

# Progressive Architecture

AUGUST 1989








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ABP  MPA**ARCHITECTURAL DESIGN***Editor in charge: Thomas Fisher***59 Seaside Ascetic**Steven Holl's multiuse Dreamland Heights building at Seaside, Florida, winner of a 1987 P/A citation, is a coolly abstract response to the town's tradition-based design code. *John Morris Dixon***68 A Masterwork for Masterpieces**The recently opened Canadian Centre for Architecture, designed by Peter Rose, furthers the understanding of architecture through its extensive collections and by the intelligent example of the new building itself. *Susan Doubilet***78 Desert High**In the Capital High School, Ralph Johnson of Perkins & Will emphasizes the rationalism inherent in the vernacular architecture of Santa Fe. *Thomas Fisher***82 P/A Inquiry: Correctional Facilities**Our ambivalence toward the treatment of criminals affects the siting and design of our prisons and jails. *Thomas Fisher***88 Look Both Ways**The first phase of a development in Atlanta, a striking new retail center by Arquitectonica and Milton Pate & Associates sets an upbeat pace. *Jim Murphy***92 A Machine in the Forest**The new Center for Innovative Technology in Virginia by Arquitectonica and Ward/Hall Associates makes a bold image for a new type of facility. *Vernon Mays*

68

**DEPARTMENTS****7 Editorial**

The Next Asbestos?

**9 Views****15 P/A Awards Program****19 News Report****33 Perspectives**

New Challenges for Nouvel

**39 Calendar****43 P/A Practice**

AutoCad Review

Waiving Liens

Warranties

**Technics Topics****101 Japanese Wood**

Construction

**104 High-Density Storage Systems****117 New Products and Literature****122 Building Materials****128 Job Mart****135 Selected Details**

Exterior Wall Section

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**136 Advertisers' Index****137 Reader Service Card**

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**Cover:**

*Dreamland Heights Building, Seaside, Florida, by Steven Holl Architects (p. 59).*

*Photo: Paul Warchol*



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# The Next Asbestos?

Architects and designers can help protect the public from unbalanced electrical currents in and around buildings, and they should be on the watch for other possible hazards.

THE next health hazard in buildings, comparable in scale and seriousness to asbestos, may be upon us. *The New Yorker* in June (June 12th, 19th, and 26th) ran a three-part article by Paul Brodeur on the potential health threats of magnetic fields created by unbalanced electrical currents in and around buildings. (The unbalance is often caused by current moving through grounded plumbing systems rather than back out the wire.) Brodeur describes research by epidemiologist Nancy Wertheimer and physicist Ed Leeper in the U.S. and medical officer Lennart Tomenius in Sweden showing that people living near transformer stations, pole-mounted transformers, or high-current overhead electrical lines (found along many city and suburban streets) have a higher incidence of certain types of cancer. He also mentions research by Wertheimer and Leeper connecting electrical cable heating systems in ceilings (as well as electric blankets and computer video-display terminals) to higher rates of miscarriages.

There are several lessons here for the architectural community. First, the article undermines the common but erroneous assumption that just because we have used something for a long time, it must be safe. As Brodeur points out, we began using overhead electrical lines (as we did asbestos insulation, lead pipes, and lead-based paint) long before the advent of environmental impact statements or health-related product testing. Which raises the question: How many other common building materials or systems that we now use pose a health hazard? The architectural community, as prime consumers of building products, has the leverage to demand that manufacturers provide evidence as to the long-term biological effect of building components and systems.

Second, Brodeur's article focuses on the attempts by the government, the utilities, and product manufacturers to discredit this research with few attempts at replicating it. The reason for such stonewalling is not hard to find. There are over 30 million video-display terminals in use in the U.S., there are growing numbers of electrically radiant-heated buildings, and there is an immense investment in the overhead power distribution system. But if Brodeur's account is true, the duplicity, especially among government agencies and government-controlled utilities, is inexcusable. If nothing else, this episode, like that of asbestos before it, underscores the need for skepticism about manufacturers' claims, the need for more building research independent of any industry or interest group, and the need for better means of transferring technical information, since, as in the case here, most of the research findings were buried in obscure technical journals rarely seen by practicing professionals or the public.

Third, the article raises questions about liability in such matters. The courts may hold companies liable for the safety of particular products, but how can responsibility be assessed when damages are caused by the way we distribute electrical power or communicate electronic information in this country? If such systems turn out to pose a public health threat, then the courts could conceivably go after those who specify and locate the harmful components in and around buildings as well as those who make and distribute them.

What, then, should the architectural community do if further research verifies these preliminary findings? Brodeur has several suggestions. An effective solution to VDT radiation, he writes, has "all VDT operators sit at least twenty-eight inches from their own terminals, and about forty inches from other terminals." He also mentions that some U.S. computer companies make magnetically shielded terminals for sale only in Scandinavia (where laws require it), and that a Norwegian firm is marketing such a terminal in the U.S. Brodeur admits that overhead power lines pose a more difficult problem. "In some cases," he writes, "restringing or burying them may be sufficient to reduce magnetic-field exposure. In other cases, it might be necessary to develop ways of changing the present grounding system, which, because it often allows unbalanced currents to flow through plumbing systems, can create relatively strong magnetic fields in many homes. The trick will be to accomplish this without losing protection against electric shock. Possible solutions include using nonconductive plumbing or installing dielectric unions in existing plumbing to interrupt the flow of electric current in conducting pipe."

It is not enough to conclude that others will take care of such problems. Architects have a professional obligation and a moral duty to press for more information and more action. **Thomas Fisher** ■



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## Post-Modernism and Energy

The John Morris Dixon editorials are one of the main reasons I subscribe to P/A. And I like the one for April (page 9) in which you discussed diversity.

But somewhere, the subject of energy should have been brought in. The underlying assumption of Modernism was a steady decline in relative energy cost, and the underlying assumption of Post-Modernism was a reversal of that seemingly reliable decline. That's why the big changes came with the Arab Oil Embargo, OPEC, and related events. (The optimism of the International Style rejected regionalism based on energetics. Energy cost, as a declining percentage of the cost of living, made a glass box in Phoenix seem chic and a concern for ventilation in Tallahassee seem quaint but irrelevant.)

If we are in a period of confusion now, it's because our culture is waiting to see if fusion will become more important than fashion. Will it give us another steady energy cost decline? Or will plain old heat pollution (greenhouse effect) prove worse than physical pollution (acid rain, etc.)? Awaiting more data, stylists have no clear verdict—and can try anything.

*Harry Compton, Architect  
Bartlesville, Oklahoma*

## Post Offices and Suburbs

I would like to compliment you on the breadth of your recent article on "Reordering the Suburbs" (May 1989 P/A, pages 78–91). While the subject appears in much of the professional and popular literature these days, yours was one of the first articles to provide a valuable comparative commentary on the variety of concepts.

I was, however, struck by a dichotomy in the same May issue between the article referred to above and the Technics Topics article on Post Office Design (pages 111–113). The prototype development team apparently did not include a spokesman for a differing "kit" that might relate to the setting within which the

post office was to be located. Similarly the site plans included with the article reflect two suburban parking-in-front-of-the-building solutions.

A case illustrating the inherent problem of this approach occurred recently in a small, suburban fringe community where I have been working on a plan for orderly growth. The existing downtown is a disjointed mix of somewhat urban and suburban character and the new planning concept seeks to alleviate some of this by encouraging development to the sidewalk line. A new post office is planned for this community. The plans for this post office, prepared by an out-of-state architect, are virtually identical to the suburban examples shown in your article. While this plan no doubt resulted from discussions concerning the convenience of access (in a retail sense) it works against the urbanizing planning concept (in a civic sense).

Communities at our urban fringe will not often be designed by teams with the sociological and design range of those identified in your "Reordering the Suburbs" article. Neither will one developer be likely to control the destiny of most large tracts of land. We must work to insure that institutions such as the Post Office (including their postmasters and design architects) recognize the importance of their developments as potential focal points of the urban/suburban fabric. I am certain that the site plan examples shown in the post office article do not fit any of the emerging community prototypes of your suburbs article.

*William L. Clarke, ASLA, ASCE  
Ross, California*

## Seductive Presentations

I was browsing through a June 1989 P/A in another office and, in spite of my effort to cut back on subscriptions, the projects and presentations were inspiring so you got me again. I respect and take pride in good presentation drawings. "Presentation Methods" (page 84–93) is most interesting with variety in styles,

techniques, and medium, and I hope it's a regular feature.

*Rolf S. Lokensgard, AIA  
Minneapolis, Minnesota*

## Pratt Finalist Corrected

The finalists for the Pratt Institute School of Architecture commission (July P/A, Pencil Points, page 20) were Gwathmey Siegel & Associates, Rafael Viñoly Architects, and Eisenman Architects. The other firms mentioned were among the ten firms who competed for the job.

## Rendering Credit

The illustration of the Center for Innovative Technology, Herndon, Virginia (June 1989, page 85), was done by Terry Guilbeau for the architects, Architectonica International.

## Tile Installation Photo

The photograph of the Daily Catch restaurant by JCA/Architects (July 1989, page 93, right) was taken by Richard Mandelkorn.

## Tile Information Source

P/A's list of reliable sources of information on ceramic tile (June 1989, page 92) should have included the Ceramic Tile Marketing Federation, which provides information and organizes educational programs on tile. Contact CTMF, 1200 17th Street NW, Suite 400, Washington, D.C. 20036, 202-296-9200





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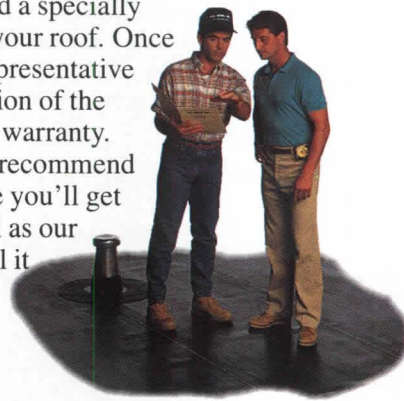
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**Research:** *Min Kantrowitz*, Principal, Min Kantrowitz Associates, Albuquerque; Adjunct Associate Professor, School of Architecture and Planning, University of New Mexico, Albuquerque. *Stephen Selkowitz*, Group Leader, Windows and Daylighting Group, Applied Science Division, Lawrence Berkeley Laboratory, Berkeley.

**Judging** will take place during October 1989. Winners will be notified, confidentially, before October 31. Public announcement of winners will be made at a ceremony in New York in January 1990, and winning entries will be featured in the January issue of P/A. Clients, as well as professionals responsible, will be recognized. P/A will arrange for coverage of winning entries in national and local media.

*Turn page for rules and entry forms.*

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**DEADLINE FOR SUBMISSIONS: SEPTEMBER 5, 1989**

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**Eligibility**

**1** Architects and other environmental design professionals practicing in the U.S. or Canada may enter one or more submissions. Proposals may be for any location, but work must have been directed and substantially executed in U.S. and/or Canadian offices.

**2** All entries must have been *commissioned, for compensation, by clients with the authority and the intention* to carry out the proposal submitted. Schemes developed for design competitions must meet the same qualifications; the submitted design must be the one the client intends to execute. (For special provision in Research category only, see Item 6.)

**3** Prior publication does not affect eligibility.

**4** Architectural design entries may include only buildings and complexes, new or remodeled, that are scheduled to be completed after January 1, 1990. Indicate *schedule* on synopsis page (Item 12).

**5** Urban design entries must have been accepted by the client who intends to base actions on them. Explain *implementation plans* on synopsis page (Item 12).

**6** Research entries may include only reports accepted by the client for implementation or research studies undertaken by entrant with intention to publish or market results. Explain basis of eligibility on synopsis page (Item 12).

**7** The jury's decision to premiate any submission will be contingent on verification by P/A that it meets all eligibility requirements. For this purpose, clients of all entries selected for recognition will be contacted by P/A. P/A reserves final decision on eligibility and accepts no liability in that regard. Please be certain entry meets above rules before submitting.

**Publication agreement**

**8** If the submission should win, the entrant agrees to make available further graphic material as needed by P/A.

**9** In the case of architectural design entries, P/A must be granted the first opportunity among architectural magazines for feature publication of any winning project upon completion.

**Submission requirements**

**10** Entries must consist of legibly reproduced graphic material and text adequate to explain proposal, *firmly bound* in binders no larger than 17" in either dimension (9" x 11" preferred). No fold-out sheets; avoid fragile spiral or ring bindings.

**11** No models, slides, films, or videotapes will be accepted. Original drawings are not required, and P/A will accept no liability for them.

**12** Each submission *must include* a one-page synopsis, in English, on the first page inside the binder, identifying the project and location, clarifying eligibility (see Item 4, 5 or 6), and summarizing principal features that merit recognition in this program.

**13** To maintain anonymity, no names of entrants or collaborating parties may appear on any part of submission, except on entry forms. Credits may be concealed by any simple means. Do *not* conceal identity and location of projects.

**14** Each submission must be accompanied by a signed entry form, to be found on this page. Reproductions of this form are acceptable. All four sections of the form must be filled out, *legibly*. Insert entire form, intact into *unsealed* envelope attached inside back cover of submission.

**15** For purposes of jury procedure only, please identify each entry as one of the following: *Education, Houses (Single-family), Housing (Multiple-unit), Commercial, Industrial, Governmental, Cultural, Recreational, Religious, Health, Urban Design, Applied Research*. Mixed-use entries should be classified by the larger function. If unable to classify, enter *Miscellaneous*.

**16** Entry fee of \$90 must accompany each submission. An early submission fee of \$75 per entry will be accepted for entries postmarked August 22 or earlier. Fee must be inserted into *unsealed* envelope containing entry form (Item 14 above). Make check or money order (no cash, please) payable to *Progressive Architecture*.

**17** P/A intends to return entries intact, but can assume no liability for loss or damage.

**18** Deadline for sending entries is September 5, 1989. Early submission deadline is August 22 (Item 16). Any prompt method of delivery is acceptable. Entries must show postmark or other evidence of being en route by midnight, September 5 (August 22 for early submissions). Hand-delivered entries must be received at street address shown here, 6th floor reception desk, by 5 p.m. on specified date.

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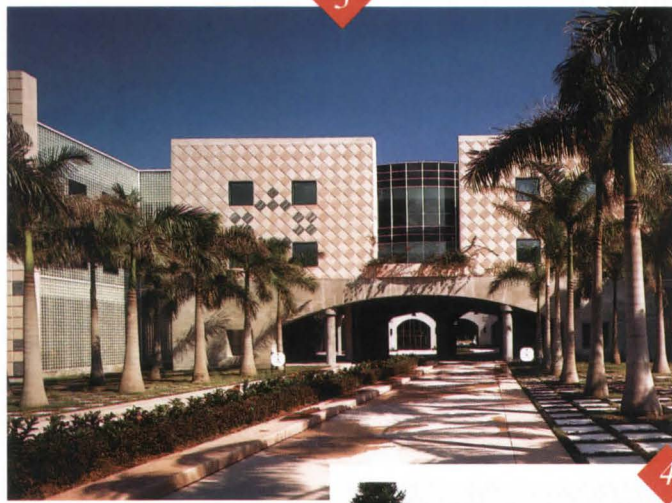
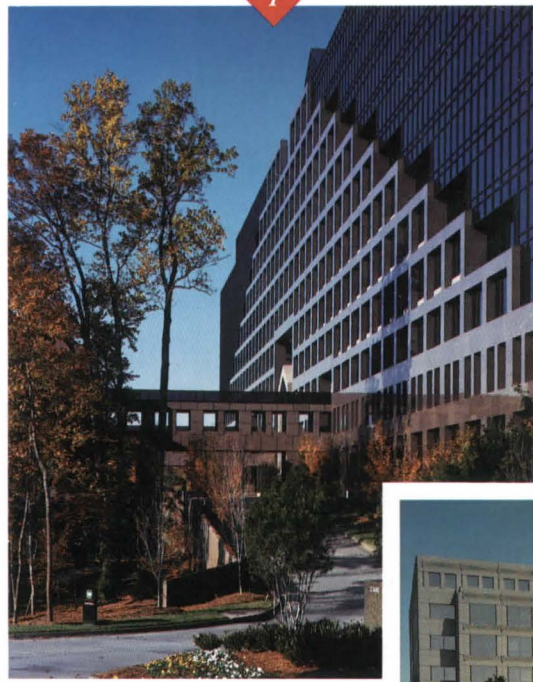
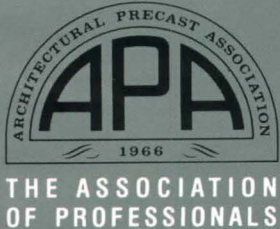
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2. Rockcreek North Office Building  
Rockcreek, MD  
House Reh Associates
3. Burger King World Headquarters  
Miami, FL  
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## Special Mention:

4. Crystal Water Park  
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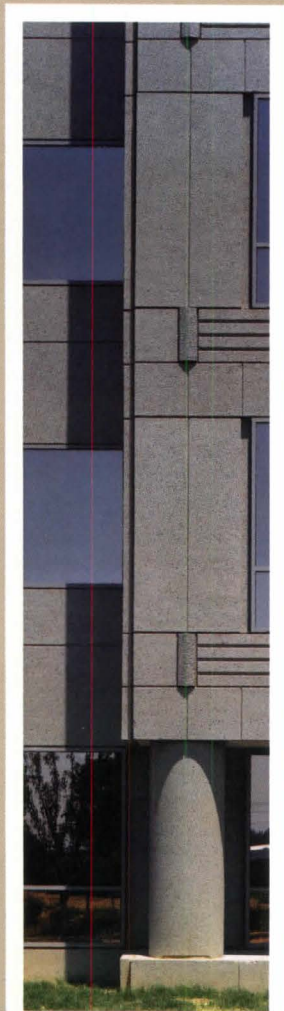
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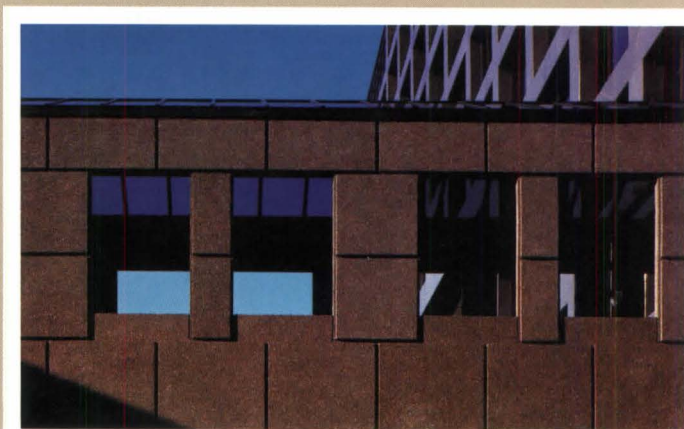


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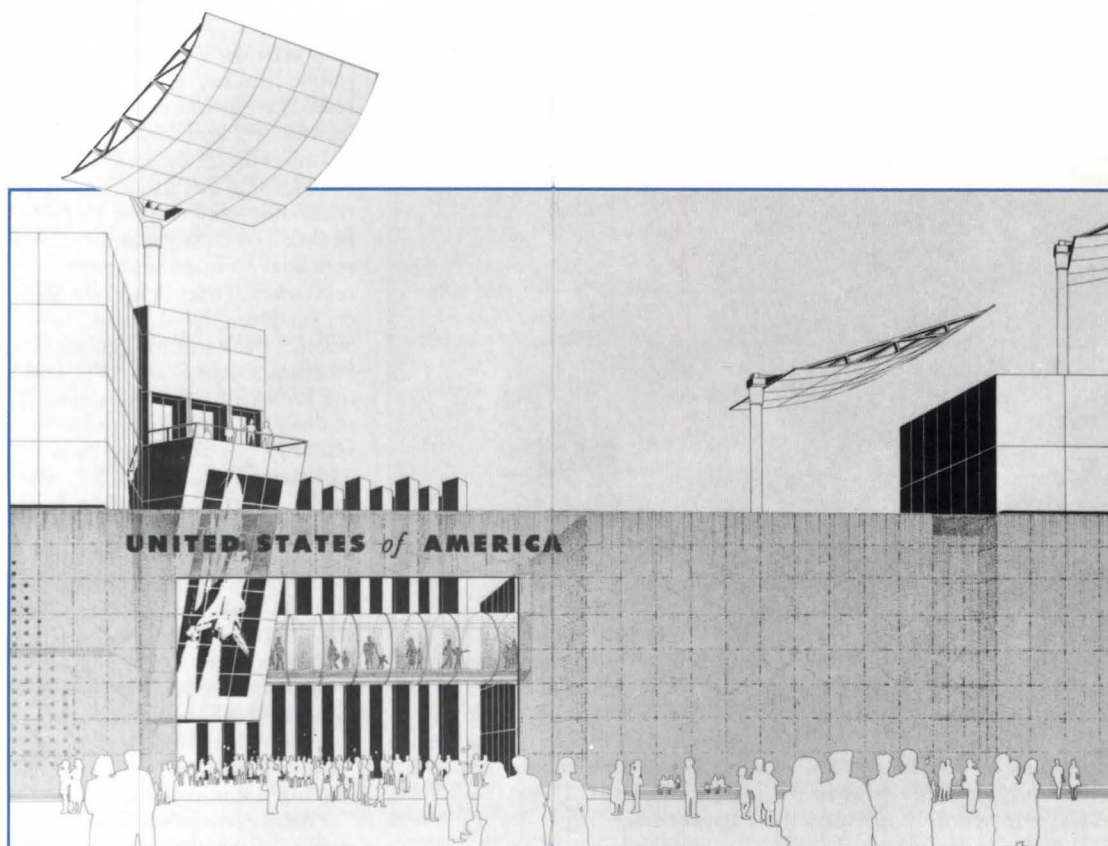


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Barton Myers's winning scheme for the Seville World's Fair: *High-Tech Americana*.

**Three new projects by Jean Nouvel include an urban infill project in Perpignan (right). See Perspectives, page 33.**



## Show of History Opens the CCA

"Architecture and its Image," the main inaugural exhibit at Montreal's Canadian Centre for Architecture (see p. 68), bodes well for future installations at the CCA. Says Eve Blau, Curator Exhibitions and Publications, "Our mandate was to show the range of the collections while dealing with issues that are central to the study of architecture and the purpose to which the CCA is dedicated." Accordingly, the first part of the exhibit deals with architectural representation, highlighted by Durer's woodcut of a fortification, dating

(continued on page 20)



Watercolor by Ernest Cormier from CCA inaugural show.



David Cooper

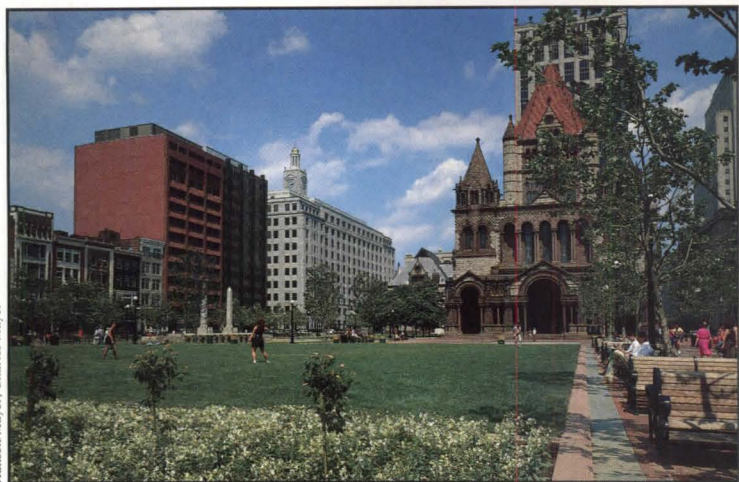
Toronto's Skydome in its open position.

## "Convertible" Stadium in Toronto

Despite the controversy that has surrounded it, Toronto's Skydome, the first domed stadium with a fully retractable roof, qualified as a local landmark even before its June 3rd opening. Considering its size and prominence, it could hardly have been otherwise. Occupying 11 acres immediately adjacent to the CN Tower, Skydome is a multi-purpose arena seating over 50,000 for baseball and football and up to 67,000 for concerts. In addition to 161

(continued on page 26)





Newly green Copley Square, with new obelisks at left rear.

**Copley** (continued from page 21) some 300 peers in an extensive competition judged by, among others, William Whyte. Since the architecture surrounding Copley Square makes as strong a statement as the last century could supply, the jurors wanted to avoid the "monumental and formal." Understatement was the stipulation, and if understatement produced a place that still seems more parcel than park, maybe the ordinary is enough. Perhaps the end of the spring rain and the coming of a food market and booths will animate the new environment with a constituency to make it a more permanent place.

Jane Holtz Kay

## Two More D.C. Memorials

This summer's unveiling of the winning design for a memorial to veterans of the Korean War, along with the announcement of the finalists for a memorial to American women who have served in the armed forces, underscores a growing challenge for the national capital. As more than a few local design review officials and architectural critics have said lately, Washington is besieged by plans for memorials.

It is hard to know how many memorials are too many for the capital city and harder still to determine who should say. Congress appears to have helped matters only slightly in 1986, with passage of the Commemorative Works Act. By stating that memorials must be concerned with persons, groups, or events of national significance, legislators seem simply to have defined the ground rules for anyone with firm convictions about a worthy cause and the ability to raise funds. Still, the Act also mandates a series of exacting and lengthy design approval procedures for monu-

ments in the city's core. These design review and approval authorities may provide the only workable basis for sorting through the proliferating memorial proposals and assuring that what is done will enhance the beauty of the capital.

The Korean War Veterans Memorial is to be sited on the Mall in an area known as Ash Woods, southeast of the Lincoln Memorial on the opposite side of the Reflecting Pool from the Vietnam Veterans Memorial. From a field of 543 entrants, the military-dominated jury picked a scheme by Veronica Burns Lucas, Don Alvaro Leon, John Paul Lucas, and Eliza Penny-packer Oberholtzer, members of the faculty of architecture and landscape architecture at Penn State University.

Their design consists of a 120-yard-long tapering walk approaching a single U.S. flag mounted atop a high pole; the approach is flanked by larger-than-life-size granite sculptures representing a platoon of 38 combat-ready soldiers. The whole composition is to be enclosed by an arc of trees.

The sculptures, if properly executed and sited, might achieve the stunning quality of the five-quarter scale soldier monuments at the Civil War Battlefield in Antietam, Maryland, which have the ghostly quality that the Penn State designers say they hope to achieve. However, the design's tree-lined enclosure appears to foreclose the possibility of distant views and in any case seems inappropriate to this otherwise open area of the Mall. This design needs review and refinement.

Plans for the Women in Military Service Memorial at the entrance to Arlington National Cemetery are less controversial, in part because whatever scheme is eventually built will defer to McKim, Mead & White's long-es-

tablished vista running from the gateway of the cemetery to the Lincoln Memorial.

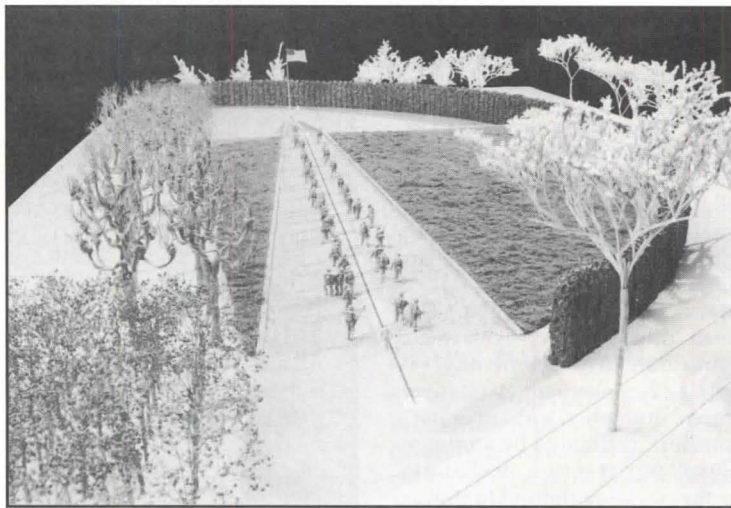
The finalists for the Women's Memorial design, observing excellent guidelines prepared by a team from the school of architecture at Virginia Tech, placed the bulk of a planned visitors center and support areas below grade. Each solution builds upon and completes the forecourt of the entry hemicycle, an important visual terminus.

The finalists are Teresa Norton, Cleve Harp, David Overholt, Sergio Cahvarria, Peter S. Christman, Martha Enzmann and Ming T. Shaing, of Tybee Island, Georgia; Gregory A. Galford and Maria L. Antonis of Philadelphia; and Michael Manfredi of New York and Marion G. Weiss, Ellen D. Sands and Thomas Schumacher of Washington, D.C. A design submitted by Stephen D. Siegle and Margaret Derwent of Chicago was designated an "alternate"; the designers were invited to continue in the competition's second stage. The finalists will develop their designs in a second stage of the competition, to be completed in November 1989.

One hopes and expects that the final design proposal for the Women's Memorial will reflect the benefit of additional effort accorded by the two-stage competition process. The jury—headed by architect Robert Campbell and nicely balanced with urban designer Joseph Sarsoneau, landscape architect Peter G. Rolland, architect Romaldo Giurgola, artist Mary Miss, and planner La Barabara James Wigfall, plus several prominent women military veterans—seems to have chosen well among the 131 entrants.

As a consequence both of the long review procedures and the challenges of fundraising, the built results of these two competitions will not be seen quickly. Estimated completion of the Korean War memorial, for example, is at least four years off, under the best scenario, all the more reason for the design review processes to work diligently and fairly to assure that these designs become the best they can be. **Thomas Vonnier**

(News Report continued on page 25)



Winning Korean War Memorial design by Penn State faculty members.



Site for Women's Military Memorial at entrance to Arlington Cemetery.

Scott Johnson



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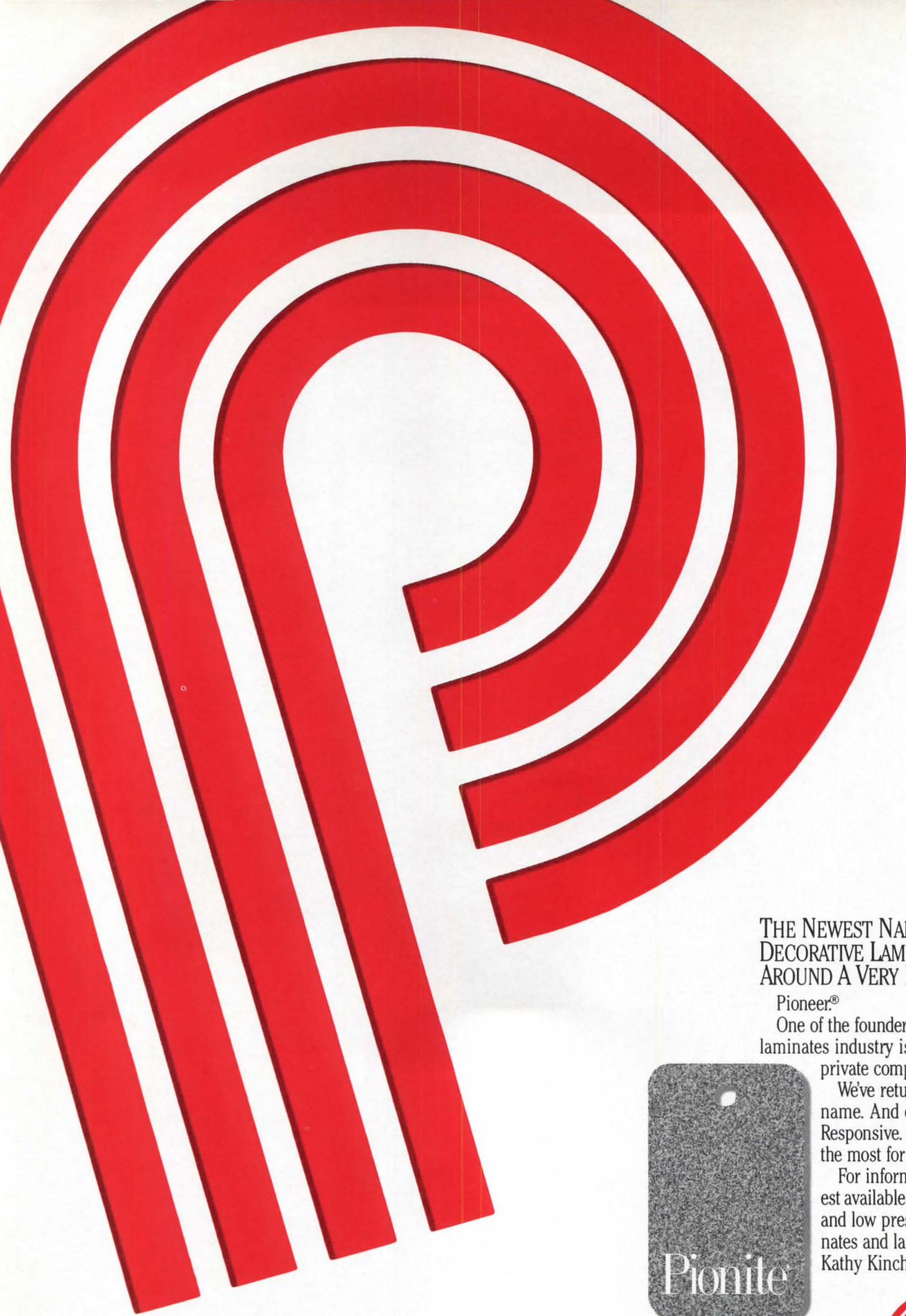
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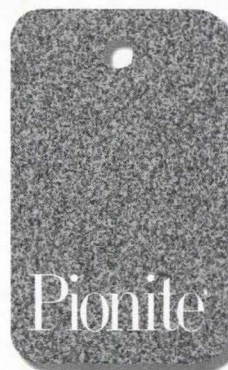
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Franklin School in 1917, before its 1950s addition.

## Symbolic Seattle School Saved

While the question "What to do with our public schools?" has received wide attention in recent years, another equally perplexing concern has faced school districts: what to do with our public school buildings? As schools across the country have outlived their original purpose they have most often been replaced, destroyed, or sold off for adaptive reuse. Rarely, though, will a school district spend the extra money required to renovate an existing facility and keep it operating as a school.

One exception to the rule is Seattle's 1912 Franklin High School. Once considered "the most beautiful school in the Northwest," Franklin's stature has diminished considerably over the years. An engineering survey identified the school as one of the district's worst facilities in terms of condition and safety. Furthermore, the beauty of Franklin's once-striking west façade was marred by a box-like 1950s-style addition that obscured its colonnade, ornamental terra cotta trim and arched cathedral windows.

Given those factors, it was no surprise when school authorities announced plans to replace the sagging structure with a new building. What wasn't expected was the enraged response from students, alumni, and preservationists, who embarked on a city-wide campaign to save Franklin from the wrecking ball.

The strong sentiments were stirred, in large part, because Franklin, which overlooks the Rainier Valley, is seen by many as the last remaining symbol of community pride for Seattle's impoverished South End. "To think it might become a faceless contemporary complex—it's unimaginable," said one

Franklin School student.

In a resultant compromise, the district plans to spend \$18 million (as opposed to the \$15-million cost of a new building) to restore the school, removing the 1958 addition and modernizing interior facilities to accommodate changing program needs.

During the course of the debate over Franklin, the question was raised: At a time when other schools are having to be closed, is the expense of preservation a justifiable option? At one point, a school board member admitted, "We're at a loss as to how to measure the educational value of a building." School board member Elizabeth Wales offers an answer: "There's an image of public schools across the country that's one of neglect . . . of mediocrity and of settling for just getting by. Franklin will stand there in total contrast to that image." *Clayton Park* ■

*The author is a freelance writer living in Seattle.*

## ADPSR on Bay Area Housing

A diverse and international group—Jean Nouvel, Cushing N. Dolbeare, Joseph Paul Kleiheus, and Kenneth Jackson—spoke in San Francisco this spring on the issue of affordable housing. In presenting the series, "Housing the City," the local chapter of Architects/Designers/Planners for Social Responsibility departed from its usual agenda of publicizing the consequences of nuclear war and disproportionate weapons expenditures to discuss the negative effects of the withdrawal of funding from low-income housing programs. The intent of the series was to review past and present attitudes toward subsidized housing in the U.S. and

(continued on page 26)

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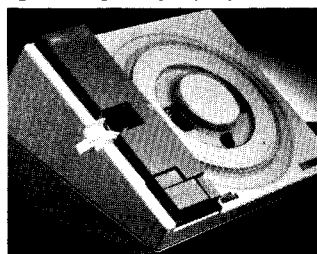
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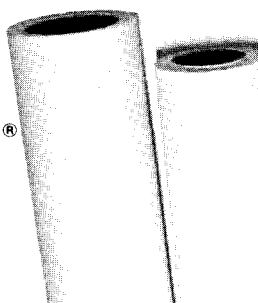
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**ADPSR** (continued from page 25)

to expand conventional perceptions of housing solutions for San Francisco, a city facing its own housing crisis.

The first speaker, Jean Nouvel, presented his recent social housing projects in St. Ouen and Nîmes. Although Nouvel emphasized the difficulties of building innovative social housing in France, his success in using unconventional materials—metal siding and garage doors for balconies—and open floor plans with mezzanine bedrooms aroused a great deal of envy in the audience.

Cushing N. Dolbeare, the founder and former president of the National Low-Income Housing Coalition, drew on her long career as a social housing advocate to distill the bewildering mass of housing statistics into a coherent and objective history of housing policy and its effects since 1980. Kenneth Jackson reiterated the theme of his best-selling book, *Crabgrass Frontier: The Suburbanization of the United States*—that we imperil the democratic foundations of our society by failing to provide shelter for the lowest tier of its members.

On May 1, Josef Kleiheus spoke about the Berlin International Building Exhibition (IBA), which he directed from 1979 to 1989. Perhaps Kleiheus's presentation, along with the run of the IBA exhibition at the San Francisco Mart from July 17 to August 18, could mobilize public opinion to develop a similar program in San Francisco. The idea of inviting noted architects to design subsidized infill housing seems particularly applicable to a city with a strong emphasis on comprehensive planning and neighborhood conservation.

The final event was a symposium in which architect Tom Jones, Chair of the Mayor's Housing Advisory Committee, presented the committee's draft report on housing. According to Jones, Mayor Agnos will seek \$40–60 million for affordable housing through a new tax on real estate transfers, tax increment funding, and a bond issue.

San Francisco has been described as a livable New York—its density is second only to New York—but with the medium price of single homes now among the highest in the nation, residents are wondering what "livable" means these days. Although the city has shown no net gain in employment over the past two decades, about 60,000 new residents, many of them homeless, have come to the city.

While the city added 2000 rental units—about 20 percent of them low-income—to its housing stock last year, the affordable housing crisis worsens. Having concluded a very successful public forum on the subject, the local ADPSR chapter is now plotting the move from talk to action.

*Sally Woodbridge*

**Stadium** (continued from page 19)

boxes, a 600-seat restaurant, and Canada's largest McDonald's, the stadium can claim another first: an 11-story hotel wrapping around the north end, with 71 (of 360) rooms overlooking the field.

Skydome's price tag doubled to \$500 million in the four years after the job was awarded to a consortium of Toronto architect Rob Robbie, in joint venture with Neish Owen Rowland Roy, structural engineer Michael Allen of Adjeleian Allen Rubeli, and construction company EllisDon. Roughly \$60 million came from government sources, the rest from private investors, many of whom received exclusive advertising and sales rights. Critics argued that the project was devised by the powerful for the rich, adding it was a misguided substitute for an open-air ballpark and a sure guarantee of traffic congestion in the core.

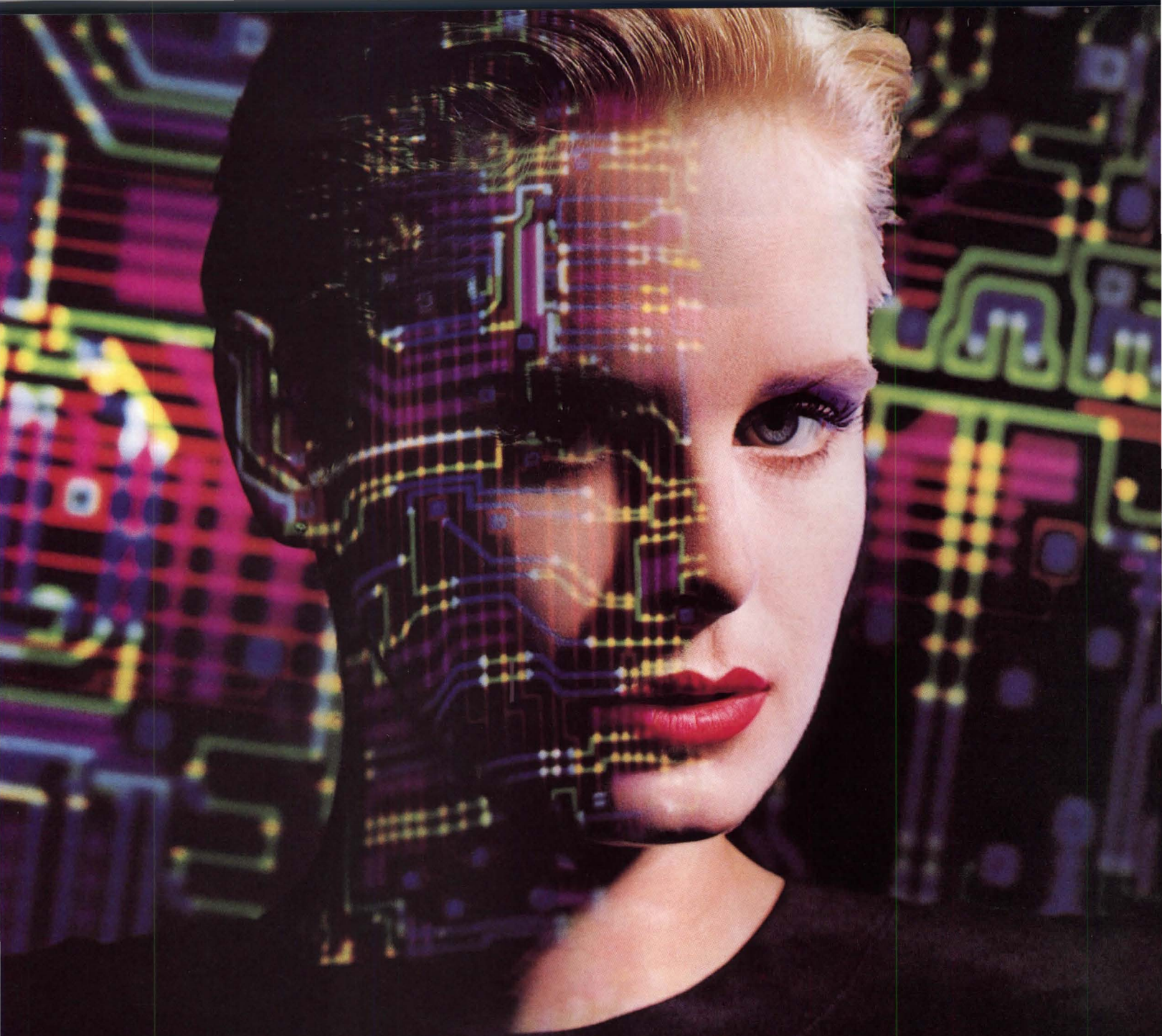
It was also Robbie's first crack at the civic and monumental. An Englishman with Brutalist tendencies, Robbie believes in systems over style. While, architecturally, Skydome is a crude eruption of concrete and curtain wall on the Toronto skyline, it also happens to be superbly organized inside—and, against all odds, a successful and atmospheric baseball stadium. Allen's roof adds a futuristic dimension. There are only three moving parts. In open mode, two barrel sections slide to the north to stack over a fixed spherical segment and a second spherical piece retracts to the north, rotating around a circular track. (The operation takes 20 minutes.)

Skydome has spawned an entire district of bars and restaurants around it, and has sent Robbie and Adjeleian to second base. They've been asked to study the feasibility of converting the fixed roof of the Hubert H. Humphrey Metrodome into a retractable lid. *Adele Freedman*

*The author, a regular contributor to P/A and Canadian publications, is design critic for The Globe and Mail of Toronto.*

(News Report continued on page 28)





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**Seville** (continued from page 19)

allusion and metaphor," the Myers design, in its conceptual stage, appears to incorporate an appropriate mix of Americana, reveling in a combination of technological ingenuity, science fiction, and popular culture. Its NASA/Constructivist architecture responds, with some sensitivity, to world's fairs of the past and suggests an optimistic America of the future. It has been conceived as a prefabricated structure with components manufactured in the United States and shipped to Spain.

Because of zoning mandates, the low-rise steel paneled building must demonstrate its wares without the usual bigger-is-better American mentality. The refreshingly small proportions, however, do not dictate small ideas. A 40-foot-high, 300-foot-long wall of water that symbolizes the vast expanse of water faced by Columbus doubles as the pavilion's façade.

Inside the pavilion, a big-screen communications board will inform visitors of the pavilion's offerings. Beyond, three tracking sails (representing Columbus's three ships) will follow the movement of the sun, shading visitors from the summer heat. The expected 4000 visitors an hour will then enter a "Walk-Through Theater." Fifty "Cool Towers" representing the fifty states will act as an outdoor air-conditioner; the towers will capture arid Seville air, moisten it, and release a cool breeze into the main courtyard.

Gardens and landscaping by the Los Angeles firm of Emmet Wemple & Associates are planned to soften the space and to provide a green oasis amidst the pavilion's metal-clad fixtures. Sussman/Prejza & Co., Los Angeles, will provide graphic design for the pavilion.

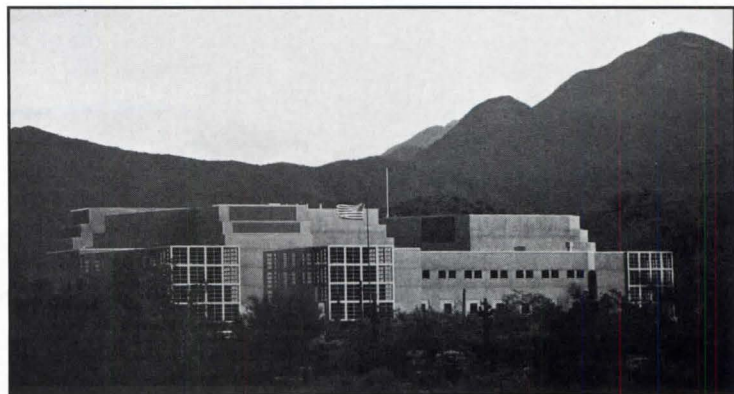
As is customary, states, cities, and anyone else—generally large corporations—will produce and organize exhibitions and pavilions within the larger

parameters of the main pavilion. With funds as yet unallocated (a combination of private donations and matching government funding is expected to cover expenses) and many of the players in this celebration still undetermined, the final shape of the U.S. Pavilion is still without definition. **Abby Bussel**

## Twelve Win Tucker Awards

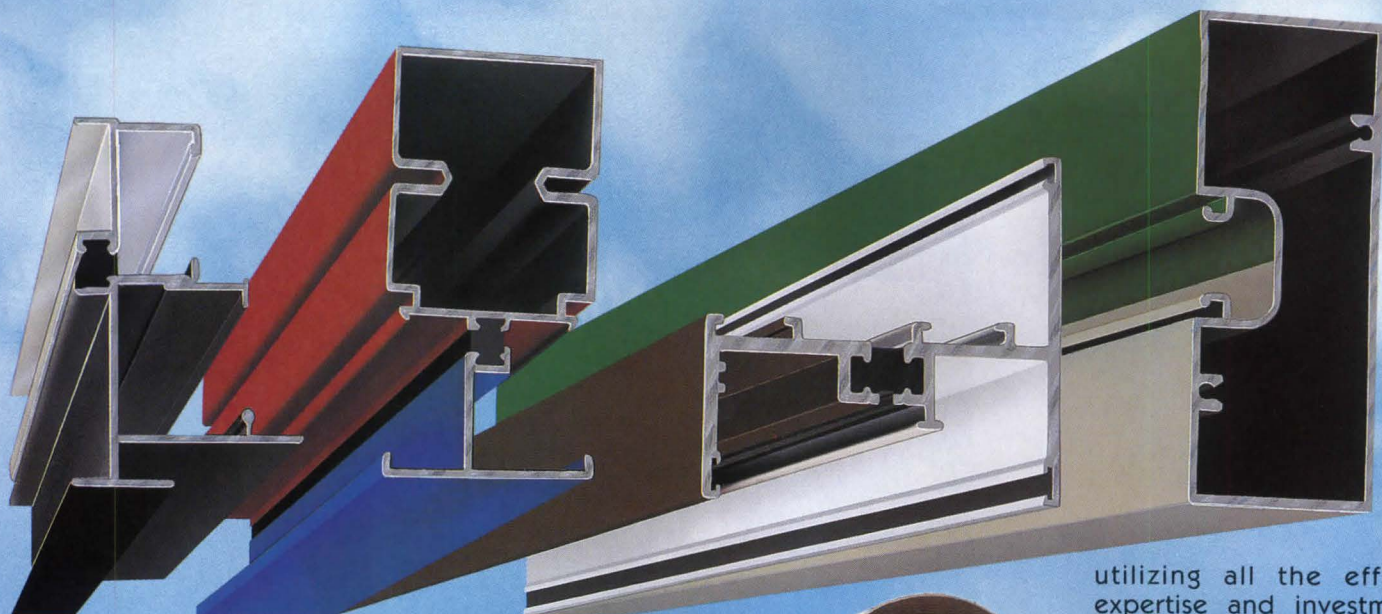
The Building Stone Institute has announced the winners of this year's Tucker Architectural Awards, an annual awards program recognizing "excellence in concept, design, construction, and use of natural stone." Choosing the 12 winners were architects Peter S. Forbes, Boston and Steven L. Einhorn, Albany, N.Y.

The winners are: Software Engineering Institute, Carnegie Mellon University, Pittsburgh, by Bohlin Powell Larkin Cywinski and Burt Hill Kosar Rittelman; 3401 Walnut Street, Philadelphia, by Geddes Brecher Qualls Cunningham (P/A, Feb. 1989, p. 86); Heron Tower, New York, by Kohn Pedersen Fox (P/A, July 1988, p. 82); Metropolitan Police Headquarters, Toronto, by Shore Tilbe Henschel Irwin Peters and Mathers & Haldenby; Macy's, Dallas, Texas, by Thompson, Ventulett, Stainback & Associates; Mayo Clinic, Scottsdale, Ariz., by Ellerbe Becket; Tennis Cottage, La Anna, Pa., by R.K.R. Hess Associates; Indiana State Capitol restoration, Indianapolis, by The Cooler Group; South Station restoration, Boston, by Skidmore, Owings & Merrill; Swimming Pool and Outdoor Shower, Eastern Maryland, by Rubenstein-Markiewicz Architects. Two projects by Kohn Pedersen Fox Conway won awards for interiors: MONY Financial Services lobby renovation, New York, and an office at 65 East 55th Street, New York.



Ellerbe Becket's Mayo Clinic in Scottsdale, Arizona, Tucker Award winner.





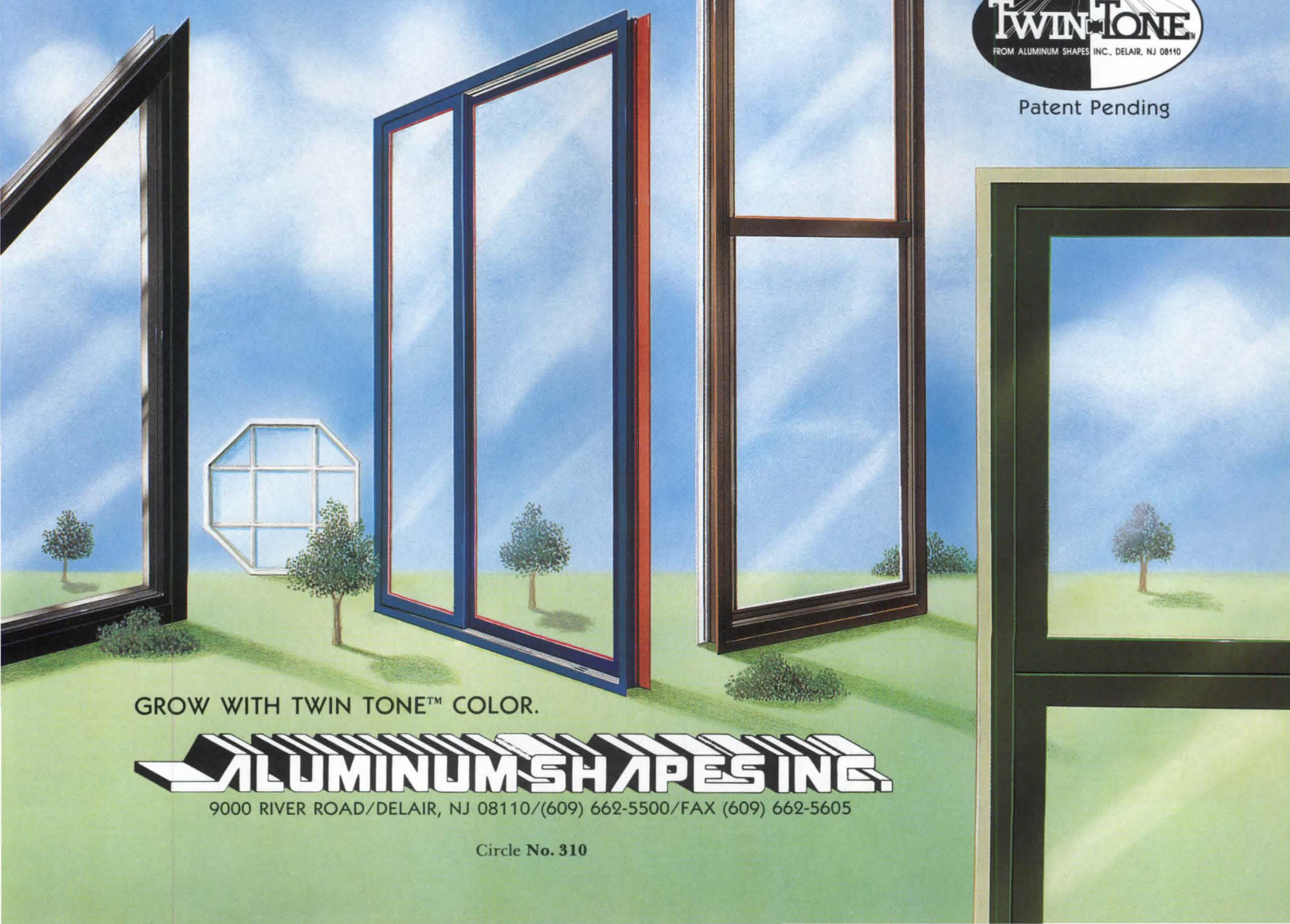
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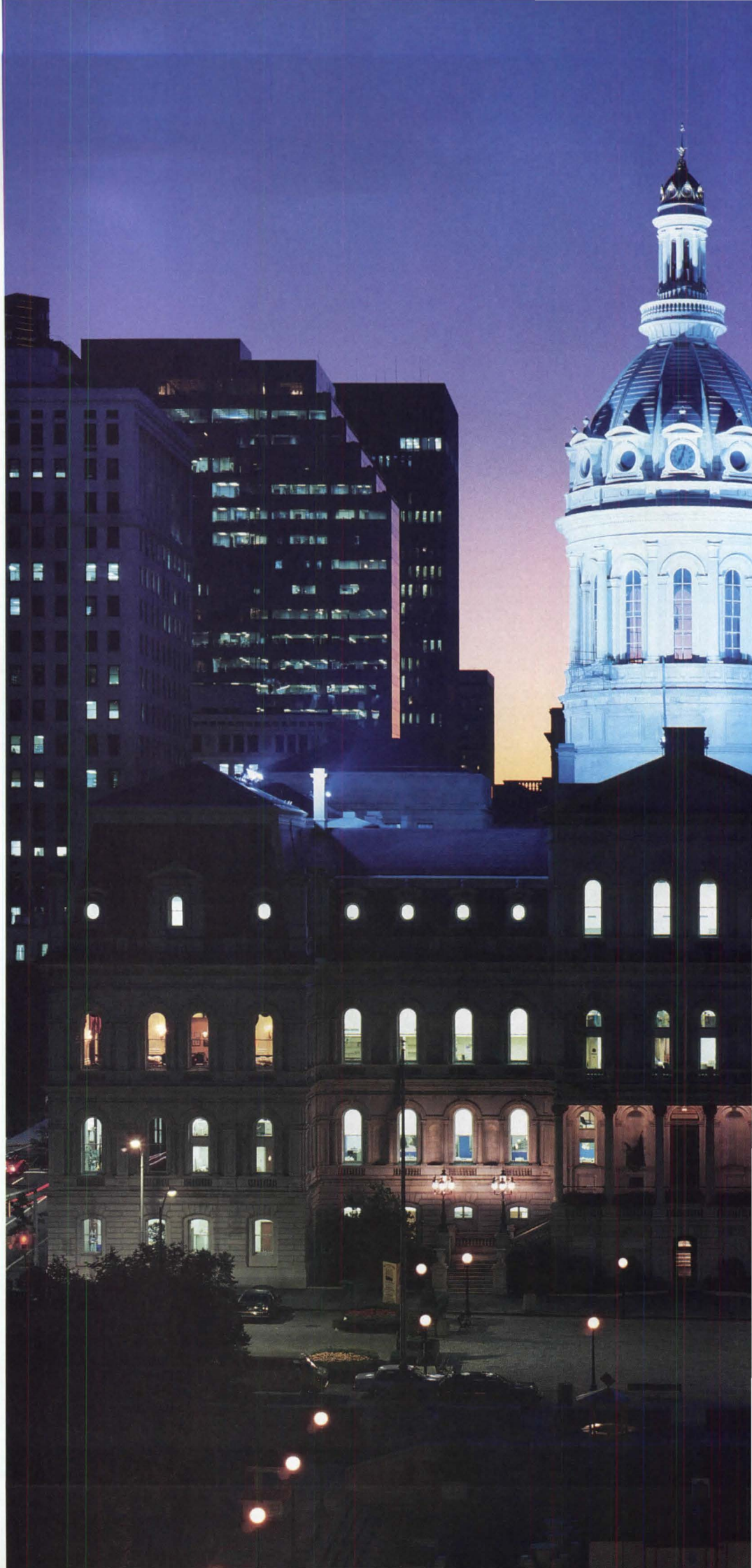
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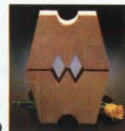
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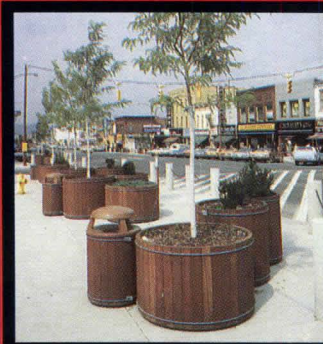
Curve it...



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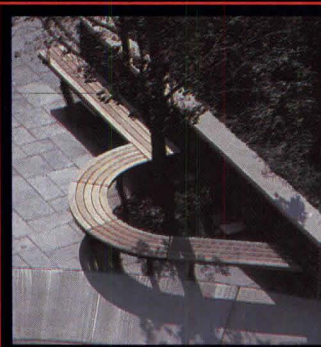
Group it...



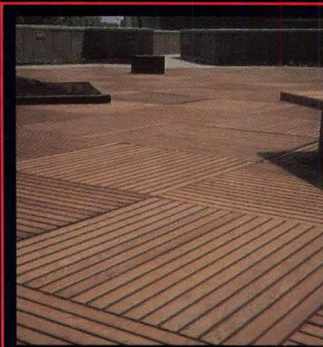
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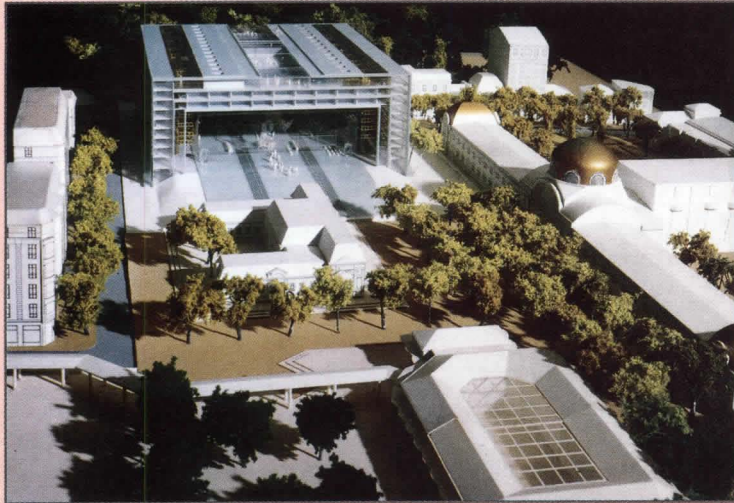
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Nouvel's "triumphal arch" for Vichy spa complex. Existing spa building is at right.



A wide range of metal and glass materials are employed in the arch.

## New Challenges for Nouvel

In the wake of his highly acclaimed *Institut du Monde Arabe* (P/A, July 1987, p. 72, May 1988, p. 94) in Paris, Jean Nouvel has become one of the most sought-after of those new image-makers that have put French architecture back on an international stage. Now a series of new commissions spread over the map of France is presenting a challenge to the syntax of elegant and urban High-Tech which has become Nouvel's personal trademark. In addition to a much-publicized and controversial design for a hotel and health spa complex at Vichy and a vast mixed-use project to renew a whole quarter of Perpignan, both of which made architecture a major issue in this spring's round of municipal elections, Nouvel recently captured the commission to realize Europe's tallest skyscraper on a prominent site at La Défense, Paris's office quarter.

The Vichy commission (for which Ricardo Bofill and Christian de Portzamparc were also competitors) is a clear gamble to tap into the excitement generated by Nouvel's architecture and to give new glitter to the somewhat depressed "queen of the spas," where the fashionable gathered into the 1930s to take the waters and haunt the casino. Financed by the Vichy Compagnie Fermière, a state-franchised spa-management division of Perrier, the new center is to combine a 200-bed, four-star hotel with a state-of-the-art health and beauty spa. On a prominent site between the existing domed Neo-Byzantine spa building (designed in 1903 by Charles LeLecoeur) and a leafy park along the Allier river, Nouvel is designing the latest addition to a century of audacious spa architecture, creating, as he says, "an event on the scale of the casino . . . an architectural event based on modernity."

A huge extruded triumphal arch (not altogether unlike Norman Foster's Sainsbury Center)

that serves as one of the principal gates to the downtown spa complex provides a visual and pedestrian link between Vichy's principal natural amenities: leafy greenery and mineral springs. Bridging the great concourse, whose transparent glazed floor is undercut by streams and fountains, the hotel and health facilities are housed in a great open frame clad entirely in glass and aluminum. The two-level roof is given over to sunbathing and pool facilities shared by hotel and spa. Throughout, the essential ingredients of any spa cure, water and abundant sunlight, are amplified and symbolized through reflective materials and transparent effects.

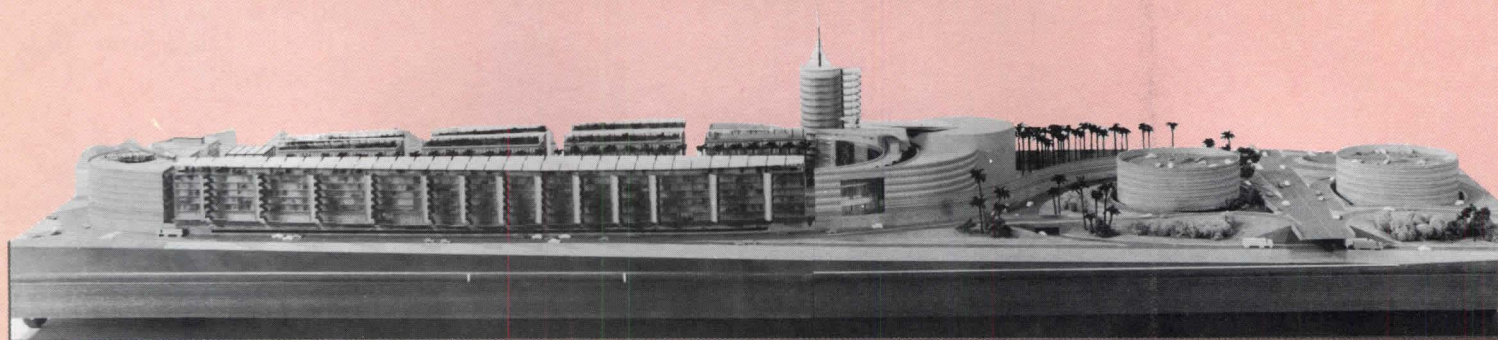
Despite the confidence of the Compagnie Fermière, doubts have been aired locally over the scale of this great arch—27 meters high—and the loss of two beloved local landmarks, the Queen's Hotel and a Neo-Alpine chalet, demolished last spring to prepare the site. Only completion in 1991 will reveal whether this triumphal arch of health, beauty, and leisure can give Vichy the facelift its corporate fathers are seeking.

Transparency, water, and sun are also principal ingredients in Nouvel's urban renewal project for Perpignan, the "Place Sang et Or" (Blood and Gold Square), the largest project ever undertaken by Nouvel's firm. Construction is scheduled to begin later this year on the three-hectare site along the Tet river on the periphery of Perpignan's historic center, a prime site left vacant by the transfer of the wholesale produce market to the suburbs. Nouvel conceived a vast oval space—with practically the same dimensions and form as the Piazza Navona in Rome—as the focus for an immense program of apartments, offices, shops, flower market, auditorium, and open-air cafés. While its piazza creates a focus and a protection from the fierce Tramontane winds, the office quarter on the south side of the square is pierced by streets which

(continued on page 34)

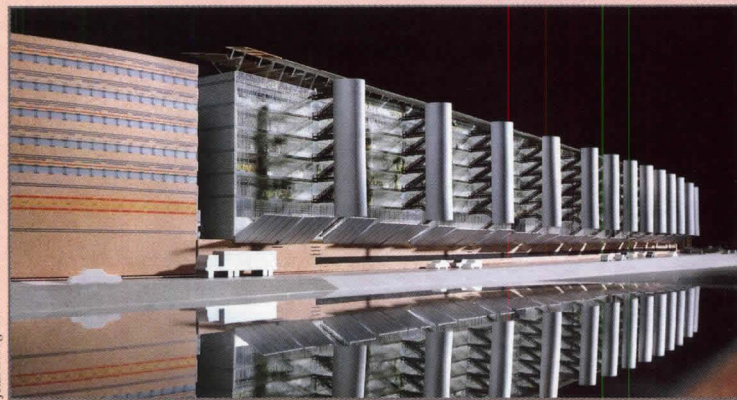


Hervé Domezan



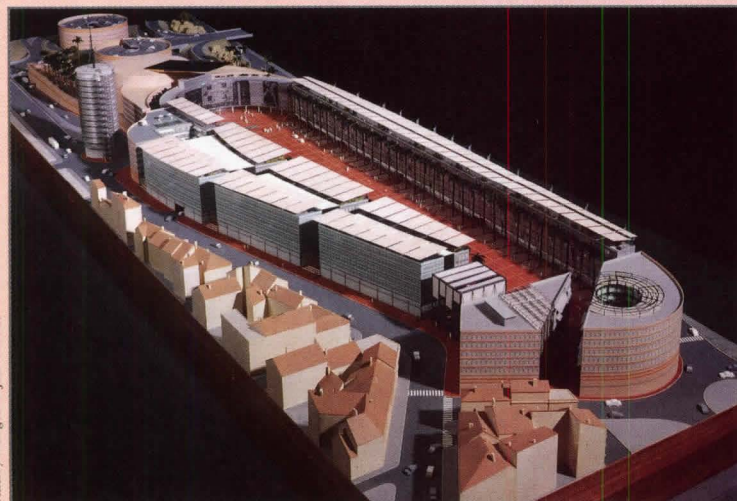
Perpignan project seen from across the Tet river. Cylindrical parking garages at right act as new "gates" to the city.

Jean Blaugaud



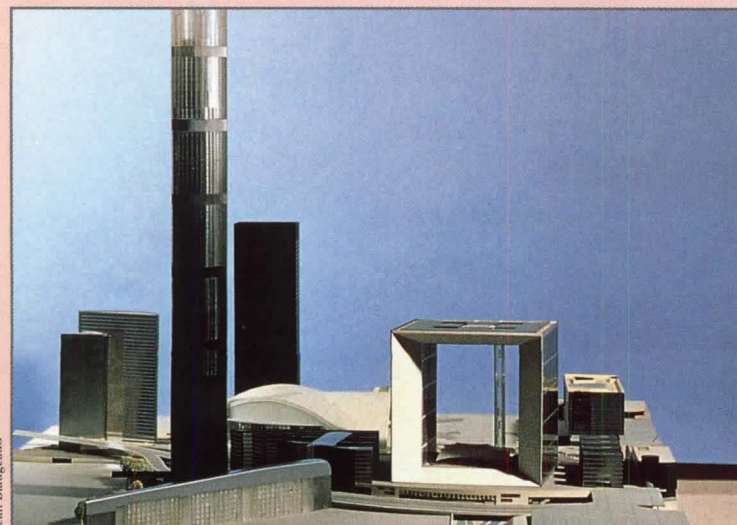
Stair towers and sound deflectors enliven the northern façade.

Thierry Blaugaud/Jean Bastide



View from the southeast illustrates the size of the oval piazza.

Jean Blaugaud



400-meter tower at La Défense, with Convention Hall (center) and Tête Défense (right).

#### Nouvel (continued from page 33)

continue the axes of the adjacent 19th-Century neighborhood and extend the existing urban perspectives into this new public forum.

Just as Bofill at Montpellier adapted his Classical language to the sunny south, Nouvel has inflected his architecture of transparency and screening to accommodate the local climate. The apartments are protected from the sun by sophisticated, electrically operated Venetian wood shutters, a sort of Catalan vernacular response to the famous photosensitive screen wall of the Institut du Monde Arabe in Paris. Likewise, retractable canopies and awnings in modern materials appear on the roofs and terraces of the various buildings. A screen of sound deflectors protects the apartments from the express lanes that separate the long northern façade from the banks of the river. While the project revels in the materials and effects of Nouvel's current work, it is meant to speak in Catalan dialect with its palm trees and fountains, its terra cotta coloring, and its echoes of the open ironwork of local church belfries.

Nouvel has taken on the romance of the great period of skyscraper building in his most audacious project to date, a 400-meter tower designed in collaboration with Jean-Marc Ibos for a difficult triangular site between the Tête Défense (P/A, February 1989, p. 24) inaugurated in July by President Mitterrand, and the great concrete shell of Zehruss's CNIT Convention Hall (1959), recently renovated. As part of the complex financing package worked out to save Tête Défense once its original program as a state run center of international communications was canceled, a team of Robert Maxwell, the newspaper magnate, and the French Caisse des Depots was promised development rights on this site, known as the "Triangle de la Folie." They were also given a zoning variance to build the highest tower in Europe. Last winter a

two-stage competition quickly reduced entries for this site from 334 to 4.

The "Tower of Infinity" as Nouvel has nicknamed it, seeks to play with the purity of the form, a cylinder with no setbacks in which neither the beginning nor the end is easily defined. Emerging from a black granite grotto—for the entire Défense is built on a multistory platform containing transportation and services—the cylinder progressively changes material and color as it rises, from black and then gray granite to aluminum panels of ever whiter tonality to transparent glass in the final uninhabited stages, which should merge imperceptibly with the often overcast and dense Paris sky. A double skin creates plays of transparency for the whole height of the tower, which Nouvel says is "concerned with the density of matter, or dematerialization." But even Nouvel announced in February when the winning model was presented that it was but a first representation: "The building will be much better, much more subtle, just as the Institut du Monde Arabe, I think, was much more subtle in reality than in all the models that we made."

**Barry Bergdoll**

*The author, who teaches architectural history at Columbia University, is on sabbatical in Paris.*





Sacred Heart Church, Prague, Czechoslovakia, from "Jože Plečnik Architect" at The Octagon through September 8.

## EXHIBITIONS

### Diller/Scofidio

This installation focuses on Elizabeth Diller and Ricardo Scofidio's incorporation of art into architecture and emphasizes their concern with the relationship of the human body to the built environment. Museum of Modern Art, New York. Through August 15.

### Berlin Modern Architecture

Divided into three sections, reconstruction (1950s to 1960s), growth (1960s to 1970s), and improvements (1970s to 1980s), this exhibition documents the post-war evolution of West Berlin with particular emphasis on the works of the IBA. San Francisco Mart. Through August 18.

### A Modern Museum

Drawings, photographs, and a model of Philip Goodwin and Edward Durell Stone's 1939 Museum of Modern Art—as well as George Howe and William Lescaze's earlier proposals for the museum—are included in the exhibition. Museum of Modern Art, New York. Through August 22.

### Disrupting Domesticity

This invitational exhibition looks at housing designs that challenge the "drearily predictable aesthetic" characteristic of single-family homes today. Work by Mark Mack, Lars Lerup, Stanley

Saitowitz, and others is included. Contemporary Realist Gallery, San Francisco. Through August 26.

### Frank Lloyd Wright

"Preserving an Architectural Heritage, Decorative Designs from The Domino's Pizza Collection," is a traveling exhibition of Wright's furniture, lamps, windows, etc. Albright-Knox Art Gallery, Buffalo, New York. Through September 2.

### Berlin: Place & Memory

Architect Thomas Bartels' drawings for his 1983–84 combination war memorial/park design for West Berlin's Prinz-Albrecht-Palais, an area heavily shelled during World War II, are on display. Williams College Museum, Williamstown, Mass. Through September 3.

### Jože Plečnik Architect

The Yugoslavian architect's use of Classical elements and desire for accessible design is demonstrated in this traveling retrospective of his works. The Octagon, Washington, D.C. Through September 8.

### French Avant-Garde

Works by some of the country's most celebrated architects—François Jourda and Gilles Perraudin, Jean Nouvel, Bernard Tschumi, and others—are included. Chicago Art Institute. Through September 17.

### Processes as Interpretation

Printing and presentation of architectural photography will be explored through an exhibition of pairs of photographs developed from one negative. Canadian Centre for Architecture, Montreal. August 28 to October 8.

### Remembering the Future

Subtitled "The New York World's Fair from 1939 to 1964," the show documents the ideas and innovations presented at the Fairs. Look for blueprints, models and drawings of pavilions and other structures by Eero Saarinen, Skidmore, Owings & Merrill, Philip Johnson, and others. Queens Museum, N.Y. September 2 to December 31.

## COMPETITIONS

### A Moment in Building

This competition is a call for photographic images of construction workers on site. Winning submissions will be published in the museum's quarterly publication and displayed in a future exhibition. Contact National Building Museum, Pension Building, Judiciary Square, N.W., Washington, D.C. 20001 (202) 272-2448. Entry deadline August 31.

### P/A Awards

The 37th annual P/A awards (see p. 15) recognize unbuilt

projects in the categories of architectural design, urban design, and applied architectural research. Projects must be scheduled for completion after January 1, 1990. Winning entries will be featured in the January issue of P/A. Contact Awards Editor, *Progressive Architecture*, 600 Summer Street, P.O. Box 1361, Stamford, Conn. 06904. Submission deadline September 5.

### Shinkenchiku Competition

Bernard Tschumi will judge this hypothetical competition for which entrants are to "insert" a 21st-Century industrial/sports complex on an irregular one-square-mile residential site. Winners will be announced in the March 1990 edition of *Japan Architect* magazine. Contact Shinkenchiku-sha Co., Ltd., 32-31-2 Yushima, Bunkyo-Ku, Tokyo 113, Japan. Submission deadline September 20.

## CONFERENCES

### CONPAC 89

This contract furnishings show will be held at the Concourse Exhibition Center and the Contract Design Center, San Francisco. Contact Lydia Crichton, 2 Henry Adams Street, San Francisco, 94103 (415) 864-1500. September 7–9.

### Rocky Mountain Design

The Denver Design Center's "Unleash the Power" symposium is billed as a forum for discussion on development of talent and creativity, current tools of the trade, "sick" buildings and how to fix them, and future trends. Contact Jan Wise, 595 South Broadway, Denver, Colo. 80209. September 13–15.

### Biennial of Architecture

An impressive international mix of architects and designers is scheduled to gather in Buenos Aires to discuss their work and their profession through lectures, round tables, exhibitions, and competitions. Contact Center of Art and Communication (CAYC), Viamonte 452, 1053 Buenos Aires, Argentina. September 18–23.

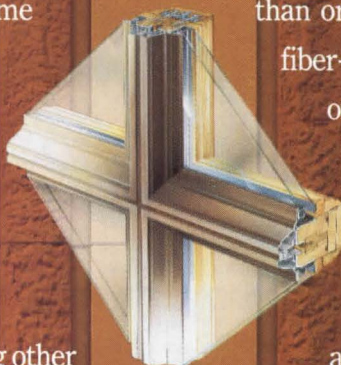


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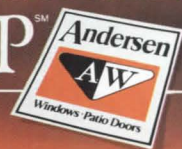
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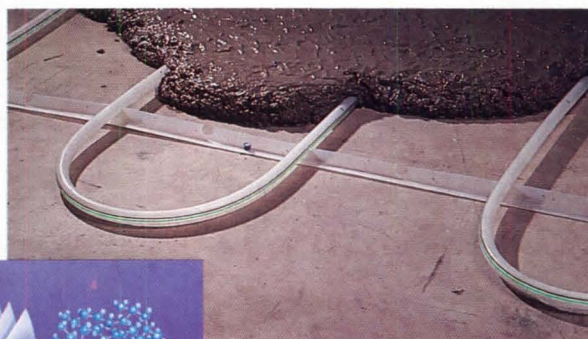
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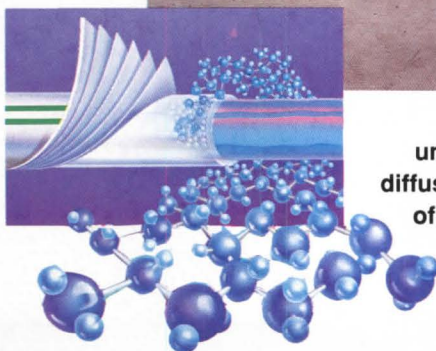
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**Computers:** Eric Teicholz and Ben Olasove review AutoCad on a Macintosh.

**Law:** Norman Coplan examines the architect's role in waiving liens.

**Products:** Michael Chusid discusses the good and bad in warranties.

## Computers: Apple and AutoCad

Computers have become an integral part of the practice of architecture. They currently permeate all aspects of design, production, documentation, and administration. Close to 70 percent of design offices have purchased CADD systems; an even greater number are using computers for applications such as word processing and spreadsheet analysis.

Today, the technical challenge facing architects is integration: of software written by various manufacturers; of hardware running different operating systems; of graphic and attribute databases generated by different software programs; and even of architects with other design and engineering disciplines and clients who increasingly want to obtain as-built databases for facility planning and management purposes.

The use of computer technology originally grew in architectural offices because of the low cost and high performance of the IBM Personal Computer. Yet, despite the increasingly cost-effective performance of these machines, they discourage casual users, including most architects, because of the awkwardness of IBM's DOS operating system. The increasingly popular alternative is Apple's Macintosh II series of computers, which do not demand learning the cryptic language of DOS.

### Apple

Part of the reason for its increased acceptance lies in the perception of the Mac II series as a more serious professional tool than its predecessors. Users also find that the software available for the Mac offers an ease of use and sophistication of program structure seldom found in its IBM-compatible counterparts. All Macintosh software use a "bit-mapped" display technique, which means that a document or drawing can be displayed on the monitor closely

(continued on page 44)

## Law: Waiving Liens

The right to place a lien on the property of the owner in the event of non-payment of fees is a significant tool for both contractors and design professionals. In most jurisdictions contractors and subcontractors may, unless they have waived their rights, assert such a lien, and in a majority of jurisdictions architects or engineers may place a lien on the owner's property if they are unpaid for the construction documents that they prepared.

Since the right to assert a future lien may interfere with third-party financing of a project, many owners seek to obtain a waiver of that right as a condition of the contract with a contractor and/or design professional. In some jurisdictions such a waiver is treated as against

(continued on page 46)

## Products: Warranties

When establishing a warranty program, a building product manufacturer typically considers the warranty's impact on product liability and the marketing appeal of the product. These factors also affect the value of a warranty to an owner and should be considered by an architect before specifying a product or accepting a substitution.

Product warranties are frequently perceived as providing increased legal and financial protection to building owners against product defects. This is an inaccurate perception. Most building product warranties provide a "limited warranty," which actually reduces the rights an owner may have by statute under a "full warranty."

A warranty is not a contract to reimburse a buyer for damages. Instead, it is a statement of fact, stipulating that the information provided by the seller about a material is accurate. The information warranted by the seller becomes part of the terms of sale for the product. If the material

(continued on page 49)

## Practice Points

**An excess of 20 million square feet of office space is being added annually to the real estate market, according to a survey of 49 office markets by the New York research firm REIS Reports. Vacancies are up, the survey states, despite a decline in commercial construction. The study predicted a continued drop in rents for some markets, which could restrict even more commercial projects to the drawing boards.**

**What comes after rent control? According to the Berkeley, California, self-employed financial consultant who brought rent control to that city, the next step is to limit the resale price of homes. A story in the Wall Street Journal about Marty Schiftenbauer's proposed law might relate the amount owners could raise their selling price "either to a national housing index or a specific dollar amount." Critics charge that the law would crush new housing construction and discourage owners from maintaining their property.**

**Water resource facilities and related marine construction will increase substantially through 1993, predicts A/E Business Review in a recent analysis. As a result of the Water Resources Act of 1986, 181 new construction projects have been authorized. With the heightening awareness of water conservation, designs for such projects may continue to be in demand.**

**Foreign influences may present a hidden opportunity for the U.S. economy rather than the threatening consequences so often anticipated. The National Institute of Building Sciences conducted a comprehensive study of the impact of such influences. They suggested that "foreign influences should be seen as an opportunity to develop both economic and technological policy in order to favorably meet the challenge." For example, research into robotics in the construction process may increase that industry's competitiveness.**



**Computers** (continued from page 43) approximating the look of the hardcopy output. For this reason, graphics applications such as desktop publishing and presentation software are particularly facile, offering professional-looking results with a minimum of trial and error.

Generally, architects approve of the Macintosh's intuitive operational structure, find the graphic user interface to be clear, and appreciate the very short learning curves associated with many of the Mac software applications. Also of significance is the fact that designers are able to use multiple applications simultaneously, including CADD for design, details, and construction documents displayed in one window, word processing applications in another, and spreadsheet software in a third.

The Macintosh also supports a number of cut-and-paste features that architects find useful, since they allow the easy incorporation of graphics files, such as CADD drawings, into word processing documents, and vice versa. Scanned images can also be pasted quite easily into either CADD drawing files or text documents. Other readily accessible applications include database software and macro writers.

"The ease of the Mac," says James Kendricks of the Rosenfield Partnership, "allows me to focus on the architecture rather than computer programming. I have found that if there is something I want to do, I make an educated guess, try it, and generally it works. Occasionally I have to open a manual but not very often."

The marketing and accounting groups in architecture firms have also found the Mac to be a useful device for their day-to-day operations. Many report that they use the Macintosh not only for word processing and desktop publishing, but to manage all the tasks and activities connected with their work, including the management of prospect databases. In particular, many marketers feel that Macs are much more comprehensible and useful for their purpose than larger systems.

#### AutoCads

AutoDesk, which has succeeded in capturing over 60 percent of the architectural CADD market with their AutoCad package, has recently released a new version for the Macintosh. It handles much like the MS-DOS version, only slower. It compares unfavorably to other Mac-based packages, such as Prime's Ver-

saCAD Macintosh or Intergraph's new Micro-Station Macintosh. The lack of speed seems to result from AutoCad's not yet using the Macintosh operating system to its fullest possible advantage.

Despite AutoCad's present unimpressive speed performance, Mac users have an incentive to look at AutoCad Macintosh since, apart from AutoCad being the de facto industry standard, it offers a number of features currently unavailable with other Mac software packages. For example, AutoCad has some excellent drafting features and provides excellent support for symbol libraries. It also readily interfaces with all major database software and includes an integrated interpreter language that is without peer in the industry.

A number of opportunities for using AutoCad innovatively will present themselves to industrious users who are already familiar with standard Macintosh software applications. For example, users of the HyperCard software may use AutoLisp to develop linkages between it and AutoCad. Access to AutoCad from word processors such as MicroSoft Word, and desktop publishing packages such as PageMaker will also be useful.

One clear advantage of the Macintosh version (over the MS-DOS version of AutoCad) is the ability to resize the text and graphics windows by using the mouse. AutoCad's pop-up menus can actually be de-mounted from their location at the top of the screen and re-positioned as separate windows for frequent use. The operation of the screen menu is basically identical to MS-DOS AutoCad. Full customization of menus and LISP code is possible using the text mode of word processors like MS Word. The package comes with a conversion utility that allows you to translate AutoCad drawings produced on the Mac to DOS and UNIX.

Apple's introduction of the Macintosh in 1984 has resulted in an approach to personal computing that is beginning to have far reaching effects. The IBM DOS operating system has been a significant impediment to using PCs by architectural professionals. Macintosh camouflages its operating system with a graphic interface that resembles a physical filing system, which presents architects with access to the computer's resources in a familiar and friendly work environment. All of the tools needed to use this environment are represented as

(continued on page 46)

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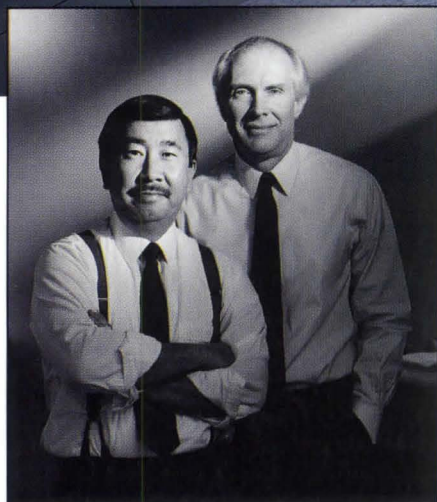
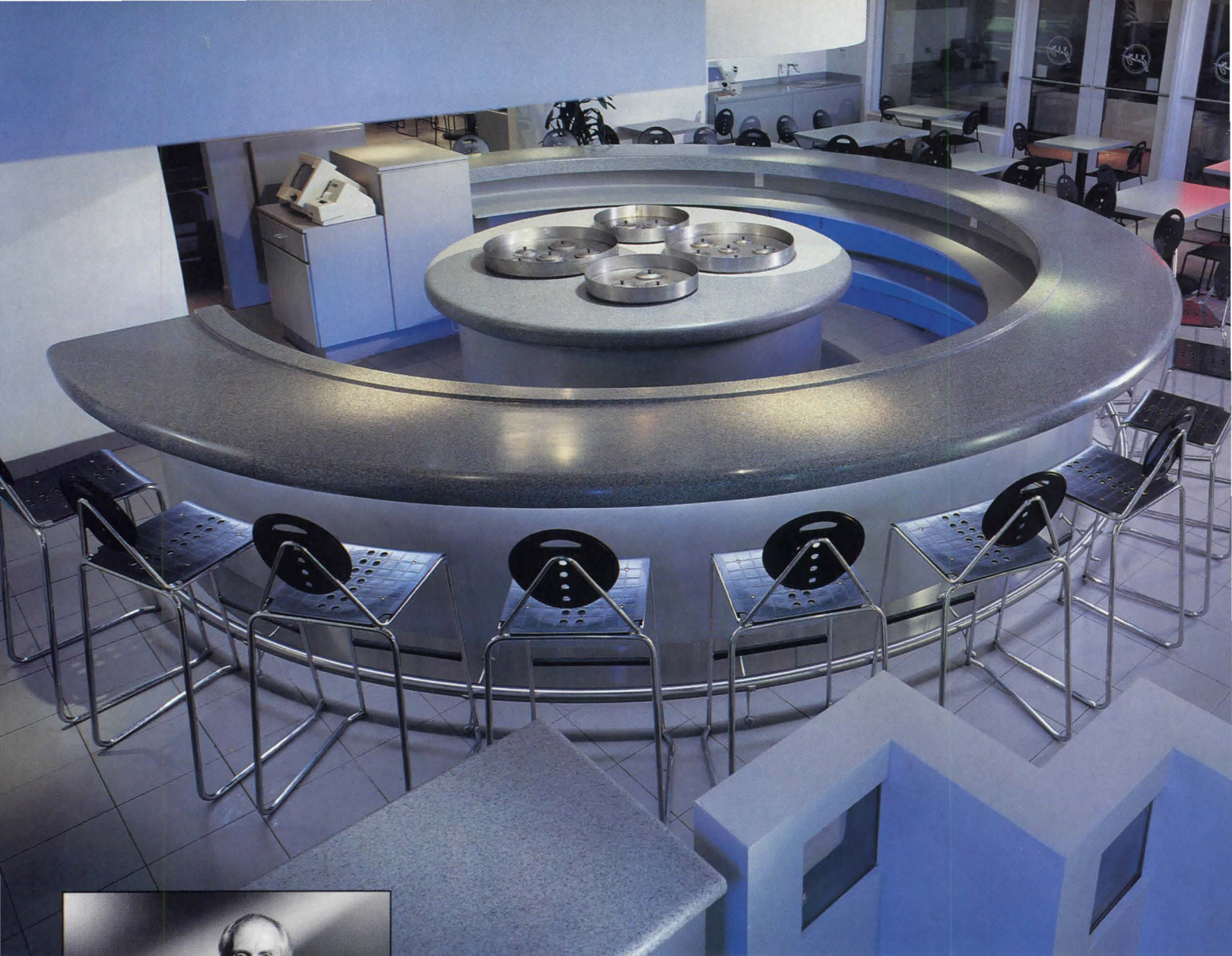
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**Eric Teicholz, Ben Olasove** ■

Mr. Teicholz is President of Graphic Systems, Inc. in Cambridge, Mass. Mr. Olasove is Project Manager in the firm's New York offices.

**Law** (continued from page 43)

public policy and thereby unenforceable. However, where a waiver is enforceable, disputes still arise as to its validity.

For example, in a case in Connecticut (*Bialowans v. Minor*), a building owner contended that the contractor's waiver of lien barred him from filing not only a mechanic's lien but also a prejudgment attachment to obtain jurisdiction over the owner. The contractor claimed that there was no consideration for his waiver, and it was therefore void. The court, however, concluded that, by signing the waiver agreement, the contractor had enabled the owner to finance the

construction of the project and thereby assure the availability of funds to pay the contractor. This, stated the court, was sufficient consideration.

The court, however, limited the application of the waiver to the filing of a mechanic's lien, holding it inapplicable to the filing of a prejudgment attachment. The court stated that the interpretation of a contract involves a search for the intent of the parties and that the waiver agreement, when read as a whole, clearly and unambiguously provided for a waiver of mechanics' liens only. Although the waiver agreement utilized broad language to the effect that it was "releasing all liens and claims of liens," the court could not interpret such language to include a prejudgment attachment lien since that wording appeared below a bold faced heading entitled "waiver of mechanic's lien."

In another recent case involving the waiver of a mechanic's lien (*Fabe v. WVP Corporation*), a Missouri court was called upon to consider the obligations of an architect, as part of his function in certifying payment to the owner, to verify the legitimacy of a waiver of lien furnished by a contractor. The facts revealed that the architect and the owner

had entered into a standard AIA agreement, where the architect was to issue a certificate of payment based on the architect's observations at the site that the work had progressed to the point indicated on the contractor's application for payment. The agreement, however, expressly provided that the issuance of such a certificate would not mean that the architect had made any examination to ascertain how and for what purpose the contractor had used the monies.

During the construction project, the contractor submitted payment requests to the architect as well as furnishing waivers of lien. The architect certified payments to the contractor, but it was subsequently discovered that subcontractors and material suppliers had not been paid. These costs were eventually paid by the insurance company which held a labor and material payment bond.

The insurance company brought an action for damages against the architect based upon the architect's alleged failure to discover that the contractor had submitted fraudulent lien waivers and certificates for payment. The court, however, rejected the argument that the architect had a duty to examine the lien waivers to ascertain if they were

fraudulently executed. The agreement between the owner and the architect, stated the court, delineated the duties of the architect with respect to the construction project. "When the contractor presented a payment request, the duties of the architect consisted of determining that work not only had progressed to the point indicated by the contractor but also had been performed in conformity with contract specifications. Once the architect authorized payment to the contractor, the contract expressly relieved the architect of any responsibility to ascertain how the contractor used the monies."

The court also rejected the argument that once the architect assumed the role of examining the lien waivers, there arose a duty to determine the authenticity of those documents. The court concluded that such a duty would have to have been expressed explicitly in the contract, which could not be amended except in writing. In the absence of such written amendment the architect assumed no such duty and the claim was without merit.

**Norman Coplan** ■

The author is with Bernstein, Weiss, Coplan, Weinstein & Lake in New York.

(Practice continued on page 49)

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**Products** (continued from page 43)

fails to comply with these terms of sale, a buyer is entitled to compensation. A building product manufacturer is bound by statements of fact even if he does not publish a document labeled "warranty" or "guarantee." The claims made in product literature, for example, are regarded as an "expressed warranty" that the material will perform as claimed. A seller is also held responsible for a "warranty of merchantability," requiring that the product be fit for the ordinary purposes for which such goods are used and meets the customary standards of the trade involved.

Unless otherwise stipulated, materials are sold under a full warranty. According to the Uniform Commercial Code (UCC) in effect in most jurisdictions in the United States, a full warranty includes not only refund or replacement for the defective material, but also the labor to repair or replace the product. Furthermore, a full warranty entitles a buyer to "consequential and incidental damages" that occur as a result of the failure of the warranted product. These could include damage to furnishings and adjacent construction, and even profits lost by the owner because of damaged merchandise or the inability to conduct business under normal conditions. The cost of replacement and consequential and incidental damages can readily exceed the original cost of the defective material. For example, a waterproofing material that fails to perform as warranted may cost less than a dollar a square foot, but it could cost thousands of dollars to replace and to repair damage in areas located below the waterproofing.

Most manufacturers find that the risks of a full warranty are more than can be accepted without increasing the cost of their product to uncompetitive levels. But the UCC allows a buyer and seller to agree to a limited warranty with reduced remedies. There is seldom a real negotiation on the terms of a building product manufacturer's warranty. Instead, a manufacturer typically disclaims his obligations to provide remedies under a full warranty and incorporates a limited warranty into his terms of sale. If the disclaimers are conspicuous in the product literature and on the product labeling, then specifying or purchasing a product will normally imply the buyer's consent to the warranty limitations. Limited warranties also seek to avoid legal

entanglements by establishing in advance the terms and remedies available under the warranty.

Common provisions in a building product warranty can exclude labor and consequential and incidental damages. Other conditions may establish criteria that must be met by the buyer before the warranty will be honored. For example, a manufacturer may require an extra fee to register the warranty, restrict the conditions of use for the

product, or require installation by specially qualified contractors. Other provisions may limit rights under the warranty to the original purchaser. This can be interpreted to mean a contractor or even a subcontractor, leaving an owner without recourse directly to the manufacturer. And if the product warranty clock begins running when the contractor purchases or installs the material, the owner may receive less protection than if the clock

started at substantial completion. Before determining what protection is given under a warranty, an architect should study the disclaimers and limitations to see which of an owner's rights and remedies are taken away.

Manufacturers must balance product liability concerns against their product's marketing appeal. For example, a wood door warranty that includes refinishing and reinstallation is of obvi-

(continued on page 50)

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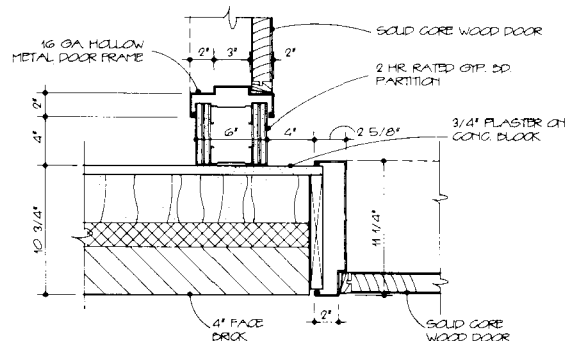
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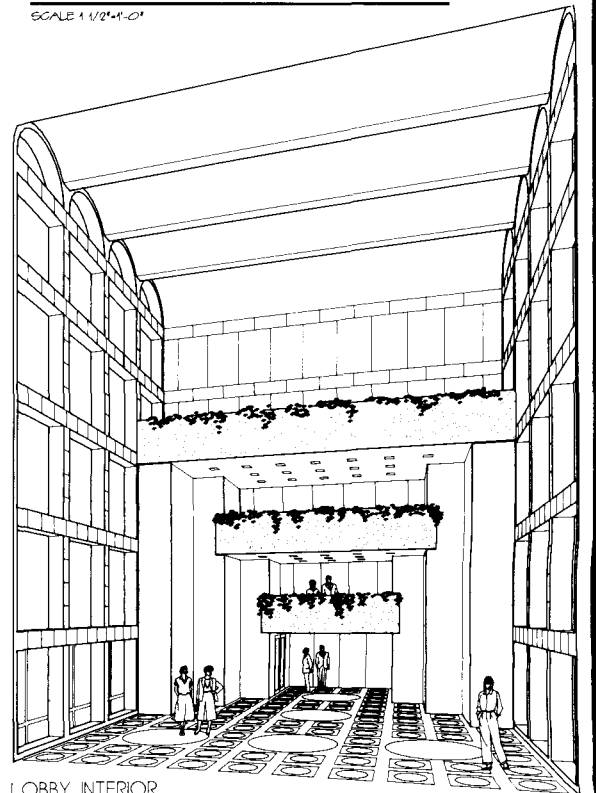
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### Products (continued from page 49)

ous appeal to potential specifiers and other customers but carries greater financial risk to the manufacturer than a "material only" warranty.

Like any other product feature, warranties are usually designed to meet the competition. If the leading manufacturer of a particular type of roof offers a ten-year warranty, for example, manufacturers of similar roofs are likely to follow suit. But in other cases, warranties are intended to differentiate one brand from another. When industry concern over the long-term color retention of anodized aluminum became apparent, at least one anodizer created an extended warranty program to increase customer confidence in what they claimed was an improved manufacturing process. And in the lighting fixture industry, where one-year limited warranties are the rule, a manufacturer of high-performance fixtures has recently introduced a "lifetime" warranty.

Despite their limitations, warranties do instill buyer confidence in a product. Because of this, warranties are especially important in new product introductions. When fluorocarbon coatings were first being promoted, a 20-year warranty was offered to help overcome skepticism about long-term product performance. Now that the coating has an established track record and strong acceptance among architects, a shorter warranty is typically offered.

In their enthusiasm to beat the competition, some manufacturers offer hollow warranties of impressively long duration but eviscerated by limitations, disclaimers, and unrealistic administrative requirements. A 20-year warranty for a sealant, for example, requires an owner to retain the product's original packaging tubes and submit them with a warranty claim. And a ten-year warranty on a pre-finished exterior wall panel requires an owner to return the panels to the factory at his own expense in case of paint failure. Few architects are qualified to compare the nuances of various suppliers' warranties, and owners are unwilling to hire an attorney to review the thousands of product warranties on a project. Manufacturers also are reluctant to change their standard warranty terms, doing so only in certain competitive situations and after review by senior management and their legal and insurance advisors. In spite of this, architects must insist upon

complete copies of warranty forms, take the time to read them, and specify warranties as carefully as they would any other important product feature.

In the final analysis, the quality of a product and the reputation of the manufacturer are usually more important than a warranty. Reputable manufacturers will go beyond their limited warranty obligations to protect their product's reputation and assure customer satisfaction.

**Michael T. Chusid**

*The author, a marketing and architectural consultant to building product manufacturers, has designed warranty programs for a variety of products.*

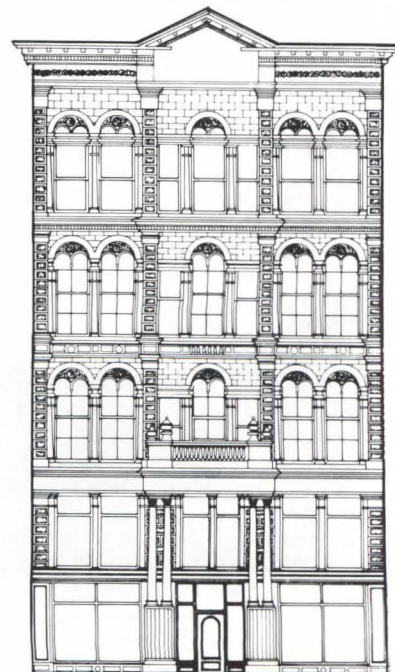
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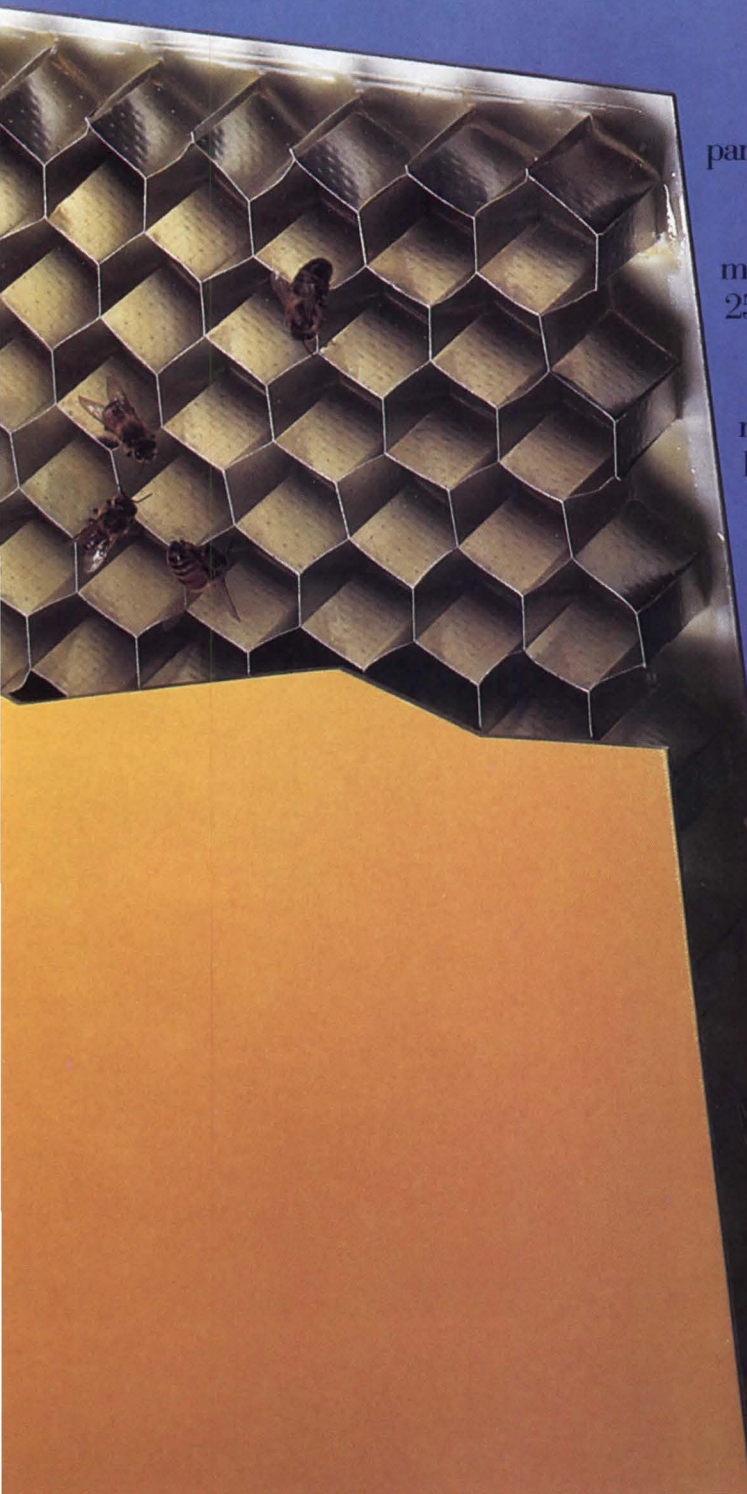


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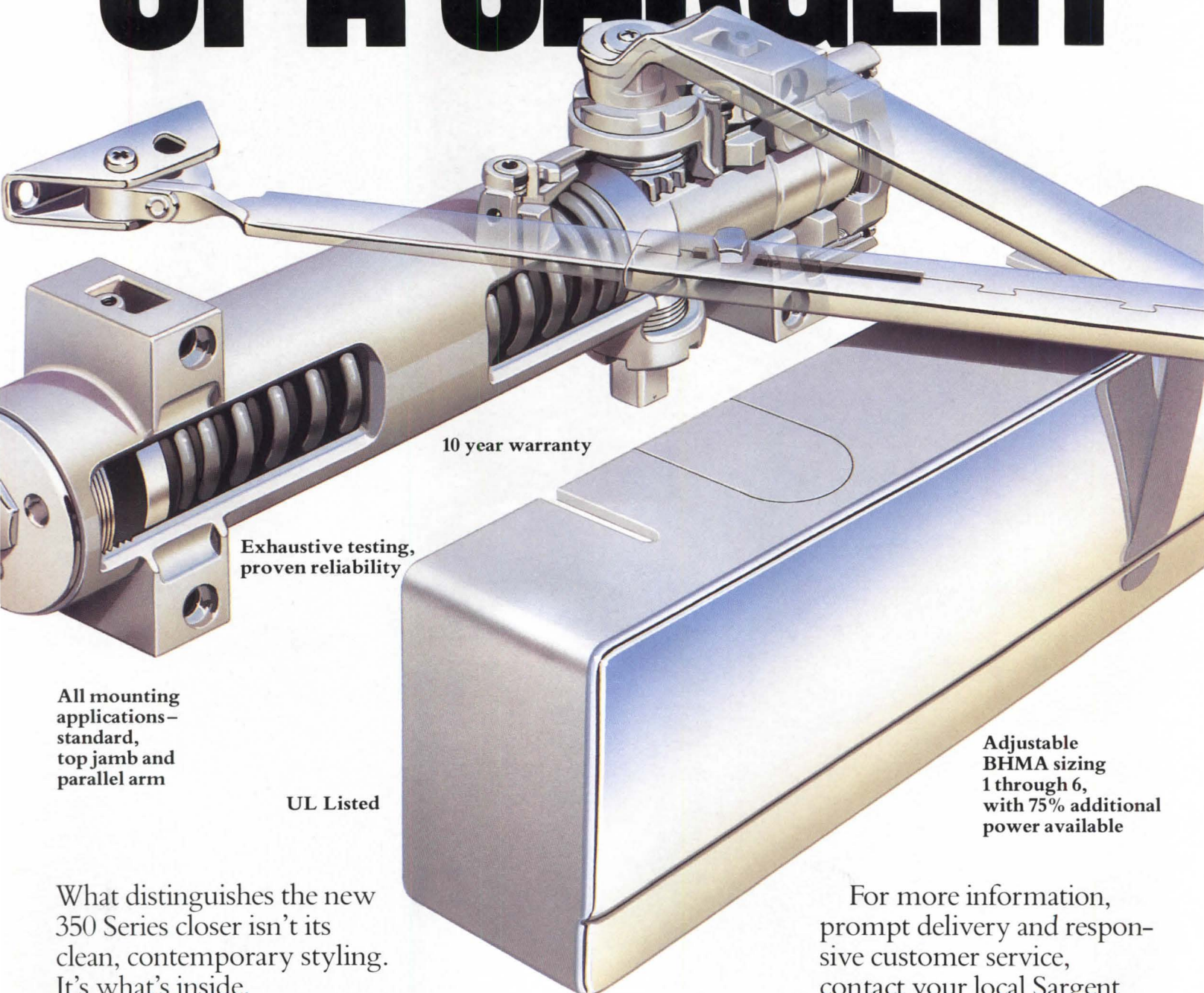
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The long vaulted galleries (above left), the square central galleries (above right), and the octagonal gallery (facing page), are capped by translucent, UV-filtered skylights (see section A-A, p. 70). In the long galleries, light bounces down through a throat to wash the vaulted ceiling. For the square galleries, light from large skylights is bounced onto the top of pyramidal canopies and then sideways onto their ceiling side; four small windows in a central lantern admit spots of bright light. The opening show in the octagonal gallery, designed by Larry Richards, highlights elements of the CCA. The opening exhibition in the main galleries (see p. 19) was curated by Eve Blau and Edward Kaufman. Display panels of silkscreened glass and black lacquered wood and display cabinets of plexiglass and steel were designed by John Vinci.

The limestone exterior is a veneer but laid up to resemble a loadbearing condition. In contrast to the bushhammered texture of the gray stone is the lustrous finish of the aluminum, used for the windows and door frames, the entrance pavilion that reinforces the pedestrian path into the site, and, most interestingly, the building's "cornice." While the small-paned windows seem ingratiating in their attempt to soften the cool reserve of the limestone façade, the cornice does nothing of the sort. Sophisticated and wholly original, the cornice, made up of off-the-shelf angles and perforated sheets, brings electricity to the façade: attenuated where the limestone is broad and planar, glinting where the limestone is matte, and thoroughly modern where the limestone is both traditional and modern.

#### Lighting

"Buildings should be able to sustain a relationship," says Rose. "If they incorporate daylight, they change, and are interesting places to spend time in. Think of Kahn's buildings." In the CCA, Rose brings in light in many ways. The staircase axis, for example, is lighted at either end and from above, and the shifting diagonal shadows cast by

the slim skylight structure enliven the orthogonal space. The galleries' skylights introduce carefully filtered light that changes minute by minute.

On the exterior, the bullnose and lightly rusticated base give some shadow play to the limestone, but it is the cornice that maximizes the effect of the Canadian sun. Not only does it cast a constantly varying shadow on the surface, but it also reflects the sunlight, building up to the moment when a streak of white light slashes across the façade.

#### The Right Time

The 1980s were ideal years for the conception and completion of the CCA building. Patron, architect, and architectural history were passing through fertile periods.

Phyllis Lambert had evolved from insightful client, over 30 years ago, to an experienced patron. Her first major act in the world of architecture was to convince her father, Samuel Bronfman, to commission Mies van der Rohe to design the Seagram Building in New York—an act which affected the course of architecture. She then completed her master's degree in architecture at the Illinois Institute of Technology, practiced (a notable work was the Los Angeles Biltmore Hotel restoration, with



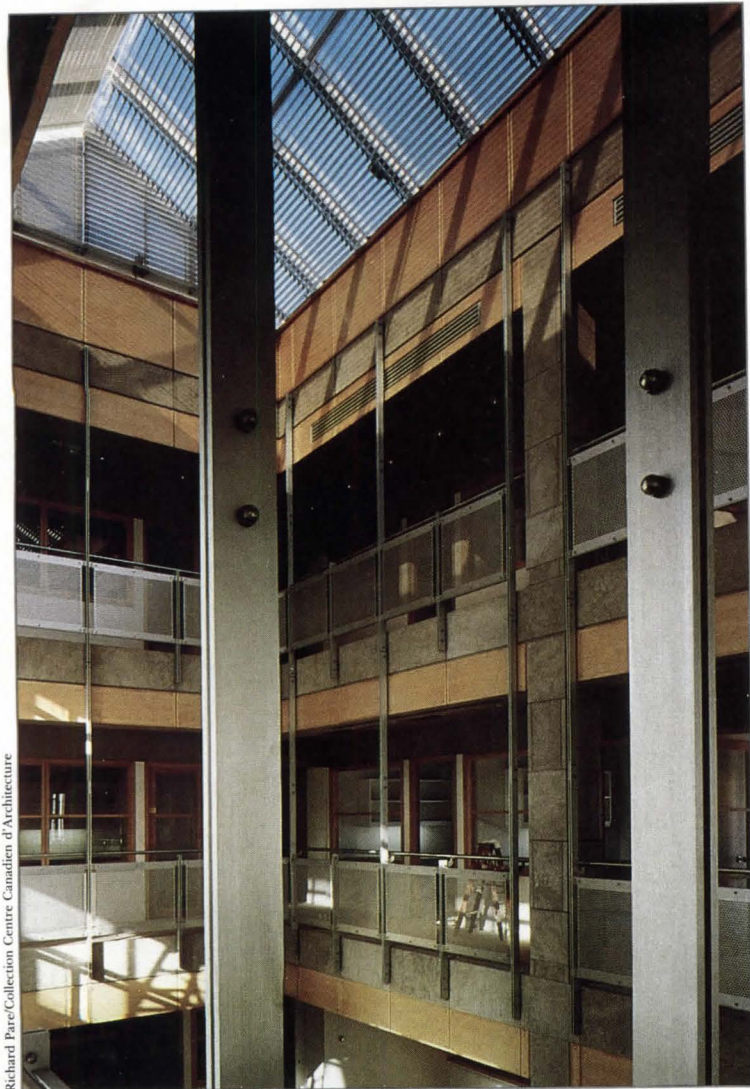


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Richard Paire/Collection Centre Canadien d'Architecture



Gene Summers, P/A, Nov. 1978, pp. 66–71) and became a guiding member of Montreal's preservation movement (the Shaughnessy House was an important "save," one of the last mansions of a residential street). When she realized the need to house the CCA collection properly, she decided that her experience as an architect would best be applied as a client, and she commissioned Rose.

Peter Rose, meanwhile, had also evolved. Fifteen years ago, he was known for his youthful and exuberant experimentation in the Post-Modern style (his St. Sauveur ski pavilion won a P/A citation, P/A, Jan. 1978, p. 70; P/A, March 1979, pp. 70–75). Now, having gained perspective, and wary of exaggerated "style," he was ready to examine each concept and detail to reach an appropriate solution, in close collaboration with Lambert.

Like Rose, history had evolved to a point where the superficial aspects of Post-Modern style were dismissed, while the important lessons of spatial enclosure, progression, and contextual harmonies and contrasts were retained.

It was a favorable moment in architecture, a moment ripe for the emergence of a strong, refined, and intelligent building like the CCA.

Susan Doubilet

**Project:** Canadian Centre for Architecture, Montreal, Quebec.

**Architect:** Peter Rose Architect, Montreal, Quebec (Peter Rose, architect; Erik Marosi, Nicholas Garrison, design team; William Steinberg, project architect, new building; Karl Pinault, Andre Arel, project architects, Shaughnessy House).

**Consulting Architect:** Phyllis Lambert, Architecte.

**Associate Architect:** Erol Argun Architecte (Erol Argun, architect).

**Restoration Architect:** Bilodeau St. Louis Architecte (Denis St. Louis, architect).

**Client:** Canadian Centre for Architecture.

**Site:** 3 acres in a traditional gray-stone-built neighborhood.

**Program:** 62,000 sq ft storage, 31,000 sq ft curatorial space, 31,000 sq ft public space and galleries, and 6600 sq ft mezzanine in the new building; 19,400 sq ft services in Shaughnessy House.

**Structural system:** in-situ reinforced concrete frame and flat slab.

**Major materials:** bush-hammered Trenton limestone, double-glazed low-emissivity windows and skylights, aluminum, granite, maple, galvanized sheet steel (see Building Materials, p. 122).

**Consultants:** Gerrard and Mackers Landscape Architects, landscape; Nicolet Chartrand Knoll Ltd., structural; The ECE Group Ltd., mechanical/electrical; George Sexton Associates, lighting; Joseph M. Chapman Inc., security; Lewis S. Goodfriend & Associates, acoustics; Boyce Nemec Designs, audio-visual.

**General contractor:** Divco Ltd., new building; P&R Desjardins Construction Inc., new building, public level interior; Les Contruction J&R Duhamel Ltee., Shaughnessy House.

**Costs:** not available.

**Photos:** Richard Bryant, except as noted.





The library provides a lesson in fine axial planning and well-proportioned spaces. One enters through a rotunda into the library's court (facing page right), which parallels the main staircase space, and looks north through a great window towards Mount Royal. On a perpendicular axis to this space is the main, custom-furnished reading room (this page). Along the north side of the reading room is a three-bayed aisle with windowed carrels in each bay. The scholar's wing (facing page left), severe in aspect, has offices on two levels along one side of a skylighted atrium.





## Desert High



*The main entrance is marked by a glazed lantern and a two-story portico. It is flanked by classroom wings and on axis with the library and offices.*

IT is one thing for a building to fit its context. It is quite another for it to reveal that context so that we see its surroundings in new ways. Ralph Johnson, design principal of Perkins & Will in Chicago, has achieved the latter in his design for the Capital High School, which stands on an open plain at the southern edge of Santa Fe, New Mexico's suburban sprawl.

Santa Fe's historic architecture is commonly thought of in romantic terms. Its Pueblo-inspired buildings, with their adobe walls, enclosed courts, and projecting beams or "vigas," strike many viewers as picturesque. So too has the city's Territorial style, with its applique of Classical detail, been seen as a type of 19th-Century eclecticism.

But the motives behind both are the very opposite of romantic. The Pueblo-inspired work was a rational response to an arid climate and to limited natural resources: The thick walls kept interiors cool, the courts provided shade, the projecting vigas allowed the reuse of timber. In a similar way, the 19th-Century Territorial style evolved, not only to satisfy eclectic tastes, but to integrate factory-made products such as fired brick and sawn lumber into Santa Fe's vernacular.

Ralph Johnson has explored that underlying rationalism in the city's new high school. Its plan, for example, has a very rational configuration, with classrooms, laboratories, and performance spaces

arranged symmetrically along a central bar containing common facilities such as the offices, library, and cafeteria. To further order the plan, Johnson identified six form types common to Santa Fe's architecture—colonnades, lofts, courtyards, halls, pavilions, and towers—and gave each a different function. The colonnades, for example, define outdoor circulation, the towers mark major entrances, and the pavilions house special facilities such as the auditorium and gymnasium.

In this, Johnson acknowledges his debt to the 19th-Century theorist, J.N.L. Durand, whose theory of formal types was an effort to accommodate modern building programs within traditional architectural vocabularies. "By reordering the building program into elements," writes Johnson, "a multi-functional, large-scale complex becomes easier to comprehend."

The Frenchman's influence is also apparent in Johnson's handling of the high school's Beaux-Arts-inspired site plan. Arranged along two axes, one aligned with an adjacent arroyo and the other running north-south, the school imposes upon the site geometrical elements, such as a circular entry drive and a semi-circular colonnade. They recall at once French landscape ideas and the circular geometries of ceremonial kivas and early pueblos.





**Ralph Johnson of Perkins & Will has designed a school that explores the ideas behind Santa Fe's historic architecture.**



*The separate entrance to the auditorium, which allows it to be used after hours, also has an identifying tower. A curved colonnade embraces visitors.*

Yet it is not only to the rationalism of 19th-Century France that Johnson refers. At first glance, the high school looks like a straight version of Santa Fe's Territorial style, with its dentiled brick cornice, precisely stuccoed walls, simplified Classical detail, repetitive vertical windows, and carefully proportioned façades. But the experience of walking through its tall columnar spaces or past its monumental porticoes recalls the De Chirico-like aspect of Italian rationalist architecture from the 1920s and 1930s. While those two styles had very different origins, both sought a similar goal: to achieve the timeless quality of Classicism using modern materials and methods.

If residents and staff seem pleased with the school, some local architects have been less kind. "They call its style Chicago Territorial," says Johnson. Such reactions are telling, for they acknowledge the outsider's perspective that is the very strength of the design. Too much of what passes for contextual architecture is too glib, making only visual connections with the buildings around it. What Johnson has done here is look beyond appearances to the intellectual traditions of the place, seeking out common ideas and pushing them beyond where others have gone. The result is bound to unsettle some, for it is an architecture that engages in the difficult yet important task of revealing a context to itself. **Thomas Fisher** ■

**Project:** Capital High School, Santa Fe, New Mexico.

**Architects:** Perkins & Will, Chicago (Ralph Johnson, design principal; C. William Brubaker, managing principal; James Toya, project manager; Elisabeth Fakatselis, Mark Romak, project team).

**Client:** Santa Fe Public Schools.

**Site:** 45-acre plain flanked by an arroyo.

**Program:** High school for grades 9 through 12 with a student capacity of 800, expandable to 1300.

**Structural system:** Cast-in-place concrete frame.

**Major materials:** Concrete masonry units, stucco, wood beams and roof deck, steel windows, quarry tile flooring, carpeting (see *Building Materials*, p. 122).

**Mechanical system:** Hot water baseboard system with evaporative cooling. Natural ventilation throughout.

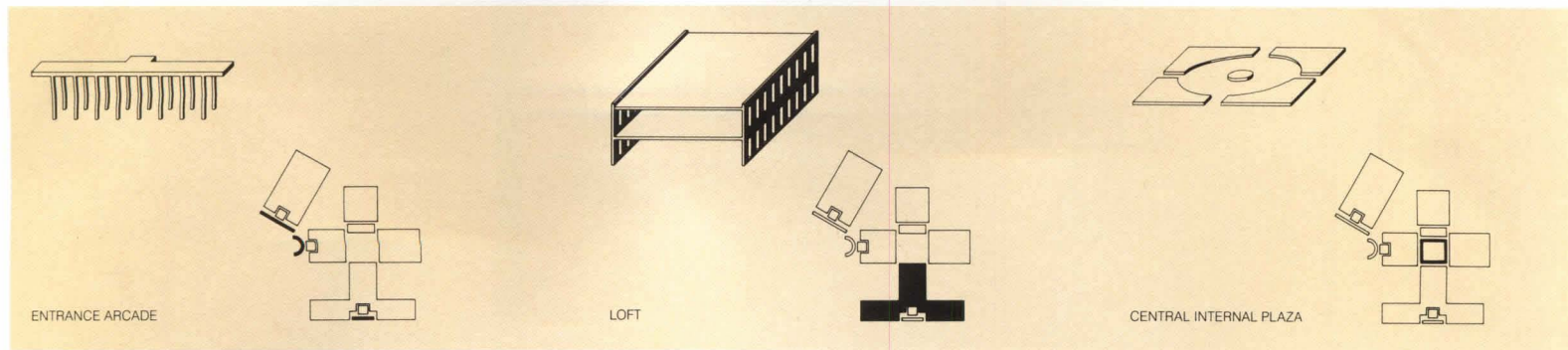
**Consultants:** DeLapp Engineering Corporation, structural; Bridger & Paxton, mechanical; Tierra Engineering, electrical; Kirkegaard & Associates, acoustical.

**General contractor:** Snider/Chapman Construction Company.

**Costs:** Not available.

**Photos:** Gregory Murphey.

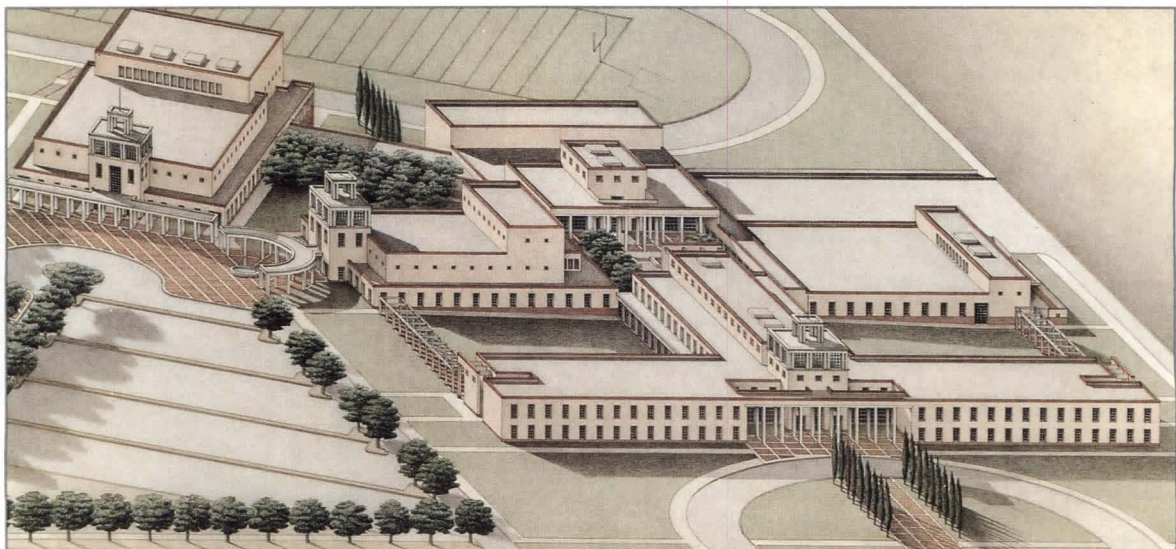




*The gymnasium wing has a towered entrance and a colonnade running its full width.*

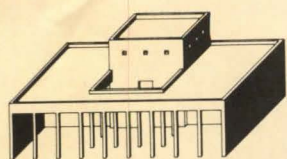


*The columnar, outdoor dining area faces a courtyard and the library's screen wall.*

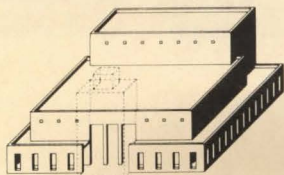
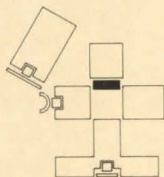


*This axonometric shows the school's courtyards and its axial organization.*

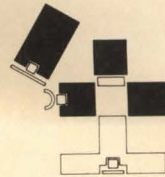




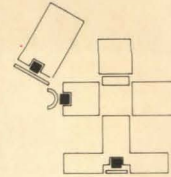
COLUMNAR HALL



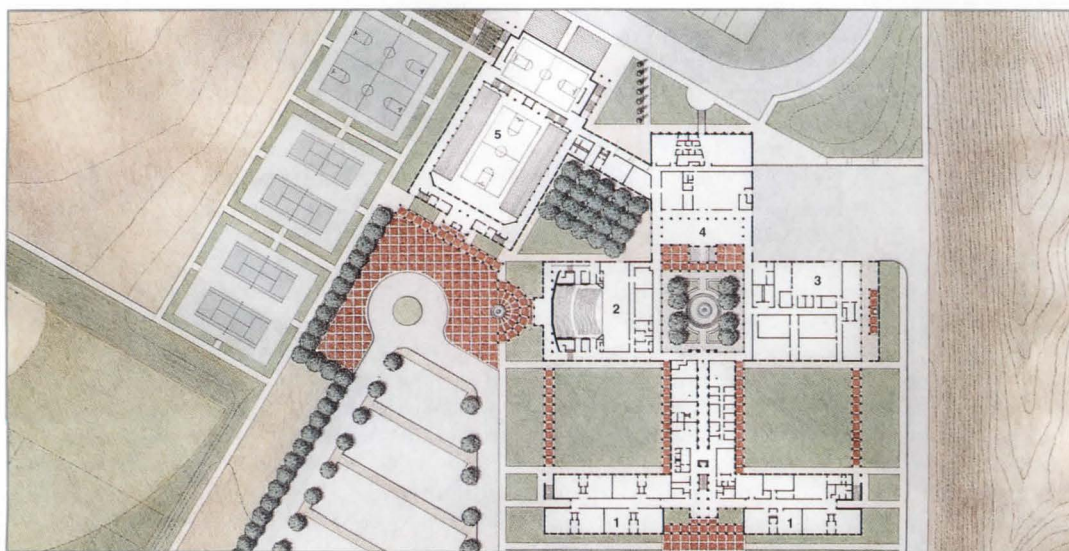
SPECIALIZED PAVILION



ENTRANCE TOWER



The second-floor library has a basilican plan with a two-story reading room flanked by offices.



First floor plan.

1. classrooms 2. auditorium 3. shops 4. cafeteria 5. gymnasium.


N 100/30m





# P/A Inquiry Correctional Facilities

**With increasing crime has come a need for more prisons and jails. But there is disagreement over their proper location and design.**



OURS is a nation ambivalent about the treatment of criminals. Some argue that criminals are born, although they disagree over whether they can or cannot be held responsible for their actions. Others claim that criminals are made, although here too there is disagreement over whether that is the result of unfair treatment by our society or simply prolonged exposure to other criminals.

Whatever their relative merits, those conflicting views have greatly affected the design of our prisons and jails. Take the most basic question of whether or not to build correctional facilities. For those who see them as training grounds for criminals, constructing more buildings only makes matters worse. Instead, they say, we should be expanding various "release upon recognizance" alternatives such as home arrest, work release, or weekender programs. These options have been increasingly forced upon states burdened by the costs of building and operating prisons. (The average construction cost per bed ranges, nationally, from \$30,000 to \$100,000. Operation costs alone in some states demand as much as 10 percent of the annual budget.) But there are risks involved in releasing prisoners into the community, both for the public, since 10 to 15 percent of home-release inmates commit new crimes, and for politicians, as Michael Dukakis found out with the Willie Horton case in the last presidential election.

For those who see criminals as the product of social inequity, the answer lies not in new prisons and jails, but in spending more money for education, housing, and employment opportunities to eliminate the underlying causes of crime. There is some evidence that this approach works: The amount of major crime had decreased by the end of the 1970s to 50 crimes per 1000 population in the wake of increased spending for social programs. But the payback for this indirect approach is so slow that it has never had a chance to fully prove itself. With the recent cutbacks in spending for social programs and increases in drug-related crime (we are now up to 57 crimes per 1000 population), the new attitude has been to get tough with crim-

inals and lock them up. As one wit put it, "Prisons (were) Ronald Reagan's form of public housing."

The 1980s, as a result, have brought a boom in the construction of prisons and jails. With 56 percent of the nation's prisons overcrowded and 43 states now under court-order to relieve those conditions, contract awards for new facilities have topped \$2 billion for each of the last three years; \$10 billion worth of new construction is planned by the states alone over the next six years. And the Federal government is following suit. President Bush's new crime package calls for \$1 billion to be spent, adding 24,000 beds to Federal prisons over the next four years.

## Finding the Right Site

In the midst of this construction, the old ambivalence remains. It emerges, for example, in the debate over where to locate prisons, with some wanting criminals kept close to the communities from which they came and others wanting them kept far away from the law-abiding public.

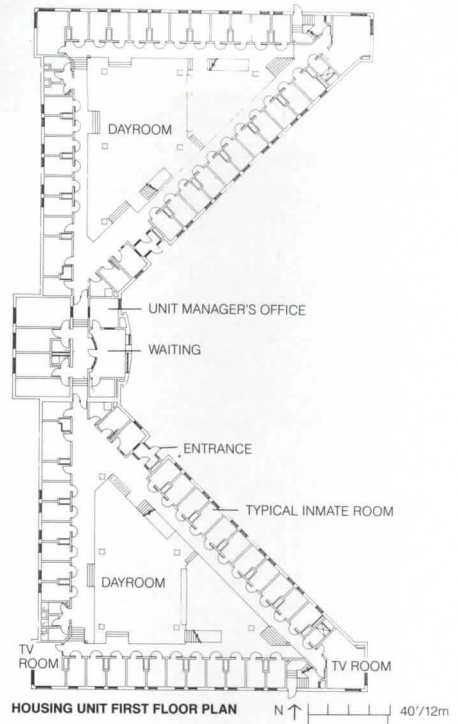
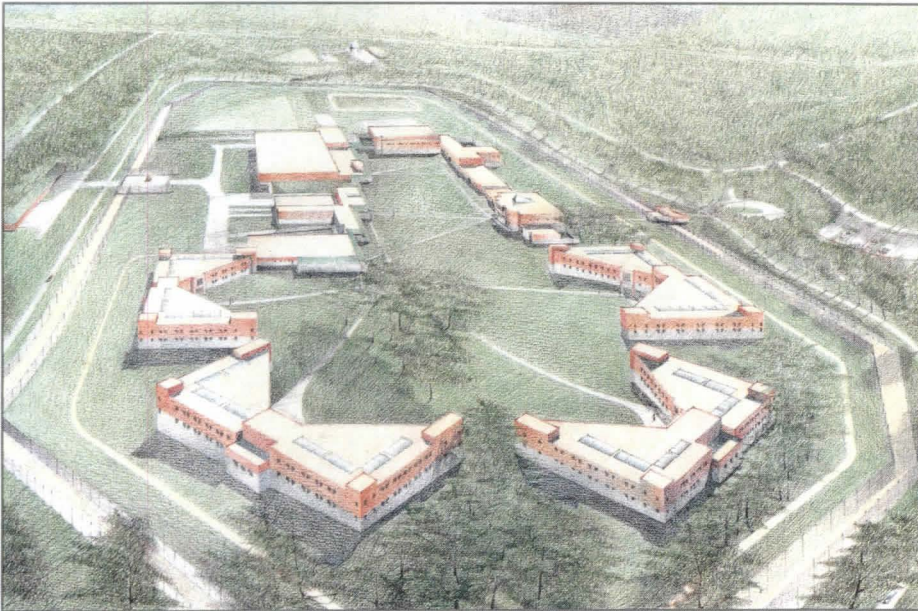
The states have generally taken the latter tack, removing serious offenders to remote locations. This may have less to do with ideology than with the pragmatic reasons that out-of-the-way land is more plentiful and less costly and that economically depressed rural areas often welcome prisons and the jobs that they bring.

Those on the other side of this issue maintain that, since many inmates come from urban areas, prisons should be in cities—if not in residential neighborhoods, then at least in nearby commercial or industrial areas—to help reintegrate prisoners into society. The Federal government took the lead in this several years ago by constructing Federal prisons in the downtowns of major cities such as New York and Chicago. But when states have attempted to locate prisons in urban areas, especially anywhere near affluent neighborhoods, they have encountered stiff public resistance and local government restrictions.

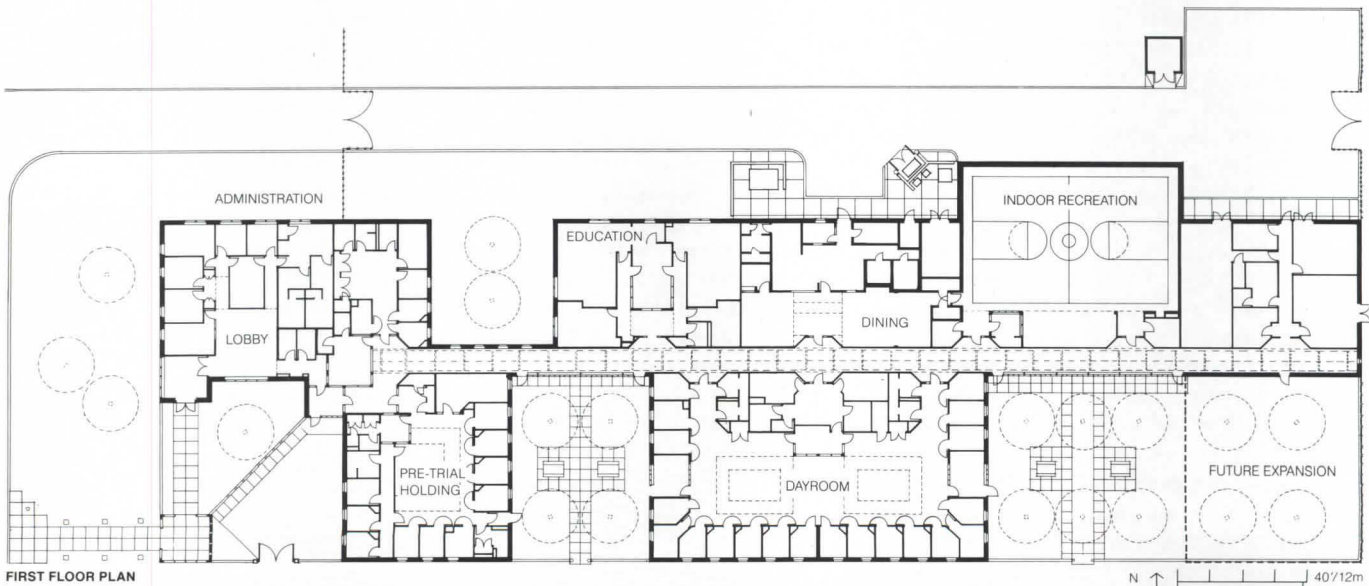




Joel Brown/David Zaiser



**F**ederal Correctional Institution, McKean County, Pennsylvania. Architects: Geddes Brecher Qualls Cunningham, Philadelphia. Given a triangular housing plan to work with (above), the architects paired the units and arranged them in such a way that they clearly define a central quadrangle within the prison's 80-acre campus (left). The structural masonry walls of the housing units (above left) make patterns using various colors and textures of block to relieve the usual grimness of these facilities. Aiding in that are the trees and changes in grade around the minimum-security units.



Photos: R. Greg Hurley



**G**rand Mesa Youth Services Center, Grand Junction, Colorado. Architects: Hoover Berg Desmond, Denver. This 30,000-square-foot youth detention center is organized along a circulation spine, with services on one side and ten-bed housing pods on the other (above). The building makes a civic gesture with its brick veneer, tall entrance porch, and large-scale windows visible from the street (far left). The housing units (left) reflect the trend toward more normal interiors, using wood doors, carpeting, upholstered furniture, daylighting, and muted colors.

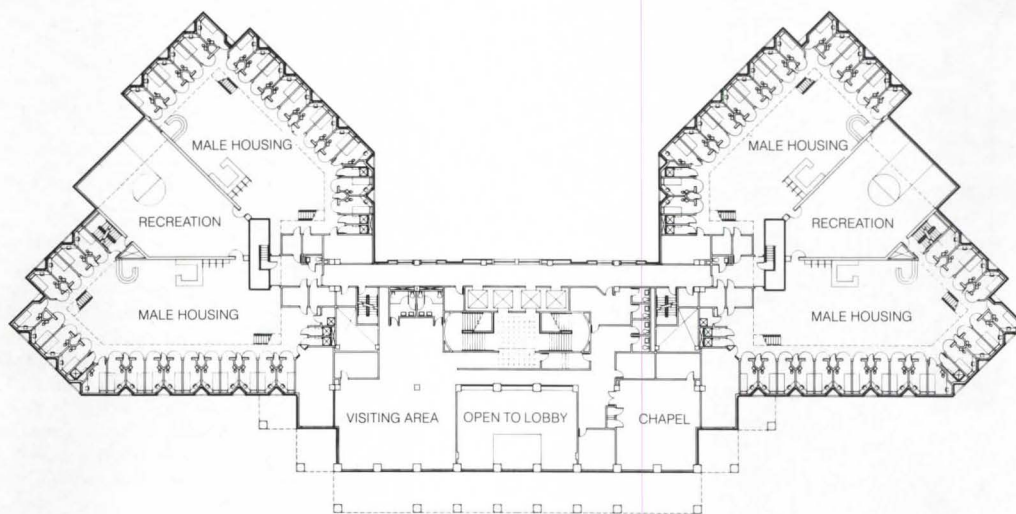




*Suffolk County Jail, Boston. Architects: Stubbins Associates, Cambridge, Massachusetts. Corrections Architects: Voinovich-Monacelli, Cambridge. Selected through a public-sector, design-build competition, this 453-bed, maximum-security jail has a prominent site on the Charles River. The front portico, symmetrical façade, and brick and granite cladding respond to the important location and civic nature of the building (right). On each floor, there are four, 36- to 40-bed housing pods to either side of a central service block (below). The pods, with their two-story dayrooms, are paired around stacked recreation spaces.*



Edward Jacoby



SECOND FLOOR PLAN

N 40'/12m

### The Hard Exterior, Soft Interior

One way of countering that has been to dress up the structures, making them look like other, more palatable facilities such as hotels or civic buildings. But that raises another hotly debated question: Just how nice should a prison or jail be? Those who see most criminals as incorrigible or deserving of the most severe punishment have become vocal in their opposition to any frills being added to prisons or jails. That point of view, if not always shared by correctional officers, has certainly affected their decisions. Prison officials, says one architect, will often "object to exterior ornamentation as being too good for the prisoners and possibly creating an image problem with the community and with inmates in other facilities." Except for those located in sensitive areas, many prisons and jails, as a result, have relatively plain, functionalist exteriors, sending the politically popular message that these are efficient, well-run facilities which, despite their costliness, do not waste taxpayers' money.

That message has certainly gotten through to those who, recognizing the need to get new buildings in place quickly, have pushed various methods of prefabricating cell blocks. The leading contenders in this arena are the manufacturers of precast concrete panel systems and factory-built modular units, both of which allow year-round fabrication, rapid erection, and minimal intrusion into the secure operations of existing prisons and jails. But both have been slow to catch on. "There has been a lot of talk about prefabrication," says architect Keith Reeves, "but it overlooks the fact that prisons are used to boost local economies, which tends to favor site-built construction." These systems, adds architect Andrew Cupples, also make it hard "to meet public bidding requirements for equal products since none of them are really equal. Lead times and delivery times, too, can be very long, and labor markets resistant to their use."

If the exteriors of many correctional facilities appease those who would have us get tough on crime, the interiors convey a much different message, highlighting our ambivalence toward criminals.

The trend on the interiors, says architect and researcher Jay Farbstein, has been to "eliminate the symbols of incarceration" such as bars on the windows and doors or row upon anonymous row of cells in multi-story blocks. "Making prison interiors appear more normal," he adds, "has produced better behavior from inmates" and seems to reinforce the idea that criminals can be reformed.

New technology introduced into prisons and jails over the last 20 years has certainly helped in this process. "The replacement of bars," notes Farbstein, "with glazing containing polycarbonate and glass has brought a real improvement" not only in the living conditions of inmates, but in the guards' ability to survey a room. Farbstein also praises the use of electronic security devices, which have replaced that ultimate symbol of incarceration—the lock and key—and the development of smoke- and fire-resistant fibers and textiles, which have softened dayroom interiors with carpets and upholstered furniture. Another improvement in living conditions has come with the installation of more durable, tamper-resistant toilet and lighting fixtures—their stainless steel housings, rounded corners, and concealed fasteners minimizing opportunities for vandalism.

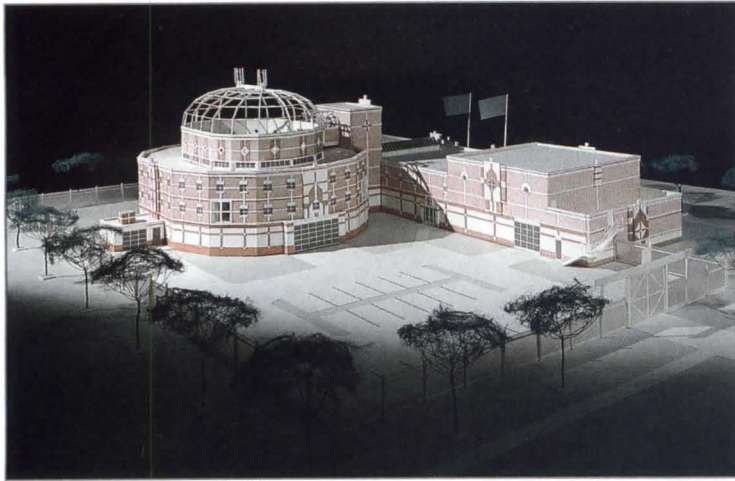
### Generations of Prisons

The creation of more normal conditions inside prisons and jails did not happen easily or quickly. Correction officials talk about the changes that have occurred in prison design in terms of generations.

First-generation facilities, which date back to the early 19th Century, had multi-story banks of indirectly lighted cells radiating or branching off of a central service building. These prisons were a vast improvement over what came before—dungeons into which prisoners were thrown without any privacy or segregation of people according to the severity of their crimes. But the enormous scale of these buildings isolated prisoners and provided little chance for meaningful interaction between guards and inmates.

Second-generation facilities, which began to appear in the 1960s,

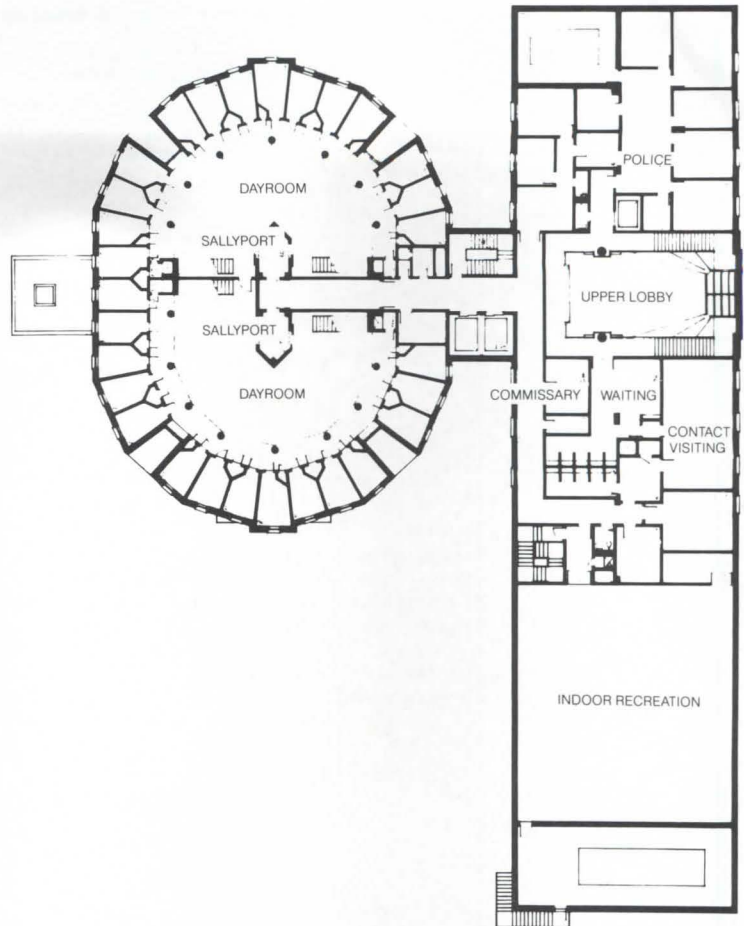




Edward Jacoby

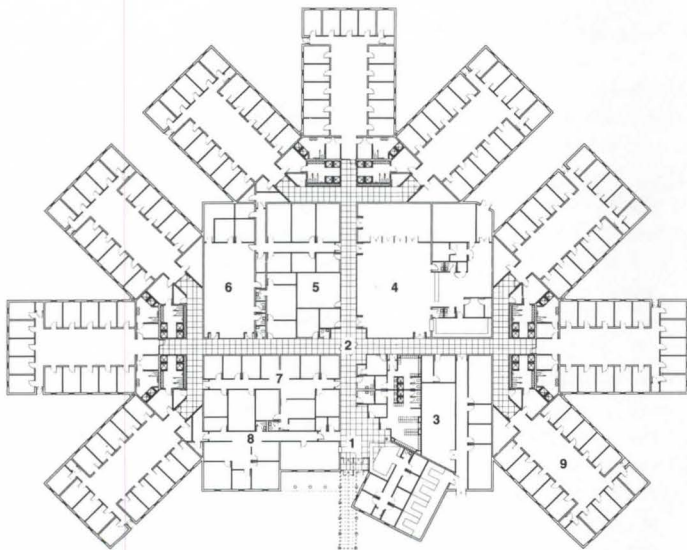
*Bartholomew County Jail, Columbus, Indiana. Architects: Hisaka & Associates, Cambridge, Massachusetts. One block from the City Hall and Courthouse and adjacent to small-scale commercial and residential buildings, this 55,000-square-foot jail uses red brick, white split-face block, and smooth precast trim to enliven the façades and break down their scale (above). The jail has a front section*

*containing offices and service functions and an oval structure to its rear that has 60 beds arranged around a pair of two-story dayrooms (right). The outdoor recreation space on the fourth floor is housed within a steel-framed, aluminum-mesh dome that reinforces the building's public role.*



SECOND FLOOR PLAN

N → 40'/12m



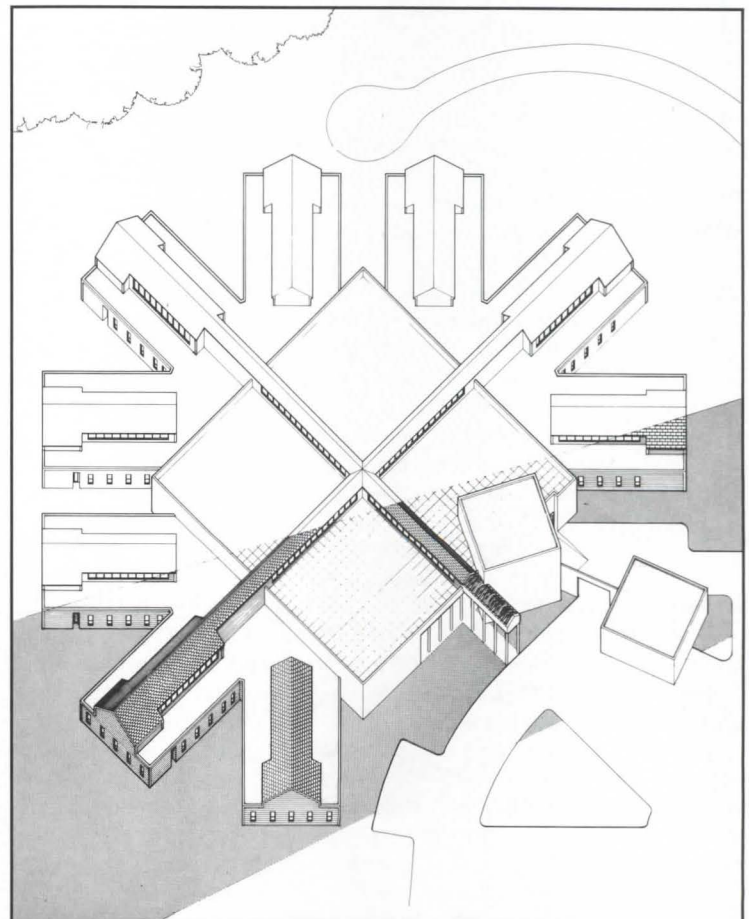
FIRST FLOOR PLAN

N ↑ 40'/12m

- |                    |                     |                |
|--------------------|---------------------|----------------|
| 1 LOBBY            | 4 DINING ROOM       | 7 WORK RELEASE |
| 2 CENTRAL CONTROL  | 5 RECREATION        | 8 OFFICE       |
| 3 MAINTENANCE SHOP | 6 MULTIPURPOSE ROOM | 9 DAY ROOM     |

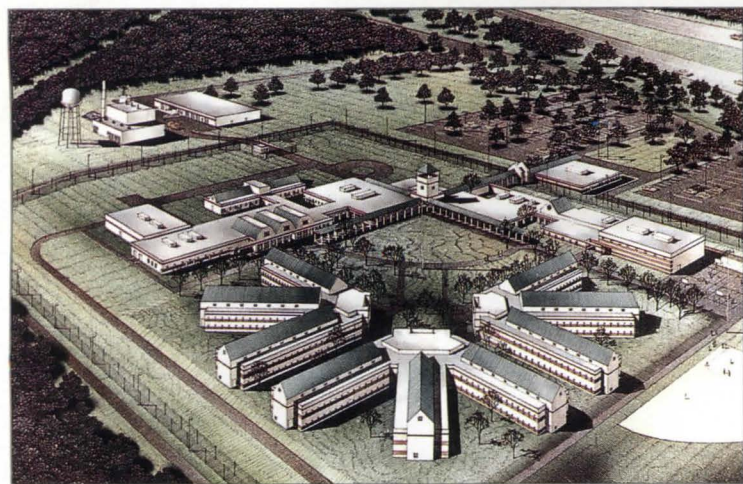


*Bucks County Rehabilitation Center, Doylestown, Pennsylvania. Architects: Vitetta Group, Philadelphia. Housing 270 inmates in 30-bed wings, this minimum-security county jail has a radial plan and a central surveillance station located at the center of a cross-axial circulation system (above, right). Supervision of the dormitory-style housing units is on an intermittent basis. The large, central-service block contains extensive facilities for education, counseling, visitation, drug and alcohol-abuse treatment, and work-release programs.*



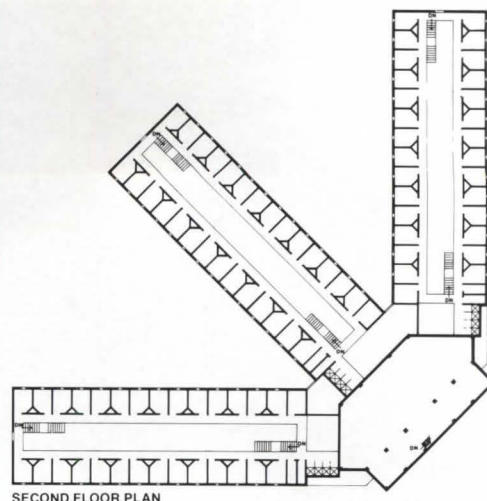
AXONOMETRIC



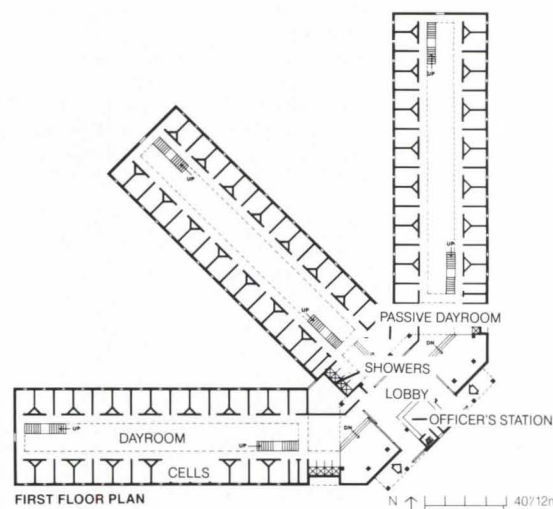


*Frackville State Prison, Frackville, Pennsylvania. Architects: Ballinger, Philadelphia. This new 500-man, medium-security state prison has a campus plan with one-story support facilities defining two sides of a central quadrangle; a corner tower and colonnade mark the entrance. Radial housing units define the other two sides (above). The housing units (right) consist of three, two-story wings*

*that radiate from a central officers' station from which the entire building is visible. Active dayrooms extend the length of each wing; quieter dayrooms are near the lobby.*



SECOND FLOOR PLAN



FIRST FLOOR PLAN

reduced the scale and improved living conditions. Smaller numbers of cells, located on outside walls for better light and views, began to be clustered into units around a dayroom, allowing a finer-grained segregation of inmates. This setup also responded to a new, behaviorist approach to prisoners: Depending upon how they behaved and responded to rehabilitation, they were either upgraded or downgraded to units that allowed varying degrees of freedom. Privacy for all inmates also improved as solid doors with view windows replaced the metal bars. What remained was the separation of prisoners and guards, with the latter still located in central control rooms.

Third-generation facilities have dramatically altered that prisoner-guard relationship. First promoted at the Federal level and now being widely adopted by state and local governments, these facilities call for the direct supervision of inmates, with unarmed guards stationed in each dayroom—"like a clerk at a hotel desk," says one architect. A motive behind this change has been the move away from behaviorism toward a more humanistic approach to prisoners, which acknowledges the unique problems of each individual and allows guards to work with inmates on a one-to-one basis.

The change in inmate behavior under this new system has been remarkable, says Jay Farbstein, who has just co-authored a comparative study of prisons that use direct and indirect supervision. "There is less vandalism, less unrest, and less illness with direct supervision," he notes. "The only danger that I see is if prisons adopt this approach without training guards or altering management methods."

The belief in prisoner reform has affected more than facility operations. Dayrooms now have more amenities—not just comfortable furniture and carpeted floors, but softer lighting, warmer colors, and entertainment equipment. And there is more freedom of movement not only within the dayrooms but among buildings. Many prisons, in fact, have become campus-like. The idea here, says architect Andrew Cupples, is that "within a highly secure perimeter, life in the prison becomes as normal as possible."

### Diversity and Dilemmas

While instructive, the idea that prison design has advanced in three generations also can be misleading, for our prisons and jails are a highly diverse lot. The number of facilities (there are about 628,000 state and Federal prisons and about 150,000 local jails in the U.S.) and the variety of independent jurisdictions (cities, counties, states, and the Federal government all build correctional facilities) almost guarantees a variety of approaches. "There are as many second-generation prisons being built," says one architect, "as third."

The generational idea also obscures the wide range of forms that prisons and jails can take. Radial and branching plans, for example, are still used, even though they are associated with first-generation prisons and might be mistakenly considered obsolete.

Finally, a diversity of approaches is demanded by the size of facilities. In smaller jails, for example, where prisoners of different types are segregated in very small groups of cells, it is often not cost effective to have a guard in each unit. Many of these facilities use a mix of direct, indirect, and intermittent supervision and retain central guard stations as well as stations in each unit.

If diversity is built into the system, so too is our ambivalence about the treatment of criminals, for that rubs up against some of our most cherished traditions. In a nation held together not so much by social consensus or cultural heritage as by laws, the law-breaker becomes the ultimate threat to stability. Yet, in a nation founded upon ideas of equal opportunity and social justice, our treatment of criminals also becomes the ultimate test of our belief in those ideals.

As a result, we continue to build prisons while we question whether we should be doing so. We continue to punish criminals while we ask whether they are truly responsible for their acts. We continue to attempt their reform while we wonder if it is indeed possible. And we continue to see in our prisons and jails, not a resolution of those dilemmas, but certainly a revealing expression of them.

Thomas Fisher



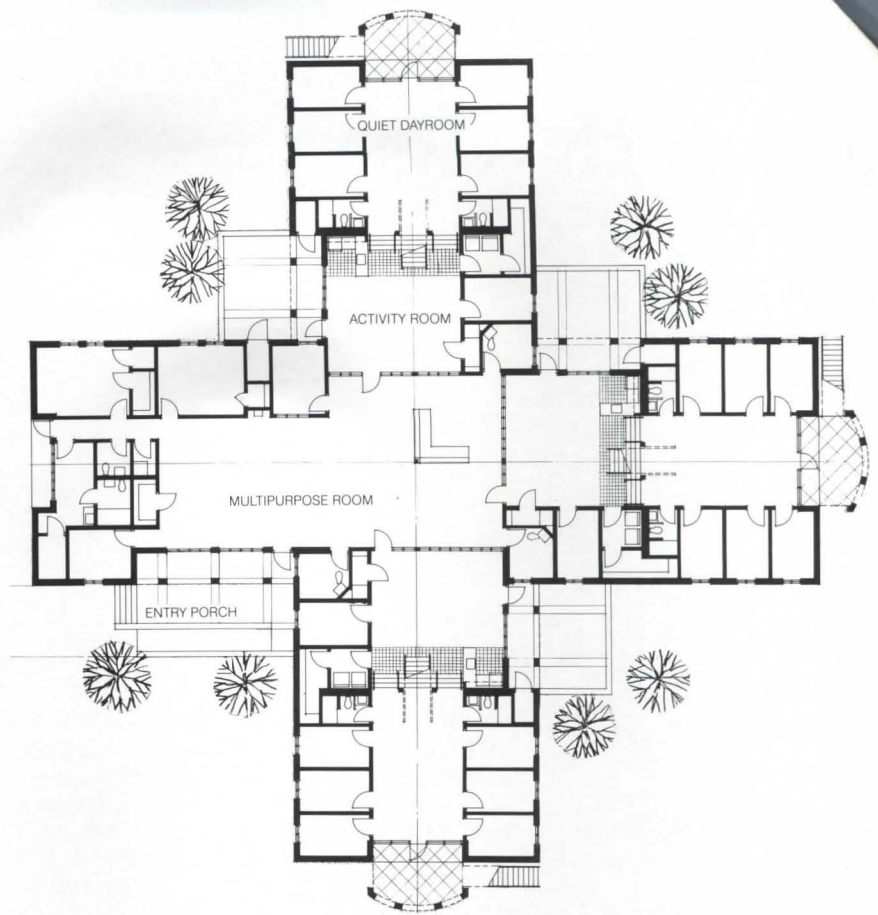


R. Greg Hursley, Inc.



*Lookout Mountain School, Golden, Colorado. Architects: Anderson Mason Dale, Denver. Master Planners: RNL Design, Denver. This building (above) is one of three new housing units for sentenced juvenile offenders. Consisting of 32 beds, the structure*

*has a cruciform shape with three wings containing housing and recreation space and the fourth, the entrance lobby and offices (right). Clad in brick and concrete masonry, with tile roofs and gabled end walls, the housing units have a residential character that relates well to the existing turn-of-the-century campus. The interiors, too, have a non-institutional feel.*



RESIDENTIAL HALL FIRST FLOOR PLAN

N ↑ 40'/12m

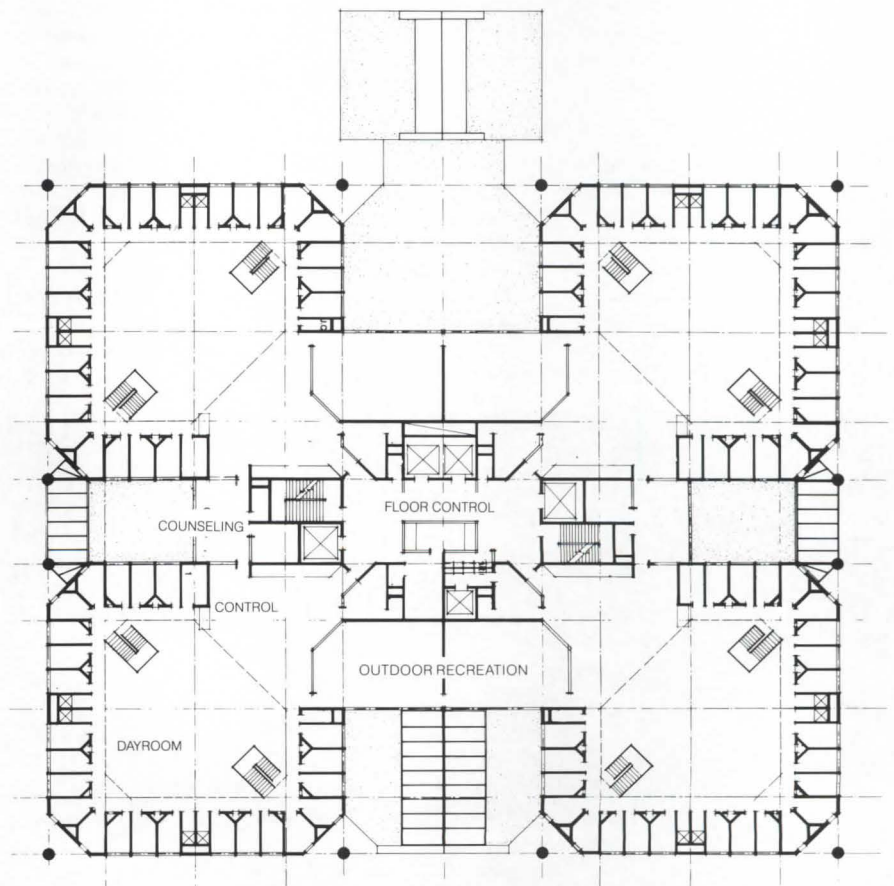


Carmen A. Sabatino



*Lehigh County Prison, Allentown, Pennsylvania. Architects: L. Robert Kimball & Associates, Ebensburg, Pennsylvania. Located in an urban area, this prison shows how such facilities can be arranged within a relatively small footprint. The building has a*

*large structural frame, with exposed corner columns, within which two-story housing units are stacked (above). Each floor has four housing units clustered around a core containing the vertical circulation and outdoor recreation areas (right).*



SECOND FLOOR PLAN

N ↘ 40'/12m



## LOOK Both Ways

**A new Atlanta retail center by Arquitectonica and Milton Pate & Associates invites patronage from two directions.**

From the parking area (below), the majority of pedestrian traffic enters through passages (facing page) between the individual buildings. The yellow framework on the face of the buildings was originally meant as a skeleton for canvas awnings, but wind loading would make that use impractical.

ATLANTA is a paradox. Although much of the architectural expression represented here could be classified as Federal, or Southern Colonial, or even Classical, the city is not without its adventurous clients; such buildings as the new IBM tower (John Burgee with Philip Johnson) and Richard Meier's High Museum (and its downtown branch by Scogin Elam and Bray) are testimony that rows of white porch columns are not everything in Atlanta. As the city continues with its seemingly endless penchant for growth, scattered nuggets of architectural gold can be found; these indicate clearly that while the city may be cautious philosophically, it can be adventurous as well, and it demands a proper degree of sophistication.

A new retail center, "Rio," designed by Arquitectonica of Coral Gables, Florida with associated Atlanta architects Milton Pate & Associates, is a reflection of the most adventuresome of these traits. Constructed in a redevelopment area, Rio causes some natives to ask why it occurs where it does—not far from mainstream Atlanta but not really in it—and why it takes the brash form it does.

Because Rio is just the first step in the developer's master plan to create a new urban node, it is a courageous opening line, required to stand on its own for now. Because two restaurants existed at



the busy intersection of Piedmont and North, the architects wanted to "buy in" to whatever activity they could to start with, so they positioned the center as close to the corner as possible. Envisioning a court that would participate in street activity, they located it off of the heavily-traveled Piedmont. These two decisions, however, forced the parking "around back," an alternative that is less than desirable for the business plan. Because much of the center's pedestrian traffic thus would be entering from the side or back, the fragmentation of the building allowed the creation of notable entries from these sides as well as from the street.

To further enhance the center's image to potential shoppers and because the buildings were to be built on a strict budget in a renewal area, brightly colored yet inexpensive elements were chosen. The architects devised a dual-focus shopping/restaurant environment, an assortment of buildings that centers around a courtyard by landscape architect Martha Schwartz (P/A, July 1989, p. 56), which creates much of the entertainment the center is intended to engender. Over 50 percent of the space is housed in an L-shaped building with one side along North Avenue and one side fronting on the parking area. The remainder of the rental space is in three buildings, one of which is rotated



Michael Astalos

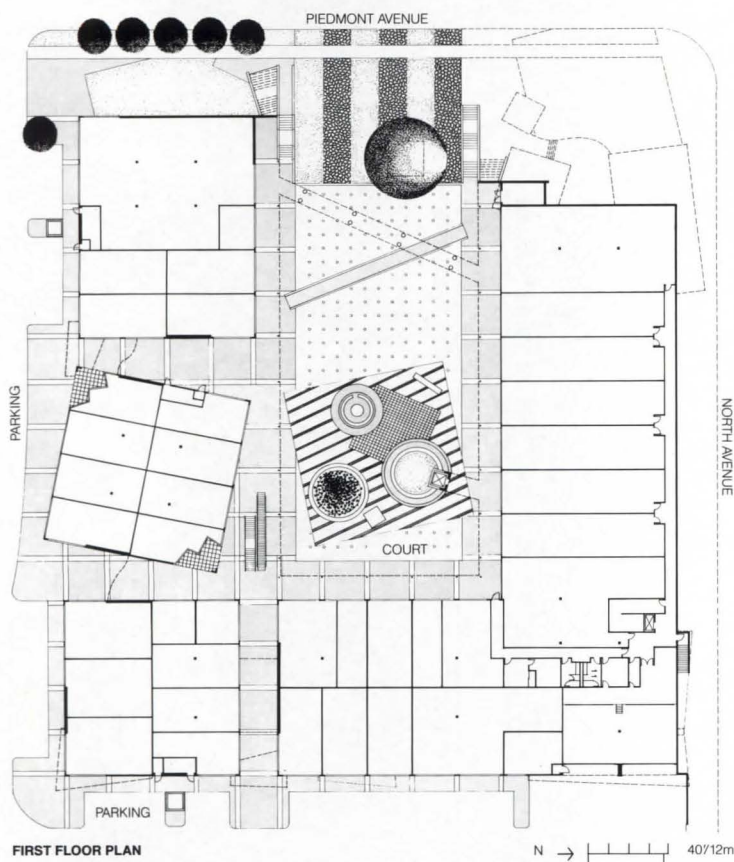






Clearly the most articulated part of the center, the courtyard is full of visual activity, even when empty of people. The blue and black corrugated metal skin of the buildings here contrasts with white railings and trim and with bright red bridges. A skewed "floating" tile island touches two edges of the rectilinear pool and provides a landing for the elevator (facing page, center). Another circular planter holds a stand of bamboo. For the eastern five bays of the building, the courtyard is sheltered by a clear span roof, open at the edges. The globe at the Piedmont Avenue end of the court (top photo, right) includes a

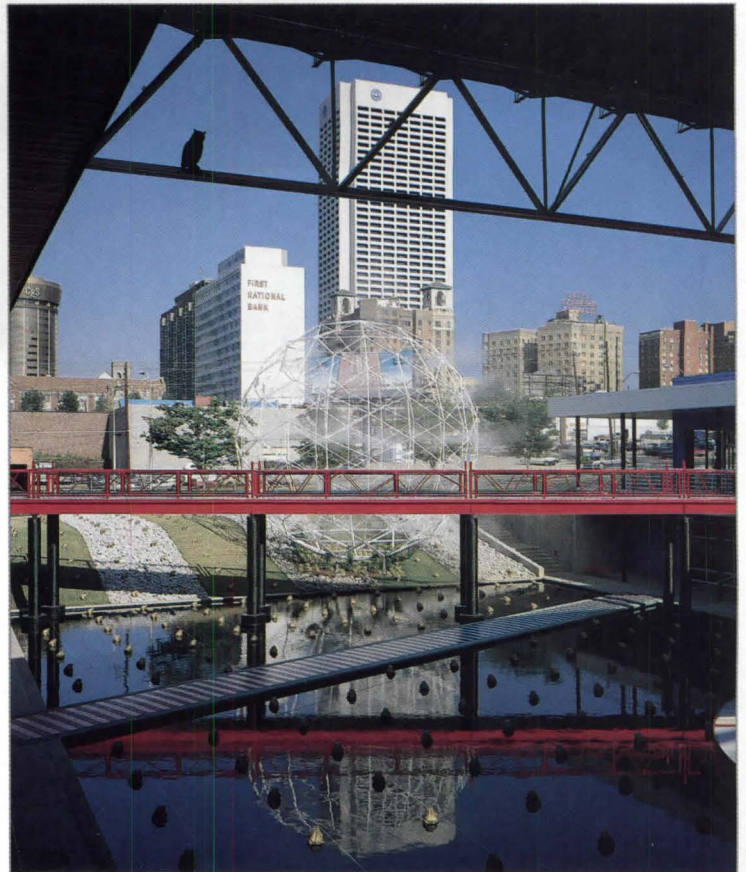
misting system for the benefit of vines that will eventually cover the structure; the gold frogs that form rows in the pool are always facing the globe, even when they progress onto the land surrounding it. The video wall with 25 television sets (bottom photo, right) was designed by artist Dara Birnbaum. Red bridges span the court on an angle at the west end of the court and join the upper elevator landing to the second level walkway. On the courtyard level, a walk crosses the pool at an opposite angle. There is a nearly seamless symbiosis here between the work of the architects and that of landscape architect Martha Schwartz.



to create dramatic skewed entry passages.

While the L-shaped building and two of the discrete segments are clad in a vivid blue vertically corrugated metal skin with white mullions and yellow awnings, the rotated element is horizontally corrugated black metal with green mullions. All are linked on the second (street) level by an open walkway, and by a bright red courtyard bridge between the L-shaped building and the detached building opposite. An elevator shares a corner of the "floating" rotated square pad in the courtyard pool with a stand of bamboo, a wet bar, a planter, and a video wall. The latter, with 25 television sets, was designed by artist Dara Birnbaum and projects multiple images of current scenes amidst a re-creation of the pre-existing conditions at the site.

Given the constraints of cost, location, and program, Rio seems to be a lighthearted and successful expression of consumerism in the best sense, yet it delivers the sophistication the city expects. It is fun to be there. **Jim Murphy**



**Project:** Rio Retail Center, Atlanta.

**Architects:** Arquitectonica International Corporation, Coral Gables, Florida—Design (Bernardo Fort-Brescia, Laurinda Spear, principals in charge; Martin J. Wander, project architect; Jennifer Luce, Richard Perlmutter, and Jenifer Briley, project staff). Milton Pate & Associates, Inc., Atlanta, Georgia—Production (Milton E. Pate, Sr., principal in charge; Lockie Brown, project architect).

**Client:** Charles Ackerman, Ackerman and Company.

**Site:** Irregular steeply sloped parcel in a redevelopment area, at the intersection of two streets.

**Program:** Two-level strip retail center with shops and restaurants.

**Structural system:** Steel frame on

reinforced concrete foundation.

**Major materials:** painted corrugated steel panels, aluminum glazing system, gypsum board (see *Building Materials*, p. 122).

**Mechanical system:** Gas-fired furnace and individual air-handling units for each space.

**Consultants:** The Office of Peter Walker and Martha Schwartz (Martha Schwartz, principal in charge), landscape architects; Bennett & Pless, structural; Brady & Anglin, mechanical, electrical, and plumbing; Bruker Design Associates, signage and graphics.

**General contractor:** McDevitt & Street Company.

**Costs:** Approximately \$13 million.

**Photos:** © Rion Rizzol/Creative Sources, except as noted.







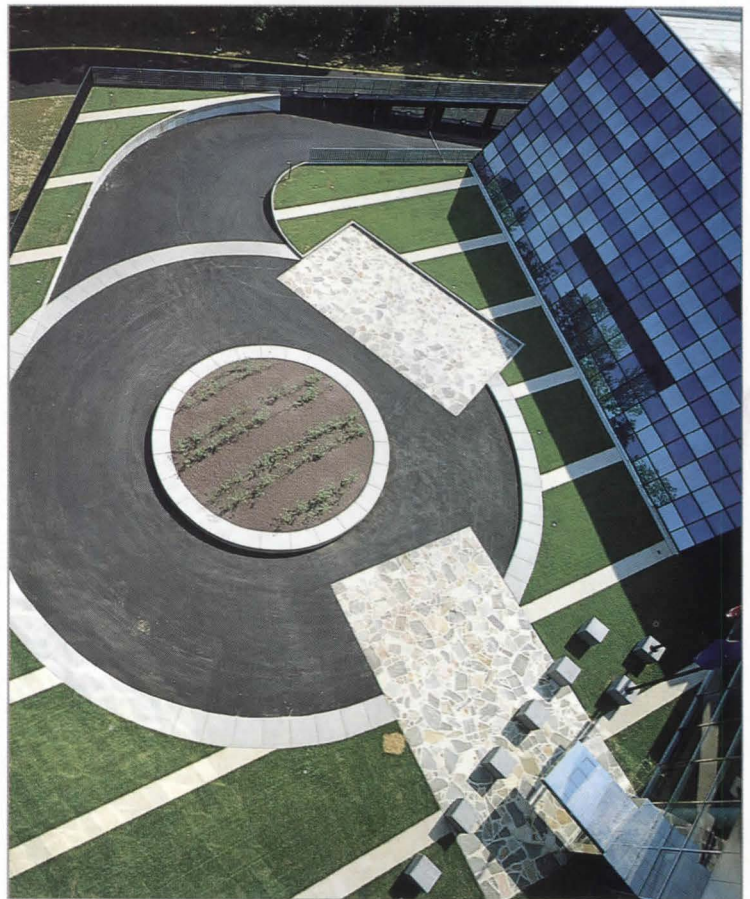
## A Machine in the Forest

**The center for Innovative Technology in Herndon, Virginia, designed by Arquitectonica and Ward/Hall Associates, abandons tradition in search of 21st-century forms.**

WHERE else, but a place so bound to tradition as Virginia, would fate have dealt the opportunity to build a Center for Innovative Technology, whose role so clearly begged for an architecture that was new, not tried and true? Presented with that opportunity, however, architect Bernardo Fort-Brescia considered the notion of re-writing architectural history in the land of Jefferson and saw in it cause for promise, not for cynicism.

He calls the crisp and dynamic outcome "the machine in the forest," a conjunction of hard-edged, irregular shapes arranged on a raised platform like so many pieces of a puzzle that don't mesh. Yet, rising incongruously on a hillcrest above an encircling veil of trees, the CIT's diverging planes and truncated top lend precisely the conversational value desired by an institution in search of a forward-looking image. CIT was established by the state in 1984 to boost economic development in Virginia through technology-centered research, both at the center and in university laboratories. A high-profile site—within easy view of Eero Saarinen's legendary terminal at Dulles Airport—became key to the development strategy of the complex.





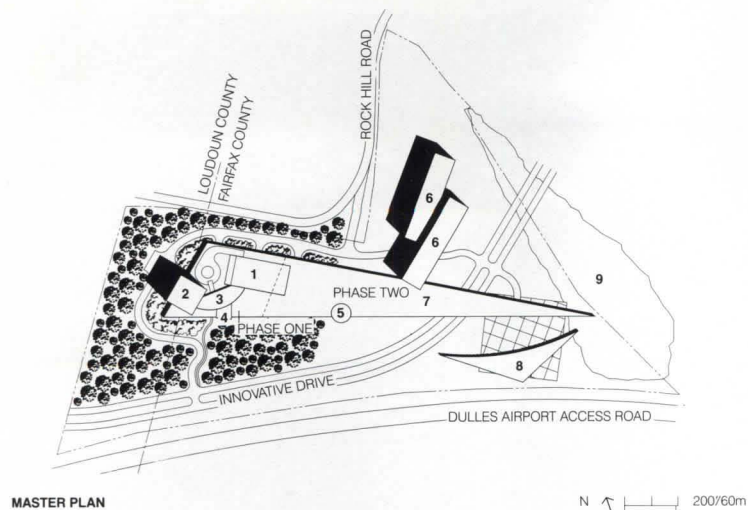
A national ideas competition, backed by a \$100,000 grant from the National Endowment for the Arts, was held in 1985 to generate concepts for what amounted to a new building type. "The brief was not a program but a general description of 'What ifs,'" recalls Gregory Hunt, a professor of architecture at Virginia Polytechnic Institute and State University, which orchestrated the competition. Of the five submissions that shared top honors, one had a clear influence on the design of the finished project. Its proposal for a complex of buildings on and around an elongated triangular platform bears a close resemblance to the built CIT because one of the competition finalists, Jennifer Luce, who was subsequently employed by Arquitectonica, encouraged the firm to pursue the commission.

From that initial suggestion, the joint venture team of Arquitectonica, based in Coral Gables, Florida, and Ward/Hall Associates of Fairfax, Virginia, developed the building form to accommodate an evolving program. In the search for an appropriate aesthetic, brainstorming sessions focused on ways to symbolize 20th-Century gains in technology, particularly advances in the speed of locomotion across land and successes in human flight.

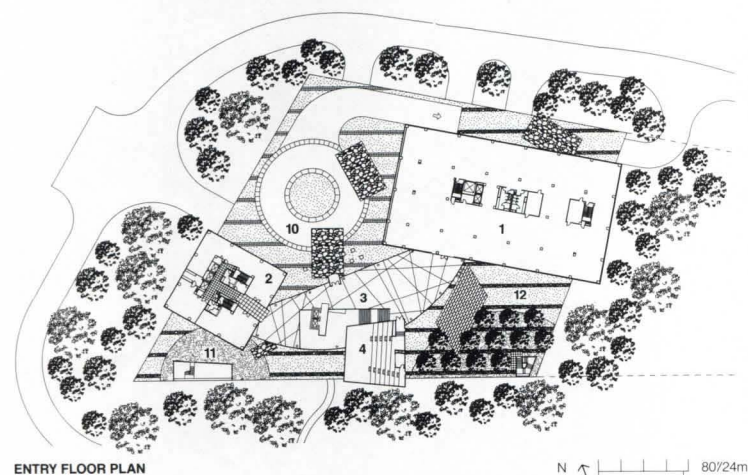
**Formal entry to the Center for Innovative Technology involves ascending a steep ramp and arriving at an elevated forecourt (above left) on top of the podium. Architect Bernardo Fort-Brescia says the angled faces of the buildings were appealing because their reflective surfaces capture the surroundings. "The building changes constantly. It reflects and transforms the landscape," he says.**

**An aerial view of the complex (top) shows the relationship of the CIT's elements—the administration tower, low-rise laboratories and offices of the Software Productivity Consortium, and prismatic commons connecting the two. The white marble block is a 125-seat auditorium. Landscape design by Martha Schwartz includes flagstone pads she likens to "carpets at the places where you step out of the building," as shown in the vehicle drop off area (above). The second pad is for limousine parking.**



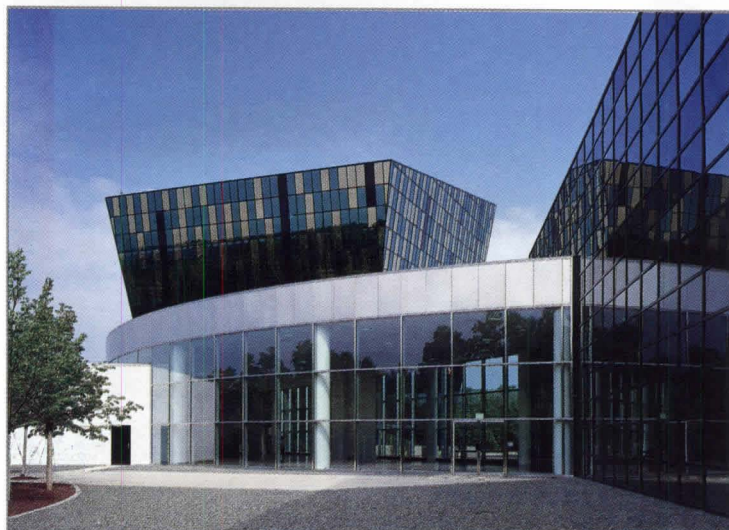


- |                                     |                               |
|-------------------------------------|-------------------------------|
| 1 SOFTWARE PRODUCTIVITY CONSORTIUM  | 7 PARKING                     |
| 2 CENTER FOR INNOVATIVE TECHNOLOGY  | 8 OFFICES/RESEARCH            |
| 3 COMMONS/EXHIBITS                  | 9 DETENTION POND              |
| 4 AUDITORIUM (UNFINISHED, INTERIOR) | 10 ENTRY PLAZA                |
| 5 HELIPORT                          | 11 OUTDOOR TERRACE            |
| 6 OFFICE SPACE                      | 12 OUTDOOR TERRACE AND BOSQUE |



If built to completion, the CIT master plan (top left) would include some 600,000 square feet of research and office space. One-fourth of that is built now. The first floor plan (above left) illustrates the simplicity of the floor plates, which accommodate many space planning options. Lines dissecting the lobby are scrims and expansion joints for the monolithic black terrazzo floor.

The elements of CIT produce a dynamic composition when viewed from one of the rear terraces (top right), still minus the yellow stone stripes and rows of decorative glass globes called for in the landscape plan. Slanting the ends of the SPC building (above right) avoided what Fort-Brescia says would otherwise have been "a dull glass box." The CIT tower (facing page) rests on a shadowy gray-black podium that holds the center's shared cafeteria and a 430-car parking garage. Aluminum grillework shields the garage from view and forms the terrace railings.



Karen Schnebaum

That thinking generated the elements of CIT: a broad, low parallelogram that seems to slide horizontally off its foundation and a tower that angles toward the sky, with gold, green, and black reflective glass panels arranged randomly to emphasize the building's verticality. The tower is home to the administrative offices of CIT, located on the top two floors of the seven-story structure (other floors have yet to be assigned or leased). Occupying the horizontal wedge is a partnership of leading aerospace corporations that joined forces to develop software engineering tools.

Connecting the two main volumes is the commons, a curvilinear lobby and exhibition space walled in clear glass. "We wanted something as transparent as possible," Fort-Brescia says. "We wanted a place of arrival, but we wanted the surrounding landscape to be dominant." Penetrating this soaring space is a self-contained auditorium clad in white marble, a jewel set against the background of trees. Another focal point is the enameled elevator shaft, a free-standing sculptural element that provides access to the cafeteria and meeting rooms on the lower commons level.

Terraces outside the commons—the "fifth façade" of CIT—were









Geometric themes of the building appear in the details of the railing on the elevator landing (foreground, above): cantilevered glass railings are used elsewhere in the lobby. A clear glass prism, shaped as a segment of a circle, houses the main lobby and exhibition space (top right). The entry to the CIT tower (bottom right) is framed by reflective glass that continues into the lobby from the exterior walls. Materials in the commons are given a modern interpretation: articulated stainless steel walls, an enamel-paneled elevator core, and a cantilevered glass block landing (facing page). Entry from the parking garage is at this level.



designed by landscape architect Martha Schwartz, of The Office of Peter Walker and Martha Schwartz, who was brought onto the project after the building forms had been determined. "These buildings are all cattywumpers," says Schwartz. "They are all at funny angles. But when you get inside them, you tend to perceive the walls and floors as rectilinear again." Schwartz's scheme of textured stripes for the podium landscape "was to create a directionality against which you'd begin to perceive the angling of the building." And, because of the number of prospective tenants who arrive via the airport nearby, the perception of the building from the air was important.

In the end, construction of CIT was a triumph over politics as much as a satisfaction of program. During design and construction four presidents and two acting presidents, each with different ideas about the building and various understandings of the project's complex history, had final authority; but they were behind the design. Meanwhile, some of the local folk still scratch their heads in bewilderment at the sight of this glass box gone awry. "People wonder what it is," Fort-Brescia says, noting that's what the client bargained for. "They got a building that people talk about." **Vernon Mays**

**Project:** Center for Innovative Technology, Herndon, Va.

**Architects:** Joint venture: Arquitectonica-Ward/Hall Associates AIA, Coral Gables, Fla. and Fairfax, Va., respectively (for Arquitectonica: Bernardo Fort-Brescia and Laurinda Spear, principals in charge; Martin J. Wander, project architect; Jenifer Briley, Tom Bittner, Toby Engelberg, Jennifer Luce, and Derek Sanders, project staff. For Ward/Hall Associates: G.T. Ward, partner in charge; Charles Hall, partner; Leo Sagasti, project director; John Anderson and Andrew Pittman, project architects).

**Site:** hill overlooking Dulles International Airport.

**Program:** office tower, research building (labs, security areas, and

offices) and commons (briefing center, auditorium, and cafeteria) totaling 150,000 square feet and a 430-car parking garage.

**Structural system:** reinforced concrete structure on mat foundations and spread footings.

**Major materials:** see Building Materials, p. 122.

**Mechanical system:** electric variable air volume system with reheat coils.

**Consultants:** The Office of Peter Walker and Martha Schwartz, landscape; Spiegel and Zamecnic, structural; Silver Associates, mechanical and electrical.

**General contractor:** Gilbane Co. **Costs:** \$22.1 million.

**Photos:** Timothy Hursley, The Arkansas Office, except as noted.









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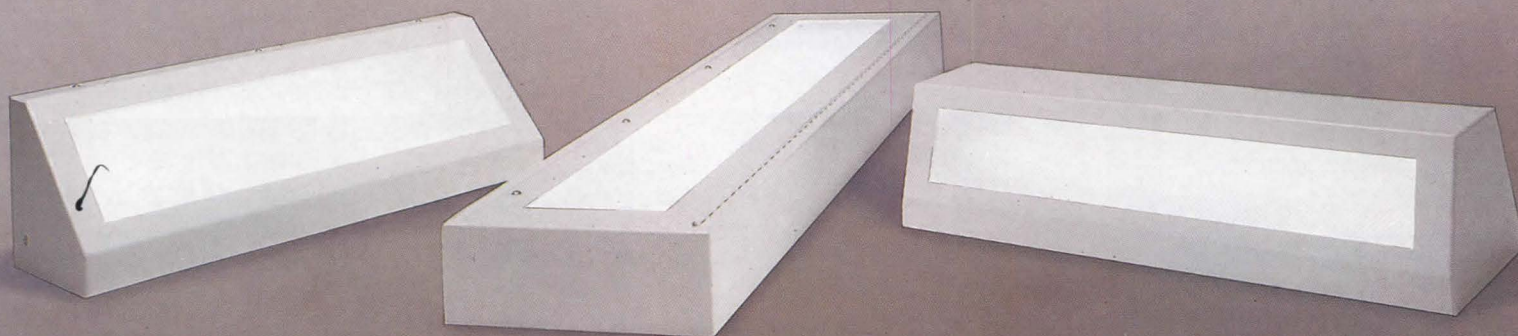


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## Japanese Style, American Life

Japanese wood construction has taken 1500 years to reach its present state, years in which even the smallest details were perfected and prescribed. The architecture was greatly influenced by Buddhist teachings and reached its most elaborate form in the temples throughout the country. The American lifestyle differs greatly from Japanese ritual, but Californian Len Brackett has created a company, East Wind, which fuses traditional Eastern building techniques and Western sensibilities.

Brackett apprenticed for five years in Kyoto, in a temple carpentry workshop. In adapting the strict forms of Japanese architecture to American patterns of living, Brackett has been extremely careful not to violate its tradition and rituals. This house in Tiburon, California, constructed in the mid-1980s, is representative of his work.

The plan, which he and his clients developed using dominos, was laid out on a redwood plaque using the 3' x 6' tatami module. (The plaque was placed above the ceiling after completion to keep the plan accessible to anyone who knows the modular system.) Structurally, the house is very traditional. The wood was completely precut in Brackett's workshop, making on-site construction swift and precise. No metal fasteners were used, and the keyed, pegged, or dovetailed joints are almost invisible.

Selection of wood for the houses Brackett builds is very important, and he is very concerned with its use and replacement. He and the Timber Framers Guild are pressuring the Forest Service to institute policies that would raise the price of old growth, which is preferred for its size, strength, and fine grain, and would encourage its replacement. East Wind uses a number of woods: sugar pine, Port Orford and other cedars, American chestnut, and redwood. Brackett maintains relationships with loggers from California to British Columbia who often call him when they find an unusual tree because they know that fine specimens will not be wasted: Enough wood for more than two

(continued on page 102)



Construction photo of the Tiburon house shows freestanding vertical posts and a free-form beam.



The engawa (right) in the living room is a detail that Len Brackett has added in his American houses.





Woods and joints are used differently in each part of the house.

(continued from page 101)

houses can be cut from the largest trees.

To begin construction, the vertical members were inserted into the sills, then pegged, each piece freestanding. (Brackett says that a sensitivity to natural materials ensures that each piece is placed with its root end down and the outside or inside of the tree placed in a predetermined orientation.) Top plates and perimeter beams were joined to the posts and to each other, followed by smaller elements: short king and queen posts, ridges and purlins, tiny rafters. The interior was spanned with round logs, including the free-form beam in the living room. (The log, which Brackett found near his shop, had to be installed first because its curve would have been too large to insert once the structure was completed.) Brackett emphasizes that the engineering is very simple. The roof construction series loads directly onto horizontal beams. One drawback of this method is that the spans cannot be enormous; the one shown above is about 15 feet.

Using materials found on or

near the site is another tradition which Brackett tries to maintain. Walls in the house are made of unfinished, plastered mud—soil from the site combined with additives to make it more durable and watertight. It is a very difficult material to work with (the plasterers came from Japan) but contributes to the house's uniqueness. The tone changes throughout the day, from a green in morning light to a deep brown under incandescents. Other on-site materials include the cattails which lattice the round window and the heavy stone step in the entryway.

Japanese details were westernized within the house. People bring American habits to a traditional house, and it "doesn't work," says Brackett. Proportions that are based on eye level when one is seated on the floor become skewed when chairs and other furniture are introduced. So the window heights, for instance, were adjusted to allow the proper perspective outside. The *engawa*, a verandah which mediates between outside, with exterior doors, and inside, with shoji screens, is another form



The stone step and the cattails in the round window were found near the site.

that was adapted: A raised futon creates a much-used space. Brackett notes that this is the most popular area in other houses he has built.

Modern technology also accounts for some of the changes East Wind has made. Stressed-skin panels and computers are not used in traditional Japanese architecture, but Brackett remains open to any technologies that do not compromise the buildings' aesthetics. In this sense, he says, while the tradition in Japan has stabilized, it is growing in the West. Still, Brackett notes that often the best techniques are the traditional ones: *Washi*, the paper used in his shoji screens, is a better insulator than glass.

Without the extensive building support system that exists in Japan, Brackett points out that the custom work done by East Wind can be very expensive. New collaborations are starting to make it more accessible: East Wind works with builders and clients to give certain prioritized areas the true Japanese treatment, while specifying the rest with a Japanese timber frame

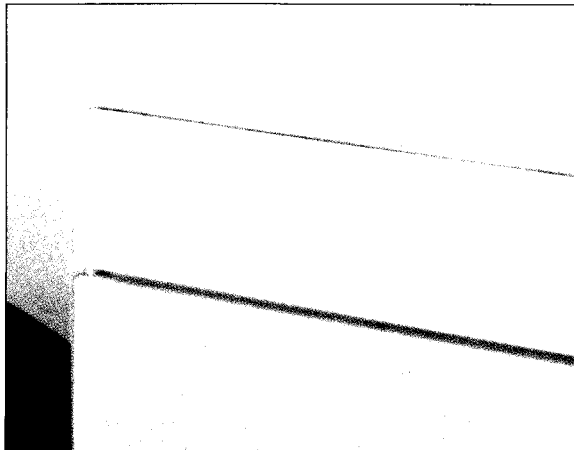
but without the extensive traditional woodwork. Such collaborations and adaptations allow East Wind, one of only a handful of companies that practices Japanese architecture in America, to bring traditional Eastern forms West. **Andrea E. Monfried** ■

*East Wind is located in Nevada City, California, and may be reached at (916) 265-3744.*

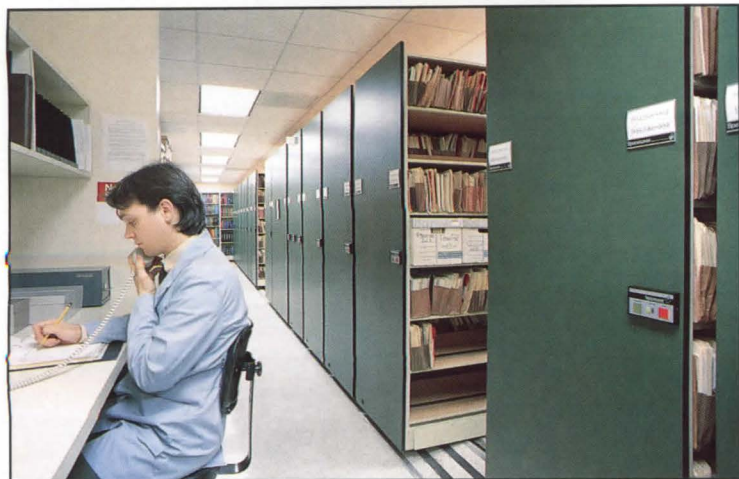
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## High-Density Files in High-Rises

Two conflicting interests are beginning to collide in today's speculative office building market. One is represented by developers' need to contain costs. Their buildings invariably are constructed with floors rated to carry 50 lb per sq ft (psf) live loads—the building code minimum for office occupancy under most building codes.

On the other side are the anchor tenants who are key to a successful development—primarily major corporate offices, banks, insurance companies, and law and accounting firms, which typically maintain massive files. Increasingly they are turning to high-density mobile storage systems for central files, law libraries, computer tapes, and supplies.

With track-mounted moving carriages and a single transposable aisle, mobile systems will hold twice as much material as stationary shelving for the same floor space—up to six times more compared with drawer-type file cabinets. The space economies are obvious and significant, but the price includes greatly increased floor loads, well in excess of 50 psf.

To accommodate tenants who want the advantage of mobile storage, the developer has two choices: Require the tenant to absorb the cost of post-construction floor reinforcement, or provide for pre-construction reinforcement of selected areas. Although many developers opt for post-construction reinforcement, this is much more costly and not always possible—especially if it would disrupt other tenants.

Pre-construction reinforcement can be much less expensive. In fact, it can be positioned

as a building amenity to benefit prospective tenants. One obstacle to pre-construction reinforcement has been a common misconception that mobile storage systems require 150 psf floor capacity. This is unnecessary for most office applications and puts too high a premium on the cost of mobile storage.

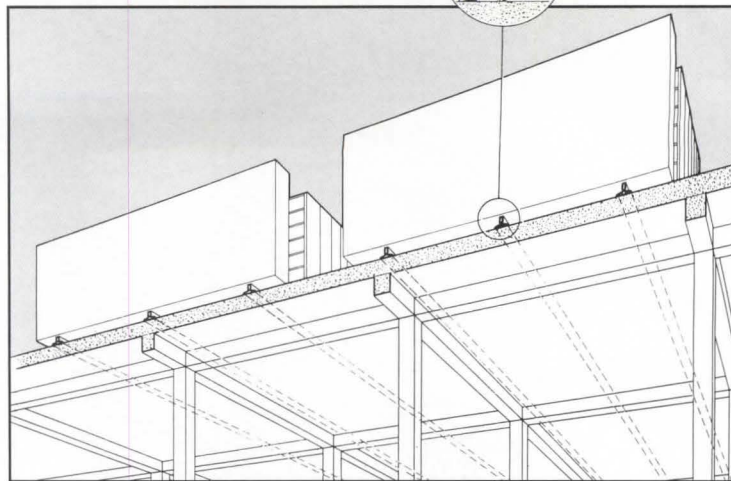
### Structural Rails Can Reduce Floor Loading

In our experience 100 psf floor capacity is quite adequate for mobile storage in office buildings and can be provided very economically with pre-construction reinforcement. This becomes apparent when mobile storage systems are viewed not so much as floor-loading devices, but rather as load-transfer devices. Properly designed and configured mobile systems can transfer loads to the building frame so that 100 psf becomes a very practical office floor rating through the use of structural steel T-rails in a range of sizes and lengths to fit various system requirements.

Mobile storage creates line loads beneath its rails. The load transfer capacity of the system depends on the number, spacing, rigidity, and orientation of the rails with respect to building joists, beams, and girders. The aim is to either locate the rails so they run directly on top of the joists, beams, or girder members, or run perpendicular to and spanning several structural members. Either way, sufficient load is transferred away from the slab and onto the building frame so that a 100 psf live floor load rating is sufficient.

### Typical Costs

In Atlanta, for example, the cost for a typical reinforced concrete floor slab, rated at 50 psf, is about \$8.25 per sq ft (\$2.75 for



Aligning rails and structure can reduce the load on the slab.

formwork, \$2.50 for reinforcing steel, and \$3.00 for concrete). Increasing this to 100 psf, which is a common rating for core areas, would add only about \$1.00 per sq ft for reinforcing steel. Concrete and formwork costs would remain the same. In a typical high-rise, the overall building cost increment for 100 psf reinforcement of two bays per floor would be less than 0.2 percent. For 150 psf, however, the combined cost of all three components would increase by \$3–4 per sq ft, or three to four times as much.

With steel frame buildings the incremental cost of 150 psf vs. 100 psf is even greater. The 16-inch-deep beams required for 50 psf floors become 18-inch beams for 100 psf floors, which again is conventional for core areas. But 150 psf floors are apt to require 21-inch beams, which would add 3 inches per floor to the building height and increase other material costs.

### Pre- vs. Post-Construction

The ultimate question to a developer, however, is how he would benefit from such a pre-construction improvement. First, it may help him close the deal, especially with the growing list of companies now insisting on compact storage. Second, by facilitating compact storage, he minimizes the chances of a tenant's storage needs outgrowing the space and forcing a move. Third, he may avoid his building becoming obsolete by providing a feature now that may be required in future building codes.

Why not just do post-construction reinforcement as necessary? Cost can be a major deterrent—from \$10 to \$20 per sq ft. Even then, it is not always practical or possible. The least expensive method—under-floor reinforcement—may not

be practical because ducts and other mechanical equipment may be in the way, or there may be tenants below that cannot be disturbed. Reinforcement may be possible within the user's own space by adding grillage and building up the floor, or suspending the mobile system from building columns. However, this work requires on-site drilling, cutting, and welding that can be a fire hazard in built-out areas as well as highly disruptive to other office operations.

### Vendor Caveats

In specifying mobile storage systems for high-rise buildings, it is essential that they be considered as an integral part of the building structure, not just furniture. They should have structural steel T-rails heavy enough to carry the load and long enough to span across building framing members. When field welding is required, the rails should permit full-penetration welds—lest the joints themselves impose floor stresses—and all field welds should be performed by a certified welder.

The manufacturer's carriage design should permit flexible location of wheel housings to permit proper rail spacing to best fit the building design and allow the installation of additional rails to share the load.

Above all, when there is any doubt at all about exceeding floor load ratings, the vendor should be required to furnish certification by a licensed structural engineer that the proposed mobile storage system will meet all building safety requirements.

**Joseph R. Russ**

*The author is a principal in the Atlanta firm of Sedki & Russ Engineers.*





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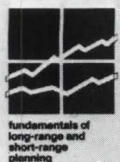
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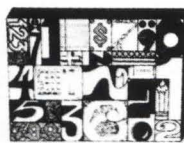


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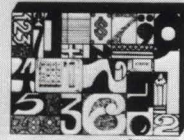
**X06 Fundamentals of Long- and Short-Range Planning**—This book is a self-study course written in the question-response-feedback style of programmed learning. The course presents detailed expansion of each step in long- and short-range planning: becoming aware of opportunities, establishing objectives, defining all premises, determining alternative courses, evaluating them, selecting a course, formulating derivative plans, implementing the plan. \$20.00

### HOW TO READ A FINANCIAL REPORT



**X29 How to Read a Financial Report**—This course will give you a better understanding of basic accounting concepts & show how to use financial statements to assess performance and to measure the financial condition of your own operation through the use of "ratio analysis." \$17.50

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**X36 How to Make Business Investment Decisions**—This course will help you understand how the relationship between money and time affects management decisions. The course covers: present value concepts, how to use compound interest tables and equations to calculate the time value of money, how to use computed values to compare alternative business investment plans, and how to make the best decision based on the economic factors involved. \$17.50

### X05 Management by Objectives —

MBO is a management method structured to emphasize what must be done, rather than how it is to be done, leaving plenty of room for creative thinking about solutions. This book, written in programmed learning format, will show you how to establish objectives, set standards for measuring performance, and conduct measurements to determine progress. \$17.50



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## Materials Library:

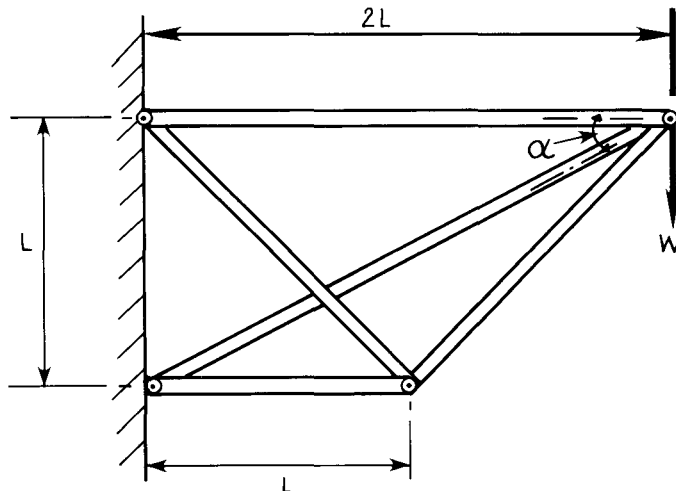
**QuickSHAPE** — automatically retrieves properties and specs of more than 1,100 AISC shapes including channels, structural tees, and single & double angles. Provides all dimensions, weights, moments of inertia, and section moduli; then combines with these structural design programs to eliminate tedious manual calculations. Program accepts user defined properties and specs for other materials. . . . . **\$295**

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Complete integrated beam design software package . . . includes QuickBEAM, QuickSHAPE and QuickMOMENT — four 5 1/4" disks and user manual . . . . . **\$795** (save \$90).

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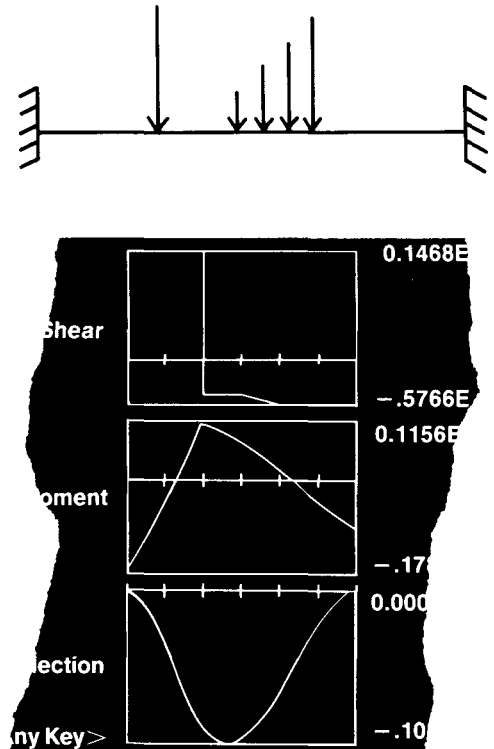
**QuickCOLUMN** — designs columns with either uniaxial or biaxial loads and any end conditions. Design philosophy complies with AISC codes . . . . . **\$195**

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## THE U.S. MARINES AREN'T LOOKING FOR PRETTY WALLS.

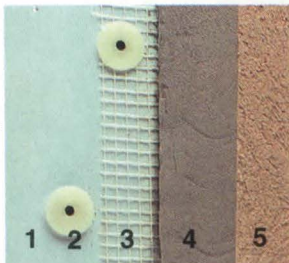
## THEY'RE LOOKING FOR WALLS THAT CAN TAKE TOUGH TREATMENT.

Talk about a tough assignment: Quantico Marine Corps Base, Virginia, with over 500,000 sq. ft. of walls on 135 buildings.

Every architect or builder faces tough challenges: to

### *Senerthik high-impact-resistant exterior insulation and finish system.*

(1) AMOFOAM, (2) mechanical fastener, (3) reinforcing fabric, (4) 1/4" polymer modified base coat, (5) protective finish coat.



create buildings with high visual impact which also have to withstand high physical impact. Military complexes. Shopping malls. Schools. Recreational centers. That's why, together, Amoco Foam Products and Senergy Inc. created one of the most *impact-resistant* exterior wall systems in the industry: Senerthik.®

The rigid backbone of this very attractive and very durable system is the superior compressive strength of AMOFOAM® brand closed-cell extruded polystyrene, which is mechanically attached to any approved substrate. (See *Senerthik installation instructions*.)

Green AMOFOAM is available in various thicknesses, with square or ship-lap edges. R-value equals 5.0 per inch. To finish the task, the remainder of the Senerthik system is then applied.

Senerthik not only takes tough abuse but provides design freedom, too.



Amoco Foam Products Company

What's more, you can integrate Senergy's Senerflex® system (*where more intricate*

*design detail is desired*) with Senerthik on the same job.

Other advantages? Senerthik is light, so it's easy to install. It reduces your need for footings and support. Construction costs are reduced without sacrificing structural integrity.

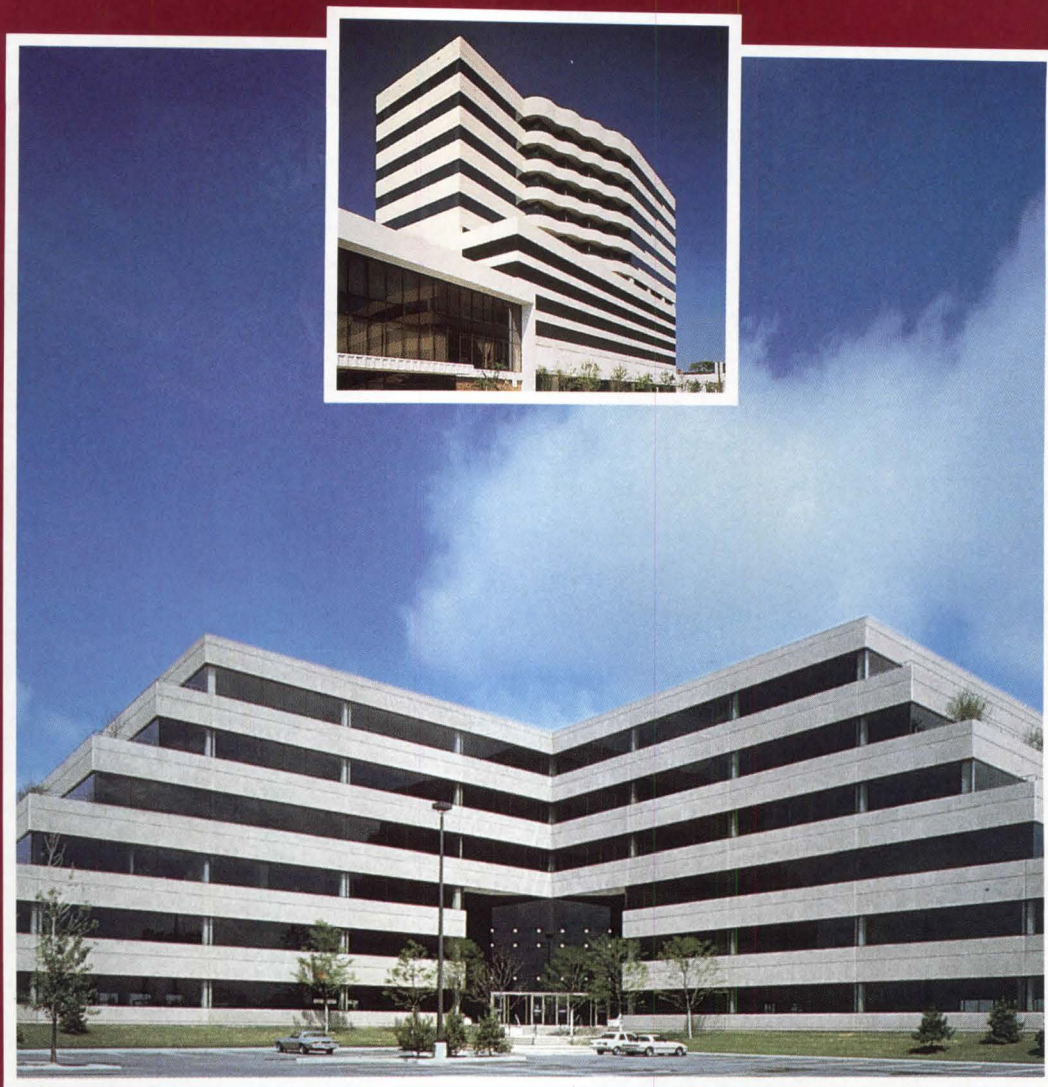
Whether new construction or remodeling, when the going gets tough, durable and stunning solutions can be achieved with Senergy. It performs. So call or write: Amoco Foam Products Company, 400 Northridge Road, Suite 1000, Atlanta, Georgia 30350, (800) 241-4402; or Senergy Inc., 1367 Elmwood Avenue, Cranston, Rhode Island 02910, (800) 221-WALL.

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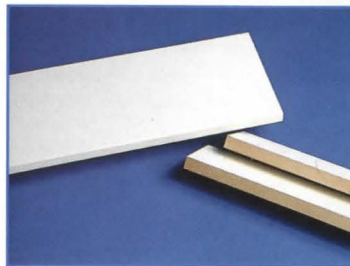
# New Products and Literature

118 **Prison-Related Products**  
120 **Products and Literature**  
continued



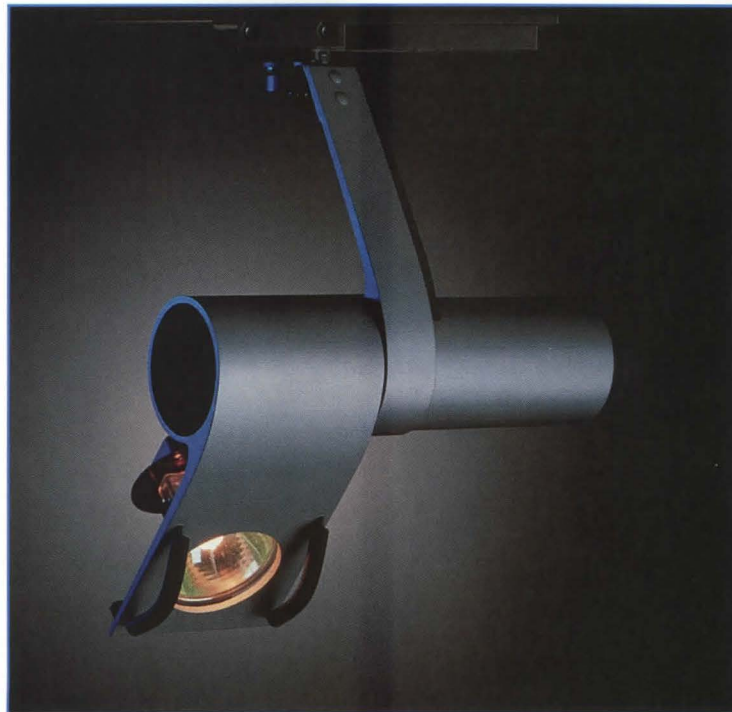
A new **tapestry** collection called Edition Gaudí joins the Homage Textile line. The fabrics, three of cotton and one of wool that make up Edition Gaudí, are patterned after Gaudí's mosaic, ceramic, and applique designs. Architex.

Circle 100 on reader service card



A new **non-structural trim** product called CTX—Clear-Type Exterior—is offered in many sizes and comes with a factory-applied prime coat. CTX is consistently free from knots, hard and soft spots, and cup and wane. Weyerhaeuser.

Circle 101 on reader service card



A **low-voltage track fixture** called Spacebird consists of extruded aluminum and accommodates MR16 lamps from 20 watts to 75 watts in a complete range of beamspreads. Ceiling or wall mounts are also available. Lighting Services.

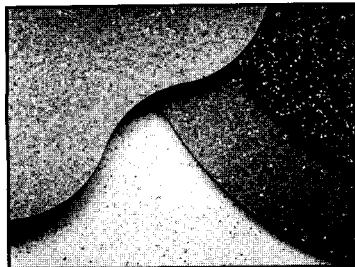
Circle 102 on reader service card



A **wall-mounted fixture** called Quarter Moon measures 72 inches high and utilizes a 50-watt MR16 halogen lamp. Power is conducted through the cables from the low-voltage transfer switch box on the floor. The spring steel, adjustable upper portion is 15 $\frac{3}{4}$  inches long. Azzizi.

Circle 103 on reader service card

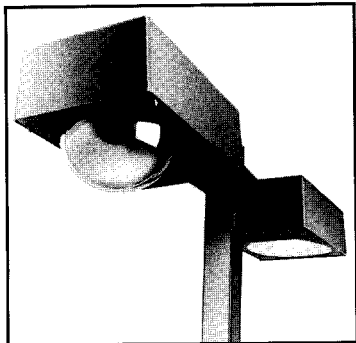




**Vinyl sheet flooring** from the Suffield line can now be specified in four new colors: topaz, copper, turquoise, and garnet. The six-foot-wide inlaid vinyl sheet features multi-colored specks against a contrasting background.

Armstrong World Industries.

Circle 107 on reader service card



**Discreet outdoor surveillance** can be achieved with the Mark VI Outdoor Omnicam, a motorized CCTV camera housing designed to resemble outdoor luminaires. The clear outer hemisphere is fixed, while the inner hemisphere, painted matte black except for a narrow viewing slot, pans with the camera.

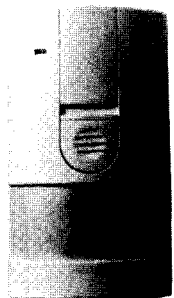
Vicon.

Circle 104 on reader service card

**A new modified bitumen** roofing material called GS Flintlastic FR carries the UL Class A rating for fire resistance over both combustible and non-combustible decks. No insulation, gravel, or additional coating is required for the fiberglass and polyester material.

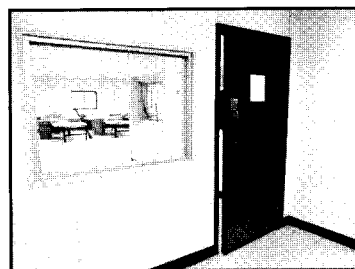
GS Roofing Products.

Circle 105 on reader service card



**A new automatic light switch** integrates a light-level sensor feature into a passive infrared occupancy detector. Models WI-120 and WI-127 will not turn lights on if a user-specified amount of natural light is available in the control area. The Watt Watcher.

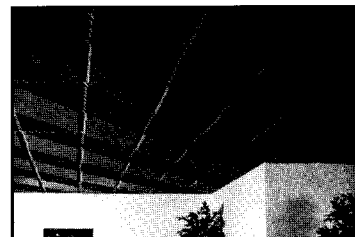
Circle 106 on reader service card



**Wall panels** designed for use in correctional facilities are called Fire-X Glasbord and are graffiti- and moisture-resistant, durable, and cleanable. The embossed surfaces provide extra wear resistance.

Kemlite.

Circle 108 on reader service card



**Acoustical ceiling tiles** called Spectrum are made of a lightweight, open-cell material that is burn-resistant and easily installed. All four patterns—and complementary flat trim tiles—are offered in white, gray, or beige.

Illbruck.

Circle 109 on reader service card

**A new water repellent** is a clear, non-yellowing, non-glossy silane-modified polysiloxane that is moisture-vapor permeable. One of several new technologies designed to promote the surface longevity and integrity of concrete, masonry, and porous dimensional stone, the patented product can be used on both horizontal and vertical construction materials.

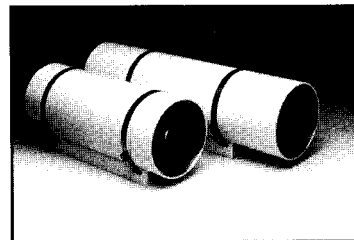
GE Silicones.

Circle 110 on reader service card

**Security glass** is the subject of a new specification guide that details laminated security products and glass-clad polycarbonates. Glass strength comparisons are also provided in the illustrated brochure.

Viracon.

Circle 200 on reader service card

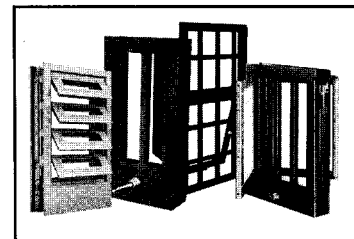


**CCD cameras** from the TC106 Series are high-performance cameras prepackaged in a weather-resistant housing, which is offered in two sizes.

An internal heater enables the surveillance unit to operate in temperatures ranging from -40 to 131 degrees Fahrenheit.

Burle.

Circle 111 on reader service card



**Detention windows** are the subject of a new, full-color brochure which features awning, casement, and guard windows. Custom configurations are offered.

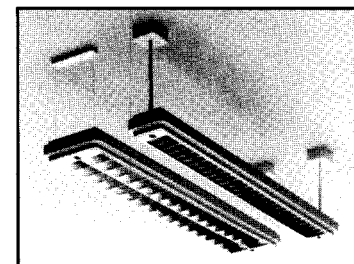
The Steel Window Institute.

Circle 201 on reader service card

**Fiberglass insulation** is the topic of a new color brochure. Blowing products, flame-resistant foil facing, sound control batts, and unfaced building insulation are discussed.

CertainTeed.

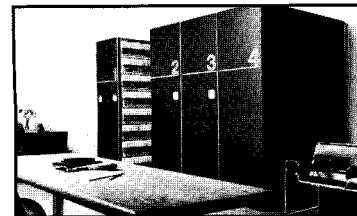
Circle 202 on reader service card



**Special lighting solutions** are one of the topics covered in a new, four-color brochure. The publication also discusses and illustrates high-tech lighting systems, electronic control gear, compact systems, and exterior luminaires.

Siemens.

Circle 203 on reader service card



**High-density storage** and filing systems are now offered with a new face-panel graphics program that combines more than 25 type faces in more than 40 colors as well as custom logos or symbols. A range of laminate colors and patterns may be specified for the mobile storage units.

Spacesaver.

Circle 112 on reader service card

**An exit alarm device** that is also fire rated is now part of the 572 Series. The low profile unit features a delay switch that permits up to a 20 second delay before activating the alarm.

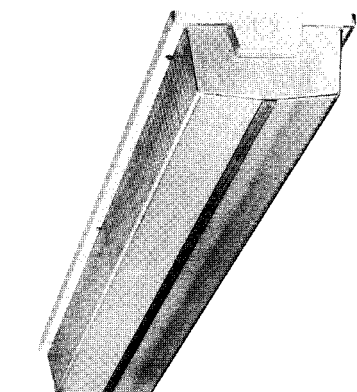
Russwin Div/Black & Decker.

Circle 113 on reader service card

**Surveillance and activity lighting** are the subject of a new guidebook for correctional facility lighting applications. Lighting solutions and specifications for exercise yards, parking lots, entrance and guard posts are some of the activity applications discussed.

Holophane.

Circle 204 on reader service card



**High-abuse luminaires** from the Series FPS are three-lamp, wraparound luminaires with an unbreakable surface. A 16-gauge metal backplate provides a firm mounting anchor for additional impact resistance. The luminaires are UL listed for wet locations.

Fail-Safe.

Circle 114 on reader service card

**Reinforced fiberglass** that is bullet-resistant is discussed in a new brochure. The lightweight material is available in opaque flat panels that tend to absorb bullets rather than deflecting them.

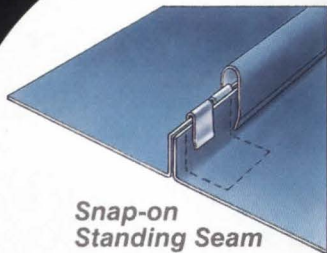
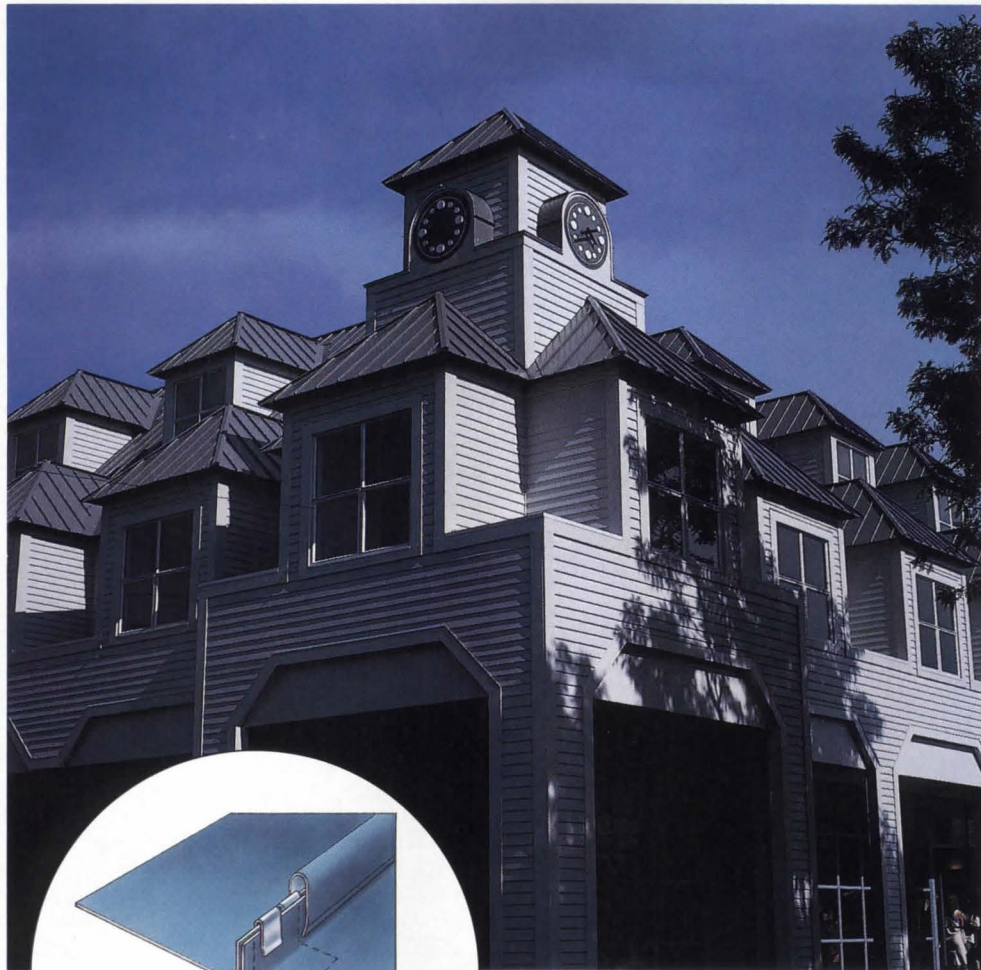
Point Blank Body Armor.

Circle 115 on reader service card

(continued on page 120)



# PAC-CLAD Metal Roofing Panels



## Snap-on Standing Seam

.032 aluminum  
24 gauge steel  
12", 18", 19" or 20" O.C.  
1" high

**Project:** 90 Main Street  
**Owner:** 90 Main Street Partners  
**Architect:** Ferris Architect, P.C.  
**Roofing Contractor:** Barrett Non-Pariel Roofing Co.  
**Panel:** Snap-on Standing Seam  
**Color:** Slate Gray

See our catalog in Sweet's: file numbers  
07610/PET, 07715/PET and 10426/CHC.



PAC-CLAD Metal Roofing Panels are a prominent design element on the recently completed 90 Main Street project in Westport, Connecticut.

The architect, Roger Ferris of Southport, Connecticut, has designed a mixed-use facility that is an attractive new addition to the town's commercial center.

PAC-CLAD Snap-On Standing Seam Panels were specified for the extensive metalwork and detailing of the metal roof, dormers and clock tower. The panels are coated with a PAC-CLAD Kynar 500® finish. The color, Slate Gray, is one of eighteen standard PAC-CLAD colors and is provided with a twenty year finish warranty.

For more information regarding the complete Petersen product line, please contact Tom Creigh at Petersen Aluminum Corporation, 1-800-PAC-CLAD.



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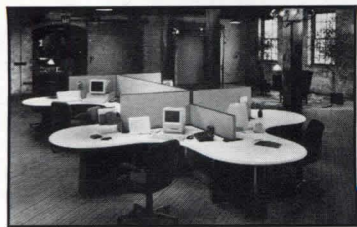
Other Plant Locations:

8735 Bollman Place    4295 Hays Drive  
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Circle No. 334 on Reader Service Card



(continued from page 118)



**A new office system** called Context is a desk-based system with curving work surfaces designed to accommodate state-of-the-art office equipment. Acoustical panels and overhead storage units with task lighting are supported by the desk units. Free-standing storage units complement the system. Steelcase.

Circle 116 on reader service card

**Brand name drafting, print, and plotter supplies** are described in a 65-page catalog. Discount prices are also included in the 1989 comprehensive catalog. Dataprint.

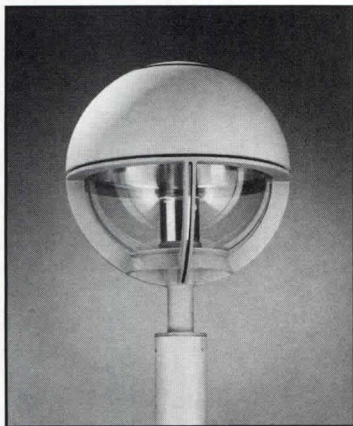
Circle 205 on reader service card

**New fiberglass enclosing sheets** called Quick-Fit Klosures can be stapled, nailed, wired, taped, or glued onto wooden or scaffold frames for temporary enclosures. Kelley Klosure Systems.

Circle 117 on reader service card

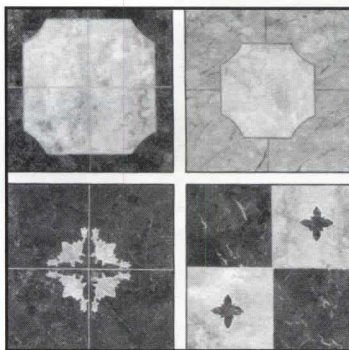
**A new composite panel** called Alucobond 21 consists of two sheets of aluminum with a new, proprietary plastic core. The new material has a high strength-to-weight ratio, is extremely flat, and is also corrosion resistant. The plastic core is fire-safe for the intended applications, including exterior curtainwall and interior cladding, signage, and industrial uses. Alucobond.

Circle 118 on reader service card



**High-performance outdoor lighting** designed by Paul Steel features a 70-degree horizontal light cutoff, a cast aluminum body, and an Alzak® reflector system. The sphere is 17 1/8 inches in diameter. ELA.

Circle 119 on reader service card



**Inlaid marble tiles** for flooring, fireplaces, countertops, and wall applications are offered in a range of sizes, styles, colors, and materials. Eight classic patterns can be custom cut for any design specification.

World Marble Designs.

Circle 120 on reader service card

**Wire files** designed for storing rolled graphics are available in four configurations for desk-side or general office storage. Some models have a step-up base for easier file location. Plan Hold.

Circle 121 on reader service card

**B-grade redwood panels** for interior or exterior applications have a nearly knotless appearance. The architectural redwood from the B-Plus series is virtually pre-shrunk. Palco.

Circle 122 on reader service card

**A modular deck** for mobile storage or shelving systems can be installed over existing floors and easily moved. Aisle Saver® is available with capacities of 700 or 1000 pounds per foot. Special steel dome levelers with steel plate-supports compensate for uneven floors.

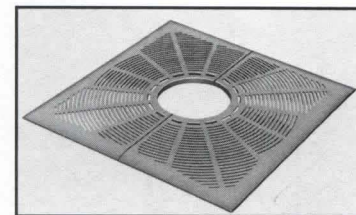
White Office Systems.

Circle 123 on reader service card

**Asbestos abatement** is the subject of an illustrated brochure that explains solutions to asbestos problems in various types of buildings. The literature helps architects and building owners understand the common pitfalls of asbestos removal.

Asbestos Abatement Services.

Circle 206 on reader service card



**Cast-iron tree grates** in a variety of styles and shapes can be seen in a new product catalog. Expandable grates are shown. Neenah.

Circle 207 on reader service card

(continued on page 122)

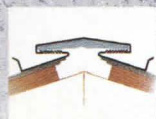
# THE EVOLUTION OF RIDGE

**Research and technology have moved attic ventilation from primitive, ugly "holes in the roof" to attractive, super-efficient Shinglevent.**

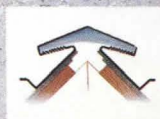
Twenty-five years of ventilation research have resulted in the ultimate in shingle-over ridge ventilation. Shinglevent provides maximum net free vent area for year-round protection against damaging attic heat and moisture. Choose Shinglevent, the most advanced, efficient shingle-over ridge vent.

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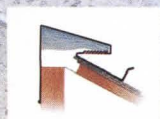
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(continued from page 120)

**A symbols library** designed to assist plumbing design can be used with AutoCAD release 10. A 240-page catalog supports the 184 pre-drawn wire-frame entities included in the library. American Standard.

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**A flooring material** called Geo-Stone® is a thin marble conglomerate in a cementitious matrix. Available as a tile or slab in 24 colors, the flooring is applicable for high-traffic commercial uses and can be specified with a honed or polished finish. Innovative Marble and Tile.

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## Building Materials

**Major materials suppliers for buildings that are featured this month as they were furnished to P/A by the architects.**

**Dreamland Heights (Hybrid Building), Seaside, Fla. (p. 59).**  
*Architects:* Steven Holl Architects, New York. Wood casement windows: Kolbe & Kolbe Millwork Co. Skylights: Circle-Redmont. Storefronts: Torrance Steel Window Co. Hollow metal doors: Curries. Wood doors and French doors: Custom Stair and Trim, Ltd. Concrete pavers: Sunny Brook Prest Concrete Co. Interior floors: 4" Southern yellow pine. Roofing: Galvalume metal roofing and Carlisle membrane. Ceramic tile, bathrooms: American Olean. Elevator, hydraulic: Mowrey Elevator. Heating and A/C system, Cu Ni exchanger: Friedrich. Sinks and lavatories: Logasa, Kohler, American Standard, Eljer. Toilets and urinal: American Standard. Bathtubs, standard and whirlpool: American Standard. Kitchen sinks, stainless: Elkay. Kitchen ranges, microwaves, dishwashers, disposers: General Electric. Refrigerators: Sub-Zero, White-Westinghouse.

**Canadian Centre for Architecture, Montreal, Quebec (p. 68).**

*Architect:* Peter Rose Architect. Trenton limestone: Les Carrieres. Bush hammer finish: St. Marc. Aluminum-framed double-glazed windows and skylights: Zimcor, Montreal. Bal-

(continued on page 124)

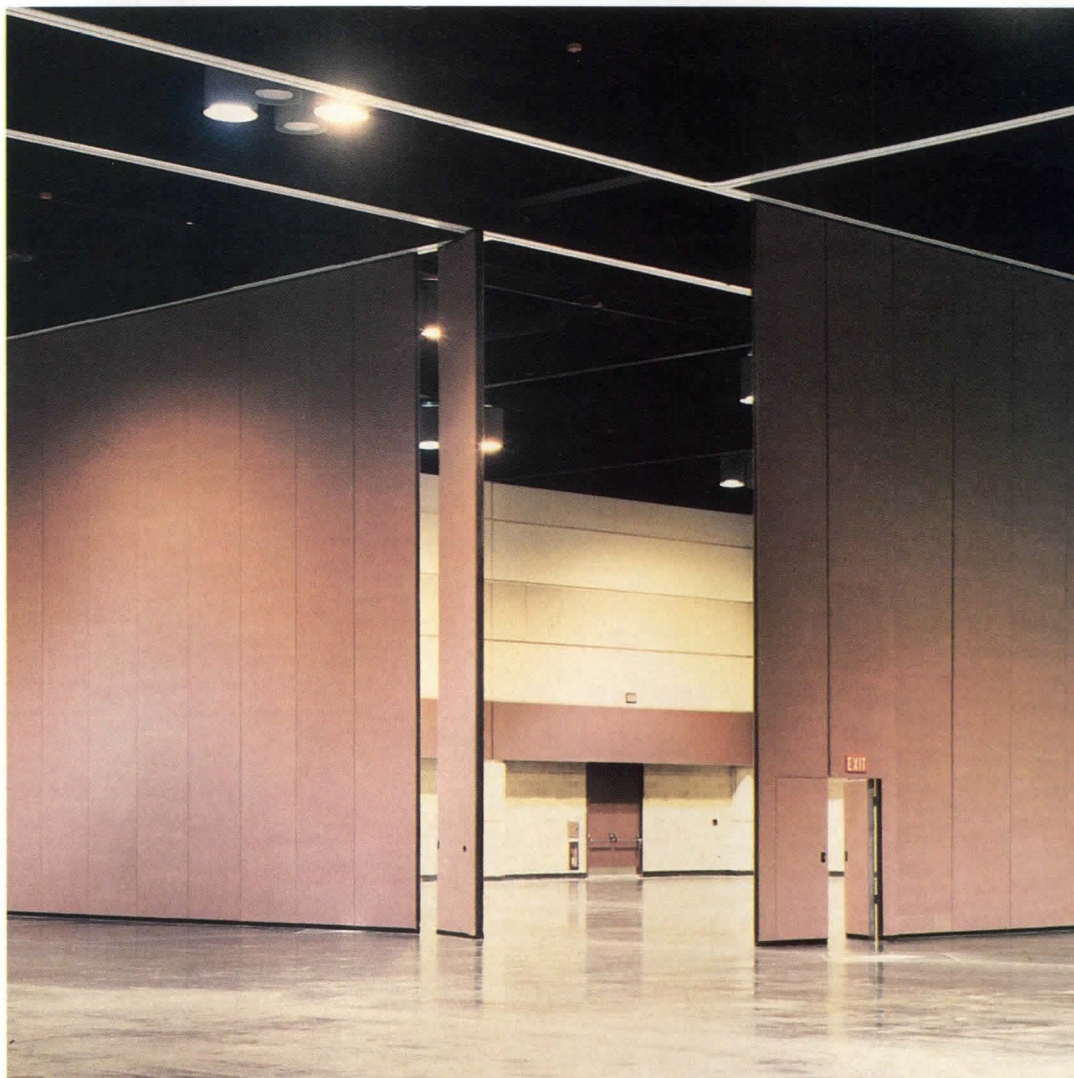
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(continued from page 122)

anced entrance door: Elison Hardware; Anjou Steel, Montreal; Zimcor, Montreal. Solid-core birch interior doors: P&R Desjardins, Montreal; Ishii Monbart, Montreal. Garage and truck dock overhead doors: Multi Porte, Montreal. Exterior unit pavers, herringbone pattern: Permacon Montco., Montreal. Interior floors: Black peribonka granite, Canadian maple. Lay-in metal pan ceiling: Donn, Oakville, Ontario. Fire-retardant fabric, auditorium ceiling: Guildford Industries, Saddlebrook, N.J. Lead-coated copper auditorium roof: Verdun Roofing, Montreal. Stationary partitions: Canadian Gypsum Co., Toronto, Ont. Alkyd-matte and velour-finish paint: Pratt & Lambert, Fort Erie, Ont.; Pittsburgh Paint. Hardware: Monthard, Boucherville, Que. (hinges); Sargent, Peterborough, Ont. (mortise locksets); LCN (concealed and surface door closers); Von Duprin/Ingersoll Rand, Mississauga, Ont. (surface panic exit). Surface- and flush-mounted intercom: TOA Electric Co., Kobe, Japan. Ionization and photoelectric-addressable fire detectors: Pyrotronics, Montreal. Theater seating: Ducharme Ltee., St. Leonard, Que. Hydraulic elevators: APV Hall Crepaco Inc., Montreal. Custom handrails: FL Metal Inc., Montreal. Exterior lighting: Metallumen, Guelph, Ont.; Edison Price, New York. Wall-hung water closets, urinals, lavatories: American Standard. Flush valves: Sloan Flush Valves. Faucets: Chicago Faucet. Toilet stalls: National Tile, Montreal; Ishii Monbart, Montreal. Drinking fountains: Filtrine. Wash-room accessories: Bobrick. Recessed-unit electric heaters: Chromalox. Cooling tower: Barber-Coleman. Chiller: Carrier. Boilers: ACME. Carpets: Crossley Karastan, Rexdale, Ont.; Abetone, Italy. Lamps: Artemide, Italy. Custom desks: Peter Rose Architect, Montreal; Francois Dallegret, Montreal. Lateral files: Storwall, Steelcase. Custom cabinets and tables: Peter Rose Architect. Chairs: Thonet. Blinds: Hunter Douglas. Skylight louvers, perforated blind motor operated and regulated by photo cells: Technical Blinds Ltd.; High Wycombe, Bucks, Eng. Simultaneous interpretation, one channel, audio-visual system: ISTS. 16mm projection system: EIKI. 35mm slide projection system: Enphoson Simda. Video protection: Sony. Sound system: Sonotechnique.

(continued on page 126)





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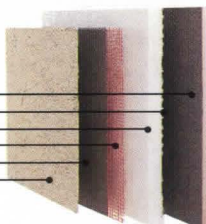
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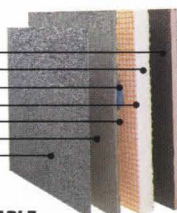
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(continued from page 124)

**Rio Retail Center, Atlanta, Georgia (p. 88).** Architects: Arquitectonica International Corporation, Coral Gables, Florida, with Milton Pate & Associates, Atlanta. Steel frame: Steel, Inc. Corrugated steel panels: Steelite, Inc. Aluminum storefront, door, and glazing system: Atlas, Inc. Exterior insulating finish system: Dryvit, Inc. Gypsum wallboard: USG. Hollow metal doors and frames: Ceco. Surface applied paving waterproofing: Neoguard Corp. Asphalt elastomer sheet roofing: Siplast, Inc. Sealants: Tremco. Bituthene insulation: Grace Construction Products. Latex aliphatic polyurethane paint: Glidden. Locksets: Schlage. Elevators/moving stairs: Otis Elevator Co. Incandescent wall-mounted lighting: Appleton. Washroom/bathroom accessories: McKinney.

**Center for Innovative Technology, Herndon, Virginia (p. 92).** Architects: Center for Innovative Technology, Joint Venture: Arquitectonica-Ward/Hall Associates AIA, Coral Gables, Florida and Fairfax, Virginia. Mat foundation steel: Bethlehem. Reinforced concrete footings and structure for all but commons: Miller/Long. Commons steel structure: Montagne Betts. Autoclave block masonry: Lightweight. Aluminum storefront: Kawneer. Curtain wall and entrance doors: Texas Wall Systems. Glazing: Cardinal Glass, Guardian Industries. Stainless steel windows: Columbia Architectural Products. Hollow metal doors: WBH Industries. Overhead doors: Overhead Door Company. Pavers: Hastings. Flagstone: Sunnybrook. Entrance stone: Georgia Marble. Gypsum board and acoustical tile: Gold Bond. Single-ply roofing membrane: American Hydrotech. Sealants: Wilcox. Batt insulation: Owens-Corning. Roof and deck drainage board: Geotech. Exterior coating: Tnemec. Interior paint: Glidden. Hinges: Stanley, Rixon. Locksets, door closers, and panic exit devices: Yale. Raised floors: Tate. Fire alarm: Symplex. Elevators: US Elevators. Electric switch boards: Lithonia, Prescott, Square D. Lavatories and water fountains: Kohler. Water closets: Speakman. Flush valves: Sloane. Toilet enclosures: SanyMetal. Sprinklers: Grinnell. HVAC systems and environmental controls: Trane. Cooling towers: Bac Cooling Towers. Carpet: JJ Commercialon. Window blinds: Levolor.





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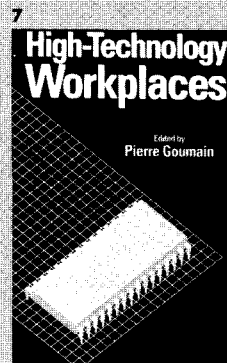
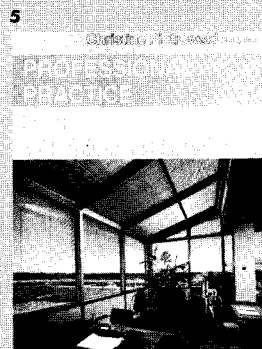
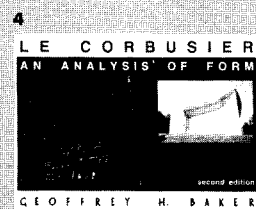
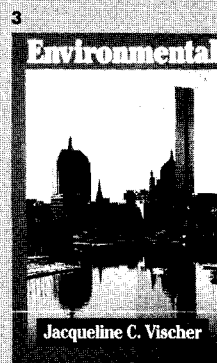
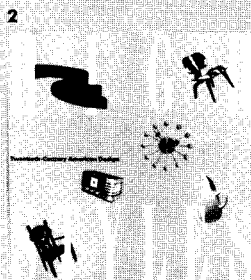
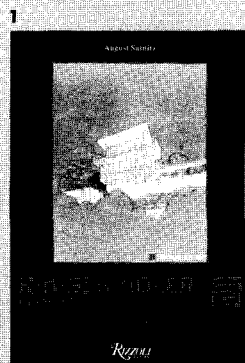


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# P/A

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### 1 R.M. Schindler:

**Architect 1887-1953** by August Sarnitz, 224pp., illus. (\$37.50)

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by Jacqueline C. Vischer, 250pp., (\$35.95)

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### 4 Le Corbusier: An Analysis of Form

by Geoffrey H. Baker, 354pp., illus. (\$46.95)

Handwritten and illustrated, this study attempts to trace Corb's career from his early training to his final masterworks. A number of formal systems and forces are explicated and applied to his buildings, including Notre-Dame-du-Haut and the monastery at La Tourette.

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by Christine M. Piotrowski, ASID, IBD, 336pp., (\$37.95)

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edited by Elizabeth Diller, Diane Lewis, and Kim Shkapich, 352pp., illus. (\$52.50)

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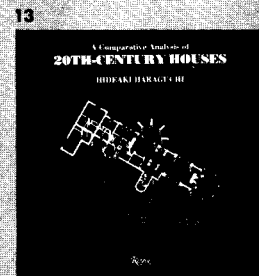
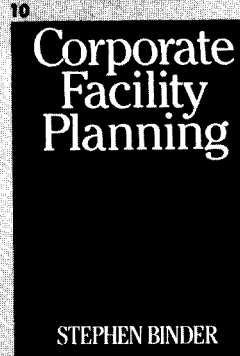
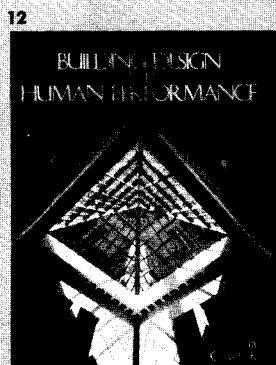
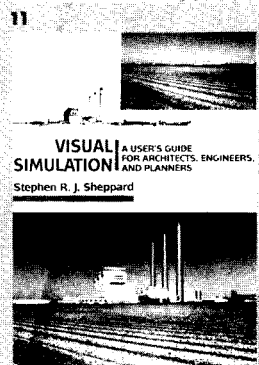
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**Circle B611 under Books**

**12 Building Design and  
Human Performance**

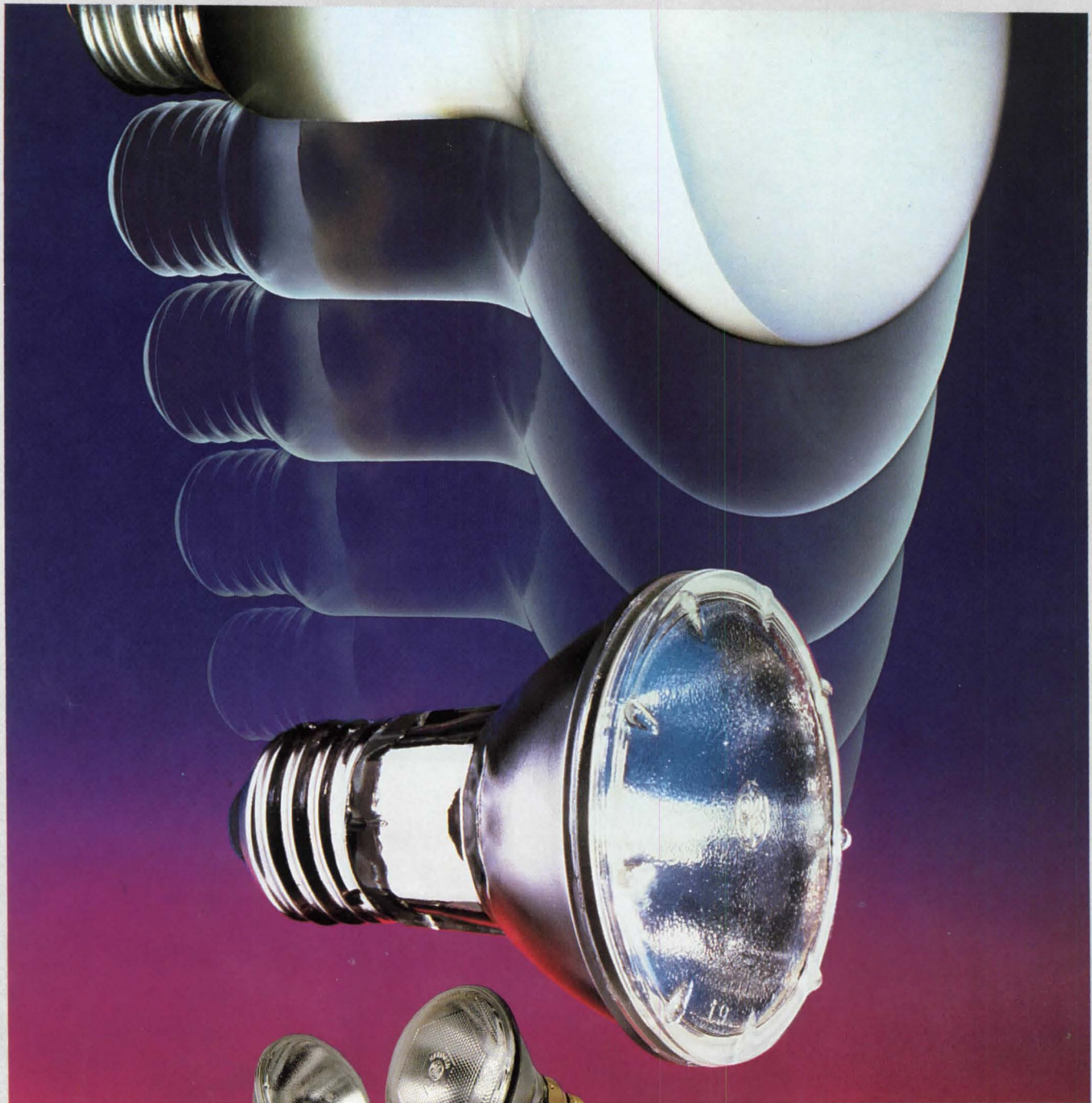
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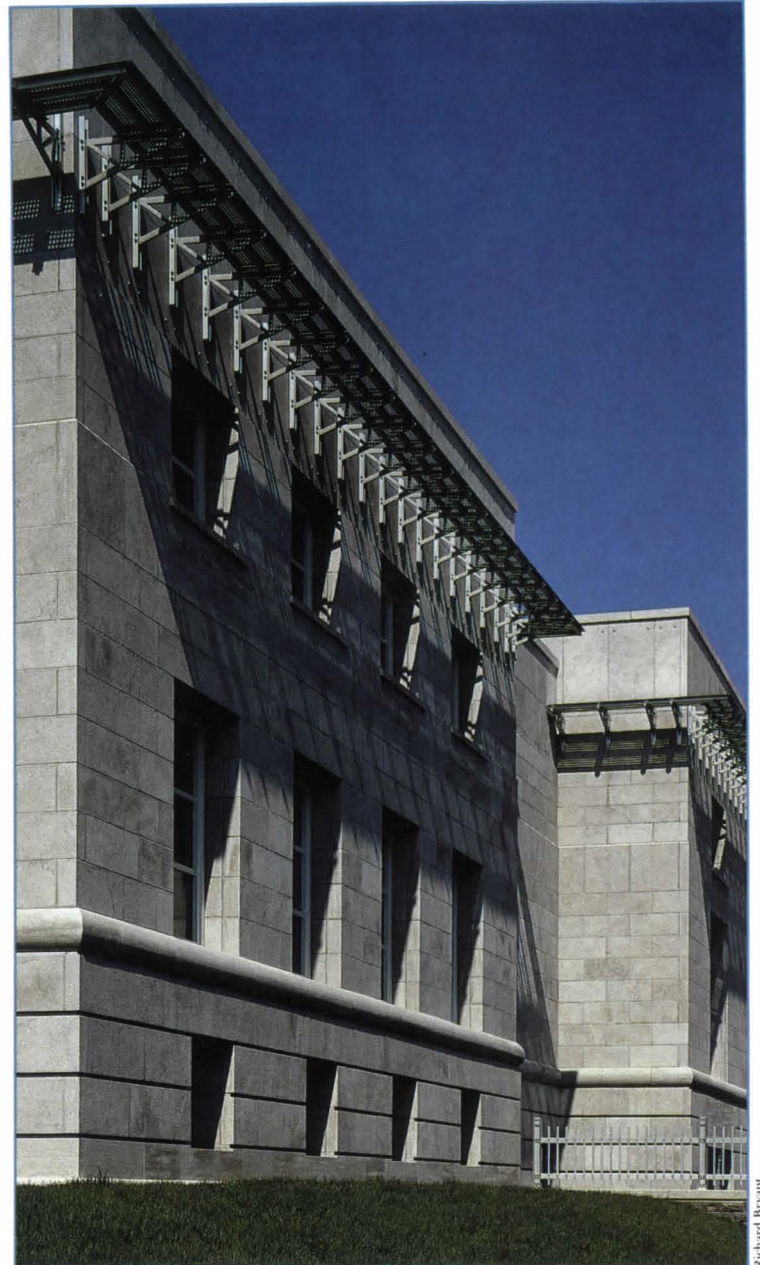
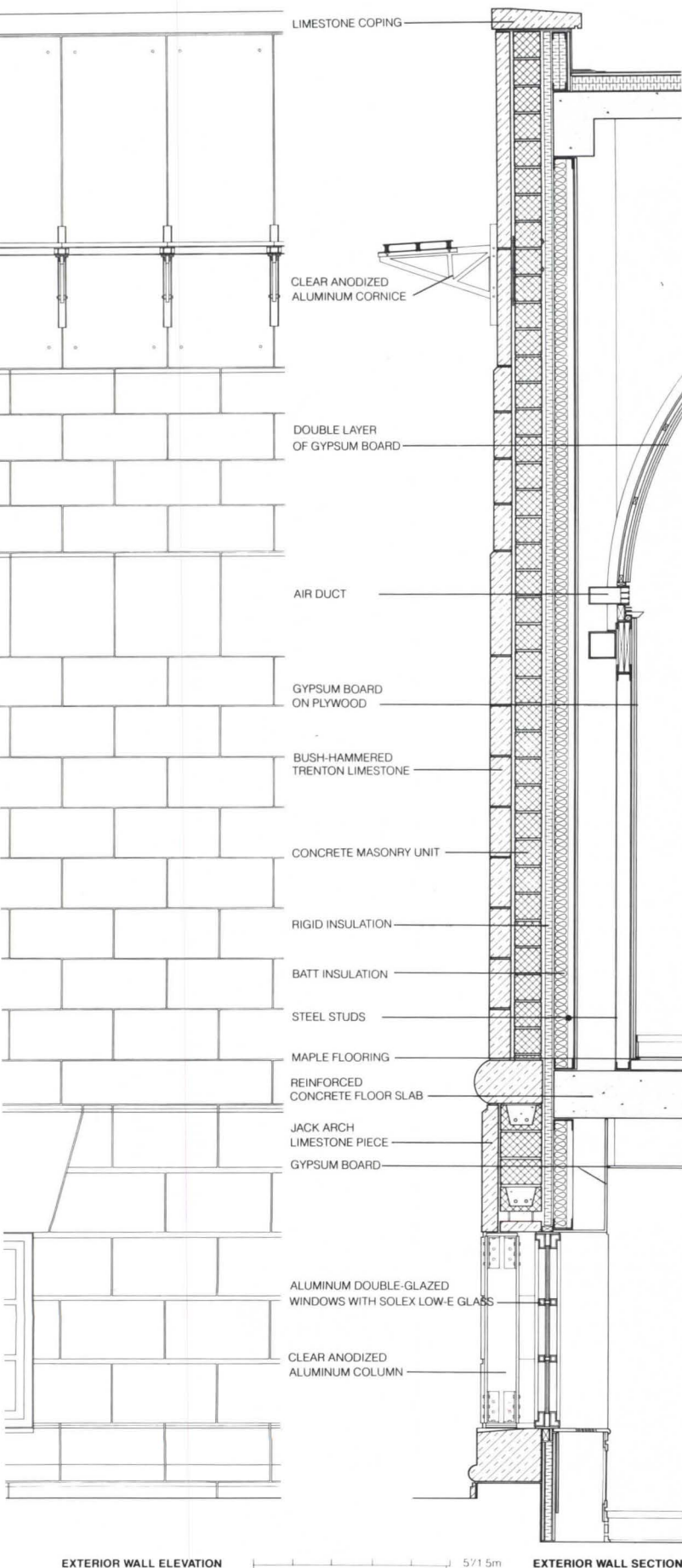
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# Selected Details



**Exterior Wall Section**  
**Canadian Centre for**  
**Architecture**  
**Montreal, Quebec**

The exterior wall of the Canadian Centre for Architecture, designed by Canadian architect Peter Rose (see pp. 68–77), walks a fine line between the historical rendition of a masonry wall and a Modern interpretation of it. Faced with bush-hammered Trenton limestone, the wall has a Classical tripartite division, but the treatment of the wall is distinctly Modern. Instead of a highly modeled surface, the wall is nearly flat; instead of its projecting out at the top, the stone surface steps back slightly.

And, in place of a Classical cornice there is a bracketed metal one, which doubles as a sunshade (above). The same dichotomy occurs in the construction of the wall. The flat arches over the ground-floor windows and the ashlar pattern of the limestone blocks suggest a structural role for the stone. Yet, as the wall section shows (left), the stone is but a cladding, backed up by a concrete masonry wall. Also the bullnose stone course at the first floor and the wider course aligned with the top of the gallery walls suggest a physical connection between inside and out, even though the gallery walls are separated from the exterior shell by at least a foot.



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Air Vent, Inc. ....	120, 121	National Partitions and Interiors, Inc. ....	124
Aluminum Shapes .....	29	Petersen Aluminum Corp. ....	119
American Stair Glide Corp. ....	121	Pflow Industries, Inc. ....	46
Andersen Corp. ....	40, 41	Pioneer Plastics Corp. ....	24
Architectural Precast Association .	17, 18	Precast/Prestressed Concrete Institute .....	116
Armstrong World Industries ....	C2, 1	Progressive Architecture Bookstore .....	130, 133
Avonite .....	45	Progressive Architecture Design Awards .....	15, 16
Best Western International .....	126	Sargent/Essex Industries, Inc. ....	54
Chemstar, Inc. ....	133W	Senergy, Inc. ....	115
Compaq Computer Corp. ....	35-38	Sharp Electronics Corp. ....	27
Concrete Reinforcing Steel Institute .....	44	Shell Chemical Co. ....	6
Congoleum Corp. ....	106	Sitecraft, Inc. ....	32
Dataprint Corp. ....	26	Steelcraft .....	48
Designer's Saturday .....	107-114	Stow & Davis .....	2, 3
Dover Elevator Systems, Inc. ....	23	TWA .....	98
DuPont Co.—Corian .....	103, 105	Tempglass Eastern, Inc. ....	106BR, 106CR
Fail Safe Lighting Systems, Inc. ....	100	Thoro System Products .....	125
Flexco Co. ....	47	U.S. Intec, Inc. ....	12, 13
Foremost Manufacturing Co. ....	129	Universal Industrial Products Co. .	127
GE—C & I Lamps .....	134	VT Industries, Inc. ....	124
Geocad .....	49	Varitronic Systems, Inc. ....	129
Glasstech, Inc. ....	8	Viking Corp. ....	4
W.P. Hickman Co. ....	122	Visa Lighting Corp. ....	25
Holmsten Ice Rinks Inc. ....	50	Wayne-Dalton Corp. ....	C4
Intergraph Corp. ....	51	Ralph Wilson Plastics Co., Inc. (WILSONART®) .....	10, 11
Interstate Brick Co. ....	99	Wirsbo Co. ....	42
KDI Paragon, Inc. ....	121		
Kawneer Co., Inc. ....	52, 53		
Kentile Floors .....	C3		
Kimball Office Furniture .....	55-58		
Kroy Inc. ....	14		
Lighting Services, Inc. ....	28		
Marvin Windows .....	30, 31		
Modernfold, Inc. ....	123		

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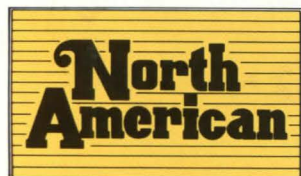
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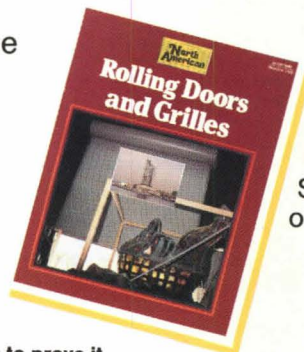


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