of the more unusual details of the buildings. The soffit slopes to follow the web pattern of the bar joists, extending slightly below it to create a ceiling line low enough to accommodate mechanical equipment. From inside the building, the effect is one of increased height and light along the bronzed window walls—a pleasant sensation for occupants. The soffit is also clearly visible from the outside of the buildings, where they add a subtle accent to the otherwise grid-like design. Most importantly, the soffit design allows a thin and delicate spandrel, prefabricated into the vertical column assemblies.

Simplicity, elegance and a clear sense of logic are the secret to these mirror-like pairs of buildings. A secret to be shared.



The framing system of the two office structures is clearly visible from the exterior of the buildings (upper left), where the tapered soffits define the perimeter bar joist connections at each floor level. The same detail causes the interior ceilings to gracefully drop away from the window walls (right), seemingly providing extra height for the glazed areas. The entire project (lower left) includes two pairs of one- and four-story buildings, each joined by a covered walkway, and placed symmetrically on either side of a roadway, providing a gateway to the industrial complex beyond.

FACTS AND FIGURES

Airport Business Center, Newport Beach, Calif. Owner: The Irvine Co. Architect: Craig Ellwood Associates (James Tyler and Robert Bacon, associates; David Rawcliffe, job captain). Engineers: Norman Epstein (structural); Paul Bennett, Inc. (mechanical); Sarvasy & Associates (electrical). Landscape Architect: Lifescapes, Inc. General Contractor: J.B. Allen & Company. Steel Fabricator: Lee & Daniel. Building Area: 129,600 sq. ft. (total for four buildings). Construction Cost: \$2,644,710.

(For a listing of key products used in this project, see p. 73.)

PHOTOGRAPHS: Glen Allison.





SPLENDOR | THE STACKS

Corte Madera's new library is a rough-sawn tuckboard surrounded by trees and gardens

These days you don't notice so much that commercial strip along the road entering Corte Madera, California. What helped is the new regional public library built by Marin County and designed by Architects Smith Barker Hanssen, San Francisco.

The site, a wooded, parklike slope, was donated—presumably to prevent further despoilation of the neighborhood. The building, its main axis aligned with the contours, is situated on the more level area, preserving a major portion of the property for relaxed outdoor reading. To think this might have been just

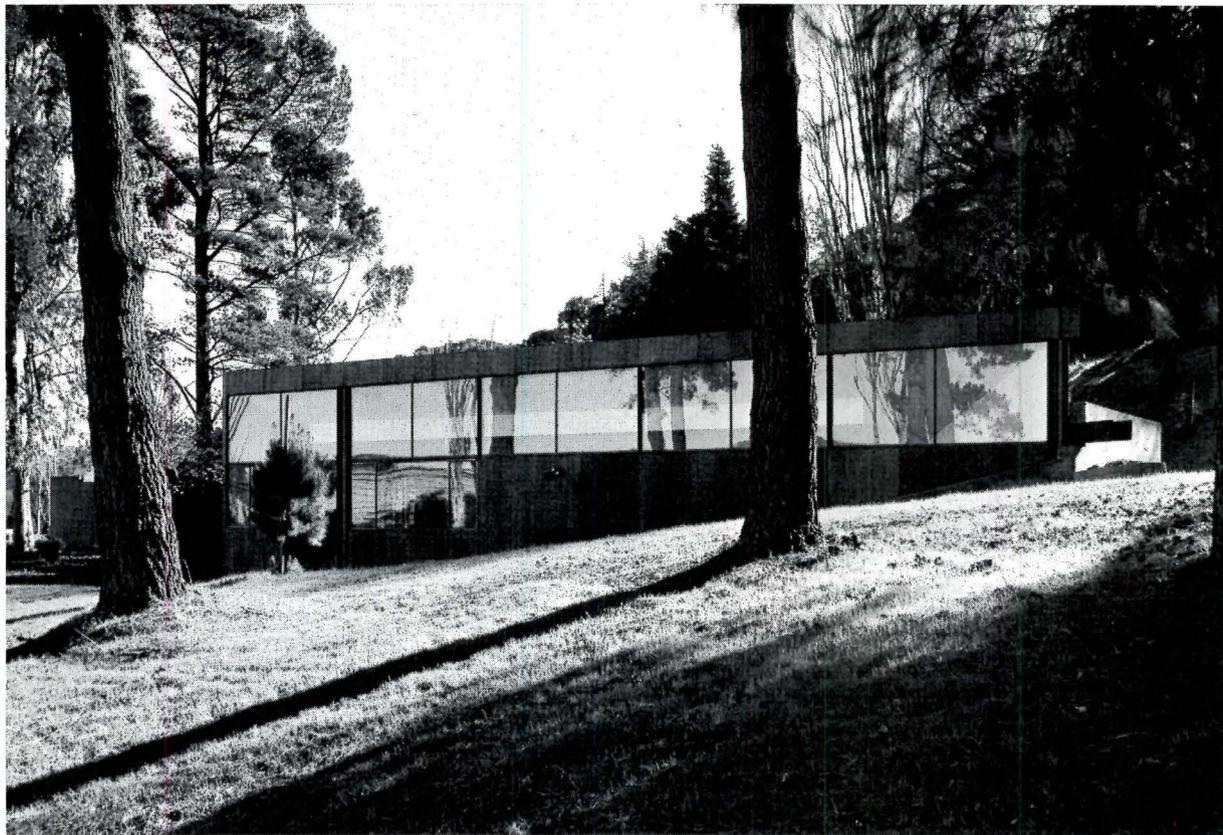
another short-order franchise.

The design sought out natural light. And clerestories beneath the saw-tooth roof let it in, glare-free, from the north. It sought identity with the terrain, so the building is low, on one level. What you get, along with the light, are views through glass of trees overhead. Sitting outside under these, you feel right with the rough-sawn redwood siding. The place has presence in the old grove. A good building to read Emerson by.

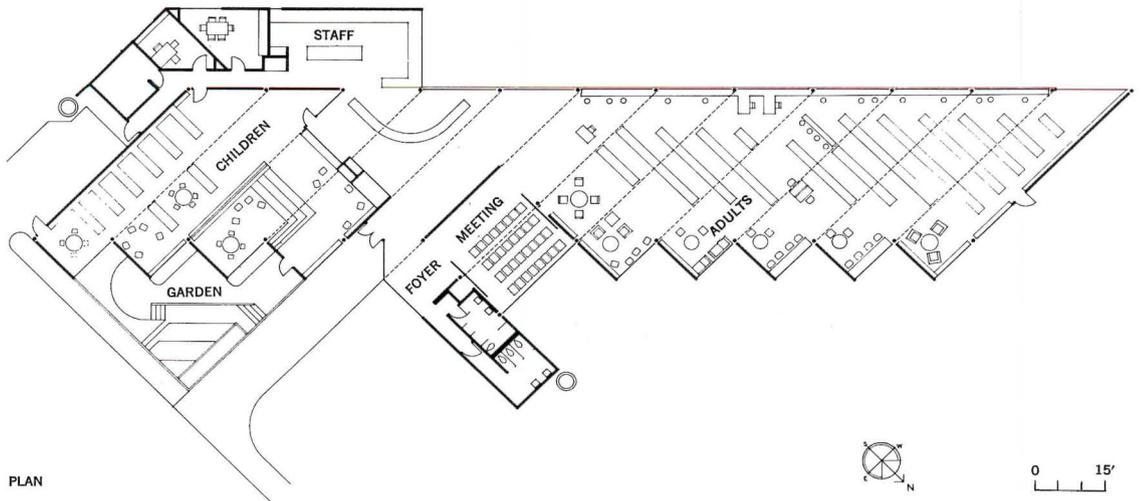
These stacks are not exactly the kind you fall asleep in. Environmental and political action

is popular, and people drop by to read through and talk over articles about such concerns.

The adult area has quiet alcoves, looking out to the trees, isolated enough for normal conversation; the children's area, separated by glass from the circulation desk, has a stepped floor for story-telling and, just outdoors, an enclosed garden. Carrels are clustered along the rear wall in a counter-type arrangement, adjustable to individual needs. And there is a meeting space with two large sliding doors; open, they make it an overflow area for young



Saw-toothing its way across the terrain, the Corte Madera library contains many books about ecology and, in fact, is one. Clerestories beneath the roof let in natural light, glare-free, from the north. A sprinkling system for landscaping cools the building on hot days, eliminating air-conditioning, conserving energy. The arresting gutter detail (far left, above) gently terminates the rear wall with the intermittent run-off of Bay Area rains.



PLAN



adults; closed, a separate room for afterhours use.

Fir plywood was used on all interior walls up to seven feet, making them a kind of non-stop tackboard with the kind of creative clutter you get when everyone wants to let everyone else know what's going on. But, then, what is a library unless it's an open book? There are 70,000 volumes in this one and a four-drawer file containing 20,000 history books on microfiche cards, part of the trend toward miniaturization. This, with the prospect of video cassettes and closed-circuit tie-ins with other

information sources, enabled the architects to think of the library in finite terms. Future external expansion, which would encroach on the sloping site, became less a consideration than assuring internal flexibility.

Some aspects of the building are not finite, of course; its resonant relationship with the landscape, its dialogue with a community whose sights it was built to raise. You sort of hope those nearby stores have learned something. For this little library, in all its modesty, is good advertising for what's down the road in Corté Madera.

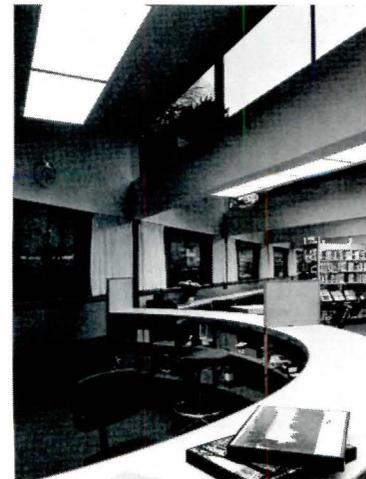
The children's section (above) has all the spontaneity of the kids who use it. The adult section ranges beyond the circulation desk (opposite), providing quiet alcoves for reading and talking.

FACTS AND FIGURES

Corté Madera Library, Corté Madera, California. Architects: Smith Barker Hansen (Douglas Barker, partner in charge). Engineers: Forell/Elsesser (structural); Norris Nelson (mechanical); Tage Hansen (electrical). General contractor: Joseph Di Diorgio and Son. Building area: 9,682 sq. ft. Cost: \$403,834 (including site development, furnishings and equipment).

(For a listing of key products used in this building, see p. 73.)

PHOTOGRAPHS: Gerald Ratto



(continued from page 19)

The town will include more than new housing. It will provide five million sq. ft. of office space for 25,000 workers. A town center will provide theaters, restaurants and plazas, mixed with schools, shops and offices. Community facilities would be available in town and neighborhood centers for worship, fire and police protection, day care, public health and emergencies. Other amenities may include art galleries, museums and libraries.

The housing will be varied and is planned for about 12,000 units, including townhouses, garden units and highrise towers. The units would be available to a mixed group of income levels and family sizes, including the elderly. All types are planned for neighborhood clusters, with no area designated for one social group.

About 55 percent of New Franconia is planned for open space. Fifteen percent of that amount would lace the 720-acre developed portions with parks, courtyards, and plazas.

HONORS

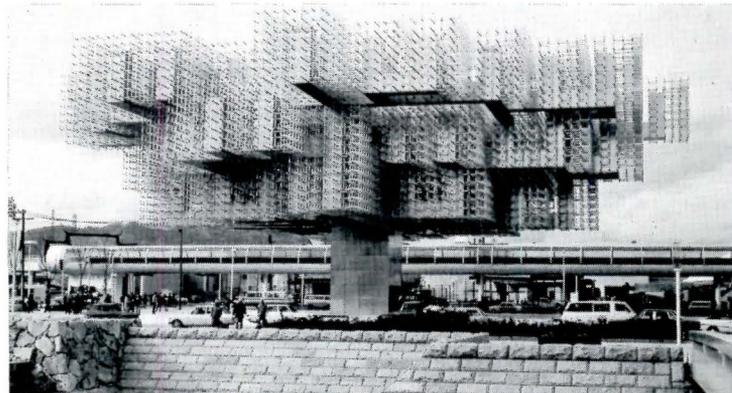
ANODIZED ALUMINUM TREE

The 1972 R. S. Reynolds Memorial Architectural Award (and \$25,000) will go to Zurich Architect Willi Walter for "Radiant Structure," a 32,000-lamp happening in the Swiss exhibit at EXPO 70 (Osaka).

The AIA jury cited his Tree of Light (1.2 million watts) as being particularly successful in providing "excitement at night" and in conveying "joy and happiness" to those seeking an oasis among busy surroundings.

The winner will also receive an original aluminum sculpture created by Artist James Prestini of Berkeley, California.

Willi Walter's Tree of Light



AIA 1972 HONOR AWARDS

Nine buildings will receive the nation's highest awards for architectural excellence at the AIA Convention in Houston.

Two of these awards are for structures that convert old buildings into new uses. Another winner is the Mummers Theater in Oklahoma City, boarded up for lack of funds before the AIA's bronze plaque arrived.

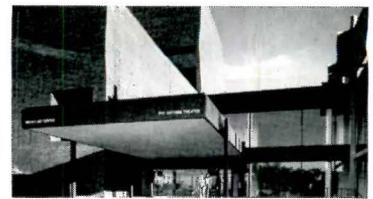
The winners are:

1. Walker Art Center, Minneapolis, Edward Larrabee Barnes, architect.
2. Koerfer house, Lago Maggiore, Switzerland, Marcel Breuer and Herbert Beckhard, architects. (Dec. '69)
3. Alley Theatre, Houston, Ulrich Franzen and Associates, architects. (Mar. '69 issue)
4. Mummers Theater, Oklahoma City, John M. Johansen, architect. (Mar. '71)
5. McCormick Place On-the-Lake, Chicago, C. F. Murphy Associates, architects. (Nov. '71 issue)
6. New York State Bar Center, Albany, James Stewart Polshek & Associates, architects.
7. YM-YWHA Day Camp, Mt. Olive, N.J., Claude Samton & Associates, architects. (July/Aug. '71 issue)
8. Weyerhaeuser Headquarters, Tacoma, Wash., Skidmore, Owings & Merrill, architects. (Mar. '72 issue)
9. Ice Houses I & II, San Francisco, Wurster, Bernardi & Emmons, Inc., architects.

Other honors to be bestowed at the Convention are these:

- The Whitney M. Young Jr. Citation (the first ever awarded) to Washington, D.C. Architect Robert J. Nash, for his "significant contribution in initiating and directing the Institute's programs in the area of social concern." AIA vice president Nash (his second term) is the first black elected to national office by the organization.

- The Citation for Excellence in Community Architecture to the Washington State Department of Highways for the design of two proposed segments of Interstate Route 90 traversing Seattle and Mercer Island, for "making a positive contribution to the environment."



1



2



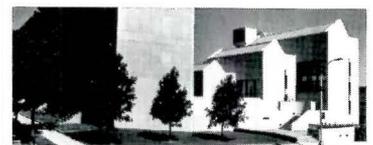
3



4



5



6



7



8



9

ACTIVE RETIREMENT

A month ago, Joseph C. Hazen, Jr., onetime managing editor and, later, publisher of the ARCHITECTURAL FORUM, retired as deputy administrator for Time Inc.'s book publishing, broadcasting, films and recordings divisions. He had been with Time Inc. for 34 years, starting in 1939 as a staff writer on this magazine. Having known Joe Hazen "relax" in the past, the FORUM's editors can report with confidence that his retirement is likely to be the busiest—and, possibly, the happiest—time of his life. When he is not being



Joseph C. Hazen, Jr.

a publishing executive, Joe Hazen designs houses, serves on the Summit, N.J. Planning Board, paints charming water colors, and restores antique automobiles. In the unlikely event that he should have some time to spare, he could always start writing for this magazine again—it would be a distinct pleasure for all concerned.

UNIVERSITY APPOINTMENTS

William Kay Turner has been named dean of the Tulane University School of Architecture. Professor Turner has been serving as acting dean since the death of John W. Lawrence a year ago. He is a specialist in urban design and community, and is the author of *Some Aspects of Social Design: The Social Neighborhood Today* published in 1970.

• Ambrose M. Richardson has been named chairman of the Department of Architecture at the University of Notre Dame, effective late summer. Architect Richardson is a former professor of graduate design at the University of Illinois, and holds the patents on various furniture designs and pneumatic struc-

tures. He has also served as Chief of Design in the Chicago office of Skidmore, Owings & Merrill.

OBITUARIES

Two years ago, we had a typical meeting with photographer Richard Nickel on a Chicago curbside. He drove up on his way to an assignment, motioned us inside, where we pored through a hastily prepared collection of his pictures of Chicago School landmarks: the Garrick Theater he had fought to save, then documented with a round-the-clock commitment; the Reliance and Monadnock, now threatened; and, of course, his Old Stock Exchange, that other Adler & Sullivan masterwork he had hoped to photograph *restored*, now rubble.

He'd been photographing Adler & Sullivan for 15 years and, with equal skill, much new work, like Saarinen's GM complex (June '71).

Dick was never without that Hasselblad; but he was never without his tools, hardhat and flashlight, either. He moved about the ruin Chicago is making of itself, his well-informed romance with its past driving him on, picking up Chicago School fragments so some kids, visiting a museum one day, might understand where those fragments came from, and also why; might learn enough of their past to avoid becoming the unfeeling vandals their parents too often were.

Dick Nickel, we found, was a gentle man. He pursued a serious subject without pretention. Unless you were willing to catch him curbside, both of you on the run, or get up in the middle of the night (as he often did) to go down to some demolition site in the Loop, chances are you would never get together.

He cared so much for the better, more human instincts these buildings represented. And when we at FORUM got word last month that he had vanished, his life presumably crushed one night beneath a fallen wall on the Old Stock Exchange site, our thoughts of him had to do with love and gratitude; our thoughts of the Chicago he treasured, with craven grief.

• Professor Walter B. Sanders, former associate editor of the



Walter B. Sanders

FORUM, on the architecture faculty of University of Michigan for over 20 years, died in March at 65. It was Professor Sanders who initiated the doctor of architecture program at the University of Michigan. Before his many years at Michigan, he taught at Columbia University and Pratt Institute, both in New York, and served as an associate editor of the *American Architect*. Since 1955 he served as design consultant to Albert Kahn Associates in Detroit. He was made a fellow of the AIA in 1963, and won the Gold Medal of the Michigan Society of Architects in 1964. The governor appointed him to serve on the Committee on the Design of the New State Capitol of Michigan.

• Dr. John F. Helm Jr., 71, emeritus professor of architecture at Kansas State University, died in March. He was known as a teacher of unusual merit. In the early Depression years he and Russell I. Thackery revived *Kansas Magazine*; he was its art editor for many years. In 1961, Professor Helm was chairman of the Art Committee for the Kansas State Centennial. He also served as executive director of the Kansas State Art Center Foundation, and art consultant for the Kansas Cultural Arts Commission.

• The concert hall at Halsingborg (1932), the Swedish Pavilion at the 1939 New York World's Fair, the satellite town of Vallingby near Stockholm (1953), so many of the housing and planning programs of the United Nations; these were the devotions of the venerable Swedish Architect Sven Markelius, who died in February, age 83.

COMPETITION

Owens-Corning Fiberglas Corporation will award Steuben crystal sculptures and crystal plaques to the winners of its 1972 Energy Conservation Awards Program, in an effort to encourage an awareness of the urgent need to conserve our national energy resources and lessen environmental pollution. The competition is open to registered architects and licensed engineers practicing in the United States. Buildings completed, or buildings under construction on the date of entry, or buildings commissioned and being designed on the date of entry may be submitted. A letter indicating intent to enter must be received not later than June 30, 1972 by Owens-Corning Fiberglas Corporation, Fiberglas Tower, Toledo, Ohio 43659.

PROBING THE INTERIOR

The fourth National Exposition of Contract Interior Furnishings will take place June 21-23 in Chicago's Merchandise Mart. This year's themes will be the recycling of space, flexible planning and new management efficiencies. Special sessions will include case studies of plans for the new Sears Tower, in Chicago, and for a 60,000-student campus to be shared by three institutions. A panel will discuss planning "health spas for the mind," or creativity-inducing environments. Speakers for the conference will include architects, interior designers, representatives of federal and state governments, education and health care facility planners, plus industry leaders.

NOW YOU SEE IT . . .

"The Invisible City" is all around us, but it will become somewhat more visible during the 22nd annual International Design Conference in Aspen, June 17-22. An interview with Richard Saul Wurman, program chairman of the conference, appears on pages 40-45 of this issue, explaining the concept and the conference. For further information, write to IDCA, P.O. Box 664, Aspen, Colorado, 81611.

PHOTOGRAPHS: page 18 (top) Neil Maurer; (bottom) UPI. Page 19 (top) Robert Otter; (middle) J. D. Rothschild.

33,800 square feet of roof deck on a warehouse in Atlanta, Georgia were covered in only 3½ working days by North Brothers using insulating board of Styropor® expandable polystyrene.

The 4' x 8' foam boards supplied by Southeastern Foam Products and W. R. Grace were molded of Styropor expandable polystyrene beads from BASF Wyandotte Corporation.

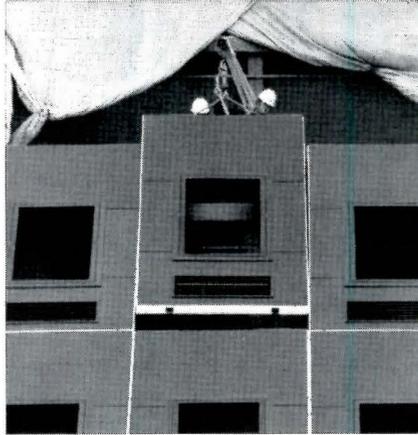
Styropor saves construction costs in many ways. Layed directly on adhesive which can be rolled quickly on the steel deck; it requires no nailing, no separate fasteners. It is light to handle, non-dusting, has no irritants to worry about. Joints are sealed fast with foamed-in-place urethanes.

Its low "K" factor makes Styropor insulation highly efficient for wall, floor or roof. Its excellent compressive strength sustains live or static loads when used to insulate floors.

An 18-story office building in a major urban redevelopment project in

New Jersey also was covered up fast. Modular curtain-wall sandwich panels fabricated with Styropor insulating cores again saved construction time and provided significant cost savings.

Each panel represented 75 sq. ft. of finished aluminum outside facing,



full insulation and a finished interior set in place in one shot.

To find out how Styropor can cover up and save for you just mail us the coupon for all the facts.

BASF



BASF Wyandotte Corporation

Advertising Dept. **E-143-1**
100 Cherry Hill Rd., P.O. Box 181
Parsippany, New Jersey 07054

Send data on Styropor® to:

Name _____

Company _____

Address _____

City _____

State _____ Zip _____

Phone _____ Ext. _____

Styropor® EXPANDABLE
POLYSTYRENE

Cover Up



THE INVISIBLE CITY

(continued from page 44)

ing some reason for doing it. Lou Kahn was a revolutionary person in architecture 10 or 15 years ago, when he said, it's not that I like mechanical equipment but I have to have it, and we ought to have a place for it; it was so simple and it affected architecture dramatically in the years since. What I'm saying here is just that simple. I'm saying why can't we get reasons for doing cities from things we have to have: we have to learn from our cities, and we have to use our cities. We can no longer abandon them, we can no longer be apathetic to them, we have to have a sense of ownership.

Q: You are doing a "Yellow Pages of Learning Resources" for the Aspen conference. What is that?

Wurman: Some people are skeptical; they say, what can you learn from the environment? I say tell me what you can't learn from it, from the People, Places and Processes of the environment? We have found that the biggest ego-trip in the world for people is talking about what they're doing—garbage-men, people at a food distribution center, anyone. People respond as soon as they're asked. People who don't know they're teachers, telling people what they're doing, people who don't know they're students.

What can you understand about a process by standing on a streetcorner? What can you understand by understanding the power distribution of the city? What can you learn from a place? For instance, at a hospital you can learn not only about medicine, but about book-keeping, food preparation, administration, many things. How can you crack it? How can you know what to ask of it? How can you see how rich everything is?

The *Yellow Pages of Learning Resources* will be a prototype; it will have about 100 people, places and processes that are available in any city for learning. A post office and postman, a TV station, the library, a quarry, a locksmith, a bakery, a bricklayer, a dryer-cleaning.

What can you learn at a vacant lot?: "Most cities have many vacant lots. Invariably they stick out in a block of otherwise good housing like a missing tooth. People complain about the hazards and ugliness of most of them and most of the time nothing gets done. But vacant lots, liabilities though they may seem at first, can easily be converted into assets. Learn from a vacant lot as if you were an archaeologist. How did the lot become vacant? Did it ever have a building on it? If it was never built upon, can you figure out why it was an undesirable lot? What kinds of junk and debris have piled up? What can you learn from the junk and trash that have collected? Why has this material collected here? What can you reconstruct about the culture of the people who lived around the lot?" And there's an action program—clean it out, make it a useful play space, make it an added amenity in the neighborhood, and so on.

What can you learn from a sports stadium? And what can you learn about city planning?: "First I found it hard to believe that my city was actually being planned. But that's what I heard. It was hard to believe because of all the old dilapidated buildings and the constant traffic jams and air pollution and the obvious need for more public facilities, like parks and playgrounds, health centers, schools, and new buildings. But I'm not the type who can sit back and believe something just because people tell me it's true. I have to find out things for myself. So I decided to make a trip to City Hall and find out what city planning is all about." Etc.

What can you learn at City Hall? What can you learn from a carpenter? From an architect? And so on. EFL is supporting the project. MIT will print it.

Q: What else will be happening at Aspen?

Wurman: Our theme statement says this: "IDCA 1972 will address the implications of making the invisible city visible; of changing misuse into use and apathy into engagement. The conference will explore the programs, philosophies and materials that use the resource of our man-made environment for

learning. The conference will address the architectural, planning, design, economic and political implications of these educational alternatives."

Conversation will permeate the week. Conversation is believable, lecturing isn't. Conversation in the afternoons, 30 things available, so no group is to large.

The whole week is intended to be very positive. The only negative thing is going to be the first night: showing Wiseman's film *High School*. It's a very negative film, a chance for me to say, what you're going to see is what is, and for the rest of the week I'm charging you and all the resource people not to catalog how awful the world is, but to tell what you are doing and what can be done.

In the mornings it's going to be run like a Dick Cavett show—a conversation between two people, which I feel is more believable than a lecture. In the evenings, three or four formal lectures. Lou Kahn will be talking about the use of the street as a learning place. Ivan Illich will be giving something I'm totally opposed to, but I have him there as a thorn in my side (we all need one). He feels that the city, and society now, is so sick that we should not make use of it for learning. That we should create a new society. I am diametrically opposed to that, but he is important enough and charismatic enough that he should have that forum.

We have people coming, like Richardson Dilworth, who probably haven't a thought about using the urban environment for learning, but he was mayor of Philadelphia, district attorney of the city and president of the school board, so he has things to say about the subject even if he disagrees with it.

We're going to have a demonstration school every afternoon, for everybody of every age, run by the director of the Aspen Community School. And Troy West will be there doing a huge map of Aspen, putting down the resources much as he did with that marvelous map of the Hill district in Pittsburgh. And Jack Dollard, who is behind the Everywhere School in Hartford, and John Bremer, the former director of the Parkway Program in Philadelphia, and

John Holt, the author of *How Children Fail* and *How Children Learn*. Nicholas Johnson of the FCC, and Albert E. Parr, emeritus head of the Natural History Museum and author of *The Design of Cities*. Larry Wells, director of the Experimental Schools Program in Berkeley, and Warren Bennis, president of the University of Cincinnati and author of *Conflict and Change*. Marcus Foster, superintendent of schools in Oakland, California and author of *Making Schools Work: Strategies for Changing Education*. And Michael Southworth and Harry Parnass, who are involved in projects I mentioned earlier.

Q: Except for a few architects and planners, it would seem that most people behind this idea do not have design backgrounds. What will it take to make these ideas take hold with designers?

Wurman: What's going to make it happen is more people waking up and saying, gee I didn't understand anything I was looking at. It's going to be people saying you can learn from your city. It's going to be people asking is there anything you can't learn from some person, some place or some process.

Q: Do you detect any backlash in this movement? So far it seems to be barreling along.

Wurman: Yes, because the kids are happy. When a kid comes home and has enjoyed a day at school, extremely conservative parents are going to endorse it no matter what it is. This will become an issue much like clean air and clean water, endorsed by conservatives and liberals alike. The conservatives can say, yes, if you learn from your environment, you can learn from all the conservatives in your environment. And the liberals can say, yes learning about your city is good, because the city itself is a liberal thing. There is the chance that you can learn some lousy things, but the chance to learn lousy things and good things, the option to learn about where you are, where it is, should be an option open to all of us. Because where we are, and where it is, and where it ought to be, and what your position is in making it what it ought to be, is life now in the city.

—ELLEN PERRY BERKELEY



Metalastic Mark II Expansion Joint Cover

ULTIMATE ENGINEERING

METALASTIC MARK II EXPANSION JOINT COVER

An exceptionally durable vinyl extrusion, with $\frac{3}{8}$ " PVC foam insulated bellows section,* that provides absolute bonding and unequalled ease of installation:

- *Exclusive splicing system defies error.*
- *Open cut insulation channels assure tension-free application.*
- *Imbedded steel fastening strips, indented nail points and self-adhering flange strips facilitate installation.*
- *Fastens to curb, cant or nailable deck edges.*

Flexible at temperatures as low as -50°F. , available for joint openings of 1" to 4" in 50 and 100-ft. rolls (flexible at temperatures to -50°F.) and 10-ft. curb-shape sections, with thermoformed transitions.

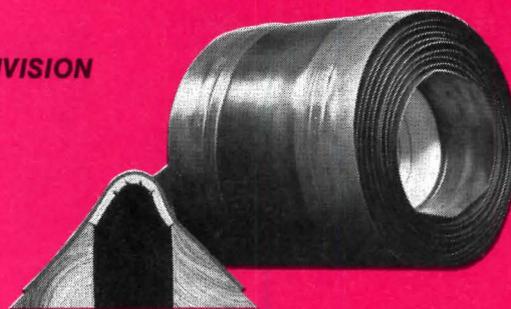


BUILDING PRODUCTS DIVISION

Get the facts:

Grefco, Inc.

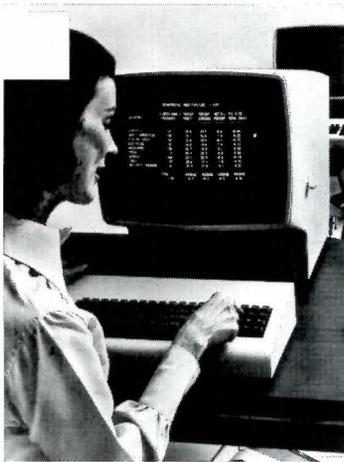
BUILDING PRODUCTS DIVISION
2111 ENCO DRIVE
OAK BROOK, ILLINOIS
60521



*"K" factor
of .30

PRODUCT REVIEW

This month's Product Review concentrates on computers, audio visual products and architect's tools.



INFORMATION DISPLAY

The IBM 3270 information display system has been announced by International Business Machines Corp. The equipment combines operator convenience with improved data handling to save time for the user and the computer in gathering, updating and communicating information. Simple computer commands are easily converted to sophisticated display and printer operations. The system can include hundreds of new TV-like display stations to guide operators entering data. *On Reader Service Card, Circle 101.*

PNEUMATIC TUBE SYSTEM

The first computerized pneumatic tube system is now available from Diebold Inc. Called Lamson Computer-Aire, the system can make 100,000 decisions a second. When the controls on the system's sending station are activated, a fast sequence of questions and answers is initiated in the computer. The computer scans the entire system to determine clear channels for the carriers. When a carrier is accepted into the system, its immediate delivery is assured, says the company.

On Reader Service Card, circle 102.



ESTIMATING TOOL

Model 610 InstaMator, a new time-saving tool for estimators, has been announced by Diversified Electronics Co., Inc. It is the basic unit to a building-block estimating system and includes optional plug-in attachments, including a paper-tape Verifier and a Memory Unit for storage of 40, 60 or 120 take-off items. The tool also has special construction-oriented calculator features. Standard architectural and engineering scales may be selected.

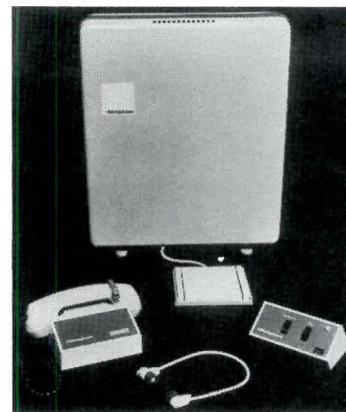
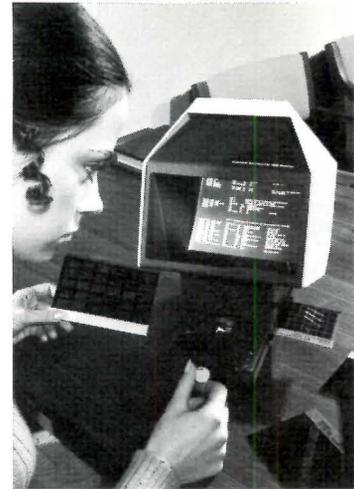
On Reader Service Card, circle 103.



MICROFICHE READER

Two models of a new low-cost portable microfilm reader, featuring front-projection optics and a unique daylight screen, have been introduced by Eastman Kodak Co. The 20X Ektalite 120 reader lists for \$95 and the 40X, model 140, has a list price of \$110. The light source for each is a small 12-volt lamp with an expected life of 250 hours, and is generally replaceable for less than 50¢. The screen has a highly reflective Ektalite (patented) surface, which permits clear views in normal room light.

On Reader Service Card, circle 104.



DICTIONATION SYSTEM

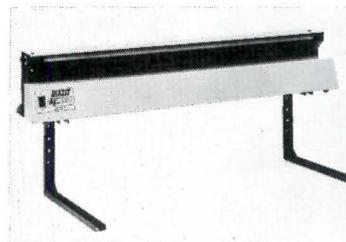
The Dictaphone Corp. has introduced a new dictation system called the Thought Tank that can cut almost 40 percent off the time now required to produce correspondence with conventional systems. The system has three basic elements: a recorder/playback tank unit with endless loop magnetic tape; a small telephone-like instrument for dictation; and a control unit for transcribing. It may be purchased or leased.

On Reader Service Card, circle 105.

MICROFICHE READER

The new MISI-201 Microfiche Printer-Reader has been introduced by Micro Information Systems, Inc. Available with 18x and 24x standard lenses at \$695 (and other optional lenses), the new equipment gives brilliant images with high contrast and uniform focusing. It delivers an electrostatic (dry) print in ten seconds at a cost of 4¢ per copy. Paper is easily loaded with cassette rolls, each giving 500 copies. Each sheet is held on a vacuum frame insuring uniform quality.

On Reader Service Card, circle 106.



WHITEPRINT DEVELOPER

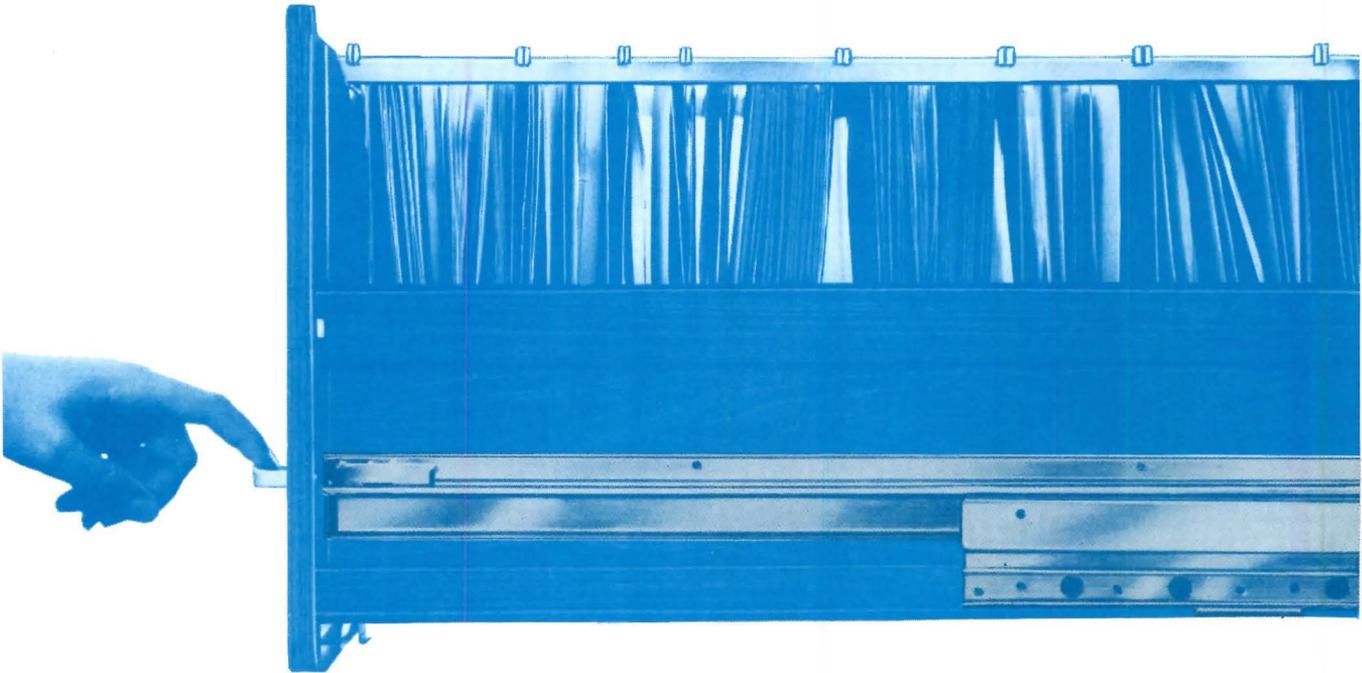
The new AF 200 Ammonia-Free Whiteprint Developer has been

introduced by the Diazit Co., Inc. It can be used with any manufacturer's whiteprint (blueprint) machine and any dry diazo developed blue line paper. It accepts prints up to 42 in. wide and of any reasonable length. No venting is required and the system operates on standard 120-volt, 60-cycle current. Manufacturer's price \$375.

On Reader Service Card, circle 107.

(continued on page 68)

THE
SLIDE
WITH
THE
VELVET
TOUCH.



THE
525.

Grant's spectacular new progressive
action slide features incomparably
smooth operation • up to 150 lb.
load capacity • simple installation
• "quick-disconnect" mechanism •
wide range of sizes •

It's ready for action!

GRANT®
WE KEEP THINGS MOVING

GRANT PULLEY & HARDWARE CO.
A Division of Instrument Systems Corporation
45 High Street, West Nyack, New York 10994

On Readers Service Card, Circle 313

OBJECT VIEW

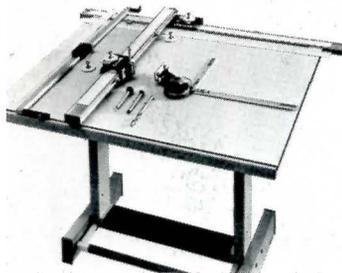
(continued from page 66)

FOUR-DIRECTIONAL PLUMB

A new plumb instrument allows the viewer to achieve simultaneous four-directional readings from one position. Developed by Miracle Instrument Co., the new level can save up to 70 percent of the user's time by eliminating the need to shift from one surface position to another to achieve plumb. The device provides one-step readings on both flat and cylindrical



surfaces, and its multi-view feature can be used for left- or right-hand sightings. On Readers Service Card, circle 108.



DRAFTING MACHINE

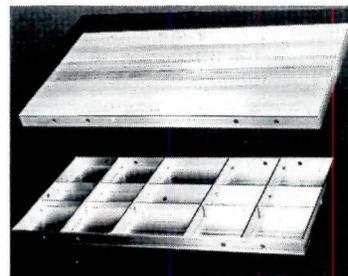
Faul-Coradi, Inc. has announced a new system that can do much

of the work done by precision coordinatographs. Called the Posigraph, the instrument is less accurate than a coordinatograph, but is acceptable for many engineering, planning and surveying purposes. It evolved from a combination of high-precision coordinate plotters and a counter-balanced drawing board with track type drafting machine. Its overall accuracy is $\pm .008$ in. over 40 in.

On Readers Service Card, circle 109.

CONCRETE FORM

A new concrete form has been introduced by the Gorbett Div. of Trinity Industries. It is fabricated of tough aluminum alloy that has been extruded and welded into a cross-bar form; tests have shown the form can handle over 500 pours. The surfaces are scratch resistant and will not leave the imprint of plywood grain. The forms butt so close, the tiny fin marks are practically invisible at 10 ft. The final concrete wall has a smooth architectural finish. The forms are available in all stand-



ard sizes or may be custom ordered. Extremely light, the forms are also designed for gang forming and mobility.

On Readers Service Card, circle 110.

PLASTIC SHEET

Plexiglas 70 acrylic plastic sheet, a new high-impact-resistant plastic, has been introduced by Rohm & Haas Co., which claims it is the toughest sheet on the market today. Developed for use where transparency and exceptional resistance to breakage are required, the new material's potential applications include sign faces, window glazing in schools and other buildings where breakage is likely to oc-



cur, lighting shields and more. On Readers Service Card, circle 111.

WASHER

A new sealing washer, developed by Elco Industries, Inc., assures proper sealing no matter what the drive torque or angle. The fastener's head has a convex underside, which produces a ball joint or swivel effect, assuring

that the washer/fastener combination, called RaBot, will achieve effective and durable sealing. It is available with $\frac{5}{8}$ -in.-dia. washers and is ideal for roofing applications and for securing sidewall.

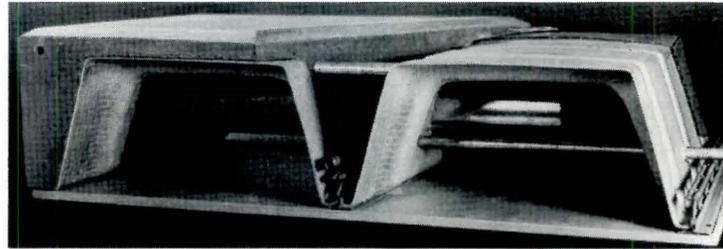
On Readers Service Card, circle 112.

FLOOR SYSTEM

A cast-in-place concrete floor and roof concept, combining steel truss tees and permanent fiber forms, has been developed and marketed by Keystone Steel & Wire. Called the Keydeck Floor and Roof system, the concept calls for four basic components: a steel truss type tee;

a fiberboard form that remains in place; temperature reinforcing mesh; and cast-in-place concrete. The system results in an integrated concrete section suitable for a 40-lb. live load at 24 ft. simple span. Load ratings may be increased where a continuous span exists.

On Readers Service Card, circle 113.



The following is a listing of the key products incorporated in some of the buildings featured in this issue:

KANSAS CITY INTERNATIONAL AIRPORT.

ARCHITECTS: Kivett & Myers. (Materials & Manufacturers as submitted by the architects). FOUNDATION WATERPROOFING: Koppers, Master Builders. PILING: Armco Steel Corp. WATERPROOFING: Neogard, Dow Corning, Sike Chemical, Tremco, Carlisle. CONCRETE & CEMENT: Buildex, Inc., Missouri Portland Cement, Master Builders. BRICK, BLOCK & STONE: City-Wide Block, James G. Hamm. STRUCTURAL STEEL: Inland Steel, U.S. Steel, Havens Steel Co. CURTAIN-WALL: PPG Industries, May Aluminum Co. FLOOR & DECK SYSTEMS: Granco Steel Products. ROOF MATERIALS: Tamko Asphalt Products, Inc. THERMAL INSULATION: Contour Packaging Co. ACOUSTICAL MATERIALS: PPG Industries, U.S. Gypsum. FENESTRATION: Alcoa. GLASS: PPG Solar Ban Bronze. INTERIOR PARTITIONS: Georgia-Pacific, U.S. Gypsum. ELEVATORS: Montgomery Elevator Co. DOORS: Kawneer, Roto-Swing, Pioneer Door Co., Overhead Door Co., PPG Industries. HARDWARE: Yale, LCN, Russwin, Rixson, Stanley. INTERIOR MATERIALS: American Novawood, Formica Plastic Laminate, Murray Quarry Tile, American Olean. PANELING: Weyerhaeuser, Columbia Showcase. PAINT: Sherwin Williams, DuPont Steel Primer, Pittsburgh Paints. ELECTRICAL DUCTS & WIRING: Anaconda, General Electric. ELECTRICAL EQUIP: Square D, Hoffman-Keystone, Hubbell, General Electric, Westinghouse. STANDBY EMERGENCY POWER: Cummings, General Electric. LIGHTING FIXTURES: Omega, Wheeler, Sylvania, Guth, Day-Brite, Gotham,

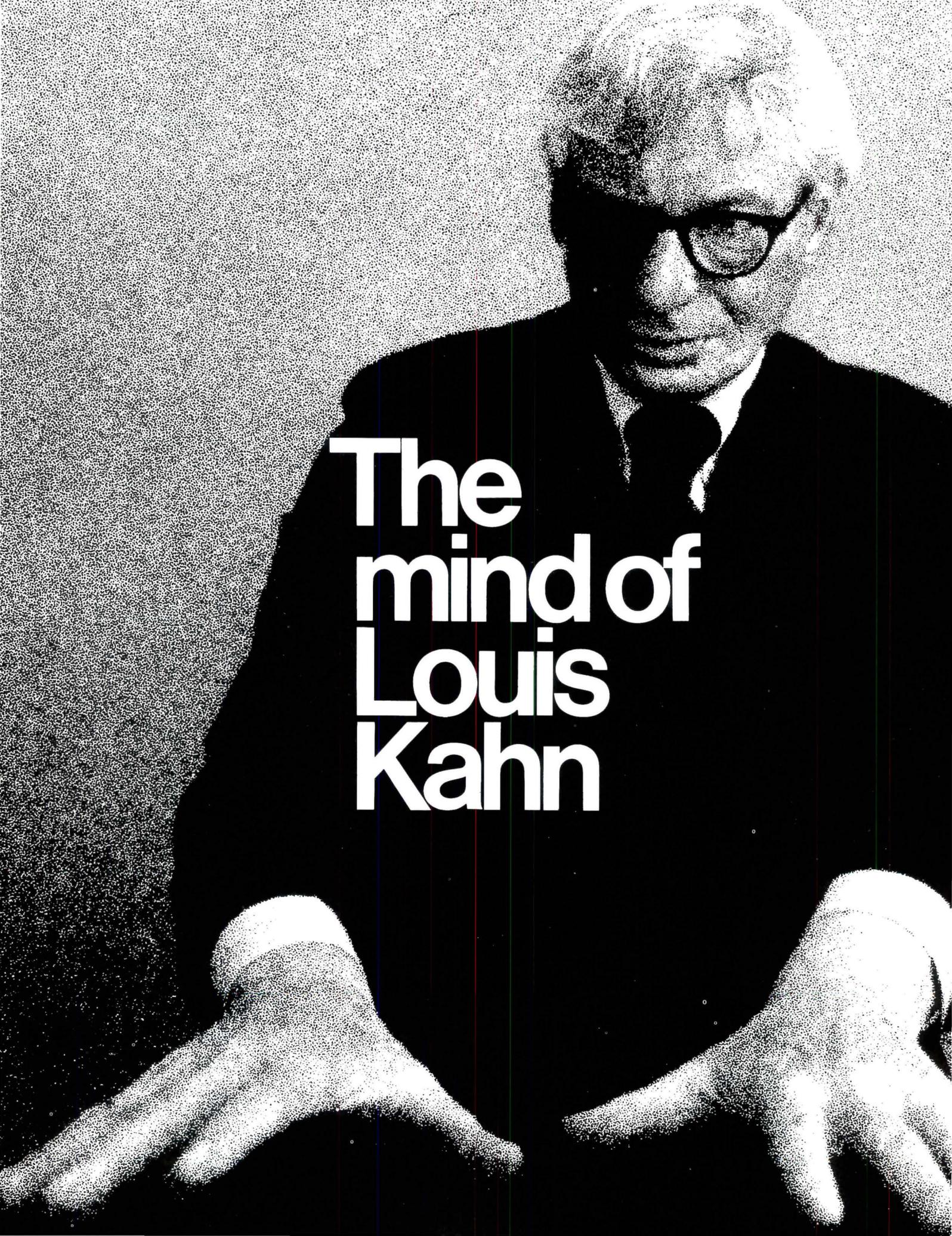
Prescolite, Lightolier, Molocast, Luminous Ceilings. PLUMBING FIXTURES: Eljer, Sloan, Kohler. PIPING: Zurn, Alarama Pipe, Chase Copper. HEATING BOILERS: Murray Boilers. UNIT HEATERS: Carrier, Dunham-Bush. UNIT VENTILATORS: Penn Ventilators. HEATING VALVES, PIPING, CONTROLS: Honeywell, Powers Regulator, Fisher. AIR CONDITIONING COMPRESSOR, FAN UNIT: Carrier, York, Ingersoll-Rand. DIFFUSERS, DUCTS, PUMPS: Ingersoll-Rand, Titus, Allis-Chalmers, Dunham-Bush, Johns-Manville, American Standard. SPECIAL FANS & VENTILATORS: Westinghouse, Penn Ventilator. INTERCOM SYSTEMS: Voycall. AUDIO VISUAL EQUIP: Audio Communications. PNEUMATIC TUBES, CONVEYORS: Mathews, Rapistan. SPRINKLER SYSTEM & FIRE PROTECTION EQUIP: Grinnell, Notifier Alarm. CEILING MATERIALS: Armstrong, National Gypsum, Steel Ceiling Co. WATER COOLERS: Haws Drinking Fountain. MOVABLE PARTITIONS: Modernfold, Coil-Wal Partitions, Inc. KITCHEN EQUIP: Dwyer Products, St. Charles. FINISH FLOORING & CARPETING: Johns-Manville, Dex-O-Tex, H.B. Fuller, American Novawood. FABRICS: Herman Miller. DRAPERY HARDWARE: Kirsch. CONTROL TOWER EXTERIOR WALL: U.S. Steel Cor-Ten.

DALLAS/FORT WORTH REGIONAL AIRPORT.

ARCHITECTS: Hellmuth, Obata & Kassabaum; Brodsky, Hopf & Adler. (Materials & Manufacturers as submitted by the architects). FOUNDATION WATERPROOFING: Bentonize, Inc. CONCRETE & CEMENT: Gifford-Hill Co., Inc., Texas Industries, Inc., Trinity Div., General Portland Cement. BLOCK: Acme Brick Co. STRUCTURAL STEEL: AFCO Steel Co. CURTAIN-WALL: Cupples Products

(continued on page 73)

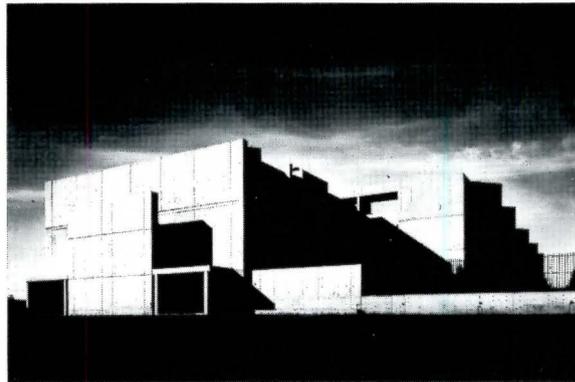
**The
July/August
issue of
The Architectural Forum
will be an
editorial encounter
with an
“architect’s architect”**



**The
mind of
Louis
Kahn**

Kahn's Contribution

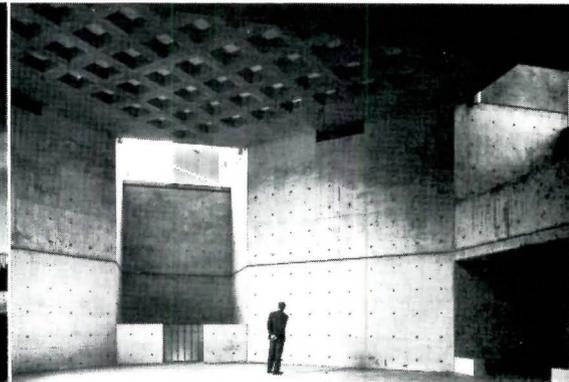
For years he was called an "architect's architect", a visionary, a theoretician whose thoughts were more significant than his practice. But lately, at construction sites from Fort Worth to San Diego to Bangladesh, his designs have come to solid realization in structures of such strength and integrity that now, at 71, Louis Kahn is believed by many to be the most important American architect of his generation. In 1971 he received his profession's highest award, the Gold Medal of the American Institute of Architects. He is soon to receive the gold medal of the Royal Institute of British Architects.



"The Mind of Louis Kahn" will be an introduction to the fascinating man who was first to look beyond the steel and glass grids of the International Style in the 1950's (he called the Seagram Building "a lady whose beauty is hidden in corsets") and explore a bold new architecture of solid mass and poetic form.

In this issue of the FORUM, readers view the plans and sites of his recent achievements:

He has given modern architecture a sense of history, creating a continuum of past, present and future in building forms that recall the aura of their primitive forebears—Scottish castles, Romanesque vaults, 13th century French townscapes and Florentine towers.



This year The Architectural Forum will devote its July/August issue to this emergent genius. And we invite you to join this editorial venture, a meeting with "The Mind of Louis Kahn."

Second in a Continuing Series:

This will be second in a new series of publishing landmarks, issues appearing at six month intervals focusing the thoughts and achievements of influential designers who are calling the turn of the times. The series began early this year with "The World of R. Buckminster Fuller" January/February issue which has been called the FORUM's finest since the dramatic Frank Lloyd Wright issue of 1938.

He has taken that oft-repeated but rarely practiced dictum—"form follows function"—more seriously than any architect of his time, creating buildings whose living spaces, utility cores and arteries, structural bones, walls and windows—all come together in an integrated architecture that never abandons its central purpose.

More than any other architect he has used the full values of natural light as an element of building design; his interiors are an eloquent answer to the poet, Wallace Stevens, who once asked the architect, "What slice of the sun does your building have?"

He has been among the foremost to plan architecture which does not begin and end with the individual building, but takes its place within the human environment, and architecture which, as Professor Scully of Yale put it, "regards the city as the ultimate work of human art."

Design For the World at Large

The FORUM will take its readers to worldwide sites where stirring achievements are either projected, under construction or brought to full realization:

New Haven, Connecticut

where the Paul Mellon Center for British Art and British Studies will bring the academic and business worlds together in a building that not only provides inviting spaces for culture, but retail space to reinvigorate an old commercial street.

Dacca, Bangladesh

where a new capital city challenges the climate with a striking skyline of turrets penetrated by huge geometric openings—and where Kahn designed a series of archways that may be the most magnificent vaulted masonry of our times.

Exeter, New Hampshire

where Kahn has designed a library which stands as a strong symbolic center of learning to become the contemporary heart of an old New England campus.



Fort Worth, Texas

where a roof of repetitive vaults shelters the Kimbell Art Museum whose curved ceiling contours were designed to carry natural lighting deep into the interior exhibition spaces.

Venice, Italy

where history has challenged Kahn (as it challenged LeCorbusier before him) to envision a twentieth century architecture that joins hands with the 13th century—as Kahn has done with a proposed plan for a congress hall that would be 428 feet by 100 feet by 78 feet high.

Ahmedabad, India

where within Kahn's exciting campus, the FORUM's readers will see a school building concept which is, in effect, "a building-within-a-building—one open to the sun, the other open to living"—a design to admit natural light but repel the impact of a hot, hostile climate.

Kansas City . . . Fort Wayne . . . Jerusalem . . . Nepal . . . New York . . . Berkeley . . . Baltimore . . . here and at sites beyond, Kahn has new work in progress which the FORUM will bring into the handsome format of its July/August issue.

But one point about this issue must be clear:

this will not be just another record of accomplished work, not just a perfunctory layout of pictures, captions and plans. This will be an intimate view of a great architectural mind at work.

The FORUM will focus on Kahn's creative *process* (or "reprogramming" of a building as Kahn often calls it) which is his distinctive way of developing organic plans that are functionally and harmonically integrated.

When Kahn takes on a new project, he goes back to the deepest roots of the design concept, explores the proposed building's most basic function to seek a solution that is both practical and poetic. He believes that a room is the organic center of a building. "The room," he says "is the beginning architecture . . . it is the place of the mind." And he adds, "The plan is a society of rooms." This is the thought out of which his buildings grow.

Deeper Insight Into Architecture

The FORUM's editors will undertake to bring you close to the core of Kahn's design process, as is their editorial way. Over the years the Forum has consistently attempted to take its audience behind the facade, to expose the profound purposes, the functions and esthetics from which a building takes its form.

By exploring the underlying purpose of architecture the Forum has taken its place as architecture's most articulate spokesman.

The Architectural Forum invites you to meet a man who was born on an obscure Estonian island in the Baltic Sea, and became one of the most inventive leaders of modern America. We hope you will join our editorial encounter with "The Mind of Louis Kahn," second in our series of twice-a-year publishing events, *double numbers* focusing on the thoughts and achievements of influential designers of the Seventies.

Memo to Advertisers

Advertising forms for the July/August issue of The Architectural Forum—an editorial encounter with "The Mind of Louis Kahn"—will close on June 16.

The Architectural Forum

Whitney Publications, Inc.
130 East 59th Street, New York 10022
(212) 751-2626

(continued from page 68)

Div., H.H. Robertson Co. DECK SYSTEMS: Granco. ROOF MATERIALS: Vol-Rok Aggregate Co., Koppers Co. THERMAL INSULATION: Owens-Corning Fiberglas. ACOUSTICAL MATERIALS: Celotex Corp. PRECAST FENESTRATION: Alcoa Aluminum Co. GLASS: Libbey-Owens-Ford. ELEVATORS: Montgomery Elevator. DOORS: Cupples Products Div., H.H. Robertson Co. INTERIOR MATERIALS: Formica Tile, Dallas Ceramics. ELECTRICAL DUCTS & WIRING: I.T.E. Imperial Corp. LIGHTING FIXTURES: Lightolier. PLUMBING FIXTURES, TOILET SEATS: Crane, Olsonite. PIPING: Chicago Faucet. HEATING VALVES, PIPING, CONTROLS: Mission, Hammond, Demco. UNDERGROUND PIPING: Johns-Manville Corp. ABOVEGROUND PIPING: Ric-Wil, Inc. DIFFUSERS, DUCTS, PUMPS: Aneostat, Gowco, Allis Chalmers. CONTROLS: Johnson Services Co. FAN UNITS: Trane. SPECIAL FANS: Greene Heck Fan & Vent Corp., Brunpage Co. SPRINKLER SYSTEM & FIRE PROTECTION EQUIP: Reliable Automatic Sprinkler, Viking Co. SKYLIGHTS: McKune Skylights, Inc. LIGHTNING PROTECTION: Robbins Lightning Protection Co.

EURAM BUILDING. ARCHITECTS: Hartman-Cox. (Materials & Manufacturers as submitted by the architects). WATERPROOFING: Robson Polyurethane. CONCRETE & CEMENT: Capital Cement. BRICK: Calvert. THERMAL INSULATION: Owens-Corning Fiberglas. ACOUSTICAL MATERIALS, INTERIOR PARTITIONS & CEILING MATERIALS: U.S. Gypsum. FENESTRATION & GLASS: PPG Industries. ELEVATORS & ELECTRIC STAIRWAYS: Westinghouse. DOORS: U.S. Plywood, City Steel Door Corp. HARDWARE: Russwin. INTERIOR MATERIALS: American Olean. PAINT: Benjamin Moore. LIGHTING FIXTURES: Lightolier. PLUMBING FIXTURES & HEATING BOILERS: American Standard. UNIT HEATERS: Mitco. AIR CONDITIONING COMPRESSOR, FAN UNIT: Carrier. SPRINKLER SYSTEM & FIRE PROTECTION EQUIP: Ellenco Fire Alarms. MAIL BOXES & CHUTES: Cutler. VENETIAN BLINDS & SHADES: Verticals, Inc. FINISH FLOORING & CARPETING: Congoleum Nairn.

WESTCOAST BUILDING. ARCHITECTS: Rhone & Iredale. (Materials & Manufacturers as submitted by the architects). FOUNDATION WATERPROOFING: Davis Foundation Spray, Ltd. PILING: Vancouver Pile Driving & Contracting, Ltd. WATERPROOFING: Uniroyal-Industrial Waterproof Systems, Ltd. CONCRETE, CEMENT, BRICK, BLOCK & STONE: Lafarge. CURTAIN-WALL: Kawneer. FLOOR & DECK SYSTEMS: H.H. Robertson Co. ROOF MATERIALS: Dow Chemical. GLASS: LHR Solar Bronze. ELEVATORS:

Otis. DOORS: Pero, LOF. HARDWARE: Sargent, Stanley, LCN. PANELING: U.S. Plywood. PAINT: General Paint. ELECTRICAL EQUIP: Westinghouse. STANDBY EMERGENCY POWER: Caterpillar. LIGHTING FIXTURES: Westinghouse. PLUMBING FIXTURES: Crane, Olsonite. HEATING BOILERS: Sanitherm Engineering, Volcano. INDUCTION UNIT, AIR CONDITIONING: Carrier. HEATING VALVES, PIPING, CONTROLS: Honeywell. DIFFUSERS, DUCTS, PUMPS: B.C. Ventilating, A.S. Leitch. SPECIAL FANS & VENTILATORS: Sheldons. SPRINKLER SYSTEM & FIRE PROTECTION EQUIP: Grinnell. CEILING MATERIALS: U.S. Perlite, Hunter Douglas Luxalon. MAIL BOXES & CHUTES: George H. Hewitt Co., Ltd. VENETIAN BLINDS & SHADES: Burnaby Venetian Blinds, Ltd. KITCHEN EQUIP: Russell Food Equipment. FINISH FLOORING & CARPETING: Armstrong, Alexander Smith. FURNITURE & SEATING: Steelcase. DRAPERY FABRICS: Jeff Brown. DRAPERY HARDWARE: Kirsch.

AIRPORT BUSINESS CENTER. ARCHITECTS: Craig Ellwood Associates. (Materials & Manufacturers as submitted by the architects). CONCRETE & CEMENT: Portland Cement. STRUCTURAL STEEL & CURTAIN-WALL: U.S. Steel Cor-Ten. FLOOR & DECK SYSTEMS: H.H. Robertson Co. GLASS: Libbey-Owens-Ford. ELEVATORS: Dover. DOORS: Kawneer, Roddis. HARDWARE: Sargent. PAINT: Dunn, Edwards. ELECTRICAL DUCTS & WIRING: General Electric. ELECTRICAL EQUIP: Cutler Hammer. STANDBY EMERGENCY

POWER: Siltron. LIGHTING FIXTURES: Prudential, Nulite, Marco. PLUMBING FIXTURES: American Standard. AIR CONDITIONING COMPRESSOR, FAN UNIT: Johnson Control, Trane. WATER COOLERS: General Electric, Filtrine. FINISH FLOORING & CARPETING: Armstrong, Cabin Craft. DRAPERIES: Menlo Textiles. DRAPERY HARDWARE: Marshall, MacMurray.

CORTE MADERA LIBRARY

ARCHITECTS: Smith Barker Hansen. (Materials & Manufacturers as submitted by the architects). WATERPROOFING: Flintkote. ROOF MATERIALS: Gacoflex. FENESTRATION: Simpson Ruf-Sawn Redwood Plywood. GLASS: PPG. DOORS: Weyerhaeuser, Voge. HARDWARE: Schlage. PANELING: U.S. Plywood. PAINT: Fuller. ELECTRICAL DUCTS & WIRING: Western Conduit, General Cable. ELECTRICAL EQUIP: Arrow-Hart, Zinsco. LIGHTING FIXTURES: Smoot-Holman. PLUMBING FIXTURES: Crane, Torginol. HEATING BOILERS: Weil-McLain. UNIT VENTILATORS, RADIATORS, CONVECTORS: Vulcan. HEATING VALVES, PIPING, CONTROLS: Honeywell, Danfoss. DIFFUSERS, DUCTS, PUMPS: Titus. SPECIAL FANS & VENTILATORS: Jenn-Air. WATER COOLERS: Halsey-Taylor. BOOK CHUTES: Mosler. KITCHEN EQUIP: Dwyer. FINISH FLOORING & CARPETING: CCC. FURNITURE & SEATING: Stendig, Knoll, Herman Miller, Thonet, G.F. FABRICS (UPHOLSTERY & DRAPERIES): Knoll. DRAPERY HARDWARE: Kirsch.

Rounds in the Round

Soft curves in an unbelievably hard material . . . Stainless Steel. In several sizes, 36", 42", and 48" diameters; cocktail heights as well as dining; the 2" diameter round stock is forged into a pristinely simple design statement but has sufficient overtones of a Baroque Era to truly define the term "eclectic" and to further advance our conviction that we are the best in the world at what we do.

LIBBEY-OWENS-FORD
INDUSTRIES INC.

Showroom and National Sales Office:
315 East 62nd Street, New York, N.Y. 10021
(212) TE 8-1630



On Readers Service Card, Circle 314

PRODUCT LITERATURE

To order material described, circle indicated number on self-addressed Reader Service Card, facing page 68.

ADHESIVES

3M Company makes available brochure describing their new Blue Glue carpet adhesive that provides increased coverage and low installation costs of vinyl foam backed carpet. On Reader Service Card, circle 200.

AIR DIFFUSERS

Tuttle & Bailey Division, Allied Thermal Corp., offers its new Luminaire Diffuser catalog describing the firm's improved line of products. On Reader Service Card, circle 201.

BLEACHER SEATING

Automatic Devices, Inc. announces publication of illustrated brochure on portable steel bleacher seating designed to permit future expansion in length and height. On Reader Service Card, circle 202.

CARPETING

Downs Carpet Company has available 24-page Contract Carpeting Book showing carpet installations in stores, offices, apartment houses, churches. On Reader Service Card, circle 203.

CEMENT

Sauereisen Cements Company has completed a grout comparisons sheet presenting the advantages of its Level-Fill Grout No. F-100 over metallic iron, sand-cement, and organic resin grouts. On Reader Service Card, circle 204.

DOORS

Overly Manufacturing Company describes and illustrates broad line of protective doors, including acoustical, radiation shielding, sliding fire and others in 12-page brochure. On Reader Service Card, circle 205.

Empire Metal Products Corp. offers their 1972 screened door line catalog detailing door sizes, materials, grille styles and components. On Reader Service Card, circle 206.

Kawneer Company makes available literature on Entara-XD, a new aluminum entrance system engineered and built specifically to withstand massive traffic abuse. On Reader Service Card, circle 207.

Fenestra Division of the Marmon Group, Inc. has available information on their Presidential Seamless and Full Flush Doors and new line of prefinished doors and frames. On Reader Service Card, circle 208.

DRY WALLS

Celotex Corporation, subsidiary of Jim Walter Corp., announces availability of technical brochure covering gypsum board shaft wall systems for

high-rise buildings. On Reader Service Card, circle 209.

ELECTRICAL

Flexicore Co., Inc. issues report showing how precast, concrete slabs are used for electrical raceways. On Reader Service Card, circle 210.

EMERGENCY POWER

Fermont Division of Dynamics Corporation of America has available new manual for the selection of standby-and-continuous-duty engine-generator sets. On Reader Service Card, circle 211.

Caterpillar offers booklet investigating the dual-service concept and potential cost savings of standby emergency power. On Reader Service Card, circle 212.

ENVIRONMENT CONTROL

Raytheon Company describes products and services of its Environmental Systems Center including studies and analyses in the fields of thermal pollution and water quality. On Reader Service Card, circle 213.

FORM WORK

Owens-Corning Fiberglas Corporation makes available brochure explaining time savings and performance advantages of Fiberglas-reinforced nylon tie bars and brackets used in holding plywood wall forms in place during curing of concrete. On Reader Service Card, circle 214.

Symons Corporation announces publication of six one-page brochures detailing use of plastic architectural form liners. On Reader Service Card, circle 215.

GYMNASIUM EQUIPMENT

R. E. Austin & Son offers 16-page catalog describing and illustrating their complete line of field and gym equipment. On Reader Service Card, circle 216.

HARDWARE

Kirsch Company has available Volume IV of "Windows Beautiful", a 132-page book defining window types and treatment and showing drapery hardware styles. On Reader Service Card, circle 217.

Reflector Hardware Corporation-Spacemaster announces availability of brochure introducing completely modular, all-metal merchandising system that works as well for a single department as for an entire store. On Reader Service Card, circle 218.

HEATING-COOLING

Better Heating-Cooling Council makes

available portfolio of data on service and operating problems of rooftop heating and cooling units. On Reader Service Card, circle 219.

ILLUMINATED CEILINGS

Wilson Company offers literature on Dimension '70, a new series of illuminated ceiling panels designed to give 1001 distinctively different ceilings by the use of a wide variety of interchangeable components. On Reader Service Card, circle 220.

ILLUMINATED SIGNS

General Electric Company has available 20-page brochure giving detailed information on LEXAN® polycarbonate sheet and its uses for signs. On Reader Service Card, circle 221.

INCINERATORS

Ross Engineering Machinery Division of Midland-Ross Corp. makes available data sheet giving description and specifications for straight pass, low silhouette solvent and fume incinerator with heat recovery. On Reader Service Card, circle 222.

INSULATION

Johns-Manville announces availability of Home Insulation Calculator for determining FHA insulation requirements and how to meet them. On Reader Service Card, circle 223.

LIGHTING

Pfaff & Kendall offers 32-page Architectural Lighting Guide describing their line of luminaires, standards, pole bases, enclosing globe luminaires, electric lowering mechanisms and lighting accessories. On Reader Service Card, circle 224.

Thomas Industries, Inc. makes available 68-page color catalog featuring the firm's Benjamin commercial and industrial lighting products. On Reader Service Card, circle 225.

J. H. Spaulding Co., Division of Whiteway Mfg. Co., now has available a new tennis court lighting brochure describing a variety of lighting systems for basic tennis court layouts. On Reader Service Card, circle 226.

PANELING

Simpson Timber Company offers idea brochure showing the versatility and elegance of redwood interiors and featuring redwood paneling in Sierra Groove, La Honda and Montreal patterns. On Reader Service Card, circle 227.

PLUMBING

Nalgene Piping Systems Division of

Nalge Company announces publication of 16-page catalog of chemical-resistant polyethylene piping systems illustrated with photographs and drawings of pipe, traps and fittings. On Reader Service Card, circle 228.

ROOFING

Overly Manufacturing Company has available pamphlet illustrating application of mansard and batten roofing for a variety of structures. On Reader Service Card, circle 229.

STEEL LOCKERS

Lyon Metal Products, Inc. introduces new steel locker catalog containing descriptions and specifications for the many designs and sizes of their business, industrial and institutional lockers. On Reader Service Card, circle 230.

STRIP SEALING

Watson-Bowman Associates, Inc. offers brochures and technical information on their WABO-MAURER Strip Sealing System for expansion joints. On Reader Service Card, circle 231.

VAPOR BARRIER

St. Regis Laminated and Coated Products Division makes available literature kit describing Vaporstop 298, a reinforced kraft lamination assuring complete barrier coverage between roof deck and insulation in built-up roofs. On Reader Service Card, circle 232.

WATER HEATERS

The Patterson-Kelley Co., Inc. announces availability of bulletin describing three water heater systems in the P-K Compact 400 line: steam-to-water, boiler water, and high-temperature water. On Reader Service Card, circle 233.

WINDOWS

Caradco Division of Scovill Manufacturing Company has available "A Book of Classics", on the ABCs of choosing window styles. On Reader Service Card, circle 234.

WOOD GRILLES

Customwood Manufacturing Company offers 83-page catalog describing and illustrating its complete line of hardwood grilles, panels, tabourets and ponderosa pine doors. On Reader Service Card, circle 235.

WOOD PRESERVES

Koppers Company, Inc. makes available brochures describing Wolmanized® pressure-treated lumber and presenting some of its applications and case histories. On Reader Service Card, circle 236.



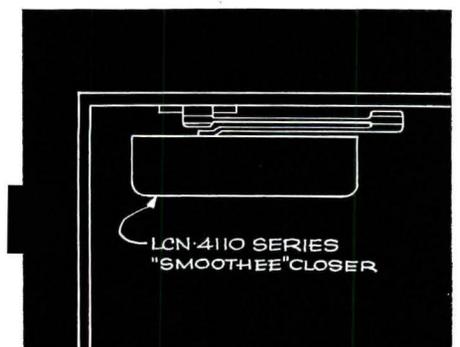
American Airlines Concourse, Washington National Airport, Washington, D.C. • Giuliani Associates/Aviation Architects and Planners, Washington, D.C.

LCN Door Closers

For smooth, efficient control of most all doors, interior or exterior . . . in heavy or light traffic areas. The one in the picture is an LCN Smoothee[®], stop-face mounted 4110 Series. It features an arm that folds parallel to the door, adjustable hydraulic back-check and adjustable spring power. For full particulars, talk to your Hardware Consultant or write LCN. Listed in Sweets, Section 8.

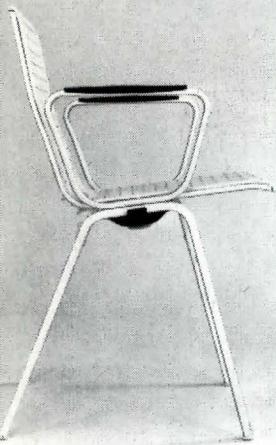
LCN Closers, Princeton, Illinois 61356.

See Reader Service Card, Circle 315



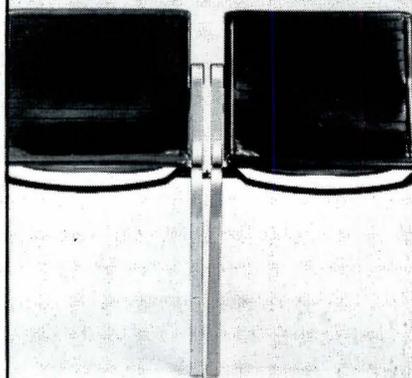
The Indestructibles.

Interstax can write...



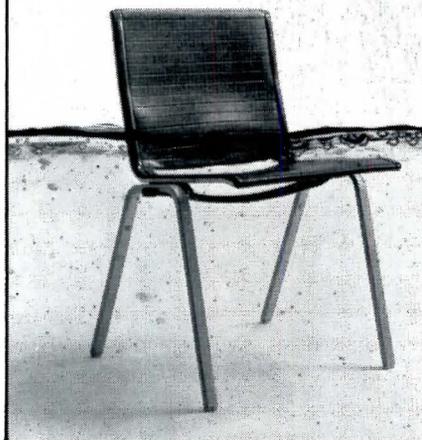
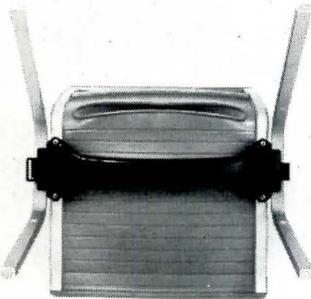
stack...

gang...



perform... and

take the weather.



Interstax™

Solid aluminum bar stock frame
Built-in no nonsense ganging device.
One piece seat bonded to frame by patented method. 7 colors.
Die cast substructure provides strength and stability.



One Park Avenue, New York, New York 10016 • (212) 686-3500



B.S.N. Young & Rubicam, France 16
BASF/WYANDOTTE CORP. Ad Concepts, Inc. 63
BRUETON INDUSTRIES, INC. Martin Gura Associates 73

FORMS & SURFACES Sherrill Broudy Associates 9

GACO WESTERN, INC. Kraft, Smith & Lowe 68W-2
GOODRICH, B.F. CO. Griswold-Eshleman Co. IBC
GRANT PULLEY & HARDWARE CO. Cove & Cooper, Inc. 67
GREFCO, INC. Motivation Dynamics Div. of Delos Co., Ltd. 65

INLAND-RYERSON CONSTRUCTION PRODUCTS CO.
Hoffman-York Inc. 10-11
INTERROYAL Ferber & Strauss 76

LCN CLOSERS Alex T. Franz, Inc. 75
LIBBY OWENS FORD CO. Campbell-Ewald Co. 2-3

MARLITE DIV. OF MASONITE CORP.
Howard Swink Advertising Agency BC
MODERN PARTITIONS, INC. Modern Advertising 13

PACIFIC CLAY PRODUCTS Fish Communications Group, Inc. 68W-1

REPUBLIC STEEL CORP. Meldrum & Fewsmith, Inc. 15

SARGENT & COMPANY Hepler & Gibney, Inc. IFC

TAYLOR COMPANY, THE HALSEY W. The Bayless-Kerr Co. 14

U.S. GYPSUM CO. Needham, Harper & Steers, Inc. 4

ADVERTISING SALES STAFF

NEW YORK 130 E. 59th St., New York, N.Y. 10022 (212)751-2626
John Mertens
John H. Wolfe
David W. Bentley
William C. Little
Laurence Ross
Laurence D. Wyman

CHICAGO 410 N. Michigan Ave., Chicago, Ill. 60611 (312)644-6763
John D. Murray, Midwest Manager
William K. Murray

CLEVELAND 32 West Orange St., Chagrin Falls, Ohio 44022 (216)247-4485
Charles S. Glass

SOUTHERN REPRESENTATIVE: Paul E. Yergens, 6 Cedar Waxwing Road, Hilton Head Island, South Carolina 29928

LOS ANGELES 1830 West 8th St., Los Angeles, Ca. 90057 (213)388-0521
Cole, Sweeney & Anthony
George Anthony
Ronald J. Sweeney.

SAN FRANCISCO 582 Market St., San Francisco, Ca. 94104 (415)986-6342
Wick Smith

On Readers Service Card, Circle 301→