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Congratulations on your publication of "Contemporary transformations of Modern architecture" by William J. R. Curtis [ARCHITECTURAL RECORD, June 1989, pages 108-117].

It is a breath of fresh air in a boring fog of unintelligible POMO praise for the past. "Back to the Future" would, indeed, be a good title for it.

There have been only three great creative leaps in architecture since it began: Egyptian, Greek, and Modern, in my opinion. At any rate, Curtis substantiates Modern as one creative leap, and goes about documenting its lasting qualities and depths of possible interpretations.

He ably restores the masters—Wright, Corbu, Mies, Kahn, and Aalto—to their creative genius status, as opposed to the denigration attempted by the POMOs. I would add Sullivan and Gropius to the list for various reasons.

Not to recognize the importance of the buildings Curtis cites and to deny their derivation from the masters—in fact, to contend that Modernism is dead—seems incomprehensible after reading this fine analysis.

Richard W. Snibbe, FAIA
New York City

I thought that the passage on Carlo Scarpa's Brion Cemetery in William Curtis's article [ARCHITECTURAL RECORD, June 1989, pages 108-117] was as superlatively lyrical and evocative as anything I have seen written on that miraculous work—and indeed on almost any piece of architecture.

Herb McLaughlin
Kaplan McLaughlin Diaz
San Francisco

We enjoyed the articles on urban schools in the March 1989 issue of ARCHITECTURAL RECORD (pages 106-115). We did a double take, however, when we looked

at New York City Public School 234, designed by Richard Dattner (pages 108-111). Something looked very familiar. The photos and plans then triggered the memory of a colleague's recent photos of the work of Charles Rennie Mackintosh. We were curious enough to explore some historical references to confirm many corresponding likenesses.

There are remarkable similarities between P. S. 234 and Mackintosh's Scotland Street School built in 1906. The architects of both schools responded to a school board program with stringent budgets. Both schools are located in industrial neighborhoods close to major rivers.

The playgrounds of both are hardscaped and have an enclosing decorative ironwork and masonry fence next to the street. Both have a decorative metal gate and a low, arched masonry gateway. Both have low wall bases and metal fences above. Both playground fences have masonry wall elements incorporated into the adjacent masonry walls.

Both three-story school buildings share a similar palette of colors and materials. The tan—*Continued on page 8*

Corrections

The photograph of ornamental dolphins on the Dai-Ichi Tokyo Bay Hotel [RECORD, May 1989, page 134] should have been credited to Grant Marani.

In the story on the AIA 1989 Honor Awards, the photograph of the Folger Shakespeare Library in Washington, D. C. [RECORD, May 1989, page 62], should have been credited to ©Peter Aaron/ESTO.

N. Charles Slert should have been listed as co-principal-in-charge of design for the Escondido (California) City Hall [RECORD, January 1989, pages 102-107].

Through August 16

"Designing Interior Designers," an exhibit of students' renderings, CADD drawings, and furniture designs, done by students at the School of Visual Arts; at the SVA, New York City.

Through September 3

"Berlin: Place and Memory," an exhibit of architectural drawings by Thomas Bartels for the redesign of the Prinz-Albrecht-Palais area; at the Williams College Museum of Art, Williamstown, Massachusetts.

August 28-30

A conference on "Money and People: Managing Main Street's Resources," conducted by the National Trust for Historic Preservation; at the Sheraton Society Hill Hotel, Philadelphia.

The program will be repeated October 2-4 at the College of Charleston, Charleston, S. C. For information: Vicki Onderdonk, Program Associate, National Main Street Center, National Trust for Historic Preservation, 1785 Massachusetts Ave., N. W., Washington, D. C. 20036 (202/673-4219).

August 29 to September 23

"Berlin Modern Architecture," showing the work of Charles Moore, Gae Aulenti, Peter Eisenman, Josef Hoffman, Gottfried Boehm, et al.; at the Pacific Design Center, Los Angeles.

September 11 to October 13

"Nikken Sekkei: Its Ninety Years and the Modernization of Japan," an exhibition showing the work of Japan's largest and oldest architectural firm; at Avery Hall, Columbia University, New York City.

September 16 to October 7

"Brothels of Nevada," showing photographs by Timothy Hursley; at the Harris Gallery, New York City.

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Rooftop remodeling, Vienna, Coop Himmelblau, Architects
Photographer: Gerald Zugmann

Letters continued from page 4 colored masonry units used on P. S. 234 are similar to Scotland Street School's buff-colored sandstone block. The overall organization of main building plans at P. S. 234 is quite like the Scotland Street School plan. Classrooms at both schools have a symmetrical layout along a double-loaded corridor with a pair of stairwells in common locations. Larger assembly spaces occur between the stairwells with the auditorium and gym at P. S. 234 and a hall and cookery classroom at Scotland Street School.

The auditorium of P. S. 234 is somewhat like the lecture theater at the Glasgow School of

Art with its wood paneling, exposed ceiling structure, and curved stage. The bench seating shown at the end of the corridor (photo on page 111) at P. S. 234 was also used by Mackintosh. P. S. 234 also utilizes a recurring architectural pattern in the grid of squares or checkers used to define window elements, acoustic ceiling grid, oak panels in the auditorium, and the masonry-block exterior.

All these similarities intrigue us. They all may be mere coincidence, but still—we wonder. Did Richard Dattner discuss sources of inspiration with ARCHITECTURAL RECORD?

We are pleasantly surprised and encouraged that solutions generated over 80 years ago have validity today.

Robert Bateman
Robert MacLean
Interactive Resources, Inc.
Point Richmond, California

The comments by Robert Bateman and Robert MacLean regarding the similarities between our P. S. 234 and the Scotland Street School by Charles Rennie Mackintosh are intriguing. While not consciously patterning P. S. 234 on the work of Mackintosh, a year of study at the Architectural Association in

London (under James Gowan of Glasgow) and several visits to the Glasgow School of Art certainly made a strong impression.

Perhaps a more compelling reason for the obvious similarities between the two schools are the programmatic and contextual features influencing both buildings:

(a) Both schools were designed as urban "cloisters"—precincts protected by surrounding masonry piers and iron fences from the traffic and noise of adjacent streets. Like the residents of New York and Glasgow, both schools are somewhat tough and crusty on the outside and only reveal their kinder, gentler sides to those who penetrate their outer defenses.

(b) Both schools respond to their immediate context. P. S. 234 is a new building in an old New York neighborhood characterized by turn-of-the-century loft buildings formerly housing the "butter, cheese, and egg" district.

(c) Both schools attempt to give tangible form to a set of values concerning education. In the case of P. S. 234, the entrance gate suggests the dignity and importance of the activity within the building; the small cylindrical transition spaces with conical roofs respond to the special scale of a child and suggest the "magic" world awaiting the kids inside the building.

It would be equally interesting to compare turn-of-the-century British schools with their counterparts in New York City. From 1890 to 1910, New York City undertook a vast program of new school construction. The Board of Education architect responsible for much of this work—C. P. J. Snyder—looked for inspiration to European models, particularly the courtyard scheme of the Hôtel de Cluny in Paris. The N. Y. C. Board of Education has found that many teachers and students prefer those older schools.

The architectural solutions generated then are certainly relevant now, and I thank Robert Bateman and Robert MacLean for their thoughtful analysis.

Richard Dattner, Architect
New York City

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Could it happen here?



The devastation suffered in the Armenian earthquake (photo) is not likely to happen in U. S. cities because those prone to earthquakes (e. g., Los Angeles) have already taken safeguards in their building codes. But it *could* happen in cities not so prepared if caught by surprise. This was the gist of a recent briefing for Congressional and federal-agency staff by members of an architectural team, headed by Ronald Altoon, which gave Armenians remedial advice under AIA sponsorship. The result? Possibly more stringent seismic codes for less prone cities, at least in federal work.

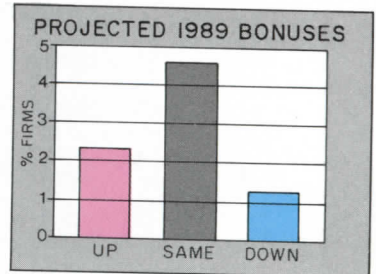
Be nice to your engineers

Just when we hear that the number of architects is expected to explode [RECORD, April 1989, page 23], we are told that the number of people entering engineering is in serious decline. This, from the American Association of Engineering Societies, means there will be far fewer engineers per architect than there are now. The situation is attributed to the declining interest of all younger people and of women in particular. Of new engineering students in 1983, 17 percent were women. Today, they constitute 15 percent. The situation seems doubly ironic in light of engineers' recent attempts at inroads on architecture when it would seem that they will already have more than enough to do. On the brighter side, the number of minorities entering the field is increasing—up 15 percent over last year—meaning they will be in far greater proportion. *C. K. H.*

Design-firm management doing OK, thank you

Salaries for managers of building-design firms increased by some 6 percent in 1988, according to the Executive Management Salary Survey conducted by the *Professional Services Management Journal*. Much of this hike was due to record-high bonuses that ranged on average from 12 percent for project managers to 38 percent for chief executives—showing, according to editor Frank Stasiowski, that firms had a good year. It also shows a trend toward making compensation dependent on results. "Firms are moving away from high base levels." But, says *PSMJ's* Bill Fanning: "The overall increase reflects continuing strong demand for good people."

The best news: Firms remain optimistic about 1989, expecting staff-size increases of 12 percent on average and, according to another survey, salary increases about the same as this year's [RECORD, April 1989, page 21].



Not such good news for executives is that the impact of the new tax laws includes less use of such fringe benefits as company cars and, for all the staff, a decline in firm-funded retirement plans. (Only 28 percent of firms now have one, while 54 percent rely on 401K plans funded by the employee.) For a survey copy, contact *PSMJ*, 10 Midland Ave., Newton, Mass. 02158 (800/537-7765).

California architects might find it interesting to compare *PSMJ's* results with those of a survey by Management Design, 2351 Powell St., San Francisco, Calif. 94133 (415/989-4338).

Want to make a video about your firm? Find a sponsor



Corgan Associates Architects may have found an unusual opportunity when one of its clients, United Way, offered to collaborate in making a film on the realities of working in a profession, i.e., architecture. Nonetheless, it was an opportunity that might be duplicated by other firms with other sponsors to give the firms a boost. (In this case, no limitations were set on what Corgan could do). Corgan, according to firm member Bruce Seeds, had some difficulty in deciding what to do, at least, not to appear unduly self serving. Attempts to simply pin down

professionalism produced "as many definitions as there were people to discuss it." The result? The impressions and experiences of four professionals in the firm at different career stages, "leaving the message to the viewers' interpretation." The film won an award in a national program and was distributed to, among others, the firm members' alma maters. Although the film makers had no greater understanding of architecture than do most laymen, Seeds found shared visual orientations helped translate the architects' intentions onto the screen. *C. K. H.*

Women architects, unite!

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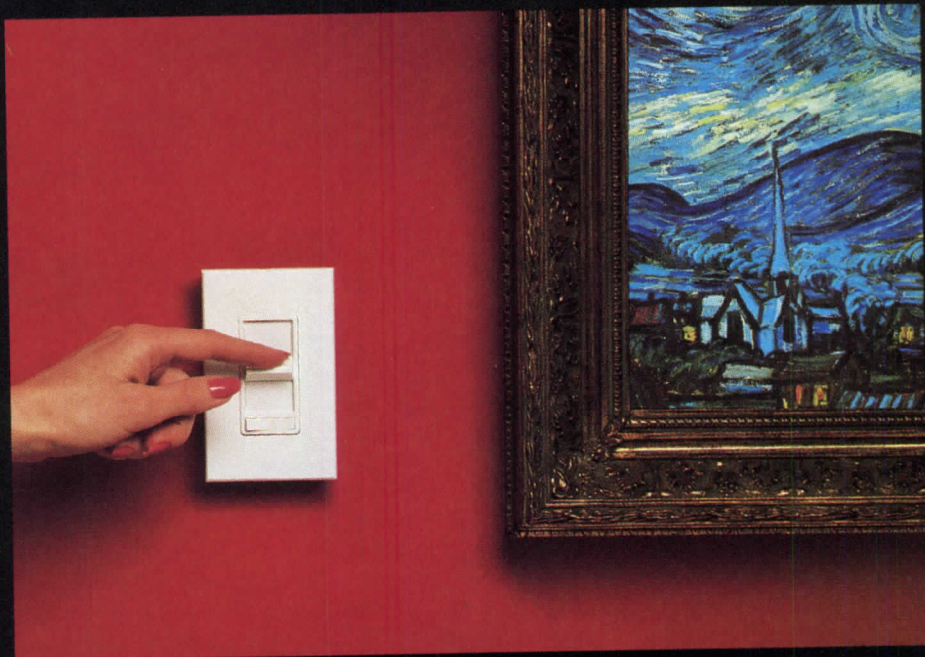
A quarterly publication of the Small Business Administration will list presolicitation information on new projects to be built by 11 participating federal agencies. But be prepared to wade. The publication also lists such information for all forms of the agencies' procurement.

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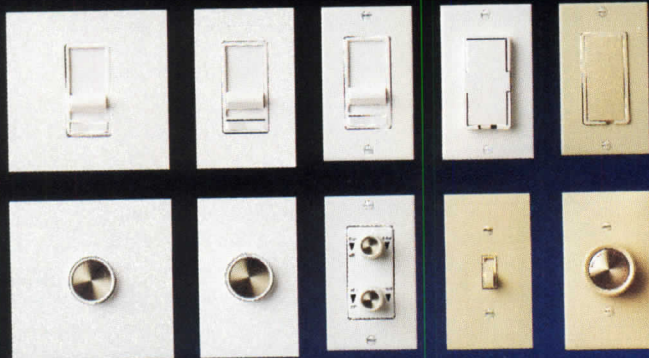


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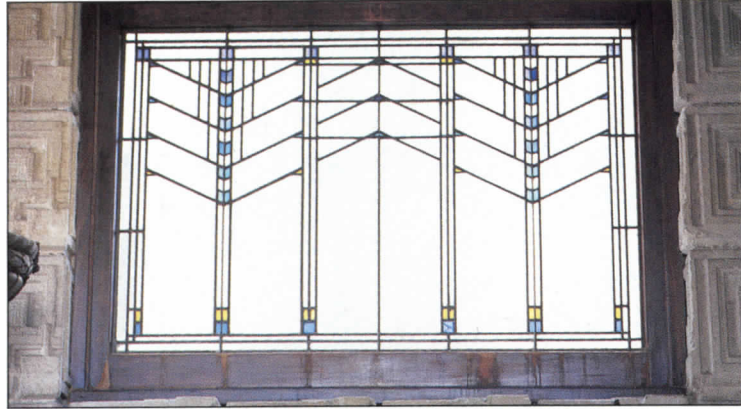
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Frank Lloyd Wright's Ennis-Brown House in Los Angeles may lose its architect-designed windows, doors, and other artwork in order to raise funds to make needed repairs to the structure itself. The owner, the nonprofit Trust for Preservation of Cultural Heritage, says it has decided to strip the house of such ornamentation as its art glass windows (photo) and sell it to collectors.

Architects interested in

contributing to the fund to save the original ornamentation can send donations to Ennis-Brown House, 2655 Glendower Ave., Los Angeles, Calif. 90027. Phone 213/660-0051.

Also lending a helping hand is ISICAD, California software maker, which has provided CAD drawings and models of the house for grant packages put together by the house's former owner, August Brown, and Eric Lloyd Wright. *C. D. K.*

Restoring the architectural heritage of a 1,000-year-old divided city

Attempting to revitalize the historic walled city of Nicosia on Cyprus and restore its ancient wall sounds daunting enough. But when the city's Turkish Cypriot and Greek Cypriot citizens have been divided by a buffer zone for 25 years, how can such attempts succeed?

The mayors of the divided city, Mustafa Akinci and Lellos Demetriades, representing the Turkish and Greek Cypriots, respectively, visited New York recently (photo) as guests of the United Nations Development Program, which has helped facilitate the master plan for the restoration. Commercial and

residential districts will be involved in the rehabilitation, and total cost is estimated at \$58 million. "We have showed our respective peoples that cooperation is good," said Akinci. Will Nicosia be a model for other divided cities? "We must build the bridges," said Demetriades. "Then they can be used by others." *C. D. K.*



Demetriades (left) and Akinci with New York's Mayor Koch.

Copyright Office study recommends more protection for works of architecture

A new study on the ins and outs of architectural copyright protection concludes that Congress should hold additional hearings and give "further serious consideration to enacting additional protection for works of architecture."

The study by the Copyright Office of the Library of Congress was prompted by legislation pending last year, eventually passed by Congress, for the United States to adhere to the Berne Convention for the Protection of Literary and Artistic Works, including works of architecture, plans and sketches, and three-dimensional models. The report concluded that Congress, after listening to a number of witnesses, adopted a "minimalist approach," making only those changes in U. S. legislation "absolutely required to join the convention."

Although the report said that architects' blueprints, scale models, and "separable artistic features" appear to be adequately protected by United States copyright laws, whether the combination of federal and state safeguards "adequately protects works of architecture remains in doubt. We would support appropriately drafted legislation to make U. S. law more clearly consistent with the Berne convention."

David Lawson, FAIA, chairman of the AIA's government affairs committee said, "We're delighted. It's clear the Copyright Office agrees that Congress should seriously consider amending the Copyright Act to prevent the unauthorized construction of buildings from copyrighted plans."

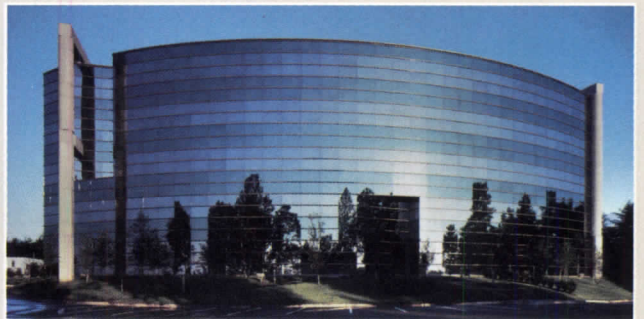
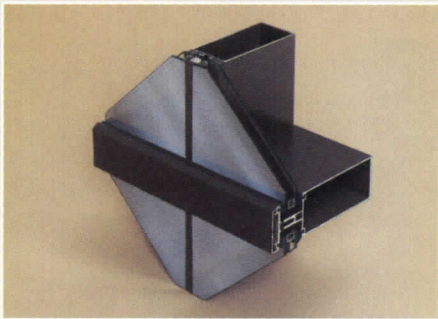
Albert Eisenberg, AIA's senior director of federal liaison, says the association will draft some legislation proposals but the specifics haven't been worked out as yet. "All we are sure of is that we want Congress to pass legislation that says if somebody has acquired copyrighted

drawings, he cannot build from them without the copyright holder's permission." Obviously, the copyright owner can sue now but that's expensive and time consuming. "We have not made a decision whether a building itself should be copyrighted," Eisenberg added.

Such comments highlight a key area of concern: While plans per se are pretty much protected, there is virtually no protection for the unauthorized construction of a structure, based on bootleg blueprints [RECORD, May 1989, page 37]. While professing no preference, the Library of Congress study laid out four possible options for its parent body:

- Create a new subject matter category for works of architecture in the Copyright Act and legislate appropriate limits, limiting protection to, for example, "fine artistic structures," and specifically exclude residential tract housing.
 - Amend the Copyright Act to give the copyright owner of architectural plans the right to prohibit unauthorized construction of substantially similar buildings based on these plans—an approach suggested by the AIA. Said the study, "smaller architectural firms would most likely find their works copied, and they would, therefore, benefit the most from increased protection."
 - Amend the definition of "useful article" in the act to exclude unique architectural structures, i. e., "nonmonumental works of architecture."
 - Do nothing and allow the courts to develop new legal theories of protection under existing statutory and case law. One possible problem with this approach is the prospect of "conflicting theories as well as the possibility of weak or inadequate protection for subject matter," said the report.
- Peter Hoffmann, Washington, D. C.*

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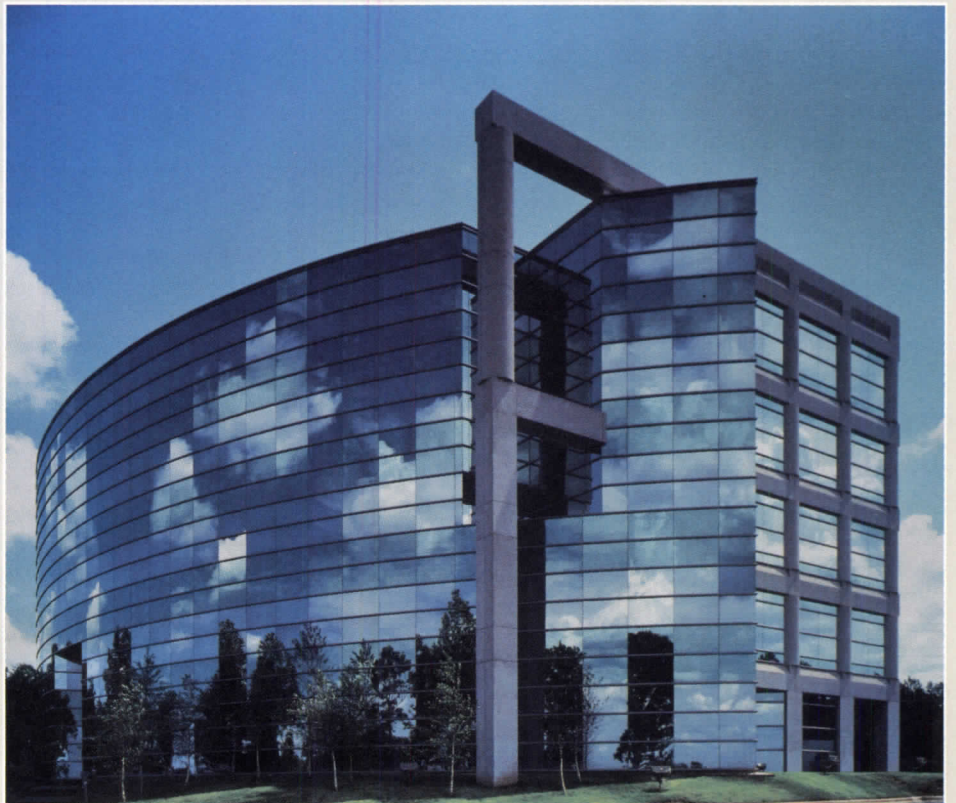
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Finance: Lower interest rates are a good omen for construction

By Phillip E. Kidd

The economy has slowed. However, the spring and early summer slide in interest rates will stimulate sufficient activity to keep the economy growing for the remainder of the year.

During the spring of 1988, worries about an upturn in inflation began to mount. The Federal Reserve, in a series of actions lasting more than a year, firmed monetary policy. Its objective was to pull real economic growth, which was running above 3 percent, back into a 2- to 2.5-percent range.

This was intended to crimp any significant upsurge in inflation.

At the moment, the Federal Reserve's actions appear to have worked in reducing real growth. Second-quarter real GNP, when released, is likely to be in the target range.

Consumer expenditures, which account for roughly two-thirds of final demand, are a major reason for the more leisurely advance. Since the first of the year, individuals have been trimming back their outlays. This sluggishness has been felt

More of consumers' money going into savings instead of debt, combined with less borrowing demand by business and government, could mean an unexpectedly rosy prospect for many types of construction.

throughout the economy, but particularly in two very interest-sensitive industries, automobiles and housing.

In addition, purchases of other durable and nondurable goods have moderated. Imports have dipped and exports risen, narrowing our trade deficit marginally.

Next, the manufacturing-capacity utilization rate has inched down from nearly 85 percent in January toward 83.5 percent this summer, easing some of the strain on production. There has also been modest improvement in commodity prices, helped immeasurably by the decline in oil prices.

Meanwhile, employment, while still climbing, is no longer rising fast enough to offset the number of new job seekers. The unemployment rate has turned up slightly, minimally reducing wage pressures.

The above trends are the first faint evidence that the second objective of the Federal Reserve, dampening inflationary pressures, is gradually taking hold. Nevertheless, larger changes in those trends will be needed before the statistics will reflect any retreat in inflation. As a result, the Federal Reserve is at a significant crossroads in directing monetary policy.

A clear danger has always been that the Federal Reserve would tighten monetary policy too much, dumping us into a recession. The sudden slowing of real growth in the second quarter raises that specter.

Complicating the Federal Reserve's decision, however, is that inflation statistics continue to point upward. At best, it will be another two or three quarters before more restrained economic growth causes inflationary forces to subside enough to turn those indicators downward.

Fortunately for the economy, the Federal Reserve will be able to delay any radical shift in policy in the next few months

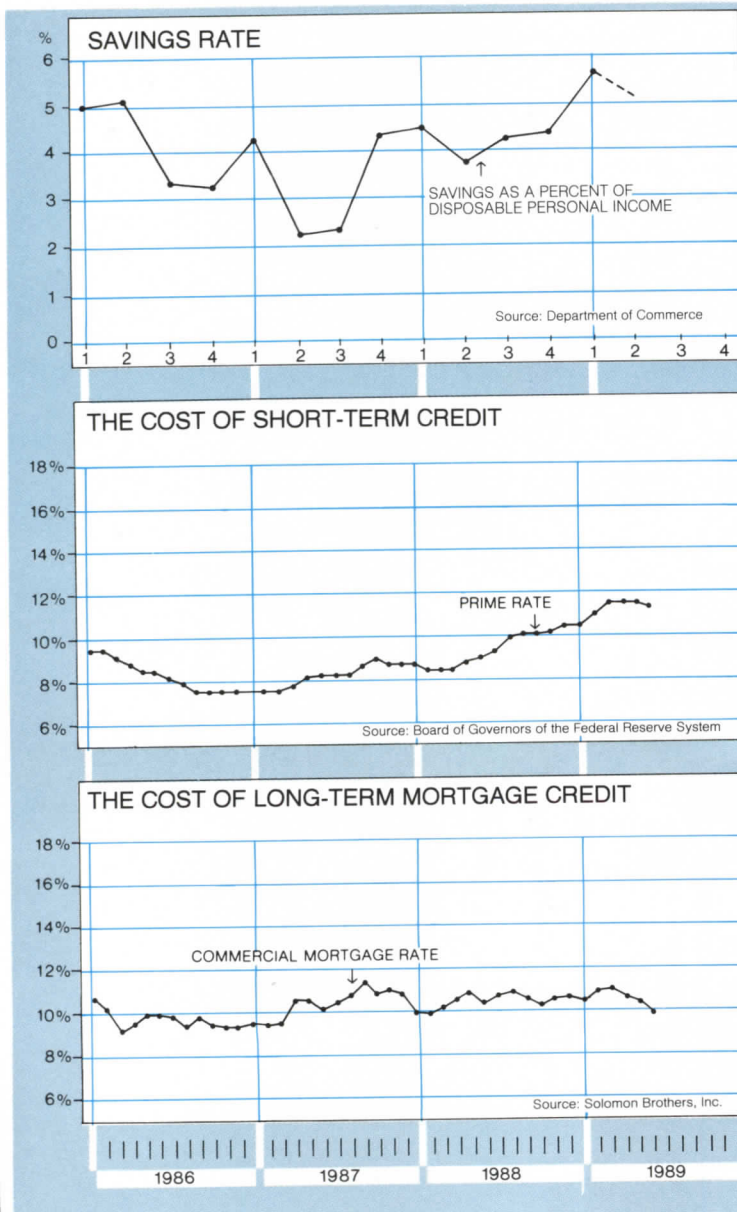
because of very positive actions by consumers. Since a nadir in the third quarter of 1987, consumers have been saving more. When they began slowing expenditures earlier this year, they boosted their savings. This improved the supply of funds at a time when borrowing by consumers, business, and even government was weakening. As a result, interest rates tumbled.

In the second quarter, short- and intermediate-term rates fell roughly 100 to 140 basis points (one hundredths of a percent). This drove those rates down from 9.25-9.75 percent to 8.20-8.50 percent at the start of the summer. And mortgage rates dropped from nearly 11.25 percent to about 10.25.

Interestingly, declining rates occurred without any significant easing of policy on the part of the Federal Reserve. Moreover, those lower interest rates will allow the Federal Reserve to keep monetary policy reasonably firm to subdue inflationary pressures without too much worry about the economy losing any more momentum in the next few months.

The reason: It takes time for potential homebuyers to recognize when there has been a substantial break in interest rates. Only recently have financial institutions aggressively begun to advertise lower mortgage rates to improve loan volumes. This is occurring as the traditional home-buying season is well underway.

This summer, housing construction will reverse its decline and single-family and condominium starts will gradually perk up. That activity will stimulate other housing-related industries, such as furniture, appliances, etc. This will provide enough new domestic demand to keep the economy comfortably rolling along within the targeted real growth of 2 to 2.5 percent through year-end.





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Circle 35 on inquiry card

Should future architects practice as generalists, specialists, or both?

In a lively counterpoint of views, this year's well-attended Walter Wagner Forum, on the theme of generalists versus specialists, aired a long-debated subject that, as moderator Jack Hartray put it, "appears like locusts out of the earth every seven or eight years." He questioned past differences: "Is there something in the nature of getting buildings built that forces practitioners to take a generalist's view, or (in academia) for schools to develop specialists' views?"

The session—introduced by RECORD's Editor, Mildred F. Schmertz, and AIA board member, Thomas L. McKittrick, as co-sponsors—represented the pick of an unusually large number of provocative essays submitted by ACSA faculty and members of the AIAS school chapters. Juries for the papers included representatives from all the organizations involved.

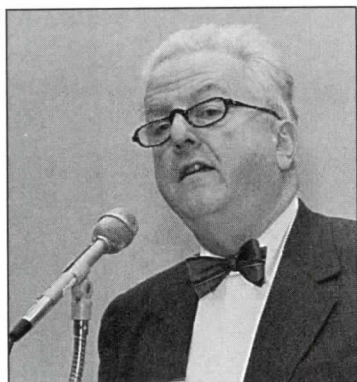
Perhaps the most astonishing revelation by the various papers was the number of different interpretations of what is meant by generalists and specialists—ranging from types of building design and/or services offered by a firm, to individual tasks and skills within a firm, to extreme specialization in sometimes esoteric research and theory. Could it be that the lack of understood semantics leads to the recurrent debates on the subject? In selecting papers, the juries attempted to reflect a smattering of these interpretations.

In the thoughtful presentation of the winning papers by the panel of architects, educators, and students, those long-standing academic-versus-practitioner preconceptions questioned by Hartray largely proved still true, but with a general consensus that, for real success, the profession needs a meld of a lot of options.

New challenges did emerge, however. Student Geoffrey

McDonald posed that tasks within firms were "now overly specialized," and would change as "the computer offers new potentials" in many basic skills. And architect Cynthia Weese observed "a trend toward generalization . . . it does not take a big office to do big buildings."

In contrast, educator Walter Wendler called for "a vital specialization" based on a



Panel moderator, architect Jack Hartray of Nagel, Hartray and Associates, underscores divergent views.

"science of verifiable knowledge [of building] assembled by architects." Pro-generalist student Sherri Crumpler countered, "What's wrong in saying, 'I specialize in architecture?'—the next generation need only live up to that title!" As a novel admix, educator Dan McGilvray proposed "a body of specialists [with specialized research as a base] and a few generalists as master planners and theorists."

In her talk, Cynthia Weese gave what was probably the most eloquent answer to a problem that will, in the end, only be solved by an individual's talents and beliefs: ". . . there are many ways to achieve an end. But the essence . . . needs someone supple and fluid who combines disparate elements rather than separating them, who makes few prescribed rules, who listens to the heart as well as the voice."

The Walter Wagner Forum, established in memory of RECORD's late editor, is an annual three-part series of

panels sponsored by RECORD and the AIA and its Architects in Education Committee, with the cooperation of the Association of Collegiate Schools of Architecture and the American Institute of Architecture Students. Papers are called for from members of the ACSA and the AIAS, and the winning essays are presented in debate at their respective annual gatherings; two students and two educators are then selected from these and, joined by two invited architectural practitioners, form the final panel for the national AIA Convention. The subject for the 1989-90 call-for-papers will be announced in early fall.

Tapes of the entire final 1989 Forum and a monograph of the premiated papers (plus a number of runners-up) are available from the AIA. For information, contact: Joe Bilello, Director of Education Programs, The American Institute of Architects, 1735 New York Avenue, N. W., Washington, D.C. 20006. *Herbert L. Smith, Jr.*



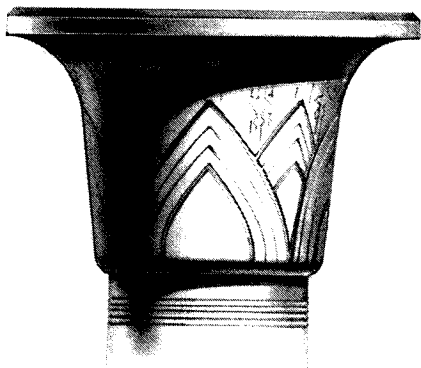
The 1989 panelists, left to right: Walter Wendler, associate dean, Texas A & M; Cynthia Weese, Weese Hickey Weese,

Architects; moderator Jack Hartray; Sherri Haynes Crumpler, student, University of Texas; Geoffrey McDonald,

student, University of Nebraska; and Dan MacGilvray, associate dean, Texas A & M.

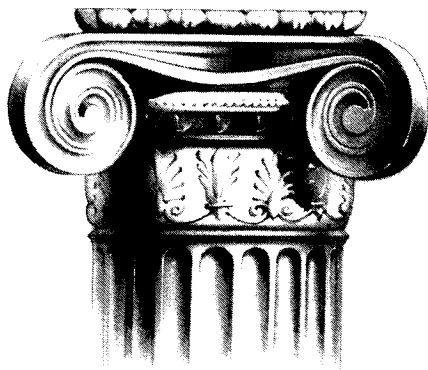
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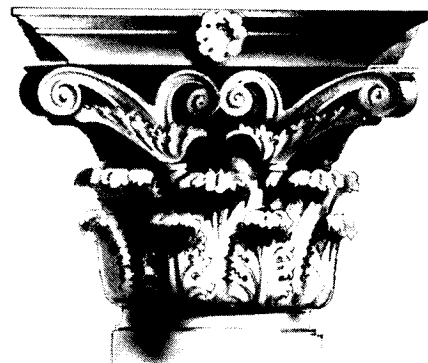
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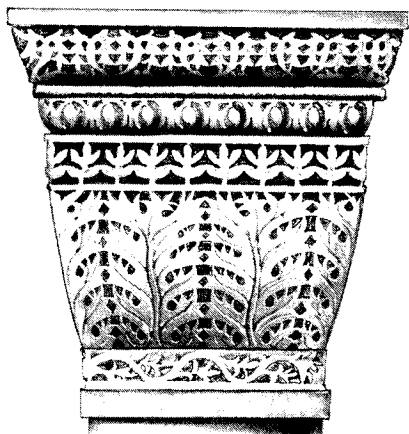
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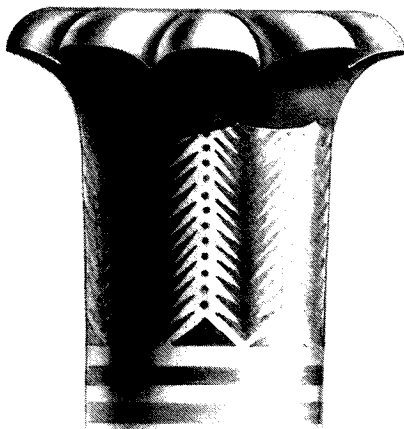
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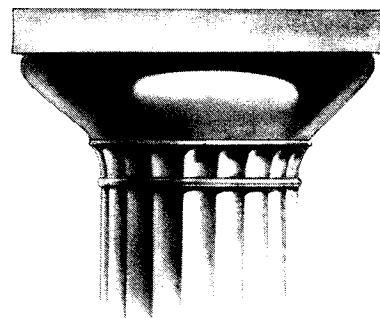
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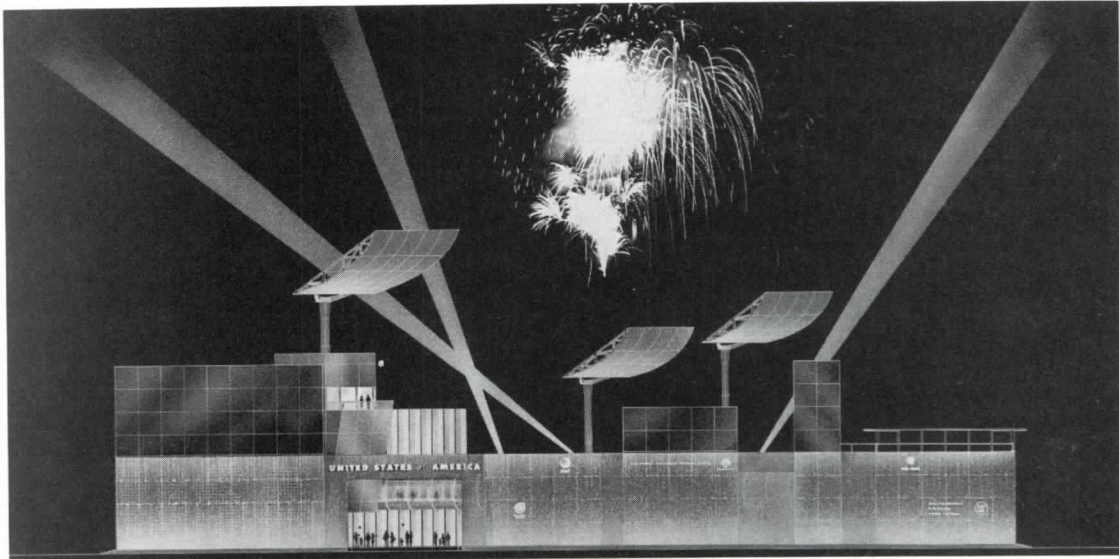
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A high-tech Columbian fleet

Like Seville's Expo '92 itself, the U. S. Pavilion at the fair will gaze, metaphorically speaking, in two directions simultaneously: backward in commemoration of Columbus's discovery of America in 1492, and forward in celebration of the birth of the European Community in 1992.

Designed by architect Barton Myers of Los Angeles, the pavilion will refer to the two periods both figuratively and literally. The three sails suspended above the pavilion should call to mind the Niña, the Pinta, and the Santa Maria of 1492. At the same time, though, these are strictly high-tech 1992 sails, mechanically tracking the sun to cast well-placed shade during the day and reflecting laser projections at night.

The least expected architectural material will be water, which will constitute a 40-foot-high front facade that will partially conceal, partially reveal the several buildings inside, most



effectively after nightfall when they are lighted. Besides veiling the interior in a mysterious but inviting way, the waterfall is intended to symbolize "ocean" to visitors symbolically coming to America through the pavilion's front door. The smaller pavilions-within-pavilion will be

prefabricated in the United States of aluminum, copper, and wood, and each of them will have a material and esthetic identity of its own.

In addition to Barton Myers Associates, members of the design team, all of California, included: BHA Design Inc./

Barry Howard, Ltd., exhibition designers; Sussman/Prejza and Co., graphic designers; and Emmett Wemple and Associates, landscape architect.

The Seville exposition will be the first major world's fair in 22 years and the first in Europe since 1958.

A new house for the fabulous Philadelphians

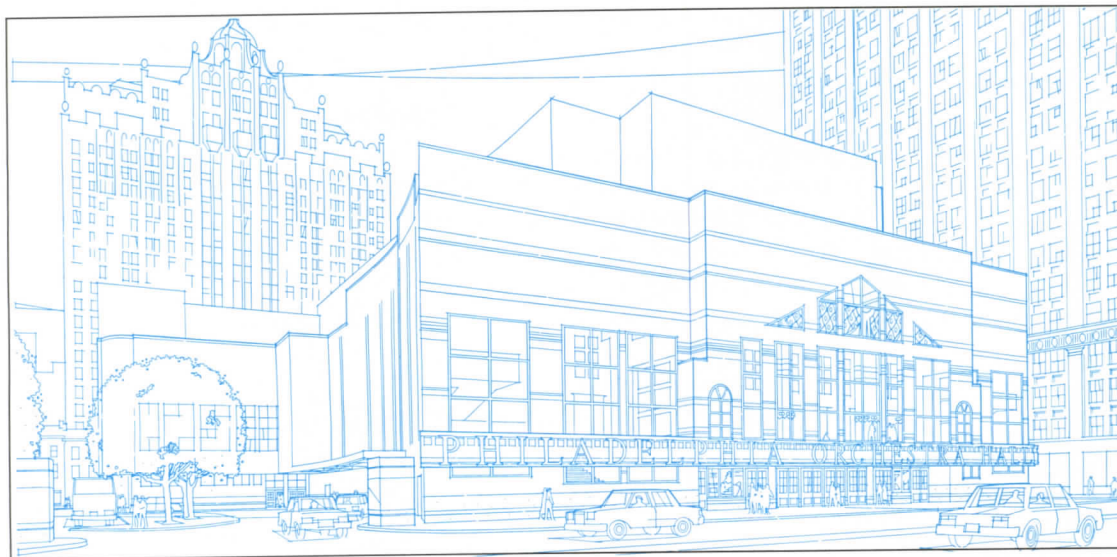
We have grown so used to thinking of Robert Venturi as a form-giver that we tend to forget that he's a full-service architect. But read his analysis for the design of Philadelphia's new Orchestra Hall: "... a building type with crucial demands for acoustical

excellence, for sound isolation, for complex spatial and structural geometries that accommodate sight lines, for interior circulation that works effectively and graciously for accommodating crowds, for sophisticated mechanical systems, for stringent

requirements of fire safety, and for a variety of programmatic needs beyond those of the orchestra chamber itself—not to mention budget constraints."

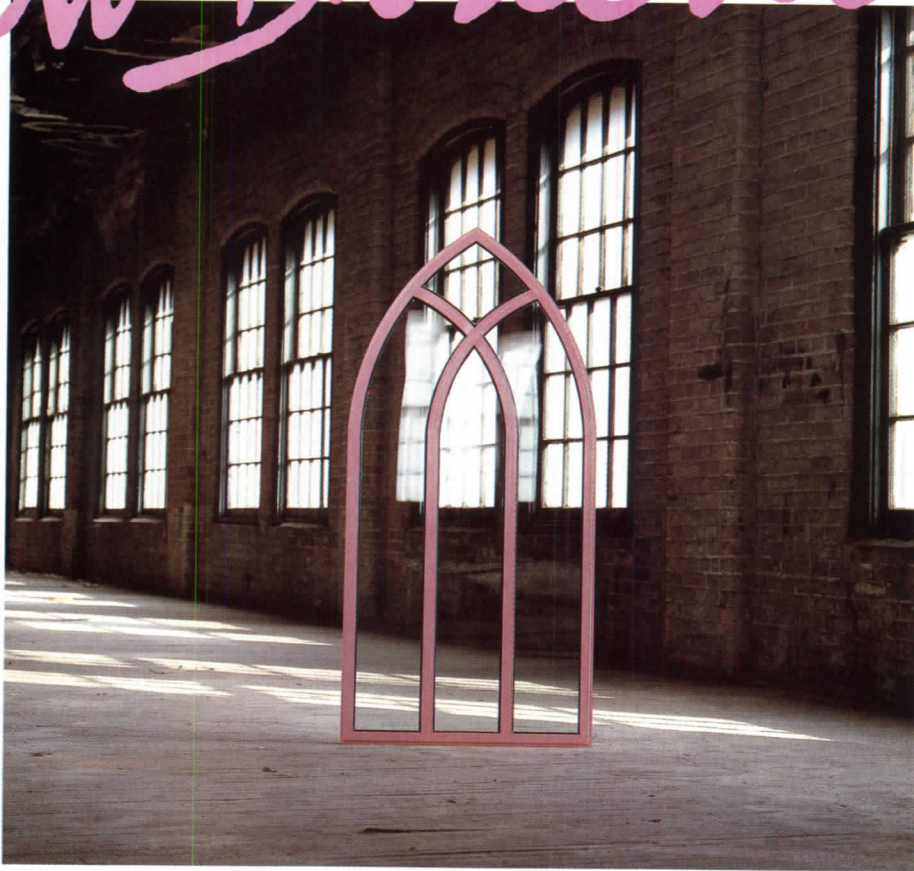
Located downtown in order to enliven the city after dark, the small building must assert itself in the face of the much vaster scale of surrounding skyscrapers. Venturi relied on oversized windows and a glass pediment to impart monumentality, but at the same time mixed in small-scale elements at the base as signs of hospitality and friendliness.

Inside, the concert hall itself is, of course, the essential ingredient. Though largely formed by the needs of the acoustician, Artec Consultants, the hall, with its raised orchestra platform, will have tiered balconies on all four walls. Architecturally, the design will emphasize the balcony faces both as ornament and to reduce the room's apparent size.



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News briefs

A landmark pre-ordained

Glasnost continued: the Academy of Art of the U. S. S. R. has sponsored its first exhibit of contemporary Western design, showing the work of Massimo and Lella Vignelli. Seen last month in Moscow, the exhibit continues through September 14 in Leningrad.

The MOMA Design Store will open across the street from New York City's Museum of Modern Art in October. Designed by Hambrecht Terrell International, the store will offer for sale authorized versions of furniture by major designers recognized by the museum, as well as smaller objects for home, office, play, and personal use.

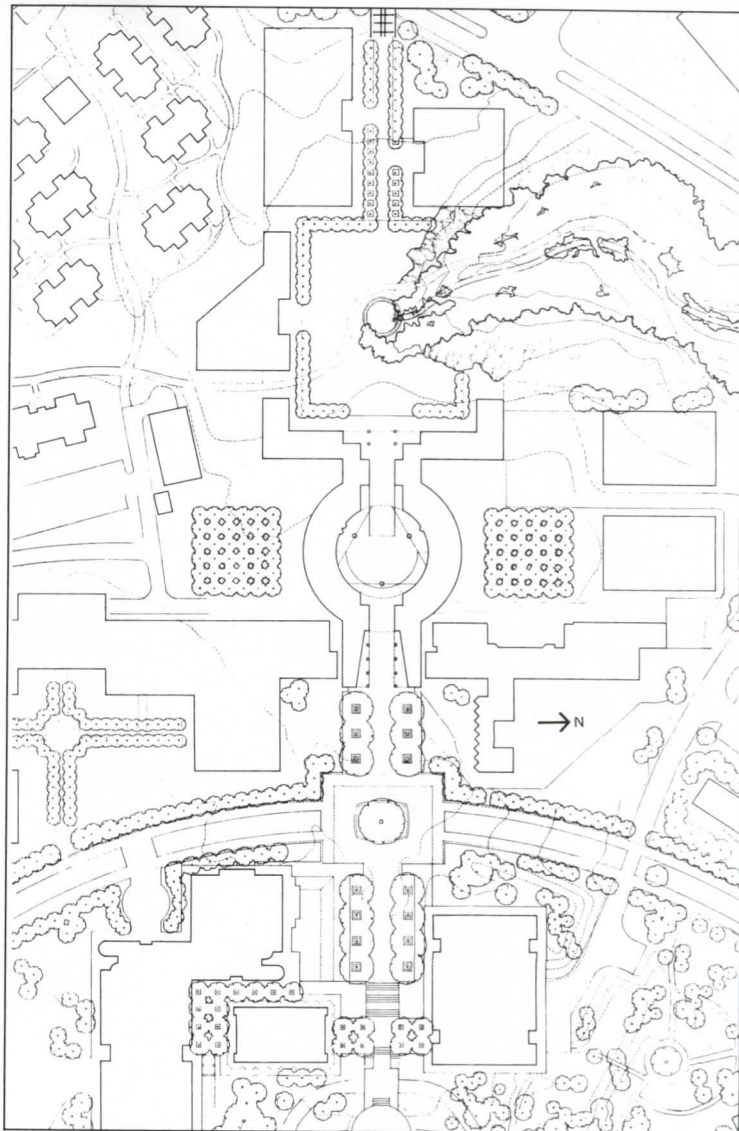
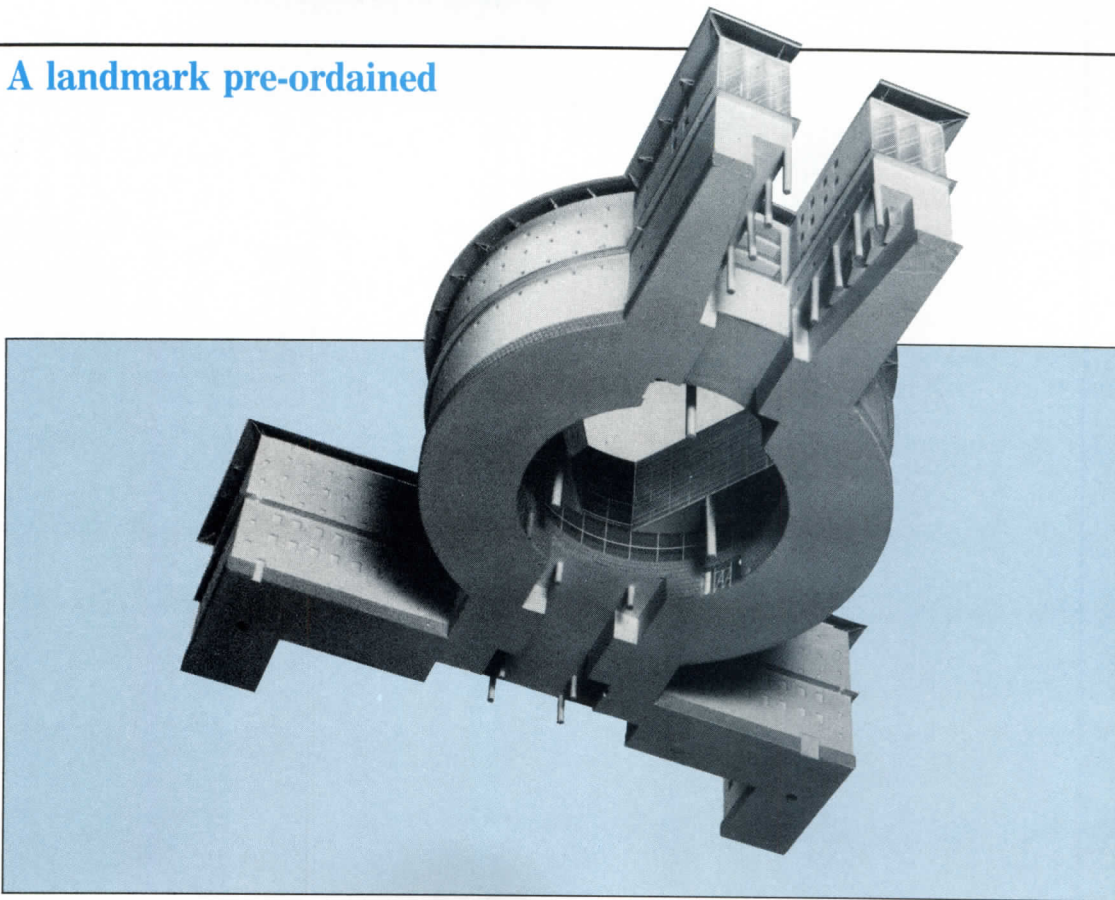
The John Addis Islamic Gallery at the British Museum opened earlier this summer to exhibit Islamic miniatures, glass, ceramics, and lusterware collected by the late Sir John Addis. At the gallery's dedication, the Aga Khan remarked, "If change [between Islam and the West] is to occur in an acceptable context . . . its premises must be genuine, knowledgeable understanding, and mutual respect."

Architectural commissions: Geddes Brecher Qualls Cunningham of Philadelphia will design a new master plan for Stockton State College near Atlantic City, New Jersey, a school that the firm originally designed 20 years ago; Hellmuth, Obata & Kassabaum, Inc., will convert the Beehive, a former cavalry barracks at Fort Leavenworth, Kansas, into a facility for computer war-game simulation for the U. S. Army; I. M. Pei & Partners, of New York City, in association with the San Francisco firm Simon Martin-Vegue Winklestein Moris, will design San Francisco's New Main Library; architect Robert A. M. Stern, of New York City, has been commissioned by WestPoint Pepperell to design sheets and towels for its Atelier Martex collection.

Part of the assignment given to architect James Stirling for the new Science Library at the University of California at Irvine was to create a major architectural presence. The circular building and its tangential wings will straddle the Biological Sciences Mall, a major pedestrian spine, and its round entrance courtyard will offer a cool and shady resting place for strollers. The circular building faces in two directions at once, the narrow side a portal from the campus's Ring Mall, and the wings a broad face toward the medical school.

The second floor of the six-story building, intended for the heaviest traffic, will accommodate current periodicals, a vital part of any science library, and the third floor will house an electronic Technical Services Division that will serve all of the university's libraries. The three upper floors, marked by accordion-pleated end windows, will enclose stacks in the triangular overhangs above the courtyard (see location plan and worm's-eye model).

The composite structure will be clad with sandstone and synthetic stucco. The architects are James Stirling and Michael Wilford, in association with the I. B. I. Group-L. Paul Zajfen.



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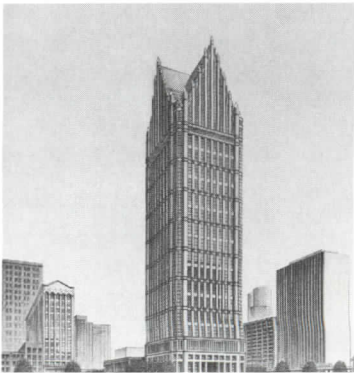
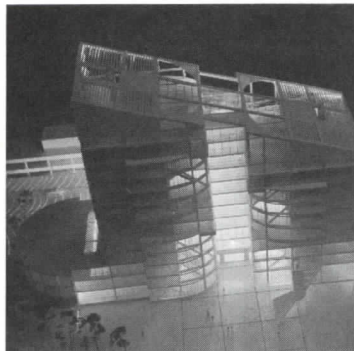


Leading our industry into the next century

Circle 38 on inquiry card

News briefs

Aspen Design Conference:
The Italian Manifesto



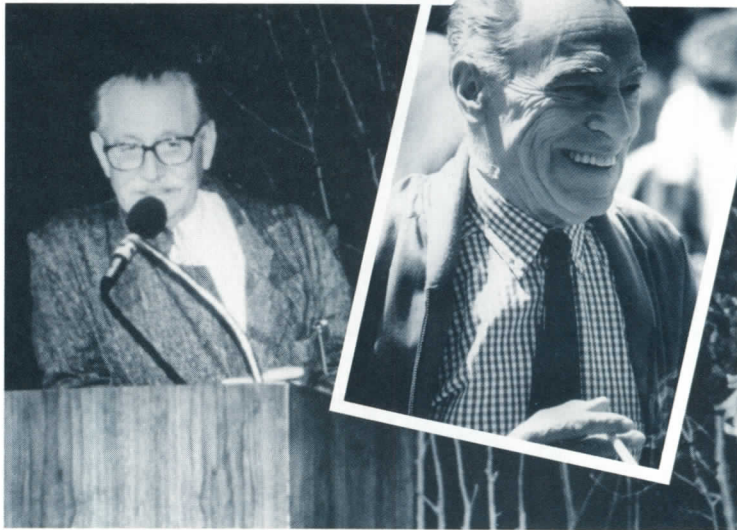
Polymer Sciences Building at the University of Akron (1), by the Cleveland firm Richard Fleischman Architects, Inc., will contain 44 labs for graduate research in polymer engineering, each having a maximum of four research stations, each station having an individual office.

The Corporate Headquarters of Whittle Communications (2) in Knoxville, Tennessee, designed by New York City architect Peter Marino, is true 20th-century neo-Georgian architecture, inspired by the work of McKim, Mead and White. The \$26-million building, for a TV production company, will occupy two blocks at the intersection of two major downtown streets. Associated architects are Barber & McMurry, Inc., of Knoxville.

A "manor house" for retirement condominiums (3) was designed by the Hartford, Connecticut, architect Design Group One for a joint venture of developers GHM, Inc., and Blue Cross & Blue Shield of Connecticut. In addition to single-family and mid-rise housing, the Shingle Style community will include a health center providing both fitness programs and nursing care.

Washburn Apartments (4) will re-use an 1840 warehouse along Memphis, Tennessee's Cotton Row, a riverside landmark that lay abandoned for 30 years (at left of alley in elevation). Architect Temple Washington and Associates of Arlington, Virginia, developed a new alley facade to create a pedestrian-scaled street with stores below and apartments above.

One Detroit Center (5) will occupy a site in downtown Detroit, rather than along the recently developed waterfront. Designed by John Burgee Architects of New York City, with Kendall/Heaton Associates, Inc., of Houston as associate architect, the 50-story tower will have beige-granite and gray-glass cladding.



Alan Becker

Ettore Sottsass (left); Achille Castiglioni (right)

The 39th International Design Conference In Aspen, entitled "The Italian Manifesto: The Culture of the 999 Cities," pondered such questions as "What is Italy?" and "Why is the country a continuing source of fascination for American designers?" An impressive lineup of Italian designers, historians, and entrepreneurs attempted to answer those and other questions posed by the six-day event's 1,600 attendees.

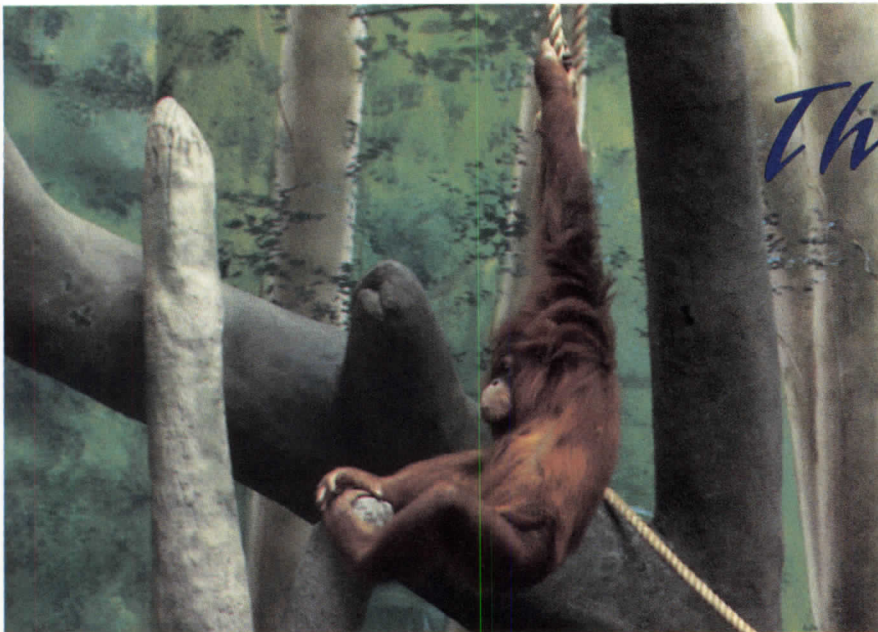
The most outspoken speakers were, understandably, the hits of the conference, including historian Federico Zeri, who supported his somewhat traitorous claim that unified Italy is "a total fraud" by defining the country as "a mosaic of towns." Furio Colombo, chairman of FIAT USA, expanded on Zeri's description of the mythic and often elusive Italian spirit in a refreshingly unbusinesslike manner. In Colombo's view, Italy is obsessed by its own history—it is a place where "the past is in occupation like a foreign militia."

Alberto Alessi Anghini sounded a recurrent theme that has secured manufacturers like Alessi, producer of architect-designed tableware, a place in the hearts of American

designers by maintaining that the company is driven *not* by market research but by a desire to manufacture "objects that make people laugh and cry."

Serious political and economic issues aside, talk frequently returned to two favorite Italian topics: food and romance. The culinary arts were the subject of a demonstration by master Florentine chefs Benedetta and Fabio Picchi. The audience looked to Ettore Sottsass for insight into Italy's other national obsession. The 72-year-old Sottsass, self-proclaimed "godfather of design," spoke candidly on how women influenced his career, neatly tying in his avocation with his vocation by concluding that Italian design is successful because "it is achieved through the senses and not the intellect."

As if to prove his point, Achille Castiglioni staged a multimedia presentation of his lighting and furniture designs that had the septuagenarian running around the dais, gesticulating wildly, to explain the functional problem each product attempts to resolve. Castiglioni proved that the real stars of Italian design possess a winning combination of charm, street-smarts, and showmanship. *K. D. S.*



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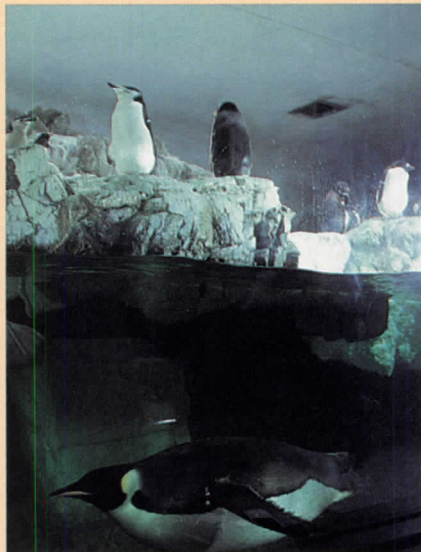
- Polar Bears Underwater & Observation Deck Windows: Denver Zoo; Denver, Colorado.
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- Chimp Exhibit: Detroit Zoo; Detroit, Michigan
- Jungle of the Apes/Great Apes & Orangutan Exhibit: St. Louis Zoo; St. Louis, Missouri.
- Buffalo Zoological Gardens Tropical Forest & Gorilla Habitat/Lions & Tigers House; Buffalo Zoo; Buffalo, New York.
- Penquin Encounter: Sea World; Cleveland, Ohio.
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Zoo Atlanta's Gorilla Interpretive Building, Atlanta, GA; Owner: Atlanta/Fulton County, Zoo, Inc., Atlanta, GA, Architects: Turner Associates, Atlanta, GA and Robert & Company, Atlanta, GA, Glazing Contractor: General Glass Company, Inc., Atlanta, GA, Photographer: Gail Bruner, Zoo Biologist, Atlanta, GA.

Penguin Encounter, Sea World of Ohio, Cleveland (Aurora), OH: Owner: A Harcourt Brace Jovanovich Co., Orlando, FL. Architect: Delawie/Bretton/Wilkes Assoc., San Diego, CA. Glazing Contractor: Sterling Plate Glass & Paint Co., Cleveland, OH. Photos courtesy of Sea World of Ohio.



Polar Bear Underwater Windows, Lincoln Park Zoo, Chicago, IL. Owner/Architect: Chicago Park District, Adm. Bldg, Chicago, IL. Glazing Contractor: Trainor Glass Co., Alsip, IL., Photographer: Photo Group, Photography Inc., Northbrook, IL.

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In the shade of the Rockies

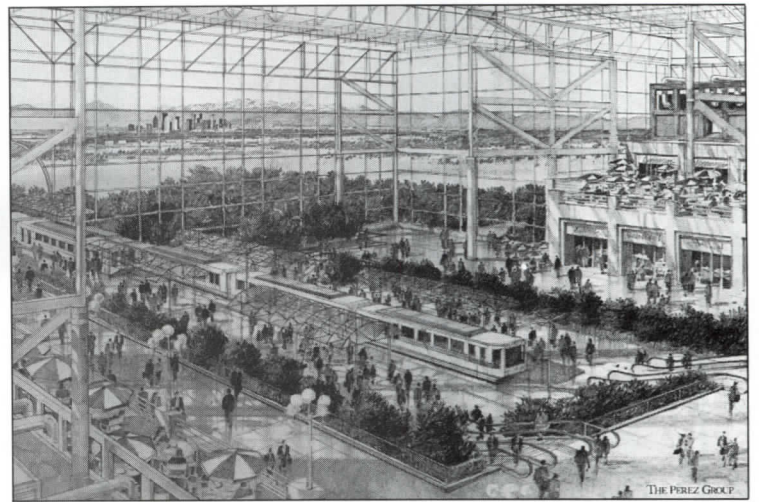


Denver's Stapleton Airport, a hub for two major airlines, is overcrowded and sensitive to bad weather. The city has therefore commissioned a new airport, designed by the Perez Group of New Orleans.

The 2.5-million-square-foot terminal will consist of four glazed modules stretched in a line, each built to the dimensions of a Denver city block. The architects structured curbside access with greater separation of traffic than is customary—reading the tiers from top to bottom in the rendering above:

private cars dropping departing passengers; private cars picking up arrivals; public transportation (taxis and buses); rental cars for both pick-up and return, an arrangement that eliminates the familiar shuttle bus. The terminal will offer four levels of underground long-term parking.

Passengers will make the trip from the landing field to the terminal via an automated underground train. From the city 18 miles away, passengers will arrive via a light-rail system that will deliver them directly into the modules (rendering at right).



Gigantic! Colossal!! Humongous!!!

A new type of mixed-use megastructure seems to be emerging as a by-product of the consumer society: shopping mall-cum-theme park. In its first phase, now under construction in Bloomington, Minnesota, the Mall of America will contain four major department stores,

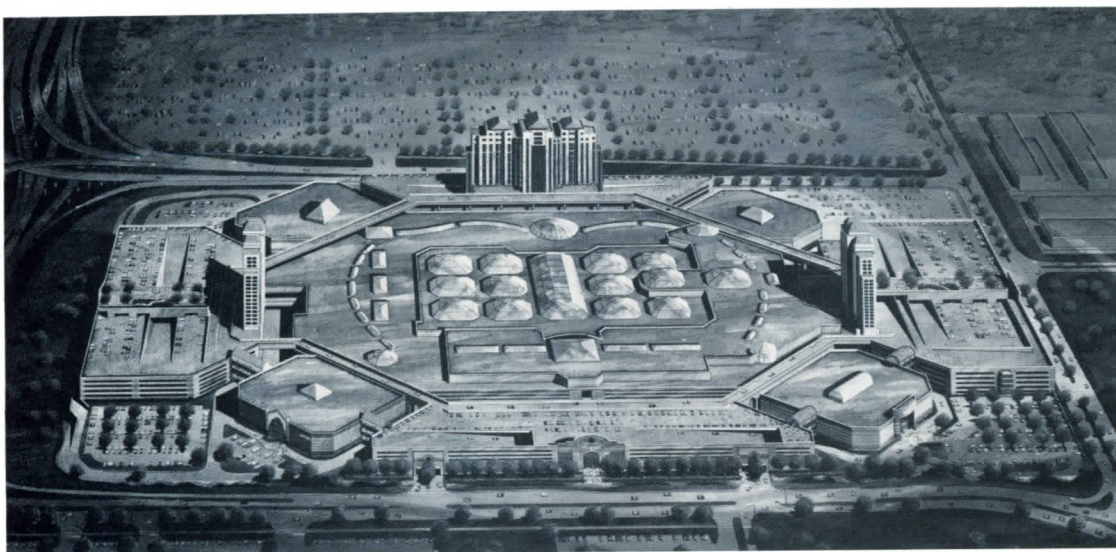
including Bloomingdale's, Nordstrom, and Carson Pirie Scott, with four more planned later in the first phase. The project will also include an enclosed entertainment park, in addition to as many as 800 specialty stores, 18 theaters, restaurants, nightclubs, and a

health club. The \$600-million development will also provide 12,750 parking places.

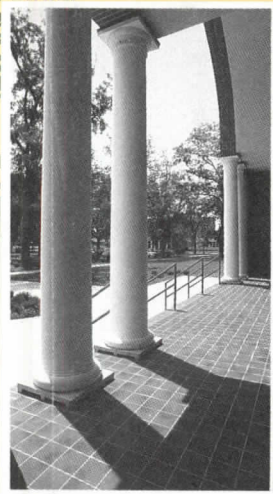
The second phase will add three high-rise hotels, effectively transforming the development from a suburban shopping mall into a vacation resort.

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Design architects are the Jerde Partnership, Inc., of Los Angeles, and project architects are HGA/KKE, an association of two Minneapolis firms: Korsunsky Krank Erickson Architects, Inc., and Hammel Green Abrahamson, Inc.



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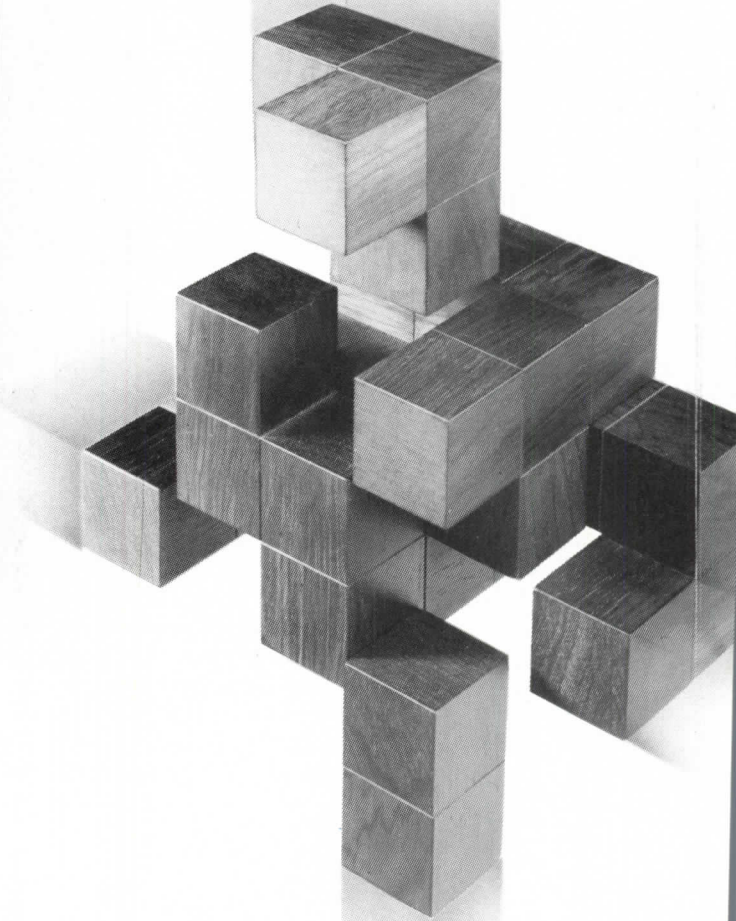
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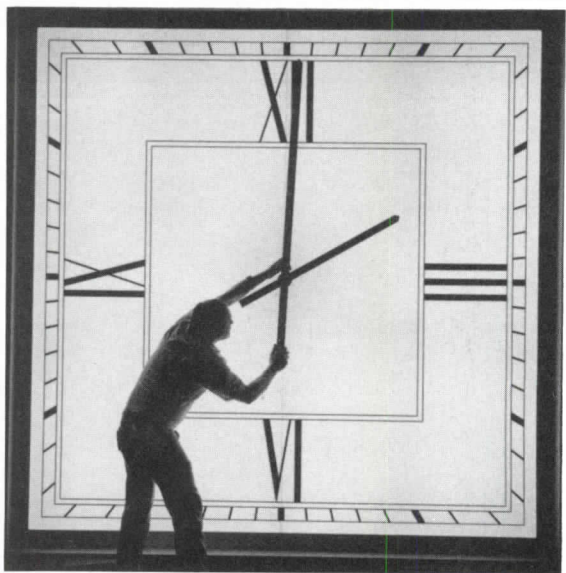
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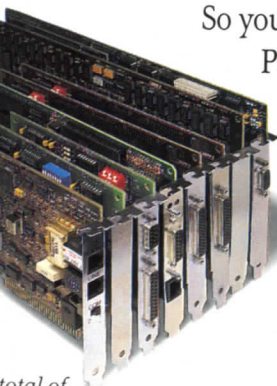
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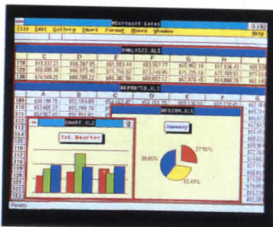
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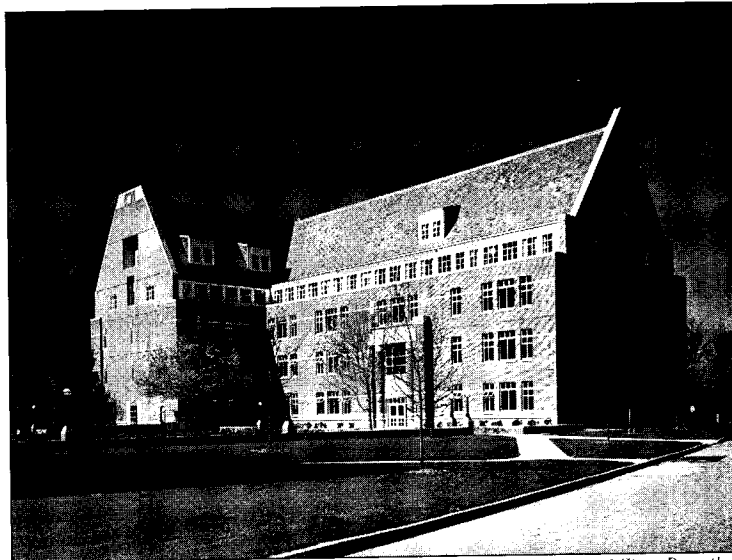
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Design awards/competitions: Brick Institute of America Brick in Architecture Award

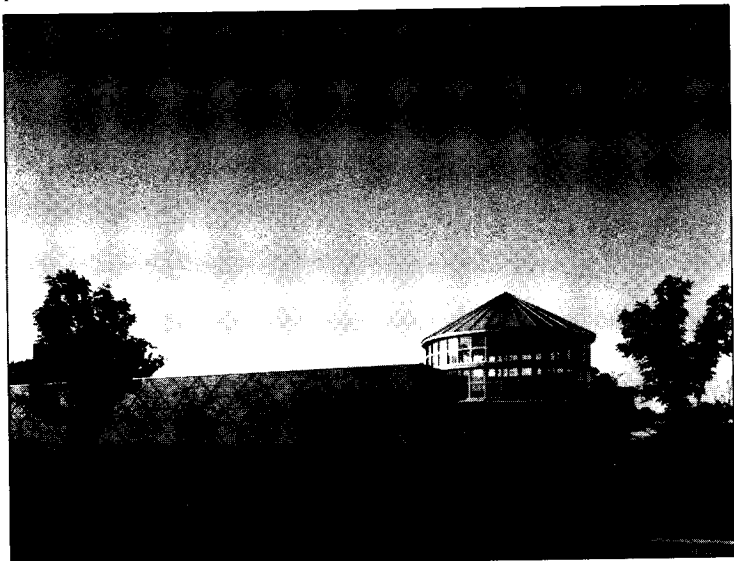
The Brick Institute of America has established a biennial program, the Brick in Architecture Award, to recognize "successful and innovative brick use." Jurors for this year's program—the first to be conducted by the BIA—included four architects: Harrison Fraker of Minneapolis as chairman, Arthur Cotton Moore of Washington, D. C., Frank Welch of Dallas, and Barton Phelps of Los Angeles.



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1. **Student Houses, Lawrenceville School, Lawrenceville, New Jersey;** Short & Ford Architects, Princeton, New Jersey. The new dormitories were designed to recall but not imitate the old, and the jury remarked, "Bracketed cornices and elaborate sheltered entryways reflect the spirit of Victorian porches and detailing. The skillful use of two colors of brick provides a sense of facade organization, and decoration is subtly carried out through the entire project."
2. **Facility Systems, Inc., Eden Prairie, Minnesota;** Meyer, Scherer & Rockcastle, architects, Minneapolis. Designing for a regional Herman Miller dealership, the architects chose brick because "its strength, durability, color, texture, detail, and modularity are similar to the criteria for designing office furniture." The jury thought that "the solid exterior masonry . . . established a message of substantiality softened by diagonal brick detailing, demonstrating elegance in simplicity."
3. **Edith Stein Hall, Holy Cross College, Worcester, Massachusetts;** Sasaki Associates, Inc., architects, Watertown, Massachusetts. The



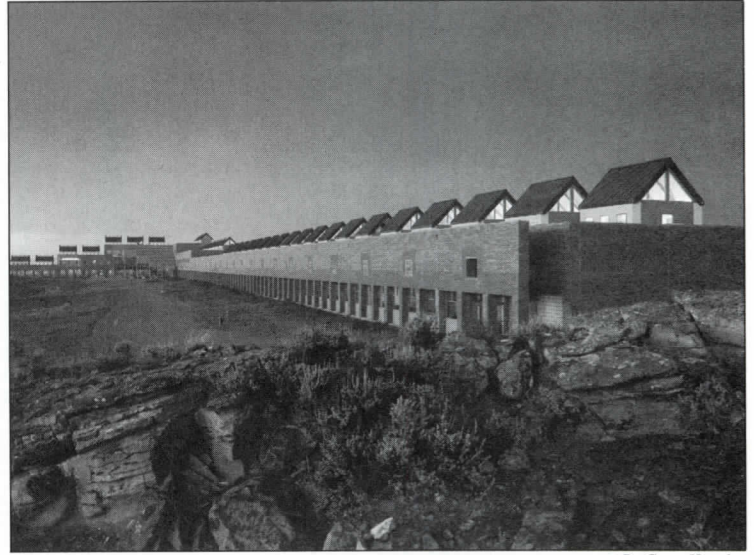
4. **Hood Museum of Art, Dartmouth College, Hanover, New Hampshire;** Centerbrook Architects, Essex, Connecticut [ARCHITECTURAL RECORD, February 1986, pages 108-119]. Said the jury, "The building's calm yet assertive 'elbowing-in' between the highly unlikely



- partners of Richardsonian Wilson Hall and Harrisonian Hopkins Center is masterful . . . The several-colored brick masonry adds to the museum's informal gabled forms reminiscent of traditional New England architecture."
5. **Hotel Jerome Addition, Phase II, Aspen, Colorado;** Hagman Yaw Architects, Ltd., Aspen, Colorado. Finding the addition "bold, deft, and distinctive," the jury further commented, "The design and use of brick not only reflects the 19th-century Aspen landmark, but also many traditional elements of the city's



6



8

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architectural heritage. The brick finish adds a second highlight brick to accent the exterior windows and upper floors."

6. ABC Studios, New York City; Kohn Pedersen Fox Associates, New York City. The jury remarked of these production studios that "the organization of the mechanical support into a symmetrical balanced composition has produced a simple yet well-proportioned building . . . The exhilarating brick patterning on the exterior makes this project a remarkable and welcome treatment for what could have been a rather ordinary industrial building."

7. Herring Hall, Rice University, Houston; Cesar Pelli & Associates, Inc., New Haven, Connecticut. Many of the original structures at Rice were polychromatic brick and at Herring Hall the use of multicolor patterning "develops a system of expression and ornamentation that logically extends the campus vocabulary." In further commendation, the jury said, "The project is at once contemporary and interrelated with its environment."

8. Western Wyoming Community College, Rock Springs, Wyoming; College Planning Associates, architects,

a joint venture of Sasaki Associates, Watertown, Massachusetts, and Anderson Mason Dale and the BKLH Group, both of Denver [ARCHITECTURAL RECORD, January 1988, pages 88-89]. The campus consists essentially of one long weathertight building with "an interior landscape of great variety." Moreover, the jury said, "Subtle coloration anchors the building to the plateau from which it rises, and the layering of big patterns on long, unrelieved walls results in a lively exterior that operates differently when seen close up and far away."

9. Mt. Sinai Resident Facility, New York City; Davis, Brody & Associates, New York City [ARCHITECTURAL RECORD, February 1988, page 130]. Meant as affordable housing for the hospital's younger staff members, the building was described by the jury as having "simple brick detailing in an abstracted pattern of rustication and decorative window grilles." The jury added, "To develop architectural quality out of a program of high-rise dorms on a tight budget is a grand achievement."

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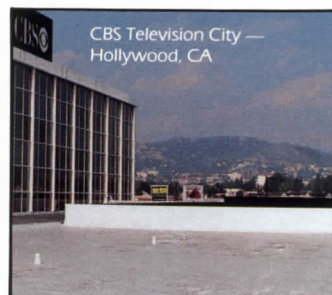
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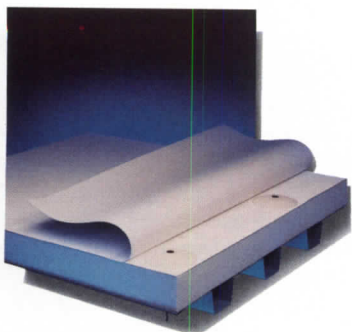
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L'architecture parlante

Pundits have compared the recently completed Canadian Centre for Architecture to major structures by Louis Kahn and Otto Wagner. More to the point, writes Suzanne Stephens, it is a seriously flawed but striking monument to the collaboration of architect Peter Rose and the Centre's founder and director, Phyllis Lambert.

By Suzanne Stephens

The opening in May of the Canadian Centre for Architecture in Montreal was a deservedly august and momentous affair, attended by, among others, numerous architects, academics, and historians curious to see what had been wrought in one of Canada's most important recent commissions. Architect and architectural force majeure Phyllis Lambert [RECORD, October 1988, pages 73-75] founded the Centre in 1979, and it is directed as well as largely endowed by her. The CCA is one of the few independent institutions for the exhibition and study of architecture yet built and, at a reported cost of \$60 million (Can.), certainly the most lavish.

The mouth-watering commission for the 150,000-sq-ft new building (which surrounds Shaughnessy House, a Victorian graystone pile designed by W. T. Thomas in 1874) went to a young, relatively unknown Montreal architect, Peter Rose, who had previously designed but never built a cultural institution. It should be said that Rose, now 45, *did* have a little help because Lambert (with Erol Argun as the associate architect) also acted as the consulting architect. Having a client-collaborator is not the sort of double-barreled relationship that many architects would eagerly embrace, yet the product of this pairing surprised even die-hard cynics. The attendant cognoscenti made favorable comparisons to Louis Kahn's Kimbell Art Museum, in Fort Worth, and Center for British Art, at Yale, and to Otto Wagner's Postal Savings Bank, in Vienna. With the CCA's quality of execution, no one had trouble believing Rose's claim that he had focused on little else for six years.

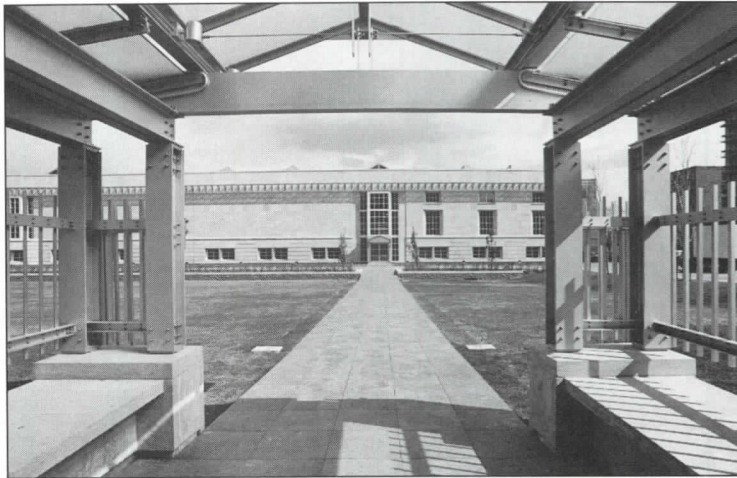
Suzanne Stephens, based in New York City, writes frequently on architecture and design.

The Centre's site is a three-acre plot in the not-too-auspicious western end of downtown Montreal, but its dignified design unashamedly proclaims the cultural institution as a high-minded, civilizing force, an image too many museums fear will alienate their paying public. While the Centre is meant to attract average folk as well as scholars, the building is not a populist funhouse like Piano & Rogers's Pompidou Center, nor an operatic stage set in the mode of Gae Aulenti's Musée d'Orsay; nor does it resemble another Paris project, the well-crafted but airportlike underground concourse of the "Grand" Louvre. It is, in spirit, a refinement of the Beaux-Arts museum type, if rendered in an abstracted rather than historicist manner.

The design is commendably restrained, but in some areas *too* restrained. The austere exterior doesn't sufficiently celebrate the Centre's cultural significance to the wider city, nor does it rapidly convey where you enter the building. The intersecting axes of the U-shaped plan, which is linked to Shaughnessy House, lack the seamless flow demanded by the multipart program that includes six galleries, a library, a special-collections reading room, offices for scholars and curators, and ultra-damage-proof vaults for storage.

On the other hand, individual spaces and details are the design's strengths. The bush-hammered limestone exterior is meticulously handled, with an elegantly articulated base, handsomely proportioned stringcourses, deeply incised window surrounds, and a winsome aluminum-framed cornice. On the interior, the smooth planes of limestone, granite, maple, and aluminum are striking, yet sumptuous (lower right photo). Everywhere rivets are elaborately expressed. One

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The CCA's main entrance facade is set well back from the residential-scaled Rue Baile. Visitors are cued by an aluminum-framed aedicular gateway (top). The ashlar

pattern of stone is carried into the skylit entrance vestibule, where it is rendered in the rich tones of maple-veneered wood panels fastened by exposed aluminum rivets (above).



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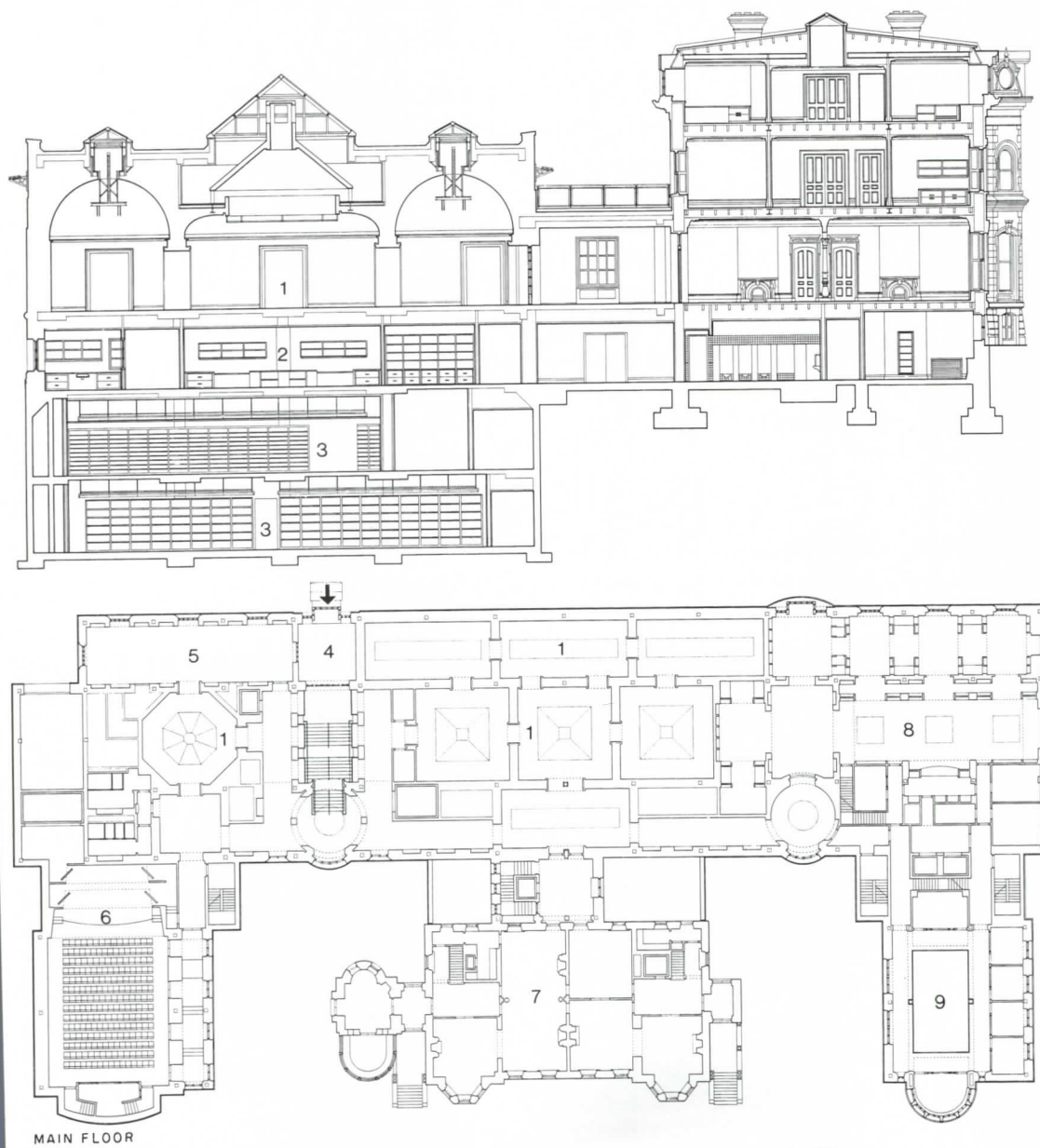


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| 2. Scholars' offices | 7. Dining/reception |
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| 5. Bookstore | |

The CCA's temperature- and humidity-controlled underground vaults are located below skylit galleries.



have been bolder, it does keep the CCA from seeming too much a purely historicist exercise.

The elevations had more punch once upon a time. When the CCA was published as a project in 1985, an axonometric indicated a narrow, more pronounced entrance that had been pulled forward from the building volume to read as a vertical shaft. This, and its balancing bay window (expressing the double-height library reading room), thrust upward through the cornice to the roofline. Two windows once had been punched into the blank area between these two elements, visually reducing its slablike length and holding the remaining unpunctured wall in compression, much like the blind panel in Le Corbusier's Villa Schwob. The base and end bays of the entrance facade seemed to have had a stronger horizontal articulation as well. These design changes have lessened the Centre's vitality. Rose was no doubt aiming for a proto-Modern austerity with which to express his classical parti. Since the Centre is meant to celebrate architecture, a gutsier exuberance was in order. The tepidness of the elevations gives way to the surprising drama of the interior spaces, but the loss of focus one senses outside recurs in the processional experience as well, as one meanders in one direction to the auditorium, in another to the galleries, and so on.

almost expects the rivets to have rivets. Rather than designing flexible but amorphous exhibition spaces and corridors, Rose has created rooms, each with distinct shapes and proportions. This play of small-scale details against the simple geometries of the volumes endows the modestly dimensioned spaces with a certain awe-inspiring monumentality.

The majority of the Centre's collection comprises fragile works on paper, and the most expedient gallery solution would have been to ban all windows. But both Rose and Lambert

were committed to the ever-changing quality that natural light affords. The galleries, designed with George Sexton Associates as consultant, channel light through gabled and pyramidal skylights and filter it through mechanical blinds and ultraviolet-blocking glass. Then, combined with supplementary illumination from incandescent fixtures, it is bounced against shaped ceilings and suspended baffles before softly washing the artworks. The effect is indeed stunning, subtly charging the spaces with an ambient glow, and attests to Rose's study of such masters in the use of light

as Borromini, Soane, and Kahn.

There are areas, however, where the design falters. The elevations have been executed in a spare, classical manner, with limestone walls laid up in juicy slabs four to six inches thick instead of as a thin veneer over masonry blocks. Nonetheless, the exterior is not quite grand enough; it lacks heft. The anodized-aluminum cornice is elegant, spiky, and pleasantly quirky. But it is too finely drawn to read from the street. Its bolted-aluminum shapes introduce a note of industrial construction that is pursued inside; while this gesture could

The inaugural exhibit, "Architecture and its Images," blocked Rose's planned vista through the enfilade of galleries, but presented impressive selections from the CCA's enviable collection, which includes thousands of drawings, 55,000 photographs, and 130,000 books. The contents of the show, curated by Eve Blau and Edward Kaufman, and installed by John Vinci, were unfortunately arranged according to vague and

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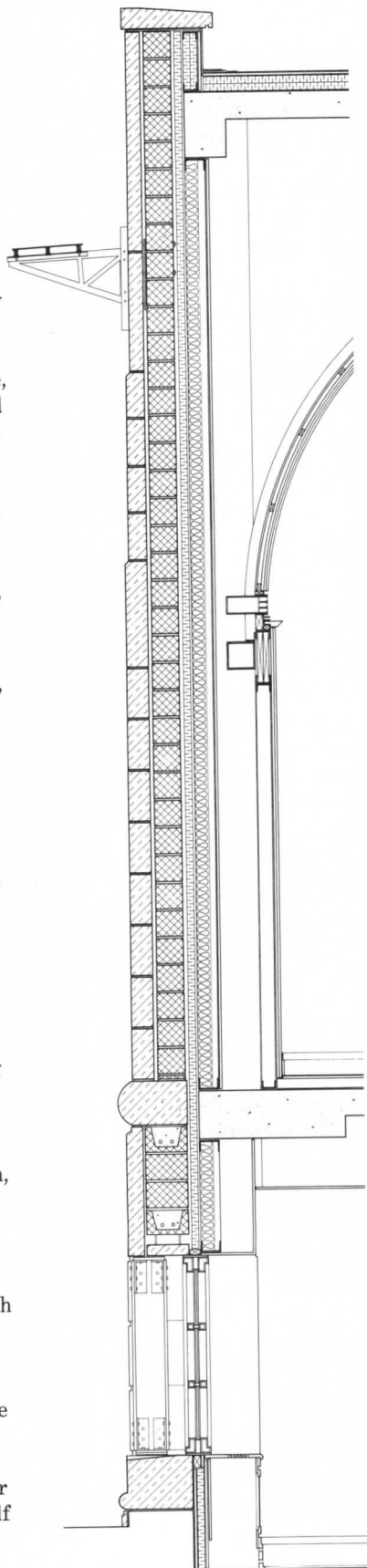
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"The tepidness of the elevations gives way to the surprising drama of the interior spaces, but the loss of focus one senses outside recurs in the processional experience as well."

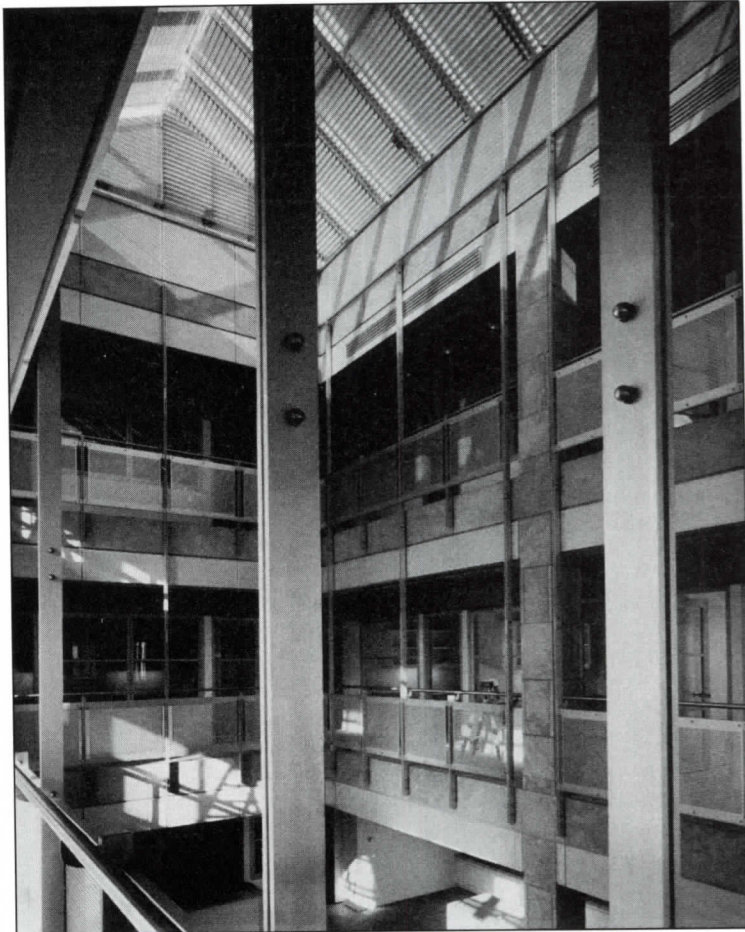
all-encompassing themes such as "Architecture as Process" and "Architecture in Three Dimensions" that made it difficult to find a path through the galleries.

This lack of a coherent narrative is a theme one could argue extends to the overall architectural concept itself. Shaughnessy House (restored by Denis Saint-Louis) is the highly visible set piece around which Rose wrapped the new structure, but it contains mainly offices and spaces of lesser importance. The new building is only four stories high, two of which are actually below grade, so the house is not overwhelmed by this much-larger "addition." The mansion faces Boulevard René-Lévesque, a major thoroughfare, but because of traffic problems, the city wanted the Centre to locate its main entrance on the "back," facing the smaller, quieter Rue Baile and from which Shaughnessy House is invisible. Here the real entrance is strangely played down. It has been placed off-center on this elevation—a shift that balances the bay window of the reading room—but the arch that points the visitor down the entry path has the scale of a domestic garden gateway.

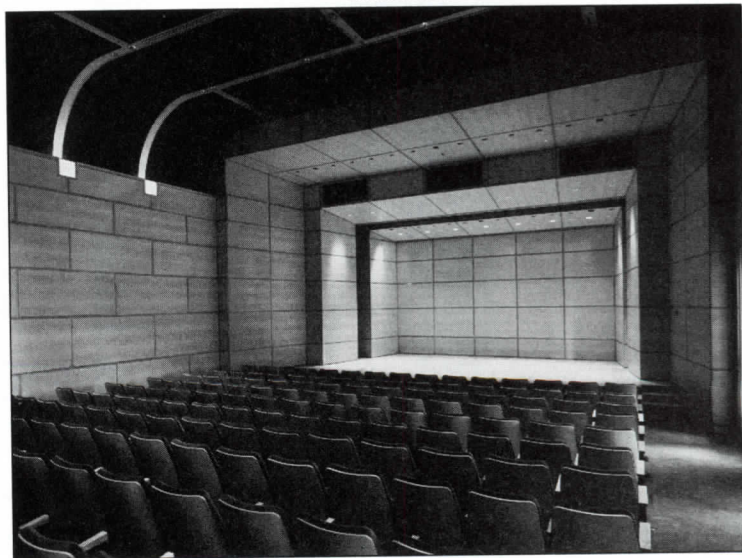
There are, no doubt, lots of reasons for the lack of a strong metaphorical and literal center: the old house had to be incorporated, the entrance moved from its obvious location, plus the usual difficulties encountered in a job of such complexity. It should be added, as one visitor noted, that even the Centre's faults are on a high level. Once quite rambunctious in his architecture, Rose is clearly maturing and gaining authority and expertise. Still, he seems like a ballet dancer, accomplished in technique, but afraid—for fear of vulgarity or lack of precision—to let himself go in the *grands jetés*. Now, however, Rose is ready to leap.



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©Richard Pare/Canadian Centre for Architecture



The exterior wall is subtly articulated by stone reveals and by bolted-together aluminum extrusions that make up a cornice and divide window openings (section).

Similar detailing is carried through in metal supports at the Study Center (top) and the running-bond pattern of maple-veneered panels in the auditorium (bottom).

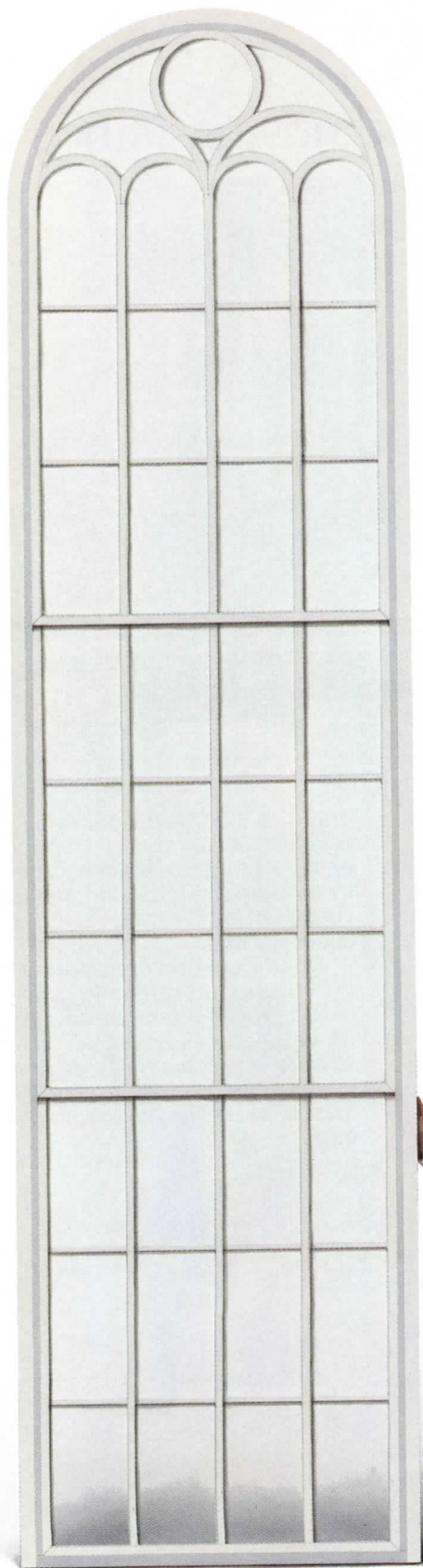


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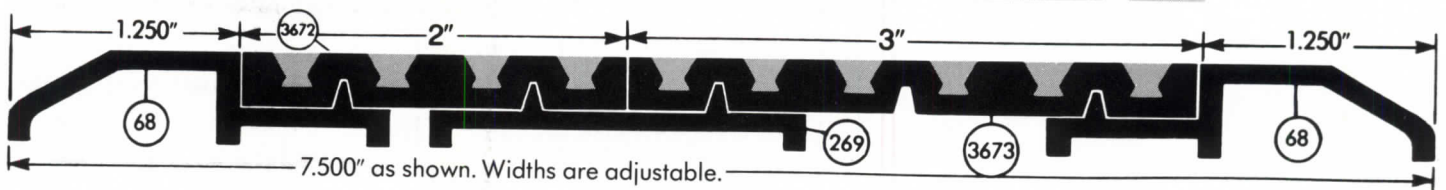
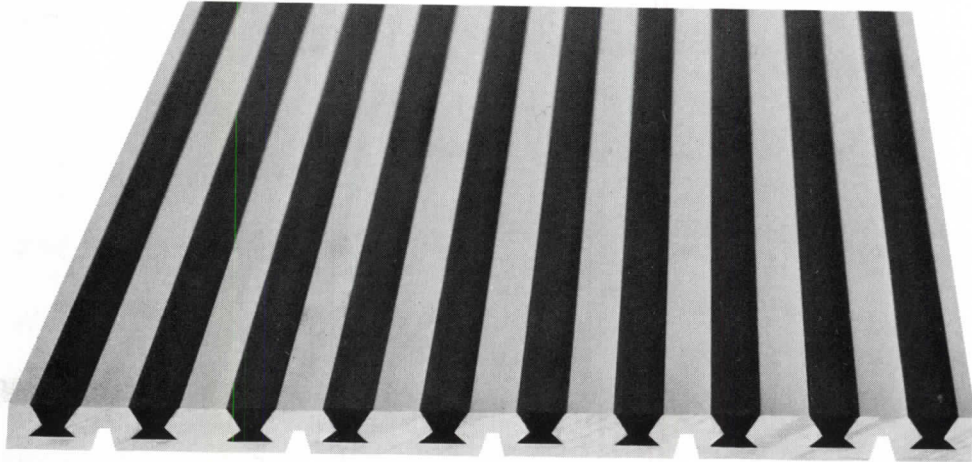


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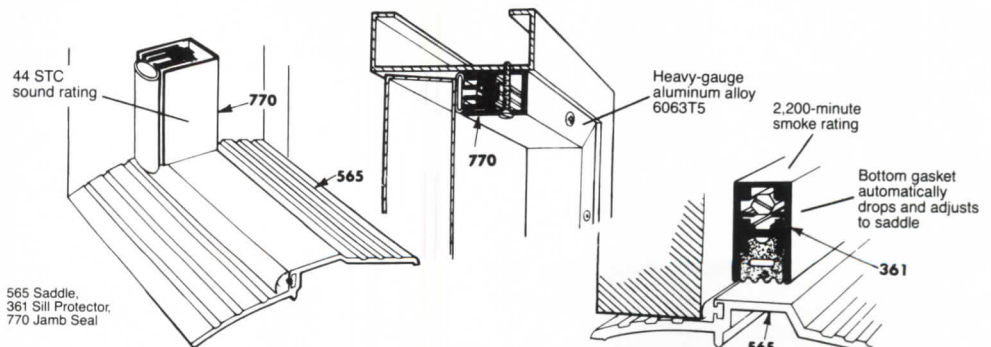
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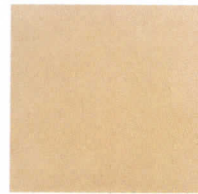
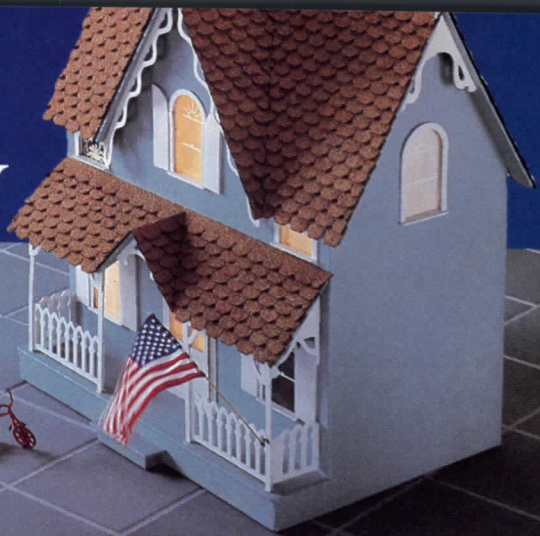
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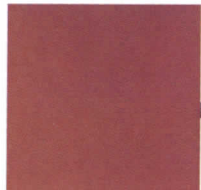


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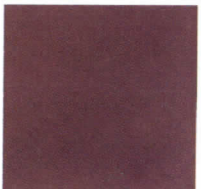
64 Bone



10 Summitville Red Flashed



44 Oxford Gray



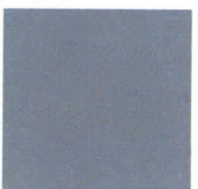
48 Moroccan Brown



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At 8:01 the next morning, he called Dealer Services in Grand Rapids. Martha O'Connor picked up the call. She winced. "Your order is being manufactured in *five* different plants,

some of the parts are already on trucks, *and* it's New Year's Eve. But," she added, "I'll see what I can do."

Martha called back in a couple of hours. Three of the plants had already started the repainting, and the trucks were being off-loaded.

The whole order shipped out in the right color on January 2nd, a day ahead of schedule.

Jacobs thanked his lucky stars he was a Steelcase dealer.

Thanked Martha. Wrote her boss...

"The amazing thing is," he recalls, "Martha didn't have any direct authority. But when she called the plants and said, 'We have a dealer who has a problem and that means we have a problem. Our customer needs help,' people said, 'No problem, we'll do it.'"

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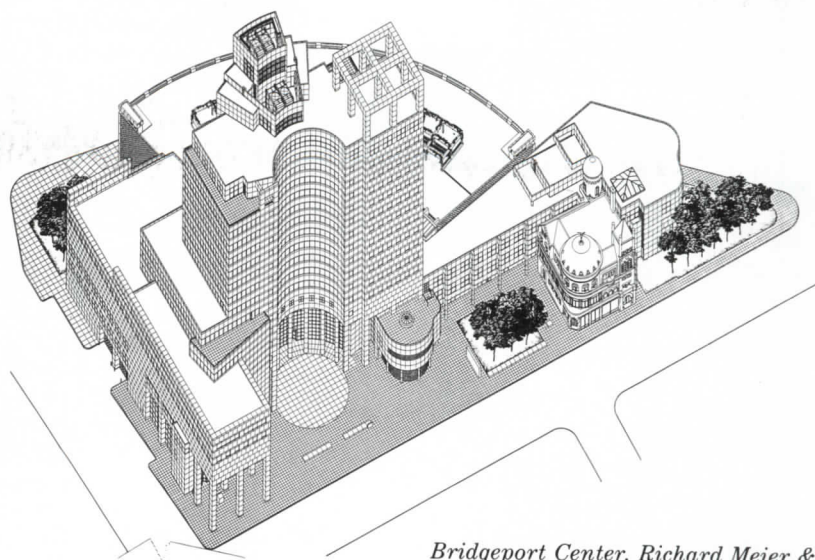
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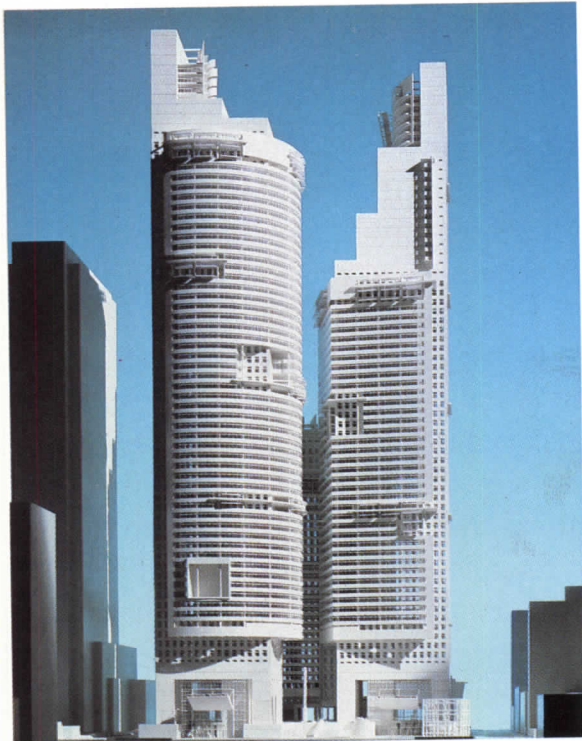
In this issue

In her analysis of Richard Meier's Bridgeport Center (drawing below and pages 70-77), Deborah Dietsch calls the project part of a "new direction" by the architect, away from "the coolly self-contained and uniformly clad objects of Meier's past work" toward buildings that reflect "site-derived geometries and material diversity as an appropriate response to urban settings." In a real sense all the projects featured this month represent new directions—for architects, their clients, or even the cities in which they are situated. Aside from marking an esthetic turning point for Meier, Bridgeport Center is destined to become an instant symbol of rejuvenation for an economically and socially decaying New England city bent on changing the course of its recent history. Our cover story on the latest work of Coop Himmelblau (pages 82-91) reveals how the Austrian firm is attempting to enliven the history-lined face of Vienna through a brash architecture of imbalance and fragmentation. Less dramatically, Hoover Berg Desmond has adapted the bland Modernist vocabulary of a postwar urban college campus in Denver (pages 102-107), producing an academic superblock that in less skillful hands might have created a barrier between the university and downtown, but here forms a sympathetic link between city and campus. In Indianapolis, Woollen, Molzan and Partners has deftly infused new life into the Children's Museum through the addition of a commodious gallery that houses an impressive array of public amenities (pages 78-81). Finally, our Building Types Study on zoos focuses on the innovative ways that exhibition designers and curators in San Diego, Seattle, and Boston have produced naturalistic environments for the display and care of animals (pages 92-101). At these zoos and others, there are lessons in architecture—and humanity—that none of us should ignore.

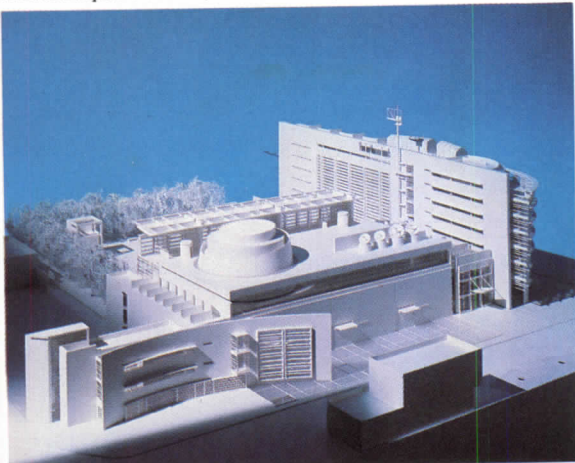


Bridgeport Center, Richard Meier & Partners

New directions



Madison Square Garden, New York City



Canal + Headquarters, Paris



City Hall and Library, The Hague

© Ezra Stoller/ESTO photos this page

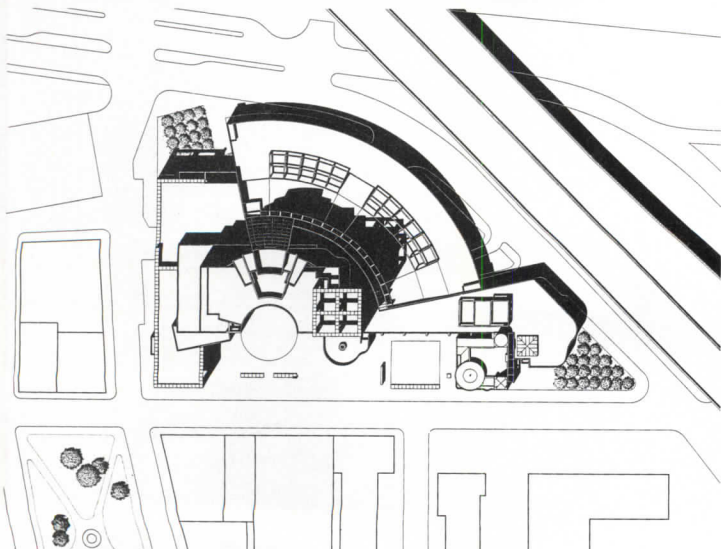
Over the past decade, Richard Meier has moved away from his signature white houses to design more complex institutional and commercial buildings. The most recently completed example is Bridgeport Center, a 528,000-square-foot headquarters for People's Bank in Bridgeport, Connecticut. Although only 16 stories in height, the structure is the tallest building in the city, occupying a prominent downtown site bordered by Interstate 95, the heavily trafficked connector between New York and Boston. In designing such a highly visible symbol on the city's skyline, Meier dismissed the idea of a singular emblem in favor of a clustered collage. "I wanted to indicate the possibilities for the future growth and scale of downtown Bridgeport through a conglomeration of buildings that responds to the city differently on every side," the architect says, explaining that he carefully avoided the type of monolithic tower-on-a-podium aesthetic of Stamford, 15 miles to the south.

Sheathed in panels of metal and granite, the highly expressive, variegated volumes of Bridgeport Center are a marked departure from the coolly self-contained and uniformly clad objects of Meier's past work. In explaining his new direction, the architect rationalizes the design as a sympathetic response to the building's four-acre urban site. "We've attempted to relate materials and forms to an existing context, as opposed to the earlier projects which were freestanding objects in pastoral settings," he says. In addition to Bridgeport Center, designed in 1985, Meier's fascination with fragmented and site-specific compositions is underscored by more recent projects. Designed with partner Thomas Phifer, who joined the firm three years ago, they include a trio of commercial and institutional buildings: Canal +, a cable television station in Paris (middle left) designed last year, a 1987 proposal for the Madison Square Garden site in New York City (top left), and the award-winning scheme for the 1986 city hall and library competition in The Hague (bottom left).

Like Bridgeport Center, the architect's ill-fated proposal for Olympia & York's redevelopment of Madison Square Garden (SOM and Frank Gehry were jointly awarded the commission, but the project was ultimately shelved) consists of separate components: twin 72-story skyscrapers, a spec office building and attached conference center, and an entry pavilion to the underground train station. The towers, to be assembled from masonry-clad cores encircled by glass curtainwalls, are chiseled at the top to frame views of the Empire State Building. While The Hague city hall is recognizably aligned with the architect's familiar Modern idiom, it too derives its volumetric arrangement from the geometry of the site, with the library pulled away from the mass of the government building at the corner. Similarly, the 450,000-square-foot Canal + headquarters is arranged in deference to its context, divided into a narrow office block facing the Seine and a separate production facility extended behind it. Although primarily intended to house office space, all three projects incorporate light-filled, street-level public spaces, which strengthen the ties to their respective urban surroundings. At present, the firm is hard at work on several other European commissions, including a corporate headquarters in The Netherlands, a museum of contemporary art in Barcelona, and a plan for a business technology park in Edinburgh. Further evidence of Meier's current design direction will be revealed next year when he promises to unveil the final design for the Getty Center in Brentwood, California, due to begin construction in

Richard Meier's latest commercial and institutional projects reflect the architect's current preoccupation with site-derived geometries and material diversity as an appropriate response to urban settings.





1991. "It will be constructed of more permanent materials than porcelain panels," he promises.

As a transitional building between the architect's current projects and his earlier work, Bridgeport Center is more experimental in its bold, somewhat awkward juxtaposition of materials and forms. Meier based his subdivision of the high-rise on the parameters of the triangular site, organizing the offices of the bank into blocks fronting Main Street, placing a parking garage at the edge nearest I-95 as a buffer, and linking the activities with a shared service core at the heart of the complex. On Main Street, he defined a public plaza with the concave wall of the central tower, a low granite-covered wing on the corner nearest a public square (top left), and the Barnum Museum, an 1891 structure renovated by the architect to its original Romanesque Revival splendor (opposite). To the south of the museum, he terminated the tip of the site with a sculpted wing containing additional exhibition space for the museum, and an employee cafeteria and training facility for the bank (middle left). Each portion of the building is further activated by a variation in cladding: the straight planes of the office blocks are paneled in gray metal and horizontal strip windows, the corner towers covered in red granite to harmonize with the brick and sandstone of the Barnum Museum (opposite), and the more plastic segments rendered in white porcelain-enameled panels.

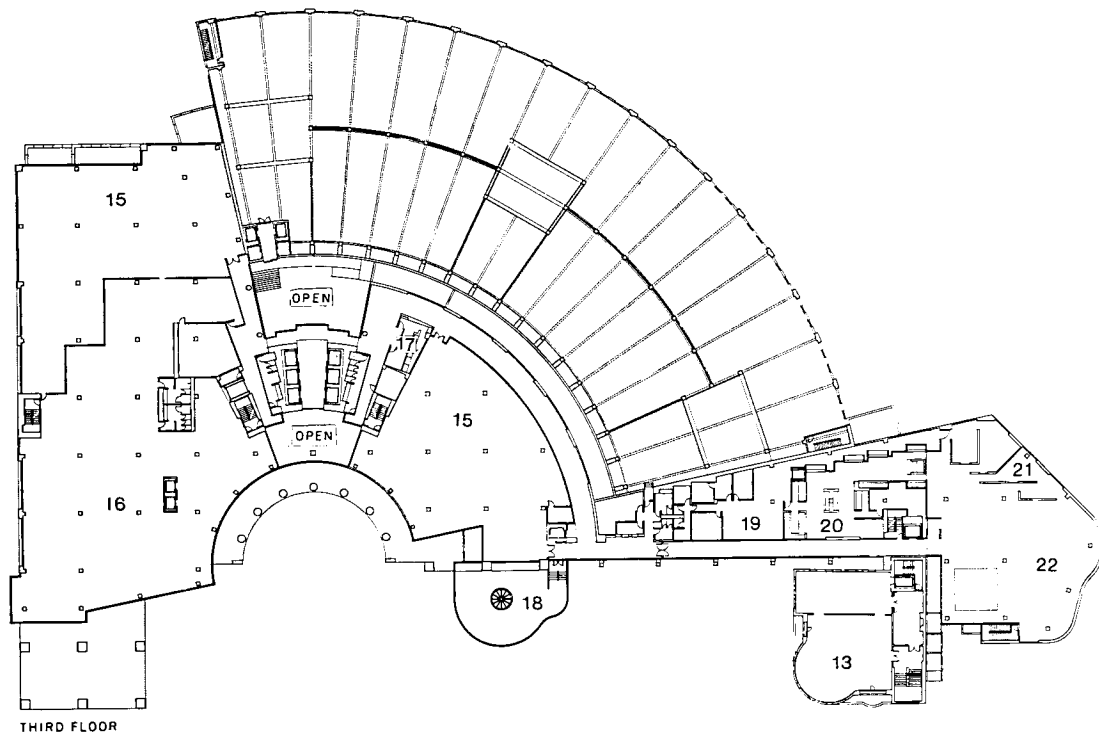
While Meier has juxtaposed different materials in earlier projects such as the 1982 addition to Eliel Saarinen's Des Moines Art Center—his first use of granite—Bridgeport Center represents a significant departure from the subtly shifted palette of previous works. The architect further diverged from his gridded Modernist rigor by articulating portions of the Center with elements that evoke more traditional associations than the abstract purity of his usual repertoire. The masonry towers, for example, are detailed with honed granite sills, and the white service tower is stepped both horizontally and vertically, recalling the profiles of Art Moderne precedents. As intended, Meier's variegated combination of material and massing breaks up the scale of the Center and helps it blend in with the row of smaller commercial buildings on Bridgeport's Main Street. But the agitated parts and pieces seem overly complex for the size and function of the building, giving the impression that Bridgeport Center is intended for more diverse activities than it really contains. Once inside, the elaborate volumetric differentiation dominating the exterior virtually disappears. The typical floors of the bank are treated as seamless open office space stretching from one end of the complex to the other.

Bridgeport Center's most successful spaces are located on the ground level, in which Meier's elegant manipulation of natural light and meticulous geometries are most evident. As in his best institutional buildings, the architect has interwoven circulation and public spaces into a coherent ceremonial ensemble. Crowned by a curved skylight, the entrance lobby and banking hall are joined as a continuous grand hall, dramatically framed with indirectly lighted openings in the teller and private banking areas. To connect the building to neighboring train and bus stations, Meier sliced a back entrance into the northeast corner of the atrium, and provided access to the parking garage through spacious vestibules that directly overlook the main lobby.

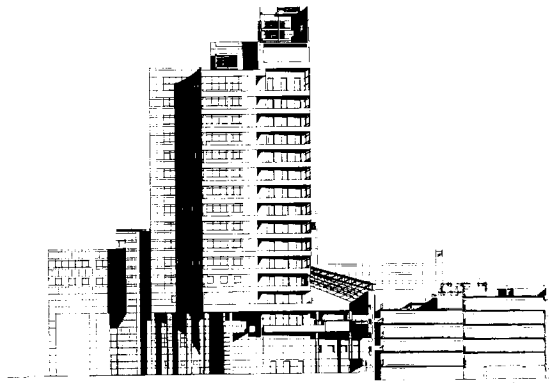
Although Bridgeport Center may not be Richard Meier's best building, it does indicate a willingness on the part of the architect to expand the boundaries of his tightly disciplined framework. Moreover, the Center sets a high standard for future building in Bridgeport, which has only begun to revitalize its sluggish economy from an industrial base to financial services. Much of the credit for the city's renewed stature goes to the officers of People's Bank, who insisted on choosing a downtown site and an internationally renowned architect. In championing high design, they are not only the recipients of Richard Meier's first completed high-rise, but catalysts for positive change in their troubled New England city. *Deborah K. Dietsch*

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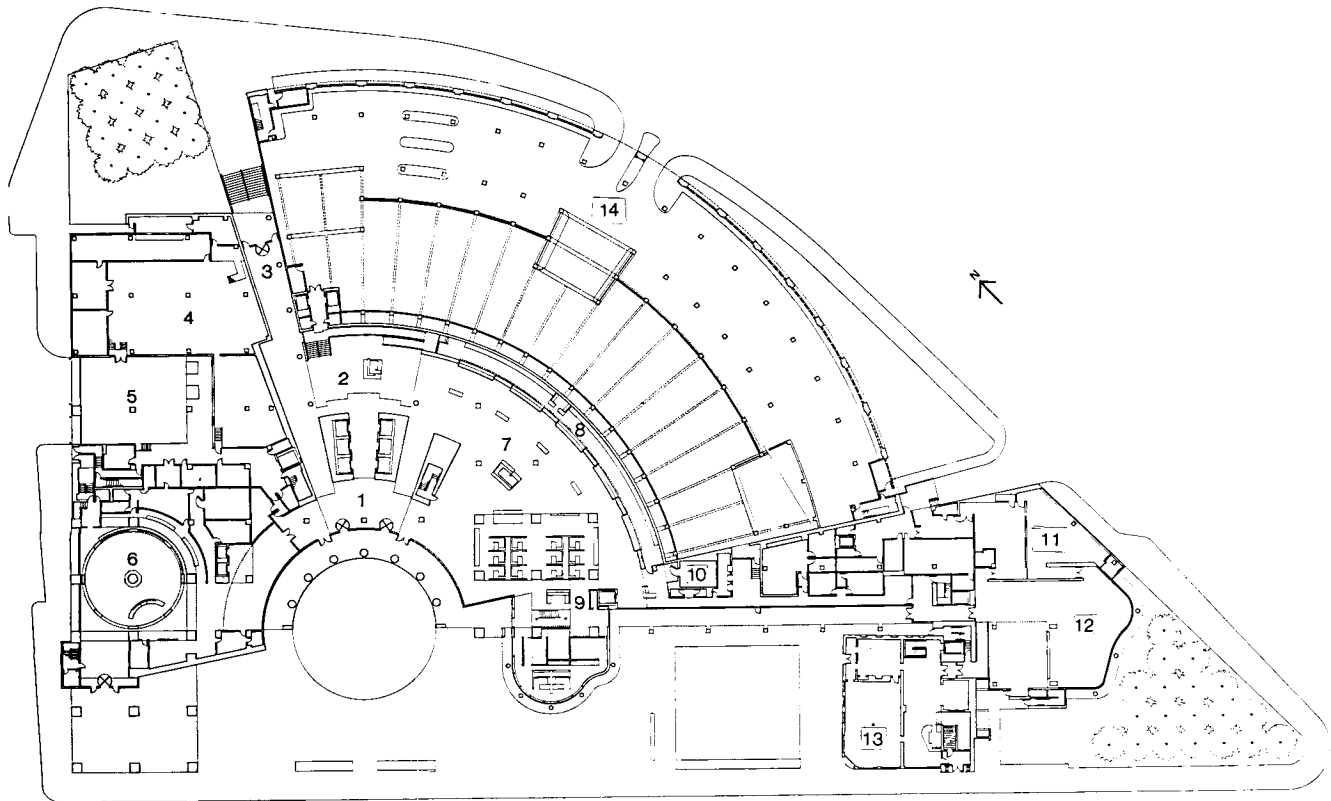




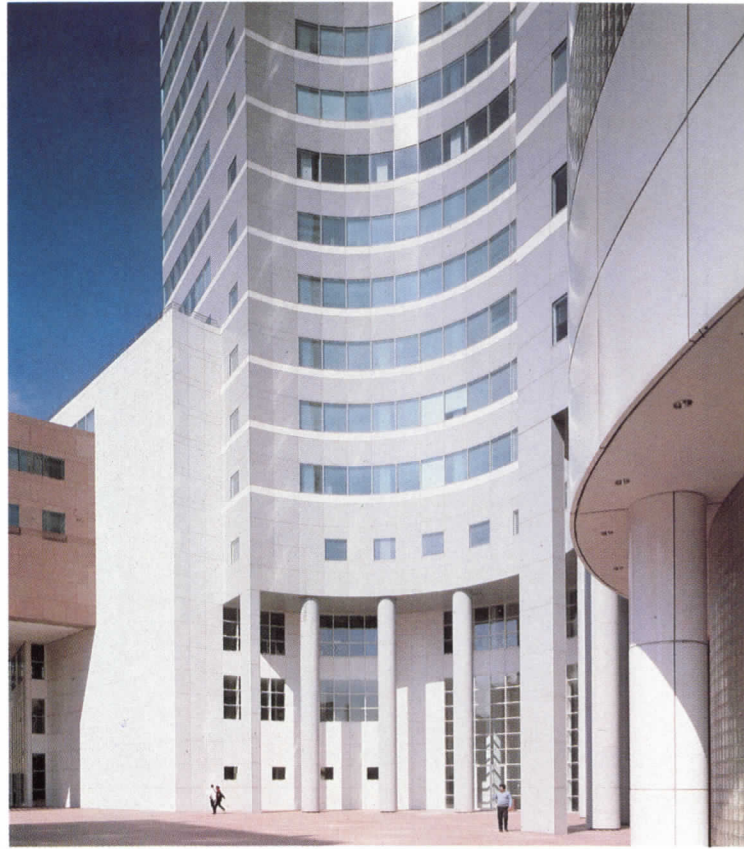
THIRD FLOOR



- | | | |
|---|----------------------|-------------------------|
| 1. Main Street entrance lobby | 8. Tellers | 16. Tenant office space |
| 2. Atrium | 9. Private banking | 17. Coffee bar |
| 3. Northeast entrance | 10. Vault | 18. Terrace |
| 4. Central plant | 11. Audiovisual | 19. Kitchen |
| 5. Loading dock | 12. Exhibition space | 20. Serrery |
| 6. Banking hall
(Connecticut National) | 13. Barnum Museum | 21. Private dining |
| 7. Banking hall (People's Bank) | 14. Parking garage | 22. Cafeteria |
| | 15. Office space | |



GROUND FLOOR



Along Bridgeport Center's Main Street elevation, Richard Meier defined a series of human-scale public spaces with variegated sculptural volumes. At the northwest corner of the site nearest the town square, he projected a granite-sheathed wing (above left) to call

attention to Connecticut National Bank, which is housed on three floors leased from the People's Bank. At the center of the plaza, he located the main entrance leading to the lobby and banking hall (bottom plan opposite) within the concave curved facade of the office

tower (above right). Meier sequestered regional and commercial banking within a porcelain-enameled southern wing that frames the renovated Barnum Museum (bottom photos) and relegated parking (plans and section opposite) to the back of the site nearest I-95.





Beyond the Main Street entrance (bottom left), an atrium containing the banking hall for People's Bank (bottom right) and balconied lobby leading to the parking garage (opposite) reflect Meier's skillful ability to manipulate light and shadow.

*Bridgeport Center
Bridgeport, Connecticut*

Architect:

Richard Meier & Partners, Architects—Richard Meier, Michael Palladino, John Eisler, Katharine Huber, design team; John Eisler, project architect; Kimberly Ackert, Roy Barris, Mary Buttrick, Paul Cha, Jon Cooksey, Carlos Concepcion, Charles Crowley, Allen Denenberg, Bill Gilliland, Gerald Gurland, Christian Hubert, Grace Kobayashi, Hans Li, Eric Liebman, Mark Mascheroni, David Parker, Katherine Platis, Rijk Rietveld, Peter Robson, Madeline Sanchez, Alan Schwabenland, Ralph Schwarz, Erin Shih, James Smith, Ralph Stern, Steven Theodore, project team

Engineers:

Irwin G. Cantor (structural); Cosentini Associates (mechanical)

Landscape architect:

Quennell Rothschild Associates

Consultants:

Claude Engle (lighting); Whitehouse and Company (graphics); Fletcher-Thompson (interiors); Post and Grossbard (food service)

Construction manager:

Gerald D. Hines Interests

General contractor:

Turner Construction Company





Putting on a happy face

The Children's Museum
Indianapolis, Indiana
Woollen, Molzan and Partners,
Architects

©Timothy Hursley photos

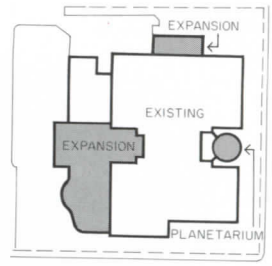


Begun in 1925 with an assortment of curiosities—a mounted porcupine fish, a bottle of sand from the Holy Land—displayed in a one-room carriage house, the peripatetic Children's Museum of Indianapolis grew its way through a succession of four ever-larger mansions and hopeful additions en route to 1976, when it settled into a tailor-made building of its own. This, however, proved not to be its final metamorphosis, which awaited the major addition that this year transformed the duckling into a swan.

Although the 203,000-square-foot, five-story 1976 structure made the museum the largest of its kind, it too was quickly outgrown as the museum's collections expanded and annual attendance figures edged upward to 1.5 million—twice the number the building was planned for. Only six years after it opened, the museum asked Woollen, Molzan and Partners to develop a master plan for a phased expansion (schematic top opposite) that would increase its space by half. Predictably, the brief gave high priority to up-front amenities for visitors, as well as back-of-the-house support facilities and space for special exhibitions, including a planetarium. Underlying the formal

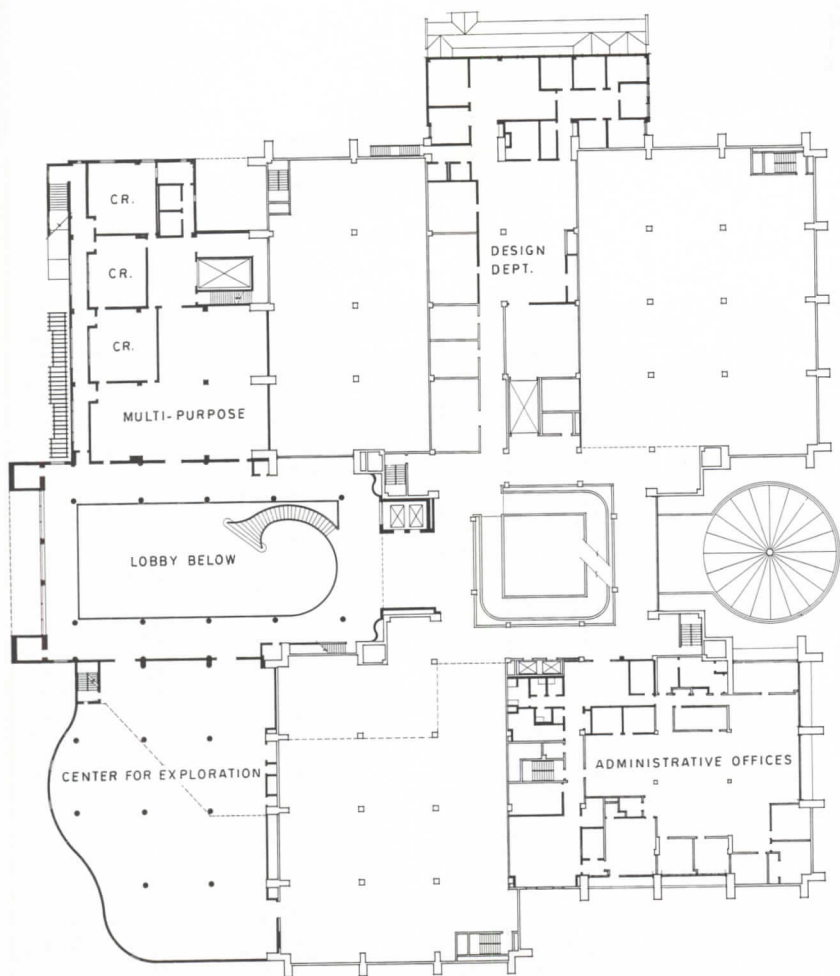


An ebullient new addition that introduces the treasure troves of the Indianapolis Children's Museum makes getting there half the fun.

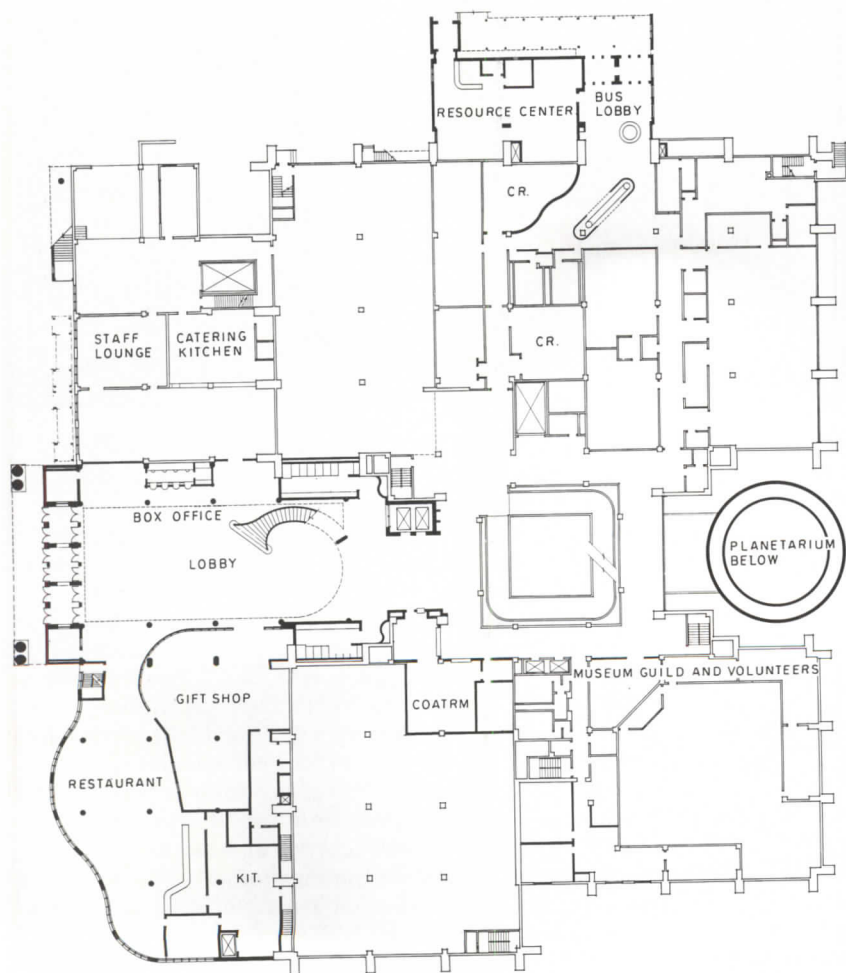


agenda, though, was the intent of humanizing a building that carried the austerity of a dour purple-brick and concrete exterior through to stingy gathering spaces inside. (The original plan, for example, efficiently placed exhibit galleries on each floor in a pinwheel around a spiral ramp; then skimped by unceremoniously thrusting visitors directly from the main entrance into this circulation well, with little more than an aisle between. "Imagine," says designer Evans Woollen, "three busloads of children getting in and out of snowsuits and galoshes.") Both concerns were addressed by an addition that stretches across the building's western facade to create a new face and a new front door. The first phase, completed in 1983, provided staff facilities and storage and a public snack bar, and previewed a palette that brightens the dark brick of the original building with pinstripes and arched window casings of yellow-brick. The second phase, opened just this year, balances the first with a similarly striped but curving wing pierced by big windows at ground level and random punched openings above. The upper floor contains the "Center for Exploration," a 15,000-square-foot gallery for special

exhibits; the lower floor contains a restaurant and gift shop. Another new reception area on the north provides a back-door drop-off and entrance for groups arriving by bus. The heart of the addition, however, is the prodigally generous atrium set between the two bracketing wings and announced by a front porch composed of an immense arch on stubby paired columns. Filling the arch, a stunning sunburst window glazed in graduated tones of blue augments natural light from skylights over the uncluttered four-story space, which is "furnished" with a box office, information desk, and a 30-foot-high water clock. Remarkably, although it is perked up with bright-blue erector-set trusses, bright-yellow metal trim, and bold child-produced banners, the atrium is mercifully free of grownup-dictated "child appeal"—not least because children were appealed to directly. Early in design the architects held a series of sessions during which groups of 15 or so children were invited to show (in drawings and paintings) and tell what aspects of the museum, and what kind of spaces, they liked best. The metaphors that emerged speak for themselves. *Margaret Gaskie*



THIRD LEVEL



SECOND LEVEL

Concentrating on facilities strained by the museum's rapid growth, the west-front addition adds skimmed or missing public amenities—restaurant (photo below), snack bar, gift shop, ticket booth—while also providing more-generous support space for museum staff and activities. A crabbed entrance has been replaced by a capacious atrium that introduces the museum's wares and affords access to other public areas, including the principal exhibit spaces in the original building. Opening off a display gallery around the atrium's mezzanine is the "Center for Exploration," a new multilevel area for special temporary exhibits.

*The Children's Museum
Indianapolis, Indiana*

Architect:

*Woollen, Molzan and
Partners—Evans Woollen,
designer; Joseph Burns,*



*partner-in-charge; Anna
Waggoner, project architect;
Kalevi Huottilainen, Steve
Robinson, project team*

Engineers:

*Lynch, Harrison & Brumleve
(structural); Lehr Associates
(mechanical/electrical)*

Consultants:

*William Lam Associates
(lighting); Ralph Gardes and
Associates (codes); Steve R.
Keller and Associates, Inc.
(security); Walker Parking
Consultants (parking)*

Owner's representative:

Toth-Ervin, Inc.



Over the edge



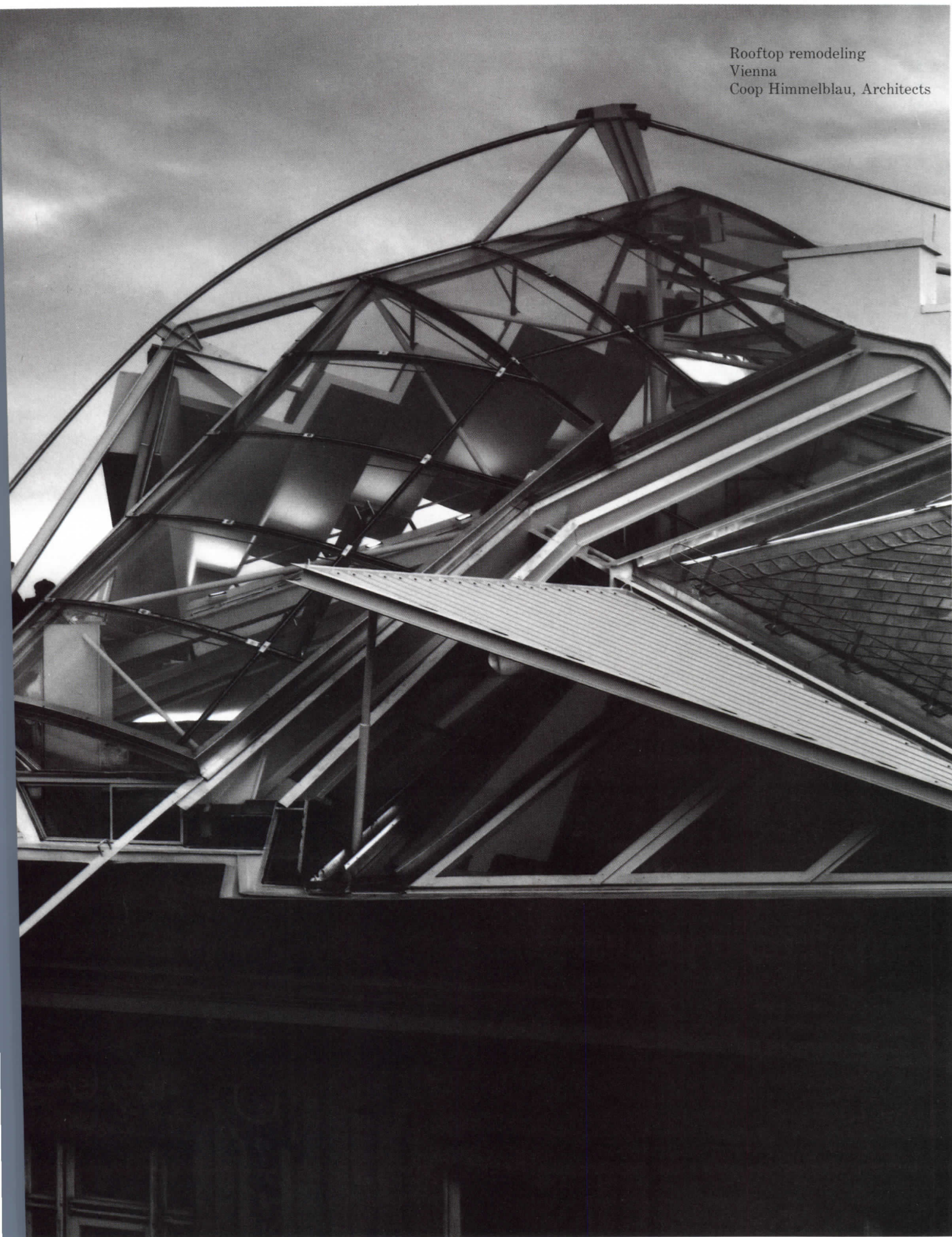
Two recently completed projects by the Austrian firm Coop Himmelblau—a penthouse suite of offices in Vienna (pages 82-89) and a factory in the southern province of Carinthia (pages 90-91)—represent the most highly developed examples of the renegade architects' built work to date. Since forming the firm in 1968, principals Wolf D. Prix and Helmut Swiczinsky have battled against their adopted city's tradition of recycling architectural styles, waging an ongoing war against historicism. Now, legitimized by their inclusion in a show at New York's Museum of Modern Art and backed by a group of more adventuresome clients, Prix and Swiczinsky are ready to show just how far they will go.

Portfolio
Coop Himmelblau, Architects



Gerald Zugmann photos

Rooftop remodeling
Vienna
Coop Himmelblau, Architects



Wolf Prix and Helmut Swiczinsky both have an impish gleam in their eyes. That's not to say that the cofounders of Vienna-based Coop Himmelblau are identical in demeanor: their public personas are, in fact, surprisingly distinct. Prix is apt to be out and about representing the firm's interests abroad by appearing at various architecture-related events in the United States and Europe, or supervising work in the firm's adjunct office in Los Angeles, where he is also a visiting critic at the Southern California Institute of Architecture. Swiczinsky, on the other hand, prefers to remain closer to home, comfortably ensconced in Coop Himmelblau's headquarters, a smoke-filled studio carved out of a dowdy, fin-de-siècle apartment building in central Vienna. Personal differences aside, that common gleam is telling. It provides a key to understanding Prix and Swiczinsky's intense collaboration—a potentially explosive combination of two different personalities which, as it turns out, encompass strikingly similar philosophies.

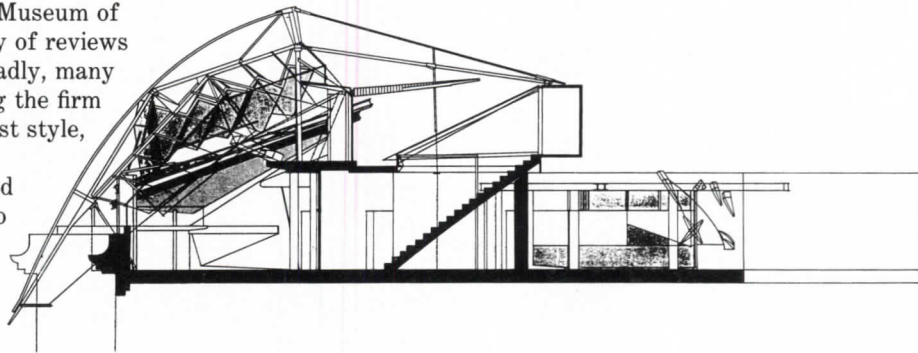
Professionally reared in a city obsessed by its past, Prix and Swiczinsky advocate a rejection of historic styles that is as aggressive as it is absolute—"a panther in the jungle" is how they describe their work. But to dismiss Prix and Swiczinsky merely as rebellious sons hoping, in some Freudian-architectural drama, to disinherit the design legacy of previous generations, is to misinterpret the underlying message of their architecture. After all, a firm that calls itself "The Blue Sky Cooperative" can not be without its own idealistic mission.

Coop Himmelblau's mission may appear muddled to the many Americans who first saw the firm's work in the "Deconstructivist Architecture" exhibition mounted at New York's Museum of Modern Art last summer, or featured in the flurry of reviews that accompanied the controversial installation. Sadly, many visitors to the show were misled into pigeonholing the firm as single-minded advocates of the proclaimed latest style, whose main characteristics are best described as imbalance and fragmentation. To be sure, Prix and Swiczinsky's work embodies such elements, but to reduce the architects' more far-reaching sociological aspirations about how architecture reflects and perpetuates the political morality of its time to a single, albeit multisyllabic, word belittles their true purpose.

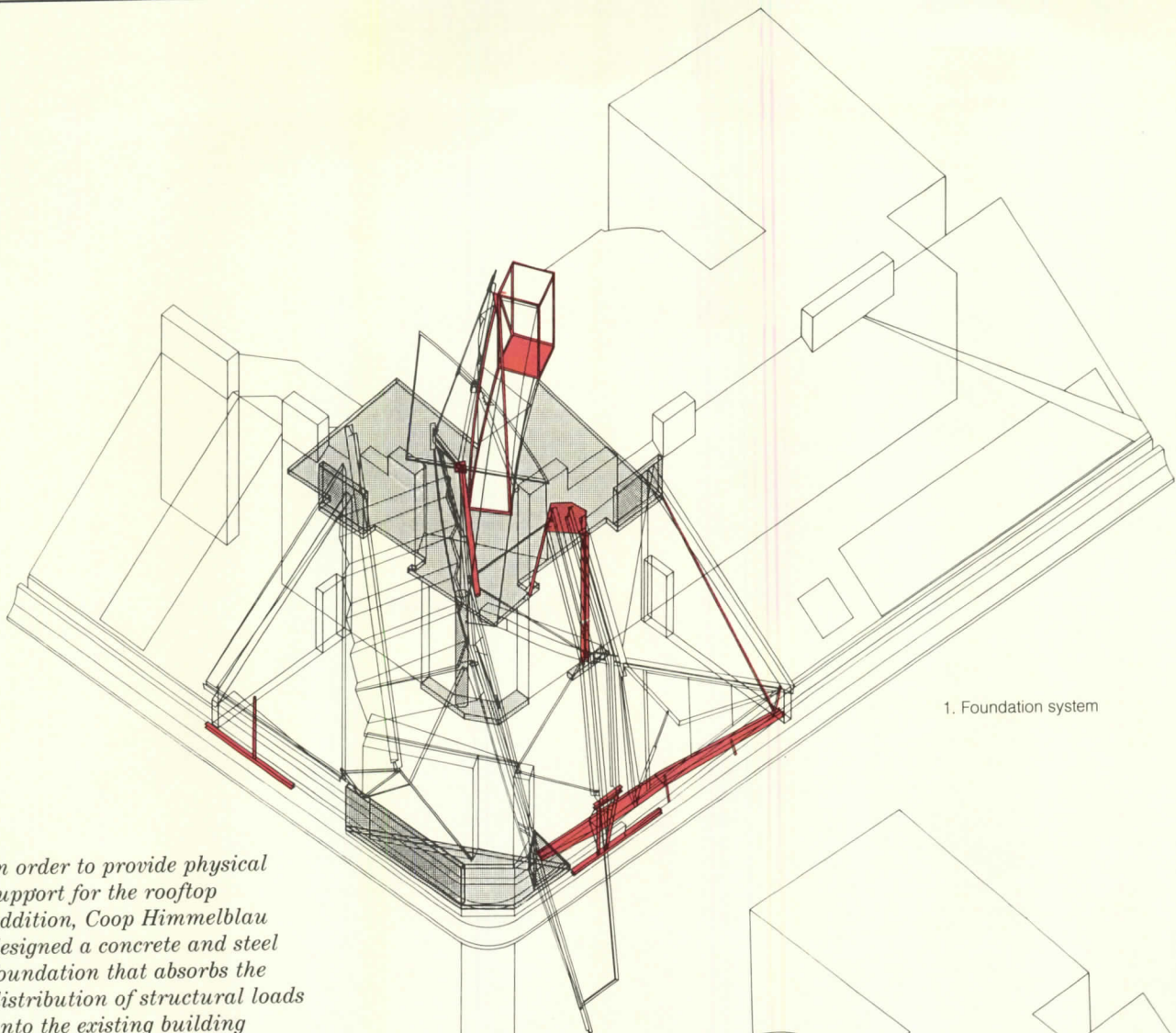
In the writings and publicly staged "spectacles" that occupied the firm during its first decade of practice, following Coop Himmelblau's formation in 1968, Prix and Swiczinsky called for a live architecture "that bleeds, that exhausts, that whirls, and even breaks." The architects' vision, still mostly on paper even by the early 1980s, required not only a rejection of familiar styles, but also a physical assault on the existing fabric of Vienna. In the architects' view, the city's longstanding tradition of historic eclecticism, best exemplified in the circular Ringstrasse, the great 19th-century boulevard of Neo-Gothic, Neo-Classical, and Neo-Baroque buildings that forms a stylistic choker around the heart of the city, was stifling. Not surprisingly, the double-sided image of suffocation and release figures prominently in Coop Himmelblau's built work to date—Constructivist-inspired collages that seem literally to break through their physical boundaries. Interior projects of the past several years such as the Baumann Studio, a seemingly haphazard amalgam of intersecting planes and surfaces, appear to have crashed through their more prosaic containers [RECORD, mid-September 1986, pages 68-73].

Rooftop remodeling

In more recent years, as the scale of their projects and the confidence of their clients have increased, Prix and Swiczinsky have been able to translate their ideas more fully into three-dimensional realities. Five years in the making, the newly completed penthouse office for a Vienna law firm reveals how Coop Himmelblau developed its iconography in a more
Continued on page 90

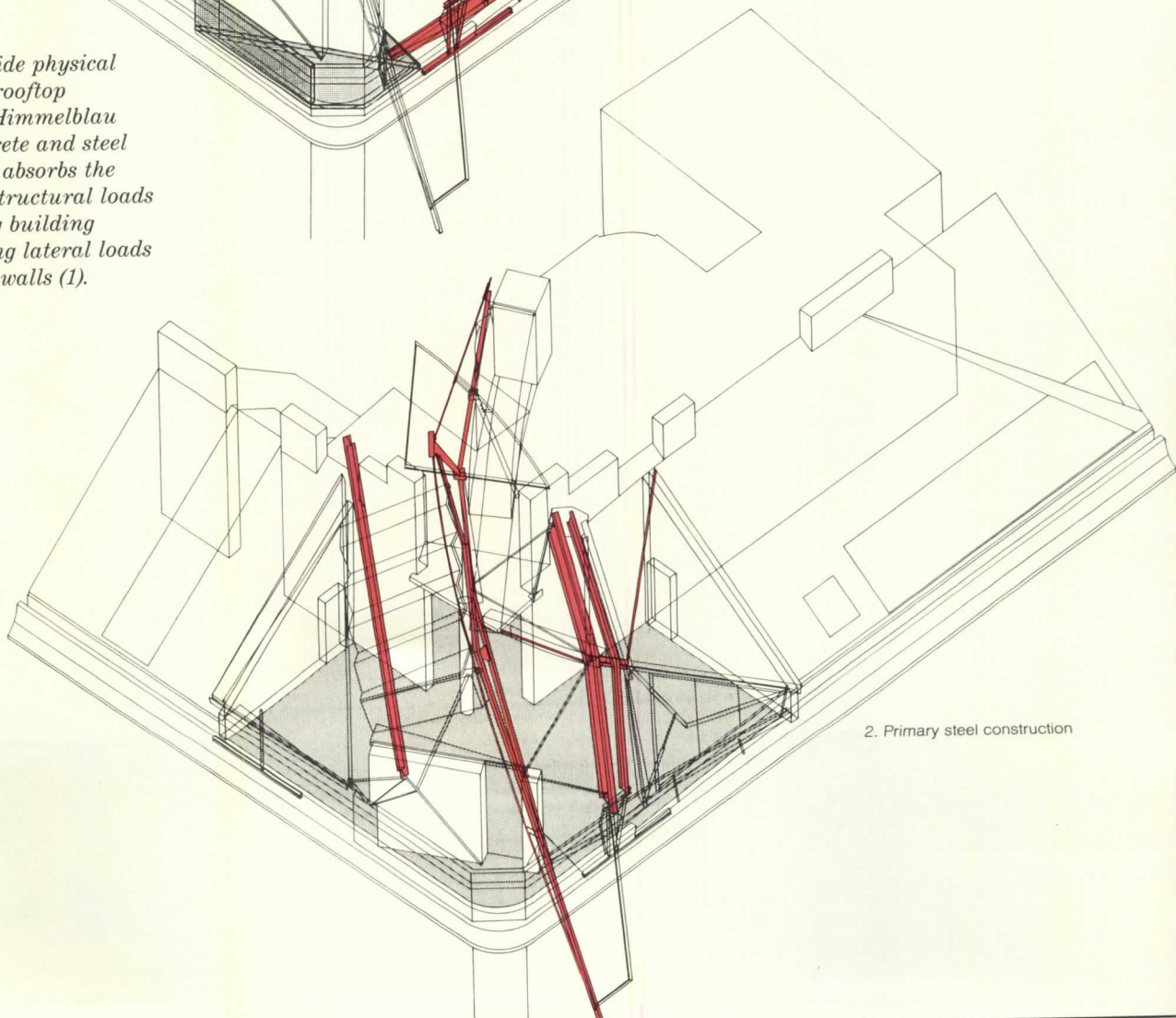




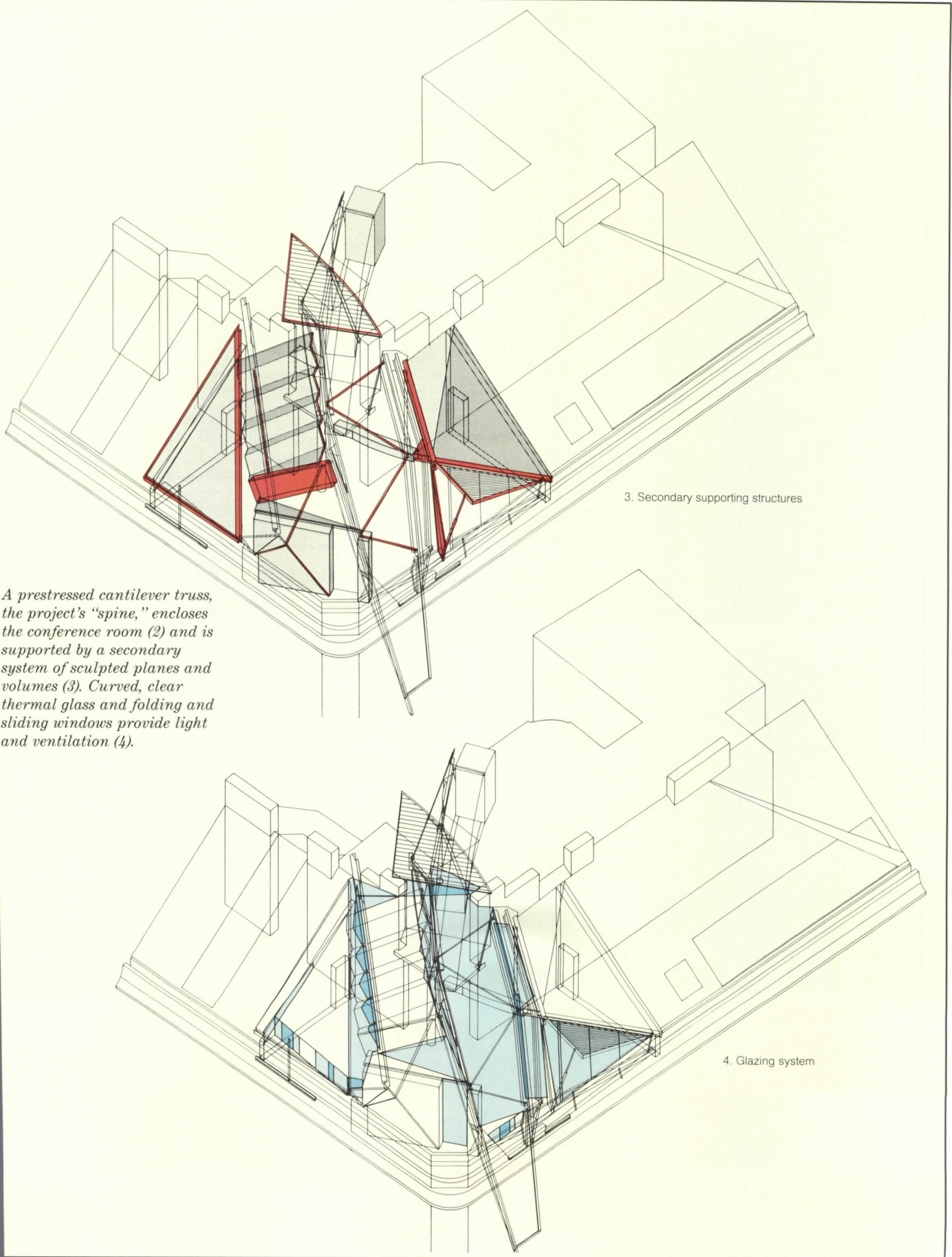


1. Foundation system

In order to provide physical support for the rooftop addition, Coop Himmelblau designed a concrete and steel foundation that absorbs the distribution of structural loads onto the existing building without deflecting lateral loads to unreinforced walls (1).



2. Primary steel construction



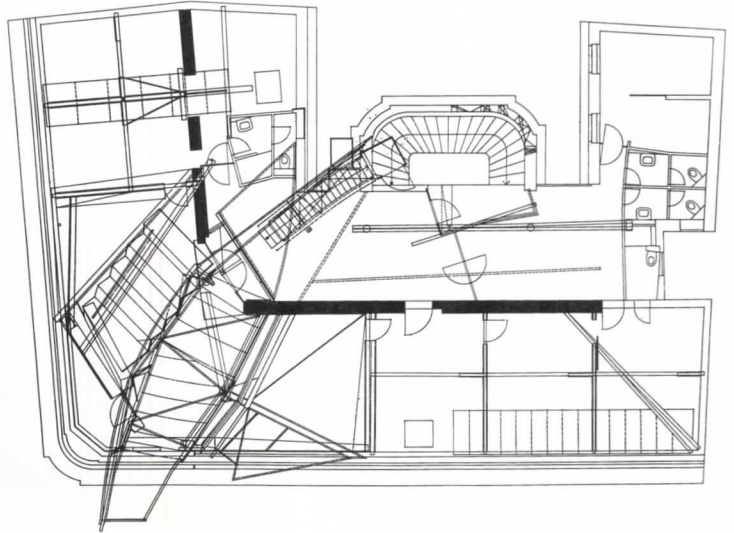
3. Secondary supporting structures

A prestressed cantilever truss, the project's "spine," encloses the conference room (2) and is supported by a secondary system of sculpted planes and volumes (3). Curved, clear thermal glass and folding and sliding windows provide light and ventilation (4).

4. Glazing system



The two-story conference room opens toward the historic heart of Vienna (below). Coop Himmelblau installed a variety of fixtures, including neon tubing and halogen spots to intensify the play of light inside and out (opposite). The Constructivist motifs of the conference room are repeated in private offices, where structural-steel beams are encased in gypboard and plaster (below left).



*Rooftop remodeling
Vienna*

Architect:

Coop Himmelblau—Wolf D. Prix and Helmut Swiczinsky, principals-in-charge; Franz Sam, project architect; Max Pauly, Stefan Kruger, Karin Sam, Robert Hahn, Mathis Barz, and Valerie Simpson, project team

Engineer:

Oscar Graf (structural)



Continued from page 84

biomorphic guise by giving the rooftop "addition" the form of an exposed exoskeletal structure (cover and pages 82-89). Perched atop a landmark building in Vienna's First District, a conference room, the project's focal point, looks like a dissected ribcage that the architects transplanted with the utmost surgical precision onto an aging behemoth, as if to imply that the newly grafted element is somehow able to breathe life into the older carcass. In more concrete terms, Coop Himmelblau found inspiration for the intricate pre-tensed form somewhere between the construction systems of an airplane and a bridge, suspended in a state between "explosion and implosion," according to Prix. Though the rooftop element is not a contextual response to their client's request for a "contemporary" workplace by any standard interpretation, the architects claim that their design *was* determined in part by the project's location at the corner of two streets, the bow-shaped cavity meant visually to form, in the architects own words, "a connection between street and roof."

For all its visual fireworks, the project is far more than an abstract billboard for a new high-tech expressionism. Not only were the architects able to project their chosen image, they were also able to execute it flawlessly. Elaborately intertwined, the various construction systems of reinforced concrete, steel, and glass (drawings page 86-87) represent a feat of structural virtuosity that incorporates, perhaps inadvertently, a homage to history in its deft union of form and function.

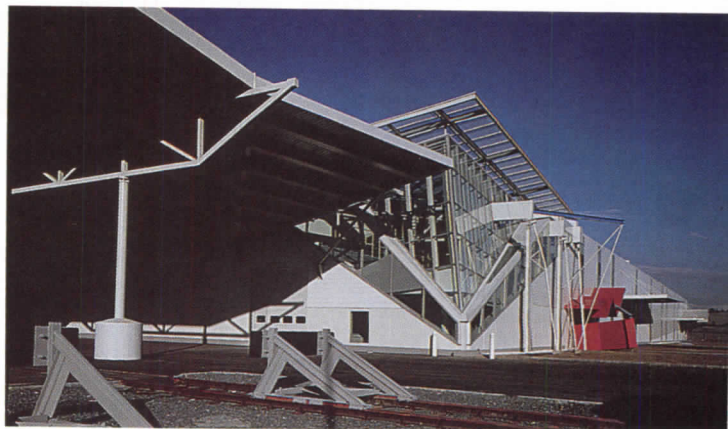
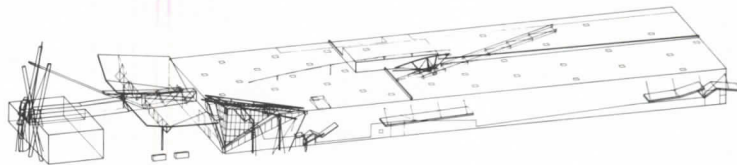
Funder Factory 3

The architects found the relationship between form and function an equally integral part of their design for the Funder Factory 3, located in the province of Carinthia in southern Austria (right and opposite). This commission, at first glance, seemed to provide regrettably little room for esthetic invention. The architects' task was to transform an industrial shed that accommodates an assembly-line process of coating decorative paper rolls with plastic resins into what they refer to as "a strongly assertive architecture." Here, Coop Himmelblau performed its initial dissection on the *program*, a process of functional distillation that owes an obvious debt to Frank O. Gehry, another of the chosen architects featured in the "Deconstructivist" show. Prix and Swiczinsky isolated certain aspects of the program for creative intervention, essentially leaving the bulk of the 50,000-square-foot white box intact. In embellishing select areas, such as the main entrance, which is marked by a fragmented red canopy and a projecting red screen (actually a staircase on its side), the architects exaggerated the scale of the elements to make them legible at highway speeds—the kind of Las Vegas strip-style imagery popularized by Robert Venturi and Denise Scott Brown. The so-called "energy center," or power station, of the factory is confined to its own bland rectilinear structure, which is symbolically articulated by three, 75-foot-high chimneys whose artful, playfully tilted positioning seems to have been effected by the steam that they emit. A bridge connects the power facility to the adjoining production building, whose exploded south-facing corner is the project's architectural tour de force. The glass and steel assemblage has a dual appearance: it seems both the result of a crash and, much like the rooftop addition, a separate element poised for flight.

That image is a particularly poignant one for Coop Himmelblau these days as Prix and Swiczinsky wait for construction to begin on a variety of fronts. Although the firm has won several recent important competitions—the urban plan for the new town of Melun-Sénart, a suburb of Paris; renovation of Vienna's Ronacher Theater; an addition to a hotel on the outskirts of the city; and, just last June, a performing-arts building in California, a collaboration with Los Angeles-based Morphosis—none is fully under way. All told, the projects represent an incredibly diverse portfolio of work, but for now, they are only a gleam of anticipation in Prix and Swiczinsky's eyes. *Karen D. Stein*

Funder Factory 3
St. Veit/Glan, Carinthia, Austria
Coop Himmelblau, Architect

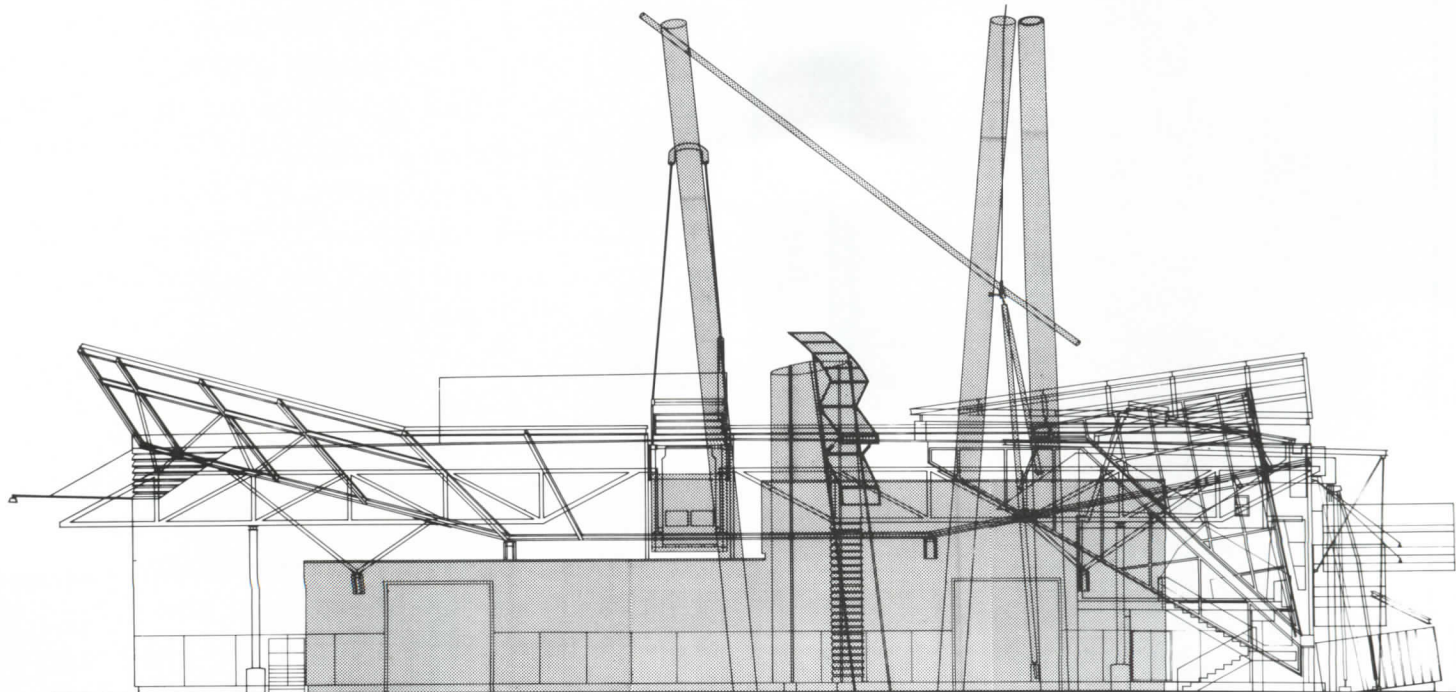
Funder Industrie, an Austrian manufacturer of fiberboard, particleboard, and specially coated paper, asked Coop Himmelblau to design its Factory 3 in order to "strengthen [the company's] corporate identity and [produce] a positive effect on the



disposition of the personnel," according to company officials. The architects' design concept was based on what they call the "dissolution" of a standard long-span industrial shed into an amalgam of more sculptural, functionally differentiated elements.

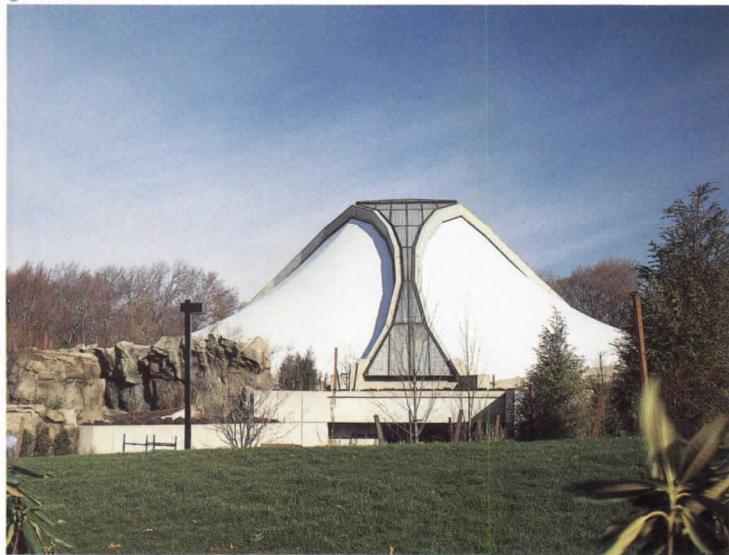
Funder Factory 3
St. Veit/Glan, Carinthia, Austria
Architect:
Coop Himmelblau—Wolf D. Prix and Helmut Swiczinsky,

principals-in-charge; Markus Pillhofer, project architect
General planner:
Ahammer & Tritthart
Landscape architect:
J. B. Koppandy



Back to nature

©David Hewitt



Tropical Forest, Franklin Park Zoo, Boston



Elephant Forest, Woodland Park Zoo, Seattle

Since the late 1960s, the zoological “garden” as an often-scruffy menagerie has gradually given way to displays of ecologically related species within a discernibly natural environment. But zoos continue to change in response to a variety of powerful and sometimes conflicting forces. With man’s voracious consumption of natural habitat worldwide, a new research role has been spawned, as some species now reside only in zoos. Moreover, there are many other amusements—from Nintendo to educational theme parks—competing for the family’s recreational dollar. Exemplary zoos have also come to be seen as an institution a city must have to call itself (inevitably) “world class.”

To meet these challenges, curators have gone to ever greater lengths to create a realistic setting for animal displays, developing sophisticated animal-holding and research facilities, and bringing the natural world closer to visitors through elaborate hands-on experiences that can even include interactive computer devices.

It is clear from the projects shown here that the architect’s role in zoo design is as varied as the species these institutions house. In San Diego, architectural structures are minor events within the artificial stream bed of Tiger River, designed by Jones & Jones. In Seattle, Jones & Jones has used indigenous forms to show the interaction of humans and animals, while Huygens DiMella Shaffer’s scheme at Boston’s Franklin Park Zoo encompasses a variety of habitats under one cable-supported fabric roof.

Lest one conclude that zoo projects are merely an offbeat specialty, it is worth noting that nearly every American city has significant zoo work in progress, and these gleaming new facilities are worlds (perhaps *biomes*) away from the barred cells and glorified picnic shelters of yore. *James S. Russell*



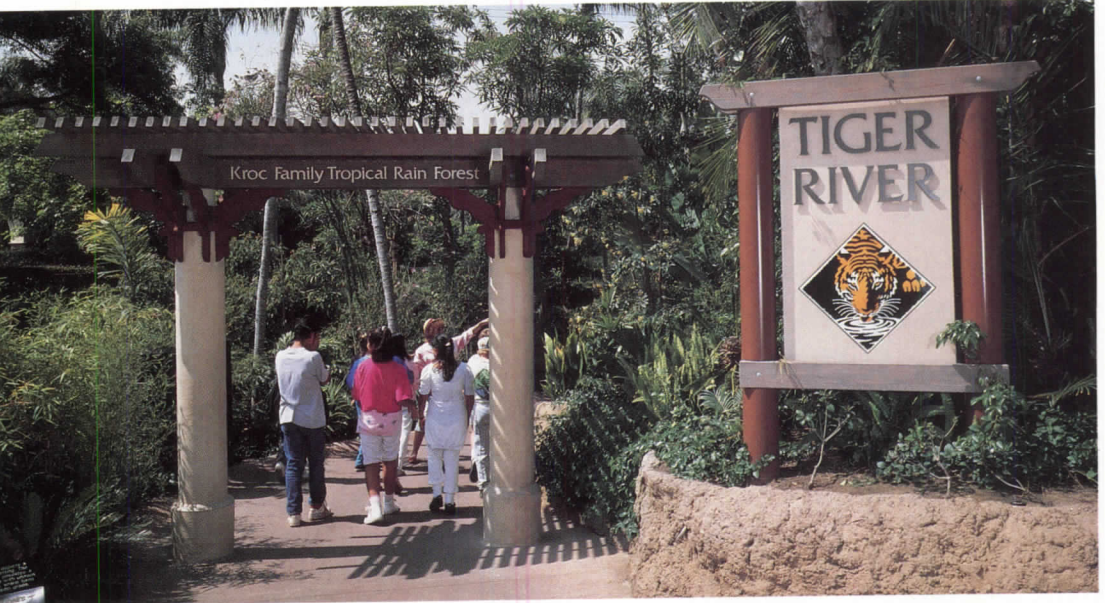
Tiger River, Kroc Family Tropical Rain Forest, San Diego Zoo

Tiger River San Diego Zoo

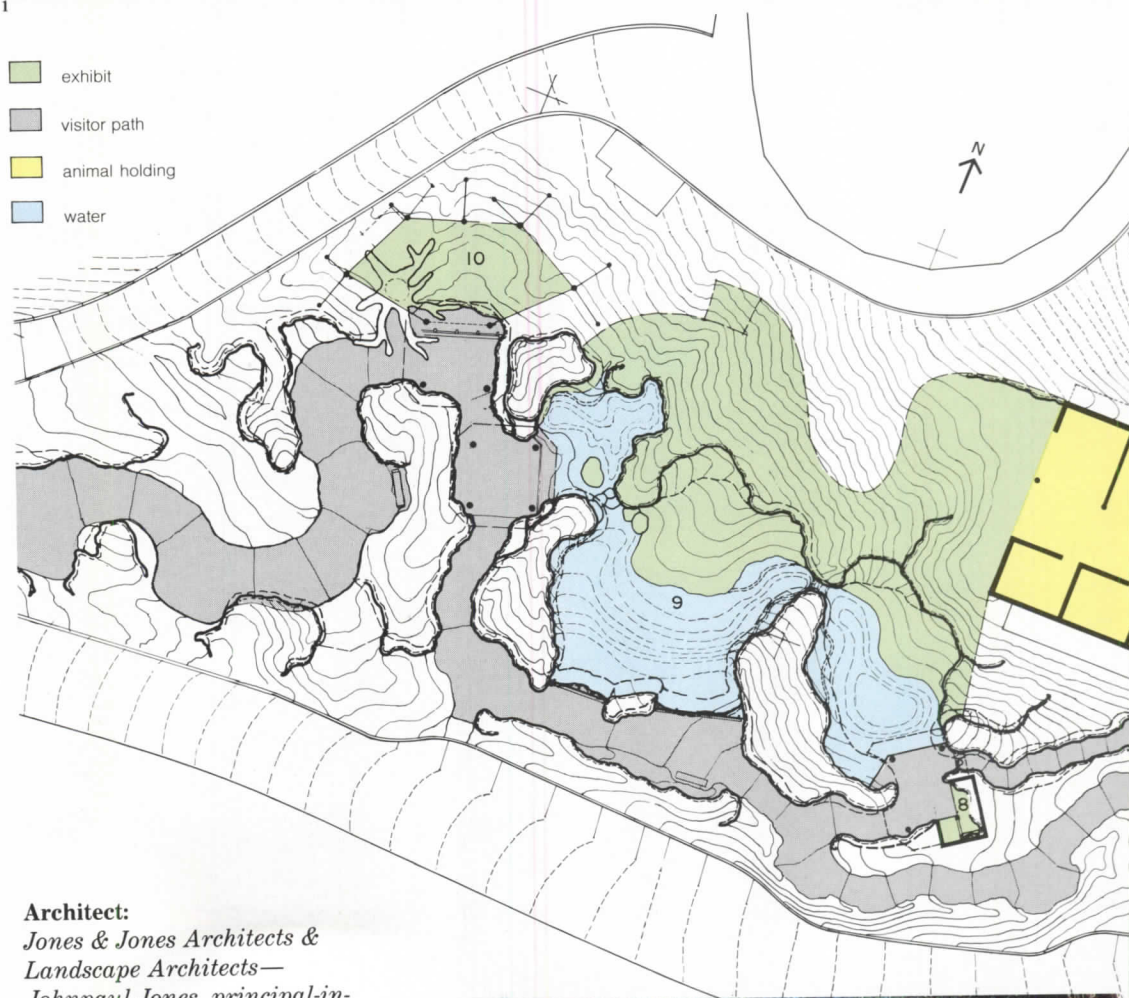
The San Diego Zoo has recently embarked on a long-range effort to recombine its renowned collection of animals and botanical gardens into 10 bioclimatic zones. Instead of grouping animals into taxonomic enclaves (birds with birds, for example), the zoo has begun placing mammals, birds, and reptiles together into environments that simulate their native habitats. The first completed example of this ecological approach is Tiger River, a miniature Southeast Asian rain forest populated by exotic animals ranging from crocodiles to Sumatran tigers, and covered with 5,000 tropical plants. Designed by the Seattle-based firm of Jones & Jones in collaboration with the zoo's director of architecture and planning, David E. Rice, the \$6-million project was created by recontouring an existing canyon to support 10 displays, interwoven with a "river"—actually independent pools of recirculated water—running the length of the exhibit. Visitors walk down a parallel sunken "riverbed" that is flanked by sprayed concrete banks from the entrance arch through viewing structures that recede into the landscape. Constructed of plant-covered wood trellises supported by concrete columns, the pavilions are loosely modeled on traditional Indonesian architecture. Animal enclosures and holding areas also disappear into the landscape, giving the illusion that visitors and wildlife are truly integrated, an effect heightened by a misty atmosphere produced by a computerized irrigation system.

D. K. D.

Client:
Zoological Society of San Diego—David E. Rice, director of architecture and planning; Susan Kinkade, landscape designer; Chuck Coburn, horticulturalist



© Tom Bonner photos, except as noted



Architect:
Jones & Jones Architects & Landscape Architects—Johnpaul Jones, principal-in-charge; Roger Sherman, project landscape architect; Kai Kazuto Mikami, project architect

Consultants:
Howe Engineering (structural); Dunn-Lee-Smith-Klein (mechanical/electrical); ENARTEC Consulting Engineers (life support systems)

Construction manager:
Worley Construction Management





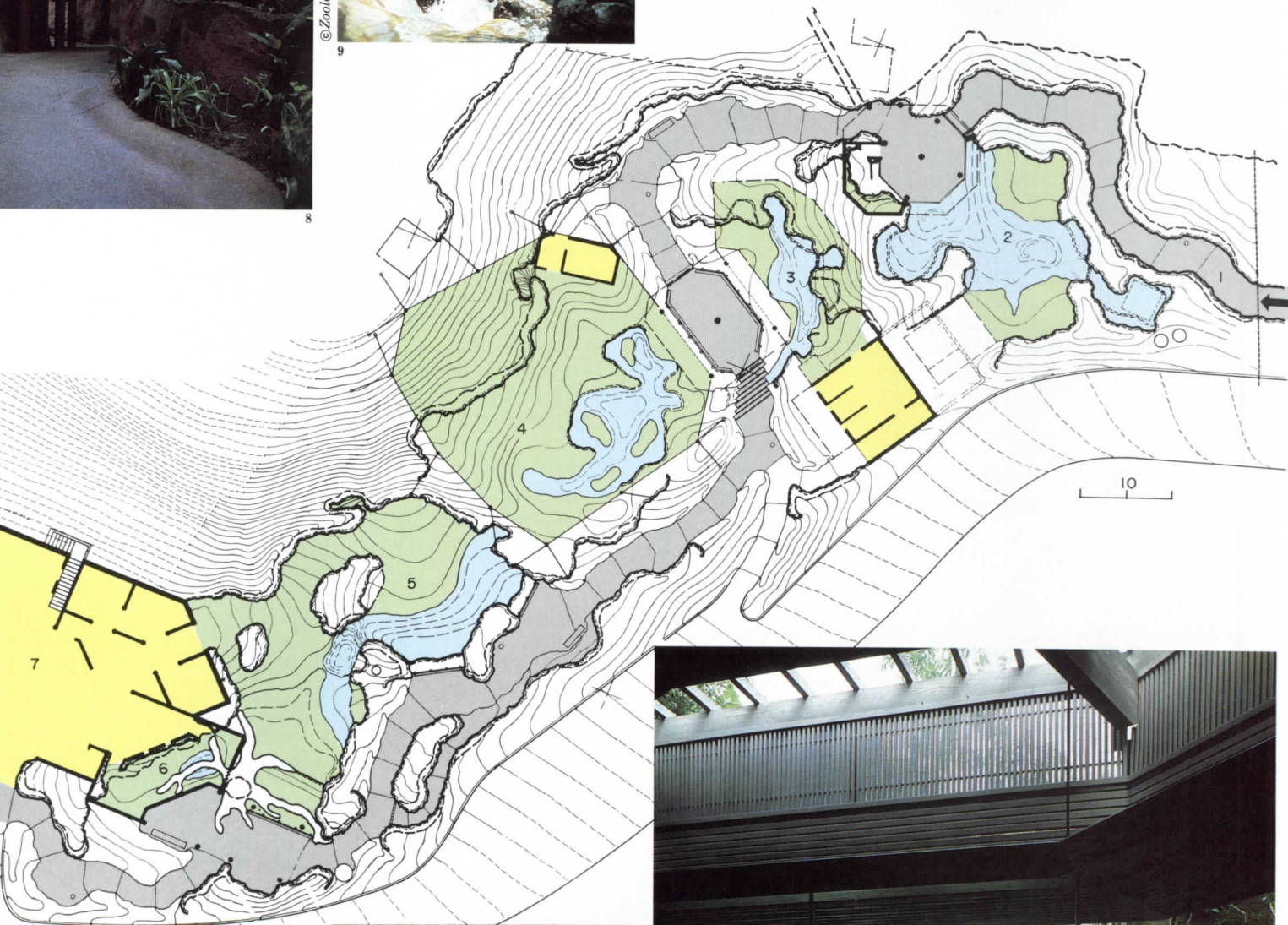
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©Zoological Society of San Diego/Ron Garrison

9



- 1. Entrance
- 2. False gaviel
- 3. Fishing cat
- 4. Marsh aviary
- 5. Rhino/tapir
- 6. Python
- 7. Tiger and rhino holding
- 8. Small mammal
- 9. Sumatran tiger
- 10. Forest aviary

©Zoological Society of San Diego/Ron Garrison



2

Elephant Forest Woodland Park Zoo

Michael Ian Shopenn photos, except as noted



In the Oriental art of *feng-shui*, building sites are laid out according to an ancient formula that gives special meaning to the roll of a hill or the cut of a stream. One goal of *feng-shui* is to endow a landscape with twisting circuitous pathways, so that one's destination is not immediately apparent.

A touch of *feng-shui* now can be found in Seattle, where the new Elephant Forest at the Woodland Park Zoo has been designed to house and display the zoo's elephants while also showing the animals' complex relationship with the people and culture of Thailand. The exhibit, designed by Jones & Jones, is modeled in part after a Thai logging camp, which for centuries utilized the big animals to help drag logs from the rugged, muddy teak forests of that nation.

True to *feng-shui*, the Elephant Forest was conceived to reveal itself in stages, offering carefully controlled vistas across the wooded five-acre site. The visitors' entrance is flanked with six poles carved to recall the city of Brahma, home to the Buddhist gods. The first vista replicates the Asian elephants' wild environment, and is designed to duplicate the clearings elephants often carve

out of the forest in their search for food.

After passing a small viewing amphitheater and crossing a stream, the exhibit's path leads to a typical northern Thailand logging camp, with oversized elephant tacks on display and a working Thai elephant gate. A demonstration area is used to display elephants' log-handling skills. A third area contains interpretive exhibits explaining the elephant's role in Thai culture. Finally, visitors come to the 60-foot-tall Rong Chang ("House of Elephants"), where the animals are bathed and bedded down. The Rong Chang and other structures on the site were built using Thai construction techniques, with trusses that follow the steep roofline.

In addition to housing the zoo's elephants, the exhibit is a significant botanical reserve of 12,000 plants representing 159 species. *Douglas Gantenbein*



- exhibit
- visitor path
- animal holding
- water

1. Elephant
2. Marsh
3. Restroom
4. Thai village courtyard
5. Interpretive
6. Demonstration
7. Demonstration area
8. Logging camp
9. Elephant house



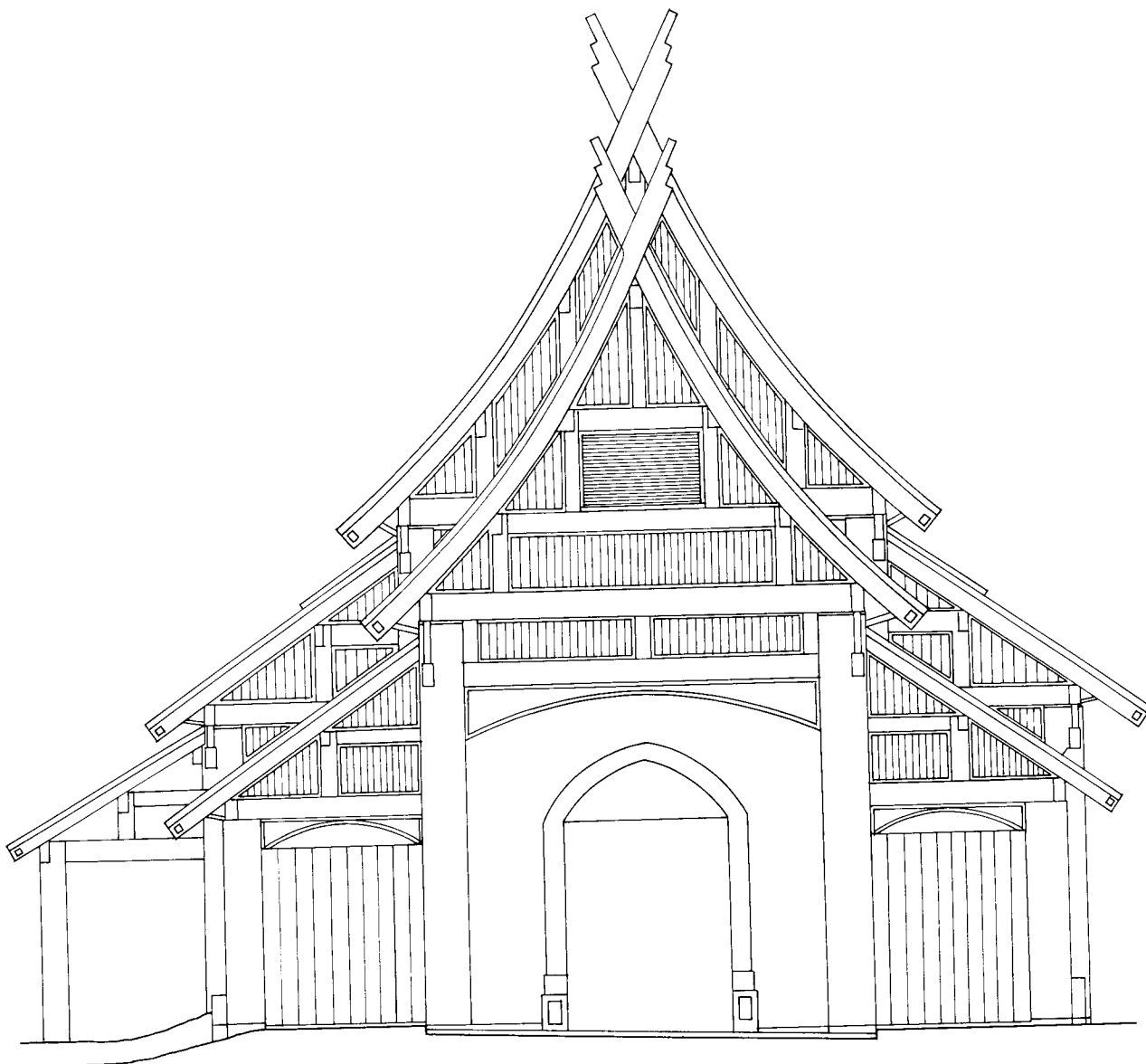
The steeply gabled roofs of the Rong Chang, or House of Elephants (top opposite), and an open-air theater overlooking a demonstration area (bottom opposite and below) were patterned after rain-shedding Thai vernacular buildings. V-shaped gable extensions on

all the buildings in the Elephant Forest are called kalae, or "glancing crows," by the Thai people. Some historians, however, believe that the ornamental poles represent pairs of buffalo horns that once were mounted atop houses as a symbol of wealth.

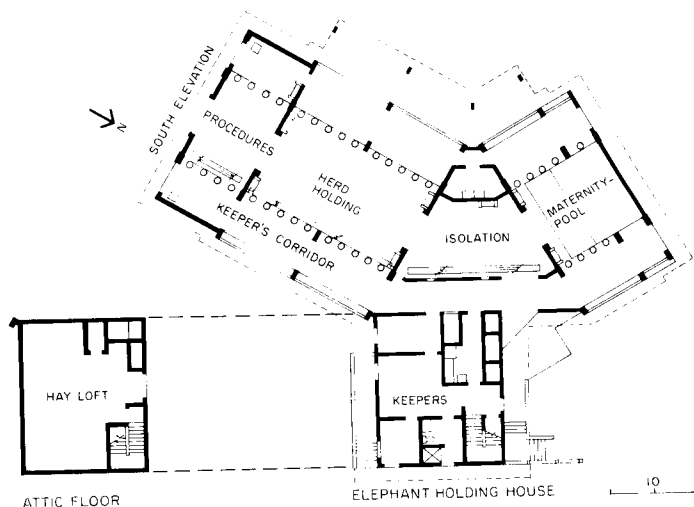


A series of sliding doors allows the holding areas within the main elephant house to be reconfigured to isolate an individual animal. The indoor bathing pool can double as a maternity ward (plan). Sophisticated environmental-control facilities exchange

interior air eight times per hour. The holding area (opposite) is scaled to the 20-foot reach of the elephants' agile and powerful trunks. Bollards on either side of the main interior space are spaced far enough apart to allow keeper access, yet the gaps are



SOUTH ELEVATION



narrow enough to keep elephants confined. Extra crossbars can be added should the zoo acquire an infant animal. Tile reliefs over the doorway were commissioned for the exhibit.

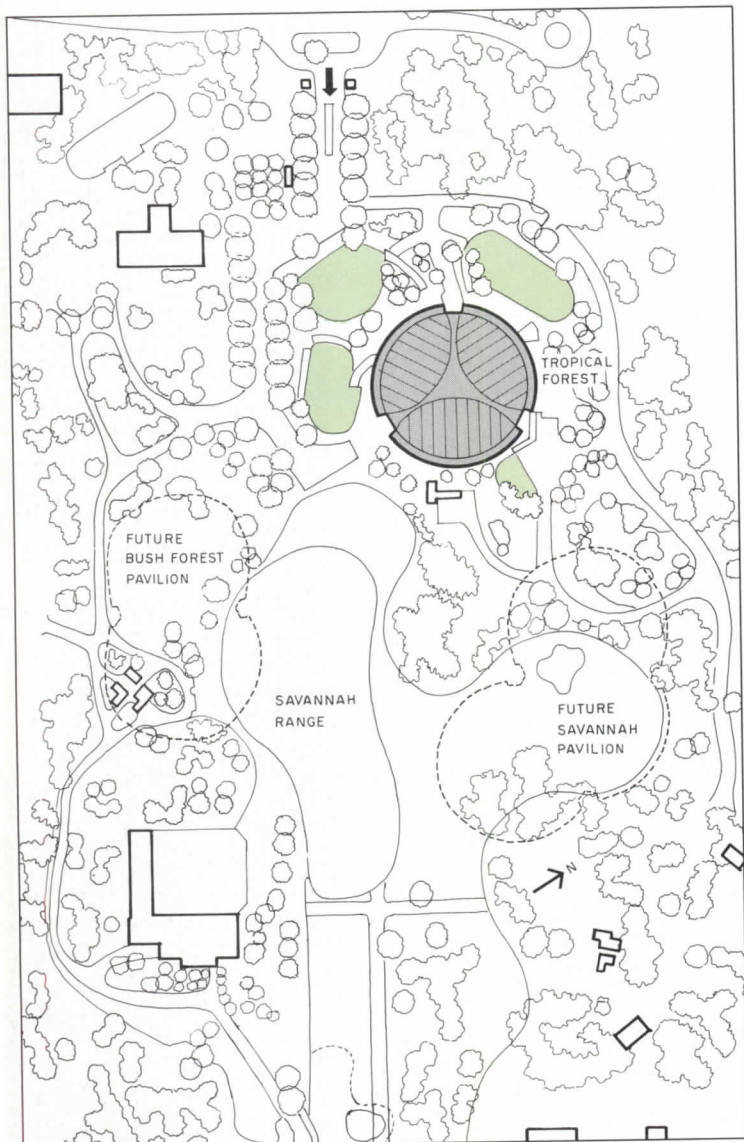


Client:
City of Seattle
Woodland Park Zoo—Jo Rekhi, parks engineer; John Marshall, parks architect; David Towne, director; Jim Maxwell, director of planning and development; Tom Kubota, project manager; Lisa Douglass, horticulturalist
Architect:
Jones & Jones Architects & Landscape Architects—Grant Jones, partner-in-charge; Nik Worden, Mario Campos, Kent Scott, Michael Braden, Steve Durrant, project team

Consultants:
Howe Engineering (structural); D. W. Thomsom Consultants, Ltd. (mechanical/electrical); C. H. Kuhn and Associates (soils/irrigation); Guido Perla & Associates (hydraulics)
Contractors:
Eberharter Construction Group; Will Construction (elephant house); Jolly Miller Construction (artificial rockwork)



Tropical Forest Pavilion Franklin Park Zoo



"We wanted to emphasize the animals, not the building," says Remmert Huygens of the Tropical Forest Pavilion his firm designed at Boston's Franklin Park Zoo. To that end, Huygens went about creating a tentlike structure that, at least from the inside, would serve as a neutral backdrop to the pavilion's main event—the gorillas, antelopes, leopards, and pigmy hippos.

"The idea was to design as sheer and unarticulated an enclosure as possible," explains Huygens. The building's circular footprint served this purpose by eliminating corners and defining a flexible space in which display designer Jerry Johnson had a free hand in creating naturalistic environments for the animals. The building's geometry also establishes a modular system for creating additional enclosures. Two or more circles can be joined to form larger pavilions without having to rework the structural or cabling systems. In fact, the project calls for four separate pavilions made of single, double, and triple circles. Planned for construction as funds become available, each pavilion will showcase the flora and fauna of a different African biome—tropical forest, bush forest, desert, and savannah. The building may defer to its

four-legged inhabitants from the inside, but it is more assertive on the outside. Its roof is a Teflon-coated glass-yarn fabric supported by steel cables hung from three steel arches. The tensioned cables are anchored at the base by a 30-foot-wide compression ring at the display area perimeter. The ring also houses mechanical and service areas and holding pens for the animals. Depending on the weather, animals can move from holding pens to either indoor or outdoor display areas without special handling by zookeepers.

Display designer Johnson crafted naturalistic environments for animals using moats, hills, and artificial rock formations (made of fiberglass-reinforced concrete), then laid out a winding path for humans to follow, offering a variety of views of the animals while screening views of other visitors. "I tried to create a sense of discovery and awe with every sharp turn in the path," explains Johnson. "I wanted the visitor to find a surprise around every bend." Johnson also tried to "tell the story of the tropical forest by involving as many of the senses as possible," arraying landscaping, water features, and plants for their smells, sounds, and textures, as much as their visual impact. C. P.

Client:
Metropolitan District
Commission, Commonwealth
of Massachusetts
Boston Zoological Society

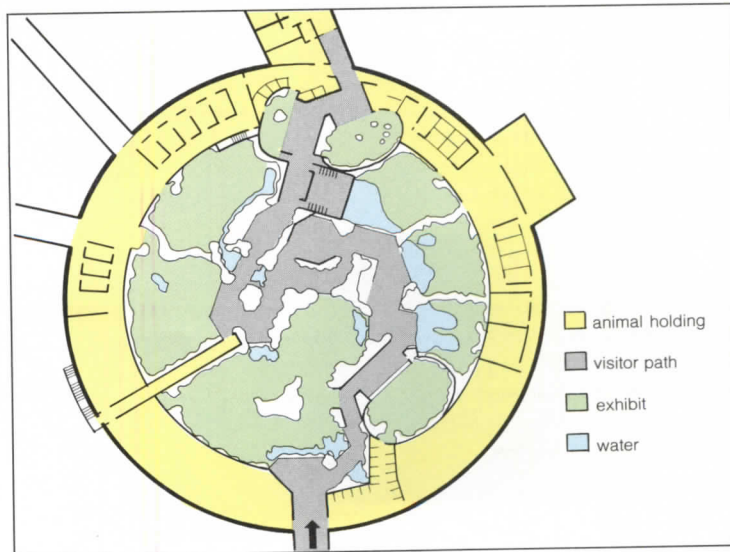
Architect:
Huygens DiMella Shaffer and
Associates—Remmert W.
Huygens and A. Anthony
Tappe, principals-in-charge;
Stuart Carter and Harry
Gundersen, associate
principals; Terry Cracknell,
John Cunningham, Erling
Falck and Edward Talanian,
senior associates

Engineers:
Weidlinger Associates

(structural); Cosentini
Associates (mechanical/
electrical)

Consultants:
Jerry M. Johnson Productions
(exhibit design/construction);
Moriece and Gary
(landscaping); Donald Bliss
(exhibit lighting)

General contractor:
J. F. White Contracting

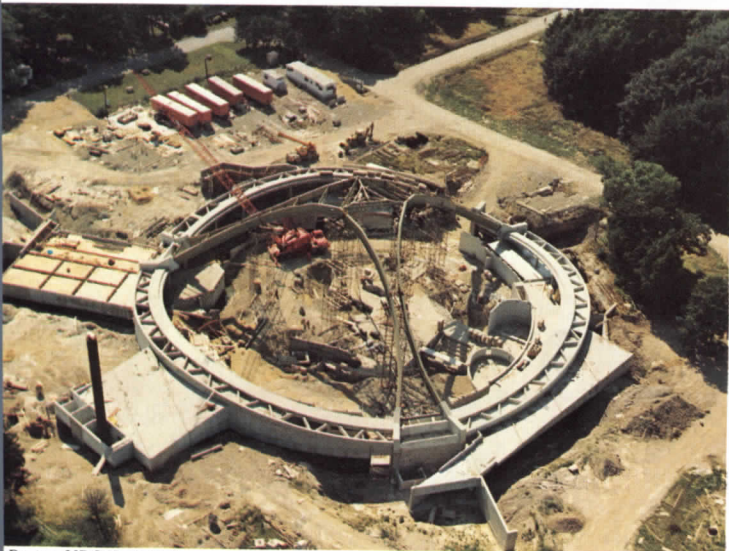


A circular footprint roofed by a tensile structure provides the Tropical Forest Pavilion at the Franklin Park Zoo with 28,000 square feet of unobstructed display area. Fresh air is supplied from beneath the winding visitors' path, while fans at the apex of the

building's three steel arches expel hot air. The same module and fabric-roof system will be used on three additional pavilions planned for the site, which sits at the end of a four-mile-long strip of parkland conceived by Frederick Law Olmsted in 1885.



©David Hewitt photos, except as noted

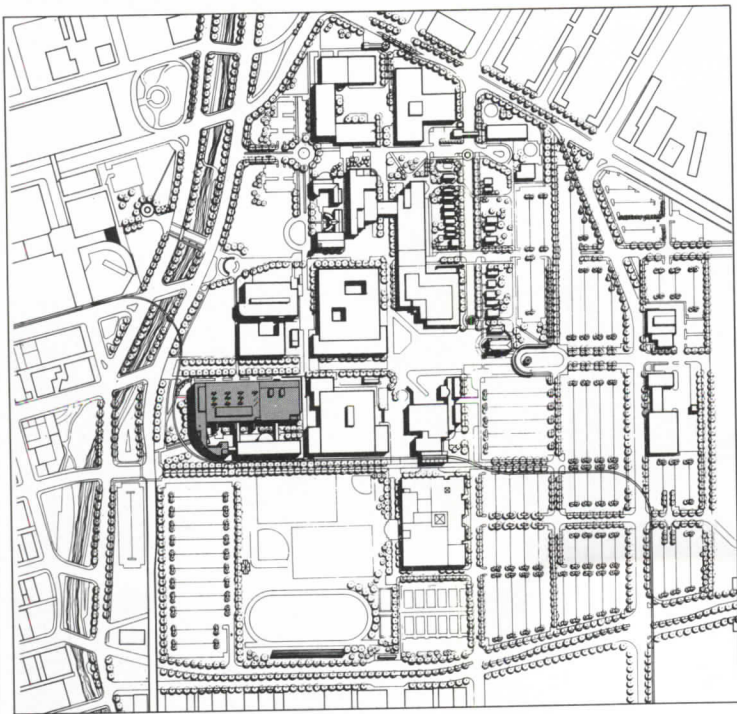


Boston MDC/Jack Malev



Hoover Berg Desmond's polished interpretation of the ho-hum design vocabulary common to neighboring buildings introduces urbanity to an urban campus.

© Greg Hursley photos, except as noted



Designed to serve as a gateway between downtown Denver and the adjacent Auraria campus, a new classroom building opens its major entry (above) to the terminus of historic Larimer Street, and edges a pedestrian mall that extends the parallel Lawrence Street into the campus. A future addition will complete the courtyard now suggested by projecting stairways (opposite).

Opening doors

Typically, urban universities grow up in concert, if not always in harmony, with the cities around them. Denver's Auraria Higher Education Center, however, emerged from the '60s tide of urban renewal, which swept clean a downtown site to house three fast-growing local institutions: Metropolitan State College, the Community College of Denver, and a satellite branch of the University of Colorado. Positioned literally "across the creek" from the central business district (left in site plan), the from-scratch shared campus was premised on lively exchange, both among the participating institutions and with downtown cultural and commercial resources. But the boldness of the educational vision has not been matched by the physical plant.

The single-minded pursuit of economy and efficiency has forced individual campus buildings into a Procrustean bed shaped not only by stringent budgets but by least-common-denominator design guidelines that dictate bulky, rectangular, two- and three-story concrete structures striped by bands of liverish brick alternating with dark-glazed, dark-framed strip windows. Although landscaping now provides visual relief, as do a handful of historic buildings rescued from the wrecker's ball, the resulting ensemble is at best unprepossessing. In this milieu, the 260,000-square-foot classroom building recently added by Hoover Berg Desmond is immediately notable for a freshness and finesse that belie its restricted vocabulary and \$80-per-square-foot price tag. Less obviously—and ironically since the new building's function is to replace temporary facilities downtown—it is the first campus structure to assert a link between the two precincts.

Originally allotted only the inner portion of its superblock, the building (and a planned addition) grew during design development to fill the site. Within the campus, classrooms and laboratories occupy two stories rising to three; at the outer end, an added two stories of faculty and administrative offices step up the building scale on its approach to the city and create a well-defined wall along the curved lot line. In a grand gesture of rapprochement, however, the structure breaks free as the wall curves around the property line, angling to form a glass-block-lined portal that is at once a visual terminus (at night a glowing lantern) for Denver's historic Larimer Square and a gateway between campus and city.

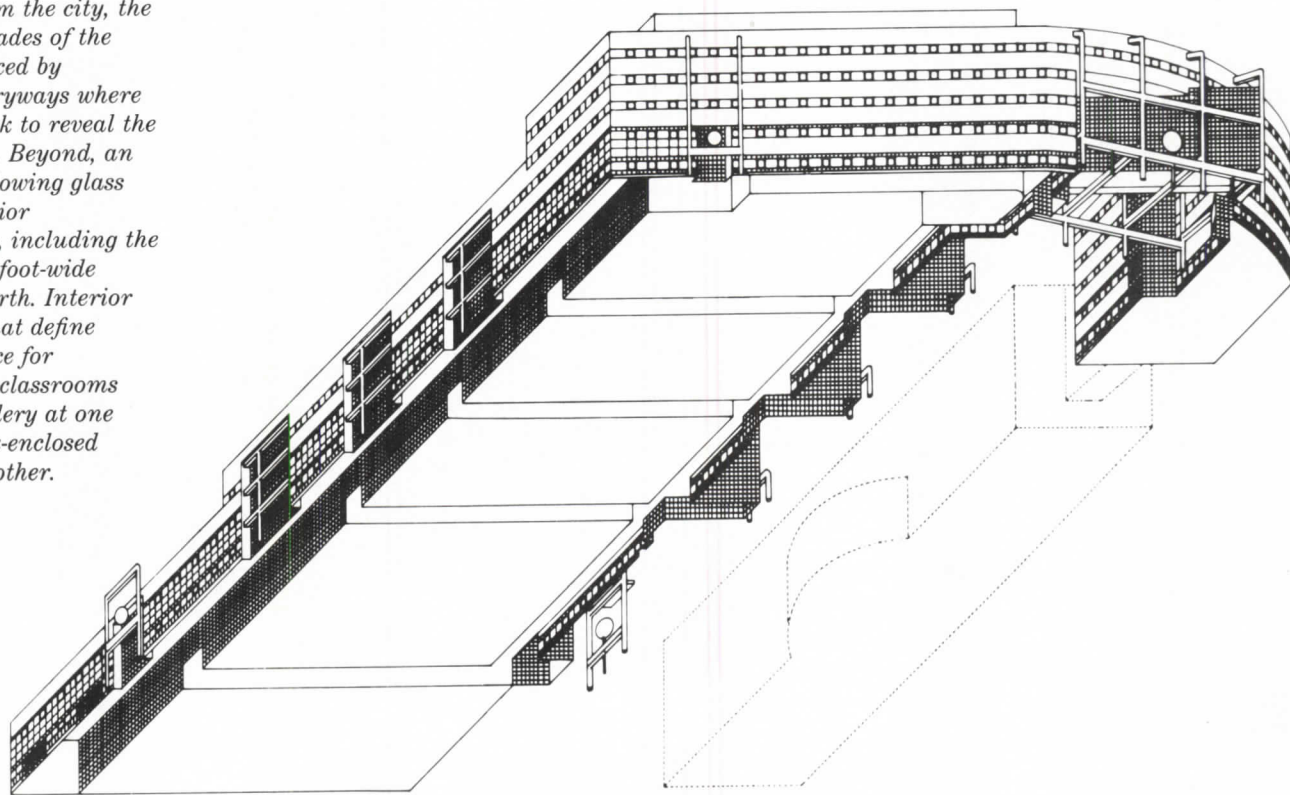
More important to students, the invitational break in the wall prefigures a building interior with an openness and generosity unexpected on this no-frills campus. Except for a few dedicated spaces—a large lecture hall, heavy engineering labs—the simple rectangular plan contains regular blocks of loft space that can readily be subdivided into offices, classrooms, or laboratories as needed. The hermetic effect of the required interior cross-corridors, however, is avoided by feeding them into a perimeter circulation path that allows outdoor views. At the inner courtyard (photo opposite) the corridors expand to meet glass-block-enclosed stairwells. On the opposite facade, which adjoins a major pedestrian mall through the campus (now under construction), the subsidiary entrances reprise the exposed skeleton and glass-block inner lining of the corner portal, announcing a splendid building-long gallery that culminates the exterior circulation system. Unprogrammed, and unprecedented on a campus with few informal student hangouts, the three-story "stairhall" was pieced together by combining the circulation allowance with every possible square inch that could be eked out for the common uses it now houses: eating, lounging, study—and celebration.

Margaret Gaskie

North Classroom Building
Auraria Higher Education
Center
Denver, Colorado
Hoover Berg Desmond,
Architects



Built out to the curved lot line to define the campus edge, the classroom building also steps up in height from two and three stories on the facades facing the campus to five stories on the west where the building addresses downtown Denver. Augmenting the major portal to and from the city, the long, low side facades of the building are pierced by intermediate entryways where the skin peels back to reveal the concrete skeleton. Beyond, an inner lining of glowing glass block traces exterior circulation paths, including the building-long, 25-foot-wide gallery on the north. Interior cross-corridors that define blocks of loft space for laboratories and classrooms run from the gallery at one end to glass-block-enclosed stairwells at the other.

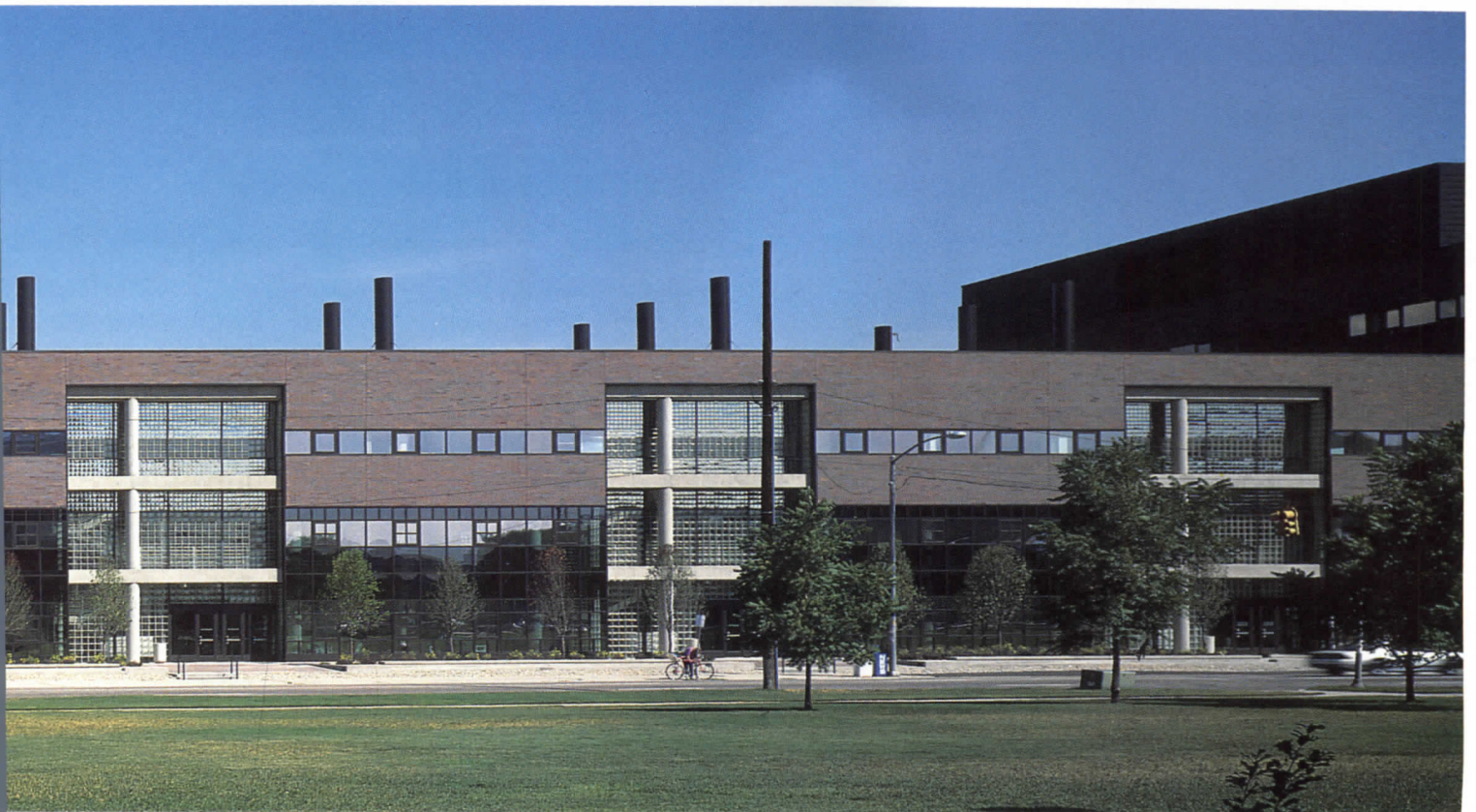




The architects' deft use of the prescribed palette of cast-in-place concrete, brick, and glass is exemplified by fenestration patterns that embroider on a basic grid, decreasing in complexity as they ascend from entry level to office floors.

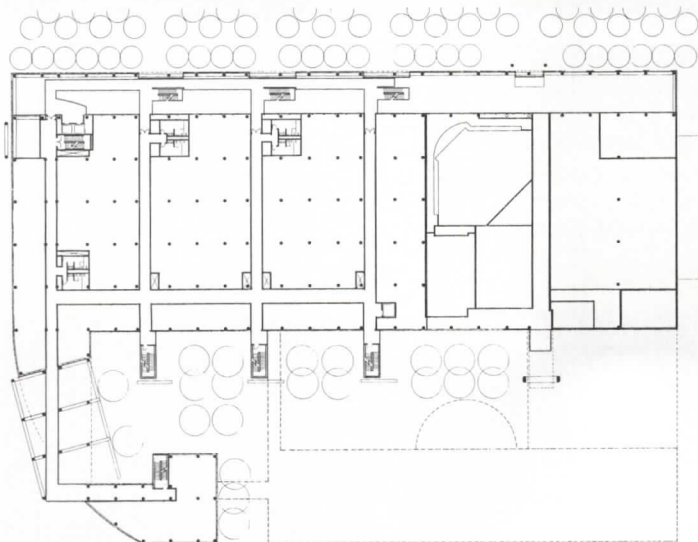


The "screens" of 12- by 12-inch glass block not only pierce light through the building skin for light and orientation, but assert a recognizable structural module against the backdrop of dark brick and glass.

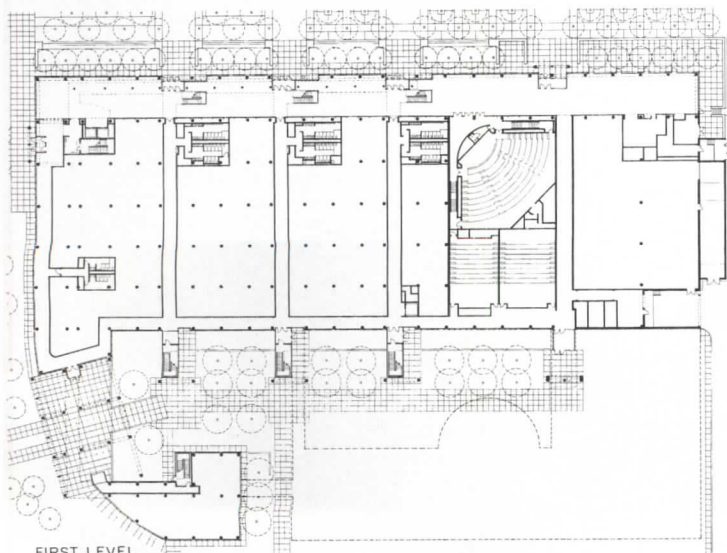




Entered from the portal between the building's inner courtyard and the campus, the 25- by 500-foot gallery professes its circulatory function with three-story tiers of stairs and bridges beyond the ceiling-high outer doors. Between, bays furnished with sturdy white-painted-wood porch furniture and stackable upholstered foam blocks create discrete lounge-study areas. The southern end, dropping to two-stories, contains a cafeteria-cum-gathering place thick with umbrella-shaded café tables and chairs overlooking a tree-lined pedestrian mall. In pleasant weather, which is frequent in Denver, glazed garage doors join the interior to a terrace beyond. The inner wall of the concourse employs varied glass block, from clear to sandblasted to opaque, to form patterns that trace the functions of inside classrooms, labs, and service facilities.



SECOND LEVEL



FIRST LEVEL



*North Classroom Building
Auraria Higher Education
Center
Denver, Colorado*

Owner:

*Auraria Higher Education
Center*

Architect:

*Hoover Berg Desmond—Gary
Desmond, principal-in-charge;
George Hoover, principal-in-
charge of design; Jay Smith,
project architect; Ranko Ruzic,
project designer; Pam
Bartozak, interior designer;
Andrew Barnard, Richard
Hamal, Jill Fitzsimmons, Mark
Fitzwilliam, Khristine Hoehn,
Roy Perlmutter, project team*

Engineers:

*Martin/Martin (structural);
McFall-Konkel and Kimball
(mechanical); Garland D. Cox
Associates (electrical)*

Consultants:

*Civitas (urban design/
landscape); Dober and
Associates (programming); The
NBBJ Group (laboratories);
Ensar Group (energy); Jerald
R. Hyde (acoustics); Schirmer
Engineering Corporation (life
safety); Specifications
Consultants, Inc.
(specifications); Thomas Ricca
Associates (food service)*

General contractor:

M. A. Mortenson Company





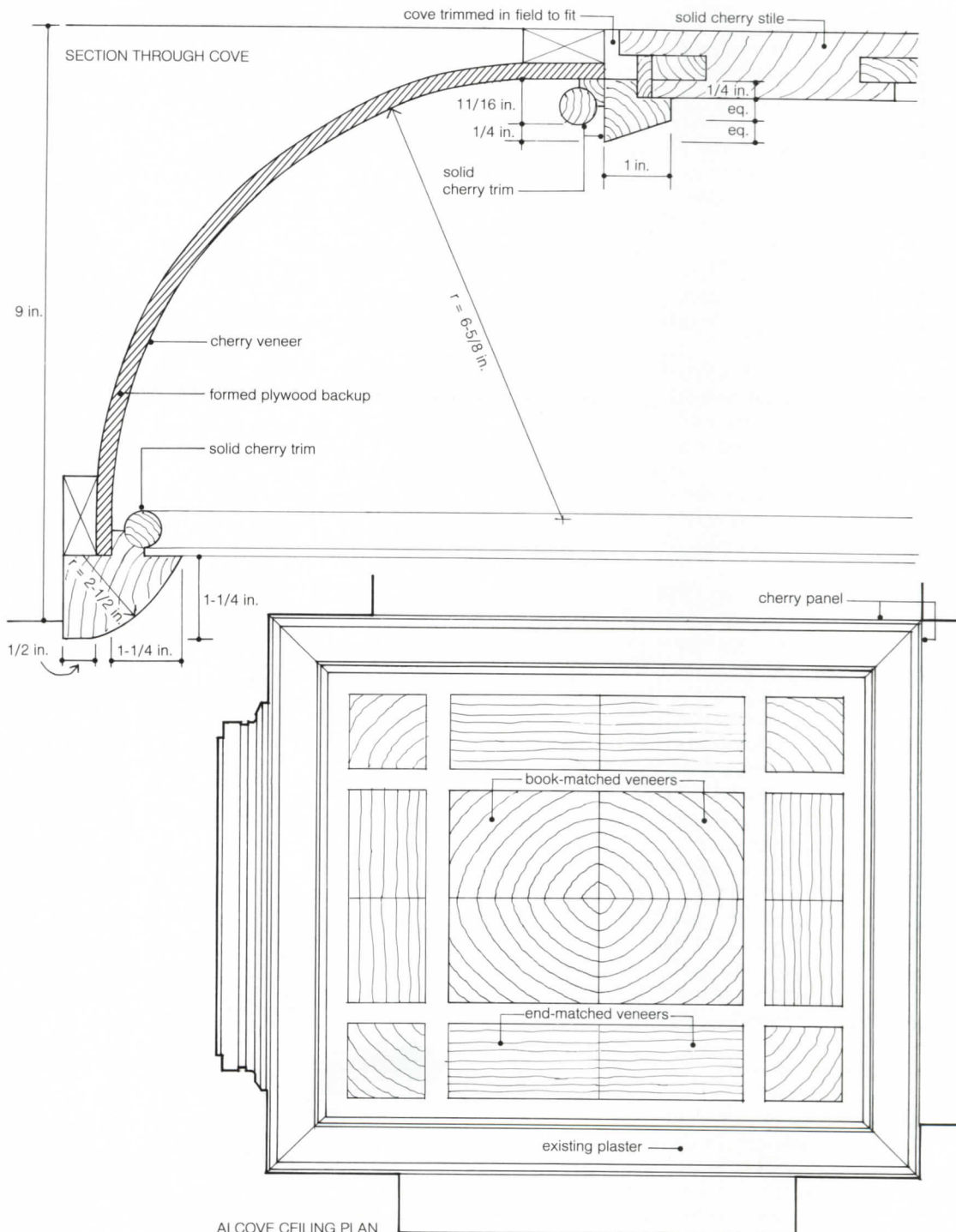
Below the surface

Two interiors by Bentley LaRosa Salasky reveal the esthetic potential and technical complexity of fine architectural woodworking.

Although wood is in many ways a forgiving material, architectural woodwork demands that the designer understand the innate qualities of each species, such as grain, available sizes, and types of possible cut. Even with careful detailing, it takes a skilled shop to recognize the fabrication and finish characteristics of each type of wood. Yet, woodwork's relatively high per-unit cost is repaid in a richness of texture rarely found in synthetic materials.

Bentley LaRosa Salasky had the opportunity to explore wood's inherent qualities in the two projects shown on these pages. Like many New York City practices, this three-partner firm once saw interiors as a means to an end—a stepping-stone to the design of freestanding buildings—since all the principals are trained architects. Today, however, BLS sees interiors as ends in themselves, primarily because of the close scrutiny to detail such commissions afford.

The luxury of material, pattern, and color in the projects illustrated here can distract from the essentially architectural sensibility brought to them. In an apartment on Park Avenue, for example, the architects utilized a low partition and decorative column (opposite) to divide an ill-proportioned L-shaped room into two rectangular spaces housing an informal sitting area and a small alcove study. Rejecting a literal historicist approach, the architects chose sumptuous materials, including cotton twill fabric wallcovering and cherry cabinetry and woodwork, combined with spare, almost abstract detailing. Instead of complex combinations of traditional moldings, they devised simple trim profiles that are in keeping with the size of the space. The top trim of the wainscot is a simplification of the casing profile (top and



In remodeling a series of rooms in a Fifth Avenue apartment, Bentley LaRosa Salasky selected cherry for a new wainscot, running trim, and paneled ceiling. The grain of ceiling-panel veneers runs perpendicular to the long side of the larger den. Within an

alcove defined in part by a nonstructural column (opposite), book-matched veneers denote the center of the room, while vertical-grain veneers parallel the outside walls (ceiling plan above).

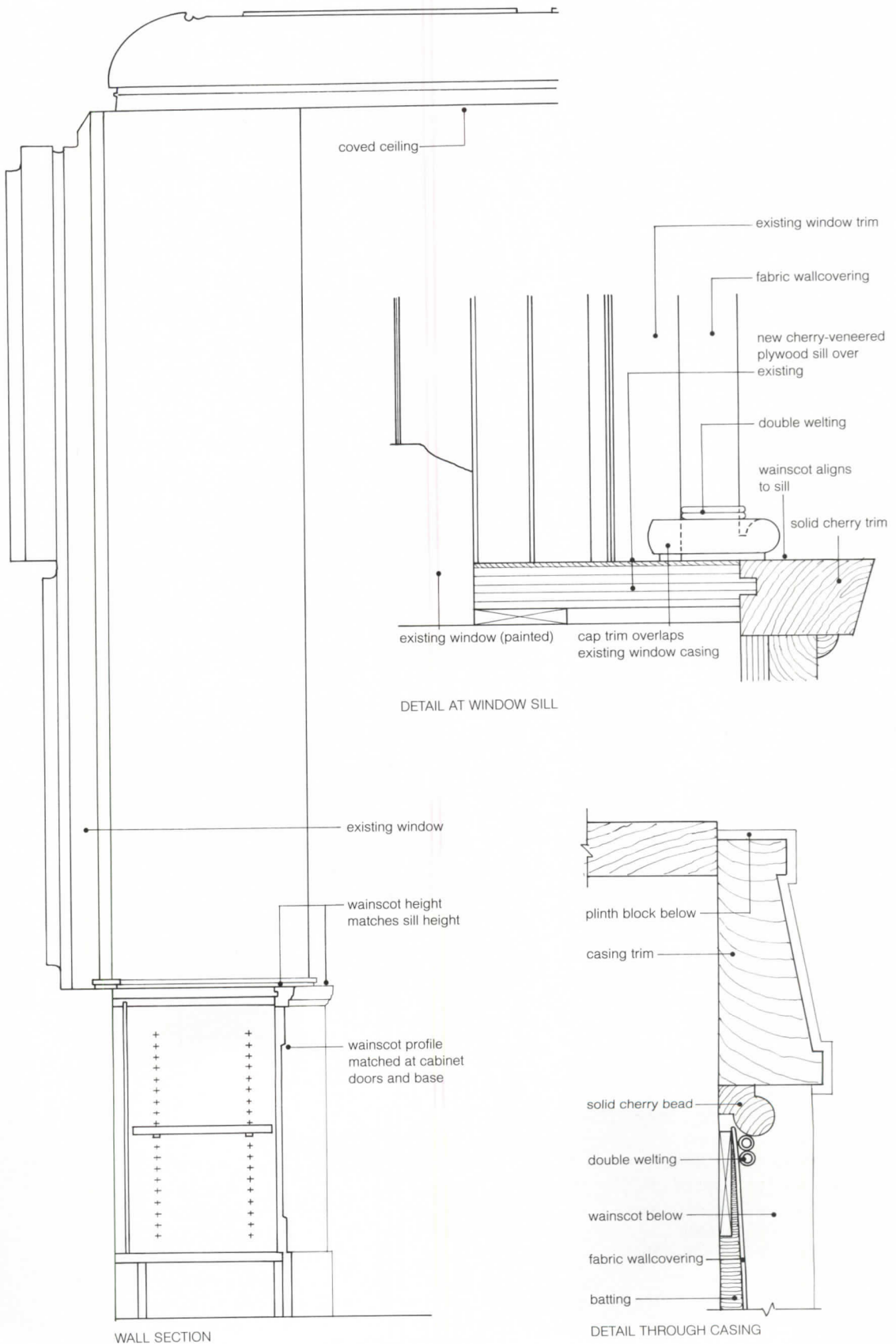
bottom right drawings), which is itself an abstracted version of a traditional door surround. A three-quarter-round bead is carried throughout to create an additional shadow line and to cover transitions from wood to wood, wood to fabric, and cove to flat surface (page 109). Though the traditional transparent coating for such woodwork is lacquer, BLS here chose an oiled finish even though it requires more frequent renewal. Sal LaRosa notes that it allows the natural grain and color to read through even as sunlight changes the wood over time. "It's the difference between the way a watercolor drawing looks by itself versus the same drawing under glass," says Ron Bentley.

In another apartment, on Fifth Avenue (pages 112, 113), the architects reconfigured the space to loosen up the seating plan in what had been a corridorlike den. The woodwork pieces are more overtly architectural, having been treated as cleanly sculpted, spacemaking elements within the room. A purple-heart-topped, French ash-veneered wainscot ties together a built-in banquette and low dry-bar cabinet and surrounds an existing powder room that bulged conspicuously into the room. Within a separate study, the alternating solid-and-void of the cabinet echoes the configuration of the room.

For both projects, BLS either specified or custom-designed all finishes and furnishings. In the latter category is a desk (page 112), the prototype for a line now offered by Brickel, and a coffee table (page 113). That architectural details and surfaces appear to harmonize so closely is no accident. BLS typically studies profiles in cardboard model form, and then has samples made up by woodworkers. Details are checked prior to fabrication not just on shop drawings, but on-

A cherry-veneered wood cove is used in lieu of a crown molding to alter the vertical proportions of the room and make a smooth transition above existing window openings (section). The windows themselves were painted to fade into the background. New

casework fills the opening below the windows, and the sill becomes the datum line for the wainscoting (top detail below and bottom left photo opposite). A solid cherry bead marks the transition between door-casing trim and welting that anchors the wall fabric (top right photo



this page and bottom right detail opposite). Once an awkwardly proportioned ell, a new seating area was divided from an alcove study by a low paneled divider containing bookshelves and a faceted wood column (below left). Consistent with detailing developed for the

den, cabinetry within a remodeled bathroom was made from mahogany, a more moisture-resistant wood than cherry, and finished in polyurethane (bottom right).



site as well, using full-scale cardboard mockups. While this is a labor-intensive process, it avoids the rejection of completed pieces or costly after-fabrication changes if details are not fully understood by the shop or do not turn out as anticipated.

"Because of the richness of the materials we use, people see these interiors as a decorator's approach," says Franklin Salasky. "But we pay the same attention to the profile of a piece of furniture as we do to the proportioning of a room, or the shape of a piece of trim. These are things a decorator would never do." What with so many architects preoccupied by shapemaking—whatever the material—lavishing attention on what are, at base, a project's tiniest elements (but which are often the most immediately perceived) is something that many *architects* "never do" either. *James S. Russell*

Publications by the Architectural Woodwork Institute, Arlington, Va., offer data on species, fabrication, and finishes. Associations representing species or groups of species, such as the Architectural Walnut Association, can supply specific data. Fitches—samples of veneer patterns representing the exact log from which the final panels would be made—may be ordered from woodwork houses.

Architect:

Bentley LaRosa Salasky Design—Ronald Bentley, Salvatore LaRosa, Franklin Salasky, partners-in-charge; Jeffrey English (Fifth Avenue apartment)

Contractor:

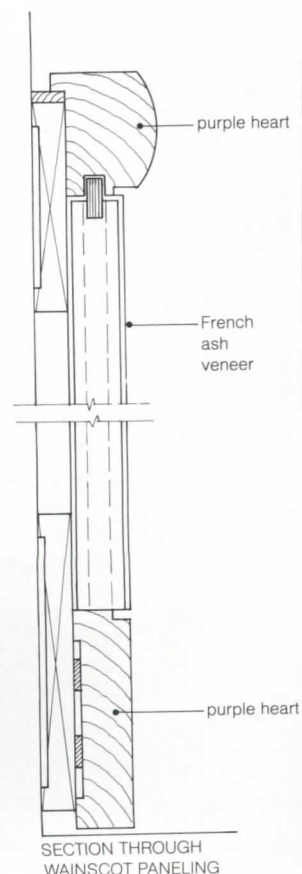
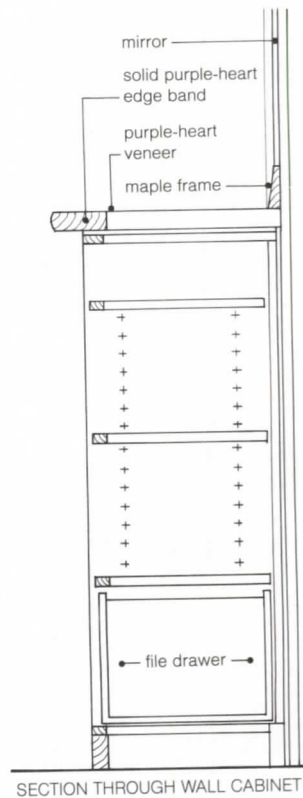
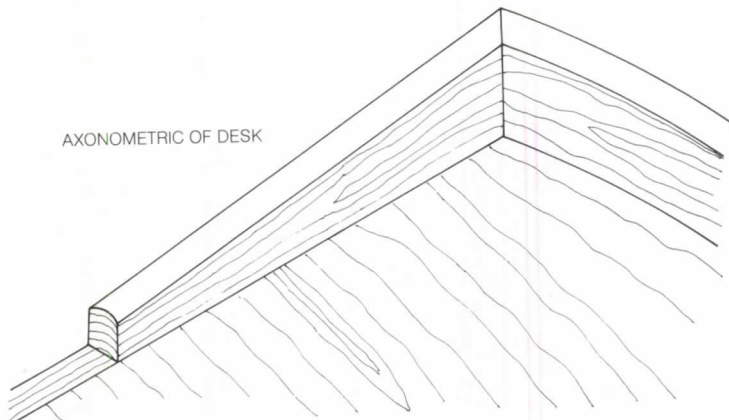
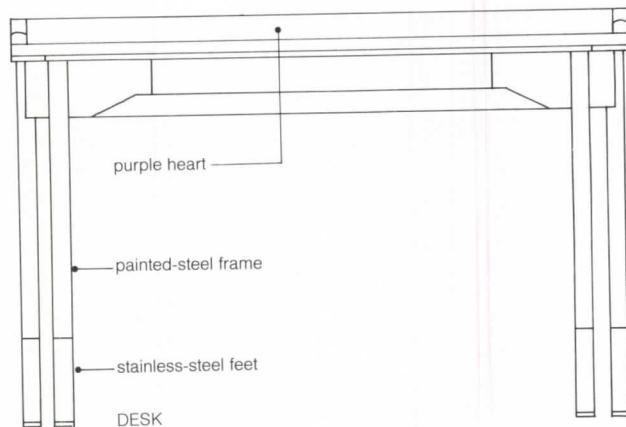
Sanchez Interior Carpentry (Fifth Avenue apartment)

Architectural woodwork:

Constantine Joannides, Ulli Shuppar, Kalle Fawset (Fifth Avenue apartment); Pilot Woodworking (Park Avenue apartment)

Book-matched French-ash veneers form a smaller-scale rhythm within the surfaces of paneling in the den of a Park Avenue apartment, and the wood's characteristic crossfire (a pattern that runs across the grain) adds a subtle horizontal linearity. Low cabinets divide a

seating area into usable spaces, while bands of veneer turn a formerly obtrusive powder room into a sculptural element (opposite). In a study, details for a mirror, a custom-designed desk, and a cabinet were carefully coordinated (below).





New products: windows for historic renovation

Every historic window replacement is essentially a custom design, attempting to reflect the materials, appearance, and function of the original fenestration. Authenticity standards for restoration, set by the National Park Service and other preservation groups, have risen, and manufacturers have responded with windows that combine standardized components with project-specific details.

1. Tudoresque wood

Converting a 1920s transient hotel into low- and moderate-income apartments required custom wood-framed casements that met all City of Chicago landmark guidelines. Marvin Windows, Warroad, Minn.

Circle 200 on reader service card

2. Multiple mullion

The remodeling of the 1887 Winchester, Massachusetts, Town Hall preserved the original sills and molding while adding new double-hung wood windows with multiple lights of insulating glass. The PVC jamb liner is a charcoal color that blends with the dark gray-green exterior paint. Rolscreen Co., Pella, Iowa.

Circle 201 on reader service card

3. Texas restoration

Recent work on the Houston City Hall required thermally efficient windows that would lower the building's air-conditioning bills, in a metal that would not react with the intricate '30s cast-aluminum spandrels. The new windows project only 1/8-in. beyond the original plane, with almost identical jam sight lines. Large openings have divided-light insulating glass. Traco, Pittsburgh.

Circle 202 on reader service card

4. New York Deco

Developed as a replacement for steel casements widely used in prewar New York City apartment buildings such as Emery Roth's Beresford, aluminum Designline-90 windows provide in-swing, project-out, awning, and fixed-light functions. The design achieves narrow sight lines, with

a glass-to-glass dimension for intermediate vertical and horizontal members of only 3 in. Glass is recessed 1 in. from exterior frame plane, set with a 3/8-in. simulated putty bead. Skyline Windows, New York City. *Circle 203 on reader service card*

5. Mill finish

Though National Park Service rehabilitation guidelines aim for replacement in kind, customized Trim-All aluminum windows qualified as substitutes for deteriorated wood industrial sash at a 100-year-old New England factory. Existing panning dies were adapted to capture the exterior leg of the frame, minimizing sight-line encroachment. EFCO Corp., Monett, Mo.

Circle 204 on reader service card

6. Narrow sight-line steel

The Landmark window is a replacement for this maker's out-of-production Holford steel window, updated with high-performance, corrosion-resistant coatings, integral-groove weatherstripping, and snap-in glazing beads. Hope's Architectural Products, Inc., Jamestown, N. Y.

Circle 205 on reader service card

7. Double-hung

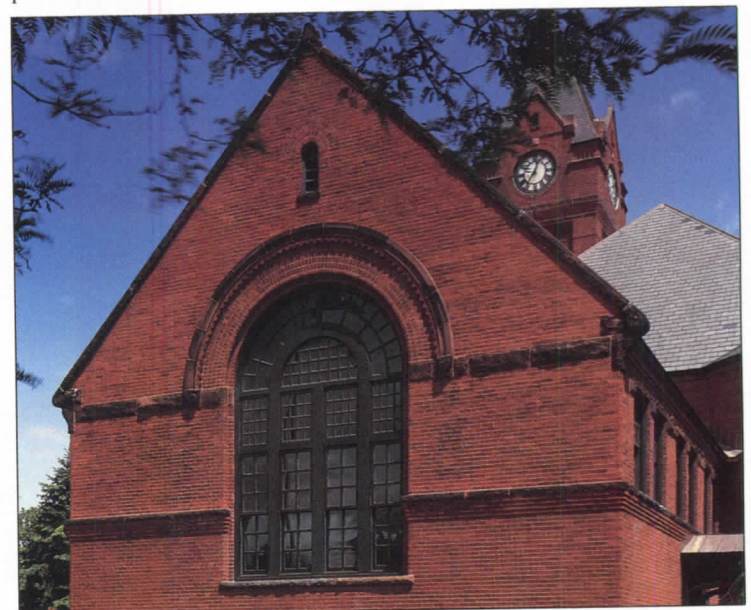
The Blackstone aluminum window is described as replicating virtually every detail of the wood-framed originals used in the landmark Chicago hotel. Features include an extended lower lift rail and a narrow panning design. Graham Architectural Products Corp., York, Pa.

Circle 206 on reader service card

8. Custom color

A tilt-sash, commercial double-hung window has details such as an offset muntin that replicate the original wood windows used by architect Samuel Hannaford on the Cincinnati, an 1882 French Second Empire hotel. The trim color was matched exactly. Season-all Industries, Inc., Indiana, Pa.

Circle 207 on reader service card
More products on page 145



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4



5



6



7



8

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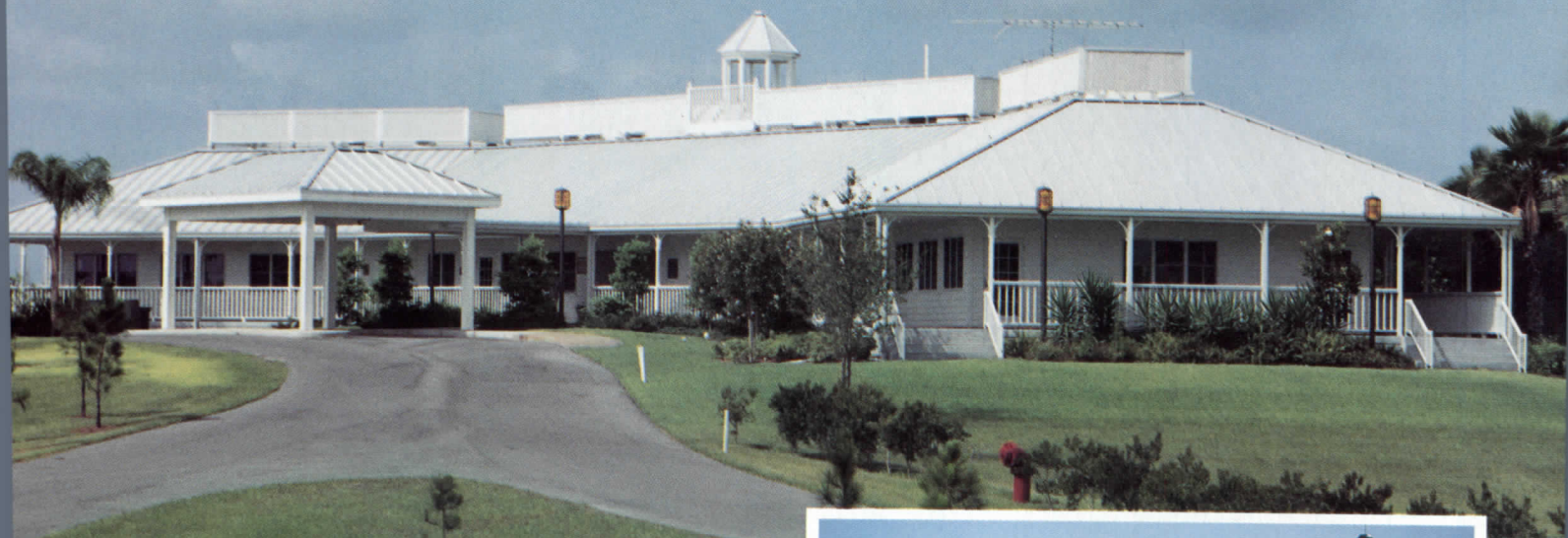
Tampa 813/752-3474

San Antonio 512/661-2409

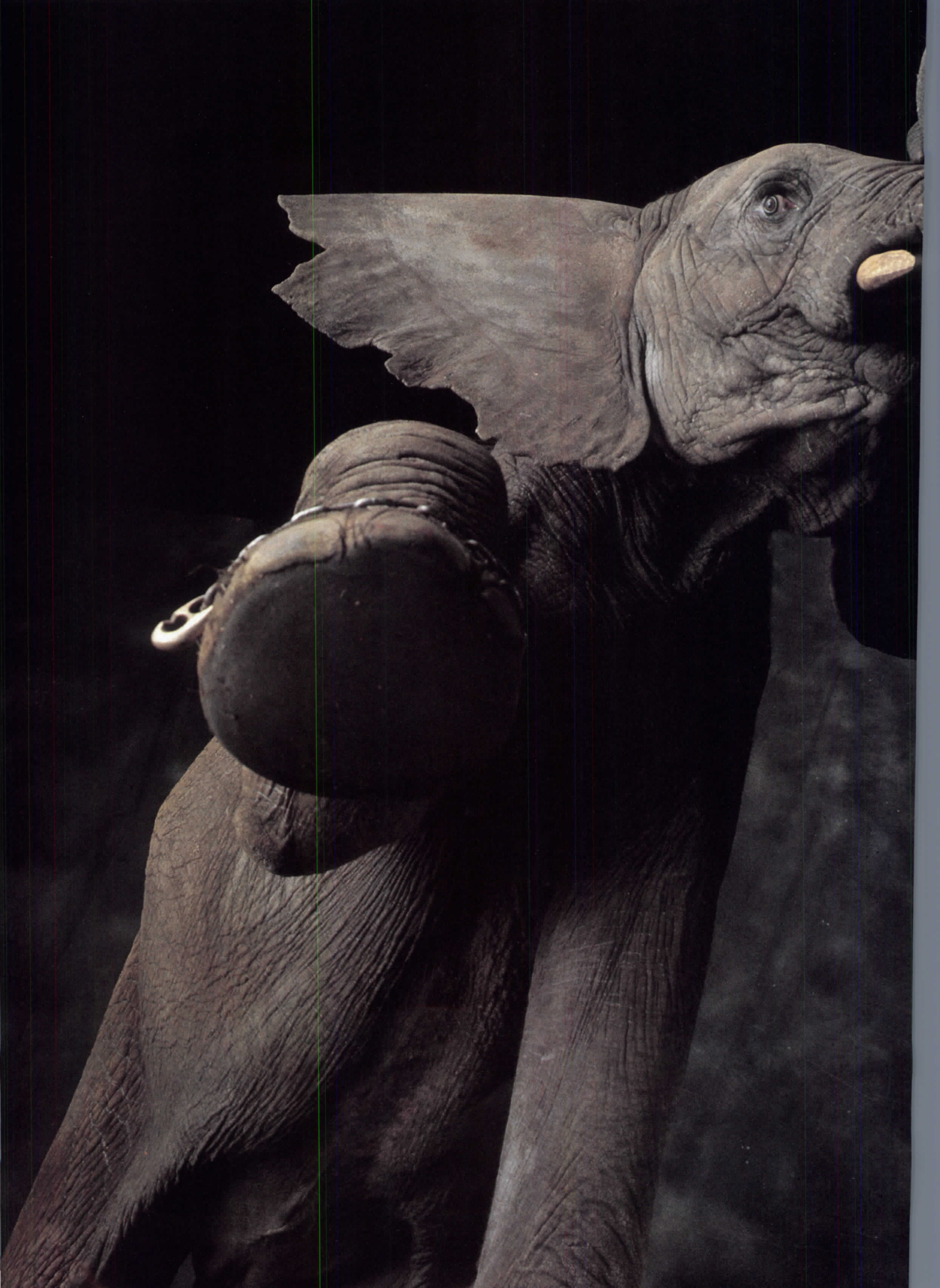
Richmond 804/526-3375

Dallas 214/988-3300

Indianapolis 317/398-4400



Project: Coral Oaks Golf Course, Cape Coral, FL
Architect: W.R. Frizzell Architects, Inc., Ft. Myers, FL
Roofing Contractor: Crowther Roofing Co., Ft. Myers, FL



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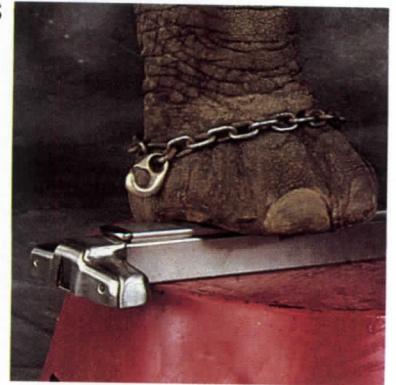
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A/E/C Systems '89 product roundup

By Steven S. Ross

Software vendors are betting that architects will come to embrace 3-D CAD. At this year's A/E/C Systems show, they introduced dozens of new packages to persuade the profession to do just that.

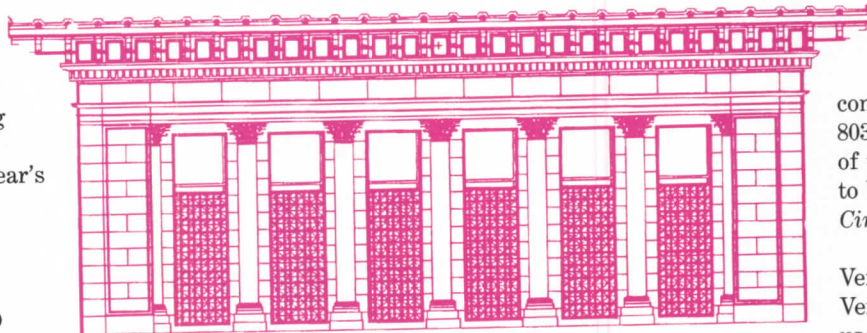
Of course, most of the 3-D software requires more powerful computers than the older 2-D versions that architects were just getting used to. Luckily, fast computers based on the Intel 80386 processor (so-called "386" machines) are becoming commonplace. And Apple has speeded up its Macintosh, too.

And, as long as the office is getting one of these fast and fancy systems, why not automate the specification process and add a CD-ROM disk drive? The CD-ROM disk, which looks identical to audio digital disks, stores up to 540 megabytes of information—about the same as 1,500 old floppy disks. That's more than enough to handle dozens of furniture catalogs on one disk, or enough drawing details to keep every plotter in a major city churning for months. The thought has occurred to many at the same time. Thus, for the first time at A/E/C Systems, a whole show-within-a-show was devoted to specification-writing.

Market shakeout

The new software systems just emerging are not only more complex to write. They are also more complex to service. The result: the biggest shakeout and market realignment in years. At the show, it was announced that Cadkey, perhaps the biggest power in the mechanical engineering CAD world, would acquire Microecture, the developer of DataCAD. Fujitsu agreed to market Lockheed's CADAM personal-computer-based software.

Mr. Ross is a prominent computer consultant and a regular contributor to RECORD.



Four of the largest developers of AutoCAD add-on products have merged into two new firms. Founders of Archsoft Group, the original developers of AutoCAD AEC Architectural, and Chase Systems, a developer of many other AutoCAD add-ons, joined to start a new company, ASG. At the show, the firm introduced six AutoCAD add-ons with a common look and feel, for better control of drawing layers, plumbing, hvac, 2-D piping, 3-D piping, and structural systems.

Circle 300 on reader service card

Two other developers of AutoCAD add-ons, Acuware and DCA Engineering Software, also merged just before the show. Acuware's AutoPE structural software will be the basis for the merged firm's new offerings.



1. Schlumberger's MacBravo! facilities software
2. Sun 386i workstation with ECAD software
3. Generic's CADD Level 1, Mac version
4. Bruning plotter output; Precision Visuals software

Auto-Architect tailors AutoCAD for architectural uses. Many DCA add-ons for the Macintosh version of AutoCAD were announced at the show.

Circle 301 on reader service card

Eclat Intelligent Systems, which recently began publishing a CD-ROM disk service that automates many manufacturers' catalogs, especially for furniture and other interior products, joined with SuperSpec, Inc. The SuperSpec specification-writing system will be available in an automated form on Eclat's IntelliFile CD-ROM.

Circle 302 on reader service card

Altek and F. W. Dodge joined forces to introduce a one-step take-off and estimating system to be used with standard-size paper construction drawings or scan film.

Circle 303 on reader service card

Santa Cruz Operation, perhaps the largest supplier of UNIX and XENIX operating-system software for personal computers, says it is joining with Autodesk to promote training of users and third-party developers in SCO UNIX/XENIX versions of AutoCAD.

Circle 304 on reader service card

Operating system choices

One of the most important pieces of news for the architect involves a product that most architects will not buy directly from the supplier: 386/DOS-Extender software from Phar Lap, Cambridge, Mass. It allows CAD packages to use up to 4 gigabytes of memory in

computers that use the Intel 80386 processing chip. Our part of the software industry seems to be standardizing on Phar Lap. *Circle 305 on reader service card*

VersaCAD displayed its new VersaCAD/386 software that uses Phar Lap to run workstationlike on a 386 computer, leaving plenty of memory—over 400 kilobytes—to run network software and plotter spoolers at the same time. *Circle 306 on reader service card*

Autodesk introduced AutoSHADE/386, which uses Phar Lap, and promised a version of AutoCAD itself using Phar Lap for late this year. *Circle 307 on reader service card*

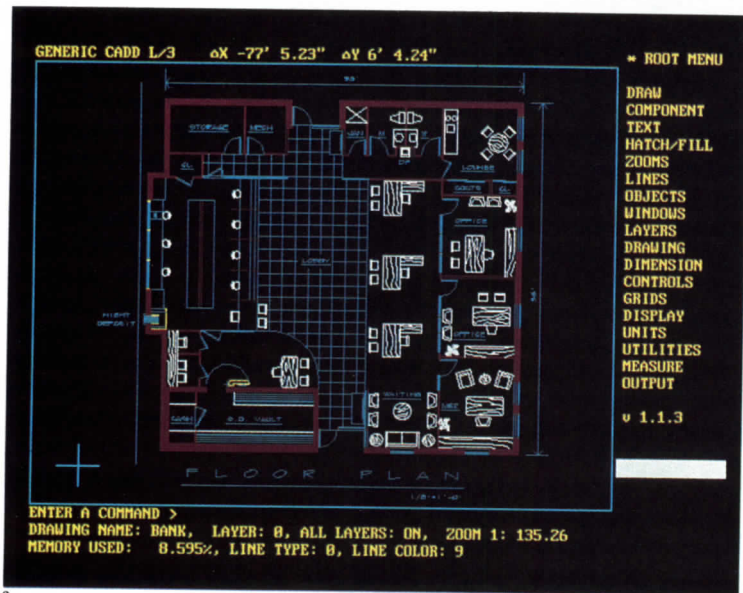
Other firms showing Phar Lap-compatible software and hardware included Nth Graphics' Nth Engine Display Controller. *Circle 308 on reader service card*

DFI demonstrated I-DRAW Plus, the first 386 version of its CAD software. The firm hedged its bets, releasing a UNIX version for Sun Microsystems color workstations as well. *Circle 309 on reader service card*

Not on display, but discussed by Phar Lap, were CADUL GmbH's CAD-UL CAD package (which previously was available only for use on minicomputers), Hewlett-Packard's ME10/DOS 2-D mechanical-design system, UNICAD/386 from Hochtief AG, and Presentation/386 and Paint/386—high-quality graphics and presentation packages from Wasatch Computer Technology. *Circle 310 on reader service card*

Phar Lap may be the last gasp for the PC-DOS and MS-DOS operating systems, however. Operating systems that can

It was the year of 3-D at the June show in Anaheim as dozens of software vendors introduced new packages to entice architects away from the 2-D versions.



6,000 contract-furniture symbols in plan, elevation, and 3-D views. A powerful catalog-translation program turns the generic views into detailed specs for the 45,000 products in 125 manufacturer catalogs supported by Computer Aided Planning, Inc.

Circle 317 on reader service card

Eclat Intelligent Systems says manufacturers continue to sign up for distribution of their catalogs electronically through IntelliFile. The firm expects its new link with SuperSpec will make use of the system more enticing.

Circle 318 on reader service card

SuperSpec, which debuted last year as a paper-and-pencil checklist that architects fill out and send to the company for preparation of a completed spec, has now been automated.

SuperSpec checklists can now be filled out on computer and sent by toll-free modem. The completed specification is transmitted back the same way,

and printed out in architects' offices. Selected sections from divisions 0 through 14 are available through SuperSpec. Architects can continue to use the paper-and-pencil checklists if they wish.

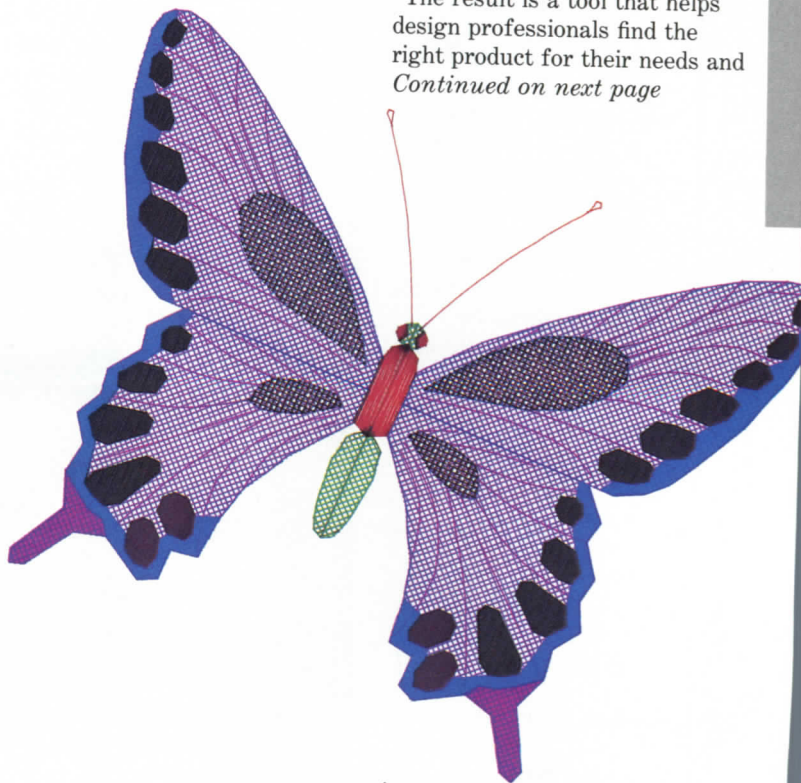
Circle 319 on reader service card

Sweet's, the construction-product information arm of McGraw-Hill Information Services, released the second edition of its CD-ROM disk containing SweetSearch (an electronic index to the Sweet's Catalog File) and SweetSpec (the automated specification-writing service).

Changes since the first disk was released in January include more specification sections, more products, and for the first time, a manufacturer's catalog, from Carrier Corporation.

"It takes the tremendous storage capacity of a compact disk and harnesses it to the information sorting and processing power of the personal computer," said Rick Jannott, general manager of Sweet's. "The result is a tool that helps design professionals find the right product for their needs and

Continued on next page



4

directly address more memory are coming, and new software is already being designed with such operating systems in mind.

The clear front-runner for a new operating system emerged at this show: UNIX, and a variant, XENIX. Only a handful of new products are using OS/2, highly touted by IBM. It seems that OS/2 is coming so late that software developers have had to overcome the relative lack of UNIX graphics standards instead. The result: Architectural offices will see a merging of mainframe, mini, workstation, and personal-computer operating systems in the next few years. That will make life easier, and investments in new equipment more secure.

Circle 311 on reader service card

Computer-assisted specifying

The focus was on SweetSpec from McGraw-Hill, along with many automated catalogs, on floppy disk and on CD-ROM.

3-D-FM, the furniture-specifying and inventory-tracking system, is now available nationally from 3-D-ISIS. The program runs inside AutoCAD.

Circle 312 on reader service card

The Airstream Division of Penn Ventilator offered its free LouverCAD software, to move details of its products directly into most CAD drawings.

Circle 313 on reader service card

The AIA demonstrated Masterspec Interiors, with sections on such topics as textile wall coverings, systems furniture, woodwork, caseworks, plumbing fixtures, and sound-masking systems.

Circle 314 on reader service card

ASHRAE offered 300 tables taken from the 1989 Fundamentals Handbook on disk, with software that allows users to manipulate the information.

Circle 315 on reader service card

Artel Software introduced Atelier Interiors, a Macintosh CD-ROM-based color data library of furniture, materials, fixtures, and equipment. The system can produce cost estimates, project analyses, specifications, and so forth. It is compatible with most Macintosh CAD software.

Circle 316 on reader service card

A CD-ROM product updated for the show is CAPgeneric, version 4.0 of a library of more than

assembles a complete and accurate specification document quickly." Jannott says the disk is the most advanced commercial use for CD-ROM technology yet developed.

Circle 320 on reader service card

Tam-CADD is the first interactive detail and specification software for roofing. The new package, from Tamco Asphalt Products, generates CSI-formatted specifications, and can handle multiple roofs for big projects.

Circle 321 on reader service card

Weather Shield announced QuikCAD, software for users to select from its catalog of windows and doors and insert elevations and specifications for them into any AutoCAD 10 drawing. The release date is scheduled for this month.

Circle 322 on reader service card

Version 2.0 of Building Code Analyst, a HyperCard-based guide to the general provisions of the Uniform Building Code, was announced by Architectonica. With this software, Macintosh users can perform "what-if" scenarios and check code-related design parameters quickly and inexpensively.

Circle 323 on reader service card

Mac software explosion

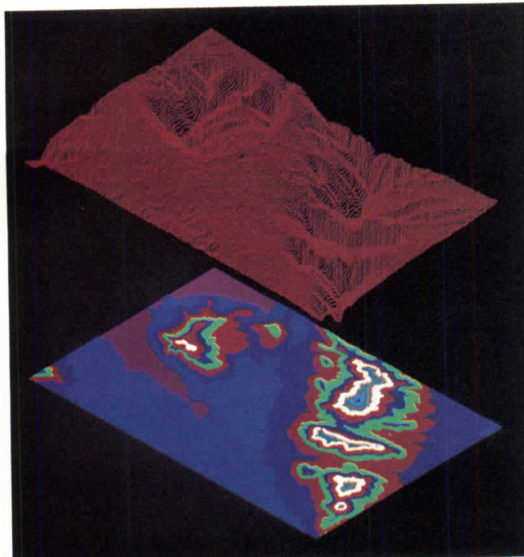
ArchiCAD version 3.4 was announced by Graphisoft, San Francisco. It includes an improved ability to import and export DXF files to and from AutoCAD, and PICT format files for desktop publishing. This 2-D drafting/3-D modeling and database package can now handle dimensioning more easily, and has better facilities for editing fill patterns and placing walls. There is also a new plotter driver, one of the most versatile available for Macintosh software.

Circle 324 on reader service card

COMPUnearring (formerly Erez Anzel Software) released a new version of its LANDesign package for the Mac.

Circle 325 on reader service card

Dynaware Corp. showed improvements to its DynaPerspective 3-D



5

presentation and modeling software, including DXF import and export capability.

Circle 326 on reader service card

Generic Software, now a wholly owned subsidiary of Autodesk, released its Generic CADD Level 1 software for the Macintosh. The price is only \$99.95.

Circle 327 on reader service card

Gimeor released Architrion II for the Mac. It now supports color.

Circle 328 on reader service card

Graphic Magic introduced Multiframe, a structural design package for the Macintosh. It can handle problems as complicated as high-rise structures. A library of standard structural shapes, included, can be customized with nonstandard steel shapes as well as concrete and lumber sections.

Circle 329 on reader service card

Graphsoft released Blueprint, a 2-D drafting package for the Mac. The firm also announced Azimuth, mapping software for the graphic artist, for shipment in late summer. Graphsoft was the developer of MiniCad+, a 2-D/3-D Mac package.

Circle 330 on reader service card

IDD announced two new symbol libraries to be used with its Dreams 2-D CAD software for the Mac. The new libraries are for light commercial construction and for preliminary design. The firm also announced a plotter driver that supports over 80 models of plotters and up to 32 pens.

Circle 331 on reader service card

Paracomp announced a substantial upgrade to its Swivel 3-D drawing and modeling program for the Macintosh. Version 1.1 now includes image mapping, better drawing tools,

better animation, and better support for encapsulated Postscript.

Circle 332 on reader service card

Silicon Beach Software showed an upgrade to its Super 3-D modeling and animation package for the Mac. The package makes full use of Mac II color capabilities. Animation is easy; there is a "Tweening" command that "fills in" missing steps in the animation automatically.

Circle 333 on reader service card

VersaCAD showed its latest upgrade to its Macintosh package, version 2.1, for the first time. The package now sports tolerancing, more complete "undo" and "redo" commands, and graphical display of wide lines.

Circle 334 on reader service card

Visual Information Development, Inc. introduced its Dimensions Presenter 3-D imaging and animation software for the Mac. The software, which features realistic shading, imports files from other CAD products, or from the firm's own Design Dimensions 3-D CAD.

Circle 335 on reader service card

3-D CAD and Modeling

Sigma Design announced that its Arris package is now available on the Sun386i workstation with new GXi graphics accelerator board. The Arris package now runs on Sun systems ranging from the low-end 386i to the SPARCstation and Sun-3.

Circle 336 on reader service card

CADAG Research & Development displayed its NoVA 3-D for presentations. It handles walk-throughs and solid shading on MS-DOS and PC-DOS computers, and on the Silicon Graphics workstation. It can export output to Microsoft Windows, AutoCAD, and Ventura Publisher. Up to 11 views can be on-screen at once. The software also calculates real sun shadows for anyplace on earth, at any time of the day and year.

Circle 337 on reader service card

Cadvance 3.0, the 3-D version released this past March, was demonstrated to large audiences.



6

The package is fast on MS-DOS and PC-DOS computers, offers an intuitive 3-D interface, and has a direct two-way link to dBase and similar software. PRISMA is the firm's UNIX-based software for larger workstations.

Circle 338 on reader service card

Evolution Computing introduced FastCAD 3-D for IBM computers and compatibles. True to its name, the package, like its well-regarded 2-D predecessor, is fast indeed. The 3-D interface is intuitive as well. It allows users to animate the viewpoint and walk through the drawing.

Circle 339 on reader service card

Generic Software, now a wholly owned subsidiary of Autodesk, showed its inexpensive Generic 3-D Drafting software for the first time. It is scheduled to be available late this summer.

Circle 340 on reader service card

Point Line CADD demonstrated software for creating stereo-3-D views and animations on the 3-Display monitor system from StereoGraphics Corp.

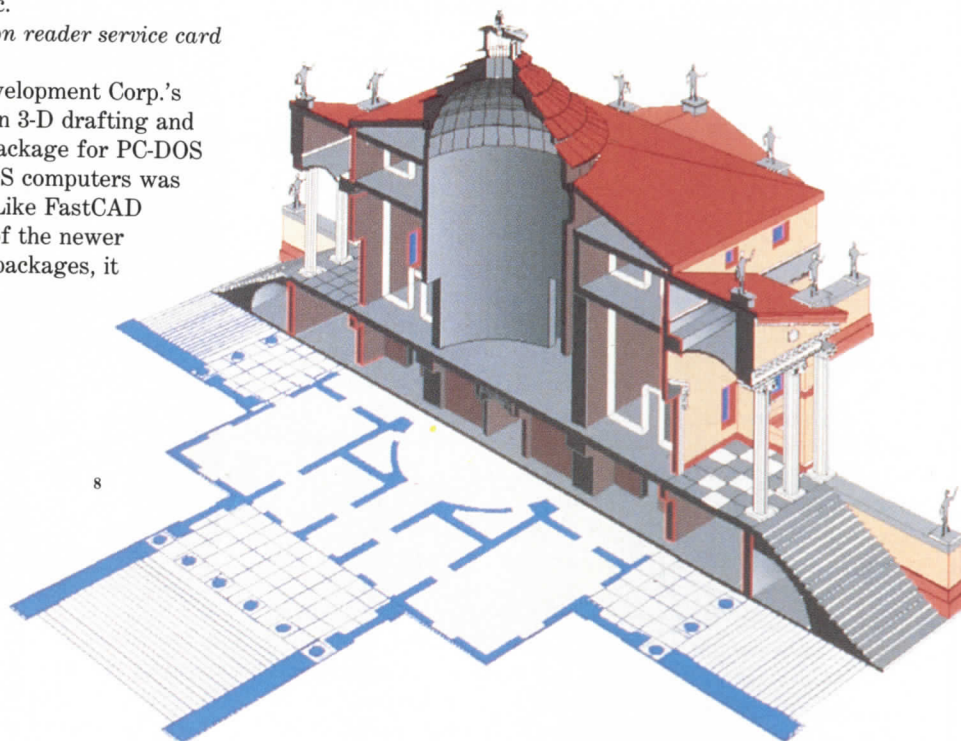
Circle 341 on reader service card

Schlumberger CAD/CAM demonstrated its new

MacBRAVO! facilities design, layout, and mapping software for the Mac.

Circle 342 on reader service card

Schroff Development Corp.'s SilverScreen 3-D drafting and modeling package for PC-DOS and MS-DOS computers was displayed. Like FastCAD and many of the newer Macintosh packages, it



5. *Intergraph's Microstation, MAC version*

6. *MapInfo by Mapping Information Systems*

7. *Calcomp's DrawingMaster plotter*

8. *ArchiCAD by Graphisoft, Mac version*

is designed to handle surfaces as surfaces rather than as a collection of lines. This allows smaller files and faster execution. SilverScreen goes a step further than most personal-computer software, however, in being totally object-oriented, rather than layer-oriented. That is, objects, no matter where they are in the drawing, can be treated as single entities. In layer-based systems, the objects have to be on the same layer to be treated that way.

Circle 343 on reader service card

A new version of its 3-D CAD package especially for DOS computers using the 80386 processor, PC.BAT II, was shown by Batisoft. The interface allows access to almost all functions through the digitizing tablet. In fact, the software can be run without a keyboard. The firm, based in France, is just entering the American market.

Circle 344 on reader service card

Plotters and printers

Manufacturers tried to slow the inevitable slide in plotter prices by adding more features. At the same time, thermal printing technology is offering a low-cost alternative to electrostatic plotters for some applications. SSC Softsystems showed an

upgrade to its PLUMP software plot spooling system. It can now send output through the serial and parallel ports at the same time.

Circle 345 on reader service card

Advanced Matrix Technology (AMT) introduced its Intelli-Plot C-size color dot-matrix printer/plotter. It emulates Hewlett-Packard desktop plotters and sells for \$1,945. Older Accel-500 printers can be factory-upgraded as well.

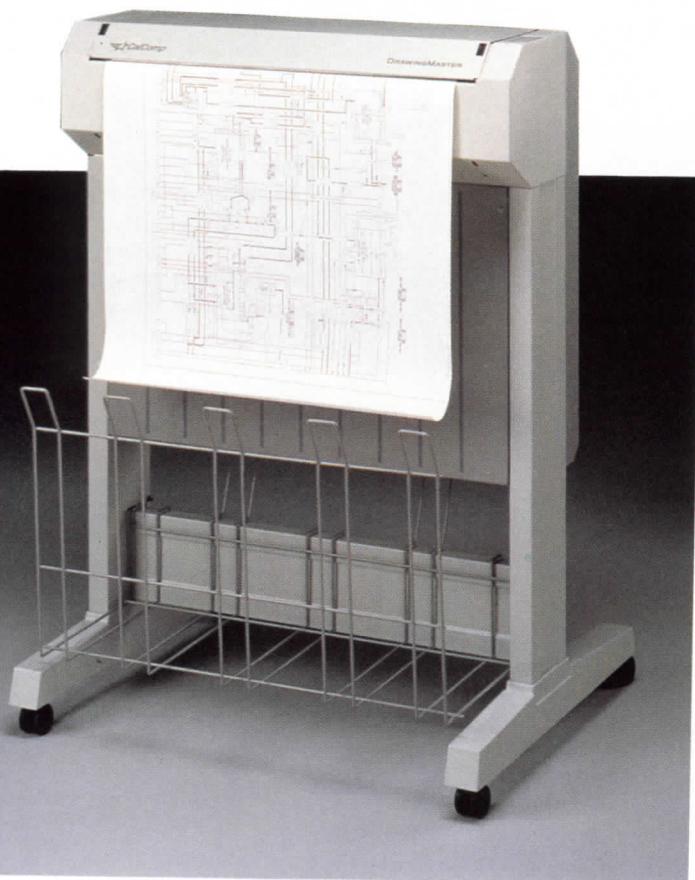
Circle 346 on reader service card

Bruning introduced its ZETA 600, a D-size 8-pen plotter for only \$4,395, and four large-format plotters (ZETA 924, 924PS, 936, and 936PS) for sheets up to 36 inches wide and 120 feet long. The firm also showed thermal transfer color printers in the A and A/B sizes.

Circle 347 on reader service card

CalComp showed a wide variety of plotters released in the past year, at a kinetic booth that drew as many raves as the company's products. The DrawingMaster 52224, introduced in April, uses thermosensitive paper or film to produce fast two-color

Continued on next page



(black/red) plots up to 24 inches wide. The media travels at 2 inches a second (for 200 dpi resolution) or 1 inch a second (400 dpi), speeds and resolutions similar to electrostatic printers. But at a list price of \$14,995, the cost is only half as much. CalComp's new 300 dpi ColorView color printer/plotters were also on display. They use the now familiar thermal transfer technology to print on paper or transparency film.

Circle 348 on reader service card

Enter Computer announced a price cut on its 8-pen Encad plotters. The SP2800 for A- to E-size is now \$5,495 and the SP1800 (up to D-size) is \$4,295. They feature quiet servo-motor drives. The low-end Sweet-P A/B plotter is now only \$795. Enter is giving plotters to dealers, in the hopes of demonstrating their quality to end-users.

Circle 349 on reader service card

Gerard Research Inc., introduced the ProPlotter, a C/D size pen plotter for only \$1,995.

Circle 350 on reader service card

Hewlett-Packard showed enhancements to its 7600-series electrostatic plotters, including takeup reels for unattended plotting, new toner, and clear and matte polyester film media. HP is making a move to strengthen its dealer network. Not only did the company release numerous new products in the first half of the year—everything from three 80386-based personal computers and high-resolution displays—but it has also offered dealers free use of entire systems for demonstrations.

Circle 351 on reader service card

Houston Instruments introduced its fast ink-jet printer/plotter, the JetPro 360, priced at \$1,495. This monochrome unit prints at 360 dpi. It can make final plots up to B-size, and drafts up to E-size. With JetView and ProPlot software, included in the price, the unit accepts plots in the HPGL and DM/PL languages. HI also introduced the Image Maker, a \$1,295 A/B 8-pen plotter, and lowered the price on its E-size DMP-62 plotter, to \$5,300.

Circle 352 on reader service card

JDL introduced its Model 950 ProPlotter, a color dot-matrix printer/plotter. Like the older AutoPlotter 850+, the new unit can plot in up to 20 colors. But the 950 handles drawings up to 24 inches wide (D-size), instead of only 16 inches. Resolution is as high as 360 dpi. The ProPlotter understands HP-GL and can handle raster images as well.

Circle 353 on reader service card

Neuendorf Systems released ConnectCAD, a printer/plotter driver that links AutoCAD with Intel's Connection CoProcessor board. It allows drawings up to E-size to be FAXed, directly from AutoCAD.

Circle 354 on reader service card

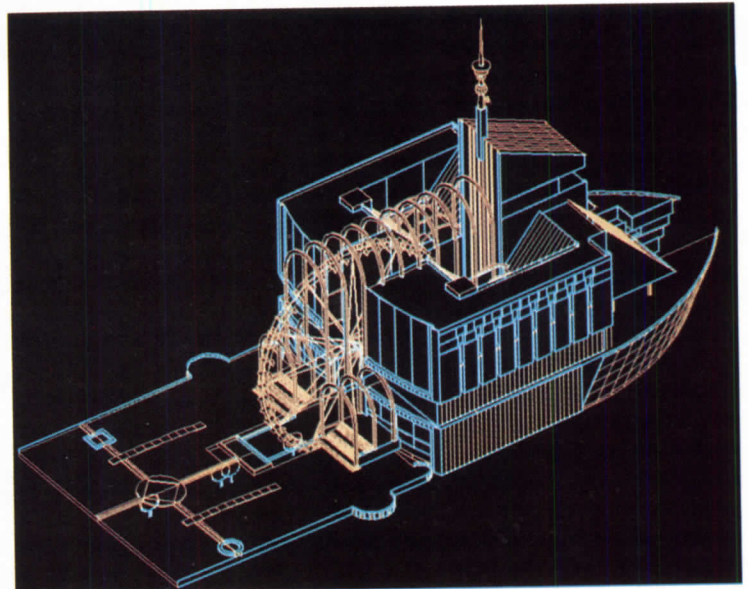
Roland introduced the LTX-100 A/B thermal plotter. The price is \$3,295. Roland also introduced two drum-style plotters (one for A- to D-size plots, the other for A- to E-size) using new micro-stepper motors for better accuracy. Prototypes of two plotters using thermal-sensitive paper, for electrostatic-like speed at lower prices, were shown as well. Sales are expected to start by the fourth quarter of this year.

Circle 355 on reader service card

Seiko Instruments and Palomar Software joined to develop software drivers to support the

*9. Optographics workstation
10. PC.BAT by Batisoft*

*11. Architrion by Gimeor,
Mac version*



10

Seiko CH-5504 and CH-5514 300 dpi color printers on the Macintosh. The CH-5514 can handle tabloid-size printouts.

Circle 400 on reader service card

Toyo Spectrum's TPG-4300 thermal transfer printer outputs 300 dpi images on A- or B-size paper from any DOS monitor and (most Mac monitors) with up to 1280 by 1024 resolution, with no special software. The B-size image takes only three minutes to be printed.

Circle 401 on reader service card

Graphics cards and systems DFI (Design Futures, Inc.) unveiled a 4096 by 4096 display and graphics card.

Circle 402 on reader service card

Control Systems introduced its first high-resolution video card for the Macintosh, the Artist Mac10. It is particularly suitable for large, 19-inch monitors, and for applications such as CAD slideshows, where the Mac screen can flicker perceptibly during scrolling.

A graphics network, Artist Net, was also introduced at the show. In a UNIX- or XENIX-based network, it can allow up to nine users to have full-power graphics, with only one full-blown computer and eight relatively inexpensive terminals. The firm also showed two new software drivers to adapt AutoCAD for use with the Artist XJ10 cards for MS-DOS and PC-DOS computers. The drivers allow true dual-screen operation. One driver puts the super-fast redraw capabilities of the card on both screens. The other configuration uses the XJ10 to drive one screen, with the other screen using inexpensive VGA or EGA.

Circle 403 on reader service card

DuPont unveiled its FastTrax system for managing architectural drawings and



9

related documents. With it, documents can be scanned, stored, and retrieved. The computational power comes from the Macintosh.

Circle 404 on reader service card

Imagraph Corp. introduced faster and less expensive versions of its TI-1210 display boards. One nice touch: the boards will display software that requires a VGA display. So such software can be used on the same computers as those that hold AutoCAD and similar packages.

Circle 405 on reader service card

Lundy Electronics and Systems demonstrated its Lundy 1612 Color Graphics Subsystem, a 1600 by 1200 pixel monitor and graphics card. It can be paired with the firm's new 80386-based computer, for workstationlike capabilities at a combined price of about \$16,000.

Circle 406 on reader service card

Matrox announced drivers to link its PG graphics board to Micro Control System's Cadkey 3.5 CAD software and to AutoCAD 10 with support for extended memory.

Circle 407 on reader service card

Nth Engine released a Xenix 386-compatible driver for AutoCAD Release 10.

Circle 408 on reader service card

Number Nine Computer Corp. released the first graphics boards using the super-fast Texas Instruments TMS34010 graphics controller chips. The firm's Pepper family of graphics boards is compatible with IBM Micro Channel and the older AT-style compatibles. Also announced were software drivers for boards used in Prime/Computervision Personal Designer series CAD software.

Circle 409 on reader service card

Sun Microsystems announced a graphics accelerator board for its popular Sun386i workstation. The low-cost GXi board improves 2-D imaging speed by a factor of 3 to 10.

Circle 410 on reader service card

Wyse entered the DOS 386 workstation market with its Model 3225 computer, WY-8400 intelligent graphics controller, and WY-890N high-resolution color monitor.

Circle 411 on reader service card

Focus on Intergraph

Intergraph demonstrated its new Macintosh version of MicroStation. The software, announced in April, preserves much of the functionality of MicroStation on large DOS computers, and of Intergraph's mainframe software as well.

Circle 412 on reader service card

modeling package with COGO and GIS features built-in.

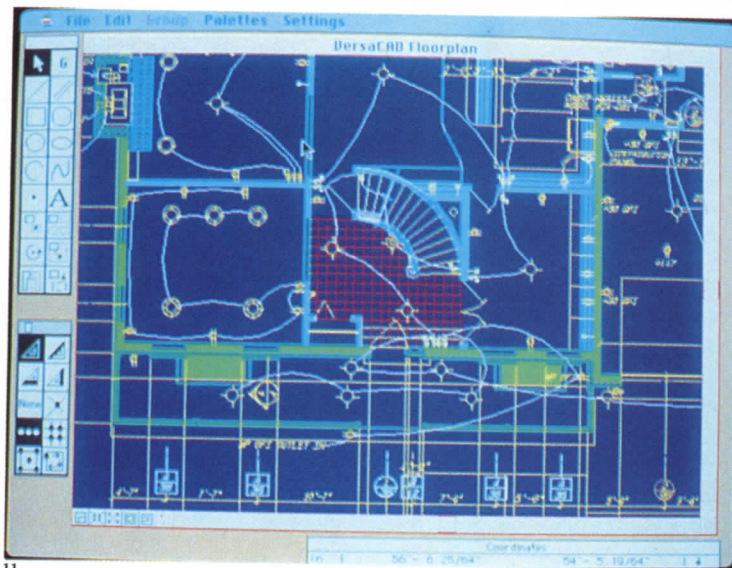
Circle 416 on reader service card

Ground Modeling Systems, Inc., introduced its European Panterra digital ground modeling system to North America. The software runs on DOS computers.

Circle 417 on reader service card

A low-cost visual database manager, viewBase using CD-ROM disk to archive large collections of drawings was introduced by Image Systems Technology.

Circle 418 on reader service card



GWN Systems announced Version 4.0 of its digital terrain modeling package, that runs with MicroStation PC. The firm's COGO and GIS packages also have MicroStation versions now.

Circle 413 on reader service card

Mapmaking and site planning Accugraph (formerly Holguin) announced an integrated COGO (coordinate geometry) system, and said its Mountaintop workstations can now run AutoCAD as a network server.

Circle 414 on reader service card

Hewlett-Packard's Apollo division announced new software for facility design, mapping, and geographical information systems (GIS).

Circle 415 on reader service card

Data General introduced DG/AROSE, an integrated highway-design and terrain

Version 4.0 of MapInfo, mapping software for MS-DOS and PC-DOS computers, was demonstrated by Mapping Information Systems Corp. The software can use information stored in dBase III or IV to add information to maps of a locality or floor plans of a building. This allows easy updating of facilities plans, and easier use of demographic data in site planning.

Circle 419 on reader service card

PacSoft, which introduced the MS-DOS/PC-DOS version of its civil engineering and surveying software family (COGO, ROADS, Data Collection, T-Net Modeling) last October, demonstrated a modified release that runs within AutoCAD, and also unveiled its SITE EARTHWORK program, the fourth module in its Digital Terrain Modeling family.

Circle 420 on reader service card

Input devices

The BUG voice command system from Command Corp. for AutoCAD is flexible enough to be "trained" to recognize commands in languages other than English.

Circle 421 on reader service card

Foresight Resources Corp. announced Drafix CAD Overlay, for converting digitized old drawings into files usable by Drafix CAD Ultra. The firm also announced a scanning service to create computer files out of old drawings by digitizing them.

Circle 422 on reader service card

P-EDIT, a new system for digitizing old drawings and modifying them with conventional CAD, was introduced by GTX. The resolution is 200 or 400 dpi. GTX claims its software can automatically clean up imperfections in old drawings.

Circle 423 on reader service card

Ideal displayed a 36-inch scanner with conversion software that scans directly into AutoCAD or VersaCAD. The price: \$12,500.

Circle 424 on reader service card

Kurta displayed prototypes of 17- by 24-inch and 20- by 20-inch tablets, along with what was informally called a "keyboard tablet." This all-electronic tablet is so fast that it can digitize handwriting as it is scribbled on the surface. The firm's popular booth featured A. Ted Schaeffer, co-author of the AutoCAD Productivity Book, and creator of Kurta's IS/Productivity Series of AutoCAD templates.

Circle 425 on reader service card

The new Numonics GraphicMaster tablets for DOS computers use an electromagnetic technology that allows them to be made lighter, thinner, and with a smaller border around the active area. They come with software that emulates the popular Summagraphics MM series, Bitpad, and Microsoft and Macintosh mouse.

Circle 426 on reader service card

Optigraphics Corp. showed its new OptiDRAFT workstation, designed to combine scanned

Continued on next page

raster images with CAD. The firm has long offered versatile systems to digitize large volumes of drawings, and services for firms needing to digitize old drawings in preparation for specific projects. The new workstation brings the technology within reach of a broader range of firms. It semi-automates the process of defining attributes in the old drawings.

Circle 427 on reader service card

Voice Technologies, formerly Circle Computer Consultants, announced the upgrade of its VoiceCAD voice input system for AutoCAD, so that it is compatible with Version 10 for DOS computers.

Circle 428 on reader service card

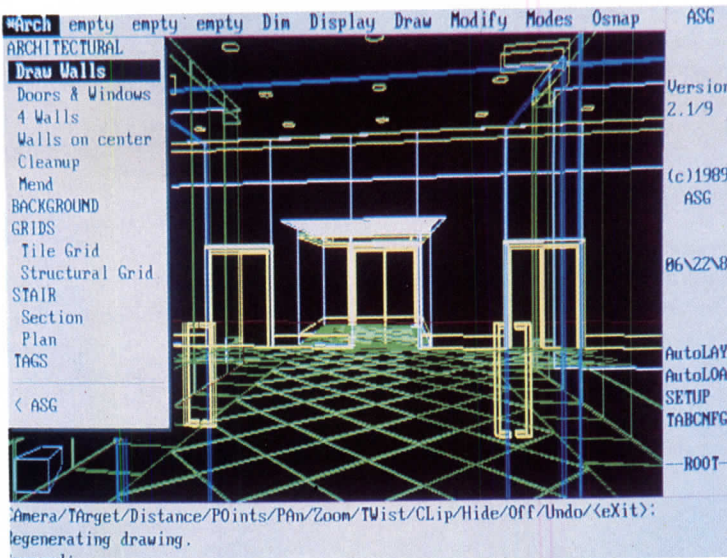
Networking

ACS Telecom introduced its 10CAD Engineering Data Management System, which tracks projects, drawings, and plotters. Through an Ethernet 2.2 Network, 10CAD can link workstations to minicomputers and mainframes. It is compatible with Novell NetWare 2.15.

Circle 429 on reader service card

Planning, estimating, and facilities management

The Computer-Aided Design Group announced Personal Edition, a version of its CADG+FM Facility



Management System for the IBM PS/2, PC-AT and compatible personal computers. The firm also announced Workstation Edition, for stand-alone UNIX workstations. Until now, the smallest system that could run this mainframe-based software was the DEC MicroVAX. CADG+FM Personal Edition or Workstation Edition files, created at remote sites, for example, can be used on the mainframe "Enterprise Edition." The new products include modules for space inventory, equipment inventory, layout plans, and lease inventory. Personal Edition was developed in cooperation with

Autodesk, Inc., but is not an AutoCAD add-on product.

Circle 430 on reader service card

Creighton Nolte + Associates released templates that work with the Excel spreadsheet on the Macintosh to do billing, overhead calculations, efficiency and utilization rates, and other chores.

Circle 431 on reader service card

PlanTRAC II, project-management software from Computerline, was demonstrated with recent enhancements, including a network version, speedy "what-if" modeling, better time and resources

scheduling, and the ability to send plot files to graphics printers instead of plotters.

Circle 432 on reader service card

Advanced strategic space planning is promised by Drover Technologies' Spacetek software for DOS computers. The underlying database is SQLBase from Gupta Technologies.

Circle 433 on reader service card

G2 Estimator from G2, is now available in Version 2.0, which includes the National Construction Estimator database. This PC-based cost-estimating software allows "what-if" planning, and import or export of files to common database and spreadsheet software. Cost databases from the Corps of Engineers, National Electrical Contractors' Association, and Mechanical Contractors' Association of America are among those available as options.

Circle 434 on reader service card

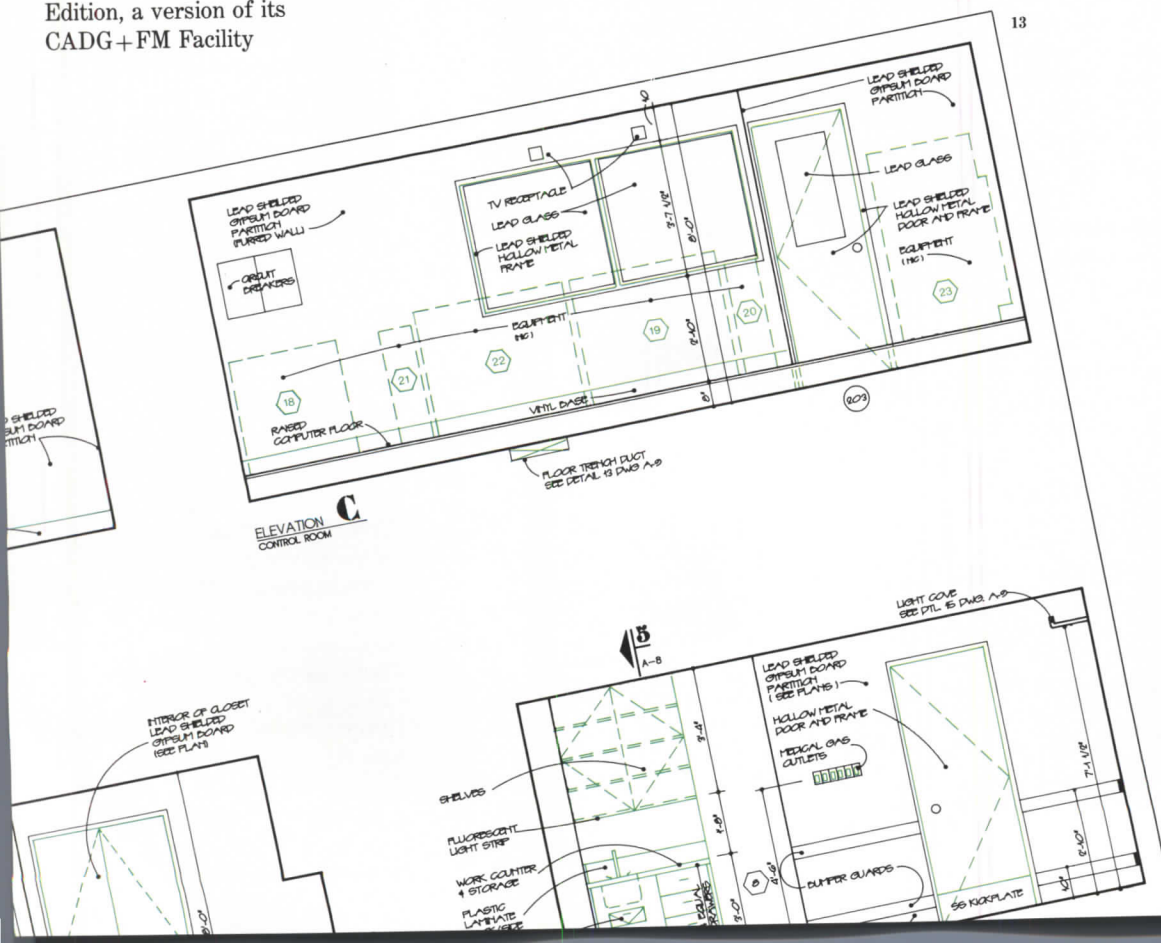
IBM's Construction Management and Accounting System, CMAS II for the IBM AS/400 computer, announced a year ago, finally became available. This software allows creation of an overall project database that can be tapped for planning, materials ordering, and billing.

IBM also announced its Enterprise Management Control Series software for large computers running the VM/CMS operating system. This EMCS package includes modules for construction data management, hour and shift tracking, and project planning and schedule forecasting.

Circle 435 on reader service card

General contractors and construction managers may be interested in Homer, from Kulda Corp. Version 1.3, new at the show, handles submittals, certificates of compliance, conversation logs, close-out request letters and other management chores. It runs on the Mac.

Circle 436 on reader service card



- 12. ASG Core by Archsoft
- 13. GEOCAD
- 14. ASG Core by Archsoft
- 15. JDL plotter output

Sigma Design announced its Arris F/X facilities management package for 386 computers, the Sun SPARCstation, and Silicon Graphics' Iris. It handles space planning, design, and management.

Circle 437 on reader service card

Softouch Software demonstrated its Constructimator II cost-estimating system and CPMS II for construction-project management. The packages run on the Macintosh.

Circle 438 on reader service card

Timberline and Primavera jointly demonstrated a new link between their estimating and scheduling software. The link, Precision Primavera Integrator, allows schedules to be generated faster than before.

Circle 439 on reader service card

Turtle Creek Software showed a wide variety of HyperCard-based estimating, billing, and scheduling packages for the Macintosh.

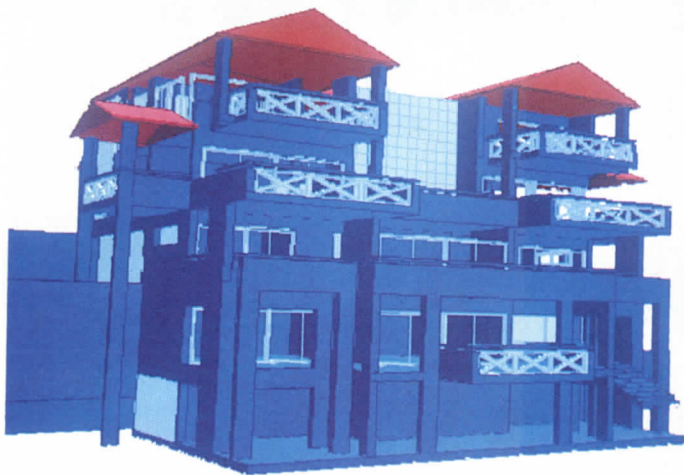
Circle 440 on reader service card

CAD/base Version 1.1, the software link between large drawing files and databases for such things as billing, from the van der Roest Group, was announced. The new version can move information back and forth from dBase, Lotus, and ASCII files.

Circle 441 on reader service card

Welcom Software Technology's Open Plan software for MS-DOS and PC-DOS computers now has an optional risk analysis module, OPERA. The user inputs three possible durations for a task—minimum, maximum, and most likely. It then calculates the likelihood of meeting cost and schedule on the overall project.

Circle 442 on reader service card



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Other equipment

Ergotron showed a variety of clever workstation furniture for accommodating computer equipment in a space-efficient and easy-to-work-with manner. The modular system allows monitors to hang above desk space.

Circle 443 on reader service card

Marketing and management practice

RFP 4.0, released in May, was demonstrated at the show. It allows marketers to respond to requests for proposals by citing germane past projects, clients, and personnel. The software, from A/E Management Services, also prints SF254 and 255.

Circle 444 on reader service card

Samsara introduced Clerk of the Works, architectural practice accounting software for the Mac. It includes modules for time and expense reports, billing and accounts receivable, general ledger, payroll, and accounts payable.

Circle 445 on reader service card

Other AutoCAD

AutoManager 3.0 was announced at the show by Cyclo International. It displays up to 18 AutoCAD files on-screen at the same time, without using

AutoCAD itself. The new version is compatible with 3-D files from AutoCAD 9 and 10.

Circle 446 on reader service card

Cadmaster released its Auto-Parametrics design automation software. It can help automate design tasks within AutoCAD.

Circle 447 on reader service card

Factory design is easier with FactoryCAD from Cimtechnologies.

Circle 448 on reader service card

The GEOCAD architectural add-on for AutoCAD now allows grouping of layers with on-screen picking. Use is intuitive.

Circle 449 on reader service card

KETIV Technologies introduced KAST, its version of a standard AutoCAD menu for mouse or digitizing tablet. Version 2.0 of the firm's ARCHT2 menu overlays, also introduced at the show, are specifically for architects (separate ones for hvac, plumbing, power, and facilities), have the same layout.

Circle 450 on reader service card

Neuendorf Systems released a Computer Graphic Metafile-to-DXF converter. It has been

tested with CGM files from Harvard Graphics and from Lotus Freelance Plus.

Circle 451 on reader service card

Octal says its Converter software has been modified to convert AutoCAD 3-D drawing files to and from Intergraph IGDS, CADAM, Calma, CATIA, Unigraphics, Auto-trol, and CADD54/4X.

Circle 452 on reader service card

SoftSource says its Drawing Librarian is the most advanced multidrawing display and control system for AutoCAD users, and for other CAD drawings in the DXF format. It can display AutoCAD drawings without using AutoCAD itself.

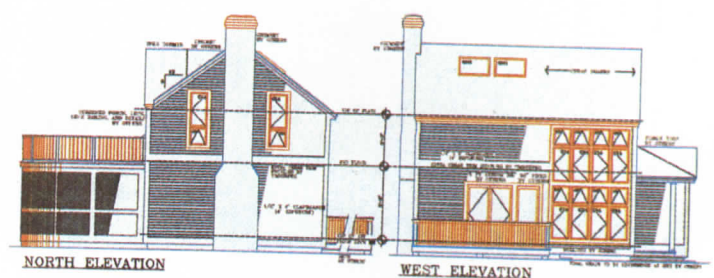
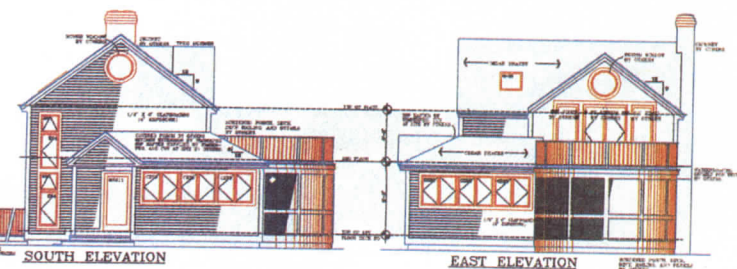
Circle 453 on reader service card

SoftWest DAVC from The Great Softwestern Company, Inc. allows users to efficiently archive up to 32 different versions of the same AutoCAD drawing. The trick: it stores the base drawing, and the instructions detailing the differences between this original file and subsequent modifications. Thus, the changes take up far less space than they would if 32 entire drawings were being stored.

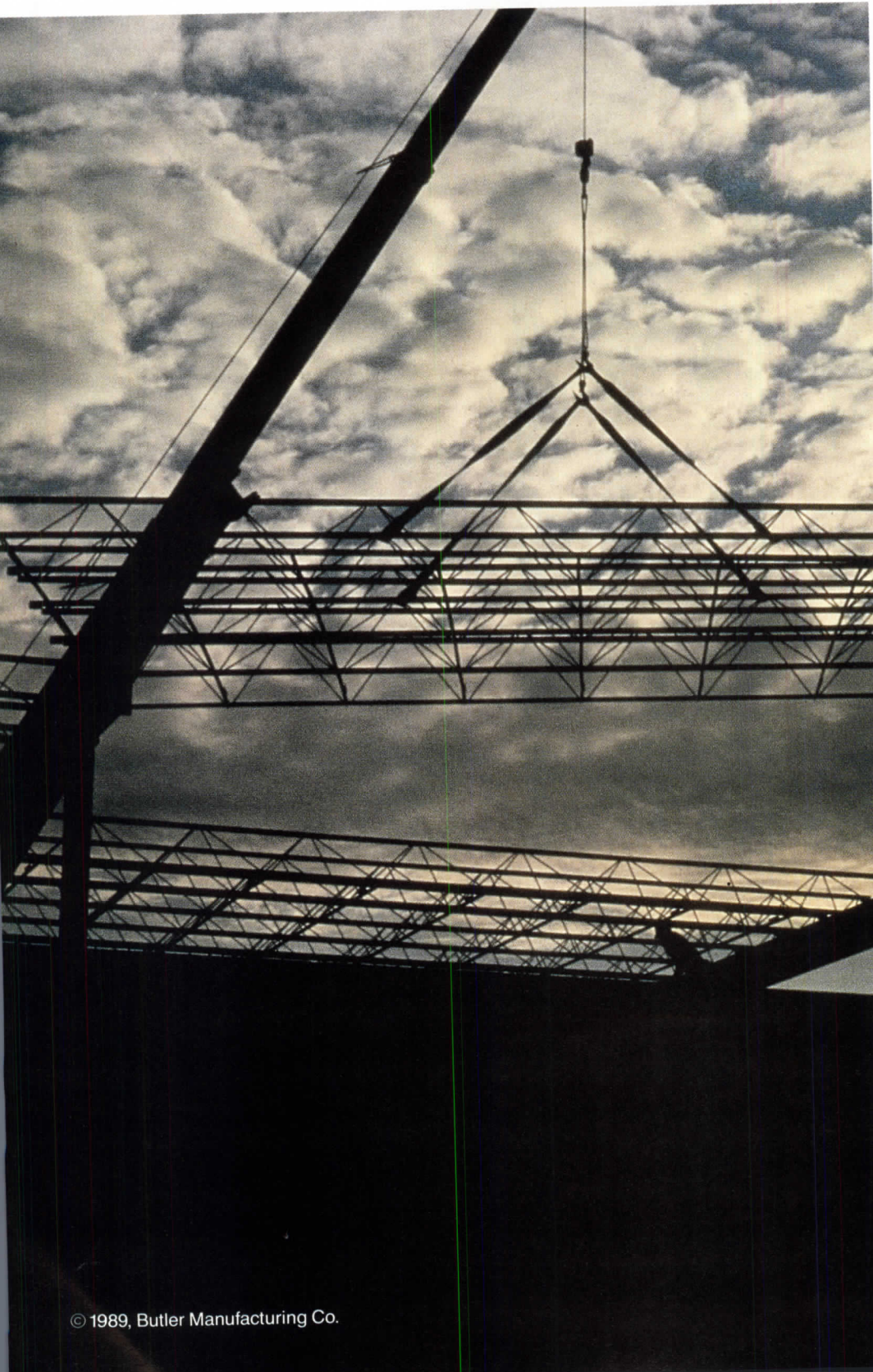
Circle 454 on reader service card

Ventana Press announced several new book titles for AutoCAD users. *AutoCAD: A Concise Guide to Commands and Features* was published in May. A book for advanced users is due this fall.

Circle 455 on reader service card



How To Build An Overnight Success.



You read about it from time to time. Someone comes up with the right product at the right time and literally overnight, that product's success is guaranteed.

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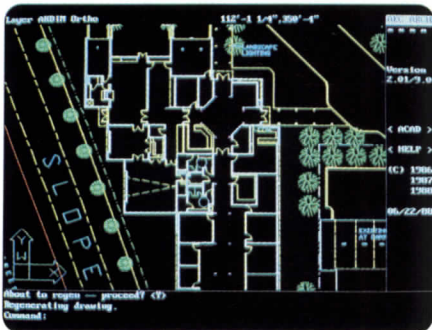
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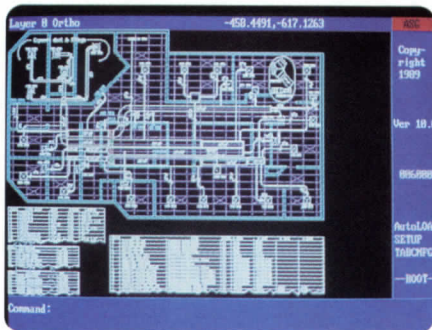
Building the best

Circle 54 on inquiry card

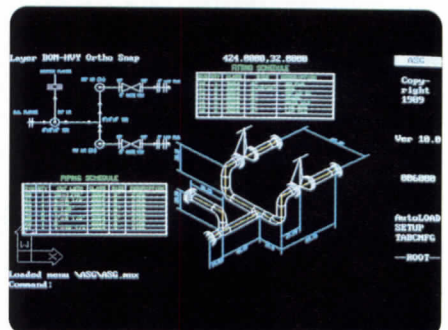
The First Fully Integrated CAD Solution Should Look Familiar



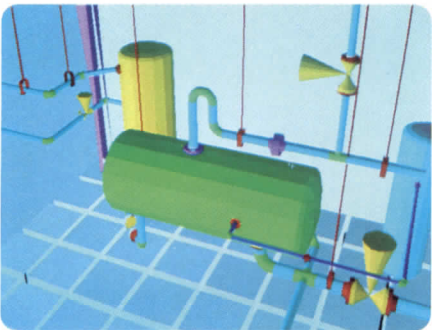
The look and feel of the familiar industry-leading AutoCAD AEC® Architectural.



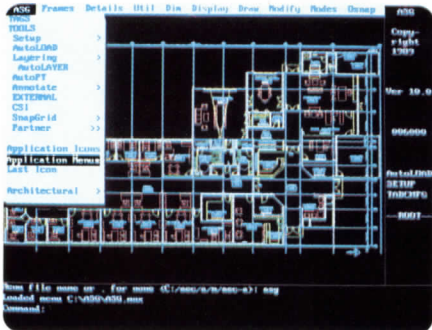
The best-selling, two-template ASG Mechanical will replace AutoCAD AEC® Mechanical.



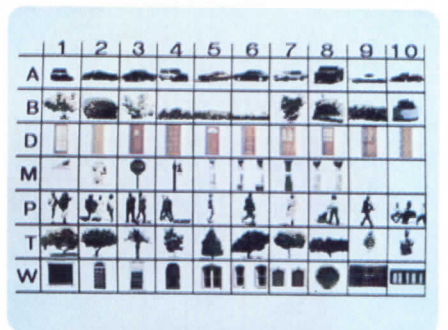
ASG 2-D Piping, creates plan and isometric views in single or double line.



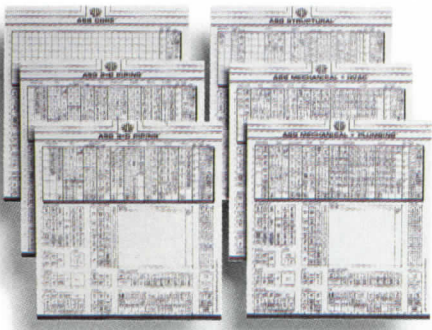
ASG 3-D Piping harnesses the 3-D power of AutoCAD Release 10.



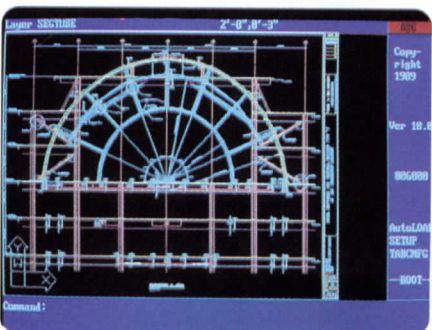
ASG Core is a unique "operating system" of integrated tools and utilities.



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The products in ASG's integrated CAD solution are familiar because you know many of them already. As the best-selling, industry-leading, award-winning products of Archsoft and Chase Systems.

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have come together as ASG with one purpose in mind. To bring you the industry's first genuinely integrated product line. A line with a *standard user interface*



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Now configured with a shared interface, all existing Archsoft and Chase Systems products will be released under the ASG name, starting this month. And they'll be joined shortly by a growing line of additional, productivity-building CAD products from ASG.

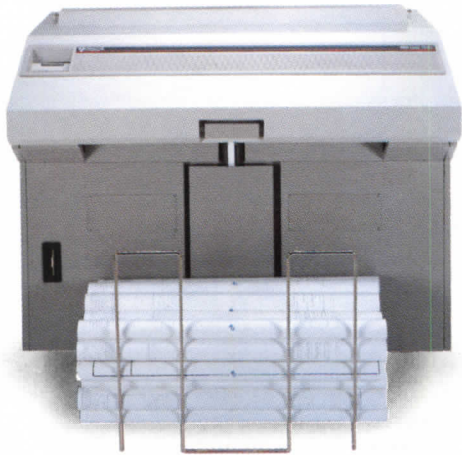
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An expert panel explores the pros and cons of computerized specifications: Part II

Continuing coverage of a RECORD roundtable held this spring, this concluding report explores subjects ranging from cost-effectiveness to what lies ahead.

Part one of this report [RECORD June 1989, pages 159-165] revealed the panelists' conclusions that we are indeed moving ahead in this promising field to capabilities that far exceed word processing, which was the state of the art up to a few short years ago—capabilities that produce drawings and specifications simultaneously and, with difficulty still, interactively. The majority on the panel did not see some aspects of specifying changing radically with automation: the continuing need for input by product suppliers' salesmen, for professional specifiers (who would get better with systems but only be replaced by them in the smallest of offices), for the use of regional products that might not show up in a national database, and for hands-on product research such as seeing actual samples, testing them, and checking on products' effectiveness in previous applications.

Do computer systems produce better specs? The consensus was that they could be more accurate, take into account many more variables, and find the best product for a particular application. But, worried the product manufacturers, will they also limit designers by not taking into account the right variables? If we can find the right words to describe all products and get them onto a common footing, then we have solved that problem, concluded one panelist. Predicted moderator Steven Ross: "Two years from this date, there will not be any architectural firm in the country that is big enough to get Sweet's Catalogs that will not be using some form of computerized spec writing." But, he cautioned: "Automation can really hurt if people misuse it." Do it right or not at all. C. K. H.

Architect George Terrien played the devil's advocate on costs—saying that systems might add to the time required to do specs: "Architecture is practiced in a competitive marketplace. A firm is chosen not on the basis of price, but on being within a range of price that often does not admit such a rigorous process in selecting materials."

But these systems take less, not more, time argued architect Martin Bloomenthal, who had extensive experience with them. Further, he said: "We have



Miriam Eldar, vice president, Electronic Sweet's, McGraw-Hill Information Services Co.

found that the cost of computer time associated with SweetSpec [McGraw-Hill's new system] is break-even at an average of 45 minutes savings per section. We save that and more and the quality of our specs is vastly superior to those we produced with the old techniques."

How does his firm bill for the time it does use? "Computer time is charged as a direct cost to projects. Clerical time is not. This big saving is simply additional money in the firm's pocket." While the client does not pay for computer time in fixed-fee projects, he does when the firm bills on a time basis.

Architect Kellen Chapin found that, because his firm once used a typing service for specs, the savings right there paid for his system and that the savings in

professional time were additional, helping pay for any deficit in the design budget.

Systems may raise client expectations in various ways

One unfortunate way: "You go to a client presentation," hypothesized moderator Steven Ross. "They say, 'well, what would it look like with this type of window' and you say 'we'll search through our catalogs and computer system by tomorrow and have an answer for you.'" In other words, will systems



William Mitchell, professor of architecture, Harvard Graduate School of Design

allow the client to design the project for you?

"The only difference we have noticed," said Chapin, "is a difference in clients' confidence levels. When they come to a firm of our limited size, we have to prove we can deliver expertise and [a system] is definitely an aid to us in marketing services."

"In our presentations," said Bloomenthal, "we don't focus on the fact that it is now possible to change a spec section 25 times. What we instead highlight is improved quality control and production speed."

"Will clients say they want a specific specification process or package some day?" asked Ross.

"Nobody has asked for one," said architect Barry Milliken, who represented the broad experience of a large firm.

Architect Robert Dean thought this would soon change.

Who will do the actual work?

"Fine-tuning the specification into what ultimately becomes the text of the final document is still being done by our specification staff," said Bloomenthal. The next step will be to export the text that we create on our PCs to our mini-computer-based word-processing system for what is very little more than final printing, formatting, pagination, footnotes, etc."



George B. Terrien, president, NCARB and Terrien Architects, Inc.

Said Chapin: "We have eliminated word-processing. It is still more efficient for architects to produce that final document. They proof it; they look at it, and then it goes to me for review without touching a secretary."

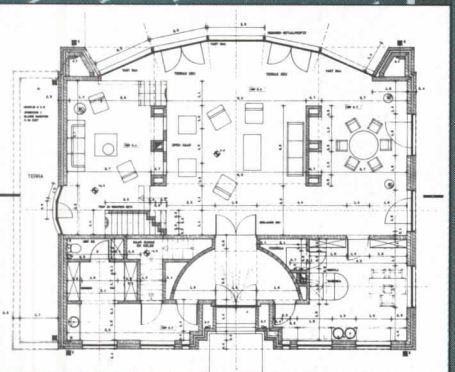
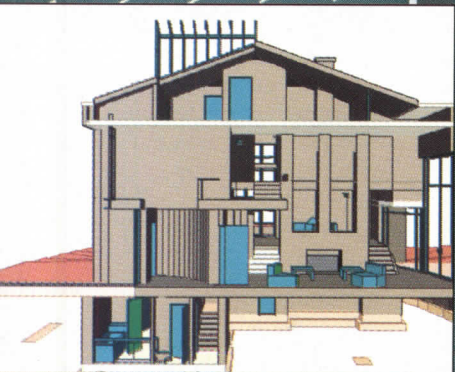
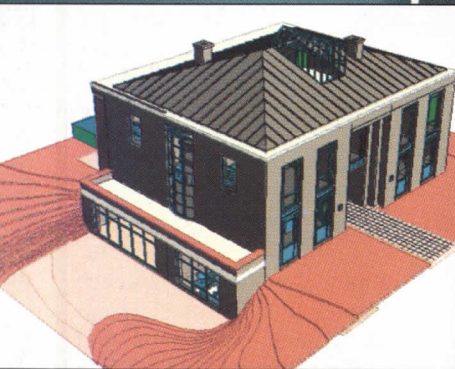
Shorter specs vs. longer specs

Ross pointed out that both SweetSpec and MasterSpec tend to produce a longer specification than architects might otherwise use: "If it's too big, is there a liability there?" asked Ross.

"This is a question that has no real answer," said Bloomenthal. "Witness a recent conversation I had with one of our project managers. He stated that people in the field don't have access to the standards [that specifications frequently refer to], so we
Continued on page 133

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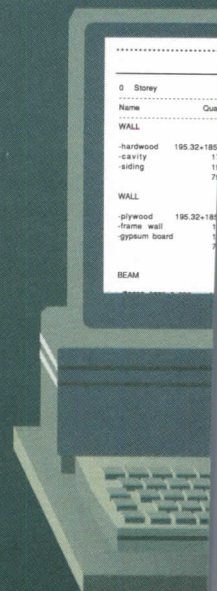
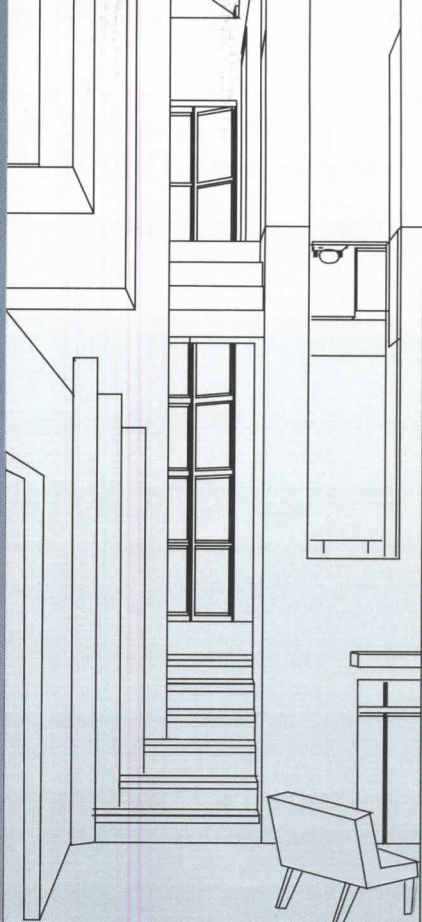
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"There is no way a system is ever going to be a substitute for thinking, which is what the client is paying the architect for."



Kellen M. Chapin, partner and production coordinator, Ronald Schmidt & Associates, Architects

Who is liable?

Asked Ross: "If a CD-ROM can hold over 500 megabytes of information and the information is put down with one-part-per-million error rate—which is exceptional and very accurate—there are going to be 500 errors on the disk. Who is liable?"

"The obvious answer is ultimately the architect," responded Bloomenthal, "although, as we have been through what is now the seventh generation of SweetSpec, one of the things we have seen evolve is the disclaimer language."

"The final responsibility is always going to rest with the architect of record no matter what disclaimers," said Kornblut. "And, even though there may be this search for perfection in creating spec systems, it will never be obtained. There is certainly a lot of information, a lot of capability that can be created, but it is never going to be perfect and it is never going to excuse the professional from having to exercise independent judgment as to whether that information is appropriate for that particular client or project. There is no way any system is ever going to be a substitute for thinking, which is really what the client is paying the architect for."

"What the system can do—and this affects the cause of many professional liability claims—is reduce the amount of guesswork, due to lack of

knowledge, the pressures of time, whatever." Chapin saw this as an additional cost benefit of systems way over and above mere savings in time.

Nothing is fail-safe; human input is still required

Kornblut gave an example of why: "Architects, like many professionals, are notoriously poor spellers. You can get a spelling-check program with your word-processing system that can do a masterful job of catching misspelled words, but it is never going to be able to discriminate between homonyms and whether a proper usage



Theodore L. Stanton III, executive vice president, Yearwood Johnson Stanton & Crabtree, Inc., Architects

exists for a correctly spelled word. Again the human element has got to take over at that point and it is part of a quality-control program in an office. There has to be a constant management reminder to people who are working with automated systems—and this applies to CAD or any other system—that just because they are working with a computer they can never presume it is going to be correct. And this is particularly true of misspelled words or misused words that can change the entire legal sense of a sentence or provision in the specifications."



Arthur T. Kornblut, architect and attorney, Kornblut and Sokolove

"People should be nervous about this," reminded Ross, "because as they reduce their support staff due to systems—especially typists and good secretaries who might have caught such errors—they do rely more on the computer. We have all seen cases of design goofs not caught in stage one that have managed to migrate to the final stage of design and be built into a building that falls down."

The management answer

Dean emphasized its importance: "When we moved from hand drawings into CAD, we tried to manage our projects pretty much as we always had and it doesn't work. You must learn new techniques to go along with the new technology. If you do learn, you will greatly reduce the likelihood of problems."

Asserted Bloomenthal: "The frequency of errors in the electronic approach is considerably lower than the frequency in the manual."

Chapin: "The automated process does not change the likelihood of an error in content. If a person was going to make a mistake before, the potential is there that he is going to make that mistake now."

"Where systems are much better," he continued, "is in saving architects from omissions." The question-and-answer format of automated specifications will remind architects of what they might otherwise have left out.

Said architectural professor
Continued on page 135

should spell out precisely what we mean. A little bit further along, he questioned why we can't make specs much shorter. You can't have it both ways."

"We lawyers get the same complaint," said attorney and architect Arthur Kornblut. "The clients say, why can't you write me a short contract, as though what is in it is there for some superfluous reason. I often respond by saying, if they think the contract is too long, we will use a smaller type face. But an architect cannot shy away from reasonably detailed specs if he is to serve his client."

Said Terrien: "There is an aspect of regionalism that also has to do with the type of job and type of contractor. In some instances, specifying a lumber quality by saying no knots larger than a dime is better than going through the classification of the species you want."

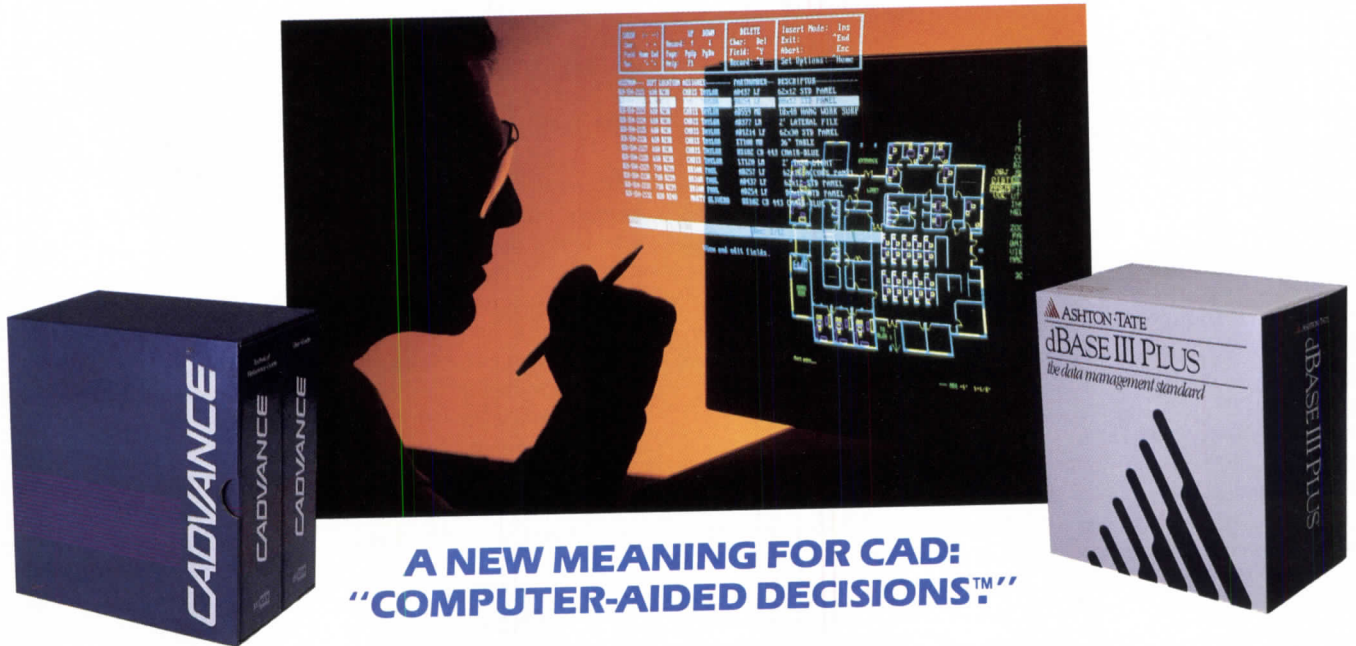
Can standards references be put into a spec system so that they could be called up on screen for reference only?

Ross: "You can tell by looking at a compact disk how much room has been taken up on it. If you look at a Sweet's CD-ROM, it looks like there is still 500 megabytes to spare. They have only used up 1/10th of a disk. You could put the Bible in what's left over. The problem there, of course, is the cost of doing it."

Terrien had other objections: "Contractors and architects in the field have to have access to standards too. That they would know them is a level of expertise that goes beyond what you can reasonably expect."

Julio Schiralla, with window-maker Pella spoke in agreement from the audience: "We manufacturers believe that, if we fail to do our role of educating the contractor, then the contractor will fail and then all the specifications writing, drawings, and shop drawings will fail."

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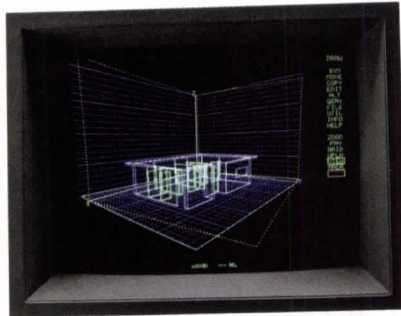
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“Comparative costs are one of the things that make me choose one material over another. Ease of installation makes me choose. So, if I am going to dream, I’m going to dream about an interactive database that gives all the information I need.”

William Mitchell: “Clearly one way of making sure you have accurate data is to capture it in two different ways and cross-check. That’s redundant, but it reduces the probability of errors. I think one of the key software-design issues here is how are you going to make the trade-off between redundancy, which helps to reduce the probability of error, and efficiency, which is one of the major objectives here.”

Electronic Sweet’s vice president Miriam Eldar spoke about coordination: “We would love to see manufacturers provide information in more uniform formats. But there are diverging interests. The manufacturers’ prime interest in product information is as a marketing tool. The design profession’s prime interest in that information is as a selection and specifying tool. And the two are just not the same.”

Fewer change orders?

“An automated specification system might be interactive between the manufacturers and specifiers,” said Kornblut, “to enable the architect to ask, if in 18 months when the contractor goes to order a product, will it still be available?” This would avoid last-minute change orders—a problem for architects and owners alike—with an early-warning system of when the manufacturer is going to withdraw a product or change its catalog number, thereby altering the contract documents.

Research architect Alan Glassman with Armstrong Industries saw the near-term possibility through modem links.

Spec systems for every office—even those without CAD?

“The two systems have nothing to do with one another,” asserted Bloomenthal. Kornblut stated that, even for the small unautomated office, the small capital investment in a spec system well justifies the return,

whereas the initial capital investment in a CAD system is typically far greater.

Pointed out Ross: “The absolute-minimum capital investment needed to get into SweetSpec is something on the order of \$1,500 and SuperSpec is even cheaper.” Terrien: “A firm that doesn’t have CAD does things by hand and being able to save time in specifications will provide more time for that.”

What would be the one feature you would most like to have in computerized specing if costs were no object?

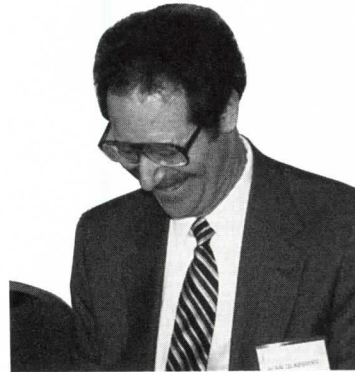
Thus Ross questioned the panel to draw out their views on what evolving architectural offices would need five or 10 years down the road.



Robert Paul Dean, vice president (and director of SweetSpec development), Heery International, Inc.

“A good link between specifications and CAD,” responded Eldar.

“My ideal conception,” said Bloomenthal, “would be that all of the text of SweetSpec would be material that we had participated in the development of, so that not only would it be possible, as it is now, to import text to modify a section once it has been compiled, but to have questions in the audit trail that are unique to our practice—customization to address our



Alan Glassman, senior research architect, Armstrong World Industries

office’s specific needs.”

Dean expanded on Eldar’s desire for integration, listing drawings, specs, production, and cost-estimating “in such an interactive form that the system doesn’t make the decisions for you, but presents you with information that allows good timely decisions and the production of fully coordinated documents.” He said it was possible. “It is just a question of how far we take it and the market will dictate that.”

Architect Hugh Thompson of Swanke Hayden Connell: “We are asking questions about how do we cut out the CD-ROM process and put all that data in our database to control it.”

Chapin pointed to the amount of time lost in waiting for information not included in current spec databases—especially costs. “Comparative costs are one of the things that make me choose one material over another. Ease of installation is another. So if I am going to dream, I am going to dream about an interactive, cohesive information base that has all of the information I need from manufacturers, from testing agencies, from code writers, so that I cannot make the mistakes that make me spend so much time defending things.”

One answer lies in a building being more than the sum of its parts

“The current focus of manufacturers,” said

Bloomenthal, “is to present their building components in a form that allows them to be imported into a drawing. A window is a good example of that being readily possible. In many components of building construction, that is not anywhere near as practical—such as through-wall flashing, which is so integral a component of building construction that it doesn’t plug in the way a window does. I am not quite sure, frankly, that this idea of having a building made of a



Barry Milliken, associate partner/systems director, Skidmore, Owings & Merrill

bunch of Lego blocks is the way buildings are built and that it’s all that relevant.”

Terrien gave an example of how more integrated specs might be applied: “You are specifying a certain finish in a fire egress and a code-provision program in your system immediately identifies that as having a smoke generation that’s excessive.”

Ross said that even a window detail could be more responsive: “It could say, ‘If you use me, my lintel has to look like so and I have to have this kind of energy rating.’” Added Terrien: “And I better not be next to aluminum.”

Automated specs may mean more automated construction

“There is one major universe,” said Terrien, “that we haven’t looked at and that is automation
Continued on page 136

in construction. At some point it is going to erupt and it may erupt in Japan long before it erupts here."

"Standard modules that fit in whole bathrooms—more factory-built things?" questioned Ross.

"In the factory and in the field with automated laborers in effect," answered Terrien.

"Construction up to the level of CAD," added Bloomenthal.

"If it is done in the factory, the factory can supply you with a detail that goes right into your drawing?" asked Ross.

"And it says 'ouch' if your plumbing isn't there ready to receive it," responded Terrien. "We won't have to do shop drawings anymore for sprinklers because they will be snaked in and will be preassembled that way. Our CAD systems will allow us to model buildings in 3-D to a level of detail in which we can go from the generic to the production of shop drawings and it is the manufacturer that's plugging in components. Then a huge step will be taken, not only on the issue of quality control, but on how we go from the near



Hugh Thompson, associate/CAD manager, Swanke Hayden Connell Architects

perfection of the drawing to the mess that construction involves. How many problems occur just because of the difficulties of putting things together in the field? What the lists [in automated specs] can do is organize in such a way that the shop and field conditions become much more controllable."

Toward more direct links between buildings and their documentation

"As long as we are a collection of specialists," said Thompson, "we will have a specialized way

of doing things. That, I contend, needs to change."

Concluded SOM's Milliken: "The major challenge in the next decade is the transformation of our point of view on the whole design process from one that is primarily document-oriented, whether text or drawing, toward one that's building-oriented—describing the real object in a manner that is as close as possible to the real object itself. You would get the building right and then decide how best to depict it—a fundamental reconsideration of the way our current CAD and database technology is oriented."

Professor Mitchell looked at a more direct relationship another way: "Conceive of a database as being the core of what we're doing rather than a collection of documents. If you look at the total life of a building, it begins with an idea, goes through a design process, through construction, and then it is occupied and managed and eventually demolished or transformed. I think it is increasingly important to

recognize that there should be a database accompanying the building all through its life, evolving and changing and being used for different purposes as it progresses."

"Because automation enables us to become involved in the generation of specifications earlier in the overall documentation process," concluded Bloomenthal, "specifications take on a far more integral role in design than they ever did in the past. Now



Martin Bloomenthal, architect and manager of specifications, The Hillier Group

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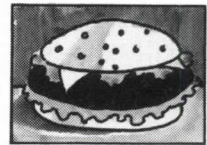
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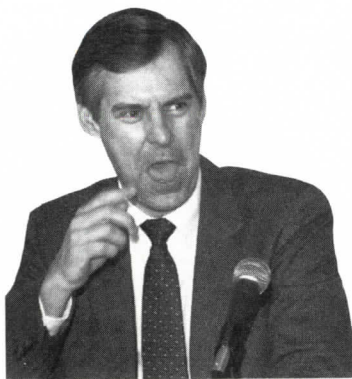
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specifications, material considerations, workmanship issues, etc., are interactively involved in making the decisions on what a building is ultimately going to be. So I think that constitutes a major change in how buildings happen."

Shouldn't the profession as a whole become more involved in development?

The AIA's Warren Hoppe: "You are struck by what the architects of this country have produced and it is not just buildings, but part of the excitement of what we have. I think they are under-compensated for what they contribute and I think systems can increase the quality of the profession by doing production more efficiently."

Architect Theodore Stanton saw the development of automated specifications as a way of architects gaining back more control of the design and construction process: "All along in our history we've abdicated and abandoned some things that we probably shouldn't have. We have to continue to talk to each



Warren D.J. Hoppe, general manager, Professional Systems Division/MasterSpec, AIA

other like this and universal ideas will come out of it that will help keep costs down and keep the network going."

Said Dean: "It seems to me that the AIA is one institution that could go very far in moving us in the direction that's being discussed. I do wonder, however, whether the membership would support the kind of investment that might be required. I do think there is one other resource that hasn't been mentioned and

that is the schools of architecture. They have been relatively untapped for at least some of the research and initial development."

Mitchell: "This raises general issues for the architectural profession that go way beyond automated specs. As we move into an era when high-technology tools are increasingly important, there is a tremendous premium on being able to innovate and being able to get the right kind of tools at the right time. So there is a need for up-front investment in technology and for risk-taking. The question that the architectural profession is going to face in many areas over the next couple of decades is if that entrepreneurial development is going to take place within the profession or if that role is going to be filled by somebody else. So far in the development of computer aids, the role is mostly being filled by other organizations outside."

Surprisingly, SOM's Milliken saw a future not so tightly restricted by our technical aids: "I always see great irony in our

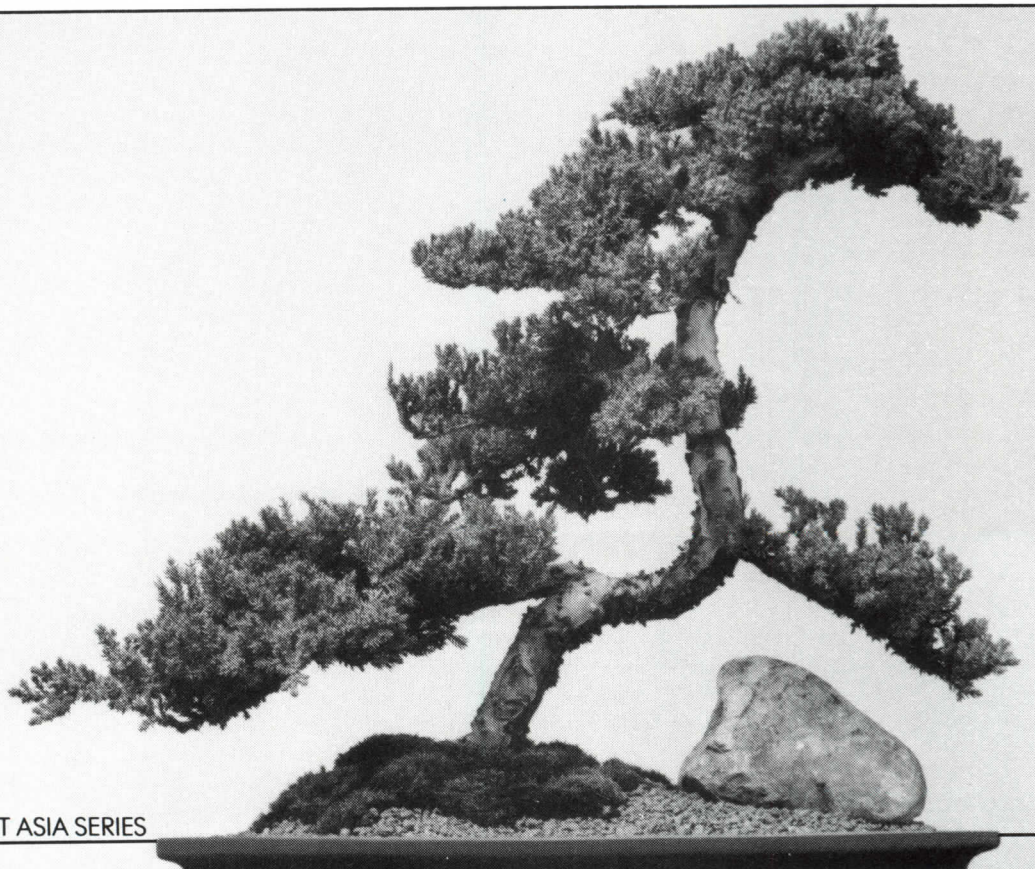
profession. One is always asking why there isn't greater standardization and trying to put into these neat cubbyholes how all the manufacturers describe their products when, in fact, most of what we do, every building we do is a one-of-a-kind thing. Many of the things we spec are picked for unique characteristics. They meet the standard performance criteria, but we picked them because of some unique fact, maybe esthetics, maybe because of the manufacturer's reputation, or maybe because they have the product available when I need it. So it is a philosophical tug of war that we play with ourselves that's never going to be resolved in a process that's inscrutable in many ways and will remain so."

And so the arguments and the development will go on, but, as this writer concluded at the end of the meeting, through the computerization of specs, we all will soon agree that a building is indeed more than a sum of its specified parts.

Charles K. Hoyt

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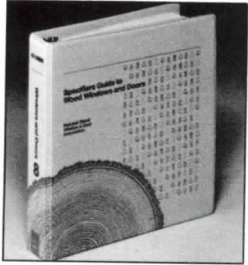


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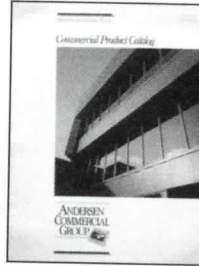
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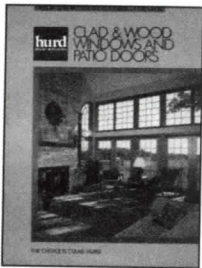
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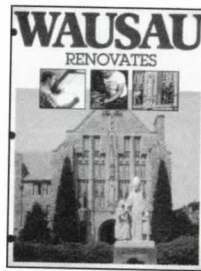
Specification guide
A binder-format Guide developed by code, standards, and technical committees of the National Wood Window and Door Association is offered to architects and other specifiers; \$25 charge. NWWDA, Des Plaines, Ill.
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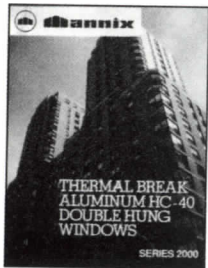
Commercial windows
A colorful 64-page catalog covers wood-frame commercial windows, including curtainwall, standard, and custom-sized styles for new construction and renovation use. Andersen Corp., Bayport, Minn.
Circle 214 on reader service card



Residential windows
Ponderosa pine windows, offered with a number of energy-efficient glazing options, are illustrated in a 40-page, full-line design catalog. Hurd Millwork Co., Medford, Wis.
Circle 209 on reader service card



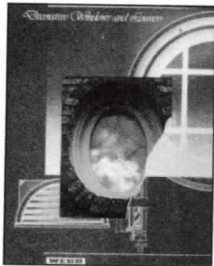
Historic retrofit
Renovation case histories show new metal windows installed on landmarks like Harvard's Widener Library and Detroit's Guardian Building; architectural representatives are listed. Wausau Metals Corp., Wausau, Wis.
Circle 215 on reader service card



Double-hung windows
Technical brochures on commercial styles feature Series 2000 thermal-break aluminum double-hung windows; detail drawings and performance data are included. Mannix Industries, Inc., Brentwood, N. Y.
Circle 210 on reader service card



Aluminum divided light
An illustrated catalog features the Heritage divided-light narrow sight-line restoration window, suggested for authentic replacement of old steel-framed warehouse units. Custom Window Co., Englewood, Colo.
Circle 216 on reader service card



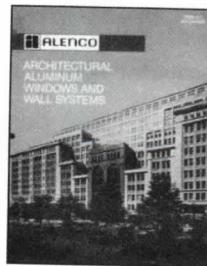
Decorative windows
A 14-page brochure illustrates a number of round, oval, segmented, and half-round wood and molded plastic/wood residential windows. Webb Mfg. Co., Conneaut, Ohio.
Circle 211 on reader service card



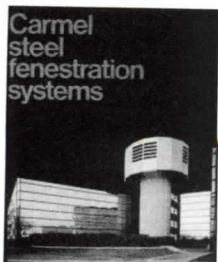
Aluminum windows
The performance criteria offered by Jordan architectural windows are explained in a 12-page design catalog; historic and institutional renovation installations are pictured. Jordan Architectural Products, Memphis.
Circle 217 on reader service card



Commercial windows
A full-line 24-page architectural catalog includes information on custom extrusion and color capabilities for authentic window restoration; schools, municipal buildings, and hotels are shown. Peerless, Kansas City, Mo.
Circle 212 on reader service card



Architectural windows
A 16-page catalog describes in-house aluminum casting, extrusion, coating, and engineering services, and illustrates how different window styles can be stacked on the same wall. Alenco, Bryan, Tex.
Circle 218 on reader service card

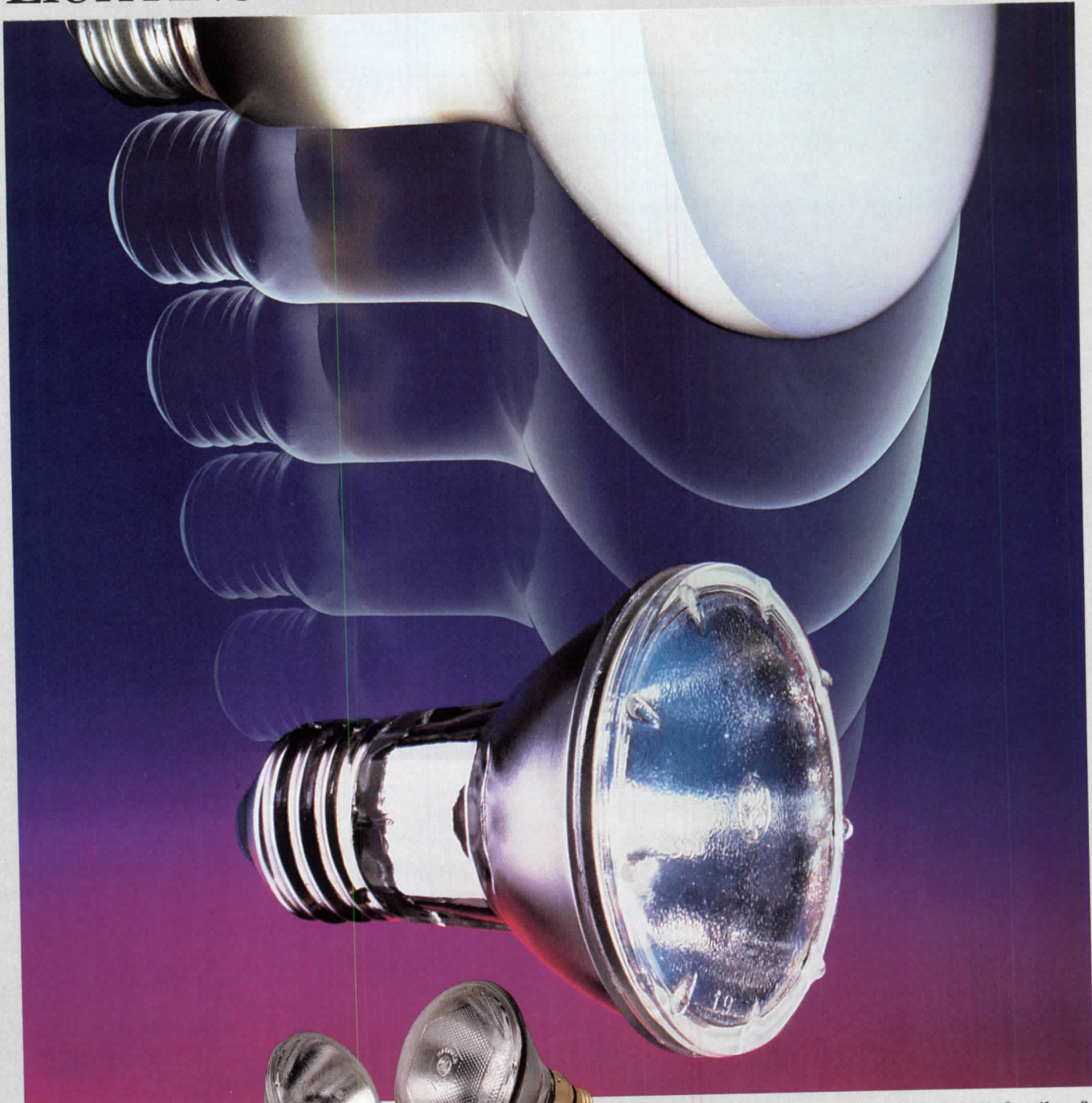


Steel fenestration
An 8-page brochure illustrates custom curtainwall and entrance installations that incorporate the long-span capabilities of steel framing systems. Carmel Steel Products, Santa Fe Springs, Calif.
Circle 213 on reader service card



Custom wood windows
An eight-page brochure discusses the energy-saving benefits of argon-filled coated insulating glass, offered in both standard and custom window styles from Crestline. Crestline, Wausau, Wis.
Circle 219 on reader service card
Continued on page 143

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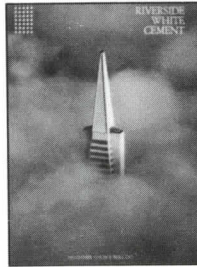
GE is Light.



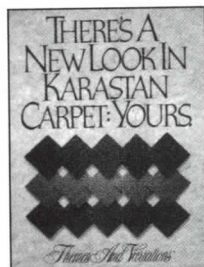
GE Lighting



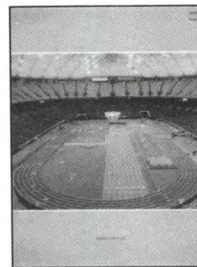
Polymer-concrete facade
Precast insulated and facing panels, with a deceptively massive appearance, are shown in an architectural design brochure; attachment methods are detailed. Ar-Lite Panelcraft, Inc., New York City.
Circle 220 on reader service card



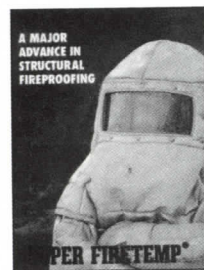
White cement
Written for architects, a color brochure highlights the esthetic and texture options offered by white cement, picturing it used in precast and cast-in-place construction. Riverside Cement, Diamond Bar, Calif.
Circle 226 on reader service card



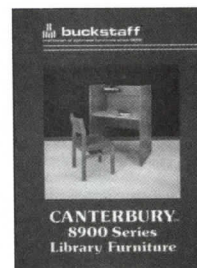
Almost-custom carpeting
A 16-page brochure illustrates the different patterns, three pile types, and dozens of colors offered in the Themes and Variations program: a choice of over 400 possible combinations. Karastan, Greensboro, N. C.
Circle 221 on reader service card



Sports flooring
A 12-page catalog shows rubber-based flooring used in gymnasiums, weight rooms, fieldhouses, and indoor and outdoor running tracks; technical and color data are included. Mondo Rubber, Inc., Laval, Que.
Circle 227 on reader service card



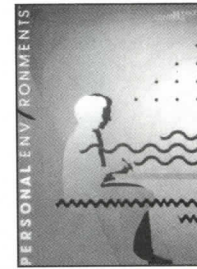
Structural fireproofing
Super Firetemp, made of hydrous calcium silicate, is a lightweight, nailable board capable of withstanding temperatures over 2000 F. A catalog details duct and column applications. Pabco, Houston.
Circle 222 on reader service card



Library furniture
A new line, Canterbury reading tables, chairs, book stands, and carrels are constructed of cathedral-grained red-oak veneer with radius corners and bullnose edges. Buckstaff Co., Oshkosh, Wis.
Circle 228 on reader service card



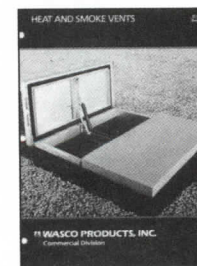
Electronic library
The new functional and electrical requirements of library furniture, which must support computerized search terminals and on-line catalogs, are outlined in a 12-page booklet. The Worden Co., Holland, Mich.
Circle 223 on reader service card



Office-comfort system
A booklet explains how the Personal Environment permits individual adjustment of a workstation's temperature, air flow, lighting, and ambient noise level from a desktop panel. Johnson Controls, Milwaukee.
Circle 229 on reader service card



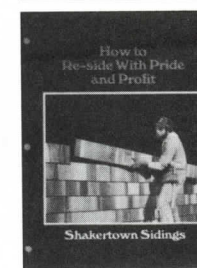
Metal-clad moldings
A catalog describes architectural wood trim covered in brass, copper, and aluminum, suggested for use with formal interior materials such as marble and granite. CMF/Colonial Moulding, Paterson, N. J.
Circle 224 on reader service card



Smoke vents
A brochure discusses the role of rooftop heat and smoke vents in fire-safety planning for commercial buildings, and illustrates single- and double-leaf domed and aluminum vents. Wasco Products, Sanford, Me.
Circle 230 on reader service card



High-performance coatings
A 42-page selection guide describes polyurethane, epoxy, alkyd, and acrylic paint systems, including Imron and Corlar. Products are cross-referenced as to surface and performance. Du Pont Co., Wilmington, Del.
Circle 225 on reader service card



Re-siding with cedar
A remodeling brochure shows how to re-side with western Red Cedar shingle panels directly over existing siding, and illustrates door, window, and corner treatments. Shakertown Corp., Winlock, Wash.
Circle 231 on reader service card

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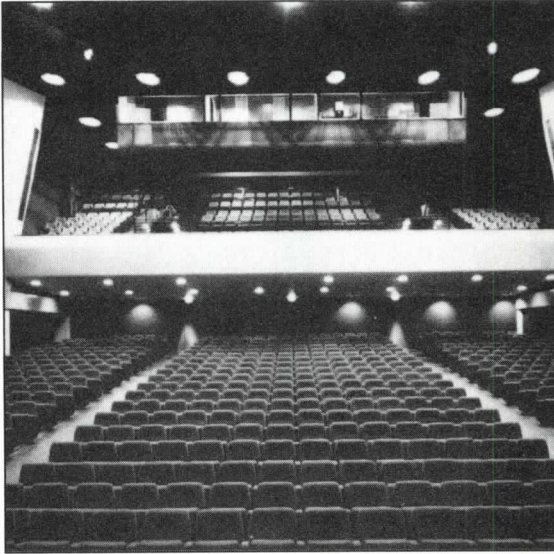
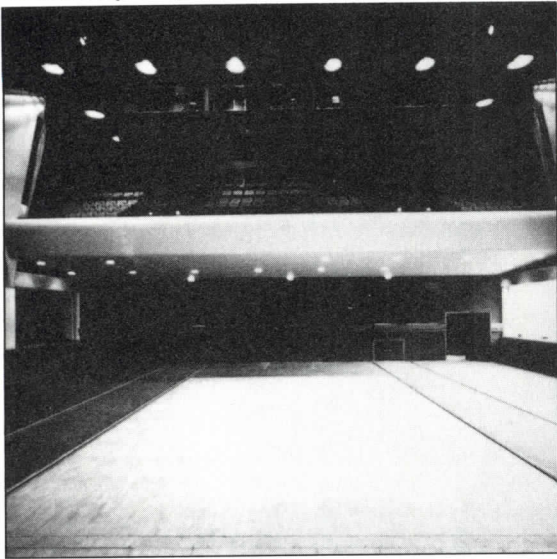
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Continued from page 115

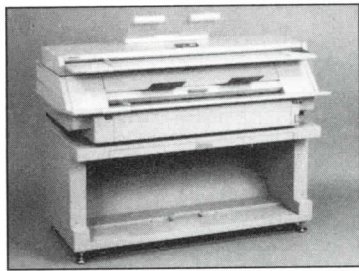


Multiple-function theater

A movable floor/seating assembly developed by French architect Henri Chauvet allows this suburban Paris auditorium to function either as a sports or exhibit space with a level floor, or as a sloped-floor theater.

The automatic system consists of folding chairs, stored compactly under the floor or stage, that are brought out in rows at the touch of a button, and a special floor that rises on hydraulic jacks to a preset angle once the seats are in place. FTPO, Chicago.

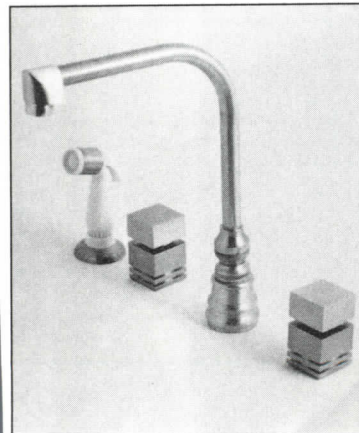
Circle 192 on reader service card
Continued on page 147



Large-document copier

A new plain-paper copier, Model 9036 can produce five 24- by 36-in. copies per minute, on bond, vellum, or polyester film. The copy size range is from 8 1/2- by 11-in. to 36-in. by 12 ft. Features include print stacking, automatic sheet feed, and a roll cutter. Bruning, Itasca, Ill.

Circle 190 on reader service card



Faucet set

Domestically made of solid brass, the Scandia faucet comes in models for kitchen (pictured), lavatory, and tub/shower. There are 15 finish options. Sepco Industries, Inc., Brooklyn, N. Y.

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Forges

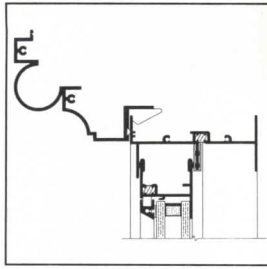
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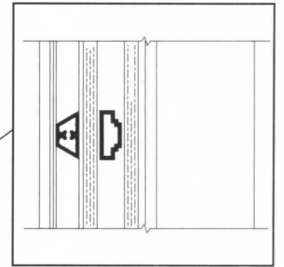
Valli & Colombo
(U.S.A.) Inc.
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Duarte, CA 91009-0245
(818) 359-2569
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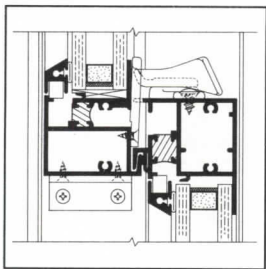
Le maniglie Valli & Colombo



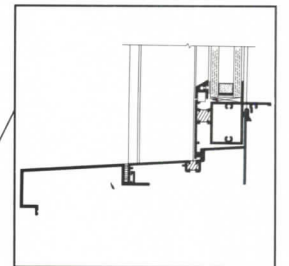
HEAD



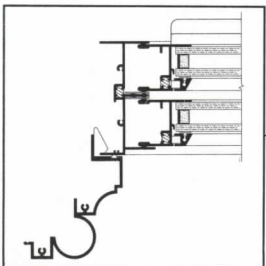
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MEETING
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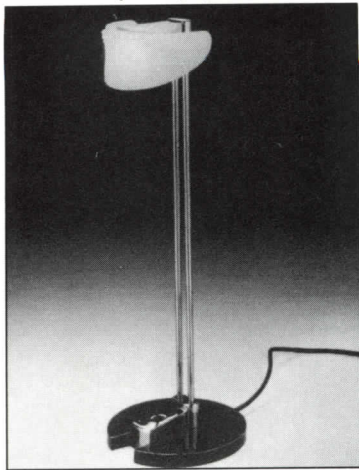
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Continued from page 145



Halogen desk lamp

Designed by Perry King and Santiago Miranda, the Fritz lamp stands 21-in. high, with a white opal shade diffusing light from a 50W halogen bulb. Finishes are black nickel plate and black enamel, with a green or blue acrylic accent disk. Flos Incorporated, Huntington Station, N. Y.

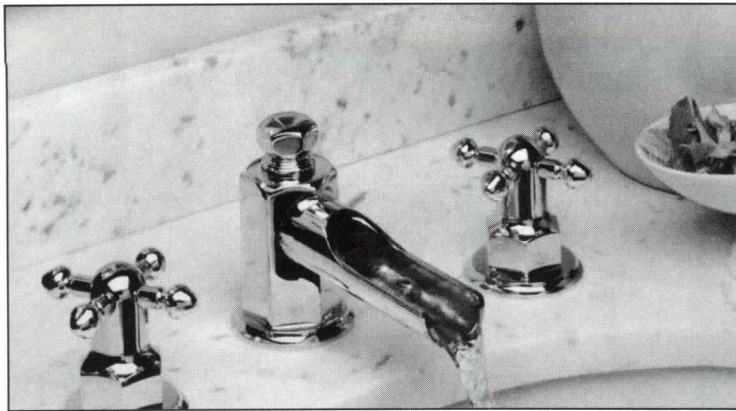
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A/E drawing storage

A new drawing reduction system, called Macromaster, reduces full-size architectural drawings to 8 1/2- by 11-in. sheets, either as a positive film made of whitened Mylar, or a film negative. Unlike microfilm, the sheets are large enough to read without hardware, and have better image quality when enlarged. The format facilitates using the drawing as a CAD database. DuPont Co., Wilmington, Del.

Circle 194 on reader service card

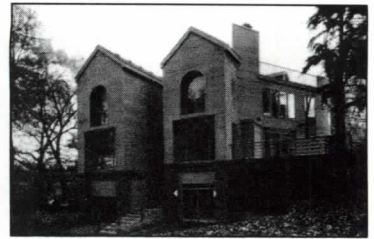


Open-spout faucet

Reminiscent of old-fashioned pump spouts, the Echo faucet has traditionally styled handles and a

spout that has been sectioned to expose the water flow. Kallista, Inc., San Leandro, Calif.

Circle 195 on reader service card



Clad custom shapes

An aluminum cladding option in three colors is now offered for all of this maker's Traditional Profile wood windows, including any size or shape custom or round-top unit. New Morning Windows, Bloomington, Minn.

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Continued on page 159

Entrance Exam.



Entrance exams leave little room for error. The questions are tough: Were your original design objectives supported by high quality door and entrance construction? Will the doors stand up under traffic conditions and operate without problems day in, day out? Does the fabrication and finish represent the kind of craftsmanship you expected. Passing this kind of test over and over

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Manufacturer sources

For your convenience in locating building materials and other products shown in this month's feature articles, RECORD has asked the architects to identify the products specified

Pages 70-77

Bridgeport Center
Richard Meier & Partners, Architects

Pages 70-75—Metal stud curtainwall: Harmon. Porcelain enamel panels: P. G. Bell. Steel truss curtainwall: Moliterno. Granite cladding and pavers: Savema (Royal Red). Glass block: Pittsburgh Corning Corp. Membrane roofing: Firestone Building Products. Aluminum windows and entrance: Vistawall Architectural Products. Clear and spandrel glass: Viracon. Revolving doors: International Steel Co.

Pages 76-77—Skylight: Super Sky Products, Inc. Perforated metal ceilings: Simplex Ceiling Corp. Recessed and wall wash fixtures: Edison Price.

Pages 78-81

Childrens' Museum of Indianapolis
Woollen Molzan & Partners, Architects

Page 78—Standing-seam roof: Copper. Membrane roofing: Carlisle. Fixed windows and window wall: custom, Hope's Architectural Products, Inc. Entrance: Builders Specialty; Curries Mfg., Inc.; American Metal Door Co. Exterior finish: INSUL/Crete Co., Inc. Terra cotta: Gladding, McBean & Co. Louvers: Construction Specialties, Inc. Pavers: Cold Spring Granite.

Pages 79, 81—Paints: Glidden Co. Waterclock sculpture: Bernard Gitton. Special light fixture: custom, William Lam Associates. Carpet tile: Lee's Commercial Carpet Co. Track and theatrical lights: Staff Lighting. Information desk: custom by architects, fabricated by client. Doors: Curries Mfg. Hardware: Builders Specialty.

Page 80—Ceiling tile: Armstrong. Exit signs: mcPhilben. Recessed fixtures: Staff Lighting; Kurt Versen. Column covers: Plastrglas, Inc.

Pages 93-95

Tiger River Exhibit, San Diego
Jones & Jones, Architects
Structural wood: Georgia-Pacific Corp.
Wood stains: Olympic HomeCare Products. Laminated glass enclosures: Armor Glass. Paints: Ameron Paints.

Pages 92, 96-99

Asian Elephant Exhibit, Seattle
Jones & Jones, Architects
Laminated wood beams: Western Wood Structures, Inc. Roof shingles: G.A.F. Corp. Paints (metals, masonry): Tnemec Co., Inc. Wood stains: Olympic HomeCare Products. Trench drains: Olympic Foundry, Inc. Concrete colorant: L. M. Scofield Co. Skylight: Cyro Industries, Inc. (Exolite). Exterior wood doors: Will Construction Co. Iron hinges: Richards-Wilcox.

Pages 92, 100-101

Tropical Forest Pavilion, Franklin Park Zoo, Boston
Huygens DiMella Shaffer and Associates,

Inc., Architects

Roof fabric: Owens-Corning Fiberglas Corp. Coating: DuPont Co. (Teflon). Fabricator: Birdair Structures, Inc. Translucent skylights: Kalwall Corp. Exterior lighting: Sterner Lighting Systems, Inc.

Pages 102-107

Auraria Higher Education Center, Denver
Hoover Berg Desmond, Architects

Pages 102-105—Glass block: Pittsburgh Corning Corp. Clock: custom by architect, fabricated by Electric Time Co. Brick: Endicott Clay Products Co. Roofing: Owens-Corning Fiberglas Corp. Bollards: Guardco. Storefront windows and entrance: Kawneer Corp. Automatic doors:

Stanley Magic-Door. Pavers: Clalite. Preformed wall panels: Inryco Architectural Products Div., Butler Mfg.

Pages 106-107—Wood tables and seating: Weatherend Estate Furniture. Mesh chairs and tables: Kroin. Area rug: Durkan Carpets. Ceiling tile: U. S. G. Interiors. Recessed downlights: Lightolier, Inc. Epoxy flooring: Palma. Resilient flooring: Armstrong World Industries. Paints: Tnemec; Glidden. Upward-acting doors: Overhead Door Co. Panic hardware: Sargent Mfg. Co. Stair treads: Flexco Co. Interior doors: Kawneer Co. Sprinklers: Gem.

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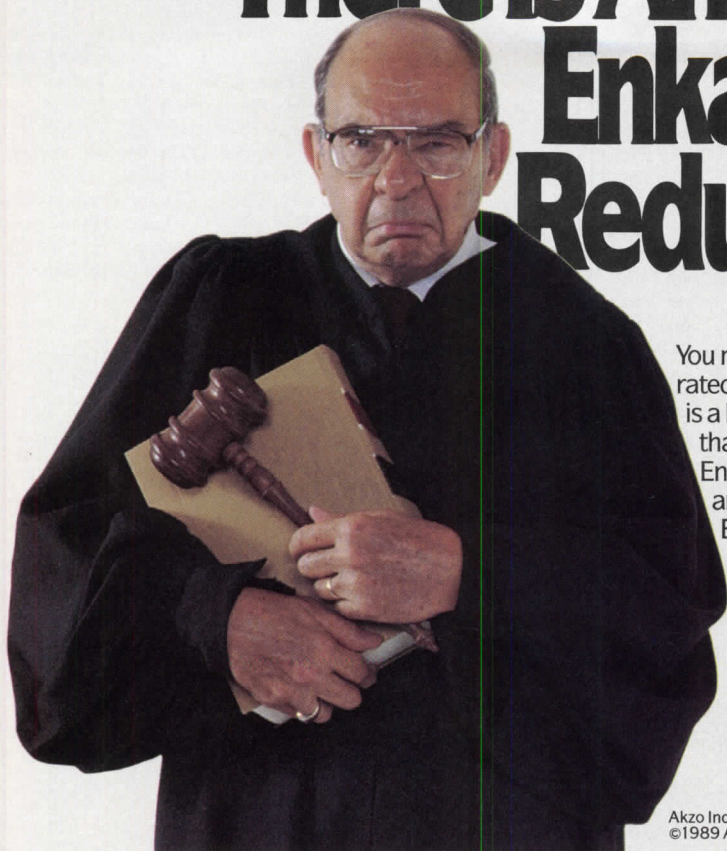
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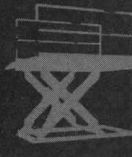
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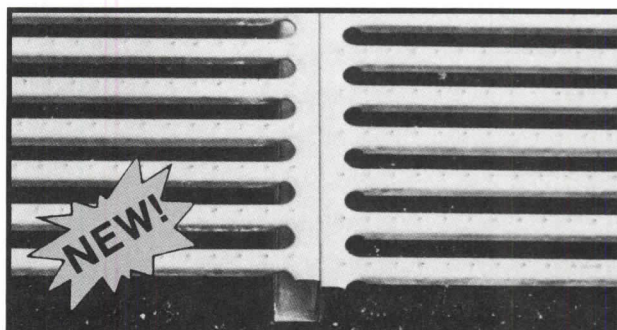
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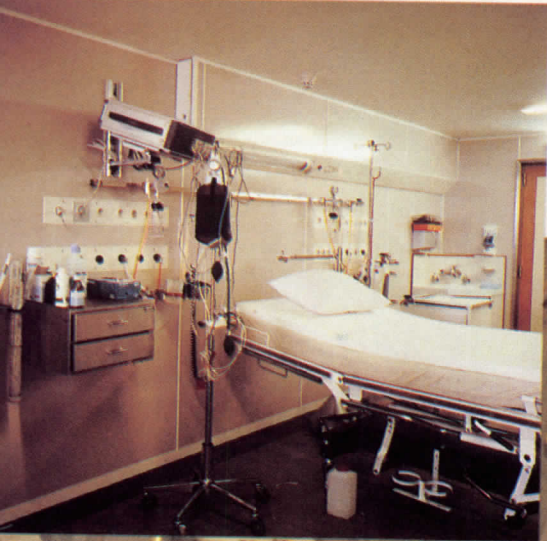
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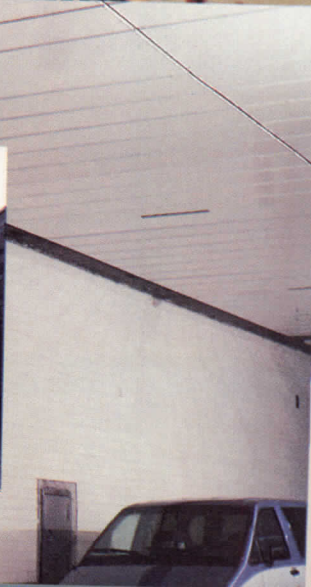
Paragon Building, Houston, Texas.
COLORFUSION panels, specified as part of a complete curtain wall system. The non-progressive system makes them easy to install and access. Panels are available in contemporary colors and textures. And in any graphic desired.



Union Station, Washington, D.C.
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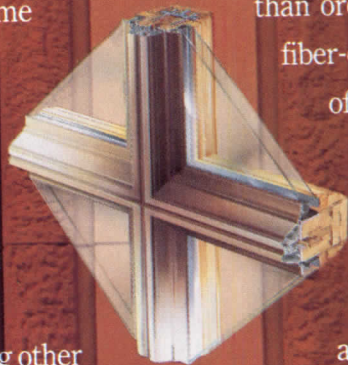


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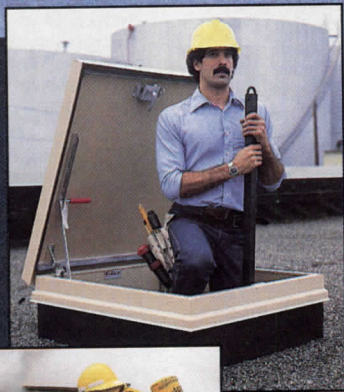
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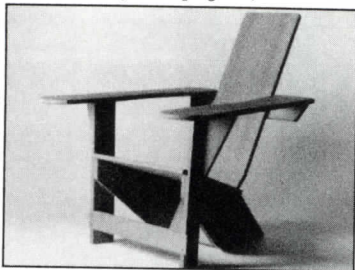
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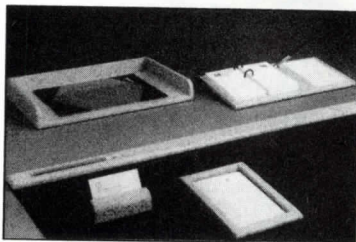
Continued from page 147



Redwood chair

Architect Gary Brown's version of Thomas Lee's original Adirondack-style chair is made of all-heart redwood, fastened with bronze screws. Called the Westport, the chair is 39-in. wide by 38-in. deep, and is available unfinished or painted with polyurethane. The Westport Chair Co., Berkeley, Calif.

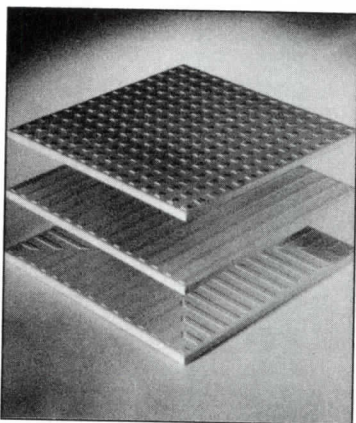
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Desk accessories

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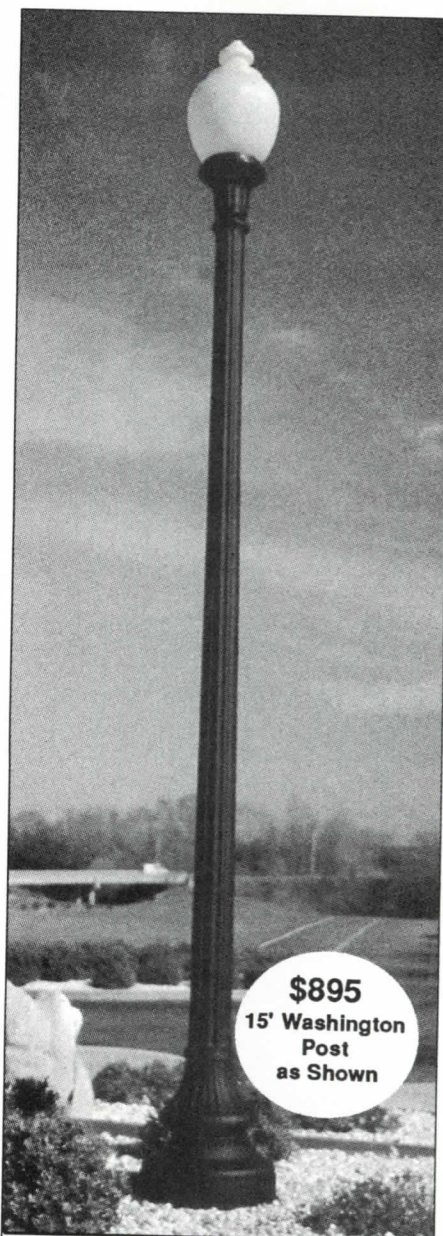
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Porcelain tile

White has been added to the existing black and gray colors of Designer pattern Fiandre porcelain tile, which contrasts polished and matte surfaces in a geometric design. Trans Ceramica, Ltd., Elk Grove Village, Ill.

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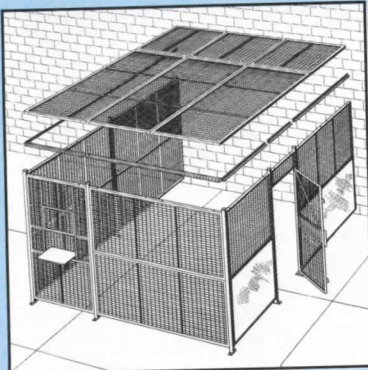
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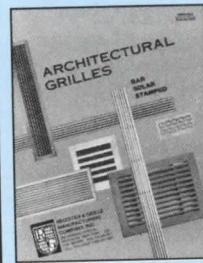
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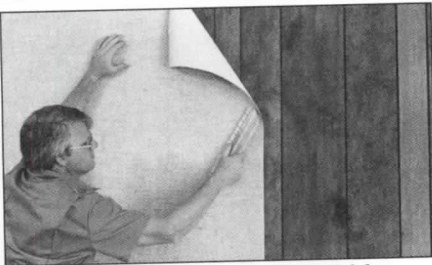
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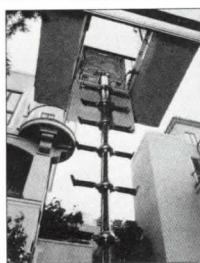
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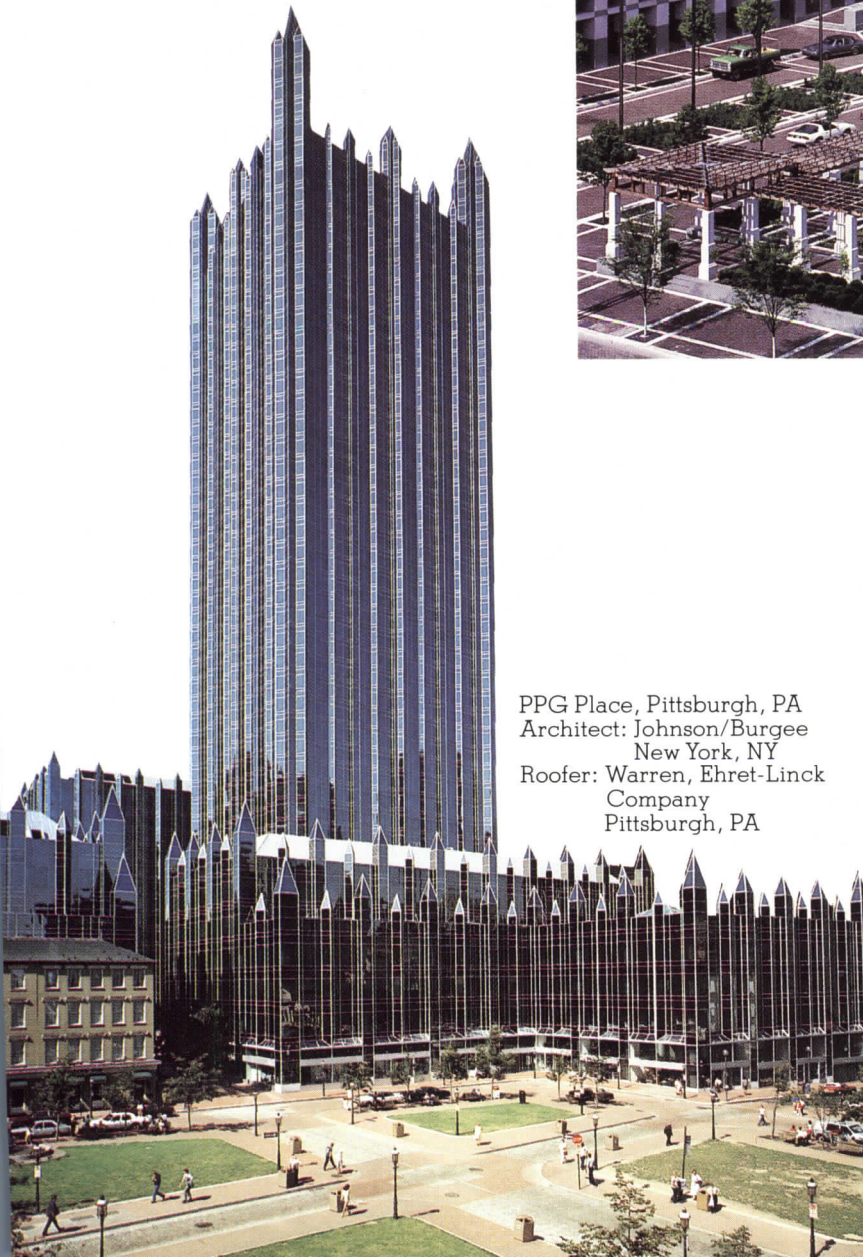
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