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BUILDING TYPES STUDY: MUSEUMS

ARCHITECTURAL ENGINEERING: FABRIC ROOF FOR A BULLOCK'S STORE

FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

FEBRUARY 1982

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Letters to the editor

I applaud the article "Is modern architecture dead?" by Ada Louise Huxtable [RECORD, October 1981, pages 100-105]. It is unfortunate that her clarity of thought is not as widely read as some less credible critics, i.e., Tom Wolfe. Not mentioned is the tragedy that schools of architecture experienced when many were quick to abandon their academic objectivity and fall in line so readily with myopic blinders, polluting otherwise objective courses and reducing design education to historical eclecticism and step-by-step recipes. Academia, consequently, dealt a severe blow to its own credibility. Many students learned design as a high-impact periodical image and never gained even a conceptual sense of the basics.

A. J. Davis, Architect
Cambridge Seven Associates, Inc.
Cambridge, Massachusetts

In "Is modern architecture dead?" Ada Louise Huxtable used far too many words to convey many wise thoughts on the current intellectual squabble over directions in architecture touched off by such celebrities as Philip Johnson and Tom Wolfe.

In all of the current debate, the work of Frank Lloyd Wright seems to be overlooked, probably because he was one architect who had explored all the avenues now being talked about, and more. The glass-clad skyscraper (Rogers Lacy Hotel), the polychrome facades (Hillside Galleries), mirrored interiors (Mercedes Benz Showroom), ancient forms such as columns and arches rethought (Gammage Auditorium and Morris Store), earth-bermed houses (Jacobs Hemicycle), patterned roofs and roof edges (Marin County), the revival of the atrium (Larkin Building and Guggenheim), and skeletal structural systems (exhibition pavilions of the 1950s on the Guggenheim and Hollyhock sites, Hillside Drafting Studio).

He did not, however, design buildings intended to look as if they were unfinished or falling down. Nor did he relentlessly pursue one form of expression, as did Mies in his later years. At the same time he designed the multicolumned (with capitals, too) Arizona State Capitol, he was sketching out Trinity Chapel. He didn't hesitate to rethink traditional architectural grammar from his earliest works to his last, but he always gave it a fresh look that made it appropriate for its use wherever it appears.

As a lifelong student of Wright's work and word, I have never understood why so many American architects and a few critics failed to grasp the lessons that he left so plainly for

all to see. When one surveys the current scene via the magazines, one senses that each architect is trying to outdo his peers with outlandish designs so as to rush into print. Some efforts are downright ugly. Crude, undisciplined, ill-proportioned structures litter the pages of contemporary journals.

Of course there are exceptions. Out of the blue and on the cover of ARCHITECTURAL RECORD [March 1981; also pages 88-93] comes the Fay Jones chapel we all admire. It respects tradition, site and purpose in a natural way. Here the architect made a clear statement all the stronger for not resorting to fashionable devices. To quote Frank Lloyd Wright, "Your success will come—not by vanity, not by way of ambition, but naturally—the way it came to me naturally, although I waited almost 60 years."

Charles Montooth
The Frank Lloyd Wright Foundation
Scottsdale, Arizona

I've just finished going through your December 1981 issue, and once again I am moved to say what a compelling magazine you publish. I see quite a few consumer, professional and trade magazines, and I certainly think that from the point of view of graphics and editorial content yours is quite up there at the top. It is a pleasure to read and look at.

I hasten to add that I have no clients directly or indirectly related to your field of interest at the moment, so that I cannot be accused of apple polishing, I wish you continued artistic (and commercial) success.

Amos Landman
Senior Vice President
Ruder & Finn, Inc.
New York City

True confession: once, while dining at a table very much like that depicted, rail-side in the photograph of the East Bay Trading Company [RECORD, December 1981, page 46], my knife slipped from the table (as knives will) and plunged two stories down, where it stabbed to the heart a pair of shoes (mercifully unoccupied).

This was so terrifying that I recommend that Award Winners and others dam up their railings in the vicinity of cutlery.

Diane Blitzer
Architect
McLaughlin/Diaz
Portland, Oregon

Correction

The address of the new firm Der Scutt & Associates, given in error in the November 1981 RECORD, is 244 Fifth Avenue, New York, New York.

Calendar

FEBRUARY

17 Conference, "Marketing Engineering and Technical Consulting Services Overseas," at the St. Francis Hotel, San Francisco; sponsored by the U.S. Department of Commerce, International Trade Administration. Contact: Fred Pursell, (415/556-5860).

Through February 18 Exhibit, "The Historic American Buildings Survey in Ohio," architectural drawings representing Ohio's architectural heritage from 1933 to 1974. At the Gallery at the Old Post Office, 120 West Third St., Dayton, Ohio.

Through February 21 Exhibit, "To Unite in Fellowship," celebrating the 125th anniversary of the American Institute of Architects, at the Octagon, 1799 New York Ave., N.W., Washington, D.C. Contact: Allison MacTabish, (202/638-3105).

MARCH

1 Seminar, "Marketing Architectural Services for Housing," sponsored by the American Institute of Architects Housing Committee and the Society for Marketing Professional Services; at the AIA National Offices, 1735 New York Ave., N.W., Washington, D.C. Contact: Richard Van Os Keuls, (202/626-7429).

19-20 Seminar, "Architectural Engineering Lighting," at the Birmingham Alabama Hilton Hotel; sponsored by University of Alabama in Birmingham Department of Special Studies, co-sponsored by the Illuminating Engineering Society. Contact: The University of Alabama in Birmingham, Special Studies, 1101 South 11th St., Birmingham, Ala. 35294.

29-30 Seminar, Protection of Historic Architecture and Museum Collections from Earthquakes and Other Natural Disasters, held in the auditorium of the National Academy of Sciences in Washington, D.C.; organized by the Architectural Research Centers Consortium, Inc., with financial support from the National Science Foundation. Contact: James Haecker, Architectural Research Centers Consortium, P.O. Box 225, Fairfax, Va. 22030.

APRIL

19 Seminar, "Computer Graphics in Architecture & Engineering," on computer-aided drafting and design; to be held in Boston; sponsored by the Paper Plane, a newsletter for document production management. Program will be repeated April 21 in Chicago; April 23 in Los Angeles; May 17 in Washington; May 18 in Houston, and May 20 in Denver. Contact: George Borkovich, Editor, The Paper Plane, 3400 Edge Lane, Thorndale, Pa. 19372.

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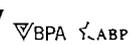
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AIA's new *Sourcebook*—the most effective tool yet for encouraging public education in architecture

For years, many architects have been complaining (or have at least been concerned) that "people don't really understand what we do. They don't understand architecture—and they don't seem to care much about it. . . ."

And for years, a relatively small handful of architects and educators have been struggling to develop a meaningful way to teach the general public (and especially school-age children) at least something about architecture and planning and design.

This kind of public education is a passion of now-retired RECORD senior editor Elisabeth Kendall Thompson—and I remember her raging (in her gentle Southern manner, of course) that children were taught to play band instruments at public expense, required to "take art," whether they wanted to or not, but were scarcely exposed to the word "architecture." Betty—and many other concerned architects—struggled on committee after committee to encourage the introduction of environmental education into schools, to develop curricula, to build the interest of teachers and school boards. Many architects have volunteered as community workshop leaders, teachers, legislative activists; or have organized "Archifests," guided tours, or other forms of adult education. Similarly, many concerned educators have, mostly on their own, developed programs for their classes and taken students into the community to consider the nature of their environment.

The trouble has been that the successes have been isolated and unsung. If a teacher were interested in developing a program of environmental education in the school, where would he or she turn for help? What programs have been successful? What resources are available? Where are there any instructional and activity guides?

Well, now there is an answer to that question (or at least the beginnings of an answer), and the credit goes to AIA's Public Education Committee and its staff director Alan Sandler. AIA has just published *The Sourcebook*, properly described as "a unique system of information about current environmental education projects, activities, and curricula materials that spans the entire learning spectrum, from kindergarten through college."

The *Sourcebook* was developed after considerable research and consultation. The preface states that "In 1980, the AIA conducted eight surveys to determine the needs

of the education community. . . . Over 900 persons were contacted throughout the country, including state environmental education coordinators, primary and secondary school teachers, education administrators, graduate faculty of architecture and education, textbook publishers, representatives of non-formal education sectors—including television, children's magazines, and museums, and AIA components. . . . The content of the resulting *Sourcebook* is divided into four key sections—in a bidder format so that additional material can be added."

■ The first section is "Models"—descriptions of seven environmental education programs that have proven especially effective. Sample: "Beaumont, USA"—a seventh-grade combined history and art course on local architectural heritage taught in public and parochial schools in Beaumont, Texas, developed jointly by the Beaumont Art Museum and the Heritage Society. Described is a seven-month, five-unit program: "Discovering Architecture" introduces the concept of the built environment and architecture as a fine art "embodying the elements of space, human scale, structure, decoration, and design." "What is Style?" introduces "world and American architecture as reflected in Beaumont, using the school and various neighborhoods as outdoor classrooms for discovery. . . ." Other units concentrate on the changes in design over the years, on studying the new construction in the community (with emphasis on the impact of an urban mall then under construction in Beaumont), and strategies for preservation of historic places and neighborhoods. Various teaching methods and resources used in different Beaumont schools, contributions (as teachers and advisors) of local architects, and teaching materials are described.

Other "Models" in this first *Sourcebook* focus on the study of local environments, the earth's resources, the nature and history of street environments, and local environmental problem-solving projects.

■ The second section of the book is "Resources"—a listing of 29 commercially available teaching aids—planning workbooks, teaching materials, visual aids, suggested classroom and community activities—indexed by grade level, subject area (art, science, social studies) by setting (classroom, studio, field trip, etc.) and by scope (for example: communities, structures, design, heritage, natural laws . . .). These resources were

recommended by educators from around the country, and chosen for inclusion by the Public Education Committee.

■ The "Bibliography" section of the *Sourcebook* is an annotated list of three dozen books especially recommended for students and teachers—ranging from *Walden* and *Silent Spring* to Bucky Fuller's *Operating Manual to Spaceship Earth*, Rene Dubos's *So Human an Animal*, and Robert Stern's *New Directions in American Architecture*.

■ The very valuable "Network" section of the *Sourcebook* lists, by state or region, people or organizations that teachers or administrators can contact for help and advice. Included are AIA contacts, state environmental education coordinators, education organizations, local/regional resource centers, and community resource people—with a brief description of their special expertise and/or materials they can make available.

Finally (and thus the loose-leaf binder format), the Public Education Committee is encouraging architects and educators alike to make suggestions for additions to each of these sections of the *Sourcebook*. Reply cards are included in the *Sourcebook* for recommending additional model programs, or for volunteering as a "resource person" in the Network section.

The *Sourcebook* is being sold by AIA for \$25, and an annual subscription service to the additions made each year by the Committee is \$10.

You know what I'd do if I were an architect concerned that "people don't understand architecture—and they don't seem to care much about it. . . ."? What I'd do is send \$25 to AIA Publications Marketing/Sales, 1735 New York Avenue N.W., Washington DC 20006. And if I agreed with this rave review disguised as a magazine editorial, I'd buy some extra copies and give them to the head of the local board of education, or to an involved and appropriate teacher in my child's school, or to the school superintendent.

As the title of this editorial makes clear, I think this is the most effective tool yet for encouraging public education in architecture. Let's get it to the people—that is the educators—who can use it. Let's help the children learn at least as much about architecture as they do about trumpet playing or finger painting. If nothing else, after all, one of them might grow up to be a good client.

—Walter F. Wagner Jr.



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Construction contracts fell 10 per cent in November, worsening an already depressed construction market, according to George A. Christie, vice president and chief economist for the F.W. Dodge Division of McGraw-Hill Information Systems Company. The total value of newly started construction projects declined to \$9.7 billion in November, after a brief period of stability in the fall. Contracts for nonresidential construction totaled \$4.4 billion, down two per cent from the previous month's value after seasonal adjustment. Residential building, with a total of \$3.7 billion in newly started projects, which includes hotels and other nonresidential buildings, revealed a 10 per cent decline from October's value after seasonal adjustment. Over the past 12 months, the annualized value of construction contracting has fallen 31 per cent to a total \$129 billion, compared with \$187 billion a year ago. "November's contracting data showed that even though credit conditions were beginning to ease, construction markets had not yet caught up with the changing economic environment," said Christie. "Housing failed to respond to falling interest rates in the latest month, and commercial and industrial building showed a degree of strength that was inconsistent with the awareness of an oncoming recession. However, turning points in both these categories of construction are imminent, and soon should become evident."

The University of Wisconsin in Milwaukee is offering a new Ph.D. program in architecture. The program is now accepting applications for the fall of 1982. The area of concentration will be in environment-behavior studies, intended for persons who seek careers in research and teaching architecture and allied fields, in consulting, or in roles in government and professional practice requiring advanced skills and research experience. The school has been offering a master's degree in architecture since 1975. For further information contact: Uriel Cohen, coordinator, Ph.D. Program in Architecture, Department of Architecture, School of Architecture and Urban Planning, The University of Wisconsin-Milwaukee, Milwaukee, Wisconsin 53201.

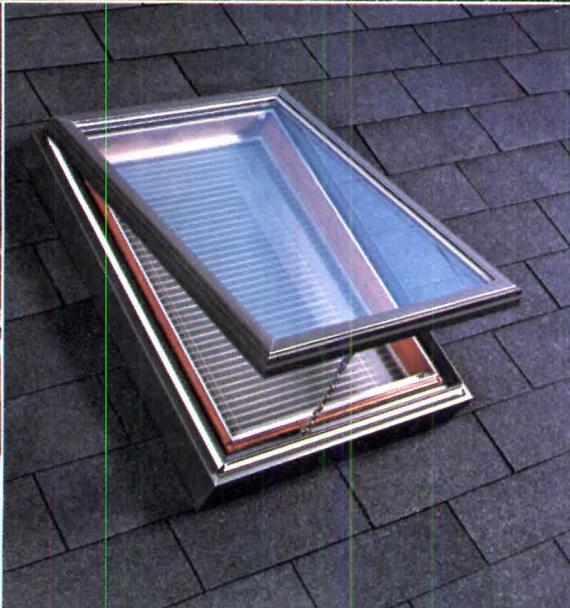
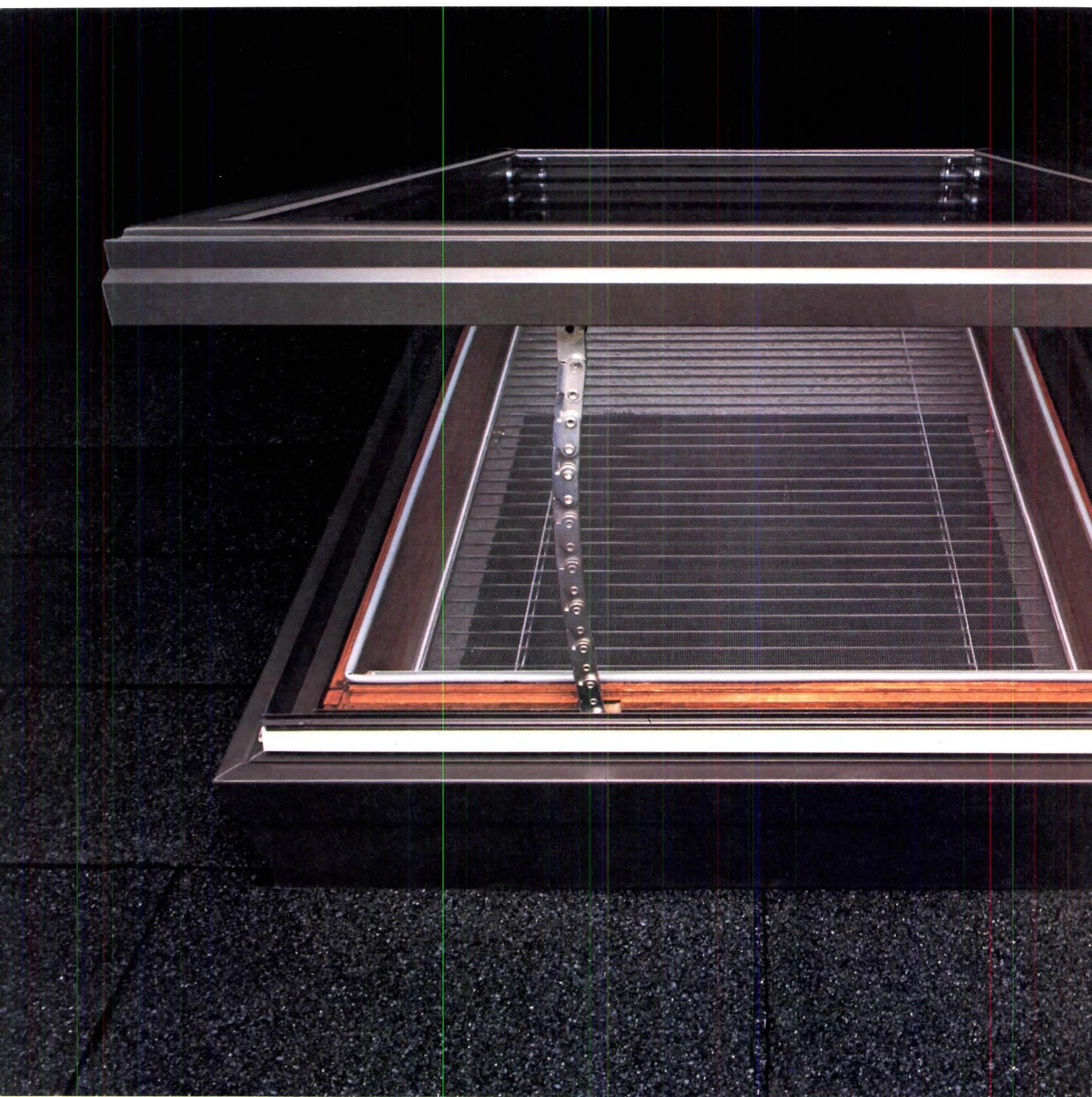
George Nelson, architect and industrial designer, will be chairman of the International Design Conference in Aspen, which will take place from June 13 to June 18. Nelson will develop the theme "The Prepared Professional" for the 1,500 design professionals from a variety of disciplines who are expected to attend Aspen's 32nd international symposium. Nelson is president of George Nelson Associates, a New York-based design management consulting firm.

"The Museum Building Boom" will be the topic of the second annual "Directions in Architecture" symposium at the Cooper-Hewitt Museum in New York City, on February 23. Architects Emilio Ambasz, Hugh Hardy and Cesar Pelli will be panelists, and Arthur Rosenblatt, vice president for architecture and planning at the Metropolitan Museum of Art, will be the moderator. Each participant is currently involved with at least one museum with an active building program and will give a presentation of his work. Admission is \$10.00. For further information call 212/860-6868.

An international computer/graphics conference will be held in Washington, D.C. on March 22-26. The conference and exhibition on the application of computer technology for the building process is being co-hosted by the Advisory Board on the Built Environment of the National Academy of Sciences and the World Computer Graphics Association in cooperation with the International Planning Committee. Members of the building industry in Australia, Czechoslovakia, England, France, Hungary, Israel, Italy, Japan, the United States and West Germany will be among those attending the conference. The conference fee is \$325.00. For further information contact: World Computer Graphics Association, 2033 M St., N.W., Suite 250, Washington, D.C. 20036, 202/775-9556.

Landscape architect Lawrence Halprin's design sketches will be exhibited at the Philippe Bonnafont Gallery in San Francisco between January 20-February 27. The opening of the exhibit corresponds to the completion of the Levi Strauss Plaza at Battery Street and Union Square in San Francisco, designed by Halprin. The exhibit will include drawings of the Crocker Plaza in Los Angeles, the Portland Pioneer Square competition, Jackson Place Plaza in Indianapolis, the Los Angeles County Library Garden, and the Old City in Jerusalem. Halprin's current projects include the Yerba Buena Center in San Francisco and continuing design work on the Old City in Jerusalem. The gallery is located at 478 Green St., San Francisco.

The work of Robert Adam, a Scottish architect-designer, will be on exhibit at the Cooper-Hewitt Museum in New York City, from January 19 to April 11. "City Dwellings and Country Houses: Robert Adam and His Style" will bring together, for the first time in the United States, original Adam drawings, furniture and silver from public and private collections in the United Kingdom and America. Adam worked during the 18th century, and the exhibit will cover every stage of his career. A documentary film that shows many of Adam's buildings, "The Hand of Man" by Scottish film-maker Murray Grigor, also will be shown as part of the exhibit. The museum is located at 2 E. 91st Street, in New York City.





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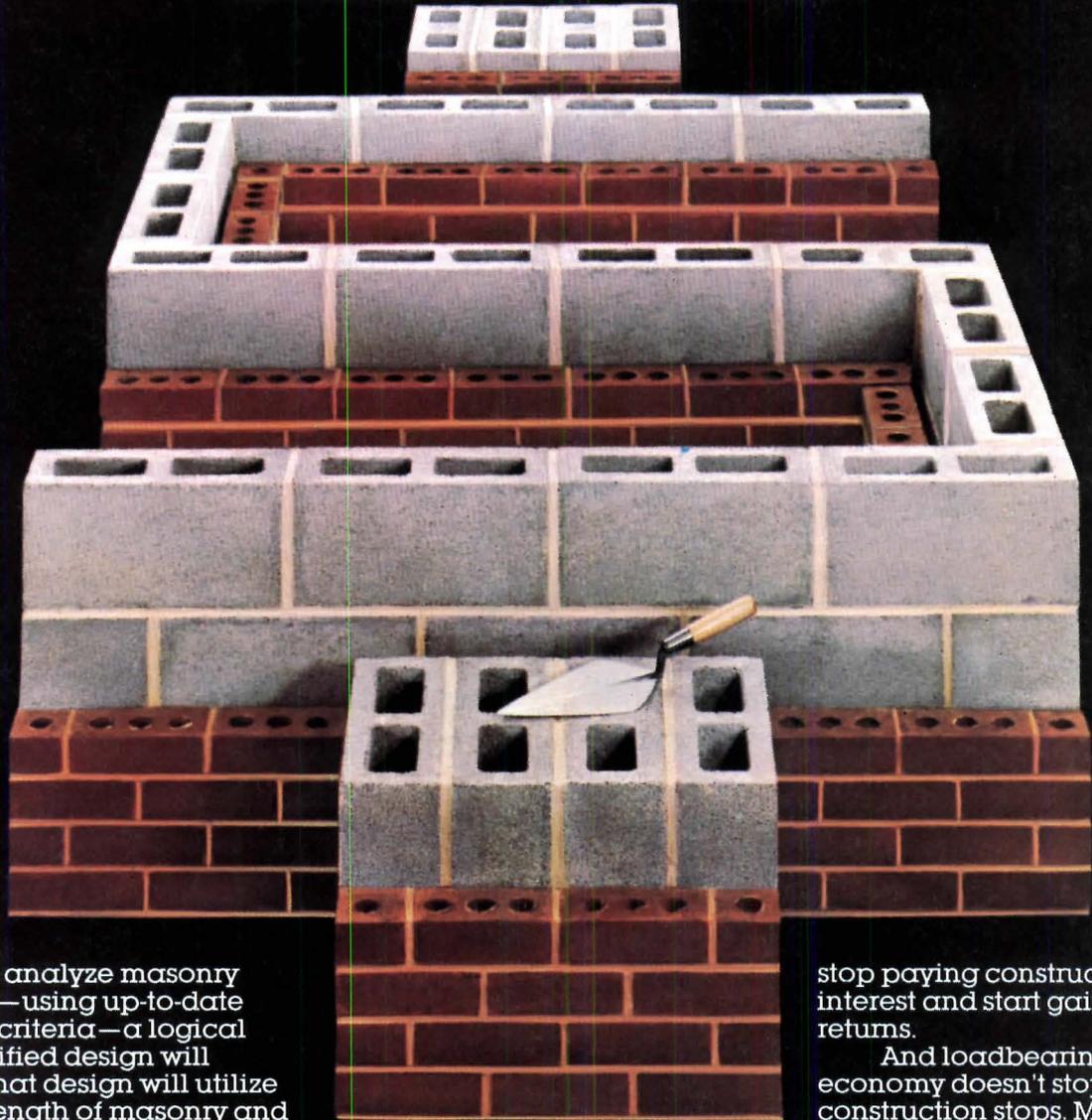
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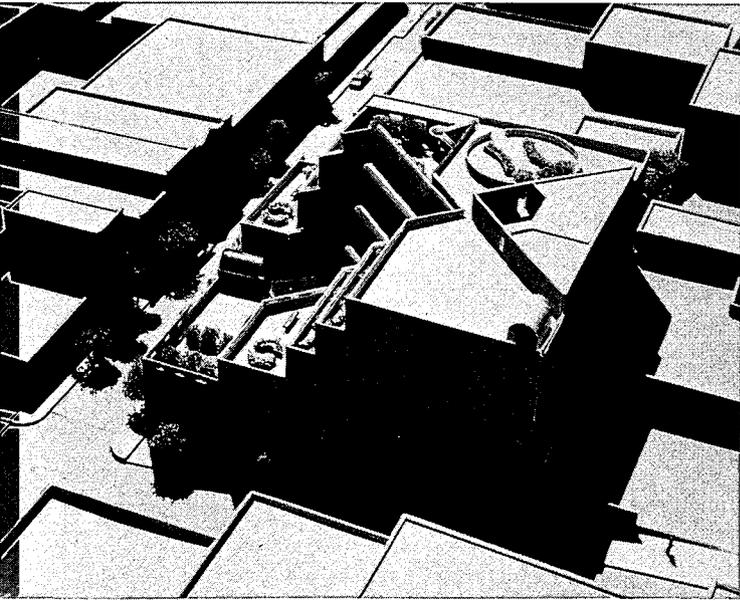
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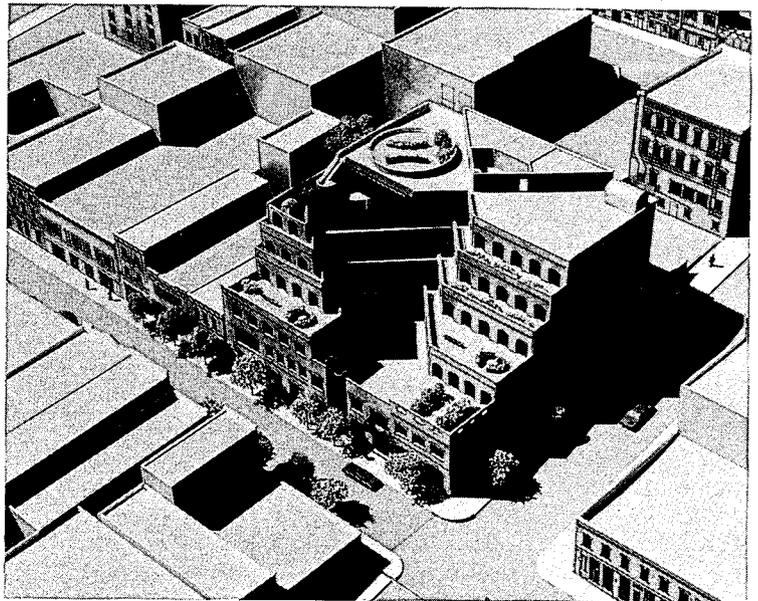
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San Francisco's historic district is site of new mixed-use building

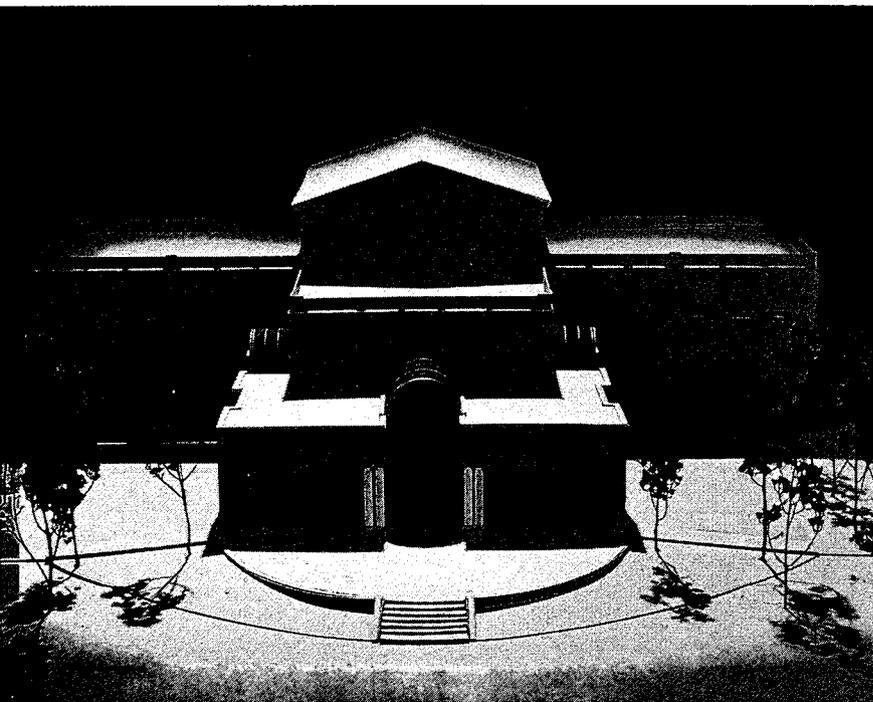
The Munselle/Brown Partnership, Inc. of San Francisco is adding a mixed-use structure to the Jackson Square Historic District, north of San Francisco's financial district. "The building is one of a new breed of buildings that is dedicated to preserving and enhancing the historic and urban fabric of

the neighborhood by relating the street facades harmoniously with the adjacent facades and designing a building that is sympathetic in scale, form and proportion to the older buildings in the historic district," said architect Theodore W. Brown. Located on the corner of Pacific and Montgomery,



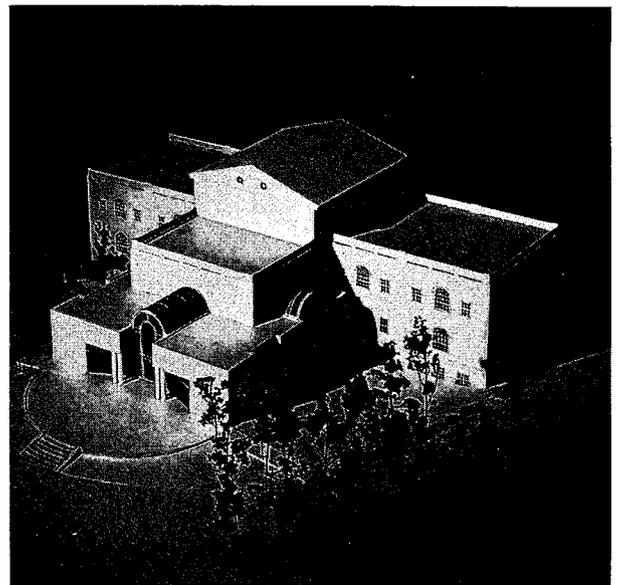
the structure contains 11,500 sq ft of retail space on the ground floor and about 54,000 sq ft of office space on floors two to six. Two pedestrian entrance ways open onto a 24-ft-high atrium. The fourth, fifth and sixth stories are set back, creating terraces at the upper levels. Colored concrete

is used on the south facade's upper three stories, and all windows above street level are tinted bronze for energy conservation. Richard Kulka and Westlake Development Company, Inc. are developing the project at a cost of about \$12 million. Completion is expected in 1983.



University of Vermont's 52-year-old museum is being renovated

The Boston firm of Crissman & Solomon Architects Inc. has designed the addition and renovation of the University of Vermont's Robert Hull Fleming Museum in Burlington. The renovation is being undertaken, in part, to reorient the museum toward the campus. A new entrance has been



designed for what was formerly the rear elevation. A new elevator and interior ramp will provide wheelchair access to all public portions of the building. The museum, which was built in 1930, is also being renovated to meet current building code, museum climate and security standards.

According to Colleen Montgomery, the museum registrar, the museum will be petitioning the State legislature this spring to help finance the project. The estimated cost of the renovation is just over one million dollars. Construction is planned to commence sometime this summer.

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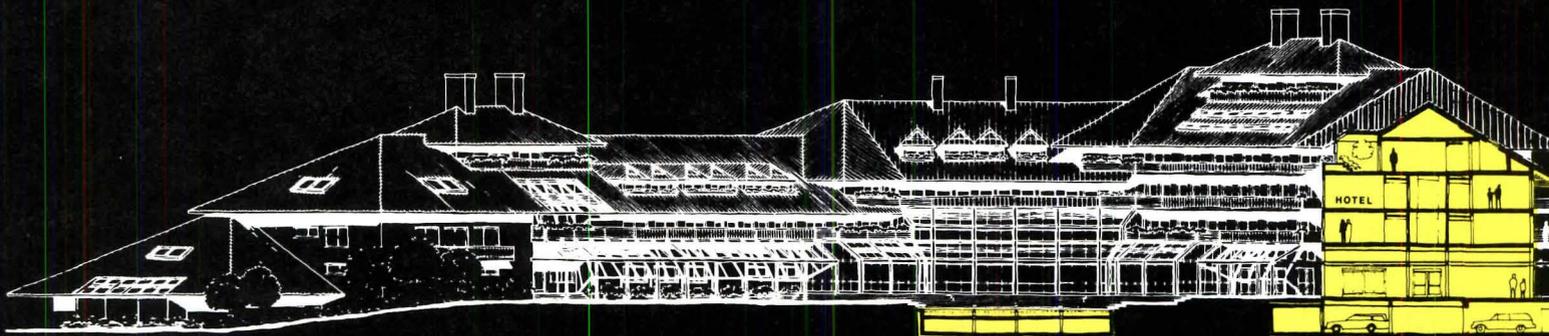
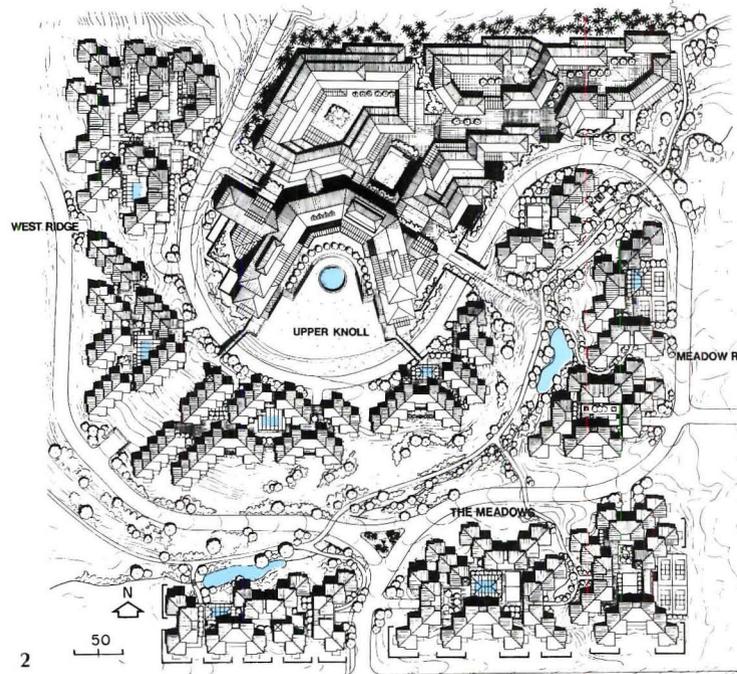
Architect: Archeon, Inc., Memphis, TN

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CARLISLE

DESIGN AWARDS/COMPETITIONS

The Boston architectural firm of Goody, Clancy & Associates has won an open two-stage competition sponsored by the developers Caltenco-Colorado for the design of EagleRidge, a \$160-million resort community to be constructed in Steamboat Springs, Colorado. Elements of Goody, Clancy's premiated design are illustrated below and opposite; submissions from the other four finalists appear overleaf. Bill N. Lacy, FAIA, professional advisor for the competition, observed that "the developers exhibited a level of esthetic concern that is truly unusual." Excellence in the design of investor and institutional office buildings is the criterion for an annual awards program recently inaugurated by another developer, the New York-based Reliance Development Company. The first three projects honored by Reliance are shown on page 44.



3

EAGLERIDGE DESIGN COMPETITION

The 37-acre EagleRidge development has been conceived as a year-round, family-oriented resort. Located about 1,000 feet from ski lifts at the foot of Mount Werner, the site encompasses open meadowland rising 110 feet from Burgess Creek to a plateau with panoramic views of the Yampa River Valley and surrounding peaks. The nine-phase construction program, scheduled to extend over a period of five to eight years, will ultimately comprise 341 condominiums, a 194-unit lodge and hotel, and 81,900 square feet of mixed-use commercial, retail, and office space, and conven-

tion facilities. A six-acre tract adjoining Burgess Creek will be reserved as a park with landscaped pathways for joggers and cyclists.

Besides stressing the importance of ecological and esthetic harmony with the natural environment and with the nearby town of Steamboat Springs, the sponsors encouraged entrants to regard the competition project as "an opportunity to combine the latest technologies related to housing by experimenting and developing them at the luxury level where they can become realities. These innovative concepts can then be used

to improve the quality and design of lower-cost housing." In addition to jury chairman Moshe Safdie, director of the Urban Design Program at Harvard University's Graduate School of Design, the panel included architects Ralph L. Knowles, FAIA, and Charles W. Moore, FAIA; landscape architect M. Paul Friedberg; and Gordon and Stephen Gunn, chairman of the board and president, respectively, of Caltenco-Colorado. The jury has agreed to extend its participation in the project as an advisory panel during both the design and construction phases—a role which is unprecedented



WEST ELEVATION
4

PREMIATED DESIGN: GOODY, CLANCY & ASSOCIATES



5



SOUTH ELEVATION

ed in competition history, according to Bill Lacy.

In addition to receiving the \$20,000 award presented to each finalist, Goody, Clancy has been retained to complete the EagleRidge master plan and produce contract documents for the first phase of construction. Selected jury remarks and description of the projects submitted by the four runners up—Lun Chan Associates, in San Francisco; Fraser Thomson and Associates, in St. Louis; Architecture Studio, in New York; and Wou International, in Newport Beach, California—follow commen-

tary on the winning design.

The jury remarked that **Goody, Clancy & Associates'** "organizing concept of grouping the individual units to form larger clusters, accommodating the parking platforms, forming little hillsides in the meadows or jagged pyramid-like clusters on the slope, and building up to the hotel as focal point, resulted in a dramatic development perceivable at a distance and offering varied and rich spaces within. The organizing arrangement is not a formal, imposed order . . . but rather one which is versatile and responsive, resulting in

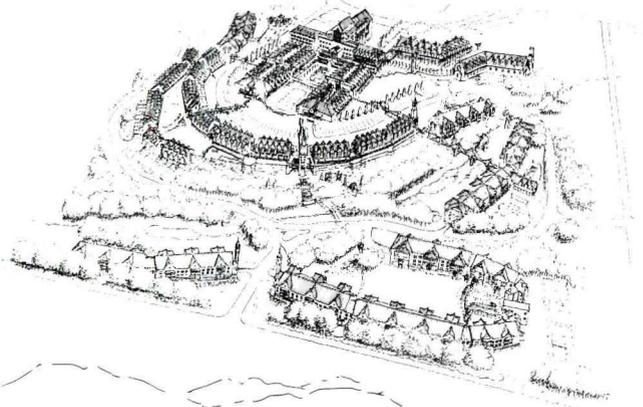
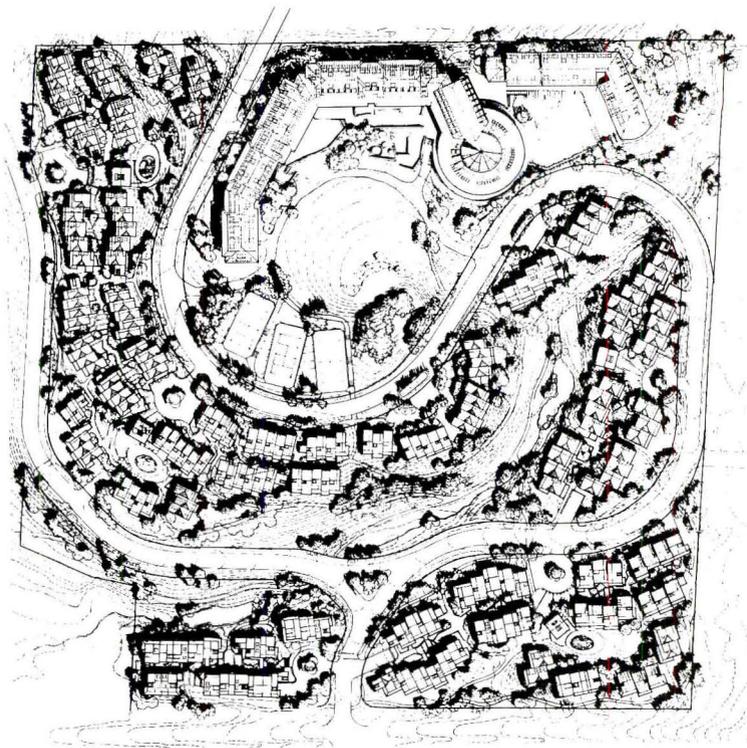
the arrangement of buildings and public spaces in a manner in which the site features are maximized. The circulation system of walkways and paths, crossing the road and descending the hill, similarly demonstrates the abilities of the organizing concept to respond effectively to the site's opportunities."

A key element of the residential sectors is interlocking configurations of L-shaped dwelling modules (Figure 4), stepped to follow the terrain and sited with north-south/east-west orientations for optimal exposure to sunlight and views. All parking is

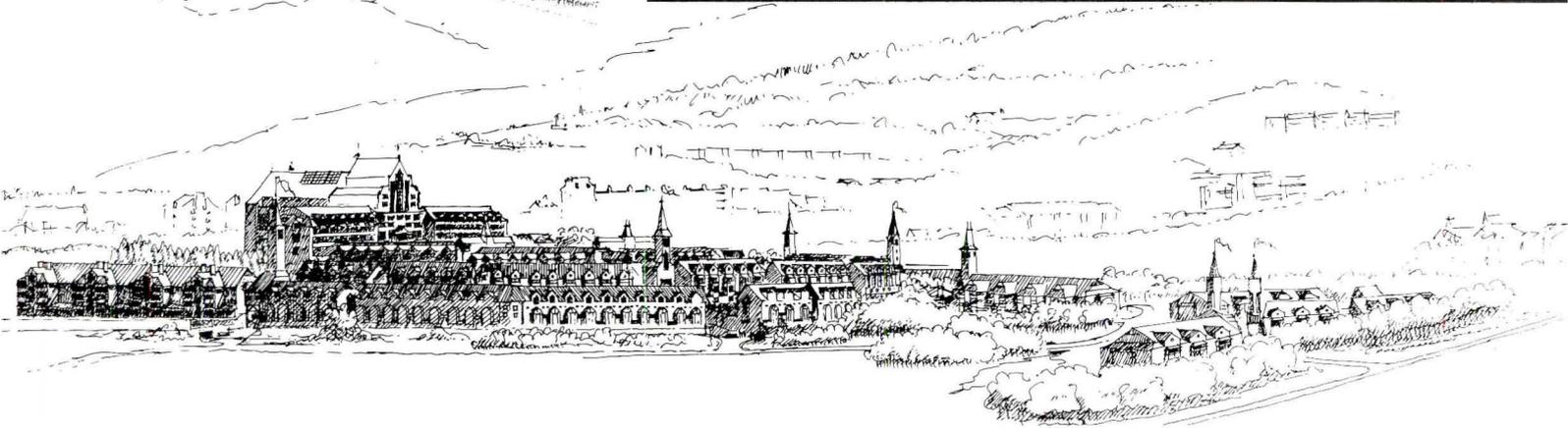
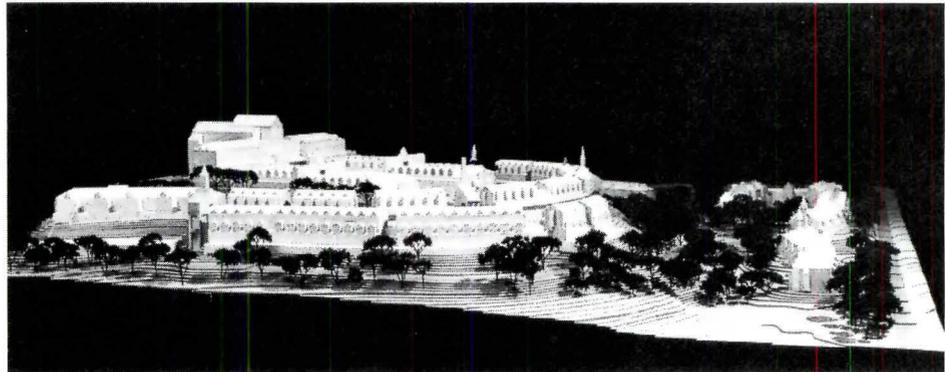
underground and pedestrian bridges span sunken roadways. The "commercial plaza" programmed for the northeast zone of the site is laid out along a pedestrian street (Figure 5) that connects the Mount Werner Ski Base to the Great Court of EagleRidge Lodge (Figure 3). Sheltered terraces furnish year-round settings for outdoor cafes and public gathering places. In cooperation with the sponsors and the jury/advisory panel, Goody, Clancy have continued to refine their project. The principal modification (apparent in a comparison of the original site plan, Figure 1,



LUN CHAN ASSOCIATES



FRASER THOMSON AND ASSOCIATES



and a more recent layout, Figure 2) advances the hotel/lodge to the most prominent area of the upper knoll, enhancing its impact as the cynosure for all of EagleRidge.

Lun Chan Associates envisioned EagleRidge Lodge as a commanding landmark that would endow Steamboat Springs with an image as memorable as those of the Grand Hotel on Mackinac Island or the Hotel del Coronado in San Diego. Housing is massed in low clusters, visually subordinated to the Lodge, with its conical metal roof—recalling the great cupola of the Hotel del Coronado—and

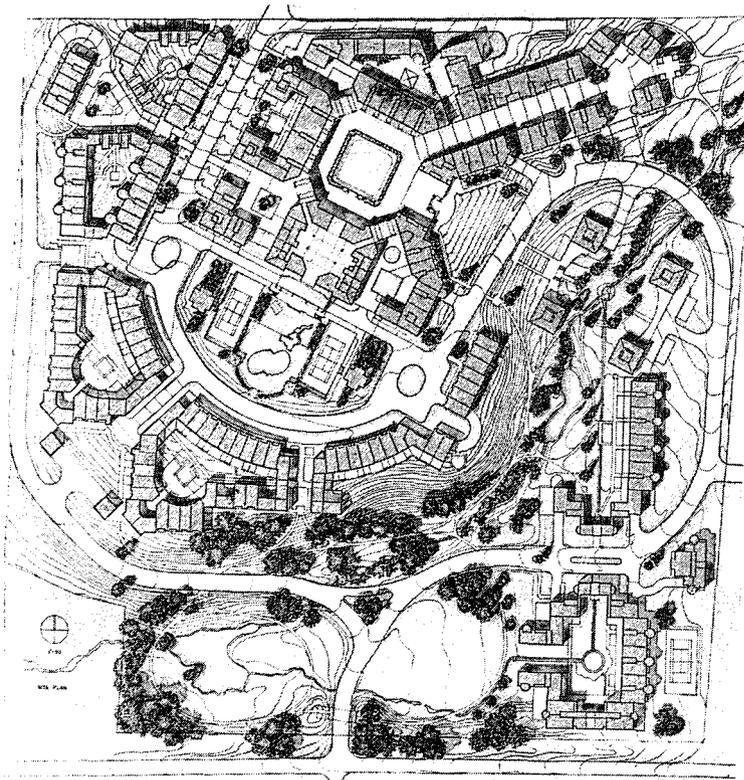
90-foot-high atrium. A computer-controlled solar tracker shields this fully glazed south-facing lobby. In residential areas, solar energy admitted by varied roof pitches and skylights would supply nearly 60 per cent of heating needs.

During the first stage of adjudication, the panel cited this project for its designers' commitment to energy conservation, and found that "the hotel and the open recreational space in front of it were the most compelling designs for that particular aspect among the five schemes." When the revised project was reviewed during

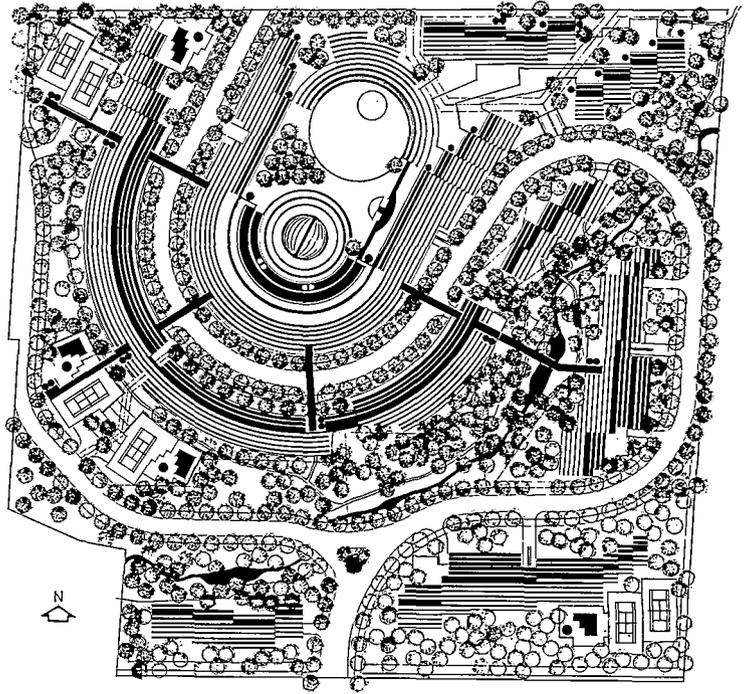
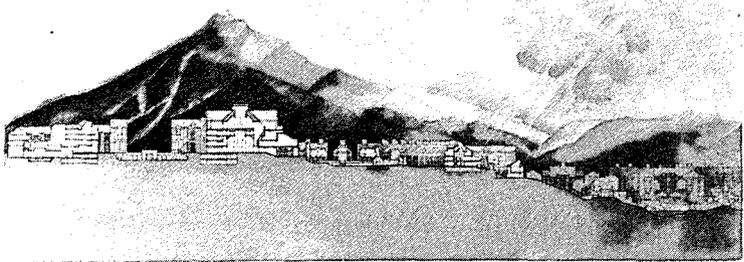
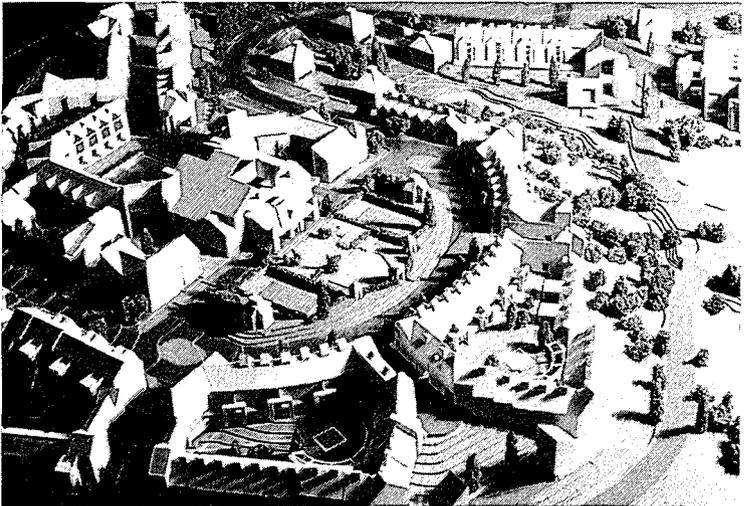
stage two, the jury remarked that the grouping and siting of residential units on the slopes appeared somewhat disorganized. The panel also pointed out a need for greater clarification of the functional diversity of various areas in the resort.

Fraser Thomson and Associates chose to consider EagleRidge as a small town in its own right, with the hotel complex grouped around a "town square" and encircled by rings of residential quarters and parks. The towers on the skyline would house resort employees, and identify different neighborhoods and major pedes-

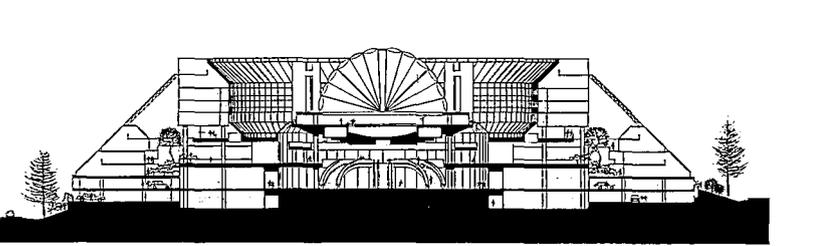
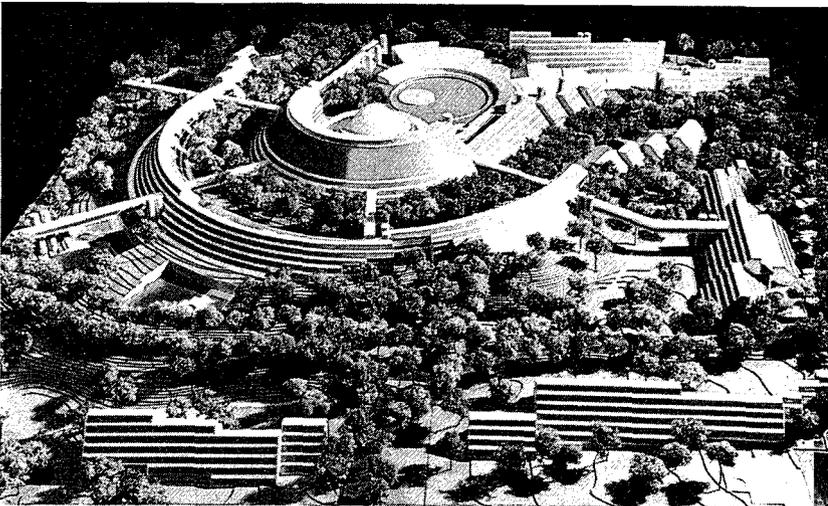
trian intersections. Tall gabled house facades are meant to recall the Carpenter's Gothic residences of old Western towns. The jury was initially "taken with the medieval imagery clearly delineated in the rendering. . . . Although the second-phase submission indicates a high level of development and a refinement of the architectural and urban-design components of the scheme, the designers seem to be trapped in the formalism of their own making. . . ." The jury expressed concern that this entry's clear esthetic merits were nevertheless outweighed by an inward-look-



ARCHITECTURE STUDIO



WOU INTERNATIONAL



SECTION THROUGH HOTEL/LODGE

ing plan and an air of monumentality that might seem out of place in a mountain resort.

Steven K. Peterson and Barbara Littenberg of **Architecture Studio** were determined that EagleRidge should not exhibit the lack of cohesion among its diverse components that they had observed in many other ski-area developments. Consequently, they laid out axial paths to link all residential zones to a central public focus and open up the center to vistas of the landscape beyond. The jury was impressed with "the urbane and ordered organization of the

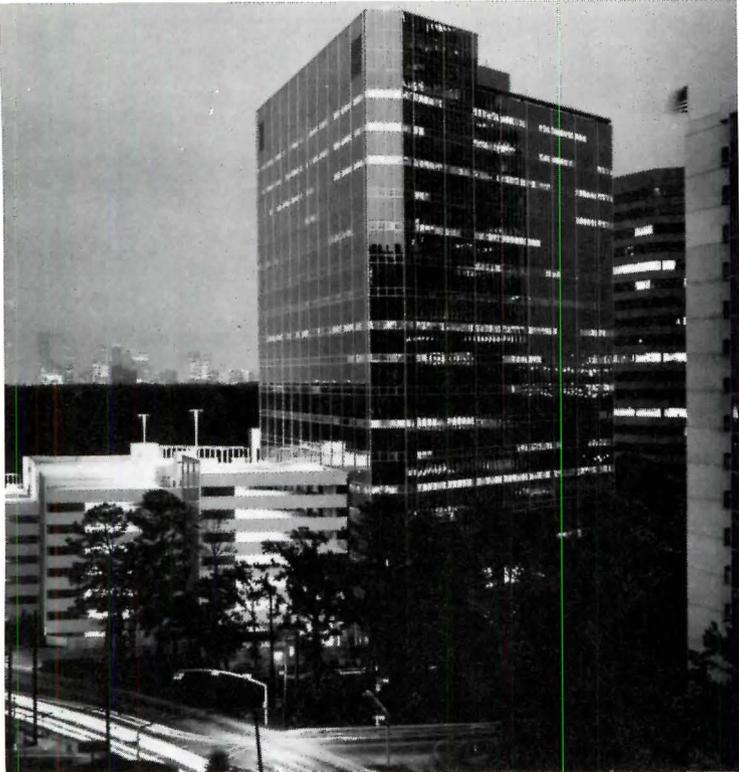
buildings on the site and the great variety of spatial experiences within the house clusters, hotel, and other parts. . . .The designers of this scheme developed the most convincing hotel entrance and clearly articulated and related pedestrian and vehicular paths." The jury noted that "as the design evolved through the second phase, it had greatly formalized. A system of axes was created and building forms modified to respond to these axes. The result is a series of design gestures, houses transformed to form four symmetrical pavilions, others to form gateways

. . . all attempting to reinforce an axially whose appropriateness is questionable."

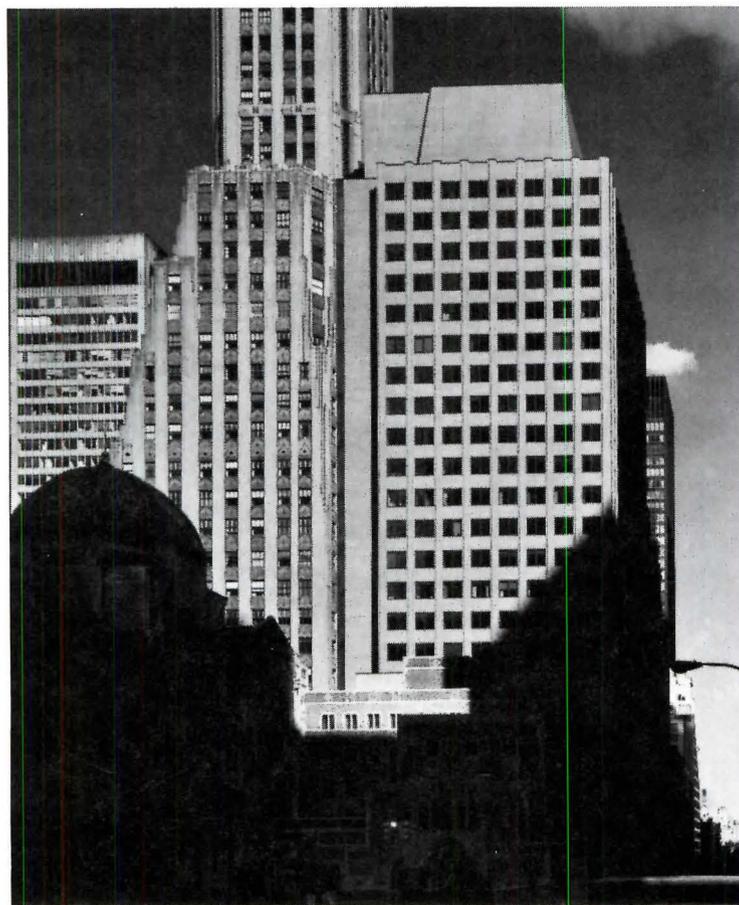
Wou International proposed a series of megastructures enclosed within an envelope of reflective glass panels to minimize visual intrusion into the open landscape. Precast concrete floor and wall panels, poured indoors in winter and stored for erection in the spring, would furnish thermal mass for passive solar heating. On the exterior, tempered double thermal glass panes would be mounted at 45-degree angles, with sunshades to reduce summertime

solar gain.

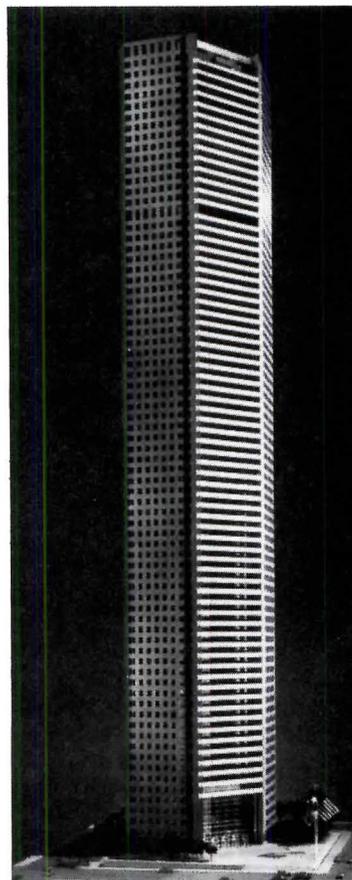
Singling out the first-phase design for its "rich imagery, capturing the spirit of the Crystal Palace," the jury commented that this was "the most innovative [submission], relying less on borrowed and familiar images and attempting to propose a contemporary and new environment made possible by modern technology, which might be responsive to what people wish in such a resort community." In the final analysis, however, the jury was unconvinced that the massing of buildings was adequately attuned to changing orientation.



Mark Scheyer



©Peter Aaron/ESTO



Calendar

Henry Hering Memorial Medal. Submissions for the National Sculpture Society's award for projects showing exceptional use of sculpture with architecture must reach the Society by March 2. Additional information is available from Claire A. Stein, Executive Director, National Sculpture Society, 15 East 26th Street, New York, New York 10010.

Doll House Competition. *Architectural Design* magazine has announced an international competition for the design and construction of a child's doll house. Cash prizes will be awarded, with special additional prizes for students. Winning designs and runners-up will be exhibited and published by *AD*. Stage One of the competition is open to all architects, designers, and students. Entrants are requested to submit drawings within the format of two sheets measuring 600x840 millimeters, accompanied by a two-page statement of intent. Designers should print their names, addresses, and professional status on the back of each sheet. Full-scale models may also be submitted. Entries, clearly marked "Doll's House Competition," should arrive no later than March 31 at *Architectural Design*, 42 Leinster Gardens, London W2, England. Stage Two of the competition is open only to invited entrants. The list of American participants includes Allan Greenberg, Charles Moore, Robert A. M. Stern, and SITE. Entries will be reviewed by Vincent Scully, Bruno Zevi, James Gowan, Robert Maxwell, and Andreas Papadakis, and by an independent jury of 12-to-15 year-olds. Doll houses and drawings will eventually be offered for sale, with proceeds divided equally among the designers, *AD*, and the Save the Children Fund.

RELIANCE DEVELOPMENT COMPANY AWARDS

The awards jurors were Charles Bassett of Skidmore, Owings & Merrill; A. Eugene Kohn of Kohn Pederson Fox Associates; Henry A. Lambert, president of the Reliance Development Company; Walter McQuade, an editor of *Fortune*; Mildred F. Schmertz, executive editor of *ARCHITECTURAL RECORD*; Tim Vreeland, of Albert C. Martin & Associates; and Harry Weese, of Harry Weese & Associates. Recipients of \$30,000 awards were Caudill Rowlett Scott, for the IBM Branch Office Building in Houston (Figure 1), and I.M. Pei & Partners, for the Texas Commerce

Tower, also in Houston (Figure 2).

Rising from a triangular base, with no direct eastern or western exposure, the IBM Branch Office Building was designed for maximum energy efficiency. Bands of double-glazed vision glass occupy only 20 per cent of total wall area, and reflective cladding admits only 17 per cent of solar radiation. A computerized monitoring system ensures efficient energy distribution. The 1,049-foot-high Texas Commerce Tower is the world's tallest composite concrete and steel building. Its "ruptured-tube" frame required jump-form sys-

tems with pumped cast-in-place concrete. A stainless-steel space frame anchors the entrance front, an 85-foot column-free span.

The jury awarded a special citation to 560 Lexington Avenue, in New York (Figure 3), designed by the Eggers Group P.C., for its "particularly keen response to the urban landscape." The 22-story building adjoins St. Bartholomew's Church, currently the focus of a landmark-preservation battle, and the Art Deco General Electric building. The articulation of the new brick tower echoes the masonry finish of its neighbors.

BUILDING ACTIVITY
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 OFFICE MANAGEMENT

Computers for the smaller office: a primer

Low-cost, high-powered microcomputers are new to the marketplace, but architects have been among the first to put them to work. In this article, architect Fred Stitt answers many of the questions commonly asked by design professionals—especially “small-office” practitioners—who are novices in the world of “software” and “CAD.” Besides offering a guide to current technology, Mr. Stitt assesses the advantages (and drawbacks) of microcomputers.

by Fred A. Stitt

After years of watching and waiting, the computer age has arrived for the small-office (1-20 persons) design firm. There's been an explosive growth in computer use among these architects in just the past 12 months. The particular kind of computer responsible for this growth is the “microcomputer” or “desktop” installation (the units and peripherals literally fit on a desk-size work space). Although compact, they are as powerful as a room full of equipment used to be, and they have all the basic components of the much costlier mini and large computer systems. In addition they are a link to computers of any size. If you need more power and memory, the sky is the limit, thanks to telephone-timeshare computer services.

“Micros” are not to be confused with “minicomputers.” Although the differentiation in wording may seem odd, “mini” in the computer trade refers to substantial machines costing from \$20,000 to \$500,000. “Large” units are in the million- and multi-million-dollar range. “Micros” are smaller than minis but larger than “personal” computers. “Personal” micros cost from \$300 to \$5,000. Business and professional office quality microcomputers cost \$6,000 to \$20,000 and up (depending on peripheral equipment), which puts them in a price class with office copiers. Like copiers, they are now affordable by offices of virtually any size.

Although long called “thinking machines,” computers of course think or know absolutely nothing. They merely provide microscopic switches and circuits for low-level electrical current. “On” means “yes” or “one” in computer language, and “off” means “no” or “not-one.” With that elemental yes/no starting-point, you can build any possible body of data. Each single on-off

circuit switch is called a “bit.” It takes a combination of eight bits to store a single character such as a letter or number. Such a character or symbol is called a “byte.” The capacity of computer memories is normally measured in terms of how many bytes it can handle and is expressed as so many “K,” which means thousand. For example, a 32K memory has room for 32,000 bytes or characters before it is filled up.

The “brain” of the computer—its circuitry—is the primary part of what's known as “hardware.” This component is all potential and can do nothing without instructions. “Software” is the precise step-by-step operating sequence for storing, manipulating, and retrieving the data in the machine. Software costs more in the long run than the equipment—a point to budget for when planning to install and operate a system.

The great strength of these machines in design-firm productivity is their capacity to store reusable data. Most data created by design firms are recreated in various forms over and over again. And most of that recreation is done the expensive way—by hand. The repetitive data include everything from routine correspondence to job proposals, accounting, drawing notation, and press releases. The computer lets you quickly modify stored data to fit any particular need.

Although computer circuitry has its own storage capability, most software and data storage are recorded on hard or soft disks. These are either rigid or “floppy,” like ultrathin versions of old 78 or 45 rpm phonograph records. The built-in memory of one popular desk-top computer model is 48K (48,000 bytes or characters). But one small diskette can store up to 300,000 bytes. You can buy and use as many disks as you want, so there is virtually no limit to your possible memory storage file.

Microcomputer disks or diskettes are handled in “disk drives.” When you want to use the machine, you turn it on and add whichever disk you want to work with. As you work, you operate a terminal, a TV-like screen with keyboard. What you type is

simultaneously shown on the screen and stored in the computer and/or on the disk. When you need hard copy, you activate a printer or plotter which types or prints the data for you on paper. Together, the disk drive, the computer itself (or “mainframe” or “microprocessor”), the terminal and the output devices compose the hardware. It is possible to have multiple terminals, a variety of printout devices, and multiple disk drives. All can enhance your system or add up to a costly spree of impulse buying, depending on how well you plan your shopping.

Two other pieces of equipment to plan on are a telephone coupler and a “digitizer.” The coupler will let your computer “talk” with any other computer anywhere, either in a swapping process with other offices or as a means of using more powerful computers at service bureaus. The digitizer is an input device for storing complex symbols and drawings in computer memory.

Let's look at the other uses of this equipment in the context of the smaller design office

1. Text editing and word processing are duck soup for the microcomputer. An immediate and obvious use of a word processing system is in writing specifications. Your master specification can be typed in or you might buy a “prerecorded” master such as the Construction Specification Institute's Spectext or the PS&E (Production Systems for Architects & Engineers) MASTERSPEC 2. All future editing for any particular project is done on printout “checkprints” and on the computer terminal. This electronic “cut-and-paste” is far faster than the old method, and more accurate.

Boilerplate copy—your contract forms, the things you say in job proposals, form letters, government paperwork—and much more goes onto disk storage. Then you add, subtract, and revise any way you need to. It is fast, and standard “daisy wheel” printers yield typed copy whose quality matches, or even surpasses, that produced by any electric typewriter. Microcomputers can also be linked to electronic typesetting machines to produce “book-quality” copy.

It is not just form-letter material that goes fast—all writing is speeded via word processing. If you do much writing yourself, it will pay to learn to type and work on the keyboard yourself. Either that or learn to dictate, and edit the print-out copy.

continued on page 49

Fred A. Stitt is a California-based architect, editor, and inventor. In conjunction with his partner Marjorie Stitt, he has published numerous manuals, handbooks, and directories for design professionals, including *The Guidelines Letter*, a newsletter on design firm management. Mr. Stitt is also the author of *Systems Drafting: Creative Reprographics for Architects and Engineers*, a McGraw-Hill book.



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2. The next immediate major use and value of the microcomputer is in accounting. General ledgers, tax forms, payroll, profit and loss statements—the whole gamut of accounting processes are automated now.

Accounting is hardly one of the most spectacular aspects of architectural practice, but a good deal of attention has focused on the comparatively recent emergence of "financial management" in A/E firms across the nation. In a nutshell, financial management is a technique for analyzing data from time cards and job records to give all sorts of measurements of office performance. The micros make low-cost in-house financial analysis of all kinds immediately accessible.

3. One of the prime tasks for micros is, of course, calculations—in endless variety. There's no end of programming available for fundamental structural, electrical, plumbing and hvac problems. Other computation programs are available for all manner of passive and active solar problems. There are quantity survey systems for construction cost estimating and ongoing cost monitoring during a job. There are financial formulas for every kind of feasibility study. All have been programmed, and you can buy or swap such programs nationally.

Programs of every variety for architects and engineers are listed for sale or trade in the *Design CompuData Exchange* newsletter. The *Exchange* also offers a comprehensive annual directory of A/E computer software and related data sources. Literature may be obtained from Frank Stasiowski, Design CompuData Exchange, 45 Van Brunt Avenue, Dedham, Massachusetts 02026.

4. Some architects input building code data, zoning laws, and other regulations as checklists. Then they tell the computer what they are designing, and it tells them whether or not it's legal. The Uniform Building Code, BOCA, Southern Building Code, and their local variations will all eventually be recorded on computer disks and tapes for convenient scanning and cross-referencing.

5. Many other firms draw up calendars of current work loads, upcoming projects, and work assignments. It is easy to update these electronic agendas and reprint them as guidelines for staff. They also indicate to clients how their projects fit into the total office schedule.

6. Designers use lists of requirements and restraints, with numerical "weights," as the starting point for schematic design. Many functional and physical requirements can be translated into symbols and manipulated in the computer more efficiently than on paper.

Computer-aided design and drafting

Computer-aided design (CAD) and computer drafting (AD for "Automated Drafting") are distinctly separate kinds of operations and, so far, only partially within the domain of the microcomputer.

Computer-Aided Design is usually applied to creating images of building masses, or interior forms, and viewing them in varying angles of perspective closeup or at a dis-

stance. This type of work, especially in three dimensions, requires high-powered equipment and extensive memory. As far as I can determine, CAD is still not widely used by smaller architectural firms.

Automated Drafting is also a high-powered and large memory process and, in important ways, a commonly misunderstood operation. Anyone who views a demonstration of computerized or automated drafting can't help but be impressed by seeing a plotter bang out yards of drawing within minutes. What they *don't* see is the lengthy and laborious process of programming the drawing into the computer in the first place. Just as the computer doesn't think, doesn't act, and doesn't solve problems, neither does it create drawings. It only stores information and then plays it back on demand. The playback is what you see at demonstrations. Its speed belies the digitizing process, i.e., the numerical location of the end points of each line, centers of curves, etc. This used to be done literally by number but now is handled by a device that resembles an electronic pencil. It is switched on and off to tell the computer where lines begin and end. As of this writing, that process is as slow as it sounds. In another year, the speed will likely be vastly increased through new technology. For now it is a drawback to full-blown in-house computer drafting at any level.

The main areas of success in microcomputer drafting are recording lists of notes, general information, indexes, legends, and working-drawing schedules such as for doors, finishes, equipment, furnishings. Small computers help in indexing and keeping track of base and overlay sheets in pin register overlay drafting, as well as in tracking drafting and printing budgets and time schedules. Even the comparatively low-power models of the Apple and TRS 80 personal computers have been used successfully by architects and engineers in these realms.

A related area of success is keynoting. Keynoting involves the storage and retrieval of working-drawing notation from a master file rather than writing it from scratch on every new working-drawing sheet. This is one of the most popular Systems Drafting techniques in use these days and it is a natural for computerization with micros or word processors. Keynoting illustrates the main value of Systems Drafting in general and computerization in particular. Their value is a virtually limitless capacity for storage or reusable data, rapid access to these data, and convenience in revision and rearrangement of the data after retrieval.

Construction detailing is another area of immense potential in using the systems approach. Architects and designers often resist the concept of "standard" details, protesting that their designs are most certainly not "standard" and their buildings involve little repetitive work. The truth is that no matter how unique or innovative a building may be, its parts and the way these parts are assembled follow consistent construction practices. Traditional practice doesn't deal with this reality, and you'll see designers and

draftsmen in offices everywhere either copying old details by hand or reinventing them. They do this over and over, project after project. Many design firms have minimized these labors by compiling their own libraries of standard details. Besides saving time and money—80 per cent and more on many detail sheets—these firms say their quality control increases dramatically. They can now give extra time to detail design and review, to make sure only the very best gets through to the construction site.

As one outgrowth of the trend towards standards files, ready-made outline or "skeleton" standard details will be introduced nationally this year. These will be in such a form that copies modified to suit particular job situations can be directly pasted up on working drawing sheets. Later, they will be available on computer disks and tapes.

Within the next year or so, you or your project architect will be able to sit down with a working drawing checklist and mark off decisions, step by step, about each component of a project. As you make decisions and check off items, you'll simultaneously and automatically call up the relevant working-drawing notes on a keynote list. At the same time you will call up the appropriate construction details from a master detail file along with the outline specification division that goes with the checked item. In other words, you'll identify working-drawing components, write notation, assemble details, and write outline specifications in one single operation. Microcomputers will lend more versatility to the process. For example, when augmented with a microcomputer data base, you'll also be able to call out special design rules, code restrictions, construction cost estimates, and much more—just in the process of planning the job.

As remarkable as microcomputers are, they still cannot handle large-scope and large-size architectural documents. For those you need the mini and larger units. While the heavy-duty machines are beyond the reach of most A/E firms, they're still accessible through computer service bureaus. This opens a whole new area of opportunity, combined with special risks for the newcomer. Even though computer technology has been around quite a few years, it is still a brand-new subject to most architects. Their enthusiasm and concern is reflected in questions I receive from design professionals around the country. Here are some typical questions, and my answers:

Q: How do you actually get started? What are the first steps for getting all this going?

A: The key first step is to get a complete data base on what's what in hardware, software, services, and A/E-oriented computer literature. There isn't space to list all the sources here. "Computer Data Sources," a four-page directory of booklets, newsletters, seminars and conferences, computer manufacturers' literature, and other A/E computer data sources is available free of charge from the author. (Send a self-addressed first-class

continued on page 51

'CLOSE HARMONY



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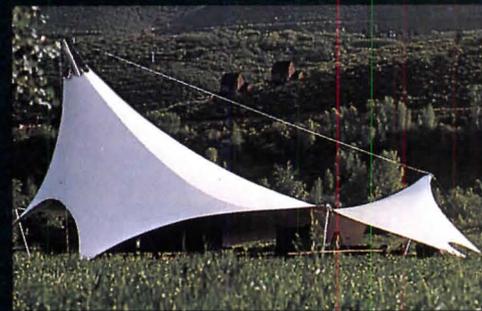
The delicacy and beauty of these tensioned membrane structures is thoroughly practical. In this economical shelter for an outdoor music amphitheater, the natural beauty of the



site is preserved, with only minimal disturbance for footings for structural elements. The smaller white tensioned structure at the Aspen Design Conference in Colorado is even simpler, facilitating its erection and dismantling each year.

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The second step is the same as the fundamental step of Systems Drafting in general: review your graphic clarity and simplicity. You have to take a look at your project planning methods because planning is everything in systems. You'll lose a fortune if you go to computerized working drawings and feed the computer incomplete information or premature design data. You'll also have to acquaint your staff and management with the intricacies of paste-up and overlay drafting because that's all the computer does.

Q: How do you charge for computer time? Is it billable or just overhead?

A: Some firms treat it as overhead. Others charge computer time to each job at an hourly rate. They estimate operating and monthly amortization or lease costs and bill accordingly—usually from \$20 to \$100 an hour. This makes great sense for everyone, especially the smaller design firms.

Q: Is it wise to buy or lease now, when everyone predicts new chips and lower prices?

A: If there will ever be a time, this is it. The best equipment is designed to accommodate as many advances as can reasonably be forecast for the next five years. The big improvements you hear about are expansions in computer chip capacity. That reduces costs of the mainframe, especially for large computers.

But most microcomputer costs are not for chips but for basic hardware, peripherals, software, and operating costs. As new equipment becomes more powerful, so does existing equipment.

Q: How about the smallest offices, such as one- or two-person firms?

A: I know of one-person firms—even a part-time, one-person firm in the swamps of Louisiana—that use microcomputers extensively. Most often they start with one of the popular personal computers and then upgrade their equipment to business-level capacity.

Q: What are the worst problems and pitfalls?

A: Architects have often missed the mark and grossly under- or over-bought their equipment. It seems they rush out and buy as soon as a chunk of money becomes available, without long-term planning or comparative shopping. Uncoordinated buying is another problem. Firms pick up a word processor at one time, then decide on a machine for engineering purposes another time, then purchase a general business computer system for accounting, and so on. They end up with several incompatible systems. This is not to say there aren't times when you should have totally separate equipment. But that decision ought to be a deliberate part of an over-all plan, and not just the immediate response to some very specialized office need. A final problem is under-utilization. Sometimes terminals become the "property" of a particular segment of the staff, such as secretaries, bookkeepers, or specification writers. When this happens, all the other potentialities go unused.

Q: A/E computer service bureaus are springing up around the nation.

How good are they and how do you make best use of them?

A: Some people in the business are incompetent. Some are fine in their specialties but don't understand the needs of architects. You do not need architectural expertise in plain print or repro services, but the lack of it can be a fatal flaw in computer drafting. Some newcomers in the service-bureau business are over-optimistic about what their machines and software can do.

In order to approach a service bureau correctly, it is crucial that you carefully check referrals from other customers. When you're satisfied with references and management qualifications, bring in a sample job for a trial run. Reputable service-bureau managers say if you have only \$5,000 or less to spend, you won't be doing enough work to evaluate the system properly.

In order to use such services, or in-house computer drafting for that matter, give extra time early on to simplify your drawings and create an extensive mock-up of the entire job. Don't let design decisions remain tentative right up to the time you go on the computer for working drawings; it is terribly expensive to do so. The computer input operators will need clear but bare-bone sketches with ample, accurate, and wholly coordinated dimensions. Overdrawing and undermanagement are responsible for the greatest waste of time and money.

A checklist of tips for dealing successfully with computer service bureaus has been assembled by two experienced design professionals, Patricia Schilling and Spencer Jue of the Design Logic Company. For a copy of the checklist, send a self-addressed envelope with \$.20 postage to "Computer Services Checklist," Design Logic, 405 49th Street, Oakland, California 94609.

Q: Do you have to learn programming to operate a microcomputer?

A: Not really, but you or others in the firm may choose to in order to understand and utilize the equipment to its fullest extent. (Sources are listed in "Computer Data Sources," cited above.) Nothing is more important than learning to understand the internal workings of the equipment. That means reading the manual; and learning how information is actually encoded and processed within the circuitry. One architect told me that the most important benefit he has gained from his computer is learning to organize his thinking.

Q: Doesn't computer drafting make systems such as overlay and paste-up drafting obsolete?

A: So far, just the opposite. Experienced computer users find that it is essential to understand other systems if one is to grasp and exploit the computer properly. Also there is constant interaction and switching back and forth from hand sketching to paste-up to computer to overlay graphics. Every technique has its place of greatest and least value. There are some things the computer does extremely well and other areas where it

is inefficient and horribly costly. Once you understand the systems' principles and use them manually, you'll know exactly how to get the most from the computer. Without that experience the results will be costly and disappointing.

The limitations of computer drafting are especially acute when you're not using other time- and cost-savers such as paste-up, photo-drafting, or keynoting. In some simple and highly organized engineering drafting, one computer workstation may be as productive as 20 traditional drafting stations. But so far, most architectural users say they get only about one-to-one cost equivalence: in a pinch, they may save time in some applications, but they're not yet saving any money. On the other hand, users of graphic systems—especially non-photographic in-house paste-up and overlay—consistently report 30-to-40 per cent time and cost savings over traditional drafting. And their quality is noticeably improved in the process. That's the best of all worlds. For a useful eight-page report, "Planning & Organizing for Computer Aided Design & Drafting," send a self-addressed 9x12 envelope with \$.20 postage to The Paper Plane, MRH Associates, P.O. Box 11316, Newington, Connecticut 06111. A final note on this point. A leading Southwestern A/E firm that has pioneered computer use for over 20 years is still getting only 15 per cent of its production drawings from the computer. We clearly have a way to go.

Q: What new developments are coming?

A: Above all, new and improved software. Many more architects and engineers will soon be selling and trading the special use programs they create through the software exchange cited above. My partner and I have developed a master construction detail system that will soon be available, along with a universal master keynote system to store all construction notation. These systems will later be linked in a total system built around a set of project management task modules. That is, an architect will be able to proceed from task to task—making decisions/holding decisions/delegating, etc.—and combine data gathering from the client, the scope of services list, project programming and pre-design, schematic design checklist, project cost estimating, working-drawing planning and monitoring, and specification, with complete job-history documentation from beginning to end. It is a big step for the profession and it's starting in earnest this year.

Telecomputing is another major change to watch for. Much if not all of your work may be done as readily at home, or at a private studio at the beach, as in a central office. Many employees in varied information industries have already changed their status to that of independent contractors and are now working wherever they please via computer hookup.

A longer-term development in our profession will be the final elimination of job prints. Instead of sending out blue-line prints to client and bidders, you'll send them floppy or video disks—or, more likely, you'll send disk data from your computer to theirs.



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OSHA violations as evidence in civil litigation

Since the enactment of the Occupational Safety and Health Act in 1970, much attention has focused on the way in which the government has enforced the law. Little noticed, but potentially more troublesome for architects, has been the manner in which the courts have dealt with OSHA violations in civil litigation. In the past decade, cases have involved issues ranging from whether OSHA created a private cause of action to the use of OSHA standards and violations to prove a defendant's negligence. In some recent cases, the courts have begun to recognize the prejudice that can result if OSHA violations are allowed to be used as evidence of negligence. This development should be welcomed by architects and others concerned about professional liability.

by Arthur Kornblut, Esq.

The Occupational Safety and Health Act, as enacted by Congress, contains a clause which states explicitly that the Act is not to "enlarge or diminish or affect in any other manner the common law or statutory rights, duties or liabilities of employers and employees under any law with respect to injuries, diseases or death of employees arising out of, or in the course of, employment." On its face, this restriction would seem to preclude a role for OSHA in private litigation, as the intent of the Act was to create a statutory mechanism for dealing with workplace hazards.

Despite the foregoing provision in OSHA, the past decade has seen a significant number of cases in which plaintiffs have attempted to piggyback on OSHA to advance their lawsuits. One major line of cases involved attempts by injured workers to use OSHA itself as the basis for suing their employers and others. The mere fact that there was a violation, they claimed, gave rise to a right to sue. The courts categorically rejected these arguments; OSHA could not be used as the basis for a private cause of action. Any OSHA-related civil litigation had to be based on traditional theories of liability, such as negligence.

Having been rebuffed in their attempts to create a new cause of action out of the whole cloth of OSHA, plaintiffs' attorneys then began to use OSHA on an evidentiary basis. OSHA standards and violations were offered to "prove" that a defendant had indeed violated a standard of care and thus should be held liable for the plaintiff's injuries. In some cases, the courts permitted the fact

of an OSHA violation to be conclusive of liability under a rule of law known as negligence *per se*. This principle holds that a violation of a law that results in injury is sufficient proof of a defendant's negligence, requiring no further proof of failure to meet a standard of care.

In the mid-1970s these arguments were often accepted by the courts. Only one court, a Federal district court in Mississippi, ruled that OSHA standards could not be utilized to prove either negligence or negligence *per se*. On the other hand, state supreme courts in Alabama, Alaska, Arkansas, and Washington permitted the use of OSHA violations and standards to prove negligence on the part of defendants. This trend continued until very recently.

In 1981, the Supreme Court of Connecticut was confronted with the use of OSHA standards in a case involving a collapsed embankment that injured a construction worker (*Wendland v. Ridgefield Construction Services, Inc.*). The plaintiff was employed as a carpenter by the general contractor on a high school construction project. The defendant was a subcontractor for the excavation work. At the time of the accident, which occurred after heavy rains, the plaintiff was working at the bottom of a narrow trench that had been excavated by the subcontractor but had not been properly shored.

At the trial, the judge instructed the jury that it would have to find the subcontractor negligent *per se* if there had been a violation of a safety regulation. The jury awarded the injured worker \$291,150; the subcontractor appealed on the basis of the jury instruction, which it claimed was erroneous.

In dealing with this issue, the state supreme court focused specifically on the section of the OSHA Act quoted at the beginning of this article. The court said: "Negligence *per se* operates to engraft a particular legislative standard onto the general standard

of care imposed by traditional tort law principles, i.e., that standard of care to which an ordinarily prudent person would conform his conduct. To establish negligence, the jury in a negligence *per se* case need not decide whether the defendant acted as an ordinarily prudent person would have acted under the circumstances. They merely decide whether the relevant statute or regulation has been violated. If it has, the defendant was negligent as a matter of law. A negligence *per se* instruction transforms the character of the factfinder's inquiry. The applicable standard of care is affected by such an instruction. Because the standard of care is the key factor in determining liability, we conclude that the application of a negligence *per se* instruction affects common law rights, duties and liabilities of employers and employees arising out of and in the course of employment. . . ."

Even though the Connecticut court ruled that a jury instruction on negligence *per se* was reversible error, it did suggest that applicable safety standards could be admitted as evidence of the standard of care.

In October, 1981, a Federal court in South Carolina concluded that OSHA regulations have no place in civil litigation (*Trowell v. Brunswick Pulp & Paper et al.*). In this case the plaintiff, a visitor to a pulp mill, was injured by a defective piece of equipment. The defendant filed a motion to prohibit the use of any evidence at the trial that would involve OSHA violations. In refusing to permit OSHA-related evidence in this case, the court noted that the plaintiff was not in the class of persons intended to be protected by the regulations (the plaintiff was a visitor and not an employee of the defendant). Consequently, evidence of OSHA violations would not be admissible to prove negligence *per se*. The court went further, however, and ruled that it would be "highly prejudicial" to permit the admission of any evidence of OSHA violations with regard to the defendant.

These cases are important to architects because they signal a growing recognition by the courts that OSHA standards should have no role in determining a defendant's negligence in civil litigation. For the architect who is sued by an injured construction worker, the defense will not be hampered by reference to violations of safety standards for which the architect normally has no responsibility and which should have no bearing on whether the architect has failed to meet the appropriate standard of care.

Mr. Kornblut is a registered architect and practicing attorney in Washington, D.C.

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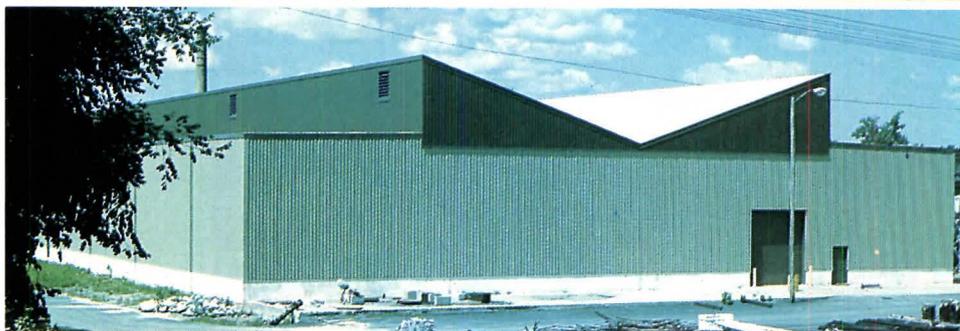
Stewart Airport, Newburgh, New York
Stewart International Airport
Newburgh, New York
Architect: Abbott-Merkel & Co.
General Contractor: VRH Construction Co.
Owner: Metropolitan Transportation Authority of New York



Niagara-Mohawk, Buffalo, New York
Niagara Mohawk Power Corporation
Material Management Facility, Buffalo, New York
Architect: Owner-designed
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EXPANDING HORIZONS

The East Campus Complex by Gwathmey Siegel & Associates

Charles Gwathmey and Robert Siegel have never gone wanting for professional kudos: their 11-year-old New York firm is among this country's most praised, published, and premiated. The American Institute of Architects' 1982 Firm of the Year Award—announced this month—adds an emphatic exclamation point to Gwathmey Siegel & Associates already distinguished career. With the exception of a four-story dormitory/dining hall complex for the State University of New York at Purchase (RECORD, September 1979), it has been a career of modest-scale work—primarily residential commissions, interior design projects, and low-rise office buildings. But with the June 3rd dedication of the \$28.7-million East Campus Complex at Columbia University in New York, Gwathmey Siegel & Associates registers a significant change in scale. It's a long way from the elegant and pristine summerhouses on Long Island to this 360,000-square-foot residential/academic complex in Morningside Heights. For an architectural rite-of-passage from small to large, from suburban to urban, and from luxury to economy, one would be hard pressed to invent a more exacting problem.

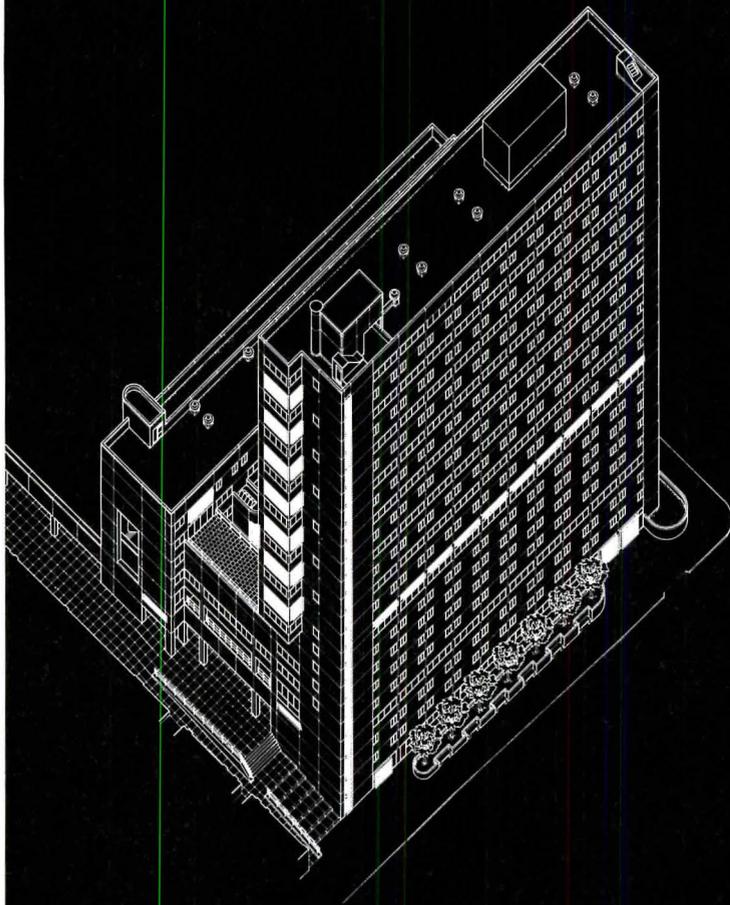


An Ivy League academic curriculum is only part of the education Columbia University offers undergraduates: a mandatory course in New York urbanism adds a second dimension. The Morningside Heights campus reaches deep into Manhattan's Upper West Side, from West 114th Street to West 120th Street, between Broadway and Amsterdam Avenue, with an East Campus sector extending to Morningside Drive (site plan, opposite page, top right). The immediate contextual envelope is a tightly woven, densely built residential/commercial neighborhood conspicuously past its prime. To the east, Frederick Law Olmsted's Morningside Park provides a sinuous band of green dividing Columbia from Harlem (photo previous page).

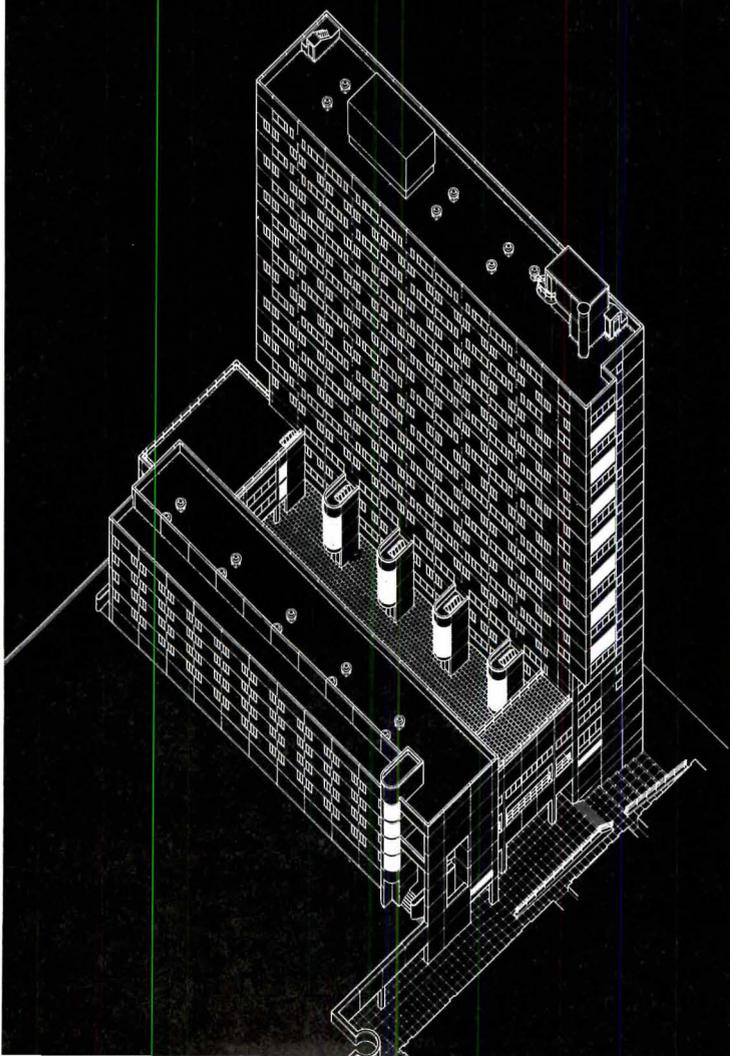
If the neighborhood appears precariously poised between urban decay and revitalization, it is a condition not dissimilar to Columbia's own. In the years since McKim, Mead & White's 1893 master plan, the Classical lines of the Main Campus—with the imposing, domed Low Library at the center, and academic buildings around the perimeter—have lost much of their clarity. Successive generations showed little regard for the McKim, Mead & White plan, and the campus edge was significantly broken by a bridge connecting the Main and East Campus. The bridge was then extended to provide an elevated concrete plaza that cut a wide swath through the East Campus—giving students access to Harrison & Abramovitz's 1963 Law School and 1971 School of International Affairs—until it came to an abrupt halt just short of two tenements facing Morningside Drive. The bridge and its linear plaza had created a powerful west-to-east axis that awaited a terminus.

During the last decade, the active presence of James Stewart Polshek as dean of the Columbia School of Architecture and architectural advisor to the university has improved the quality of campus design. The late '70s brought Mitchell/Giurgola's Sherman Fairchild Life Sciences Building and Alexander Kouzmanoff's Avery Library extension: the '80s will bring Kliment/Halsband's computer science building and James Stirling's much-awaited physics building.

In addition to the vicissitudes of its campus, Columbia, like oth-



A pair of low-rise, rectangular housing blocks—one capped with a high-rise slab—are joined by academic buildings to form a cloister/courtyard.



er urban universities, faced a chronic student housing shortage at the same time that it faced expanding student enrollments. Alumnus Jerome A. Newman (class of '17) recognized that the academic and fiscal health of his alma mater depended on how successfully it met the residential needs of its student population. In 1975, Newman chaired a Board of Visitors under the heading—and with the goal of improving—the "Quality of Life" at Columbia. Prompted by the dearth of Morningside Heights building sites, the board turned their attention to the two deteriorating tenements at the end of Harrison & Abramovitz's East Campus plaza. (The university had already identified the parcel as an underdeveloped and desperately needed piece of real estate.) The "Quality of Life" board recommended to the university president a major housing complex for the site, lending their collective, and considerable, financial support to the project.

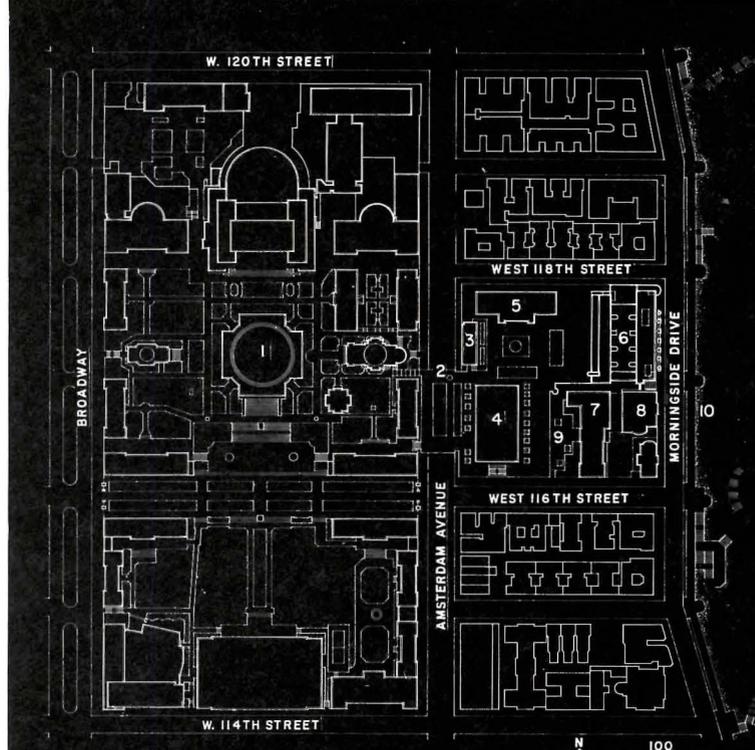
When the commission for the proposed residential complex was awarded to Gwathmey Siegel & Associates, the university was effectively restating its commitment to providing Columbia with architecture of quality.

Razing the two Morningside Drive tenements revealed an awkward wedge of land, bordered on the west by Harrison & Abramovitz's elevated plaza and the sheer wall of a garage (under the plaza and beneath the School of International Affairs), and on the east by Morningside Drive (section, overleaf). The plaza loomed like the edge of a cliff, taking a dramatic dip to the site down on the drive, before a final plunge down to Morningside Park. The plaza's monumental scale and the drive's residential scale provided complexity (if not contradiction). The architectural opportunity being presented did not escape Charles Gwathmey and Robert Siegel.

From the bridge over Amsterdam Avenue, the complex is framed by the Italian Studies Center to the north and the Law School to the south (photo right); farther along the plaza, however, the north frame is replaced by the School of International Affairs, and the south frame replaced by the Faculty House and a graduate women's dormitory (both sited below the plaza at street level). The 360,000-square-foot East Campus Complex fills

the picture plane, providing a terminus for the west-to-east axis, and thereby anchoring Columbia's heretofore exposed eastern wing. It also, for the first time, activates and populates the plaza, resolving what was generally regarded as a questionable planning decision. Charles Gwathmey refers to this from-the-plaza perspective as the "foothill" (before the mountain?) view.

A massive cylindrical stair tower signals the main entrance to the complex. Residents are ushered in off the plaza through a portal carved through a four-story housing block, which appears to have been slipped out from the high-rise slab behind it (photo right). This trundle-bed parti provides a visual modifier to dampen the brute strength of the high-rise slab; it also creates a scale element that reinforces the much-deteriorated cornice line of the neighborhood. Once through the portal and into the courtyard (cover photo), however, one finds that the four-story "foothill" has a twin beneath the high-rise slab, which acts, at least conceptually, as the podium on which the high-rise rests (axometric, overleaf). The concept is reinforced visually by the application of a red-tile skin for the two low-rises (intended to echo the brick of surrounding buildings), which is then set against a beige/gray-tile skin for the high-rise (intended to echo the limestone of surrounding buildings). This matched pair of low-rises provide 350 students with townhouse-type walk-up residential units reminiscent of the English college system (and rendered here in Gwathmey Siegel's familiar modernist vocabulary): access to the individual suites is through the glass block-encased stair towers (photo and plan overleaf). The split, paired scheme of low-rise townhouses eliminates the need for elevators (a frequent object of vandalism and malfunction in colleges), and the 60-foot-wide courtyard brings extra light and a communal cloister space to students. While the two parallel residential blocks form the east and west parameters of the courtyard, the north and south edges are the consequence of two sizable gifts that the university elected to incorporate into the East Campus Complex: to the north, the Heyman Center for the Humanities (photo overleaf), an academic center for interdisciplinary study and research; and



- | | |
|-----------------------------------|------------------------------|
| 1 Low Library | 6 East Campus Complex |
| 2 Bridge over Amsterdam Avenue | 7 Graduate Women's Dormitory |
| 3 Italian Studies Center | 8 Faculty House |
| 4 Law School | 9 Pedestrian Mews |
| 5 School of International Affairs | 10 Morningside Park |

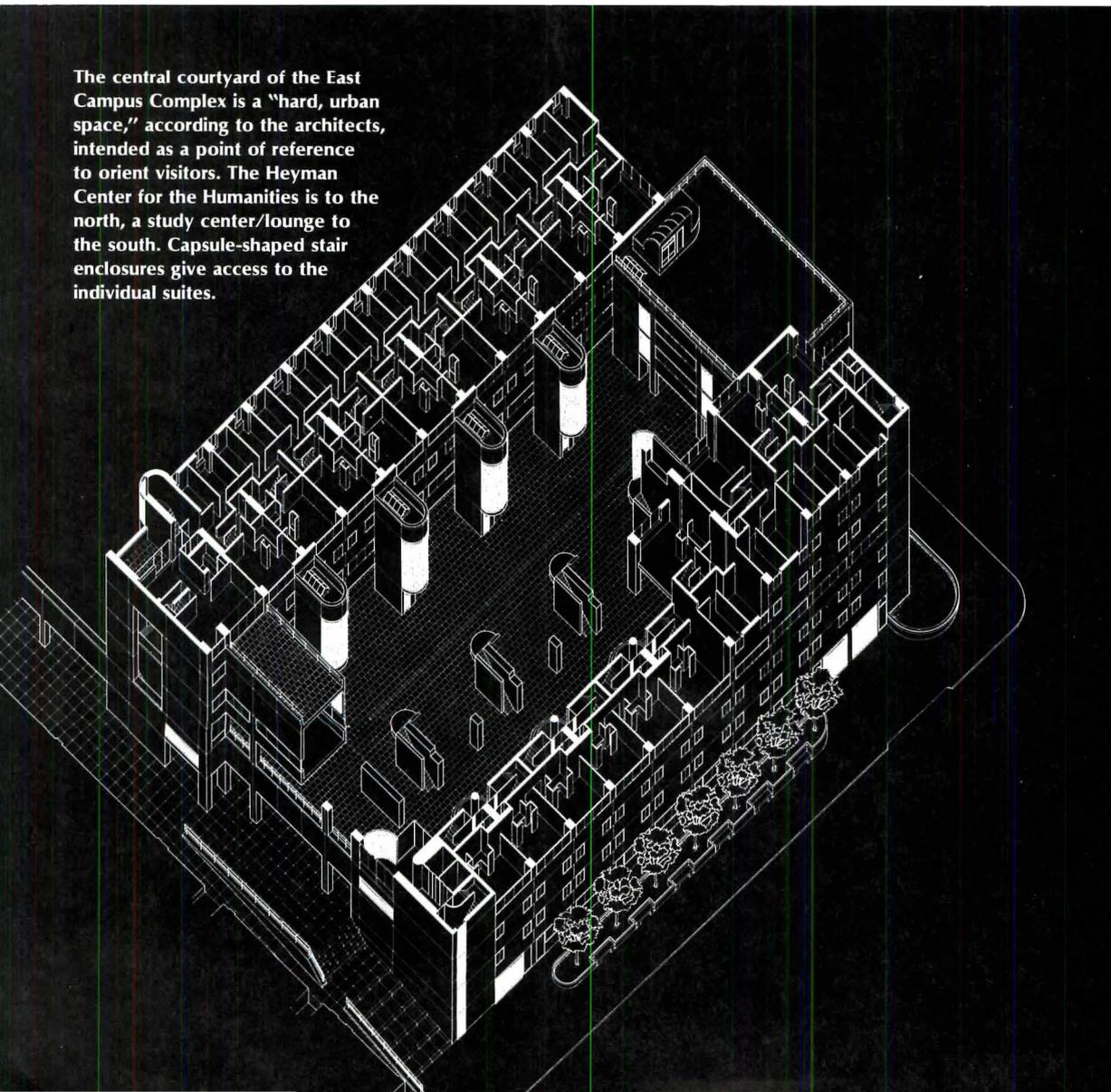


Along Morningside Drive (above), a red-tile inset picks up the scale and color of existing residential buildings; from the Columbia campus (below), a stair tower marks the entrance to the East Campus Complex, on axis with the bridge over Amsterdam Avenue.





The central courtyard of the East Campus Complex is a "hard, urban space," according to the architects, intended as a point of reference to orient visitors. The Heyman Center for the Humanities is to the north, a study center/lounge to the south. Capsule-shaped stair enclosures give access to the individual suites.



to the south, a law school study center/lounge, an enclosed, double-height bridge contiguous with a dean's apartment above the portal (again, a gesture reminiscent of the *English* college system). The balance of residential space is contained in the 14-story slab. Sandwiched between the high-rise and low-rise is a transitional "hotel" floor containing double-height guest rooms for 40 visitors to the university: the "transient" floor is articulated in the fenestration with a narrow band of glass block running above the ribbon windows.

The logic behind Gwathmey Siegel's scheme is perhaps best illustrated by charting a circulation route—from west to east—along the south elevation (shown in axonometric left). One enters through the portal in the low-rise (photo right), housing a stair which leads either up a few steps to the courtyard (and, subsequently, to the elevator banks in the high-rise), or down to a loggia which opens to steps leading out to Morningside Drive (photo below). From the south, one enters by way of West 116th Street and a pedestrian mews (between the elevated Law School and the graduate women's dormitory and Faculty House) that gives access to the loggia.

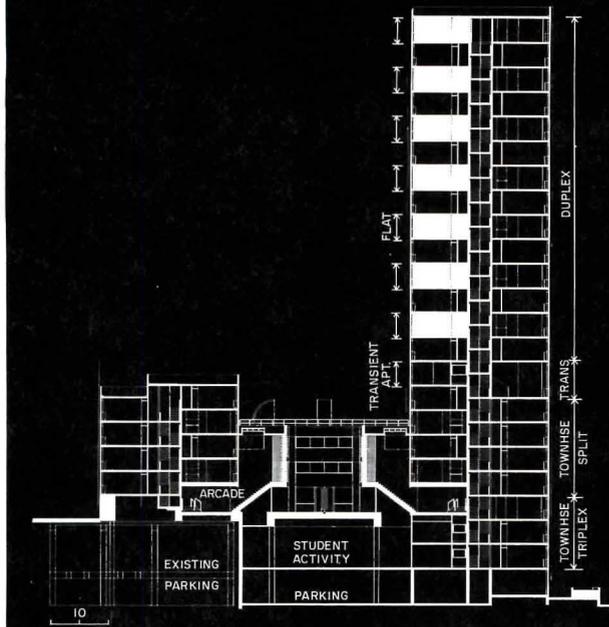
In terms of urban design, the East Campus Complex follows the established New York tradition of treating high-rise buildings as "edge," both to parks and to north-south avenues, although the 23-story slab is considerably more of an edge than Morningside Drive is accustomed to (photo top, previous page). Down along the drive, however, the architects provided their slab with a base of heavily-glazed shops and/or offices, which



will—when occupied—animate the street facade. By bringing their building down to street level, Gwathmey Siegel & Associates have reversed a Columbia tradition of elevating and isolating the campus from its environs. (This tradition stems from the Heights' roller-coaster topography.) One has only to walk by either the adjacent Law School or School of International Affairs—both elevated, throwing blank masonry walls down to the street—to know how welcome a change that is. It is only at the north facade that the full weight of the high-rise slab is felt, as it meets West 118th Street. (An earlier scheme extended the pedestrian mews from West 116th Street, through the cavernous spine beneath the courtyard, to West 118th Street: the interior street was to be used for recreational facilities and ad hoc student activities. Campus security, budgetary concerns, and changes to the program conspired against the scheme.)

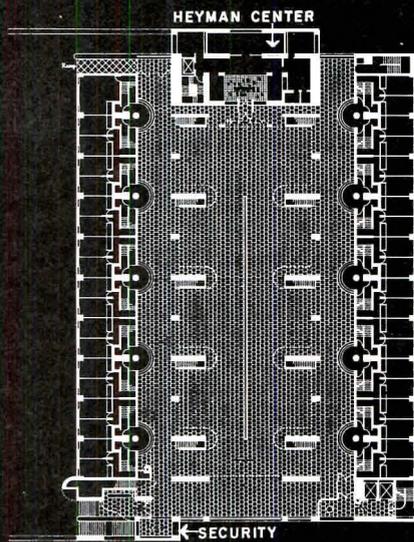
From the western plaza, from the southern mews, and from the eastern drive, the East Campus Housing Complex speaks well of Gwathmey Siegel & Associates' near-acrobatic agility in responding to the exigencies of Columbia's constricting campus plan. That agility becomes all the more pronounced when considering the topographical seesaw on which they worked.

EAST CAMPUS COMPLEX, New York, New York. Owner: *Columbia University*. Architects: *Gwathmey Siegel & Associates—Joel Bargmann, associate-in-charge*. Associated architects: *Emery Roth & Sons*. Engineers: *Geiger Berger Associates (structural); Meyer Strong & Jones (mechanical)*. General contractor: *Morse Diesel*.



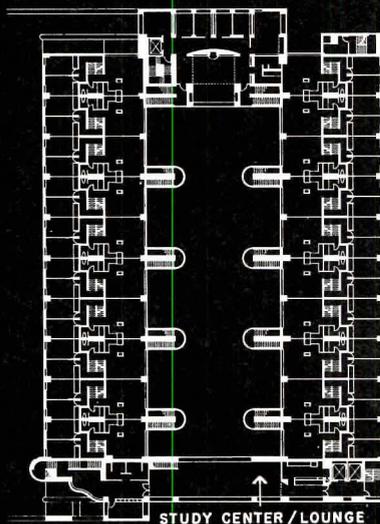
A section cut through the courtyard shows pre-existing garage, contiguous with as-yet-unoccupied student activity space and beneath the west low-rise block: the 60-foot-wide courtyard gives way to 15-foot-deep arcades and access to individual suites.



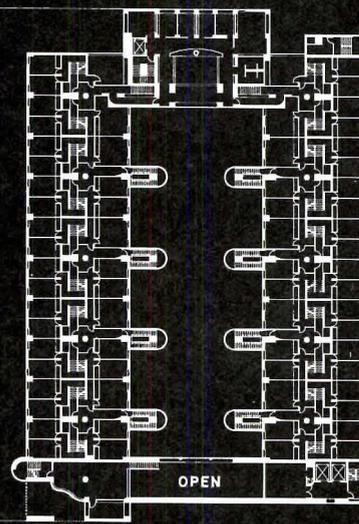


ENTRY/CLOISTER LEVEL

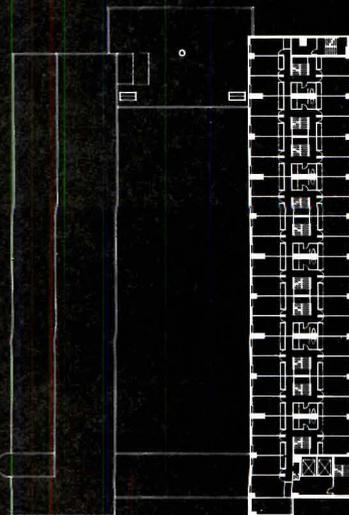
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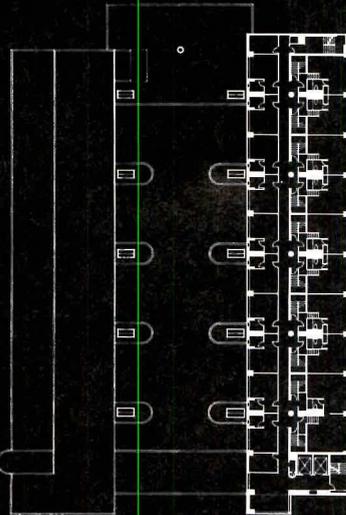
SECOND LEVEL



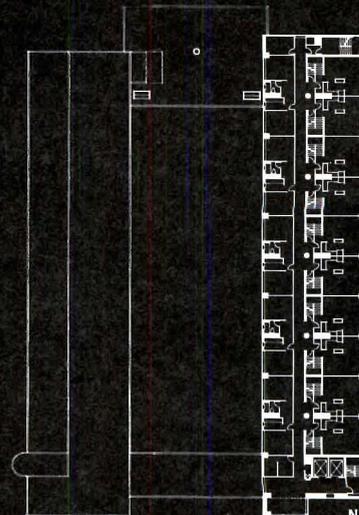
THIRD LEVEL



TYPICAL HIGH RISE DUPLEXES
(BEDROOM LEVEL)

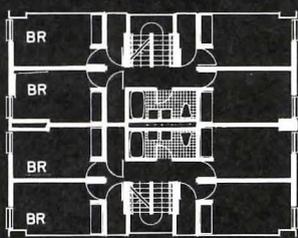
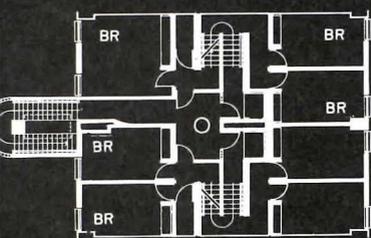


HIGH RISE TRANSIENT FLOOR

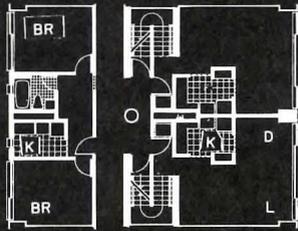
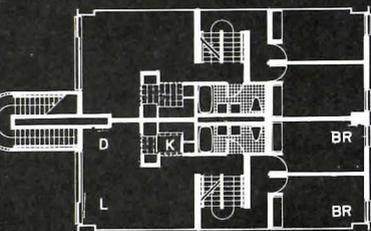


TYPICAL HIGH RISE FLATS/DUPLEXES
(CORRIDOR LEVEL)

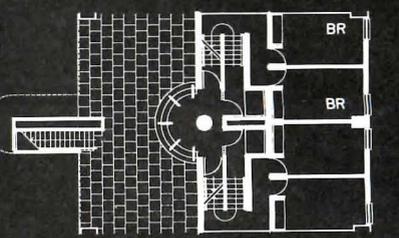
Columbia as client offered Gwathmey Siegel & Associates enviably amenable working conditions: "They actually didn't come to us with a budget. They came to us and said 'let's try to figure out the most reasonable way for students to live . . . let's develop a program first, and then translate that into dollars,'" recalled Robert Siegel. The \$28.7-million program that evolved—with the considerable input of students and a 10-man building committee composed of deans—responded very clearly to the students' marked preference for privacy and variety. While the unit configurations range from two-person flats to eight-person triplexes, bedrooms are single-occupancy, and each apartment has its own kitchen, bath, and living/dining area. Those such amenities were costly, a Ford Foundation-sponsored study (conducted at the University of Massachusetts) provided Columbia with the impetus—and the statistics—to trade higher building costs for lower operational costs. According to then campus architect D. Dean Telfer, "We all felt that students living in apartment-type arrangements was not only a long-term economic necessity, but preferred."



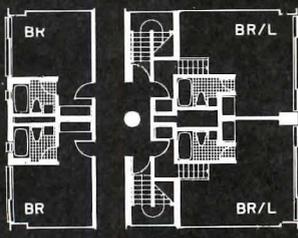
TYPICAL HIGH RISE DUPLEX
(BEDROOM LEVEL)



TYPICAL HIGH RISE FLAT/DUPLEX
(CORRIDOR LEVEL)

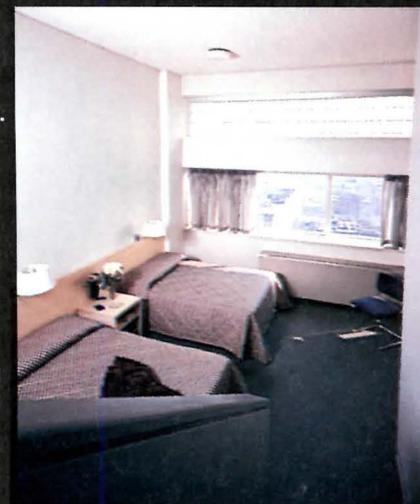


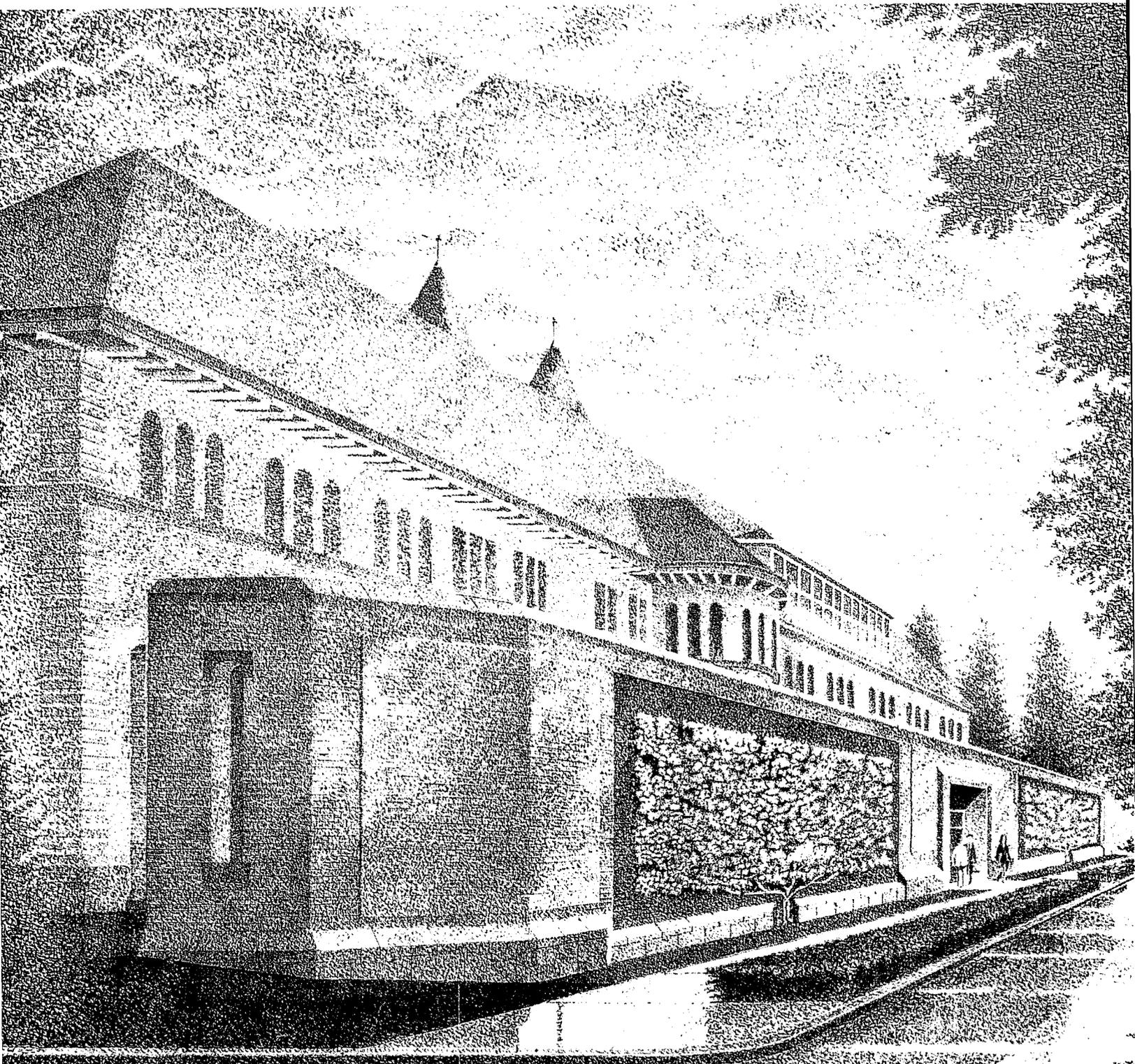
TOWNHOUSE SPLIT LEVEL UNIT



TRANSIENT FLOOR APARTMENTS

The complex's Heyman Center for the Humanities (photos above) may boast George Nakashima furniture and finishes reminiscent of Gwathmey Siegel houses, but the residential accommodations for students bring Columbia out of the dormitory dark ages. An intricate matrix of unit configurations—interwoven with exquisite economy—offers an enviable range of living options, detailed in the plans at left. Residents of the 14-floor high-rise are provided the expediency of skip-stop elevators, thanks to duplexes with bedrooms consistently isolated—for privacy—from the entry levels' living/dining areas. Double-loaded corridors in the high-rise are punctuated with massive columns set into vestibules which form, according to the architects, "appropriate and ceremonial" entrances to the suites. At the south end of each of the high-rise corridor floors, a double-height lounge (cantilevered from the south facade) provides a communal space (photo right), especially intended for occupants of the two-person flats. The lounges also provide welcome light at the end of the corridors, echoed by small windows punched into the north end of the corridors; circulation is always toward light. Exiting from the elevators, one finds another window; the view south to midtown is spectacular.





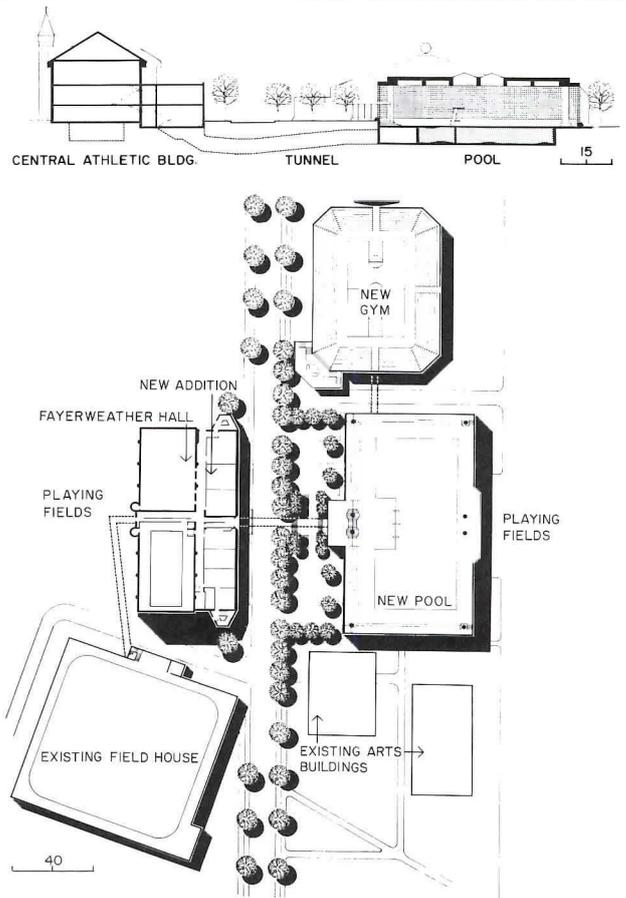
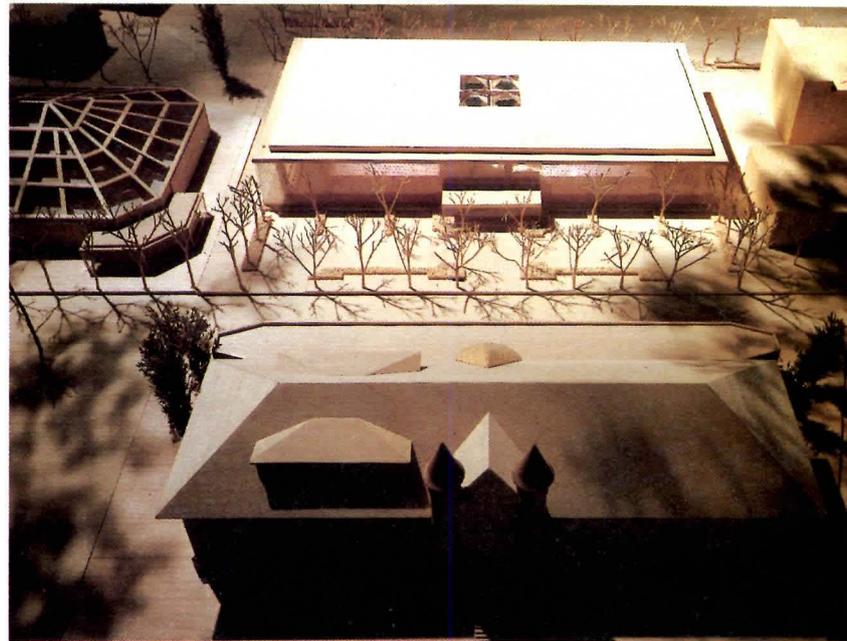
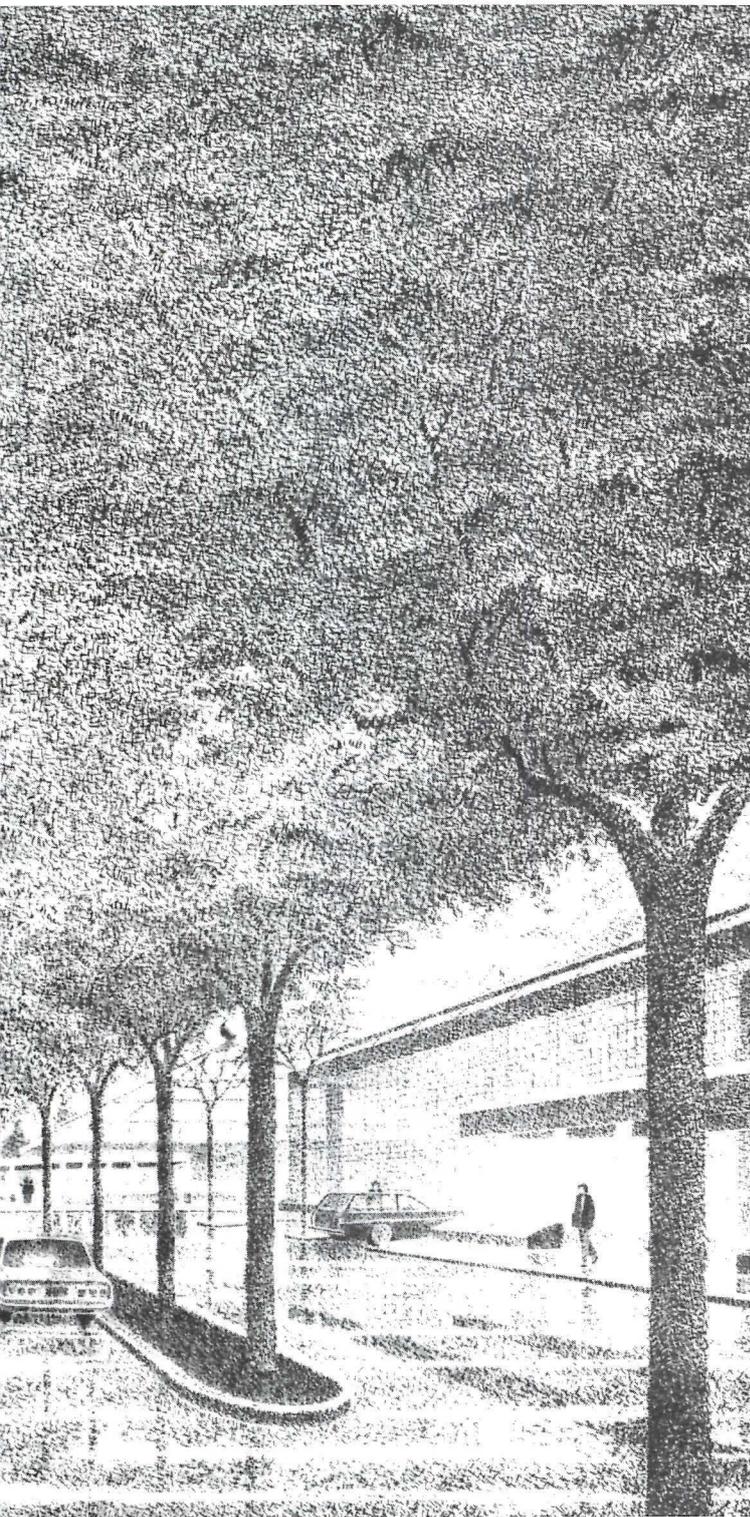
Three new buildings at Wesleyan create vitality at the campus center

The playing fields of Wesleyan are at the center of the campus, where the beauty of the green Connecticut fields and the color of vigorous activity are shared by most of the buildings and walkways. It is, as architect Warren Platner says, "almost theatrical—a green plane covered with moving patterns of runners and football scrimmages and baseball games and Frisbee players."

At the center of all this activity has stood, since 1894, the neo-Romanesque Fayerweather Hall, with an outmoded (pre-basketball) gymnasium, a too-small

pool, and locker and changing rooms. It is linked via a tunnel with a separate and undistinguished field house.

Platner's assignment was to add facilities for intercollegiate and practice basketball, and a new pool that could be used for both recreation and competition. Because of the nearly residential scale of the college (indeed, there are many handsome houses in this part of the campus) Platner decided early on to build the new facilities in small and separate increments. That instinct also helped shape Kevin



Ezra Stoller ©ESTO photos



Roche's Center for the Arts (RECORD, May 1975)—which is also at the campus center and handled as nearly a score of small concrete and limestone structures. Another argument for the small-but-separate solution was the architect's functionalist conviction that a pool should look like a pool and a gym like a gym, that they both need different kind of light, different spans and therefore different structural systems, and that different finishes are appropriate.

Thus the complex shown in the illustrations on this page:

- A luminous glass-block pool pavilion (right in drawing above) faces and is on axis with Fayerweather Hall.
- A solid-walled (but virtually glass-roofed) basketball pavilion is set alongside (where it balances in the composition elements of Roche's Art Center).
- An addition to Fayerweather Hall, built on the structure of an awkward earlier extension, improves and adds to the essential locker room/shower/team room/storage/and control facilities for the entire complex, including facilities for the increas-



ing number of women students. Tunnels link this central facility to the pool and gym—so that the entire complex of new and old buildings is linked underground.

■ The buildings have been sited, and the narrow street running across the fields in front of Fayerweather widened, to create a garden court. When the trees and vines that are an integral part of the design of the Fayerweather addition (see drawings) are mature, this court will create a strong and handsome focal point for the whole sports complex.

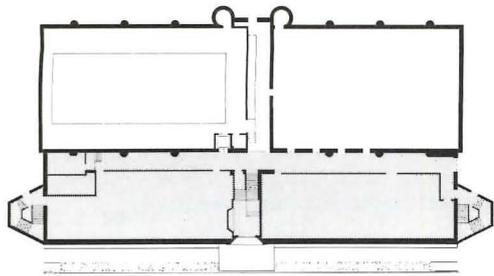
The first building to be com-

pleted (the pool and gym await final funding but are committed) is the Fayerweather addition. Despite its humble locker-room functions, it has received the same kind of attention to detail and detailing that marks all of Platner's work. The facade of the two-story building is conceived as a large-scale garden wall, in brick matched to Fayerweather, with granite base, coping, entrance frame, and trim. Because of its length, the wall is treated as a series of panels. Two major panels flanking the entrance are recessed, with brick headers set

as anchors for the branches of flowering hydrangea, which will be clipped into a kind of garden tapestry (again, see opening drawing). Beyond these flowering panels, the walls are bent back—a form marked by raised panels that help lead the eye into the courtyard, relieve and soften the length of the building, and relate in another plane to the sloping and hipped roofs of the older buildings.

The design of the swimming pavilion (next pages) began with the obvious fact that a pool is beautiful to look at. So the pool

was set almost at grade, framed by shallow steps for lounging and for spectators at competitive events, and enclosed in a glass box. The building is framed in concrete as two squares, each with corner columns, spanned by an efficient, two-way pan roof. The walls are one-foot-square transparent glass block permitting an almost-natural-daylight level inside, and a clear view from the inside out to the fields. At night, when the higher light level is inside, passers-by should be able to see the color and vitality inside. Between the two squares



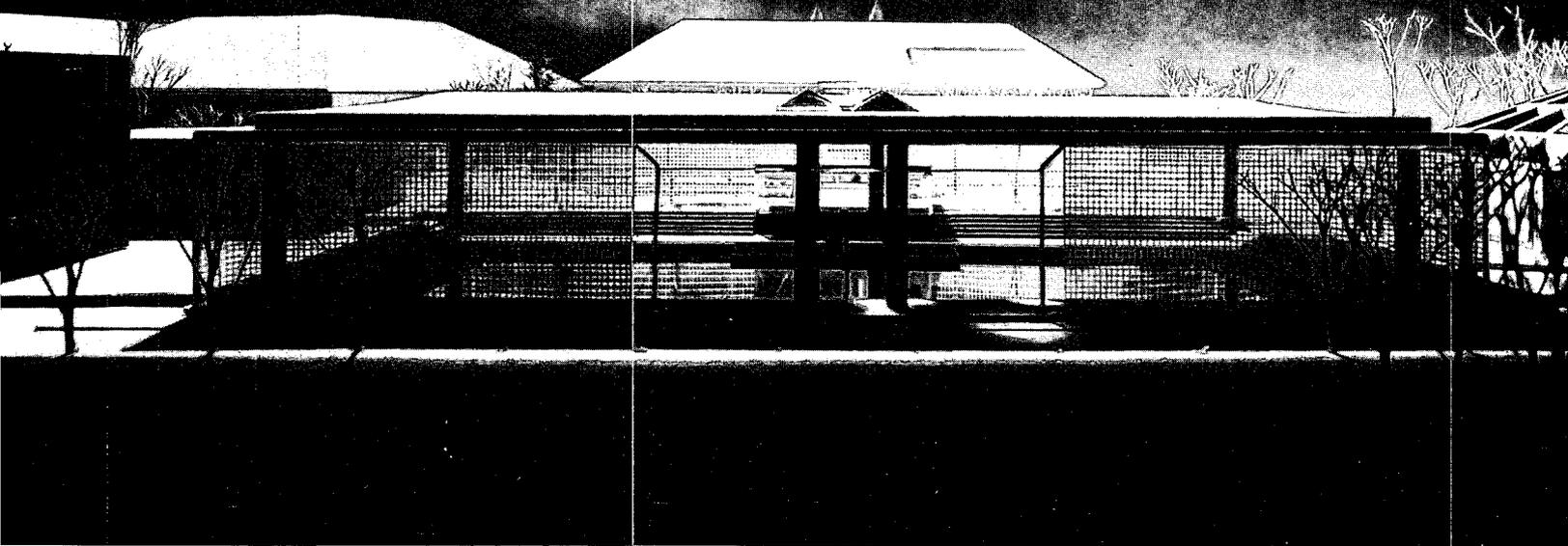
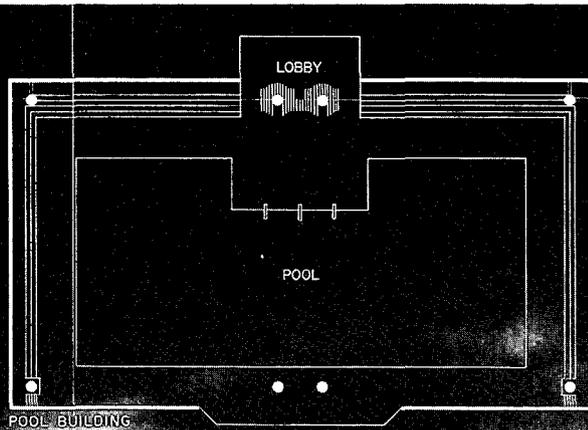
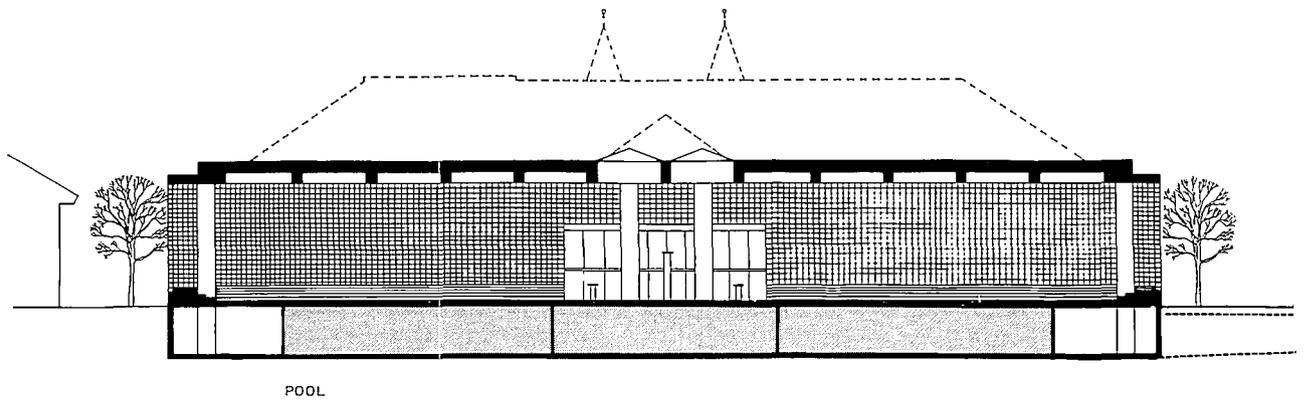
The addition to Fayerweather Hall is in the same brick as the 1894 structure, given interest by the treatment of raised and recessed panels, and set off by the carefully detailed granite trim. Inside, though the building is largely locker and changing space, the detailing is carefully done. The architects designed the brass downlights and wall lights, and the display cases; slate is used on stairs, as wainscoting and corner guards.



of the structure, a clear glass bay will mark the entrance and, on the other side, provide a clear window to the fields beyond. Skylights over the diving platforms will similarly brighten the pool during the day, add sparkle to the composition at night.

The new basketball gymnasium (overleaf) is designed as a contrasting composition. It will have solid walls and a glass roof—a form as appropriate to basketball as the glass walls and solid roof are to the pool. In this building, the playing surface is set well into the ground to minimize

height. When the grandstands used during competitive play are folded back, there is room for two full-size practice courts. The masonry walls (again of matched brick) are windowless—and the wall panels drop down to mark the main and emergency entrances/exits. The corners of the building are chamfered—to minimize bulk, to repeat the forms of Fayerweather across the street, and to create a better seating pattern at the corners inside. A ticket lobby for intercollegiate games extends from the octagonal form into the garden court.

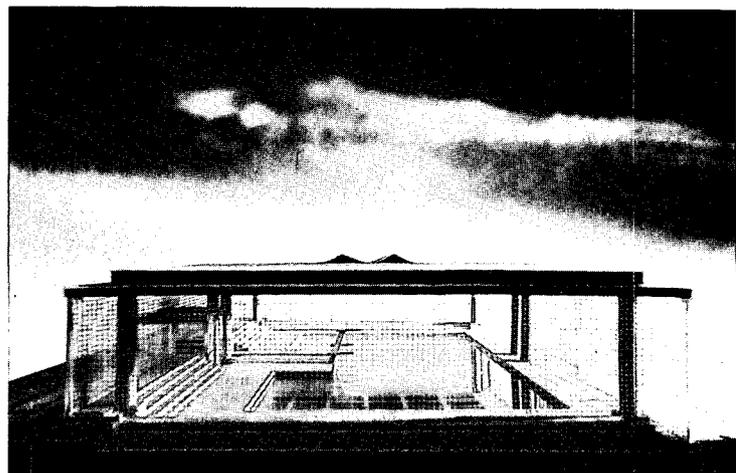


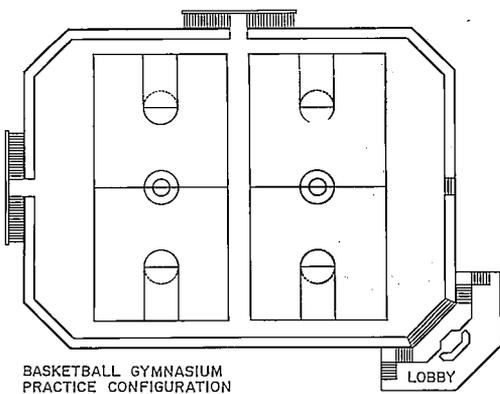
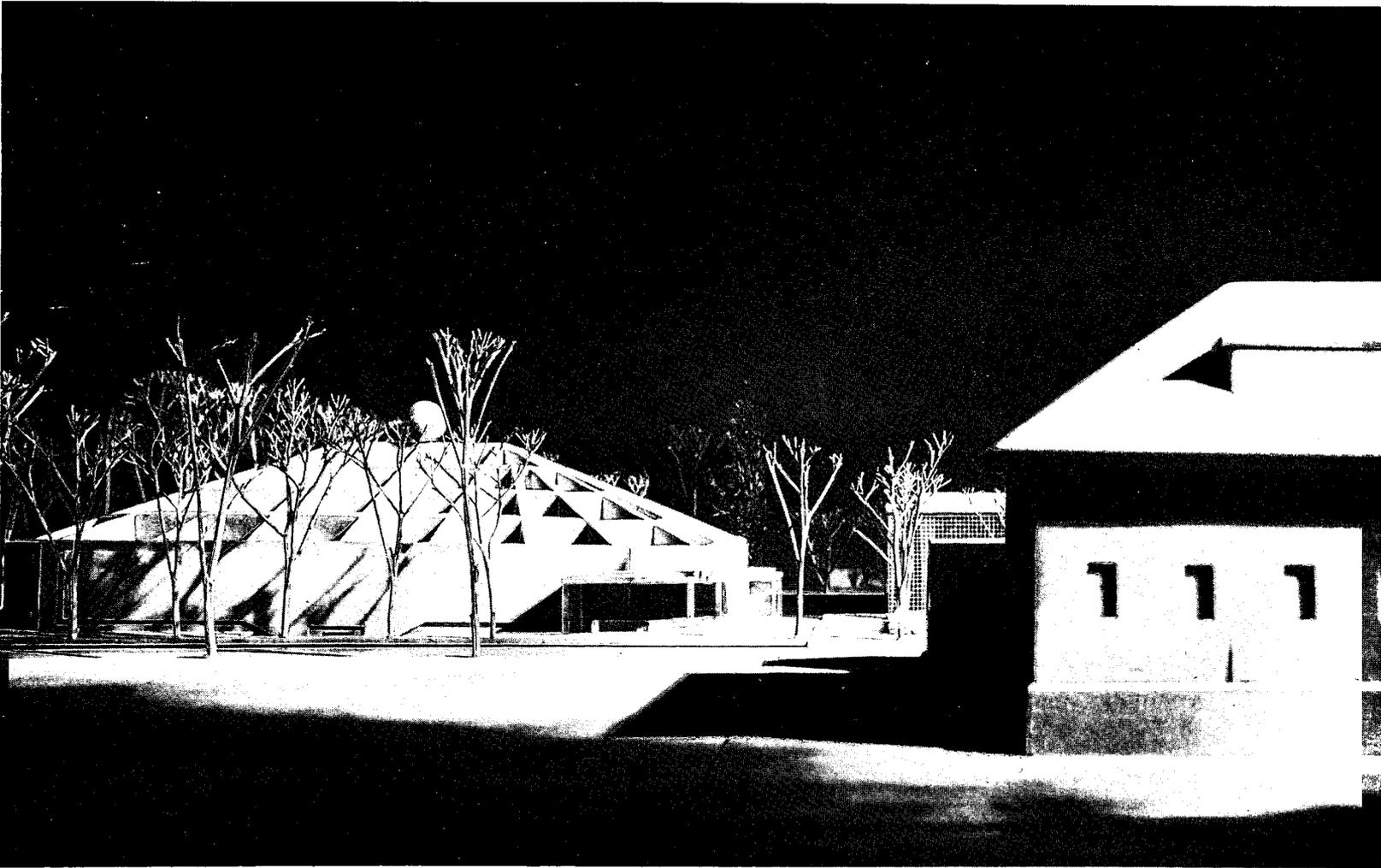
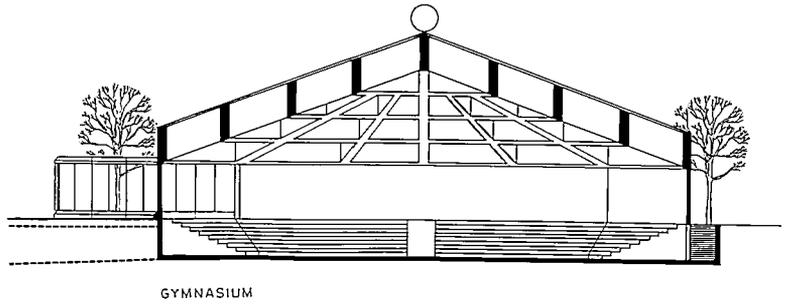
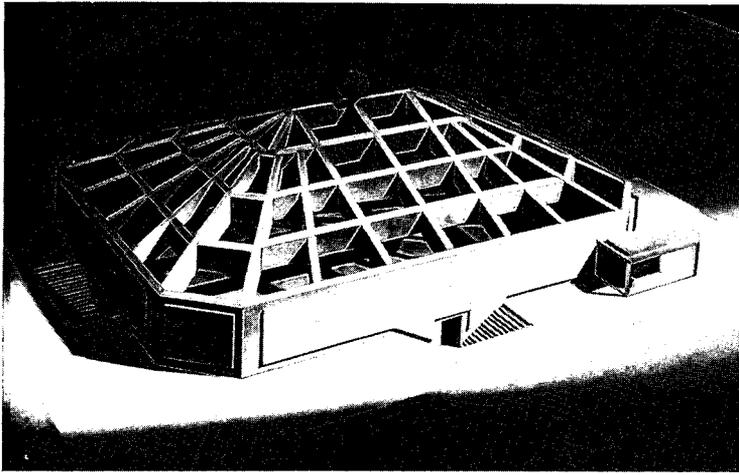
The sloping roof is framed with a two-way structure of deep concrete beams filled in with skylights. The depth of the beams and a system of baffles will diffuse the very high level of daylighting and eliminate glare. The finial is, of course, the world's only concrete basketball.

Taken individually, each of these buildings has a completely different esthetic growing out of the requirements of its use and reinforcing that use. Yet they are linked by materials and forms and detailing to each other and to the older buildings around them. And

when the composition is complete, it will strengthen the campus plan by creating a new focus for the school's athletic program.

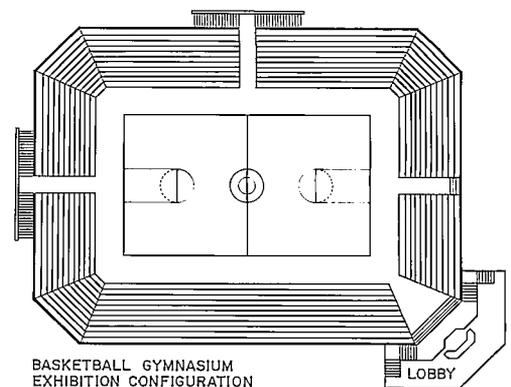
ATHLETIC COMPLEX, WESLEYAN UNIVERSITY, Middletown, Connecticut. Architects and landscape architects: *Warren Platner Associates—associates of Mr. Platner on this project: Robert Brauer, Ron Grantham, Jesse Lyons, Don Holevoet, Linda Muirhead, and Steve Dynia.* Engineers: *Tor, Shapiro Associates* (structural), *John L. Altieri* (mechanical/electrical). Contractor: *Clear Span Structures.*





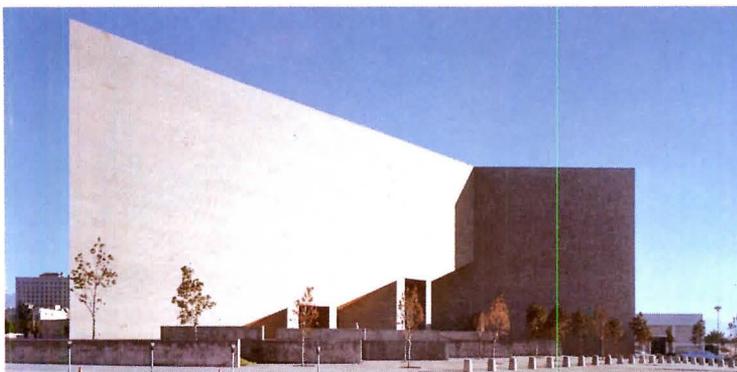
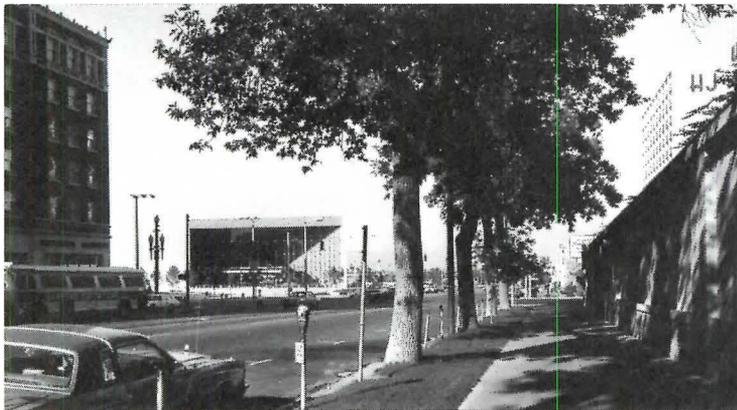
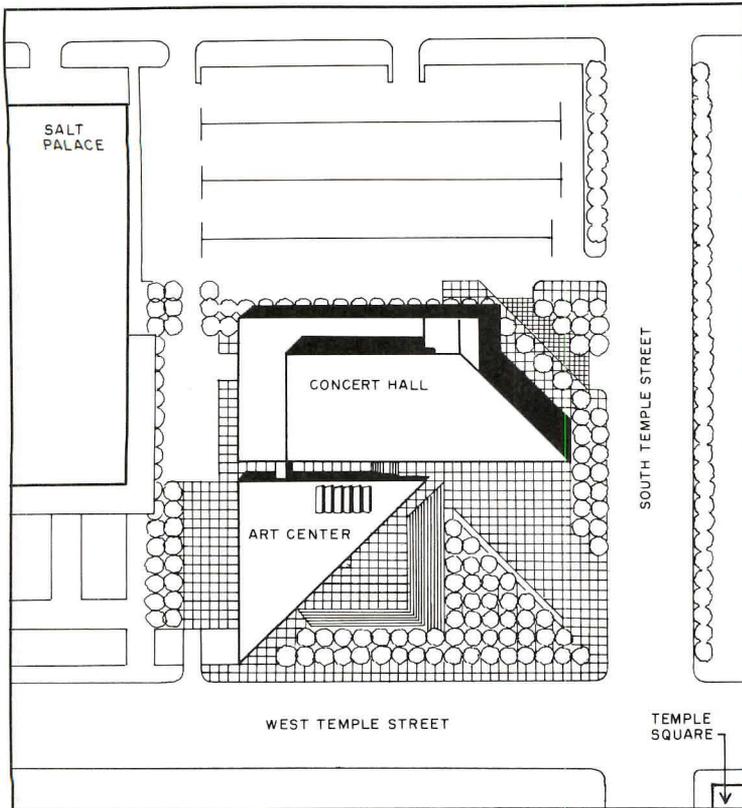
BASKETBALL GYMNASIUM
PRACTICE CONFIGURATION

The pool building (opposite) and the gymnasium are in sharp contrast—the pool all glass with a solid roof, the gym all brick with a skylighted roof. There is seating for 750 on the walkway around the pool; the gym, when set up for intercollegiate games, seats 2,000. In both buildings, the seating is designed to place spectators in close contact with the athletes. And in both buildings, great attention was paid to lighting: the pool, appropriately, seems almost an outdoor space; the gym a closed space with light pouring in, glare-free, from above. Both will be under construction soon.



BASKETBALL GYMNASIUM
EXHIBITION CONFIGURATION

SALT LAKE CITY SYMPHONY HALL AND SALT LAKE ART CENTER



With its unique historical and cultural characteristics, Salt Lake City forms a special backdrop for its Bicentennial Arts Center—a two-building complex (see site plan) of Symphony Hall and the Salt Lake Art Center. Architects Fowler Ferguson Kingston Ruben faced all the predictable sensitive community issues raised when designing a major civic structure, but had the added challenge of the Center's relationship to Temple Square, world headquarters of The Church of Jesus Christ Latter-day Saints. This world-famous religious enclave holds (on one of the city's unique 10-acre "blocks") the Mormon Temple, Assembly Hall and Tabernacle.

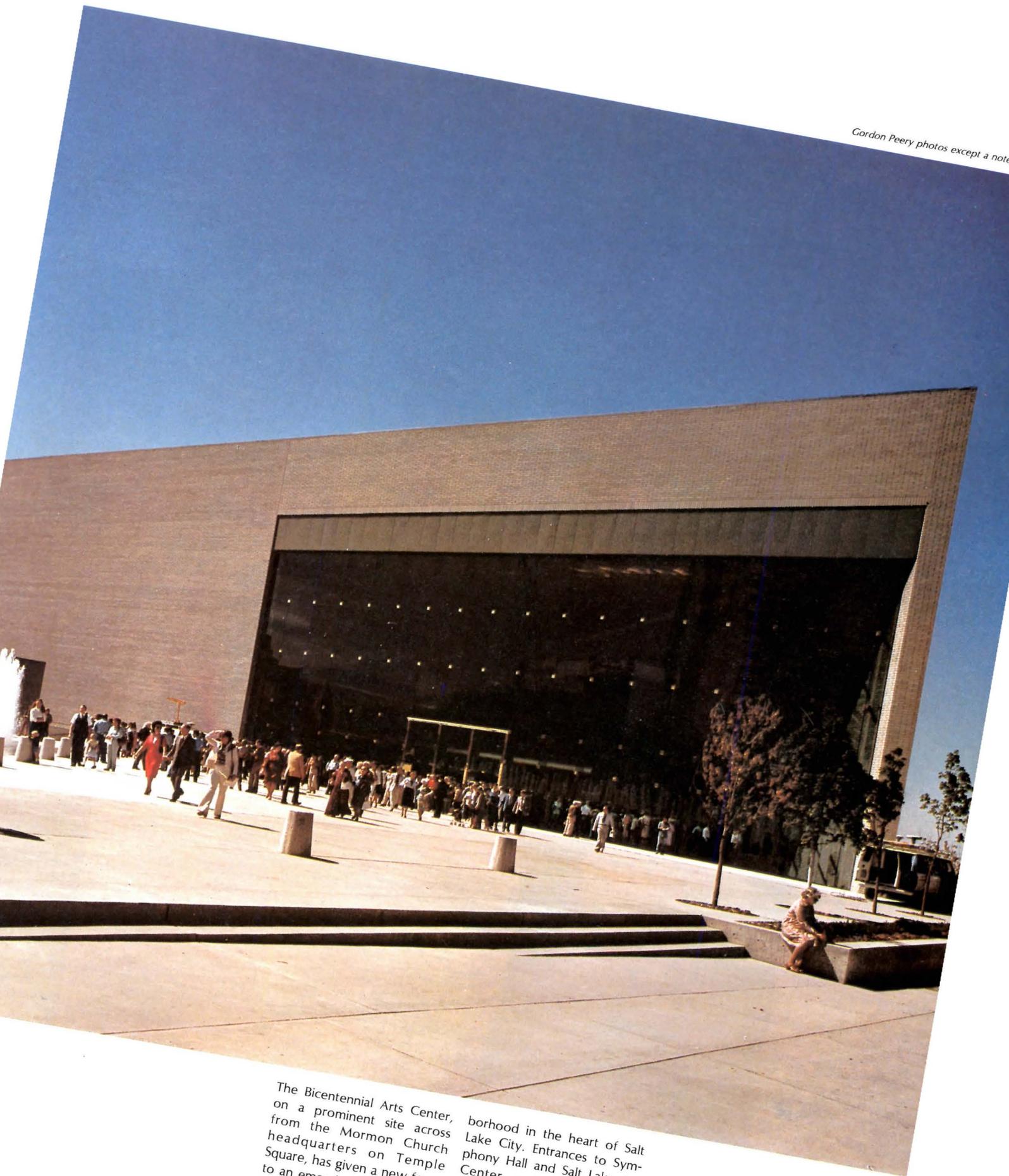
As the largest business center in the Intermountain Region, serving a large number of tourists (many of whom are enroute to the surrounding Wasatch Mountains for some of the best ski areas in the country), the city is busy all day, but nearly closed after dark. There are new office buildings and retail stores, including the important rehabilitation of ZCMI (RECORD, March 1978, pages 122-125), but little stimulus for night-time activities.

To strengthen the attractiveness and usefulness of the downtown core, the Second Century Plan was developed in the 1960s by the Downtown Planning Association and the Utah Chapter of the AIA. Urban goals outlined included preservation and rehabilitation of significant structures, better planning of circulation and parking facilities, creation of urban parks, and construction of cultural and visitor centers. By 1970, a 14,000-seat civic auditorium, known as the Salt Palace, was built to encourage evening cultural activity, but it has been used almost exclusively for sports events. Community support for a music and art center became so strong that a bond issue was passed in 1974 to build the \$10 million Bicentennial Arts Center shown here.

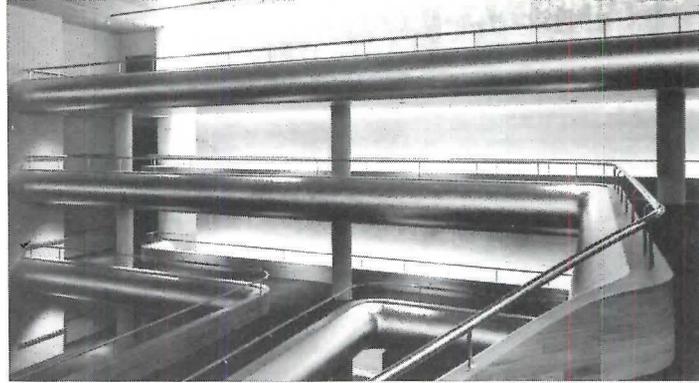
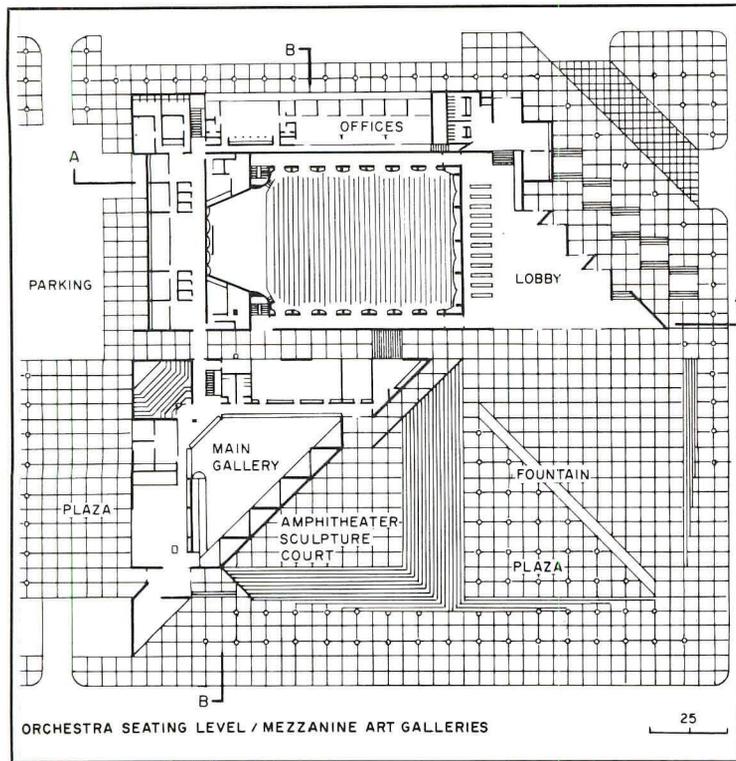
The program dictated the purpose and site of the complex: a performing hall for orchestral music only, to become the home of the Utah Symphony, and an art school/gallery transplanted from its location near the Uni-



Gordon Peery photos except a note



The Bicentennial Arts Center, on a prominent site across from the Mormon Church headquarters on Temple Square, has given a new focus to an emerging cultural neighborhood in the heart of Salt Lake City. Entrances to Symphony Hall and Salt Lake Art Center, and the plaza on which they sit, orient directly to Temple Square.



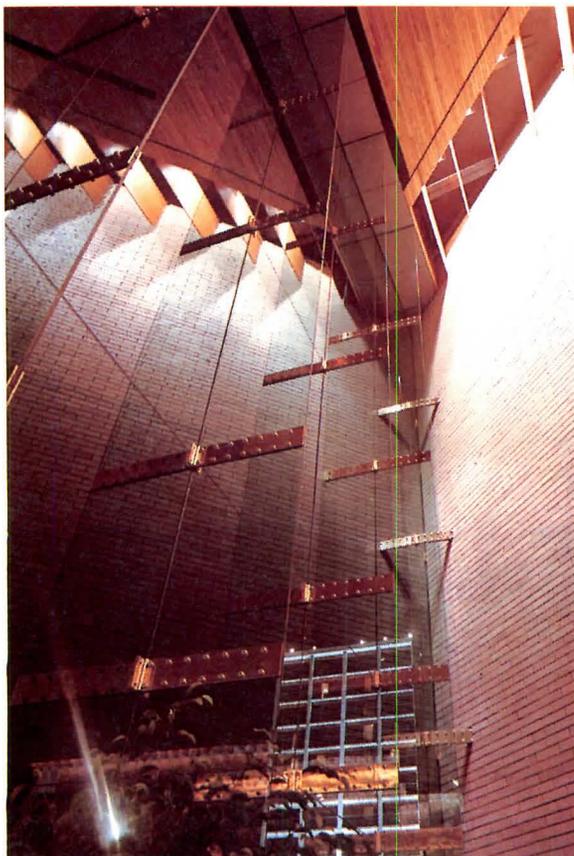
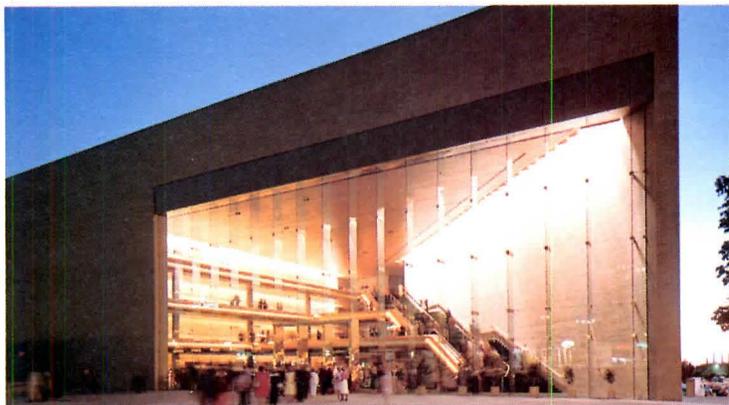
iversity of Utah campus some distance from downtown. Both would be located on a corner portion of the block with Salt Palace, a corner directly across the street from Temple Square.

The shape of the Symphony Hall was established by Dr. Cyril Harris, Professor of Electrical Engineering and Architecture at Columbia University, who was retained as the acoustical consultant. His strategy called for a rectangular-shaped hall. With this shape in mind, the architects designed this strong and formal complex—large in scale but appropriately related to Temple Square.

To set up a visual and functional relationship between the two blocks the Symphony Hall and Art Center were separated into two buildings, and playing on the geometry of the triangle, aligned to form a plaza facing Temple Square. More than a gesture, this pedestrian park, with a fountain designed by architect Boyd Blackner, is only the second public park in the center city. The park serves as processional entry into the Symphony Hall, and is particularly wonderful at night when lighted. The lobby of the Symphony Hall is an active and colorful backdrop—seen through its 580-square-foot glass entry wall. To further strengthen the visual relationship between the new Center and Temple Square, a gray brick was specified for the Center to match the gray granite of the Assembly Hall and Temple.

The Symphony Hall gets top grades for its acoustical performance. The single-purpose hall is Dr. Harris's forte, and if it's fair to call his recurring design preferences a "formula" then it is working again here as a shoebox-shaped hall with varied wood and plaster surfaces in special shapes to produce optimum reverberation and tonal quality.

This is a classic approach, influenced by designs of Boston Symphony Hall (1900) and Vienna's Grosser Musikvereinssaal (1870). Harris has applied his formula to other concert halls, including the redesign of Avery Fisher Hall in Lincoln Center, New York City, and



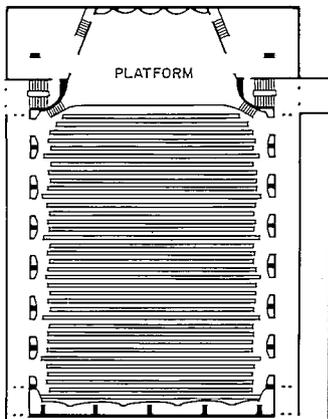


A magnificent four-story-high lobby with sculptural staircase and floating balconies, highlighted with gold leaf, provide the all-important ceremonial entrance and grand prome-

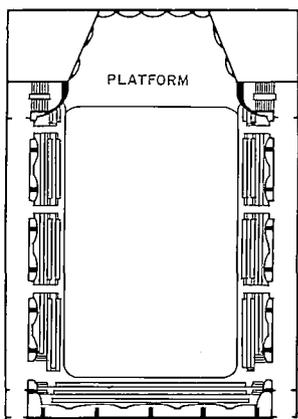
nade for the Symphony Hall. A multi-faceted effect is created by a huge 580-square-foot glass wall with glass stiffeners, adding another dimension to the festive space. Handsome

brass rail detailing, dark green carpeting (like that inside the Hall), an oak wood ceiling, and perimeter lighting further contribute to the concert hall lobby's elegance.



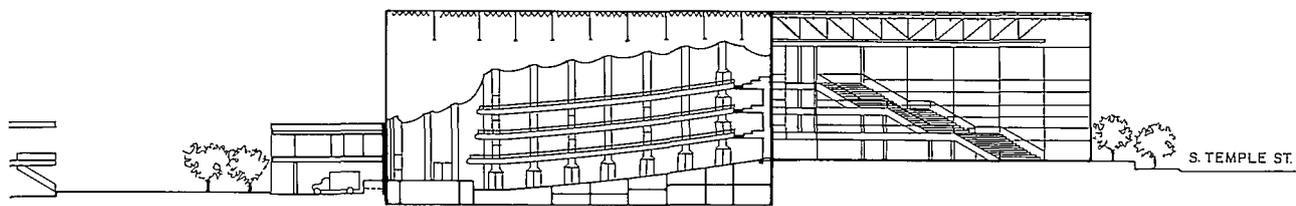
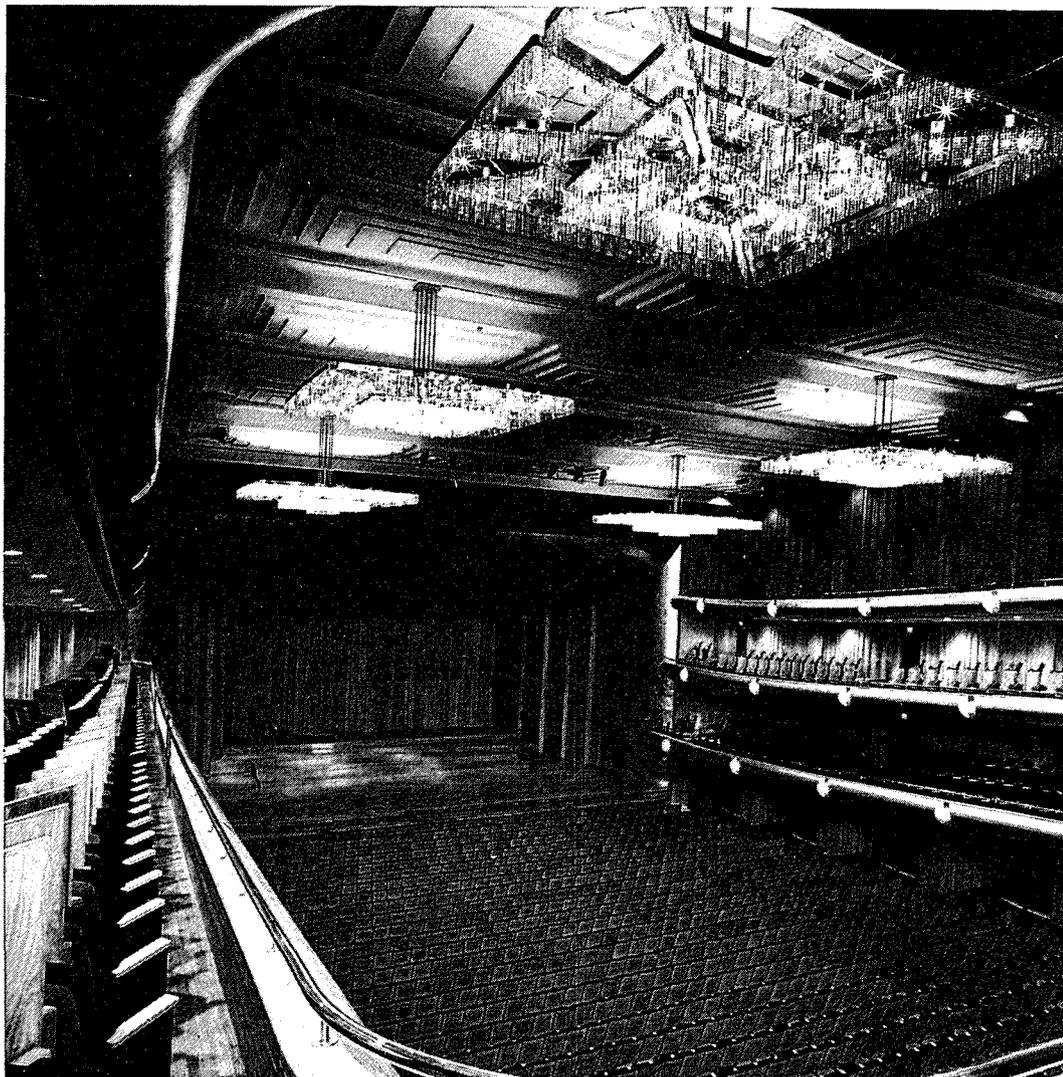


ORCHESTRA SEATING LEVEL

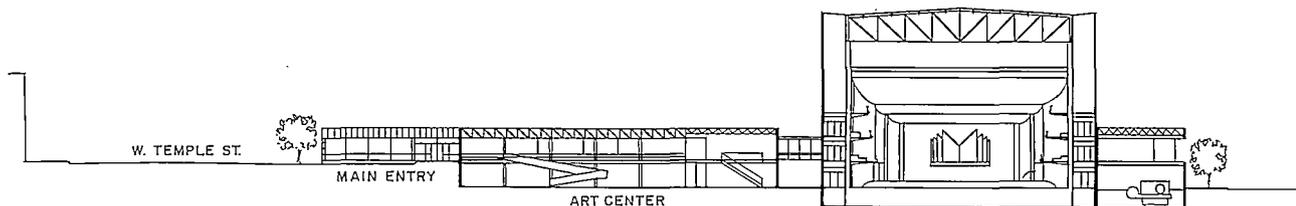


FIRST TIER SEATING LEVEL

This single-purpose hall was designed in the manner of the world's most classic symphony halls, with a reliance on traditional shape, sound-diffusion techniques and materials. Exhaustive studies were conducted, aimed at "tuning" the hall to achieve an optimum reverberation time. The hall is rectangular, 160 ft long, 90 ft wide, and 55 ft high. Randomly-dimensioned oak panels facing the walls, a plaster ceiling with pronounced square patterns, and convex-shaped plaster balconies covered with gold leaf are all shapes and hard surfaces which contribute to producing a rich mixture of tones. With a total seating capacity of 2,805, 1,833 are on the orchestra level in continental seating, 401 on first tier, 307 on second tier and 264 on third tier. The orchestra and tiers slope toward the stage, with tiers also stepping back from one another to eliminate seats with only a partial view. The hall is like a box within a box, as a corridor around the hall acts as a sound lock to control intrusions from outside noise.



SECTION A-A



SECTION B-B



Minneapolis Orchestra Hall.

The Symphony Hall interior is 160 feet long, 90 feet wide, and 55 feet high, and seats 2,805. Avoiding the problem of many large halls—in which there is a relatively large number of seats with limited views—the majority of people in this hall are seated on the orchestra level in continental seating. Each tier is stepped back and slopes toward the stage to also maintain full views. To make the audience an extension of the musician's platform, there is no proscenium, stage house or other theater trappings.

To control and manage orchestral sound, the ceiling is formed of extra heavy plaster, in articulated square patterns. The auditorium floor is oak, laid on a wood under-flooring, mounted on wood sleepers with an airspace underneath, and carpeted. The ceiling and floor are parallel but are angled down toward the stage (see sections). The walls have random-width oak panels mounted on wood furring with an airspace behind the panels. And the balcony railings are sweeping convex shapes.

An elegance results from the mix of colors and materials, from gold-leaf-covered balcony fronts, green wool upholstery, natural oak wood paneling, to custom-designed brass and crystal chandeliers.

The Bicentennial Arts Center, in itself a well-designed, handsome complex with high acoustical performance, will be additionally influential in Salt Lake City for its approach in providing festive public space and its part in the creation of a unique cultural neighborhood for the city. —Janet Nairn

THE BICENTENNIAL ARTS CENTER—SYMPHONY HALL and SALT LAKE ART CENTER, Salt Lake City, Utah. Owner: *Salt Lake County*—*Georgius Y. Cannon*, owner's architectural advisor. Architect: *Fowler Ferguson Kingston Ruben Architects*. Engineers: *Reavely Engineers & Associates, Inc.* (structural), *Syska & Hennessy* (mechanical/electrical). Consultants: *Dr. Cyril M. Harris* (acoustical), *Klepper/Marshall/King* (sound system). Landscape architect: *David C. Racker & Associates*. Construction manager: *John Price Associates*.

Dick Springate photos





Dick Springate photos

The Salt Lake Art Center was designed for a modest program of art school and gallery. Set apart in a triangular-shaped building from the Symphony Hall, but connected by a bridge (see site plan and floor plans), the school facilities are laid-out in an L-shape to embrace the two-level main gallery. Glass interior walls separate the school from the exhibitions, while still permitting views from an overlooking corridor. The gallery itself is unadorned; brick used on the exterior is wrapped around the interiors of columns on the eastern elevation. An outdoor amphitheater and sculpture court are also provided.



WHO SHOULD BE AFRAID OF TOM WOLFE?



The architectural literati, that's who—according to Bradford Perkins in his review of Wolfe's notorious book From Bauhaus to Our House.

Bradford Perkins of the New York architectural firm of Atтия and Perkins is a frequent contributor to ARCHITECTURAL RECORD on many subjects.

Tom Wolfe's book has generated more public attention than any other book on architecture in recent years. It is to architectural writing what AT&T's top has been to architectural design—a media event, with more style than substance, that somehow has generated an important architectural debate.

The book, *From Bauhaus to Our House*, has already been extensively reviewed. Most of the more serious reviews have panned it, but in spite of a host of valid criticisms, many serious architects think it well worth reading. Not only is it the most entertaining book on architecture written in years (in a field where entertaining, understandable prose is clearly out of favor), but also it makes a strong point—possibly unintentionally—that needed to be made. In a profession consumed with theoretical debate, it is very helpful to have an outside commentator raising the obvious questions with so much confidence and style that they cannot be ignored.

As I will discuss later, Wolfe is most effective when commenting on the current scene. And because criticism of today's vanguard makes the architectural literati uncomfortable, this half of the book is virtually ignored in the reviews. Instead, the main reviews have concentrated their attention on the obvious flaws in the first half where he sets forth his version of the origins of modern architecture. Rather than repeat the long dissection of these faults already carried out by better critical surgeons, I shall briefly summarize the book's problems.

His history is, at best, unusual and, at worst, just plain wrong. To label modern architecture a European import that denies the essence of American culture, is a claim that even the most chauvinistic Europeans do not make—much less the Bauhaus group that played a major but not exclusive role in the continuous development of modernism. Wolfe ignores the Chicago roots of the Bauhaus concepts as well as the parallel vitality of American modernism.

He is equally wrong in his portraits of the central characters in the first half of the book. In his desire to portray his favorite villains—the "white gods" from Europe (Gropius, Mies, Breuer, etc.)—as dogmatic elitists, he seriously distorts the truth. His portrait of Gropius whom he labels the "Silver Prince" is particularly unfair. (It was Paul Klee who first

described Grope thus in a spirit of affection. Wolfe uses the phrase pejoratively). Anyone who spent even half an hour alone with Gropius would know that this portrayal is a more accurate picture of Wolfe himself—a white-suited dandy—than of Grope.

Once he settles down to tell the story of the advance of modernism, he ignores or fails to understand the forces—far more powerful than architectural dogma—which made modern architecture the dominant style. For example, rising building costs had more to do with the death of ornament than the polemics of the Modern Movement. The cheap, unadorned boxes that litter every American city today are, for the most part, designed by architects who are anything but dogmatic modernists. After a recent trip to China, which is also rapidly building flat roofed, unadorned boxes, a friend commented, "Wolfe would probably blame that on Grope, too!". The genius of the modern masters was that they recognized the implications of the new industrial materials and structural methods and came up with an esthetic that accommodated these new architectural determinants. Mies's Lake Shore Drive Apartments and early Chicago office buildings became forms to imitate in large part because they at least brought style to necessity.

Later in the book, describing modernism's emergence, Wolfe takes the Ivy League classroom and dormitory debates—or more likely New York cocktail party discussions of architecture—far too seriously. Nationally, figures such as Eero Saarinen and Frank Lloyd Wright were never relegated to the cultural back seat that he claims. Take this example from the book:

I can remember writing a piece for the magazine Architecture Canada in which I mentioned Eero Saarinen in terms that indicated the man was worthy of study. I ran into one of New York's best-known architectural writers at a party, and he took me aside for some fatherly advice.

"I enjoyed your piece," he said, "and I agreed with your point, in principle. But I have to tell you that you are only hurting your own cause if you use Saarinen as an example. People just won't take you seriously. I mean, Saarinen. . . ."

I wish there were a way I could

convey the look on his face. It was that cross between a sneer and a shrug that the French are so good at, the look that says the subject is so outfe, so infra dig, so de la boue, one can't even spend time analyzing it without having some of the rubbish rub off.

Wolfe is undoubtedly right in using this as an example of what happens in discussions among writers on architecture (now more than ever), but it is a serious misrepresentation of the mainstream of architectural thought. Just last year [January 1980] an ARCHITECTURAL RECORD survey of students and practitioners put both Saarinen, Wright and their work at the top of the profession's list of favorites.

And finally, Wolfe has a tin eye. It does not help his thesis to claim that architects who "actually catered to the hog-stomping Baroque exuberance of American civilization" such as Edward Durell Stone were declared apostates. Stone was denied acclaim, not because his buildings violated the standards of 20th-century modernism but because by the standards of any age, his best known buildings were poorly designed and executed. But with all of these obvious flaws, why are so many architects taking Wolfe's book so seriously? One of them recently answered this very succinctly when he said, "While you cannot take it seriously as architectural criticism, you must take it seriously as social criticism." And this explains why there is such a sharp split between the professional critics and the majority of architects. Tom Wolfe's most telling points are not to be found in his version of the history of the modern movement nor in his critiques of buildings—where he misses the mark more often than he hits. He is at his best when holding up to ridicule the verbal and philosophical fog within which architects have worked in this century—a fog that has become a real peasouper since the advent of Post-Modernist architectural writing. Architects, weary of both Modernist and Post-Modernist dogma, find Wolfe's evisceration of the more pompous elements of this dogma a welcome change.

One well-known critic, in a recent speech, denied that architectural criticism played a major role in shaping architectural style. He is either too modest or does not understand the business, professional or per-

sonal objectives of the people he writes about. As any experienced architect knows, publicity—even bad publicity—is essential to the development and maintenance of a practice. It is a real chicken and egg question as to whether good work generates publicity or vice versa. If it were not so essential, major architects would not spend so much time cultivating a claque among the writing crowd. Further, professional recognition is also a central objective for most architects. It is one of the primary rewards they strive for, recognizing it as compensation for the profession's notoriously inadequate financial rewards.

The problem today, however, is that the role of writing, cocktail chatter, and the other media of architectural criticism has taken on far greater importance in recent years. Wolfe, among others, would like to trace at least part of the current media explosion to the publication of Robert Venturi's *Complexity and Contradiction in Modern Architecture*. While not denying the impact of this important book, a better understanding of the profession reveals that political and economic factors have been far more important. These are the strongest catalysts for change in the arts. Rarely, if ever, does a faction in the arts cause a basic shift without strong outside help. In the case of the current debate about Post-Modernism, the 1974-75 recession (and the governorship of Nelson Rockefeller) can probably take more of the credit than all of the pre-1975 polemics of the Post-Modern theorists.

Rockefeller—and the vast state-wide building programs he initiated—changed New York City, which was already a media and art center, into an architectural center as well. Until his State University Construction Fund, Urban Development Corporation, and other State-sponsored programs began to seek out and hire design-oriented firms for their large programs, New York area architecture was not a major topic. Rockefeller—and later former Mayor John Lindsay—changed that and New York suddenly became one of the places, if not *the* place, to work if you were serious about design. The design figures that grew and prospered during this long boom made their reputation by building. And New York—the nation's media capital as well as the home of much of the design press—had flesh and blood, design-oriented architects to meet and exchange ideas with.

... "because criticism of today's vanguard makes the architectural *literati* uncomfortable, this half of the book is virtually ignored in the reviews."

"Wolfe is at his best when he is holding up to ridicule the verbal and philosophical fog within which architects have worked ..."

Architecture—and New York area architecture in particular—began to be a media event. It was natural that the media would find architecture an appropriate object of its attention. The media likes style, and on one level, architecture is a fertile source of articles on style. But if your focus is on style, you have to limit discussions of architecture to the depth which can be comfortably absorbed over a Sunday brunch of croissants and coffee. Thus, it is not surprising that virtually all of the media coverage focuses on buildings which can be described in terms of style: houses, boutiques, loft renovations, showrooms, and most recently skyscrapers. The current discussion of the skyscraper is typical in that it focuses on these buildings as sculpture rather than architecture. The building's top or its geometry are discussed without reference to the functional or esthetic reasons for either. The even more complex issues of the building's spaces, detailing, and the many other factors of a truly successful work of architecture are ignored.

Until the mid-1970s the impact of the written word was under control because architects were still busy building. Then came the 1974-75 recession, which hit New York harder than most—because it coincided with New York City's fiscal crisis, a glut of office space, and a temporary loss of faith in the City's future. My father, Lawrence Perkins, always said he was lucky to start his firm during the Great Depression because all the established firms were shattered and it made room for his generation of young firms. Something similar happened in the mid-70s. The architects who built suddenly were not building, firms shrank or collapsed, and there was little to publish beyond the often bizarre extravaganzas for various OPEC clients.

As Wolfe correctly recognizes, this was a marvelous opportunity for the non-builders because they could maintain the liveliness of the previous boom years by theorizing. There was a major shift in attention away from the vast public projects of the previous 10-15 years—such as complete new towns and university campuses (because they were no longer being built), and the media filled its pages with the glutinous prose of architectural theory illustrated more often than not with Southampton beach houses, unbuilt buildings, and in some cases drawings of projects never intended to be built.

This shift to the written word and architectural analyses based on style alone was accelerated by the fact that many architects had to retreat to academic positions to support themselves and maintain the momentum of their careers while clients were scarce. This brought them into association with the art historians. Not only does this particular branch of academe make its living categorizing the artistic geniuses in terms of theories and factions (often totally unknown to the artists themselves) but such historians base their analyses in large part on photographs of art. In analyzing painting—and even most sculpture—this is possible, but reducing architecture to two dimensions misses most of the experience of it as an art form. Yet if one were to listen to the current debate, architecture can be understood at the skin-deep level captured by photography.

Any architect aspiring for recognition rapidly learned that he had to be able to play the word game if he wanted to be taken seriously. This opened the floodgates and what has poured out has filled hundreds of articles, books, television shows, etc.—but too few building sites. It is common for architects to borrow language from the latest "in" field. In the 1960s it was computers. One well-known architect went so far as to describe the corridors in one of his buildings as circuitry. Today, the chic field is linguistics and Wolfe, a master of the English language, has a field day dissecting the pedantic prose of architectural theorists who borrow critical words and phrases from the fields of literary criticism, and linguistic studies. Too much of it is reminiscent of the freshman college papers we salted with big words to give them the weight we could not provide from experience. One paragraph by Wolfe on Peter Eisenman illustrates both the current problem and Wolfe's ability to expose it.

Eisenman had gone all the way with the linguistics business Others were talking about syntactical nuances and the semiology of the infrastructure and the semantics of the superstructure and the morphemes of negative space and the polyphemes of architectonic after-image. They would talk about such things as "the articulation of the perimeter of the perceived structure and its dialogue with the surrounding landscape." (This caused a Harvard logician

to ask, "What did the landscape have to say?" The architect had nothing *verbatim* to report.) But they were all United Press International rewrite men, simple to a fault, compared with Eisenman. Eisenman's great genius was to use relatively clear words from the linguistic lingo and lead one's poor brain straight into the Halusian Gulp.

"Syntactic meaning as defined here," he would say, "is not concerned with the meaning that accrues to elements or actual relationships between elements but rather with the relationship between relationships."

Eisenman was beautiful. He could lead any man alive into the Gulp in a single sentence.

Much of the current Post-Modernist debate, however, should have been healthy for the art of architecture because it freed us for a new thrust of creative exploration. Unfortunately, as Ada Louise Huxtable noted in her article, "Is Modern Architecture Dead?,"

"What they are doing is trivializing architecture, reducing it to something less than its traditional role as the one art capable of uniting the real and the ideal as an expression of body and spirit, society and symbolism. The results are small, narcissistic exercises that range from the exquisite to the empty, lacking passion or conviction."

One would never learn from the current writing that architects are serious people solving serious problems.

Architecture has become—at least in the media—too close to fashion. And it is here that Tom Wolfe is most on the mark. When it comes to finding the poorly sewn seams of fashion, he is without peer. Many architects feel very strongly that the profession is in the grips of dogma every bit as strong as at the height of the modern movement. It is serious when even SOM feels on the defensive. As Wolfe recounts:

Nevertheless, it seemed vital, even to the commercial giants, to get in on the new game, at the very least. Last December, Gordon Bunshaft's firm, Skidmore, Owings & Merrill, the commercial giants of the old Miesling glass-box vogue, took a rather desperate step. They invited the editors of the

Harvard Architecture Review to put together a private panel of architects who would discuss new developments in Post-Modernism with them. The Review came up with Graves, Stern, Steven Peterson, and Jorge Silvetti. They sat at a U-shaped table at the Harvard Club in New York and confronted a team of Skidmore, Owings & Merrill architects—and lectured them as if they were architecture students receiving their first studio critiques. The Skidmore group showed slides of their new work, by way of proving that their work was by no means restricted to glass boxes of the Lever House tower sort. The fact was that they were also doing squat glass boxes with curved corners and the like. The Post-Mods, whether White or Gray, were having none of that. Stern said: "The kinds of buildings Skidmore builds are boring—tall or short, fat or thin, if you've seen one you've seen them all." The Skidmores didn't even bother to fight back.

O Destiny . . . At no time did it seem to strike anyone present as funny that here were the leading architects—commercially—in the field of large public building in America, and they were willingly—willingly?—they begged for it—sitting still for a dressing-down by four architects who, between them, could claim few buildings larger than a private house. Well, what was funny about that? Such was the hold of the compound mentality, of the new Scholasticism, on the architectural profession."

Irrespective of the judgment—or lack of it—which prompted this meeting, Wolfe's use of it is a very telling example of the danger that the profession faces in exchanging one too-rigid definition of architectural acceptability for another. Thus, those of us who want to get on with the serious artistic problem of building good buildings in accordance with our own feelings about a valid esthetic, appreciate even a witty layman's attempt to clear away the cobwebs, we welcome the cry from the crowd that the emperor of architectural freedom is not wearing any clothes. If this message is heard, we and the emperor will both be better off.

"This shift to the written word and architectural analyses based on style alone was accelerated by the fact that many architects had to retreat to academic positions to support themselves and maintain the momentum of their careers while clients were scarce. This brought them into association with the art historians."

"Architecture has become—at least in the media—too close to fashion. And it is here that Tom Wolfe is most on the mark. When it comes to finding the poorly sewn seams of fashion, he is without peer."



MUSEUMS

After a quiescent decade during which comparatively little in this building type was constructed, a boom in museum building now appears to be gathering force. The three museums in the pages that follow are part of this new generation. In their diversity, they begin to reflect the shifting spectrum of planning and curatorial concerns that will almost certainly shape museums in the years ahead. At Boston's venerable Museum of Fine Art, for example, I.M. Pei and Partners have added a new wing that reorganizes the museum's circulation completely at the same time that it increases potential revenues and expands the opportunities for display. Akron's new Art Museum by Dalton, van Dijk, Johnson and Partners is a conversion from a landmark post office and a splendid example of adaptive reuse, a strategy with almost unlimited potential in cities across the country. The Mid-America Center, by contrast, is neither an addition nor a conversion, but like the other two museums, it is something of a departure. Designed by E. Verner Johnson and Associates with Stuck, Frier, Lane, Scott, Beisner, Mid-America's science exhibits are irresistibly dynamic. The Center's hands-on attitude toward displays and its insistence on visitor participation are keys to its success and vectors for the future.

Though divergent in their circumstances, methods and objectives, all three museums represent substantial investments by major cultural institutions in the cities and regions they serve. —B.C.



©Steve Rosenthal photos except as shown

Pei designs new West Wing for Boston's Museum of Fine Art

For good or ill, the nature of art museums has changed beyond recognition since the end of World War II. It used to be enough to raise a temple to an important collection and then to hang paintings in favorable light to allow viewers solitary contemplation or, at most, hushed discussion.

No longer. Attendance has increased geometrically at both major and minor museums. Certainly young people seem to equate culture and sociability—not just at museums but also at plays, ballets and rock concerts.

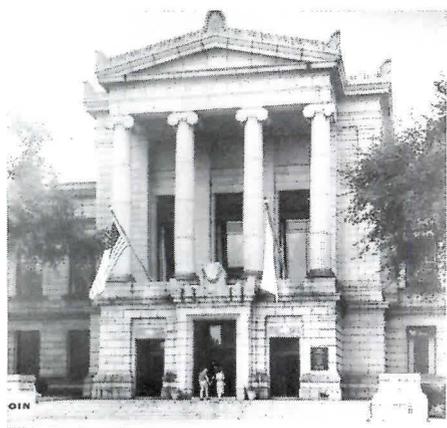
What's more, the changed character of public cultural institutions introduces the unspiritual factor of money, needed to maintain both buildings and contents in a period of expensive labor and fuel. The wealth and generosity of a few private patrons can no longer support the enormous needs of major institutions. Thus, in addition to admission fees, the development of such profit centers as shops for the sale of books and reproductions—tasteful but decidedly commercial.

And of course curators continually add to their collections, requiring both galleries and safe storages.

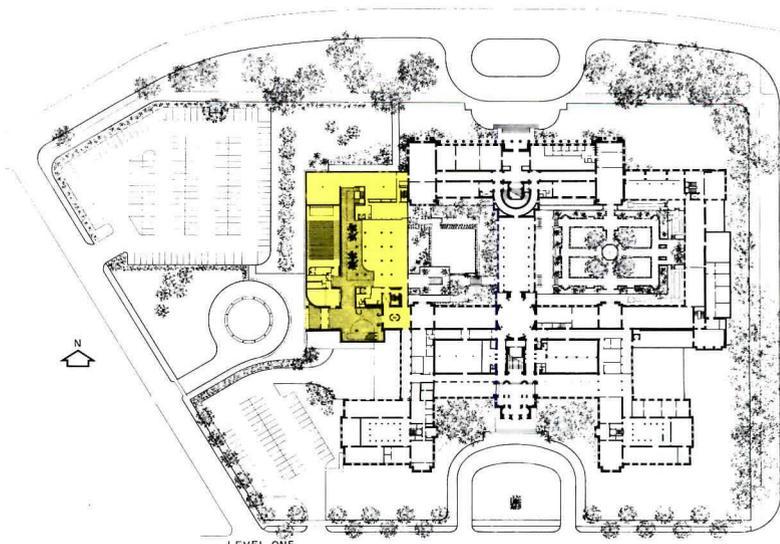
To meet these combined artistic, social and financial needs, Boston's illustrious Museum of Fine Art asked architect I. M. Pei for a new West Wing and other modernizations of its 1909 building designed by Guy Lowell (photo below left).

The first and most important issue that the museum faced had nothing to do with either space or money. The crying need was for, of all things, air conditioning: paintings, drawings, scrolls and fabrics already showed signs of deterioration to the professionally fearful eyes of curators. But as any fund raiser recognizes, climate control equipment, however imperative, is invisible to donors. Fortunately, the museum needed at the same time some visible accommodations: galleries for special exhibitions (especially traveling "blockbusters" like the popular King Tut show) and for contemporary art, as well as

BUILDING TYPES STUDY®571



Courtesy Museum of Fine Art



for social amenities and for profit centers.

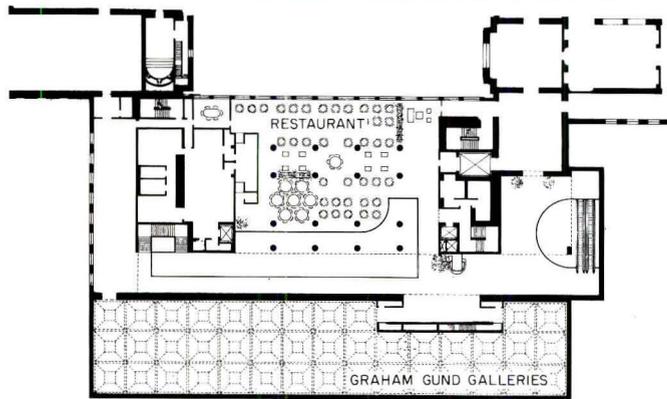
From the outside, the new wing is non-committal, almost secretive. A glimpse of glass barrel vault gives the merest hint of the space to be found inside. If the visitor already knows the Lowell building, though, he will expect a surprise. While the same Maine granite clothes both structures, the details could not be more different. At the front of Lowell's Beaux-Arts building, an Ionic colonnade sits on a rusticated base and supports a pediment with acroteria and idiosyncratic cornice. At the front of Pei's modern wing, the unadorned facade is smoothly dressed—no rustication here—and a single round column supports a simple concrete lintel.

Pei's design continues to keep its secret even after the visitors walk through the door—as two-thirds of them will since the West Wing will become the museum's main entrance.

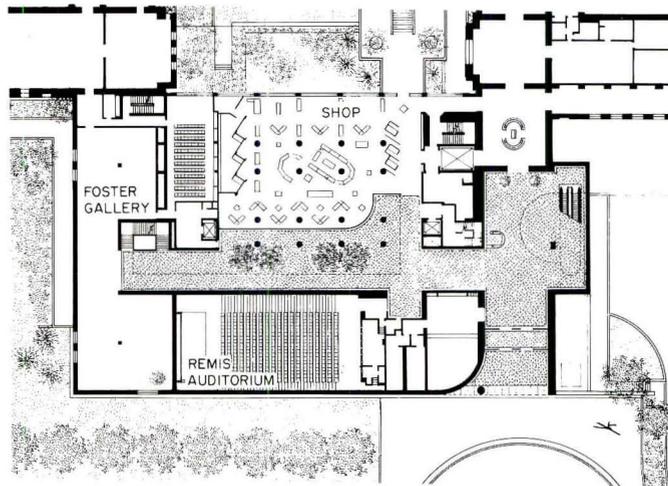
The lobby, finished in concrete and wood, amply demonstrates the elegance and subtlety of which modern architecture is capable, but one is inevitably drawn to the escalators by daylight spilling from an open circle in the ceiling. Only after reaching the second floor and passing a monumental canvas painted by Thomas Sully does one find the core of the building: a soaring skylight below which people can talk, sit, eat and fantasize in splendor and radiance. Alternatively, the visitor who turns right at the Sully proceeds directly to the old museum. (The small photos below show the sequence.)

Even while the galleria acts as a pleasure dome for the public, however, it fills essential circulation functions. First of all, it serves as a corridor connecting new galleries, restaurants and shops. Most important, it completes a circulation loop for the entire museum: Lowell's U-shaped plan formed dead ends and forced museum-goers to retrace their steps to reach the central rotunda (see site plan on page 91). Now visitors can enter the old building directly from the West Wing's ground floor or at the top of the escalator.

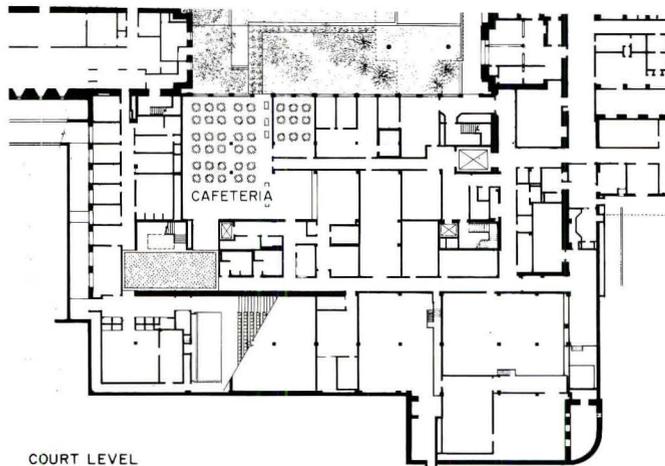
Not least among the social amenities that figured so largely in the museum's expansion plans are public services ancillary to the display of art. A curving glass wall does all it can



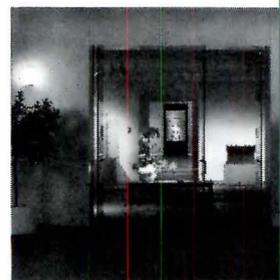
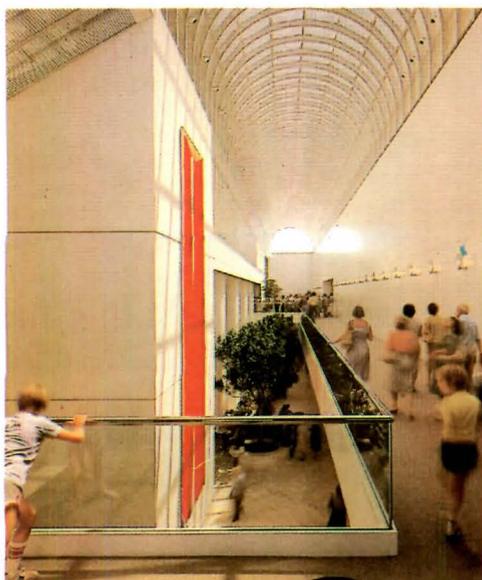
LEVEL TWO



LEVEL ONE



COURT LEVEL



The architectural and social heart of the Boston museum's West Wing is a 250-foot-long skylighted vault. This galleria connects new art galleries and such social amenities as shops, restaurants and lounging space. In the lobby (directly above),

visitors are drawn to escalators by daylight pouring through a circular well; at the top, they may either proceed to the galleria and exhibitions (above) or enter the old museum (above right). Opposite, customers wait for restaurant tables.



to entice customers into the well-lit bookstore. And the public can choose among no fewer than three restaurants. The café is the most evident, its tables scattered around the bookstore and lighted by the barrel vault; non-eaters use the seating to study their catalogs or simply to rest their feet. A cafeteria occupies room below grade and commands a view of the landscaped courtyard enclosed by the old building and the new wing. Finally, from the more formal Fine Arts Restaurant above the bookstore, diners look out at promenaders under the skylight.

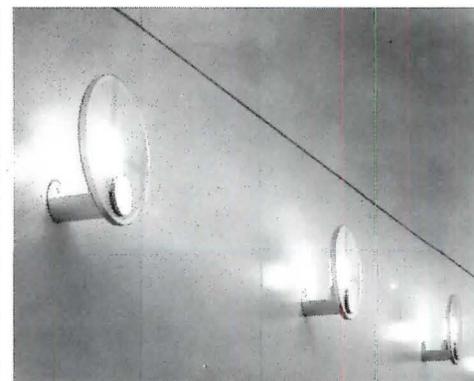
The museum's administrators required especially that the West Wing be an independent facility, connected with but separable from the main building. This arrangement opens the wing to evening visitors and social gatherings while preserving the integrity of central collections and saving wear and tear on the building, on staff, on security and on lighting bills. Moreover, it extends the use of the 380-seat Remis Auditorium for lectures, films and concerts.

Public comfort and profit centers notwithstanding, the heart of any museum lies in its art collections and its galleries. The Museum of Fine Art's West Wing contains two major exhibition spaces: the Graham Gund Gallery along one side of the galleria for special exhibits, and the Henry and Lois Foster Gallery at one end for 20th-century art.

Pei and lighting consultant Paul Marantz take especial pride in the coffered ceiling of the Gund Gallery, which affords daylighting for art without compromising the flexibility of layout needed in a room that may contain several exhibitions at one time. Daylighting for art galleries "wants to be inefficient," Marantz says, to reduce outdoor levels from a dazzling 2000 footcandles to the optimum 50 footcandles on vertical surfaces indoors. The first strategic move here was to limit the amount of daylight penetrating the space—small lights (5 feet square in a 15-foot grid) reduce overhead openings to about 1/9 of the area, "a gift of the architectural scheme" that Marantz appreciated. The depth of the coffers, moreover, causes the light level to diminish quickly, while their sloping sides diminish glare. Skylight and laylight, sandwich-



The light glass cage enclosing bookstore and restaurant curves behind two-story concrete columns. White jackets around the columns receive tall skinny mirrors set askew of the grid to fool the eye and lighten apparent mass (at right and across page). Sconces on walls of galleria (at right below) recall Pei's familiar light globes in two dimensions: glass disks shield bare lamps.





ing fluorescent and incandescent fixtures for evening illumination, incorporate prismatic layers to focus light on the walls. The edges of the coffers will accept partitions so that the museum can set up seemingly permanent walls for temporary displays. Should curators want to minimize light or eliminate it altogether, the skylights have a wardrobe of opaque and mesh fabric screens that can be fastened on top of the domes with elastic.

The galleria daylighting also required control, not only because sunlight seems exaggeratedly brilliant indoors but also to allow visitors' eyes to accommodate to gallery lighting standards. The reflective glass of the barrel vault transmits only 18 per cent of available sunlight. Further, aluminum tubes screen out another 50 per cent of the daylight, at the same time they establish animated shadow patterns. Architecturally, the tubes and their supporting hoops smooth the inner surface of the segmented skylight.

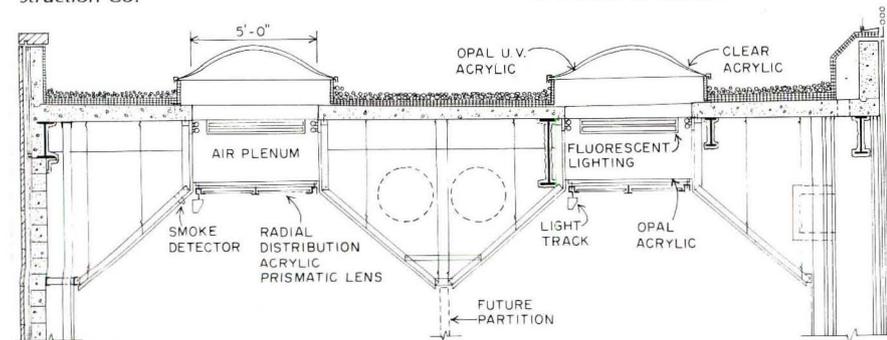
As a public attraction, the West Wing has succeeded beyond the museum's wildest dreams. On one day shortly after opening in July, it drew 10,000 visitors—4,000 more than the most optimistic projections. Admittedly, the museum offered two important exhibits that month—*The Great Bronze Age of China* in the Gund Gallery and *Camille Pissarro* in the main building. But as museum officials pointed out, the colleges hadn't opened yet.

The new wing and the installation of climate control, along with the improvement of storages and existing galleries, cost \$22 million—\$2 million from the National Endowment for the Arts in a 5-to-1 matching grant, the rest from private donations.—G.A.



Employing simple means with imagination, the coffered ceiling of the Gund Gallery (on this page) combines daylight (the most favorable illumination for art) and the flexibility needed for the exhibition of changing, perhaps multiple, exhibits. Full partitions can be installed at the edges of coffers to allow a variety of room arrangements within the 15-foot grid. In the Foster Gallery (opposite, at the end of the galleria), specially designed lighting track doubles as a linear air diffuser.

MUSEUM OF FINE ART WEST WING/MODERNIZATION, Boston, Massachusetts. Architect: I. M. Pei and Partners—I. M. Pei, partner-in-charge; Leonard Jacobson, administrative partner; William Jakobek, project architect; C. C. Pei, design architect; Richard L. Cutter, resident architect. Engineers: LeMessurier Associates/SCT (structural); Syska and Hennessy (mechanical/electrical). BMFA museum designer: Tom Wong. Consultants: Jules Fisher & Paul Marantz, Inc. (lighting); Crabtree Associates (food service). General contractor: Jackson Construction Co.



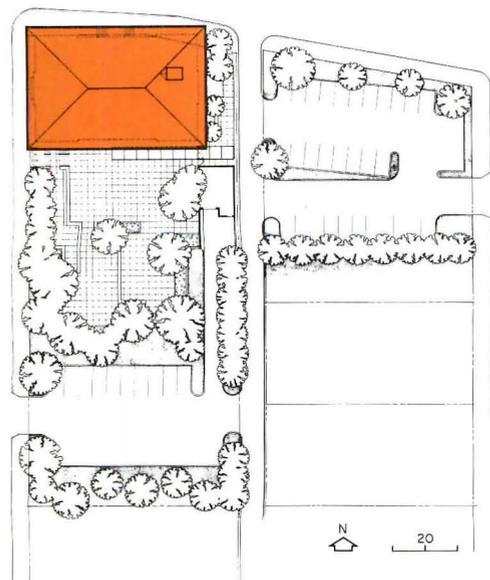


Akron's new Art Museum: A model for adaptive re-use

Akron's historic Post Office Building, constructed in 1899 to plans by the supervising U.S. Treasury Architect, James Knox Taylor, had suffered the neglect of half a century. Deeded to the City in 1930, it passed through a series of makeshift uses, its Italianate exteriors obscured by insensitive alterations, superimposed layers of paint and accumulating grime. To many in Akron, the old structure—however familiar and reassuring—must have seemed an improbable and perhaps even irredeemable survivor of the McKinley era.

Among those who placed a different valuation on the building were members of the Akron Art Institute whose cramped headquarters occupied space across the street. In 1978, after prolonged study, they commissioned Dalton, van Dijk, Johnson & Partners to begin work on converting the old Post Office into the Akron Art Museum. The restoration effort was painstaking and methodical. The 1899 brickwork received a careful chemical cleaning. The existing roof of asphalt tile was replaced by a roof of red tile that matched the original. Carved soffits under the eaves and wood trim around the windows were restored and painted. Glazing, together with copper gutters, were replaced as necessary. The aim was a more or less complete restoration of the 1899 exteriors, and the result, as the photos indicate, justified the effort and expense involved.

But restoration is one thing, conversion another. To transform the old interiors into a series of spaces suitable for the museum's needs, a complete gutting was required. Only a few light fixtures, some ornamental plaster and a marble mosaic depicting a pony express rider could be retained. Within the existing envelope, three major new exhibition areas were provided. The ground floor exhibition area, a 40- by 63- by 17-foot volume, is located just off the main entrance. Adjoining it is a smaller exhibit space. The upper level gallery space (see section) extends to the full floor area of the building producing a huge,



By the acquisition of an adjacent parcel, the Museum is now able to provide staff parking to the south and main visitor parking to the east. Visitors are sheltered along their entry route by a transparent canopy with a section that echoes the half round window heads of the half structure's facade.

Balthazar Korab photos





flexible volume adaptable to a variety of exhibits. In each of these spaces, modern display lighting has been provided, most of it in ceiling-mounted tracks.

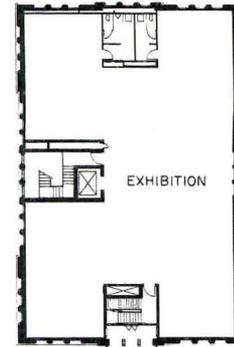
Between the two exhibit floors is a new mezzanine designed for offices, conference rooms and assorted administrative needs. A graceful, half-round opening in the wall at mezzanine level (photo right) recalls the arched openings on the exterior.

Some new museum space outside the original building envelope was also required. Below grade, a new auditorium seating about 150 adds to the museum's capabilities. A new loading dock (see plan) is also located outside the original structure. But the most conspicuous of the add-on elements is a large new sculpture court that extends from the building's south facade. This 13,000-square-foot open-air display area provides a particularly pleasing setting for large, outdoor sculptures. Night-lighted, landscaped, and modulated by changes of level, this splendid court is a powerful magnet that often attracts passers-by, offering them a moment of unexpected but welcome repose. A walkway with translucent, semi-circular canopy links both the court and the museum with parking areas.

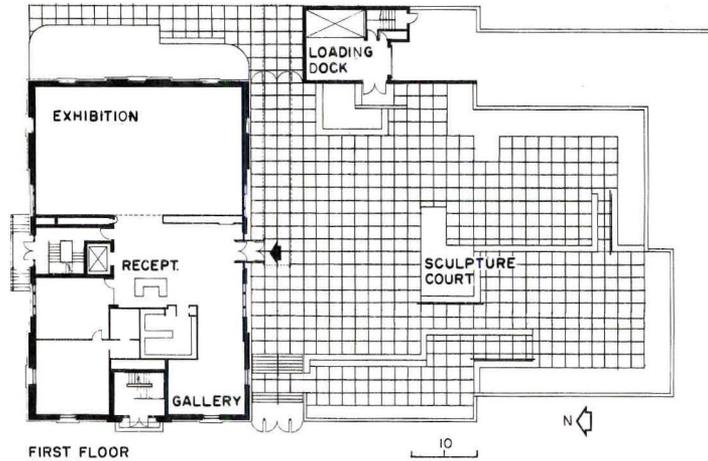
The new museum is taking its place in the revitalized downtown area of Akron. Located at the corner of South High and East Market Streets, the new facility counts the public library and the University of Akron as its neighbors as well as Quaker Square, a commercial development with shopping, entertainment, and hotel accommodations. There is every reason to hope that this mix of civic, commercial and educational functions will be mutually reinforcing. "The new Akron Art Museum," says its director, I. Michael Danoff, "reflects Akron's cultural revolution. By presenting quality art in a welcoming atmosphere, the Museum is playing an essential role in Akron's present and future." —B.G.



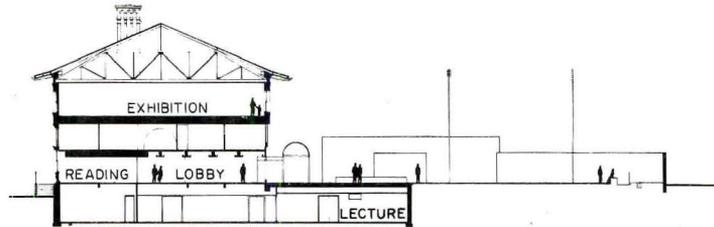
MEZZANINE



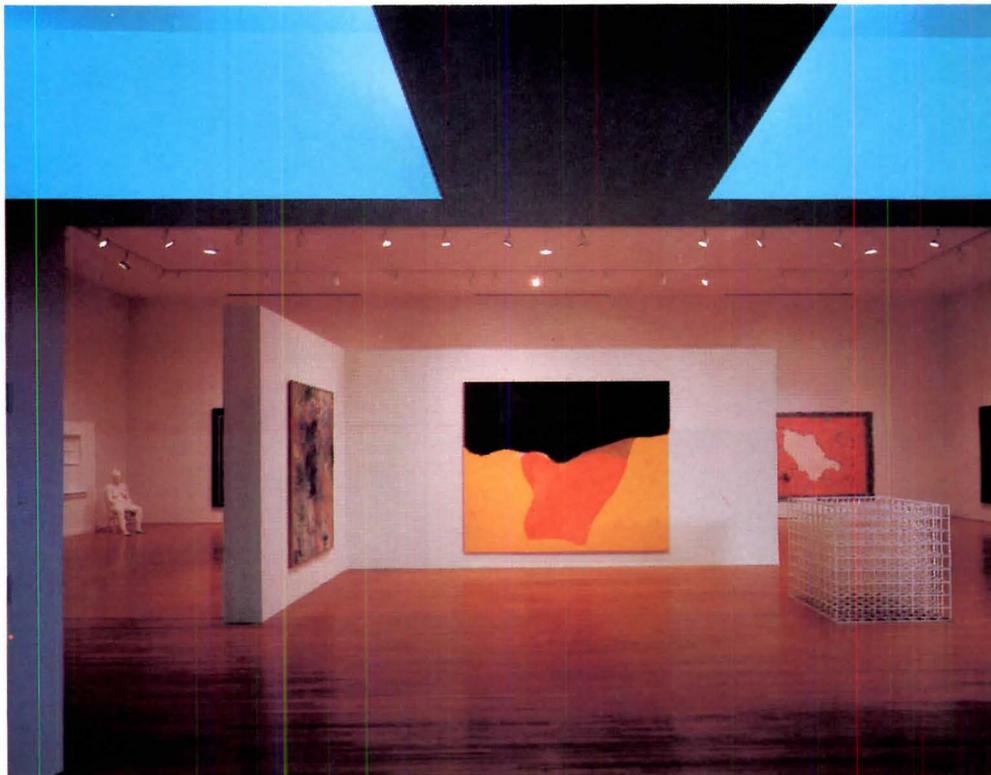
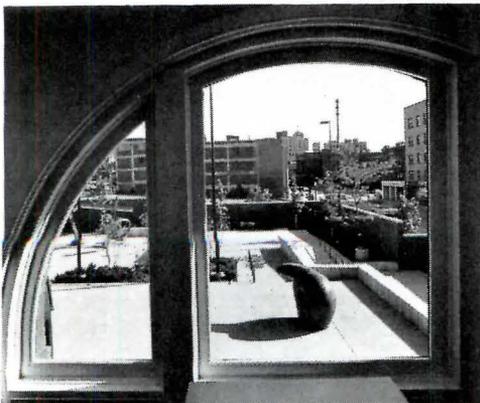
SECOND FLOOR



FIRST FLOOR



AKRON ART MUSEUM, Akron, Ohio. Architects: Dalton, van Dijk, Johnson & Partners. Engineers: Barber & Hoffman (structural); Byers, Urban, Klug, White & Partners (mechanical/electrical). Landscape architects: Knight & Stolar. General contractor: Welty Building Corporation.



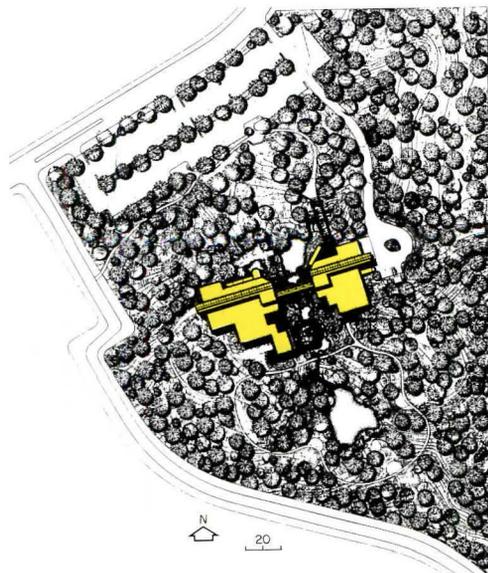


Mid-America Center: Arkansas' new participatory science museum

By pumping air, pushing buttons or throwing levers, visitors to the Mid-America Center near Hot Springs, Arkansas, can activate dozens of carefully prepared exhibits that demonstrate in simple but imaginative ways the basic laws of natural science. There is a hot-air balloon to launch. There are water levels to raise and lower. Other exhibits permit the visitor to synthesize music, experience centrifugal force, create a miniature tornado, generate electricity, or understand the principles of surface tension as they act on an air bubble of changing shape. There is room for whimsy too. Sculptor Rowland Emett has created for the Museum his "Featherstone Kite Openwork Basket-weave Mark II Gentleman's Flying Machine." All of these exhibits aim at making people of all ages comfortable with science and heightening their curiosity about the natural world. This often includes confronting a basic, popular hostility toward science that if unspoken is nevertheless widely felt.

The building that encloses these displays is the result of an association between museum designers E. Verner Johnson and Associates of Boston and Little Rock architects Stuck, Frier, Lane, Scott, Beisner, Inc. The building occupies a heavily wooded site about six miles from Hot Springs, a site bisected by a mountain stream that designers have "harnessed" and turned into a learning tool. A bridge of trihedral pipe sections spans the stream and gives the building mass its strongest visible feature. Visitors passing between the museum's two main sections are offered fine glimpses of the site and of an outdoor aquarium that is charged by the stream. Other outdoor exhibits will be added as funds, cut back in a recent austerity move, gradually become available.

The smaller of the two structures includes visitor reception areas, support and administrative spaces, restaurant, and a visitors shop, called "Discovery Depot," in which a range of items—"exhibits you can



Parking for visitors has been purposefully kept at a distance from the Museum. Arriving visitors follow a heavily wooded path to the entrance—a path enlivened by the sounds of wind and water, and a path to be enriched by future outdoor displays.

Hursley and Lark photos





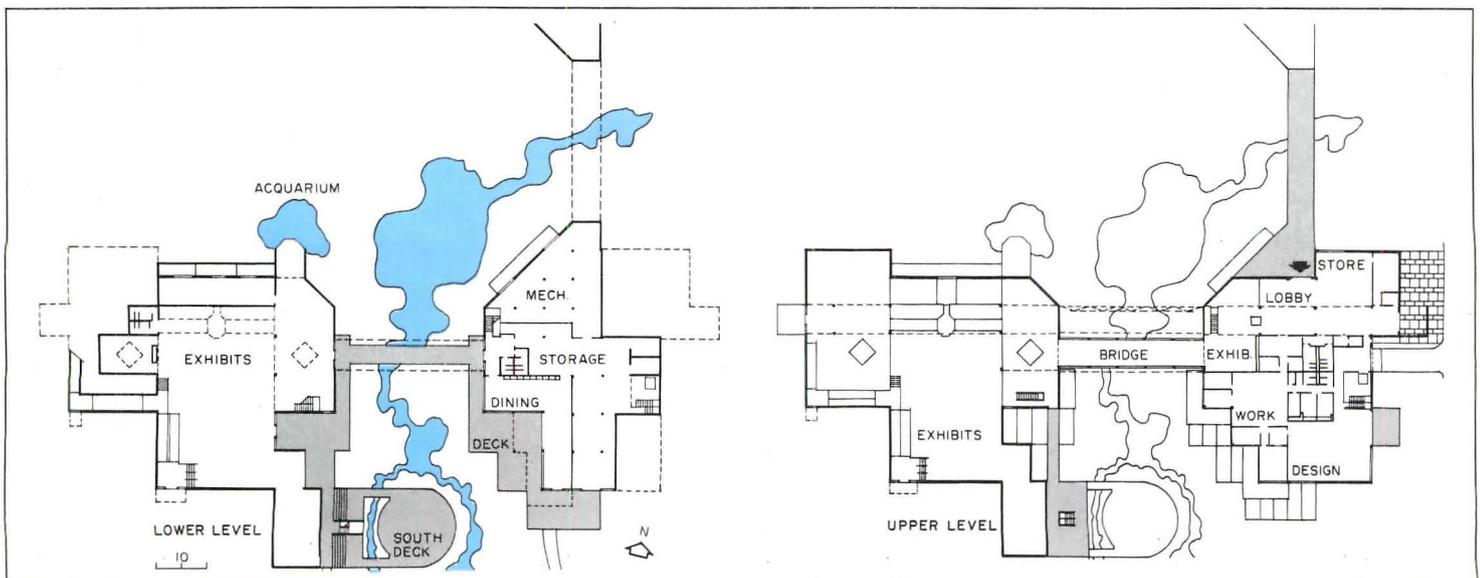
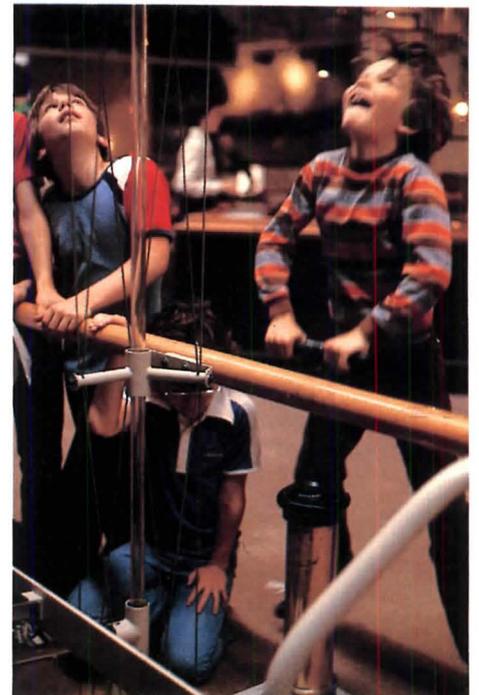
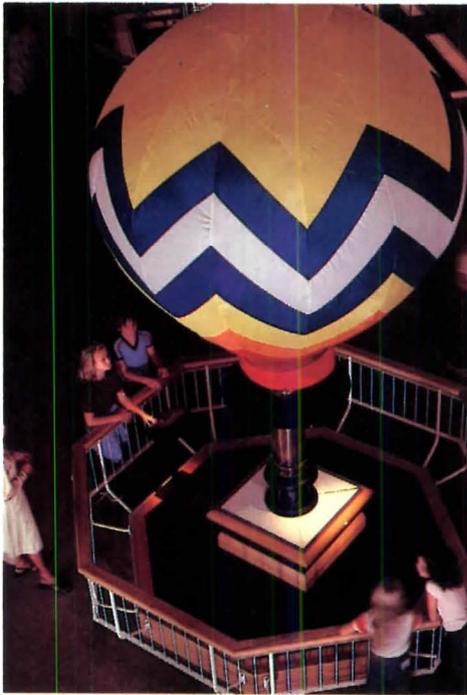
take home" in museum director Harry Louck's words—are offered for sale. The larger structure houses most of the museum exhibits. The circulation through exhibit spaces is informally but carefully organized so that visitors may proceed at whatever pace is comfortable, pausing wherever they wish for as long as they want. The complete circuit is probably too much for a single visit so a variety of shorter routes have been thoughtfully planned.

The interior spaces are not designed as neutral, white box containers. In most areas, long span joists are exposed overhead; and mechanical systems, also revealed, make the building's structure and its workings an integral part of the visitor's visual experience. Principles like triangulation and air distribution are therefore part of the museum's permanent display.

Light monitors bring daylight in over the main circulation routes (photo right), and many of the exhibits are accompanied by especially prepared music and interpretive sound tracks. These devices are simultaneously activated in widely dispersed areas of the museum so that audio encroachment is never permitted to develop among adjacent exhibits.

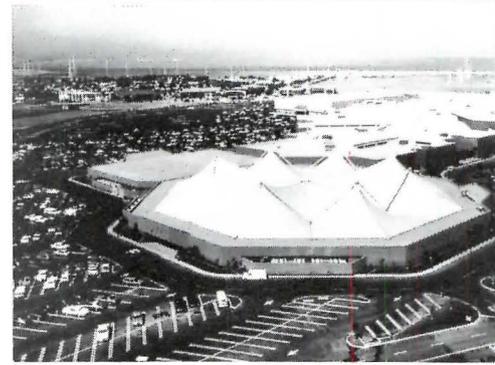
The Mid-America Center serves a wide geographic area and serves it well. The building's lively forms arouse continuing interest, and its displays are expected to attract about a million visitors this year. Many of these visitors will return in future years and when they do they will find new exhibits that will entertain, bemuse and challenge. Plans now on the drawing boards envision games with a computer as opponent, and a small robot who will wander the museum spaces engaging visitors in many ways both interesting and unexpected. —B.G.

MID-AMERICA CENTER, Hot Springs, Arkansas. Owner: Mid America Museum Commission—Jerry Porter, executive director. Architects: E. Verner Johnson Associates in association with Stuck, Frier, Lane, Scott, Beisner. Engineers: Pitts & Associates (structural); Pettit & Pettit (mechanical/electrical). Lighting: Williams Lam Associates. General contractor: Nabholz Construction.





MERCHANDISE SEEN IN A BRIGHT NEW LIGHT



Steve Proehl

Bullock's Fashion Island department store, 20 miles south of San Francisco in San Mateo, is a fresh approach and a major departure in store design, construction and merchandising—all the direct result of the building's tensile fabric roof. The eight-peak, octagon-perimeter fiberglass roof generates a strongly ordered interior with remarkable openness, kaleidoscopic variety, and astonishing daylight that brings out vibrant colors in the merchandise.

Both architects and merchandisers can learn from the results. The building has a sense of permanence and of architectural unity that escapes most of the more utilitarian applications of fabric roofs. Customers can easily grasp what is in the store, find their way around, and shop in genuine pleasure in the presence of light and order, with none of the confusion and tortured circulation of murky alcoves and cluttered displays.

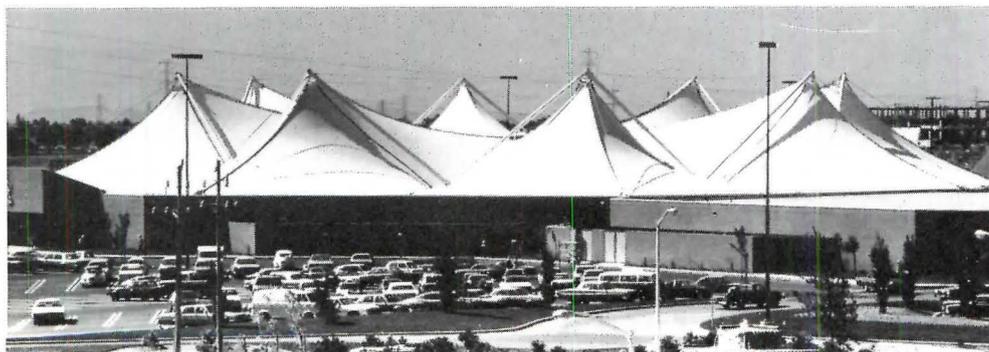
The roof shape is a case of form following engineering, but a shape appropriate to its purpose. The portion of the building covered by the *Teflon*-coated fiberglass roof has an octagonal shape because it is comprised of eight modules. The number of modules used with point-supported fabric roofs such as this is a matter of choice (4,6,8,10 . . .), but at Bullock's, eight modules covered as much area as soil conditions would permit; furthermore, an eight-sided form is readily comprehended by a viewer. Only a limited number of piers supporting concentrated loads was

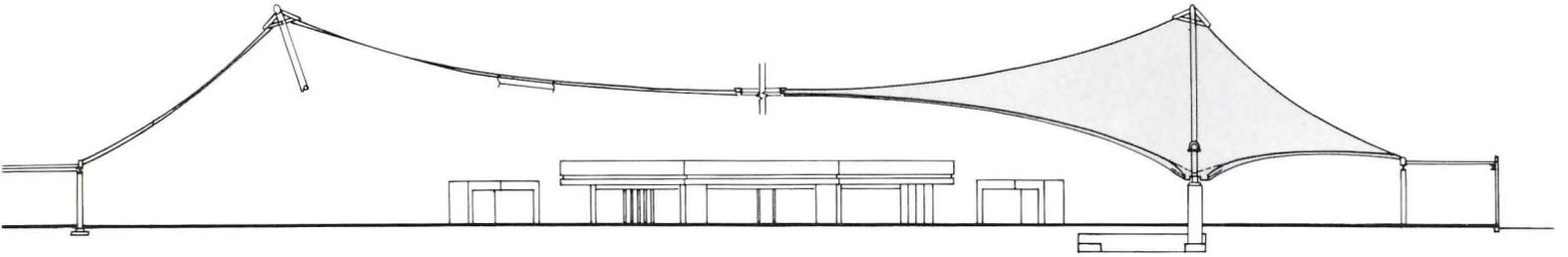
possible because of a slough area (of bay mud) within the site. The fabric-roof portion of the store covers 70,000 sq ft. An appended area for the home furnishings department was designed as a one-story conventional steel-frame structure to avoid concentrated foundation loads (see aerial view and plan next page).

While an octagonal floor plan is an unlikely geometry for department-store layout, it gave architect Gene Zellmer and the interior architect EPR (Environmental Planning & Research), an opportunity to be "super-organized" in their approach. The space is an open plan, but the layout is still very structured. EPR made the main aisle octagonal (see plan) and arranged merchandising display units octagonally (again, see plan). They fan out from an octagonal mezzanine creating intimacy via architectural forms.

This tensile roof design, conceived by Horst Berger of Geiger Berger Associates, is a grouping of modular units with A-frame compression members acting as skyhooks at the roof peaks, and tensioned cables and stressed fabric molding the roof into ridges and valleys and doubly curved surfaces.

The roof starts low (15 ft) at the perimeter, rises to 50 ft at the peaks, dips to 10 ft at the piers (which take the downward forces of the A-frames), and then slopes to a 35-ft elevation at the tension ring in the center hovering over the mezzanine restaurant (see section). The roof is restrained at its outer





All photos ©Russell Abraham except as noted



A ceramic-tile aisle clearly defines the circulation in Bullock's Fashion Island, a daylighted, conditioned space under a fabric "sky." Islands of merchandise have carpeted floors (wood is used in the housewares area). The cast shadow, right, center in the photo, is from one of the legs of an A-frame from which each of the eight peaks of the roof hangs. Forces in the A-frame legs are picked up by con-

crete piers enclosed by cylinders that also house roof drainage pipes. The steel frame cantilevering from the top of the pier supports sprinkler pipes and provides mountings for sprinkler heads and for incandescent light fixtures. The store area covered by the fabric roof is an octagon because the roof comprises eight point-supported modules. The store totals 130,000 sq ft out of which this area is 70,000.

edge by the 20-ft band of conventional flat roof at the perimeter. The store required enclosing space there for support functions such as fitting rooms and merchandising storage, where a flat, opaque roof made sense.

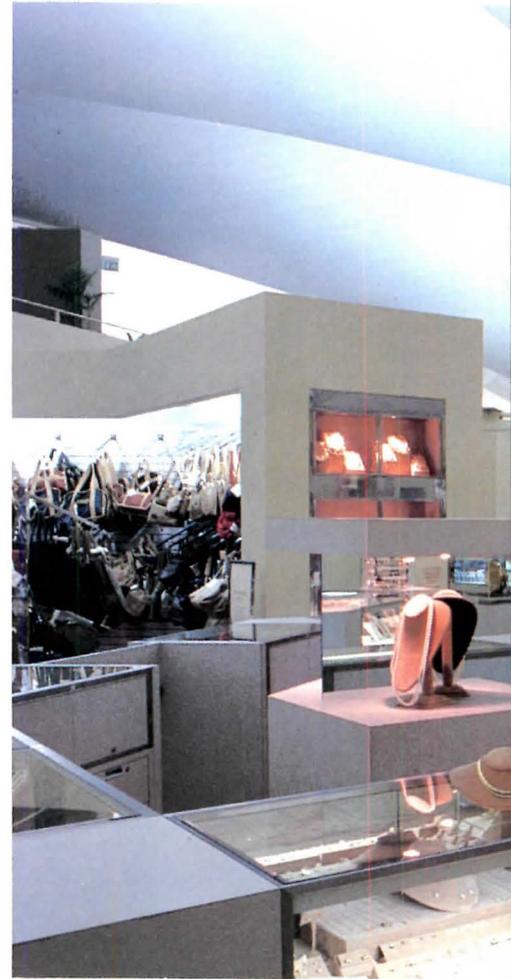
Ridge cables from the peaks, valley cables from the piers, and stay cables for the A-frames are anchored at the corners of the octagonal ring formed by the flat roof which is metal deck and concrete topping, reinforced so it works as a compression ring.

The roof design is an extension of a concept of point-supported, balanced-force tensile structures developed by Horst Berger that until now have been used for a variety of outdoor shelters. This is the first major application of a fabric roof to a mercantile building. Bullock's was the pioneer in the application of a fabric roof to a store—a 16,000-sq-ft covered area on the top floor of a 150,000-sq-ft two level store in the Oakridge shopping center at San Jose (RECORD, mid-August, 1979). This early design developed out of a chance meeting on a plane between Paul Heidrick, chairman of Bullock's of Northern California, and L. Gene Zellmer, architect from Fresno, who had harbored the idea of doing a fabric building since his graduate studies at M.I.T., Zellmer put the bug in Heidrick's ear on the flight from New York to California, and two weeks later Heidrick, enthusiastic about the dazzle of the fabric roof and its merchandising potentialities, asked Zellmer to consult with EPR, the archi-

ects for the earlier Oakridge store. Geiger Berger Associates were called in, and the skylight EPR had planned for the top floor was changed to a fabric roof.

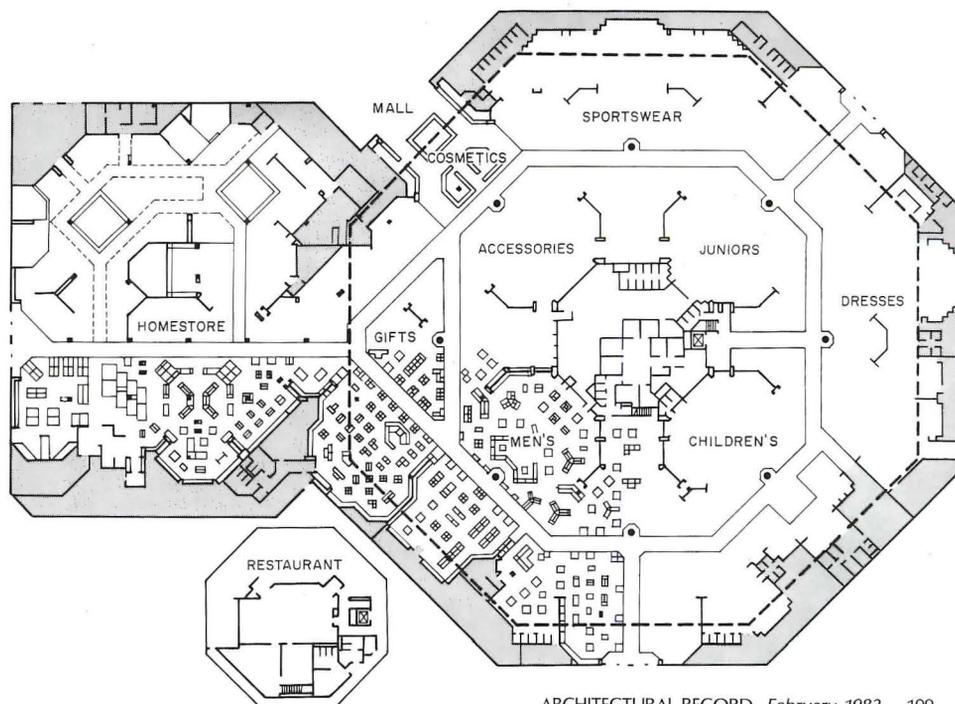
On the heels of the success of Oakridge, Federated Department Stores (Bullock's parent company) sponsored a feasibility study conducted by EPR and Geiger Berger to see if the "toe-in-the water" approach used at Oakridge could be expanded to a significantly larger scale. When Bullock's was ready to start planning the Fashion Island store, Heidrick asked Gene Zellmer to be the architect for the building and EPR to be the architects for store planning. Geiger Berger Associates served as design consultants, roof designers and structural engineers.

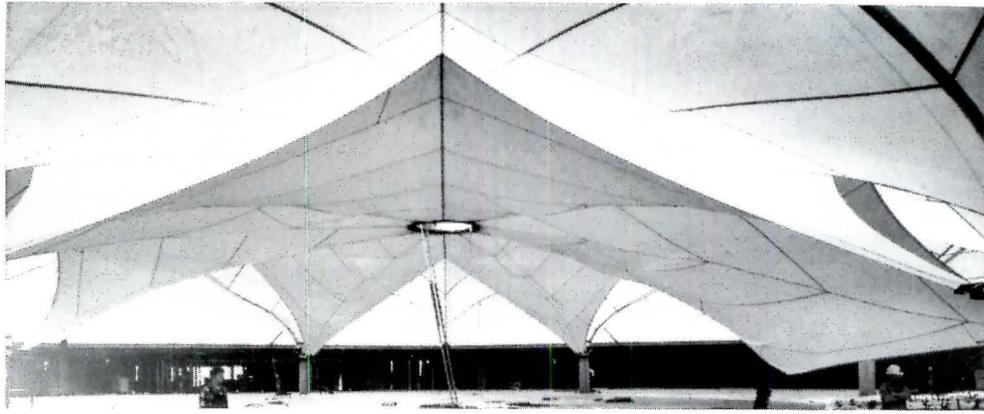
Because of their previous store design experience, EPR consulted with Gene Zellmer on a number of interior design considerations including: use of 10-ft-high exposed steel-beam structures for attachment of sprinkler heads and piping and for accent lighting; creation of a reveal around the interior fascia of the octagon to provide a termination for sprinkler beam supports and a natural location for air-handling grilles; use of multifunctional display units that enclose merchandise, provide display niches, and conceal indirect fixtures for metal halide and high-pressure sodium lamps that illuminate the interior of the store at night by reflections from the roof. EPR chose a beige color for the dry-wall display units and the vertical surfaces at the





The roof is a source of light both night (left) and day (below). The nighttime indirect illumination comes from fixtures with metal halide and sodium vapor lamps concealed in the tops of dry-wall merchandise units. The need for electric light during the day is minimal except to provide accent lighting and to illuminate merchandise in the display units. The roof with its inner-liner panels provides an expansive natural backdrop that doesn't distract from the display of merchandise. Forms are repetitious, and one is not compelled to look up. Colors are especially vibrant with the daylight illumination—the silverware sparkles. The store interior architects distinguished the different merchandise areas by painting different colored accent strips on the dry-wall merchandise units and by using fluorescent lamps of the same color in display niches at the ends of these units. These display units help anchor people and create an intimate feeling via architectural forms. Because of soil conditions the fabric-roof portion was limited to 70,000 sq ft. Home furnishings are in an appended section built conventionally with steel framing and flat roof.





perimeter and mezzanine to avoid a "neon" effect that primary colors would produce.

To make the sprinkler system unobtrusive Gene Zellmer worked with fire-protection engineer Jerry Perstein to integrate the system with the roof structure as much as possible. It is a "mixed" system in the sense that part of the sprinklers follow the line of the ridge cables, while the balance are in sprinkler beams that extend inward from the perimeter and outward from the mezzanine, and also are cantilevered from the piers.

Wherever the roof slope is less than about 20 degrees, the fire marshal required that the roof have an inner liner as a safety net against burning embers. This is a lighter-weight fabric than the exterior fabric and additionally provides sound absorption and increases the thermal value. Wherever these inner liners occur, they "hide" the ridge cables, so in these areas the sprinklers are in the sprinkler-beam structures to give the code-required sprinkler density.

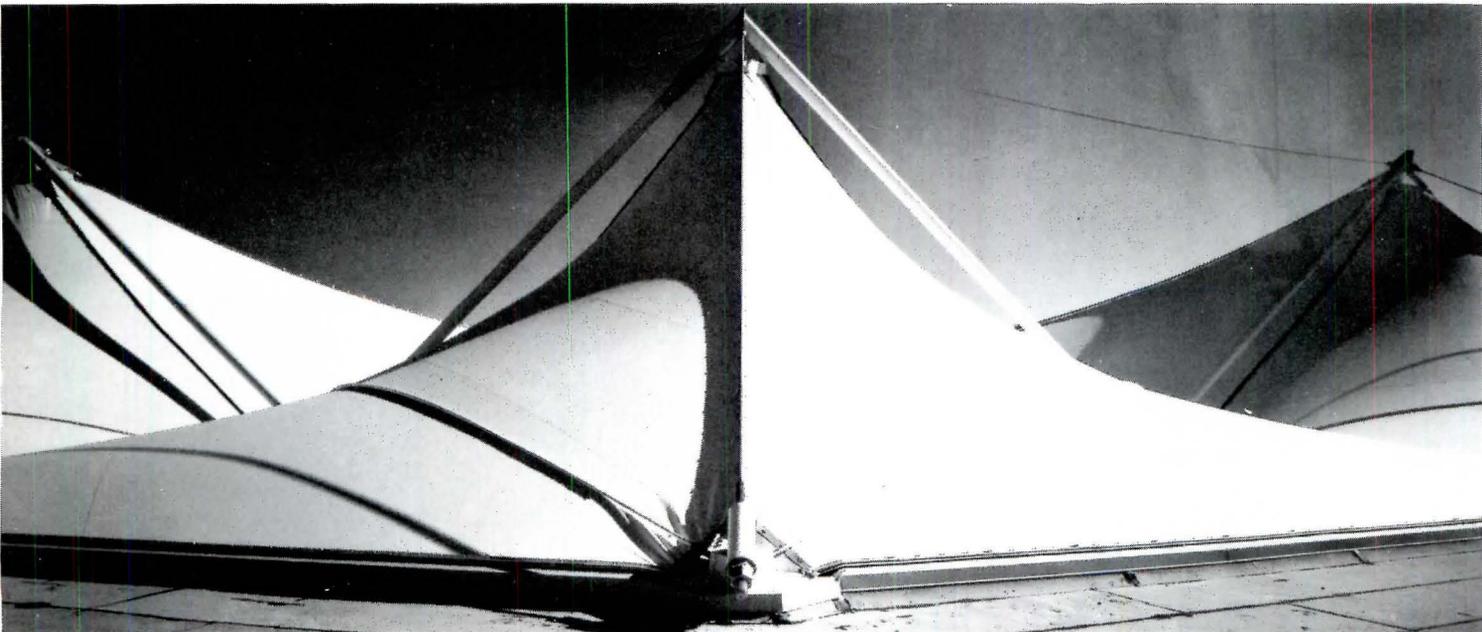
To assist the heat sensitivity of the sprinklers along the ridge cables, Zellmer and his fire-protection engineer collaborated on a butterfly-shaped fabric baffle inserted between sprinkler heads perpendicular to the sprinkler lines.

The use of inner liners also affected the choice of translucencies for exterior roof panels. A higher-solar-transmission fabric was used for the roof panels areas hidden by the inner liners than those in the open to even out brightnesses.

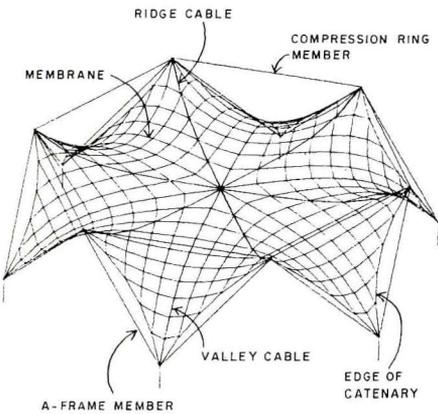
Aside from its merchandising potentialities, the fabric roof structure is expected to save considerable energy since very few electric lights are turned on during the day. Bullock's Northern historically has had low energy bills for their stores, according to chairman Paul Heidrick. The Oakridge store, for example, has an energy density of only 3½ Watts per sq ft. The Fashion Island store was budgeted for 2.6 W/sq ft, but Heidrick expects this figure to be well under 2.0. (Annual energy use divided by the open hours gives the energy density.) Heidrick expects the annual dollar savings in energy to run between \$70,000 and \$100,000.

The cooling system for the store uses 100 per cent outdoor air and has no mechanical refrigeration. Wayne Hansen of Giampalo and Associates, mechanical engineers, achieved this through use of packaged evaporative coolers that utilize the building's exhaust air to evaporate water cascading over heat-exchanger tubes filled with water.

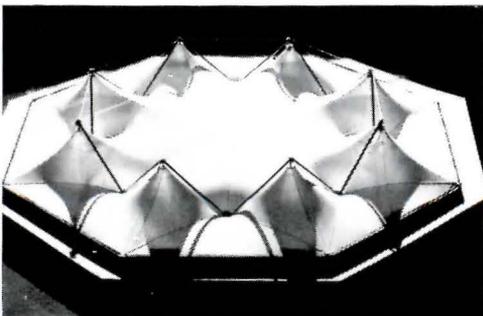
BULLOCK'S FASHION ISLAND, San Mateo, California. Architects: *L. Gene Zellmer Associates*; interior architects: *Environmental Planning & Research, Inc.*—officer-in-charge, *Darryl Roberson*; project director, *Bruce Pao*. Engineers: *Geiger Berger Associates, P.C.* (design consultants, roof design and structural engineering)—principal-in-charge, *Horst Berger*; associate-in-charge, *Chris Anastos*; *Giampalo and Associates, Inc.* (mechanical/electrical); *FPE Group* (fire protection). Roof fabrication and erection: *Birdair Structures*. Contractor: *Rudolf and Sletten*.



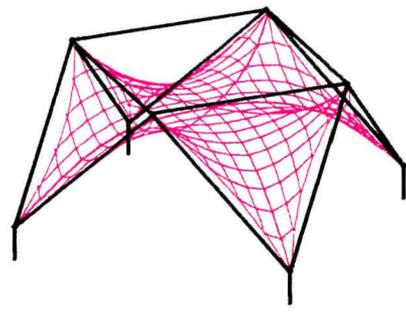
The computer drawings on this page by Geiger Berger Associates illustrate the progression of thinking leading to the development of the roof design for Bullock's. And they indicate how the principles embodied in a basic four-sided fabric tension structure can be extended to larger structures by increasing the number of modules and by manipulating the geometrical configuration. Fabric tension structures are by their nature center-supported systems. In order to turn a tension structure into an open span, the support system must be modified. A basic method is to replace the center support with suspension cables hung from external pylons as was done with S.O.M.'s Haj terminal in Jeddah. Another approach is to replace the central mast with external A-frames as Horst Berger did for a park structure near St. Louis.



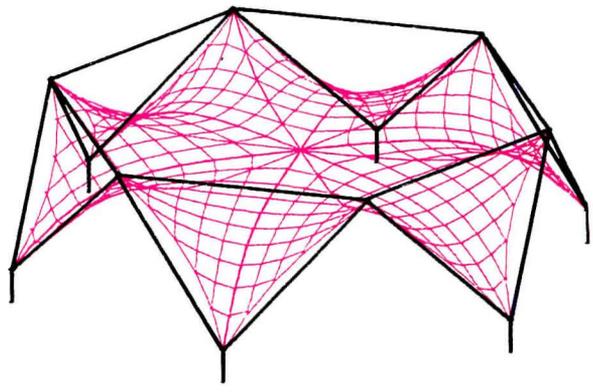
In drawing (1) a basic modular unit (patented by GBA) is force-balanced. Four A-frames and an overhead compression square support the membrane which is stressed against the four support corners. A variation of this structural principle was used for a picnic pavilion for Sea World in San Diego employing cantilevered extensions as shown in drawing (3), although it is 10-sided, not six as used here to aid visualization. The struc-



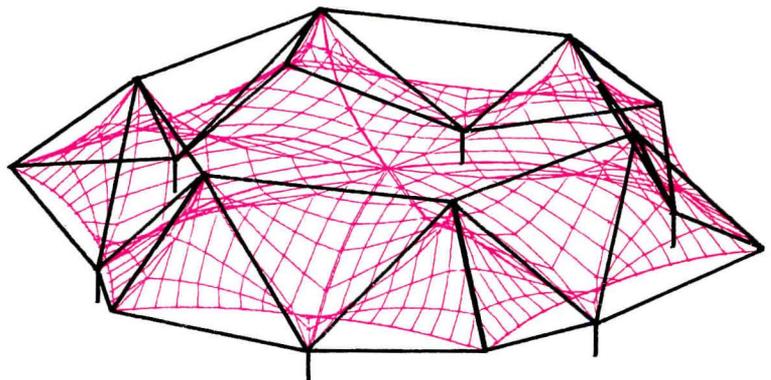
ture for Bullock's takes the principle one step further. Though similar to Sea World, it replaces the compression members on top of the A-frames by a compression band around the perimeter formed by the low-level conventional roof structure to which the A-frames are tied back by simple stay cables. Bullock's is octagonal, not hexagonal as shown here. The photo above is of a structural model for Bullock's.



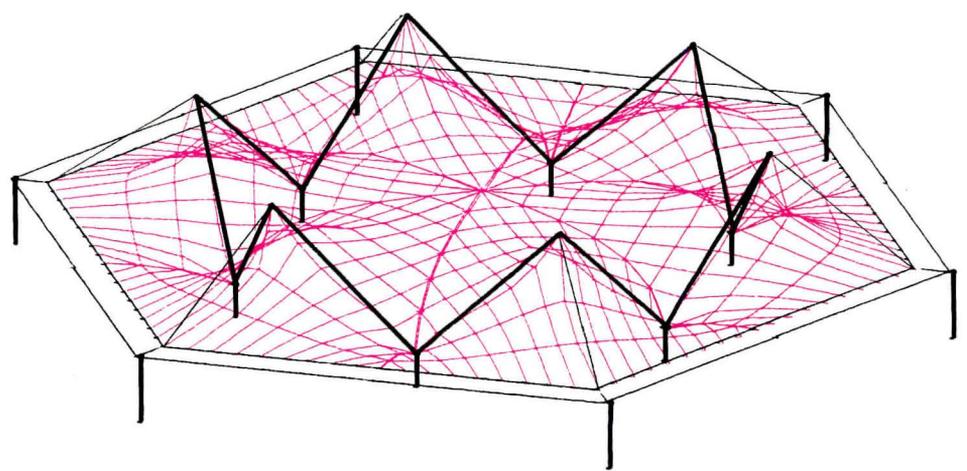
1. Square Fabric Membrane Structure



2. Hexagonal Fabric Membrane Structure



3. Hexagonal Fabric Membrane Structure with Cantilever Extensions



4. Hexagonal Fabric Membrane Structure with Perimeter "Compression Ring"



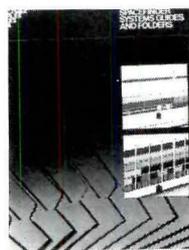
SPACE / "Privacy in Public and Semi-Public Places" is a brochure designed to help designers create a sense of personal space in the office and in the home. Commissioned by GF Business Equipment, Inc., and prepared by Research and Forecasts, Inc., the study puts into perspective the issues surrounding personal privacy. ■ GF Business Equipment, Inc., Youngstown, Ohio.

circle 400 on inquiry card



STORAGE / Systems that double filing and storage capacity are described and illustrated in a new color catalog from Stacor. The catalog outlines the applications and flexibility of mobile systems for storing materials from reference books to computer tapes. ■ Stacor Corp., Newark, N.J.

circle 401 on inquiry card



GUIDES AND FOLDERS / A 32-page catalog describes and illustrates a line of file guides. Organized by product type, it contains information on color-coded folders, labels and inserts as well as supplies that are compatible with the manufacturer's lateral files. ■ TAB Products Co., Palo Alto, Calif.

circle 402 on inquiry card



FIRE BARRIER / A four-page brochure describes the characteristics of an expanded line of products which swell when exposed to heat and prevent the spread of fire. Called "Fire Barrier," these products include caulk, putty, and standard and pre-formed wall sheeting. Applications can be wall and ceiling surfaces, and penetrations for plumbing, ducts, and conduits. ■ 3M, St. Paul, Minn.

circle 403 on inquiry card



PARQUET FLOORING / This color brochure focuses on two new parquet flooring products called "Cambridge" and "Heritage," and three types of backing. The brochure contains a chart which compares the company's four types of flooring based on color, size, backing type, use, and finish information. ■ Hartco, Oneida, Tenn.

circle 404 on inquiry card



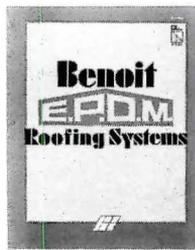
FIREHOUSE HEATING / A four-page brochure illustrates "CO-RAY-VAC"—a ceiling-hung, infrared system intended to melt snow and ice on fire fighting apparatus. For both new construction and retrofit, this gas-fired system is claimed to cut firehouse fuel consumption by up to 50 per cent, with a combustion efficiency of 90 per cent. ■ Roberts-Gordon Corp., Buffalo, N.Y.

circle 405 on inquiry card



METAL BUILDINGS / This four-color brochure illustrates large industrial metal buildings designed for special needs. Economy, speed of construction, energy savings and versatility of design are analyzed in clear-span interiors. ■ Mitchell Engineering Co., Columbus, Miss.

circle 406 on inquiry card



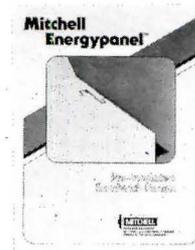
ROOFING MEMBRANES / A 12-page color brochure illustrates three roof membrane systems and describes the advantages of using them for both new and re-roofing applications. This membrane comes in 32- by 100-ft sheets, and does not require cleaning prior to making field seams and attaching flashings. Seam sealer is also not required. ■ Benoit, Inc., St. Paul, Minn.

circle 407 on inquiry card



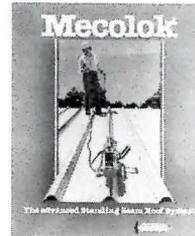
HARDWARE / A new catalog displays over three dozen of this manufacturer's most widely used items. Divided into four sections—door hardware, drawer slides, hospital hardware, and shelf standards and supports—the catalog uses cross sections and detailed diagrams to illustrate products. ■ Grant Hardware Co., West Nyack, N.Y.

circle 408 on inquiry card



PRE-INSULATED PANELS / Literature provides data on core properties, performance features and details of a 2-in.-thick wall panel, which delivers a tested U-value of .064. Other data is provided on thermal properties, fatigue resistance and its Class One rating. ■ Mitchell Engineering Co., Columbus, Miss.

circle 409 on inquiry card



ROOF SYSTEMS / A color brochure details data on the installation of standing seam roof systems with panels 30 in. v and up to 40 ft long. O information covers the UL rating which meets a wind 90 classification, specifications and insulating options. ■ Schell Engineering Co., Col bus, Miss.

circle 410 on inquiry



WASHROOM EQUIPMENT / The 1982 color catalog from this manufacturer, which marks its 150th anniversary, includes illustrations and technical information on complete lines of stainless steel washroom equipment, mirrors, grab bars, c nets, bathroom accessories, soap dispensers. ■ The Cha Parker Co., Meriden, Conn.

circle 411 on inquiry



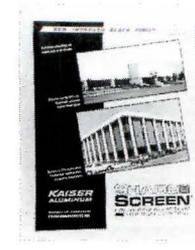
WALLPAPER / An eight-page brochure introduces a collection of wallpapers with various fabrics which adopts antique French designs in florals, stripes and miniprints. This collection consists of 22 designs in paper 27-in. wide, screen printed, trimmed and vinyl coated. Twelve related fabrics are 100 per cent cotton and 54 in. wide. ■ Katzenbach and Warren, New York City.

circle 412 on inquiry



SUN CONTROL / An eight-page brochure describes Exatrol blinds—operable shades hung on the exterior. Color photographs of existing installations are shown with drawings to explain how blinds are constructed. Also included are cost guidelines, design considerations and general specifications. ■ Baumann Inc., Wauconda, Ill.

circle 413 on inquiry



SUNSCREEN / A four-page brochure explains the energy savings principles of a black aluminum sunscreen. The screen is claimed to reduce solar heat gain by as much as 10 per cent. The brochure contains suggested applications, installation methods and test results. ■ Phifer Wire Products, Tuscaloosa, Ala.

circle 414 on inquiry

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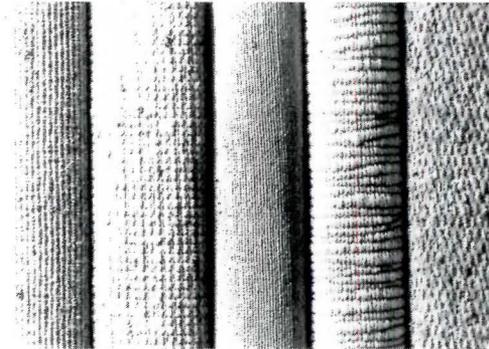
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WEST WEEK '82 Los Angeles March 19-21

"Gateway to the Pacific"—the theme for this year's West Week to be held at the Pacific Design Center in Los Angeles March 19-21—will introduce the largest number of interiors product manufacturers now on the West Coast. It is also a preview to the 1984 "Gateway to the World" theme planned by PDC for West Week '84, the year Los Angeles hosts the Olympic games.

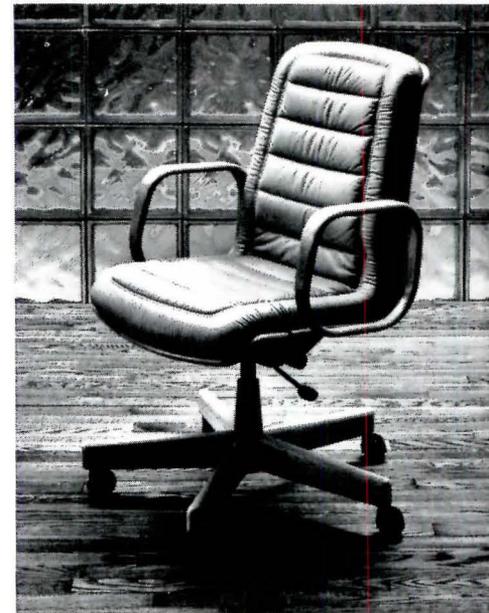
All Pacific Design Center will be open for West Week '82 with the contract showrooms concentrated on the second and third floors. Because of the tremendously successful special program at West Week '81, there will be an expanded program for this year's conference, again sponsored by PDC TWO (29 of the center's tenants who make up the Contract Manufacturers Association/West Coast). The highlight of the program will be a four-part "Your Turn/My Turn" symposium in

which 37 internationally-known architects and designers will explore their personal views on furniture design. These sessions will be moderated by Richard Saul Wurman (architect, author and chairman of Otis/Parson's Department of Environmental Design) and held in a special tent set up outside PDC. Other panel discussions will include: "Why don't they make it?" with Michael Graves, Mario Bellini, David Martin, Tony Lumsden and Arthur Gensler discussing what they would like to see designed for use in their interiors; "Inside movie interiors" will be an examination of movie interiors and whether they influence design trends or fads; "Important furniture in important places" with Gene Summers (co-owner of the Biltmore Hotel) and Richard Koshalek (deputy director of Los Angeles's Museum of Contemporary Art); and several informal "conversations" with the designers. —J.N.



UPHOLSTERY FABRIC / From Design Tex, pure wool and wool blend fabrics in warm, natural tones are offered in 27 patterns, including the nubby weaves shown here. The "Wool Naturals" upholstery line won the 1981 IBD Silver Medallion. ■ DesignTex Fabrics West, Los Angeles.

circle 300 on inquiry card



ANATOMICALLY DESIGNED / Developed in Switzerland, "Giroflex" seating products will now be manufactured and marketed in the United States, under an exclusive licensing agreement with Albert Stoll Giroflex AG. This "Lignas" chair is an all-wood design, with bases, arms and trims in oak or walnut. The "Girolift" mechanism, which combines a spring support with gas cylinder adjustment capabilities, is standard on all task, executive, conference and guest seating in the series. ■ GF Business Equipment, Inc., Youngstown, Ohio.

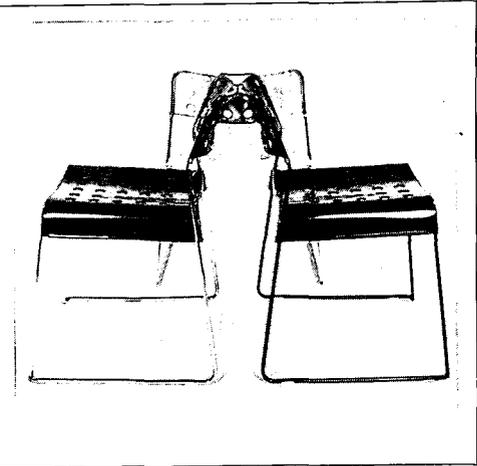
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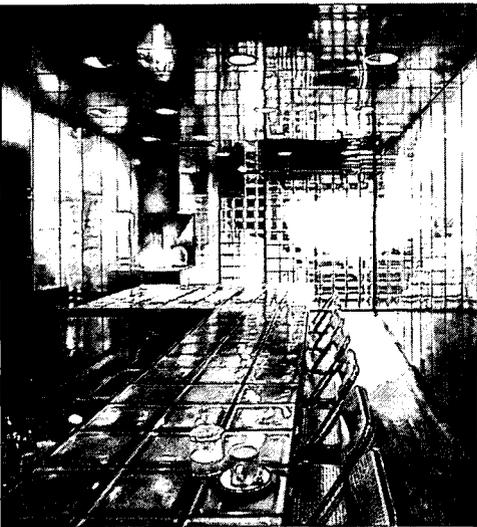
INDOOR/OUTDOOR / An award-winning design by Rodney Kinsman, the lightweight "OMK" chair has a baked epoxy finish in white, yellow, red, black or green, and may be used indoors or out. A version with chrome-plated frame is offered for indoor applications. Optional accessories include a snap-on seat pad, ganging clips and a dolly for stacking. A matching perforated steel table comes in the same epoxy colors; its center hole can accommodate an umbrella. ■ International Contract Furnishings Inc., New York City.

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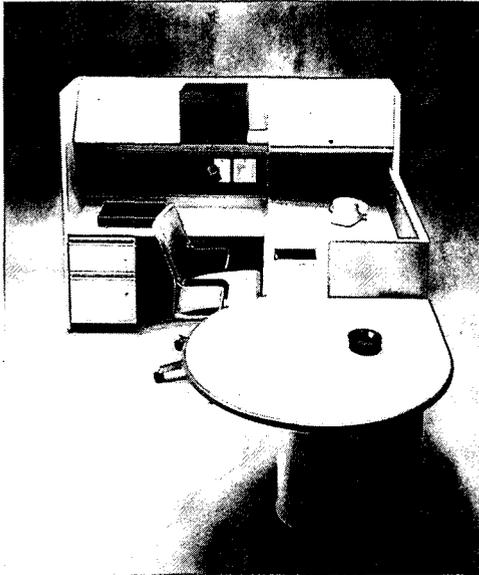
OFFICE SYSTEM / Wood and fabric panels, storage and work surface components, desks, ambient and task lighting: "The Free Dimensional System" has been designed by Warren Snodgrass with natural materials for the office landscape. ■ Stow/Davis, Grand Rapids, Mich.

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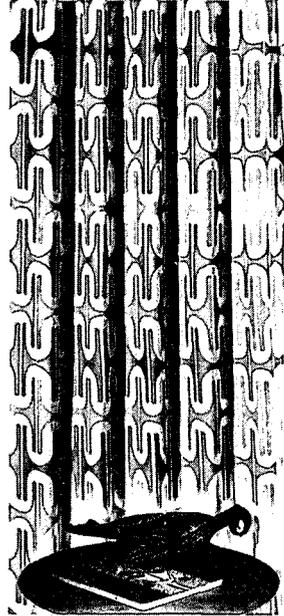
GLASS BLOCK / Part of a line manufactured by Nippon Electric Glass Co., glass block imported from Japan is offered by Forms + Surfaces. The initial collection comprises a variety of designs, all of which admit daylight while controlling heat and sound transmission. ■ Forms + Surfaces, Santa Barbara, Calif.

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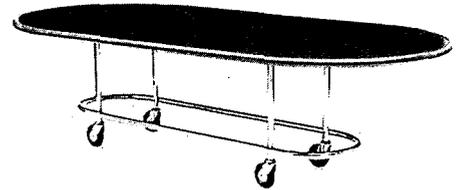
OFFICE SYSTEM / Said to combine the economies of industrial production with the details of fine furniture, designer Mario Bellini's "Marcatré" modular work stations, tables, desks, storage and accessories form complete but changeable workspace units. Unusual features are conference "rounds" and "ovals"—adjacent meeting surfaces contiguous to, yet isolated from, desk areas. The "Marcatré" system is finished in Roman oak veneers, or combination oak/gray, oak/white, or oak/beige laminates. ■ Atelier International, Ltd., New York City.

circle 305 on inquiry card



ETHNIC PRINTS / Inspired by war shields, drums and masks of the primitive Sepik River area of New Guinea, contract fabrics from Ben Rose are available in four distinctive one- and two-color prints. Shown here is "Chimbu," a two-color design incorporating a "frog leg" motif with interlocked horizontal bands. Colorways range from delicate tones to deep shades; fiberglass and a rayon blend. ■ Ben Rose, Chicago.

circle 306 on inquiry card



MOBILE TABLE / A functional conference table set on large rubber wheel casters, this Ward Bennett design uses stainless steel tubing as a scaffold base with a foot rail. The capsule-shaped top is available in a range of woods and finishes, including *Imron*, which is impervious to liquid spillage of all kinds. The top measures 96- by 48-in., and has a bullnose edge. ■ Brickel Assoc., New York City.

circle 307 on inquiry card



OPEN OFFICE / The ASD division of Westinghouse, in its continuing design program for open office systems, emphasizes a variety of office configurations through the use of credenzas, hanging file cabinets, desk, conference tables, chairs, and coordinating "paper management" system with shelves and desk accessories. ■ Architectural Systems Division, Westinghouse, Grand Rapids, Mich.

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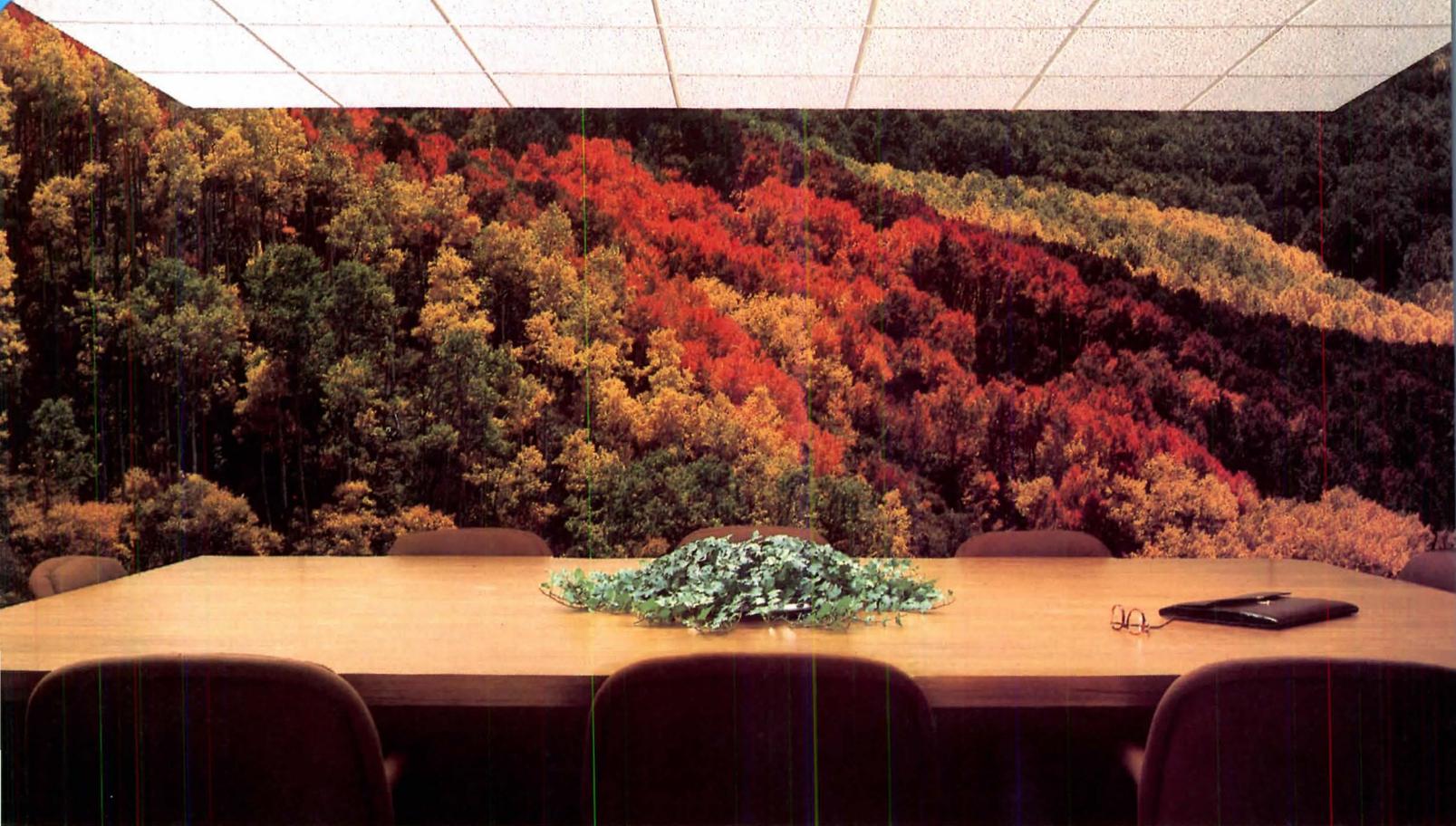
METAL CEILING SYSTEMS / "Brite-Metal" ceilings come in easy-to-install lay-in and glue-up tiles, which may be cut with conventional woodworking tools for fitting around obstacles. Standard colors are chrome, black chrome, two shades of brass, copper and glossy black, and include both satin and bright finishes. Wall paneling, moldings, beams, strips and facias may be ordered in color-coordinated finishes; all products have a Class A flame-spread rating. ■ PHD Industries, Burbank, Calif.

circle 309 on inquiry card
more products on page 121

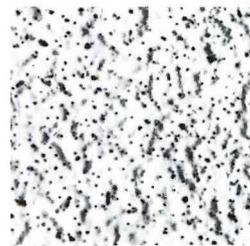
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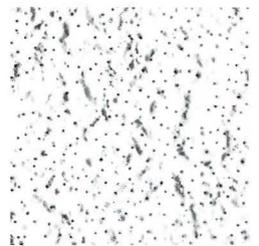
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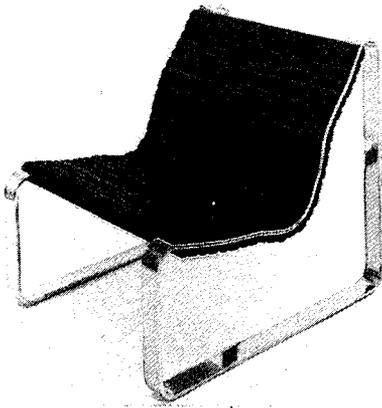
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WOOD AND STEEL / For the executive office, the "XO" chair has a mirror-polished stainless steel frame shaped to support the human back. Bridging this frame are fitted lengths of solid walnut. A matching table/bench is also available for lounge and reception areas; both designed by Leif Blodde. Steel/leather versions of the "XO" chair and table are available as well. ■ Kimball International Inc., Jasper, Ind.

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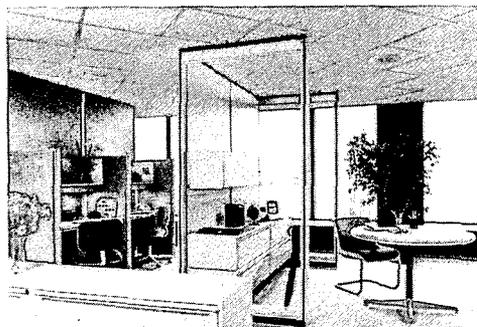
COMPONENT OFFICE / The *Haller System* is based on a special ball-and-screw connector that links chrome tubes to create multi-purpose geometric structures into which shelves, panel sections, drawers, bins and many accessories can be fitted. Wiring, cable leaders, holders, plug boxes and ambient lighting contribute to the flexibility of the work station system. ■ Haller Systems Inc., Irvine, Calif.

circle 313 on inquiry card



STEAMBENT OAK / An ergonomic design constructed with curved white oak arms, back support and five-star base, the "Tempus" chair is available in high-back management, mid-management and task worker models, with or without arms. The series offers several options, including pneumatic seat height and/or back angle adjustment, manual height adjustment, etc. The "Tempus" chair can function in two distinct modes: with a fixed back or with a self-articulating back. ■ The Gunlocke Co., Wayland, N.Y.

circle 316 on inquiry card



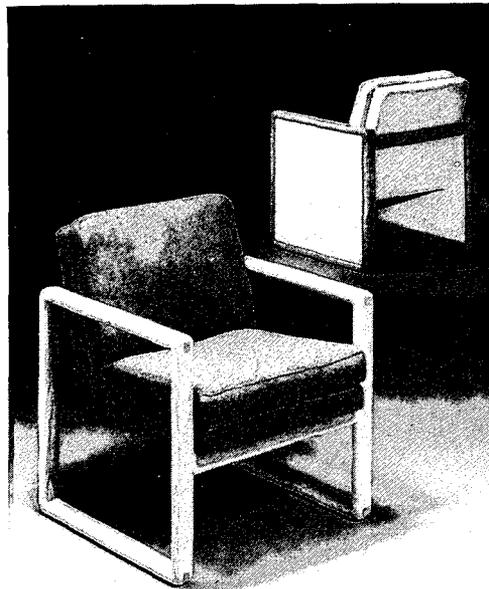
SPACE DIVISION / The *Privacy Panel System* is based on the concept of "differentiated privacy" in office design, allowing the user to assign visual and auditory separations according to individual requirements. Panels are available in heights of 48-, 60-, 75-in. and full-height, standard or acoustical; in enamel-finished steel, fabric-wrapped or glazed. Exhibited in the new Hauserman showroom designed by Massimo and Lella Vignelli. ■ The E. F. Hauserman Co., Cleveland.

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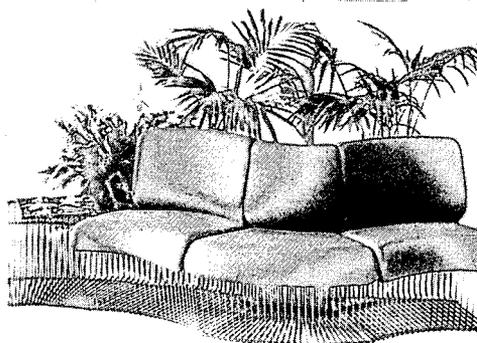
ERGONOMIC CHAIRS / One of the most extensive lines of ergonomic office chairs available, these "Vitra Flex" chairs feature an "intrinsic adjustment," which has eliminated the use of other mechanical controls. A two-part construction consists of seat-and-lumbar support hinges that separate the backrest to allow the back to move as much as seven in. ■ Herman Miller, Inc. Zeeland, Mich.

circle 317 on inquiry card



GUEST SEATING / An upholstered line for office use, "260 Series" seating is constructed on a fully radiused frame, with innerspring seats and dacron-wrapped multi-density foam cushioning. Chairs can be used alone or ganged side-to-side. Both open and paneled arm versions are shown here. ■ Executive Office Concepts, Compton, Calif.

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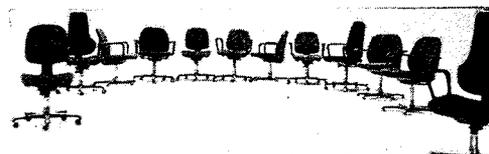
WIRE-BASED SEATING / Set on steel wire bases. Verner Panton's "Pantonova" series tables, seating and storage units have a sculptural, high-tech appearance. Seating clips together into convex, concave or straight-line arrangements. Available in both high or low seating heights, upholstered units are covered in *Mira-Lastic* two-way stretch fabric in 50 colors. ■ Cado/Royal System, Inc., South Plainfield, New Jersey.

circle 315 on inquiry card



OFFICE SEATING / A brand new line designed by Bill Stephens, the "5000" series includes task, operational, management and executive chairs. All are said to meet the highest ergonomic standards and to be exceptionally comfortable. Five-star bases and cast aluminum parts are offered in light, medium or dark metallic gray finishes; upholstery options feature a range of fabrics and leathers. ■ Knoll International, New York City.

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more products on page 122*



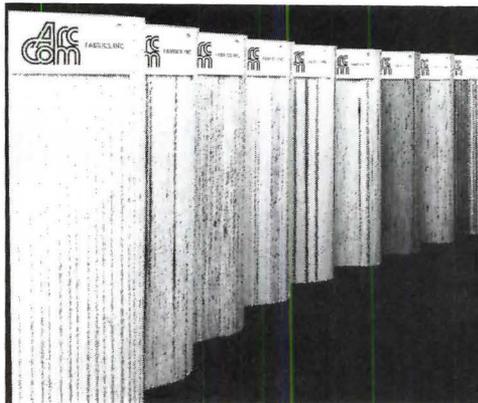
OFFICE CHAIRS / An expanded *Drabert* chair line now includes seating for all office work functions, designed to provide a full range of comfort adjustments: raising, lowering, swiveling and tilting. The back cushion of the *Drabert* chair is molded to support the spine correctly, while leaving the shoulder blades free. ■ Sunar, Norwalk, Conn.

circle 312 on inquiry card



ARTICULATING CHAIR / Both basic "Dorsal" chair models are said to respond to any position the user may assume, while providing comfort and back support at economical prices. Designed by Emilio Ambasz and Giancarlo Piretti, the operational model and four-legged stack chair have articulating backrests; the operator's chair features a pneumatic height adjustment mechanism. ■ Krueger, Green Bay, Wisc.

circle 319 on inquiry card



WALLCOVERING COLLECTION / The "Strand-wall" wallcovering collection, available in 20 architecturally-styled patterns, will be exhibited in this manufacturer's expanded Los Angeles showroom. The wallcovering has an ASTM-E84 rating, and comes in a 30-in. width. ■ Arc Com Fabrics, Inc., New York City.

circle 320 on inquiry card



SWIVEL CHAIRS / For executive and conference applications, these "Posture-Back" and "Swivel-Tilt" chairs are said to provide luxury and comfort in a smaller-scaled, space-saving seating size. The chairs were designed by John Wolcott. ■ Condi, a division of Pacific Furniture, Compton, Calif.

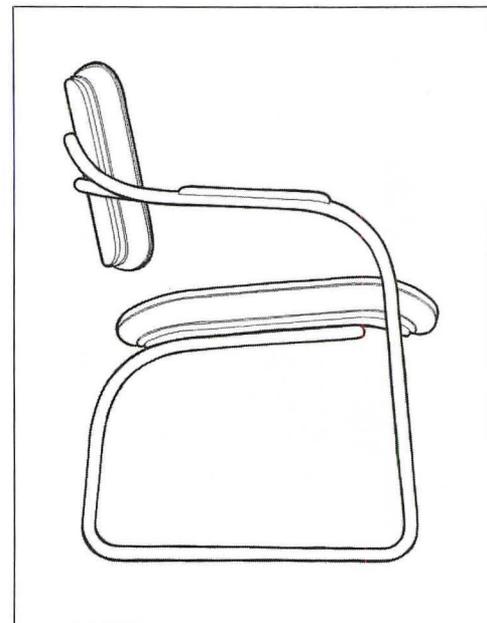
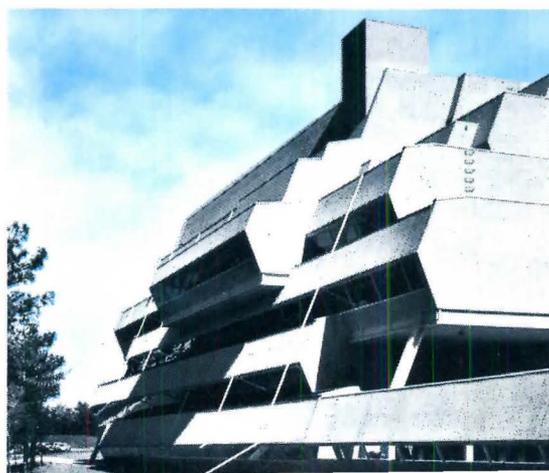
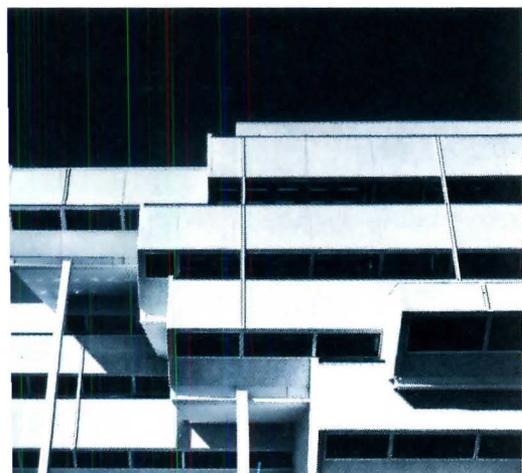
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Burroughs Wellcome Co. Building, North Carolina • Paul Rudolph, Architect • Photo, Joseph W. Molitor



CANTILEVERED CHAIR / A contract chair designed by Leonard Scott, the "S" chair has a double tubular steel frame, with the inner tube bent to support the fully upholstered seat and back. Frame is offered in a variety of metal finishes; seat and back come in a choice of fabrics or leathers. ■ Kasparians, Inc., Alhambra, Calif.

circle 322 on inquiry card



INDOOR/OUTDOOR FURNITURE / For restaurant and cafeteria applications, the "Willi" series of indoor/outdoor seating and tables has a frame of plasticized tubular steel. The chair seat and back are of impact-resistant polypropylene; the table top is of molded high resistance melamine resin. Exhibited in the Gail Epstein Ent. showroom. ■ Artemide, New York City.

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more products on page 135

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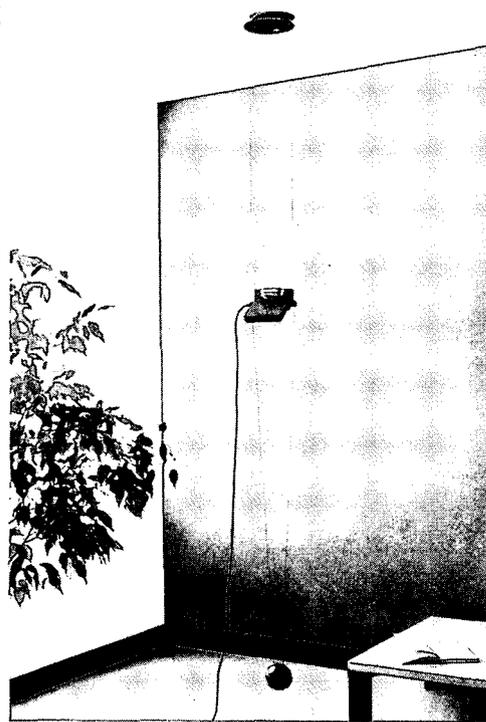
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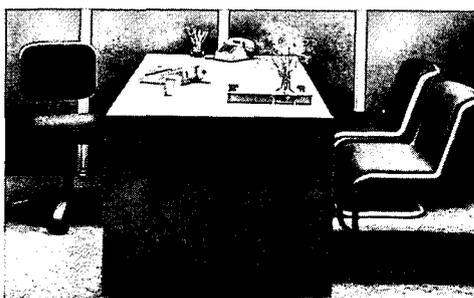
SUSPENSION LAMP / The "Abolla" lamp is suspended from a ceiling connector with cable tension created by a die cast metal sphere. The unit slides on the cable for positioning at any height. A halogen bulb is used with a diffusor (in brown and beige painted metal with protective grill) which can rotate 360 deg. Exhibited in the Gail Epstein Ent. showroom. ■ Artemide, New York City.

circle 324 on inquiry card



SEATING SERIES / The "DF" seating series features high-back and low-back executive and conference chair versions; designed by Robert De Fuccio. Also shown is the "Summit" table, which has a segmented base. Exhibited in the Gail Epstein Ent. showroom. ■ Castelli Furniture, Inc., New York City.

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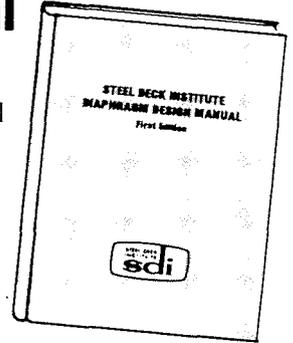


OFFICE SEATING / Upholstered in heather-toned textured fabric, the "CAS" seating line includes executive and general office chairs, secretarial seating and a drafting stool. Each model incorporates design configurations that facilitate those variations in movement inherent to specific job functions. ■ The E. F. Hauserman Co., Cleveland.

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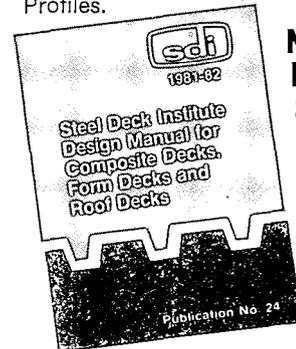
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OFFICE NOTES

Offices opened

Stanley M. Brent and David Marshall announce the formation of Brent/Marshall & Associates, Architects and Planners, located at 916 Main Street, Venice, California.

Peter C. Chipouras announces the formation of his own firm, for the practice of architecture, planning and interior design, to be known as P.C. Chipouras and Associates located at 220 Jericho Turnpike, Mineola, New York.

John C. Douglas, AIA has opened a new office, Douglas Architecture and Planning, 1645 East Missouri, Suite 140, Phoenix, Arizona.

Hansen Lind Meyer announces the opening of a new office located at Southeast Bank Building, Suite 1424, 201 East Pine Street, Orlando, Florida.

ISD Incorporated announces the opening of a Denver office located at 1900 Wazee Street, and the election of Paul B. Berger, AIA as vice-president-in-charge.

Rolf Jensen & Associates, Inc. announces the opening of a new Houston office located at 7015 West Tidwell Road, Suite 101. The office will be headed by Randolph W. Tucker, PE

Stow Group Architects, Inc. announces the opening of its Sacramento office located at 106 K Street, Suite 200.

Firm changes

William H. Walsh has joined the Concord office of Anderson-Nichols & Co., Inc.

The firm of L.D. Schmidt & Son, Architects and Engineers, Inc. will change its corporate name to Blackwood Associates, Inc. Architects and Engineers.

CRS, Inc. announces that Joey R. Horn and Walter Lenskold have been named vice presidents and John W. Cheek, David W. Syphard and Robert T. Wotherspoon have been named associates.

John R. Dossey has joined the architectural firm of Jason Frye and Associates as a project manager.

The firm of Jung/Brannen Associates, Inc. Architects announces Richard E. Cary, AIA as principal and Bruce M. Johnson, Neil B. Middleton and Eric R. Ward as associates.

LVK Associates Inc. has appointed Ron Pedonti as director of design.

Joseph R. Milton, AIA was elected a partner in the Houston firm of Melton Henry/Architects.

Roberta Chiprut has been promoted to marketing coordinator for Robison + Associates, Inc.

Charles L. Crumpton has joined the firm of Sasaki Associates, Inc. as director of planning services for the firm's regional office in Coral Gables, Florida.

Stone, Marraccini and Patterson announces the appointment of four senior vice-presidents: E. Alan Holl, Frank J. Kelly, Jr., Francis A. Pisani and Jack F. Van Zanten. Also promoted were Morry Wexler to associate director and James T. Hannon to associate.

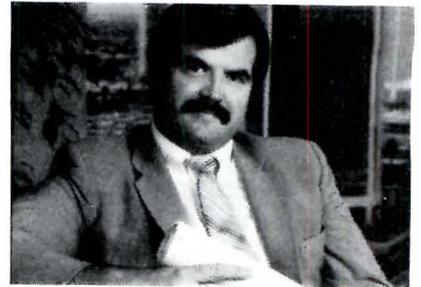
Dennis Morganelli has joined the firm of John Carl Warnecke & Associates and the Warnecke/Le Maire Interior Design Group as a vice president.

New addresses

Geddes Brecher Qualls Cunningham Architects have moved to their Princeton offices located at 120 Alexander Street, Princeton, New Jersey.

Wilkins Architects, Inc. have moved into new offices located at 1209 First Avenue South, Seattle, Washington.

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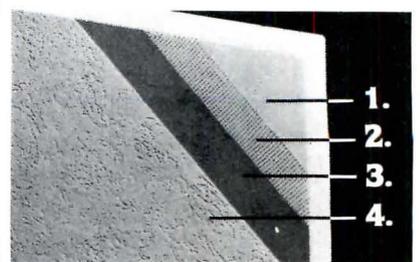
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