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BUILDING TYPES STUDY: HEALTH-CARE FACILITIES

FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

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Letters to the editor

The juxtaposition of Fay Jones's Thorncrown Chapel with the work shown at the Venice Biennale was powerful medicine, whether or not that was your intention [see RECORD, March 1981, pages 88-93, and 109-113]. For a work of such exceptional quality as the chapel to appear when the nittering between Modernists and Post-Modernists has become nearly deafening was a stroke of good fortune we can hardly believe. But such it was, for in one stroke it made crystal clear the ease with which really superb architecture can be recognized, and in so doing it exposed the shallowness of all efforts by narrow-visioned factionalists to qualify architecture by trying to push it through the eye of a philosophical needle.

Most architectural and art criticism is jargon gibberish, and I am sure you editors are flooded with enough submissions to fill every issue with no leftover space for either ads or photos. A brilliant young artist friend of mine once said, "Western intellectuals, and the English-speaking ones especially, talk too much about art and thus produce a miasma of words that simply hides and even erodes the qualities of art that really count: those that can be felt deeply first of all and analyzed secondarily, if at all."

If my friend was right, then the role of the professional journal should be that of reporter and not that of critic. This would not be a come-down except for the professional snob, and even he might recant if confronted with more reportage of the kind composed by Charles Gandy to explain his emotional response to Thorncrown Chapel and to describe the evolution of the relationship between an architect and his client as well as the societal bubble containing them. And finally how they all melded into the magic of this building.

Nothing needs erudite explanations that explodes with such gut power.

*Paul Sterling Hoag,
Architect
West Los Angeles, California*

P.S. And special thanks as well to photographer Greg Hursley!

I wish to thank ARCHITECTURAL RECORD for its sensitive and comprehensive coverage of the Walters Art Gallery [April 1981, pages 126-129] particularly in its descriptive text.

As designer and project architect of the new addition when I was associated with Shepley Bulfinch Richardson & Abbott, I must point

out that much of the project's success is owed to Richard Randall, director of the Walters. While the complexities of the building's context and its functional requirements have been explained, portions of the new addition also had to respond to specific collections. Indeed, in many situations, specific pieces had to be accommodated. Through Randall and his curatorial staff, time and educational effort was invested so that our acquaintance with and understanding of the collections was achieved. Thus as designers we could begin to provide the appropriate architectural and physical context for these objects.

Randall, as a participant in the entire design process, shared in the construction of a most responsive and unconventional building. The project represented the very best in collaboration between user and architect—an event that must be cited.

*Donald James Tellalian
Principal
Perry, Dean, Stahl & Rogers, Inc.,
Architects
Boston*

I was delighted to see your article on Strawberry Square by Lawrie & Green—Mitchell/Giurgola in downtown Harrisburg, Pennsylvania [RECORD, December 1980, pages 76-81], since the building is a superbly responsive solution to a complex set of urban design controls for "Harris-town" as a whole.

On the other hand, your readers have been led to believe that David Crane himself planned the project. This is not true. Mr. Crane was not an active participant in the firm between 1973 and 1978, when he was at Rice University. For the record, the project was directed by me as partner-in-charge. It should also be noted that Mr. Crane is no longer a partner in the firm and that our name has been changed from David A. Crane and Partners/DACP, Inc., to DACP Associates.

*James Nelson Kise
Partner
DACP Associates
Philadelphia*

Corrections

Mahmoud Ahmed, a store planner in Miami, Florida, should have received credit for his contribution to the design of Burdine's (RECORD, May 1981, pages 106-107).

Architect Arthur May is a principal in the firm Kohn Pedersen Fox Associates, not design partner, as reported in RECORD's story on the firm (June 1981, pages 81-91).

Calendar

AUGUST

23 through Sept. 4 "Art by Architects" show representing architects from the Central Arizona, Rio Salado and Southern Arizona Chapters of the American Institute of Architects. At the Elaine Horwitz Galleries, 4211 N. Marshall Way, Scottsdale, Ariz. **Through Aug. 31** Exhibition, "The Drawings of Andrea Palladio," at the Art Institute of Chicago, Michigan Ave. at Adams St., Chicago.

SEPTEMBER

17 Seminar, "Design/Build and the Law (for Architects, Engineers and Owners)," at the Embassy Row Hotel, Washington, D.C. Program will be repeated Oct. 15 in Chicago and Nov. 11 in Dallas. Contact: ARCHITECTURAL RECORD SEMINARS, 1221 Avenue of the Americas, New York, N.Y. 10020 (212/997-3088).

Through Sept. 15 Exhibition, "Marcel Breuer: Furniture and Interior Design," at the Museum of Modern Art, 11 W. 53rd St., New York, N.Y.

OCTOBER

4-6 "First North American Conference on Industrial Architecture," to be held in Detroit; sponsored by the American Institute of Architects Committee on Architecture for Commerce and Industry. Contact: AIA Professional Interest Programs, 1735 New York Ave., N.W., Washington, D.C. 20006.

7-10 Annual meeting of the Association for Preservation Technology, "Rehab/Tech," held in Washington, D.C. Contact: Rehab/Tech, Suite 301, 1555 Connecticut Ave., N.W., Washington, DC. 20036.

14-17 Architectural Woodwork Institute annual convention, Dallas. Contact: AWI, 2310 South Walter Reed Dr., Arlington, Va. 22206.

16-17 Second National Technical Conference on Earth Sheltered Buildings, sponsored by Architectural Extension at Oklahoma State University; to be held at Williams Plaza Hotel, Tulsa, Okla. Contact: Architectural Extension, 120 Architecture Building, Oklahoma State University, Stillwater, Okla. 74078.

22-23 National Institute of Building Sciences Consultative Council annual conference, at the Washington Hilton Hotel, Washington, D.C. Contact: NIBS' Consultative Council Annual Conference, 1015 15th St., N.W., Suite 700, Washington, D.C. 20005.

30 through Nov. 1 Seminar, "Irish Art & Architecture," at Christie's, New York; sponsored by the Irish Georgian Society. Contact: Miss Mary McDougall, 1235 Park Ave., New York, N.Y. 10028.

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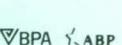
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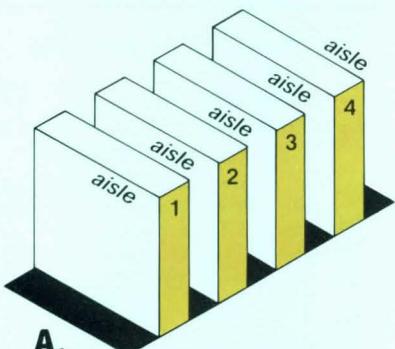
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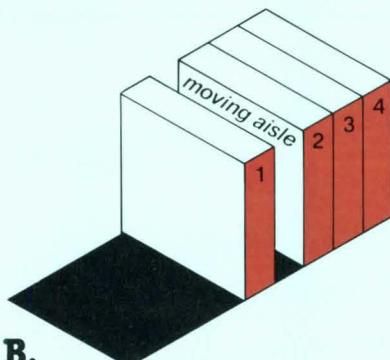
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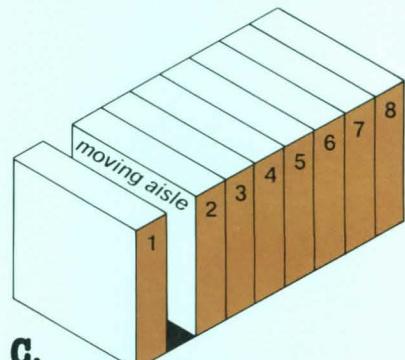
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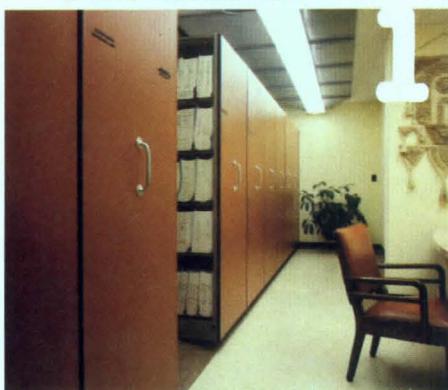


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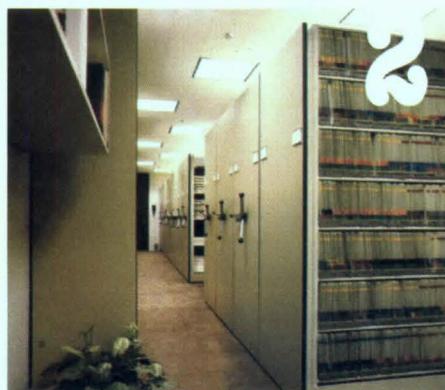


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1. Fort Savings & Loan Association
Edgerton, Wisconsin



2. Arthur Andersen & Associates
Chicago, Illinois



3. First National-Southern Natural Gas Company
Birmingham, Alabama

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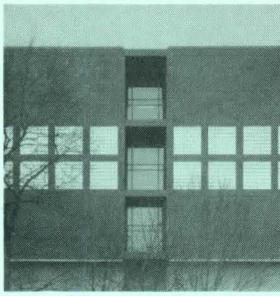
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THE RECORD REPORTS

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A note on RECORD INTERIORS
and RECORD HOUSES—especially to their
critics

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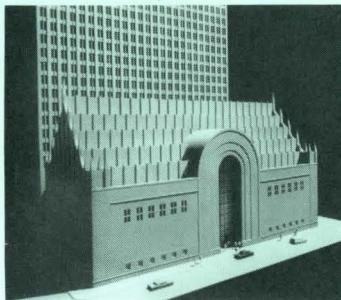
23 News in brief

27 News reports

Mike Marschall resigns as head of GSA
building program. A bill promising
substantial tax credits to homebuilders
utilizing solar technology in new
construction boasts wide Congressional
support. The U.S. Postal Service has
announced drastic reductions in new
construction spending.

31 Buildings in the news

Richard Meier & Partners' new museum
in Atlanta. Johnson/Burgee unveil
RepublicBank Center. A mixed-use mid-
block high-rise for Manhattan. The
"tallest composite concrete/steel tower
in the world" tops out in Houston.



36 Design awards/competitions

The winner and runners-up in the
competition for a new Pittsburgh Center
for the Arts and the recipient of this
year's Reynolds Aluminum Prize for
Architectural Students illustrate a variety
of approaches to buildings for cultural
institutions. The Chicago Chapter of AIA
honors 10 projects in its 1981 Interior
Architecture Awards program.

41 Books received

122 Submissions for RECORD INTERIORS

128 Submissions for RECORD HOUSES

ARCHITECTURAL BUSINESS

45 Building activity

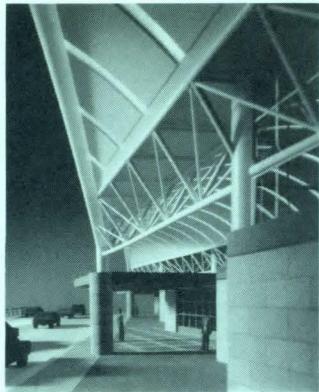
Dodge/Sweet's Construction Outlook

1981: the second phase

The "double dip" is still with us, but
economist George Christie sees hope
for a strong construction
recovery next year.

FEATURES**55 Current projects of Heery & Heery:
Explorations of post-modernism
at large scale**

Four large projects by a large, mainstream firm tackle such "post-modern" issues as imagery, visual and historical reference, and context: a city hall in Tallahassee, an airport in San Antonio, and manufacturing plants in Cincinnati, Ohio and Roswell, Georgia.



E. Alan McGee

**64 Performing Arts Center at Purchase
by Edward Larrabee Barnes**

Barnes's design provides a long awaited terminus for the university's main academic axis. Its four enclosed theaters are among the best of their kinds to be found anywhere.

**72 The not-so-simple art of the box:
two projects by the Hartford Design
Group**

In his designs for a top-secret addition to a U.S. Navy base and a community center for the elderly—both located in Groton, Connecticut—architect Tai Soo Kim investigates the expressive range of basic geometry.

**80 China update: New perspectives,
new directions**

A report on current architectural events in the People's Republic of China as noted on a recent visit by Herbert L. Smith, Jr., followed by some observations and conclusions on the Chinese architectural scene by Frederick Gutheim, an avid architectural "China watcher."

BUILDING TYPES STUDY 563**88 Health-care facilities**

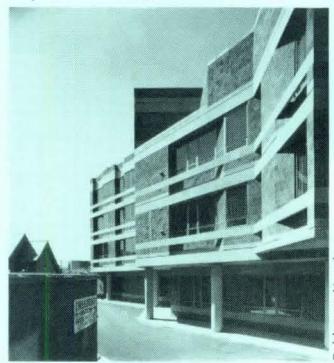
A new humane esthetic is emerging in the design of health-care facilities, producing environments more inviting and logically-ordered than the dispassionate, enigmatic interiors found in many existing facilities. Strongly individual, yet cost-effective, solutions are presented which meet the demands for inpatient and the ever-expanding area of outpatient care.

89 Tucson Medical Center**Tucson, Arizona**

Perkins & Will, architects.

92 Mental Health Unit**Detroit, Michigan**

Kaplan/McLaughlin/Diaz, architects.



Balthazar Korab

94 Wills Eye Hospital
Philadelphia, Pennsylvania

Ballinger, architects.

98 Family Health Center**Gary, Indiana**

Schmidt, Garden & Erikson, architects.

100 Walter Reed General Hospital
Washington, D.C.

Stone, Marraccini, Patterson, architects.

ARCHITECTURAL ENGINEERING**104 Office literature****109 Product reports****129 Classified advertising****132 Architectural Record Bookshop****142 Advertising index****145 Reader service inquiry card****NEXT MONTH IN RECORD****Building Types Study:
Planning for universities and colleges**

Now that the pressing needs of the Post-War baby boom have been met, it is apparent that the main thrust of campus planning will no longer be a response to rapid growth, but a refinement of existing and smaller new facilities to meet ever-changing educational needs and techniques. Architects and planners now help colleges and universities face the problems generated by increasing community involvement. Planning skills are more frequently used to bring existing and new facilities into a better relationship with each other. Good solutions to such challenges are demonstrated by three recent major projects: Lehman College Center for the Arts, Bronx, New York by Todd/Pokorny; University Center, University of Michigan in Flint, by Ulrich Franzen & Associates with associated architects Tomblinson, Harburn, Yurk & Associates; and the Fine Arts Center, New York State University of Stony Brook, New York by Damaz, Pokorny & Weigel.

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FORMS + SURFACES

Notes on Record Interiors and Record Houses —especially to their critics

It seems, each year, as if we scarcely finish writing the mid-February interiors issue and the mid-May housing issue when we have to start planning for the next. And so it is again this year.

First, as we've done every year, allow me to invite submissions for these two award issues. As I said in an editorial just a few months ago, nothing pleases us more than to publish the work of new and/or young and/or unpublished firms—and there are no issues for which we try harder to find the work of those firms.

Yet many familiar names keep recurring—especially in RECORD HOUSES; and so do letters of protest.

Some are brief and to the point: Architect J. Thomas Hollis writes, "Please tell me you are kidding with your 'Record Houses of 1981.' If not, cancel our subscription."

Some letters are crisp and cutting. Architect Jorge Arango: "Record Houses 1981 is a collection of 'in' architecture. It has the names and the styles that are in fashion these days. A few are not (Whitton's, for example). What I like about the collection is that it generates nostalgia. It brings to mind those famous words of Woody Allen: 'No matter where I am, I wish I were somewhere else.' In space and time, most of these houses are trying to be somewhere else. I also like the fact that the collection of houses has achieved universality of values and 'taste': old people like them because they look old, young people like them because they are 'revolutionary,' children like them because they look like toys, and editors like them because they are 'in fashion.'"

Some letters argue for more attention to "the neglected firms." Michael Bovey of Detroit writes, "The houses selected once again illustrate the consistent philosophy that status quo architecture is the rule. Too often, professional magazines have neglected the thousands of smaller architectural firms and architects whose creative designs have nurtured the average individual, within affordable means, by providing simple living space. This is just as extraordinary as the so-called exceptional houses. . . . I challenge the RECORD and its staff to become more responsive to the profession as a whole; and as a reader and subscriber, I ask that we readers be responsive and submit for review and recognition a broader range of work."

Let me say first that we are far more serious about RECORD HOUSES than these critics

suggest. We publish no building—including a Record House—because it is "in fashion." All of the editors have a voice in their selection—from well over 300 submittals. We all have our favorites—and our "least favorites." And it is more than "liking the house"—I guess maybe it doesn't even matter if we "like it." We choose the houses we publish because we think their idea content is important—that they offer fresh planning ideas, fresh use of familiar materials, new contemporary forms, and, yes, effective use of historical references (for those of us who "don't like" Post-Modernism nonetheless cannot ignore it, and should understand it before we criticize it).

We do not publish any architect because he or she is "in fashion." We publish architects because we think their work has idea content that serves the reader. Some architects' work appears often in RECORD not because they are in fashion, but because in our opinion they are very good at their work. (Just for the record: From 1956 through 1980, we published 514 Record Houses by 333 architects!)

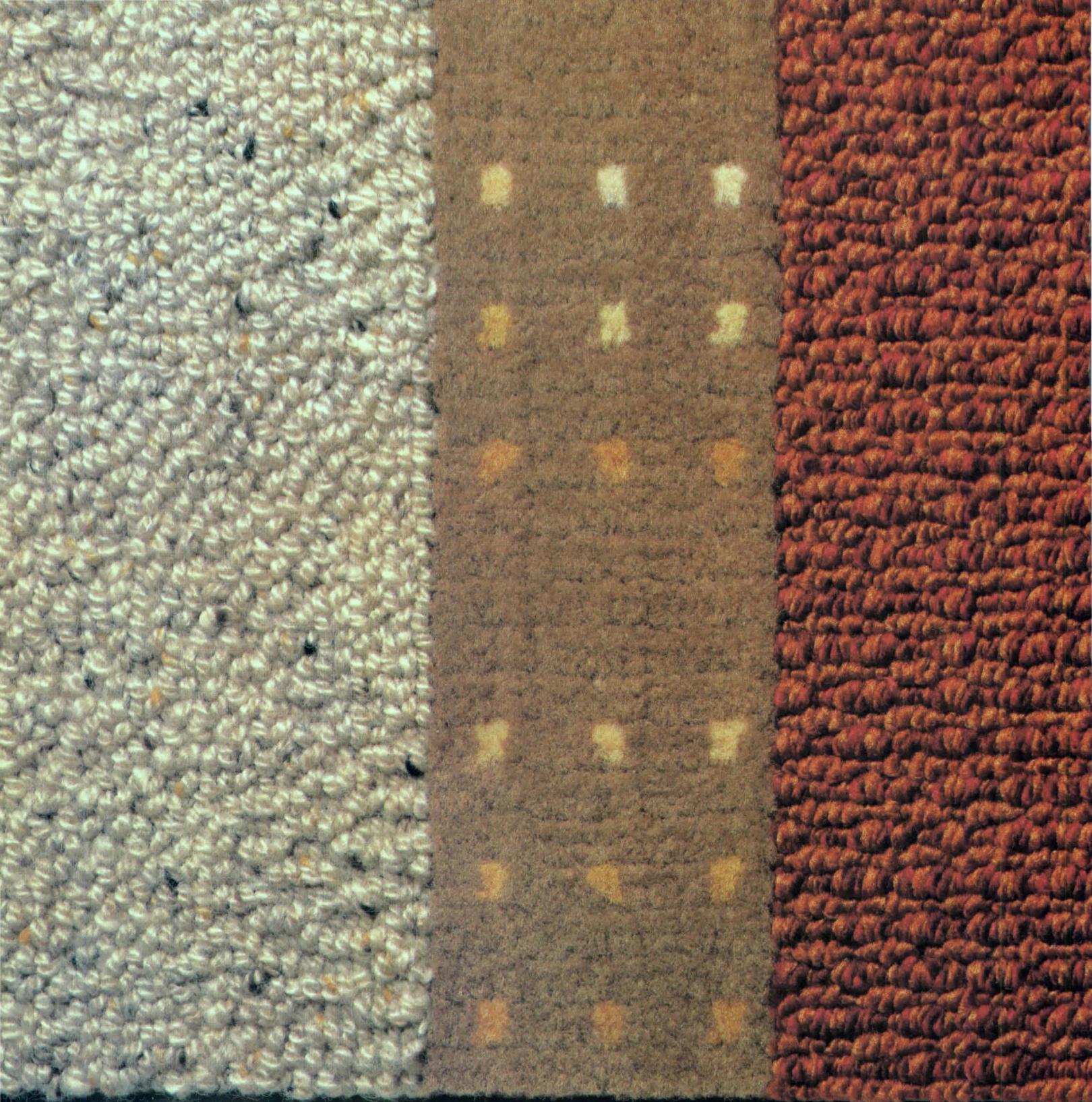
Which brings me to my point: Architect/readers, be responsive. . . . Nothing would please us more than to have 1000 submissions for RECORD HOUSES—and another 1000 submissions for RECORD INTERIORS. From new firms. And/or young firms. And/or unpublished firms. And from everyone we've published before.

Submissions requirements are simple for either issue: We'd prefer that material be inserted in 8½- by 11-inch binders; but in any event, materials should be securely bound in a single folder for each project. Please, no oversize material. We need enough black-and-white and color photographs to describe the project fully, sharp and clear enough for us to make a careful judgment. We need plans and, if relevant, sections. We need a brief written description. We need enough material in short, for careful study.

The deadline for RECORD INTERIORS submissions is October 15, 1981. They should be sent to Charles Gandee, associate editor, Architectural Record, 1221 Avenue of the Americas, New York, N.Y. 10020.

The deadline for RECORD HOUSES is November 15, 1981. They should be sent to Barclay Gordon, associate editor, same address, of course.

We look forward to seeing your work.
—Walter F. Wagner, Jr.



If our imagination isn't enough for

That's assuming, of course, you find something lacking in our imagination.

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Soaring interest rates and budgetary restraint combined to deepen the decline of contracting for new construction in May, as the month's value of contracts sagged 7 per cent below April's already weak total. But in contrast to last year's across-the-board decline of all construction markets, nonresidential building has weathered 1981's credit squeeze surprisingly well. In May, a total of \$5.1 billion of contracts for commercial, industrial, and institutional buildings reflected a 3 per cent seasonally-adjusted gain from April's value. At the end of five months, the cumulative value of all construction started in 1981 was \$62.1 billion, a gain of 14 per cent over the total of work begun during the same period in 1980.

Builders and Remodelers '81 invites architects, developers, contractors, and designers to convene in Portland, Oregon, September 8-9, for "the most comprehensive conference on passive solar construction held in the U.S." Attendees are being promised an exhibition of 100 energy conservation and solar products, and workshops covering all aspects of building and selling passive solar structures. For further information contact: Builders and Remodelers '81, P.O. Box 40024, Portland, Oregon 97240 (503/221-2082).

The National Trust for Historic Preservation's National Main Street Center will conduct a training program on downtown revitalization at three regional locations over the next three months. The four-day training program is geared toward community development activists, planners, chambers of commerce, merchants associations, state and local officials, preservationists . . . anyone interested in revitalizing their town. Conferences and dates include: Salt Lake City, Utah, August 24-27; Chicago, Illinois, September 21-24; and Nashville, Tennessee, October 19-22. For more information contact: Paul Engelstad, National Main Street Center, National Trust for Historic Preservation, 1785 Massachusetts Avenue N.W., Washington, D.C. 20036 (202/673-4219).

Emilio Ambasz has been elected president of the 100-year-old Architectural League in New York City. The New York-based Argentinian designer/writer/architect is well-known for his underground house projects, the Vertebra Seating System (designed with Giancarlo Piretti), and for his six-year tenure as curator of design at the Museum of Modern Art. Ambasz was co-founder of the Institute for Architecture and Urban Studies, author of *The Architecture of Luis Barragán*, and editor of *Italy: The New Domestic Landscape*. Frances Halsband, a partner in R.M. Kliment & Frances Halsband Architects, was elected vice president for architecture.

Fifteen Chicago architects are being honored with an exhibition in Verona, Italy, entitled "Oltre L'International Style: New Chicago Architecture." According to its sponsors—Verona's Museo de Castelvecchio in collaboration with Chicago's Graham Foundation—"The scope of the show is to clarify certain themes which have arisen from the discussion of current directions in architectural culture, in particular those tendencies which have emerged from the Post-Modern scene. The situation in Chicago can be seen as a test of the development of these tendencies, given the particularly significant role assumed by this city in the context of modern architecture." The participating architects are: Thomas Beeby, Laurence Booth, Stuart Cohen, Deborah Doyle, James Goetsch, Gerald Horn, Helmut Jahn, Ron Krueck, James Nagle, Anders Nereim, Peter Pran, John Syvertsen, Kenneth Schroeder, Stanley Tigerman, and Ben Weese. The exhibition will be accompanied by a bilingual catalog.

An exhibition of photographs by John Margolies is now at The Hudson River Museum in Yonkers, New York. "The End of the Road: Vanishing Highway Architecture in America" displays 128 color images, captured by Margolies on a five-year, 100,000-mile cross-country journey seeking out examples of vernacular architecture. Though the Hudson River Museum show will close September 6, Viking/Penguin has published a catalog to accompany the exhibition, and to share its name: the catalog includes an essay by Margolies.

Classical America is sponsoring a three month, three-hour-per-week drawing course—entitled "Classical Architecture: Drafting of the Five Orders and Classical Ornament"—beginning September 16th at the National Academy School of Fine Arts in New York City. According to Henry Hope Reed, president of Classical America (an organization founded to encourage the classical tradition in the arts), "The course will give a working knowledge of the Orders along with the drafting of the basic elements and details of the classical." For more information contact: Henry Hope Reed, 227 East 50th Street, New York, New York 10022 (212/753-4376).

The Skidmore, Owings & Merrill Foundation's first Annual Traveling Fellowships for graduate students of architecture were presented in May, by Foundation chairman Bruce J. Graham. Lawrence Mitsch (Cornell University) was the recipient of the first award, \$10,000 for nine months of travel and study; Bruce Lonnman (Cornell University) received the second award, \$7,500 for five months; and Margot Alofsin (Yale University) won the third award, \$5,000 for three months. The SOM Traveling Fellowship was established in 1980 by the SOM Foundation. Each year, the award enables three architecture students to travel and study in the country of their choice.

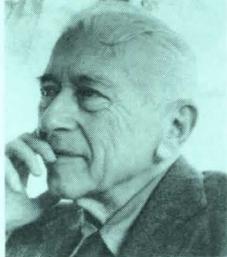
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**Marcel Breuer
1902-1981**

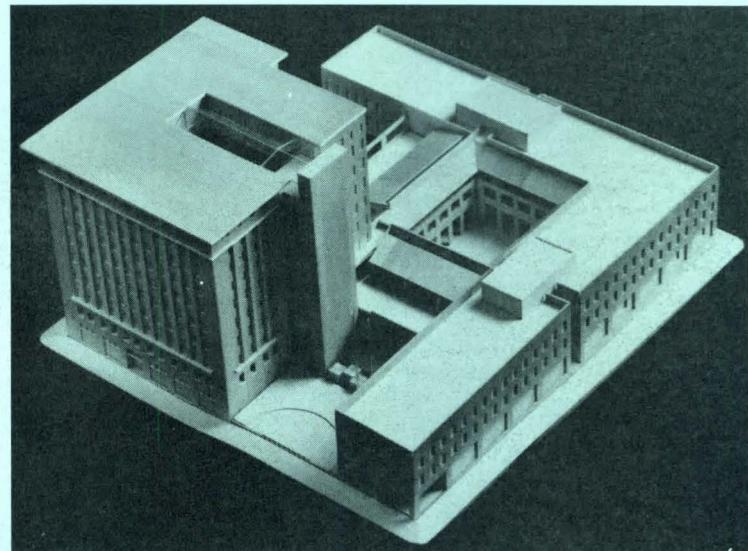
Marcel Breuer died July 1 at his home in New York City. The Hungarian-born architect was 79 years old. Breuer came to the United States in 1937—13 years after graduating from the Bauhaus—to join Walter Gropius at Harvard, where he taught until 1946. After leaving Harvard and his nine-year-old Cambridge firm, Breuer moved to New York City and established Marcel Breuer & Associates—

remaining active in the firm until his retirement in 1976. Breuer was a Fellow of the AIA: he received the AIA Gold Medal in 1968, and AIA Honor Awards in 1970, 1972, and 1973. This year, he was honored with the Award for Excellence in Architectural Education (his students at Harvard included Edward Larrabee Barnes, Philip Johnson, and I.M. Pei), the first GFI/Knoll Creative Leadership

Award, and an exhibition entitled "Marcel Breuer: Furniture and Interiors," currently at the Museum of Modern Art in Manhattan. Among his most memorable works are: the UNESCO Headquarters in Paris (1958); the IBM Research Center in Var, France (1961); the HUD Headquarters in Washington (1963-68); and the Whitney Museum in New York City (1966).



Shin-ichi Kumanomido

**The Wainwright Building in St. Louis: kudos to Missouri for saving a landmark**

When the State of Missouri dedicated its new office complex in St. Louis this summer, officials had more to celebrate than the consolidation of 18 state agencies—and 700 state office workers—under one roof: the June 5th festivities recognized the rebirth and reuse of the landmark Wainwright Building. Frequently referred to as the "father of the modern skyscraper," (because of its honest expression of an inner steel structure), the ten-story U-shaped building was designed by Louis Sullivan, of Adler and Sullivan, in 1890. (At the time, Frank Lloyd Wright was a young draftsman in the firm.) But like other historically significant buildings, the Wainwright fell on hard times; by the early 1970s, the building had become both functionally and economically obsolete—plans called for demolition and the construction of a parking lot on the site. But the National Trust for Historic Preservation acquired an op-

tion on the building, and in 1974 the State of Missouri exercised the option and purchased the Wainwright. Governor Christopher Bond and the Missouri State Division of Design and Construction sponsored a national design competition for the renovation of the Wainwright and the construction of additional office space on the remainder of the midtown block; in November of that year, Governor Bond announced Hastings & Chivetta Architects/Planners in association with Mitchell/Giurgola Architects, winners of the competition. The winning design called for the renovation and reuse of the original building and the addition of an Annex—three L-shaped three-story buildings linked by courtyards and plazas. The Wainwright was given a central atrium by capping the original light-well of the U-shaped building with a glass roof and by removing windows from the walls facing the light-well/atrium.

Interior halls were moved against the atrium walls, creating light-filled circulation corridors. The atrium is closed on the north end with a glass wall and bridges on each floor, allowing access to elevators relocated in a tower at the juncture of the old and new buildings. The preservation of Sullivan's original detailing and ornamentation was a prime concern: original skylights were re-used as decorative elements in the new atrium; carved stonework on the exterior was repaired, thanks to a grant from HUD; the original tile pattern was retained for the ceramic tile floor of the entrance lobby; and to approximate the look of the original cypress windows, replacement windows were framed in teak. The new Annex posed an especially difficult design problem. According to Aldo Giurgola: "What does an architect do when building next to a 'jewel' like the Wainwright? He must be humble, but

without affectation. . . . we strove to achieve the same simple qualities Sullivan once sought—a basic, intelligible sense of structure. It was our task to identify a tradition, and to make a building capable of interchange and reciprocity with the Wainwright, rather than merely imitating its details in a lifeless manner." The three-story Annex has masonry exterior walls, while the inner courtyard is framed by four screen walls in granite. All of the materials used—including the brick and granite courtyard paving, and the slate inset at pedestrian level on the exterior walls—were chosen to relate to the materials and colors of the original building. The renovated Wainwright provides 152,027 square feet of office space, and the Annex adds another 76,758 square feet: the total cost of the renovation, restoration, Annex, and interior work was \$13,900,000.

more news on page 29



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Abe Feder to present his Dialogues With Light at Minnesota meeting

Feder, one of the country's leading lighting designers for both buildings and theater, has compacted his well-known lighting workshop into a six-hour presentation to be given at the University of Minnesota, in Minneapolis, on Thursday September 17th. Sponsors are the Minnesota chapters of the AIA, the ASID, and the Institute of Business Designers; and the Designers Lighting Forum.

Feder's presentation, given at a number of major universities and in a seminar sponsored by *Interior Design* last year, combines multi-screen effects and changeable walls and ceilings using theater stagecraft. Emphasis will be on the newest lighting techniques (including miniaturization and low-voltage), new lighting effects, and new lamps—some developed in theater, motion pictures, and television and now adaptable to building design. The techniques are adaptable to all commercial buildings—offices, hotels, restaurants, stores. For enrollment information, contact S. Rae Baymiller, The Baymiller Studio, 300 Saint Paul Building, 6 West Fifth Street, St. Paul, Minn. 55102 (612/292-1610).

Postal Service slashes new construction spending

The Board of Governors of the U.S. Postal Service has ordered its management to cut new construction spending by \$200 million for the fiscal year beginning October 1. Previously, \$324 million had been allotted for construction.

Officials will undertake a review to determine which projects—post offices, vehicle maintenance centers, or large mail handling facilities—will be eliminated. Some \$400 million in funding for capital expenditures (mainly automated equipment) remains untouched by the order.

In recent years the Postal Service's construction budget has dropped from \$650 million, in fiscal 1976, to only \$251 million, in fiscal 1980.—*William Hickman, World News, Washington.*

Possible tax savings for energy saving

If a newly organized trade group has its way in Congress, a tax credit of up to \$2,000 per dwelling unit will be available to homebuilders who utilize passive solar technology. The Passive Solar Industries Council (PSIC) of Alexandria, Virginia, claims wide Senate support for their tax-credit bill and endorsements from more than one-third of the House.

The AIA and the National Association of Homebuilders (NAHB) are but two of PSIC's 20 members. The

Council insists that homebuilders need the tax incentive to overcome buyer resistance to the "unfamiliar" solar technology, and to subsidize the slightly higher construction costs incurred with solar hardware. Advocates estimate that approval would mean only \$135 million in lost revenue to the U.S. Treasury over a five-year period.

A similar tax credit measure came close to approval in the Senate last year, when it was added to tax legislation imposing a windfall profits tax on oil producers. But House members—opposed to tacking a tax initiative on to the windfall profits bill—dropped the proposal.

Last year's bill had one distinct advantage—President Carter's endorsement; so far, the Reagan Administration is conspicuously silent on the recent measure.—*William Hickman, World News, Washington.*

Head of GSA building program resigns

After two years at the post, A.R. (Mike) Marschall has resigned as head of the General Services Administration (GSA) building program. The resignation was prompted by Marschall's frustration with the Federal Government's resistance to an expanded construction program, and by the government's refusal to enact the "Moynihan bill" (aimed at reversing the practice of housing Federal office workers in leased space, rather than Federally-owned space, RECORD, June 1981, page 35). Senators who backed the Moynihan bill indicated that the success of the proposed GSA building program depended on having a Federal executive of Marschall's talents and enthusiasms.

The final blow came to Marschall when the Senate approved a revision of the Public Building Law that ruled out time financing (a practice which would have given the GSA access to U.S. Treasury loans for construction funding). The Reagan Administration denounced this "off-budget" financing, signaling to Marschall that the sizable construction effort he favored is at least five years away.

One of Marschall's first acts at GSA was to end the agency's controversial construction management system. (In that system, the construction manager, hired as the government's agent, was not necessarily either a general contractor or an architect/engineer.)

GSA administrator Gerald Carmen said that Marschall "contributed enormously to the improvement of the operation of the Public Building Service and the morale of its employees." Marschall was made an honorary member of the AIA this year.

John F. Galuardi, Marschall's deputy and a long-time GSA official, is acting commissioner while a permanent successor is sought.—*William Hickman, World News, Washington.*

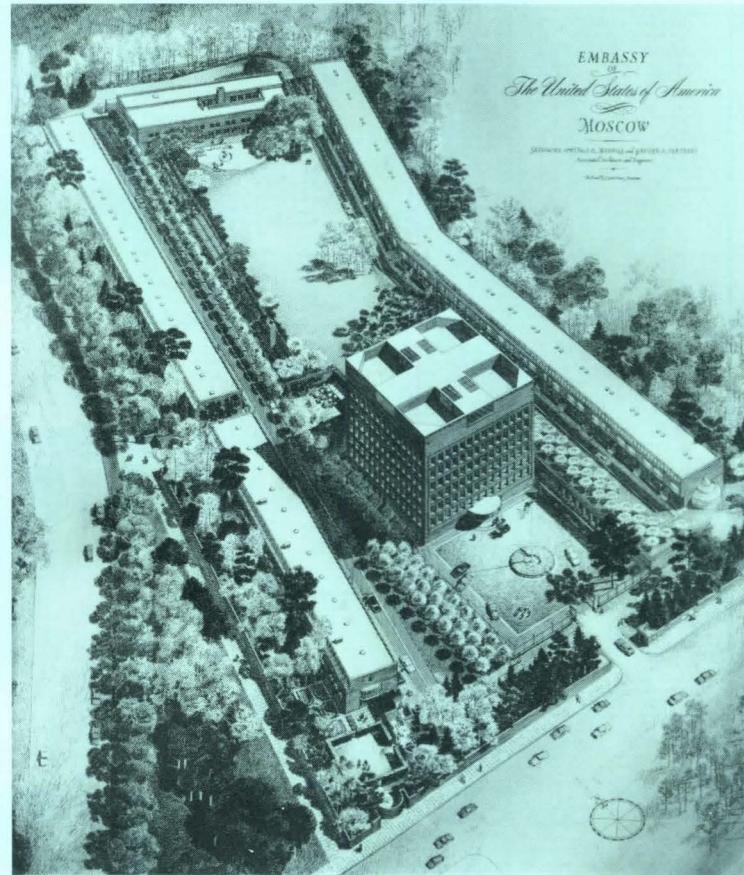
Anticipating future construction: a Capitol master plan

A master plan for future construction around the U.S. Capitol will be unveiled late this month. Officials stress that the master plan will not announce new construction projects—current Federal budgetary restraint prohibits that. Instead, the plan establishes siting guidelines for the inevitable post-austerity-wave of building.

According to the plan, future development is to be clustered in an oval-shaped campus, anchored by plazas on either side of the Capitol grounds; automobile parking will be banned at street level and placed

underground. Additionally, a spur off Washington's Metrorail system will provide access to all buildings in the Capitol complex (the Supreme Court, Library of Congress, and House, Senate, and Capitol buildings.)

Capitol architect George M. White said it is increasingly difficult to handle the four million visitors who tour the Capitol each year, and work space is tight for the 18,000 Congressional employees. Nonetheless, the current economic mood will continue to forestall major new construction efforts.—*William Hickman, World News, Washington.*



The Moscow to Washington connection

Construction is proceeding slowly on a new United States Embassy Complex in Moscow, one mile from the Kremlin walls. (Construction is slow—and tedious—because a new Soviet Embassy in Washington must be ready for simultaneous occupancy, according to a U.S./Russian treaty.) The rendering above shows the scheme for the 10½-acre site: a large central park will be enclosed by three- and four-story terraced row houses on two sides, a school on the third side, and by the eight-story Embassy office building on the fourth. The central common green will be used for recreational and social activities; below the surface, numerous service and community facilities (parking, cafeteria, commissary, dispensary, and additional recreation space). Due to the natural slope of the site, these subterranean facilities

will be accessible—and obtain daylight—at the western edge of the common. According to joint venture architects Gruzen & Partners (San Francisco) and SOM (San Francisco): "One of the primary concerns was to create a strong sense of community for the inhabitants and employees. Naturally, at the same time, it was important to be a good neighbor to the surrounding city. An early and important design decision was that of avoiding any overt monumentality and to maximize the aspects of livability and quiet good manners."

The new U.S. Embassy complex will contain almost 633,000 square feet of space: 150,000 for office facilities; 100,000 for support service facilities (including auditorium, recreational, cafeteria, school, lounges, and infirmary); and the balance for 146 Embassy personnel apartments.

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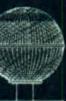
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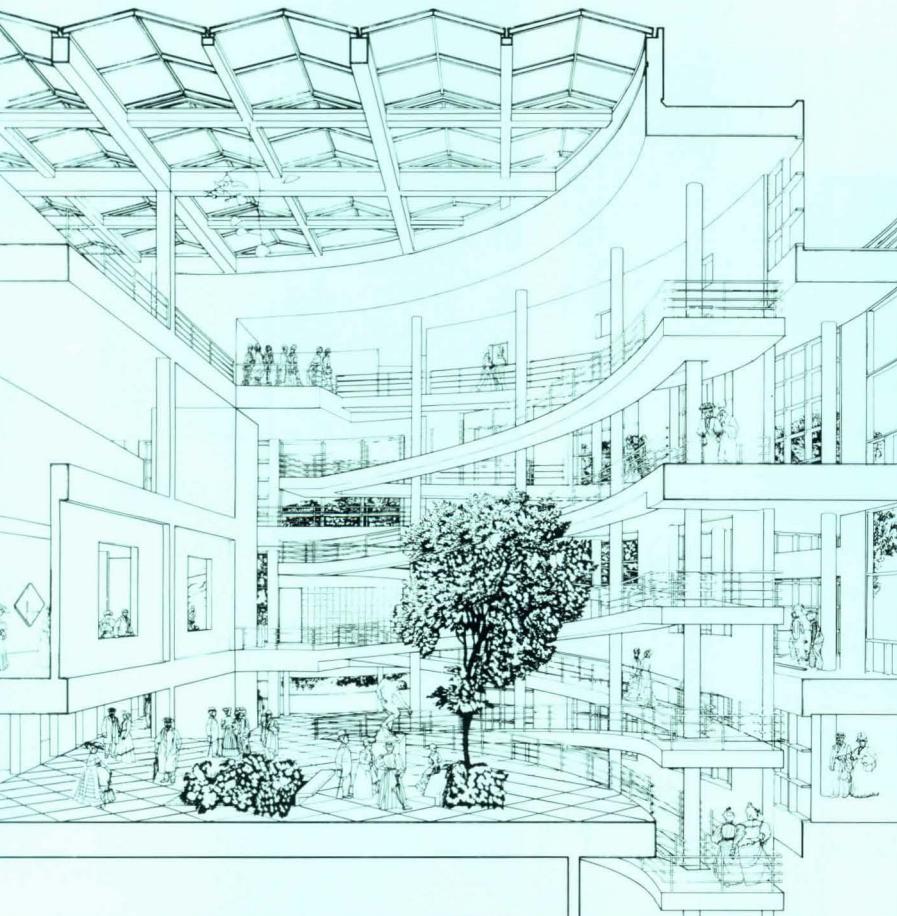
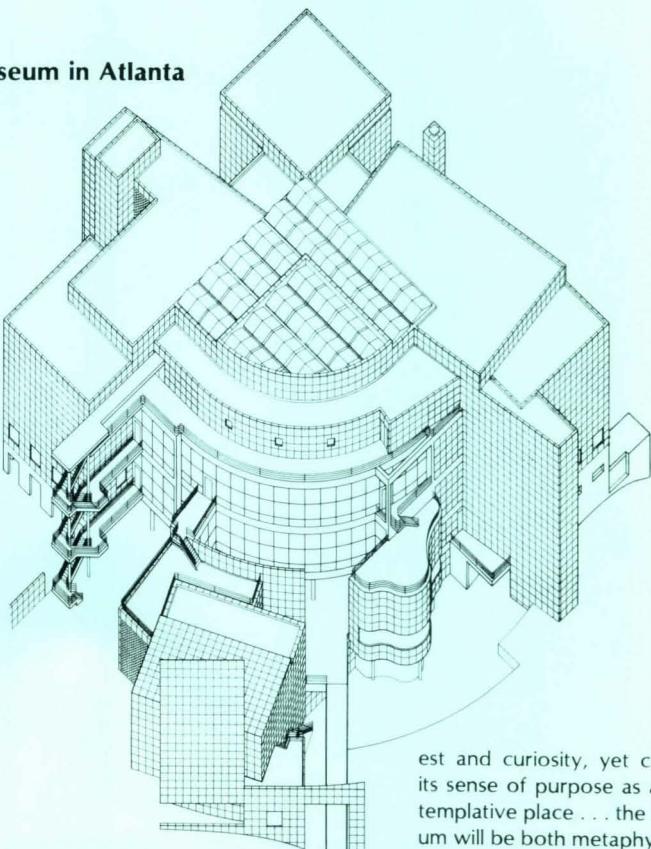
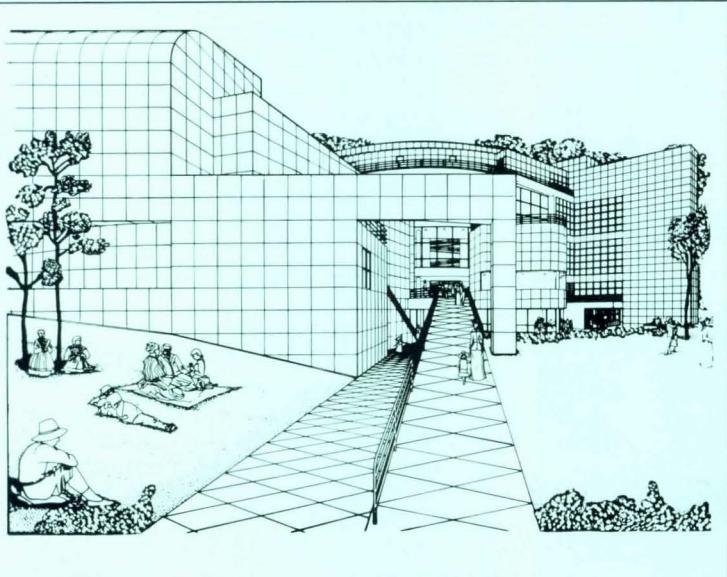
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Art in architecture: Richard Meier unveils plans for the new High Museum in Atlanta



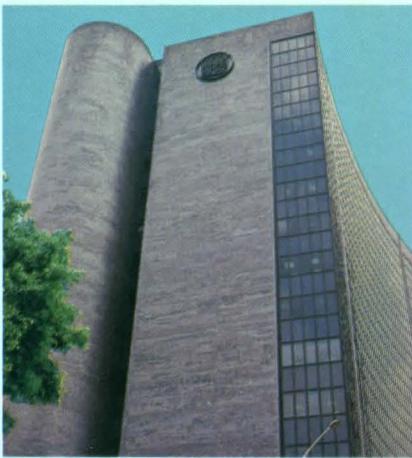
Serious space limitations currently rob Atlantans of up to 90 per cent of the High Museum's permanent collection, and virtually ensure that the Southern city remains off-limits to major traveling exhibitions. But 1983 will bring the museum's collection out of storage and place Atlanta back in the running for "blockbuster" exhibitions, with the completion of a \$15-million new High Museum. Architect Richard Meier was awarded the commission last year, only months after his scheme for an addition to the Museum for the Decorative Arts in Frankfurt was selected—from a field of 7—in an international design competition (RECORD, April 1981, pages 88-95). Meier recently unveiled his plans for the new High Museum along with the following statement: "This building is not intended to awe or overwhelm by its monumentality. It will welcome the visitor, arouse inter-

est and curiosity, yet convey its sense of purpose as a contemplative place . . . the Museum will be both metaphysically and literally 'radiant.'" Like Frank Lloyd Wright's Guggenheim Museum in New York City, Meier's design features a central skylit atrium at its core, encircled by ramps leading to the various galleries: visitors will be offered a variety of perspectives from which to view the art, and a full panorama of internal circulation. The 130,000-square-foot building is to be encased in trademark Meier white porcelain-enamelled metal panels. In addition to the substantial increase in gallery space, the new museum will contain educational facilities, a "Junior Gallery," space for storage and support services, offices for the museum staff, a gift shop, and a cafe. The sixth floor galleries have been designed for flexibility; they can be combined for special exhibitions requiring up to 15,000 square feet. A 320-seat auditorium, separate from the main structure, is connected to it by a second-floor bridge. Construction is scheduled to begin this summer. Consulting architects are Jova/Daniels/Busby, Inc.

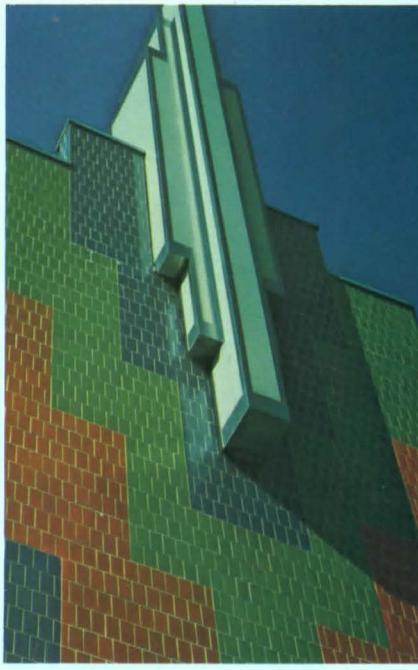
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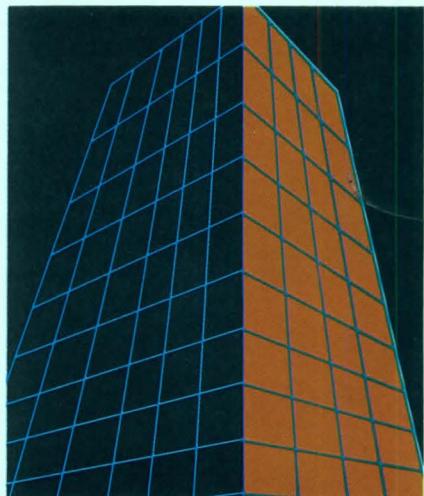


Buchtal's MONOCOLOR on the facade of the Mummers' Museum in Philadelphia. Architects: Ueland & Junker, Inc.

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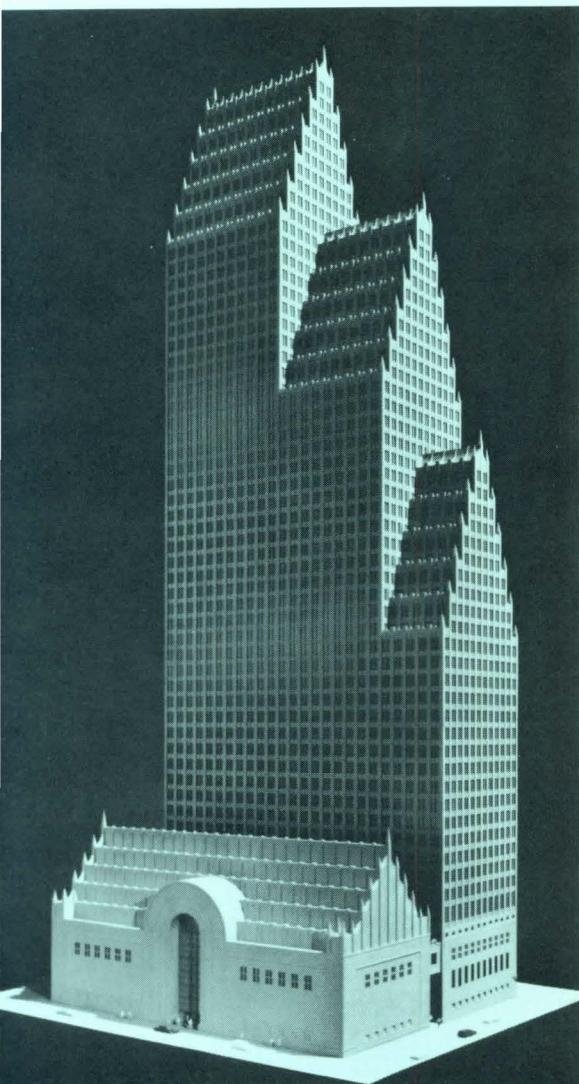


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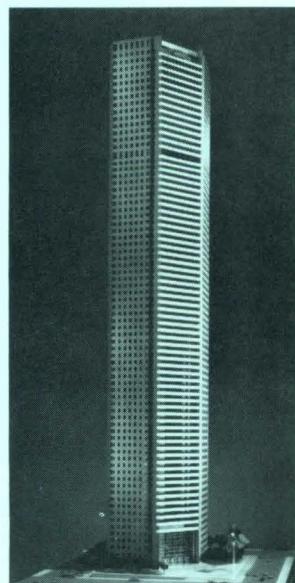
**Back together again:
Developer Hines and architects Johnson/Burgee**

The collaboration is not unexpected, considering the success of the Hines-developed, Johnson/Burgee-designed Pennzoil Place (RECORD, November 1976). But times have changed since then, and Johnson/Burgee along with it. Construction is scheduled to begin this month on RepublicBank Center, directly across the street from Pennzoil Place in Houston. The 56-story office tower is termed "neo-renaissance" by Johnson; according to Burgee, the design of the 5-million-gross-square-foot structure was influenced by the Netherlands' gabled houses. Spires, rising from the gables, are the most striking feature of the design: "We added these obelisks to give a sparkling effect against the sky," notes Johnson. RepublicBank Center will be clad in flame-finished "Napoleonic red" granite, quarried in Sweden. A rectangular 250-

foot-long banking hall—rising 125 feet—has been placed as a distinct element at the tower's base: the hall boasts continuous linear skylights along each stepback, and a mezzanine elevated 35 feet above the banking floor.

Visitors will enter through a 75-foot-high arched doorway which continues through the bank and the adjacent tower lobby to a second arched doorway opening onto the parallel street. The tower is divided into three segments, by two major setbacks—the gables and setbacks allow tower floors to range from less than 5,000 square feet at the top, to over 30,000 square feet at the lower floors. Included in the project are approximately 12,000 square feet of retail space and underground parking for 300 cars. Initial occupancy is scheduled for 1983. Kendall/Heaton Associates is associate architect.

Close on the heels of MoMA's controversial Museum Tower Apartments (RECORD, March 1981, pages 94-99), plans were recently released for a 58-story combination office/apartment building on 52nd Street, one block south of the MoMA tower (visible in rendering above). This second, mid-block tower will undoubtedly raise the eyebrows—and ire—of urbanists intent on preserving the long-standing New York tradition of high-rise buildings on the avenues and low-rise buildings on the cross streets. But at 33 West 52nd Street, that tradition will soon give way to 24 floors of office space (140,000 square feet), topped by 34 floors (65 apartments) of residential space. Developers are considering condominium ownership of the offices; if their plans are realized, 33 West 52nd Street will be the first such offering in Manhattan. The apartments are to be generally grouped two per floor; they will feature 11-foot ceilings, marble entry galleries, and a central hall plan. Several penthouses will occupy either entire floors or multiple floors. The facade of the slender, 12-sided tower is to be a combination of rough and polished granite, alternating with glass. The 650-foot-high mixed-use building was designed by Raul de Armas of the New York office of SOM. According to Robert Gladstone, a partner in developer Madison Equities: "The completion of Thirty-Three will be a return to more gracious times in New York...."



**Texas Commerce Tower:
a Texas-size success for Houston**

After topping out on January 30, 1981, at 1,044 feet, the "tallest composite concrete/steel building in the world" is now scheduled for occupancy this fall. The 75-story Texas Commerce Tower, in downtown Houston's United Energy Plaza, is the work of developers Gerald D. Hines Interests and Texas Commerce Bank, and architects I.M. Pei and Partners and 3D/International. According to Pei, "The form and shape of the complex was very much influenced by how it would appear on the skyline; the siting of the tower, on the other hand, was a conscious attempt

to create a significant open space for Houston. The one-acre plaza will provide a common setting for all its surrounding buildings." In addition to offering Houston an impressive office tower and welcome open space, Texas Commerce Tower has scored another success—by winning the American Consulting Engineers Council (ACEC) 1981 Grand Conceptor Award "for excellence in engineering design." Congratulations go to McClelland Engineers, Inc., and CBM Engineers, Inc., and to Harold Fredenberg, architect-in-charge-of-design for I.M. Pei and Partners.



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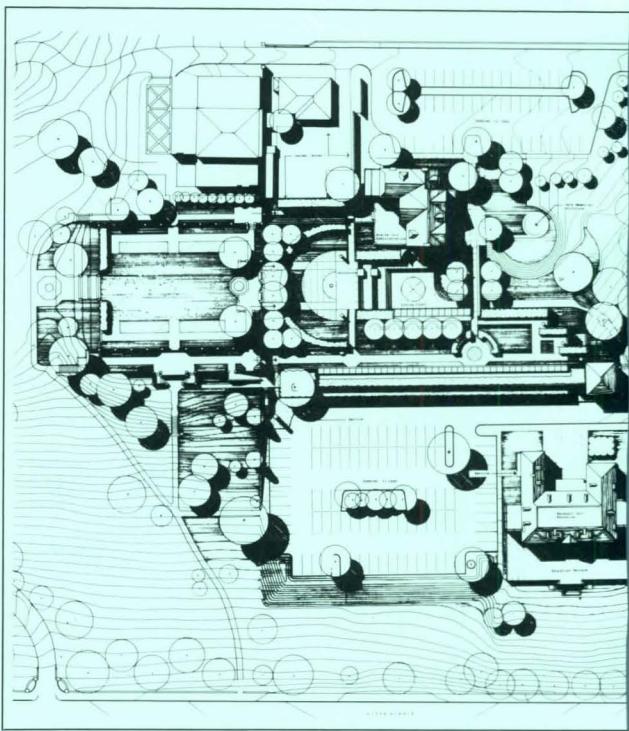
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DESIGN AWARDS/COMPETITIONS

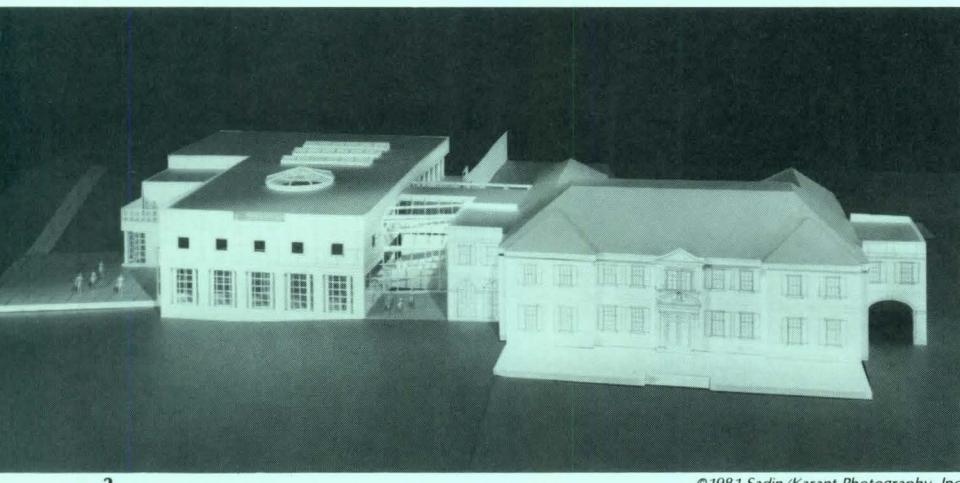
The projects illustrated on these two pages demonstrate a range of approaches to buildings for the arts. Entries in the competition for the new home of the Pittsburgh Center for the Arts were characterized by the jury as fitting into two groups: "dominant" and "recessive." The selected design (shown below with the two runners-up), a partially subterranean structure that blends into venerable surroundings, was judged to be the most distinguished representative of the "recessive" category—a graceful architectural understatement. The winner of this year's Reynolds Aluminum Prize for Architectural Students (opposite), a cultural center on the island of Cyprus, combines a forthright celebration of modern technology with symbolic references to local history. Imaginative reshaping of existing contexts and the creation of new environments are also exemplified in the ten projects honored by the Chicago Chapter of AIA in its 1981 Interior Architecture Awards program (overleaf).



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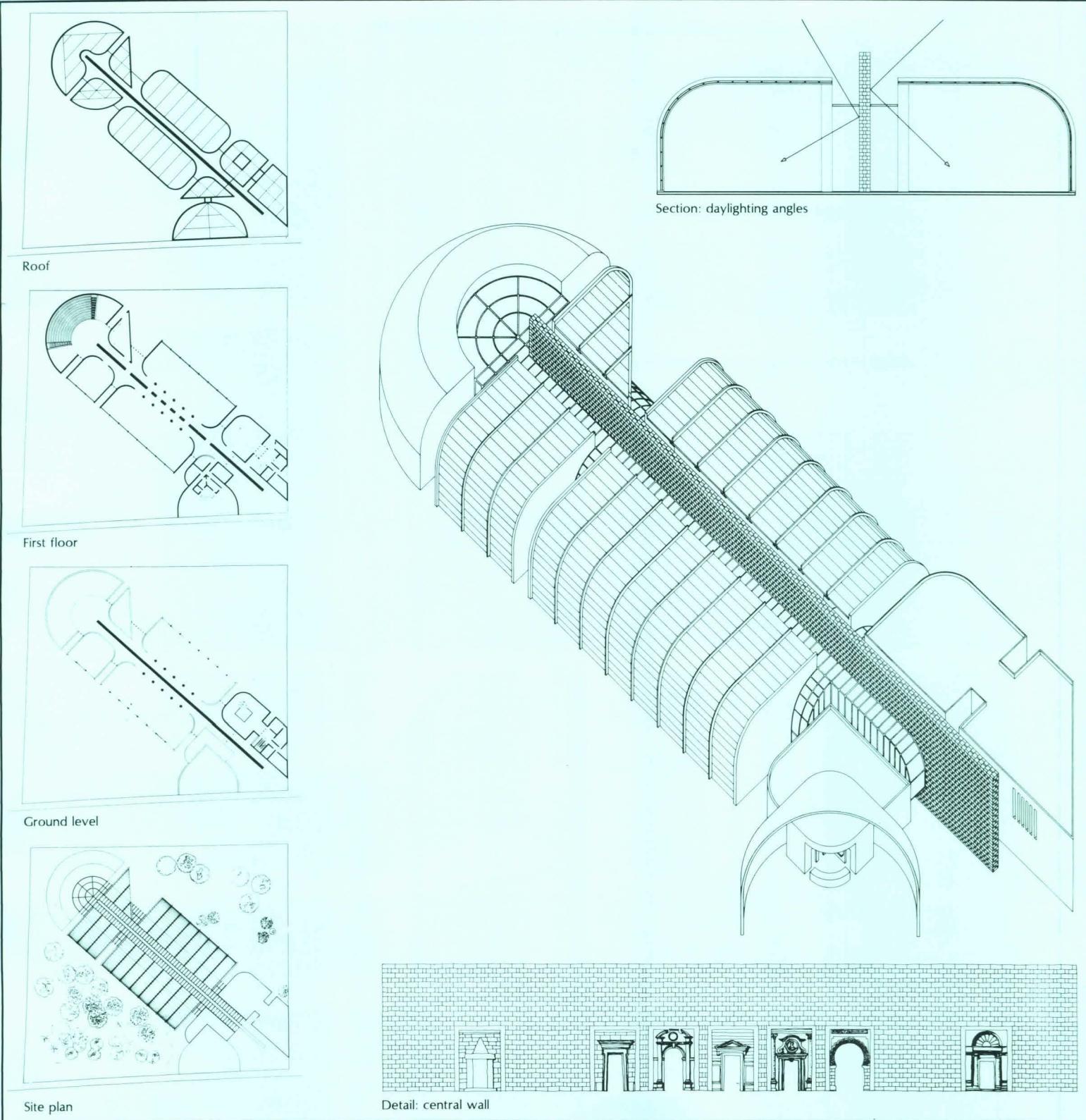
David Aschkenas

PITTSBURGH CENTER FOR THE ARTS COMPETITION

The competition program for Pittsburgh's Center for the Arts called for enlargement and consolidation of facilities currently housed in two period mansions surrounded by the handsome grounds of Mellon Park. A \$10,000 prize (funded by the National Endowment for the Arts and the City of Pittsburgh) and the commission for the project have been awarded to the Design Alliance, one of the 24 local firms who participated in the competition. The jury comprised architects Harry Weese, FAIA; William Turnbull, Jr., FAIA; Malcolm Holzman, FAIA; and Stephen A. George, AIA,

executive director of the Urban Development Authority of Pittsburgh; landscape architect Hideo Sasaki; and J. Carter Brown, director of the National Gallery of Art. According to jury chairman Harry Weese, "It quickly became apparent that few competitors sufficiently valued the inherent qualities of the mansions in the existing landscape which became the essential personality of the Center over the years...." The premiated design (Figures 1 and 2) embeds new galleries and an auditorium into a hillside between the two houses. A roof garden extends the axial vistas of the

park, while vines overhang south-facing gallery windows to provide a solar screen. At the western end of the low, rectangular structure, a new gatehouse repeats the massing and classical detail of the adjacent mansion, creating a formal entry from Shady Avenue. The jury described the project as "neither a set piece nor an extravaganza.... If the end product lives up to the intent, it should fulfill its promise for an even broader community base." Citations for Excellence were presented to designs by IKM/SGE (Figure 3) and Walter Boykowycz (Figure 4).



REYNOLDS ALUMINUM PRIZE FOR ARCHITECTURAL STUDENTS

A project for a cultural center on the island of Cyprus, designed by Ian Frederick Taberner, a student at the Pratt Institute School of Architecture in Brooklyn, New York, has been awarded top honors and a \$5,000 prize in a competition sponsored by the Reynolds Metals Company. Administered by AIA, the Reynolds award annually cites an "original design in which creative use of aluminum is an important contributing factor." Gunnar Birkerts, FAIA, chaired the 1981 jury, which also included O. Jack Mitchell, FAIA, and three student members of AIA: J. Rodgers Critz,

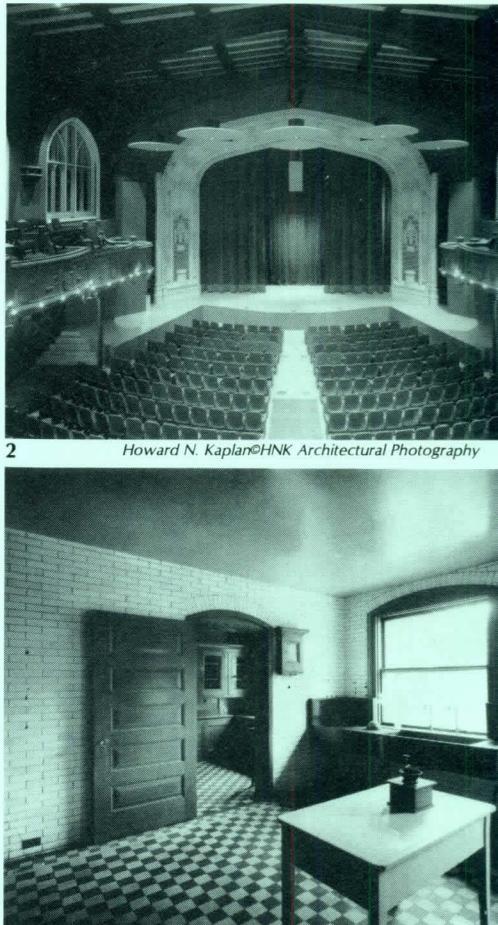
winner of last year's Reynolds Prize, Brice J. Davis, and James Groen. The central element of the premiated design is a wall of native Cypriot stone, penetrated by doorways whose ornamental surrounds embody styles associated with various cultures that have dominated the island during its turbulent history. Ian Taberner regards the wall as a traditional symbol of authority and oppression, whereas the seven open portals "indicate that in the presence of art there are no walls or barriers between people." Besides connecting interior spaces, the wall would

reflect diffused light into the galleries. The remainder of the building acknowledges the impact of modern technology. Prefabricated curved aluminum beams over galleries and studios carry insulated brushed-aluminum sandwich panels. For the vaults above a cafe and amphitheater, Taberner specifies a patented new Swedish concrete mixture which fuses aluminum with lime to create a strong yet lightweight building material. The competition jury found that "The architecture of the Center successfully expresses the author's historical and political messages."



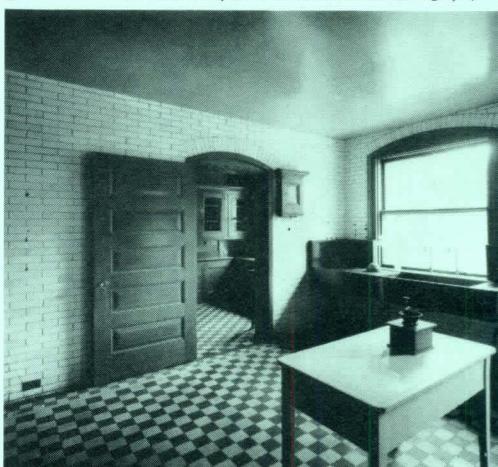
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CHICAGO CHAPTER OF AIA INTERIOR ARCHITECTURE AWARDS

The Interior Architecture Committee of the Chicago Chapter of AIA has cited seven area firms for outstanding design, following review of 69 entries by a special jury in Houston. The judges were architects James B. Thomas, AIA, of Morris Aubry Architects; Robert H. Timme, of Taft Architects; and Morris R. Tucker, AIA, of 3D/International; and interior designers Linda Pinto, of Caudill Rowlett Scott; and Sally Walsh. An Honor Award was conferred upon one entry, Skidmore, Owings & Merrill's design for the Banco de Occidente (Figure 1); nine other projects re-

ceived Citations of Merit.

1. Banco de Occidente, Guatemala City, Guatemala; Skidmore, Owings & Merrill, architects. A National AIA Honor Award winner (see RECORD, May, 1981, page 47), the project consists of a bank headquarters and two branch facilities. Courtyards, translucent fabric roofs, and skylights modulate interior lighting.

2. Leon Mandel Assembly Hall, University of Chicago, Chicago, Illinois; Skidmore, Owings & Merrill, architects. Bold stenciled patterns in brilliant colors evoke the original decorative scheme of a turn-of-the-century

auditorium designed by Shepley, Rutan and Coolidge. Renovation included many acoustic improvements.

3. Glessner House Kitchen Suite Restoration; Office of Wilbert R. Hasbrouck, HISTORIC RESOURCES, architects. "A fine example of architectural detective work," the jury observed. The project involved restoration of rooms designed by H. H. Richardson to their original 1887 appearance.

4. The Bay Club, Boston, Massachusetts; Skidmore, Owings & Merrill, architects. Furniture and finishes lend an air of discreet elegance, exemplified by tables whose wooden tops,

Calendar

AudioVisual Competition for Design Professionals.

Sponsored by the Society for Marketing Professional Services in cooperation with McGraw-Hill and *The Presentation ADVISOR* magazine, the competition is open to architects, engineers, interior designers, and other design professionals. In addition to a grand prize for excellence in audiovisual communication, awards will be presented in three categories: marketing services, project designs, and marketing products. Entry formats are film-strips or slides with taped sound, motion pictures, or video cassettes. August 21 is the entry deadline. For competition rules and an entry blank, contact Ernest Burden, Chairman, Annual AudioVisual Competition, 20 Waterside Plaza, New York, New York 10010 (212/889-4672).

Owens-Corning Fiberglas Energy Conservation Awards. Entry forms must be submitted by August 28. Additional information is available from Mary G. Reinbold, Owens-Corning Fiberglas, Fiberglas Tower, Toledo, Ohio 43659 (419/248-8053).

Society of American Registered Architects Annual Awards. Submissions for the 1981 awards program must be postmarked no later than September 1. For further information address inquiries to Ove W. Uggerby, 1981 Awards Chairman SARA, P.O. Box 3470 CFS, Champaign, Illinois 61820 (217/352-3922).

Walker/Group National Student Design Competition. Students of architecture, interior planning, graphics, or industrial design are eligible to enter a competition established by Walker/Group, Inc., a New York architecture and design firm, "to promote innovation and awareness of retail design." A \$1,500 prize will be awarded to the winner; second- and third-place entrants will receive \$1,000 and \$500 prizes. Entries will be judged by Charles Gwathmey, FAIA; Hugh Newell Jacobsen, FAIA; Kenneth Walker, AIA; Arnold Aronson, Chairman of Saks Fifth Avenue; Melvin Jacobs, vice chairman of Federated Department Stores; and Ted Nierenberg, president of Dansk International Designs Ltd. Prospective entrants must notify Walker/Group by September 30. Programs may be obtained from the Competition Director, Walker/Group, Inc., 304 East 45th Street, New York, New York 10017.



6

Craig Lewandowski

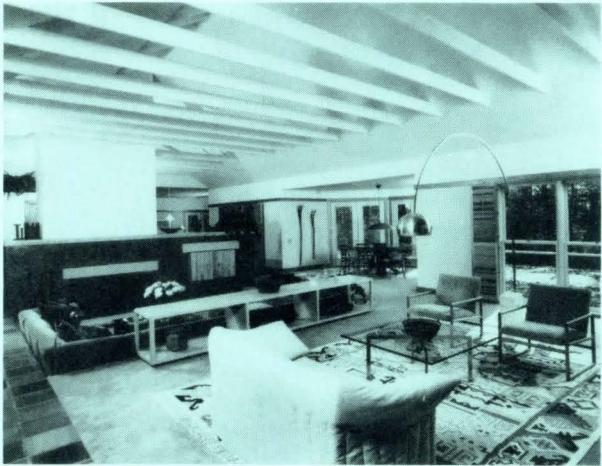


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10

Hedrich-Blessing

used for lunch service, are removed in the evening to reveal polished granite surfaces.

5. Industrial Trust and Savings Bank, Muncie, Indiana; Skidmore, Owings & Merrill, architects. A feeling of accessibility was the prime objective for banking areas at the center of a three-story atrium.

6. Loft Town House, Chicago, Illinois; George Pappageorge and David A. Haymes, architects. Subtle gray accents and a sense of verticality achieved through lighting were remarked upon by the jury. Translucent doors serve as room dividers, keep-

ing the openness of warehouse spaces while giving privacy.

7. Rowe Building, Chicago, Illinois; Kenneth A. Schroeder and George Hinds, architects. Minimal changes to this former book bindery were necessary to bring the building up to code. Wherever possible, unobstructed loft spaces were retained to allow for adaptation by tenants.

8. George's Restaurant, Chicago, Illinois; Chicago Art & Architecture, architects. An 8,000-square-foot space was transformed into a 165-seat restaurant and cabaret. Existing columns form an elegant screen

between the bar/service area and the dining room/night club.

9. Kuntz Residence, St. Charles, Illinois; Weese Seegers Hickey Weese, architects. The free-flowing spaces and natural materials of early twentieth-century Prairie School design were emulated in a new house.

10. Offices of Nagle, Hartray & Associates, Chicago, Illinois; James L. Nagle, architect. Ceiling fans and metal halide indirect lighting fixtures are energy-saving features of a loft converted into architects' offices. "Great effect with minimum expenditure," the jury concluded.



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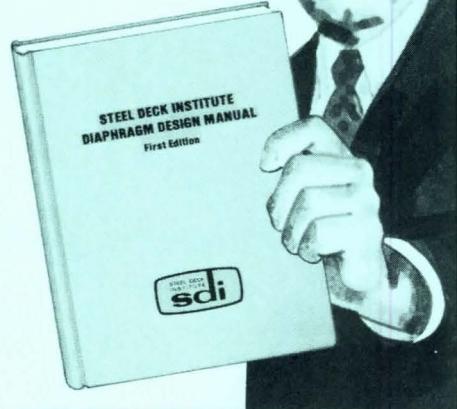
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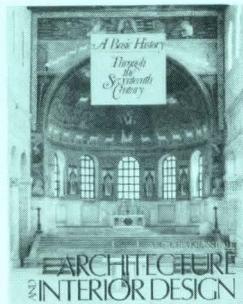
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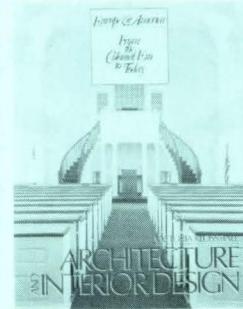
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Inside the outside: six on interiors



ARCHITECTURE AND INTERIOR DESIGN: A BASIC HISTORY THROUGH THE SEVENTEENTH CENTURY, by Victoria Kloss Ball; John Wiley & Sons, \$45.

A chronological history of architecture and the contents of architecture from prehistory to 17th-century England. The author argues that "architecture is far more than empty frames and spaces. . . . Architecture is great art only when its forms, setting, and contents make a whole as seen within its culture . . . we are concerned with buildings and their furnishings which involve all those heterogeneous artifacts, utilitarian as well as ornamental, that contribute to satisfactory interiors."



ARCHITECTURE AND INTERIOR DESIGN: EUROPE AND AMERICA FROM THE COLONIAL ERA TO TODAY, by Victoria Kloss Ball; John Wiley & Sons, \$45.

Volume Two picks up after the 17th-century (above) and continues into the 20th century.



CONTEMPORARY CLASSICS: FURNITURE OF THE MASTERS, by Charles D. Gandy and Susan Zimmerman-Stidham; McGraw-Hill, \$19.95.

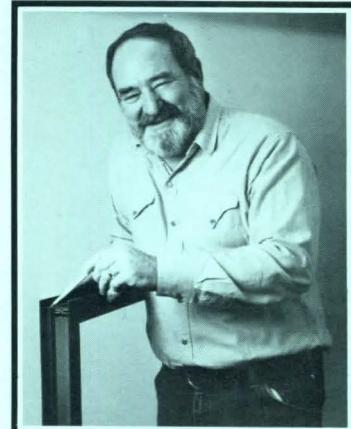
A cursory three-part introduction—"The Arts and Crafts Movement," "Art Nouveau," and "Pre-World War I Design"—provides a historical backdrop for introducing the work of eight acknowledged masters of contemporary furniture design. Thonet, Breuer, Mies, Corbusier, Aalto, Wegner, Eames, and Saarinen are each accorded a separate chapter. Line drawings and photographs illustrate the volume; a brief biographical text provides a prelude to the discussion of the individual designer's furniture.

continued on page 43

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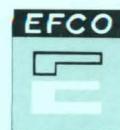
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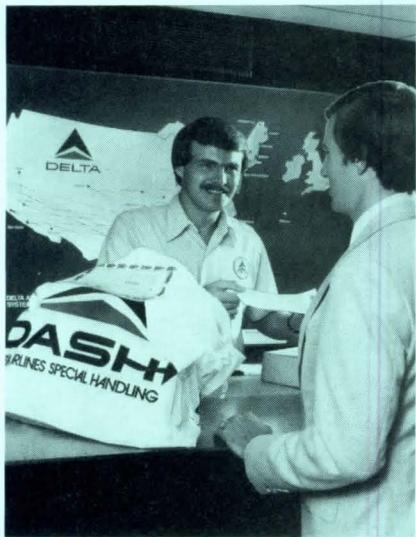
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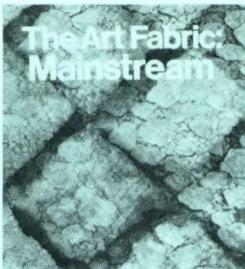
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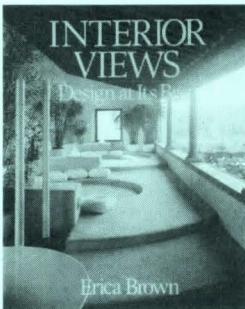
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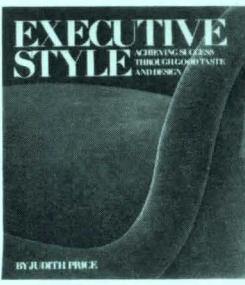
THE ART FABRIC: MAINSTREAM, by Mildred Constantine and Jack Lenor Larsen; Van Nostrand Reinhold, \$39.95.

An impressive coffee table book with an ambitious and rewarding text as well. The authors provide a brief history of textile art—"Evolution of the Art Fabric"—but the emphasis is on developments in the 1970s. Includes: a chapter entitled "Art Fabric in Architecture," showing installations of major textile works; the soft sculpture of artists Man Ray, Christo, and Robert Rauschenberg; and a pictorial chronicle of "fibrous material" art exhibitions.



INTERIOR VIEWS: DESIGN AT ITS BEST, by Erica Brown; Viking, \$25.

Forty interior designers have been brought together in this catholic compendium, for an overview of the current state-of-the-art. Author Erica Brown is to be commended for her scope: from the serene minimalism of Joseph D'Urso, to the sherbert-colored sensuality of John Saladino, to the red-lacquered walls of Mark Hampton, to the classic elegance of "Sister" Parish and Albert Hadley. *New York Times* architecture critic Paul Goldberger provides the foreword.



EXECUTIVE STYLE: ACHIEVING SUCCESS THROUGH GOOD TASTE AND DESIGN, by Judith Price; Linden Press, \$19.95.

What the well-dressed white-collar office is wearing this year. In her introduction, author Price offers the following: "An office with executive style harmonizes with the image of the company while it lets you show your individuality. An office should be a frame for your personality...." Along with impressive graphics, *Executive Style* provides a source list for everything from briefcases to pens, to chairs, to desks, to letter openers....

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BUILDING ACTIVITY

BUILDING COSTS AND FINANCING

BUSINESS DEVELOPMENT

CONSTRUCTION MANAGEMENT

LEGAL PERSPECTIVES

OFFICE MANAGEMENT

Dodge/Sweet's Construction Outlook 1981: Second Update

Last January the nation's economic priorities were reshuffled, putting greater emphasis on investment and growth. Six months later, however, the construction industry was still shackled by the austere monetarist policies of the past. Up to the middle of 1981, contracting for new construction looked like a replay of 1980. Just when recovery from last year's credit crunch was picking up momentum, a new round of monetary restraint sent building markets into a second tailspin. From November through May the seasonally adjusted Dodge Index of total construction contract value declined 22 per cent, rivaling 1980's first-half plunge of 32 per cent. And there's no clear evidence that 1981's "double dip" has bottomed out yet. The sharp decline of new construction starts since the beginning of 1981 translates into another lean summer on the job site for contractors and building materials suppliers.

1981 National Estimates of Dodge Construction Potentials

Second Update July 1981

		1980 Actual	1981 Forecast	Percent Change
Construction Contract Value	(millions of dollars)			
Nonresidential Buildings	Office Buildings	\$ 13,466	\$ 16,700	+24
	Stores & Other Commercial	11,336	11,300	-
	Manufacturing Buildings	8,239	7,775	-6
	Total Commercial & Manufacturing	\$ 33,041	\$ 35,775	+8
	Educational	\$ 6,766	\$ 6,375	-6
	Hospital & Health	5,396	5,800	+7
	Other Nonresidential Buildings	7,142	7,525	+5
	Total Institutional & Other	\$ 19,304	\$ 19,700	+2
	Total Nonresidential Buildings	\$ 52,345	\$ 55,475	+6
Residential Buildings	One-Family Houses	\$ 41,474	\$ 45,625	+10
	Multi-Family Housing	18,519	19,975	+8
	Total Housekeeping	\$ 59,993	\$ 65,600	+9
	Total Nonhousekeeping	\$ 3,213	\$ 3,250	+1
	Total Residential Buildings	\$ 63,206	\$ 68,850	+9
Nonbuilding Construction	Highways & Bridges	\$ 12,282	\$ 11,600	-6
	Utilities	4,584	5,000	+9
	Sewer & Water	7,591	8,275	+9
	Other Nonbuilding Construction	7,156	6,600	-8
	Total Nonbuilding Construction	\$ 31,613	\$ 31,475	-
Total Construction		\$147,164	\$155,800	+6
Dodge Index (1972 = 100)		162	171	
Floor Area of New Buildings (millions of square feet)				
Nonresidential Buildings	Office Buildings	244	270	+11
	Stores & Other Commercial	441	415	-6
	Manufacturing Buildings	213	200	-6
	Total Commercial & Manufacturing	898	885	-1
	Educational	95	83	-13
	Hospital & Health	56	55	-2
	Other Nonresidential Buildings	146	137	-6
	Total Institutional & Other	297	275	-7
	Total Nonresidential Buildings	1,195	1,160	-3
Residential Buildings	One-Family Houses	1,284	1,300	+1
	Multi-Family Housing	545	550	+1
	Total Housekeeping	1,829	1,850	+1
	Total Nonhousekeeping	57	52	-9
	Total Residential Buildings	1,886	1,902	+1
Total Buildings		3,081	3,062	-1
Number of Dwelling Units (thousands of units—F. W. Dodge basis)				
	One-Family Houses	809	825	+2
	Multi-Family Housing	519	525	+1
	Total Dwelling Units	1,328	1,350	+2

It was just about this time last year that the Federal Reserve made its dramatic reversal of monetary policy, switching abruptly from restraint to ease. By that act, the Fed removed the major barrier to a second-half recovery of building activity. Once interest rates broke, home building rebounded by more than 50 per cent in just a few months, while commercial/industrial building soared to a new high. Unfortunately, it didn't last long. What are the chances for a comparable rebound in 1981? All it would take would be a rollback of interest rates, but the probability of another major reversal of monetary policy is very low. This time around, the Fed—with the blessing of the Reagan Administration—is much more likely to err on the side of sustained monetary restraint. This does not mean, however, that the current 20-plus per cent prime and the 16 per cent mortgage rate are irreversible. In credit markets, at least, there is still a "demand side."

The process by which interest rates are likely to unwind in 1981's second half is not a very pleasant one. After more than six months of severe monetary restraint, it now appears that the economy's growth has slowed to a crawl. Another quarter or two of sluggishness is bound to follow until a shift to more stimulative *fiscal* policy (tax cuts, etc.) begins to spark a revival toward year's-end. In that period, it is reasonable to expect that reduced loan demand will bring interest rates down a notch. However, without a basic change in monetary policy, another period of rising interest rates is probable in the first half of 1982, as the Administration's tax cut and other economic stimuli begin to heat up the economy.

Clearly, lower interest rates are the key to the recovery of building activity in the remainder of 1981. But while events are leading to another rate decline, the response by the construction market this time is apt to be different from last year's strong rebound. In 1980, interest rates came down sharply because the reversal of Federal Reserve policy greatly increased the supply of credit. In that fertile financial environment, both housing and nonresidential building surged ahead together. In 1981, rates will come down only because a stretch of economic stagnation will temporarily reduce business demand for credit. Under such circumstances, the benefits of lower interest rates are not likely to extend much beyond the housing market.

Signs of a turning point are evident at mid-1981. This Second Update of the Dodge/Sweet's Construction Outlook anticipates the following developments.

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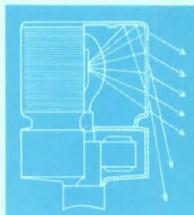
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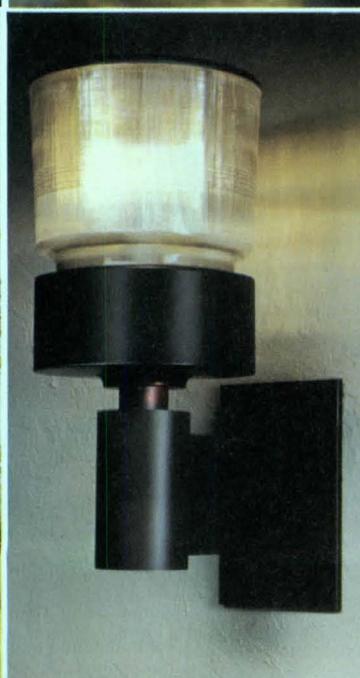
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The Outlook by Quarters							
Year/Quarter	Seasonally Adjusted Annual Rates in Billions of Dollars						
	Nonresidential		Residential		Nonbuilding		Total
Commercial & Industrial	Institutional & Other	One-Family	Multi-Family	Public Works	Utilities		
1981 I	\$37.2	\$20.3	\$43.8	\$22.0	\$28.6	\$3.0	\$154.9
II	36.6	18.1	42.5	21.3	25.2	5.0	148.7
III	34.5	19.8	46.1	23.9	26.3	5.4	156.0
IV	34.8	20.6	50.1	25.7	25.8	6.6	163.6
1982 I	37.0	21.0	50.6	25.8	25.5	7.6	167.5
II	38.6	21.5	59.5	27.5	26.0	8.7	181.8

The 1981 construction outlook: housing

With interest rates approaching another peak, and with the housing cycle at or near its bottom at mid-1981, the short-run issue is not whether the housing market will improve, but how fast and by how much. As interest rates soften, the rate of housing starts should begin to improve in the third quarter. But because hard-pressed thrift institutions will need extra time to regain their ability to attract and hold

savings, the recovery of housing activity in 1981's second half will be less vigorous than it was under similar credit conditions in 1980. With the rate of housing starts back to 1.4 million by the final quarter of 1981, this year's total is estimated at only 1,350,000 units, or just about even with 1980's weak volume. At current prices, the contract value of residential building in 1981 will increase 9 per cent to \$68.8 billion.

1981 Regional Estimates

of Dodge Construction Potentials

Construction Contract Value (millions of dollars)	Northeast			Midwest		
	1980 Actual*	1981 Forecast	Percent Change	1980 Actual*	1981 Forecast	Percent Change
Nonresidential Buildings						
Commercial & Manufacturing	\$ 5,634	\$ 6,700	+19	\$ 7,045	\$ 6,850	-3
Institutional & Other	3,993	4,100	+3	4,658	4,475	-4
Total	\$ 9,627	\$10,800	+12	\$11,703	\$11,325	-3
Residential Buildings						
One-Family Houses	\$ 5,752	\$ 6,400	+11	\$ 6,897	\$ 7,200	+4
Multi-Family Housing	3,124	3,550	+14	3,059	3,200	+5
Nonhousekeeping	517	600	+16	443	425	-4
Total	\$ 9,393	\$10,550	+12	\$10,399	\$10,825	+4
Nonbuilding Construction						
Highways & Bridges	\$ 2,712	\$ 2,050	-24	\$ 2,893	\$ 3,025	+5
Utilities	281	1,475	++	490	1,675	++
Other Nonbuilding Construction	3,726	3,375	-9	3,054	3,000	-2
Total	\$ 6,719	\$ 6,900	+3	\$ 6,437	\$ 7,700	+20
Total Construction	\$25,739	\$28,250	+10	\$28,539	\$29,850	+5

*Totals may not equal sum of components, due to independent rounding.

++ = Over 100% increase.

Construction Contract Value (millions of dollars)	South			West		
	1980 Actual*	1981 Forecast	Percent Change	1980 Actual*	1981 Forecast	Percent Change
Nonresidential Buildings						
Commercial & Manufacturing	\$11,759	\$12,925	+10	\$ 8,603	\$ 9,300	+8
Institutional & Other	6,512	6,825	+5	4,141	4,300	+4
Total	\$18,271	\$19,750	+8	\$12,744	\$13,600	+7
Residential Buildings						
One-Family Houses	\$17,854	\$19,725	+10	\$10,971	\$12,300	+12
Multi-Family Housing	7,010	7,650	+9	5,326	5,575	+5
Nonhousekeeping	1,276	1,350	+6	977	875	-10
Total	\$26,140	\$28,725	+10	\$17,274	\$18,750	+9
Nonbuilding Construction						
Highways & Bridges	\$ 4,431	\$ 4,400	-1	\$ 2,246	\$ 2,125	-5
Utilities	2,237	900	-60	1,576	950	-40
Other Nonbuilding Construction	4,899	4,775	-3	3,068	3,725	+21
Total	\$11,567	\$10,075	-13	\$ 6,890	\$ 6,800	-1
Total Construction	\$55,978	\$58,550	+5	\$36,908	\$39,150	+6

*Totals may not equal sum of components, due to independent rounding.

++ = Over 100% increase.

The next impediment to housing's recovery will be the upward pressure on interest rates in next year's strengthening economy. This will be a time when recent developments in "innovative financing" will demonstrate their viability.

Nonresidential building

For the remainder of 1981 and through most of 1982, the dominant forces in the nonresidential building market will be the opposing movements of a cresting office building boom and the early stages of recovery of most other types of commercial and industrial building. One consequence of these offsetting developments is to stabilize the year-to-year fluctuation of total nonresidential building contracting during 1980, 1981, and 1982 within the narrow range of 1.15 billion to 1.20 billion square feet. Contracting for office buildings, already at a strong 244 million square feet in 1980, soared to an average rate of more than 300 million square feet during the first half of 1981. Measures of office building *demand* indicate that this extraordinarily high rate of building cannot be sustained for long. If this imbalance is recognized in time, the office building boom of 1980-1981 can conclude in a "soft landing," with several years of reduced, but still high levels of building ahead.

Meanwhile, circumstances at mid-1981 are not yet supportive of recovery for most other types of commercial, industrial, and institutional building. Store and warehouse contracting will remain depressed until after a housing recovery is securely under way. Industrial building will be slow to recover until excess capacity is taken up, and economic conditions for the next two or three quarters will retard that process. Institutional building, lacking the support of public funding, is currently off between 5 and 10 per cent. As a result, square footage of total nonresidential building will be down another 3 per cent in 1981. An assist from inflation will boost the year's contract value to \$55.5 billion, a gain of 6 per cent.

By early 1982, most of the conditions for a general recovery of nonresidential building markets should be in place, with one exception: offices.

A preview of 1982

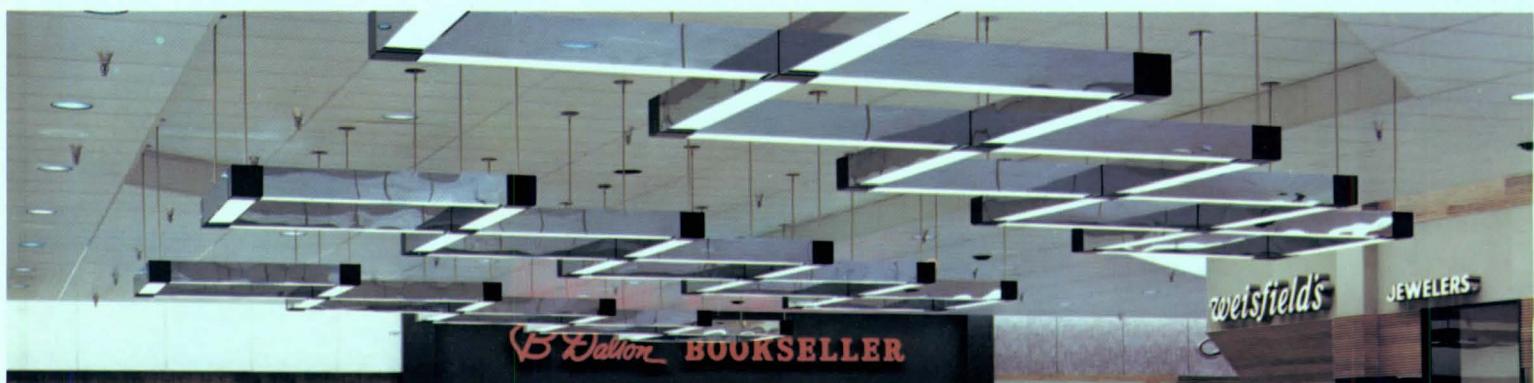
Two things (at least two) are needed to enable construction markets to realize more of the huge potential that has been suppressed for the past two years by monetary restraint. One: the new Administration must assume more of the burden of managing the economy through fiscal policy, allowing the Federal Reserve greater flexibility in monetary matters. Two: inflation must be brought steadily downward. With modest progress in these critical areas, 1982 could be the year of strong recovery for construction that 1981 should have been. Total construction contract value in the range of \$185-\$190 billion is within reach next year.

George A. Christie
Vice president and chief economist
McGraw-Hill Information Systems Company

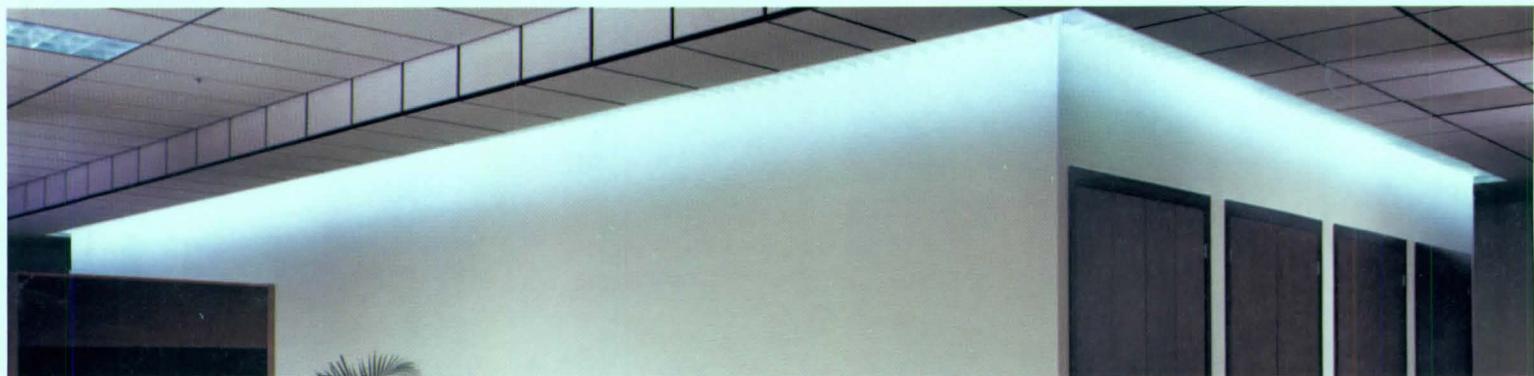
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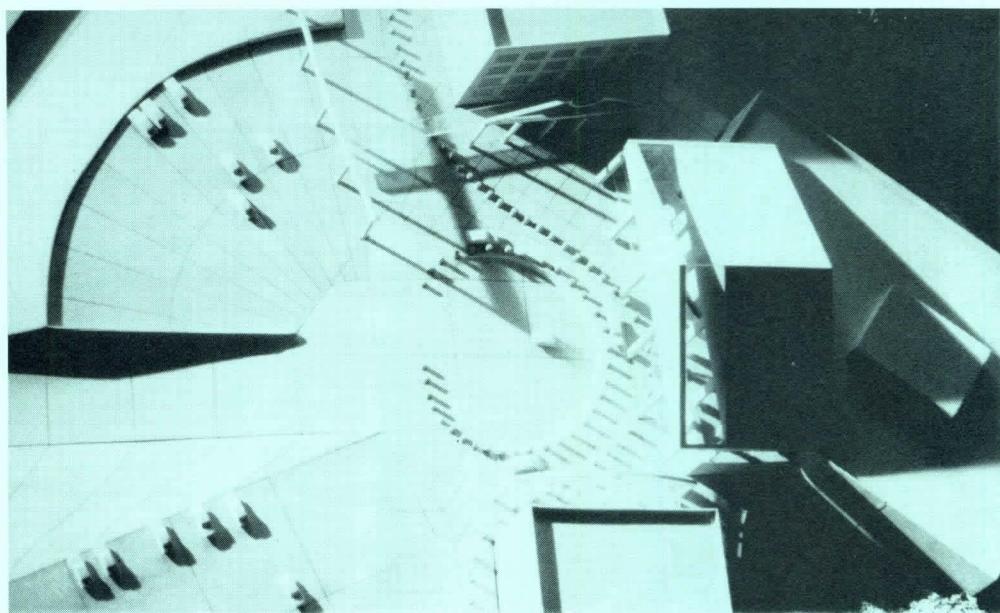
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CURRENT PROJECTS OF HEERY & HEERY: EXPLORATIONS OF POST-MODERNISM AT LARGE SCALE



Heery & Heery is a large (380-member) firm known and respected for its large-scale work, its skill at on-time, on-budget delivery and its conservative, functional design.

The four projects presented on the following pages suggest something new in the design work of the firm—these designs each have their own identity, but there is clearly—in varying degrees—an acknowledgement of stylistic change, a moving away from literal expression of function.

The project pictured above has the strong and explicit classical references that label it Post-Modern. It is Heery's unsuccessful entry in a competition for the design of the courts complex for the State of Kentucky in Frankfort—and its monumental pedimented facade reaches back to a host of stately court buildings. The project shown overleaf—a city hall for Tallahassee, Florida, has equally clear roots in the public buildings of the 1930s.

These, and the other three designs, have been developed under the guidance of B. Mack Scogin, Heery & Heery's vice president in charge of design. He prefers not to use the phrase "Post-Modern" at all, feeling that it connotes the superficial and the decorative. But he acknowledges historic references that are appearing in the current generation of the firm's design, does see a release from the functional tenets of the Modern Movement, and believes that architecture is on the threshold of significant change—not just in design, but in the nature of the design process. He sees new efficiencies in office administration, computer-aided design and drafting, and building technology as creating not just

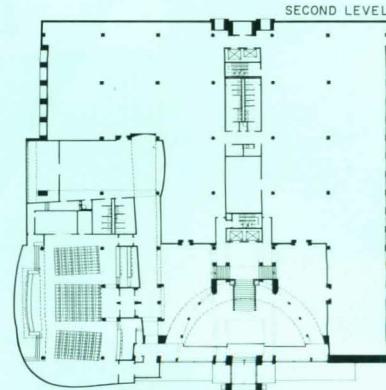
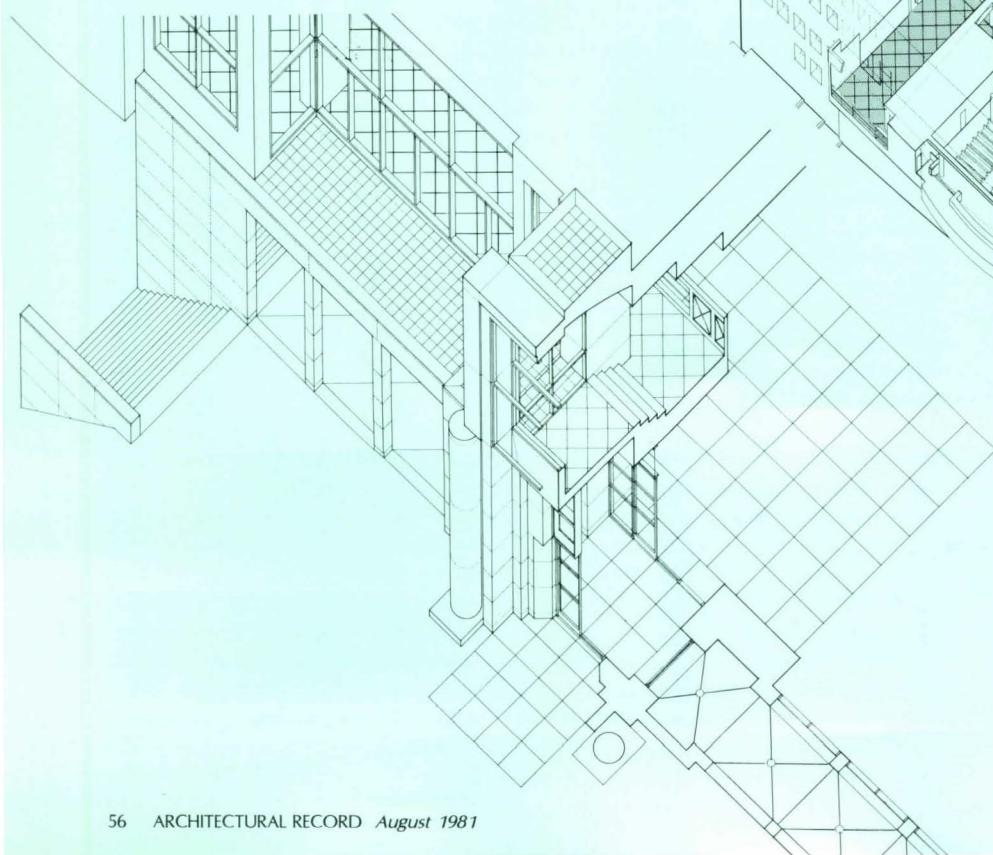
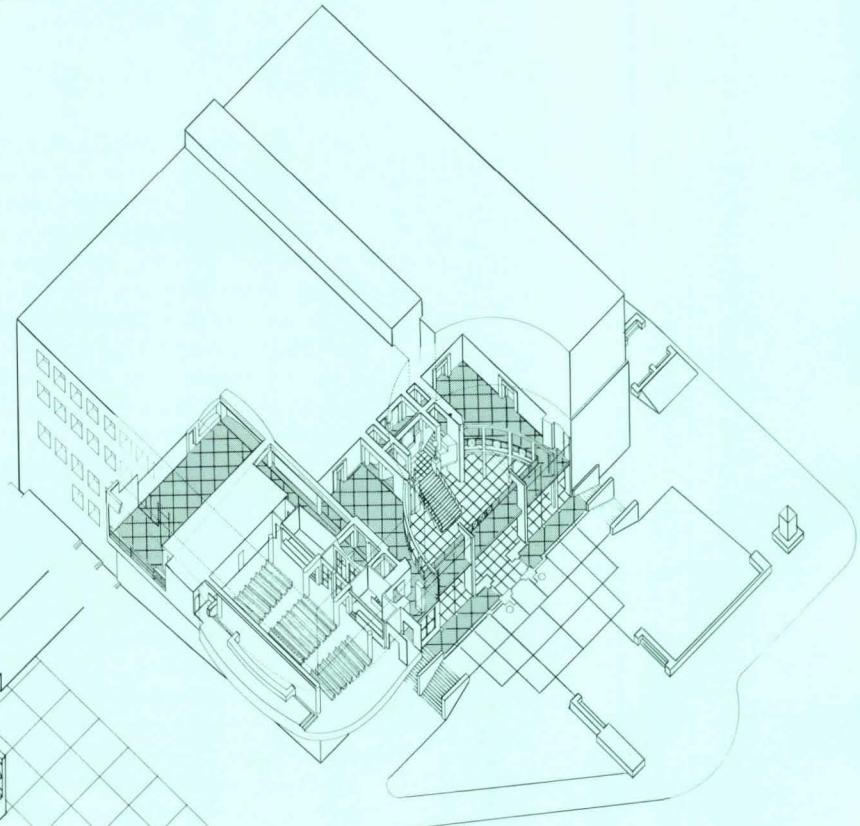
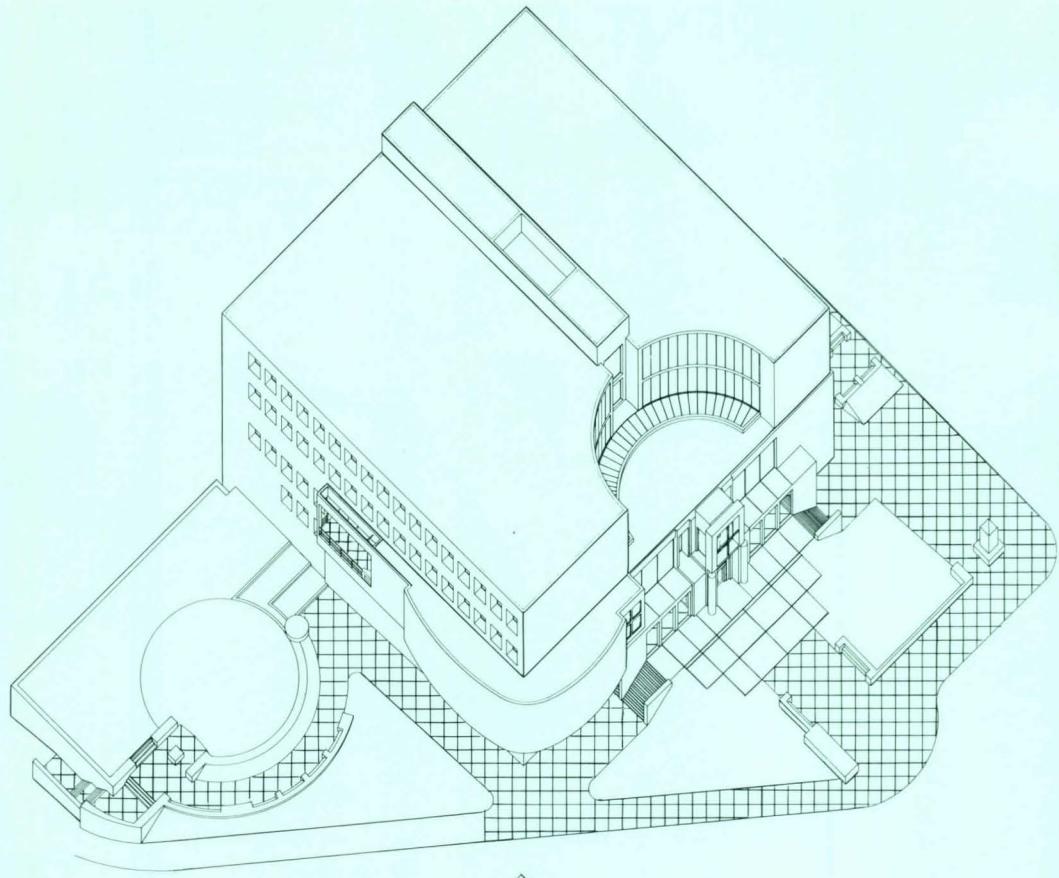
the tools but the time necessary for more thoughtful, more highly developed design.

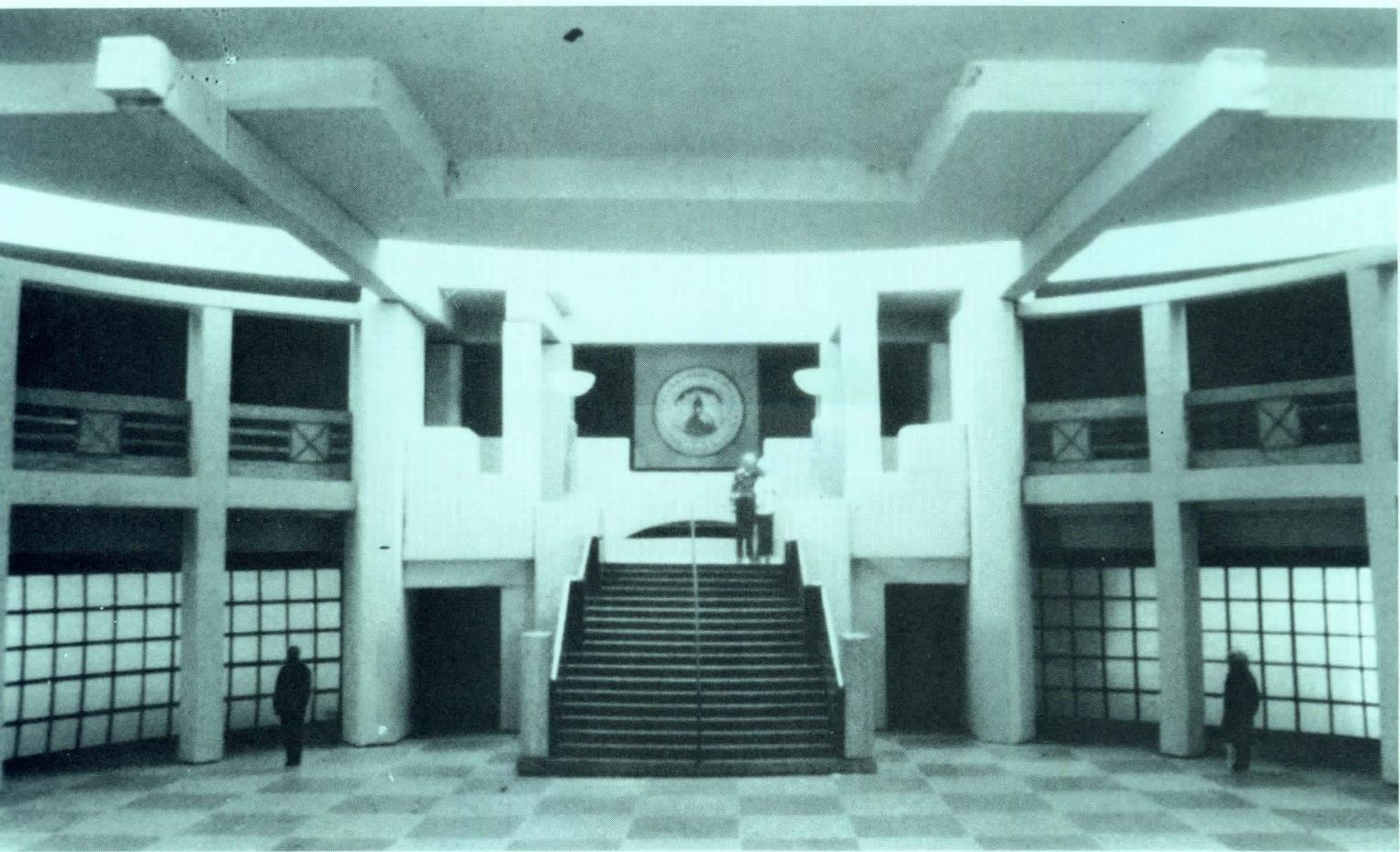
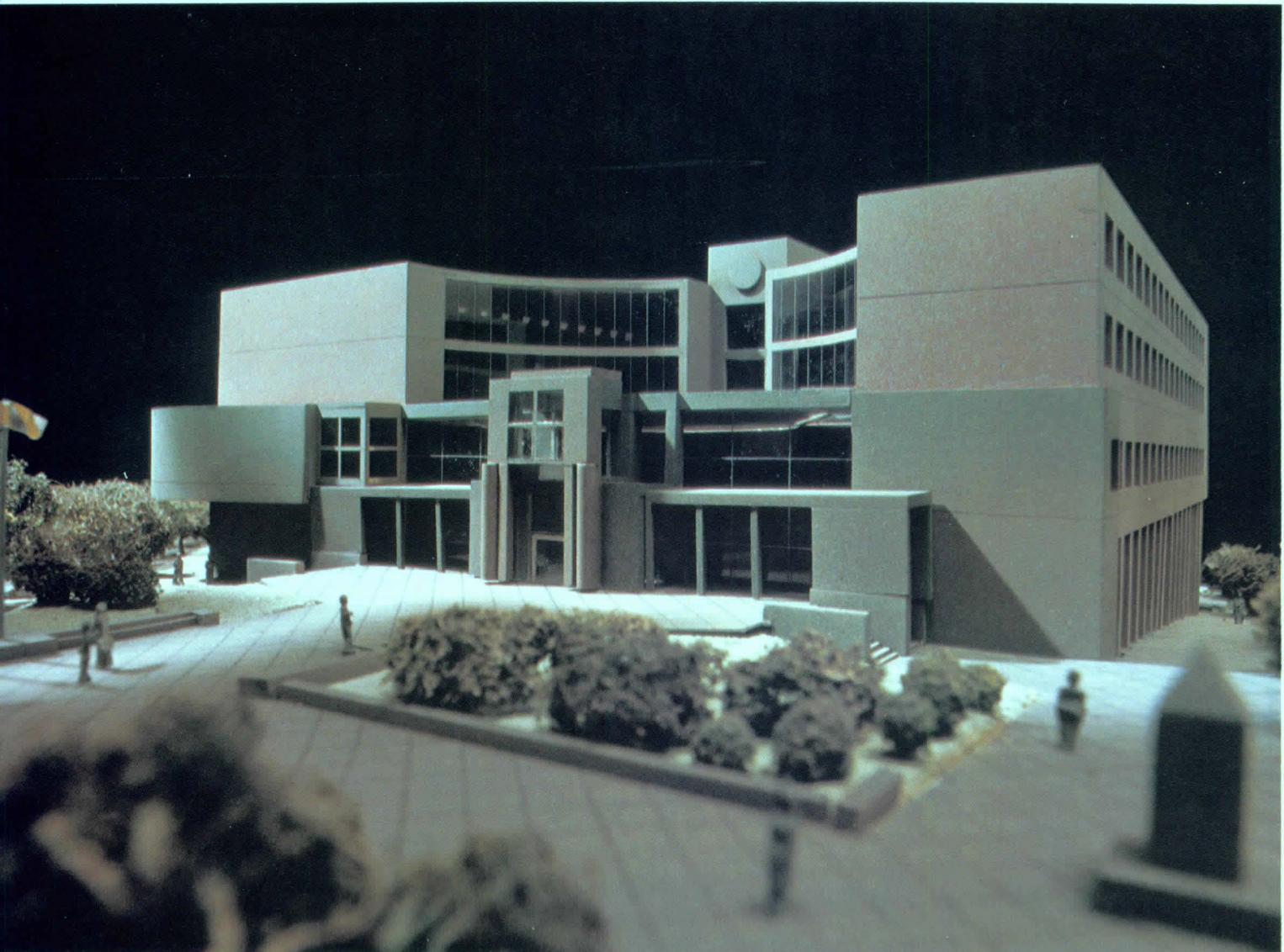
In three other projects shown here, that attention to design is clear—though the Post-Modern idiom is here less insistent, more lighthearted and decorative; though nonetheless significant. In the San Antonio airport, the references to the "adobe" arcaded esthetic of that historic city are fleeting but important in a design that is otherwise a stunning contemporary statement; the designs for two industrial buildings are still very much of the hard-edged contemporary style that marks most such functional buildings—but there are elements of decoration both festive and inviting, that are perfectly appropriate to the businesslike industrial buildings, but that just wouldn't have been designed before.

Thus Heery & Heery design vice president Scogin, supporting the subjective goals of the project designers, while of course maintaining the objective discipline that has marked the firm's work, is clearly in a period of exploration. Like a few other firms, they are exploring—sometimes forcefully, sometimes with just a brush stroke—ways to add something important to their large-scale buildings. Interest in Post-Modern references was generated, of course, mostly by work at small scale—indeed mostly in houses. It is intriguing to watch skilled designers up-scale Post-Modernism—and for a while, as Barclay Gordon wrote in his article on Helmut Jahn's design explorations [ARCHITECTURAL RECORD, August 1980], "We cannot afford to either applaud uncritically or prematurely dismiss the designs with a few falsetto protests. We wait and watch."

The Tallahassee City Hall is, of the four projects, the one most clearly influenced by the post-modern idiom. It has a base, a middle, and a top—even if the top is only a cap expressing skylight and elevator penthouses. The formal, almost symmetrical, facade and lobby (photos opposite) have clear, strong associations with the city halls of the 1930s. And, specifically, the elegant proportion and detailing of the masonry skin create a monumentality and symbolic presence for the building that is most appropriate to its use.

The building is also responsive to current concerns about making government accessible, and about neighborhood context. For example, the building is mixed-use: a variety of shops occupy the first floor opening off the lobby. And the two side facades are handled differently in response to the neighboring buildings—on one side a strong flat facade, on the other an open but formally designed plaza. The council chamber (see plan and isometrics) is behind a curved wall that expresses its importance. Heery design vice president Mack Scogin and project designer Merrill Elam were responsible for this design in association with landscape architects and civil engineers Post, Buckley, Shuh & Jennings.

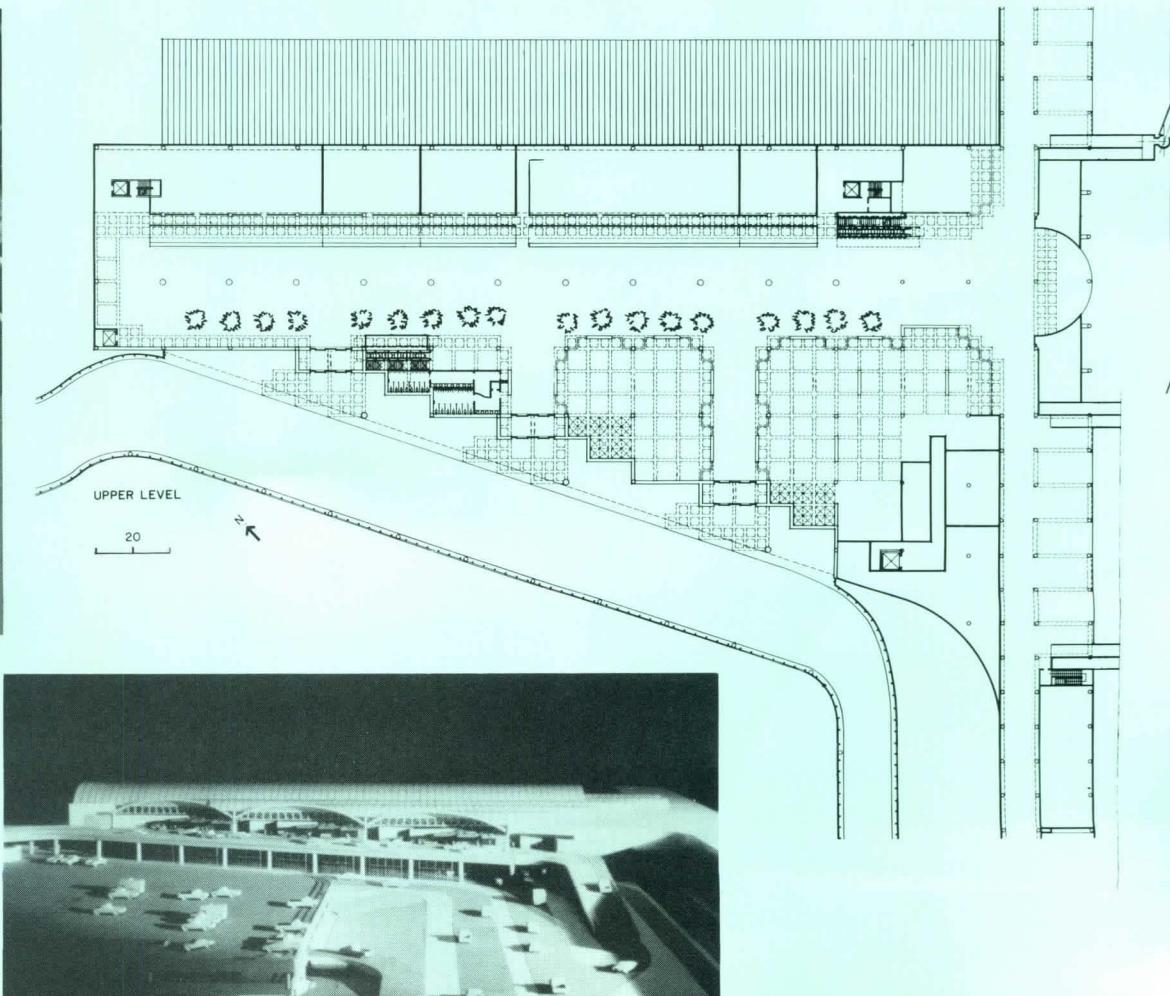


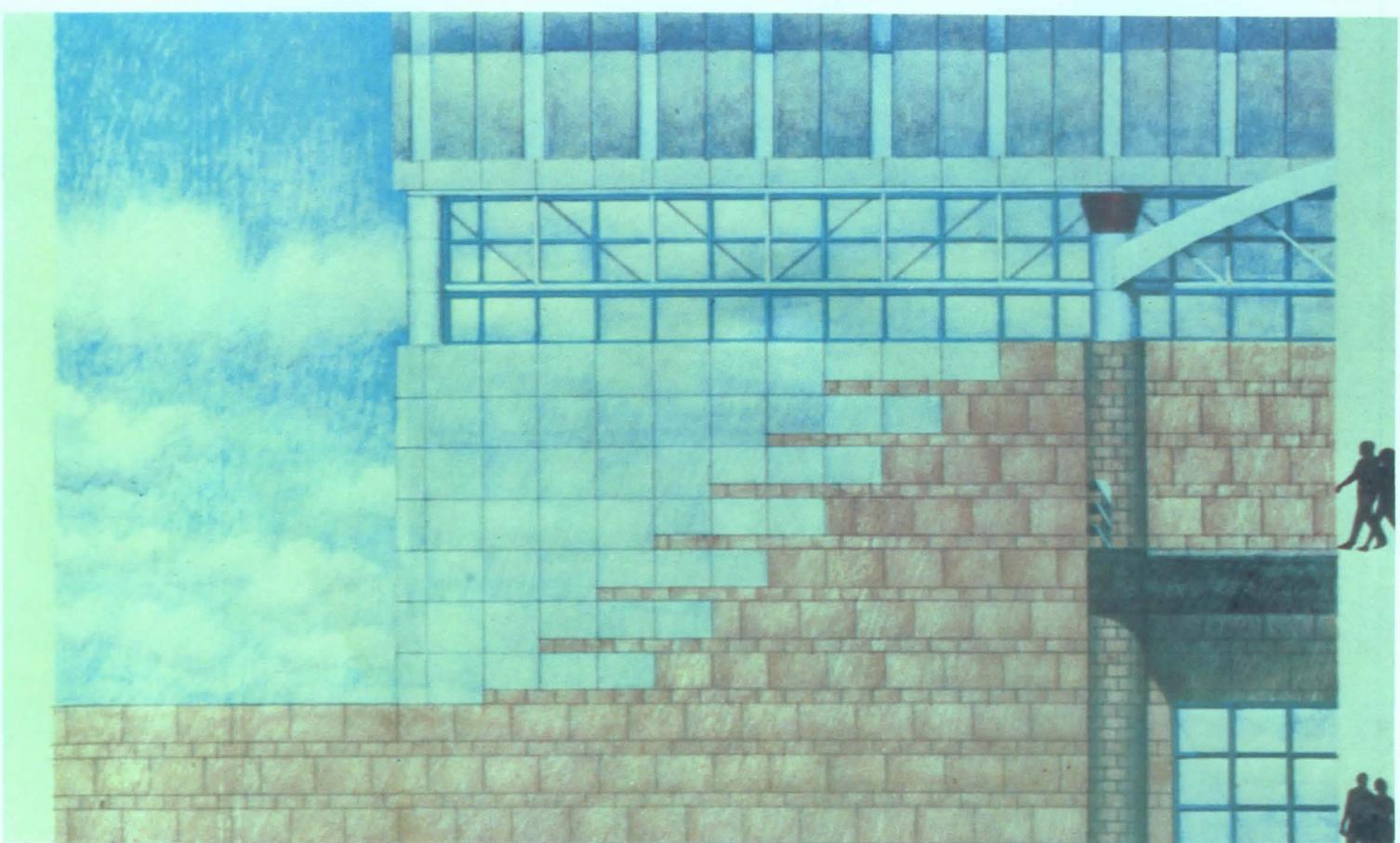
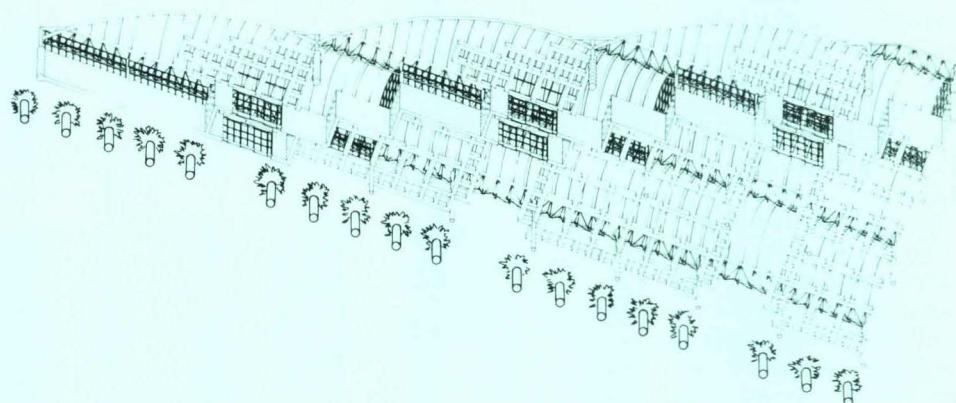
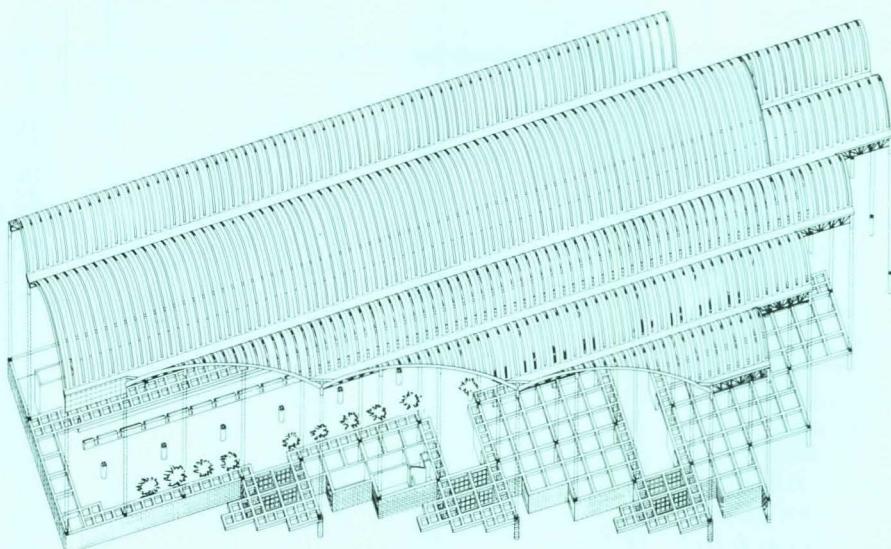
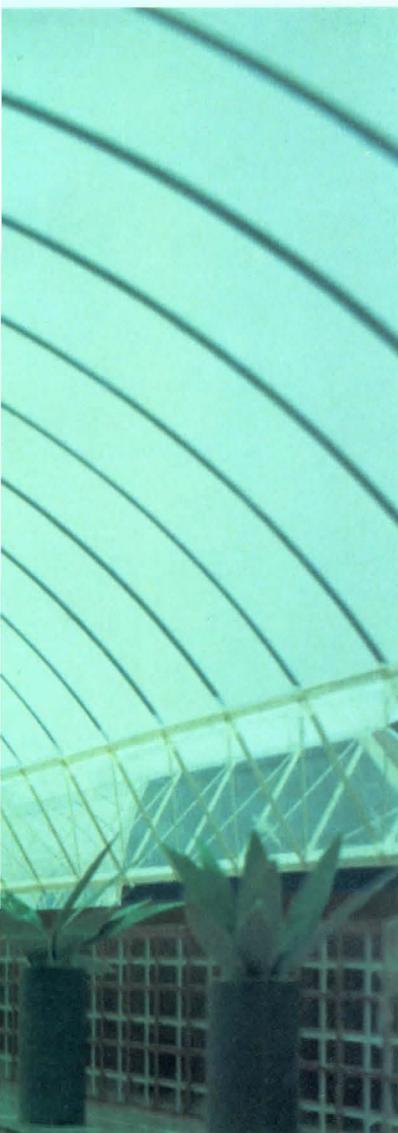


The design for San Antonio International Airport also reconciles strongly conflicting problems of imagery. The airport for one of the country's fastest-growing cities clearly wanted to be a strongly contemporary statement. Yet this is the city of the Alamo—a colorful city steeped in history and tradition.

So at the base of the building—at the drop-off points and at the pedestrian level, the design team—headed by project designer Terry Sargent—used local stone for the walls, regional tile paving, and large-scale trellises and arcades. "We even tried an adobe scheme—but that just didn't work," says design vice-president Mack Scogin. At any rate, the visitor arriving at the airport is aware at once of the local character—the appropriateness of these surfaces. Superimposed on the base are soaring, airy metal-and-translucent glass roofs. The architects see the grand nineteenth-century train sheds as the model—others will see airplane wings.

And the result is an image completely appropriate to the city, and to air travel. The project is currently under construction, and has won an award of excellence from the AIA for the joint venture architects and engineers, Heery/Marmon Mok/Simpson.

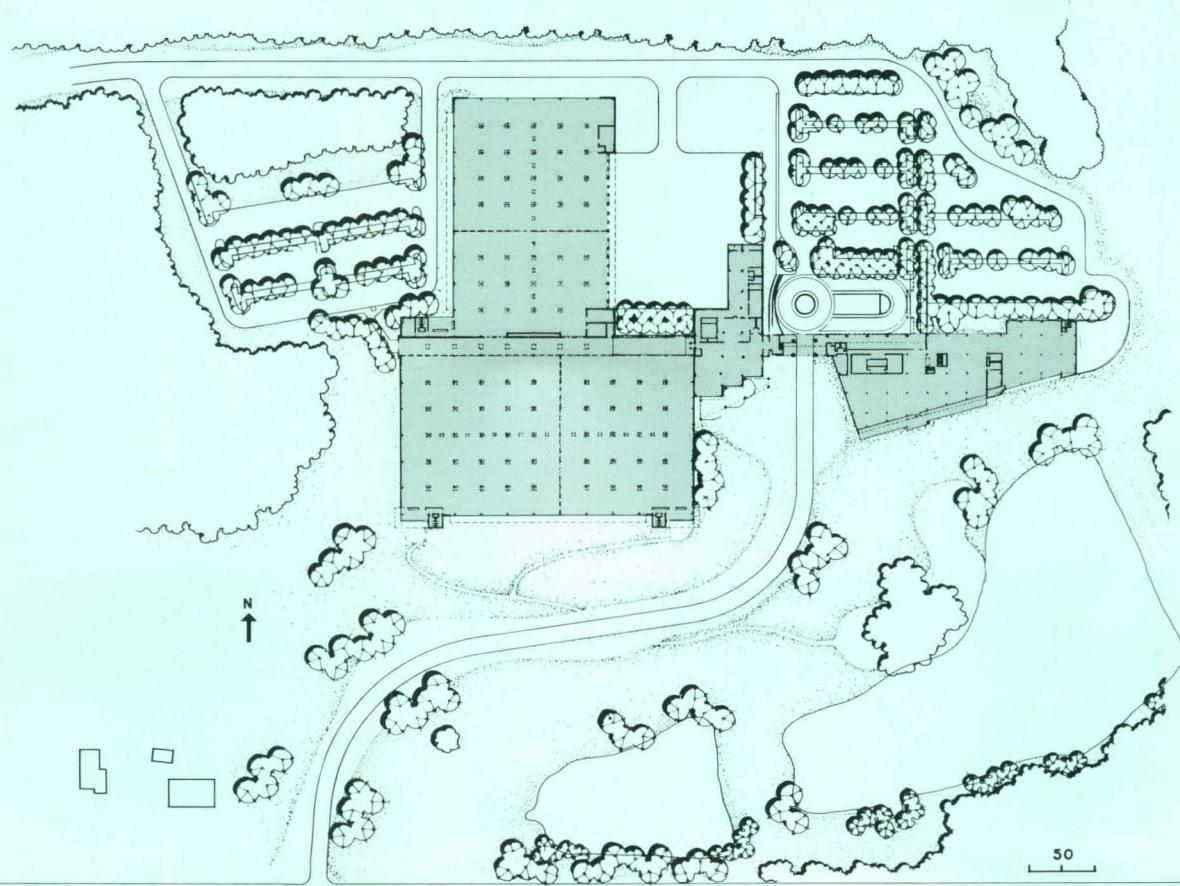
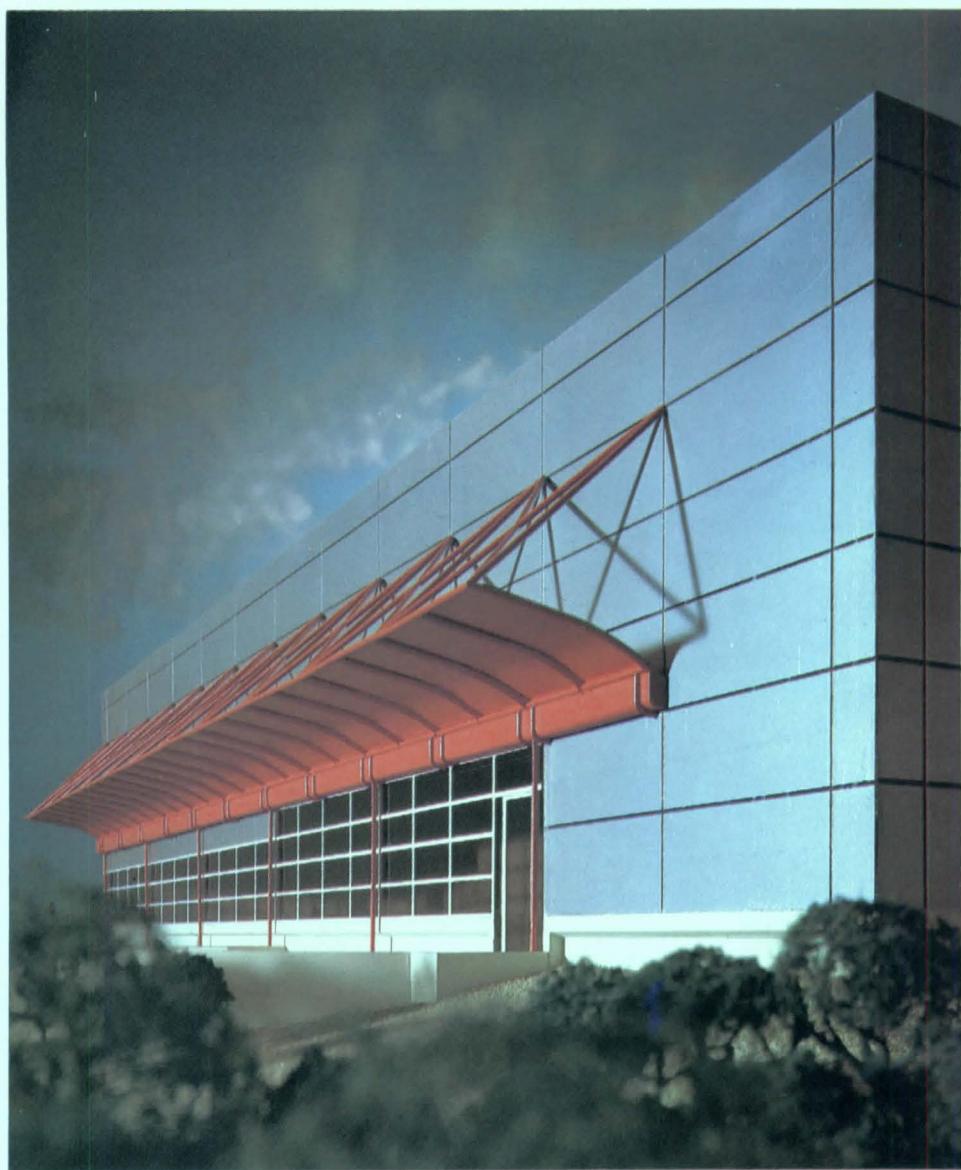


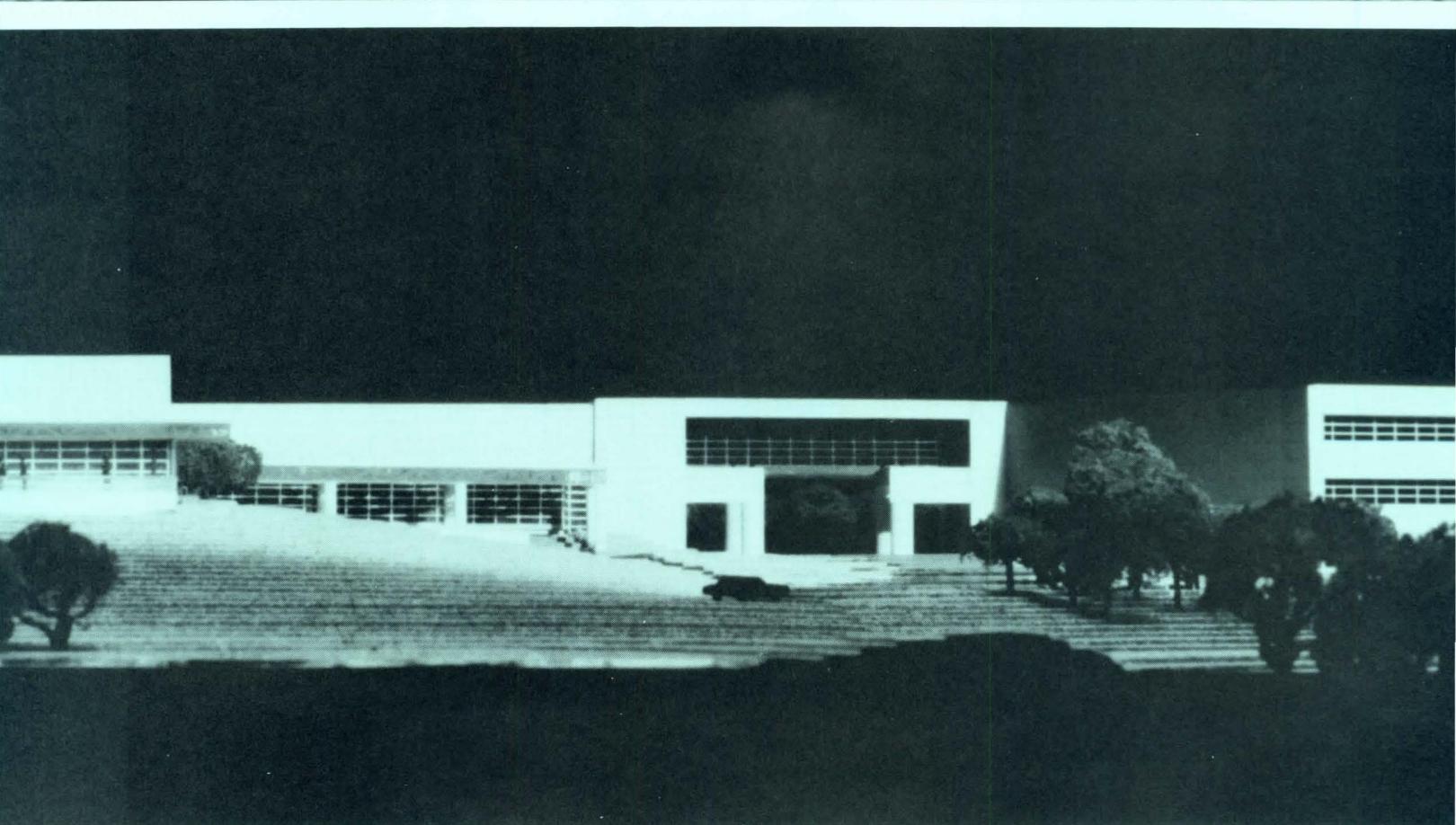


The Herman Miller plant and offices in Roswell, Georgia are the first phase of a program to build one million square feet of space covering nearly 20 per cent of 135 acres of rolling farmland.

For this project, the design team, headed by Merrill Elam, pursued very different goals from those set for the buildings shown on the preceding pages. The buildings will be carefully fitted to the natural contours of the site to preserve as much of the natural setting as possible, and minimize their bulk. The design goals included a strong graphic expression—in the taut metal skins and window treatment—of both the production function of the buildings and the contemporary esthetic of the furniture made there.

Importantly, the goals also included architectural expression of the client's commitments to its employees. As an example, the symbolic main entrance to the buildings is in neither the manufacturing building (left in plan and photo below) nor the office building (right)—but through a bridge between the two over the entry road, leading to a formal entry plaza. Further, every employee—in warehouse and plant as well as office—works with at least a glimpse of the outdoors through sun shaded windows.

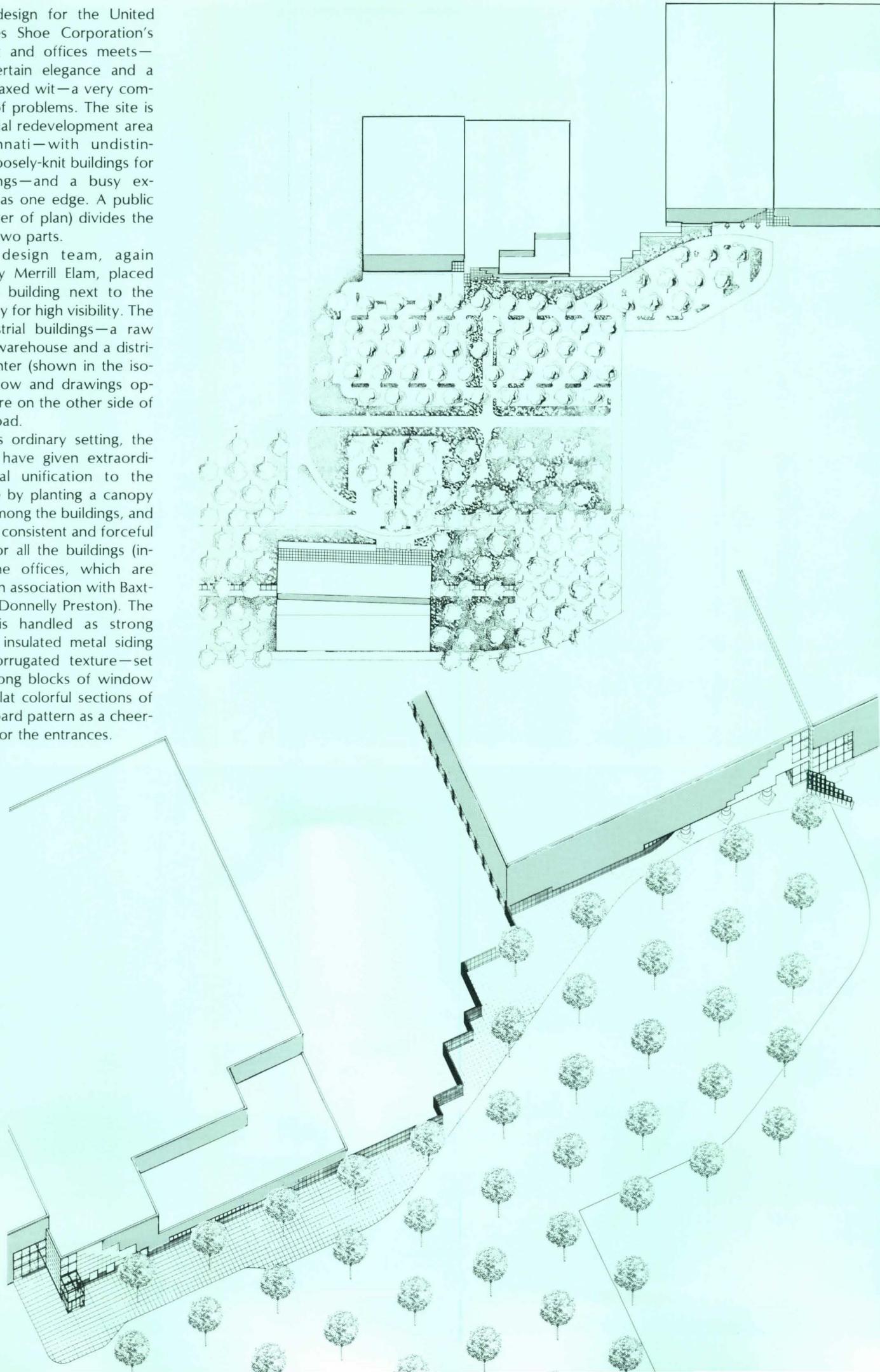


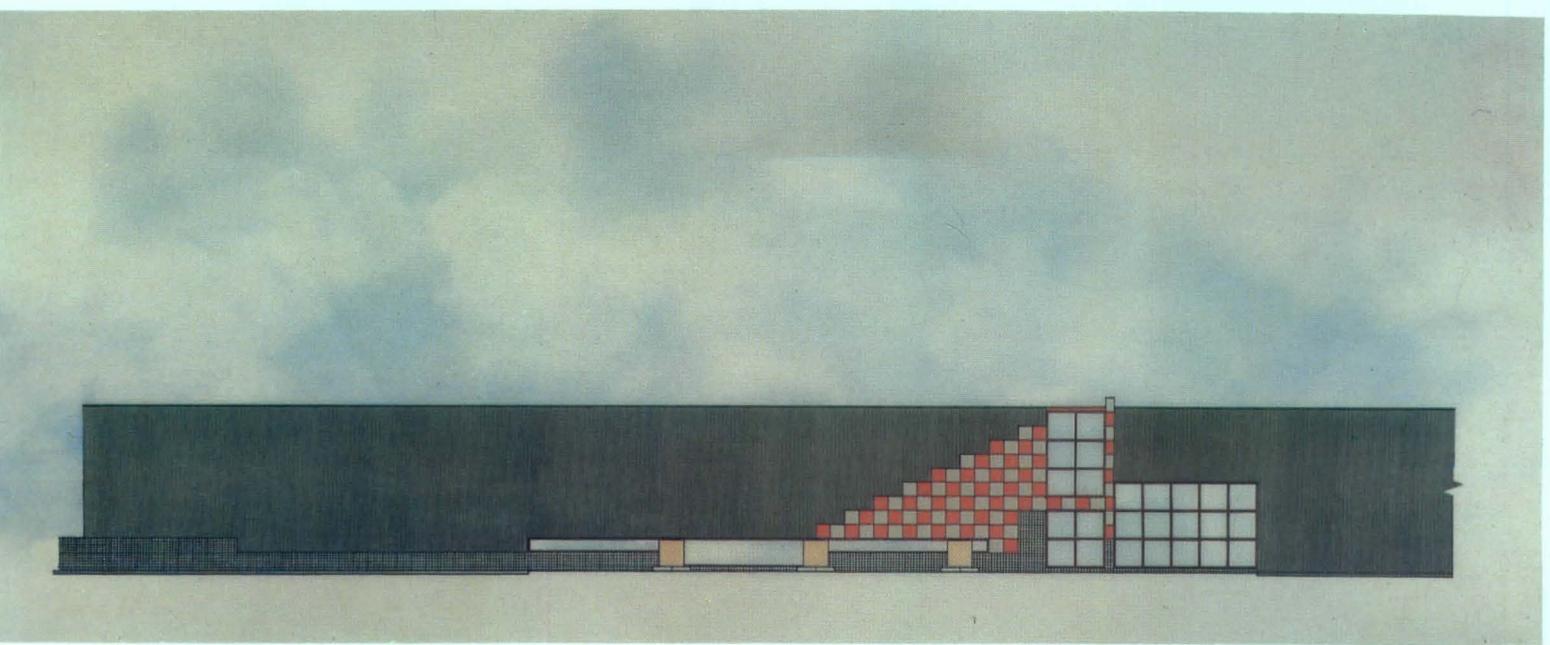
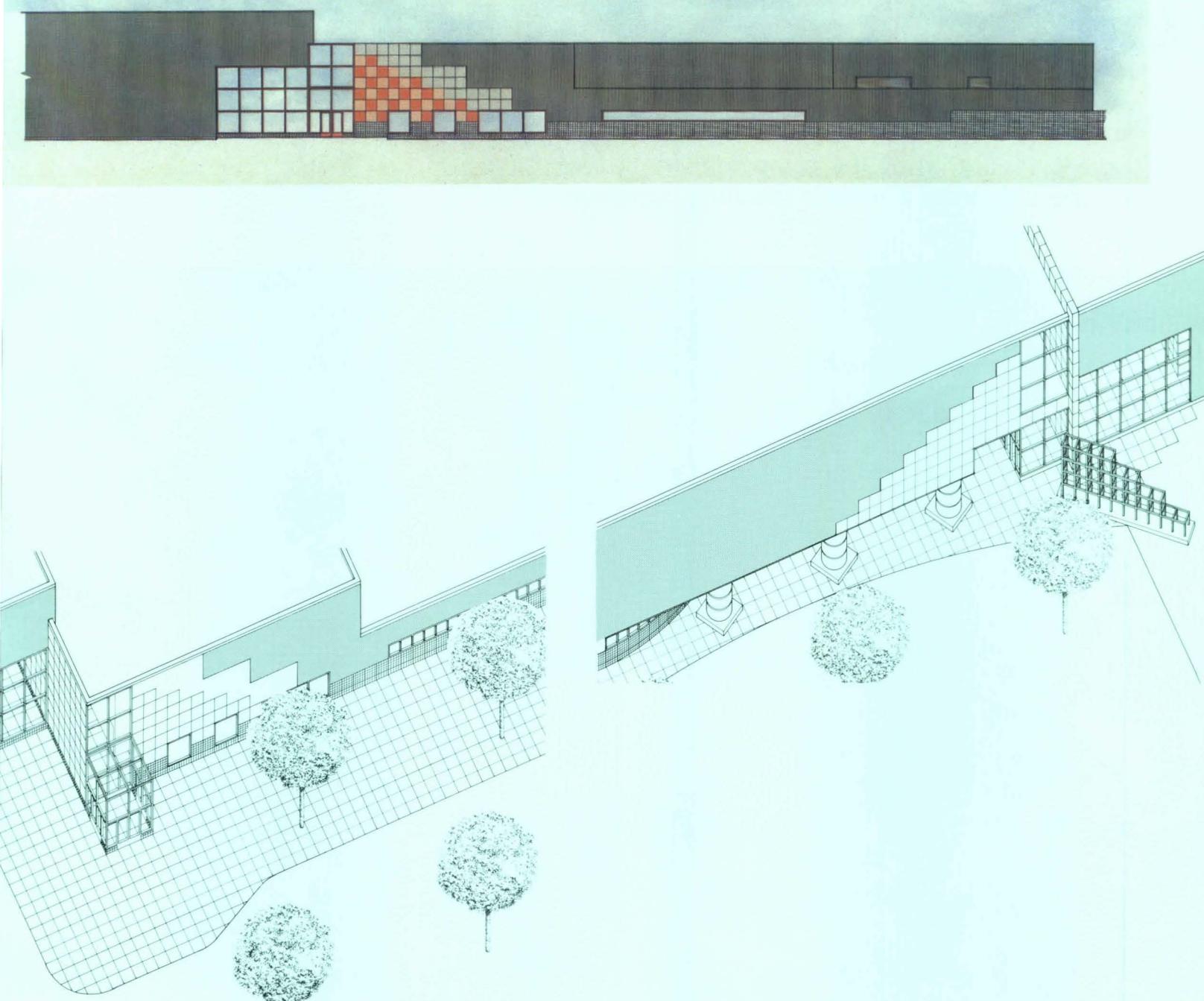


The design for the United States Shoe Corporation's plant and offices meets—with a certain elegance and a certain relaxed wit—a very common set of problems. The site is an industrial redevelopment area of Cincinnati—with undistinguished, loosely-knit buildings for surroundings—and a busy expressway as one edge. A public road (center of plan) divides the area into two parts.

The design team, again headed by Merrill Elam, placed the office building next to the expressway for high visibility. The two industrial buildings—a raw materials warehouse and a distribution center (shown in the isometric below and drawings opposite)—are on the other side of a public road.

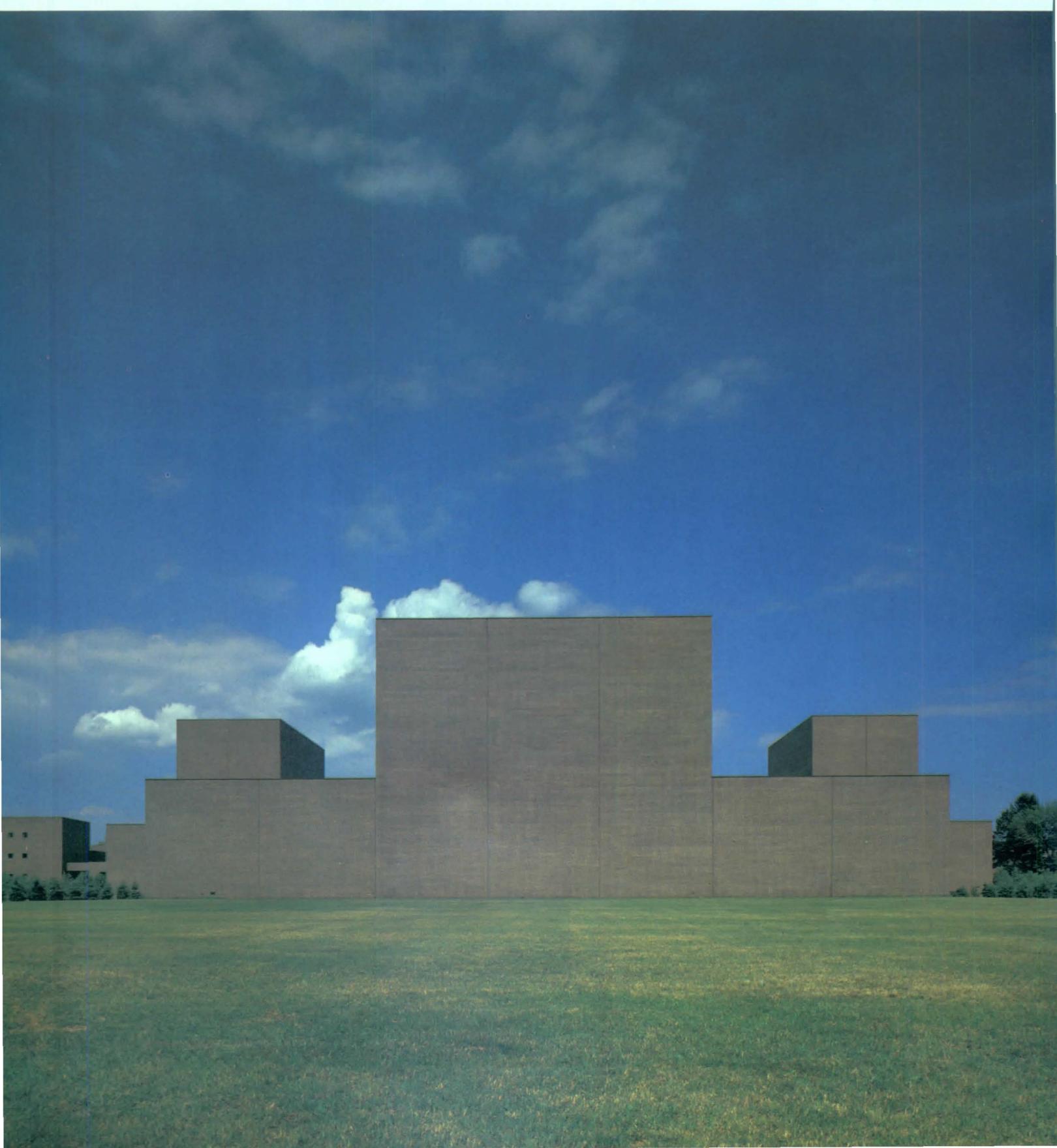
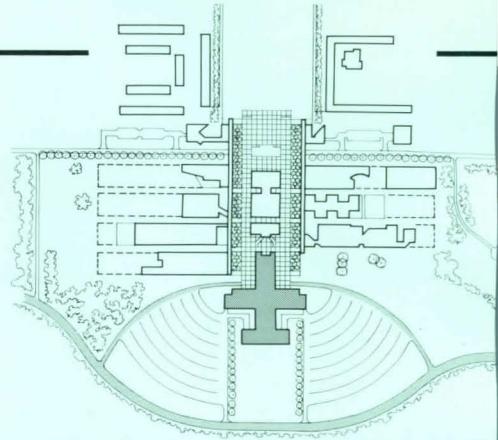
In this ordinary setting, the architects have given extraordinary visual unification to the whole site by planting a canopy of trees among the buildings, and by using a consistent and forceful esthetic for all the buildings (including the offices, which are designed in association with Baxter Hodell Donnelly Preston). The cladding is handled as strong planes of insulated metal siding with a corrugated texture—set off by strong blocks of window wall and flat colorful sections of checkerboard pattern as a cheerful signal for the entrances.





EDWARD LARRABEE BARNES' DESIGN FOR THE PERFORMING ARTS AT PURCHASE

The new center gives the campus a strong terminus
and the university a unique teaching opportunity



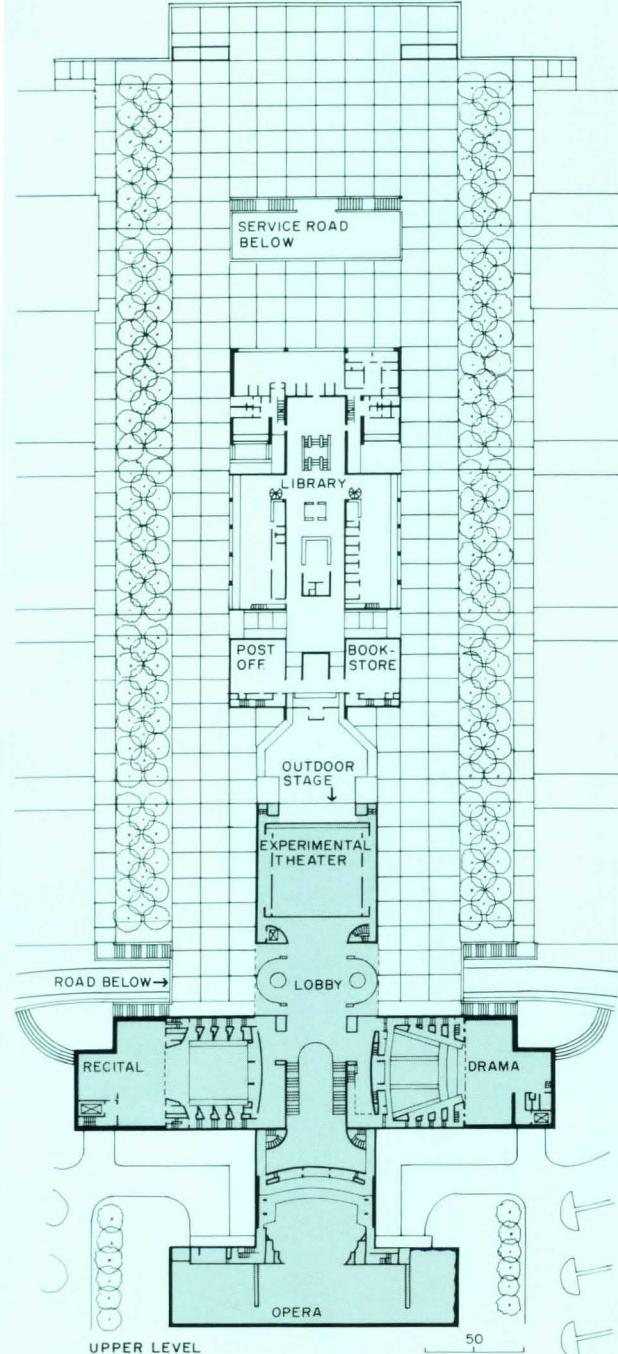
With the completion of its Performing Arts Center (see site plan), the main academic axis of the State University of New York at Purchase is now revealed in final form. The building caps not only the long axis but years of patient planning during which Barnes, together with Dean of Drama Norris Houghton, theater consultant Ming Cho Lee and a host of other specialists, developed building plans that would give this university campus one of the finest and most flexible centers of its kind to be found anywhere. As

built, the Center includes four separate theaters all lavishly equipped and all designed to be superb teaching instruments dedicated to the task of training future generations of theater performers, designers, technicians and administrators.

Out of the welter of early planning decisions, two emerged with special force and shaping potential. The first was that no unnecessary monies would be spent on dressing up the lobbies and public spaces. Every available dollar would instead be allot-

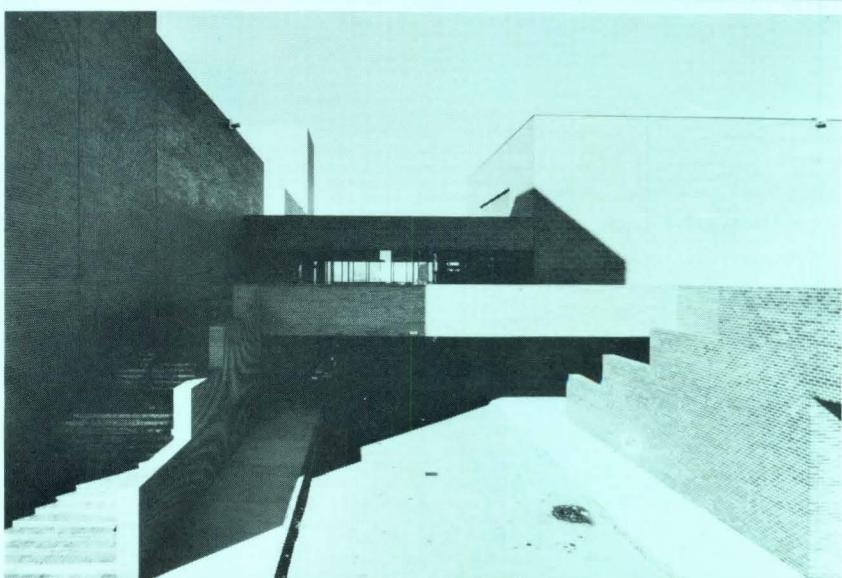
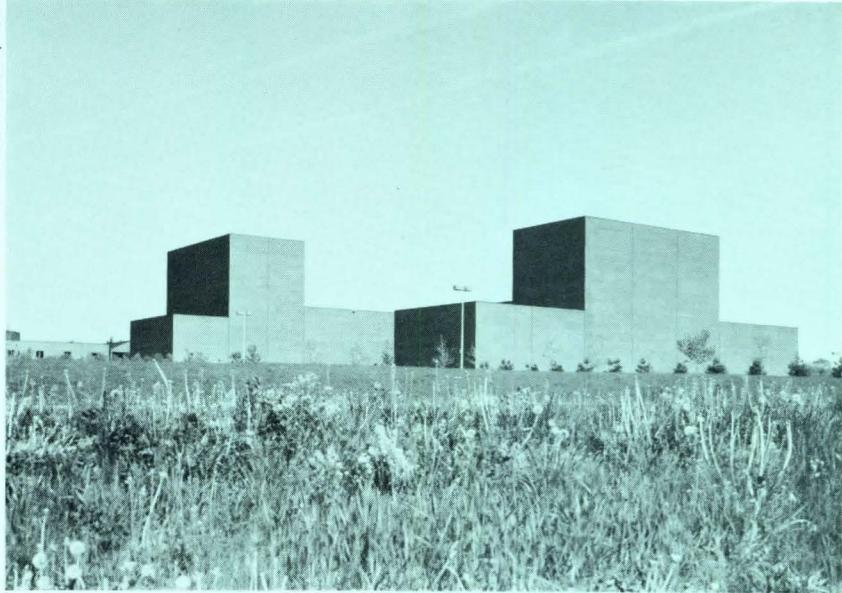
ted to extending and perfecting the capabilities of the theaters. The second decision was that the several theaters would be grouped around central—and to some extent shared—lobby spaces, a decision that brought the stage houses with their tall fly towers to the outside of the composition and gave the massing its clear tripartite symmetry and individual components their simple volumetric expression.

Both decisions affected nearly everything that came after.



In each exterior view, the Center's tall fly towers give the massing a solidity and a severity that takes some getting used to. In working out the designs, Barnes returned in his mind to evening concerts he had enjoyed in the medieval castles of Europe. The Center's brick is chosen for compatibility with nearby university buildings.

Norman McGrath photos

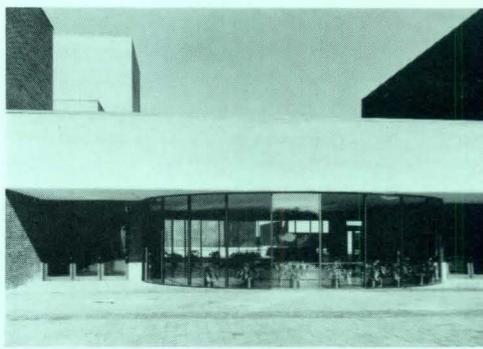


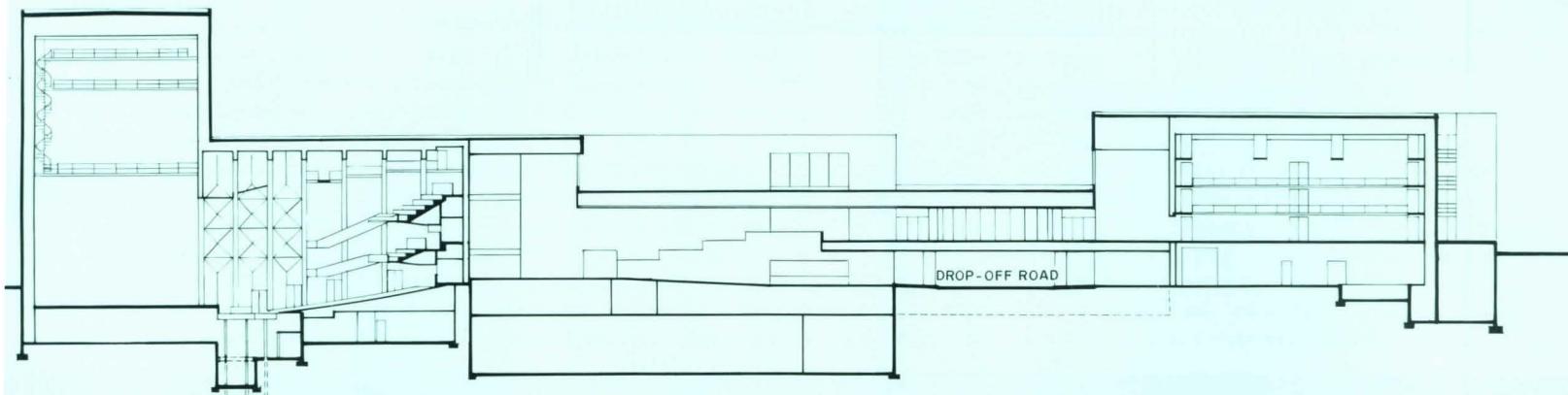
The lobbies are a key to the Center's spatial organization

The Center is entered either from a lower level vehicular drop-off (photo below and previous page) or on foot from the main campus level above (photo right). Either way, the visitor enters a large, carefully layered series of lobby spaces designed to serve the several theaters either singly or simultaneously. By lowering the roof section over these lobbies, Barnes has been able to introduce daylight into these spaces through large clerestories—daylight that is augmented by glass walls at the upper-level pedestrian entry. Fur-

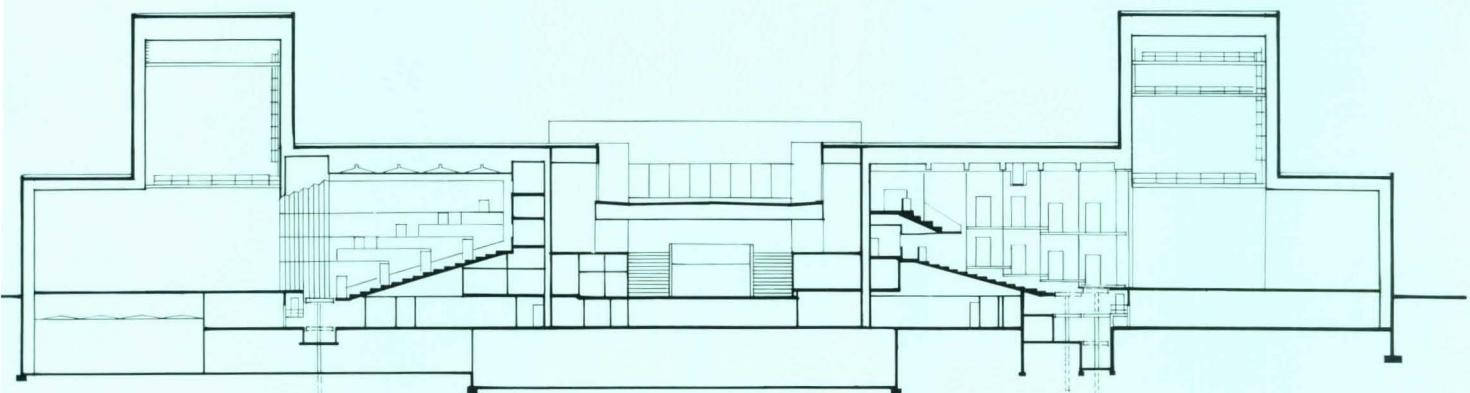
ther brightening is provided by an expansive lobby sculpture (photo below right) executed on a musical idiom. All the spaces and sub-spaces share a homogenous look but each, as the photos indicate, is deliberately made unique and fiercely retains its own character and identity.

A lobby box office serves the ticket-buying public and a series of administrative offices, located just off the lobby but nearby, provides much needed work space for the Center's staff.



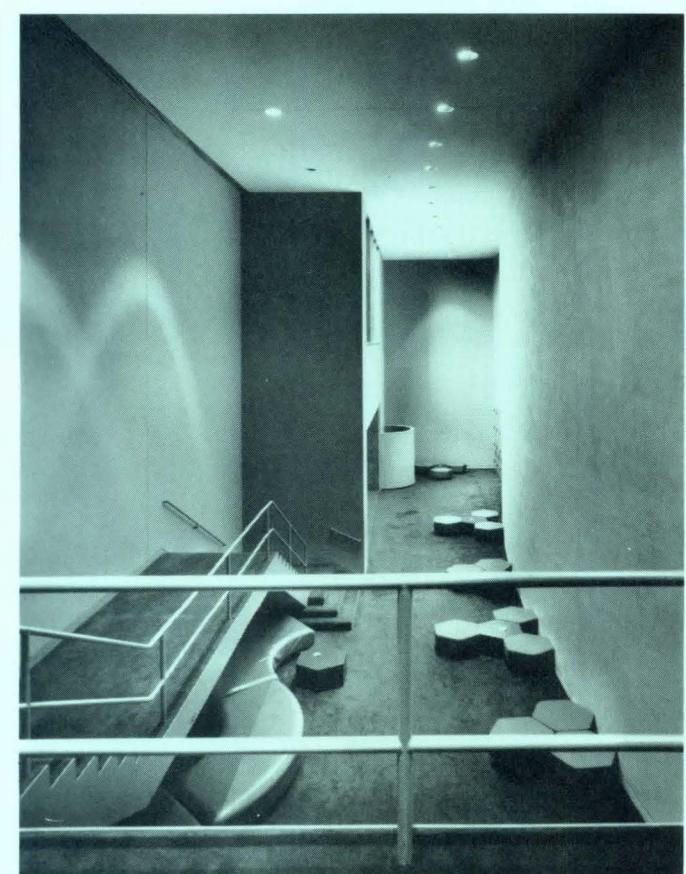


SECTION THROUGH OPERA HOUSE AND EXPERIMENTAL THEATER



SECTION THROUGH RECITAL HALL AND DRAMA THEATER

The building sections reveal a highly complex program and building organization, together with spaces richly varied in scale and treatment.



A spectacular setting for fully mounted musical productions

The largest of the four theaters, the 1400-seat opera house, provides space for the grandest of musical productions. The proscenium is generous in scale, the fly tower houses a system of 37 pipes, and by giving up the first two rows of seating the orchestra pit can be doubled in size to accommodate the full 80-member orchestral forces required for most of the Wagner operas. The broad sweeping arcs of continental seating offer comfort and convenience. Sightlines are excellent and viewing distances are reasonable for a house

of this size—about 65 feet to the last row of seats on the orchestra floor, somewhat farther to the last rows of the balconies. The interior wall surfaces of the auditorium are lively in their modeling and detail but the acoustic treatment, though plainly visible throughout, is never allowed to become obtrusive or to dominate the rest of the design. The red and lavender tones of the house generate a vibrancy and a visual excitement that is carried out into the lobby (photo right) where these colors meet and melt into

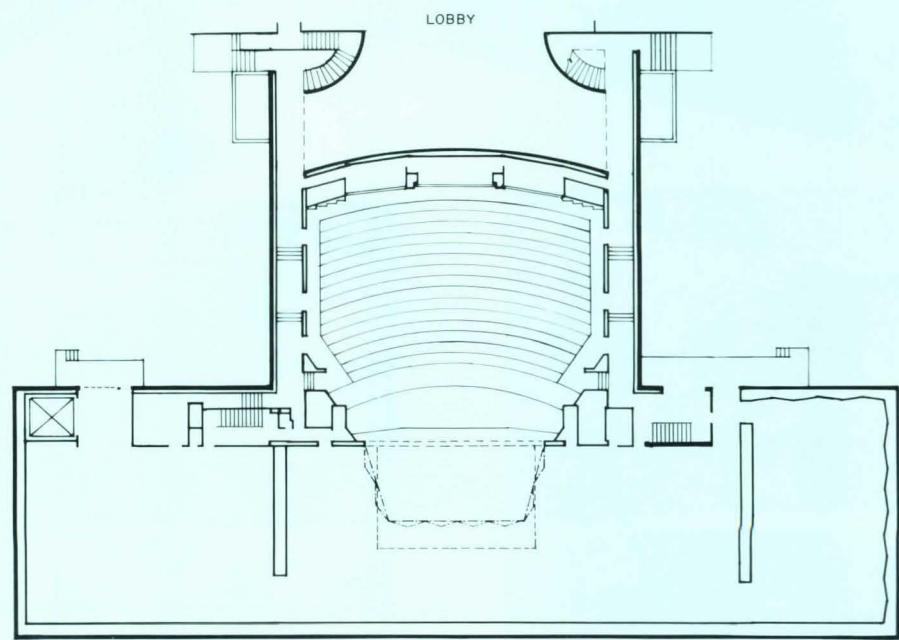
the brick tones of the lobby spaces, and where the balcony levels are expressed externally in the circulation space. A flexible, state-of-the-art communications system has been installed to link the opera house's major elements: backstage, stage, auditorium and lobbies.

The small photo at right shows the large and well-equipped costume shop that, together with other support spaces, serves not only the opera house but the Center's other three theaters as well.





The supremely generous wing space (see plan) not only increases technical capabilities but greatly eases the flow of personnel and material from the shop spaces below.



OPERA HOUSE (LOWER LEVEL)

The two houses offer flexibility and uncompromised quality

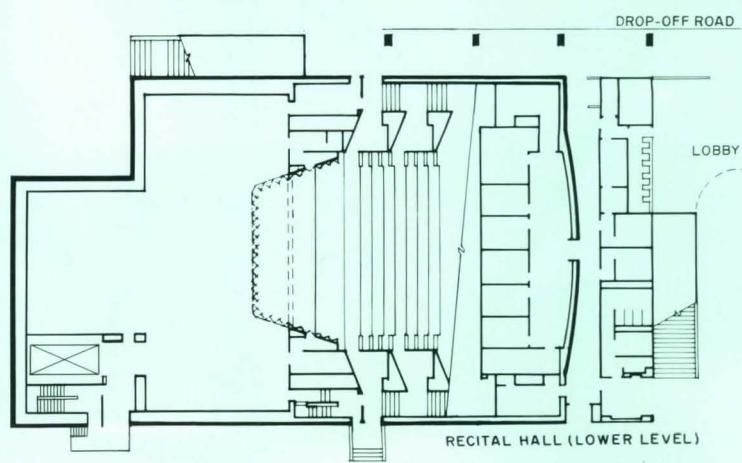
In addition to the 1400-seat opera house, an outdoor stage under a tent, and the small experimental theater, the Center includes two medium-sized houses. The first (photos below) is a recital hall—a 500-seat facility designed expressly for concerts, its stage fitted with a sprung floor for dance events. Like the opera house, the recital hall employs continental seating with side aisles, but augments this seating with a series of triangular-shaped elevated boxes that enclose built-in music stands so that listeners who wish to do

so may follow performances in their scores. The openings behind these boxes are hung with draperies that may be drawn or not as acoustical requirements dictate. A more important acoustical control is provided by a moveable stage shell that is designed in the same oak finish as the hall's side walls, and used to reflect sound back evenly into the auditorium.

The Center received as a gift a large organ that had been designed for (but never used at) Carnegie Hall in New York. Kept in

an adjacent space, this majestic instrument—console and pipes together—can be moved on an air cushion (and with surprisingly little strain or risk of damage) into the recital hall, a near perfect setting for the instrument and its music.

A second medium-sized theater, this one for drama, completes the Center's inventory of enclosed performance spaces. Seen in the photo at right, it is a lively volume and a flexible design. The pipe structures at both sides of the house support platforms that are

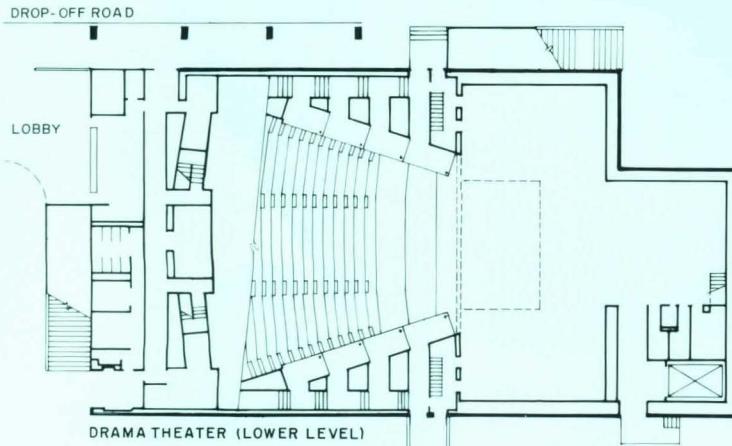


themselves small stages and thus provide "wrap-around" possibilities for audience and performer. Conventional rather than continental seating was designed for this house, but once again sightlines have been worked out with the utmost care. This theater shares public lobby space with the other houses and has easy access to the wide variety of technical and support spaces (mostly below) on which fully mounted theatrical productions so heavily depend. These include carpentry and costume shops, paint loft, storage and admin-

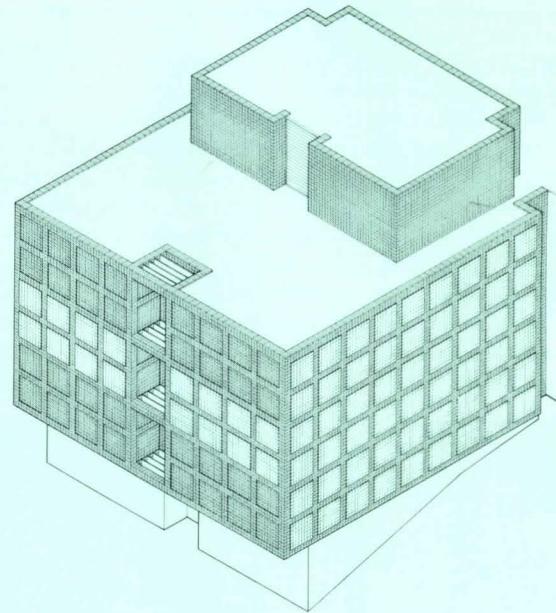
istrative spaces and a full complement of dressing rooms. Certain of these spaces are color-coded to the several theaters above so that performers and technicians—some of them guest artists who are not familiar with the center—can find their way with comparative ease through the block-walled, lower level passageways.

In all the theaters, outside walls and roof areas are double thick to protect against noise from aircraft using the nearby Westchester Airport.

PERFORMING ARTS CENTER, State University of New York at Purchase. Architect: Edward Larrabee Barnes—Arthur Baker, Burce Fowle: associates-in-charge; Hildegarde Bergeim: associate. Engineers: Weiskopf & Pickworth (structural); Segner & Dalton (mechanical); Bolt, Beranek & Newman (acoustical). Lighting: Jack Fitzpatrick. Landscape architect: Peter Rolland. Interiors: Mary Barnes. Theater consultant: Ming Cho Lee; theater lighting: Martin Aronstein; stage rigging: Bernard Weiss with Peter Feller; projection: Boyce Neme; cost consultant: Wolf & Co.; contractor: Polera Building Corp.

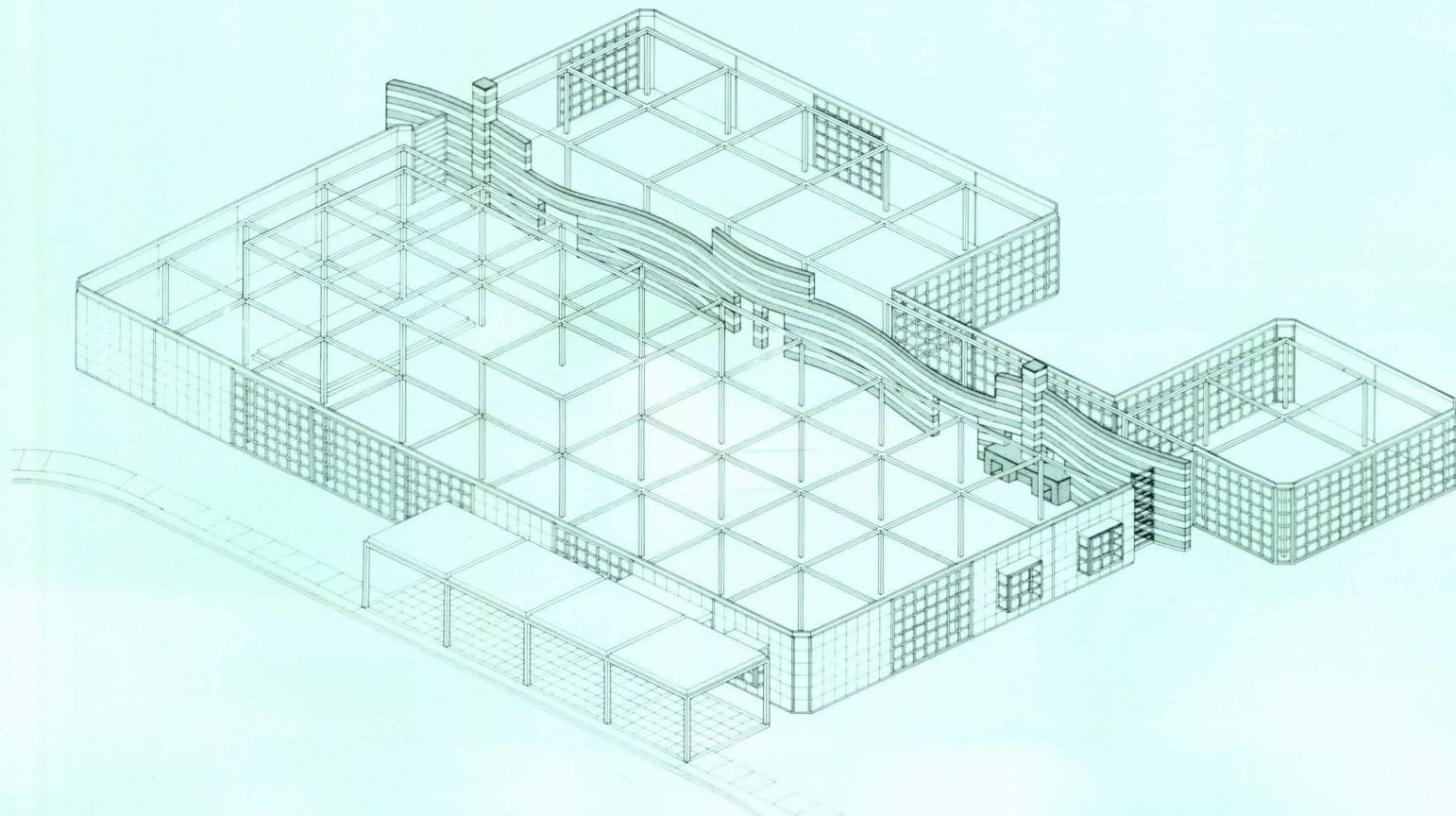


THE NOT-SO-SIMPLE ART OF THE BOX: TWO PROJECTS BY THE HARTFORD DESIGN GROUP



When he is asked about the guiding principles behind his work, architect Tai Soo Kim of the Hartford Design Group, in Hartford, Connecticut, offers no abstruse theory or ideological manifesto: "I like a very rigid, strong order," he replies; "I like a box." The taut simplicity and geometric discipline of Kim's buildings reflect his concentration on the essential needs and values of the people who use them. Elegantly applied, this rigorous approach is the common bond between the two projects shown here—two buildings which might, by ordinary standards, seem an unlikely pair: a submarine training facility (isometric above) and a senior citizens' center (below), both in Groton, Connecticut. The projection of a grid into space constitutes the underlying scheme of both designs, although Kim has skillfully adapted this orthogonal framework to accommodate very different programmatic demands, with striking contrasts of expressive effect. By his own account, he is neither a minimalist nor an unswerving advocate of Cartesian order, and he enjoys giving the grid an occasional unexpected twist. "Of course, I like the intellectual economy of the box as much as its physical economy,"

he says. "But I want buildings to have warmth and gentleness and, when it is appropriate, monumentality." The structural systems and materials Kim uses are, for the most part, familiar components of the mainstream modernist tradition in which he was trained during the 1960's, as a student at Yale and an apprentice in the office of Philip Johnson. "I probably absorbed more than I realized at the time from Philip Johnson. When I worked for him he was primarily dealing with the skin of the building, the grid, and reinforcement of the corner. These are all themes I am still working on." They are also themes that relate directly to ancient traditions of post-and-beam structure and modular planning in China, Japan, and Kim's native Korea. Similarities to oriental precedents in the work of the Hartford Design Group reflect only distant kinship, however, for Tai Soo Kim has no interest in aligning himself with any single regional school or stylistic camp. Kim's current projects display a systematic linkage of elementary forms into combinations of ever greater complexity and refinement. He describes the process succinctly: "I am now making boxes within boxes." —*Douglas Brenner*



A mirrored grid shields secret operations at a Connecticut submarine base

A sturdy box, plain and simple, was just what the Navy had in mind when it commissioned the Hartford Design Group to design an addition to Building 427 at the New London Submarine Base in Groton. Classified A1, top secret, this \$1,620,000 citadel houses a simulated undersea attack center, fully equipped with computerized sonar devices and training classrooms for the officers and crew of nuclear-powered Trident submarines. Building 427 occupies a wooded promontory with a sweeping view of the Thames River harbor, but because of tight security regulations, the Navy originally conceived the 12,500 square-foot annex as a windowless shed, grafted onto the south side of a standard government-issue red brick block. Architect Tai Soo Kim was familiar with the Navy's exacting utilitarian standards, having recently renovated several barracks in Groton. "They really wanted the training facility to be designed as though it were a ship," he says, yet he was determined to create a building that would take full advantage of its dramatic site on solid land. Thanks in part to efforts by the Naval Facilities Engineering Command to upgrade the quality of architecture within its purview, Kim was able to persuade his client to rethink the entire program.

In order to avoid extensive blasting of a solid granite ledge to the south of Building 427, and minimize the disruption of existing computer banks, Kim elected to site his three-story steel-frame structure on a steep western slope. This reorientation enabled the new wing to command the hillside, standing out as an autonomous abstract form against the broad plain wall of its neighbor. Kim emphasized the contrast between the old brick box and his new one by indenting the corners where they meet. The two buildings are in fact structurally independent (section overleaf), isolating sensitive equipment in the annex from vibrations caused by settling in the block next door. Cantilevered over an earth-filled concrete podium, which is anchored into the hillside with rock bolts, the Trident training facility is separated from Building 427 by a series of aluminum slipping floor joints, rubber insulation in floors and walls, and a full expansion joint at roof level.

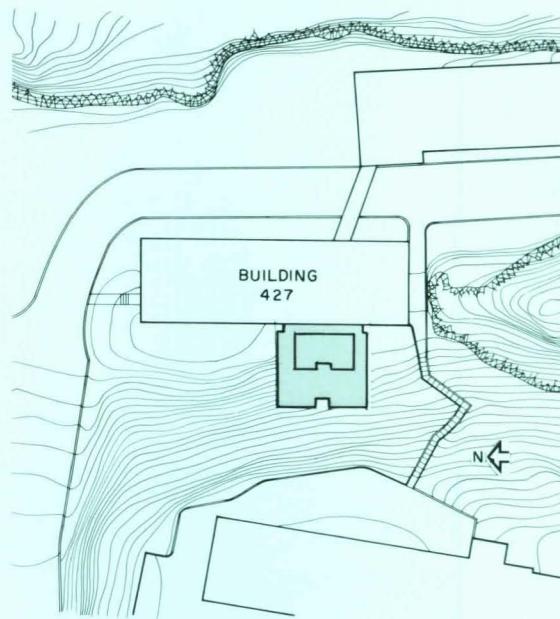
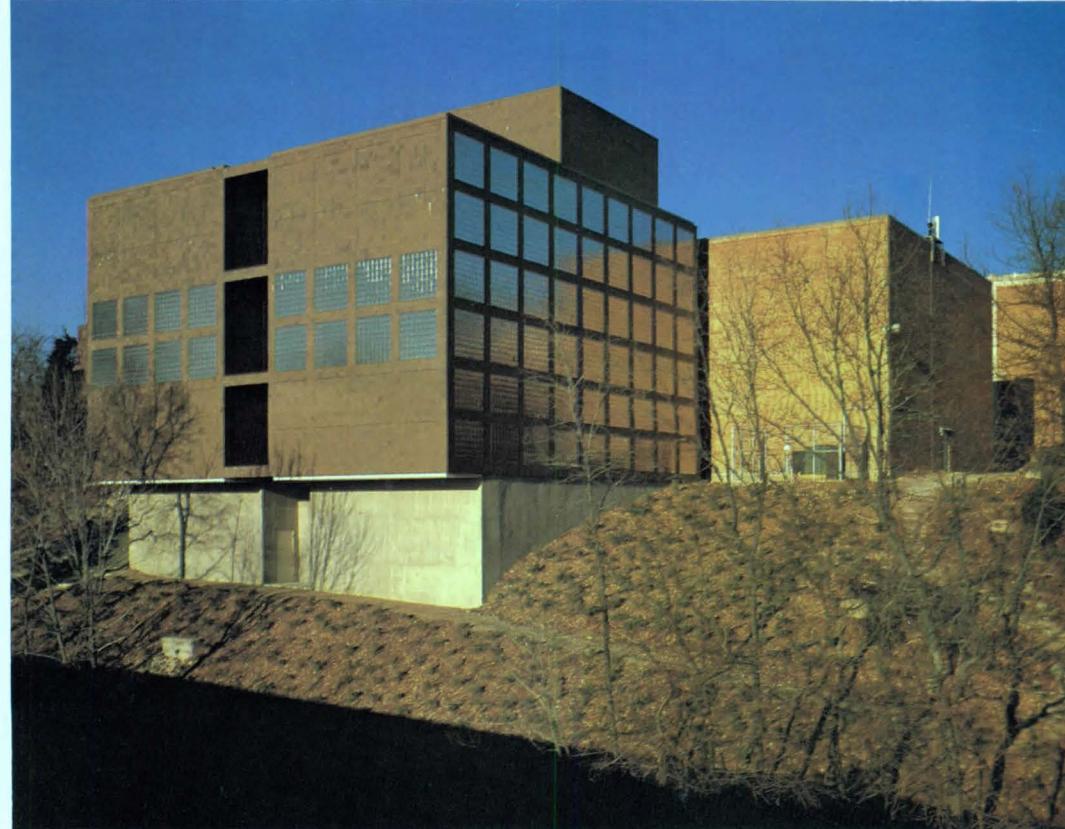
Since transparent windows were strictly prohibited in Class A1 installations, Kim introduced panels of glass blocks, coated on the outside with a solar-reflective bronze metallic oxide but clear inside, to admit daylight and glimpses of sky and greenery: "We thought it was terrible to make sailors go from the closed capsule of a submarine into windowless classrooms." In combination with brown matte-glazed bricks of exactly the same size, the eight-by-eight-inch glass blocks provide the basic module for a three-dimensional grid that articulates every facet of the exterior. Square panels of glass block projecting one-half inch, and corresponding brick panels recessed by the same measure, establish a subtle play of reflected light, color, and shadow. "The building projects the precision of a machine," Kim observes, "Yet it also pos-

sesses the warmth of masonry." And, one might add, a sense of mystery wholly appropriate to its function.

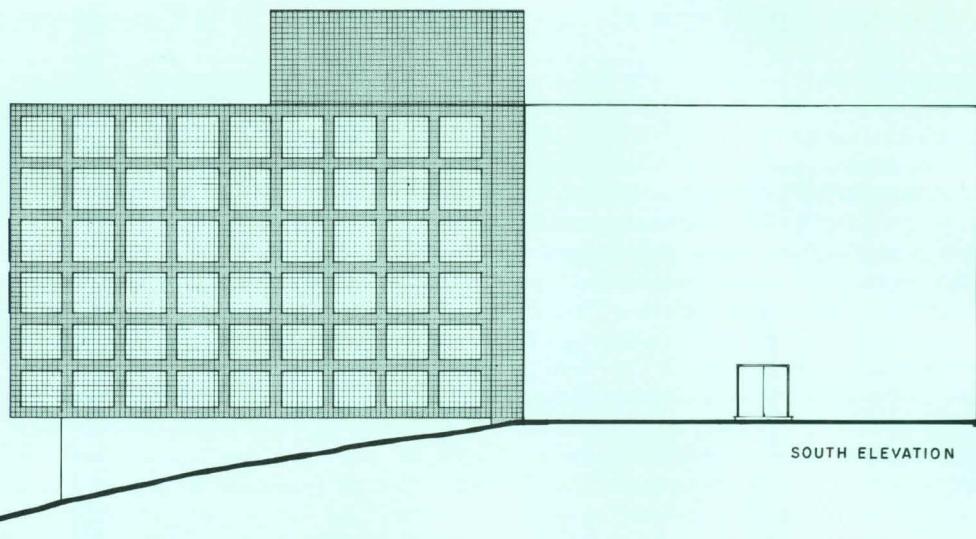
Studied dualities pervade the entire building—beginning with the fundamental paradox of a top-secret facility that occupies one of the most prominent locations in the base. The grid that organizes the exterior, punctuated with two rows of window panels for every story, is calculated to make the building seem nearly twice its size when viewed from a distance. The inset central bay of the west facade—framing bronze-tinted windows that light the central corridor—suggests the presence of a ceremonial entrance. There is in fact only a blind niche at ground level, and one enters the training area from the east, through a circuitous series of checkpoints. Because the adjoining facades of Building 427 are so nearly blank as to give no indication of relative size, Kim's little annex assumes a monumental scale that cannot be measured by any gauge except its own powerful geometry. Kim supplied the submariners with all the equipment they required, but packaged it in a box of unexpected grandeur, a shimmering bastion of technology that glorifies the art of concealment.

ADDITION TO TRAINING FACILITY, NEW LONDON SUBMARINE BASE, Groton, Connecticut. Owner: *United States Department of the Navy, Naval Facilities Engineering Command, Northern Division.* Architects: *Hartford Design Group—Tai Soo Kim, partner-in-charge; C. James Lawler, project manager; Peter Chow, job captain.* Engineers: *The Minges Associates, Inc.* General contractor: *Robert J. Sullivan, Inc.*

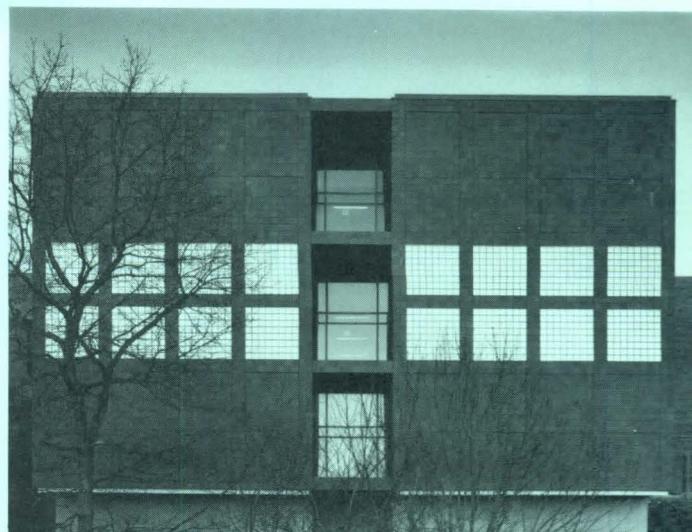
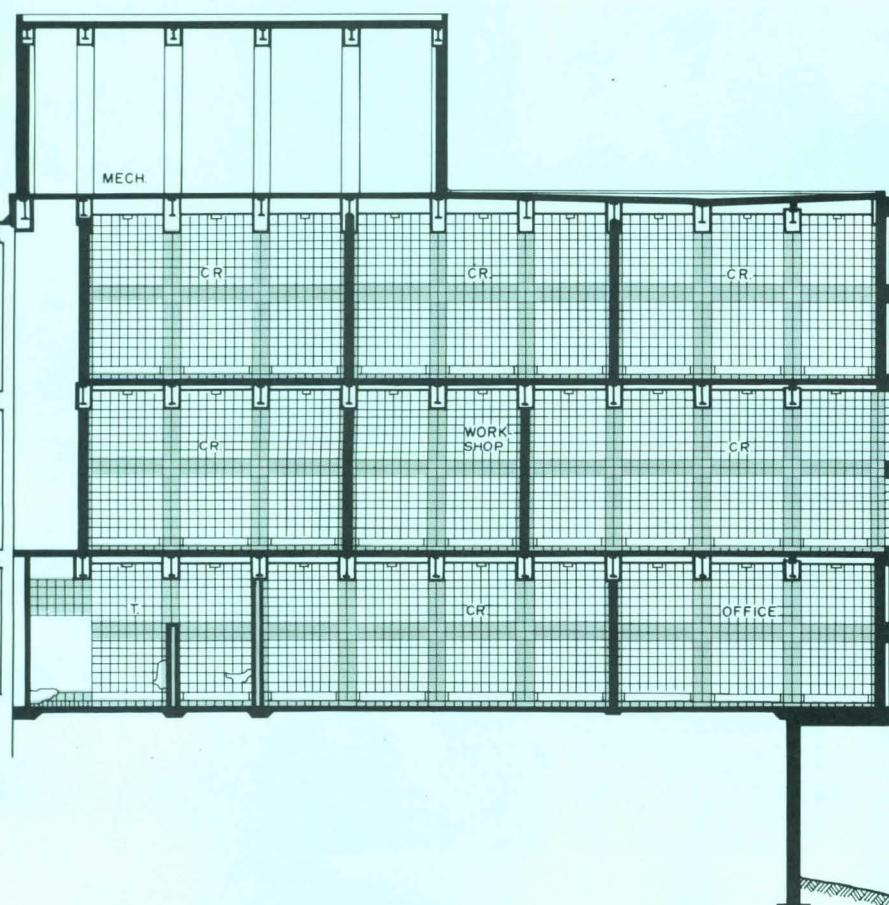
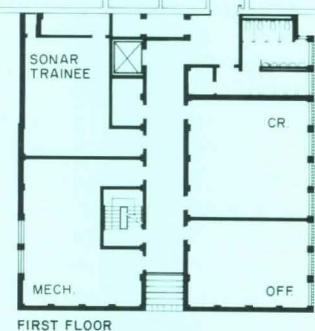
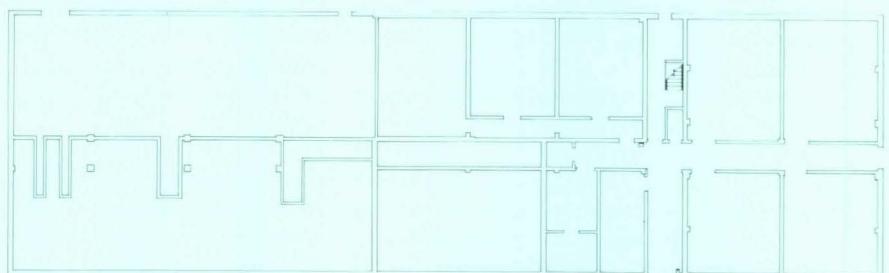
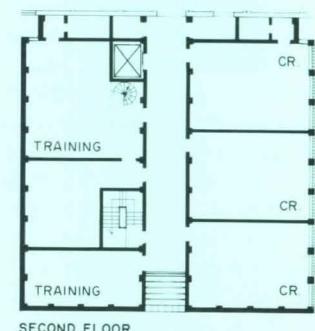
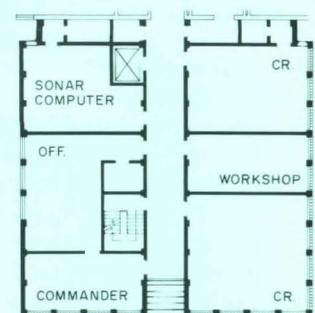
© Nick Wheeler photos



The U.S. submarine base at Groton has been a center for naval technology since before World War I. Tai Soo Kim's addition to Building 427, a hillside training facility, provides classroom space and a simulated attack center for officers and crew of the Navy's most advanced Trident-class nuclear-powered craft. Windows of bronze mirror-finished glass blocks, set as modular panels within a brick grid, meet stringent security requirements while enhancing the effect of monumental rustication.



By cantilevering the new addition over a raised concrete podium, and recessing the return where it abuts Building 427, Kim emphasizes the geometric precision of his design. Inside, a framework of ground-face concrete block piers, glazed brick transoms, and boxed-in beams transposes the abstract exterior grid to the human scale of offices and classrooms. Sunlight and views of the site are filtered through the transparent inner face of the reflective glass block panels (training rooms are windowless, to re-create submarine conditions). All wiring for computers is encased within double-layer floors, equipped with a fire-extinguishing carbon dioxide discharge system.



Senior citizens find a welcoming hearth in a pavilion of steel and glass

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Although no one lives in the Groton Senior Center, the low white structure across the parking lot from the town's public library has become a second home for some 2,400 elderly persons. Built entirely with municipal funds, and backed by a well-organized constituency of senior citizens, the \$1,135,400 center opened last October. After a fruitless search for vacant buildings that might be suitable for recycling, a bipartisan committee appointed by the mayor invited several Connecticut architects to submit proposals for a new facility to be constructed on public land. The five committee members, four of whom were senior citizens, gave the Hartford Design Group their unanimous approval. George Creehan, the committee chairman, recalls that "The slide projector bulb burned out in the middle of Mr. Kim's talk, and he was afraid he'd made a bad impression on us, but he lit up our hearts right away. The other architects talked about how many stories high their projects would be and what materials they'd use. Mr. Kim was the only one who spoke about older people leaving their own homes and coming into another homelike atmosphere."

Kim laid out the building along the ample lines of an old New England house or inn, with a variety of communal areas connected by broad hallways. It was essential that the entire facility be at ground level, to ensure ready access for the frail or handicapped. The plan (overleaf) and isometric (see page 72) show how the one-story building is composed of uniform modules, defined by a grid of steel columns at 14-foot intervals. A metal stud system, which allows for six inches of insulation, is clad externally with panels of asbestos cement. Inside, the post-and-beam structure is revealed throughout, creating an effect of tectonic clarity, as though the entire 13,500-square-foot building were a cluster of luminous pavilions. (This impression is intensified by shallow tent-shaped plaster vaults, inserted for acoustic effect in the lobby and larger public rooms.) The same lattice structure continues outdoors into the transitional space of the entrance portico, where public buses make scheduled stops.

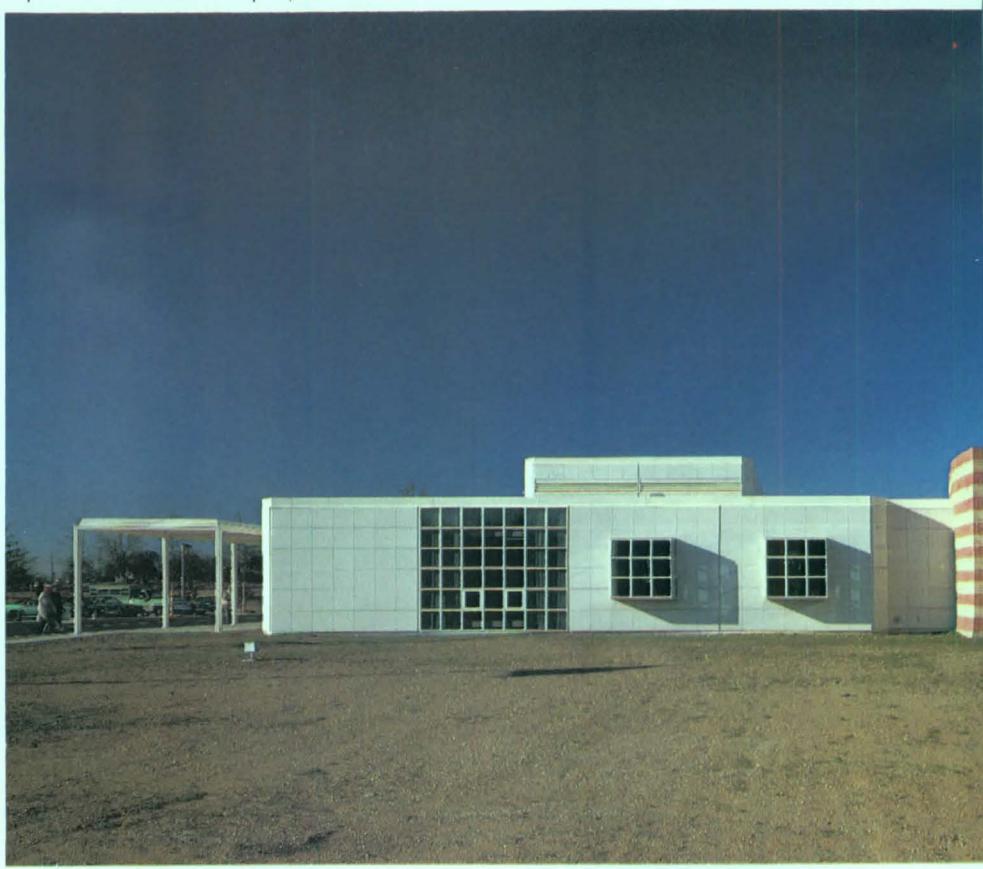
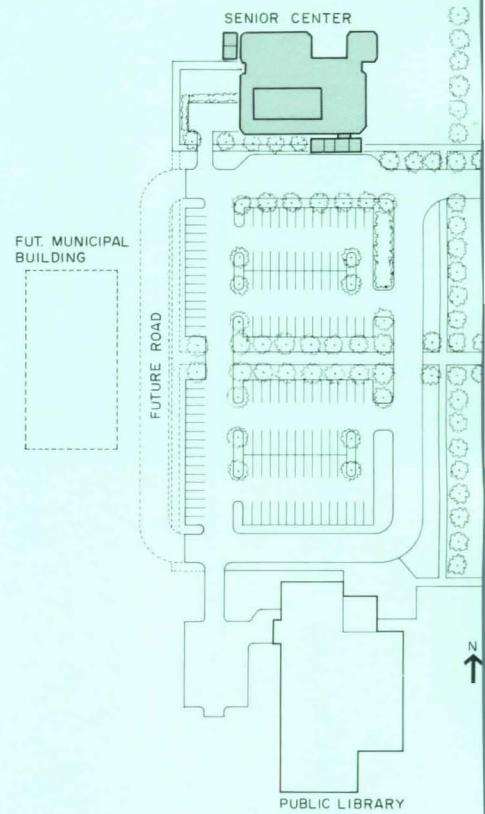
The regular cadence of this orthogonal layout is interrupted by an exotic grace note—a serpentine brick wall that meanders along the inner face of the east-west corridor and pierces two facades. A flourish of pattern and color, intended to relieve the monotony of a long hallway, this boldly striped screen also forms an acoustic barrier for mechanical and utility areas. Duct lining and mufflers were also installed to control mechanical system noise, a key environmental concern in design for the elderly.

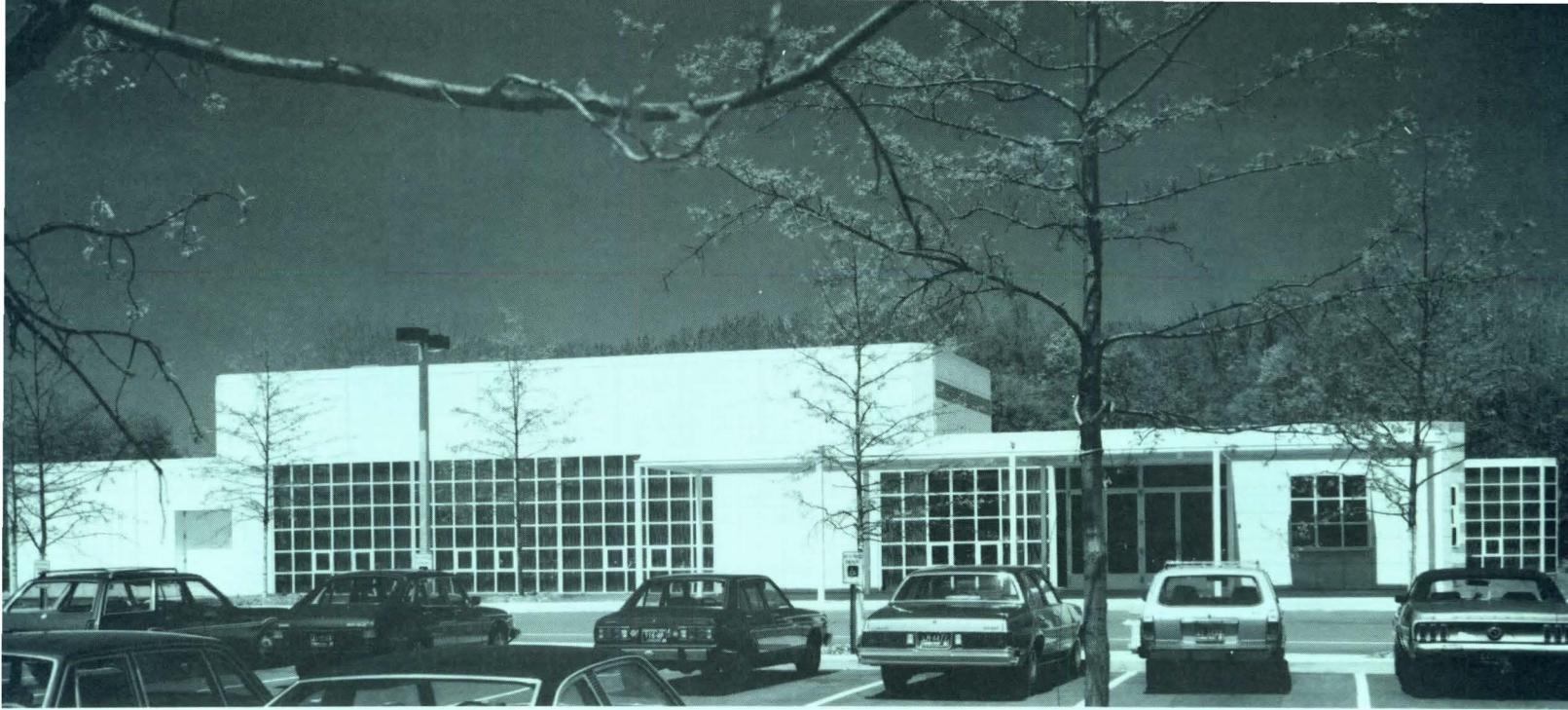
The client asked for plenty of daylight, particularly in heavily used spaces such as the crafts room, club game room, and multipurpose room, whose functions range from meal service to dance classes and theatrical performances. Large mullioned windows give these areas the character of spacious sun

porches, a bright domestic touch that is echoed by bay windows in the meeting room and director's office. Kim deliberately included such allusions to residential design to contrast with the hard-edged industrial materials of the exterior. "I wanted to soften the slick skin of the building," he says, "and give it a sense of humor." He has achieved this goal most engagingly in the living room, a large alcove off the lobby. Wing chairs and inglenook benches furnish a cozy place to watch television, read, or wait for a bus.

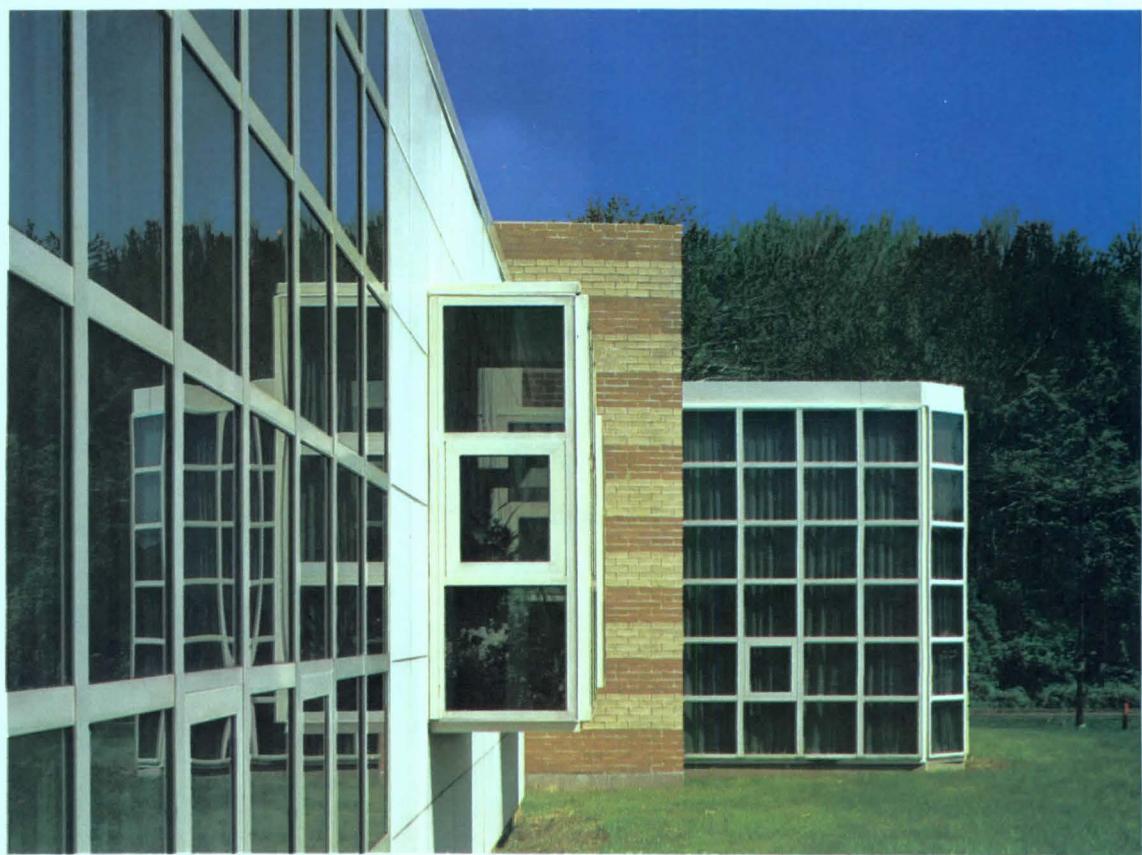
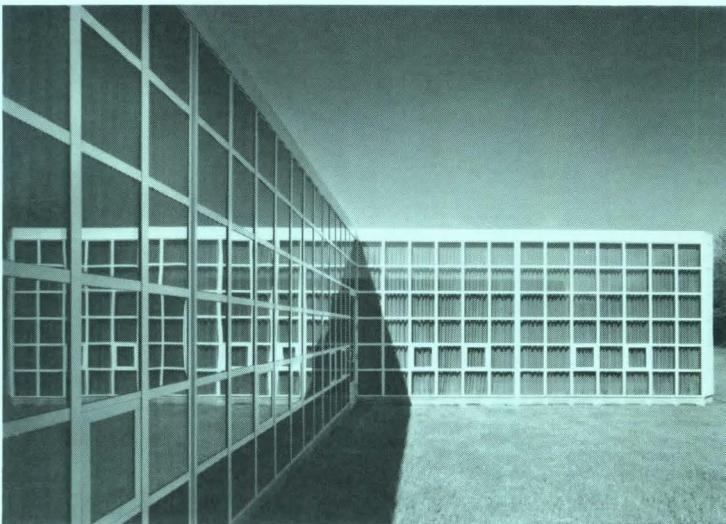
The senior citizens of Groton are enthusiastic about the home comforts provided inside their new community center, although a few of them still have reservations about the exterior, which they compare to a filling station. Committee member George Creehan retorts that white buildings surrounded by neat lawns are an old New England tradition. The parking lot out front makes a poor substitute for a town common, but everyone agrees that Tai Soo Kim's pristine box has become one of Groton's proudest landmarks. Long-range plans call for the construction of a municipal building next door, which would place the Senior Center at the heart of a new public complex.

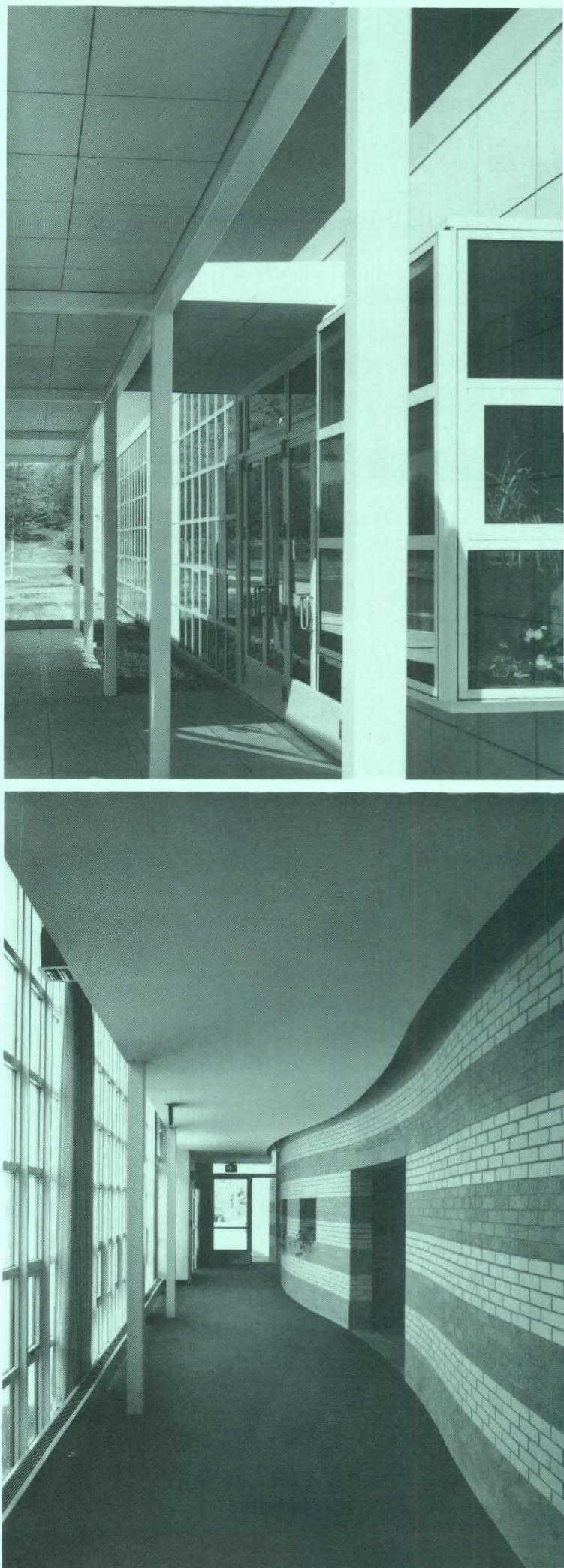
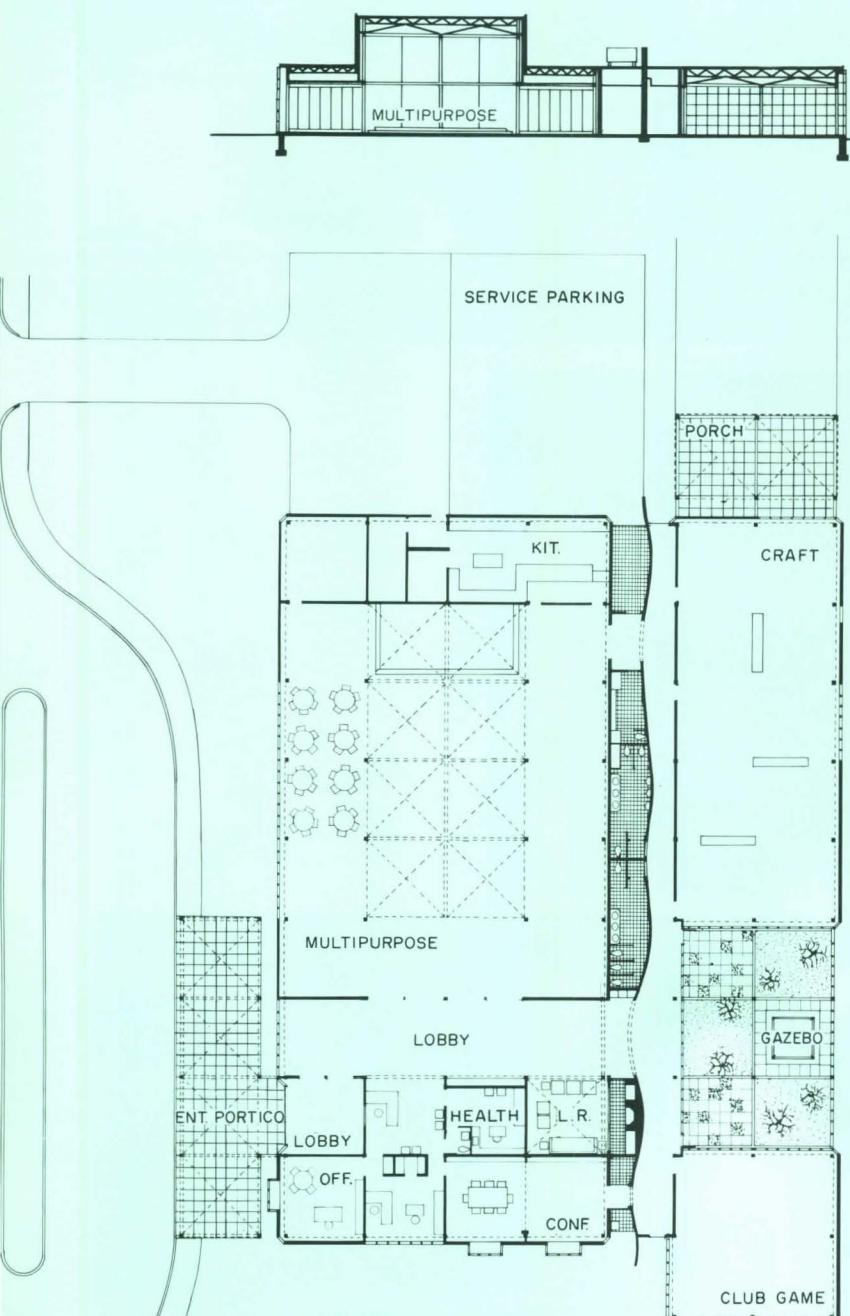
GROTON SENIOR CENTER, Groton, Connecticut. Owner: Town of Groton, Connecticut. Architects: *Hartford Design Group—Tai Soo Kim, partner-in-charge; C. James Lawler, project manager; Neil R. Taty and Gary Galanto, design team*. Engineers: *Girard & Company (structure); Clarence Welti Engineering (foundations); Kotan, Allen & Associates (mechanical/electrical)*. Acoustical consultant: *Bolt, Beranek, and Newman, Inc.* General contractor: *Aspinet Construction Company*.





Economy and plenty of light-filled space were the client's top priorities for the Groton Senior Center. Tai Soo Kim satisfied both requisites in a dignified steel-frame structure, built at a cost of \$78 per square foot. The grid patterns of white asbestos-cement wall panels and insulated aluminum glazing bars establish a delicate linear counterpoint to Kim's austere rectangular masses. Chamfered corners and protruding fragments of a curved interior brick wall subtly modulate this orthogonal scheme. Flower beds edged with white marble chips will be planted by the center's garden club.





African violets bloom in the office bay window of Judith Wilkinson, director of the Senior Center (left). "The new building is a great success with all of us," she says, "because it immediately gives visitors a feeling that this is not an institution." Tai Soo Kim evoked the spirit of a commodious house by varying the proportions, texture, and lighting of interior spaces. The solid comfort of the living room (above right) is enhanced by a snug chimney corner and chintz-covered armchairs (much of the furniture in the Center was purchased with a \$45,000 fund raised by the elderly, with the assistance of local service groups). The low "side aisles" of the multipurpose room (section left, photo below right) were intended to reduce the apparent size of the hall, breaking it down into more congenial spaces. Intersecting steel supports at the far end of the room compose a schematic proscenium, framing a dais used for performances. The public address system can be tuned up to aid the hard-of-hearing, and pyramidal ceiling coffers minimize echoes. The sinuous brick wall in the corridor (below left) is an acoustic buffer to deaden noise from central utility areas. It is also a whimsical departure from the rationality of the prevailing grid, like a winding garden path in the midst of a formal parterre. The small landscaped courtyard and gazebo shown in the plan have not been constructed, owing to a present lack of funds.



In the aftermath of the Cultural Revolution's end in 1976, the People's Republic of China has gradually opened its doors to an unprecedented degree: to tourists and visitors of most nations; to much of its territory—even such historically inaccessible areas as Inner Mongolia, Sinkiang and Tibet—and to the outside worlds of architectural ideas. Foreign architects are designing buildings in many Chinese cities. Joint-venture building projects are underway. Some Chinese are again traveling, and some are studying in U.S. architectural schools. In short, China has indeed set new directions. This update of ARCHITECTURAL RECORD's earlier China coverage (Elisabeth Kendall Thompson, October 1973; Walter Wagner, September 1974) results from an extensive tour I was privileged to make last October with a People-to-People Architectural Delegation, and is followed by some observations and conclusions by Frederick Gutheim, an avid architectural "China Watcher" and traveler. But with all the portending change, as these photos indicate, serene old China is still visible and cherished. —Herbert L. Smith, Jr.

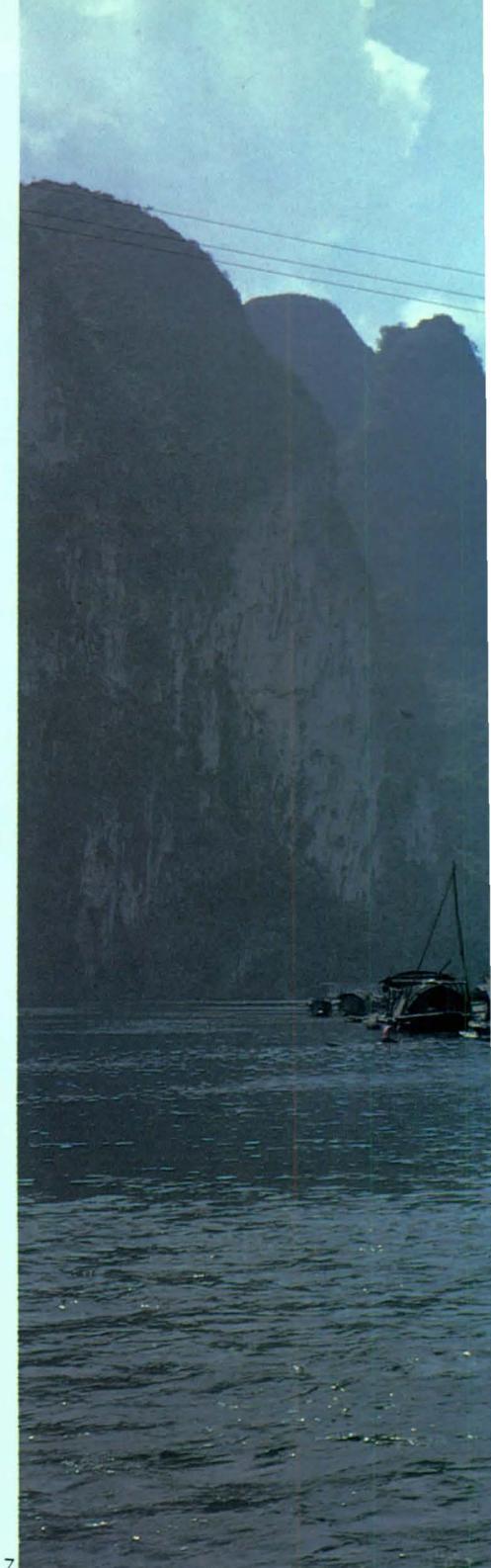
CHINA



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- 1 A welcoming blackboard at a Shanghai kindergarten sums up current warmth towards visitors.
- 2 Gilt Lion at the Forbidden City's Gate of Heavenly Purity recalls the glitter-that-was.
- 3 Care of detail triumphs in this Bridge at the Summer Palace near Beijing.
- 4 Ancient Bell Tower in a small park forms an oasis in the center of Nanjing.
- 5 Crowds are lost in the vastness of the court of the Forbidden City's Hall of Supreme Harmony.
- 6 Placid water-traffic plies the many old canals in Suzhou.
- 7 The fabulous peaks along the Li River, near Guelin, have inspired centuries of Chinese paintings.



Herb Smith photos

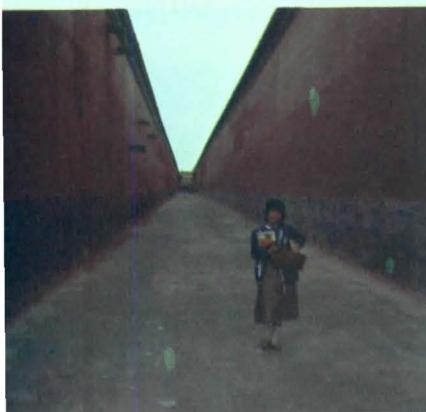
CHINA UPDATE: NEW PERSPECTIVES NEW DIRECTIONS,



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Of course there are all those people and all those bicycles, but a traveler in China today is also overwhelmingly conscious of construction everywhere. Streets and roads (and even the corridors of one hotel) are punctuated with piles of building materials—bricks, concrete blocks and panels, sand, reinforcing rods—either near structures going up or under repair, or readied in obvious anticipation. The majority of work is for much-needed housing, but there are also hotels and municipal offices. There is not the construction intensity that one senses today in Hong-Kong, Singapore or even Manhattan, but it is calmly omnipresent. And, compared with the buildings of the last generation or so, the newer designs and completed buildings show an increasing sophistication.

One also quickly senses that there is a sense of cautious change in the air. People are extremely friendly and helpful to the many nationalities of tourists. Brighter, less standardized clothing can be seen here and there, particularly in the South. Many girls have permanents and a bit of make-up. Couples are again strolling hand-in-hand along the rivers at dusk. There are more cars, trucks and noise from horns in the cities than one might have expected. An opera we attended was a period-costumed, somewhat risqué Ming epic. And Coca Cola and American cigarettes were often available!

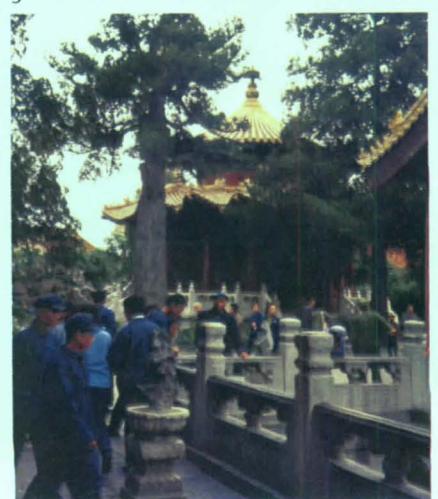
The People-to-People group that I toured China with had as its delegation leader, and was formed by, Preston M. Bolton, past national secretary of the AIA, and president of the Texas Society of Architects. It consisted of thirty-five people, mostly from Texas—

but with a few from such disparate places as Ohio, New Mexico, Delaware, New York, Michigan and Saudi Arabia. We visited some ten towns and cities, as well as such outlying monuments as the Great Wall, the Summer Palace, and the Ming Tombs. Formal meetings were set up with planning officials, architects and professors in Shanghai, Nanjing and Tianjin. But even under such auspices and with much pre-planning, there were momentary snags in arrangements, apparently due to the welcome but sudden surge of tourists; there were some difficulties in accommodations and one major leg of the trip (from Nanjing to Tianjin) had to be made by train instead of by air. However, we were never without comfort—and the meals were sumptuous.

To help cope with such snags there is a current building program underway for new hotels and related travelers' facilities in all the tourist centers. To further speed up the process, and to augment the relatively limited number of PRC architects (during the ten-year cultural Revolution, most design schools were closed and most architects were sent to fields and factories), foreign practitioners and foreign capital in joint-venture are being enlisted. Pan Am's Inter-Continental Hotels is proposing a chain; Hong Kong architects Palmer and Turner have hotels underway in Shanghai and Nanjing; I.M. Pei is constructing one in Beijing, as is Welton Becket Associates (Becket also has two in the planning stages in other cities). And the Australians are providing "instant" hotels—prefabricated units complete down to small refrigerators and kangaroo-print curtains in each room—and trained construction crews. Along with this



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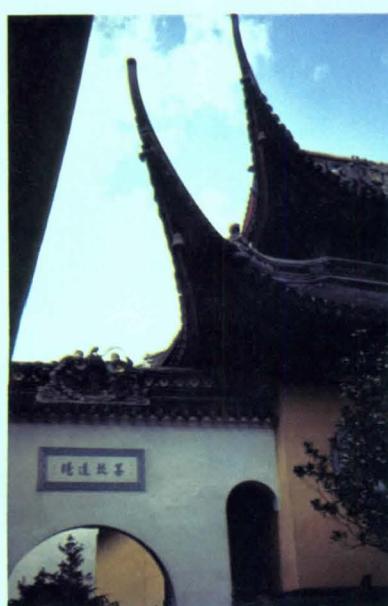
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Restoration, preservation and re-use are proceeding all over China after the long hiatus of the Cultural Revolution. Interest and moderate activity have obviously been rekindled by the push on tourism, but there is also a broad new emphasis on China's total cultural heritage—not just the "leap forward." The Chinese people themselves now throng to the major monuments on holidays, and lesser ones have their fair share of citizens. And the architectural students are doing exquisite measured drawings of local landmarks, and adding antique tile ornaments to the stock of models for freehand studies. The general revival of interest in arts and crafts is extended to restoration work, as in ceramic details of the Forbidden City (figure 1), and in the Painted Gallery of the Summer Palace (4). The famous attractions everywhere are being refurbished. The Chen Hai Watch

Tower in Guangzhou (9) is restored as a museum, and Shanghai's Yu Fo Si Temple (10) is newly restored and active again. Behind the formidable inner walls of the Forbidden City (3), small-scale domestic quarters are reopened (6). But attentions are not limited to the great monuments. Typical old houses in Suzhou (5) are tidily maintained. In Guangzhou, late Victorian "Western" buildings are retrofitted as a department store (2), and as housing (7) on the old foreign concession of Sha Mien Island. And such more recent buildings as those in the former V.I.P. resort of Cong Hua Hot Springs have been converted into a beautifully-kept tourist center (8). But the most overwhelming job of rehabilitation centers on Tianjin, where the earthquake of 1976 devastated much of the city, and where hard decisions are being made on what to restore and what to build anew.

partial and growing list of successful endeavors by peoples of different cultures, one must add that at least one American architect reports sufficient frustration for him to cancel work in China.

As for the PRC architects themselves, one sensed a certain relief with new directions—and a certain hesitancy. Apparently funds and official priorities still rule over enthusiasms and keen interests. Responsibilities for planning and design are divided among many bureaus: city planning, engineering, transportation, environmental protection, public utilities, design, construction. For design, there is an office for each city and one for the province, together employing "several hundred architects and engineers."

Urban planning is a paramount concern, with long-range plans underway in the bigger cities to limit population growth; promote more parks, trees and green belts; and establish nearby satellite towns for industries and expansion. The new towns in Britain and Holland were cited as admired models. Transportation, traffic and the attendant noise are also big problems: Shanghai, for example, has subway plans in the works, with a tunnel under the Huangpu River already finished.

New housing, cleaner in design and a bit more commodious, is still built from stock plans. There have been some experiments with high-rise buildings, but elevator and tenant problems have led to a reversion to the five- or six-story walk-up. Typical space allocation is about five square meters per person; a major change has been from one kitchen and bath to two families in the 1950s, to a single family being given a bigger kitchen and

bath in the 1970s. One planner commented that, of course, "positioned and technical persons need more room for preparation."

By contrast, public buildings are designed individually, not only by the design offices, but by the faculties and students of the architectural schools. In Nanjing we were told that students each year were assigned one traditional building and eight current projects, to study and detail, with "some built." In Tianjin, we were shown handsome models of several buildings under construction, designed by the professors and working drawings drawn by the students.

Everyone in the schools seemed fairly abreast of current architecture in the rest of the world, with libraries filled with magazines from all over. Although our questions as to who they felt were *their* top designers were always parried, for admired foreign architects their answers were almost unanimous: I.M. Pei, Frank Lloyd Wright, Mies and Philip Johnson. One young professor did ask me in an aside if it were true that Post-Modernism had taken over the U.S.—I parried that one.

The PRC is also sending occasional delegations abroad to study building types they are planning—Becket's Beijing hotel apparently is the direct result of such a group's fascination with his Dallas Hyatt. As with so many countries suddenly looking outside, they are torn between the lure of Western big-scale glitter and love of their own traditions. It must be an even more difficult time for the Chinese as they now find the West questioning itself. Perhaps as they realize this more, they will find their own resolution that will teach us all a lesson.



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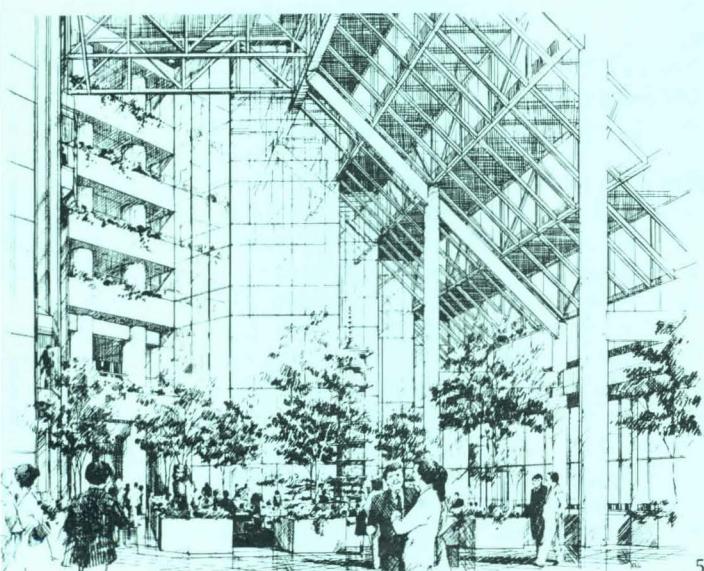


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New construction in China today exhibits a growing concern with design. Guangzhou's newest hotel, the Bai Yun (figure 3) is, compared with earlier modern structures, a considerable step ahead in the care of its massing and details. Blond wood panels and strips in its lobby and restaurants indicate a passing familiarity with Scandinavian work, or (as one member of our group noted) with some of the rooms of the United Nations Headquarters. Its garden court (4) is a pleasant surprise. Less considered in esthetics, but high on comfort, are the pre-fab, metal-sheathed hotel units (figure 1 shows a unit in Guelin) being shipped from Australia to quickly ease the shortage of tourist accommodations. New public buildings are all now being designed with more individuality and character than previously, from such small structures as a fairly sculptural little office building in Cong Hua (2), to the tower under construction for the new telecommunications facility in Nanjing (8), with its nicely proportioned precast panels and end walls of beige tile. Construction is also underway for two major Beijing hotels, each with a full range of Western services and amenities, and designed by two American architectural firms: Welton Becket Associates, and I.M. Pei & Partners. The 1,007-room, 22-story Great Wall Hotel by



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Becket is a \$78-million joint venture by the China International Travel Service (CITS), E-S Pacific Corporation Company (ESPDC), and Becket Investment Corporation. To be completed in 1983, the structure is being built with Chinese labor and will be jointly managed by CITS and ESPCC. The operation and ownership of the hotel will revert totally to the Chinese ten years after it is completed. Cited as a "symbol of Beijing's impetus toward the 21st century," the mirror glass hotel (6) has a six-story atrium (5). Pei's Fragrant Hill Hotel (7) by contrast stresses lower scale and relationship to Chinese tradition.

8



WHITHER CHINESE ARCHITECTURE?

by Frederick Gutheim



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China's varied modern legacy

- 1 Western style buildings on Shanghai's Bund.
- 2 Tianjin's eclectic old French concession.
- 3 The house of Madame Chiang Kai-Shek in Nanjing.
- 4 Department of Architecture, Tianjin Engineering Institute.
- 5 Museum of History and Revolution, Beijing.
- 6 Premiated design from recent National Theater Competition.

The third largest country in the world, with a total area of 3,600,000 square miles, and a population of 1,000,000,000, has 6,000 architects. Measured by the world's population, one person in five is Chinese; but of the world's architects, one in 50 is Chinese: China is short of architects.

One would also reach that conclusion by looking at the buildings of China, especially those created since 1949 when, in Mao Zedong's words, "China has stood up"; and more particularly since the first five-year plan of 1953-57 launched the program of industrialization and urbanization that has created today's China. The architectural traveler in China is impressed by growth, urban growth; but equally by the mediocre quality of most contemporary building and urbanization. Quantity rather than quality has been the objective of central planning; and it shows. China had a "modern" history of Western and Nationalist influenced design (figures 1-4), but 1958 marked the historical watershed in modern Chinese architecture. In that year ten significant buildings enunciated the architecture of the new China, predominantly Soviet in its inspiration. The rebuilding of the Tien An Men Square, a 98-acre plaza echoing Moscow's Red Square, provided a great space for national celebrations and parades. Facing the Square were created the elaborate 118-foot-high revolutionary monument; the Great Hall of the People, 1000 feet long and with a capacity of 10,000 delegates; the large showpiece Museum of the Revolution (figure 5) and its associated institution, the Museum of History; and nearby the Cultural Palace of the Minorities. At this time another architecturally significant building was the Beijing exhibitions center.

The characteristics of this Sino-Soviet style derive from its predominantly precast concrete elements. In pursuing the goals of construction efficiency and economy, the result has been a heavy, insensitive denial of other architectural values. Too often, these are human values. The technical deficiencies are apparent enough in the form of a poor quality of finish, but more fundamentally, building processes must respond to the need for greater detailing. This must begin with design, but the effort will be frustrated unless it can be translated into the reality of building, and interpreted by architects on the job.

In the buildings of the past quarter century these deficiencies were, in some fashion, recognized; but the efforts made revealed that more than superficial remedies were necessary. Tacking on elements derived from classical Chinese architecture was not enough. In some cases, like the blue tile roof or the yellow tile cornices of the Mao Zedong

Memorial Hall, the genuflection to classical architecture is sincere, but in others it is more perfunctory. The basic architecture is ineradicably composed of heavy precast concrete elements, and until these are dealt with nothing much can be done.

Most Chinese architectural leaders would like to get away from the many monotonous modern buildings that have been produced. The new Beijing airport terminal building may be taken as an illustration of some current architectural ambitions (even if designed before 1977) but to Western eyes it is an outmoded structure. They are aware of the poor quality of much construction work, but are divided as to whether this should be accepted as an architect's or even an engineer's responsibility. (It seems clearly the responsibility of the building production organizations.)

The central problem of architectural design arises from the pragmatic view taken by Chinese architects. They wish now to respond to Western influences, but there is an innate conservatism that manifests itself in a resistance to change.

One new direction is obvious, although far from easy to translate into practice: to re-establish a continuity with China's historical architecture. That this is a resource is universally acknowledged. And one significant recent move is to increase and liberalize studies in the history and criticism of China's historical architecture suppressed during the thirty-year cultural blackout.

This general direction is toward an architecture that recognizes the variety of local and regional conditions in China, particularly the northern and southern provinces; that conserves a culturally significant historical architecture, once thought to be evidence of undevelopment; that seeks to reflect modern conditions arising from science and technology; and that countenances a resulting variety. The evidence of change can be found in recent events like the National Theatre competition in April 1980, which produced an astonishing total of 677 designs that addressed both the total problem of modern theater design and the regional specifics (figure 6).

The demolition of city walls, notably in Beijing but widespread in other historic cities throughout the nation, was an outstanding break with the past. At the time it was recognized as such. Replacing the walls with wide, Western-style boulevards, however, compounds the difficulty of oozing urban space and the obliteration of historical reference points. Continuity and identity have been lost. Elsewhere, Shanghai streets, lined with thousands of London plane trees, show what a Western street design can become in Chinese hands, but this example is not common and reflects pre-revolutionary decisions. For all its rich urban background in courtyard planning and urban squares, modern China has still to create appropriate forms in these categories. Bigger is not better.

While design emphasis was being placed on large civic squares, the bulk of construction efforts was producing housing and groups of industrial buildings. These have

Frederick Gutheim, architectural critic, planner and frequent contributor to ARCHITECTURAL RECORD, has been a close observer of recent Chinese architectural developments since his official visit in 1978 as a member of a five-man traveling seminar invited by the Architectural Society of China.

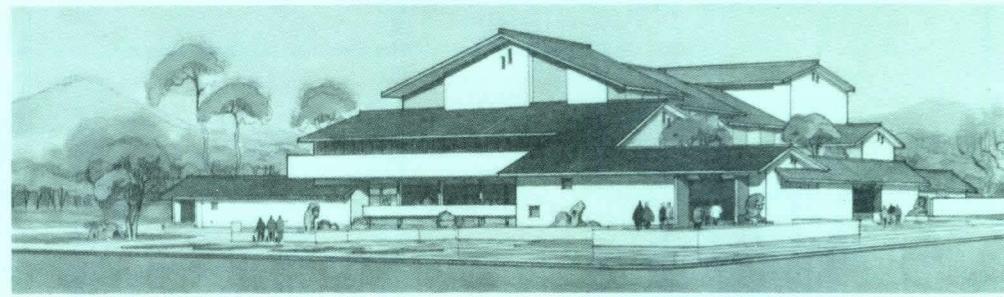
been devoid of any urban design; or, as in the case of the deliberately massed apartment blocks in Beijing along the Xuan We Men and He Ping Men east of the railroad station, a depressingly monotonous effect is created by uniform building lines and heights, and what clearly aspired to a triumphant statement has created its own difficulties. One is reminded of nothing so much as East Berlin's Stalinallee where Soviet-inspired design produced the same result. Thus, on one of the rare occasions when Chinese architects have been given abundant space, in a major urban situation, and a reasonably clear design objective, their response has not been dictated by economic or technical limitations, but by cultural or design shortcomings.

One major conflict between Chinese architecture of the present day and its new goals is in that important field of housing. Nothing more dramatically illustrates this conflict than the traditional courtyard houses of the older cities like Beijing—carefully oriented, low-rise, intimate in scale, reflective of the warmth of brick, tile and traditional materials—and the high-rise concrete apartments that are offered as the principal urban housing type of today's China. As in similar situations in the U.S., families wish to improve their housing conditions but strongly resist moving from their accustomed surroundings.

This characterization of Chinese architecture today is, of course, an oversimplification. But after this effort to make a more concrete and specific critical analysis, it is necessary to take a broader view if one is to speculate on possible steps China can take to extricate itself from what is an acknowledged architectural dilemma.

If Chinese architecture reaches ahead for its further creative development it will encounter two major obstacles. The first, from within, is the limited professional scope that has dedicated architectural education to the production of technicians. There is little comprehension of what is meant by problem-solving creativity, or acceptance of professional responsibility in the studio or on the job. The second obstacle is presented by the building industry itself. It is one thing to accept that one must design within its limitations, or to strive to upgrade its presently low standards of quality; but it is another thing to resolve the existing questions of responsibility on the job as between architects and builders. No consideration of how Chinese architecture can develop in the future can escape these issues, and the aspirations of China for a more and responsive architecture must face them.

To overcome its architectural manpower deficiency China must look to its six architectural schools, and a larger number of sub-professional technical schools. The shortage of architects is paralleled in city planners, landscape architects, urban designers and interior designers. There are many obvious remedies. Better use can be made of the existing architectural work force. Some overseas architects can be brought in. The existing architectural schools can be expanded. New schools can be created.



6

But if quality rather than quantity is the issue, the six-year curriculum must be re-established, and some hard decisions in selecting architects of ability must be made. In the latter case, architectural competitions offer a solution that is already being invoked.

A notable handicap to practice as well as to architectural education is the dearth of professional literature. Books, magazines and technical literature of all sorts from overseas were the victims of the self-imposed isolation of the 1949-1977 period. Nor were internal channels of communication that would allow Chinese architects to learn from their own experience open very wide. Nevertheless, some news of the outside world got through, and Chinese architects are fast overcoming these deficiencies.

In selected areas of presumed priority, such as tourist accommodation, reviews of significant foreign experience are finding their way into China's *Architectural Journal* which, for example, published a very competent analysis of the convention center at Acapulco, Mexico, some new hotels in the United States, and buildings in Hong Kong.

In this situation it is worth asking what foreign architects can do to help. Those few who are given the opportunity to design buildings in China have a heavy responsibility to reflect their educational background, not by flourishing an empty and often irrelevant technology but by producing sympathetic and buildable solutions. Embassy buildings are a good category to start with; but all forms of hotels, office buildings and such specialized structures as broadcasting studios present the same opportunity.

Foreign architects can guide Chinese colleagues to a more assured appreciation of their own architectural heritage, and thus toward a new Chinese architectural identity. I. M. Pei's hotel in China shows that he is clearly moving in this direction (see preceding page).

More Chinese architectural students should attend overseas schools, as historically was the case before the Second World War. And because a large number of these schools are in the United States, and they are accustomed to accepting numbers of students from elsewhere, it is probable that a large proportion of those Chinese students who can study outside their own country will do so here. It is significant that among the few architectural missions to China one was largely composed of architectural educators.

Members of that AIA architectural mission to China in the late spring of 1979 had opportunities to visit construction sites, to

visit architectural design institutes and schools, as well as to discuss with Chinese architects and educators the problems they were facing. I have appreciated the opportunity to discuss these experiences with some members of the AIA mission, particularly as they represent experiences I did not have in my earlier visit to China, but the conclusions drawn in this article are my own.

More Chinese architectural leaders should travel abroad. They are participating in the International Union of Architects, but should be doing more in specialized organizations like the International Federation of Housing and Planning and ICOMOS.

Chinese architectural experience has something to offer the West, as in the work of its design institutes. These are not, as most Americans would perceive them, "architectural bureaus" but something closer to the French "équipe," a building design team. They provide an element of continuity, incorporate more systematic research activities, and are able to address significant regional design issues. Their contribution to architectural selection—a universal problem—could be significant, particularly as China itself passes from selection on the basis of party loyalty to a basis of talent.

China must look to its talented and industrious architects for many roles that are played by specialists in the West. It is a condition common in small or developing countries. In this the Chinese architects are therefore more akin to what we see in a country like Finland, where these professionals contribute to the design of building products, many tasks of architectural engineering, city planning and urban design, even urban transportation.

Accepting that Chinese architecture will be eclectic for some years to come, the policy of "let a thousand flowers bloom" will provide a certain opportunity that has been lacking for many decades. The question is how to make the most of it.

The ten buildings of 1958 were, measured by their influence since, as effective as they were deliberate. But they did not provide the basis for an acceptable modern Chinese architecture. Nor was this heavy stroke a model for anything that should be done today. More subtle and lasting measures are required.

An important start has been made in the architectural exchanges of the past few years. But more than brief, if stimulating, encounters of this sort are required if the tougher questions are to be faced and any real assistance provided that would contribute to the necessary changes.

TOWARDS A MORE HUMANE HEALTH CARE

Lurking with the classical image of the health facility as a majestic Greco-Roman temple is the contemporary image of mean corridors crammed with patients and electronics. Fortunately, a far more humane environment is emerging. As health administrators search for more friendly and inviting environments, architects are addressing the social aspects of health care and producing a new esthetically more satisfying architecture.

As the following pages show, the results can be strongly individualistic too. New construction and remodeling of the Tucson Medical Center by Perkins & Will and CNWC Architects (opposite page) reflects in contemporary terms the Spanish colonial character of the 37-year-old institution. The Mental Health Unit of the Michigan Osteopathic Medical Center, Detroit, by Kaplan/McLaughlin/Diaz (pages 92-93), creates a relaxed domestic atmosphere for its patients in a building that blends well with its difficult urban site. A new home for the famed Wills Eye Hospital, Philadelphia, by Ballinger (pages 94-97), reconciles complex site conditions, mixed uses, and time and cost constraints with sensitive planning and design. A Family Health Center for the Methodist Hospital of Gary, Indiana, by Schmidt, Garden & Erikson (pages 98-99), extends health services to a depressed city neighborhood in a building that is more domestic than institutional in spirit. Finally, Walter Reed General Hospital, Washington, D.C., by Stone, Marraccini and Patterson with Milton T. Pleuger (pages 100-103), solves the logistics problems of relocating an enormous hospital (1,280 beds) from a clutter of older buildings to a new structure of clarity, logic, and amenity. These and many other health facilities are evidence of a profound soul-searching in the health profession.

The rapid rise of health-care costs in the United States is a major cause of this re-evaluation. Medical expenses have alarmed the public and the government into seeking at least a lower rate of increase. Some of this gain may have been attributable to the relative ease of third-party payments since costs are passed on from patients to government and private insurers. A part also may be traced to the increasing percentage of older Americans, who require a host of geriatric services. Nor can inflation be ignored.

However, it has fallen to the health-care profession to wring economies out of the system. The drive for cost containment has centered on greater use of ambulatory or outpatient facilities, while admitting fewer inpatients and shortening their stays. Concurrently, more emphasis is being given to diagnosis and treatment, financial planning, cost effectiveness of building structural and mechanical systems, and ways to share costly medical apparatus. These survival strategies constitute strong forces for change in the planning and design of health facilities.

Reductions in the total number of hospital beds and numbers of beds per hospital have continued since the 1960s, reflecting both overbuilding and massive population shifts. Statistics compiled by the American Hospital Association show that the total number of beds stood at 1.456 million in 1950, rose to 1.704 million in 1965, and

dropped to 1.372 million in 1979—even as the total number of hospitals has remained fairly constant, peaking at 7,174 in 1974 and falling to 6,988 in 1979. Occupancy rates, however, have slipped steadily since 1950, when hospitals were 86 per cent full, to 76.1 per cent in 1979.

But as the space devoted to beds has diminished the space needed for ambulatory care, diagnosis, and treatment has grown. Outpatient clinics have become an important point of entry for the public seeking health care. The poor have always relied on them in the absence of private physicians. Now, since private physicians seldom make house calls and few private offices can duplicate a hospital's equipment, outpatient clinics and emergency rooms are drawing more affluent patients as well. Expanding these facilities is a cost-cutting means of reducing hospital stays and encouraging earlier detection of disease. The public has gotten the message: outpatient visits have soared from 125.8 million in 1965 to 262.0 million in 1979. Complex building structural and mechanical systems, so promising for economy and efficiency in the 1960s, have proved a mixed blessing. Such innovative concepts as interstitial spaces and automated material conveyances function well for some institutions; at other hospitals they are needlessly costly. Interstitial spaces are luxuries for institutions which do not really need the flexibility. And sophisticated technology may simply replace lower-paid employees with a high-priced technician.

High technology medical equipment has been reviewed in the same pragmatic way. Versatile diagnostic tools like the computerized axial tomography (CAT) scanner are magnets that draw top physicians. At a cost of over \$750,000 each, however, a scanner should be in continuous use. Closer scrutiny of health costs by third-party payers and shrinking government support have forced hospitals to consider sharing such equipment or not having it at all.

Economic retrenchment has also introduced competition for physicians and patients. Institutions find themselves pitted against one another to win and hold sources of revenue, from routine outpatient care to highly specialized surgery. Hospitals now recognize the pivotal role architecture and interior design can play in creating a positive public image for this most institutional of institutions. There are no esthetically neutral hospitals.

A more humane environment begins in the outpatient clinic, which serves as the "living room" where patients receive a first impression of a hospital. Spacious and comfortable waiting areas encourage a community to use its hospital's services. Some hospitals are even inviting their communities to conduct joint programs in health education and physical fitness in such spaces as their auditoriums. This results in better utilization too.

Inpatient facilities are being upgraded in numerous ways. Greater privacy is afforded by reducing room size to semi-private or better. More appealing interiors come from better finishes, furnishings, and lighting. Long-term care now stresses social interaction with interior malls, lounges, cafeterias, and other public activity spaces.

Nor have provisions for the medical staff been overlooked. Economical office space in or near hospitals, staff housing in tight rental markets, and physical amenities such as more windows, subtle lighting, and attractive dining rooms can persuade physicians to shift hours and patients. In a time when staff stability is a serious problem, enhancing hospital interiors takes on more significance.

The humanization of health-care facilities is an endeavor to invest complex functions with intelligible, humane social forms. Society wants scientifically competent hospitals. Yet their architecture can have a therapeutic value of its own.—Roger Yee



Hedrich-Blessing photos

A one-story medical complex blossoms in the desert



Were visitors to the old Desert San in Tucson, a private luxury health resort that flourished in the 1920s, to return to their hideaway five years ago, they would have been startled to find it operating as the largest hospital in southern Arizona. The small adobe-like guest houses called *casitas*, built around open courts in the Spanish colonial style, had grown into a sprawling medical complex of 28 crowded buildings covering nearly a square mile of land.

Were they to return today, they would find the Tucson Medical Center dramatically transformed and enlarged—incorporating the *casitas*—into a modern 650-bed health facility by Perkins & Will, architects, in association with CNWC Architects.

Tucson Medical Center has experienced the same rapid expansion as its service region, the communities of southern Arizona. Since its founding in 1944, it has come to

include a broad range of services for inpatient care and a variety of outpatient facilities. It is a regional referral center for specialized medical/surgical programs such as cardiovascular, neurological, orthopedic, and neonatal care.

Growth brought growing pains, unfortunately. Grafting new structures on the old Desert San created such inconveniences as patients being wheeled from surgery through the open air to outlying units, security problems stemming from too many entrances, and a maze of congested corridors.

The charge to the architects was three-fold. First, to modernize and organize the diagnostic and treatment services. Second, to improve circulation *within* the hospital. Third, to modernize nursing services in the patient bed wings. All of this was to be accomplished while retaining a residential atmosphere.

A long-range plan drawn up by Perkins & Will became the blueprint for a phased con-



struction program of expansion and modernization that would add 344,000 sq ft without expanding the available site. Comparison studies of the existing low-rise horizontal functional plan against possible multi-story configurations showed that construction and operating expenses and the potential for rapid phased construction with the least disruption of ongoing care would be best on one floor. Needed: a very compact solution.

Clustering the diagnostic and treatment services in a central core running east to west and flanking this core on its north and south boundaries with bed wings grouped around patios gave the architects an open-ended structure that was both capable of expansion and respectful of the existing milieu. Three key internal circulation routes were established to bring people directly to the hospital's primary services from new entrances and lobbies dedicated to the general public, out-

patients, and inpatients (see plan).

Services were similarly clarified. Mechanical and electrical distribution systems were consolidated within a curved lightweight steel framed "skyway" that follows the main public corridors and emerges at the main entrance as a canopy (photo overleaf). Public access to the main entrance from the ring road encircling the complex was clearly marked by a formal symmetrical elevation.

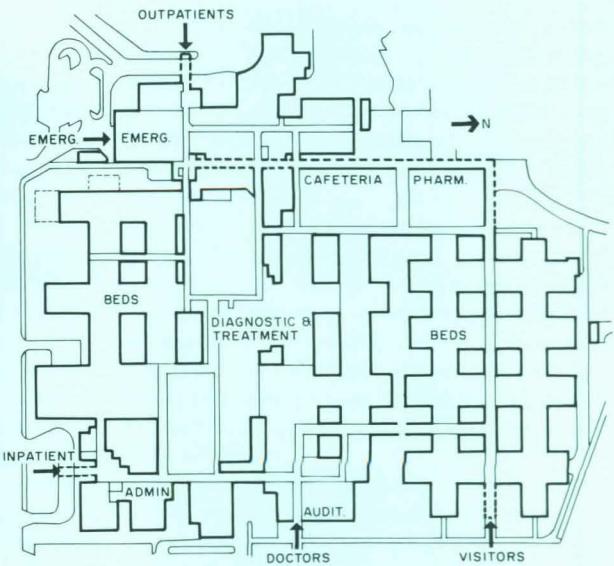
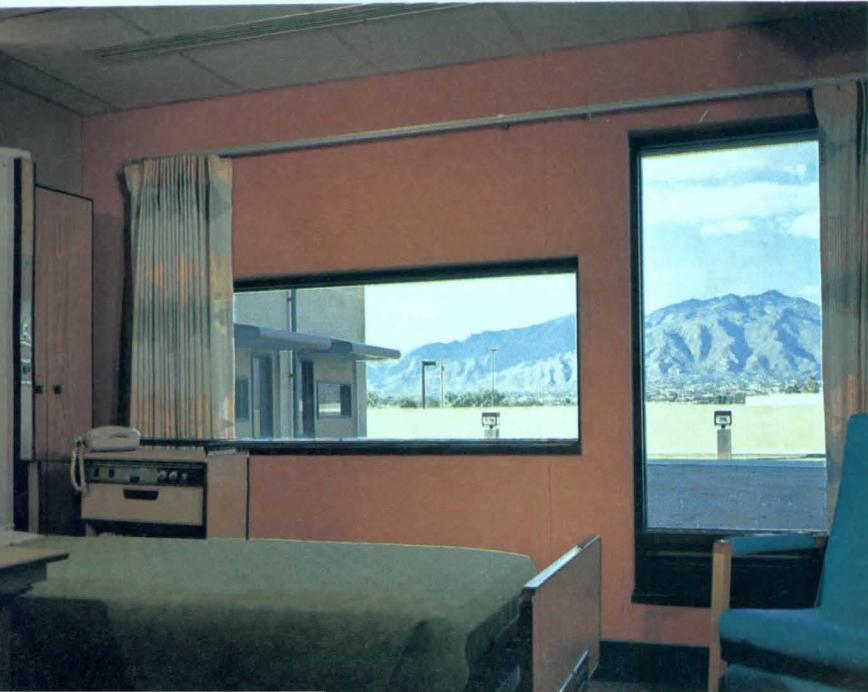
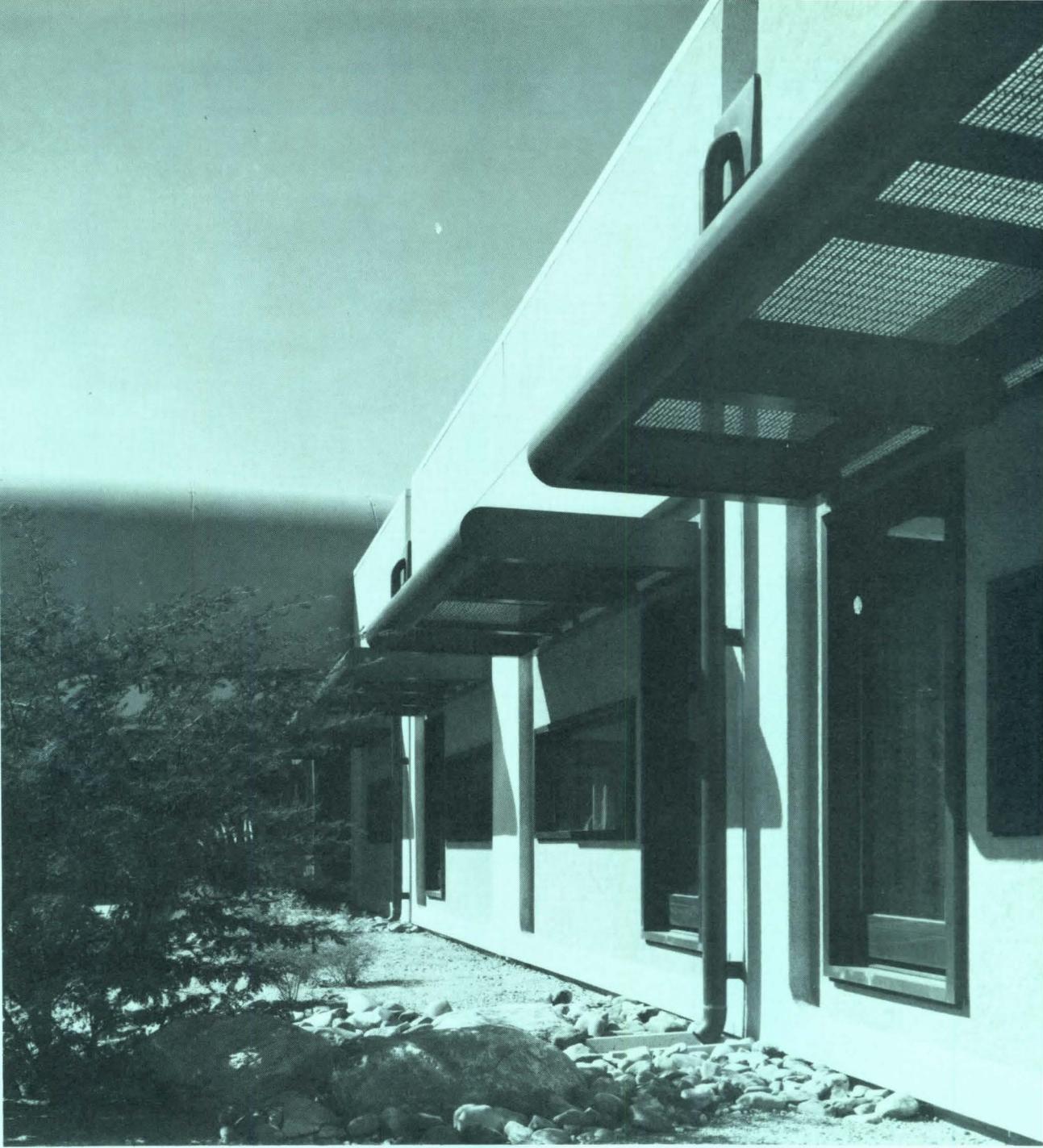
The complex still seems smaller than it is, being one story tall. Respecting its regional flavor, the architects have designed a strong, simple facade that resembles adobe construction, but is actually a prefabricated wall system of concrete stucco over fiberglass-reinforced beadboard. Fenestration is punched out in metal framing that enhances its depth, as does a finely detailed drain pipe (photo opposite page top). An overhang or "eyebrow" shades sunlight and adds needed

sculptural interest.

The interior design also derives from regional sources. Desert colors form a basic palette to which modular furniture, accent walls, carpet, linen, and conform. A major interior element is the Tucson landscape itself; patient rooms, lobbies, and even corridors are flooded with views of landscaped inner courts or the Tucson mountains. This has such beneficial consequences as enlarging the apparent dimensions of the interiors and maintaining the patients' visual link to the majestic land outside the Center.

TUCSON MEDICAL CENTER, Tucson, Arizona. Architects: Perkins & Will. Associated architects: CNWC Architects. Engineers: Rod Gomez (structural/civil), Stewart R. Palmer (mechanical), A.E. Magree (electrical). Planners: Perkins & Will, Cresap, McCormick & Page. Interior/graphics: Perkins & Will. Construction manager: Tishman Construction.

The landscaped interior courts of Tucson Medical Center (opposite and right) have a special regional flavor that the architects have carefully nurtured. Views of these courts are generally intended for inpatient rooms, though public corridors look into them too. Fenestration in a typical bedroom (below) includes a horizontal window for the patient and a vertical one for visitors.





Balthazar Korab photos

A mental health center infills a tight urban site

Into a tight triangular urban site on Woodward Avenue, Detroit's original "Gold Coast," Kaplan/McLaughlin/Diaz, architects, have placed a handsome and spacious Mental Health Unit for the Michigan Osteopathic Medical Center. Like many other urban infill projects, this facility was expected to fulfill numerous interrelated goals. It would provide living quarters for 56 inpatients, offices for doctors and psychiatric social workers, and facilities for a community mental health service unit. It would promote independence and freedom of movement for patients. And it would accomplish this in a congested urban setting adjacent to the existing main building of the hospital, which was originally conceived as a neo-Gothic private residence.

To satisfy this ambitious program took a four-story triangular building occupying 98 per cent of the allowable zoning envelope. This in turn produced a straightforward verti-

cal zoning of functions, starting with administration on the first floor, 28 inpatient bed units and living spaces on each of the next two floors, and communal rehabilitative facilities and an outdoor terrace on the top floor. All inpatient single bedrooms were located on the north side, while living rooms were located on the south to receive the sunlight.

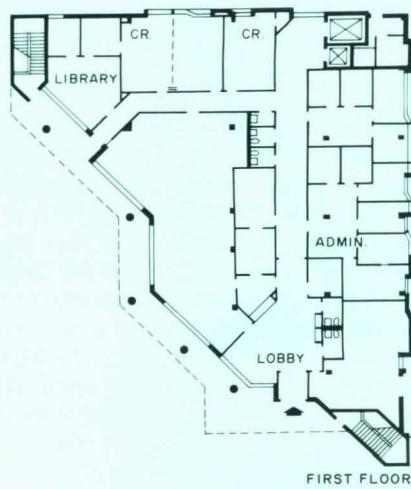
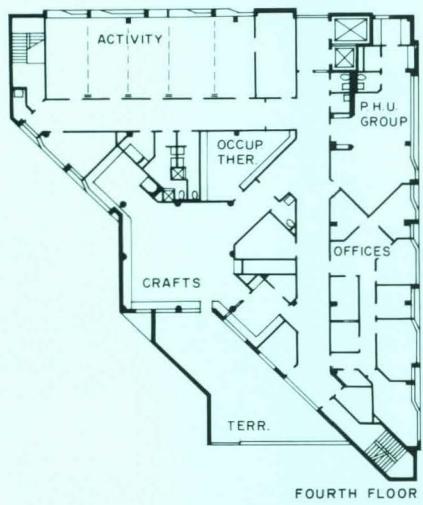
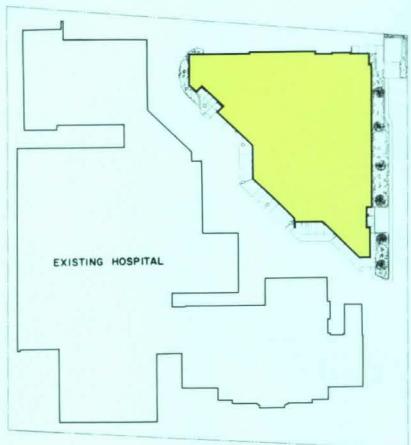
The building's strongly modeled form and masonry materials must be appraised in the context of the site. Exterior elevations—of nonbearing brick and large glass windows separated into horizontal bands by concrete spandrels—are invested with an almost hand-hewn texture and small scale that hold their own against the nearby neo-Gothic stone facades. Yet the building is unmistakably modern, as it "floats" above a ground floor cut back from the building line.

The interiors are modern in spirit, of course. The architects superimposed a 45-

degree rotated grid on the primary planning grid to create room-like spaces within the corridors and freeform activity rooms that have an unexpectedly spacious feeling. Residential furnishings, bright colors, and plenty of natural light soften the institutional presence still further.

It is a delicate balance. While honoring the site, the architects firmly direct the Mental Health Unit towards the modern world. As in the best architectural problem solving, it still looks effortless in the end.

MENTAL HEALTH UNIT, Detroit, Michigan. Owner: Michigan Osteopathic Medical Center. Architects: Kaplan/McLaughlin/Diaz—Carl Krause, project architect; Paul Barnhart, Peter Gordon, Philip Buskirk, project design team. Consultants: McClurg & Associates (structural), Hoyem/Basso (mechanical/electrical), Charles Griffen (hardware), Hans Glas (specifications). General contractor: R.E. Dailey.





Tom Hall

A hospital that bridges a transitional urban site

From whatever street you approach it, Philadelphia's Wills Eye Hospital by Ballinger, architects and engineers, is an impressive sight: a ziggurat sheathed in warm gray enameled metal panels and tinted glass bands, rising from the sidewalk to an elevation eight stories high. The aura of high technology is apt for the internationally renowned eye treatment center. However, its siting, massing, interior design, and mixed-use program (there is a 250-car garage and considerable retail space at street level) bespeak another important responsibility: to house its staff and patients in a supportive environment that enhances its urban neighborhood.

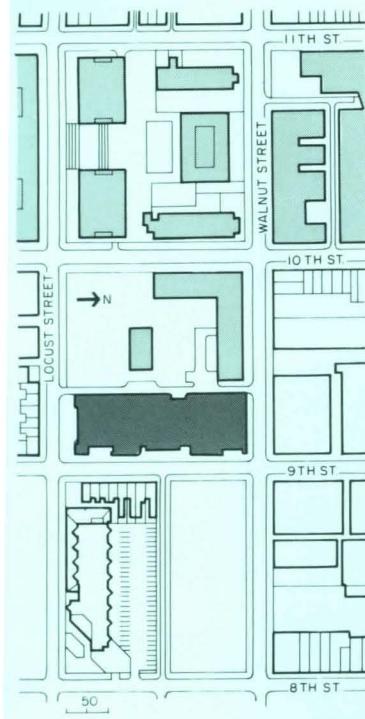
To be sure, most of the program requirements were strictly medical: a 230,000-square-foot hospital with 120 inpatient beds, outpatient facilities for 150,000 visits a year, 30,000 square feet of basic research space, and training and teaching facilities.

But Wills Eye Hospital is a project strongly influenced by its site and neighborhood. The search for a third home in nearly 150 years for the venerable institution was complicated by the shortage of available sites in the center of the city. It finally chose to accept an offer from the Philadelphia Redevelopment Authority to occupy a transitional area between residential and retail districts just southeast of the City Hall, not far from the teaching hospital of Jefferson University; Wills Eye is affiliated with the hospital.

It was a tight site. To fulfill its program, the hospital would have to fully exploit the allowable floor area ratio, placing its 230,000 square feet on roughly 52,000 square feet of land. The nearby structures were heterogeneous: three- to five-story rowhouses to the south and east, the historic Walnut Street Theater on the northeast, office buildings with retail space at street level to the north

and west, and Jefferson University Hospital to the west. Surface parking in the neighborhood was judged inadequate for the cars Wills Eye would attract. In addition, excavation for below grade space would be limited by the presence of underground streams traversing the site.

Ballinger chose to lift much of the building's mass up towards the center of its building area, so that while the hospital attained its needed space, pedestrians see the perimeter as a five-story structure. The use of warm gray for the fascia and bright red for railings and trim gestured towards the stone and brick found in older buildings nearby. To the extent possible, the existing character of the area was continued, the south and east elevations being kept quiet at street level by spreading apart entrances for vehicles and pedestrians, while the north elevation was given over to retailing at street level, and the west



Both the exterior and interior of Wills Eye Hospital have unexpected visual surprises. The five-story parking garage is so well integrated into the over-all structure (opposite), that it can be mistaken for more hospital space. The main lobby (left) is designed for comfort and orientation.



Tom Crane

elevation became the ambulance route to the emergency room.

"Light" and "clarity of space" were the key concepts in the design solution described by William Gustafson, project designer, and Edward Jakmauh, planner/interior designer. Natural light was permitted to penetrate as much of the interior as possible, including the ends of corridors. Public spaces were kept open to put visitors at ease and to avoid the disorienting sameness of typical hospitals.

The functional zoning of Wills Eye was obviously a vertical one. Outpatient facilities and staff offices were placed on the first three floors for immediate access. Research and ancillary services were placed on the fourth and fifth floors between the outpatient/office floors and inpatient floors above. Inpatient 40-bed clusters, with views of the city from all rooms, were placed on the sixth, seventh, and eighth floors. Ancillary storage,

mechanicals, and food service were placed on the lower level. A five-story parking structure is located on the south third of the site.

Circulation was similarly zoned. Floor movement was divided into public areas on the east and staff areas on the west. Inpatients use elevators on the west, while outpatients and visitors use those on the east.

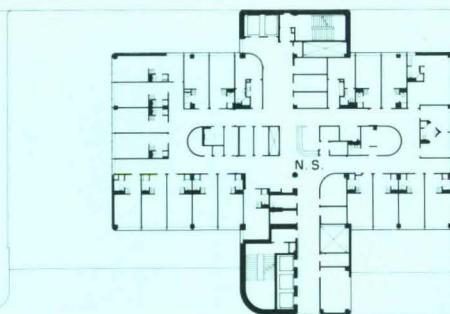
Painstaking care was devoted to producing easily-understood circulation paths with such directional cues as information desks, windows, curving walls, and color changes. For many visitors and the staff, one of the hospital's most notable features is its high esthetic quality. Restful spaces achieved by the deft use of economical materials, subtle color and lighting, and handsome furnishings are accented by plants and original art.

Particular attention was given to the main lobby or "City Room," where a multitude of people converge and then disperse.

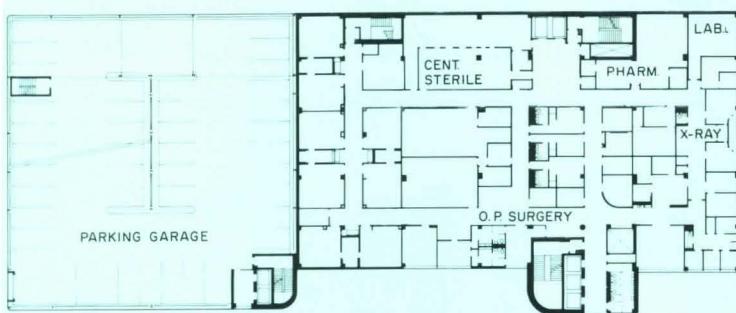
Here visitors face the information desk upon entering, and are directed to registration and waiting areas nearby. A sloping glass wall transforms the room—of tile floor, carpet, bold graphics, lush plants, and serpentine lounge seating—into a greenhouse bathed in light. It is a memorable synthesis between medicine and architecture, as is this hospital as a whole. This was all accomplished in just 24 months, at a cost of \$65 per square foot.

WILLS EYE HOSPITAL, Philadelphia, Pennsylvania. Architects: Ballinger—John DeMoll, principal-in-charge; Joseph Archut, project manager; William Gustafson, project designer; Lawrence Spearman, project architect; Edward Jakmauh, planner/interior designer. Consultants: Felix Di Nicolantonio (structural), Anthony Carango (electrical), Steven Darr (mechanical), Allen Weiss (lighting), Harley, Little (kitchen). General contractor: Turner Construction Company.

Tom Hall



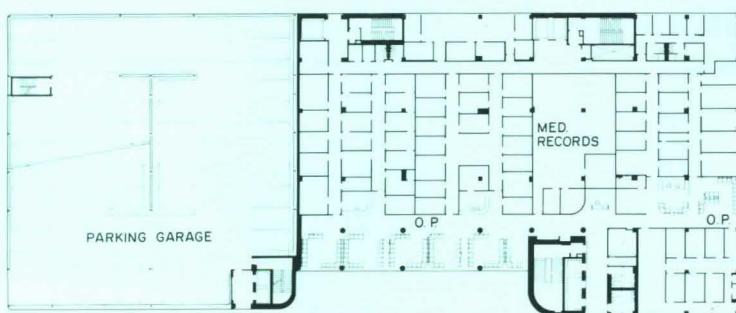
LEVELS 6, 7 & 8 (NURSING)



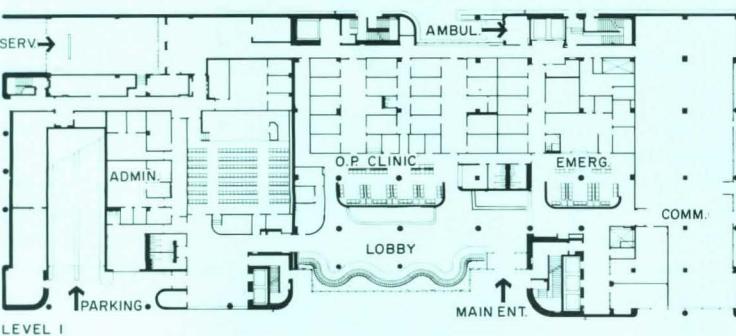
LEVEL 5 (SURGERY, LABS, & X-RAY)



LEVEL 4 (RESEARCH)



LEVELS 2 & 3 (OUTPATIENT)

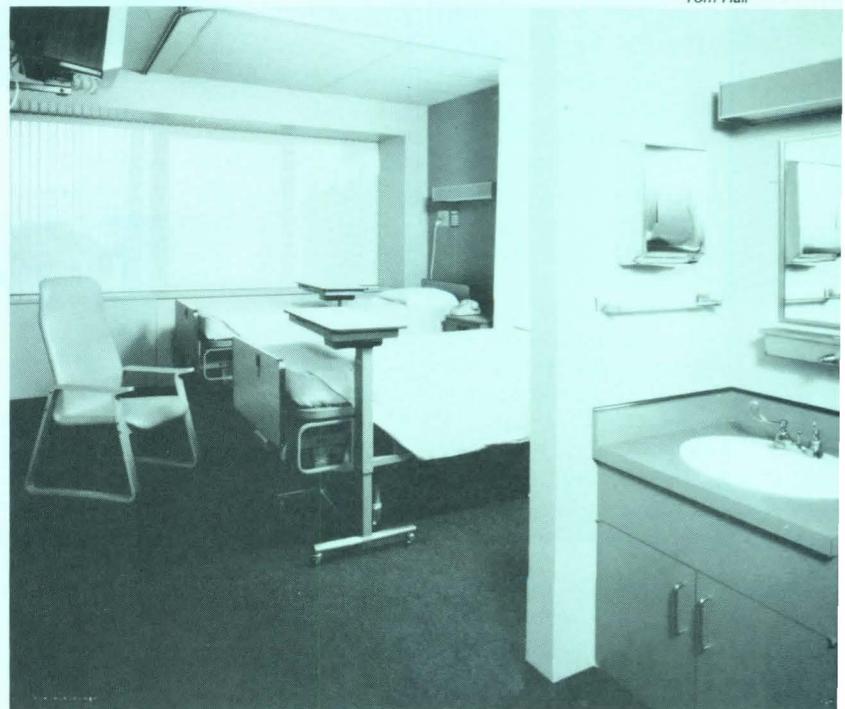


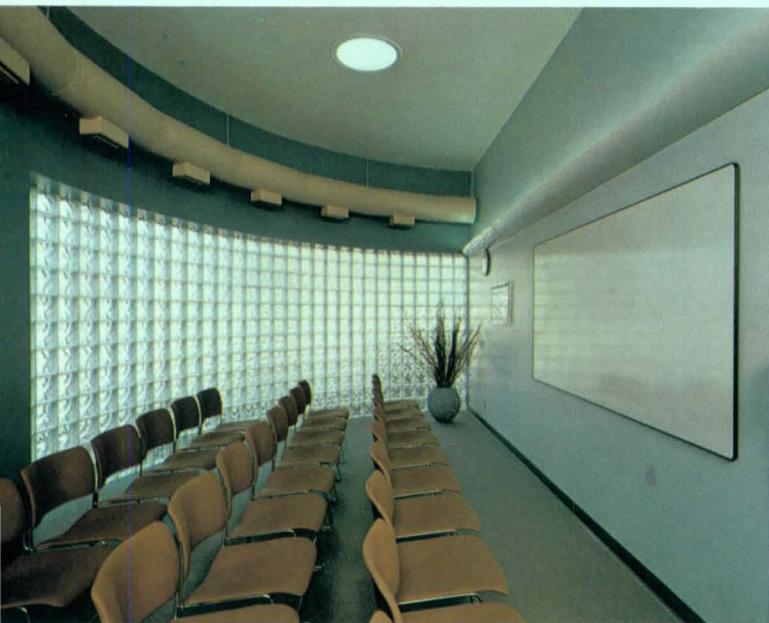
LEVEL 1



Light, both natural and artificial, is used to give character to such interiors as the dining room (opposite), a main floor waiting area (above), and a patient room (below). Artwork and indoor plants provide visual interest.

Tom Hall





Family services for an inner city neighborhood

The Family Health Center of the Methodist Hospital of Gary, Indiana, conducts a resident program in family practice in an area of the city designated for redevelopment. In doing so, it extends the hospital's outreach to a neighborhood whose residents might not obtain health services on their own. The building that houses the program has been designed by architects Schmidt, Garden & Erikson, to be low-key and inviting.

The five principal functional areas—examination rooms, staff and support spaces, reception/waiting room, and conference room—have been assembled into a compact, one-story structure framed in wood and sheathed in wood siding. The building occupies a corner site surrounded by four-story brick apartment buildings. It is articulated as three interlocking segments (plan right): a two-story cylinder enclosing the reception/waiting room, a one-and-a-half-story

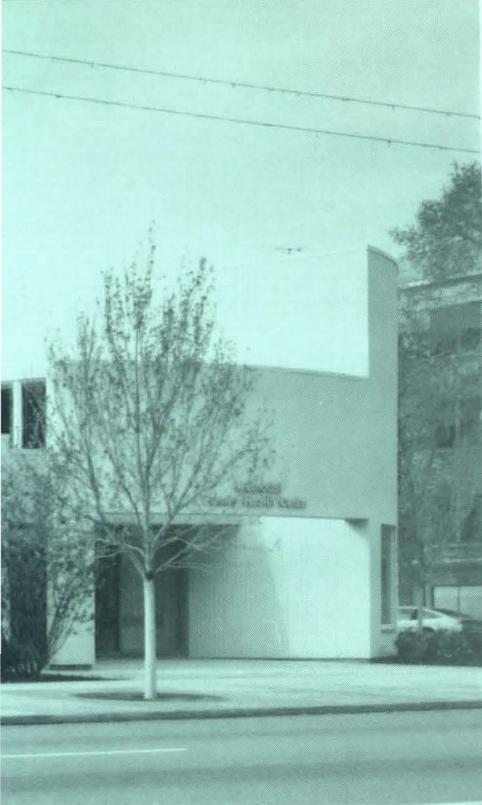
cylinder enclosing the conference room, and a one-story oblong box enclosing everything else. This results in a building that could be perceived as three very small structures, and the low profile and small scale contrast strongly with the apartment buildings.

Formal doorways that are cut from the two cylinders add a note of importance to the three entrances—a main public entrance at the street corner, a patients' parking entrance, and a physicians' parking entrance. They are also a source of delight, however. Rather than openings made in solid cylinders, they reveal themselves to be fin walls—and the cylinders to be incomplete.

Inside, the Center's interiors are swung tight and taut around the axis centered in a children's play area of the circular reception/waiting room. The diagonal corridor, drawn as a diameter line across the circular space, directs patients from the reception

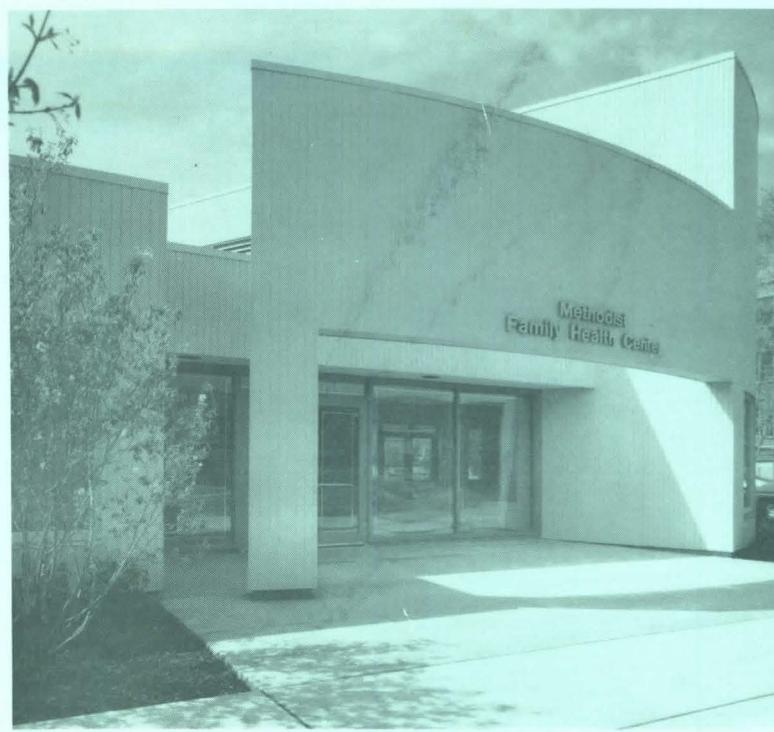
desk past staff spaces to the examination rooms at the rear. A muted color composition of gray, taupe, blue/gray, and pink, softly focused downlighting, and comfortable seating introduce a calming influence on these sharp interior edges and flexed surfaces. Whether or not these architectural subtleties are recognized by the community, the Center has been fully utilized by the people it intends to reach.

FAMILY HEALTH CENTER, Gary, Indiana. Owner: Methodist Hospital of Gary. Architects: Schmidt, Garden & Erikson—Wayne Fishback, partner in charge of design; Peter Pran, design director; Chris Liakakos, project manager; Hal Sriver, project architect; Beverly Jablonski, interior design director; Kate Joneson, senior interior designer. Engineers: Val Mazeika (structural), Harry Smith (electrical), Junius Fischer (mechanical). General contractor: Brandt Construction.

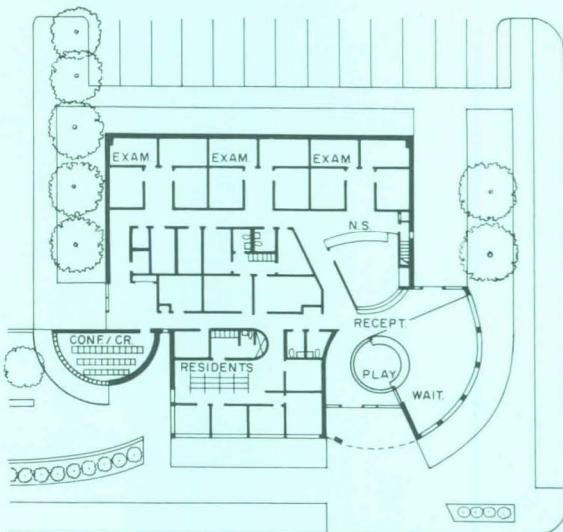


Sardin/Karant photos (exteriors)

A brief glance at the Family Health Center (left) reveals there are three structures: the cylindrical conference room (opposite, far left), the rectangular staff facilities and examination rooms (opposite, left), and the cylindrical reception/waiting room and nursing station (below). These interiors are similarly differentiated into parts by curving walls, lowered soffits, complementary colors, and exposed ductwork (below).



James Norris photos (interiors)





A famous Army institution builds a technological showcase

Before construction of the new Walter Reed General Hospital began in 1972, the famous Army hospital in Washington, D.C. for military personnel, United States' Presidents, and other government officials was in serious need of treatment itself. The institution had grown from a staff of 70 treating 16 soldiers on opening day, May 1, 1909, to a staff of 7,000 treating 1,000 outpatients each day and 16,000 inpatients a year by 1972. Its facilities had grown too—but haphazardly, scattering staff and patients among 43 separate three- and four-story Georgian buildings on a 100-acre campus known as Walter Reed Army Medical Center (WRAMC). The commission for a new structure to pre-empt a large amount of the Center's obsolete facilities was awarded to Stone, Marraccini and Patterson, architects and planners, in joint venture with Milton T. Pileger, architects.

Speaking of WRAMC means speaking in

superlatives. It is unique within the Army Medical Service in serving all military services as well as military dependents, retired personnel, and government personnel. It functions as the Army's major teaching institution. It is the home of the prestigious Armed Forces Institute of Pathology and the Army's largest medical research unit.

Consequently, the hospital administrators set forth some very formidable goals: a hospital exemplifying the state-of-the-art in physical plant and medical practice, capable of changing and incorporating all advances in the art during design and construction, and flexible enough to include further advances in the art during the life of the building with minimal disruption.

More specifically, Walter Reed is a 1,280-bed teaching hospital with a 1,000-car garage. It has provisions for medical and surgical services, inpatient, acute and intensive

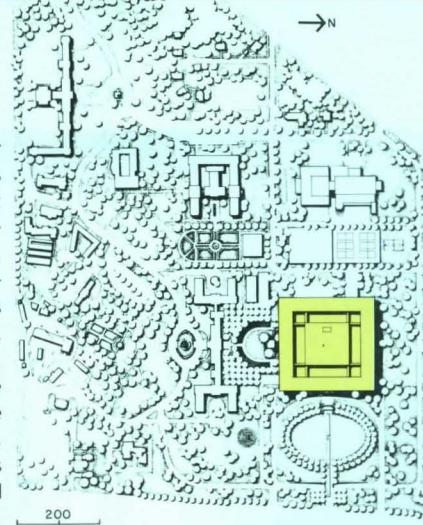
care, diagnostic, treatment, and ancillary services, outpatient care, teaching and research facilities, and amenities. When coordinated with other demolition and construction plans of the Corps of Engineers and the Surgeon General, the facility would become the core of a new medical complex.

The completed building—a steel structure framed in 30- by 60-ft bays with trusses at the depth of its interstitial levels, with concrete floors, and exterior precast concrete panels—is massive. Walter Reed encloses 1.2 million square feet in a seven-story square block measuring 480 ft on a side and 125 ft high, a configuration judged optimal for continual medical and technological change. The architects have thoughtfully located this giant on axis with the original 1909 Georgian "Building No. 1" on the rolling ground of the campus, joining the two with the formal landscaping that characterizes



Robert Lautman photos

The main entrance to Walter Reed General Hospital is across a landscaped plaza that covers a two-level underground parking structure (left). The use of landscaping continues on the inpatient floors with inner courts (below), which inpatients can enjoy. The site plan (right) shows the building in the context of the Army's great medical center. The other formal plaza faces the original 1909 Walter Reed Hospital.



WRAMC. A two-level garage has been discreetly placed beneath a landscaped plaza.

Despite its impressive inpatient facility, Walter Reed is firmly committed to ambulatory care. Many of its service clinics are zoned to provide easy access for outpatients. The first four floors include diagnosis, treatment, ancillary services, and outpatient oriented clinics. A 200-bed acute- and intensive-care facility is located on the fourth floor, along with a surgical center for outpatient surgery and the maternity unit, to have close proximity to the hospital's 16 surgical operatories on the same floor. The top three floors are the inpatient precinct, where nursing units ring a core of clinics.

Obviously, a structure of great functional complexity relies on mechanical and electrical services of a comparable order. Walter Reed represents an early application of the building systems concept as developed by Stone,



Marraccini and Patterson, which analyzes a building as modular components, isolating its mechanical and electrical services in interfloor service zones or interstitial floors above occupancy floors for quick access with minimal disruption of normal activities.

When applied at Walter Reed, the concept becomes a technological tour de force. Among the material handling systems distributed from the interstitial floors are monorail networks of self-propelled containers for medical supplies, laboratory samples, mail, and food, pneumatic chutes for soiled linen and trash, and automated cart lifts for surgical supplies and pharmacy. Communications are relayed by paging and call systems, intercom, closed circuit television, and electronic data processing. Environmental controls are fully computerized.

The inpatient floors are notable for efforts to create a more personal environment.

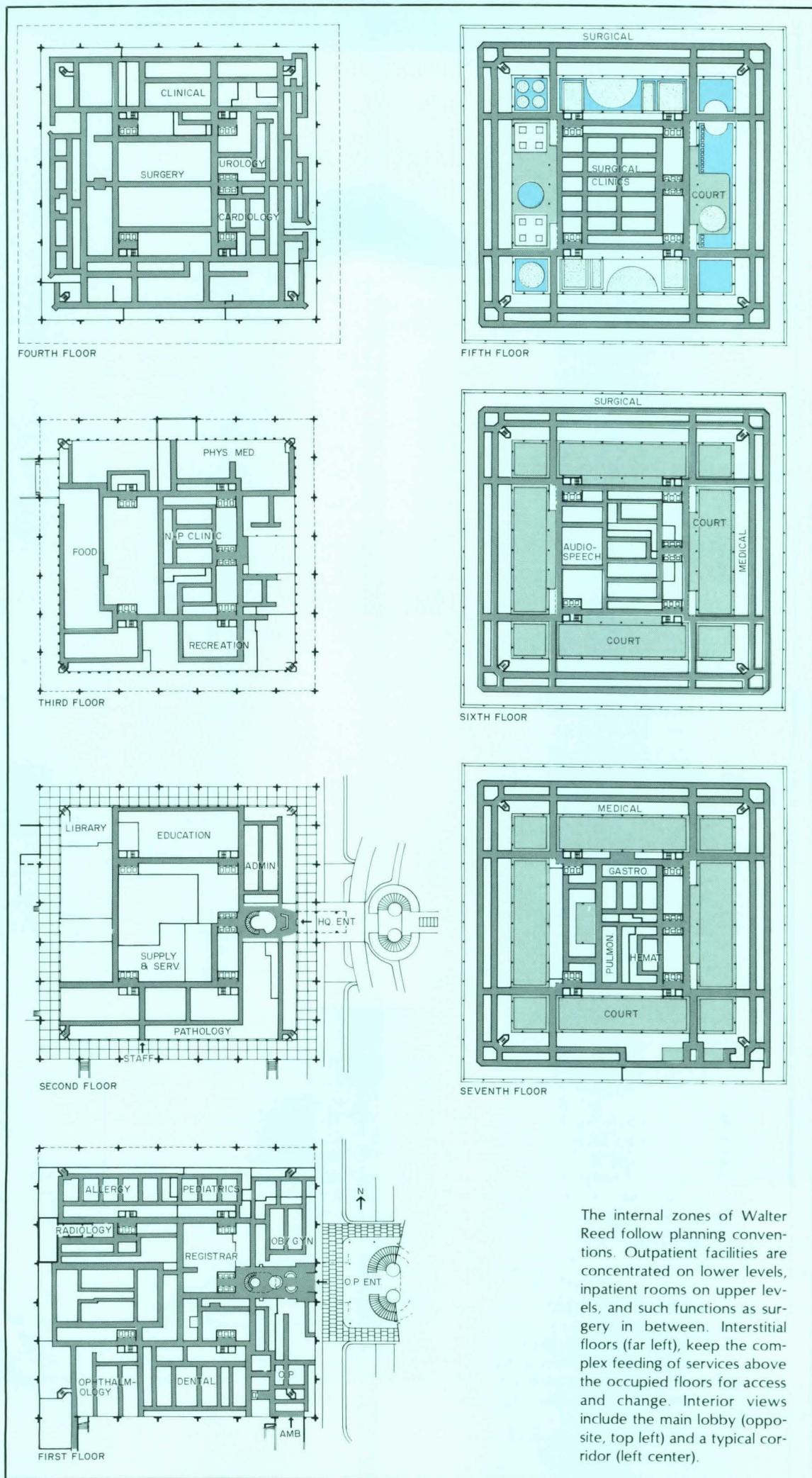
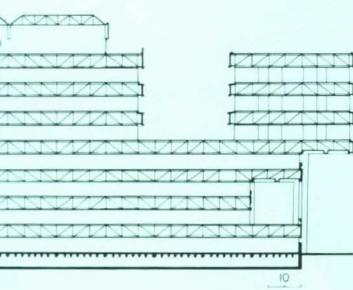
The ring configuration of double corridors of bedrooms and nursing stations is kept simple to facilitate shifting boundaries. And the central nursing station concept of logistic, communications, and administrative support for nurses frees them to spend more time with patients. Additional innovations are the pass-through "nurse-server" cabinets, which are filled once daily from outside patient rooms, and the bedside columnar units containing essential environmental services.

Visually more impressive are the interior courts that open up the fifth floor and above between the ring of inpatient rooms and a central core of clinics. They come as a distinct surprise, since the exterior of the hospital does not suggest their presence. Each of eight courts is landscaped individually.

Most of the interiors are utilitarian in design. Yet opportunities have been exploited to introduce visual interest. The main

lobby is appointed in sculpted wood wall panels, fine furniture, and soft lighting. Accent colors, colorful furnishings, and framed graphic art give a strong sense of identity to major functional areas. What is in essence an immense, complex, technological instrument for the state-of-the-art practice of medicine thus assumes distinctly humane features, as indeed it should.

WALTER REED GENERAL HOSPITAL, Washington, D.C. Architects: Stone Marraccini and Patterson in association with Milton T. Pfeuger—Norman Patterson, Milton Pfeuger, co-managing principals; Clark Davis, design director; Lee Greenfield, project administrator; William Hutcheson, project architect; Roger Hill, project designer; William Wedemyer III, interior colors/graphics. Consultants: Isodore Thompson (structural), Buonaccorsi (mechanical/electrical), The SWA Group (landscape architecture). General contractor: Blake Construction.



The internal zones of Walter Reed follow planning conventions. Outpatient facilities are concentrated on lower levels, inpatient rooms on upper levels, and such functions as surgery in between. Interstitial floors (far left), keep the complex feeding of services above the occupied floors for access and change. Interior views include the main lobby (opposite, top left) and a typical corridor (left center).

OFFICE LITERATURE

For more information, circle item numbers on Reader Service Inquiry Card, pages 145-146.



LIGHTING CALCULATOR / A pocket-size "slide rule" calculator helps compute the most energy-efficient pole spacing and lamp wattages for the "PMS" series of indoor and outdoor post top luminaires. ■ Crouse-Hinds Co., Lighting Products Div., Syracuse, N.Y.

circle 400 on inquiry card



LOW-VOLTAGE SWITCHGEAR / A 28-page technical brochure on the "AKD-8" switchgear describes such features as true closed-door draw out construction; ventless breaker compartment doors to protect operators from hot gases; and an insulated/isolated bus bar system. ■ General Electric Co., Distribution Equipment Div., Plainville, Conn.

circle 401 on inquiry card



OFFICE FILING / A color booklet on *Spacefinder* files outlines each component of the TAB system, including color-coded *AlphaCode* and *CompuColor* labels, *Spacefinder* cabinets, Unit open-shelf files, *Tab-Trac* high-density mobile storage, and a full line of accessories. ■ Tab Products Co., Palo Alto, Calif.

circle 402 on inquiry card



ATTIC RIDGE VENTS / A color brochure explains the "Independent Suspension" design of the *Ridge Runner* static ventilation system, a continuous ridge vent supplied in easy-to-install four-ft modular sections. ■ Leslie-Locke, Akron, Ohio.

circle 403 on inquiry card



COAL-FIRED BOILERS / A bulletin published jointly by Kewanee Boiler and Detroit Stoker describes a line of new coal-fired package units for industrial, institutional and commercial buildings of all types. While designed primarily for coal, units can be ordered with a rear-mounted burner for gas and/or oil firing as well. ■ Kewanee Boiler Corp., Chesterfield, Mo.

circle 404 on inquiry card



BARRIER-FREE FIXTURES / Elkay catalog describes kitchen sinks, lavatories, shower valves, faucets, water coolers and drinking fountains that comply with ANSI A117.1-1980 barrier-free requirements. ■ Elkay Mfg. Co., Oak Brook, Ill.

circle 405 on inquiry card



WIDE-SHEET ROOFING / The Benoit rubber elastomer membrane roofing system is explained in an eight-page color brochure. Standard widths range from 4-ft up to 32-ft 10-in., available in 100-ft-long rolls. The Benoit roof comes without talc, eliminating the need to clean joints and saving installation time. ■ Benoit Inc., St. Paul.

circle 406 on inquiry card



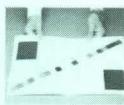
FIRE ESCAPE / Color booklet describes the *E-Z-Scape*, a UL-listed device that helps evacuate people from high-rise office or apartment buildings equipped with balconies. A telescopic, steel-pipe ladder fits into a box set into the balcony floor slab, and permits easy descent during an emergency, while preventing ascent by unauthorized persons. Literature contains step-by-step color photos demonstrating use and storage of the *E-Z-Scape*, as well as installation diagrams. ■ Naka Industries, Ltd., Culver City, Calif.

circle 407 on inquiry card



HOT WATER MACHINE / Product bulletin describes the counter-top *Bunn-O-Matic* 15-gal. hot water machine, which delivers large quantities of near-boiling water for many cooking and maintenance jobs in commercial kitchens. The preheated water will come to a rolling boil in just 60 seconds, saving energy and stove-top space. ■ Bunn-O-Matic Corp., Springfield, Ill.

circle 408 on inquiry card



STRUCTURAL FABRICS / Sample folder contains swatches of *Pro-Tec* tri-laminate polyester/pvc fabric in 12- and 16-oz weights. Applications for the flame-retardant material include solar shades, pavilion tents, canopies, arena covers and tension forms. ■ John Boyle & Co., New York City.

circle 409 on inquiry card



BUILDING TILE / A series of "Showcase" posters are offered to design professionals to demonstrate various architectural applications of ceramic tile and *Mini-Brick* thin brick. The full color, 17- by 22-in. posters will have a photo of each project, information on the design concept and architectural credits, method of construction and tile or thin brick product employed. ■ Huntington/Pacific Ceramics, Inc., Corona, Calif.

circle 410 on inquiry card



REDWOOD PANELING / The high thermal value and fire retardant characteristics of redwood are highlighted in a color brochure. Photos show various grades and patterns of wood as used in homes, offices and hotels. Instructions of interior paneling installation are included in the brochure.

■ Simpson Timber Co., Seattle.

circle 411 on inquiry card



OPEN OFFICE / A series of five booklets from Panel Concepts, Inc., a manufacturer of open plan office systems and furniture components, describes each product's dimensions, options, construction characteristics and features. The company's fast delivery program, "Turnaround 5," is explained. ■ Panel Concepts, Inc., Standard-Pacific Corp., Santa Ana, Calif.

circle 412 on inquiry card



FURNITURE / Four new Luxor product lines are introduced in a "Video Furniture" catalog. Mobile carts, consoles and cabinets are included, all available for delivery from stock.

■ Luxor Corp., Waukegan, Ill.

circle 413 on inquiry card



REFLECTIVE FABRIC / *Insalume* is a combination of polyester film, foam and fiber bonded to pure metallic aluminum, with such heat reflective uses as solar awnings, greenhouse shades, passive solar devices and sun reflectors. A set of composite samples provides design professionals with an idea of *Insalume*'s working characteristics. ■ John Boyle & Co., New York City.

circle 414 on inquiry card



POWER DISTRIBUTION / An ordering guide for I-T-E's Bus Duct systems describes a new expedited shipment capability, offered to contractors for type "XL-X" power distribution duct and type "BD" plug-in Bus duct. ■ Gould Inc., Rolling Meadows, Ill.

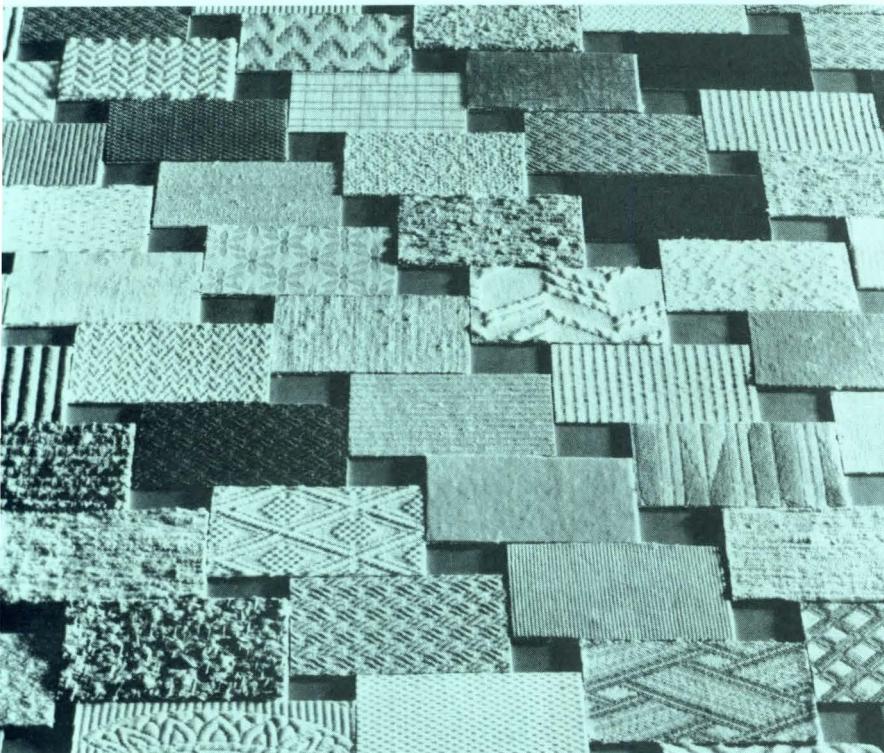
circle 415 on inquiry card



MINERAL FIBER SHEETS / Product data folder describes the range of architectural and construction applications of *Flexboard* mineral fiber and cement sheets. Photographs and charts demonstrate the boards' versatility, strength, flexibility and physical characteristics. ■ Johns-Manville, Denver

circle 416 on inquiry card

more information, circle item numbers on
Service Inquiry Card, pages 145-146



Sophisticated collection of natural weaves and colors

other collection introduced this spring is "Natecru." Brunschwig & Fils, known for its floral prints and colorful fabrics, now presents a new set of designs that have great variety, woven to emphasize natural fibers and neutral tones.

The collection is imported from France and designed by Patrick Frey, and has been divided into seven "families," which run the gamut from rough woven fabrics to vel-

vets and faux leathers. The imaginative designs are expressed solely by the weave, with variations of surface. ■ Brunschwig & Fils, Inc., New York City.

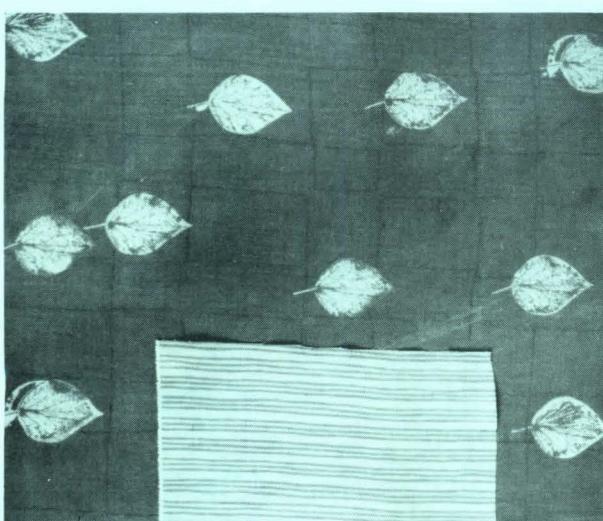
circle 301 on inquiry card

Combination of elegant designs and durable silk establish first collection

new fabric house—Upper South Studio—offers elegant designs on silks from northern China. According to founder and designer Larry Rosen, the fabrics are hand-screened and hand-dyed with light and wash-fast dyes. Shown are "Wet Creek" (inset in photo) colorways including sets of bay leaves on lavender background, and "Shady Grove," a sophisticated design of leaves spread over a subtle colored background. Custom projects are accepted. ■ Upper South Studio, Winston-Salem, North Carolina.

circle 302 on inquiry card

more products on page 111



Strength of geometric patterns equalled by brilliant colors

The spring collection from Cohama Specifier includes "Metro," a 45-in. wide, 50 per cent polyester/50 per cent cotton group of fabrics. The print collection emphasizes contemporary geometric patterns (entitled Herald Square, Wall Street, Metro, Little Touches, Neon and Sketchbook) in a full line of brilliant colors called sunshine, midnight, red, sand, powder, ebony and lime.

■ Cohama Specifier, New York City.

circle 300 on inquiry card



P L A N A



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Architect: William Kessler and Associates, Incorporated, Detroit, Michigan; Zeidler Partnership, Incorporated, Toronto, Ontario; Giffels Associates, Incorporated, Southfield, Michigan. Associated architects, engineers and planners.

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Information: Write "Planar," Alcan Building Products, P.O. Box 511, Warren, Ohio 44482.

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CHAIR LINE / The "600 Series" seating line is composed of two basic models—the Executive Series and the Operator's Series. The Executive Series includes a posture version with syncro-tilt operation, and the Operator's Series accommodates a wide range of work functions including data processing and secretarial; both are offered in 13 different styles. ■ All-Steel, Inc., Aurora, Ill.

circle 303 on inquiry card



SANITARY FLOORING / Selbagard resin flooring is towed on to form a clean monolithic surface that curves up the wall, preventing bacteria and other harmful substances from collecting in cracks. Selbagard is said to be an economical, sanitary flooring system for such light- to moderate traffic areas as locker rooms, toilets, laboratories, etc. It is available in a variety of colors and several types of finishes.

■ Selby, Battersby & Co., Philadelphia.

circle 304 on inquiry card



AUTOMATED DESIGN / Auto-trol's Entry Level System offers a lower cost automated design and drafting configuration for smaller firms. An "ELS" would consist of the Univac V77-600 minicomputer, disk drive, mag tape unit and Auto-trol "AD/380" software, with one graphics terminal. A package like this would start below \$145,000. An additional graphics terminal and other peripherals can be added as needs grow. ■ Auto-trol Technology Corp., Denver.

circle 305 on inquiry card



FLAME RETARDANT TEXTILES / Offered in two coordinating patterns, the "Micro Pyro" series is designed to meet the flame retardancy requirements of the Boston Fire Department and the FAA. Styled by Hazel Siegel, fabrics are 75 per cent modacrylic/25 per cent nylon on a flame retardant backing, available in a range of colors. ■ DesignTex Fabrics, Inc., Woodside, N.Y.

circle 306 on inquiry card



SMOKE DETECTORS / A four-wire system, the ESL 500 smoke detector operates on the photoelectric light scatter concept, providing excellent response to both smoldering and flaming fires at a sensitivity setting that reduces nuisance alarms. Each unit has one set of Form A contacts for connection to the alarm initiating circuit, and a set of extra Form C contacts for other alarm functions. There are four different "500 Series" detectors, listed to UL 268. ■ Electro Signal Lab, Inc., Framingham, Mass.

circle 307 on inquiry card

more products on page 112



Girl Scout Council Hdqtrs., St. Paul, MN Bergstedt Wahlberg Bergquist Rohkol, Architects

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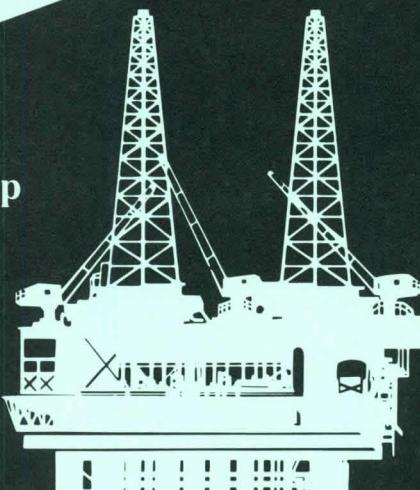
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ATTIC VENTILATORS / Broan powered ventilators are matched to attic sizes and rated at capacities of from 930 to 1600 cfm. The thermostatically controlled units are equipped with neoprene motor mountings to reduce vibration and noise; heavy-gauge flashing permits installation with hot tar for a weather-tight seal. ■ Broan Mfg. Co., Inc., Hartford, Wis.

circle 308 on inquiry card



VINYL WALLCOVERINGS / The "UltraLook" collection of fabric-backed vinyl wallcoverings includes 22 of the most popular UltraTex stripes, florals, plaids and geometrics, all priced at \$9.99 a single roll. For home or office, wallcoverings are scrubable, strippable and pre-trimmed. ■ Reed Wallcoverings, Atlanta, Ga.

circle 309 on inquiry card



OFFICE SEATING / Robert De Fuccio's "DF/81" chair series consists of this high back executive chair, a low back managerial chair, and an armless operational chair. Seating is constructed with a molded plywood shell covered with flame-retardant polyurethane. Chairs sit on a five-blade, swivel-tilt base of cast aluminum alloy, finished with a polyurethane skin. ■ Castelli Furniture Inc., New York City.

circle 310 on inquiry card

more products on page 113

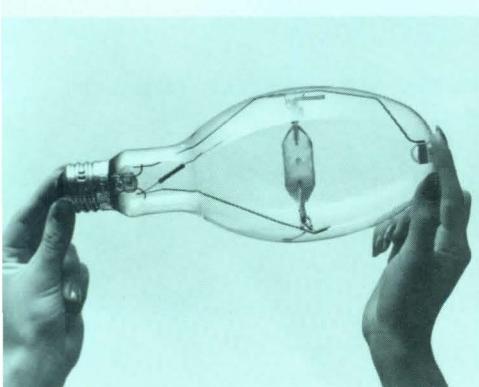


QUARTZ HALOGEN LIGHT / Available in a wall fixture as well as the floor models shown here, the "Megaron" light has a body of extruded aluminum in black, white, red or forest green lacquer finish. The base is black rubber-coated steel. The quartz halogen light source has a built-in dimmer. "Megaron" fixtures were designed by Gianfranco Frattini. ■ Artemide Inc., New York City.

circle 311 on inquiry card

TELEPHONE SYSTEM / Engineered and priced for small businesses or professional offices, the "Triad" electronic telephone system provides such features as non-locking buttons, privacy on central office and intercom lines, intercom and multi-line conferencing and calling restrictions on designated phones. The system may be easily expanded or relocated as needed. Options include music-on-hold, speaker phone operation, mobile radio tie-in, paging, etc. ■ Executone, Long Island City, N.Y.

circle 312 on inquiry card



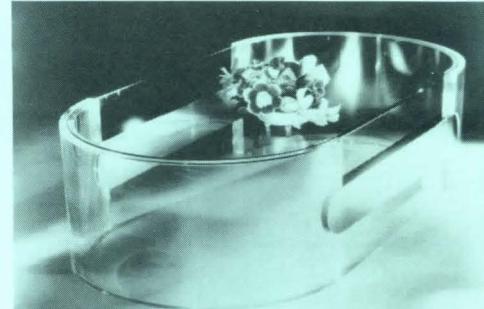
METAL HALIDE LAMP / General Electric's 400-watt horizontal-burning, vertically-operated arc tube multi-vapor lamp is said to provide significant increases in usable light over competitive lamps. Its "Genie-Arc" construction also ensures longer life at better lumen maintenance than universal-burning metal halide lamps. Primary applications include area lighting, displays, building floodlighting, and interior lighting of commercial areas and offices. ■ General Electric, Cleveland, Ohio.

circle 313 on inquiry card



VERTICAL FILE / Looking like a conventional tub file from the outside, the GABS vertical filing system contains an improved and cost effective way to file permanent engineering drawings, maps, tracings and linens. Up to 8000 documents, 60-in. wide, can be filed together by project in one-third the space required by flat drawers. ■ G. B. F. Filing Systems Ltd., Mississauga, Ont.

circle 314 on inquiry card



COFFEE TABLE / The "St. Moritz" low table has a 1½-in.-thick glass top set into oval-shaped end supports of clear, 1½-in.-thick acrylic. Two oval stretchers of brass and chrome tie the pieces together. ■ Paul Associates, New York City.

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more products on page 115



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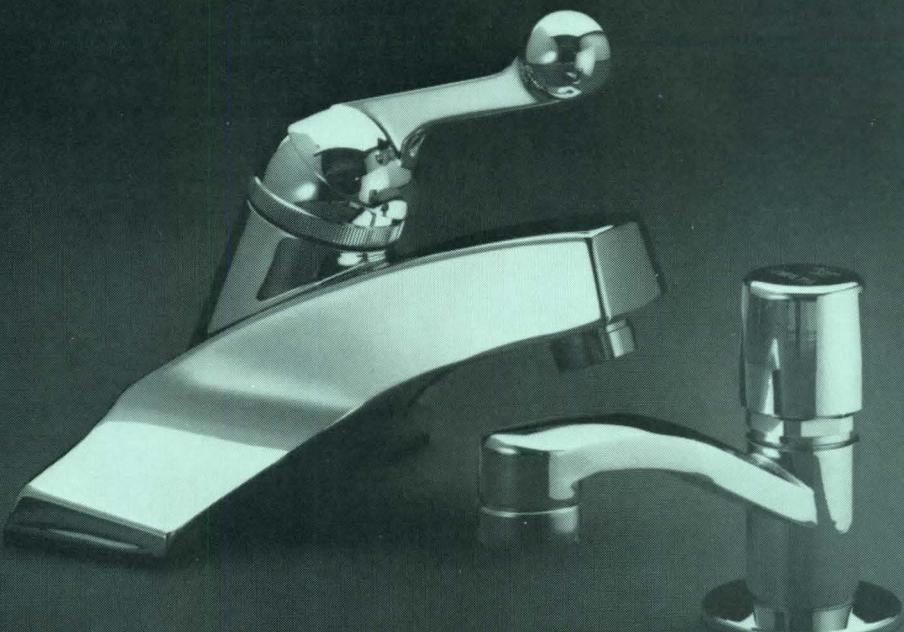
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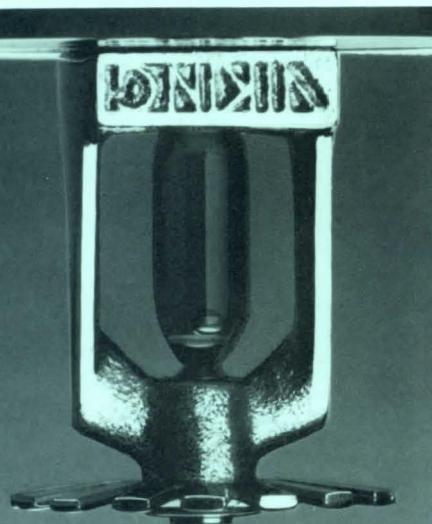
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OFFICE CHAIR / A shaped aluminum arm is now available for all models of the *Echelon* chair—desk, conference or visitor—either polished, as shown, or in a choice of thermoset finishes with matching base. The new arm is interchangeable with the currently available upholstered arm. Seat and back construction features a soft, loose cushion effect, upholstered in all standard Vecta vinyls, fabrics or leather. ■ Vecta Contract, Grand Prairie, Tex.

circle 316 on inquiry card

WALL-MOUNT COOLERS / Several internal modifications to the design of the "On-A-Wall" series of pressure water coolers have produced higher performance ratings, according to the manufacturer. An insulated tank-type storage system reduces compressor starts and operating time; most component parts carry a five-year warranty. All metal parts are either stainless steel or brass. An optional "Hot 'N Cold" version delivers 45 six-oz cups of very hot water per hour for making coffee, tea, soups, etc. ■ Oasis Water Coolers, Columbus, Ohio.



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BRITISH CARPETS / A contract Axminster line especially developed for the U.S. market, Wilton Royal's "Design Plan" includes the larger-scale graph and square pattern shown here. Carpet pile is 80 per cent wool/20 per cent nylon, offered in four different qualities and 3- and 12-ft widths.

■ Wilton Royal Inc., Everett, Mass.



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HEAVY-DUTY CARPET / Offered in eight different multi-hued colorways, "Plymouth" commercial carpeting of *Antron III* nylon has been designed to meet the wear requirements of high-traffic interiors. Carpeting is manufactured in 12-ft

widths. ■ Weave-Tuft Carpet Corp., New York City.

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EPICORE The Weight Lifter 308 psf

Specifications:

EPICORE® Composite Deck
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10' Span
Unshored
Lightweight Concrete
5 1/4" Total Slab Depth
3-Hour Fire Rating
No Spray-on Fireproofing

Change the gage, the slab depth, the span or the concrete.

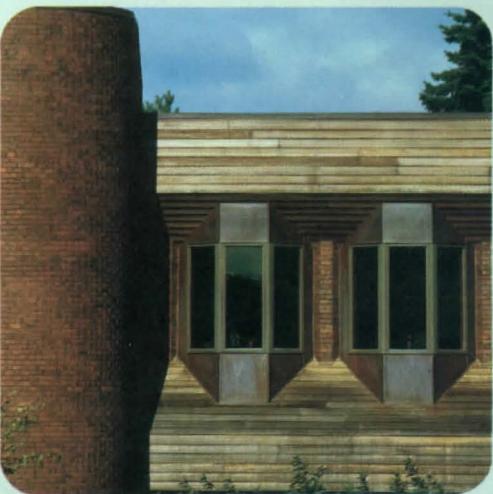
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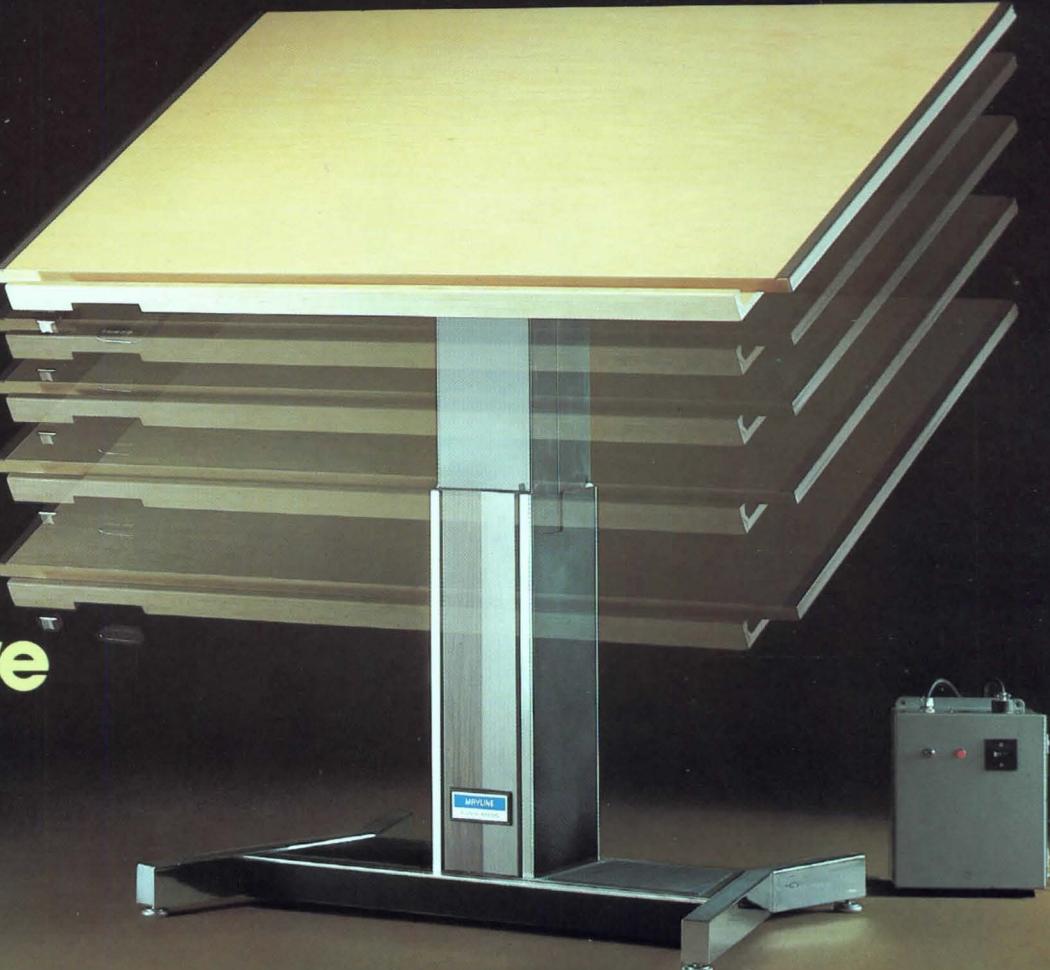
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After 7,920 cycles the only thing that failed was the timer we bought for this test.

We wanted to prove just how well our new Futur-Matic drafting table is made. So we tested its durability using some unusual methods.

First we connected a power supply equipped with a counter/timer to our unique fingertip controls. They're located in one convenient place so you can change board height and tilt angle with just one hand. Then we cycled the electric motor driven pedestal through its 20-inch travel range. Day after day the pedestal and top moved up and down simulating years of regular use. Our testing finally stopped when the counter/timer failed after 7,920 cycles. Futur-Matic showed no signs of fatigue or wear.



Next we wanted to test the lifting power and stability of our telescoping pedestal. Unlike competitive models, Futur-Matic features an all-gear drive that's free from belts for smoother operation and a ball bearing actuator for longer drive mechanism life.

To demonstrate, we had one of our technicians (he weighs about 195 pounds wet) carefully sit on the drafting top while we raised the pedestal to its maximum height. The result: No motor hesitation. No pedestal wobble. We don't recommend, however, that our customers try a stunt like this.



Finally we wanted to see if our double tilt angle locking mechanism will hold under strain. Once again Futur-Matic passed with flying colors.



If you're ready to test your own Futur-Matic, see your Mayline "Quality" dealer today. He'll also show you the matching Futur-Matic reference desk and a complete line of drafting room furniture and equipment.

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Architect: Travers/Johnston, A.I.A., P.C., Portland, Oregon

Interior Design: Associated Design Consultants, Portland

Engineer: Peterson Associated Engineers, Inc., Portland

Lighting: Lite Duct by Peerless, one of the 13 Longlite systems. Here, blue 6" lensed fixtures hang at stepped intervals, creating the one dramatic accent in an otherwise conventional space. Lite Duct comes in seven diameters and configurations, in any finish, extends to any length, and adapts to virtually any optical task.

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