

THE HARTFORD SEMINARY, BY RICHARD MEIER & PARTNERS

TWO COLLEGE PROJECTS BY WOLF ASSOCIATES

VACATION HOUSE BY MBA ARCHITECTS AND PLANNERS

OFFICES FOR ASSOCIATED METALS & MINERALS, BY JACK L. GORDON

BUILDING TYPES STUDY: "DESIGNING DOWNTOWN PITTSBURGH," BY JONATHAN BARNETT

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ARCHITECTURAL RECORD

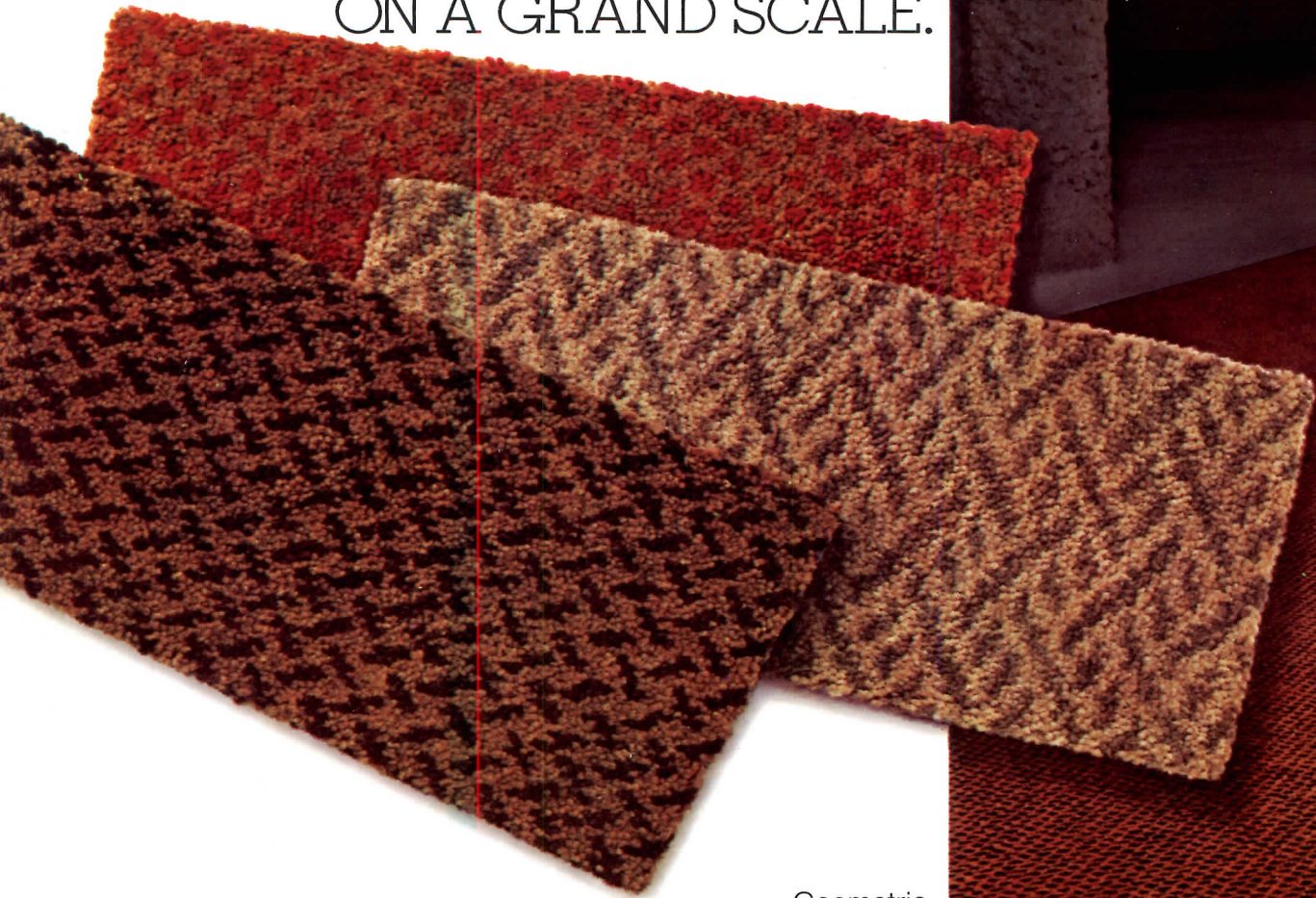
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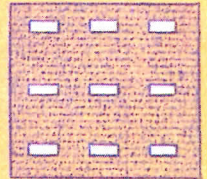
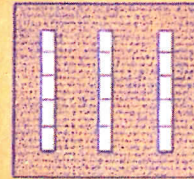
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Watts/sq. ft.	3.07	0.92
ESI/watt/sq. ft.	13	65

Letters to the editor

ARCHITECTURAL RECORD deserves praise and thanks for publishing, in its October 1981 issue, the brilliantly illuminating and masterly essay by Ada Louise Huxtable, which makes it patently clear that, to paraphrase Mark Twain, the death of modern architecture is greatly exaggerated.

Joseph Blumenkranz, FAIA
Scarsdale, New York

Since much that is written about modern architecture today is a source of increasing despair to me and many of my colleagues, I am grateful for Ada Louise Huxtable's two articles on the subject, first in your January 1981 issue, then in the October 1981 issue. Architecture more than ever is in need of clear, incisive, thoughtful and scholarly comment. Mrs. Huxtable not only writes well; hers is one of the very few voices of wisdom speaking on, to, and for my profession. Her two articles prompt me to share some personal observations on the modern architecture debate.

1. A disproportionate amount of recognition today is given to unbuilt projects. Although writing and drawings are legitimate and desirable means for expressing theoretical architectural statements, they are still speculative and even visionary (although some are quite provocative and stimulating). The leap from paper to bricks and mortar is big, and ideas may become architecture only when they can be judged as buildings. By ignoring this distinction, many critics have contributed to a faulty perception of architecture.

2. The on-going debate frequently fails to recognize the momentous technological and planning advances made in building during this century and the great reliance the public has learned to put on them. We demand systems and design solutions that will assure an unprecedented level of comfort and ease at a low cost of operation and maintenance. By adopting the "less is more" principle, modern architecture cast its lot with industrialization and mass production. It lends itself ideally to the vast technological and population explosions of this century. Through speed of construction and relative economy, it aided the rapid growth of our cities and the democratization of society. Less is more became more for more. Developers, governments and institutions picked up the ball and ran. Modern architecture was expedient. Modern economics became its master and the handcrafted past became nostalgia.

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In your October 1981 issue of ARCHITECTURAL RECORD [pages 96-99], there appeared a project on the West Side of Manhattan for a bakery designed by Rodolfo Imas. There are a few comments I feel necessary to communicate to you.

This project bears a striking resemblance to a project on the East Side of Manhattan that I completed a number of years ago. This in itself would not be so unusual except for the fact that some time ago Mr. Imas telephoned my studio. In this conversation, he revealed that he was making a project like mine and wanted to know all the particulars about the construction techniques, material sizes and other questions concerning the various design decisions that had been made. After expressing my concern to Mr. Imas that this information was the result of resolving issues related to the project, as well as my own researches, I urged him to possibly look to a solution that would express his own efforts and researches. Obviously he did not. This is not an unconscious similarity, which happens occasionally, but rather a very deliberate act. Along with the work being similar, the quotations in the text are again similar to those written and published as the original description of my project.

We are all influenced by the work of others, be it from the past or by contemporaries. This is an accepted fact. However, usually the process produces a transformation of the idea, due to the different conditions being applied by virtue of the fact that it is another site, another client, another budget, etc. These factors ultimately change the form as well. If all these do not substantially change the project, at the very least an acknowledgment of the source and reference should be given, as is common practice and courtesy in any academic endeavor.

In a time when the consumption of images is so severe, it seems even more of an imperative to maintain authenticity of authorship.

It is extremely flattering to feel that you influenced someone, but extremely unpleasant to find someone making a quick gain from your own long labors.

George Ranalli
New York City

We publish photos at right of the two facades in illustration of Mr. Ranalli's letter and his point: at top, August Too, a boutique and beauty salon by architect Ranalli, and, at bottom, Lavana's bakery by architect Imas. The interior spaces of the two projects differ in both their function and their design. —Ed.

Correction

Al Morrison should have received credit as the design architect at Heery & Heery, Architects & Engineers, for the Herman Miller facility (RECORD, August 1981, pages 60-61).

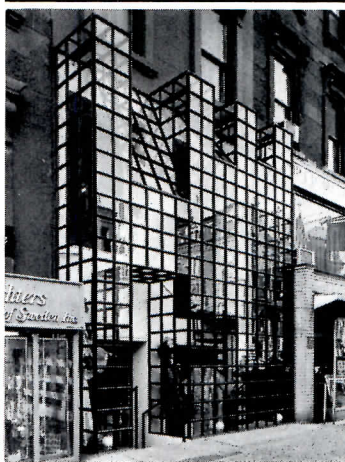
Calendar

JANUARY

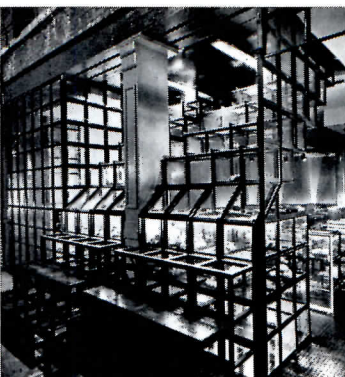
Through January 22 Exhibition, "Window, Room, Furniture," 108 projects by artists and architects; the product of an investigation by Ricardo Scofidio and Tod Williams; at the Arthur A. Houghton, Jr., Gallery, The Cooper Union, Cooper Square, New York City.

22-24 Conference, "Design Environments for All People," at the United Nations Headquarters, New York City. Sponsored by the National Endowment for the Arts and the United Nations; organized by the National Center for a Barrier Free Environment, the Landscape Architecture Foundation and the Association of Collegiate Schools of Architecture. Contact: Ms. Sherry Barndollar, Landscape Architecture Foundation, 1717 N St., N.W., Washington, D.C. 20036.

22-25 National Association of Home Builders convention, Las Vegas. Contact: Betty Christie, NAHB, 15 & M Sts., N.W., Washington, D.C. 20005.



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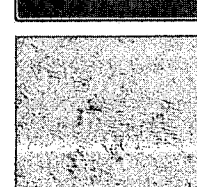
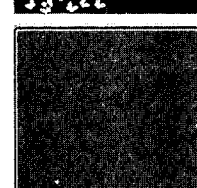
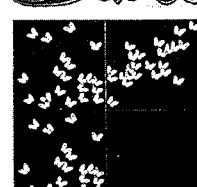
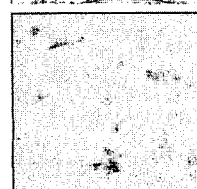
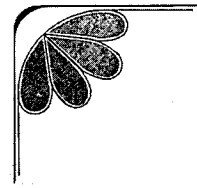
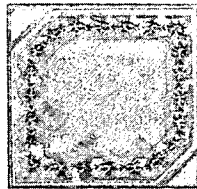
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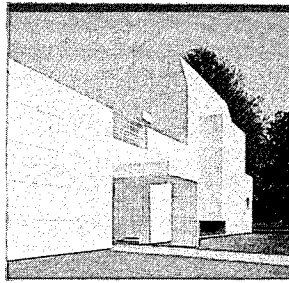
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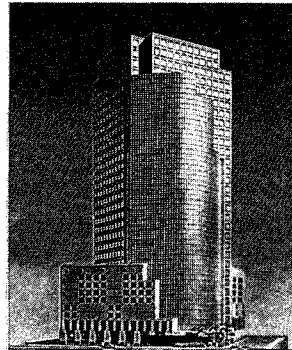
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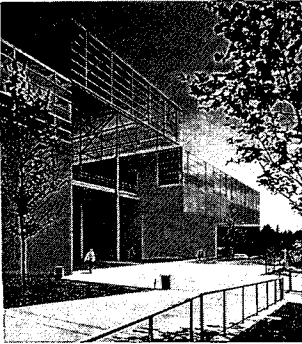
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© Ezra Stoller/ES70

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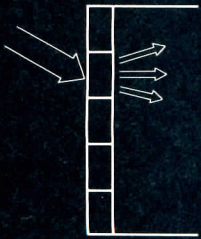
Building Types Study: Museums and Galleries
A boom in museum building seems to be gathering force and it is likely to produce a generation of designs significantly different from those produced in the '60s. Museums will reach for new audiences, structure their exhibits differently, and make better use of available resources. In RECORD's February issue, three new display spaces will hint clearly at changes to come.

Glass Block

Glass Block is emerging as a classic building material in today's architecture, combining unique and highly desirable functional values with versatility as a design element. A comprehensive selection of Glass Block for exterior walls, interior partitions, and horizontal surfaces is now available from Forms & Surfaces. These are manufactured by Nippon Electric Glass Co., one of the world's foremost companies in the development of high performance glass products. The selection includes plain and patterned surfaces with variations in transparency and translucency, and light directive, solar reflective and color options. Forms & Surfaces Box 5215 Santa Barbara, CA 93108 (805) 969-4767

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Light



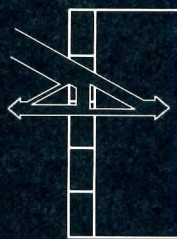
Glass Block has the unique ability to bring daylight into a building while controlling undesirable heat and glare, and providing security and privacy.

Sound



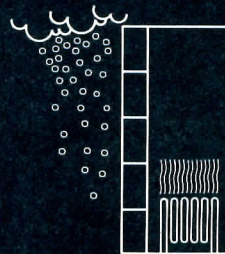
Glass Block offers the maximum sound insulation possible among light transmitting materials, including double glazing.

Heat



Glass Block is the most effective insulator against heat and cold among light transmitting materials.

Condensation



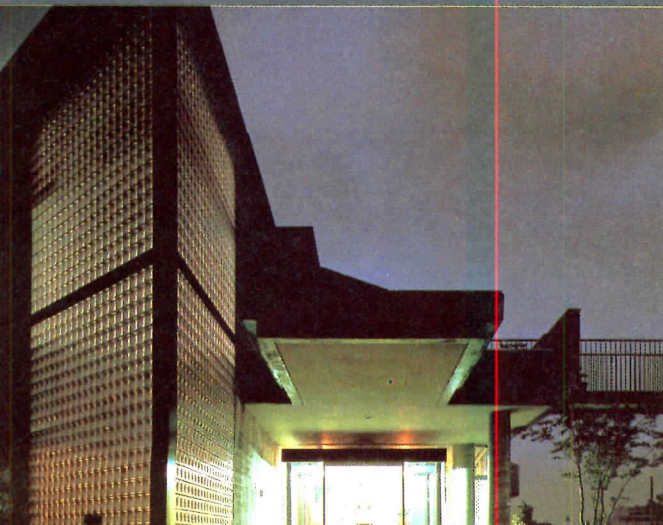
Glass Block substantially reduces the high levels of condensation associated with wide temperature variations between interior and exterior.

Fire



Glass Block is incombustible, and has the highest fire resistive capabilities among light transmitting materials.

FORMS + SURFACES



Progress report on NCARB's astonishing effort to improve the national exam

The Architectural Registration Boards of the 50 states—plus the District of Columbia, Puerto Rico, the Virgin Islands and Guam—have the considerable responsibility of licensing architects to practice. Taken together, the Boards constitute the National Council of Architectural Registration Boards—and NCARB is firmly committed to a uniform national examination for licensing, including national grading standards and techniques.

That national exam has, predictably and almost inevitably, drawn criticism. A number of the Member Boards have specific concerns about the coverage of the test—for one obvious example, seismic concerns in California. Several states simply bucked the initial national exam—which was entirely multiple choice and did not include a separate design exam—and the design exam has been reinstated. On the other hand, the Member Boards have been confronted with complaints from candidates about the content of the exam, and about the semi-annual timing.

NCARB is nothing if not deadly serious about its role in licensing, and therefore, in response to these concerns, voted at its 1979 annual meeting to undertake no less a study than to "analyze and define the knowledge, skills, abilities and functions necessary for minimum competence for the practice of architecture in the United States." That study was undertaken with great thoroughness and the task (see below) has now been completed—and a fascinating study it turned out to be! The NCARB now stands ready to undertake the second phase of the project—"to apply these findings to an evaluation of the current NCARB examinations [and later on, as a subsequent study, internship standards, education standards, and practice standards] and recommend criteria as necessary and appropriate to conform to those findings." The study of the examination will be a four-step process—examination analysis, examination validation, examination modifications, and grading modifications. The committee of NCARB members who undertook this study is supplemented by a professional advisor, two consultants and staff—including expert advice on "psychometrics" or the art of testing.

The part of the project completed so far is (to use the word again used in the title of this piece) an astonishing study of the services that make up the practice of architecture, and the various areas of knowledge and types of skill that are required of an architect in order

to protect the public health, safety, and welfare when practicing architecture—which NCARB defines as "basic competency."

To establish the most important services, the NCARB task force sent a detailed survey to 12,000 architects, worked with 3833 usable responses. Panel discussions were held with 40 "frequent users" of architectural services from both the private and public sectors.

In the end, the NCARB team and its consultant, McManis Associates, identified 164 services, 128 "knowledges," and 14 skills required in the practice of architecture. These lists were refined, and those "necessary to protect the public health, safety, and welfare" identified.

For example: 38 specific services grouped into seven areas were identified as "necessary to protect. . ." The first area is Programming—under which are listed five services: design objectives, space requirements, space relations, flexibility/expansability, and site requirements. The second area is Site Design—under which are listed nine services, beginning with land utilization (which the survey identified as the *most important* service of all), and including structure placement, form relationships, movement systems/circulation/parking, utility systems, surface and subsurface conditions, ecological requirements, deeds/zoning/legal constraints, and topography and relationship to surroundings. The other five areas of service have been defined as Building Design (with eight specific services), Construction Documents (with five), Bidding and Negotiation (two services: organization and handling of bid documents, bid evaluation), Construction (with six services) and Miscellaneous (preliminary cost estimations, life cycle cost and value analysis, and architectural-practice management).

Similarly, the NCARB has identified 29 important "knowledges": humanities, history and theory of architecture, natural forces, environmental theory, acoustics, moisture and thermal forces, soil properties and treatment, topographical factors, esthetics, proximity relationships, spatial relations, circulation, site planning, landscape design, interiors, documentation methods, energy utilization and conservation, structural systems, security systems, fire protection systems, plumbing systems, environmental control systems, electrical systems and illumination, utility and civil systems, construction materials and assemblies, construction and industry operations,

laws and regulations, contract law, and business principles.

And similarly, the essential skills of the architect were codified into four groups: 1) analytical/perceptual, 2) conceptual/synthetic/creative/artistic, 3) management/coordination, 4) communications.

This, surely, is the most careful analysis of the professional that has ever been made. And, again, this is just the beginning. For underway is another study identifying the extent to which these essential knowledges and skills are in fact examined by the aforementioned national exam. The preliminary answer is clearly: "Only in part," or "Fairly well." But clearly, as the report of the NCARB committee states, "The examinations should be improved in content and method; implementation of the examination improvements should begin promptly; and a program should be established for continuous evaluation and improvement of the examination."

The report makes clear—as anyone who thinks about it must realize—that establishing a truly meaningful examination in so complex a discipline as architecture, with the enormous variety of functional knowledge that must be applied to subjective judgments, will be an enormously difficult task.

But, in this editor's opinion, an astonishing (to use the word one more time) start has been made. And that is good for the public, it is good for the profession, it is good for the practitioner, and, though his or her task of becoming licensed may continue to an area of shifting sand, it is surely good for the intern too.

And so indeed may it be to the student. For as the final paragraph of the NCARB report says: "Like the parameters of an architectural program, this material can be used by schools of architecture to assess the philosophy, curriculum and depth of programs offered to architecture students.

"However, it is neither possible nor practical for schools of architecture to cover all the knowledges and skills and abilities identified in this report, nor to cover them to the depth implied. It will be necessary for the training period [internship period] to expand upon those knowledges, skills, and abilities. . . ."

In the end, it seems to me that all these efforts give new dignity to the study of architecture, to the profession, to the title "architect," and to the people who hold or wish to hold that grand title.—W. W.



PRESENTING

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3. Regarding the failures of modernism: I accept the rejection and sometime destruction of past architecture as a serious liability. On the other hand, I do not see, for example, the failure of public housing as a responsibility of modern architecture, and I am tired of hearing of the demolition of the Pruitt-Igoe project in St. Louis as a triumph over the evils of modern architecture. It may be easier to blame architects for the neglect of our urban poor than to admit the real socioeconomic and political causes.

4. I quote from Mrs. Huxtable's latest article: "In architecture, that subtlety and power [of great art] come primarily from the relationships of structure to space, and the image, or style, this produces." An excellent observation, but the word *primarily* implies there is something more. It is, I believe, that additional dimension that today interests many architects and with them an increasing segment of the public. I would call it *humanism*. That is the kindest word I can extract from the post-modern rhetoric and the mannerist experiments. Seen as such, it is a legitimate concern and I share it. Let me briefly elaborate.

A distinction can be made between "essential" and "nonessential" elements in architecture. By "essential" I mean those components that are required to make a building function: stairs, railings, fenestration, materials, structure, space, etc. "Non-essential" elements may be applied or be an extension or elaboration of essential elements: *ornament* is the first word that comes to mind. Painting and sculpture integral to the architecture are next (as opposed to paintings hanging on the wall or the "piece" of sculpture in the courtyard).

Modern architecture has dealt almost exclusively with essential elements. That was the inevitable result of its marriage with labor economics and industrialization. Crafts and the fine arts went their own separate ways.

Those who feel a need for a change must be confronted with two awesome problems.

First, there must be answers to the technical/economic question. We cannot pretend to revive humanism with plaster, tiles, paint or papier-mâché, and we should remember that buildings today *must* function.

Second, ornament and art in architecture cannot simply be personal statements. Traditionally, such elements represented religious or cultural symbols commonly shared and understood by most people. This would explain the durability of the classic orders over more than two millennia. Architects who today make personal decorative inventions may have a following among those eager for fashionable change. But, as a recent show of hypothetical artist/architect collaborations held in New York revealed, many seem to indulge in nothing more than architectural inside jokes. This can hardly be called humanism.

It could be that a revival of humanism is simply an impossible dream. But that indeed is the goal if we are dissatisfied with the past fifty years.

*Tician Papachristou, FAIA
Marcel Breuer Associates
New York City.*

Your advice to young people on architectural schools [Editorial, RECORD, September 1981, page 13] is both instructive and constructive.

While I'm sure some of my colleagues will disagree, I suspect that the intelligence, ability and effort a student is willing to exert is considerably more important in his or her educational development than the "quality" of the school. There are

many excellent programs and opportunities across the country; regrettably, potential candidates are often led to believe that there are only two or three schools worth attending. A student desirous of a particular specialization may indeed have only a few alternatives, but for most aspiring architects there are numerous schools with quality programs suitable to their educational interests. Trying to selectively match beginning students (who typically have not had a chance to examine their own particular strengths and interests realistically) with a single curriculum (which, as you suggest, can be exceedingly difficult to assess) is probably an exercise in futility.

The over-all quality of architecture graduates in this country is high and improving at most institutions. The ability of schools to attract top applicants into architecture may have as much or more to do with the quality of their eventual

graduates than with their various curricula and program alternatives.

Toward this need for initial encouragement, the profession is indeed important to education.

*Roger L. Schluntz, AIA
Chairman
Department of Architecture
Arizona State University
Tempe, Arizona*

P.S. *Architecture Schools of North America*, which you mentioned in your editorial, is co-published by both Peterson's Guides (as you mentioned) and the Association of Collegiate Schools of Architecture, whose membership includes all schools with accredited programs. We are flattered by your kind reference to this work.



James Renaldo, Architect

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NEWS IN BRIEF
 NEWS REPORTS
 BUILDINGS IN THE NEWS
 DESIGN AWARDS/COMPETITIONS
 REQUIRED READING

October contracting for new construction may be signaling the bottom of 1981's steep decline of building activity, according to George A. Christie, vice president and chief economist of the F.W. Dodge Division of McGraw-Hill Information Systems Company. Contracts for new construction totaled \$12.3 billion in October, slightly below September's level. "October's contracting for new construction of all kinds remained depressed, but at the same time displayed uncharacteristic steadiness," said Christie. "The stability of construction contracting is in contrast with the recent deterioration of general economic activity." According to Christie, falling interest rates are the first step toward expected economic improvement in 1982.

Romaldo Giurgola, FAIA, has been selected to receive the AIA's Gold Medal award. Giurgola, a partner in the firm of Mitchell/Giurgola Architects, of New York and Philadelphia, and Fellow of the AIA will be given the award this coming June at the AIA's national convention in Honolulu. The AIA, in awarding the Gold Medal, described Giurgola as "a practitioner and partner in a firm whose record of awards and competition wins is outstanding." The latter include an AIA headquarters building in 1965 (not built), the 1974 competition for the Wainwright Building addition to the Missouri State Office Complex in St. Louis, and most recently the worldwide competition for the new Parliament House in Canberra, Australia. Born in Rome, Italy, he attended the School of Architecture at the University of Rome. Giurgola came to New York to earn a master's degree from Columbia University, where he is now a professor of architecture.

Washington's 74-year-old Old Union Station will be saved from further decay, thanks to legislation recently passed by the Senate. The bill calls for just under \$10 million to repair the roof and study the building's structural integrity. In 1968, some \$46 million was approved by Congress to turn the Beaux Arts building near the Capitol into the National Visitors Center. The project was a failure, the Center fell into disuse and disrepair, and was closed as a safety measure last year.

One of the first buildings in America to be made a national landmark celebrates its 75th anniversary this year. The Italian Renaissance-style Pierpont Morgan Library at 29 East 36th Street in New York City, received a similar classification from the City of New York and the Municipal Art Society. The library celebrates its anniversary as a landmark with an exhibition of architectural drawings, mural designs, elevations and photographs, many relating to the evolution of the library's interior and exterior. A large-scale plaster model of the restored facade will also be on display within the 1906 building.

Italy's most prestigious product design prize has been awarded to Emilio Ambasz and Giancarlo Piretti for their design of the Vertebra Seating Range. Selected from over 700 entries, the 1981 Compasso d'Oro was granted by an international design jury. Vertebra is being produced under the license Open Ark by the following licensees: Krueger in the USA and Canada; Castelli in Europe; Hoki in Japan and the Far East; Erasmo in South America.

The education of architects, urban planners, designers and historic preservationists is the subject of an exhibit at the National Academy of Design in New York from December 10 through January 15. The exhibition, "The Making of an Architect, 1881-1981: Columbia University in the City of New York," is a major event in the Architecture School's year-long centennial celebration. The work of Columbia architecture students, alumni and faculty from the 1880s to the present, as well as examples of the work of other schools, is being displayed. Most of the exhibits' drawings, photographs and models are being shown publicly for the first time. The National Academy of Design is located at 1083 Fifth Avenue, and is open Tuesday through Sunday from noon to 5 P.M.

The work of Kazuo Shinohara, one of Japan's leading architects is on exhibit at The Institute for Architecture and Urban Studies (IAUS) in New York City from December 8 through January 15. The exhibit marks the first time Shinohara's work has been shown in the United States and the first time the architect has visited America. Shinohara designs only single-family houses, in a style influenced by Mies van der Rohe and other modernists, as well as by traditional Japanese architecture. The IAUS is located at 8 West 40th Street.

Robert M. Lawrence, FAIA, was inaugurated as president of The American Institute of Architects for 1982, early last month. Lawrence succeeds R. Randall Vosbeck, FAIA, of Alexandria, Virginia, as head of the 38,000-member society. He is a partner in the Oklahoma City-based firm of Lawrence, Lawrence and Flesher. Five other national officers were installed: first vice president/president-elect, Robert C. Broshar, FAIA, of Waterloo, Iowa; three vice presidents, Ellis W. Bullock Jr., FAIA, of Pensacola, Florida; James R. Nelson, AIA, of Wilmington, Delaware; William A. Rose Jr., FAIA, of White Plains, New York; and treasurer, Henry W. Schirmer, FAIA, of Topeka, Kansas. Harry W. Harmon, FAIA, of Long Beach, California, continues in his two-year term as secretary.

The Society of American Registered Architects celebrated its 25th anniversary this year with an anniversary convention in San Antonio, Texas.

Federal handicapped guidelines to be relaxed

The future cost of uniform guidelines requiring Federal buildings to be accessible to the handicapped will be drastically reduced as a result of compromises adopted December 1 by the Architectural and Transportation Barriers Compliance Board (ATBCB).

The White House originally tried to kill off the ATBCB by denying it funds to operate in Fiscal 1982, which began October 1. But political pressure forced a turn-about that led to negotiations between the administration and the Board Chairman Mason H. Rose.

Suspended, for the time being, were parts of the January 1980 proposed guidelines that would have applied to leased Federal buildings, including 28,400 leased by the U.S. Postal Service. Assistant Postmaster General Roger P. Craig estimated that this brings his agency's cost of compliance from \$70 million down to \$1 million.

Also postponed is the application of the January rules to the Department of Housing and Urban Development, which estimated its cost of compliance as high as \$680 million per year. The greatest relief was postponement of a regulation that would have required elevators in two-story apartments subsidized by HUD.

Another compromise changes the rules requiring that accessibility features be built into Federal build-

ings undergoing alterations or modernization. The January 1981 rules required maximum accessibility to the handicapped in buildings where alteration costs were 50 per cent or more of the estimated value of the building. Under the new proposal only those buildings that are to be vacated for complete alteration will have to abide by the January 1981 maximum accessibility guidelines. Where costs of renovations or alterations run to only 50 per cent of the value of a building, it need be less accessible to the handicapped than under the original January 1981 rules.

Another change modifies the Department of Transportation's requirement calling for elevator installations in conjunction with subway renovations. Now, a cost limitation on elevator work has been written into the regulation.

"In order to get the votes" for a compromise that would keep the guidelines alive, "we've had to give up some of the more expensive items," said Rose.

The result is a new set of proposals that will go to the Board for final approval next spring.

The final uniform guidelines will have to be followed by four so-called standards-setting Federal agencies with whom architects and builders do business—the Department of Defense, the Department of Housing and Urban Development, the U.S. Postal Service, and the General Services Administration. —*Donald Loomis, World News, Washington, D.C.*

Brooks Law may be threatened once again

Architects and engineers are lining up to fight what they see as yet another threat to the Brooks Law in a draft proposal by the Office of Federal Procurement Policy (OFPP) designed to create "a uniform Federal procurement system."

Congress' proposal, ordered two years ago, seems to lump architect-engineer services with the procurement of other services where—along with purchases of goods—price competition is favored as the key to "full and free competition."

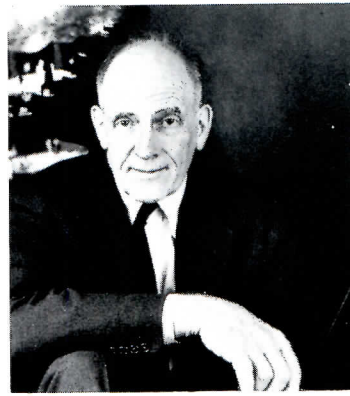
In the controversial document, the OFPP, which is part of the Office of Management and Budget, does say that "because of statutory requirements, some tailoring may be required for a number of specialized kinds of procurement, among them architect-engineer services." According to Frank Musica, director of government affairs for the American Institute of Architects, even though the Brooks Act was not challenged directly, the OMB seems to want to go through the back door to change the law. "The AIA," he said, "will coordinate its position with the engineers through the Committee of Federal Procurement of Architect-Engineer services."

Larry N. Spiller, vice-president of the American Consulting Engineers Council, said that the OFPP proposal shows a failure to address the architect-engineer selection process that is required by the Brooks Law, and by implication seems to say that such services should be procured "on the basis of price." According to Spiller and other critics of the OFPP, there is no discussion in the document of the role of professional qualifications in the selection process, in which price cannot be the key factor.

The OFPP reports that *PL 92-582* (Brooks Act) provisions "preclude any consideration of price competition in acquiring architect-engineer services." This, say architects and engineers, is not true, since the law permits price negotiation after the qualification process is completed.

The OFPP proposal, experts say, may have a "chilling effect on states that are considering adopting their own Brooks Law to govern state procurement of architect-engineer services. A number of states—Alaska, Arizona, Virginia, and Pennsylvania—have such legislation in the works; 21 states have already enacted a Brooks Law-type law. —*Donald Loomis, World News, Washington, D.C.*

Katrina Thomas



Wallace K. Harrison, Gold Medalist, dies

Wallace K. Harrison, one of the country's best-known architects and AIA Gold Medalist, died on December 2, 1981. He was 86 years old.

Harrison was involved in the design of many of New York's most important buildings, including:

- Rockefeller Center in New York City, 1931 to 1940. He was a member of a team that included Harvey Corbett and Raymond Hood.
 - The Trylon and Perisphere (theme pavilion), the World's Fair in New York City 1939.
 - The United Nations headquarters in New York City, 1947 to 1953. He was chairman of the board of design and director of planning, and worked with a team of architects that included Max Abramovitz, Le Corbusier, Oscar Niemeyer and Sven Markelius.
 - Kennedy Airport. He became a consultant in 1955.
 - The Metropolitan Opera House at Lincoln Center in New York City, 1962 to 1968.
 - Governor Nelson A. Rockefeller Empire State Plaza. He was over-all architect, and, with Max Abramovitz, was responsible for all of the complex except the Automotive, Justice and Legislative buildings.
 - The Institute of International Education, 809 United Nations Plaza in New York City, 1964. He worked with Max Abramovitz and Michael M. Harris.
 - Central Terminal and Control Tower at La Guardia Airport in New York City, 1965. Others altered it later.
- Born in Worcester, Massachusetts, in 1895, Harrison attended the Ecole des Beaux-Arts in Paris and later the American Academy in Rome. In 1922, he joined the firm of Bertram Goodhue, which later became Corbett, Harrison and McMurray. In 1935, he formed a partnership with J. Andre Fouilhoux; Max Abramovitz joined the firm six years later; and it became known as Harrison and Abramovitz in 1945, after Fouilhoux's death.
- Harrison was also an associate professor in the School of Architecture at Yale from about 1937 to 1942, and a trustee of the Museum of Modern Art and the Museum of Primitive Art. A Fellow of the AIA, Harrison was the winner of numerous architectural honors and awards. He was given the AIA's Gold Medal in 1967.

Phased construction for Capitol area is disputed

Government auditors and the Architect of the Capitol are at odds over the use of phased construction in building the new, and restoring the old, government buildings that are to be clustered around the U.S. Capitol.

In a report to Congress, the General Accounting Office (GAO) cited two attempts by the Architect of the Capitol to use phased construction that have contributed to cost overruns, completion delays, and management problems on Congressional building projects.

"Phased construction does not work well for Capitol Hill construction projects due to the numerous reviews and approvals required at each phase, funding problems, complexity of design and quality of construction required for monumental buildings, and the likelihood of numerous design changes," the GAO reported, and suggested that architect George M. White should resort to more conventional design and construction methods.

In a written rejoinder to the GAO critique, White said the agency's report did not explain that when the basic concept of phased construction was originally recommended, it was considered by most of the industry as a major advancement in the state of the art of construction management and promised tremendous savings in cost increases caused by annual inflation, which now runs 18 per cent or more in new construction.

White argues that GAO has not presented a complete and balanced picture of the advantages and disadvantages of multi-phased construction in relation to single-phased construction methods.

GAO did not, for example, discuss the possible merits offered by phased construction in enabling Congress to leave some of its decision options open until late in the construction process, and to stagger appropriations for a major project over several years instead of requiring the full amount to be appropriated before construction begins.

White also said that the GAO did not take into account the effects that inflation would have had on project costs had the conventional construction methods been used.

As far back as April 1967, after reviewing construction of the Rayburn House Office Building, the General Accounting Office concluded that phasing was not compatible with Capitol Hill construction projects. It also cited the new Hart Senate Office Building, which has grown from an original \$48 million concept to a \$137 million project and which is not scheduled for completion until 1983, although design work began in 1973.

GAO cited similar cost escalation and schedule slippages for House Office Building Annex Number Two,

the Capitol Power Plant and two other Library of Congress buildings.

White, in his formal reply to the GAO, urged the agency to start using "a less pejorative and, incidentally, more accurate term than 'overrun' to describe rising costs. To view preliminary estimates as though they were contractor's bids can obviously lead to inappropriate conclusions, and hence incorrect management decisions to future projects," he said.—*Herbert Cheshire, World News, Washington, D.C.*

Urban renovation plan on Federal front burner

President Reagan is putting "Urban Enterprise Zones" legislation, his long-awaited plan for reviving blighted inner-city areas, on the front burner in 1982.

Hearings on legislation that is designed to stimulate business in decaying metropolitan areas have already been held. The legislation is being sponsored by Representatives Jack F. Kemp (R.—N.Y.) and Robert Garcia (D.—N.Y.) and Senators John H. Chafee (R.—R.I.) and Rudy Boschwitz (R.—Minn.), and would designate certain neighborhoods for special cuts in taxes and government regulations. The legislation is apparently planned as the Administration's major initiative to help the inner cities.

The Administration's plan for revitalizing urban areas is expected to include a special investment tax credit of up to ten per cent for eligible firms; the elimination of capital gains taxes on qualified property; credits for employers on wages paid and for employees on wages earned; plus a special tax credit for hiring disadvantaged workers.

But some experts argue that the tax cuts for businesses already covered in the Administration's national tax reduction bill, are so big that an additional tax cut along these lines would provide little or no additional incentive to invest.

The Administration wants to limit the number of zones to about 25, which are to be selected by Washington bureaucrats on the basis of the additional business and de-regulation offered by state and local governments for businesses located in the zones.

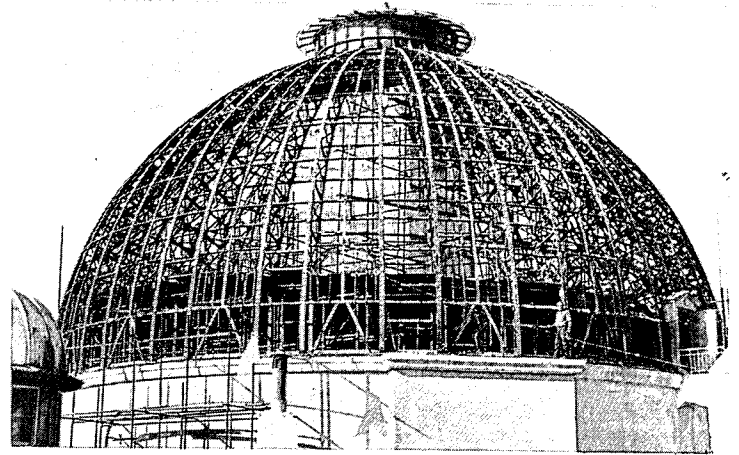
Kemp and others want more cities included in the program, and this seems likely as the bill moves through Congress and more constituencies need to be satisfied.

Already, rural Congressmen have launched a companion measure that calls for "rural enterprise zones." Their constituents, they claim, have exactly the same sort of needs for economic development as those of blighted inner city areas.—*Donald Loomis, World News, Washington, D.C.*



Jerusalem Dome has been renovated

The Dome of Anastasis of the Church of the Holy Sepulchre in Jerusalem has recently gotten a face-lift for the first time in over 100 years. The Dome was stripped down to its wrought iron framework, which was built in the 1870s, during the church's last major renovation. The framework was cleaned, coated in red lead to prevent corrosion and to act as a ballast, and painted. The Church is one of the major Christian holy places, believed to have been built upon the site of Jesus Christ's entombment and resurrection.



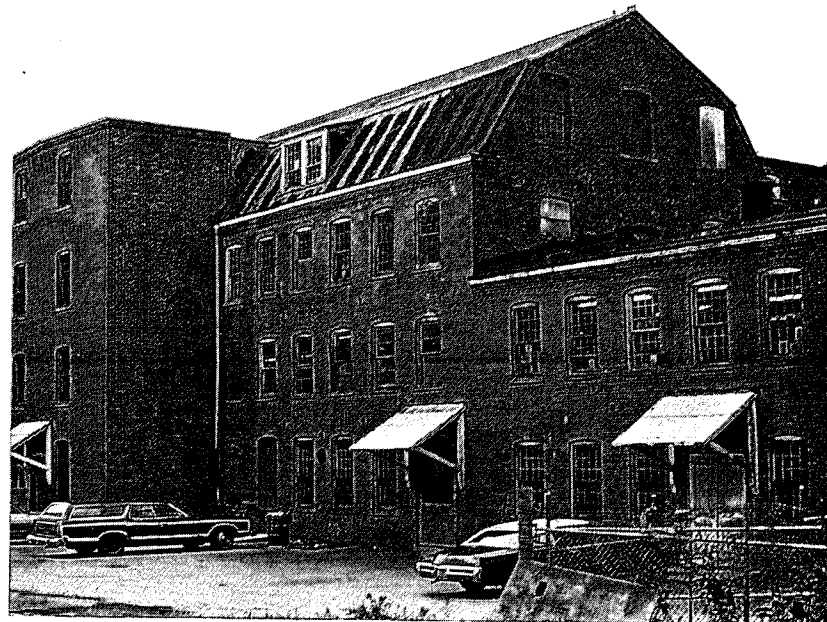
A renovation project is underway in three Connecticut communities

Three Connecticut communities will soon be getting a lesson in buildings renovation. The Tri-State Regional Planning Commission is sponsoring the Adaptive Reuse Demonstration Project that will make it possible to transform a factory in Danbury, a commercial building in Norwalk, and a school in Shelton to meet new community needs. The New York planning and architecture firm of Buckhurst Fish Hutton Katz will help redesign the buildings to function as apartments, recreation centers, offices and small stores.

Tri-State's housing coordinator for the Connecticut area is directing the project. A consultant with housing and development advisory experience, has also been retained.

"The program's purpose is to establish an efficient procedure, one that will enable older cities to reuse outmoded and vacant buildings for their current housing needs," said Frank Johnson, executive director of the planning commission. "The emphasis will be on providing a product for communities that could immediately be used to develop housing."

The Planning Commission is supplying \$42,200 of the total \$83,300



for the restoration project, the remainder is being provided by the three communities. The Connecticut Department of Housing, the Connecticut Historical Commission, and the Connecticut Trust for Historic Preser-

vation are contributing their services to the project.

The three buildings were selected from 19 schools, factories, libraries, a theater and a hotel submitted by area planners.—*A.G.*

THE RIGHT GLASS HELPS TRANSFORM A BAYOU

The IBM South Regional Service Center was designed by Caudill Rowlett Scott/Houston, Texas.

The Union Texas Petroleum and Internorth buildings were designed by Morris★Aubry Architects/Houston, Texas.

INTO A BREAKTHROUGH.



Houston's West Side now boasts a glittering architectural landmark in the midst of a once-bleak bayou landscape.

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Oakland gets new hotel/convention center

The new Downtown Convention Center and Hyatt Regency Hotel in Oakland, California is being designed by ELS Design Group of Berkeley, California in association with The Ratcliff Architects, also of Berkeley. The \$55 million project combines a 500-room hotel, shops, and dining facilities. A skylit atrium connects the hotel, which is owned by the Oakland Hotel Association Limited, to the convention center, owned by the City of Oakland. The convention center contains a large exhibit hall for trade shows, a ballroom, and several smaller meeting areas. Parking facilities for both the hotel and convention center are located above the convention center. The project is scheduled for completion in early 1983.



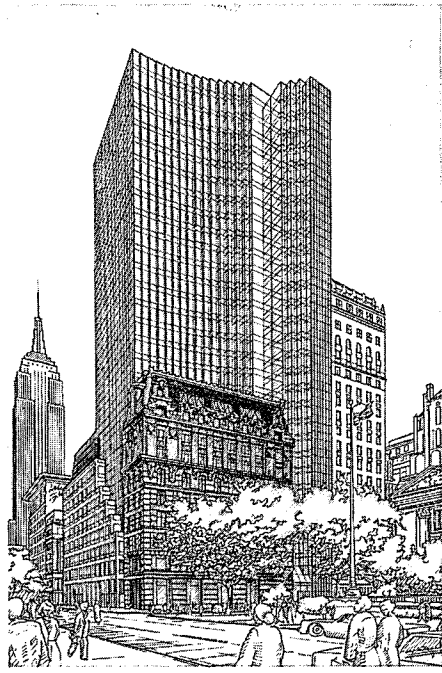
Cleveland gets new oil company headquarters

A new 46-story home for the Standard Oil Company in Ohio is being built in Cleveland. "This is a very important urban development project for Cleveland," said Gyo Obata, of Hellmuth, Obata and Kassabaum Inc. in St. Louis, the firm that is designing the oil company's new headquarters. "The community is looking to this

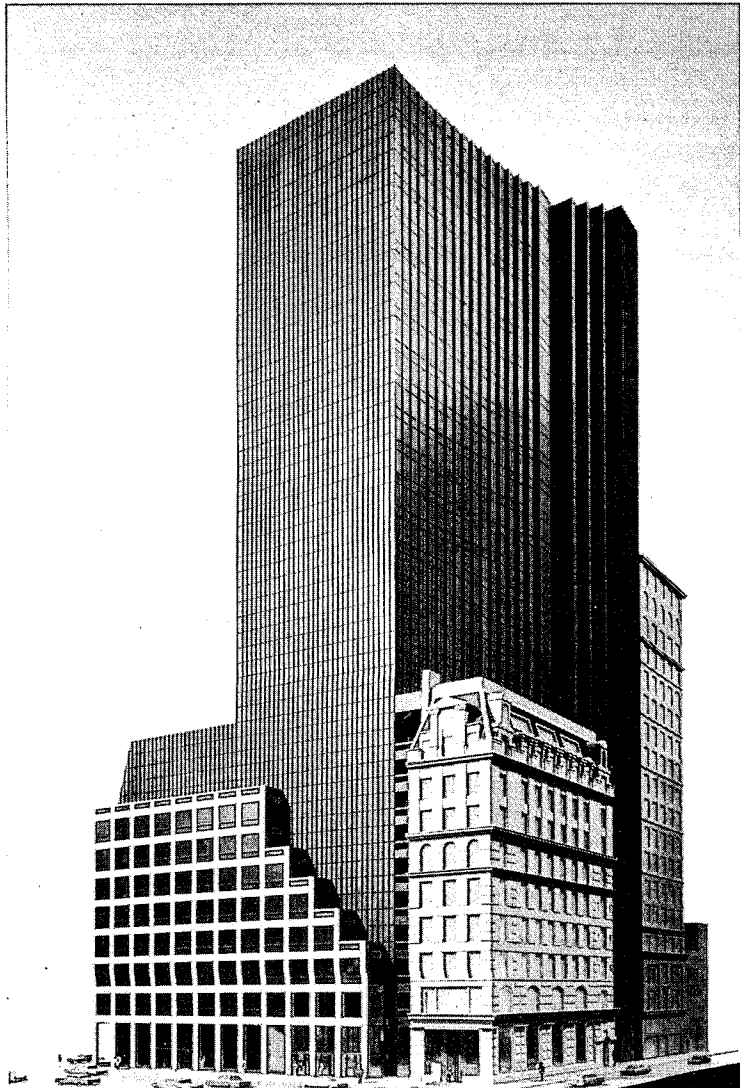
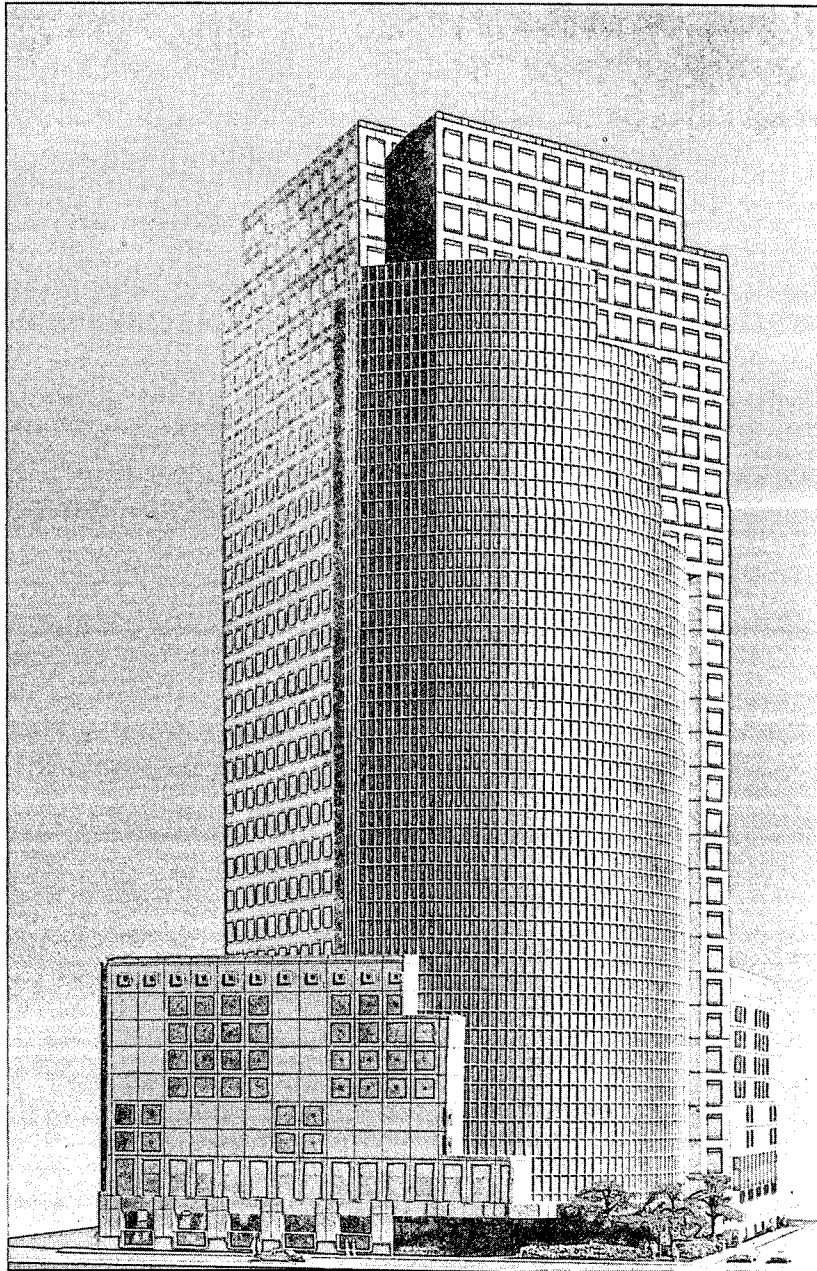
project to help revitalize the city." The atrium of the foreground building, which contains a garden, restaurants, and shops, faces onto Cleveland's Public Square at Euclid and Superior Streets. Urban Investment and Development Company, of Chicago is the developer. The building will be completed in 1985.

New building in New York links three old ones

The new 27-story headquarters building of the Republic National Bank of New York is being designed by Attia and Perkins, Architects. The new building is intended to connect three existing buildings. The landmark Knox Building on 40th Street is the design focus of the complex, and its Beaux Arts facade is being restored as part of the construction program. What used to be the Kress Department Store is getting a new granite and glass facade, shops on the ground floor, two new floors and a roof terrace for dining facilities. One West 39th Street is also being linked to the complex. The new building on Fifth Avenue, between 39th and 40th Streets, is the first major development on the Avenue south of 42nd Street since the construction of the Empire State Building in 1931. The project is scheduled for completion in 1983.



Jack Horner



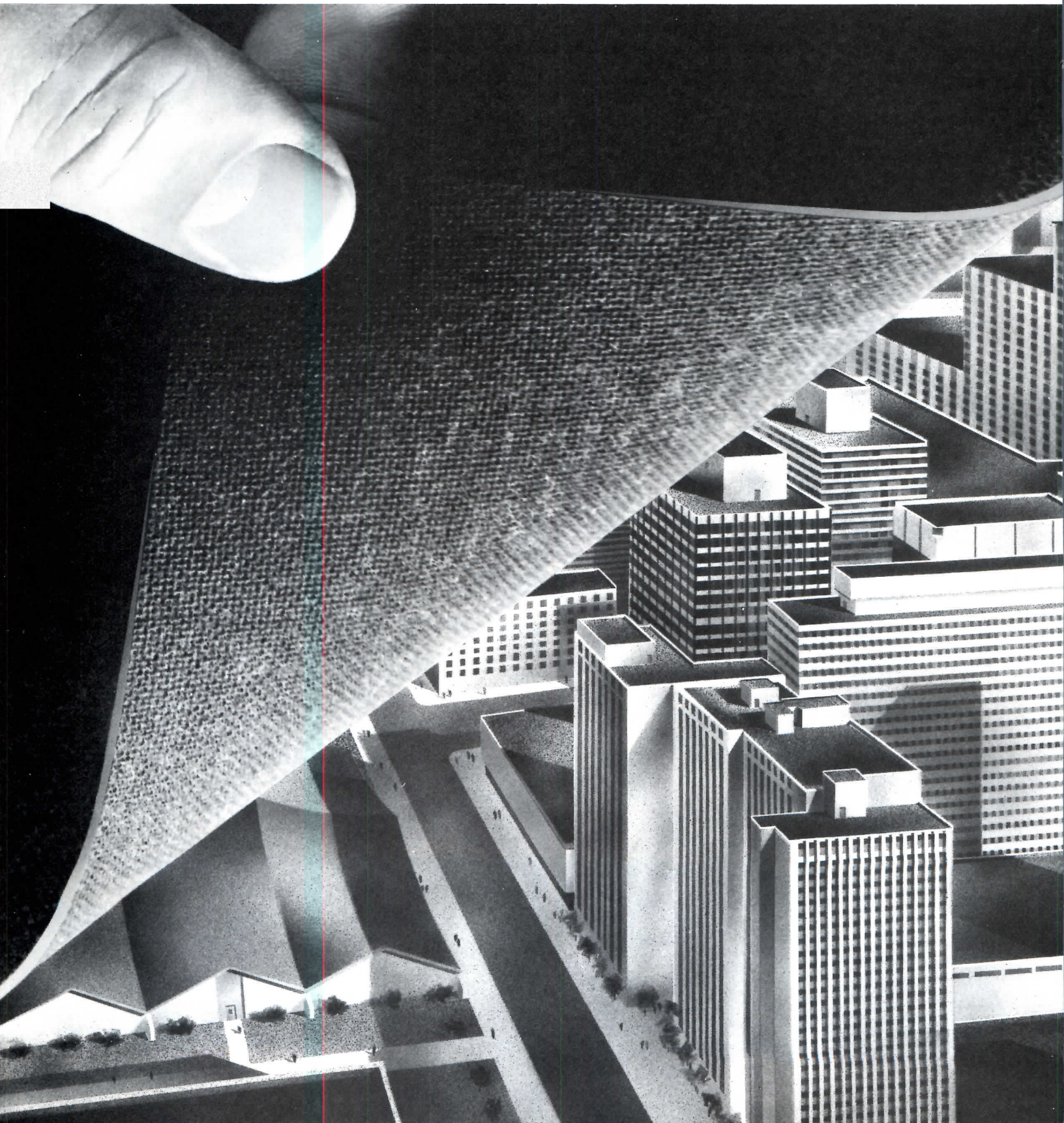
ZENREICH

Kohn Pedersen Fox builds Tampa Financial Center

The Tampa Financial Center is being designed by the New York-based architecture firm of Kohn Pedersen Fox Associates. The \$45 million office building in Tampa, Florida features a curved wall of tinted glass facing Tampa City Hall,

picture windows in the tower walls, and a granite fascia frame. The 30-story building also includes parking facilities. The Doran Jason Company is developing the building, which is scheduled for completion in January, 1984.

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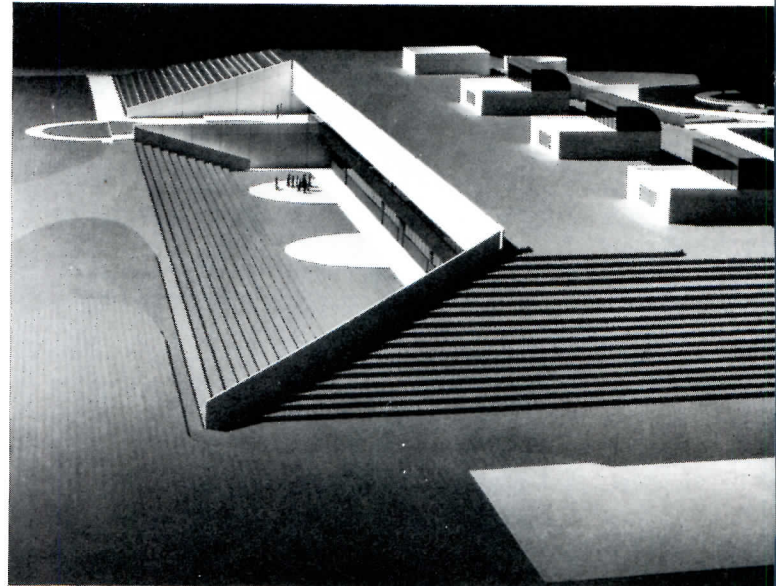
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DESIGN AWARDS/COMPETITIONS

Six projects were cited for energy-efficient design in the tenth annual Owens-Corning Fiberglas Energy Conservation Awards Program. Completed buildings and unbuilt designs were reviewed separately by jurors Ezra D. Ehrenkrantz, FAIA; Ralph L. Knowles, FAIA; Robert G. Shibley, of the U.S. Department of Energy's Office of Solar Applications for Buildings; John W. Honeycomb, director of energy programs for the IBM Corporation's Real Estate and Construction Division; Marvin W. Wiley, P.E., director of energy management studies for Heery Energy Consultants; Sital Daryanani, P.E., senior vice president and chief of design for Syska & Hennessy, Inc.; and Dr. Erv Bales, M.E., architectural and engineering systems branch chief for DOE's Building Division. Projects honored in the Chicago Chapter of the AIA 1981 Awards Program follow on pages 44 and 45. The awards jury consisted of Hugh Newell Jacobsen, FAIA; Ulrich Franzen, FAIA; Edward A. Killingsworth, FAIA; and Charles Burchard, FAIA.



OWENS-CORNING FIBERGLAS ENERGY CONSERVATION AWARDS

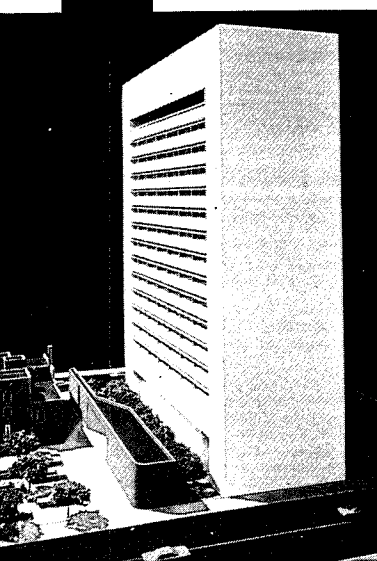
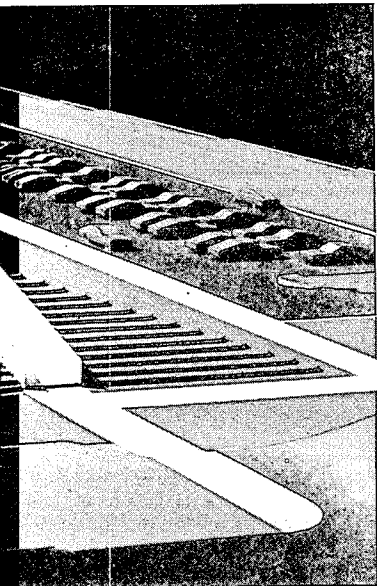
In his summary of the OCF awards review, jury chairman Ezra D. Ehrenkrantz remarked: "The most significant area of development in the past year has been in daylighting design. Unfortunately, in too many [submissions], the impact of glare was forgotten, even though significant information in this area was published in the '50s and '60s. Now that we have rediscovered daylighting, we must learn how to use it."

1. Stephen C. O'Connell Student Center, Gainesville, Florida; CRS, Inc., architects. This \$11.4-million recreation building is the first fabric

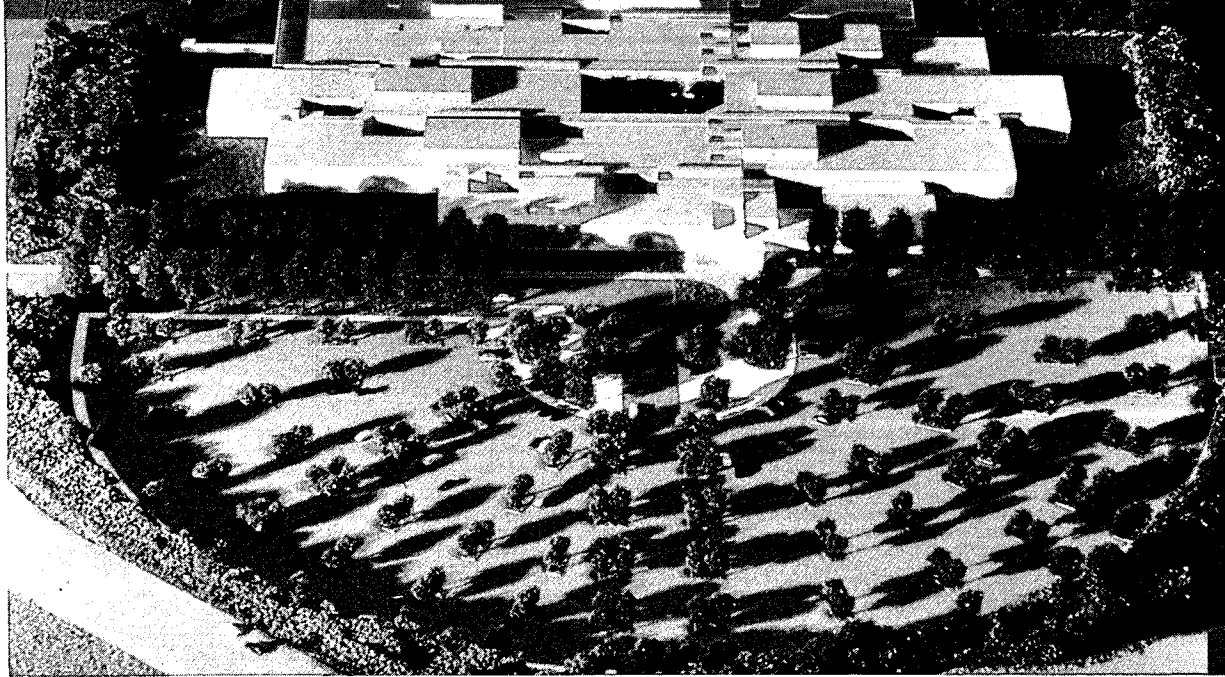
structure to combine tension- and air-supported shelter. Four 100-horsepower fans supply the necessary air pressure for a 150,000-square-foot fabric dome. Energy costs for these "pillars of air" are comparable to those of the hvac system for a conventional dome. Peripheral enclosure is provided by coated glass-fiber fabric stretched over curved concrete support columns. The fabric reflects 75 per cent of solar energy while admitting sufficient light to supply required illumination throughout much of the interior. One juror noted that "The rib structure and the fabric

define the space and reflect the scale change between activity spaces. Often air-supported fabric structures do not have that quality of legibility."

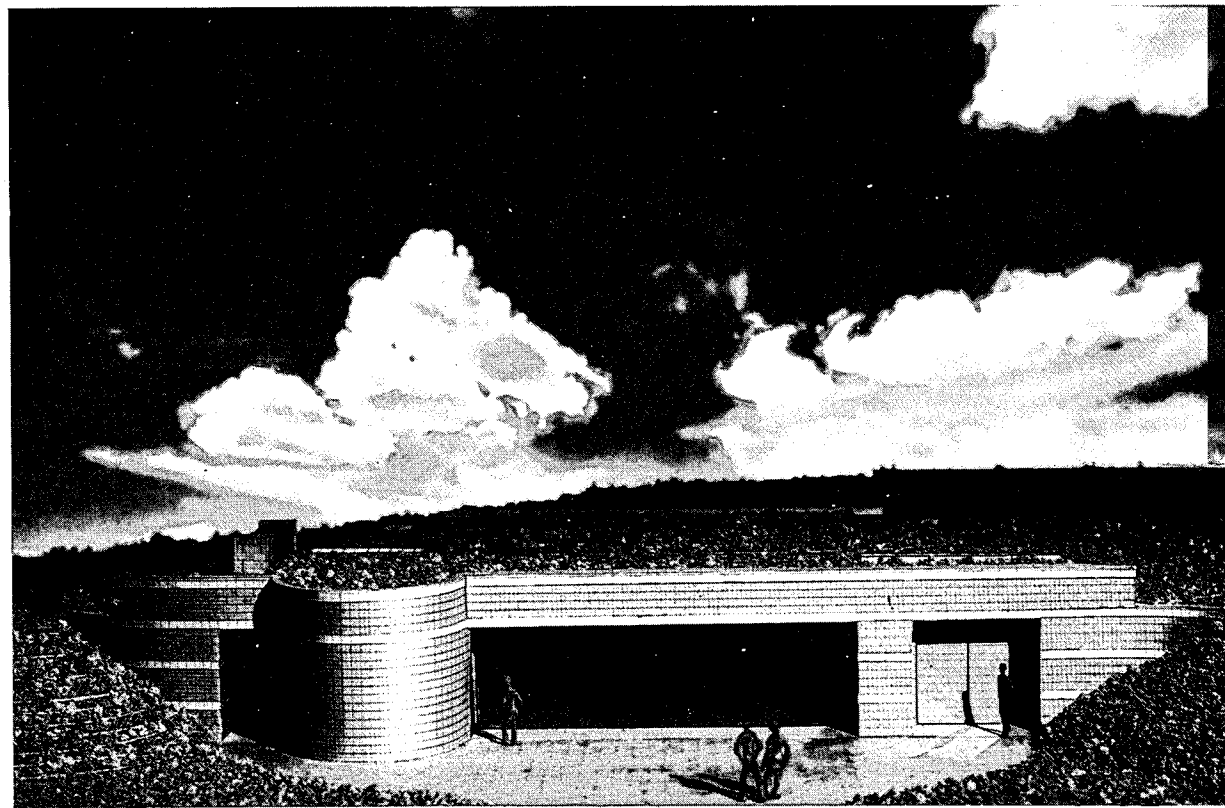
2. Washington/Jefferson Elementary School, Walla Walla, Washington; Walker McGough Foltz Lyerla, P.S., architects. The 70,135-square-foot structure is expected to require 30 to 40 per cent of the energy consumed by a standard school building. Ninety-five per cent of the earth-sheltered project's glazed surfaces face southeast, to admit daylight and solar warmth to classrooms and major activity areas. "Although a fair num-



4



5



6

ber of earth-bermed and earth-sheltered projects were entered in the awards program this year," said Mr. Ehrenkrantz, "the jury doubted the cost effectiveness of this approach in many of the schemes. . . . But this project emerged as a unanimous selection."

3. Transit Operations and Maintenance Facility, Chapel Hill, North Carolina; Cogswell/Hausler Associates, P.A., architects. In the winter, nearly 4,000 square feet of south-facing glass-block walls and glazed garage doors admit solar heat, which is stored in exposed concrete floors,

masonry walls, and a concrete roof deck. Roof monitors and skylights illuminate 60 per cent of the 15,000-square-foot building.

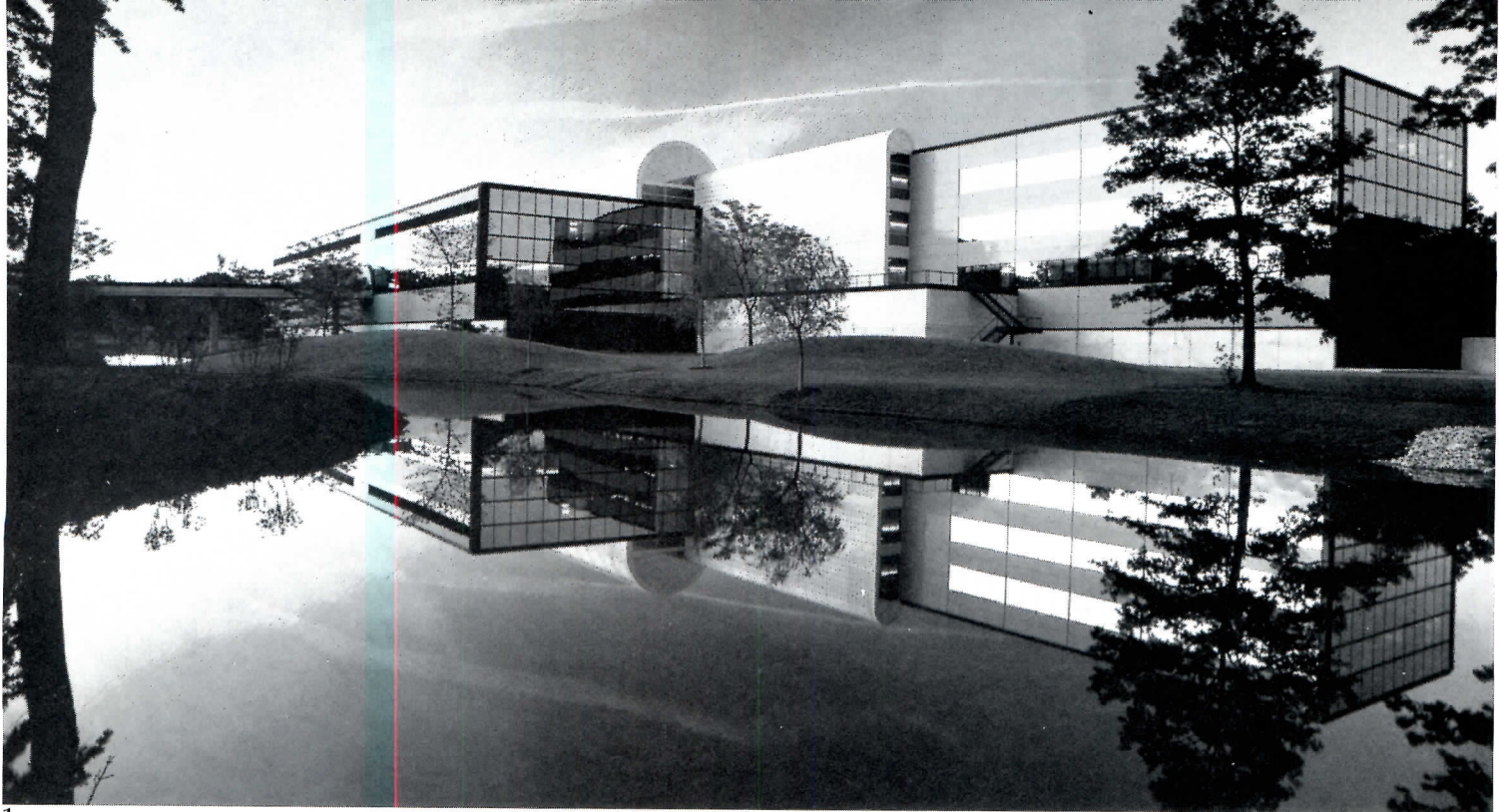
4. Farm Credit Banks Building, Spokane, Washington; Walker McGough Foltz Lyerla, P.S., architects. "The building is zoned in direct relation to the light source," commented one juror. "You get deep open office spaces on the south side and closed semi-private office space on the north wall. In the intermediate zone are some open, some closed office spaces, almost totally dependent on artificial illumination. . . . There is a

clear inference that daylighting involves a certain kind of office configuration." The 18-story tower is scheduled for completion in June.

5. Department of Justice, Sacramento, California; Marquis Associates, architects. When it is completed later this year, the 380,000-square-foot complex of offices, crime labs, and classrooms is expected to consume 38,000 Btu per square foot per year—roughly half the state's required performance standard. Energy-efficient features include recovery of computer waste heat by double-bundle condensers and the use of

low-speed propeller fans to draw cool night air into the ceiling plenum and discharge warm air.

6. Visitors Center, Antelope Valley California Poppy Reserve, Lancaster, California; The Colyer/Freeman Group, architects. This largely subterranean structure combines energy efficiency with minimal intrusion into the unspoiled landscape of a state park. Befitting its use as a demonstration center for energy-conserving technology, the building incorporates a wind-powered generating system, temperature moderating thermal mass, and clerestory lighting.



1

Sarah Lavicka



2

Howard Kaplan

CHICAGO AIA DISTINGUISHED BUILDINGS AWARDS

1. Corporate Headquarters, Research & Development Facility, Hol-lister, Inc., Libertyville, Illinois; Hol-bird & Root, architects. The 200,000-square-foot complex encompasses three separate buildings, linked by a vaulted atrium. According to the awards jury, "The design represents an object lesson in the potential richness and variety still inherent in a high-tech vocabulary. [The building] stands at a distance like a corporate chateau, reached by bridge across a moat-like body of water. It aspires to a romantic dialogue between built form and nature."

2. Addition to the Anti-Cruelty Society, Chicago, Illinois; Stanley Tigerman & Associates, architects. The building's imagery was designed to emphasize animal adoption programs rather than a euthanasia center within the complex. To this end the open facade literally puts the "doggie in the window." The jury praised the "warm 'tongue-in-cheek' architectural solution which invites the passerby to come in."

3. De La Garza Career Center, East Chicago, Indiana; Murphy/Jahn, architects. Operated by the East Chicago School District, the yellow-painted

building stands amid factories and deteriorated housing. "A tautly designed, provocatively colored assemblage of stock steel construction, so well understood in Chicago," the panel observed. "While proclaiming the pride and honor of skilled labor, this seriously detailed and brilliantly polychromed vocational school brings joy to an otherwise drab industrial neighborhood."

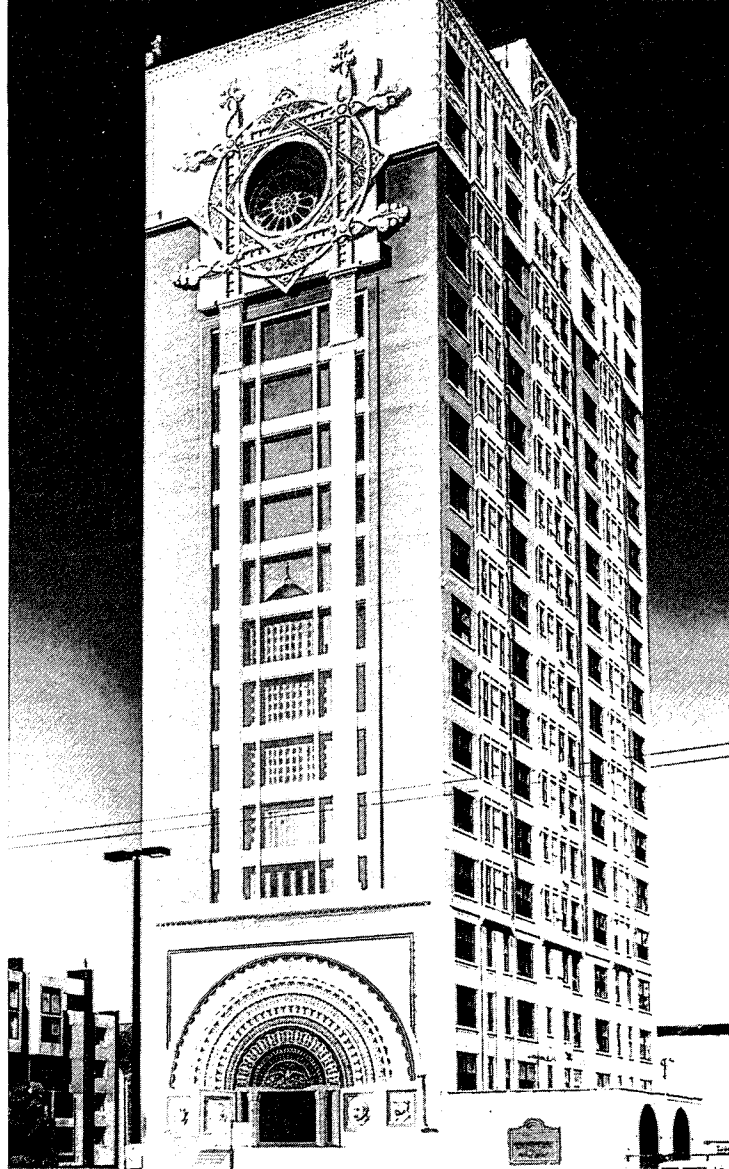
4. Eisenberg Residence, Chicago, Illinois; Marvin Ullman, AIA, architect. The exterior of this nineteenth-century house, one of three frame dwellings to survive the Chicago Fire, has



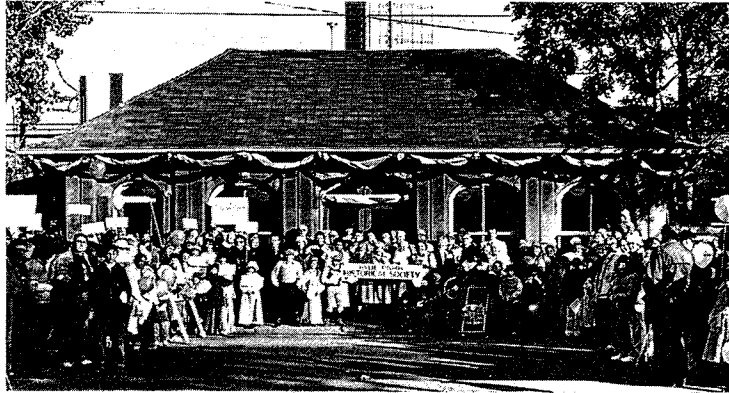
3 James R. Steinkamp



4 Hedrich-Blessing



5 Paul Zakoian



6 Joseph Block

Calendar

Fairfax Center Design Competition.

The Board of Supervisors of Fairfax County, Virginia, has announced a two-stage competition for the design of a governmental and civic complex. Stage One is open to any firm or team licensed to practice architecture in the U.S., which has a record of gross receipts for professional services of at least \$100,000 per annum during each of the last three years. At the conclusion of the first stage, four finalists will be selected by representatives of the Fairfax County government and a citizens' advisory committee. Each finalist will receive \$25,000 to develop a preliminary design for the Fairfax Center. The four submissions will be evaluated by the following jury: Chloethiel Woodward Smith, FAIA; Jacquelin Robertson, FAIA, AICP; Barry Wasserman, FAIA; Fred Dubin, P.E.; and Wayne F. Anderson, executive director of the U.S. Advisory Commission on Intergovernmental Regulations. The deadline for receipt of Stage One qualifications is January 25. Further information may be obtained by writing Professional Advisor, Fairfax Center Design Competition, The Cooper-Lecky Partnership, 3203 Grace Street, N.W., Washington, D.C. 20007.

Monroeville Area Civic Center Competition.

A \$15,000 honorarium and the project contract for a \$12-million sports and arts center and town hall will be awarded to the winner of a competition organized jointly by the Municipality of Monroeville, Pennsylvania, and the Gateway School District. The competition is open to architects registered in Ohio, Pennsylvania, New York, Massachusetts, Connecticut, Rhode Island, New Jersey, Maryland, Virginia, West Virginia, and the District of Columbia. February 12 is the last date for registration, and design proposals are due May 31. Requests for information should be addressed Civic Center Competition, c/o Intergovernmental Advisory Board, Municipality of Monroeville, 2700 Monroeville Boulevard, Monroeville, Pennsylvania 15146, attn: Gary R. Naktin, AIA, Professional Advisor.

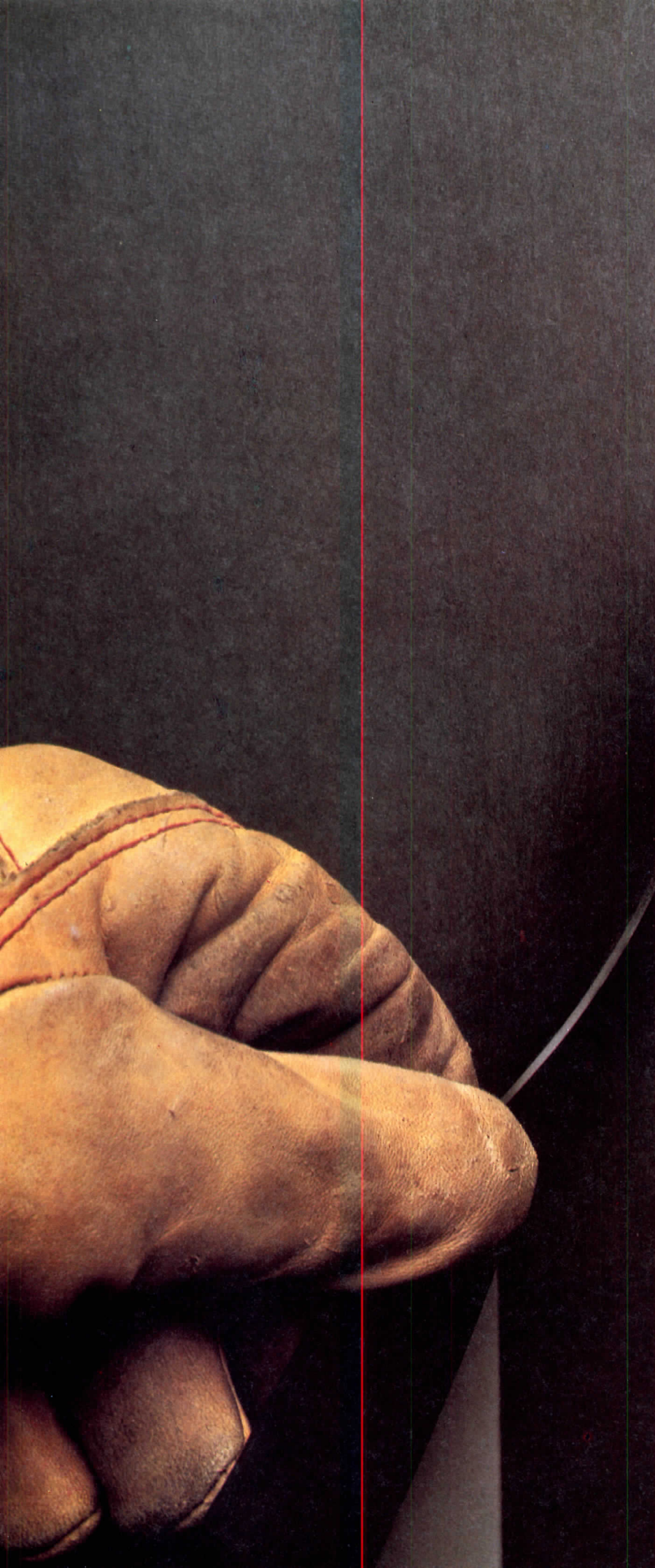
been preserved as an historic landmark. The altered interior suits the owner's taste for uncluttered modernism. Natural illumination from a nine-foot skylight filters through the open risers of a central stair. A transition between the entry and formal living areas is provided by the curved volume containing a powder room and bar.

5. **1211 North LaSalle Apartments, Chicago, Illinois;** Weese Seegers Hickey Weese Architects Ltd., architects; Richard Haas, muralist. A 187-unit apartment hotel built in the 1920s has been converted into 68

flats. Exterior trompe l'oeil murals allude to landmarks in local architectural history: Louis Sullivan's Transportation Building arch, Adolf Loos's 1922 Chicago Tribune Competition entry, and the Chicago bay window. "The architects of record deserve this award for convincing their speculative client to retain Richard Haas to execute the three brilliant, if fleeting, facades. . ."

6. **Restoration of the Chicago Street Railway Company Building, Chicago, Illinois;** Office of John Vinci, architects. Built in the 1890s as a suburban railroad station, this one-room struc-

ture is now used by the Hyde Park Historical Society as a meeting hall and gallery. The architects devoted the \$45,000 budget to a thoroughly researched interior renovation, exterior masonry repairs and painting. A new heating system is supplemented by a wood-burning stove, and reproductions of original windows were fitted with insulated glass. The restoration of Victorian craftsmanship was commended for its "admirable restraint. Mr. Vinci's attention to, and understanding of, detail have at once captured and evoked the vernacular of the time."



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Manville

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Mixed reviews

MODERN ARCHITECTURE: A CRITICAL HISTORY, by Kenneth Frampton; Oxford University Press, \$17.95.

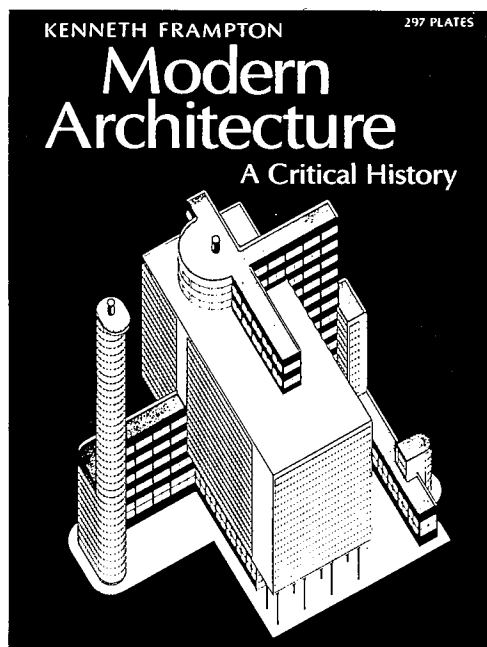
Reviewed by Stefanos Polyzoides

Kenneth Frampton's *Modern Architecture: A Critical History* is an incisive—if flawed—work that aims to present the writings, drawings, and buildings of Modern Architecture in the light of the broad cultural forces that generated them. The book is divided into three major sections, and, in fact, can be considered as a collection of three different books into one: "Part I: Cultural developments and predisposing techniques 1750-1939" outlines the cultural, territorial, and technical transformations that were the roots of the generating ideas of the Modern Movement; "Part II: A critical history 1836-1967" is an anthology of the diverse contributions of the major figures among modern architects; and "Part III: Critical assessment and extension into the present 1925-1978" is an attempt to evaluate the movement as a whole and to trace its development to the present.

Part I outlines the contributing factors that influenced the development of the Modern Movement, beginning in 1750: the intellectual shifts of the Enlightenment and the gigantic urban and technical changes (brought about by the process of industrialization) affecting both the eyes and the minds of architects and the means by which objects were made. These preconditions for Modern Architecture are presented singly and in considerable shorthand. One wishes that the argument were expanded in depth to include more facts and also to present more forcefully the effects of changing ideologies and material conditions on successive generations of architects. Certainly a discussion of architectural education and architectural commentary in the 18th and 19th centuries would have aided the argument.

Part II is by far the most dominant section of the book, both in terms of its volume and in terms of the quality of its contribution to our understanding of the architectural undercurrents of the last 200 years. Its format is based upon Frampton's lectures at Princeton and Columbia since the mid-1960s. The chapters are short, concise, and adequately

Stefanos Polyzoides is adjunct assistant professor at the University of Southern California, School of Architecture, and practices architecture with the Los Angeles firm of Bobrow Thomas & Associates.



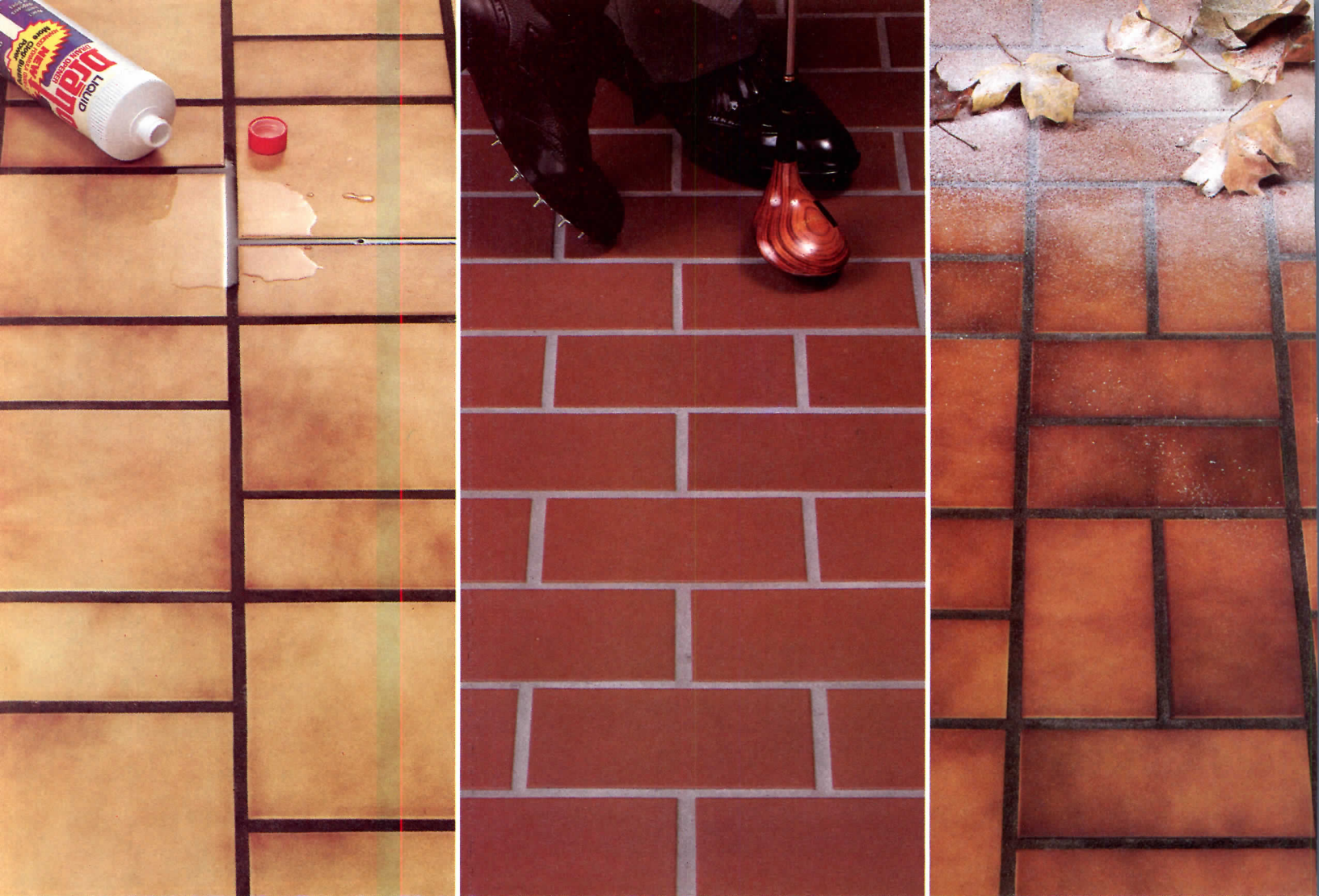
illustrated, and they make for basic but fundamental reading into the motivation and production of the modern pioneers. The argument always includes the thorough tracing of facts, adequate descriptions of major buildings, and the weaving of objects and ideas into judgments on the state of society. Frampton, the historian, the architect, and the social critic, emerges from Part II with all the force that has established him as an international figure in architecture. Some of the case studies are serious contributions to our understanding of trends within the Modern Movement. (They also correspond to Frampton's personal architectural preferences.) The chapters on England 1836-1924, on Adolf Loos, on Tony Garnier and Auguste Perret, on the Deutsche Werkbund, on Le Corbusier, on Soviet Architecture, on Alvar Aalto and the Nordic Tradition, and on Italian Rationalism are brilliant expositions of the ideas and buildings involved.

However, by highlighting the pioneers (or heroes) of the Modern Movement, Frampton forgoes the opportunity to discuss other major contributors from countries off the Berlin-Rotterdam-Paris mainstream. A short list of omissions would include, among others, Schindler and Neutra (and their students William Lescaze and Conrad Wachsmann) in the United States, Sert and the GATEPAC in Catalonia and the Basque Country in Spain, the Central European moderns, and the South American and Japanese moderns. Most of the above are mentioned cur-

sorily in Part III, but merely as relevant figures and without the care that is necessary to build the facts and evaluate their contributions. Despite such shortcomings, Part II is exceptional: it stresses architecture as idea before all else, and traces the necessary connection between ideas and the shape of society. Frampton's vision of architecture as commitment to both form and society provided a resolution to the ideological ills of the '60s that had reduced architecture to the level of verbal action. His teachings to a few, then, are now an offering to many through the printed word. Undoubtedly, Part II of this book will be a standard text in the 1980s.

Perhaps the least resolved section of the book is "Part III: Critical assessment and extension into the present"; ironically, it is almost totally devoid of a critical assessment of the Modern Movement, and the extension into the present is very partial indeed. One is left with the impression that the two major modern ideological positions—the one of Le Corbusier reconciling technique and myth, and the other of Mies making new myth out of technique—remained dominant and unchanged until the present. There is no attempt to cross-relate the case studies in order to examine their affinities and contradictions, and thus offer us a means of understanding the present. Although Frampton is a vocal believer in the continuity of architectural ideas across the artificial categories set up by "light" critics, his book leads by default to the conclusion that we are currently being faced with a state of rupture in architecture.

Though the European emphasis in Part II is correct and justified, Part III suffers from a continuing over-all emphasis on Europe. The seeds of architectural change from 1945 on have to be sought around the world at the scale of single buildings, and in Europe and the U.S. at the scale of the city as a whole. The avoidance of serious discussion of the many post-war interpretations of the Modern Movement in friction with local architectural and building traditions renders Frampton's argument partial. The phenomenon of "white" and "gray" historicism in this country is particularly important in this respect. Both tendencies question the premises of monolithic modernism and also spurred other individuals and groups around the world to do the same. And the tentative tone of Part III renders it incomplete and disappointing. This final section of *Modern Architecture: A Critical History* is an embarrassment. I would like to think that it could be reconsidered in the future, in the light of explaining the multiplicity of approaches in the present.



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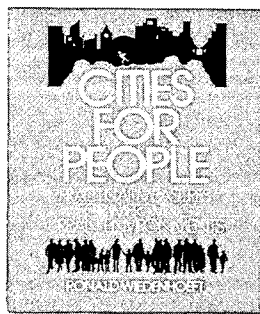
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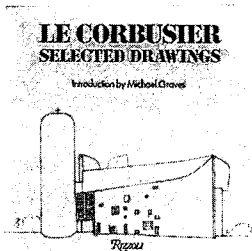
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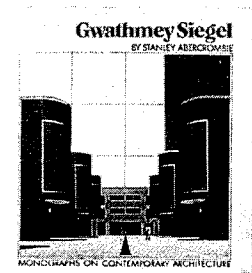
ARCHITECTURAL RECORD



CITIES FOR PEOPLE: PRACTICAL MEASURES FOR IMPROVING URBAN ENVIRONMENTS, by Ronald Wiedenhoef; Van Nostrand Reinhold, \$22.95. Unrestrained speculative real-estate development and unlimited accommodation of automobiles are the principal culprits responsible for urban erosion, according to author Ronald Wiedenhoef: *Cities for People* addresses these problems as a prelude to discussing how to make cities more responsive to human needs as well as how to improve their economic viability. Examples of urban planning successes and failures are provided with photographs illustrating "how some cities have grown monotonous, ugly, and dangerous" and identifying "techniques used during the past two decades to transform cities into far more hospitable places."



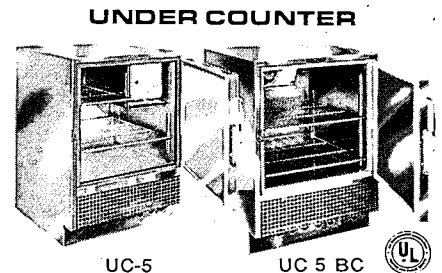
LE CORBUSIER: SELECTED DRAWINGS, introduction by Michael Graves; Rizzoli, \$15.95. Princeton architect Michael Graves provides the essay ("Le Corbusier's Drawn References") that prefaces the 240 drawings selected to illustrate twenty of Le Corbusier's built and unbuilt projects.



GWATHMEY SIEGEL, by Stanley Abercrombie; Whitney Library of Design, \$18.95. "It really is wonderfully refreshing: what you see is what you get," opines Stanley Abercrombie in his introduction ("The Art of the Evident") to *Gwathmey Siegel*, a monograph on the work of Charles Gwathmey and Robert Siegel. The seventeen projects included in this 120-page compendium range from 1971 to 1981; from the award-winning Whig Hall renovation at Princeton to the recently completed East Campus Housing Complex at Columbia; and from low-income housing to extravagant Long Island summer houses.

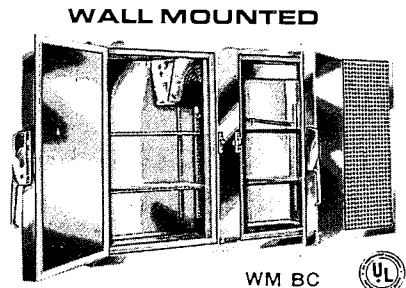
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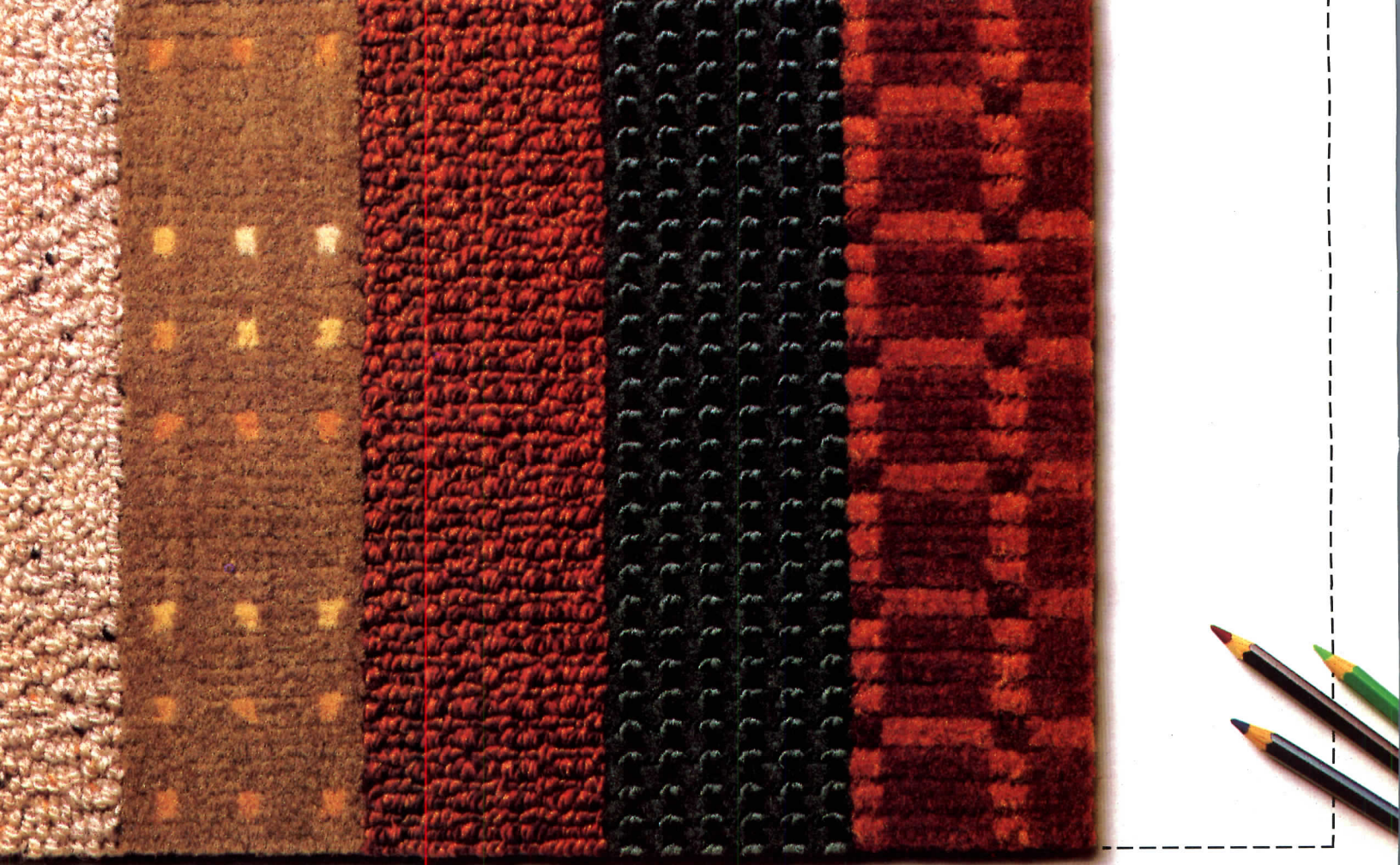


WM BC series space saving, double-door, wall-mounted refrigerators are available in 2 sizes. Furnished with 4 stainless steel shelves, they have a blower-coil cooling system with automatic off-cycle defrost and a condensate evaporator. Condensing unit is easily serviced by removing front mounted clip-on grille. **WM 7 BC** Capacity—6.6 cu. ft. (190 ltr.) **WM 10 BC** Capacity—9.6 cu. ft. (275 ltr.) *With explosion proof interior.

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 OFFICE MANAGEMENT

Staying on top of financial management: a step-by-step guide

The problem of financial management, especially during periods of economic recession, has plagued large and small architectural offices around the country. The Eggers Group, in New York, has recently designed a financial management system, using a series of periodic reports, that helps to monitor the firm's standing from day to day, project long-range needs, assess the profitability of each project, and set future targets. The system has not only proven its worth in demystifying the business end of architectural practices, but has increased earnings by almost two per cent.

by Frank Munzer, AIA

When I took over the administration of the Eggers Group a few years ago, during a period of architectural recession, the firm was saddled with severe cash flow problems. Moreover, no one had a method for forecasting what our future financial needs would be, even three or four months down the road. This led me to establish management reporting systems that would serve as accu-

rate indicators of the over-all financial status and future of the office, as well as prospects for individual projects. These systems work so well today that I can monitor the firm's standing on a daily basis, project future needs well in advance, gauge the profitability of each project, and set future goals. Since many architects, regardless of the size of their offices, face the same problems we con-

fronted, an explanation of our management systems and how they work may prove generally useful. Essentially, the systems furnish two kinds of information: a record of what actually occurs, and a forecast. The following reports help monitor the pulse of our practice: a cash flow report, an "aged accounts receivable" report (i.e., a report of all outstanding uncollected billings, showing the length of time they have been due), a marketing report, a new contract awards report, and a project management report.

A new cash flow report is generated every six months, and updated every three months, on the basis of billing forecasts, manpower projections and estimates of extraordinary expenses. In conjunction with the principals-in-charge, I personally prepare the bill-

continued on page 55

CASH FLOW REPORT			
JULY 1981			
	ESTIMATE	ACTUAL	VARIABLE FAVORABLE (UNFAVORABLE)
RECEIPTS:			
Opening Balance			
Securities Due (and \$ from Saweway MC)			
Income from Billings (incl. Reimbursables)			
Income from Loan (Bank)			
Joint Venture Distributions			
Cash Contributions (Directors)			
Other Income			
Balance in Cairo Office Accounts			
TOTAL RECEIPTS:			
DISBURSEMENTS:			
Gross Payroll (Staff)			
Directors Payroll			
Consultants Fees			
Branch Office Expenses - Trenton, NJ			
Branch Office Expenses - Cairo			
Profit Participation - Contract Holders			
Payroll Taxes, Quarterly Taxes			
Directors Taxes			
Insurance Premiums (and loan repayment)			
Insurance Claims - Deductible			
Distribution to Directors			
Retired Officers			
Loan Payable to Bank			
Securities (and \$ transfers to Saweway MC)			
Accounts Payable - Trade			
Accounts Payable - Rent			
Misc. Items - New WP Machines			
Office Alterations			
TOTAL DISBURSEMENTS:			
BALANCE:			
Operating Balance - End of Month			
+ Saweway A/C and Securities Held			
TOTAL BALANCE:			
BILLINGS: (Forecast vs. Actual)			
PERSONNEL:			

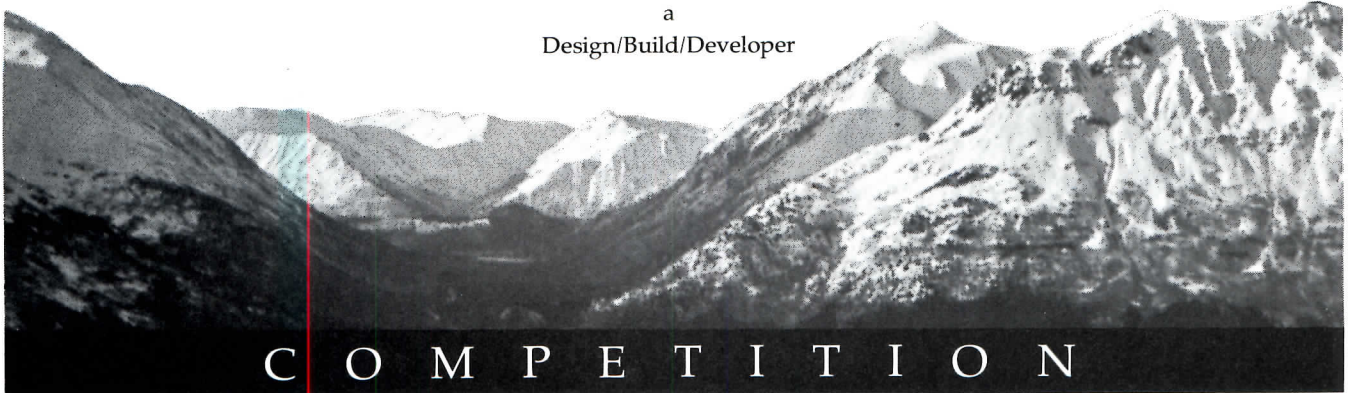
The cash flow report shows a financial overview of the entire firm, and estimates its performance six months in advance. The report is updated every three months. The July report shown is one segment of a six-month report.

MANAGEMENT REPORT			
COMPANY NO. 0TK	RPT. NO. 1	PROJECT STATUS REPORT	
		05/03/81	
COLOR WORK	TOTAL HOURS	TOTAL DOLLARS	
21870-0-07			
CURRENT	.00	.00	
JOB TO DATE	73.00	749.19	
ESTIMATE	103.00	750.00	
DIFFERENCE	30.00	.81	
PERCENT DIFF.	29.13	.11	
PCNT-EXPENDED	70.87	99.89	
CNSTRCTN ADMIN			
21870-0-08			
CURRENT	.00	.00	
JOB TO DATE	3533.50	32545.87	
ESTIMATE	2604.00	30000.00	
DIFFERENCE	929.50	2545.87	
PERCENT DIFF.	35.70	84.89	
PCNT-EXPENDED	135.70	108.49	
PLD CNSTRC ADM			
21870-0-09			
CURRENT	.00	.00	
JOB TO DATE	600.00	5725.44	
ESTIMATE	556.00	6000.00	
DIFFERENCE	44.00	274.56	
PERCENT DIFF.	7.91	4.58	
PCNT-EXPENDED	107.91	95.42	
MODEL			
21870-0-11			
CURRENT	.00	.00	
JOB TO DATE	.00	.00	
ESTIMATE	97.00	500.00	
DIFFERENCE	97.00	500.00	
PERCENT DIFF.	100.00	100.00	
PCNT-EXPENDED			
21870-0-12			
CURRENT	.00	.00	
JOB TO DATE	9087.00	82209.54	
ESTIMATE	8516.00	90600.00	
DIFFERENCE	571.00	8390.46	
PERCENT DIFF.	6.71	9.16	
PCNT-EXPENDED	106.71	90.84	

This computer printout page indicates four of the 14 work categories into which every project is divided at the beginning of each project. The complete printout shows all 14 categories, and appears bi-weekly.



THE STATE OF
ALASKA
announces
a
Design/Build/Developer



C O M P E T I T I O N

for
Anchorage Office Complex
Anchorage, Alaska

Vincent J. Scully, *Advisor to the Jury*

It is the intent of the State to consider proposals from Developers for buildings that are designed in a manner that may reasonably be expected to earn national recognition of the aesthetic qualities of the complex.

The State is assembling a site in the Anchorage Central Business District and intends to acquire, under a long term lease-purchase agreement, an office complex for 1,800 Executive Branch employees, by January, 1985, and to expand the complex to accommodate 2,800 employees by 1995. Development cost is estimated to be \$90,000,000.00 and it will in-

clude all design, construction, interior design, furniture and equipment, and related fees and costs for a 432,000 GSF office building and a two level, below grade, 1,000 car parking structure of 340,000 GSF. The State is forecasted to need an additional 213,000 GSF for 1,000 more office workers in 1995.

Pre-Qualification Criteria available January 28, 1982
Deadline for Pre-Qualification Submittals February 26, 1982

Architects, Contractors, and Developers who are interested in obtaining pre-qualification criteria for this two stage, compensated competition, should write to the State of Alaska:

Contracting and Facilities Manager
Division of General Services & Supply
Department of Administration
330 E. 4th Ave., Suite A
Anchorage, Alaska 99501

All telephone queries and personal contacts should be directed to:

William J. King and Associates
Project Management Consultant
750 West 2nd Avenue, Suite 211
Anchorage, Alaska 99501
907-272-0325

Circle 37 on inquiry card

ing forecast, which helps keep me abreast of every project in the office. I also inform the controller of any anticipated extraordinary expenses, such as bonuses, speculative work, and competition expenses. The manpower projection is prepared by the chief of production. On the basis of these estimates, the controller prepares a report that contains actual targets for expenditures.

The first thing I look for when I get this draft report is the bottom line—the amount of money left at the end of each month, to be carried over to the start of the next month. Depending on whether we have come up short or even, we either borrow or plan our short- and long-term investments. After review and adjustment, a final six-month cash flow report is completed, to be reviewed within three months.

At the end of each month, actual figures for that period are added to the original cash flow report. In addition, we are able to extract a profit or loss estimate for the coming month, based on the income we know we need in order to break even. With this monthly report in hand, I am able to determine the month's profit or loss; the amount of monthly billing (and whether we made or exceeded our target); the amount of cash that came in; the number of personnel on the payroll; the amount of cash available to meet the next month's expenses; what money we have invested, and how much we still owe consultants.

At the end of each month I also receive an aged accounts receivable report listing all jobs, billing amounts, dates and payments. In this way, I know which clients are becoming delinquent and can initiate whatever proceedings are necessary for collection, having first discussed the situation with the principal-in-charge. Many architects complain that they are victims of slow payment, but thanks to our follow-up system, most of our bills are paid within 30 to 45 days.

We bill monthly, based on the percentage of work completed the previous month, unless our contract specifically ties payments to project phases. We accustom our clients to a monthly payment structure as soon as work begins. This creates a steady cash income and balances cash expenditures.

New contracts and marketing

Monthly reports prepared by the marketing coordinator reflect activity by officers of the firm involved in business development. Each principal prepares a report outlining what action has been taken with each potential client and when future action is planned. We include an additional sheet that reports pending proposals and gives a breakdown of the firm's marketing activities. A report on pending projects that have been inactive that month is also included. This report enables the marketing coordinator, who annually presents the firm with a detailed marketing plan, to check the month's activities reports against the targets established in the yearly plan. This system keeps individual principals in

Frank Munzer is president of the Eggers Group, a New York-based architectural firm.

touch with the marketing effort on a continuing basis. It also helps maintain momentum in the pursuit of new work by reminding all of us that every month we must obtain commissions equal to monthly billings if we are to stay in business for the next year.

A report on new contract awards is issued quarterly. The marketing plan establishes targets—broken down into six-month and quarterly increments—so that we know how much new work we need to meet our marketing goals. Once a job is awarded, the billing forecast is revised. The aim of this report is to keep a continuing check on our marketing effort (is it producing the business needed?) and to give us an accurate picture of forthcoming personnel needs.

Taking the office pulse

While I keep my finger directly on the pulse of the general organization, our vice presidents maintain close control of individual projects by means of a computerized project management system. At the beginning of each project we draw up a schedule of tasks broken down into 14 work categories with bi-weekly personnel allocations for each. The categories are: programming, schematics, design development, working drawings, specifications, interior design, color work, construction administration, field construction administration, owners' changes, model, preliminary, master planning, shop drawings. To encourage pulse monitoring at all levels of the organization, this information is entered on a form that is available to all managers.

Every other week, managers receive an automatic computer printout that compares time and money estimates to actual output, showing the current status of the job in terms of hours, dollars, and the percentage of the budget expended to date. This becomes a quick reference that enables us to gauge where we are on every job in the office, so that problems can be worked out before they escalate. Now that managers are used to the system, we find that they actually monitor their jobs on a weekly basis, verifying their results against the bi-weekly printout. The principal-in-charge and the contract officer

also get copies of the computer printout and refer any major problems to me. This means that action can be taken before the difficulties get out of hand. The percentage of work completed is not included on these printouts because we have found this information so difficult to garner. If we waited until we received it, the reports would never get out at all. When managers present their reports in person, we ask them how far their projects have progressed.

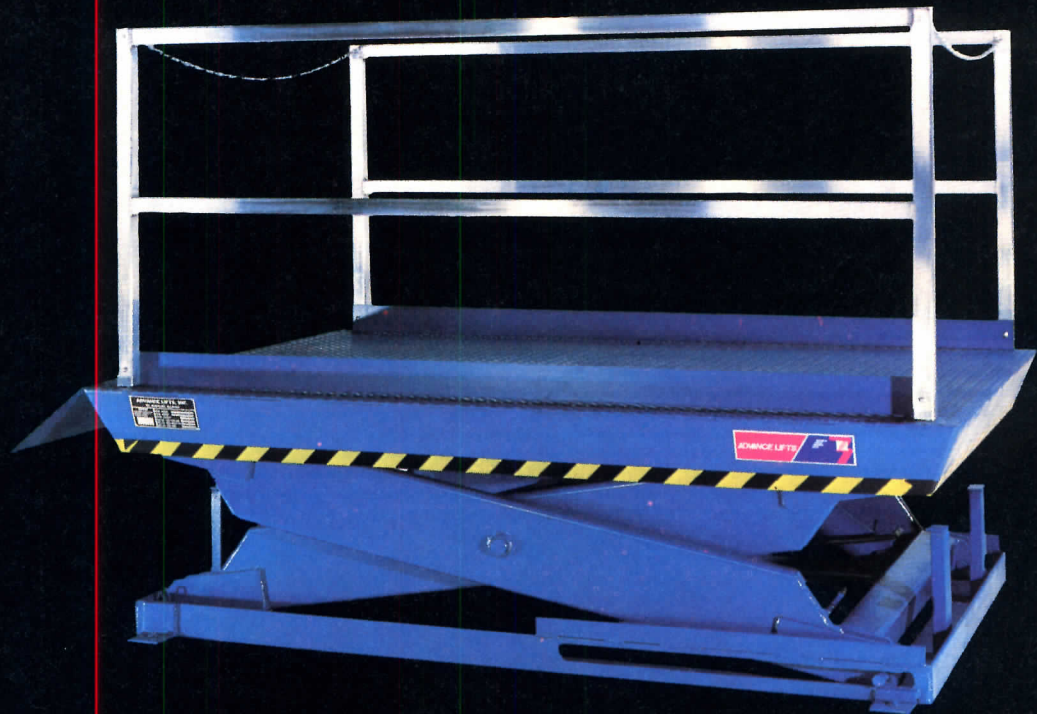
The key to the success of our project management reporting system is that we make it realistic and as simple as possible. We don't include information we don't need and we break down the paperwork into brief segments, so that a number of people can share the preparation of target figures. Beware of overzealous accountants, bookkeepers and computer programmers who, if let loose, can destroy the system by cluttering it with too much information.

Our system also gives employees in the firm a feeling of confidence and direction that offsets the time and effort they have to spend on making and checking the reports. It enables us to set realistic goals and reward those who strive to reach them. It also leaves my partners free to design and manage the work of the firm without getting involved in day-to-day financial management. Because we are frank with our employees—holding regular meetings with key personnel to show them where the firm is going—they see the value of these systems, and know that profits made on their jobs are not going to turn into someone else's losses.

When our project management system was initiated, the Eggers Group had been experiencing unwarranted losses on several projects that totaled as much as \$100,000 a year, or 1.5 per cent of earnings, simply because of sloppy management. Using the new system, we have found that both income and profits have increased substantially over the last few years, even though we have hired only two new employees. When my partner Bern Kurtz heard this he said, "Find me those two people, Frank, I want to hire more like them."

The Project Manpower Budget outlines 14 work categories for each project. The project manager allocates the number of estimated manhours and dollars that might be needed for each. This report is prepared at the beginning of each project and is updated periodically.

PROJECT MANPOWER BUDGET		Bi-Weekly Pay Periods												
Work Type #	Salary budget													
	Hrs.	Amount												
Programming	1													
Schematics	2													
Design Devel.	3													
Wrkg. Drwgs.	4													
Specifications	5													
Interior Design	6													
Color Work	7													
Const. Admin.	8													
Field Const. Admin.	9													
Owners' Changes	10													
Model	11													
Preliminary	12													
Master Planning	13													
Shop Drawings	14													



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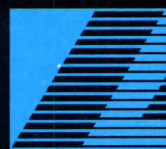
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Falling interest rates — some good news for construction

Throughout the fall and early winter, interest rates have tumbled. The decline has been most dramatic among short-term rates, sending them well below long-term rates, re-establishing the normal, upward sloping, yield curve. In turn, investors have been forced to adjust their investment strategies to include more long-term lending, which will help rejuvenate construction. Unlike past expansions, however, when falling rates and improved credit availability turned housing around quickly, this housing recovery, and its subse-

quent impact on retail building, is likely to be much more measured.

For most of the past two years, borrowers—especially small- and middle-sized businesses, state and local governments and potential homebuyers—have found it extremely difficult to obtain long-term credit, creating an enormous backlog demand for long-term financing. Whenever availability improves and borrowing costs moderate, businesses and state and local governments will pour into the bond market, pushing new

issues toward record levels. November 1981's surge in new debt issues (approaching \$8 billion in corporate bonds compared to \$0.5 billion in August) demonstrates the size of this pent-up demand for long-term credit.

It will take another quarter or two for this accumulated demand to be worked off. That demand is the reason that even in a slumping economy, long rates will not fall rapidly. Nevertheless, they will slide downward this year, with mortgage rates expected to approach 14 per cent by the summer.

Soon, pension funds and life insurance companies, attracted by even higher rates than on bonds, will supply funds to the housing market through mortgage-backed security purchases. Toward the summer, even the battered thrift industry, benefiting from the shift in the yield curve that will lower its borrowing costs, will start increasing construction and mortgage lending. By early spring, housing starts will clearly be moving upward. Within a quarter or two, rising residential building will be stimulating a second-half expansion in retail building.

All in all, most of the necessary ingredients for a classic residential-led construction recovery in 1982 are currently present. Unfortunately, there are two factors—a tough monetary policy and ever rising Federal deficits—that could do in this expansion.

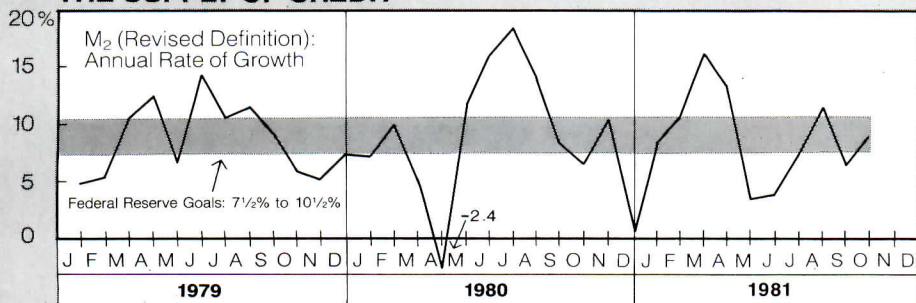
The current rundown in interest rates is mostly the result of the spreading recession, which has cut new credit demands, rather than a significant easing of monetary policy. At every opportunity, Federal Reserve Chairman Volcker has told audiences that pumping up the money supply is not the way to lower interest rates; instead, cutting government spending is the most effective way to reduce them.

If, during the second half, the rising demand for new credit from an expanding economy were to collide with a restrained monetary policy and an out-of-control Federal deficit, interest rates could rise sharply. Investors would quickly scurry into the short-term market for safety, leaving long-term credit demands unmet, stalling the construction recovery.

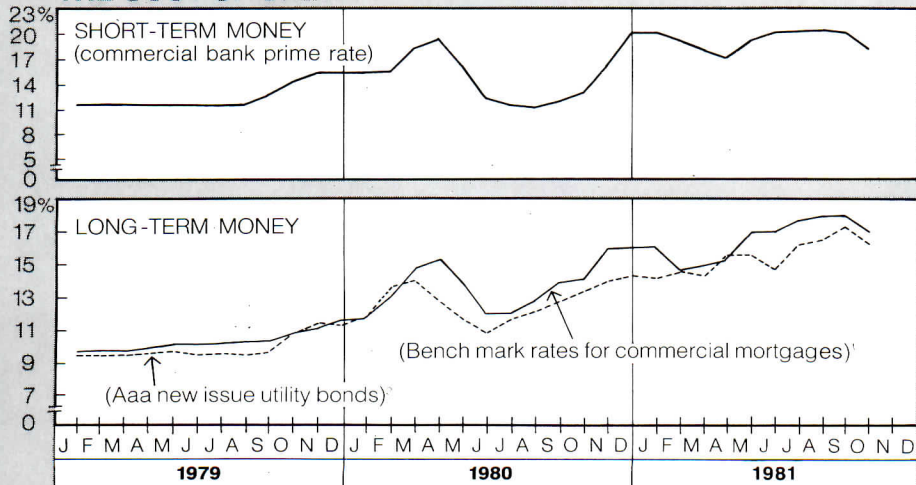
That's not the forecast—yet. But after 1981's experience, it's a possibility that must be continually monitored, especially since the President and Congress seem unwilling to tackle the truly hard budget cuts in military spending and social security.

Phillip E. Kidd
Director of Economics Research
McGraw-Hill Information Systems Company

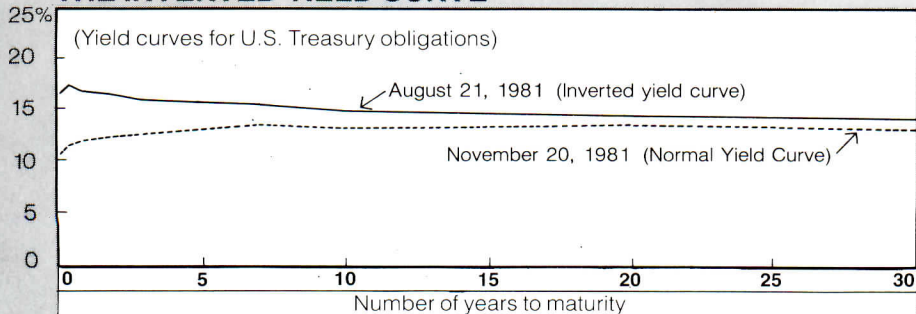
THE SUPPLY OF CREDIT



THE COST OF CREDIT

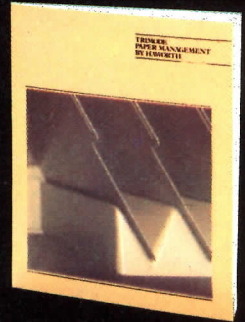


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HAWORTH



Labor costs rival materials prices as a focus of concern

A survey conducted by the McGraw-Hill Cost Information Systems Division for the period July through October 1981 reveals mixed trends in the prices of most building materials. While plywood has decreased by 1.9 per cent and reinforcing steel has increased by one per cent, other materials have varied only slightly: concrete, -.8 per cent; block, +.6 per cent; lumber, -.4 per cent; gypsum board, +.3 per cent; and asphalt shingles, +.2 per cent. Mirroring the rest of the economy, construction volume for both the public

and private sectors remains low. Housing starts reflect the large inventory of existing new houses that will have to be sold before the industry can plan any new large-scale construction. A pragmatic view of this situation suggests that new starts will occur in a phased program tied to a drop in the existing unsold backlog. Houston and Los Angeles stand out for their record pace in office construction. However, since this new construction is not scheduled to be completed until late this year, a tight market is expected

for the next three quarters. A review of key indexes in 20 U.S. cities shows an increase of 2.9 per cent in labor costs over the second quarter of 1981. Besides raising wage settlements to a 10-year high, this increase has triggered fears that labor costs will replace materials costs as the major concern of contractors in the next decade. As owners wait for interest rates to drop, planning and design projects remain on the back burner. The resultant "explosion" of demand for materials will escalate prices in mid-1982.

Districts	Number of metro areas	7/81 to 10/81 %	10/80 to 10/81 %
Eastern U.S.			
Metro NY-NJ	16	1.05	1.07
New England States	30	1.06	1.07
Northeastern and North			
Central States	118	1.02	1.08
Southeastern and South			
Central States	105	1.00	1.06
Average Eastern U.S.	269	1.03	1.07
Western U.S.			
Mississippi River and			
West Central States	123	1.02	1.06
Pacific Coast and Rocky			
Mountain States	101	1.02	1.08
Average Western U.S.	224	1.02	1.07
United States: Average	493	1.02	1.07

HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES 1941 average for each city = 100.00

Metropolitan area	1973	1974	1975	1976	1977	1978	1979				1980				1981		
							1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd
Atlanta	544.8	575.0	598.7	657.1	714.2	755.8	819.6	836.0	872.1	904.3	875.6	901.9	935.1	964.3	961.3	1023.5	1023.5
Baltimore	475.5	534.3	581.1	585.0	635.6	662.2	729.6	744.2	773.6	802.2	779.0	802.4	817.2	825.3	836.0	837.1	837.1
Birmingham	402.1	421.2	448.9	551.9	585.4	609.2	704.1	718.2	724.5	751.3	736.8	758.9	757.4	764.9	781.6	797.7	797.7
Boston	437.8	462.5	513.2	555.9	587.7	759.5	691.9	705.7	718.9	745.4	736.2	758.3	752.4	759.9	769.0	779.6	826.3
Chicago	508.6	529.6	560.1	635.2	689.9	717.3	805.4	821.5	885.9	918.7	889.4	916.1	944.5	953.9	963.4	1000.8	1020.8
Cincinnati	462.4	500.1	550.6	609.8	656.6	669.5	750.7	765.7	810.0	840.0	823.0	847.7	868.3	876.9	887.4	939.5	958.3
Cleveland	462.2	509.5	531.0	632.9	625.2	653.5	794.7	810.6	853.6	885.1	881.8	908.3	920.6	929.8	936.3	986.0	1005.7
Dallas	436.4	477.9	499.6	538.5	615.2	637.6	739.0	753.8	873.0	905.3	787.7	811.3	827.1	835.3	869.3	965.6	984.9
Denver	461.0	510.0	553.6	616.0	703.8	730.5	803.2	819.3	847.4	878.8	905.9	933.1	927.6	936.8	934.1	961.6	980.8
Detroit	501.0	538.7	597.5	617.2	664.2	756.6	840.6	857.4	865.5	897.6	860.5	886.3	911.3	920.4	945.9	1078.1	1099.6
Kansas City	405.8	444.9	509.1	547.3	603.0	631.8	657.7	670.8	711.0	737.3	735.2	757.3	771.2	789.9	791.3	818.2	834.6
Los Angeles	504.2	531.8	594.1	673.1	756.8	784.2	886.3	904.0	955.4	990.8	978.3	1007.6	1022.3	1032.5	1056.0	1116.8	1139.1
Miami	447.2	485.5	558.9	592.5	628.4	649.0	686.1	699.8	736.9	764.1	742.8	765.1	777.0	784.7	788.7	840.6	840.6
Minneapolis	456.1	488.6	538.0	564.1	629.4	651.3	793.4	809.3	824.3	854.8	827.6	852.4	848.3	856.7	871.2	934.3	952.9
New Orleans	420.5	442.1	494.7	534.8	614.7	637.0	697.7	711.6	734.7	761.9	753.8	776.4	785.5	793.3	816.9	818.1	834.5
New York	485.3	515.3	533.5	580.8	619.8	646.3	666.6	679.9	778.9	807.8	793.7	817.5	815.1	831.4	838.7	845.3	887.5
Philadelphia	485.1	518.5	567.5	579.2	658.8	680.0	778.0	793.5	814.6	844.8	830.9	855.8	849.2	857.6	869.6	901.9	919.9
Pittsburgh	424.4	465.6	509.5	526.3	589.6	614.0	692.2	706.0	736.5	763.8	746.1	768.5	773.0	788.4	795.4	864.0	881.3
St. Louis	444.2	476.7	528.9	537.1	617.1	637.4	752.0	767.0	782.8	811.8	786.7	810.3	820.5	836.9	839.4	850.0	876.1
San Francisco	632.3	672.5	753.3	820.8	963.2	990.0	1239.0	1263.8	1200.3	1244.8	1202.7	1238.8	1260.4	1285.6	1320.9	1411.7	1439.9
Seattle	424.4	450.2	515.1	570.5	629.6	669.0	700.7	714.7	761.0	789.1	763.3	786.2	807.6	823.7	829.4	879.9	897.5

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





A PROGRESSION INTO LIGHT: THE HARTFORD SEMINARY BY RICHARD MEIER & PARTNERS

If any religious symbol can be said to dominate Richard Meier & Partners' design for the Hartford Seminary in Hartford, Connecticut, it is the primordial emblem of creation: light. Whether silhouetted against a cloudless summer sky or wrapped in the haze of a New England winter, this low white building is an arrestingly luminous presence. The skill with which its light-washed surfaces were keyed to reflect the context as well as the spirit of a multifaceted institution has already been touched upon in commentary on Meier's project drawings and model (ARCHITECTURAL RECORD, April 1981). A visit to the finished building more than confirms the exquisite discipline of the project.

Transposed to full scale, the Hartford Seminary displays a harmonious ordering of calm, simple volumes, and a modulation of radiant spaces unprecedented in Meier's work. In the past, one may have wondered whether his rigorous geometry, however dazzling, verged uncomfortably close on monastic austerity or recondite abstraction. Meier's quest for purity of expression often left little room for the untidy lives of the less exacting mortals who inhabit his white pavilions. But there is no question that this uncompromising vision of architecture is very much at home in a building devoted to meditation and scholarly communion. Richard Meier's esthetic has never been expressed so subtly, or tempered with such refinement to his client's own sensibility.

*The approach is not by
a physical progression,
but by flashes
of succeeding light. . . .
The soul must seek light
by following the light.*

—St. Bernard of Clairvaux (1090-1153)

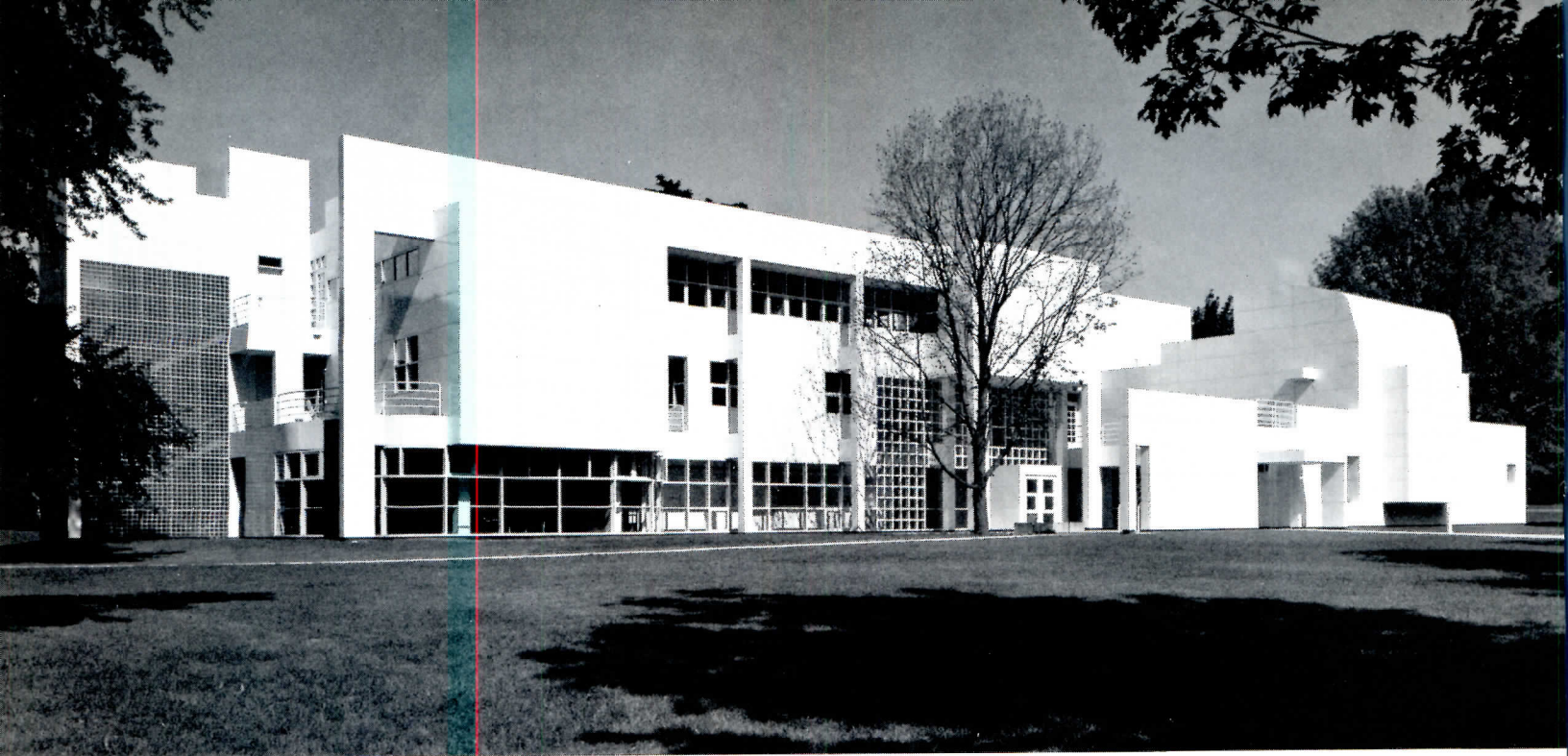
Client and architect agreed at the outset that the new building should project an image radically different from that of the Seminary's former home, a neo-Gothic complex across the street (see photo, page 69), which has since been sold to the University of Connecticut Law School. The move from rambling granite halls into a compact structure of porcelain-clad steel consummates a fundamental change in the Seminary's mission. During the past decade, the 148-year-old institution has abandoned its original role as a residential Protestant divinity school and re-established itself as an interdenominational theological center, offering advanced degree programs as well as research and consulting services for both clergy and laity.

The major functional areas specified in the Seminary's original building program were a library, bookstore, and meeting room, offices for full- and part-time staff, and three classrooms, one of which could serve as a chapel when needed. "Some people at the Seminary were still caught up in the mood of

the sixties," Meier says. "They were intent on making everything as flexible as possible." Meier attempted to devise a plan that would accord with this premise in all respects but one: he insisted that it was impossible to build a satisfactory chapel that looks like a seminar room. "There are certain kinds of spaces that lend themselves to flexibility," he explains, "and there are others that you've got to make some firm decision about, although you can use them flexibly."

The Seminary was won over by Meier's argument that a permanent chapel would endow the institution with a needed symbolic focus, even though the physical center of the building—a range of classrooms and offices—would emphasize its educational purpose. Ironically, the Seminary staff rejected a proposal for flexible open-plan offices on the third story, insisting that the scholar requires a cubicle with a door where he can think in private. As constructed; the large ground-floor meeting room (photo, page 71) most faithfully realizes the original concept of a multipurpose space. This open galleried hall is adaptable for events as varied as colloquia, art shows, and concerts.

Meier's parti is attuned to the Seminary's dual role as a "public" institution dedicated to furthering religious understanding and a "private" gathering place for study and contemplation. The distinction between public and private domains has been a central theme in nearly all of Meier's projects, particularly his

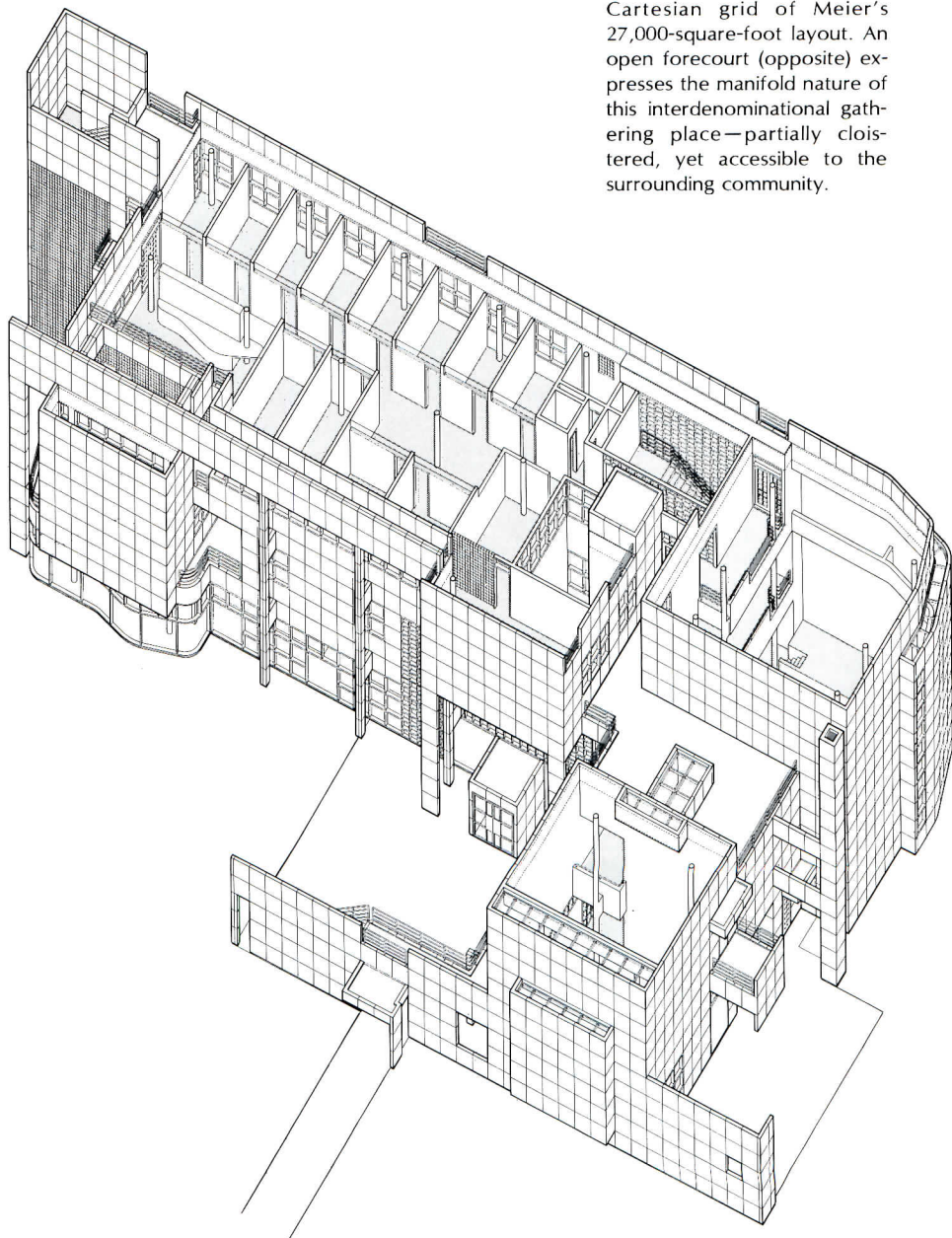


houses. In the Seminary, however, he concentrates on the complex overlay of these two aspects rather than emphasizing their polarity. Out of respect for the diversity of the Seminary's inner workings, Meier avoided any overriding hierarchical organization. Instead, key functional areas are linked by multistory spaces, axial vistas, balconies, stairways, and the directed flow of light through windows, translucent screens, and skylights. "Light seems to come from everywhere in this building, to the extent that you're not always sure of its source," says Dr. John Dillenberger, president of the Seminary. "It is like a transcendence."

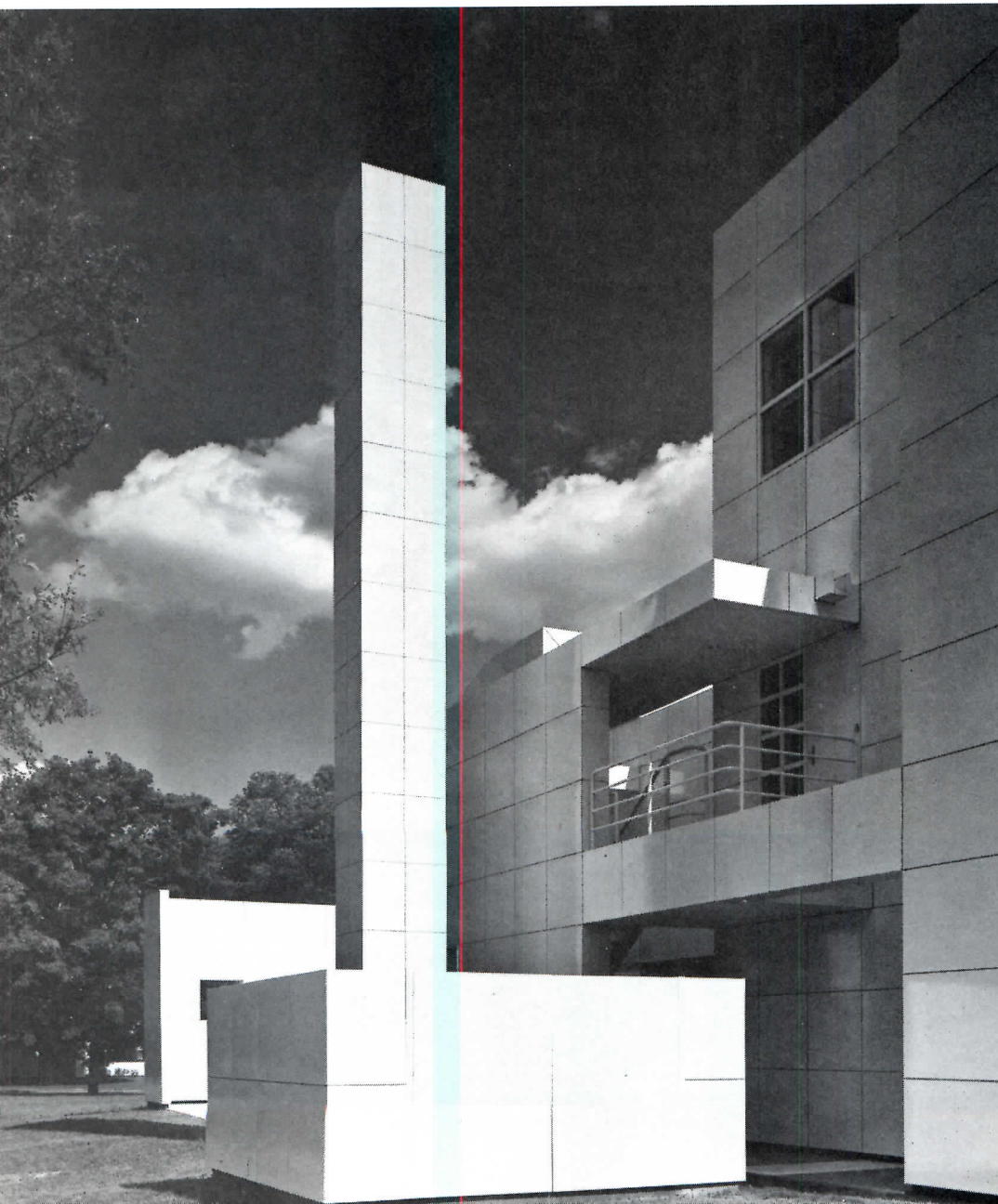
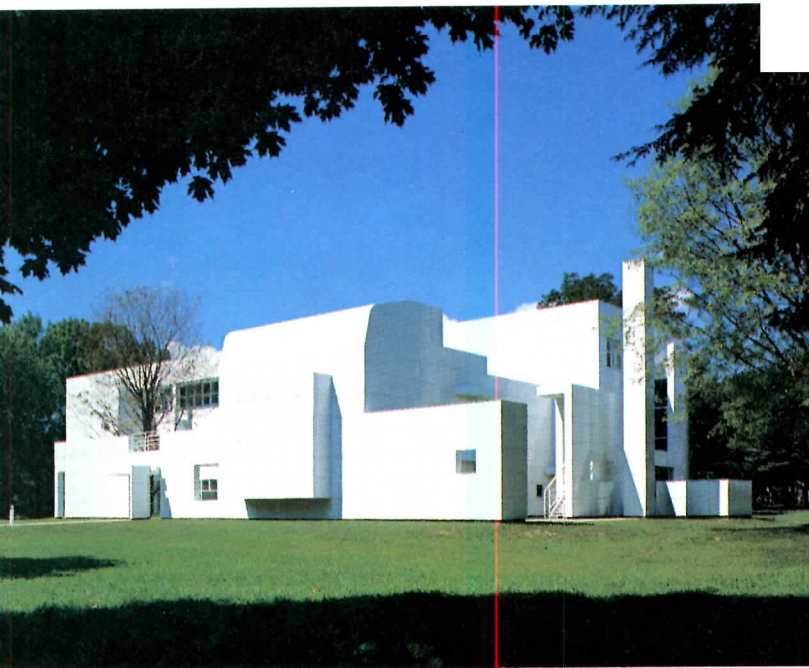
The differentiation of interior spaces is apparent in exterior massing and the varied rhythm of openings, whereas the modular pattern of wall panels and mullions expresses the three-dimensional grid that organizes the entire building. The only departures from this orthogonal schema occur in the undulating glass wall of the library, the rounded chapel clerestory, and the curved northwest corner of the meeting room—architectural acknowledgement that the identity of these "public" spaces is partially shaped by influences beyond the Seminary's internal order.

The building is pervaded by such reminders of the coexistence of transitory phenomena and the enduring ideal. For all its machine-tooled precision, the sleek new Seminary has a texture as inherently picturesque as its turreted predecessor across the way. There is a constant play of shimmering color and light reflected from sky and landscape in its white planes. Even the occasional irregularity that dimples the pristine surface of a steel panel is an oddly satisfying mark of human fabrication in a structure which appears to be barely planted on the ground. The building is at once a sensuous sculptural object and a *noli-me-tangere*, announcing the Seminary's place within the world and apart from it.

Interlocking spaces reflect the variety of activities accommodated within the steel-frame Cartesian grid of Meier's 27,000-square-foot layout. An open forecourt (opposite) expresses the manifold nature of this interdenominational gathering place—partially cloistered, yet accessible to the surrounding community.



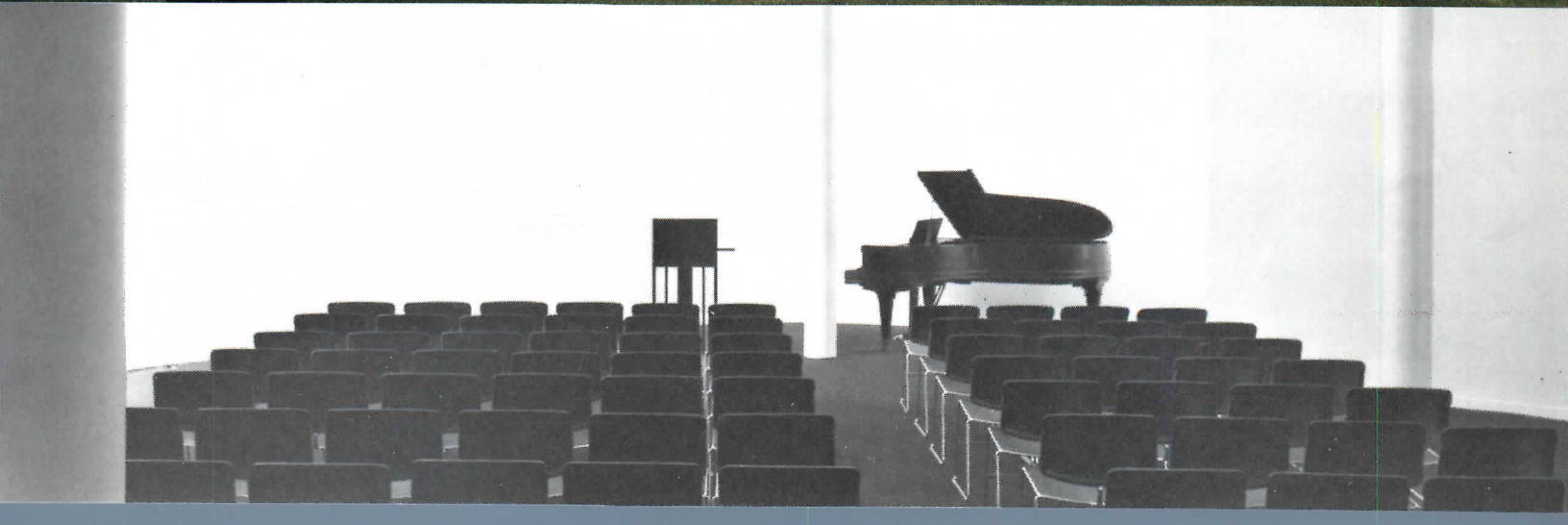
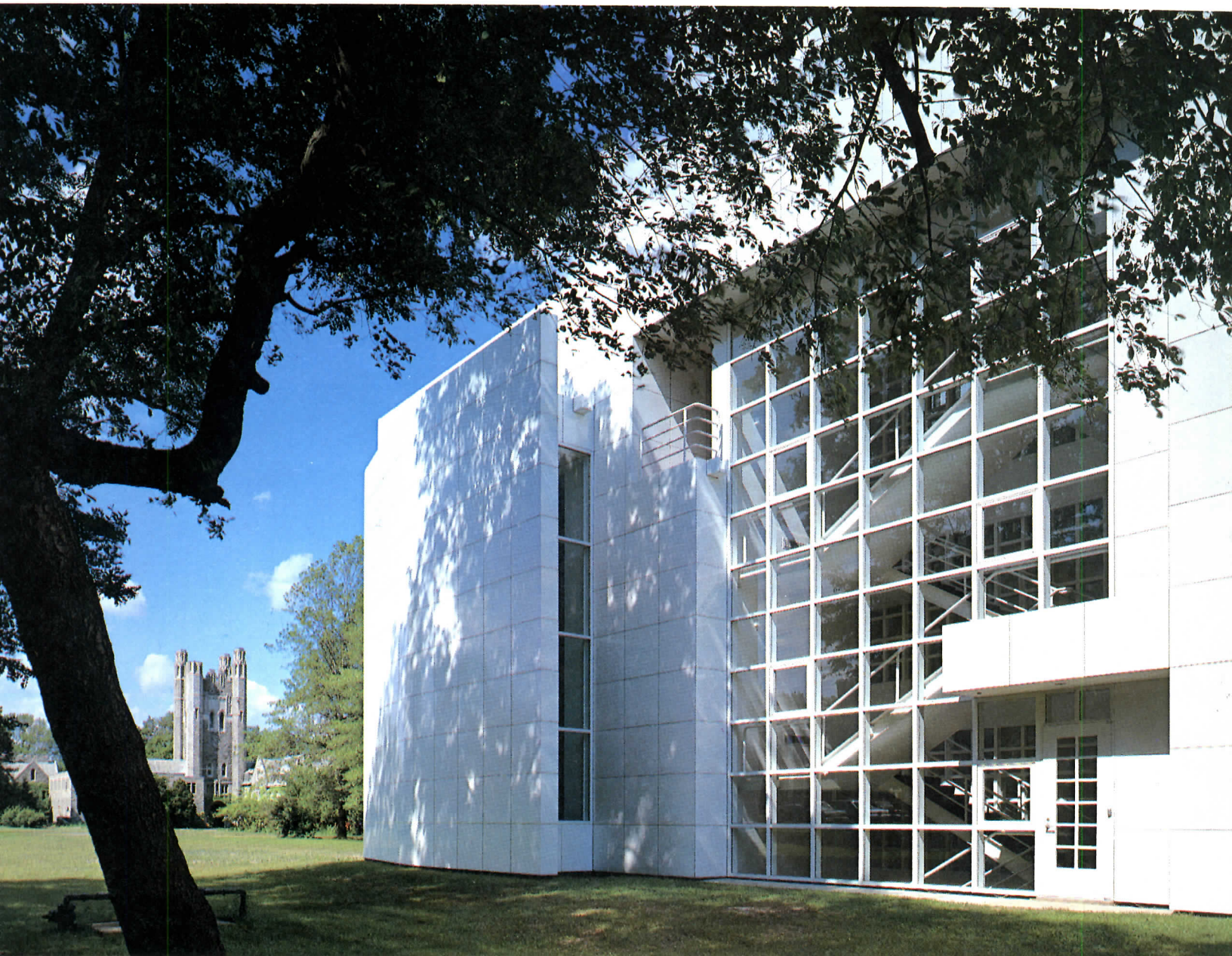


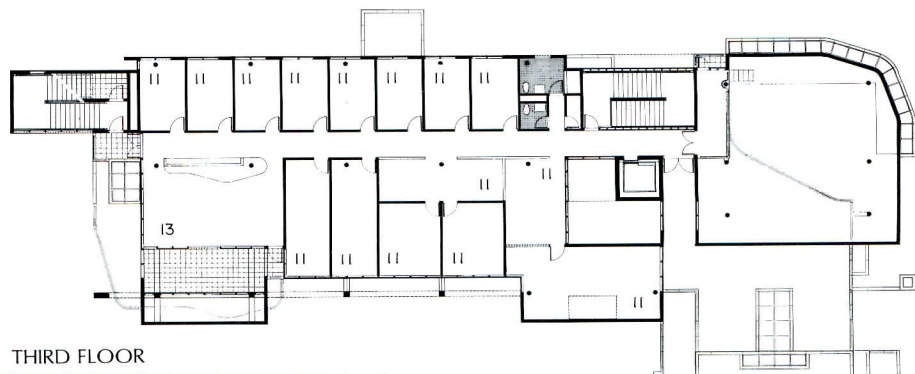


Set back from the street, but parallel to it, like the Colonial Revival and neo-Tudor houses that line the rest of this block in Hartford's West End, the Seminary is surprisingly domestic in scale. Although its unadorned volumes defy literal stylistic analysis, the L-shaped mass recalls fragments of various archetypes—the medieval cloister, the college quadrangle, the porticoed New England house—with overtones of Le Corbusier and Aalto. John Dillenberger and his wife Jane, an art historian, liken the character of the new Seminary to the spare classicism of Cistercian monasteries erected at the time of St. Bernard of Clairvaux. A vestigial cloister at the entrance—framed by the projecting chapel wing, a ceremonial gateway, and a tall oak—makes this analogy especially telling. The open courtyard is a gesture of welcome to visitors, and a transitional zone between the mundane realm outside and the intellectual and spiritual sanctuary within.

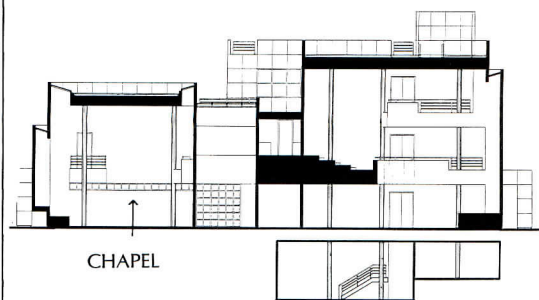
Mindful of the interdenominational scope of Seminary programs, Meier was reluctant to use explicit religious symbols. Nevertheless, he believed that the Seminary's basic Christian outlook must be recognized architecturally. At various points in the building he heightens the cruciform motif inherent in the grid by isolating cross-mullioned windows, or by recessing four-light panels within a series of glazing bars. The one overt religious icon, a silver cross on the chapel dais, is merely slotted into the oak platform, enabling it to be removed at will.

Meier was given almost complete freedom in designing the chapel. "I kept asking the Seminary for guidelines," he recalls, "and they would answer, 'We want only the simplest sort of chapel; just a little square room will do.'" Following Christian tradition, the chapel is oriented towards the east, facing a skylit recess that establishes a gentle axiality within the cubic space. Yet the form of the



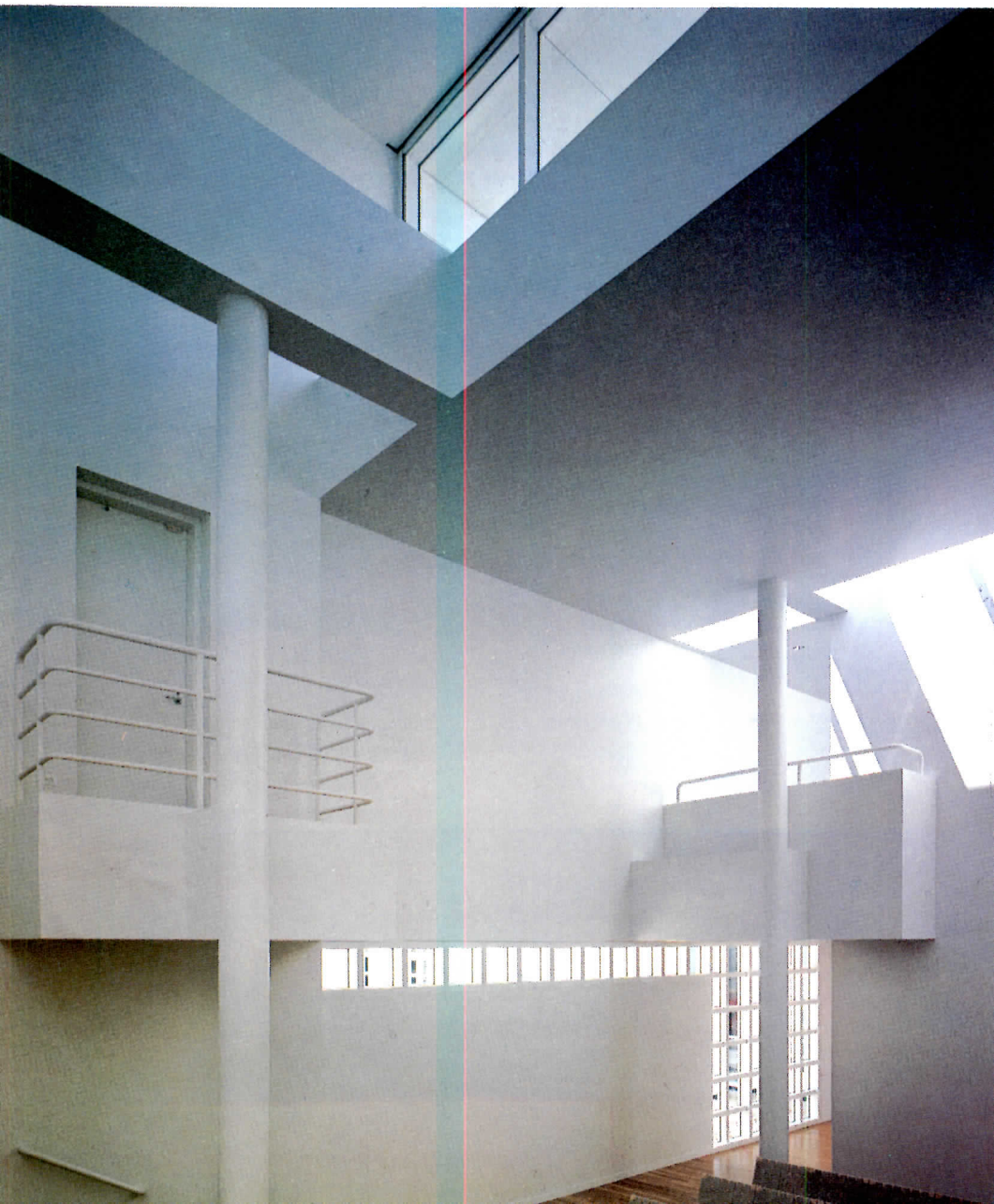


THIRD FLOOR



CHAPEL

The section shows Meier's original conception of the chapel as a flat-roofed 30-foot cube. In the final scheme (left and opposite) he modified the geometric purity of this simple volume, and subtly intensified its luminosity, by adding a raised west-facing clerestory. The pulpit and bench are architect-designed, as is an organ-case to be installed at the rear of the chapel.



room also invites celebrants to create their own focuses for worship. Balconies can be used as choir lofts or musicians' galleries, or as mounts for video equipment employed in multi-media services.

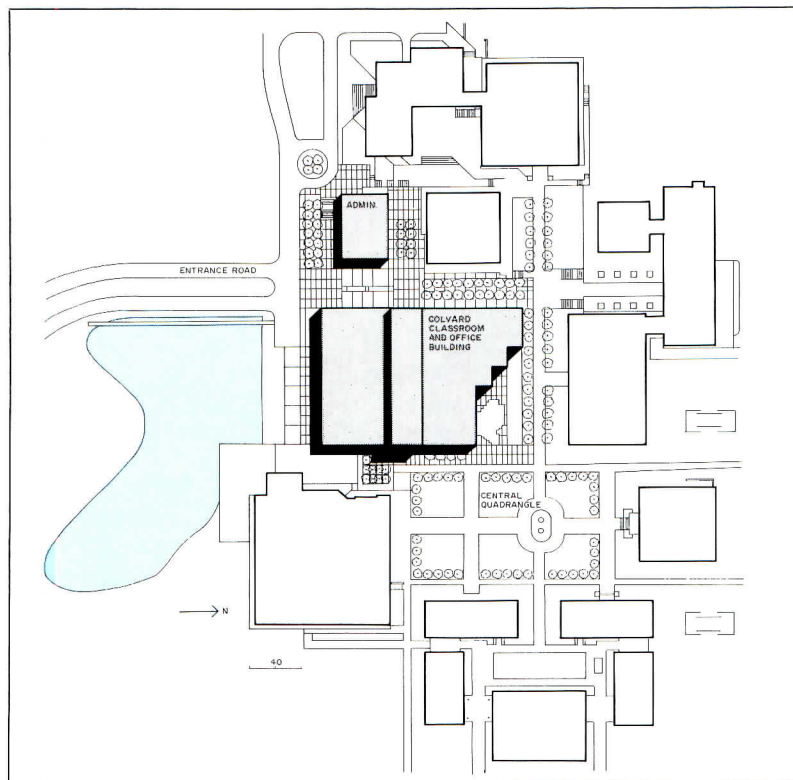
No matter how it is used, the simple interior of the chapel possesses the air of almost palpable tranquility one finds in old Quaker meeting houses. It also embodies Meier's conviction that the common element in places of worship is "a coming together in light." When the Seminary requested that some provision be made to introduce color into the chapel, Meier inserted one pane of blue stained glass into the skylight over the eastern "apse." Although blue is not a designated liturgical color, Meier deemed it thematically fitting as "a way of bringing sky into the chapel. I felt that this space and the way it receives light should have a certain changing quality, a continuing dialogue between nature and the man-made." During the morning, a faint cerulean blur washes across the upper wall, and toward midday it lengthens into a ray of increasing intensity that sweeps across the white surface. "When clouds pass overhead," says Jane Dillenberger, "it is almost as though someone were shaking a tinted veil. The light pulses, and, for a moment, it is as if some living thing inhabits the space." —Douglas Brenner

THE HARTFORD SEMINARY, Hartford, Connecticut. Architects: Richard Meier & Partners, Architects—Richard Meier, FAIA, Gerald Gurland, AIA, principals-in-charge; Bruce Nagel; Philip Babb; David Woolf; Paul Aferiat; Alan Schwabenland. Engineers: Severud-Perrone-Szegezdy-Sturm (structural); Cosentini Associates (mechanical/electrical). Landscape architects: The Office of P. DeBellis. Stained glass: Bonnie Farber. General contractor: The Charles Jewett Corporation. Cabinetmakers: The Hartford Builders' Finish Company. Exterior panel installation: Appco Porcelain Company, Inc.



RESHAPING CONTEXT: TWO UNIVERSITY PROJECTS BY WOLF ASSOCIATES

Designing for context need not always begin with a blanket acceptance of a new project's surroundings. Environments can be subtly altered to accentuate their assets. Using a design language that manipulates scale and context to the point of well proportioned abstraction, Wolf Associates has produced two very different but equally elegant solutions that do far more than provide for two universities' very different programs. The classroom and office building for the University of North Carolina at Charlotte (below, opposite and overleaf) and the School of Design Addition for the North Carolina State University in Raleigh (pages 78-81) make major contributions to two very different campus environments. By seizing on such large-scale concerns, the architects have made carefully considered but relatively modest buildings play a more important functional and aesthetic role than their size would normally produce. — Charles K. Hoyt



A classroom and office building for the University of North Carolina

With this urbane classroom/office—and a smaller administration building nearing completion nearby (see site plan)—Wolf Associates has created a forceful and prominent new gateway to the campus, has tied a casual arrangement of existing buildings into an ordered plan, has created a strong, comprehensible circulation system, has given crisp new definition to outdoor spaces, and has given the campus a new sense of place and a highly polished leading edge. The new buildings are appropriate in scale and materials to the suburban location—that is, they grow from context. Yet importantly, they strongly affect the context, changing how the campus is used and perceived.

The impact begins as visitors arrive from the highway and students arrive from dormitories by way of the winding entrance road from the south (left in site plan). The new Colvard Building (shown on these pages) and the administration building frame a strong pedestrian axis—in line with the road—which is being developed as a ceremonial entrance up a broad flight of steps. The steps' monumental effect is heightened by a ramp straight up the middle,

which serves the handicapped. The formal, pedestrian-oriented composition is an agreeable surprise in its automobile-oriented location.

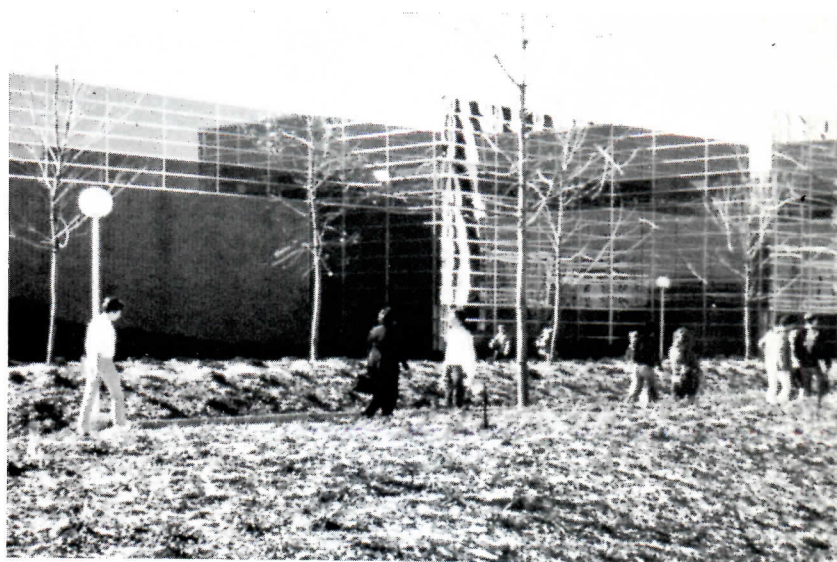
Near the top and at right angles with the steps, the architects have created a forceful pedestrian cross axis, emphasized by a dramatic arcade (large photos above and overleaf) through the Colvard Building. The axis is reinforced by alignment with spaces between existing buildings (again, see site plan). The arcade is marked as a center of student activity not only by the airy space frame above, but by its strategic location in the routes within and through the building. Stairs and galleries provide access to the interior spaces, and the arcade leads to the campus's major outdoor space, the central quadrangle. Wolf Associates has reinforced the importance of the quadrangle as a space by completing its enclosure by means of the east facade of the Colvard Building. Trees in rows around the quadrangle and along walks were meant to produce a further definition of this space and circulation routes, but the architects have been only partially successful in getting trees planted



Gordon Schenck



©Ezra Stoller/ESTO





Ezra Stoller ©ESTO

The arcade through Colvard is a lively center of student activity not only because of its strategic location on the route from campus entrance to central quadrangle, but because of the architects' dramatic shaping of the space. Part of this shaping is the arrangement of stairs and galleries in convenient locations that encourage constant traffic and a resulting sense of movement. There are three levels in the south, downhill part of the building and two in the north. As only the top floors are at the same level, the stairs must be used elsewhere to pass from one side to another. Because students come to the building from dormitories to the south, the role of the arcade as a central connector has been enhanced by overhanging parts of the building (photo left), which cover pedestrian routes to and from the arcade. A two-story lounge on the southwest corner (photo bottom right) forms a welcoming signal, and takes maximum advantage of the location near the lake. The north facade (left in plan) has a step-like series of setbacks to accommodate a "sacred" rock, much valued by the students.

by the university as they had envisioned—even though they saved the money out of savings in the construction budget.

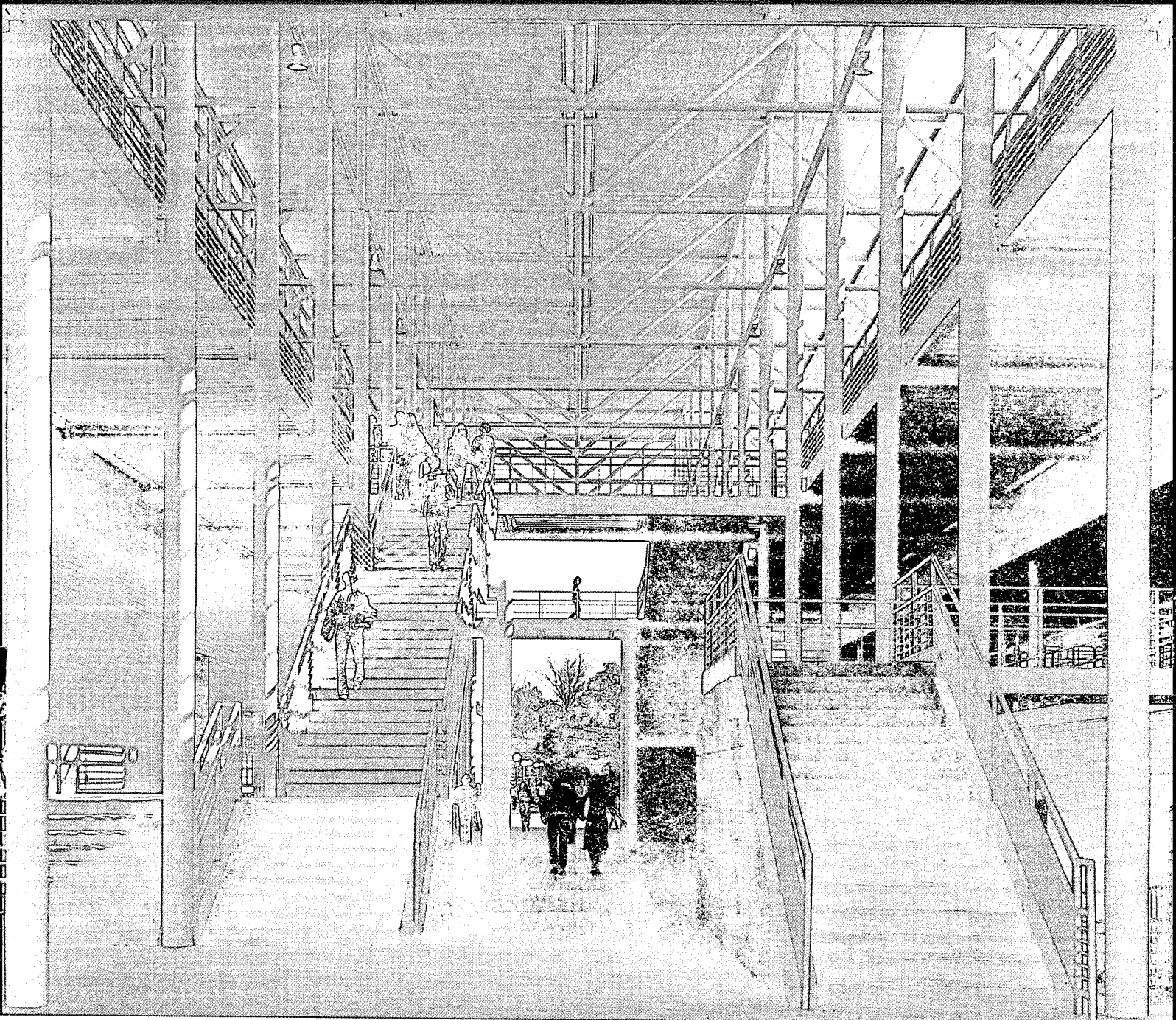
The new buildings grow from the context of older buildings by sharing similar broad planes of wall, surfaced with similar color brick. In giving the Colvard Building a South Atlantic Regional Award, the AIA jury said: "Elegant, understated detailing and layering of materials make this a restrained and comfortably fitting building."

But Wolf Associates had more on their minds than either details or matching masonry—and the result is a polished machine-like precision, enhanced by the careful attention to detailing and massing. For instance the 4- by 8-inch brick which clads the new steel structure is part of a geometric game of multiples of the square used to proportion all of the elements of the facades. The red brick walls on the perimeter of the building are abruptly changed to white as the walls turn inward on knife-edge corners at such locations as the arcade. The effect is of a building sliced away.

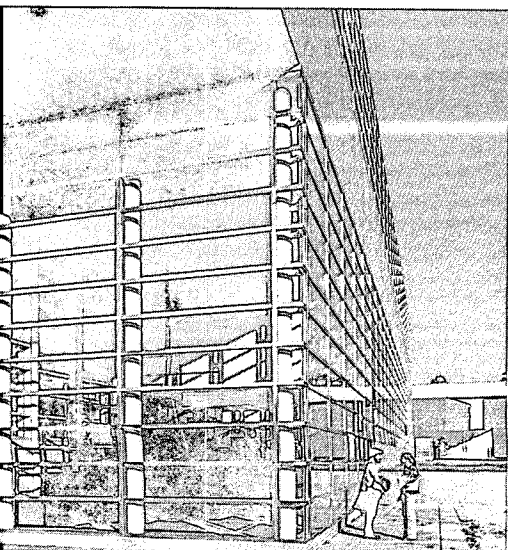
Although he appears to value such esthetic effects (which of course take a great deal of technical competence to achieve), Harry

Wolf avoids association with either the high-tech or post-modern directions. What really interests him is the illusion of scalelessness and abstraction. For instance, in the photo above, it would be difficult to determine the true size of the building if a human figure did not give it scale. The thin horizontal steel mullions all hold glass panels, but only one band holds windows, and these are not expressed as such. Wolf managed to squeeze both the arcade and extensive planting out of a \$4 million budget intended to produce only the 130,000 square feet of enclosed floor space. The building holds three colleges of the University in semi-autonomous arrangements of classrooms, meeting rooms, lounges and offices within five separate floor areas, produced by level changes as explained in the caption.

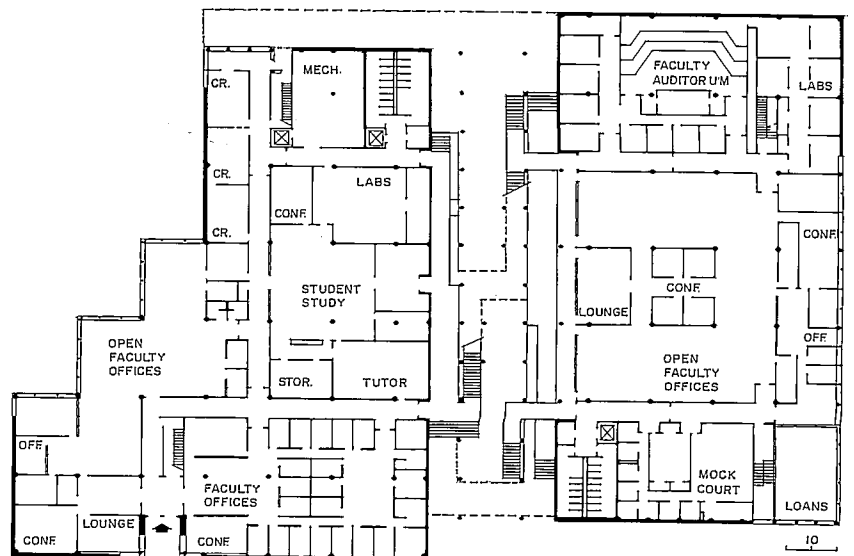
COLVARD BUILDING, University of North Carolina at Charlotte. Architects: *Wolf Associates Architects, Ltd.* Engineers: *King/Guinn Associates* (structural); *James A. Story & Associates* (mechanical); *Bullard Associates* (electrical). General contractor: *Gray R. Boone Construction Corporation.*



Gordon Schenck



Gordon Schenck





An addition to the School of Design, North Carolina State University

While Wolf Associates' project on the previous pages reshapes its context, this addition to the School of Design for the North Carolina State University in Raleigh is as much shaped *by* its context. While the architects have made strong contributions to the campus plan with this new building, the less radical approach springs from their appreciation of the handsome campus: buildings of some distinction and historic interest, well related to each other, and welded together by mature landscaping and trees.

The architects' first plan called for the renovation of a neo-classical YMCA chapel, to fulfill the program on the site where the new building now stands. But while such a plan might succeed today, preservation was not among the foremost concerns of the State administration when design began some eight years ago; and a new building was required.

The building was a long time in design. For one thing, while the L-shaped addition looks simple (as so many good designs do), the building is complex and has complex relationships to the outdoors. The most time-consuming part of the design process concerned the

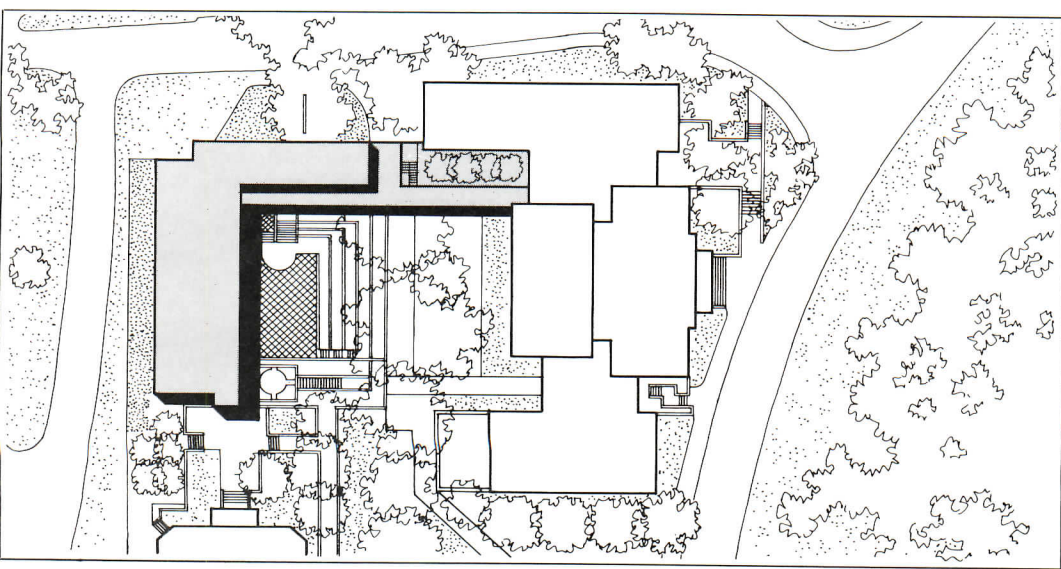
participation of the students and faculty in determining the solution. To find a desirable imagery, the students collected photographs of buildings that they found fitting models, appropriate to the campus and to the original 1920's neo-classical School of Design. Not surprisingly, many were neo-classical.

To determine the kinds of spaces that would be desirable, the students and faculty analyzed the buildings around them, and discovered that the irregular "found" spaces that occurred in older buildings were far more appealing than the regimented spaces in new ones. Accordingly, the architects have provided as great a variety of spaces as is consistent with the improvisation of activities that inevitably occur in a design school.

Finally, as the design developed, it became clear that a street closing (again, a time-consuming process) was an important design element, so that the addition could enclose a terraced court where the street once was. This pleasant court forms a new and fitting termination to an axis of pedestrian spaces to the south, and is a major campus planning contribution.



Gordon Schenk photos



The pleasant court (photos above) is a fitting new termination to a pedestrian walk from the south. It is formed by the new building, seen in the photos, which is connected by walks to the original building (center right in site plan). The walks connect to the main levels of the original school, and enhance an intentionally ambiguous impression of what is inside and out. A suspended steel mezzanine-lounge in the two-story, upper studios is visible through the windows.



Wolf Associates photos except as noted

NORTH CAROLINA STATE UNIVERSITY SCHOOL OF DESIGN ADDITION

Harry Wolf's interests in ambiguous scale and abstraction take a rewarding turn when they are applied to such contextual concerns. In reference to the original building, the new structure has carefully and sympathetically proportioned openings in the structural brick walls. The openings facing the original school echo the older proportions, even as they establish their own abstract rhythm.

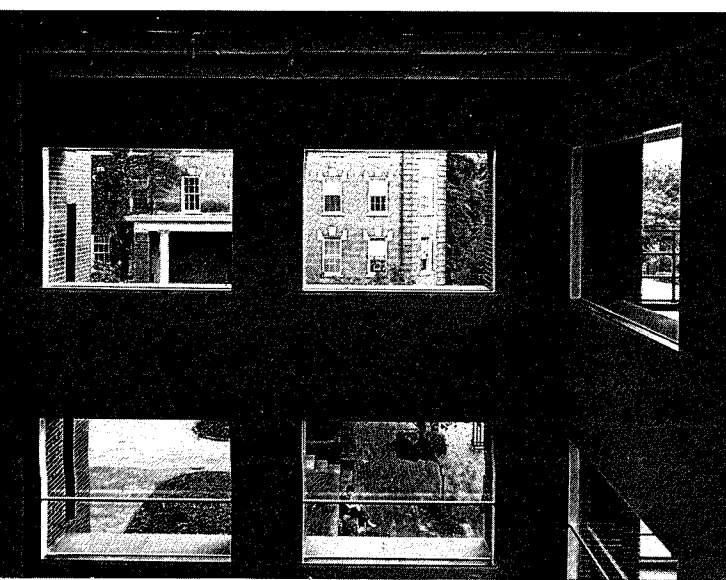
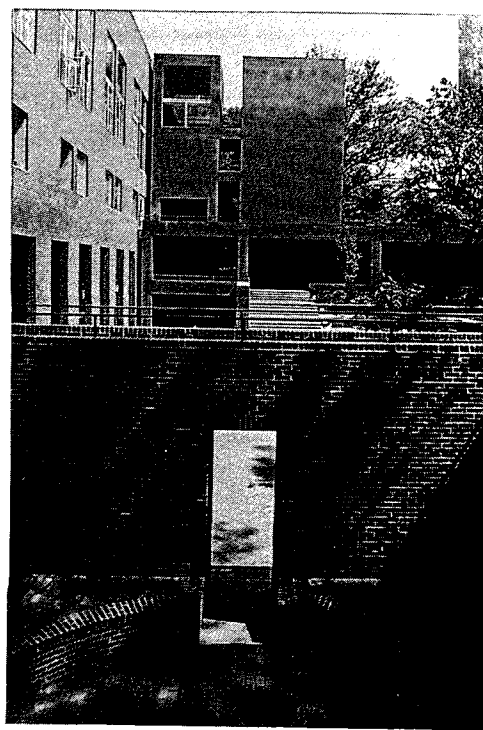
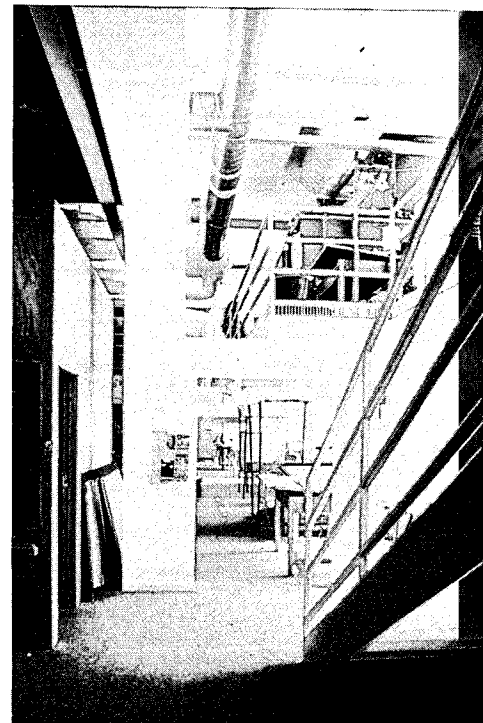
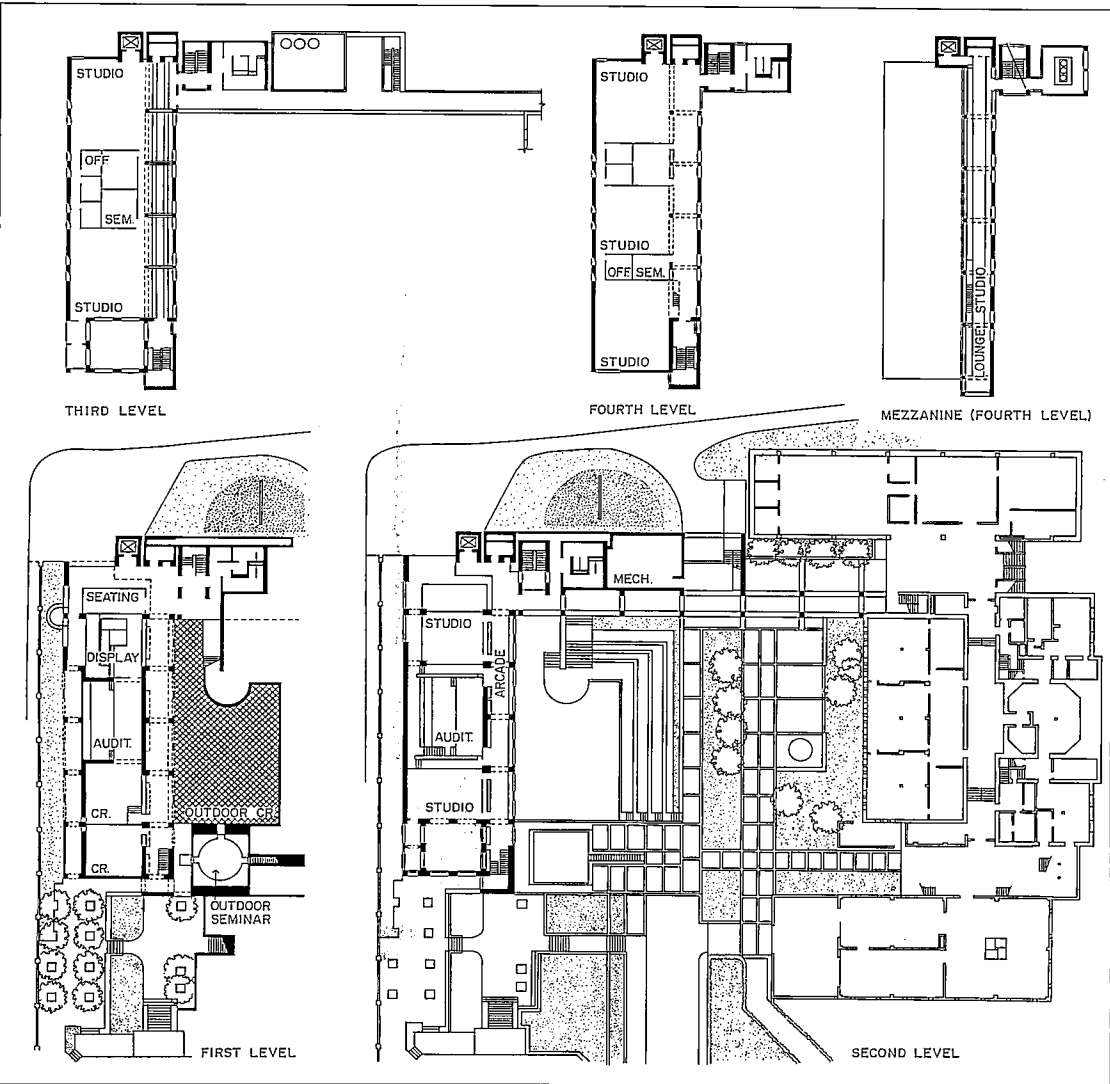
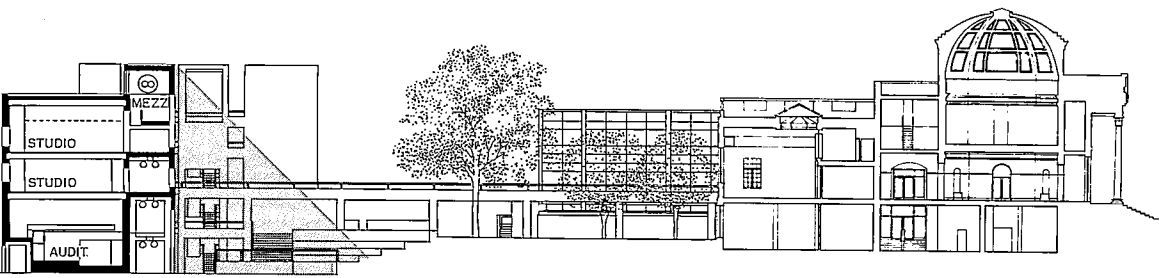
The architects have created a clerestory above the top story, and accommodated a linear mezzanine lounge in the space thus "found" (see section above). While other interior spaces may be more regular, the interaction between interior and exterior is not.

Exterior galleries on the bottom two levels are extended across the court with partially covered walkways. By creating the ambiguous impression of what is void and solid, the architects have blurred the definition of what is inside and out to the point that the courtyard becomes part of the building—and it is used just that way. Broad terraced steps (see photo above) provide seating for relaxation or student assemblies. A small walled courtyard with a circle of brick seating (photo far right) becomes an outdoor classroom.

The 37,700-foot addition houses studio and drafting space for the departments of architecture, landscape architecture, urban and product design. In addition to the studios and lounge on the upper levels, there is a 100-seat auditorium/juryroom and two lecture halls. In giving this project a South Atlantic Regional award, the AIA jury noted the "admirable integration" of the lecture halls and faculty offices with the studios—as well as the way in which the building "animates its site."

The structure within the bearing walls is precast concrete, including deep T sections for long spans and hollow core floor slabs. Many interior surfaces are covered with oak plywood, and the framing for windows and curtain walls is steel.

SCHOOL OF DESIGN ADDITION, North Carolina State University, Raleigh, North Carolina. Architect: *Wolf Associates Architects, Ltd.* Engineers: *Frank B. Hicks Associates* (structural); *James A. Story & Associates* (mechanical); *Bullard Associates* (electrical). Landscape architect: *Lewis Clarke*. General contractor: *King-Hunter Inc.*

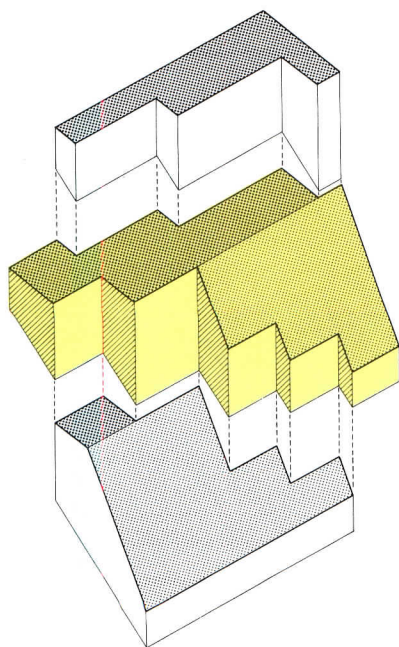


The architects have taken advantage of the sloping site in order to develop both an interesting terraced arrangement of the court's levels and to produce a new building height that matches the existing building's (see section above). The character of unexpected, "found" spaces was one of those qualities which the students found desirable during preliminary design. Accordingly, the alignment of windows and floor levels (photo left) and an enclosed outdoor classroom (photo right) are among a few of the surprises.

Twelve-Bikes House, Quechee, Vermont: Complexity simply achieved



©Nick Wheeler photos



Nestled in the Vermont hills close by winter ski areas and summer recreation spots, this year-round weekend and vacation retreat is shared, sometimes concurrently, by two families: two adults and four children per family, one bicycle per person—hence “twelve-bikes” house.

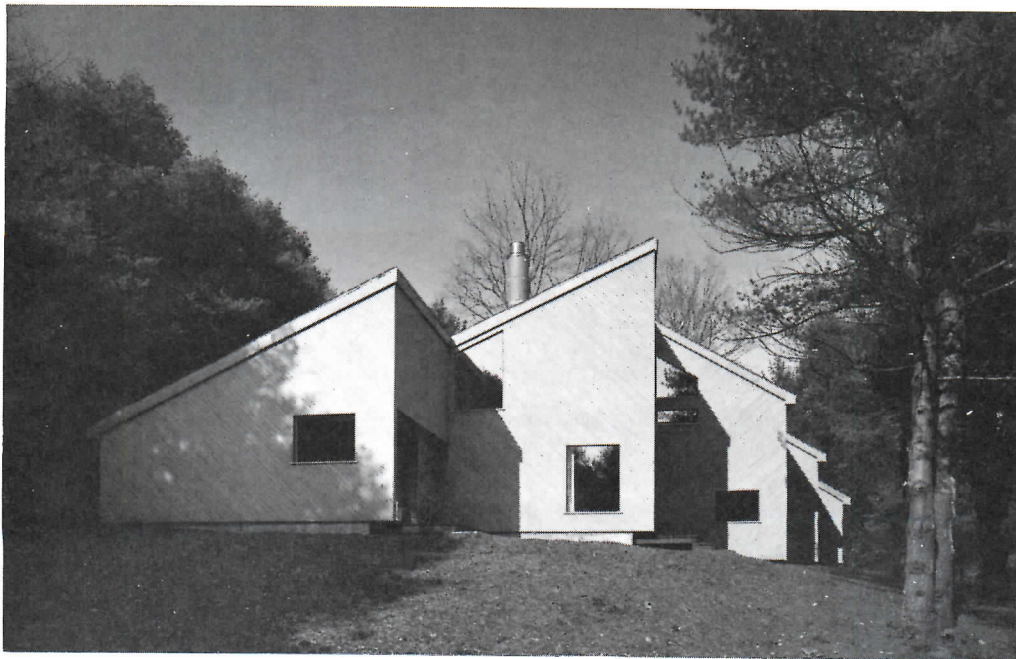
In appropriate departure from the coolly classic pavilions that have been the forte of Marcel Breuer Associates (now MBA Architects and Planners), the house is, as partner-in-charge Herbert Beckhard notes, “unregimented” in plan and massing. Its principal living space groups compatible activities in a generous two-story kitchen, dining, and sitting area calculated, Beckhard says, “to make a small house feel big.” To assure privacy, the master bedroom suite is tucked behind this central space, while telescoping forward from it are two smaller bedrooms flanking a family room that provides additional sleeping space. An oversized main entry doubles as a space for storing skis and ski boots. On the upper level a bedroom suite accessible via a private entry increases the capacity of the house for occasions when both families are present, and can be occupied by others on a rental basis.

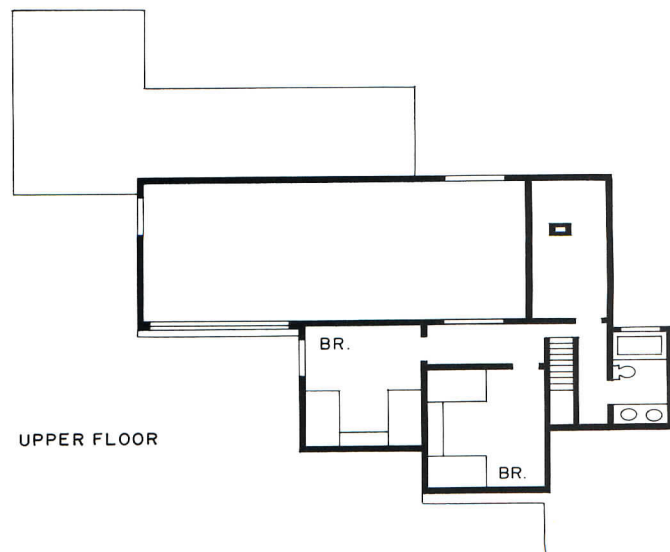
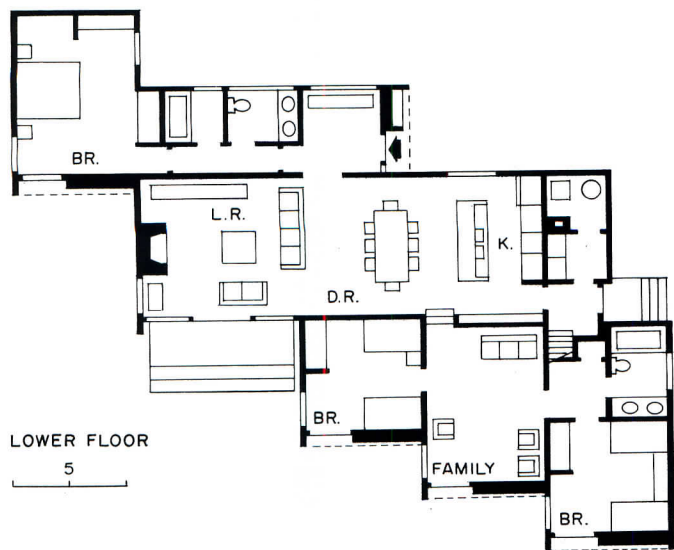
Despite the essential simplicity of the plan, its reflection in the thrusting planes of the facade lends the house a studied complexity and richness of form that is enhanced by the stepped-back line of the roof. Here too, though, complexity is achieved without fuss. Steeply sloped in deference to Vermont snowfalls, the seemingly elaborated roof is actually a simple double-pitched surface from which the house plan has been punched out as if with a cookie cutter (see diagram below left). The result is what architect Beckhard calls “an interesting edge” derived without benefit of complicated roof intersections requiring special flashing details.

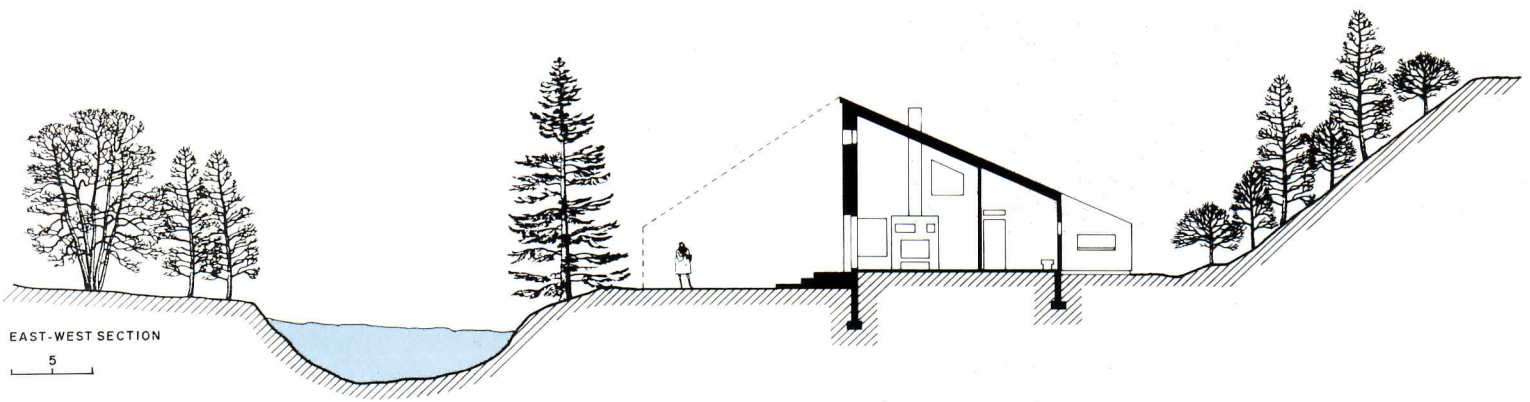
The fenestration, similarly, is at once uninhibited and straightforward. Carefully placed for energy conservation and to facilitate furniture arrangement within the rather small rooms, most windows take the form of door-height panels whose transparency contrasts tellingly with the solidity of adjacent panels of native stone. These major windows, which face east to focus on a man-made pond formed by interrupting the flow of a small stream through the property, are supplemented by “cut-out” windows that open views to a pine forest on the south.

The dynamic lines of the house are sparsely rendered in economical materials: for the roof, deep gray asphalt shingles; and for the walls, cedar boarding stained a warm gray to blend chromatically with the stone panels while affording textural contrast. Siding on the lateral walls of the house is placed diagonally to accentuate the forward thrust of the facade.

TWELVE-BIKES HOUSE, Quechee, Vermont. Architects: *MBA Architects and Planners—Herbert Beckhard, partner-in-charge. Associate architects: Taller de Architectura—Bornhorst Neuberger—Dirk Bornhorst, partner-in-charge. Associate: Hasram Zainoeddin.* Contractor: *Quechee Home Builder.*





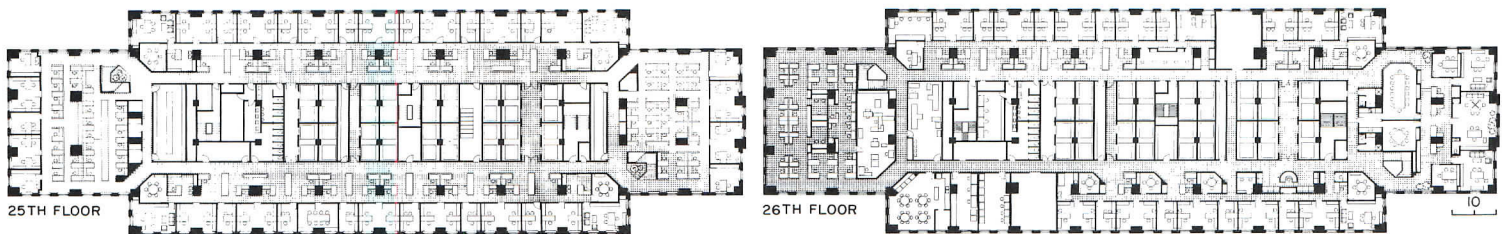


Despite its apparent complication of form, Twelve-Bikes House is basically a simple shed-roofed structure (section above) with interest added by subtraction from its implied volume. Slipped unobtrusively onto its wooded site, the house is sheltered on the west by a sharply rising hillside visible through a large window in the kitchen-dining area. All major rooms, however, look to the east where a natural declivity afforded the opportunity to embellish the site with a bass-stocked man-made pond. Within, compact sleeping areas are zoned to provide maximum privacy. The focal point of the plan is the open living-dining-kitchen area, which gains importance from its rise to the full ridge height of the roof. A fireplace in the sitting area (right) echoes the exterior use of native stone and is accented by an exposed terra cotta flue.





INTERIORS FOR A CORPORATE HEADQUARTERS JACK L. GORDON, ARCHITECT



The two floors recently occupied by Associated Metals and Minerals (the Lissauer Group) in New York's Rockefeller Center are full of fine artwork, tidy detailing and the now familiar physical symbols of an extended corporate hierarchy. But there are unexpected elements too, some developed in response to the limits imposed by the space itself built in the early '30s. These constraints included a very large central elevator core, an insistent pattern of really robust interior columns, and a 7-foot 6-inch ceiling height created in many areas when air conditioning was added long after the building had been completed. It was to these things that interior architect Jack Gordon addressed a large portion of his design attention, and from his solution to these problems the offices derive much of

their identity and distinction. The columns, for example, were simply too hefty to be stepped nimbly around or between. Gordon therefore absorbed them into the basic layout of secretarial spaces, exploiting their size by treating them as walls separating adjacent subspaces (see diagram and photos overleaf). To bring daylight into these spaces, Gordon introduced clerestories in the partition that separates secretarial areas from perimeter offices. This continuous sliver of daylight from a source above eye height has the effect of "raising" the ceiling—or at least keeping it from feeling oppressively low. The long straight corridor walls imposed on the spaces by the long central core were a given, but their numbing effect is sharply countered by the spatial liveliness of the secretarial areas

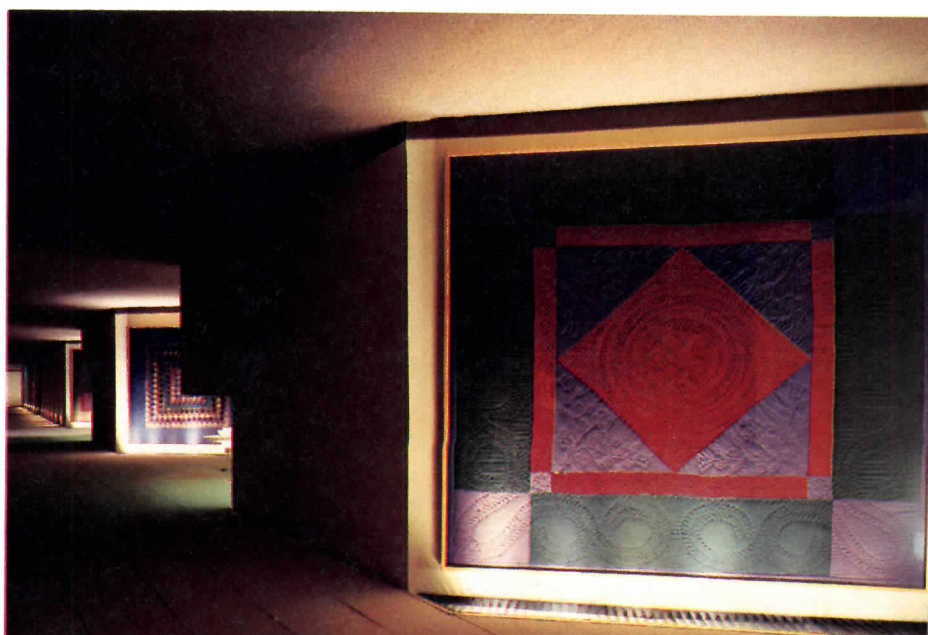
and the occasional use of chamfered walls (see plans) where artwork is displayed.

The quality of fittings, fixtures and finishes far exceeds the standard for most office interiors. Carpet, pendant lighting, soft seating and wall fabrics have all been selected with sensitive discernment for the richness and textural contrasts they supply.

CORPORATE OFFICES FOR ASSOCIATED METALS AND MINERALS (LISSAUER GROUP), New York, New York. Architect: Jack L. Gordon—project team: Jack Gordon, Rosanne Gordon, Nina Galletta, Leila Seroussi, Owen Neitzel. Consultant to the client: Ada Karmi-Melamede, R.A. Engineers: Hartmann and Concessi (mechanical/electrical); Howard Brandston (lighting). General contractor: Rockefeller Center Construction.

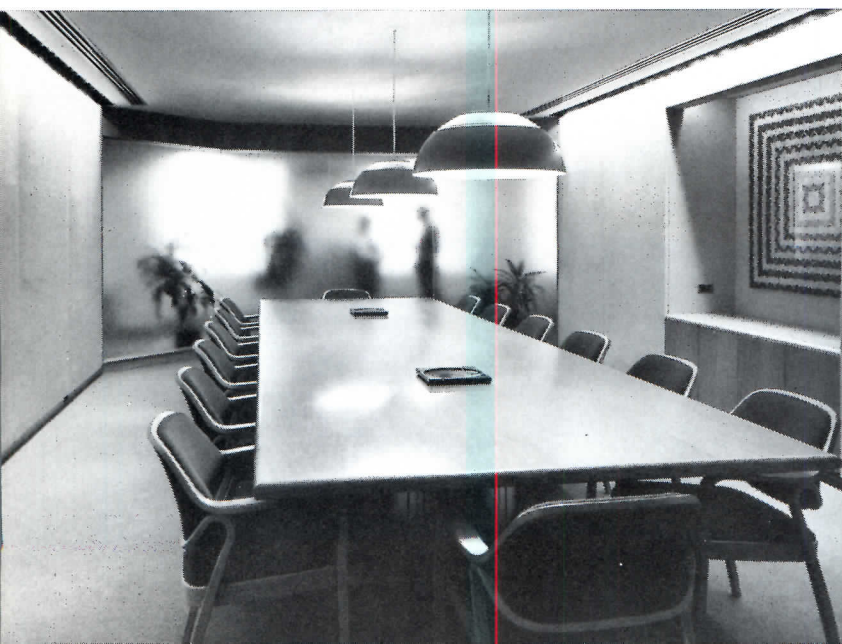


Two large and handsome murals by Michael Graves, together with a collection of brightly-colored quilts, are beautifully displayed in corridor spaces (photos below) or in executive offices (photo above). In both settings, their impact is spectacular.



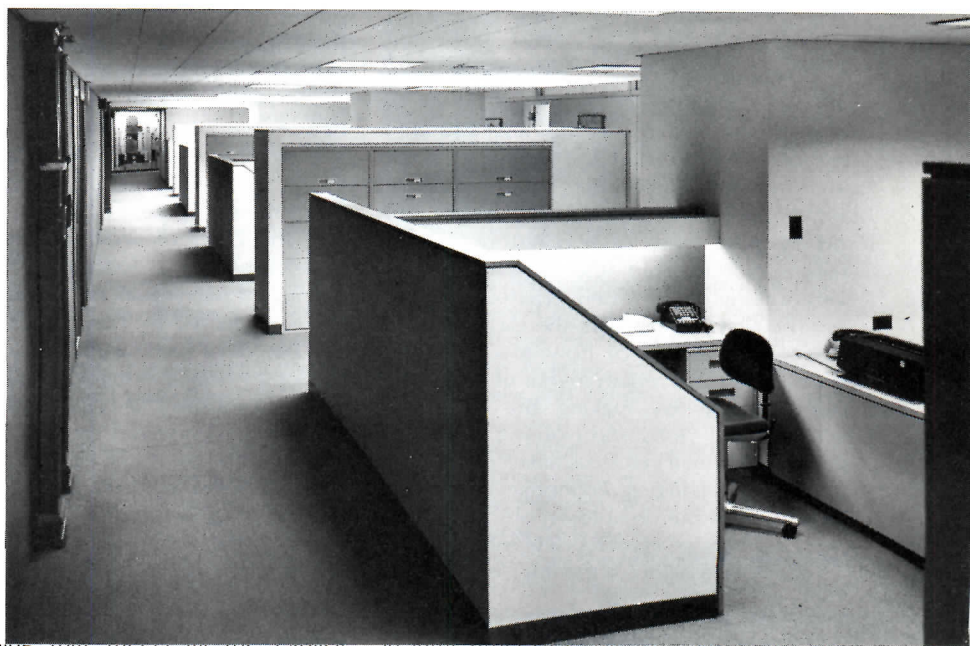
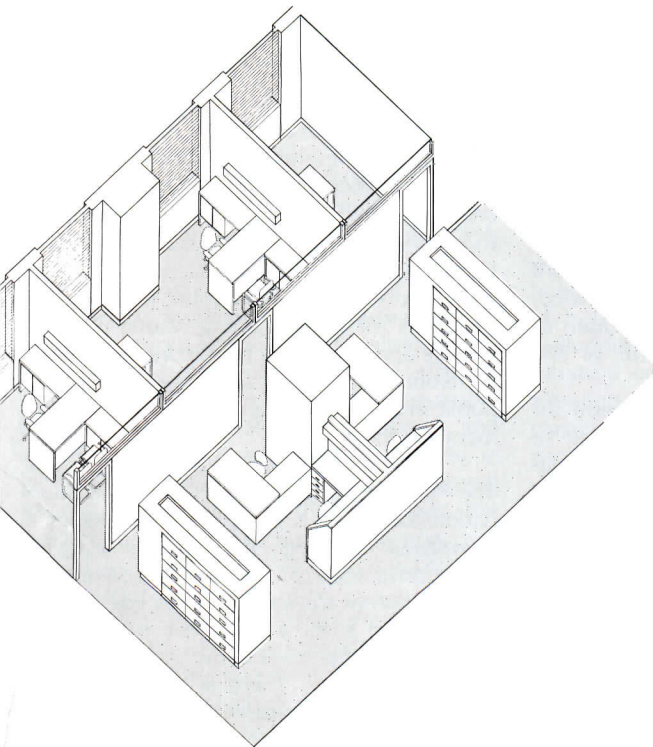


The consistent design attention so evident in the office areas is clearly apparent in the one-of-a-kind spaces: a board room with translucent end wall (photo below left) and a small cafeteria with kitchen pantry (photo below right).





One especially nice touch: orientation is maintained in corridors by painting file cabinets yellow (like the morning sun) if the viewer is facing east, and orange (like the setting sun) if the viewer is turned to the west. It's simple and works beautifully.



street capacity created by the removal of the trolley cars, plus other relatively small adjustments in such elements as traffic signals and curb radii, to improve the traffic flow downtown. This study also permits the City to set limits on parking spaces in new development based on an understanding of street capacities, to adjust the mix of short-term and

simple building that meets all the explicit zoning criteria does not give the planning authorities much scope to make suggestions. Even a complex building with a number of special requirements is hard to review if it comes to the planning department after most of the major design decisions have been set. The experience in Pittsburgh has been that

in some other cases the City has not achieved all that it wanted. In several instances the significant initiatives have come from outside the City government; at other times nothing would have happened if the City had not taken the lead. To see how things really work, we need to look at all four of the development groups in detail.

DESIGNING DOWNTOWN

by Jonathan Bennett

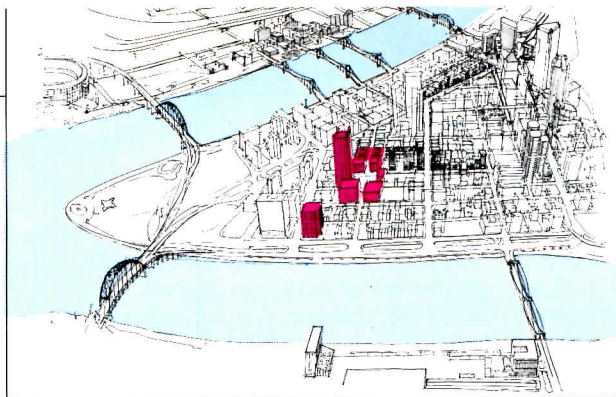
DESIGNING DOWNTOWN PITTSBURGH

PPG and the Market-Stanwix Urban Renewal Area

One of the most important initiatives in the recent history of downtown Pittsburgh was the decision by PPG Industries to build a new headquarters building. Having outgrown its space in Gateway Center, PPG had looked over the potential accommodation in several of the proposed downtown developments and decided that it wanted complete control of its own environment. PPG identified a site just to the east of Gateway Center, and then asked the City to use its urban renewal powers to assemble the land. The City said it would help on three conditions: PPG must agree to redevelop an actual district of the City and not just a plot big enough for its own building; there would be no financial assistance to PPG from the City; and there must be a public announcement of plans for the renewal district so that property owners would know what was going on.

Existing conditions in the part of downtown Pittsburgh that PPG had selected justified the designation of the area for urban renewal, but the City wished to make sure that everyone understood that a new type of urban renewal was being planned, and it was not announcing a program of total clearance. The City drew a line around a 26-acre area which included a 10-acre historic district, Market Square. The announcement of the plans for the renewal area included proposals for loan assistance to preserve buildings around Market Square that were part of the renewal plan.

Major tenants on the site of the PPG project have been relocated in a new, small office building, but negotiations with the shops in the area did not go so smoothly. At one point store owners brought a lawsuit and mounted a strong public campaign to get their side of the story heard. One of the most effective devices was the sign in a store window which said "Blight Means Somebody Else Wants Your Building," blight being one of the technical criteria for urban renewal designation. In the end, all of these businesses were relocated to their satisfaction. Several stores and restaurants were fitted into the ground floor of a nearby parking garage. A bar went into a historic building fronting on Market Square that PPG bought and rehabilitated, and several stores went into new store buildings especially constructed for the purpose. PPG bought a vacant site in the historic district and these store buildings filled in an opening on the Market Square frontage and—at the other end of the site—a gap in equally historic *Fourth Avenue* between the handsome *Benedum Trees* office building and a fine old structure aptly named the Land-



At right a model photograph of the tower of the PPG World Industries Building by Philip Johnson and John Burgee, the key element of the Market-Stanwix urban renewal area.

mark Building. Partly through the intervention of the Historic Review Commission and its staff director, Mark Bunnell, these new buildings picked up significant design features of the neighboring old buildings, such as facade planes and cornice lines, so that businesses were relocated and the historic district improved at the same time.

The design of the PPG complex

The placement of the PPG office tower pointed up a potential conflict between architecture and urban design. PPG's rental consultants had come up with an optimal floor plan (how they were able to do this before the total office floor area had been determined is not clear). The consultants asserted that the resulting tower should be placed in a way which would have meant no sunlight in Market Square during the noon hours when the Square is most used. The City addressed this issue in its official criteria for site plan review. These criteria covered several dozen land-use, transportation and building design issues. Some were dealt with explicitly, like the maximum number of cars for the garage and the placement of garage entrance and exit ramps, these decisions coming out of the Transportation Systems Management Study. A height limit of 60 feet was placed on the portion of the PPG site that fronted directly on Market Square. But there were also a great many criteria that were stated as performance specifications, for example:

1. Any office tower(s) should be designed in such a way as to block as little sunlight as possible from public open spaces such as Market Square and the plaza of the Gateway Center.

2. The design relationships between new development on the Market-Stanwix site and nearby buildings should be managed so as to minimize abrupt changes in scale.

3. The elements of the Market-Stanwix development that front on Market Square should complete the enclosure of the Square and be comparable in height, scale and character to neighboring structures.

4. The design of the Market-Stanwix project should provide a transition, through appropriate public spaces, between the plaza level of Gateway Center and Market Square; and it should, in general, provide a transition between Gateway Center's plaza level environment and the building-street relationships prevailing elsewhere in the Golden Triangle.

Criteria were also established for sheltered waiting places for buses, encouragement of retailing, truck docks, bridges over streets, and many other factors.

These criteria were drawn up before the buildings were designed, in fact before the architect was selected. There was no attempt to try to design the buildings, only to state the public interest in urban design issues as clearly as possible.

The City's design and planning criteria did not turn out to be as necessary in the case of the PPG development as they did in some other projects downtown because the City was consulted during the architect selection process and the architects selected were Johnson/Burgee. Philip Johnson has the authority, and the temperament, to put the rental consultant's optimal floor plan straight into the wastebasket, the same place that he says he put the City's urban design and planning criteria. Philip Johnson takes the position that there is no such thing as urban design, as distinct from architecture; and that any responsible architect takes the public interest into account in preparing the design for a building. Certainly the PPG buildings ended up fulfilling the City's criteria in almost every respect, and if Johnson/Burgee and PPG were able to do this without reading the document, that is a perfectly acceptable procedure. In fact, the buildings go well beyond the City's criteria in several important ways. Johnson/Burgee responded to the City's requirement that a whole new district had to be created if urban renewal powers were to be used, plus the 20 per cent open space requirement in the zoning ordinance, by proposing PPG Place, a public square completely surrounded by new buildings.

PPG Industries has behaved in an extraordinarily public-spirited way throughout the whole project, always seeking the best answer, from the details of the relocation process right through to the rearrangement of the stairs leading to the arcade in the main tower, so these spaces can be used as bus shelters in rainy weather. If there was indeed a conflict between the best office layout for PPG and sunshine at noon in Market Square, it has been resolved in favor of the Square.

The redesign of Market Square

For a long period of its history what is today the Square was covered with buildings. The most recent market building, which was torn down in 1961, had covered the entire land area of the Square and bridged over the two streets that intersect at its center. As a result, the buildings around the periphery were never designed as if they faced an urban open space. An initial improvement of the Square was completed in 1977 under the sponsor-



PPG and the Market-Stanwix Urban Renewal Area

ship of the City and the Western Pennsylvania Conservancy. The streets and sidewalks were repaved in brick, with Belgian block at the intersections, and there is a simple landscaping pattern of grass plots and peripheral trees. The Square works perfectly well now, and there would be no urgency about completing further improvements if the PPG complex were not being constructed. PPG will change the Square functionally by adding a working population of 6,000 people to its southwestern margin; the building will also change the urban design of the Square in a radical way. Three quadrants of the Square will be occupied by the present mix of masonry-fronted buildings of different widths and heights; and the fourth, which had been a vacant lot, will be filled by PPG's walls of faceted mirror glass, with their spikey, "Gothic" profiles. The PPG tower, while it is sensitively placed in relation to the Square, will be a highly visible object.

Putting a false facade on the Market Square frontage of the PPG Building could improve the architectural continuity of the Square, but it is not a very appealing idea. It worked well at Lafayette Square in Washington, D.C.; but there both the new town houses and the larger office buildings were faced with brick. The obvious urban design solution would be a greenhouse roof over the peripheral sidewalks, giving the Square a uniform frontage at ground level and mediating between the masonry and mirror glass facades. The problem is that this type of design response is unacceptable to the historic preservationists, because it would alter the character of the older buildings facing the Square. Another complication in the design of Market Square is created by the two intersecting streets. Market Street is being closed to help create PPG Plaza, but Forbes Avenue, the other street that crosses the Square, has been identified by the Traffic Systems Management Study as a critical element in the bus route pattern.

The problem, then: how to give the Square a new unity without altering the facades of the buildings or closing Forbes Avenue, and how to improve the way the Square will function given the more intensive use that can be expected when the PPG complex is complete. This was the assignment that the Urban Redevelopment Authority and the City gave architects Hardy, Holzman Pfeiffer, working with Urban Design Associates and the market research firm, Halcyon Ltd. Other ground rules included maintaining as much as possible of the recent renovation to the Square, and, when design studies

began and meetings were held with the Market Square merchants, it became clear that the streets around the periphery of the Square would have to remain open to traffic and parking.

Another factor in the urban design of Market Square is Heinz Hall plaza, two short blocks north along Market Street. Heinz Hall, completed in 1971, was an important initiative by the Heinz Foundation, which brought the Pittsburgh Symphony, Opera and Ballet downtown to the old Loew's Penn, a former movie palace beautifully renovated by the Pittsburgh firm of Stotz, Hess, MacLachlan and Fosner. These performing arts groups had been using the auditorium of the Syria Mosque in Oakland, Pittsburgh's university district. In 1979 the Heinz Foundation purchased, vacated and tore down a commercial building located next door to Heinz Hall in order to build an addition to the performing arts complex being created in the block and a plaza that would also be an intermission space in good weather. Because this addition was done entirely by the private sector with no public subsidy, the Heinz Foundation had some advantages in making urban design decisions. Although there were some discussions about the relocation of business to be displaced, there were few with preservationists or arguments about priorities. Because of the way the Pittsburgh street grid is laid out, the new Heinz Hall plaza is actually on axis with Market Street and the north-south center line of Market Square. The architects of the plaza, only just complete, are MacLachlan and Fosner.

The key to the new design for Market Square is the creation of two arches spanning Forbes Avenue as it enters and leaves the Square. The arches are faintly reminiscent of the old market building that used to span the Avenue. Because Forbes Avenue cuts diagonally across the Square, the two arches are not aligned. The effect is to make the arches strong definers of space. The other significant new element in the Market Square proposal is a colonnade that runs across the Square along Market Street, providing the visual link that makes the Square the central element in the chain of public open spaces that runs from Heinz Hall to PPG Plaza. Each quadrant of the Square is then given a somewhat different character, to relate it to the adjacent frontages, permitting more intensive uses than go on at present, and permitting a diversity of activities within the new unifying elements.

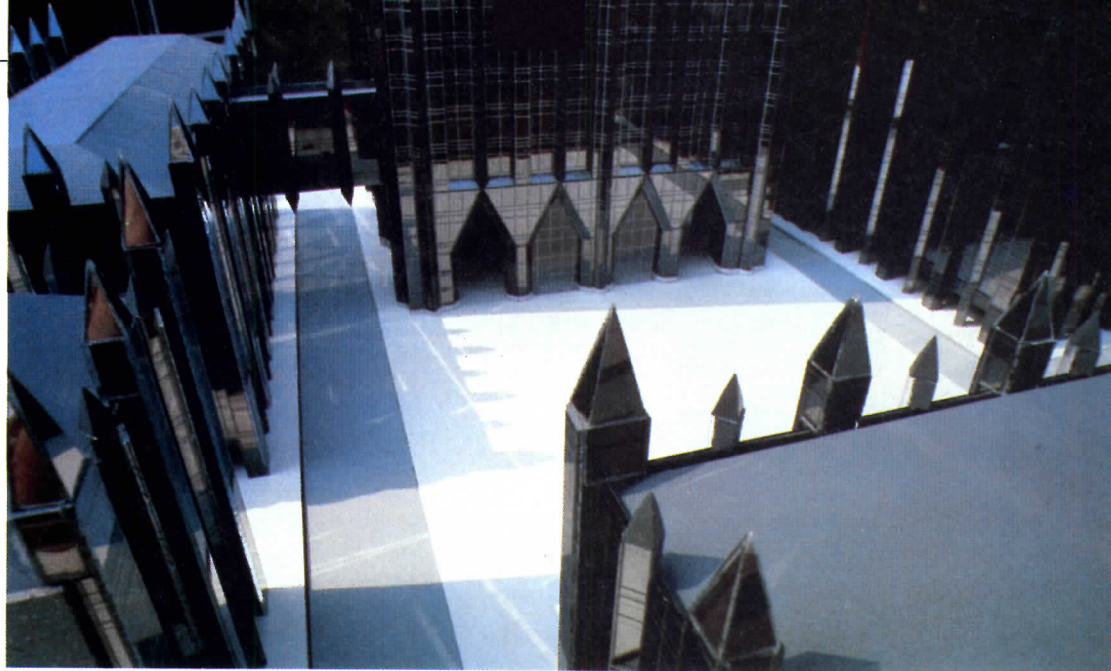
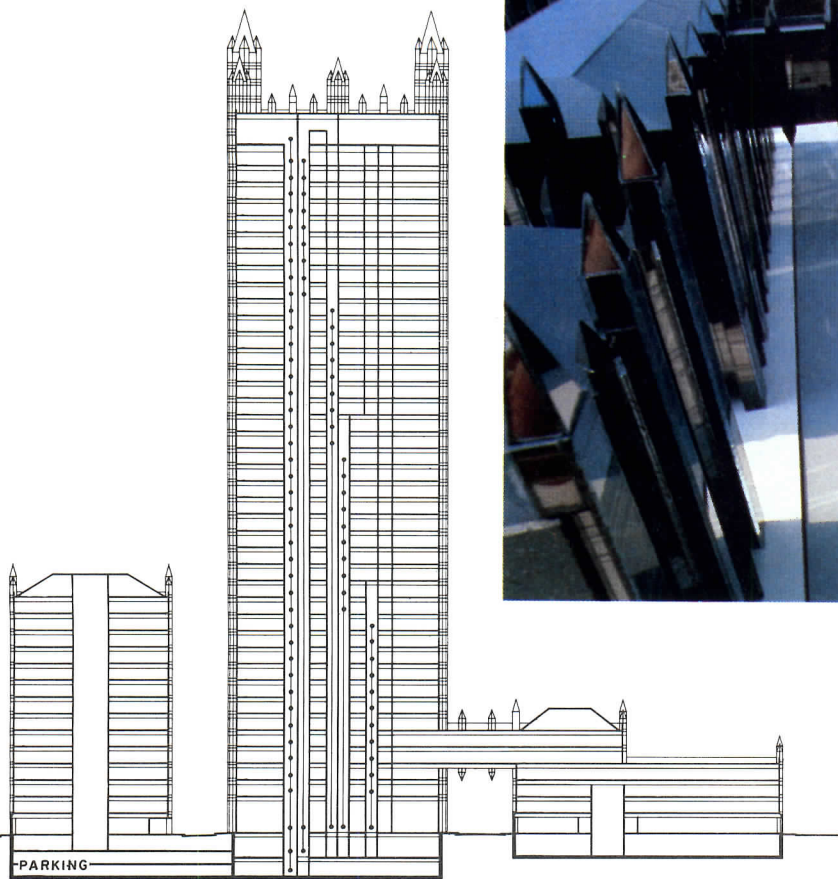
The story of Riverfront Plaza

As the site had been included in the Market-

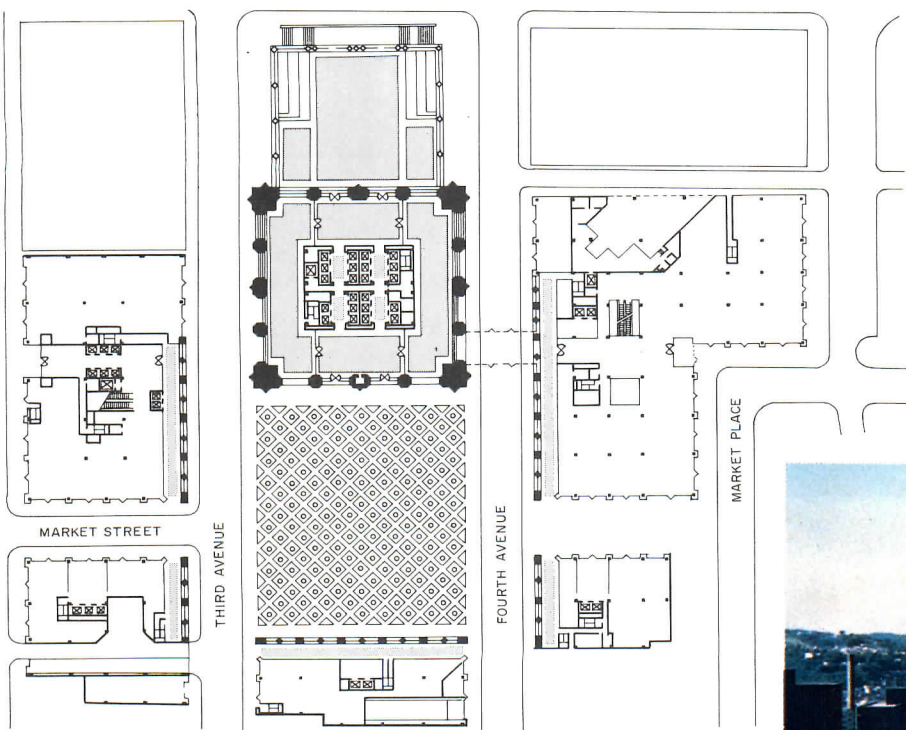
Stanwix urban renewal district, the Oliver Tyrone Development Company approached the City with a proposal that the Urban Redevelopment Authority use its powers to complete the site assemblage for a fourth tower in the Oliver Plaza complex. The Redevelopment Authority agreed to consider the possibility of a fourth tower and suggested that Oliver Tyrone prepare urban design studies that would show how the new building would relate to Market Square and the PPG complex, and how shopping could be provided that would preserve retail continuity and connect the new structure with the three previous Oliver Plaza office buildings. In addition, it was made clear that relocation of existing stores and the preservation of current shopping patterns would be important factors in the decision.

Oliver Tyrone retained architect Cesar Pelli to prepare urban design studies which showed a large tower bridging Market Street and a new retail complex that would transform Oliver Plaza from a group of office buildings in plazas into a multi-use center. The size and configuration of the building had been designed to appeal to the Dravo Corporation, which was also considering two other proposed buildings as the location for their new headquarters. However, it soon became clear, with the PPG experience as a guide, that the problems of relocating existing stores would delay the proposal past the point where it could compete for Dravo as a tenant.

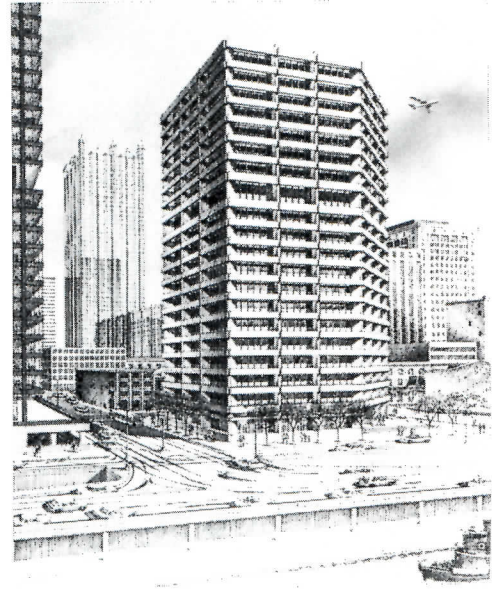
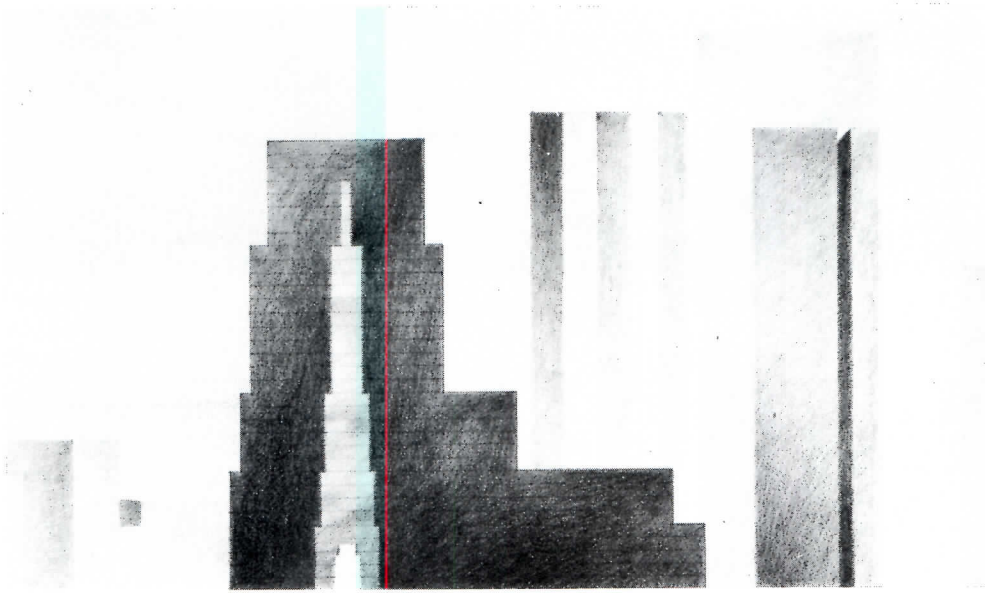
At this point, Oliver Tyrone changed its plans completely, deciding that it would rather complete a smaller building sooner than a larger structure later. Oliver Tyrone purchased a site at the corner of Stanwix Street overlooking the Monongahela River, although it was outside what has generally been considered the main office center and was zoned at a lower density. Skidmore, Owings & Merrill prepared the designs for a 364,000-square-foot building that was completely within the requirements of the existing zoning. Although there was a site plan review, the City Planning Department could only suggest a few minor modifications. The result is a well-designed office building, which is essentially a single-purpose structure located in the area that City policy had identified as the location for smaller back-up and infill buildings. The City is now studying guidelines for a second stage of the Riverview Plaza development. Policies are changed to keep up with events, but the aim is always to make all new development and rehabilitation part of a coherent urban design.



PPG Place is a real public square surrounded on all sides by buildings of the same design. It is Johnson and Burgee's creative response to the 20-per cent open space requirement in the zoning and the City of Pittsburgh's insistence that—if land were to be assembled for PPG—the result should be a genuine renewal of a district of the downtown, and not just a single building. There is also a glassed-in winter-garden just to the west of the tower, a handsome public space that is a gift to the city, not required by any government action. The plaza, the winter-garden and the ancillary buildings are all arranged to give the tower a location that keeps it clear of surrounding large buildings, but does not block the noon-time sun from Market Square, to the north.

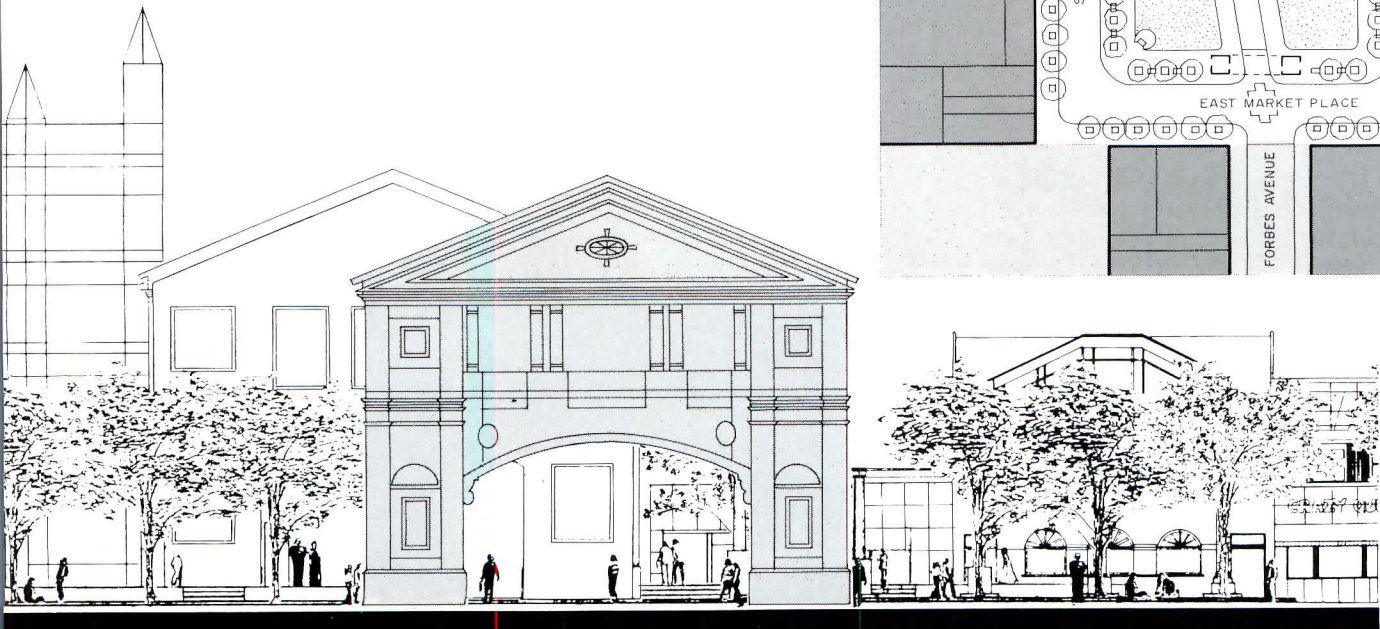
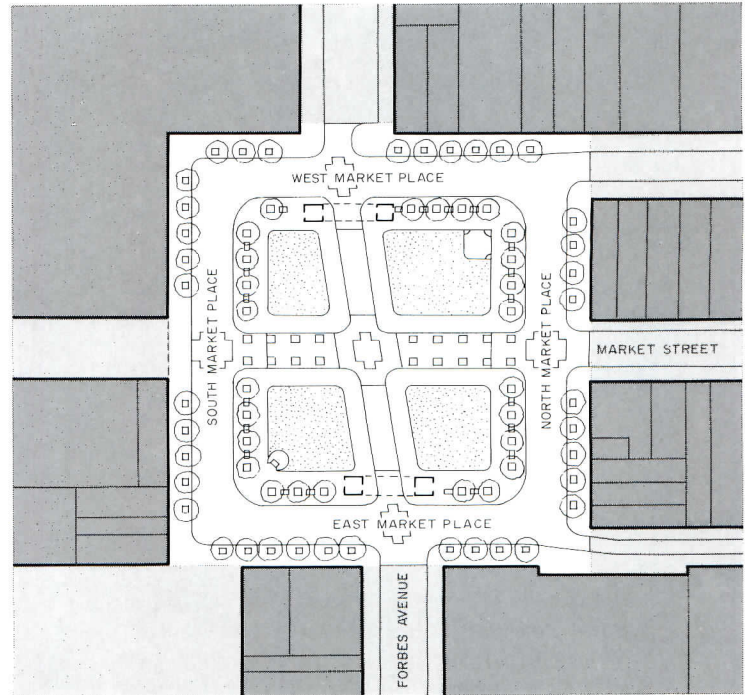


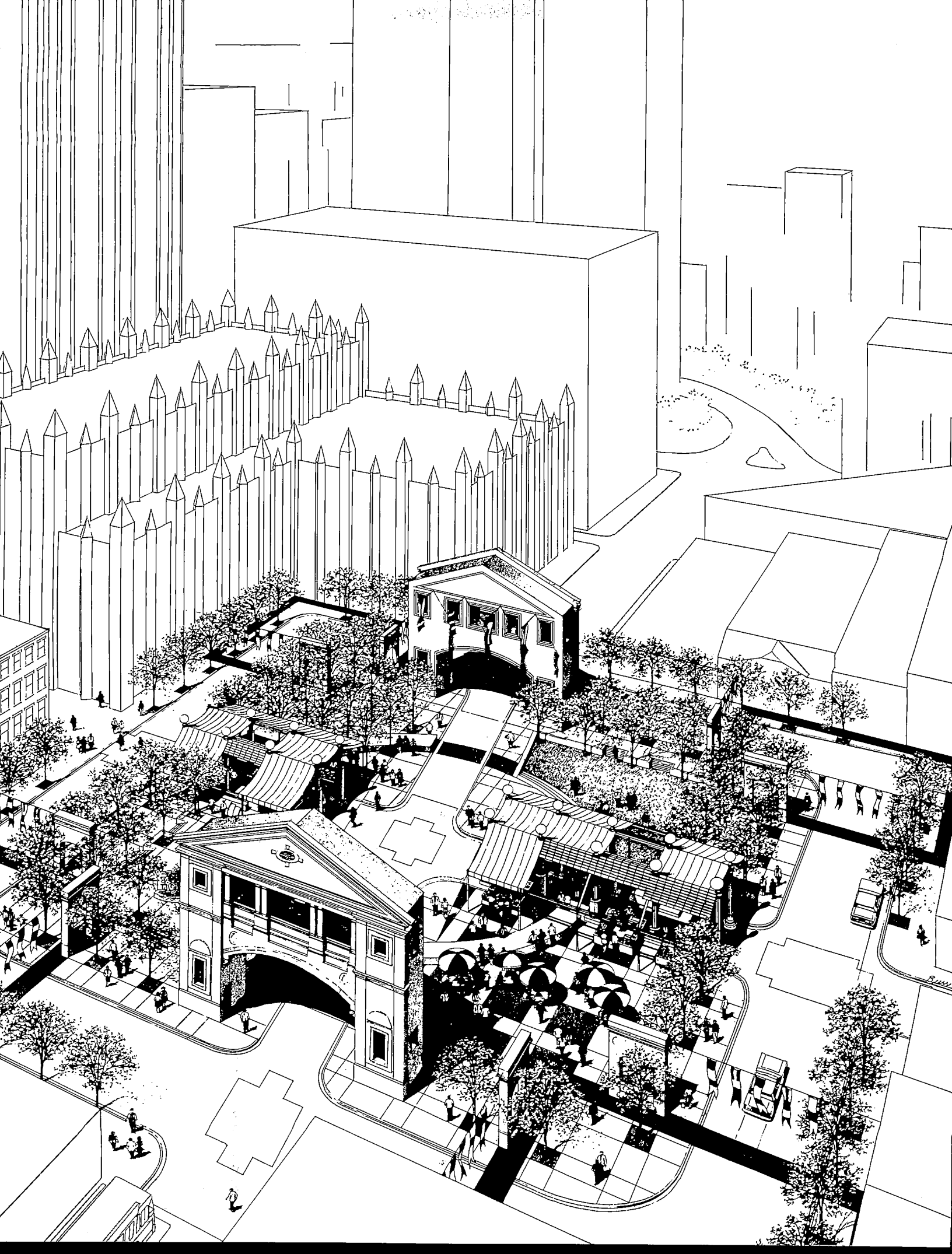
PPG and the Market-Stanwix Urban Renewal Area



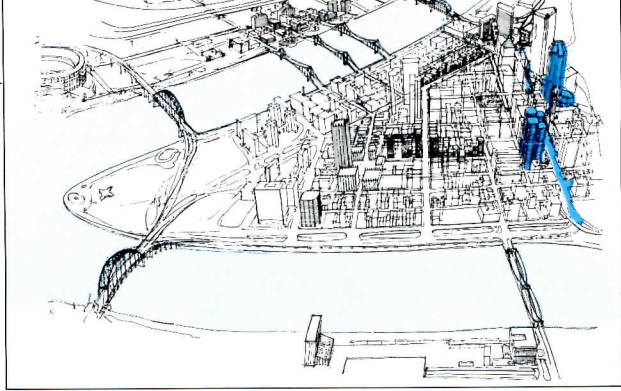
Above, a sketch by Cesar Pelli for a building that would have spanned Market Street a block to the north of Market Square. Above, right, is a rendering of the building now under construction—designed by the Chicago office of Skidmore, Owings & Merrill—which the same developer chose to build instead in a less central location, preferring a smaller building that could be built right away to a larger development that depended upon urban renewal arrangements. Below and at right are preliminary sketches by Hardy Holzman Pfeiffer

for the redesign of Market Square. Commissioned by the City, the assignment was to give the Square a character that did not depend on the surrounding buildings, without losing its role as an important public open space. Part of the square is surrounded by small, historic structures, but the southwest quadrant is occupied by part of the PPG building complex, and there will be future tall buildings nearby. The HHP design responds to both contexts; its arches evoke the memory of a market building that once stood in the Square.





New development on Grant Street



Grant Street in downtown Pittsburgh is a prestige address, the location of some important corporate headquarters, like those of U.S. Steel, Gulf Oil and the Koppers Corporation. The Allegheny County Courthouse by H.H. Richardson, surely one of the best works of architecture in the United States, is located at the corner of Grant Street and Fifth Avenue. Across from the Courthouse is the Frick Building, by Daniel Burnham and Co., and diagonally across the street is the Union Trust Company Building, by Frederick J. Oesterling, a handsome structure something like a Flemish Gothic guild hall. Henry Hornbostel's City County Building is just south of the Courthouse, and Benno Janssen's William Penn Hotel is just to the north of the Union Trust, creating an impressive and significant architectural ensemble.

The U.S. Steel Realty Development

The creation of what is now called the Steel Plaza Development on Grant Street has a typically Pittsburgh beginning. In the early 1970s, when it became clear that the main station of the new transit system would be located just east of Grant Street—between the Courthouse and the U.S. Steel headquarters tower—the Mellon Foundation purchased a sufficient number of properties to ensure that this valuable development site would not be rebuilt in a piecemeal way. The properties were then sold to the U.S. Steel Realty Development Division of United States Steel Corporation.

The City encouraged U.S. Steel Realty to redevelop these properties and adjacent areas, which were publicly owned and the City Planning Department prepared a list of design and planning criteria for site plan review—analogue to the list drawn up for the PPG development. This list was reviewed in the weekly staff meeting of development agency heads, and was adopted as City policy. Making urban design and planning criteria official policy before any buildings were designed was an important step, because there turned out to be some conflict between City policies and the development objectives of U.S. Steel Realty. (There are usually going to be conflicts between the design that might work best for an individual project and over-all urban design concepts. Consequently, when the developer is as powerful an entity as U.S. Steel, it is particularly important for the City to put its requirements on the table early, and in as objective form as possible.)

The list of criteria went from the question of any tower block's relationship with

other buildings on the skyline, the need not to block sunlight from public open spaces, relationships with nearby buildings and land uses, on to detailed requirements for parking and truck docks. Here are some of the key statements:

1. The design relationship between new development of the Grant Street East site and nearby buildings should be managed in such a way as to minimize abrupt changes of scale.

2. The elements of the Grant Street East development that face the Union Trust Company and the County Courthouse should be comparable in height and scale to these buildings, of a harmonious architectural character, and placed in such a manner as to permit a full view of both buildings' facades.

3. Consideration should be given to the creation of a new civic space, bounded by the Union Trust Company, the County Courthouse and the new elements of the Grant Street East development. Either through this civic space, or through some other sequence of civic spaces, there should be a transition between the platform level of the Light Rail Vehicle Station and street level.

4. A connection acceptable to the City should be made between Ross Street and Bigelow Boulevard, Centre and Bedford Avenues, either through the site, or around its periphery, minimizing any barrier effect.

U.S. Steel Realty's initial design and planning proposals did not meet these criteria. The principal office tower was to be placed directly at the corner of Fifth and Grant. This was the location specified by John W. Galbreath, whose company was advising U.S. Steel on the project. The tower would not be rentable anywhere else, he said. It is hard to argue that kind of issue with someone who has been running a spectacularly successful real estate business since 1924, but Fifth and Grant would have been just about the worst possible location from an urban design point of view. Placing the tower there maximizes the change in scale and character between the new building and the Courthouse, it eliminates the civic space that the City suggested, and the tower would put any public open space elsewhere on the site in shadow for most of the day. From U.S. Steel Realty's perspective, however, placing the building at Fifth and Grant maximized the distance between the new tower and U.S. Steel's existing headquarters (thus protecting their light and views). It simplified staging and acquisition for the whole project as U.S. Steel Realty already controlled most of the corner and it kept the tower completely away from the new Light Rail Vehicle line, reducing struc-

tural complications.

The road alignment on the site was another key issue where the U.S. Steel Realty initial proposal differed from the City's criteria. U.S. Steel wished to keep the entire site a super block, with all streets relegated to the periphery. The problem was the "barrier effect," mentioned in the criteria. The number of lanes required to accommodate all the projected traffic would have made the entire development an island. From U.S. Steel Realty's perspective, the superblock was the way to keep the most flexibility for future development and keep the connections among the buildings as simple as possible. The City, looking at over-all traffic systems management, found a cross-street parallel to Grant a necessity, even if it meant dividing the development.

Fortunately the architects, Welton Beck and Associates, responded to the conflicting requirements in a creative way. Their first move was to suggest that, if the site was not to be a superblock, it made sense to try to salvage the structure of one of the buildings already on the site. To make that work, the proposed U.S. Steel Realty office tower had to be pushed away from the corner of Fifth and Grant, creating the civic space that the City had asked for. The architects also worked out the connections to the LRV Station. It turned out that, because of grade changes across the site, the platform level of the station was very close to the grade level of the new civic space, making a direct connection between the two relatively simple. This new concept was accepted in principle by both U.S. Steel Realty and the City. However, U.S. Steel Realty was seeking the Dravo Corporation as a tenant. Dravo wanted a series of large office floors in the lower part of the proposed tower to house their engineering divisions. To get that much floor space on the site required either the complete demolition of the structure the architects had tried to salvage, bridging over the new street, or involving the office tower foundations with the LRV Station.

In the end, it made the most sense to demolish the old structure. The new tower goes straight up from Grant Street, as Mr. Galbreath had suggested, but it is held away from the Courthouse and the City got its civic plaza at Fifth and Grant, plus a series of attractive public spaces connecting to the LRV Station. Dravo found this new proposal—and other elements of the deal—to be attractive, and selected this development as its headquarters. The height of the lower portion of the building, which accommodates

Dravo's engineering floors, is greater in relation to the Courthouse and the Union Trust than would be ideal; but the architects were boxed in by the new street and the need to keep foundations clear of the LRV Station.

The architects also made a serious effort to achieve a "harmonious architectural character" by creating a "Mansard" vocabulary that picks up some characteristics of the Courthouse and the Union Trust. The color has also been carefully studied. The wall material is a painted steel in a pinkish gray that responds to the granite of the Courthouse and Union Trust, the red brick of the William Penn Hotel, and the *Cor-Ten* steel of the U.S. Steel tower. Contextualism has its limits, however. It is possible to say that abrupt changes of scale have been "minimized," to quote the criteria, but they have not been eliminated. The new Dravo tower is much larger than any of the surrounding buildings, except the U.S. Steel tower itself. As long as such a big building was to be right on Grant Street, some discontinuity of scale was inevitable.

The technical problems involved in relating a new office tower to the rerouting of streets and the construction of an underground transit line and station have been formidable. While the ideas are easy to draw, who does what at what time, and who pays for what at what time, require enormous amounts of negotiation. The transit station and its entrance system are to be an integral part of the building project, which is much easier said than done. The City received the street improvements it wanted on the U.S. Steel Realty site in exchange for the land value of existing streets.

The Oxford Project

In the 1960s Allegheny County acquired and tore down a handsome old post office on Grant Street that was similar in style to the Old State Department Building in Washington, D.C., or the St. Louis Post Office. The purpose of the demolition was to create a site for a new Courthouse, which it was later determined the County did not need. The site stood embarrassingly empty for many years, until the County decided to ask for competitive development proposals in the fall of 1978. In the end two proposals were submitted: one by the Grant Land Corporation, backed by the powerful Hillman interests, and one by Oxford Development, a local shopping center developer. Grant Land's architect was Hugh Stubbins, whose design looked something like four interlocking triangular Citicorp towers. Oxford's architects, Hell-

muth, Obata & Kassabaum had produced a much more straightforward building although its chamfered corners and triangular incisions suggested a cluster of six octagons.

The City had drawn up its customary list of criteria, which had been incorporated in the County's Request for Proposal. The most significant were a requirement for a 60-foot set back from Grant Street as the location for the public open space mandated by zoning, and a request to interconnect the parking required for the building with two existing garages on either side of the site.

As the County was to make the decision, the City confined its comments to technical matters, and sat back to watch the County's widely publicized indecisiveness as it struggled to choose between two well-matched schemes that pitted Republicans against Democrats and old money (Hillman) against new money (Oxford). In the process a great deal was said about urban design. The County planning staff, the County Planning Commission and the Pittsburgh Post Gazette all felt that the Hillman proposal was the right choice, and that the Stubbins building was superior urban design. The County Commissioners, however, selected the Oxford proposal by a vote of 2 to 1.

The City was certainly fortunate that the choice came down to two proposals of real merit, and the Stubbins building would have been an exciting addition to the skyline. My own view, however, is that the County Commissioners made the right urban design decision, even if it was unlikely that they were giving such issues their primary attention. The Stubbins building was the more architecturally adventurous, but it did not meet the City's urban design criteria in several important respects. Its system of interlocking triangles would not fit on the block unless one vertex came out to the building line of Grant Street on the south corner of the site. The requested setback from Grant was thus triangular in plan and would have put the space in shadow for much more of the day than the other proposal, where the setback was uniform. The underground parking in the Stubbins scheme, while it would have been the higher-quality solution in many situations, was to be placed in between two existing above-ground garages, making their interconnection more difficult. In the end only pedestrian bridge connections have proved feasible; but the row of three garages in the HOK scheme with analogous entrances and pedestrian bridge connections at similar levels makes a better parking system. The relationship of the interior shopping concourse to surrounding

street fronts was also much stronger in the HOK scheme than in the Stubbins proposal, another point of superiority for Oxford. In addition, the Oxford building was presented as an element of a larger urban design plan involving the adjacent blocks. While it was hard to know at the time whether this larger proposal was anything more than window-dressing, it was a factor in making the HOK proposal more responsive to its surrounding context. As things are turning out, the Oxford development (which now includes the Edward J. DeBartolo Company as a partner) may extend to the adjacent vacant frontages on Grant Street. While the competing proposal could have been extended also, its design did not appear to take this into account.

Another favorable circumstance for the urban design of the Oxford project was that Dravo did not elect to become a tenant. As a result, the bulky lower floors were eliminated and the over-all size of the building reduced several hundred thousand square feet, giving it a much more pleasing proportion for the bystander, if not for the developer, and a better relationship to the PPG tower nearby. All in all, the Oxford project is an urban design success story, but one which has to be attributed at least partially to luck.

The Grant Street Improvements

The Allegheny Conference on Community Development retained Environmental Planning and Design Associates (the Pittsburgh firm formerly called Simonds and Simonds) to prepare designs that would show how Grant Street could be improved once the trolley tracks were removed.

The City decided to use the Conference's initiative as a way of creating a new vocabulary of street lighting, traffic control, signage and paving that would be applicable throughout the downtown. The Mayor gave responsibility for the urban design aspects of these new systems to the City Planning Department, and the technical aspects to Public Works. When the design schematics for Grant Street had been completed under the contract paid for by the Allegheny Conference, the City retained the engineering firm, Pullman-Swindell, to prepare the contract documents, with Environmental Planning and Design continuing as consultants. The Allegheny Conference continued to be involved with Grant Street, mobilizing property owners to pay for the installation and maintenance of the special landscaping features which would make Grant Street a distinctive boulevard.

New development on Grant Street

Someone in Washington, D.C. made a very powerful urban design decision by determining that traffic signals ought to be placed over every traffic lane. Once your eyes have been opened to the significance of the issue you can quickly become a connoisseur of the various grotesque methods of fulfilling this requirement, from slinging the signals across the intersection on cables to various types and sizes of booms, with and without guy wires. There are also Federal standards for street lighting. Over the years, cities have tended to fulfill these standards by mounting brighter and brighter lights on taller and taller poles, set farther and farther apart. In a downtown area there is really a need for three different types of lighting: for intersections, for the mid-blocks, and for the sidewalks. The system adopted for Grant Street, which will become the prototype for the rest of downtown Pittsburgh's street reconstructions, is to use tall lamp poles at intersections, with the luminaires mounted directly at the top of the pole rather than on the usual "cobra-head" davit, as davits make the light fixture much more obtrusive, without a significant gain in the placement of the light. The luminaires will also be of a cut-off design, so that the light sources will only be visible when you look directly up, and won't be seen from the driver's normal viewing angle. In most installations traffic signals swing from a boom, while the signs are fixed to the boom or pole in a random way, depending on what the work crew decides to do on a given morning. Grant Street's tall poles will be a great improvement. They will have frames, cantilevered out over the streets, which will house the traffic lights and traffic information signs in an orderly pattern. In the middle of the block, a different kind of lighting fixture will be used, a transparent globe with a cut-off light source inside, mounted at about half the height of the intersection light. These mid-block lamps are of a much lower wattage than the intersection lights and will occur closer together, casting a uniform, attractive glow on the sidewalk, and appropriate illumination on the roadway. The poles are spaced at sufficient intervals to allow the placement of all parking information and other signage on them, eliminating the separate, ad-hoc supports for these signs which are seen all too frequently.

Many partisans of good design would prefer to see cities go back to fluted lamp-posts with low-intensity globe lights on top, or the type of street lamp where the bulb and reflector are held in place by cast-iron tendrils. But the problem is that achieving mod-

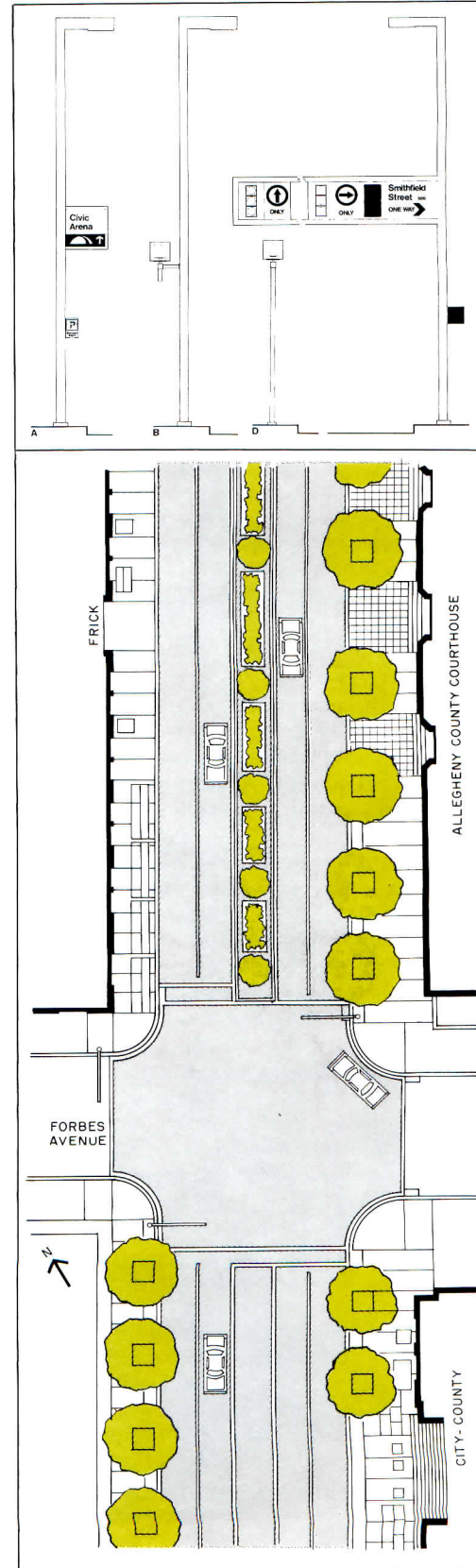
ern light level requirements with these fixtures creates insupportable amounts of glare, and there is no similarly attractive precedent for traffic signs and signals, which were handled by policemen in the good old days.

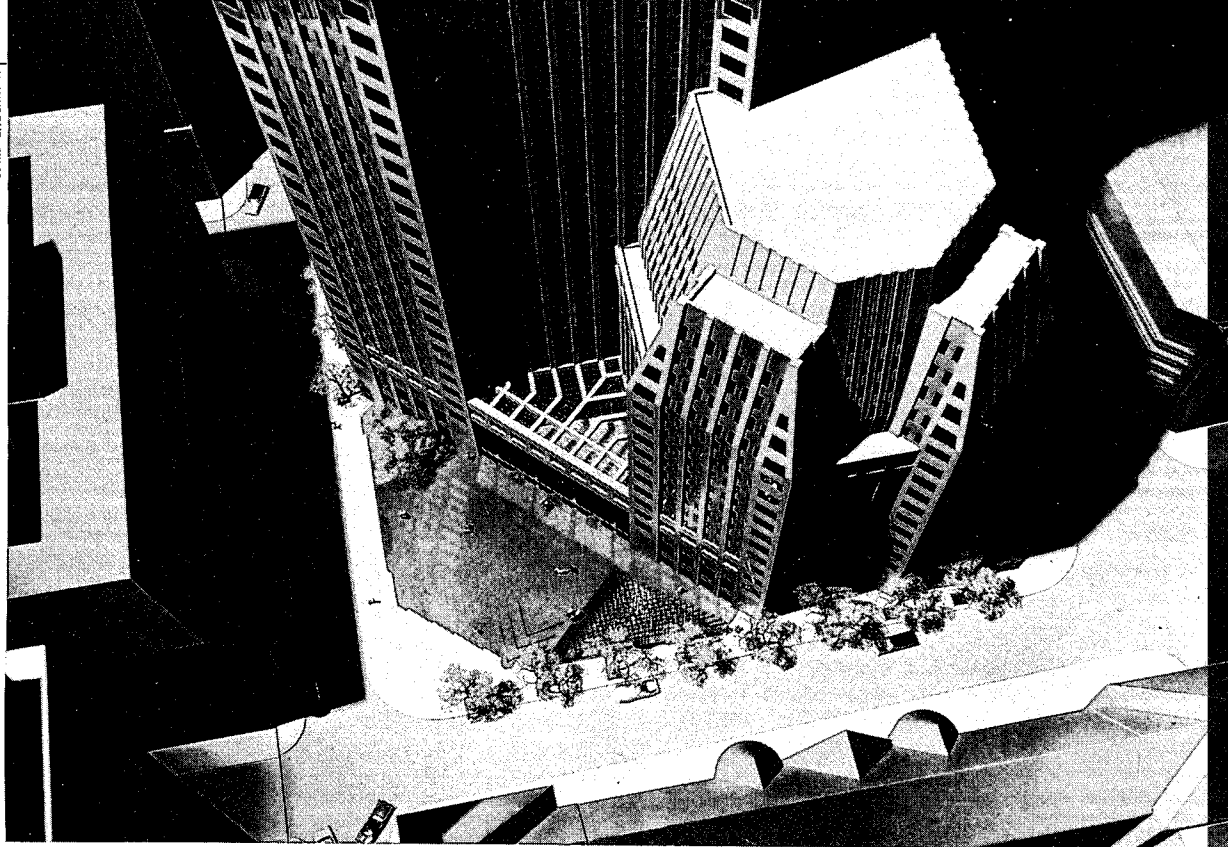
The Pittsburgh system is made up of components that are currently available, and have been installed in other cities where their performance has been evaluated. Fred Swiss, of the Pittsburgh City Planning Department staff, has put together the design components that the City has adopted as its policy.

These lighting, signal and signage decisions relate a complex system of inter-related variables, and it requires constant monitoring and evaluation to keep the system consistent with its objectives. At one point it looked as if 12-inch lenses would be substituted for 8-inch lenses for traffic signals on arterial streets downtown. If that were to happen, the frame system would become excessively deep. One answer would be to mount the traffic lights horizontally, but then the size of the signs would have to be modified. Fortunately, the Mayor's office intervened in favor of the 8-inch lenses, but there is a constant danger of the system being modified on an ad-hoc basis to produce something that is worse than the standard boom and swinging traffic signal. The success of the Pittsburgh system will not be known until its components are in place, and it will remain successful only if subsequent changes in new signs, and additional signals are made in a way that is consistent with the system.

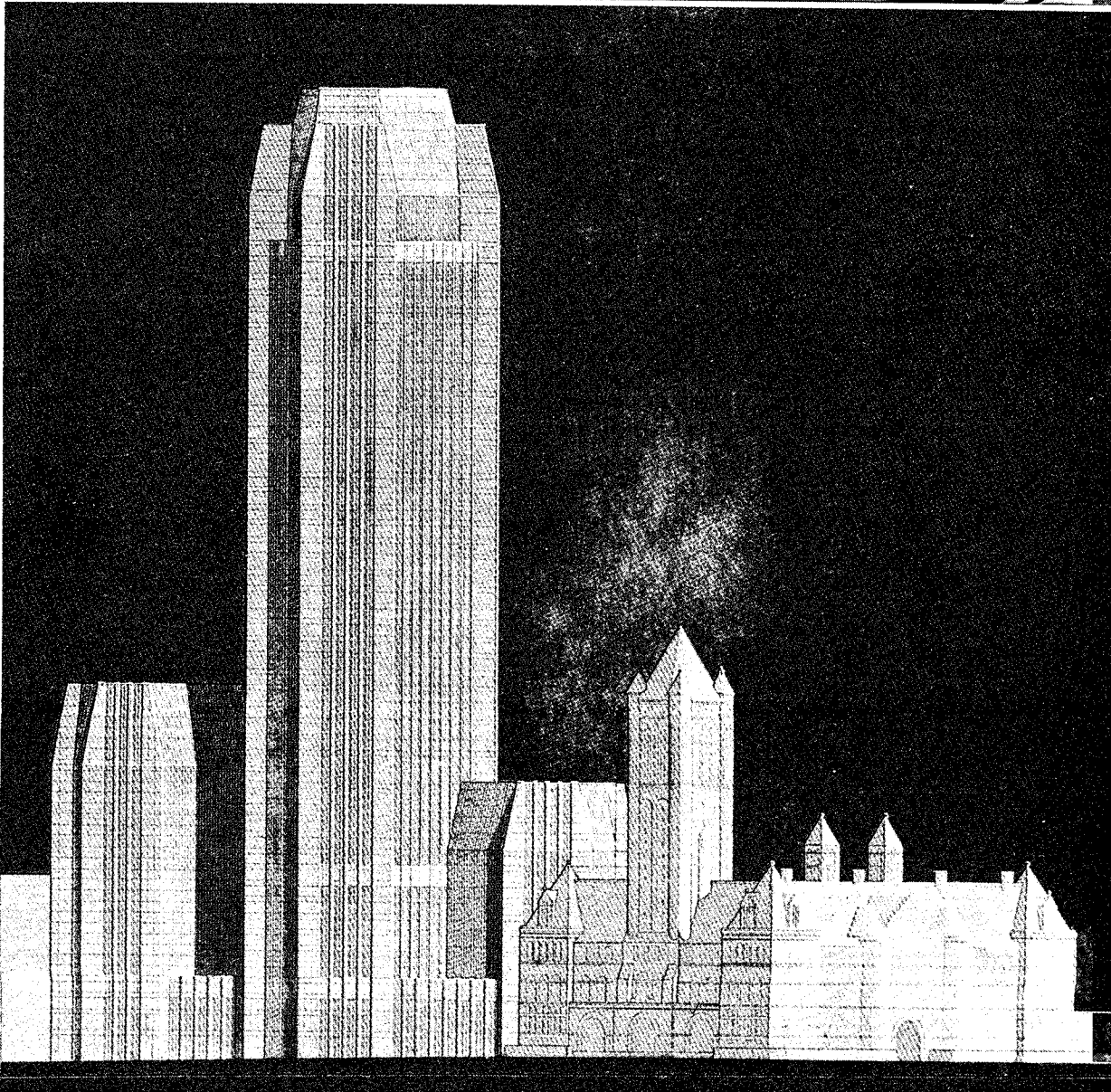
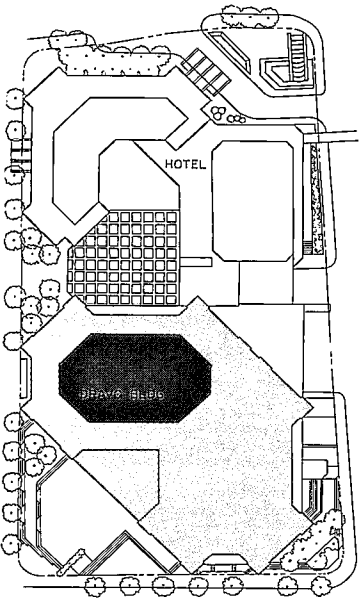
Chatham Center and the Civic Arena

The Crosstown Expressway cuts through downtown Pittsburgh just to the east of Grant Street. On the other side of the highway are the Chatham Center and the Civic Arena. Chatham Center is a mixed-use development, with a parking garage that forms a platform level, a combined office building and hotel, an apartment house, and a recently-completed second office building. It is located in such a way that its platform level is approximately the same as the garage-roof level of the U.S. Steel Realty project directly across the Expressway. In addition, the management of the Civic Arena (which is just across the street from Chatham Center) has been taken over by the De Bartolo interests. The arena is being given additional parking decks and the management is anxious to create a more direct connection to the main part of the Pittsburgh downtown. The situation would seem to be an opportunity to create something like Seattle's Freeway Park, a possibility that is under active study.



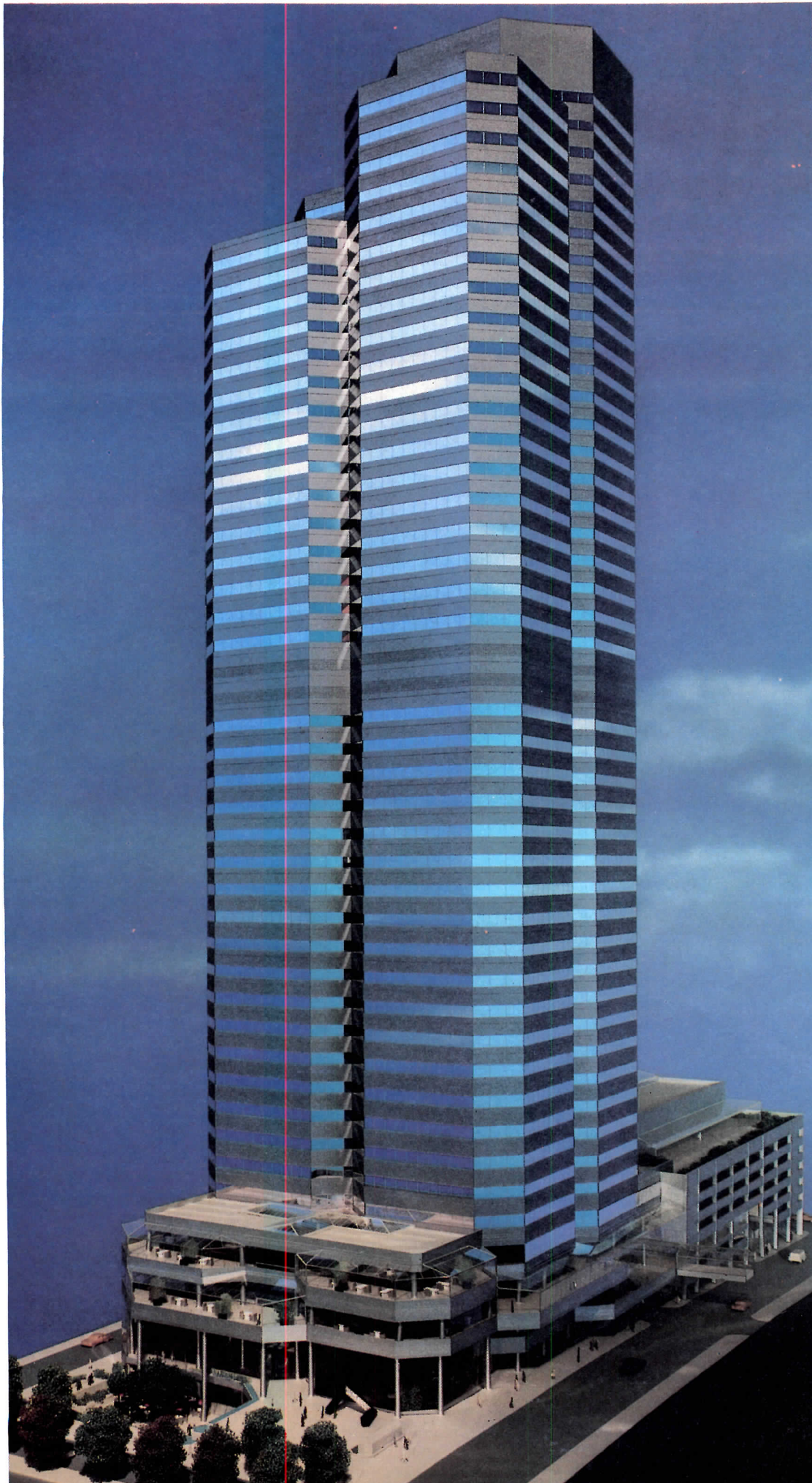


At left are examples of the City of Pittsburgh's new street furniture prototypes, which are to be used throughout the downtown as replacements and when streets are reconstructed. At left, below, is the plan of part of the Grant Street improvements, designed by Environmental Planning and Design. Grant Street is to have a special character, but the brick crosswalks at intersections are also to be a prototype for the rest of downtown.



Above and at right, a site plan, model photograph and elevation of the Dravo Building by Welton Becket and Associates, which was also published in ARCHITECTURAL RECORD (mid-August 1981). In response to City criteria, a major public space is created at the intersection of Grant Street and Fifth Avenue, setting off adjacent landmark buildings, including Richardson's Allegheny County Courthouse. This space also is part of a concourse system that leads to the main downtown rapid transit station.

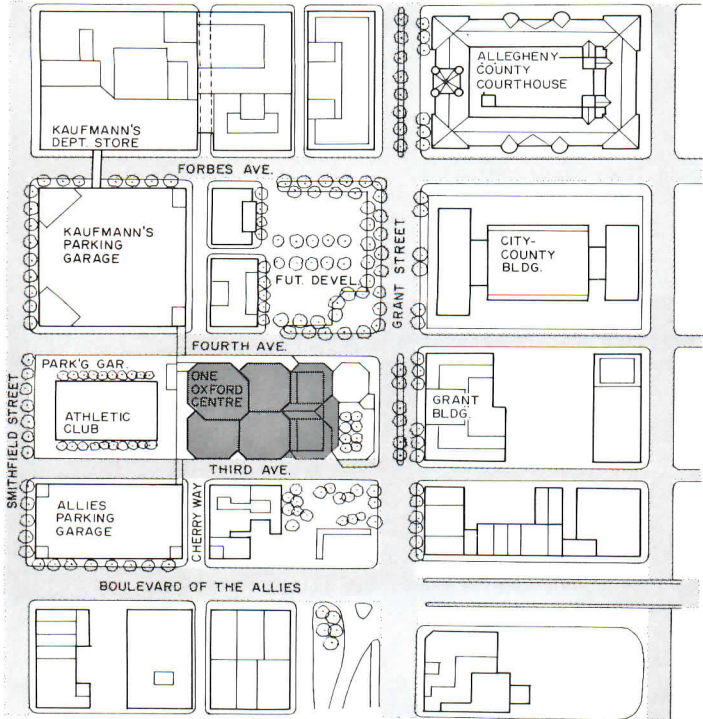
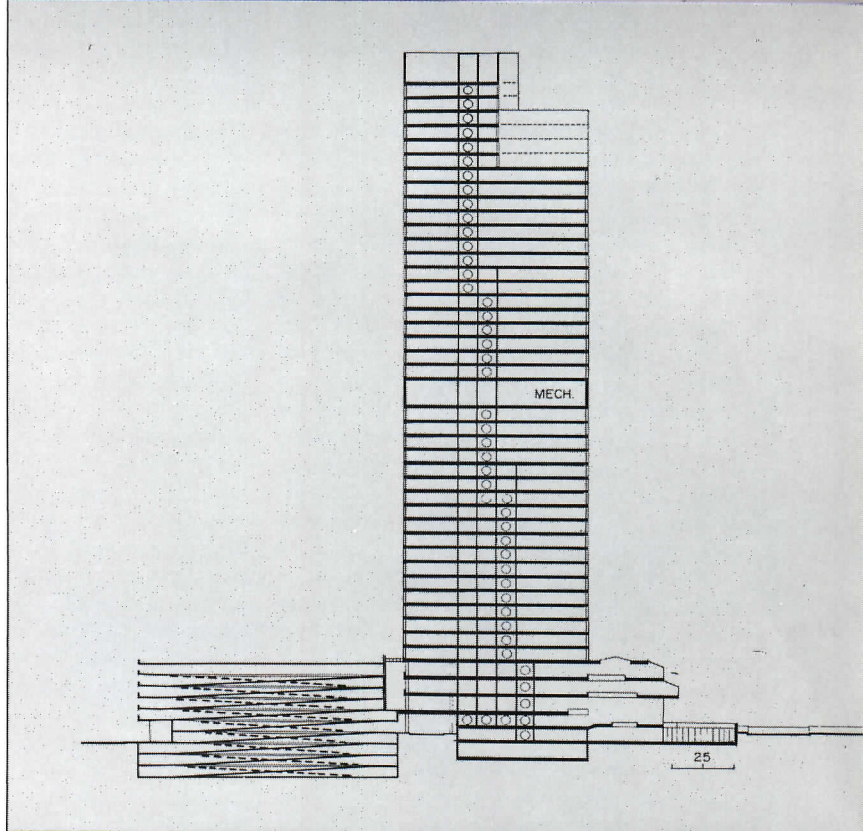
New development



The Oxford Center tower, shown on these pages, is part of what may well be a three-block development on Grant Street, one of Pittsburgh's most important business streets. The design, by HOK, reflects the possible future extension to the neighboring blocks by setting up a modular rhythm that lends itself to repetition. In response to city criteria, the building has a major public space fronting on Grant Street; and its parking garage is designed to connect to pre-existing garages on either side. In keeping with City policy, the Oxford Center is not a single-purpose office building, but contains an important, multi-level retail concourse.

Grant Street

©Nathaniel Lieberman



The convention center, hotel, the Penn Central Station and the downtown riverfronts

The construction of a convention center was one of the few important downtown planning decisions made "between the Renaissances." The site chosen was a piece of railroad property next to the tracks on the northeast corner of the downtown Triangle. The Center is relatively modest in size, and was planned as a separate entity. The expectation was that the private sector would provide the necessary adjacent convention hotel, with additional meeting rooms and restaurants, but the private sector didn't do so. Finally, in 1980, under the Caligiuri administration with its more active approach to downtown planning, the City designated an urban renewal area adjacent to the Convention Center, and the Urban Redevelopment Authority purchased the piece of vacant land just east of the new Center, which was rapidly nearing completion.

It was a courageous move. The redoubtable lawyer and business executive, Victor Palmieri, had tried in vain to market the same piece of land during his otherwise highly successful efforts to reorganize the Penn Central Corporation. The cynics said that at least the Penn Central had been able to unload the land on the City, which was sure to be stuck with it for a long time to come. On the contrary, the City put together a request for proposals, advertised it, had 11 serious expressions of interest and, ultimately, four serious submissions, each of which had fully developed architectural schematics and a completely described financial package.

The City had, as usual, adopted a series

of design and planning criteria, which were issued to the participants in this limited design and development competition and were in part a basis for evaluating the submissions. The financial aspects of each proposal were of course also of great importance, as were the specifications of the hotel and the nature of its management.

As usual, the City had also tried to make its design and planning criteria a performance specification rather than a description of a building which had been designed in advance. While each design proposal dealt seriously with the criteria, each design was noticeably different. The City finally selected a proposal whose architects were the Pittsburgh firms, Urban Design Associates and Burt, Hill, Kosar, Rittelmann Associates, in association with The Architects Collaborative of Cambridge. In many ways this design did not meet the criteria as well as a proposal whose architects were Marcel Breuer and Associates of New York with the local firm Deeter, Richey, Sippel. The principal difference was that the proposal selected included an office tower as well as the hotel. This difference helped to make the proposal a better deal for the City financially, although having two buildings instead of one made it more difficult to meet the design criteria.

The process gave the City a well designed multi-use complex to reinforce the Convention Center, plus a small real-estate profit and the return of its capital, which the Redevelopment Authority used to purchase the landmark Penn Central Station and office

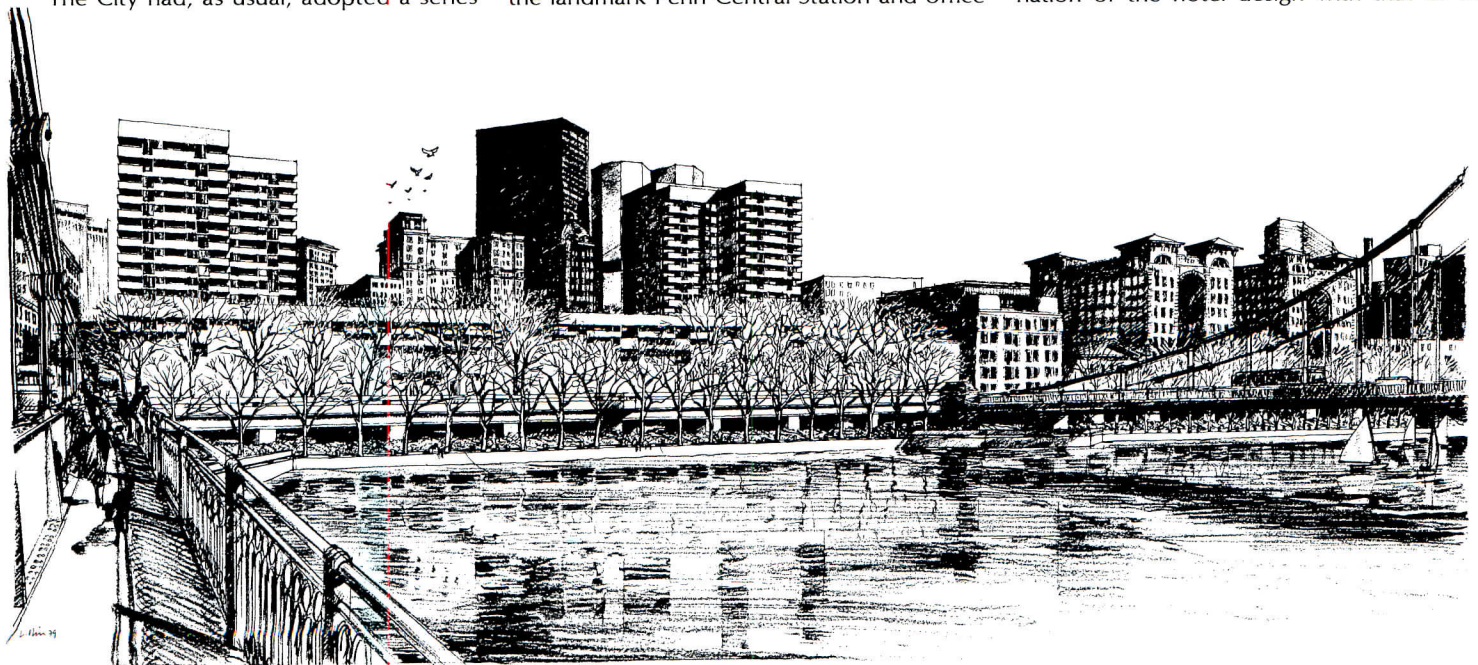
building across the street.

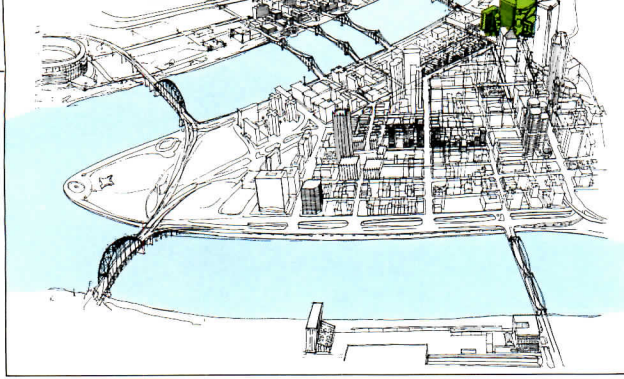
This building had been vacant for several years and was deteriorating. The City's purchase enabled emergency repairs to be carried out while an acceptable adaptive re-use and restoration proposal was evaluated.

The Grant-Liberty intersection

Some of the design criteria for the Convention Center Hotel had been directed towards creating a significant civic space where Grant Street and Liberty Avenue intersect, and the co-ordinated development of the sites surrounding the intersection. As was mentioned earlier, Grant Street is being improved and given a boulevard character as the trolley tracks are removed, and the Grant Street vocabulary has been extended across the intersection with Liberty. The purchase of the Penn Central Railroad Station gave the City control of the major frontages, making it easier to realign the streets and to promote the upper-level pedestrian bridges which had been called for in the Convention Hotel design specifications.

The realignment of the intersection is a complex technical problem as it is the location for the downtown end of the East Busway, which follows the Penn-Central right-of-way and then connects with the downtown traffic system at this point. Some of the alignment decisions had already been made as part of the busway design, which unfortunately preceded any more comprehensive design concept for the intersection. Co-ordination of the hotel design with that of the





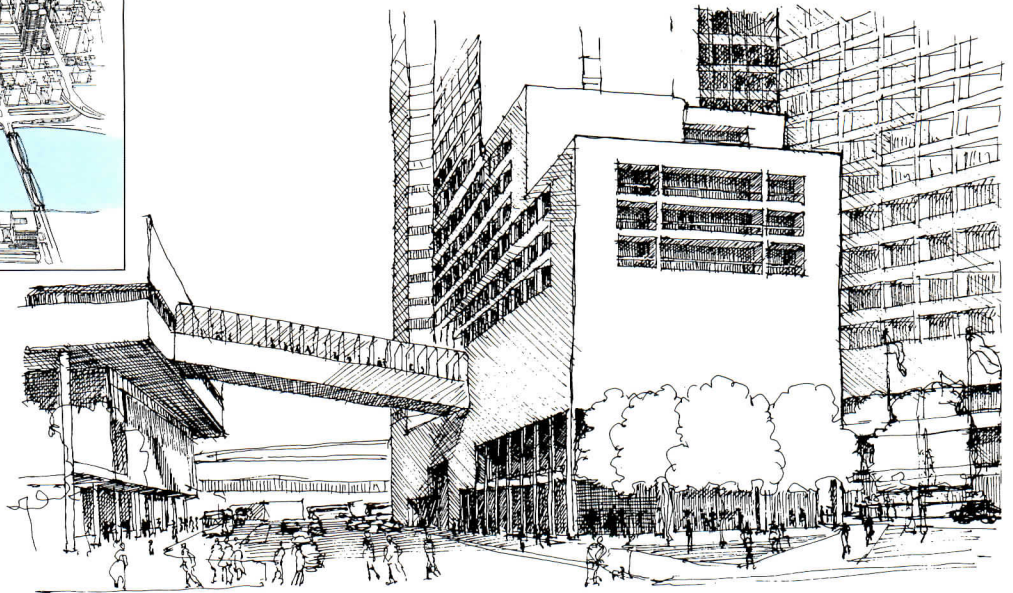
Station—being done by the Ehrenkrantz Group—is still in progress.

The Penn-Liberty corridor

The Allegheny Conference on Community Development commissioned a study of the north side of the downtown Triangle, extending from Gateway Center to the new Convention Center and from Liberty Avenue to the Allegheny riverfront. (The "Penn" is Penn Avenue, which runs through the center of the district.) This study was carried out by the New York office of Llewelyn-Davies Associates, whose successor firm is Buckhurst, Fish, Hutton, Katz. This study made a whole series of development and townscape proposals, including major changes in the downtown side of the Allegheny waterfront and the identification of a series of potential housing sites.

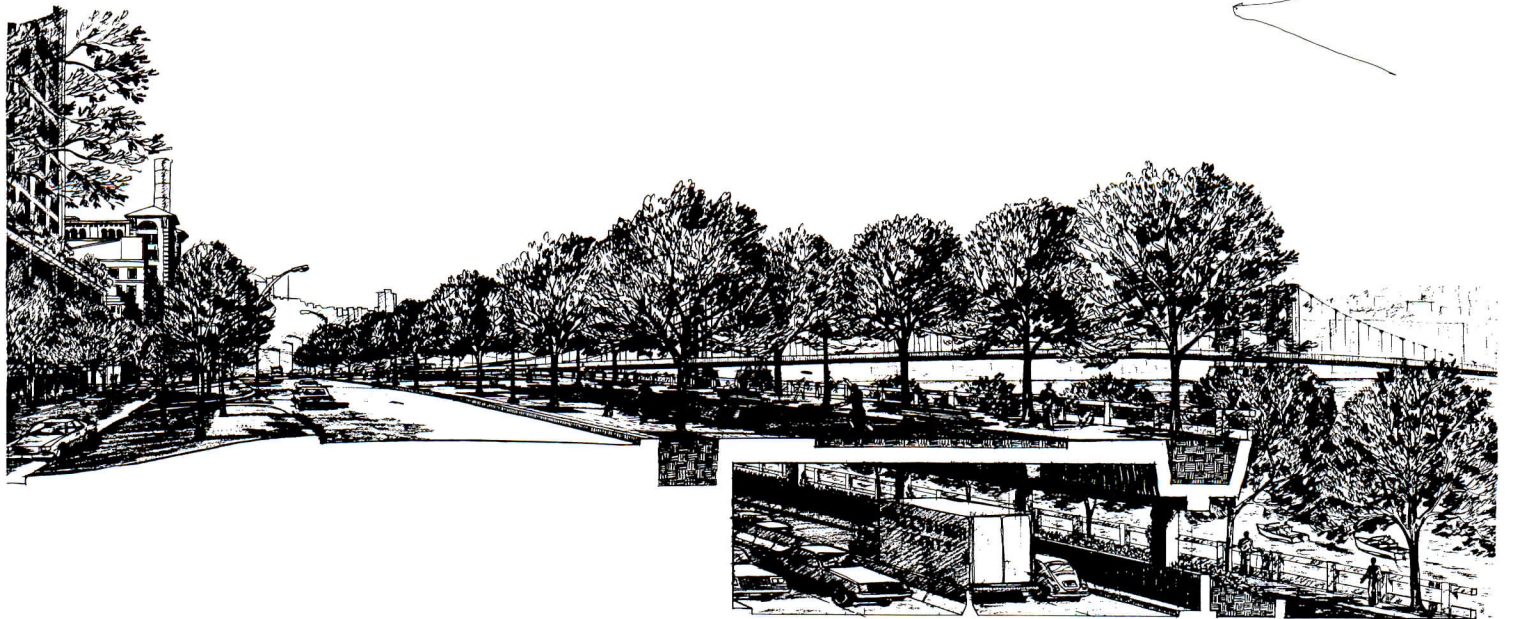
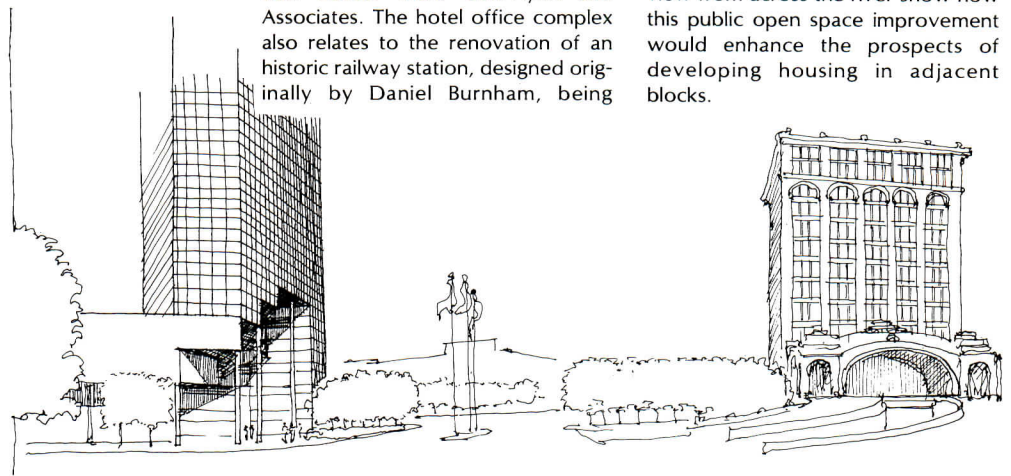
Firstside

Firstside is a name given to the analogue of the Penn-Liberty corridor on the south side of the Triangle. A study of the area on both sides of First Avenue was carried out by Vision, Inc. of Boston assisted by a grant from the National Endowment for the Arts. One of the interesting proposals in this study was a parking garage under the Penn-Lincoln Expressway, which would relieve some of the pressure to create new parking lots and garages in the Firstside district. The consultants found ways to thread the access to this garage through the highway and its ramp system.



Above, a proposed hotel and office complex will connect directly to the recently-completed Convention Center. Architects for the hotel and office building are a joint venture of Urban Design Associates and Burt, Hill, Kosar, Rittelmann both of Pittsburgh and The Architects Collaborative. The architects for the Convention Center were Celli-Flynn and Associates. The hotel office complex also relates to the renovation of an historic railway station, designed originally by Daniel Burnham, being

restored and re-used to designs of the Ehrenkrantz Group. A deck over the Fort Duquesne Expressway is a proposal made as part of a planning study by the New York office of Llewelyn-Davies Associates (successor office: Buckhurst, Fish, Hutton, Katz) and Hanna Olin, landscape architects. Section perspective and view from across the river show how this public open space improvement would enhance the prospects of developing housing in adjacent blocks.



Long-range planning across the rivers

While the City has been creating real-estate development initiatives in the downtown Triangle and responding to those of private developers, it has also been looking into a longer-range future for the less-developed downtown land that fronts on the rivers. It has been assisted by several major consultant studies.

Forks of the Ohio National Park

John Robin, the chairman of the Redevelopment Authority, has a long-range concept that all the river frontages downtown might one day be part of a single park system, perhaps administered by the National Park Service. Part of this park system already exists, including Point State Park at the west end of the Triangle where the Allegheny and Monongahela Rivers meet to form the Ohio, and the City's Roberto Clemente Park along the Ohio and Allegheny Rivers' edges across from the downtown near the Stadium. Jackson Seay, a local landscape architect, has been preparing plans for the future park system, which John Robin likes to call Forks of the Ohio National Park.

Clemente Park Extension

The first part of this new park system that will be created is an extension of Clemente Park along the north shore of the Allegheny River. These riverfront improvements, whose designs are being prepared by Jackson Seay, will in turn make it possible to redevelop the adjacent land for apartments and the kind of small office buildings that are usually found along highways in suburban areas. A planning study for housing in this area was prepared by Wallace, Roberts and Todd in association with Hammer, Siler, George and Alan Voorhees and Associates. A subsequent study of mixed-use development was prepared for a private developer by Urban Design Associates. The redevelopment of this north-shore area would fulfill a long-standing City policy to connect the Allegheny Center development north of the river with a riverfront development that in turn connects to the downtown.

Station Square

The initiative for the rehabilitation and adaptive re-use of the Pittsburgh and Lake Erie Railroad properties on the south side of the Monongahela River came from the Pittsburgh History and Landmarks Foundation and the Scaife Foundation, which put up the over \$6,000,000 equity necessary to get the redevelopment going. The *original plan* for the project was drawn by Urban Design Asso-

ciates. In the old station concourse itself is an elegant restaurant, while the offices continue to be used by the P. & L.E. management. The old freight house has been made into a specialty retailing center, and the warehouse is becoming an office building. A new hotel—architecturally the least successful component—completes the ensemble and provides the western anchor of the development. The total public investment to date comes to \$9 million through various Federal programs administered by the City.

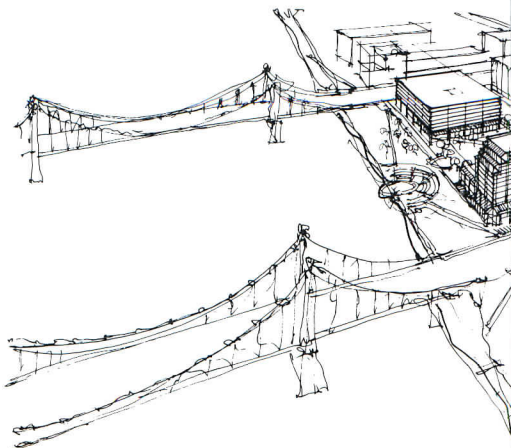
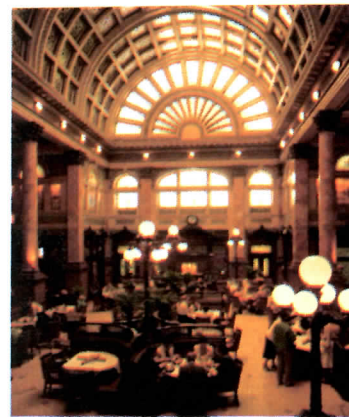
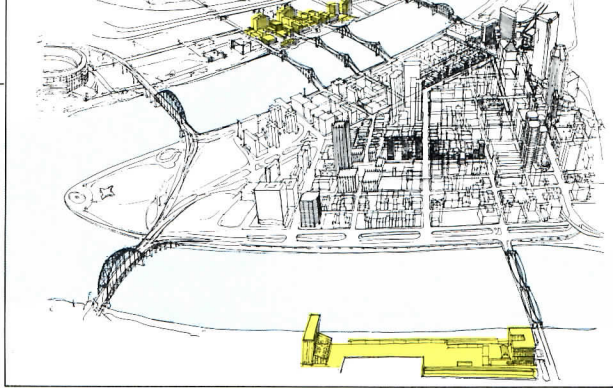
The credit for this impressive achievement of preservation and redevelopment clearly belongs to the History and Landmarks Foundation and its feisty president, Arthur Ziegler. The City, left to itself, would have sought to keep such land uses within the triangle and the conventional wisdom was that the Station Square development was impossible.

Mount Washington

South of the Monongahela River banks is a palisade, roughly 400 feet tall, that overlooks the downtown Triangle.

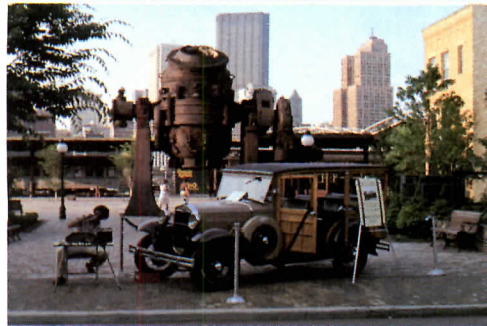
The neighborhoods along Grandview Avenue, atop this palisade, have gradually come under development pressure to create apartment houses that enjoy the sweeping views. This is the only downtown neighborhood where the private investor seems anxious to create housing, and the result is an urban design dilemma. On the one hand, the residential development is a desirable adjunct to the downtown. On the other, the transition from houses to restaurants and apartment houses has been a messy one so far, and there is a serious danger of creating the kind of rape of the landscape that has taken place along the New Jersey Palisades opposite New York City.

The City has been struggling to preserve the green hillside against encroachment and to create some coherence to the skyline, as well as safeguarding existing neighborhood shopping and houses. The Planning Commission placed a 100-foot height limit on new buildings, only to have a developer slice nine stories into the hillside on the basis of an ingenious interpretation of the law. With that loophole plugged, the City has been forced into the realization that the most marketable developments have to be tall enough that a majority of the apartments enjoy good views. The question now is whether the City can enforce a clustering of development in a few locations, and hold the line against excessive encroachment on the hillside from above or below.



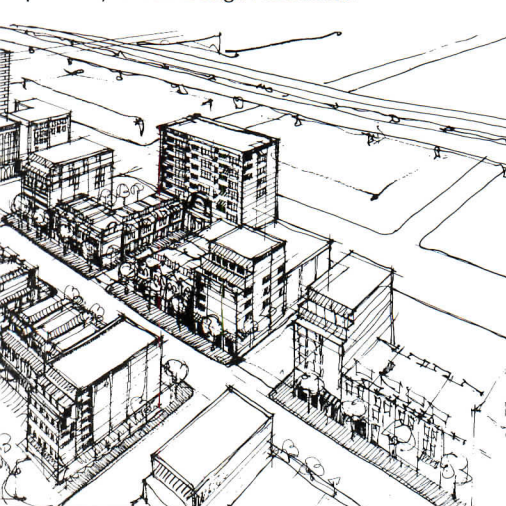
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Summary: *How these actions add up to urban design*



Across the Monongahela River to the south of downtown Pittsburgh is Station Square, a historic restoration, specialty-retailing-office-hotel complex developed by the Pittsburgh History and Landmarks Foundation.

On the north side of the Allegheny River is the proposed north shore development that will link the existing Allegheny Center to downtown. The development plan shown was prepared by Urban Design Associates.



The City of Pittsburgh has sought to shape each of these projects according to the six basic components of the Downtown Development Strategy already mentioned. For the first component—preservation and land use—the City has promoted the preservation of the Market Square area through historic district designation, proposed loan programs for facade improvements, infill building and improvements to the Square itself. The City took steps to purchase the Penn Central Railroad Station in order to preserve it, an initiative that was paralleled by the Scaife Foundation and the History and Landmarks Foundation at Station Square. Long-range preservation policies were addressed in studies of the North Shore, Penn-Liberty Corridor and Firstside areas.

The PPG, Dravo and Oxford projects have promoted the growth of the corporate office sector downtown, but not at the expense of retailing and other land uses. The PPG relocation program shows that it is possible to keep existing businesses going, and both PPG and Oxford have specialty retailing and restaurant complexes that reinforce existing shopping patterns.

In the second category—transportation policy—a Transportation Systems Management Study provided the context for closing Market Street within Market Square and the PPG project, and requiring the new Ross Street extension within the U. S. Steel Realty development. The number of parking spaces and their mix between short-term and long-term users has also been a matter of policy, as have locations for garage entrances and exits, truck docks, and bus shelters incorporated in new buildings. The main station of the new light rail line has been integrated into the Dravo building.

In regard to the third component—public open space—the City has been promoting two sequences of the parks, squares, pedestrian paths and roadways within the downtown Triangle, along Market Street from Heinz Plaza through Market Square to the new PPG Plaza, and along Grant Street from the intersection of Grant and Liberty along an improved Grant Street to the Steel Plaza, the Oxford Plazas and the intersection of Grant with the Boulevard of the Allies. Longer-range plans are being made for public open space along the riverfronts and bridging over the Crosstown Expressway.

Within the fourth component—street lighting and furniture—a new vocabulary of street lighting and a co-ordinated system for traffic signals and signage plus approved materials for sidewalks, standards for tree

planting and so on have been adopted throughout the Triangle.

The fifth component—zoning and development controls—has been of major importance. A series of criteria for site plan reviews under the Pittsburgh zoning ordinance has been issued in advance of major projects. Often these criteria have been backed up by urban renewal controls or lease agreements. The criteria are written as performance specifications before the buildings have been designed.

The sixth component—public investment priorities—has been carefully established to further Pittsburgh's downtown urban design and development objectives. Riverfront improvements on the north shore of the Allegheny between the Sixth and Seventh Street bridges have a high priority because they make it feasible to redevelop the land behind them. A second stage of improvements for Market Square receives a high priority because of the PPG project. The LRV construction creates the opportunity to improve the streets downtown, giving these streets a priority status in the capital improvement program. The use of Parking Authority powers has also assisted development goals, as have the City's applications for Urban Development Action Grants.

What happens next?

Of course, it will take to the mid-1980s and beyond to complete all the projects described in this article. It will probably take several more years before the market absorbs all the office space, and office development appears to be the primary stimulus for change in downtown Pittsburgh as in most other downtowns. Towards the end of the decade there may well be several more office developments including one on the site of the Jenkins Arcade, the modernization of Gateway Center, and possibly even the replacement of some of its buildings.

After the completion of the North Shore housing project, the City will encourage apartment construction and adaptive re-use in the Firstside and Penn-Liberty areas. New housing is being planned at Station Square and there will be more residential development in the Mt. Washington district.

There will probably be at least one more hotel beyond the ones planned for the Convention Center and Steel Plaza projects. Beyond these developments the future, already cloudy, tends to fade from view. Stories about architecture can have endings; there is no such clear stopping point when we talk about urban design.



ELEGANT TEXTURE AT A BARGAIN PRICE

For this Philip Morris plant in bucolic Cabarrus County, North Carolina, Marcel Breuer Associates drew on the firm's accustomed expertise in the effects of light and shadow on exposed concrete to develop a herringbone-texture precast concrete system that expertly exploits the sun to give life and elegance to the building. The appearance changes as the sun moves, and even on a cloudy day the panels still read as linear textured elements. Says Herbert Beckhard, partner-in-charge for the firm (now known as MBA/Architects and Planners): "The building is nearly a half mile long, and we didn't want to even try to deny its size. We wanted something bold and visible from a distance. The client was oriented toward masonry and was ready for something different, but at a reasonable cost. The objective was not to create a 'state-

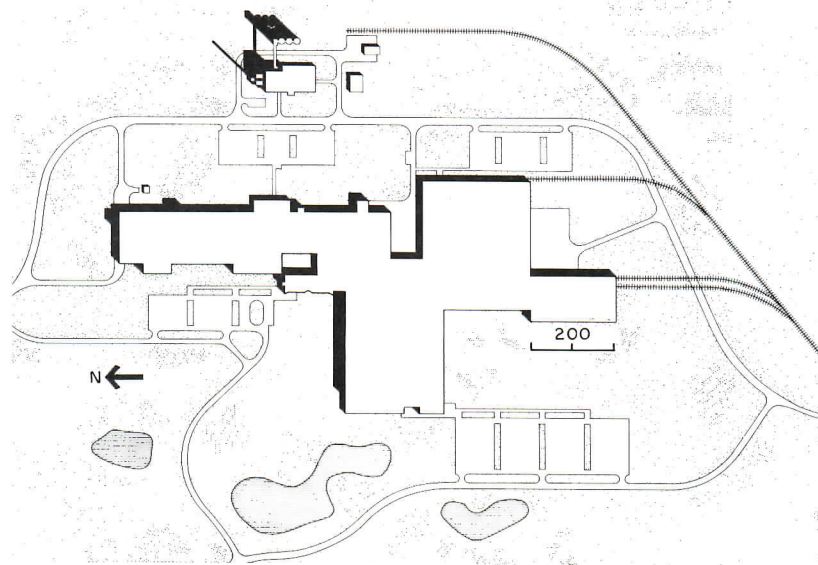
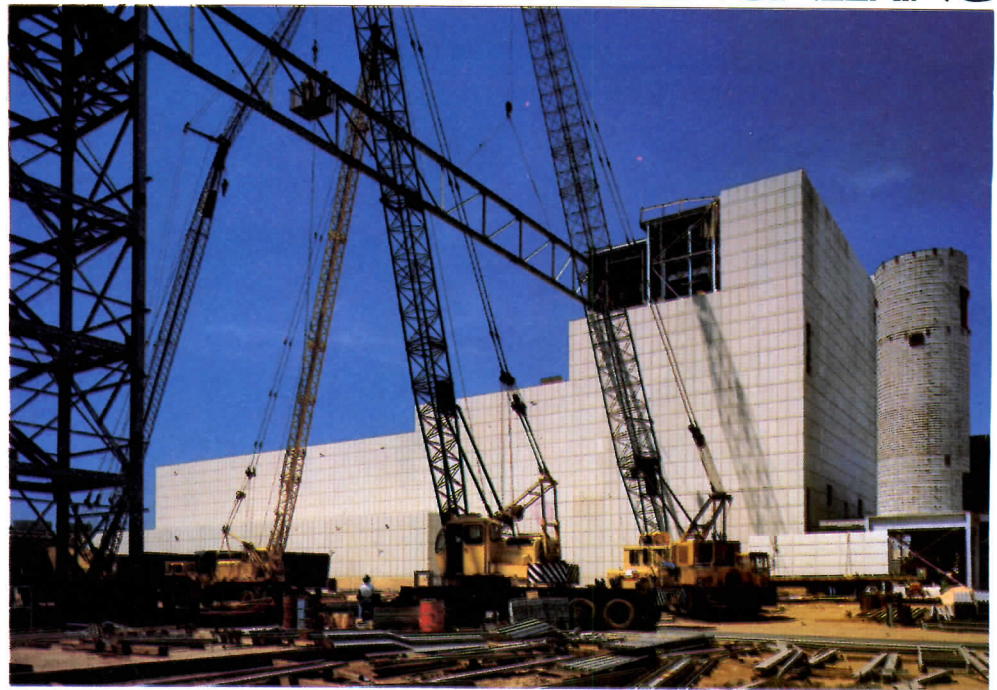
ment,' but rather a very nice place to work."

The architects' solution was a rusticated precast concrete panel, 8- by 25-ft, that provides both exterior and interior finish and thermal insulation at an erected cost of only \$12 per sq ft. Because 4 ft is a good dimension for scale, the architects designed the panel with a recess (in a sense a "false" joint) down the center of the herringbone pattern and recessed strips at each end, so the exterior appears to be 4- by 25-ft units.

In order to fabricate the panels, the precast manufacturer—Exposaic, Incorporated of Charlotte—made a master panel by placing wood strips in a form in the herringbone pattern. After the concrete set, the precaster bush-hammered the ridges to give the roughened texture. This master then was

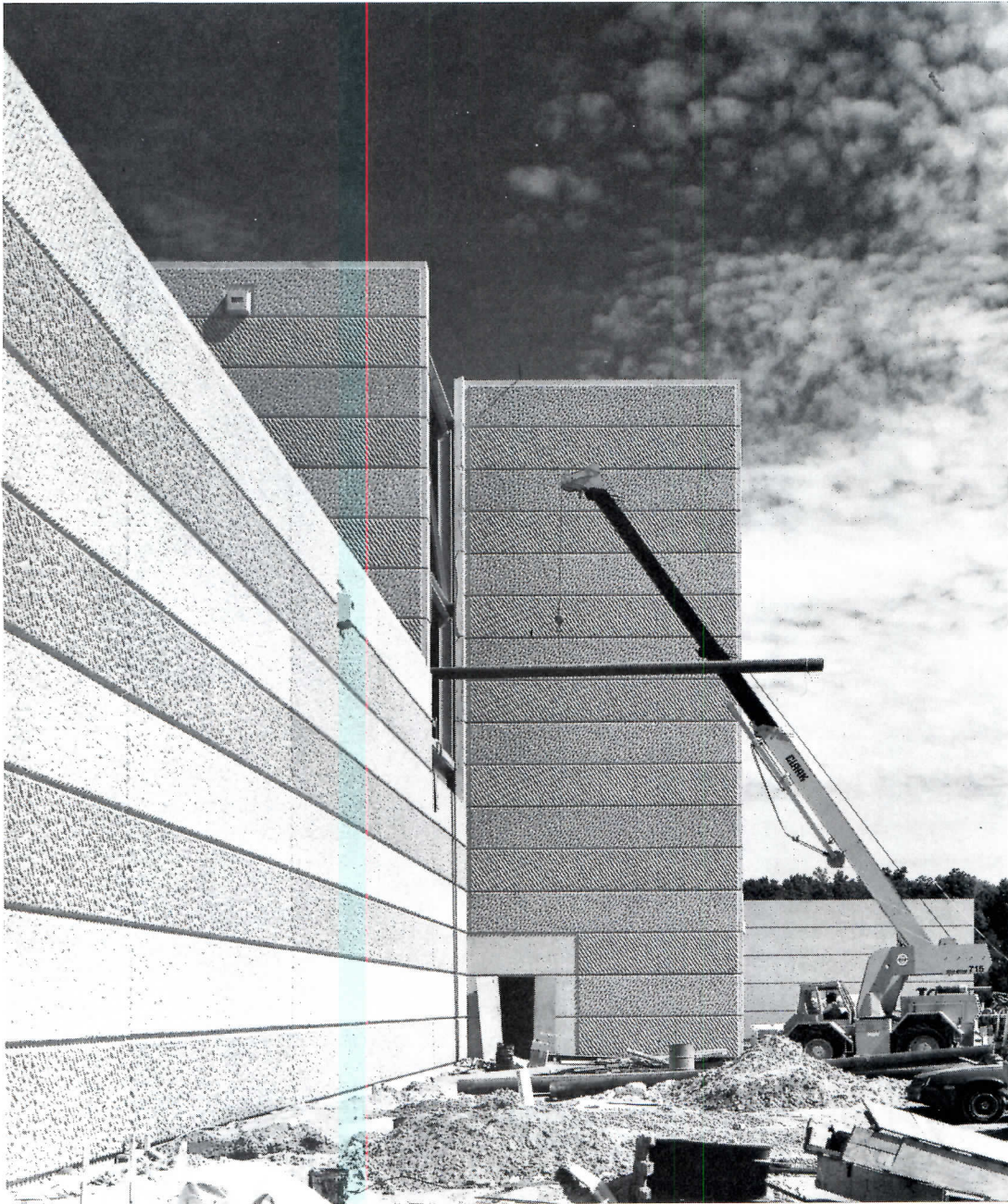


©Nick Wheeler photographer



The rural site—with trees, lakes, and cattle grazing nearby—commanded respect from the architects who organized the building for functional production flow and ease of worker access and circulation. Because of the size of the building there are four entrances and associated parking lots. The cigarette manufacturing plant starts with primary processing on the left, moves to manufacturing in center bays, and then to storage and finished goods on the right. The central plant (top photo) is in a separate building, and its precast facade has a vertical accent instead of the horizontal accent of the panels for the factory. The precast panels are load-bearing in the sense that they carry the weight of each other from top to foundation, except at setbacks. Thus, the steel frame does not have to carry this weight, but only holds the panels from tipping.





Viewed obliquely, the panels present an alternating pattern of light and shadow. Panel areas at entrances and windows are smooth to avoid rough edges where workers circulate and to provide contrasting highlights in the facade at these locations. Smooth-faced precast units also are used for air scoops that exhaust and return room air (see drawings top right on opposite page). This eliminates the need for louvers in exterior surfaces since air is taken in through the soffits of these scoops, which have a modular dimension of 4- by 25-ft. These air scoops are used low in the walls at the periphery of the manufacturing area and have sloping sills for ease of cleaning. To emphasize the sheerness of the facade near office areas and lounges the reflective insulating glass units have minimal surround and are set in silicone.

used to make rubber molds for producing the panels in quantity. After removal from the molds, the panels were sandblasted.

The architects designed smooth-surfaced panels for entrances to avoid rough edges, to provide visual accents around entrances and windows, and to make connections easy. The central mechanical plant, which is set apart from the factory, is faced entirely with smooth-surface panels, and though these panels also have the 8- by 25-ft dimension, they are hung vertically rather than horizontally to differentiate the buildings and to reflect the difference in the structural-steel frames.

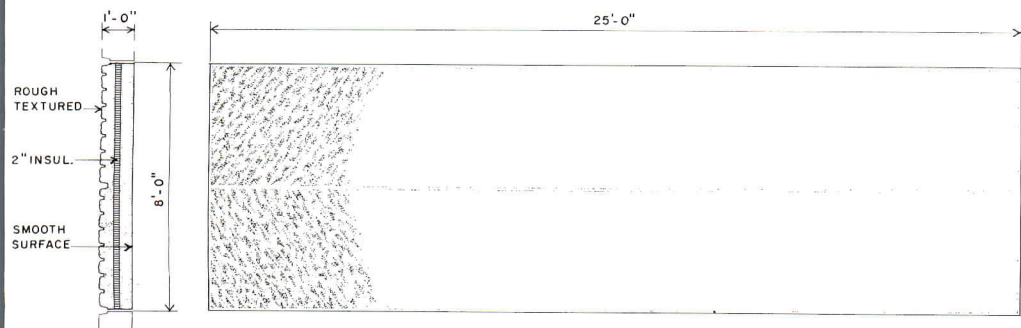
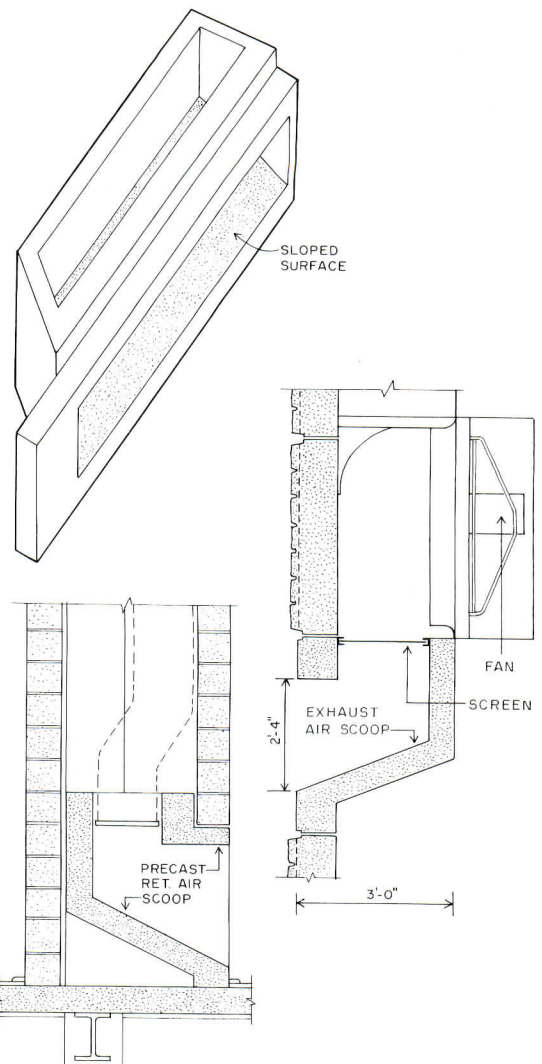
"Philip Morris is very much a personnel-oriented client," says MBA partner Herbert Beckhard, and so the architects also needed to address a number of design and internal-

environment issues including circulation for workers, provision of a clean environment that is easily maintained, good noise control and good lighting.

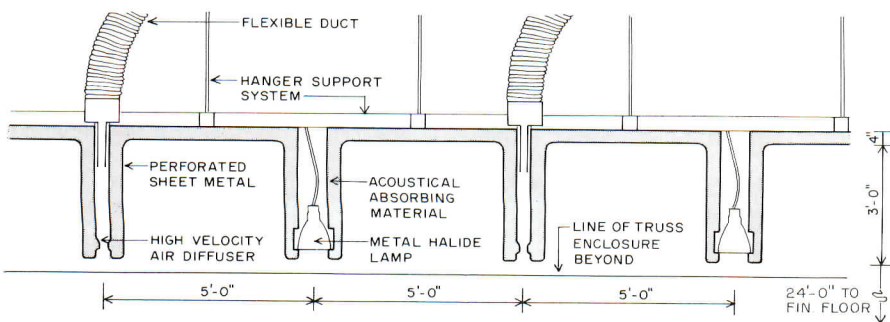
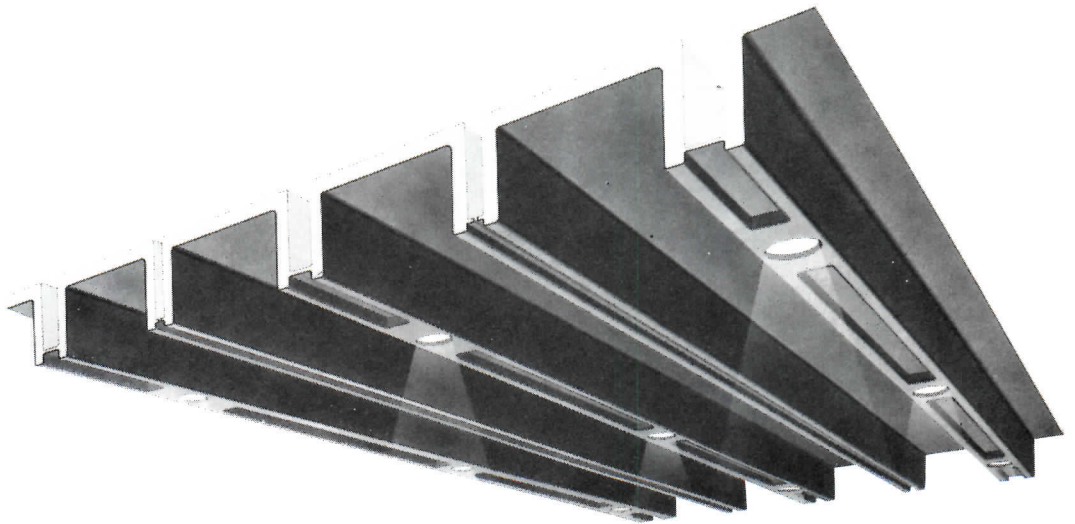
The architects paid particular attention to noise control, air distribution and lighting in a 200,000-sq-ft area where the cigarettes are made and packaged. In collaboration with their acoustical, mechanical and lighting consultants, and with Industrial Acoustics Corporation, MBA developed a special ceiling of 3-ft-deep metal troughs that absorbs noise and that houses H.I.D. lighting fixtures and high-velocity air diffusers. The ceiling units are made from film-coated metal sheets that are stamped, roll-formed and preassembled at the factory in 10- by 28-ft modules for shipping to the site. These units are staggered in the ceiling so that rows of lights and

diffusers alternate from module to module. This special ceiling, itself, covers 160,000 sq ft of space. The diffusers are simple, unobstrusive slots typically used in high-ceiling spaces. The H.I.D. downlights are gasketed to make them tight.

PHILIP MORRIS MANUFACTURING FACILITY, Cabarrus County, North Carolina. Owner: *Philip Morris U.S.A.* Architects: *MBA/Architects and Planners*—partner-in-charge: *Herbert Beckhard*; project architect: *Frank Richlan*. Engineers and associate architects: *J. E. Serrine Company*. Landscape architect: *Zion and Breen Associates*. Consultants: *Peter George Associates* (acoustics); *Claude R. Engle* (lighting). Special engineering consultants: *Weidlinger Associates* (structural); *Jaros Baum and Bolles* (mechanical). Construction manager: *Metric Constructors*.



The precast panels have 2 in. of polystyrene foam insulation sandwiched in the middle. They are 8 ft high because this is an easily transported size and 25 ft long to correspond to the spacing of steel columns. The architects experimented with a number of different panel-facing designs to find one that worked best for light and shadow and to determine how "rustic" the design should be—bold enough so the pattern would not disappear at a distance. The architects selected aggregates for a warm beige color.



In the 24-ft-high space where cigarettes are made and packaged, the architects and their consultants designed a special metal ceiling that integrates sound absorption, circular HID downlights (for ease of maintenance and for color rendition), and high-velocity air diffusers to project air down to the worker level without incurring air entrainment. The sheet metal is finished with tobacco-colored *Tedlar* film.

A new design tool for interior color selection of laminates

Formica Corporation has recently introduced *The Color Grid*—an integrated color system for laminates to serve as an on-going reference system for the company's range of products. It is claimed to be the largest single collection of color ever offered in the laminate industry. In an attempt to market laminates as an elegant, not only practical material, Formica organized a Design Advisory Board composed of architects and interior designers who act as consultants on the firm's design program and product planning. A special nine-member Color Task Force from the Board reviewed the manufacturer's color line, and devised this new scheme incorporating both traditional color needs and current color trends. The 17 members of the Board are: Charles Boxenbaum, Alan Buchsbaum, Joseph D'Urso, Richard Hobbs, Margaret Larcade, Billy McCarthy, Tony Moses, Charles Morris Mount, Ristomatti Ratia, Barbara Ross, Valerian Rybar, John Saladino, Barbara

Schwartz, Paul Segal, Donald Singer, William Turnbull, Jr. and Mary Wolter. Organized in 1977, DAB's first major program was to design a collec-

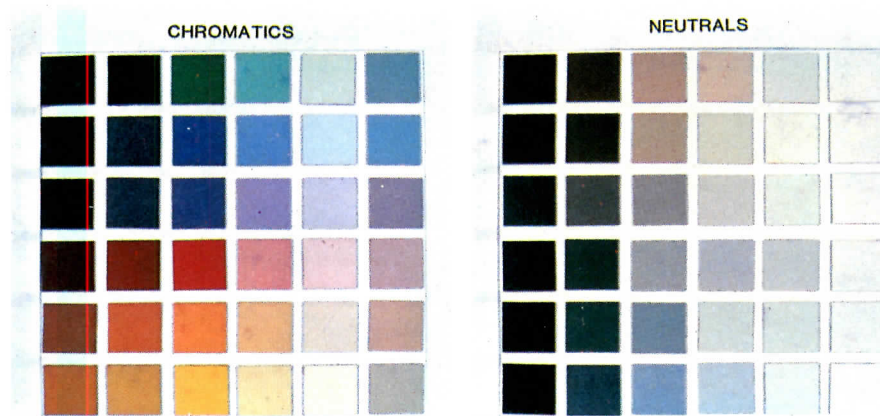
tion called "Design Concepts" (RECORD, August 1980). *The Color Grid* consists of two grids, one for Chromatics, the other for Neutrals. Each has 36 colors graded by hue and value to provide a logical progression of color from dark to light, and warm to cool. The

system's comprehensive nature, yet simplified organization, offers flexibility of working within hue or value, and with tint and shade variations; it can be bent to a small radius on suitable postforming equipment for use wherever contour edges are required. VGS is a thinner grade, special-

company's research team to be used expressly on smooth surface laminates using these new colors. The matte finish minimizes problems of color change during the manufacturing process. The color system is available in nominal sheet sizes (HGP: maximum width to 60 in., maximum length to 144 in.; VGS: width 48 in. and length 96 in.). *The Color Grid* display package (below) is elegantly designed by Larry Wolfson of Michael Abramson + Associates. Within a file case are two books: one with spirally-bound pages with tear-out samples of both grids; the other contains large color laminate chips of both grids shown on pull-out accordian-fold panels in a wrap-around cover. A system created by designers for designers, *The Color Grid* is a useful tool during the selection process of interior colors for laminates.

Formica Corporation, a subsidiary of American Cyanamid Company, Wayne, N.J.

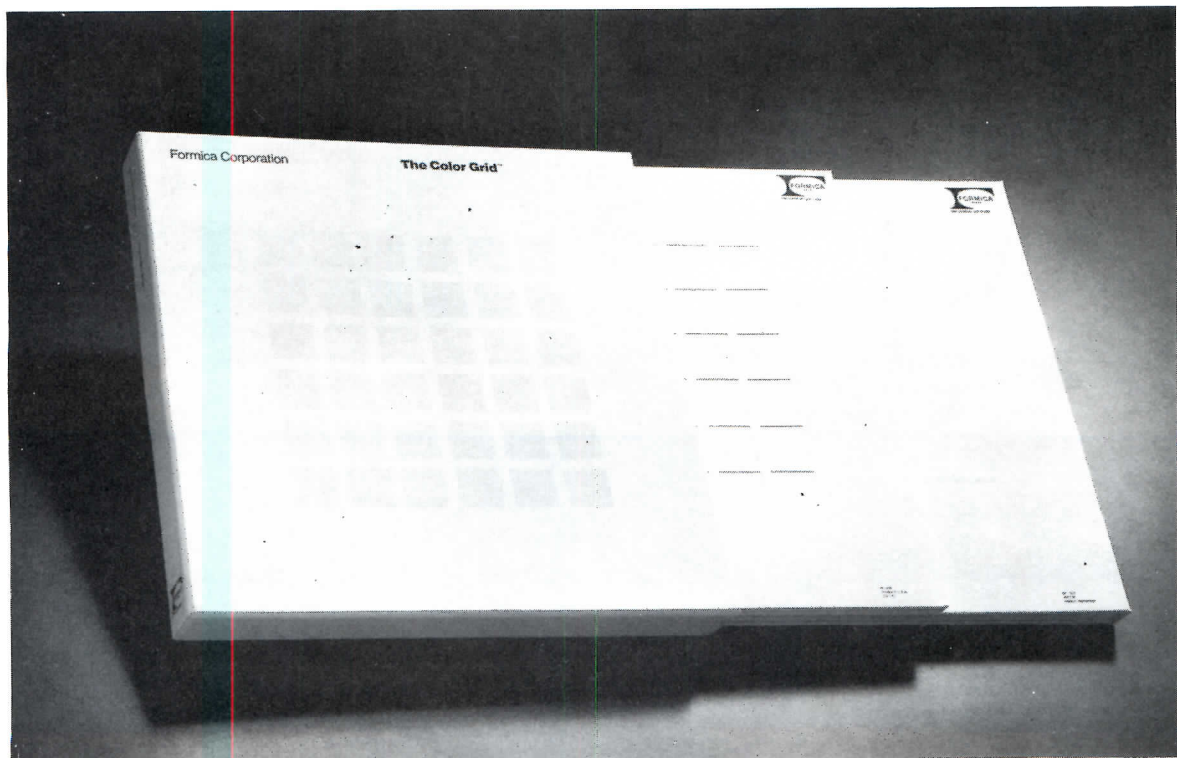
circle 300 on inquiry card
more products on page 12



tion called "Design Concepts" (RECORD, August 1980). *The Color Grid* consists of two grids, one for Chromatics, the other for Neutrals. Each has 36 colors graded by hue and value to provide a logical progression of color from dark to light, and warm to cool. The

in graduated steps. This new program is available in two grades of materials: Horizontal General Purpose Postforming (HGP) and Vertical General Purpose Standard (VGS). HGP is a tough new universal grade perfected for all interior horizontal and vertical applica-

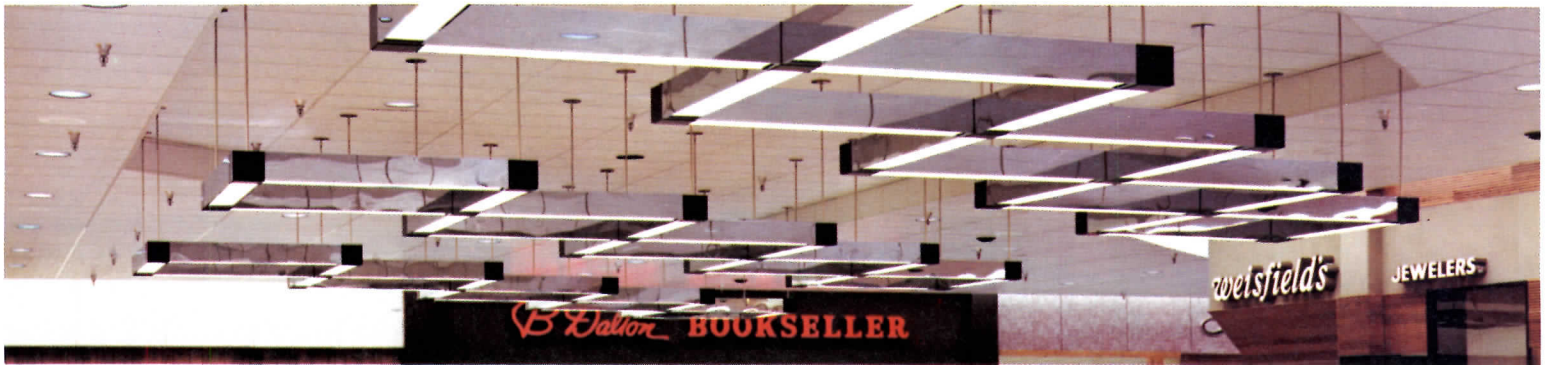
ly engineered for vertical applications where usage does not require the durability of HGP. Both grades meet ISO (International Organization for Standardization) and NEMA (U.S.) performance standards. As an added feature, a matte finish was developed by the



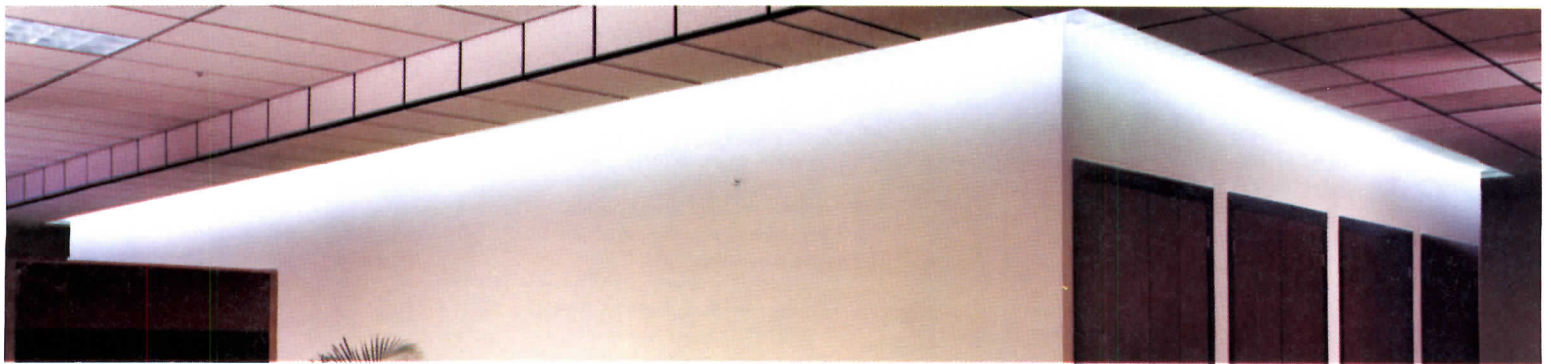
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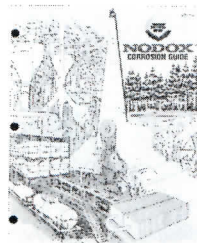
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Circle 44 on inquiry card



GLASS BLOCK / A 15-page color brochure on the exterior and interior design capabilities of glass block shows individual patterns and applications. Other sections deal with the glass block's physical properties, and specialized solar reflective block performance data and panel design. ■ Pittsburgh Corning Corp., Pittsburgh.

circle 400 on inquiry card



CORROSION RESISTANCE / A 4-page guide discusses the physical properties of a new coating for surfaces in industrial locations. Defined as a "thermosetting phenolic compound," the product is evaluated in terms of temperature, chemical resistance and cost effectiveness. Also included are typical specifications and warranty information. ■ The Wing Co., Cranford, N.J.

circle 405 on inquiry card



SPORTS NETS / Diagrams and photographs illustrate a line of nets from tennis to water polo in this eight-page brochure. Included are tennis, soccer and hockey accessories, as well as a net specification guide. Past applications include Wimbledon, Wembley Stadium and the Olympics. ■ Edwards Sports Products, Moodus, Conn.

circle 410 on inquiry card



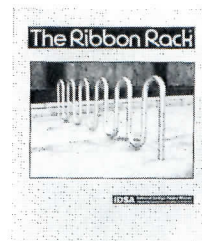
CEILING FANS / A 6-page color brochure presents the first new line of ceiling fans from this manufacturer since 1886. Included are pictures of both 52 in. and 36 in. sizes and 70 new accessories. Installation tips are given with a toll-free service number as well as information on a five-year limited warranty. ■ Robbins & Myers, Inc., Memphis.

circle 401 on inquiry card



STORAGE EQUIPMENT / A 52-page, four-color catalog provides information on equipment used to create and file plans, prints and specialized graphics. The catalog consists of five product divisions: vertical print files, original drawing files, roll files, multi-mode files and drafting/drawing furniture (which includes drawing machines and light boxes). ■ Plan Hold Corp., Irvine, Calif.

circle 406 on inquiry card



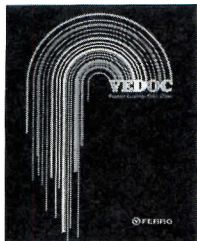
BIKE RACKS / A 4-page brochure with photographs and diagrams explores the advantages of one-piece tubular construction racks said to use 50 per cent less space than other designs. The installation methods are in-ground anchoring or optional flange mounting. ■ Brandir Enterprises, Inc., New York City.

circle 411 on inquiry card



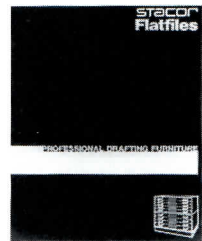
MODERNIZED BUILDINGS / From the Building Services Division, this brochure outlines a step-by-step approach to modernizing commercial buildings, beginning with a survey of environmental systems, analysis of operations, engineering assistance and installation to a warranty program on all workmanship and equipment. ■ Honeywell, Inc., Minneapolis.

circle 402 on inquiry card



POWDER COATINGS / A color chart includes 20 epoxy and 12 polyester/polyurethane powder coatings colors. The coatings are claimed by the manufacturer to meet the exposure, impact and stain resistance demanded for exterior finish applications. ■ Ferro Corp., Cleveland.

circle 407 on inquiry card



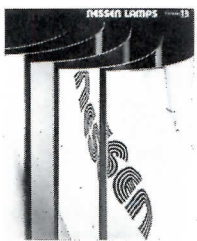
FLAT FILES / Organization and protection of mechanicals, blueprints, maps, charts, drawings, art papers and prints are the subject of this catalog. Information includes details about self-contained stackable files, component files for integrated expansion and 25-drawer files. ■ Stacor Corp., Newark, N.J.

circle 412 on inquiry card



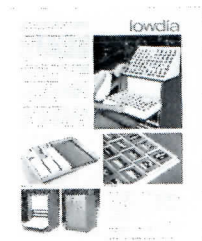
GLAZING / A pocket-sized 6-page booklet provides information on how to glaze with Lexan sheet products. Procedures for proper installation are outlined: how to measure openings; how to cut, bend, drill, bolt and route; and how to mount and seal your glazing. Proper cleaning and maintenance instructions are also included. ■ General Electric Co., Pittsfield, Mass.

circle 403 on inquiry card



LAMPS / A 52-page catalog covers over 80 different floor, table and wall lamps, including the swing arm lamp, first developed by Walter Von Nessen in 1927, and contemporary styles created by Marc Heinlein. Metal parts of lamps are made of solid brass and other parts are made from wood, leather or nine types of imported Italian marble. ■ Nessen Lamps, Inc., Bronx, N.Y.

circle 408 on inquiry card



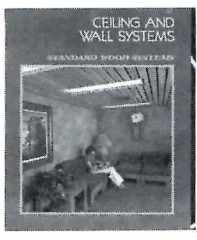
SLIDES / A one-page brochure exhibits features of this manufacturer's slide cabinet, which provides for sorting, viewing, bulk and group storage and enlarging. The cabinet measures 36- by 20- by 24-in., and holds over 2,700 slides on screens and over 25,000 in bulk storage. It is available in birch veneer or formica. ■ Lowdia, Charleston, W. Va.

circle 413 on inquiry card



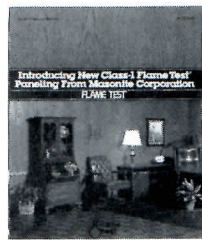
PARQUET FLOORING / A 4-page color brochure illustrates how flooring is made, and explains differences between four finishes. The line of matching moldings and three types of parquet backings are included as well as information on product specifications, product comparisons, and general installation instructions. ■ Hartco, Oneida, Tenn.

circle 404 on inquiry card



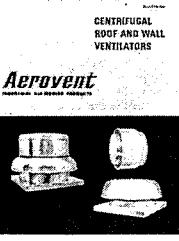
WALLS AND CEILING / A four-page brochure features two wood paneling systems with matching edge moldings and stainless steel mounting clips. Details of the mounting system are given as well as instructions for demounting. Also included are specifications for each type of paneling. ■ Standard Forest Products, Inc., Eugene, Ore.

circle 409 on inquiry card



PANELING / A four-page color brochure presents a product with a Flame Spread Rating of 25 for use in areas where fire codes require Class 1 or Class A ratings. Six finishes are displayed along with specifications and accessories. Paneling comes in 4- by 8-ft. sheets, 1/4-in. thick. ■ Masonite Corp., Laurel, Miss.

circle 414 on inquiry card



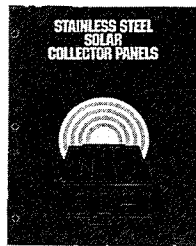
VENTILATORS / A 20-page bulletin describes centrifugal roof and wall ventilators, including a new, belt-driven wall model. Dimensional and performance data on all models, plus details and illustrations of accessories, prefab curbs and sound curbs are included as well as a description of the company's one-year warranty.

■ Aerovent, Inc., Piqua, Ohio.
circle 415 on inquiry card



ACOUSTICAL FOAM / A 12-page color brochure presents applications for the various forms of SONEX, a special acoustical foam. Information is provided on installation and a diagram illustrates how privacy panels can use the product for acoustical control. Specifications are given for each application.

■ Illbruck/USA, Minneapolis.
circle 420 on inquiry card



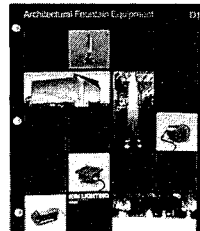
SOLAR PANELS / Describing the design, manufacture, and use of stainless steel absorber panels for solar hot water and interior heating systems, this 32-page book also covers material selection, typical panel designs, and an inexpensive permanent chemical blackening process.

■ American Iron and Steel Institute, Washington, D.C.
circle 425 on inquiry card



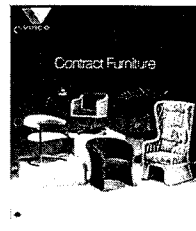
JACKS / Hydraulic cylinders for lifting, shoring, tunneling, jacking and rigging in maintenance areas such as field repair shops, railroad and maritime shops and mining locations are featured in this brochure. Cylinder capacities range from 5 to 500 tons.

■ ENERPAC, Butler, Wisc.
circle 416 on inquiry card



FOUNTAINS / A 44-page color catalog, entitled "Architectural Fountain Equipment," covers jets and nozzles, mechanical components, underwater lighting, electrical components and technical data. Also included are typical mechanical and electrical plan views, charts of available lamps, replacement gaskets and lenses.

■ Kidde, Inc., City of Industry, Calif.
circle 421 on inquiry card



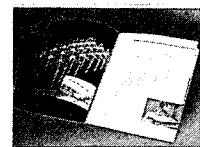
CONTRACT FURNITURE / Rattan and cane chair designs, upholstered stack chairs, folding chairs and tables, pedestal and conference tables are featured in this 52-page color catalog. Included is information on materials, color combinations, and dimensions.

■ Virco Mfg. Corp., Los Angeles.
circle 426 on inquiry card



ALUMINUM / This color brochure shows how to create signs, exhibits, displays and interiors with ALUCOBOND, a material consisting of two sheets of aluminum with a thermoplastic core. Photographs illustrate fabrication and applications, with performance data and available sizes and finishes.

■ Consolidated Aluminum, St. Louis, Mo.
circle 417 on inquiry card



FABRIC STRUCTURES / A 28-page color brochure offers design data on fabric structures (made from glass fabric coated with Teflon fluorocarbon resin). The two types of structures, air-supported and tension-supported, are diagrammed and illustrated in 20 installations, including the Haj Terminal and a Bullock's Department Store in California.

■ DuPont Company, Wilmington, Del.
circle 422 on inquiry card



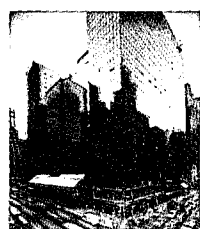
WASHERLESS FITTINGS / A new cartridge design, which keeps water at the bottom of the valve, eliminating leakage around the bonnet, is the subject of this 8-page color brochure. Featured in the brochure are single control and two-handle fittings available in chrome or brass finishes and either acrylic or metal handles.

■ Eljer Plumbingware, Pittsburgh, Pa.
circle 427 on inquiry card



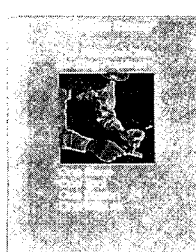
MOLDINGS / A 12-page color brochure provides ideas on how moldings can be used individually or in combination. Several applications are shown, as well as profiles of different pieces, such as base, casing, batten strip and crown, for each of the two styles presented. Also included are installation tips and finish samples.

■ Gossen, Div. of United States Gypsum Co., Chicago.
circle 418 on inquiry card



SOUND CONTROL / A 16-page brochure details the use of fiberglass insulation for sound control in commercial buildings. In addition to discussing sound transmission measurements and sound control batts, it features 31 illustrations of steel stud, wood stud, and floor/ceiling constructions for various STC levels.

■ Johns-Manville, Denver.
circle 423 on inquiry card



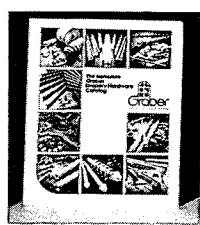
GRATE CLAMP / A 6-page color brochure describes a one-piece, reusable grating fastener designed to increase safety and reduce time and costs in installation. As illustrated, installing the clamp requires one person with a pocket ratchet. The clamp is made as one complete unit and comes in three, color-coded sizes to fit flanges from 3/16-in. to 1 1/4-in.

■ EPI, Richfield, Ohio.
circle 428 on inquiry card



CEILING FANS / A 20-page color brochure presents the latest Hunter line of ceiling fans for residential and commercial use. The booklet shows low profile light kits, handmade Tiffany globes and blades now standard on the 52-in. and 38-in. fans.

■ Comfort Conditioning Div., Robbins and Myers, Inc. Memphis.
circle 419 on inquiry card



DRAPERY HARDWARE / A 128-page "Drapery Hardware Catalog," is intended as a guide to commercial and residential applications. Rods, track and hardware are shown, with specifications for architectural assemblies and information on rod placement. Highlighted are decorative accessories, workroom supplies and installation aids.

■ The Graber Co., Middleton, Wisc.
circle 424 on inquiry card



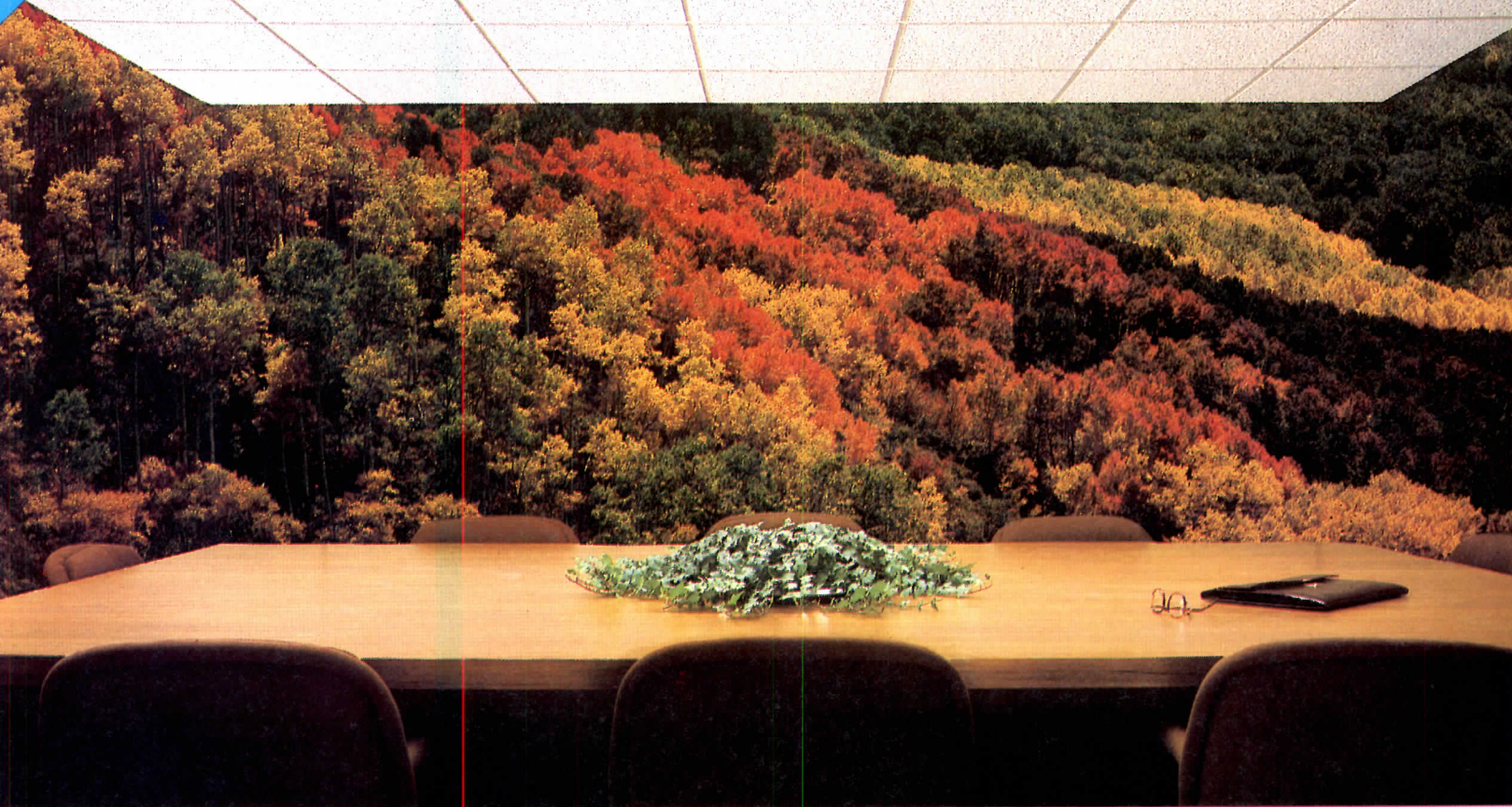
VICTORIAN LIGHTING / Classical, Rococo and Colonial Revival periods are represented in this 13-page color catalog as well as Art Nouveau and the Arts and Crafts styles. Ceiling and wall fixtures are shown with dimensions and bulb specifications alongside. Also included is information on various details such as the hand-blown glass shades.

■ Progress Lighting, Philadelphia, Pa.
circle 429 on inquiry card

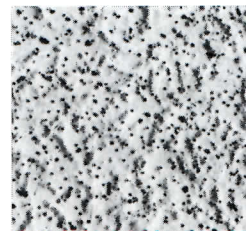
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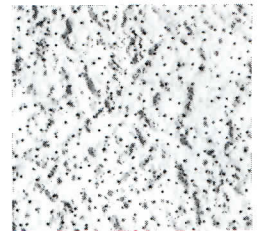
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Now, U.S.G. makes high-fashion textured ceilings an affordable choice! This exclusive new line of Auratone Panels is heavily embossed for a rugged, natural look. Made of non-combustible mineral fiber and coated with washable vinyl, these panels resist damage and conceal surface scuffs beautifully. And they offer you all of the Auratone well-balanced sound attenuation and absorption properties. The 24" x 24" panels are offered in both white and sandstone. For information, see your U.S.G. Representative or write to us at 101 S. Wacker Drive, Chicago, IL 60606, Dept. AR182



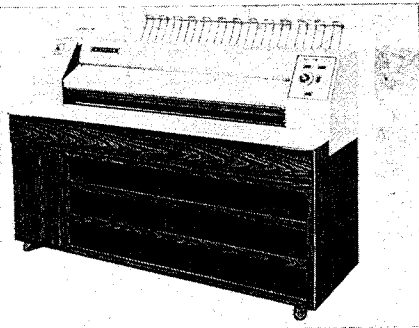
**New Horizons
"Aspen" pattern**
Bold, deep-sculptured peaks and valleys.



**New Horizons
"Tahoe" pattern**
Less emphatic but no less dramatic.

UNITED STATES GYPSUM 
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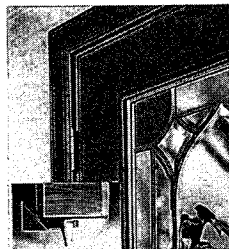
Circle 45 on inquiry card



WHITEPRINTER / A three-lamp fluorescent whiteprinter, the "Trident" is designed to fill mid-range production requirements, between the typical tabletop print machine and the more costly, larger mercury vapor lamp machines. The "Trident" has a capacity of up to 40 ft per minute, operating at a low noise level. An internal absorption system makes it practically odor free; the oak-grained cabinet provides storage space and top work surface. ■ Dietzgen Corp., Des Plaines, Ill.

circle 301 on inquiry card

DOOR FRAME SYSTEM / A two-piece steel frame,

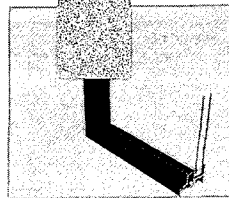


the *Adjusta-Fit* residential entrance provides a single pre-hangable jamb and closure units to cover the range from 4 1/8- to 7-in. wall thicknesses. Interior and exterior wall sheathing may be installed after the frame is in place. The frame has the appearance of wood, and carries a 1 1/2-hr fire rating. Magnetic and compression weatherstripping and a thermal barrier threshold are standard.

■ General Products Co., Fredericksburg, Va.

circle 304 on inquiry card

INSULATED PANELS / *Altex* aluminum faced insu-



lated glazing and spandrel panels are marketed for remodeling and moderate budget construction applications. They are constructed of 10 mil thick, stucco-embossed aluminum skins laminated to hardboard substrates which are in turn bonded to a styrene or urethane insulating core. A two-in.-thick *Altex* panel has an R value of 13.4. The panels are finished with a polyester-melamine coating, available in four colors, which is warranted for 20 years. ■ Gil Corp., Reading, Pa.

circle 305 on inquiry card

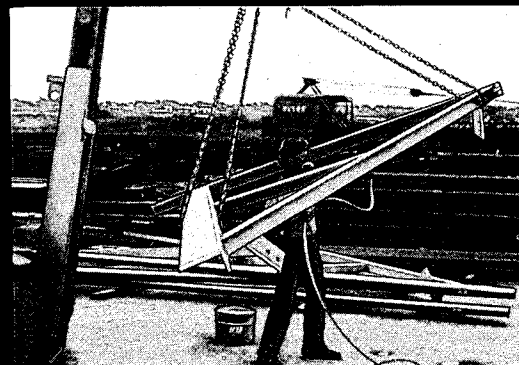
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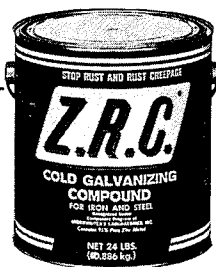
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- Recognized under Component Program, **Underwriters' Laboratories, Inc.**
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- Passes Preece Test for hot dip
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AVAILABLE IN SEVERAL SIZES

(Also specify to rustproof welds, regalvanize damaged hot dip.)

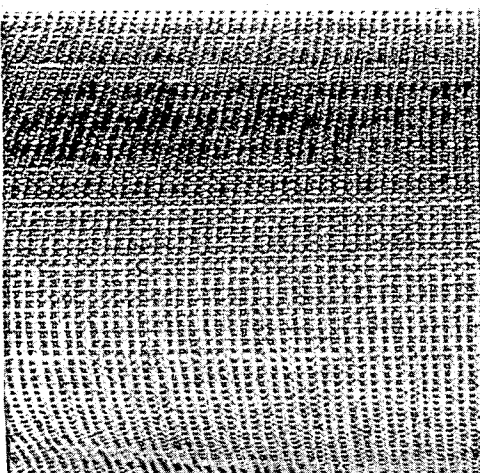


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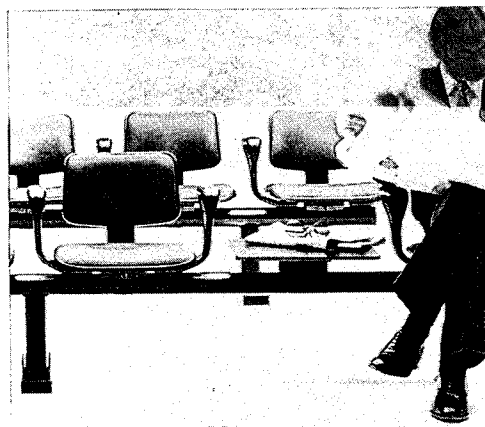
21 Newport Ave., Quincy, MA 02171 • Tel. 617/328-6700

Circle 46 on inquiry card



WOOL FABRIC / A plain weave available in ten soft, two-tone colors, "Cotswold" is woven of 100 per cent mothproofed wool. It is suitable for both contract and residential applications. ■ Gretchen Bellinger Inc., New York City.

circle 302 on inquiry card



SEATING / The Edys seating system, designed in Italy by Olivetti and being distributed in the U. S. by Pace, includes the collective seating shown. Low side tables or a series of three to five seats, with or without armrests or writing tables, can be applied to the structural steel beam. The floor anchored beam is also designed for the application of headphones. ■ The Pace Collection, Long Island City.

circle 303 on inquiry card

Glass-terpiece

The beautiful new Collin Creek mall in Dallas' suburban Plano area is another evidence of Naturalite's expertise in glass skylights.

The 28,000 square foot system of Lean-To and Structural Pyramid skylights was designed and installed by Naturalite in less than four months and utilizes energy-conserving mirrored glass. The fast-track installation was delivered on budget and on time. The mall was opened in mid-1981. Federated Realty, Cincinnati, is the owner-

builder-developer. General contractor, Walker Const. Company, Fort Worth, Tx. Architects, R.T.K.L. Associates, Inc., Baltimore.

Whatever your design calls for, Naturalite can execute it beautifully in acrylic, glass or polycarbonates. And, we are equipped to install larger custom applications almost anywhere.

See Sweets insert 7.8/Na or contact the factory. Naturalite, America's largest skylight company. Your single source for skylights.



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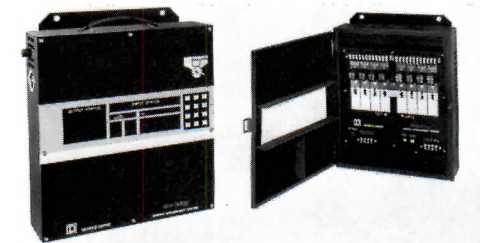
WOOD CHAIRS / These quality crafted wood frame chairs with upholstered seats, called the "Stack Back" chair, offer tapered arm/back detailing, particularly good for conference table use. ■ Thonet, York, Pa.

circle 306 on inquiry card



TWO NEW WEAVES / Michael Graves has colored two new weaves, called Deauville and Gaspé. Deauville is a medium-weight upholstery tweed offered in a variety of colors. Gaspé is a lightly brushed wool upholstery planned for use with Deauville and other textured Sunar upholstery; colors are described as "painterly" being slightly reflective and appearing differently as light changes. ■ Sunar, Norwalk, Conn.

circle 307 on inquiry card



ENERGY MANAGEMENT / Two Watchdog energy management systems are available for industrial and commercial facilities that have more than eight loads to control. Both are expandable in increments of eight loads, and feature demand measurement from current transformers or utility meter pulses. Savings are obtained through demand control, load rotation, duty cycling and seven-day scheduling. ■ Square D Co., Milwaukee.

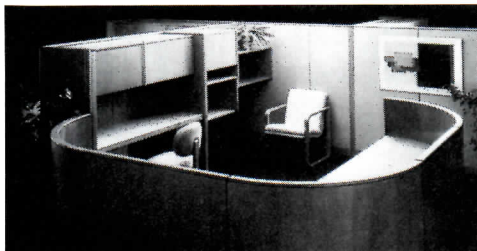
circle 308 on inquiry card

EXECUTIVE CHAIR / The Labofa "Labomatic L 8135" chair is fully adjustable to each individual user's build and work requirements. With independent tilt action, all adjustments are made by control levers. The high-back executive chair is set on a tip-proof five-star aluminum base, and is offered in a number of fabrics, artificial leathers, and hide coverings.



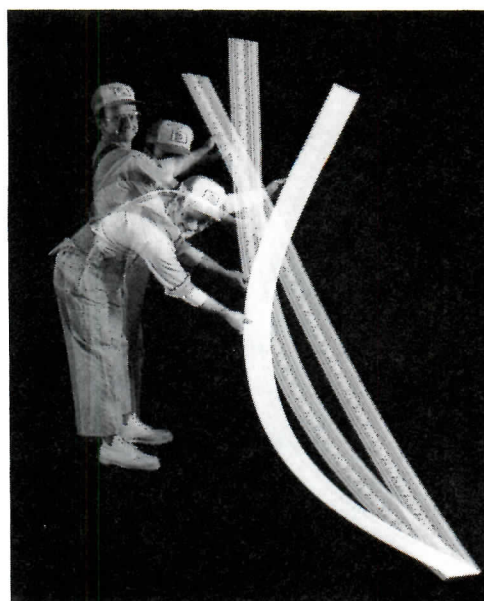
■ Functional Office Furniture, San Rafael, Calif.

circle 309 on inquiry card



OAK PANEL SYSTEM / Rift oak veneer, consistent in color and grain pattern, has been used extensively in Gunlocke's office panel system, offered in four heights and four widths, straight or curved. Narrow reveals and slight radius edges highlight the panels, available in both veneer and acoustical fabric surfaces. Installation requires only a socket wrench and screwdriver as panels bolt together with a self-guiding connector plate. ■ The Gunlocke Co., Wayland, N.Y.

circle 310 on inquiry card



ARCHITECTURAL ORNAMENTATION / For use in conjunction with Focal Point polymer straight-run moldings, *Contour-all* is a completely flexible material that allows the user to incorporate architectural detailing into stairwells, circular or oval rooms, bay windows, etc., without any special tools. Said to have all the texture and personality of the wood or plaster original, reproductions include cornice moldings, ceiling medallions, domes, spandrels, etc.

■ Focal Point Inc., Atlanta.

circle 311 on inquiry card
more products on page 129

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When wasted water goes down the drain, money goes with it. That's one of the reasons the new Bradley 90-75 Metering Faucet makes such good sense. It does more than just comply with ASHRAE hot water conservation standards for public restrooms — it exceeds them. In a 10-second cycle, the 90-75 washes a pair of hands with just one pint of water — 16 hands per gallon — which is half of the maximum allowed by ASHRAE standards for hot water alone.

With convenient push-button operation, the 90-75 is activated by a mere four pounds of pressure, allowing even severely disabled people to use it with ease. And once activated, it delivers consistent, precisely metered cycles. No more irritating "one-hand-at-a-time" struggles with old-fashioned metering

faucets that splash or shut off too quickly. Instead, there's a comfortable, efficient spray of water for just the right amount of time.

The 90-75 is built to last, too. Two-point mounting and solid brass construction make it remarkably vandal-resistant. The flow restrictor, timing-adjustment screw and metering valve all are concealed in an easily replaceable cartridge.

So when the time comes to specify a metering faucet, choose the very best — the Bradley 90-75. For more information, contact your Bradley representative or write: Bradley Corporation, 9101 Fountain Blvd., Menomonee Falls, WI 53051. (414) 251-6000. Telex: 26-751.

Bradley 90-75 is a trade name and not an ASHRAE designation.



Bradley saves water, energy and money.

Circle 49 on inquiry card



VINYL COMPOSITION TILE / For both commercial and residential applications, 1/8-in. gauge *Vinylcraft* tile is manufactured by a process that duplicates the slight irregularities and shadings found in natural floors such as brick, slate, and clay pavers. "Yuma Clay," shown here, has four multi-colored pieces fused into the base tile in a geometric grid pattern, and is available in red, putty, adobe and almond colorations. ■ Azrock Floor Products, San Antonio, Tex.

circle 312 on inquiry card

DECORATIVE LIGHTING / Spherical and flame-shape incandescent "Shimmoray" bulbs have a silk-screened design bonded to the glass itself, to produce a constantly changing effect like silk moiré as the viewer moves around the light.

Available in 25-, 40- and 60-Watts, "Shimmoray" lights can be used in open-bulb fixtures, chandeliers or wall sconces. ■ Duro-Test Corp., North Bergen, New Jersey.

circle 313 on inquiry card

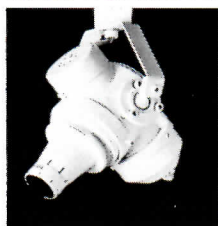
DRY-PIPE SPRINKLERS / Engineered to meet NFPA performance and reliability requirements for dry-pipe sprinkler systems, a line of 14 oil-less piston air compressors comes in both high- and low-pressure models. They range from 1/6- to 1 1/2-hp and include tankless/automatic units, bare/manual models, and tank-mounted systems (shown). The UL-listed compressors are virtually maintenance-free, and will not introduce oil-contaminated air into the pressurized sprinkler system. ■ Gast Mfg. Corp., Benton Harbor, Mich.

circle 314 on inquiry card

TOWEL WARMERS / Manufactured by Myson, two types of towel and clothes warmers for bath or kitchen are now UL-approved. Oil-filled electric models need only be connected to a 110-Volt power source, with no plumbing or pipework required. For homes with hydronic systems, there are three wall- or floor-mounted racks, for open or closed systems. Towel warmers are finished in chrome or gold plate. ■ Myson Inc., Falmouth, Va.

circle 315 on inquiry card

TRACK LIGHTING PROJECTOR / Two new systems from Wendel provide light masking illumination techniques in surface-mounted optical projectors.



Model 1180 is designed for small paintings, sculptures and antiques; model 2350 has applications in offices, bars and lobby areas. Both incorporate a "Y" yoke, adapter and track. These projectors can illuminate one or more objects to the exact contour of the item, using a contractor-installed "Système Photographique" kit. ■ Wendelighting, Culver City, Calif.

circle 316 on inquiry card

SPUN BRASS LIGHTS / The "Flash-Lite" series consists of adjustable floor lamps, table and wall lights with a specially-designed shade said to create perfect, focused illumination for a studio quality wall wash. All feature a durable 360-deg swivel and full range dimmer for precise individual adjustments. The solid brass, hand-spun shades measure 4 1/2- by 8 1/2-in.; fixtures take a 75R30 bulb.



■ Koch + Lowy, Inc., Long Island City, N.Y.

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more products on page 144

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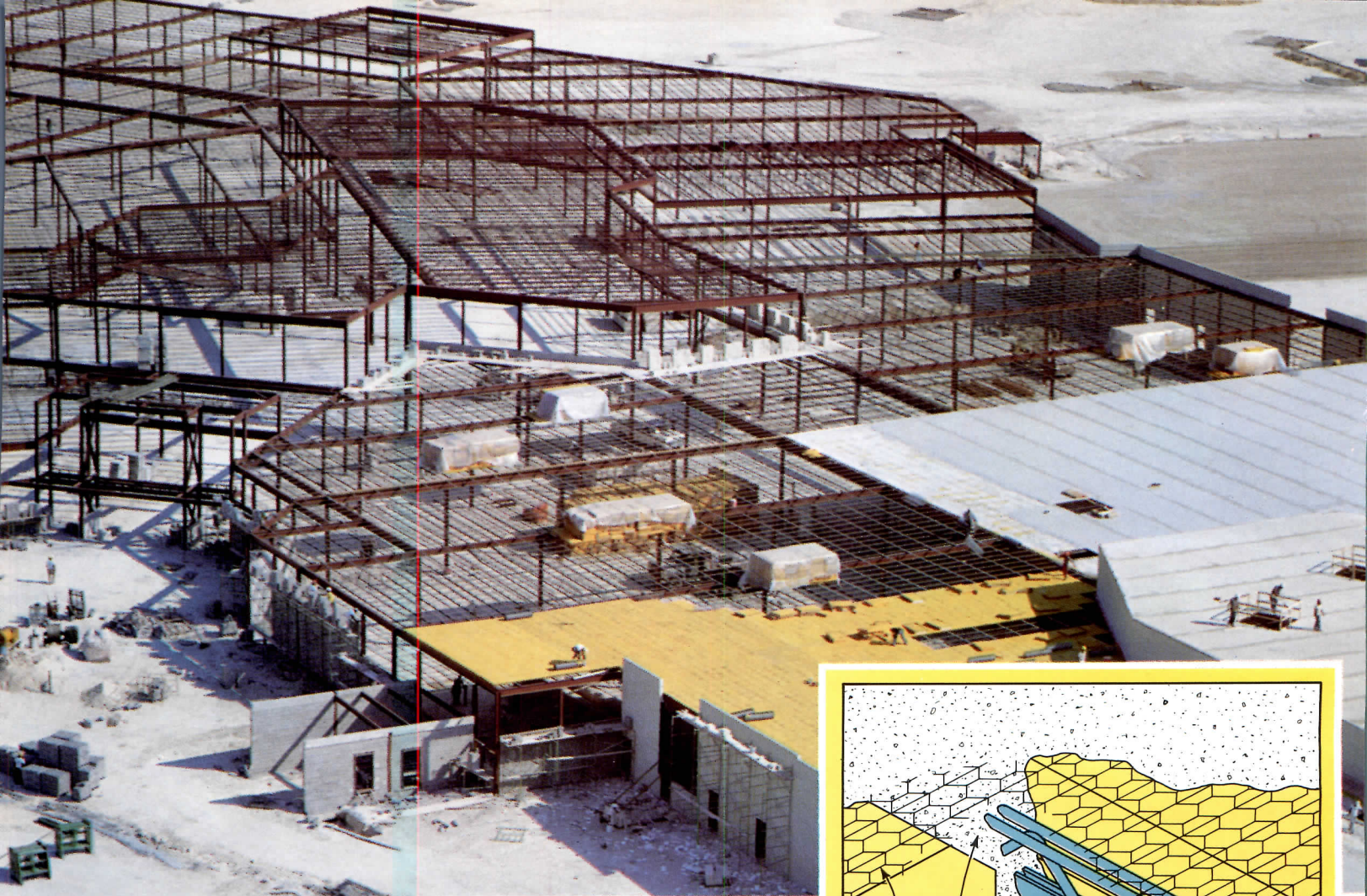
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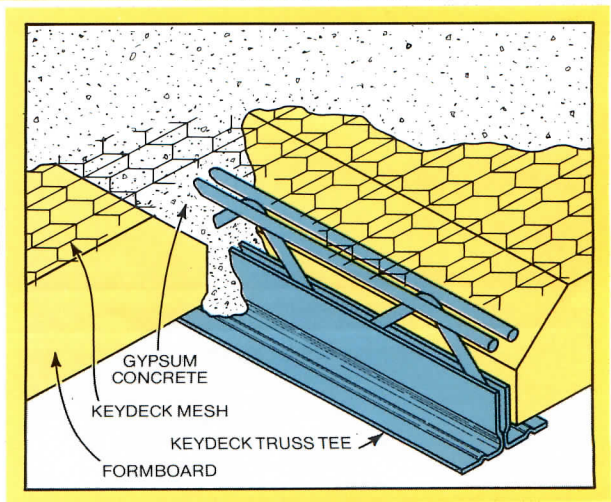
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FACULTY POSITIONS VACANT

Department of Architecture Illinois Institute of Technology — Full-time Associate Professor, starting August, 1982 to reach upper level studios. Applicants should have a terminal degree (M.S. or M.Arch.). Preference will be given to candidates with considerable professional experience in a range of building types through programming, design and construction. In addition, several years of teaching experience is required. Full-time Assistant Professor, starting August, 1982 to teach beginning courses in drawing and construction. Applicants should have a terminal degree (M.S. or M.Arch.). Preference will be given to candidates with professional experience and several years of teaching background as well as a skill in Computer Graphics, Computer Aided Design or Environmental Technology and Energy Management. Candidates for above positions should have a commitment to rational design based on human needs which includes the advancement of building technology and the conservation of energy. Salary will be commensurate with experience. For additional information and application form contact Sheila Walker, department secretary, College of Architecture, Planning and Design, Illinois Institute of Technology, 3360 S. State Street, Chicago, Illinois. (312) 567-3260. Deadline for submission of application form and C.V., etc. is January 30, 1982. Illinois Institute of Technology is an Equal Opportunity/Affirmative Action Employer.

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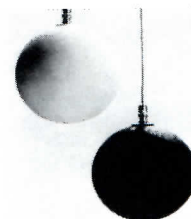
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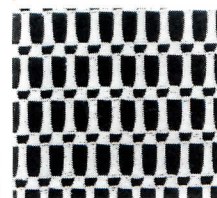


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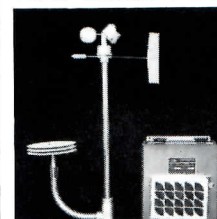
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