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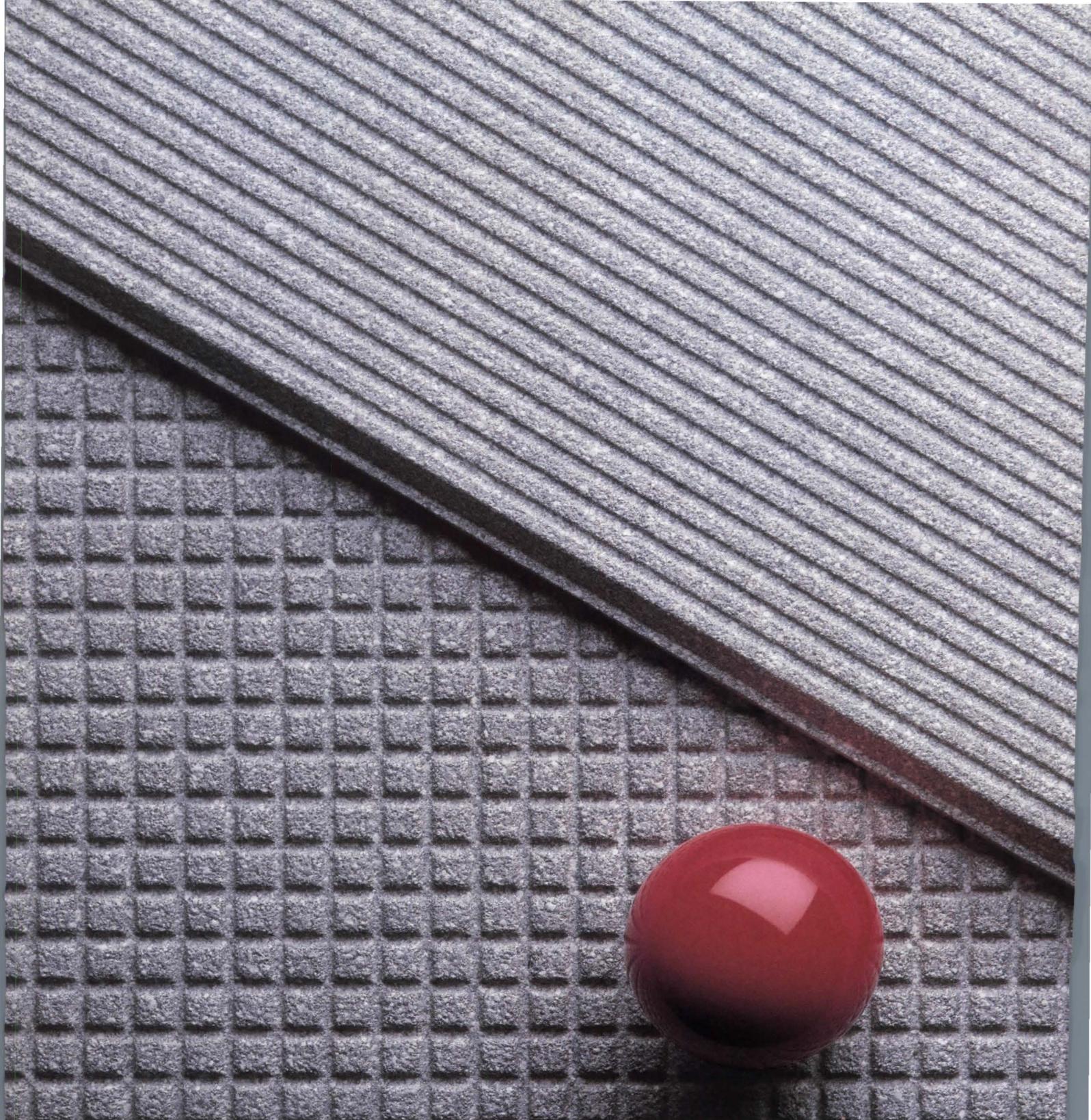


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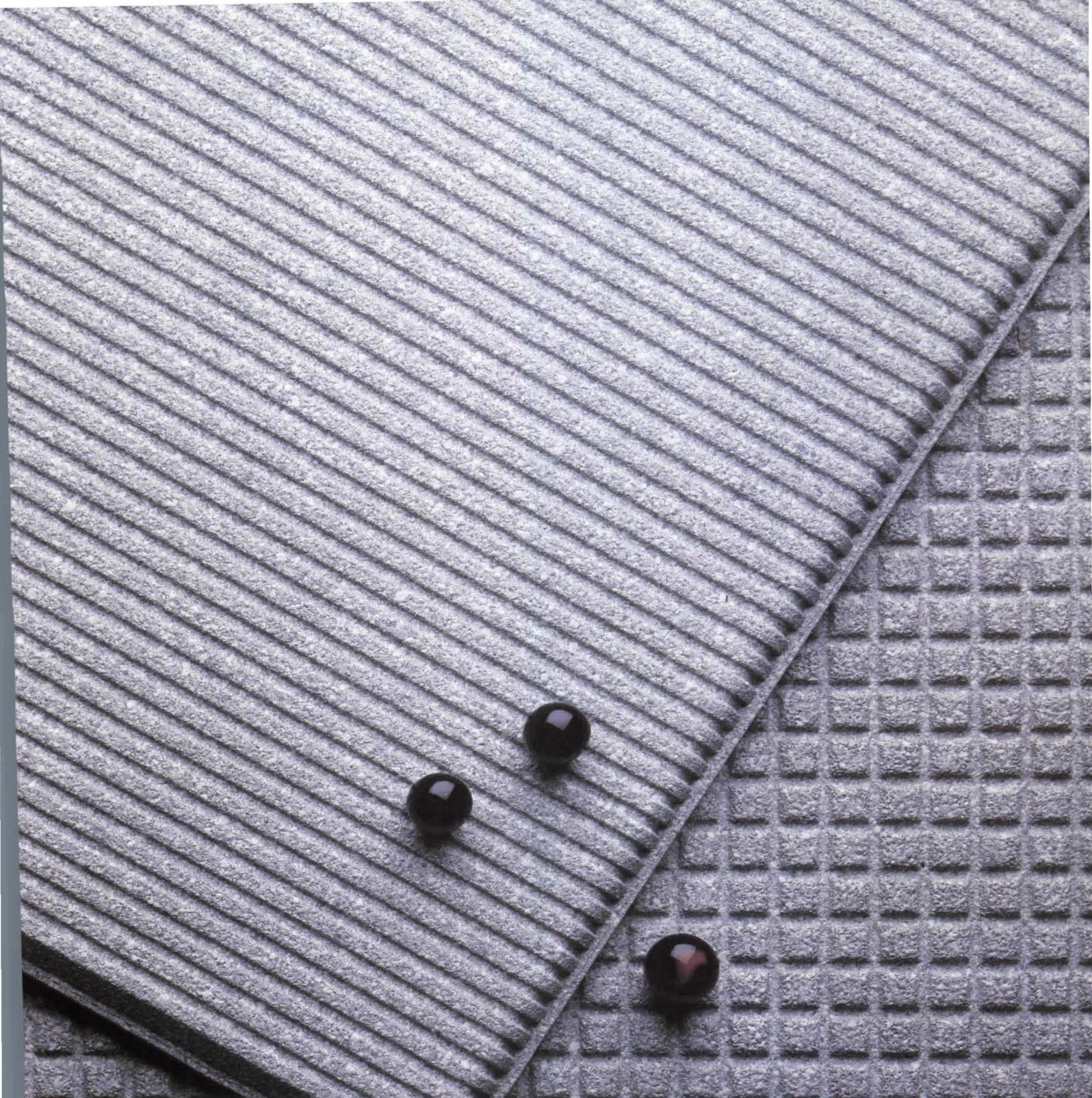
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Once again, Roger Kimball decides for us that inane grammatical brawls with exhibition catalogs are oh-so-much more fascinating than straight commentary on exhibits. Our loss.

While we could have been reading real criticism of the work of two intriguing architects, Emilio Ambasz and Steven Holl [ARCHITECTURAL RECORD, April 1989, pages 55 et seq.], we are instead forced to endure a silly academic cat fight with Stuart Wrede, author of an essay in the exhibit brochure. Writing in the guise of a review, Mr. Kimball quickly slides into sneering commentary, curious adages, and innocuous quotes from "searching monographs," that all eventually sink in the quagmire of "word, words, words" that he accuses Mr. Wrede and the architectural press of spewing forth.

All of this might be good theater, but the fact remains that verbiage does not make architecture, and that kind of nonsense robs us of real commentary on real work.

*Christopher Monson  
Armstrong Torseth Skold and  
Rydeen, Inc.  
Minneapolis*

*I am most grateful to Mr. Monson for providing readers of ARCHITECTURAL RECORD with so graphic an illustration of the distinction between genuine commentary and mere verbiage. I feel constrained to point out, however, that acquaintance with the intellectual background of architecture is a prerequisite for the "real commentary" he desires. This is particularly the case when the architecture in question is as manifestly cerebral—not to say downright pretentious—as were the projects exhibited by Messrs. Holl and Ambasz at the Museum of Modern Art.  
Roger Kimball*

Just a small point, but at last I have an appropriate opportunity to raise a nagging question.

In the editorial of your March 1989 issue, Mildred Schmertz discussed the premiated projects of an awards program. As an architect I have learned, over the years, to infer what is meant by the term *premiate* as it relates to design competitions. I have not, however, found this word in any dictionary. Is it real or simply colloquial technical jargon?

*Mitchell I. Riese, AIA  
Francis Cauffman Foley  
Hoffmann  
Philadelphia*

*Point well taken. Most of the writers on this staff use the word premiate but cannot remember where they first heard it. The word is included, however, in both Webster's Third International Dictionary and The Random House Dictionary of the English Language—though to be fair, the latter calls it "rare."—Ed.*

**Corrections**

Credits for the Consolidated Terminal at John F. Kennedy Airport, New York City [ARCHITECTURAL RECORD, April 1989, page 93] should have gone to the firm Leibowitz/Elberbe Becket, which consists of The Office of David Elliot Leibowitz P. C. and Elberbe Becket/New York. Members of the Leibowitz firm who should have received credit include David Leibowitz, principal-in-charge, and Albert T. Hennings, Mohammad Reza Samil, Antonio Rodriguez, Keith Doble, and James Robinson.

The review of *The Architecture of Kallmann, McKinnell & Wood* (RECORD, April 1989, page 55) should have listed the Harvard Graduate School of Design as publisher and Rizzoli as distributor.

**Through July 8**

"The Experimental Tradition: 25 Years of Architecture Competitions, 1960-1985," organized by the Washington Area Architecture Group; at the National Building Museum, Washington, D. C.

**Through July 9**

"George Nakashima: Full Circle," an exhibit of 54 pieces of the carver's wood furniture; at the American Craft Museum, New York City.

**Through August 22**

"A Modern Museum: The 1939 Goodwin/Stone Building," drawings, photographs, and the original model of MOMA; at the Museum of Modern Art, New York City.

**June 19-20**

"Affordable Housing," a course offered by the American Institute of Certified Planners; on Cape Cod. The program will be repeated July 17-18 in Denver and August 24-25 in San Francisco. For information: Mary Pintar, AICP, Lock Box No. 94343, American National Bank, Chicago, Ill. 60678 (312/955-9100).

**July 4-8**

"International Making Cities Livable Conference," sponsored by the Center for Urban Well Being. A similar conference will be conducted Oct. 24-18 in Charleston, S. C. For information: Suzanne H. Crowhurst Lennard, P. O. Box 7586, Carmel, Calif. 93921.

**July 13-18**

39th International Design Conference in Aspen, "The Italian Manifesto, or, The Culture of the Nine Hundred and Ninety-Nine Cities"; in Aspen, Colo. For information: Robert O. Anderson, Center of the Aspen Institute, 1000 N. 3rd St., Aspen, Colo. 81611 (303/925-2257).

**July 19-21**

Convention of the American Society of Interior Designers; in San Francisco. For information: ASID, 1430 Broadway, New York, N. Y. 10018 (212/944-9220).

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# Gateway to a new detente

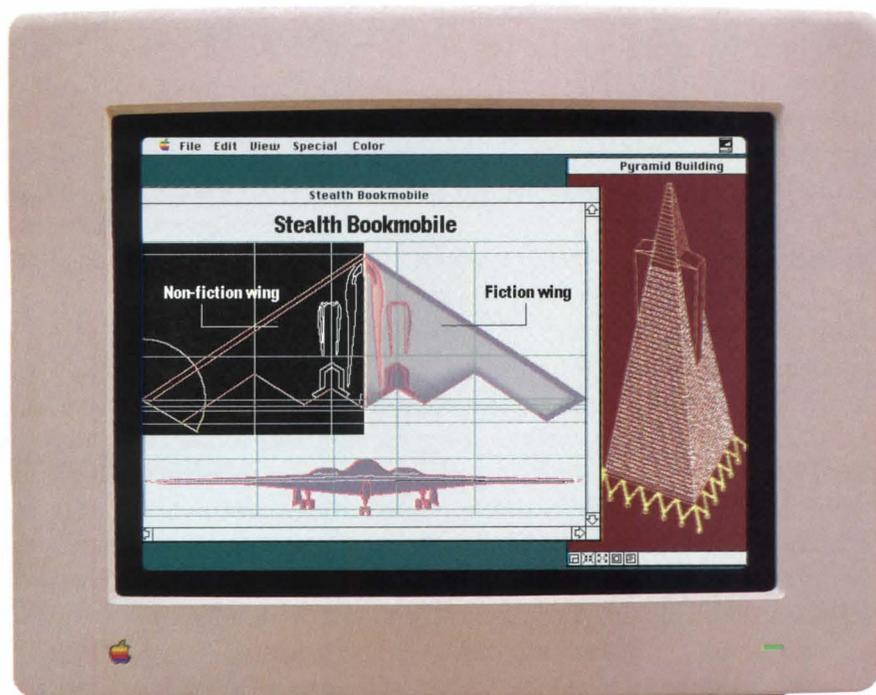
"You must interview Yuri Platonov," urged Kevin Frye of the AIA's public-relations staff, doing his best to see that nothing escaped the media in attendance at Convention '89 held last month in St. Louis. "He's charming, funny, and President of the Union of Soviet Architecture. I'll make it easy for you. Tomorrow morning he and his wife are going to the top of Saarinen's Gateway Arch. They won't have to wait in line and neither will you. Go for it." So I did.

The Platonovs and two translators arrived at our meeting place, the north base of the great steel-sheathed parabola, and together we stared up the catenary curve of its finely honed surface agleam in the early light of a beautiful day. Yuri proposed that Saarinen's great work ranks as a wonder of the world surpassed by none, not even the Washington Monument or the Eiffel Tower, and we all agreed. I felt compelled, however, to tell him that we had paid a significant price for it. Building the Arch and the vast park at its base necessitated the destruction of block after block of marvelous 19th-century commercial, industrial, and warehouse buildings, many of cast iron. Only a few blocks remain. "Such a loss in most cases is too bad," Yuri rejoined, "but the Arch is so splendid it must make you forget what is now gone. It brings together and connects the diverse elements of the city. Most important of all, it celebrates the role of the spirit."

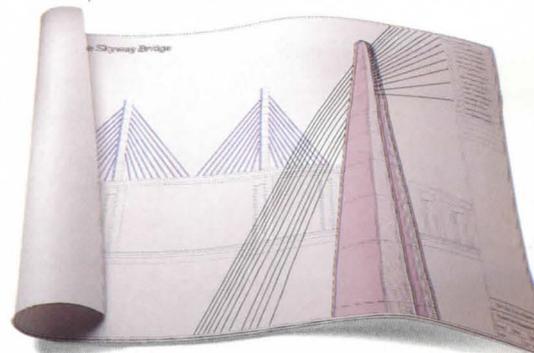
We entered the tramway within the walls of the Arch and were soon in a five-seat capsule speeding our way to the observatory at the top. "It's like a little house," said Mrs. Platonov, perhaps to give comfort as we rapidly accelerated. As we attained the top, joining the crowds peering at the panoramas of Illinois and Missouri through the observatory's narrow slot-like windows, afterward plunging downward, and later during a walk in the park and a visit to the Old Cathedral nearby, Yuri explained the mission that brought him to the United States.

He is filled with ambition for the cause of architecture in the Soviet Union. He hopes to help the Union of Soviet Architecture and the AIA develop a generous program to allow exchanges of students and faculty between U. S. and Soviet architectural schools. He hopes to facilitate the exchange of scholarly and technological research, and a free flow back and forth of a variety of publications in the architectural and construction fields. He urges that the two countries once again play host to teams of visiting professionals as frequently occurred during the cultural exchanges of the Khrushchev years. Soviet architects, he believes, should be given every opportunity to travel and study in the States. And America's architects must be made welcome in the Soviet Union. Can such a vision soon become real? Yuri believes so. Thanks to him it all seemed possible that lovely morning in St. Louis. *Mildred F. Schmertz*

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In recent years, poor quality of air in offices—deemed the “sick building syndrome”—has received considerable attention. The American Journal of Medicine reports that billions of dollars are spent every year in medical costs, due to respiratory infections often caused by poor quality air. This widespread problem has some experts predicting that indoor air quality monitoring will be mandatory by the end of the next decade.

With over 500 air pollutants residing indoors (according to Environmental Protection Agency reports), energy conservation efforts to seal buildings and reduce air infiltration/exfiltration are one reason why buildings get “sick.” A building needs to be constantly purged of pollutants, and replaced with fresh air to assure good overall air quality.

The other problem employers and building owners face is lost productivity through non-uniform distribution of air. According to BOSTI research, one of the most frequent and disruptive complaints concerns hot-cold temperature fluctuations. Workers close to the diffuser may be in a cold draft, while a person a few feet away may be too warm. This is because the low-temperature, high-velocity ceiling diffuser concept is not effective in open-plan office layouts featuring movable workstations.

The ideal air distribution system would benefit its inhabitants by maintaining a more consistent temperature and purging air contaminants more thoroughly. Here is a list that addresses these needs in detail:

**User-friendly:** Has controls for increased worker comfort.

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**Draft-free:** Able to deliver air at lower velocities and less extreme supply temperature.

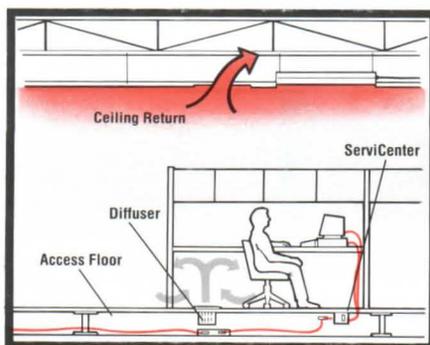
**Flexible configuration:** Diffuser outlets may be easily moved to conform to changing office layout.

**Initial cost:** Less ductwork may reduce slab-to-slab height to lower building cost.

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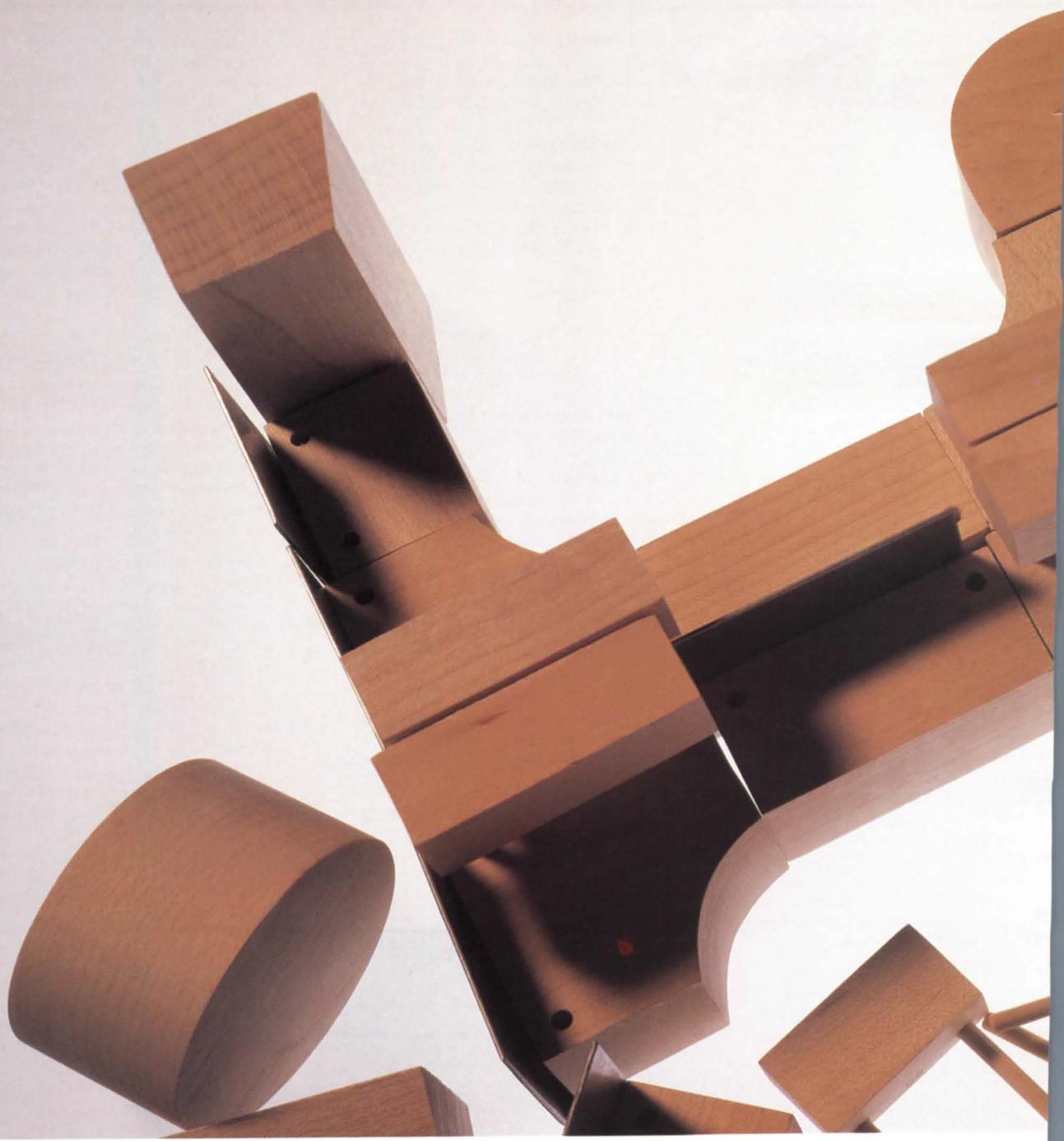
Feeding the supply air from below generates an upward current—the same direction as the “thermal lift” produced by warm machines, lamps and people. The warm, stale air and air pollutants are directed to the ceiling return and exhausted, leaving no stagnant air in the workspace.

The lack of major ductwork in the ceiling or floor can lower building costs by reducing slab to slab height. And with an investment in the flexible DONN Access Floor System, long range costs for office reconfiguration are also brought under control. Using no hardware, maintenance personnel may easily and quickly move the floor panel and diffuser assembly as a unit. Wiring is also simplified when the access floor system includes the user-friendly DONN ServiCenter™ outlets. These outlets and panels allow all electrical, data and communications services to be easily brought from the underfloor plenum to accommodate work stations in any configuration.

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## The 1989 AIA convention in St. Louis: Moving toward the 21st century

A convention of professionals can give diversion and meander from lofty paths more than give help along the way, substituting talk of action for action itself, filling minds with formulas and concepts that translate poorly in the individual circumstances of actual practice, and pushing priorities that never quite seem to match each member's needs—numbing sensibilities by dint of repeated platitudes even while pressingly important issues go virtually unnoticed. Slogans instead of substance. Hope lost to hype. Did this happen in St. Louis? Well, yes and no.

But there are good things to note about St. Louis (a few outstanding new buildings, the finally revived Union Station, the current fight to save the robust, turn-of-the-century Cupples complex of warehouses—endorsed by a convention resolution and showing a new local awareness), and good things to note about this convention which some 7,000 architects attended, making it the third largest ever.

First, the theme Vision/Reality, in reality, refers to attempts the institute leadership is making under its Vision 2000 program to be active in helping



St. Louis with Eero Saarinen's Gateway Arch and, right, young architects trying to rebuild it.

Certainly there was a lot of hype during the AIA's annual convention, including the theme Vision/Realization. The location could be commentary on such a theme: a city that, despite a rich architectural legacy, has applied the clean-it-all-out concepts of architects and planners at mid-century to produce what seems at first to be a checkerboard of bomb sites—parking lots amid some too-big new buildings and the jagged side walls of old ones. If revitalization was the purpose, it would appear that much of the vital part went elsewhere. Vision: the brave new world. Reality: something less.

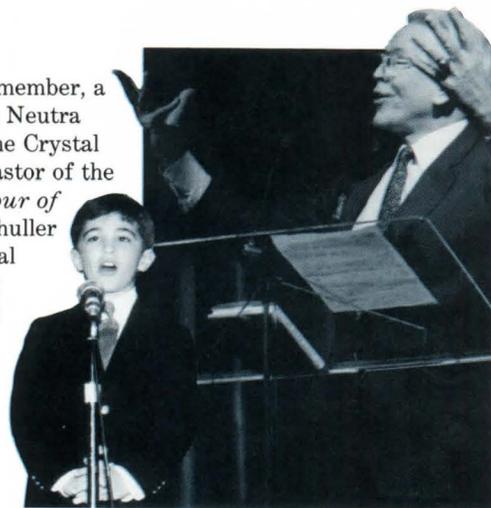
professionals fit into the changing business, political, and social environment. There are those who are mystified by some of these attempts or call them wrong (see resolution coverage below and *Practice*, page 39). But at least in this age when the favorite catch-word is "proactive," the AIA is doing its best to be just that.

There was the recognition that architects' concerns and business opportunities are global (see Editorial, page 9, and resolutions and "New Spirit of Global Cooperation?," page 39). The opening address went beyond the global to the planetary:

*The institute grapples with new pressures on practice, not without questions and dissent from its ranks. As conventions go, this one had its share of hoopla and hype, but it was also unusually serious.*

### The hour of power

A former AIA board member, a client of both Richard Neutra and Philip Johnson (the Crystal Cathedral), and the pastor of the television ministry *Hour of Power*, Dr. Robert Schuller brought his evangelical talents to the opening address exhorting the audience to attend to "H" words: Humility because "if you think you have all the answers, some of them must be wrong;" Humanity because architects have to design for humans (which most thought they were doing all along); Hospitality because we're all transitory on this planet and "shouldn't leave scars, but enhance the Earth's skin;" and Honesty (which we thought should go without saying). Said one observer: "A fifth 'H' word describes



At the opening ceremonies, Dr. Robert Schuller exhorts and Joseph Caporale, "a young dreamer," speaks out.

### The Vision 2000 teach-in

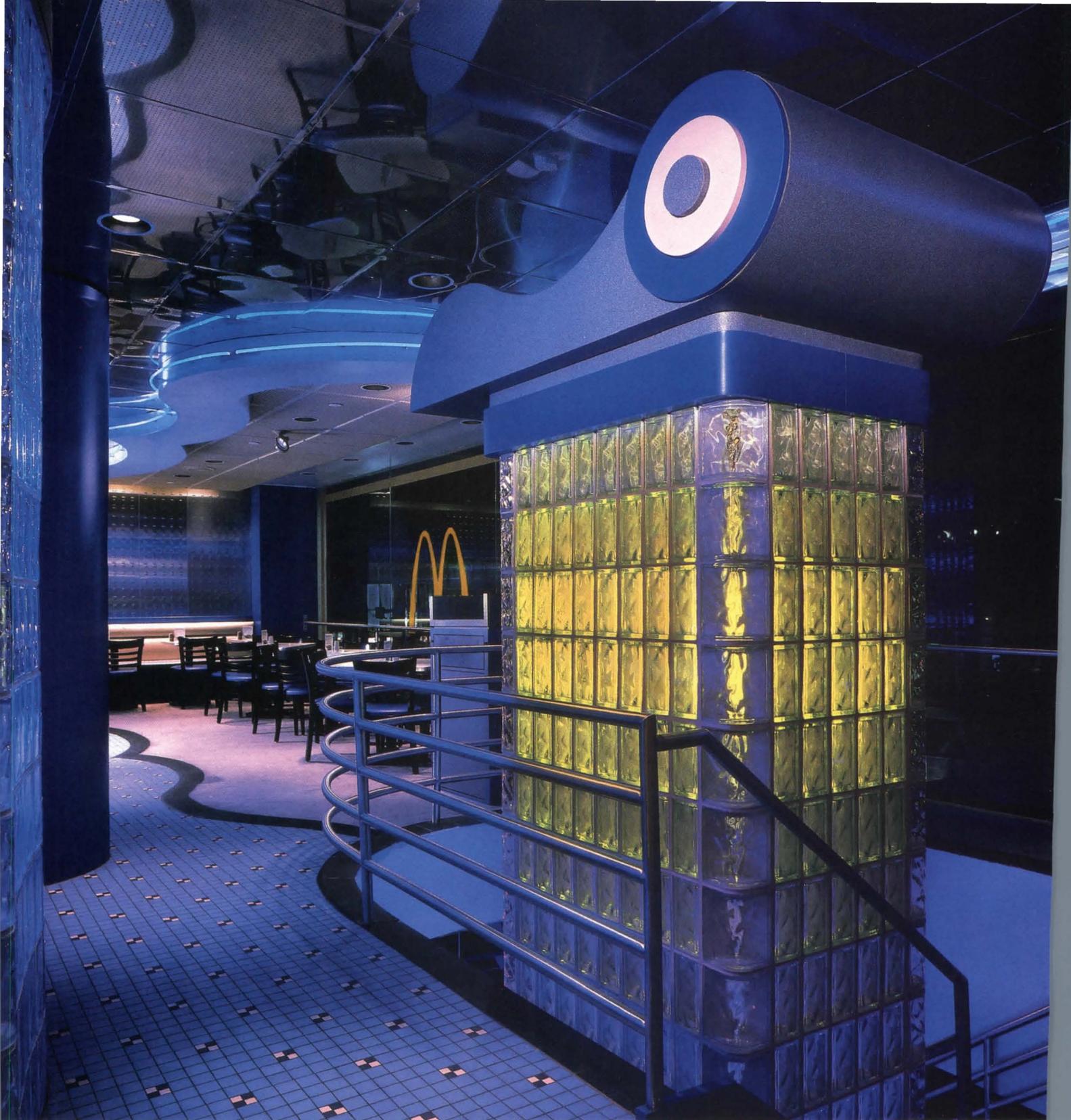
"If we are in trouble today, it's not because *others* have filled [architectural] needs, but because *we* have not," said former AIA executive director Louis Marines. An initial professional-development session billed as "Vision 2000, a report on trends and implications for practice" grouped audience-turned-participants around large tables where workbooks awaited and proctors were positioned to assure there were no shirkers. Marines reminded everyone that they faced change, change, change and that, by identifying trends, "we can understand where we want to go."

"Take off your coats," said conductor Michael Goodman of Innovation Associates. Everyone started to work. "Knowing what you know now, what would you have done differently?" asked the workbooks. "Creative people define what they can achieve by what they want," said Goodman. He drew two diagrams. On each, the path from where you are now to where you want to be—your vision—was shown as a *straight line*. Digressions on the first were immediately corrected by a right-angle turn to get back

Oscar & Associates photos except as noted his platitudinous sermon of one dreary Homily after another."

Schuller was followed by Vincent Schoemehl, the St. Louis mayor, who, in an affirmation of new local sensibilities, pointed out that the city has recently led the nation in the use of historic-preservation tax credits. Finally, 8-year-old Joseph Caporale told the assembly that he wanted to grow up to be an architect to design beautiful buildings and affordable housing. (He had won a McDonald's-sponsored contest for youngsters entitled "Hold onto your dream.") Cute yes, but not everyone loved it.





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purely technical, design, and financial issues."*

*AIA president Benjamin  
Brewer presides over  
sometimes-unruly ranks on the  
delegate floor.*

on course. "Wrong," said Goodman. The second showed digressions gradually returning to course. "Right," said Goodman. It was that simple to achieve Vision 2000. "So much emphasis on process leaves no room for changing vision," complained one architect at the tables. The principles all sounded somehow familiar. Yet, because of the innovative format that related them to people, there was a strong showing of hands at the end when it was asked who had learned something that would change their practice.

Another early session, *The Walter Wagner Forum*, focused on the theme of generalization vs. specialization. Five panelists offered as many answers. More on that in RECORD next month (see *Education*).

**Other voices, other choices**

A session entitled "Excellent architecture: How do we know and so what?" was moderated by Robert Shibley, chairman of the department of architecture at the State University of New York in Buffalo. He maintained that the question of excellence was clouded by the profession's setting choices that it knows are false, e. g., should a building be an excellent product or excellent place, when, in fact, good architecture should be both. Another false choice? Practice issues vs. design issues. They should be the same, said Shibley.

Ava Abramowitz, a vice president of Victor Schinnerer, said: "The most common false choice I see is that design and risk management are exclusive. Firms that do good design and have good risk records are in love with the craft and the art. If they don't love the craft, they work with a firm that does."

The practice-vs.-design issue was further explored by two other panelists. First, Dana Cuff, an associate architecture professor at the University of Southern California, analyzed

the client-architect relationships that produced three "excellent" buildings. She focused on the Monterey Bay Aquarium by Esherick (this year's Gold Medal winner), Homsey, Dodge & Davis. Her conclusion? "Architects alone are incapable of creating excellent projects." There must be an interaction between them, understanding clients, and the public. Specifically, client involvement with the aquarium produced a building eight times as expensive as first budgeted and required the architects to set up on-site design offices as the project evolved. "There is a need to

*Philip Bujakowski*



*The Vision 2000 teach-in stressed personal involvement.*

subsidize quality work with teaching, a rich spouse, or bread-and-butter work," she asserted.

Not so, said consultant Weld Coxe. He cited the findings of an AIA "signature-firm" roundtable that included Esherick, Frank Gehry, Warren Cox, and Fred Clarke of Cesar Pelli Associates: "Their firms were all profitable; they negotiated excellent fees." Not quite your typical offices. Design and management should be one, Coxe held, but then added: "Management should get obstacles out of design's way."

Architect Gerald Hammond agreed that disciplines should be merged, yet he described architecture as a balance of technical function and beauty—two distinct ideas again. He went on to say that his firm was working on the perfect matrix of purely technical, design, and financial issues. "Not many



firms will have the opportunity to spend eight times the budget to achieve design excellence." Perhaps it was just as well the "so what" part wasn't covered, noted one observer.

**Small firms, small projects**

This session reported on the lessons learned from the AIA small-firm roundtable: At 40 people, firms start looking at subdividing, into branch offices, and principals take on "more vision and leadership," said architect Ken Bussard of Dikis/Bussard Associates. AIA director for practice James Franklin: "The secret of being a good manager is to vary your style with the personality of the employee." He drew a curved line starting at an employee's introduction to a firm and ending with his taking over an area of responsibility. "Most managers," he said, cutting the line in half, "stop here." "Uncooperative employees probably aren't trying to be bad," said Abramowitz. You probably haven't made clear what you want them to do.

She talked about falling liability claims against architects: 44 per 100 commissions in 1985 vs. 34 in 1988. "Clearly architects are becoming better at avoiding pitfalls." And one of the best ways, she said, was to pick the right clients. Check their history of suits and financial stability.

How do you know when your small firm needs a partner? Five to seven employees are the most one person can handle, said

Bussard. Do small firms need a different contract from those that the AIA now makes available? Fully half the room showed raised hands. "Long forms scare small clients to death," said one participant.

**Other exploits**

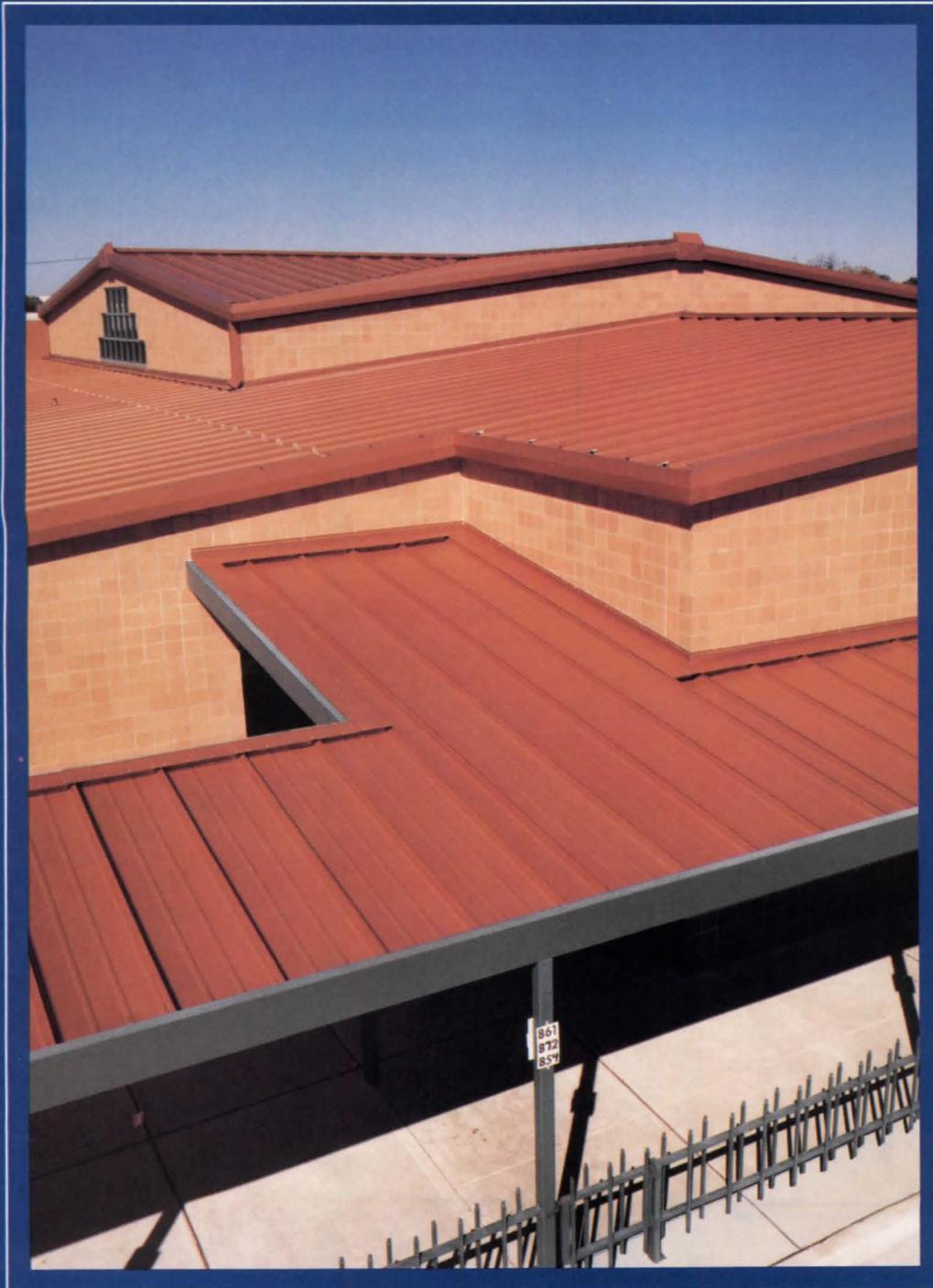
*Affordable housing.* This seminar concluded that solutions will have to come from private/public partnerships. "Architects should press for affordable housing they will not be professionally ashamed of," said St. Louis Housing Authority director Michael Jones. He said he must constantly fight federal officials who believe "a box is good enough for poor people."

*Technical seminars.* Of particular help to architects with their day-to-day technical problems was a series of seminars conducted on the exhibition floor by MasterSpec. Subjects included architects' biggest headaches, roofing failures, the new thin-stone veneers (which require keeping water out), and how to handle the growing plethora of contractors' submissions—if it's not something you've agreed to approve, send it right back).

*Elections.* The new first vice president is C. James Lawler, past president of the Connecticut Society of Architects and a firm believer in architects' activism. New vice presidents are Richard Hobbs, Warren Thompson, and Thomas Turner.

*Continued on page 39*

# Can You Recall Any New Schools Without A Metal Roof?



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## New spirit of global cooperation?



*Union of Soviet Architecture president Yuri Platanov.*

A much-heralded, but poorly attended, late addition to the St. Louis AIA Convention program was a roundtable of presidents of the UIA, the Panamerican Federation of Architects, and architectural associations of the U. S. S. R., Australia, Britain, Japan, Canada, New Zealand, and Mexico.

The session centered on the efforts of a seven-man task force of U. S. architects who recently joined Soviet architects in Armenia in a charette to help form a plan to redevelop the town of Spitak, devastated by earthquake last December. Ronald A. Altoon and Robert A. Odermatt of the U. S. team used their slide presentation as a prime example of possible cooperation between the architects of various countries.

Yuri Platanov was profuse in his thanks to the U. S. team, and proposed further cooperation and exchanges (see Editorial, page 9). He dramatically ended his address by submitting a draft proposal for more such joint ventures, to be amended as desired by the AIA, and concluding "send it to me in Moscow, and I promise I will sign it with closed eyes."

The officials of the other organizations unanimously added their desire for more and continued architectural bonds. The session was a focus of the convention's "Public Day"—an effort to involve outsiders, who apparently did not get this outreach message in any noticeable numbers. *Herbert L. Smith, Jr.*

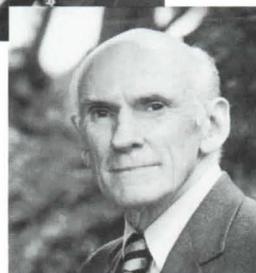
## Revitalized federal initiatives on housing

It is housing month this June in the hallowed halls of Congress: The Senate's housing subcommittee has scheduled no fewer than eight hearings throughout June on a new bipartisan housing bill. And the House of Representatives' housing subcommittee has more hearings on its agenda throughout the month.

The objects of all that ample attention are two large omnibus



*Gonzalez*



*Cranston*

bills introduced on the Senate side by the subcommittee's chairman, Alan Cranston, who co-sponsored his National Affordable Housing Act with Alfonse D'Amato. In the House, subcommittee chairman Henry Gonzalez is the principal author and sponsor of HR 1180, the Housing and Community Development Act of 1989.

Additionally, there are some half dozen bills that, if adopted, will probably be folded into the omnibus bills. They concern, e.g., renovation of existing housing for the homeless, and raising the level of funding for housing.

The aim of both omnibus bills is to get the federal government up to speed once more in the woefully neglected area of building and making available low- and middle-income housing. "Congress needs to address

housing needs in a realistic manner," Gonzalez declared just before a first round of hearings on his four-part bill. His bill would set up a National Housing Trust Fund to assist first-time homebuyers by making 6-percent loans available; create a community housing partnership; authorize more funding for a Housing Development Action Grant Program; reauthorize the HUD's and the Farmers Home Administration's assisted-housing program; reauthorize the expiring Section 8 contracts that provide funds to owners renting housing to qualified low-income persons; and add incentives to keep owners of assisted properties from prepaying their mortgages and forcing low-income people out of units being sold.

Cranston, in introducing his bill in mid-March, echoed Gonzalez's description of the nation's housing ills: "Those trends are beginning to jeopardize a vital part of the American way of life." The Cranston-D'Amato bill which (in mid-May) had 38 co-sponsors from both parties, had input from the National Housing Task Force formed by developer James Rouse and Fannie Mae chairman David Maxwell.

The bill would require new housing strategies from states and localities receiving federal assistance that would strengthen cooperation between the three entities; would permit first-time homeowners to use IRAs and 401K retirement plans for investment in a home; lower FHA downpayments to 3 percent on the first \$50,000; give state and local governments more responsibility to design and implement housing programs; promote partnerships for affordable housing; provide new forms of rental assistance and low-income tax credits; and reauthorize other measures. *Peter Hoffmann, Washington, D. C.*

### Resolved resolutions

Of the resolutions presented for delegate vote, D-1, *Regulation of allied disciplines*, held by far the most interest. Pressed by chapters that saw the AIA's recent accord on registration of interior designers [RECORD, February 1989, page 25] as contrary to a 1985 resolution opposing dilution of architects' prime responsibilities, D-1, as amended on the floor by former AIA president Donald Hackl, would have suspended the accord pending study. "Don't turn Vision 2000 into Nightmare 2000," he said. But a substitute amendment, D-1A, meant to keep current accords in effect pending study, had been approved by the board and was passed by those delegates who saw it as the best way to head off a showdown on licensing with allied professions. "It's a curious situation that the AIA does not support its own recent policies," said one delegate. "The NCARB resolution against such registration [RECORD, May 1989, page 33] was a much more thoroughly researched action," said another.

Resolution W-1 proposed that the AIA produce a resource guide to meet the need for an advocacy program for architects to lead in "the protection of life on this fragile planet." It passed, but the means seemed insufficient to such a lofty end.

Resolution L-1, *Comprehension of building codes*, proposed to produce a guide to making building codes easier to understand and to urge model-building-code organizations to standardize regulations. It passed, though one dissenter said: "Any time you have to write a document to clarify another, you confuse things further." Resolutions on expanding the influence of the architect (G-1) and roundtables to develop new practice documents for small offices (K-1) passed without comment. *Charles K. Hoyt*

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## Practice: Who will design buildings for human habitation?

By Carl M. Sapers



Over the last two years:  
• In Pennsylvania, where a state regulation forbids corporate firms not in the control of architects from practicing architecture, a handful of large engineering firms sought to have a judicial declaration that the regulation was unlawful. The Pennsylvania Architects Registration Board defeated the challenge, but not before the state AIA council had filed a brief on behalf of the engineers. That action was so remarkable to a group of prominent Philadelphia architects that they filed a brief on the side of the state board and paid for it out of their own pockets.  
• In both New Jersey and Michigan, joint architect-and-engineer panels have decided that the architectural profession has no exclusive claim to the prime professional role on buildings for human habitation. As long as an architect is hired as a

Mr. Sapers is a partner in the Boston law firm of Hill & Barlow. His clients include architects around the world. He is adjunct professor at the Harvard Graduate School of Design, where he teaches legal problems in design. In 1975, he received the AIA Allied Professions Medal and, in 1988, was elected Honorary AIA.

consultant to design the finishes and the fire safety, it is perfectly acceptable for a mechanical engineer to be the prime professional with the direct contract with the owner.

• Various national engineering organizations have promulgated a set of standard contract forms that encourage owners to contract directly with their engineers, a process that has been referred to as the "unbundling of the design team."

• The National Council of Architectural Registration Boards, having undertaken a study of unlicensed practice on behalf of its member boards, presented the preliminary results of its study to the national AIA, suggesting that the institute might be interested in focusing some of its energy on discouraging such unlicensed practice. The AIA board endorsed the idea only insofar as it related to illegal practice by unlicensed designers, but refused to join in any effort respecting practice by engineers and, indeed, voted to "mediate apparent dissension between engineering and architectural organizations."

These events manifest on the one hand a more active interest on the part of engineers to play an increasing role in the design of buildings for human habitation and an apparent acceptance of that effort by the AIA. Because of these events, and the underlying currents the events evidence, I asked RECORD to subsidize my pilgrimage to the man who invented the "prime-professional" idea, the venerable Milton Lunch, publicist and lawyer, who for 40 years was the National Society of Professional Engineers' general counsel. Although now retired from the NSPE, Lunch is as

*The noted lawyer and author, disturbed by increasing inroads by engineers on architectural practice, inroads, he maintains, which have been aided by the AIA, discusses the situation with Milton Lunch, the former counsel to the National Society of Professional Engineers.*

vigorous as ever; nobody understands the ambitions of engineers and can explain their political-economic quest better.

For as long as I can remember, friends in architecture, leaders of the AIA, for example, have asserted that engineers form a much more potent political force than architects, chiefly because there are so many of them. Thus, I was astonished at the beginning of my interview with Milton Lunch to learn that NSPE comprises between 55,000 and 65,000 members—hardly more than the AIA itself. Moreover, nearly half of that number are civil engineers, and only about



*Milton Lunch: The disciplines are not indistinguishable but overlapping.*

20 percent of NSPE's members are in the disciplines that architects conventionally turn to on a building project.

**We discussed what civil engineers, the biggest group of all engineers, do**

Sapers: Aren't they principally designing highways and other heavy engineering projects?

Lunch: The definition of civil has always been difficult because it is so broad. It can include anything from highways, bridges, and dams, to water-supply and superfund projects.

Sapers: I have observed that all the major engineering firms in my region have people with a civil-engineering background running them. Is that generally true in America?

Lunch: I think that's common.

In the discussion that followed, Lunch and I agreed that a majority of NSPE members have "nothing to do with building design." They are mining, industrial, aeronautic, or civil engineers. If engineers—that is persons licensed under state laws in the generic category "engineering"—are allowed to design buildings under a loose construction of the registration laws, what, I asked, will happen when those, whose training, education, and licensing examination have nothing to do with it, try it?

**What will prevent the majority of NSPE members with no background in buildings from engaging in that practice?**

Lunch: You're getting to the core question of this issue, which you and I know goes back 30 or more years. An answer, if it's not too glib, is that the public is protected to the same extent and in the same way the public is protected when they go to a medical doctor who may know all about some field of medicine and very little about other fields of medicine; or if the public goes to a lawyer who knows all about some field of law and not other fields. An unqualified engineer, doctor, or lawyer would foolishly practice outside his field of expertise. I am sure it happens, but it's a very foolish person who does that. First, from the standpoint of liability, he's sticking his neck out. Second, the code of ethics very clearly says: "You shall not practice outside your field of competence," and it goes on to say that if you are involved in a project requiring expertise outside of your field of

*Continued on page 43*

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*The crux of the problem? Lunch: "If you really want to be hardnosed about it, architects are basically skilled and expert in the allocation of space, the movement of people within spaces, and such things as color coordination and other esthetics—the facades of major buildings."*

competence, you are required to bring in others who have that competence. The third point, I suppose, which is very rarely invoked, to my knowledge, is that the state licensing board can always suspend or revoke a license for incompetent practice.

*Sapers:* But the state board does not require the engineer to practice only in the narrow field in which he took his exam.

*Lunch:* That is correct. This has been an old, old argument, and I suppose it will go on forever. Should there be specialty licensing in engineering? And, of course, you look at medicine, law, architecture. None of those professions have breakdowns for licensing purposes.

*Sapers:* The difference, and the reason why the analogy you make is less than perfect, is that when you and I took our bar exams, even though we were going to specialize later in our careers, we were expected to demonstrate knowledge in the areas of real property, estates and wills, trusts, criminal law, contracts, and civil procedure. Presumably, we had at least some base knowledge to bring to the job when we started the practice of law. That is also true, of course, of architects. The nine-part, now eight-part, examination is very broad in scope . . . . By the examinations that admitted us into legal practice and admits architects into architectural practice, the candidate demonstrates some knowledge of areas outside of his specialty. But the majority of NSPE members who are in fields other than building design have never had to show any knowledge of the specifics of building design . . . . Can't we reach some general agreement that the public would be better protected if engineers were told they could not design technical systems in buildings that were outside their field—for example, that a mining engineer

could not design the environmental systems?

*Lunch:* I think theoretically that would be justifiable, but realistically, pragmatically, I don't think you could ever devise a system that arbitrarily said that this guy can design the air conditioning and this guy can't, or that this guy can do the structural and this guy can't. After all, people cross these discipline lines in their practice. I know many examples of people who got a degree in civil engineering and eventually got licensed by taking a civil exam, and now they're into other areas that they picked up by experience or further education.

*Sapers:* But then, it seems to me engineers don't have a licensing system at all. They have a self-selection system. That, if we were all platonic wisemen, would be fine, but the nature of a licensing system is to recognize at the outset that each one of us can't be trusted to make self-selections.

*Lunch:* Well, yes, the legislatures in their wisdom have said you must demonstrate competence in order to protect the public.

*Sapers:* And here are engineers who have not demonstrated even minimum competence with respect to, let us say, mechanical systems in a building. Never done it, and yet, you say as a pragmatic matter, they have to be allowed to design mechanical systems in a building. You have to acknowledge that the mining engineer has never demonstrated to the public, by examination, education, or training, any competence with respect to environmental systems.

*Lunch:* That's a good, sound statement.

*Sapers:* And yet, under our current system in effect in most of the United States, he is permitted to design environmental systems.

*Lunch:* I guess the only real

answer is, first you would have to have an extremely stupid owner to retain this guy to design those systems in a building. Second, this guy would have to be a fool to stick his neck out. So it just doesn't happen.

*Sapers:* Well, I am sure that's right in most cases.

*Lunch:* I don't know of any case in which it's happened.

#### **We shifted to the subject of "significant overlap" between architects and engineers**

*Sapers:* I put the proposition to you that years ago engineers often argued that the practice of engineering and the practice of architecture were indistinguishable. I have read your recent writings in this area, including the whole discussion of the prime professional, and you seem to accept the fact that architecture and engineering are quite distinct disciplines.

*Lunch:* I think they are. I don't think the word is "indistinguishable," I think the word is "overlapping."

*Sapers:* It is true that a student of architecture is required to know something about all of the building elements, which include the engineering design. Putting that to one side, isn't the architect—the properly trained architect—[best qualified] to figure out how people interact with physical space?

*Lunch:* If you really want to be hardnosed about it, architects are basically skilled and expert in the areas of allocation of space, the movement of people within those spaces, and such things as color coordination and other esthetics—the facades of major buildings.

*Sapers:* That's too simple. For example, you've got to add materials.

*Lunch:* Some materials, the floor coverings, etc.

*Sapers:* What about fire protection? That's the architect's responsibility, isn't it?

*Lunch:* Yes, I hope so.

*Sapers:* I hope so, too. He's the only one who understands and worries about lengths of distances to exits and matters of that sort. Nobody else is concerned with that aspect of a building.

*Lunch:* Let's assume that these are all good examples of what I talked about as the interior allocation of space and circulation.

*Sapers:* And you will acknowledge that the study of how human beings respond to space is something not taught to engineers. It is, rather, an architectural discipline.

*Lunch:* Right. That type of stuff is not taught in engineering schools.

*Sapers:* It seems to me that it was exactly that perception on your part some years ago that gave rise to the notion of allocating the responsibilities with respect to the design of the building among the disciplines that were by training and experience able to deal with the elements that they were responsible for. In other words, it was Milton Lunch who advanced the notion that in a free society the owner can pick whom he wants to head the design team, but he's got to insist that the people who participate are the people trained and examined on their respective areas of responsibility. Thus, those things we just described as architectural elements must be designed by a person trained as an architect. Those things that would be described as structural must be designed by a person trained as a structural engineer.

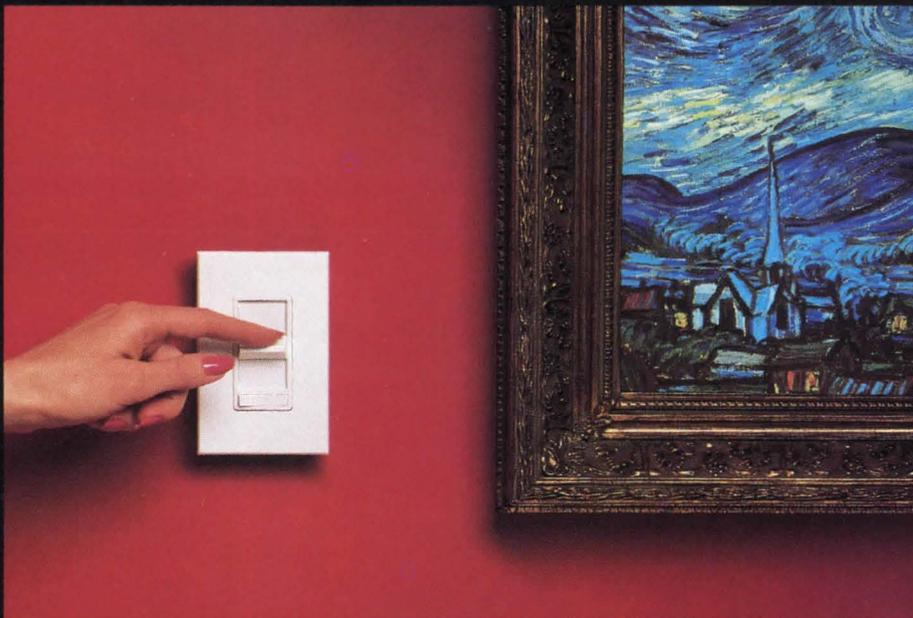
*Next month in RECORD, Sapers will press his point about the differences between architects and engineers, and he and Lunch—while not totally agreeing on who should bear the prime responsibility in building design—will not totally disagree either. C. K. H.*

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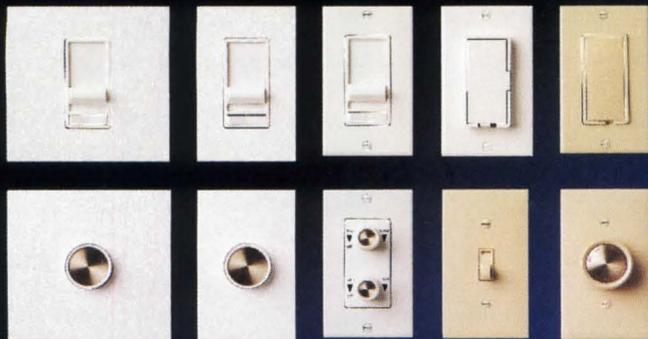


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# Construction finance: We have to conquer inflationary pressures to get building moving again

By Phillip E. Kidd

After months of strong growth, the economy seemed to slow as winter faded and spring began. In turn, the year-long climb in interest rates stalled and even declined a little. Unfortunately, interest rates are likely to resume rising as the weather becomes hotter.

The Federal Reserve has for some time been concerned that sustained real economic growth of more than 2.5 percent would trigger rapid inflation. Thus, it systematically firmed monetary policy, starting in the spring of

1988. Its intent was to cool off the rate of economic advance before inflationary pressures could achieve a solid foothold.

To show the time lag before a change in monetary policy impacts economic growth, the first evidence of a possible slowdown did not appear until February and March of 1989. At that time, the Federal Reserve made it clear that it would not constrict monetary policy any further until it was certain of the economy's direction. The financial markets rejoiced and interest

rates declined somewhat for the next few weeks.

Despite the Federal Reserve's actions, a significant inflationary build-up has taken hold all through the economy. It will take at least another two to three quarters for it to run its course and begin subsiding. The pressures are coming from significant demand for U.S.-manufactured products—keeping capacity utilization in many industries at or above 85 percent. At that level, further attempts to expand output generally only increase price pressures.

As manufacturing has become more robust, prices of materials all along the production chain have been advancing for more than a year. That trend, coupled with the surprising strength in domestic and imported-oil prices since mid-1988, has added to the forces pushing domestic producers to increase prices.

The substantial gains in both the manufacturing and services industries have bolstered the demand for workers, shoving unemployment rates to the lowest levels in decades. That is putting upward pressure on wages, which is becoming another major contributor to the rising cost of goods and services.

Because of these factors, even if economic growth subsides to levels acceptable to the Federal Reserve, inflation will continue to rise. It will take several quarters of very modest activity to ease capacity-utilization restraints, take some of the strain off of material prices, and limit wage hikes. Before that happens, inflation will reach 6 to 6.5 percent late this year from its current 4.75 to 5.25 percent.

In reality, the Federal Reserve has very little maneuvering room now. A major danger is, if it restricts monetary policy too much to check inflation, real growth will not only fall below the 2.5 percent target, but will keep on slumping until the economy goes into recession.

Complicating the Federal Reserve's task is our extremely poor savings performance for the past several years. We have not saved enough to fund the nation's prolonged economic upswing. Hence, we have become dependent on borrowed money from abroad to sustain our 6 1/2-year old expansion.

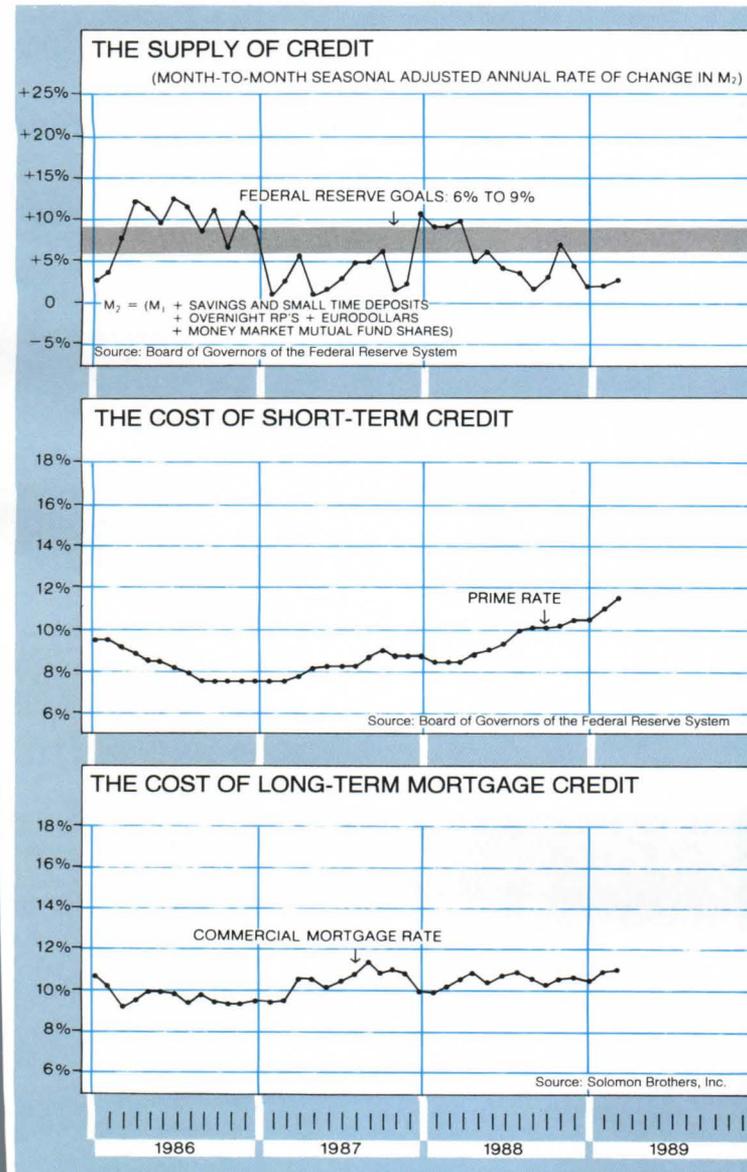
Foreign investors, however, are very worried about rising inflation here and especially its effect on the returns from fixed-rate financial instruments. To continue supplying funds, they will demand higher rates.

In coming months, the economic indicators will reveal that the pace of real activity is still vigorous, but moderating—and inflation is accelerating. Consequently, the Federal Reserve, after a spring interlude, will tighten monetary policy to blunt inflation and to mollify foreign investors.

As a result, interest rates will spiral upward in the summer. Equally important, the present inversion of the yield curve (short-term government rates higher than intermediate and long-term rates) will continue until there are clear signs of inflationary pressures easing.

In the third quarter, interest rates on quality short-term assets will range between 9.25 and 10 percent; and 7- to 10-year Treasuries will range between 9 and 9.75 percent. Meanwhile, fixed-rate, long-term, mortgage-interest rates will fluctuate between 11 and 12 percent, roughly 50 to 75 basis points above today's range.

Construction statistics will continue to slide. Single-family and retail building, which have already been slipping, will drop from their current levels. Overbuilt multifamily and office building are months away from recovery. And even industrial building, confronted with a slowing in real economic growth, will be hard put to maintain its present pace.



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## Marketing: The woman-managed firm: how big a deal?

By Robert L. Miller

Well into this century's second half, professions—all professions—promoted a self image only slightly to the left of Arthurian knighthood. Professionals were to be self-effacing, both to emphasize their concern for serving the client (or patient), and to nurture a collegial meritocracy among their fellows. One's work was to speak for itself.

Although there were relatively few women or minorities in the professions during the heyday of this ethic, the system was widely supposed to be good for them (they already had the self-effacing part down, didn't they?). In the low-key world of the professions they could slip unnoticed into entry-level jobs and be guaranteed evenhanded review (and very, very gradual advancement) by protective mentors. Shielded from lay prejudice by licensure and peer support, they would not have to sell themselves, being properly accredited as substitute white males. Surely there were good things about this professional ideal, as well as the obvious bad ones. In the hundred years since women first joined the AIA, professionalism probably has worked to help women break into architectural practice.

### The profession and ideas about women in architecture are different now than they were

The end of courtly diffidence, and its replacement by some fairly aggressive marketing and promotion, has paralleled the rise of a generation of women who have gone from being top employees in established firms to becoming CEOs and managing

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partners in their own firms. The often-cited decline of the old-boy network as a way of dispensing commissions seems to be a common factor here. But there is also something more positive, a changing perception of the profession, to which women, as relative newcomers, may be attuned. It is a reaffirmation of architecture as a profession and a public art and an entrepreneurial business that enjoys selling itself.

Unlike medicine and law with their relatively enclosed, peer-controlled worlds, architecture has unpredictable overlaps with scores of disciplines that take part in making buildings, as well as with the public whose domain buildings occupy. The successful architect has known this always, concentrating on communications with clients and the public. The old professionalism tended to regard this as ego assertion. Now it looks like a prudent way to communicate one's success, as in "success attracts success."

### Two contrasting firms with women as principals share a very rational lack of shyness

Both are roughly three years old. Murray & Associates in Alexandria, Va., is a sole proprietorship, just hiring its first employees, and Perkins Geddis Eastman in New York, is a 50-person office run by two women and a man as partners (unrelated by blood or marriage)

who co-manage and co-market more or less equally.

Both firms have talked with clients about how their firm is perceived, and are conscious of firm identity and positioning with respect to their competitors. And both firms are clear that being run by successful women is an important ingredient. Being pigeonholed as women architects is still a concern, but no one thinks the answer is hiding the fact they are women, either.

### That this positive, businesslike attitude is widespread is suggested by a recent survey of successful women architects

James Boulgarides, a professor at California State University in Los Angeles, polled 1,700 women in the AIA. The results seem at first practically tautological. Boulgarides found that those who make good money, or who call themselves successful, are also registered architects, are top managers, tend to work in larger organizations, feel successful, are satisfied in their jobs, get promoted, etc. In other words, the attributes of success are... the attributes of success.

But the message here may lie precisely in the banality of Boulgaride's profile. What might be imagined as women's values did not surface. Having a mentor was infrequently cited as a correlative of success. Comparisons with men's pay did not seem to be a major concern.

*In a changing profession, women may be ideally suited to meet the new challenges. Two case studies make the point.*

*Jo Anne Murray (left) has a successful small firm while Mary-Jean Eastman and Barbara Geddis, together with L. Bradford Perkins, opted to have a relatively large one.*

Job security, or an ability to express some unique feminine sensibility did not even show up. Also studied were decision styles: While women do fit the stereotype of being right-brained and intuitive with high esthetic values, males are equally likely to fit this description. On this evidence, there is no secret to what women want out of architecture. Success is success is success.

Returning now to our woman-managed firms: each promotes itself by communicating both firm and personal success. But the story of the woman design executive, while part of the message, is not obligatory. No one feels the need to explain, much less justify. The woman angle is really a matter of style—personal style and firm style. And the styles can be quite different.

**In Murray & Associates, Jo Anne Murray's approach to being a sole woman principal is straightforward and proactive** The set-asides that federally funded projects create for woman-owned firms are definitely part of her marketing  
*Continued on page 49*



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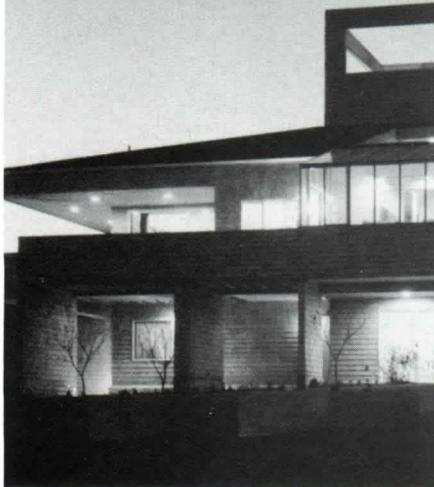
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plan, which targets educational and commercial construction. And, although Murray avoids claiming a superior understanding of women clients, she finds that women on building committees are often pulling for her. Accordingly, she has not been reluctant to publicize her inroads on the formerly all-male establishment. As the first woman member of Washington, D. C.'s University Club, and one of the first of Alexandria's Kiwanis, Murray has gained visibility for her role as an individual woman on her way up. It is visibility that symbolizes the struggle of a woman's small business in the male-dominated world of construction, finance, and politics, without rehashing battles or trashing clients.

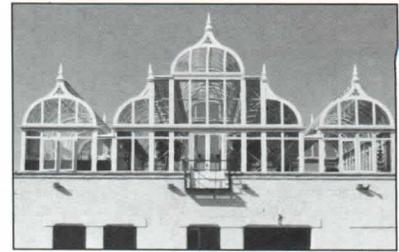
In an equally positive way, Murray deflects another stereotype by stressing specifications and construction administration in her marketing and in her practice. Active in the Construction Specifications Institute, she can show clients and project-team members strong credentials in documentation and management, rarely needing to go on the defensive when it comes to technical competence.

**Like Murray, Barbara Geddis and Mary-Jean Eastman came with big-firm project-management credentials**

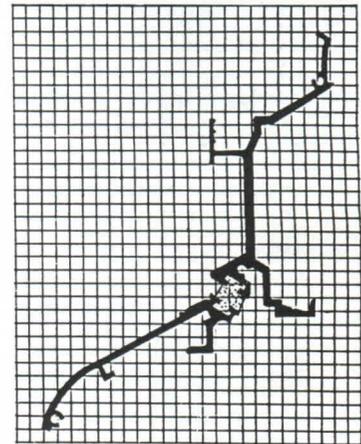
While Murray was with architects VVKR, Geddis was with The Gruzen Partnership, and Eastman with Davis, Brody & Associates and Perkins & Will. But Geddis and Eastman's approach to personal and firm image takes account of sophisticated clients (with an emphasis on large-scale development, health care, and office interiors), and the presence of male partner Bradford Perkins.

A descendant of the Perkins architectural dynasty, which started in Chicago, and a "name" partner of two earlier firms, Brad Perkins is the best known of the three principals. But the partnership is definitely not of the master-and-disciples variety. It is a balance of three personalities, which the partners themselves rearrange from time to time according to their assessment of each client or project. To add

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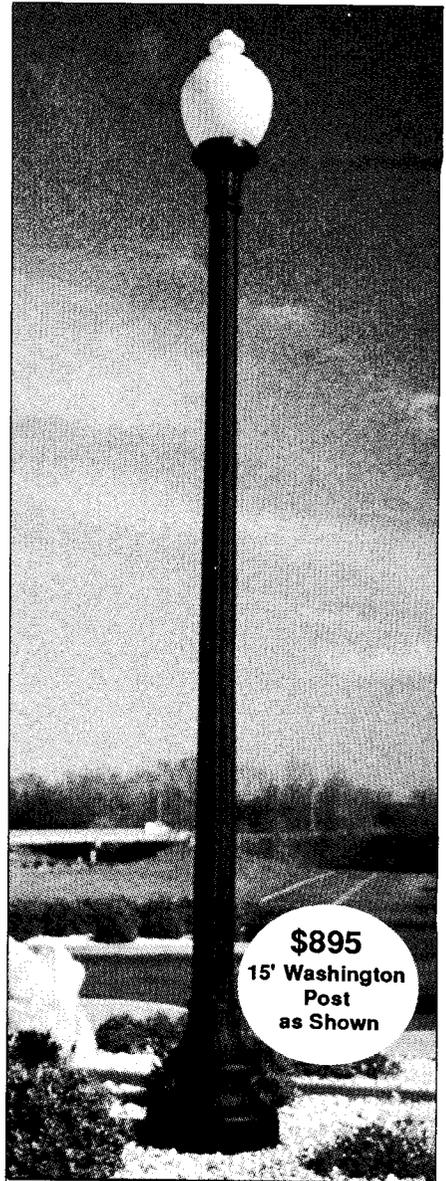
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complexity, they see one another as two relatively strong women and one relatively nonauthoritarian man, so that there is a modicum of role reversal (in the spirit of '30s movie comedies), which clients seem to appreciate. Without misrepresenting the firm, the partners see nothing wrong in assigning Perkins a bigger role in presentations to traditional, male-oriented institutions, or letting Geddis take the lead in an aggressive approach to developers. (With developers Geddis finds an easier rapport with men, and sees Perkins as better with women). Typically, however, their presentations accurately mirror the team-management and team-design process of the firm, with Perkins plus either Geddis or Eastman, and occasionally all three partners, meeting with prospects. The duo of Geddis and Eastman only rarely represents the firm (although the two women do team up in house), because they consider the combination less powerful.

Like Jo Anne Murray, the Perkins Geddis Eastman partners see the woman's angle as a significant part of their promotion and publicity (they may be the only such good-sized, nonfamily partnership in New York). But, as this brief description suggests, their story is less about straightforward striving for success, and more about the intricate management of success, with gender one of many factors.

In fact—although women's employment is certain to remain an issue for the profession—within any one office, it is, increasingly, only one aspect of a firm's personality. Architects will err by pretending, as in the old days, that women are better off hiding behind the polite barriers of professionalism; communication is needed, as much to reassure allies as to defuse prejudice. Architects will also err by making women's ownership or management a promotional drumbeat that drowns out the full story of what the firm and the profession have to offer. There is, again, no discernible difference between women's success in architecture and architects' success in architecture.



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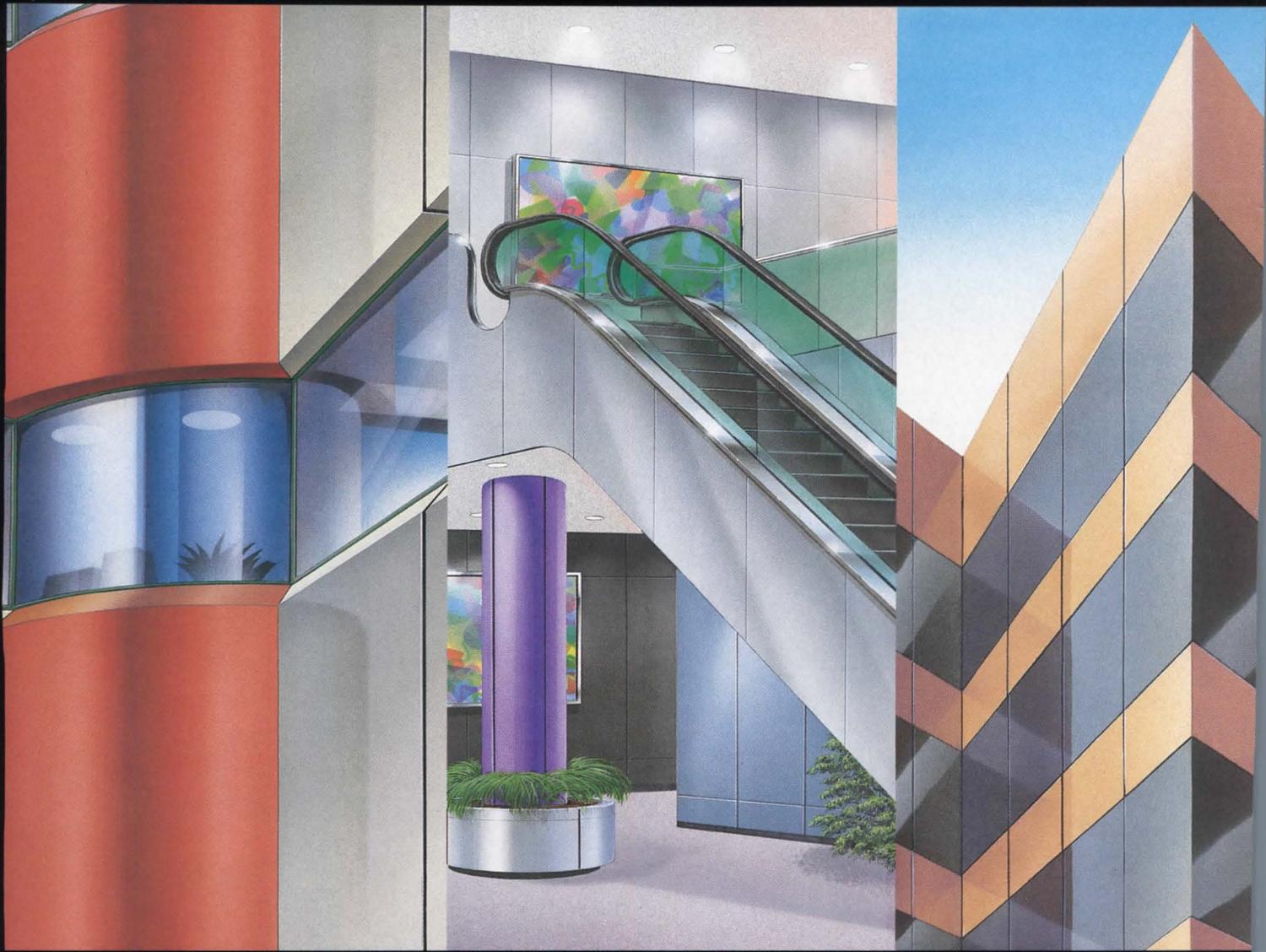
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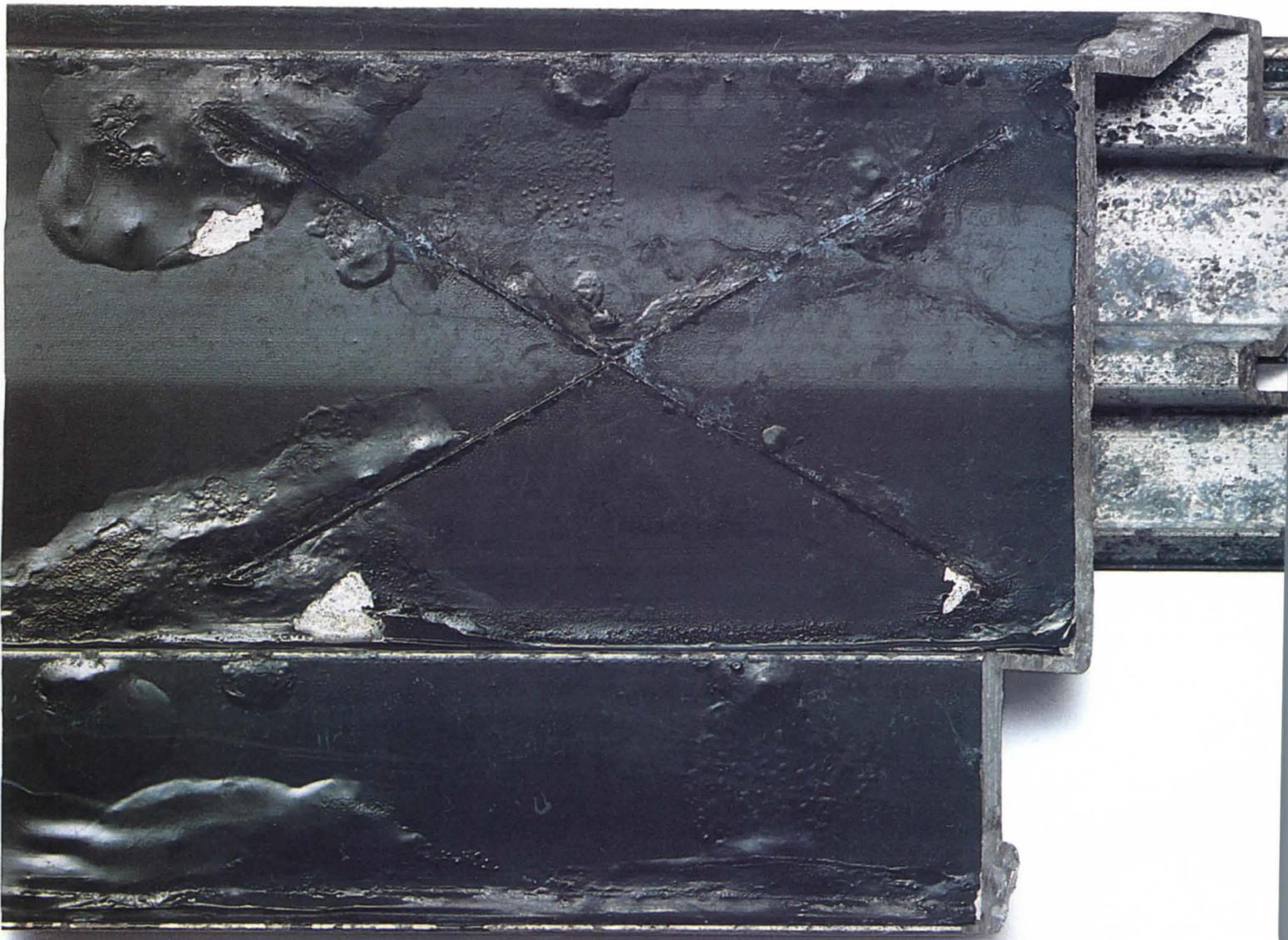
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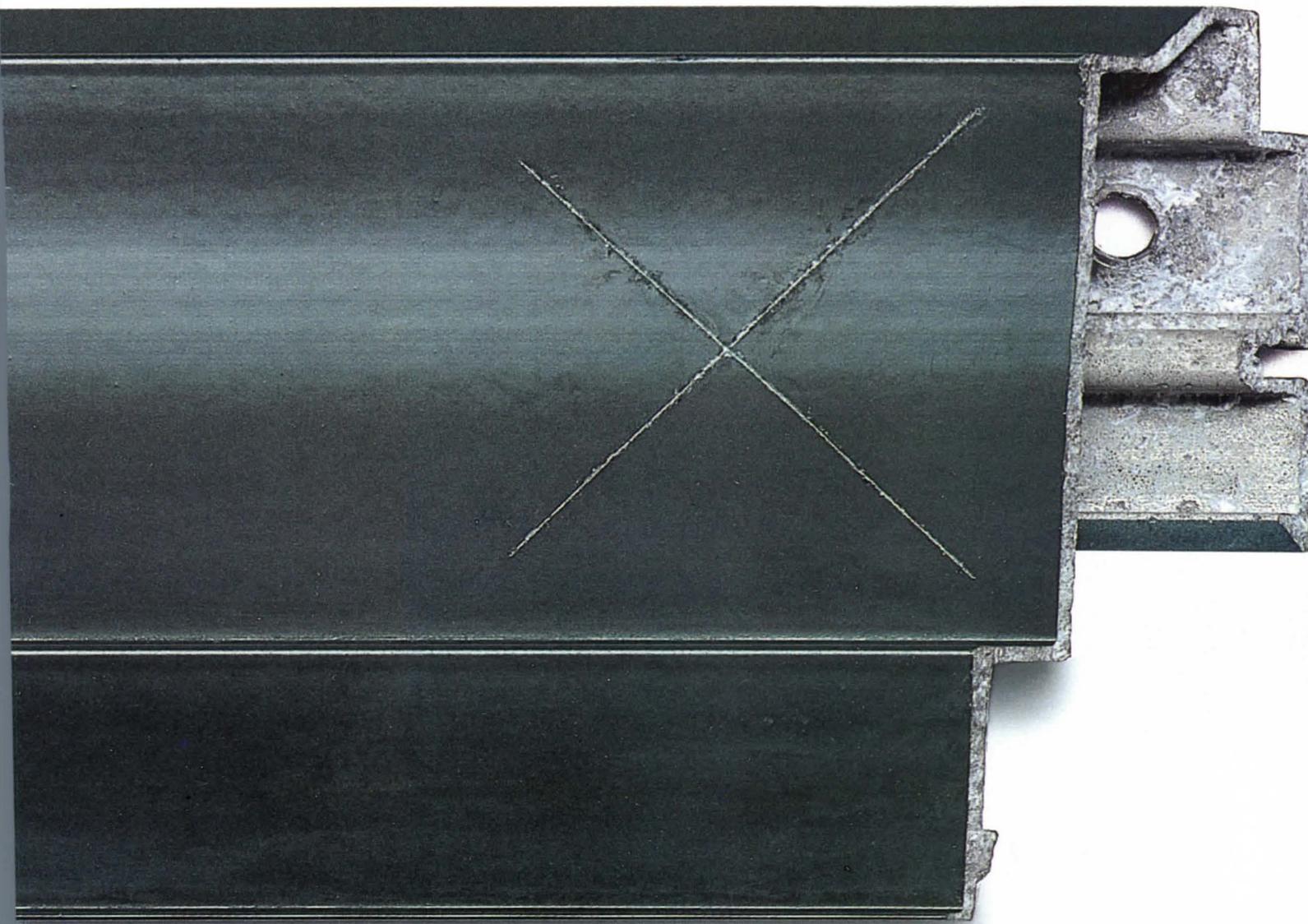


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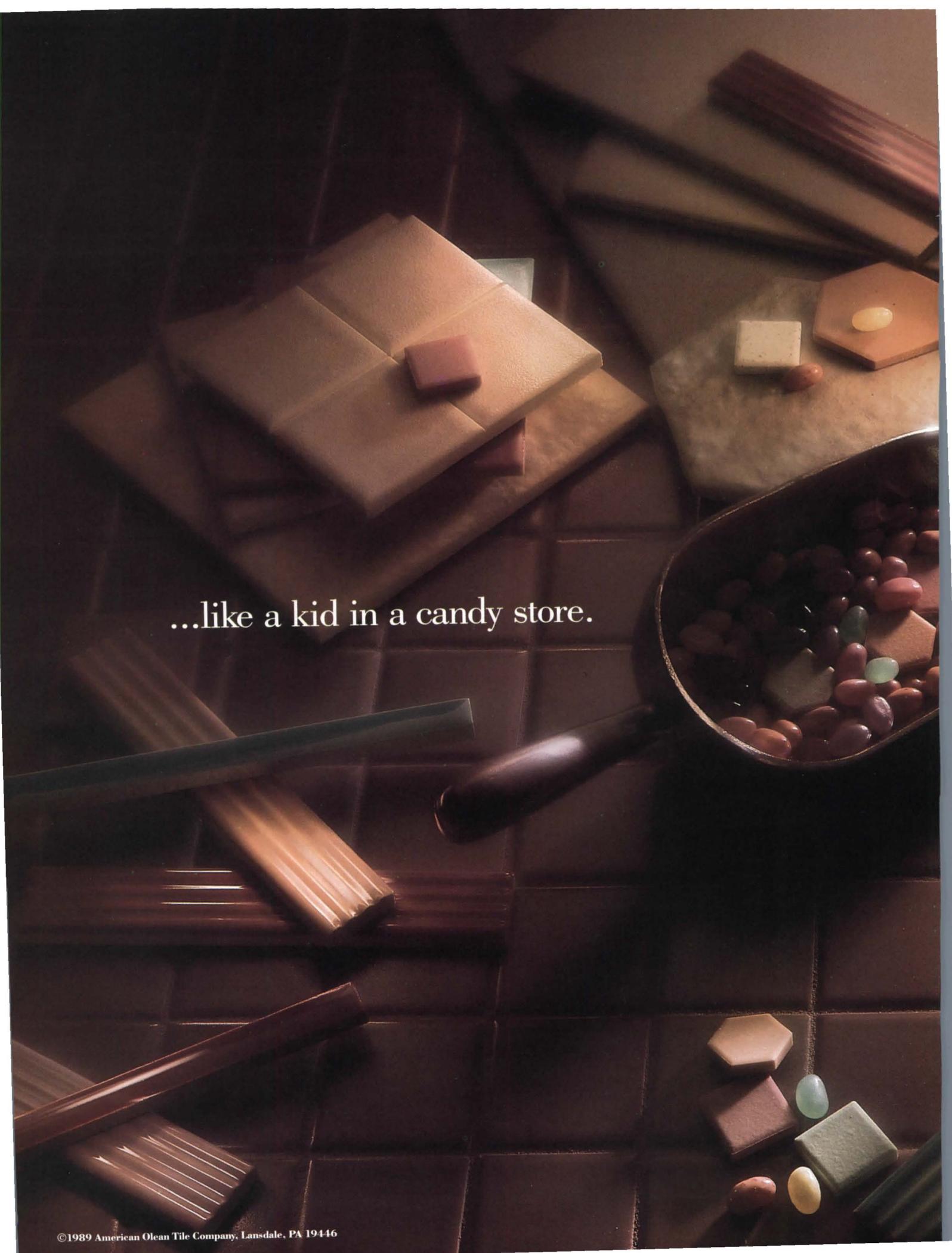
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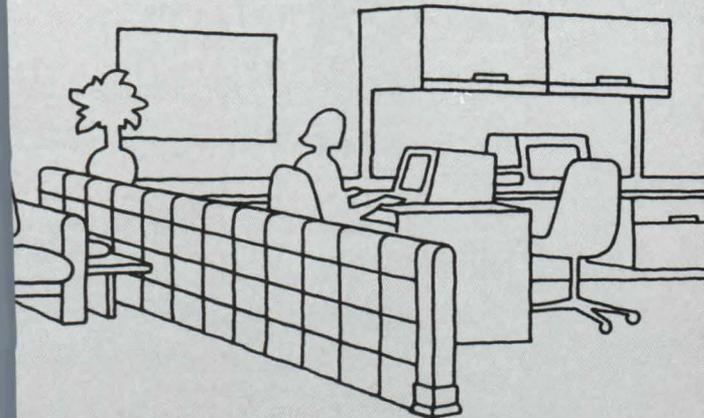
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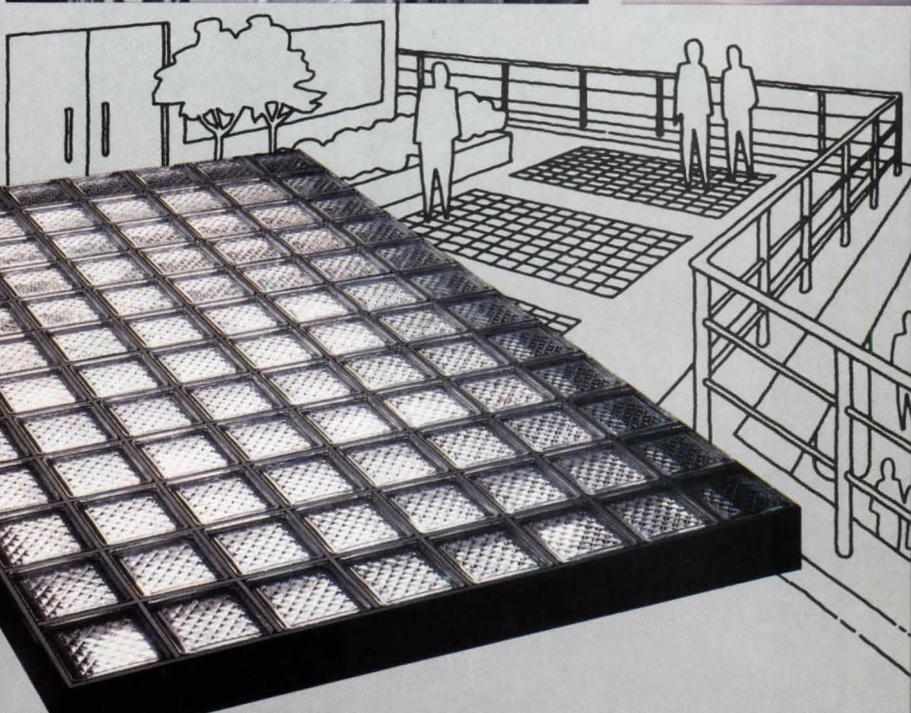
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 Other: (Specify) \_\_\_\_\_

3. Title:  Owner/Corp. Exec./Assoc./Partner/  
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 Staff Eng.  Int. Designer  Designer  
 Draftsman  Proj. Mgr.  Spec. Writer  
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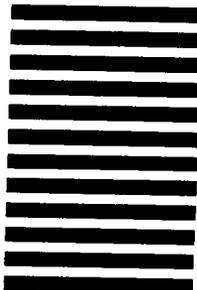
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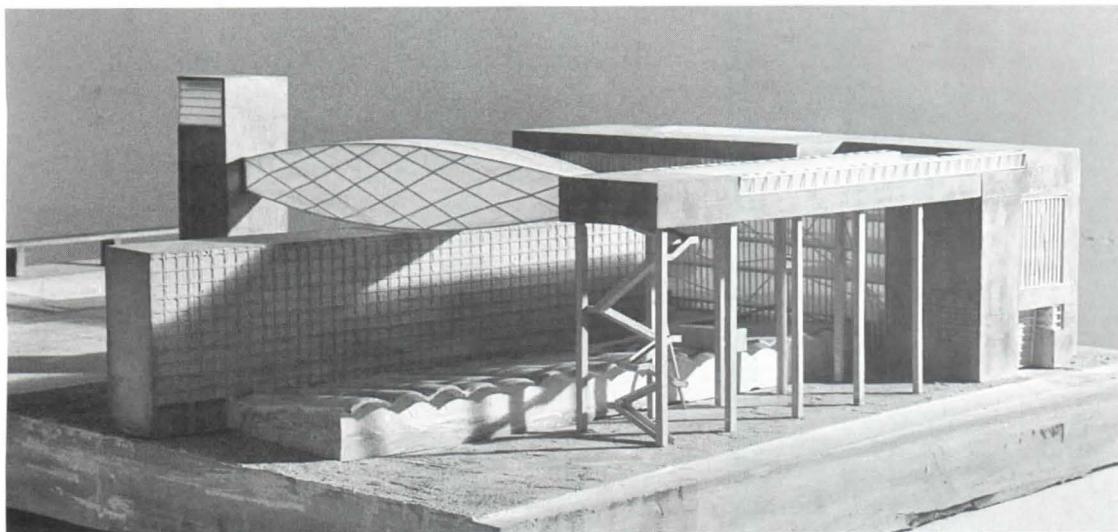
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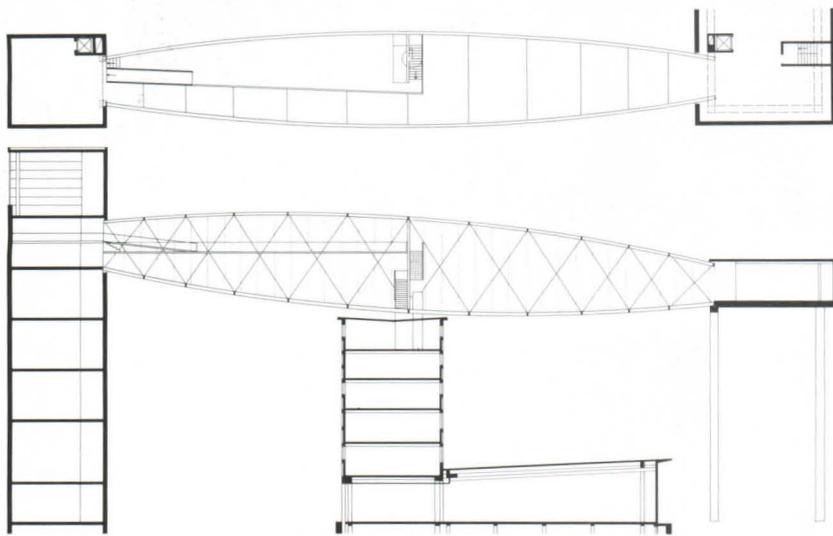
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The American Memorial Library in West Berlin was built in 1954 as a joint German-American undertaking: American money supported a competition for German architects, which was won by Fritz Bornemann. In 1988, when it became clear that the city had outgrown the International Style building, the Berlin government reversed the roles: German money supported an invitational competition for American architects, for which New York City architect Steven Holl designed the winning entry.

The earlier building provided open stacks in what was then something of an innovation for formal European libraries. Holl pursued this idea by putting the additional library space in a “browsing circuit” that surrounds the older building. The loop includes a bridge that will pass entirely over the existing building; the bridge, elliptical in both plan and section, will house the children’s library. At one corner of the library, an observation floor at the top of a tall thin office tower will command a view down the length of the Friedrichstrasse. The major library space will occupy a six-story building sandwiched by double curtainwalls of clear, amber, and blue sandblasted glass.



## The 1988 Pritzker: Architecture as frozen jazz

Frank O. Gehry has been named the 12th Pritzker Architecture Prize Laureate. Though the Canadian-born Gehry’s training and practice have taken place largely in Southern California—with pauses for schooling at Harvard and work in Paris—his architecture has become

increasingly national. According to the Pritzker citation, “Refreshingly original and totally American, proceeding as it does from his populist Southern California perspective, Gehry’s work is a highly refined, sophisticated, and adventurous esthetic that emphasizes the art of architecture . . . His designs, if compared to American music, could best be likened to jazz, replete with improvisation and a lively unpredictable spirit.” The prize, which awards \$100,000 and a medallion from the Hyatt Foundation, was presented May 18 at the Todai-ji temple in Nara, Japan.



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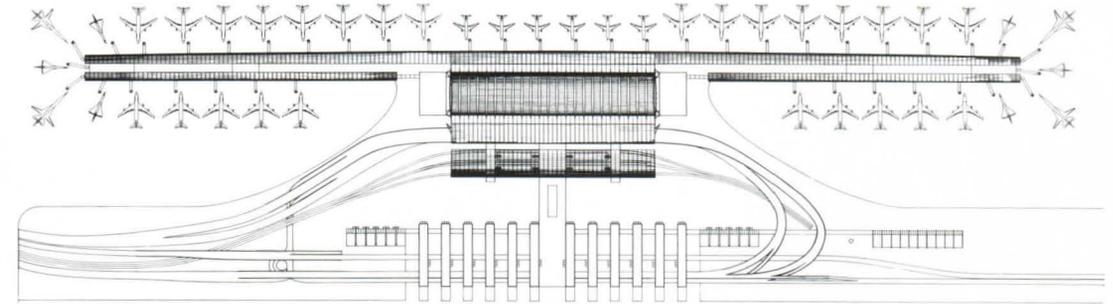
**The Ove Arup Foundation**, established as a memorial to the structural engineer, will provide funds "for the advancement of education directed towards the promotion, furtherance, and dissemination of knowledge . . . associated with the built environment." The London firm will set up a fund of £1.5 million.

**The Henry Moore Sculpture Garden** will open June 4 in Kansas City, Missouri, on a site adjacent to the Nelson-Atkins Museum of Art. Showing sculptures from the Hall Family Foundation's collection, the garden was designed by Jaquelin T. Robertson and landscape architect Daniel Urban Kiley.

**Project Oregano Italiano** is an annual in-house travel program set up by NBBJ, Seattle architects. The program is not a corporate reward for business performance but is meant to inform and stimulate design talent. This spring, the program funded a 10-day research trip to Italy for 14 staff members—11 architects, 2 interior designers, and 1 graphics designer.

**A workbook for housing the homeless**, *The Search for Shelter Workbook*, is based on the work of architects and nonprofit groups in the Search for Shelter program. Published by the American Institute of Architects, it includes information on such subjects as contacts, funding sources, and case studies. For information: *The Search for Shelter*, c/o AIA, 1735 New York Avenue, N. W., Washington, D. C. 20006.

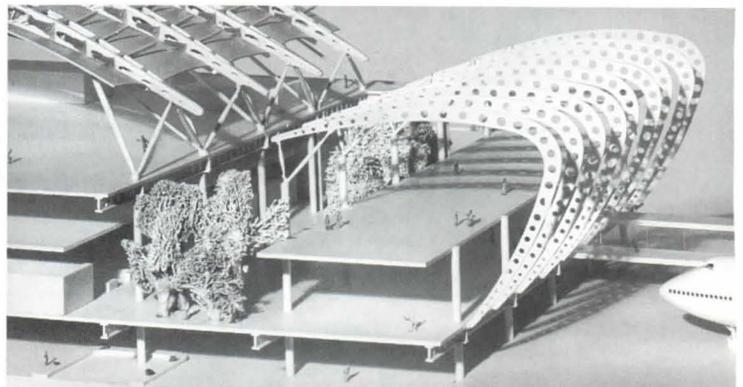
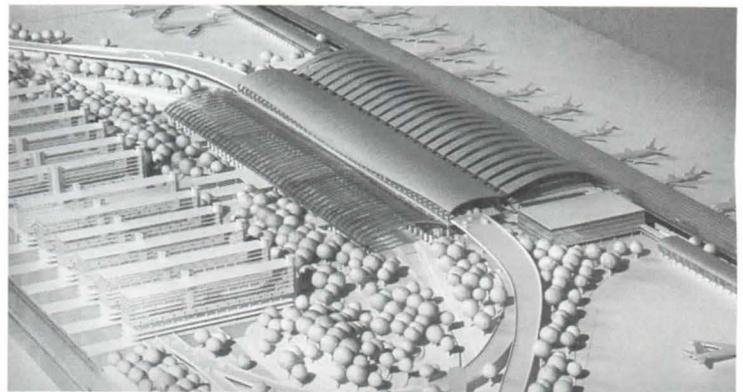
**Architectural commissions:** Geddes Brecher Qualls Cunningham will design major renovations for the Franklin Institute Science Museum in Philadelphia; the team of HNTB-Mitchell Giurgola will design a convention center and hotel in Syracuse, New York; Richard Meier & Partners has won an invitational competition to design a mixed-use complex in Montpellier, France.



Despite his occasionally poetic turns of phrase, Renzo Piano is for reason considered a high-tech designer. His sophisticated structural design for the Kansai International Airport in Osaka has an aerodynamically shaped roof above the long central terminal (upper right). The roof's steel-truss arches will spring 80 meters from roadway to flying field, and the arches will be braced on either side by a "wing" of boomerang-shaped ribs (lower right).

Considerable thought was lavished on electrical and mechanical systems. For example, the main terminal will have a dual hvac system, the macroclimate served by large air jets blowing across the ceiling and the microclimate served by smaller jets in such zones as offices and check-in counters.

Members of the project team included Noriaki Okabe as associate architect and Ove Arup and Partners as engineers.



**1989 Reynolds prize: A Swiss post office with aluminum skin**

**Theo Hotz**, a Swiss architect who practices in Zurich, took this year's \$25,000 R. S. Reynolds Memorial Award for the design of the Postzentrum Zurich-Mulligen, the country's largest postal distribution center. The massive building is faced with aluminum formed by a deep-



drawing process used mainly in automotive body-forming. Hotz chose the material partly "to express the fact that this was a highly technical industrial complex" and partly because he liked the contrast of the building's size and aluminum's "ethereal" appearance.



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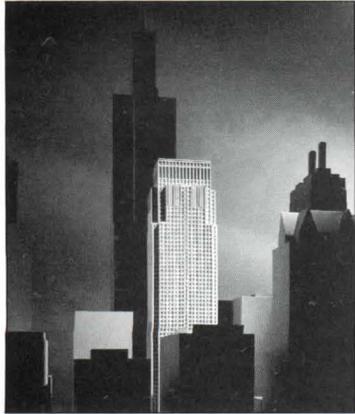
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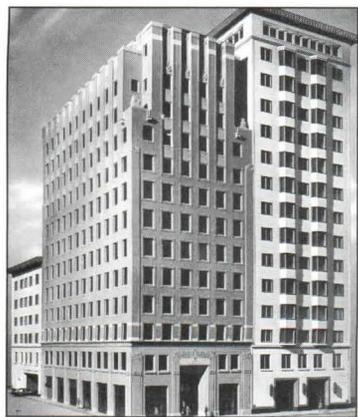
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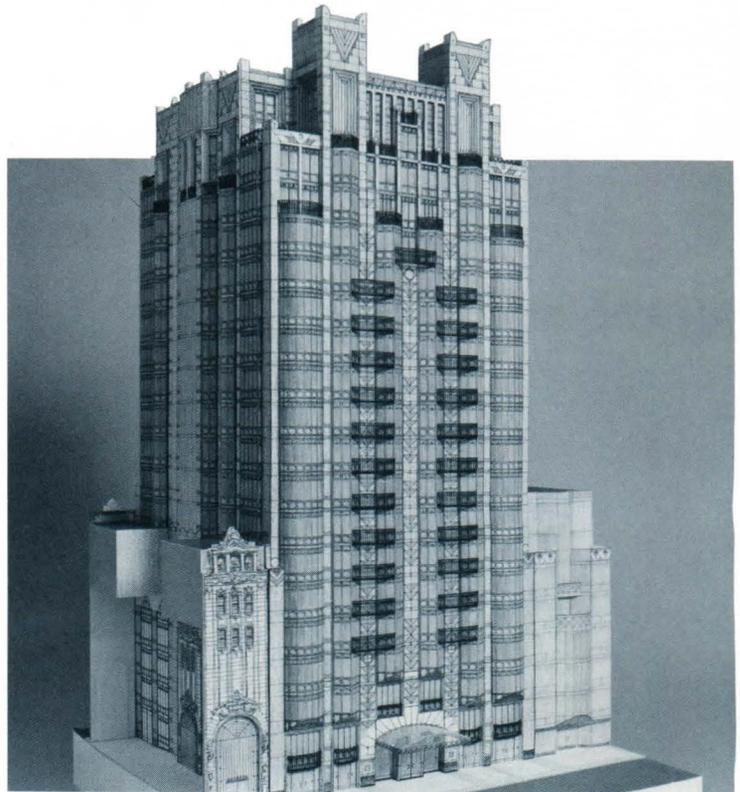


3

**Franklin Center** (1), designed by Skidmore, Owings & Merrill/Washington, will occupy a site along the Franklin Street Corridor, a new precinct of major office buildings in Chicago's Loop. The building will also be a next-door neighbor of the Sears Tower, finished by SOM some 15 years ago. In order to preserve sunshine and a view corridor in the shadow of Sears, the new building will have two masses: a shorter 17-story tower adjacent to Sears and a 65-story tower at the other end of the block. The two sections will be connected at street level with a 35-foot-high rotunda serving elevators and shops.

**The Spartan Food Systems Plaza** (2) is intended as the new headquarters of Spartan Food Systems and as the centerpiece of a revitalized downtown in Spartanburg, South Carolina. Designed by Clark Tribble Harris & Li, the complex will include not only an 18-story limestone office building but a 60,000-square-foot plaza—half of it corporate and the other half public—linking the tower and the city. The building will also have a 200-seat auditorium on the top floor and a data-processing center for regional restaurants. The center will open next year.

**343 Sansome** (3), in San Francisco's financial district, will combine old and new. The older building (left) is a designated historic landmark designed by John Galloway and John Galen Howard and will become part of the newer building (right and far left) designed by John Burgee Architects with Philip Johnson. Despite its youth, the new building, to be built for the Gerald D. Hines Interests, will have traditional San Francisco bay windows and a traditional loggia on the top floor.



Exterior appearances as well as interior uses will be thoroughly mixed at 170 Parkside, designed by Hoskins Scott Taylor and Partners for a site overlooking the Boston Common. Though the structure will function as a single building, it is intended to give the impression of three distinct—though sympathetically designed—structures. All three will have flame-treated Deer Isle granite, metal, and stained-glass ornamental facades.

The main tower, an 18-story

condominium clad in a fanciful combination of World War I Moorish and '30s Art Deco, has a floor of retail space along the sidewalk. On the left, a vaguely neo-Gothic traditional building will combine retail space and a two-story health club. On the right, a more or less Art Moderne wing with a 40-foot-high skylight will offer a passage from Tremont Street to the Boston Opera House.

The project is scheduled for completion in spring 1991.

Competition calendar

•The Building and Social Housing Foundation Habitat seeks solutions to housing problems in both developed and developing countries. Two £10,000 awards are offered; preliminary entries in the two-stage competition are due July 31. For information: Diane

Diacon, BSHF, Memorial Square, Coalville, Leicestershire LE6 4EU, U. K. (01144/0530/510444).

•The Shinkenichiku Residential Design Competition 1989, with the idea that existing building typologies are outdated, seeks "a program for the 21st century" to "consist of the intersection/combination/superimposition" of two given building programs. Prizes total 1 million yen, and entries are due September 13-20. For information: Entries Committee, Shinkenichiku Residential Design Awards Competition, Shinkenichiku-sha Co., Ltd., 2-31-2 Yushima, Bunkyo Ward, Tokyo 113, Japan.

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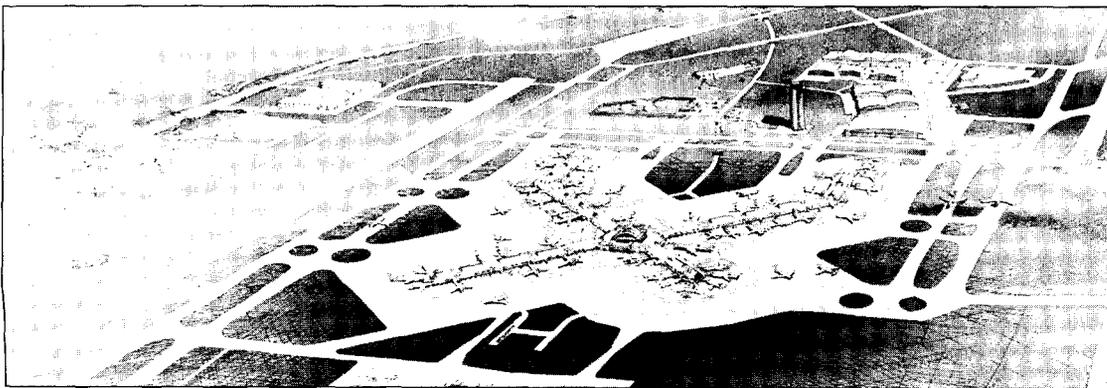
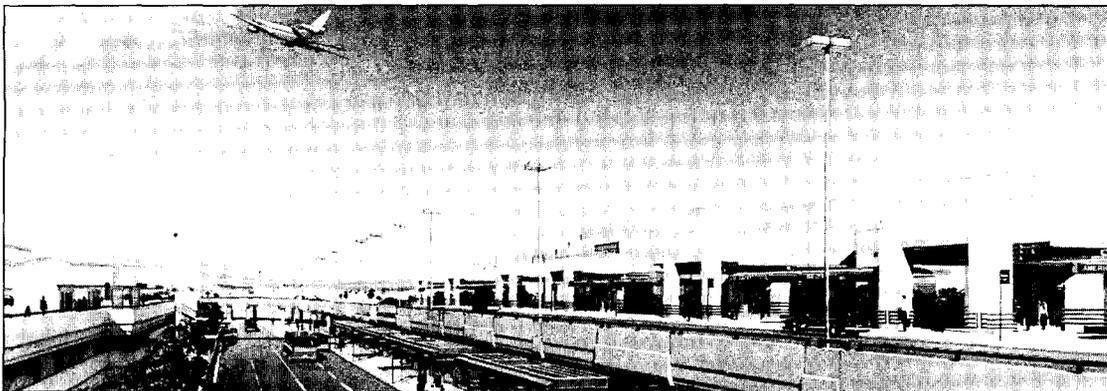
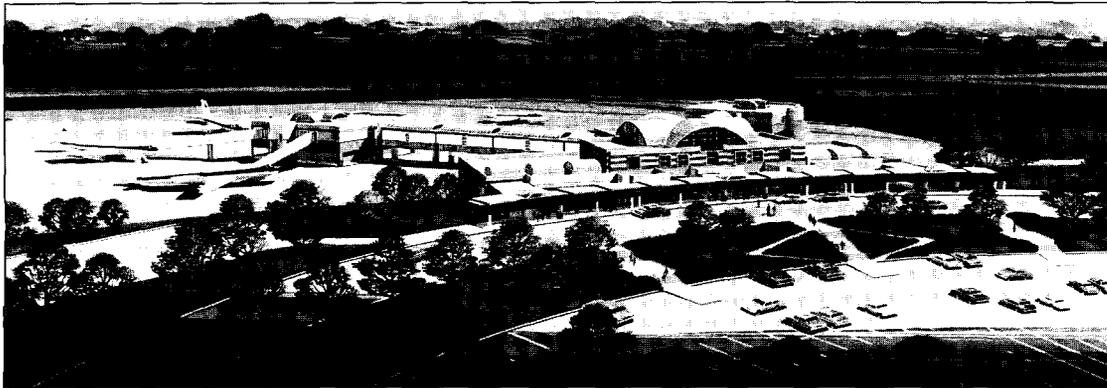
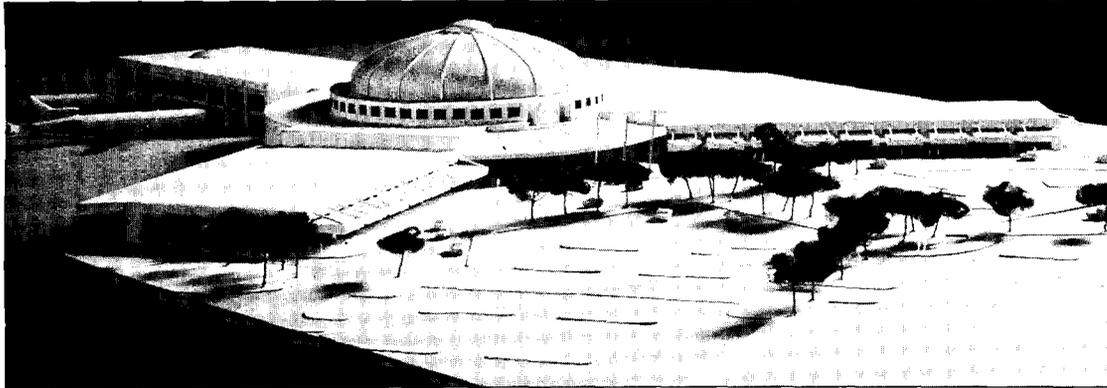
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## Deregulation and design: four new airports



Ten or more years of air-travel deregulation have certainly increased the airline business, an expansion reflected by a great number of projects for new and enlarged airports (see pages 130-141 this issue). These new facilities will range in size from small complexes barely larger than feeder terminals to large metropolitan hubs serving major international carriers.

**1. Chattanooga Metropolitan Airport**, designed by Gensler and Associates, will provide a two-level concourse with gates for seven narrow-body aircraft, a new baggage wing (at lower left of rendering), and a refurbished ticketing building. The three fingers will join in a new rotunda beneath a large metal dome.

**2. New Hanover County Airport, Wilmington, North Carolina**, designed by Howard Needles Tammen & Bergendoff, will have two concourses emanating from a central ticket office, which will be sheltered by a groined vault. Like the Chattanooga airport, it will have only a single level for vehicular drop-off and pick-up.

**3. Albuquerque International Airport** is undergoing \$120 million of additions and renovations designed by BPLW Architects and Engineers. The new north facade, with its earth-colored adobe-type finish, eroded gables, and protruding entry *portales*, will echo the Southwestern style of the existing terminal.

**4. Midfield Terminal Project, Greater Pittsburgh International Airport**, will be in effect a replacement for one of the country's busiest airports—about 48,000 passengers daily. Planned by Tasso Katselas Associates, Inc., the new facility will increase available gates for jet aircraft from 54 to 75 in the initial phase; 100 gates will be provided in the ultimate phase. An adjacent commuter terminal (not shown) will offer 25 gates for smaller commercial aircraft.





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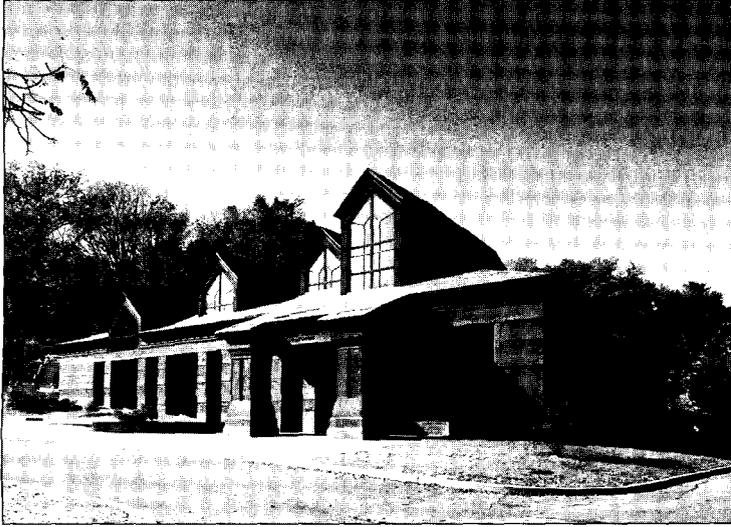


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## Design awards/competitions: The Connecticut Society of Architects/AIA 1988 Design Awards

The 10 projects honored by the Connecticut Society of Architects in its 1988 Design Awards program were all designed by architects living and practicing in that state, but the honored buildings range all over the country and, in one case, abroad. The program's jury included M. Rosaria Piomelli,



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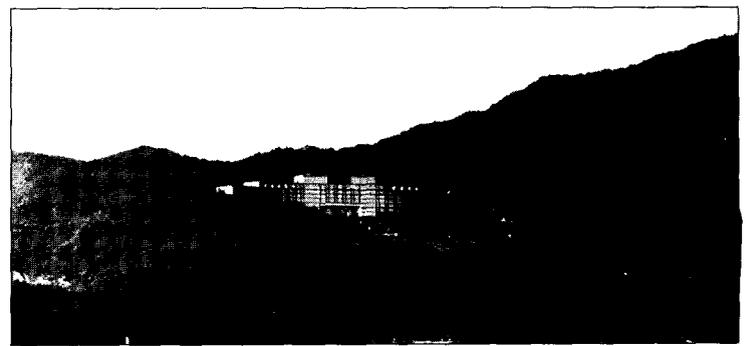
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Woojae Lee

**1. Oliver and Lorraine Grace Auditorium, Cold Spring Harbor Laboratory, Long Island, New York;** William B. Grover and James C. Childress of Centerbrook Architects. The jurors found the combined auditorium, computer facility, and scientific meeting hall "outrageous" but "nice," and thought that "it gives a nice mix between a kind of formality and informality."

**2. Sterling Cove Condominiums, Greenport, New York;** Jackson & Page Architects. The residential development occupies a waterside site severely

constricted by flood and wave-crest zones, bulkheads, and required setbacks. Despite these constraints, the jury found it particularly noteworthy among the multifamily projects it saw. It especially mentioned the development's "use of materials and detail," and added that "it is particularly sensitive and restrained."

**3. Arts/Humanities Wing, The Taft School, Watertown, Connecticut;** Herbert S. Newman Associates, architect. In addition to offering classrooms, studios, and student union in what had been two older gyms, the project visually

joins the structures with the school's existing collegiate Gothic buildings. The jurors commended Newman's sensitivity to the spirit of Cram, Goodhue and Ferguson's 1914 work, and thought that the new design "adds a kind of abstracted feeling with openness and lightness."

**4. East Hampton Community Center, East Hampton, Connecticut;** Mark Simon of Centerbrook Architects. The multipurpose project includes a library, a day-care center, and a senior center for a little mill town. The jury praised the small-scaled building for "its massing,

which gives a sense of place, identity, and strength one doesn't normally associate with a one-story building."

**5. Training Center, KyoBo Life Insurance Company, Chunan, Korea;** Tai Soo Kim Associates, architect. In a resort setting on a rugged forest mountainside, the center offers the company's employees classrooms, dormitory rooms, and recreational and support areas. "The scale of the building is quite appropriate for the surroundings of the Korean landscape," said the jury. "The curve of the building fits in particularly well with the organic feel of the mountains."

a professor at City College, City University of New York; Peter Q. Bohlin, of the Pennsylvania architectural firm Bohlin Powell Larkin Cywinski; and Graham Gund, of Graham Gund Architects, Inc., in Cambridge, Massachusetts.



6 © Peter Mauss/ESTO



9 Robert Perron



7 David Margolis

**6. James S. Reid House, Cleveland Heights, Ohio;** Jefferson B. Riley of Centerbrook Architects. "It's an elegant . . . house that takes detail to a really high level of sophistication," the jury said. The jurors particularly admired the curved wall, which "makes [the house] quite dynamic, separating the public space from the private space."

**7. Kensington Square I and II, New Haven, Connecticut;** Matthews/Thompson/Connell, architect. This seven-block neighborhood was restored as low-income housing; its 38 houses range widely in style—



8 Centerbrook

Greek Revival, Italianate, Queen Anne, late Victorian—and range in occupancy from 2 to 12 families. Impressed by the "extraordinary . . . patience and constant pushing [needed] to get the project through various agencies," the jury thought that "each house must have been a labor of love."

**8. Seneca Lake Fishing Pier and Pavilion, Watkins Glen, New York;** Chad Floyd of Centerbrook Architects. To judge from the number of awards it has taken, this pavilion must be one of the most lovable buildings in recent architectural history. The pier is the opening

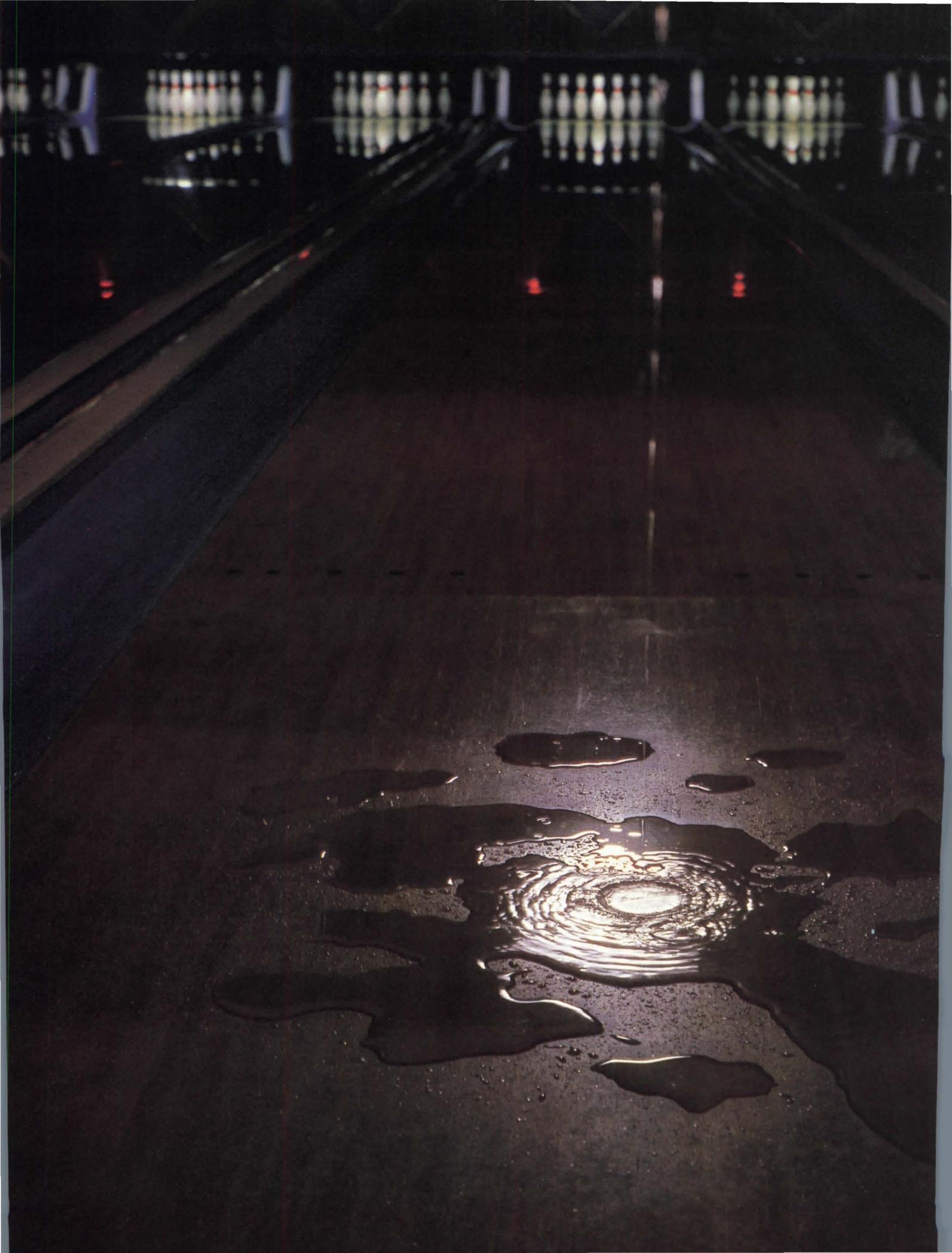


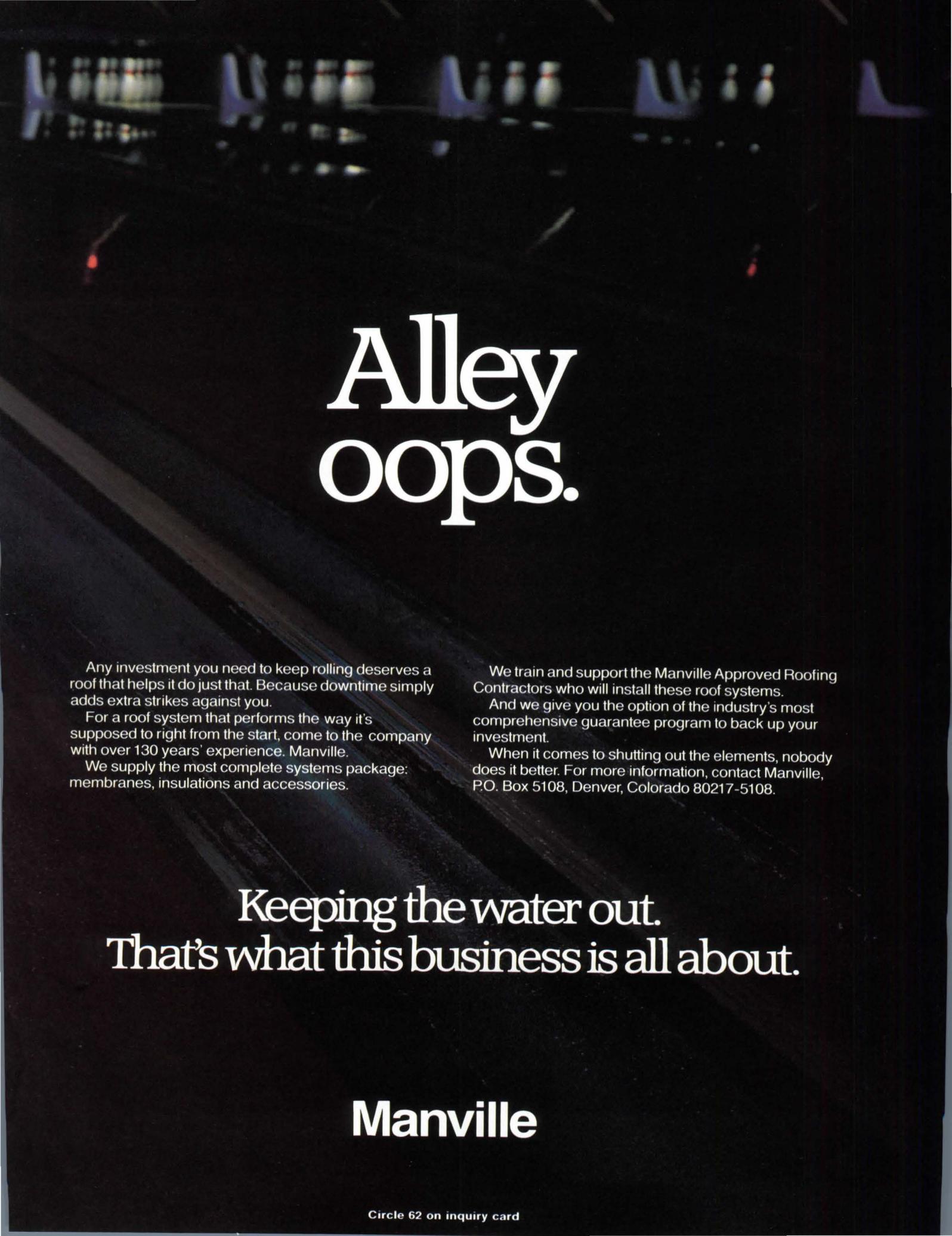
10 © Nick Wheeler

move in the redevelopment of Watkins Glen's recreational lakefront. "It's an extraordinary little building that seems totally appropriate to its circumstances," the Connecticut jury commented.

**9. "Best Small House '88," Westport, Connecticut;** Beinfield Wagner & Associates, architect. This prize-winning design—the winning entry in *House Beautiful* magazine's competition for a small house—has what the jurors termed "a storybook quality," and they commended the "exceptional modulation and interest for a house of this scale."

**10. Seafair, Dania, Florida;** Herbert S. Newman Associates, architect. The large restaurant and shopping development overlooks a docking facility for pleasure boats on the Intracoastal Waterway, and the jury thought that the "dynamic" massing "wants to take you out further and further into the water. The project's lightness and airiness speak of the southern climate. You can almost feel the wind blowing through the form."





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## Dollars for density in Manhattan: What is zoning worth?

Once seen as sophisticated and self-confident, New York City increasingly seems to represent urban life *in extremis*. Its well-publicized legions of homeless share the streets with stretch-limousine-borne tycoons. Commercial development has not lacked for excess, either. Since the city recovered from its mid-1970s fiscal crisis, planners have struggled to keep up with developers prepared to make any floor-plan contortion and exploit every bonus square foot in their quest to build structures as large as possible. Zoning lingo, with its floor-area ratios (FAR), bonus provisions, and bulk and density requirements, can seem arcane, especially when what is built under *any* rules so often seems to be unsatisfactory. But if nothing else, New York's experience makes clear that zoning strategies that might have ambiguous results at other times or in other cities can indeed have a dramatic impact.

New York has been wary of restraining development because of the tax dollars and jobs it creates and because the city perceives bigness and intensity as intrinsic to its uniqueness. From the Brooklyn Bridge in the 1870s—which dwarfed the city's medieval skyline of church spires—to the office buildings of the 1920s, and the World Trade Center of the 1970s, citizens have again and again decried, then embraced, gigantism. By the 1980s, however, a series of zoning-incentive-driven hulks portended a change in attitude. Zoning amendments were enacted to slow growth by reducing allowable square footage within an area that encompassed the most sought-after parts of Midtown and the East Side. Moreover, community groups have lately been accused of using preservation ordinances as a device to freeze density in neighborhoods lacking a truly coherent historical character. On the other hand, there remain



*Between the 149,000-sq-ft Columbus Center site, at the edge of Central Park, and the stalled 42nd Street Redevelopment Project, at the southern end of Times Square, short-term incentives were enacted in 1982 to spur development on the West Side of Manhattan and to decrease pressure on the core to the east. Before the upzoning expired, in spring of 1987, construction began on some 18 projects (red) many of which incorporate officially designated legitimate theaters (blue).*

*Millions of square feet of commercial development are rising on New York City's West Side in spite of—and, in one case, because of—city planning initiatives. James S. Russell argues that trading additional bulk as a cure for short-term fiscal ills places quality-of-life values at irreconcilable odds.*

powerful forces that tend to push development density even higher. New York has pioneered in raising revenues—particularly for repair of its deteriorated subways—by trading civic improvements for additional density. This is a very tempting device since politicians can cut ribbons without specifically committing municipal funds.

New York is not alone in seeing increased zoning density as a tool to accomplish other government ends: in San Francisco and in other cities, additional bulk can be traded for developer-financed “affordable” housing. But whether this is the kind of thing cities should be doing with zoning is rarely considered. How are the promised benefits of the traded-for items to be balanced against such burdens as decreased mobility and increased air pollution, not to mention those unquantifiable qualities that make the city a desirable place in which to live? With projects comprising millions of square feet planned or in construction (see map), the area west of Manhattan's midtown core throws these issues into sharp relief. On the following pages the practice of trading bulk for urban improvements will be examined in two large-scale schemes—Columbus Center and the 42nd Street Redevelopment Project—as well as the effects of a wave of redevelopment in the upzoned area between them.

Given the frenzied pace of development in many cities, the values supposedly promulgated by zoning can seem almost quaint. Precedents quoted by Judge Edward H. Lehner in deciding the Columbus Center lawsuit put these values in perspective. Zoning, observed the judge, is a “vital tool for maintaining a civilized form of existence for the benefit and welfare of an entire community” (Little Joseph Realty, Inc., v. Town of Babylon), a legal

mechanism “designed to preserve the character of zoned areas from encroachments of uses which devalue living conditions” (*Lavere v. Board of Zoning Appeals of the City of Syracuse*). Although these statements sound straightforward enough, the discontinuities of neighborhood scale created by enormous incentive-driven development, and pressure to trade seemingly “free” extra density for needed municipal improvements, are straining the values ascribed by the courts. As an example, Paul Goldberger of *The New York Times* excoriated Moshe Safdie's scheme for Columbus Center as “a gangling composition of anxious angles, inappropriate for the corner of Central Park,” while the *New York Post* blamed the “elite” opponents of the project for the loss of dollars, jobs, and the equivalent of “65 spanking-new air-conditioned subway cars.”

To ask elected officials—or even professionally staffed planning agencies—to make judgments in such apples-to-oranges situations seems to be asking too much. Yet, the opinions of architects are largely missing in the dialogue on these projects. Architects have a direct stake in the outcome of such debates, but they also have experience unique among the legions of urban “experts” to forge a consensus on how big is big enough. Unfortunately, the glamour of individual commissions and the frustrations of dealing with hidebound bureaucracies seem to have driven designers away from the arena where the likes of Hugh Ferriss once held profound sway. Perhaps it is time to say no to commissions in which merely adequate architecture is the best that can be hoped for, and *instead seek to promulgate a new vision of the livable city.*

*James S. Russell*

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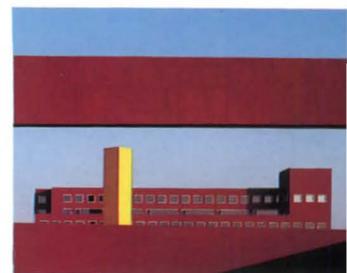
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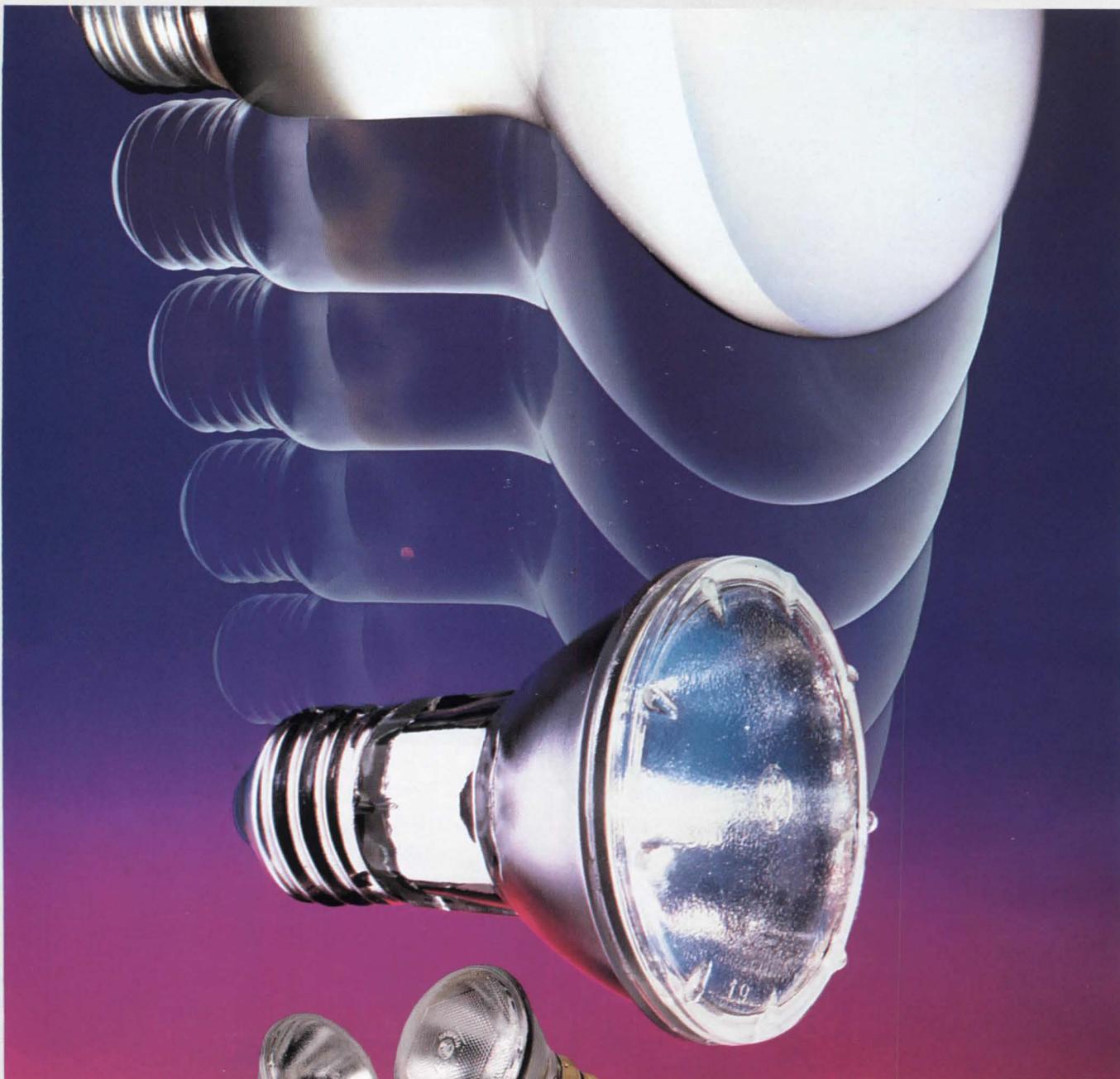
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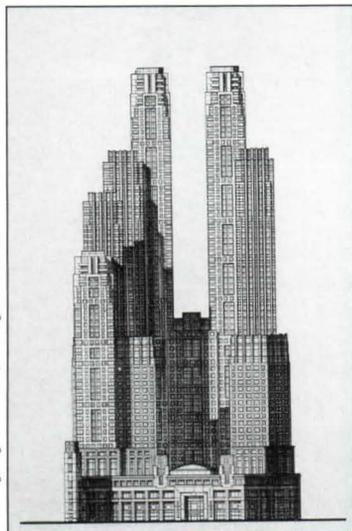
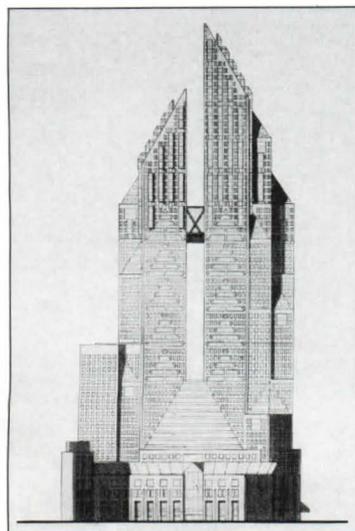
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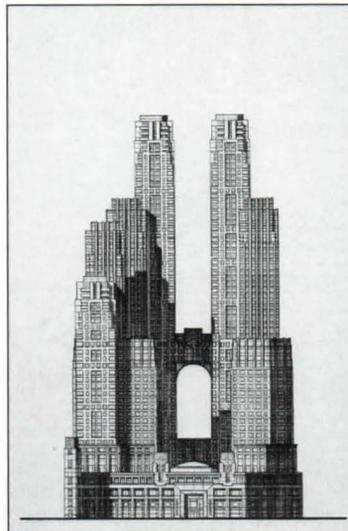
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## Columbus Center: \$57 million buys 500,000 square feet

*The three schemes for Columbus Center: the competition-winning project (left), Moshe Safdie & Associates, architect; the revised projects (middle, and right), Skidmore, Owings & Merrill, architect.*



Drawings by Skidmore, Owings & Merrill



Steel had already been ordered for the winning scheme when a judge of the New York State Supreme Court declared invalid the competition to rebuild on the Columbus Circle site of the old New York Coliseum. Unlike Battery Park City—a much-heralded previous bid-out of city land—the offering was structured so that the highest bid would “be the primary consideration” in selecting the developer—a crucial difference as it turned out—with sale proceeds used to upgrade the crumbling subway system. To realize the highest price, urban design guidelines prepared by Cooper Eckstut Associates asked only minimal accommodations to the surrounding context, and developers were *required* to seek improvements to the adjacent subway station that—consistent with underlying rules—would qualify the project for an FAR bonus of three (approximately 500,000 square feet). Because the bonus required approval by a separate agency, the Request For Proposals (RFP) indicated that the price would be reduced by \$57 million if it were not approved. In arguing against the winning project of Boston Properties (Moshe Safdie & Associates, architect), the

Municipal Arts Society (MAS), a nonprofit group active in development and preservation issues, and other community organizations argued not just that the project was too big—adding to congestion, and casting shadows over much of Central Park—but that the \$57 million represented an illegal sale of bonus square footage. Judge Edward H. Lehner agreed with this last argument, and concluded that “zoning benefits are not cash items.” The judge argued flatly that “increasing the bulk of a project imposes a certain burden on the local community,” and he accepted the rationale that improvements to the adjacent subway station constituted a compensating benefit. But he invalidated the RFP because the city did not intend to use the \$57 million for *local* improvements of a kind that would compensate for the “burdens” imposed.

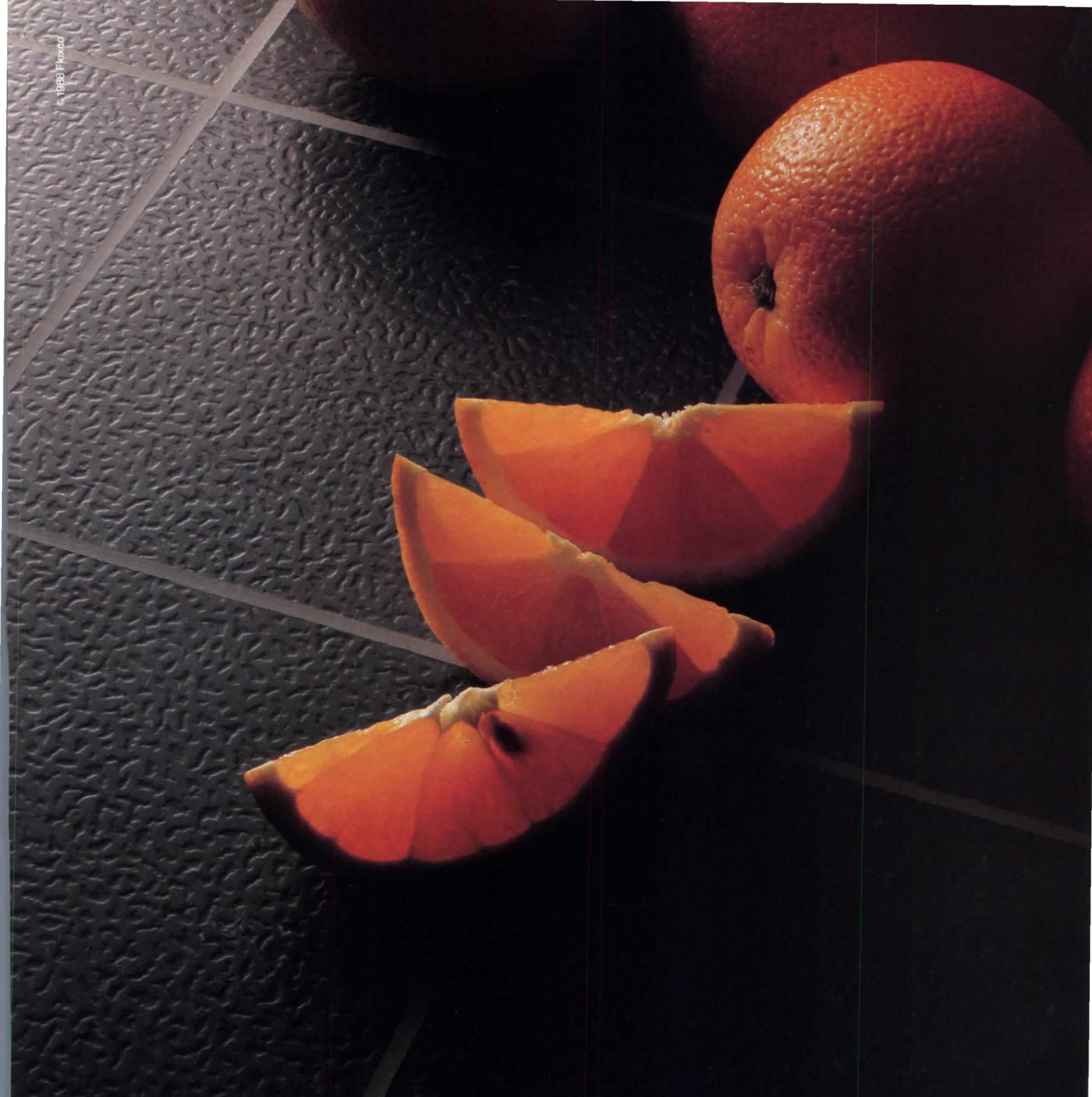
This decision certainly casts doubt on zoning bulk as a commodity that could generate cash for the community at large. But this line of reasoning could easily be taken much farther: would the local community be entitled to an additional payment if the city should receive more money than a compensating improvement is worth?

Columbus Center became a lightning rod for another reason. Though the total FAR was not greater than that permitted for similarly zoned sites, it was possible to develop a project of breathtaking size on the 149,000-square-foot parcel, originally assembled under urban-renewal legislation that closed part of West 59th Street. The MAS argued that both the site size and its irregular configuration (utterly unlike sites found on the city’s customarily long and narrow blocks) should fall under different bulk and density rules, but this argument was initially rejected by the city.

Safdie’s winning scheme (top left) used complex geometric gymnastics to maintain light, air, and views. In an attempt to salvage the project, the developer dropped Safdie and asked Skidmore, Owings & Merrill to design a more modest scheme. Partner David Childs first came up with a design that was 75 feet lower and 500,000 square feet smaller (middle). It fit more easily into the scale of its surroundings, though it would still have been by far the most prominent single object visible from Central Park. Stylistically, it was derived from the 1930s Moderne of nearby apartment houses on Central

Park West, but a more important concession to critics was the placement of much of the bulk low in the building in order to reduce its blockage of light, air, and views. But the MAS and the community boards that represent bordering neighborhoods continued to oppose the project’s size. Responding to these criticisms, the developer last April unveiled a still smaller project (right), which has been accepted by opposing groups. The developer has agreed to pay for a new entrance to the adjoining subway station and to provide community meeting space. The city promised to build 120 nearby units of housing for the homeless even though no residents would be displaced by the project. The arguments over the project’s size raise a novel issue: should a large site operate under different rules than a small one? Certainly the original competitors found it difficult to gracefully place the required square footage on the parcel. Though Childs’s scheme strives to blend in, it could never be characterized as great architecture (even at 14.2 FAR, dramatically less dense than Safdie’s 18 FAR). Yet it remains far too large and is too prominently placed to be considered a background building either.

With the April agreement the project is likely to proceed, but nagging questions persist. Could the city have gotten a better design if the competitors had been permitted to submit schemes of the density ultimately accepted? Could the city have obtained more for the site than the \$337 million (down from \$455 million) now negotiated? The city *did* commit to “consider design and environmental issues when evaluating real-estate deals,” *reported the Times*, “a statement preservationists hailed as just as important as the changes in the design.” *J. S. R.*



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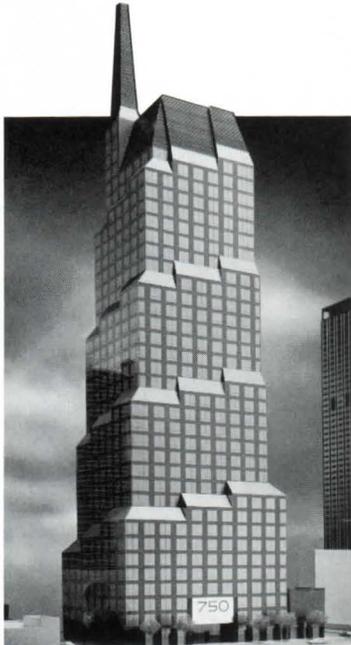
## Midtown West: Bright lights, big buildings



1

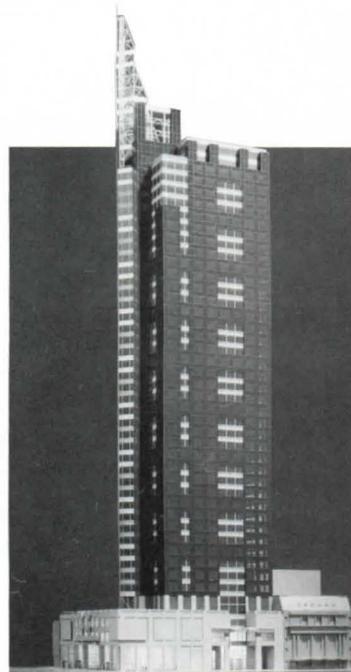


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3

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4

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Reacting to the overwhelming scale of projects then underway, the city repealed a whole panoply of zoning incentives in the Midtown core in 1982, and reduced the maximum as-of-right FAR to 15 from 18. To shift development, the city enacted temporary incentives raising the allowable FAR by three to the west of Midtown, which placed the greatest concentration of Broadway's irreplaceable legitimate theaters directly in the path of speculators.

Though committees sought ways to preserve theaters without discouraging redevelopment, no solution acceptable to all sides was found. Instead, over the objections of owners, 28 theaters have been designated landmarks. Critics say that theater owners are acting as stalking horses for developers; owners say regulations will restrict performance options.

The bizarre development spawned by the zoning changes conjoins the austere curtainwalls of 40-story office buildings with the vulgar exuberance of the low-scale remains of Broadway's honky-tonk past. New projects have taken advantage of air rights afforded by the merger of zoning lots, creating strange theater/skyscraper hybrids (1, 2,

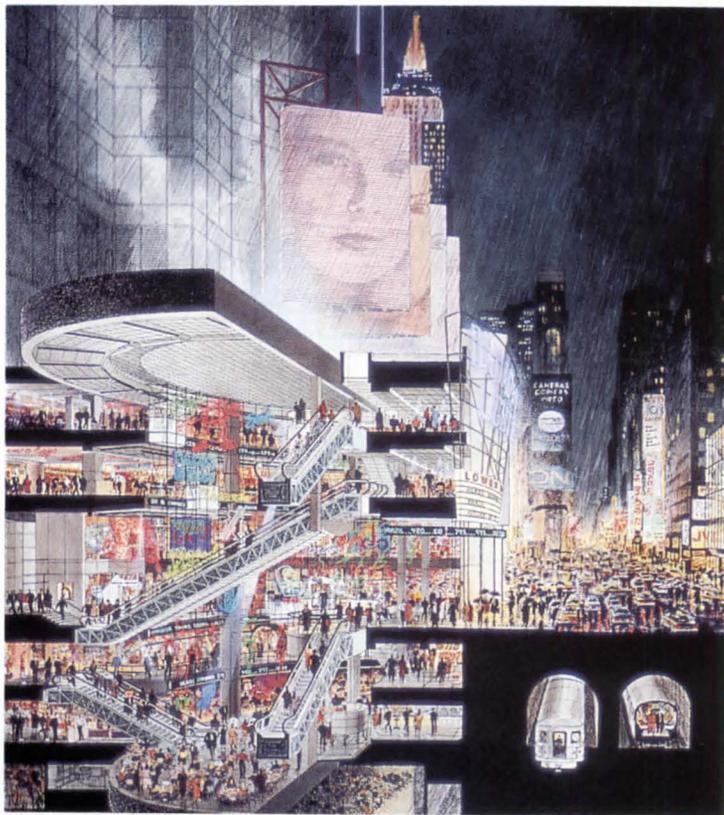
and 4 above) that are much larger than would otherwise have been allowed.

Electric "supersigns" have been mandated as a link to Times Square's past, but developers have balked at placing advertising on the face of first-class office space. Broadway State (4), goes beyond the requirements, however, by incorporating computer-controlled sound and light effects and a multilevel shopping and entertainment concourse (5).

What effect this new development will have on the continued viability of the theater district is unknown, but rising costs have contributed to a chronic lack of original productions, and theater-related businesses are fleeing (20 percent between mid-1986 and mid-1987 alone, a study reports).

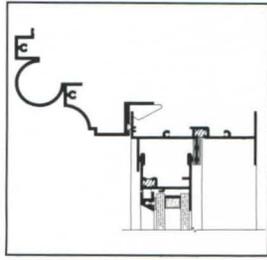
In order to allow as-of-right development (a laudable goal considering the meager public amenities negotiated under incentive zoning), the city asked developers for no public spaces or other amenities. Instead, the northern end of Times Square has become a blandly overbuilt monument to zoning that did not anticipate consequences, lacking even the relief of a vapid, windswept plaza.

J. S. R.

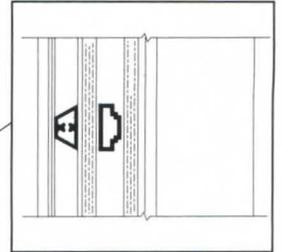


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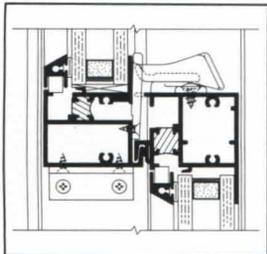
1. 1675 Broadway, cantilevered over the Broadway Theater. Fox & Fowle, architect.
2. Embassy Suites Times Square, built over the Palace Theater. Fox & Fowle, architect.
3. 750 Seventh Avenue, Kevin Roche John Dinkeloo & Associates, architect.
4. Broadway State Building with the Lyceum Theater. Skidmore, Owings & Merrill, architect.
5. Metropolis Times Square (within Broadway State), The Jerde Partnership, architect.



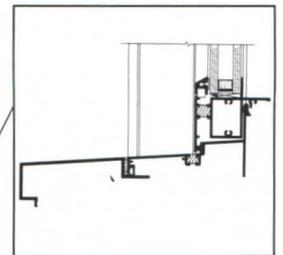
HEAD



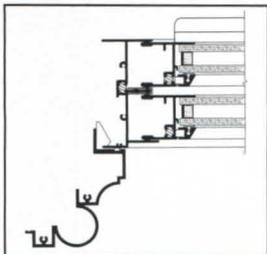
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## 42nd Street: No beat of dancing feet—yet

*Revised designs for the renovation of 42nd Street theaters includes restoration of facades, marquees, and lighting, and a new infill structure (left). Robert A. M. Stern, architect.*

© Wolfgang Hoyt

The vast 42nd Street Redevelopment Project, first unveiled in 1980 and bogged down ever since in lawsuits and developer defections, has not moved significantly closer to reality in years [RECORD, October 1984, pages 125-131], but the issues it raises *have* been more sharply defined. Split into eight parcels on parts of five blocks, the plan moves allowable zoning bulk from the middle of the blocks to four sites facing Times Square. Park Tower Realty has been selected to build office buildings on these sites to a size nearly twice what the city would otherwise allow. In a process similar to that employed at Columbus Center, Park Tower was chosen by the sponsoring city and state authority on the basis of the financial package offered. The four sites, it is said, will spin off \$80 million for improvements to the subway station at Times Square and, according to officials, "as much as it takes" to condemn the sites of eight deteriorating legitimate theaters on 42nd Street, which will then be turned over to a new entity for redevelopment as a combined commercial and not-for-profit theater center. The restoration of the theaters has been touted as justifying the enormous bulk of the office buildings, but because the parcels occupied by the theaters have failed to attract bona-fide developers, they have been the weak link in the redevelopment process all along. (Negotiations are still underway for a merchandise mart developer as well). The sponsoring 42nd Street Redevelopment Corporation hired Hardy Holzman Pfeiffer Associates and Robert A. M. Stern to reassess the condition of the theaters and prepare detailed plans for their renovation in hopes of attracting new developers (above). These schemes at last inject a palpable sense of what this spectacular concentration of theaters could



become. It will be months, however, before a new developer can be designated—if any qualify. The office towers, designed by John Burgee Architects (with Philip Johnson as consultant) have attracted wide derision, both for their overweening bulk and for their design: "exceptionally repellent" wrote Brendan Gill in *The New Yorker*. The towers are said to have been redesigned, but Park Tower has not permitted release of the scheme. According to the sponsor, the towers will sport 48,000 square feet of electric signage, bringing them in line with guideline requirements previously ignored and consistent with zoning changes elsewhere in the district.

A persistent thorn in the side of the project is the former Times Tower, which is known to millions as the structure from which a ball drops every December 31, ringing in the New Year. Deprived of its 1904 neo-

Renaissance exuberance by an ill-conceived reskinning in 1966, the tower remains a deteriorating eyesore. The RFP indicated an intention to transform it into a large electric-light sculpture; the office-building developer, however, wants it demolished. The Corporation now takes no position, and the future is uncertain for this linchpin of the Square.

If the project fails, there is little energy left on the part of any relevant interest group to try again to revive Times Square creatively—an unhappy denouement. The 42nd Street Redevelopment Project's president, Carl Wisebrod, said, "It's too bad that the adversarial nature of the development process [can allow a project] to become calcified. It would be nice to be able to say that maybe we should do something differently, to say that *that* was right four years ago, but maybe it's not today." But, pointing to a

process that to date has taken eight years and sparked 52 lawsuits, he says that the UDC cannot back away from the project as now proposed. Even if it succeeds, difficult questions will likely remain forever unanswered: are the deals a giveaway? Do the buildings need to be so much larger than would otherwise be allowed? Hardly anyone would *not* want to see the theaters returned to use, the gruesome Times Square subway station renovated. But the UDC's office building/theater renovation/merchandise mart/subway improvement/hotel scheme is so complex that the trade-offs the public is being asked to make (implicitly, since the city is vigorously promoting the scheme as cost-free) are nearly impossible to evaluate dispassionately. Under these circumstances, how does one define "the benefit and welfare of the entire community?" J. S. R.

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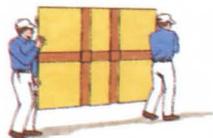


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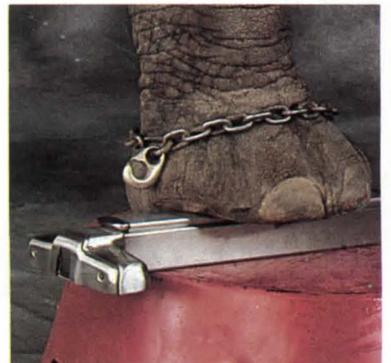
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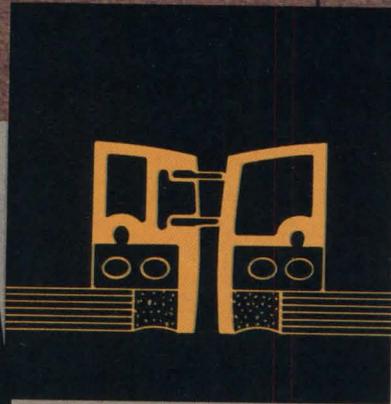
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Architectural Record June 1989 91

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*Adjustable astragal at meeting stiles  
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*Tested on a 3' by 7' door. Tested with a bottom rail sweep.*



The architect in question happened to be me. And the blunt answer I received led me quickly to believe that this old shoe was either very short on small talk or had a special disdain for people of my profession.

“Every roof leaks, sooner or later,” I countered, hoping to incite an argument, being the young

“What I look for in a good roof,” he lectured, “isn’t elasticity, it’s resistance to stress. *Tensile strength*, they call it.”

“And believe you me when it comes to tensile strength, nothing beats an Owens-Corning roof.”

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## “Don’t care for leaks,” the

adversarial type.

“Besides,” I continued, “I thought those single plies were the new high-tech item.”

Something struck a nerve. The old man rifled into his sport coat pocket.

“See this rubber band? It can stretch, yes? Given enough time and wear, it can also snap,” as a piece of rubber rocketed past my forehead.

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(I had little doubt.)

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high water. Whatever Mother Nature dishes out."

Ironically, at that moment, Mother Nature was  
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"Owens-Corning is the largest, most respected  
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# "...ing roof?" asked t naively.

## contractor said dryly.

---

(Was this a contractor or chemist, I wondered?)

"In fact it can actually add to the life of the  
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I felt myself sinking under the weight of ice-  
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"A chemist and a Latin scholar," I mumbled  
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he said with a twinkle.



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#### TRIM SHAPES



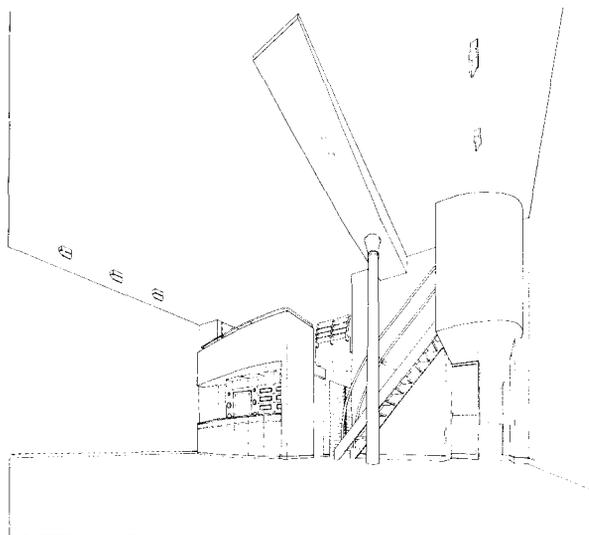
# In this issue

"Modern architecture never was the unified phenomenon that either its promoters or its detractors pretended," writes historian William J. R. Curtis in an essay that probes the intricacies of 20th-century architecture (pages 108-117). "It was always, from the very beginning, a development that combined many strands." In denouncing the superficiality of stylistic "isms" that have come to dominate theory and practice over the past decade, Curtis rightly observes that the deeper structural, functional, and formal impulses which guided architects of the early Modern Movement remain relevant for today's practitioners. Modern architecture, he concludes, is here to stay.

This month RECORD features work by architects who unabashedly embrace Modernism—not as a rigid, politically motivated panacea for society's ills but as a flexible, regionally varied vocabulary capable of responding to the specific requirements of client and site. A portfolio of completed projects by three relatively young firms (pages 118-129) illustrates the continuing efficacy of Modern design, in works as programmatically and geographically diverse as an apartment in New York City (drawing below), a church in a Dallas suburb, and a child-care center in Los Angeles.

In Atlanta, Scogin Elam and Bray looked to Modern architecture's more expressionistic roots in a striking new showroom for Herman Miller (pages 98-105), a corporation whose lifelong patronage of Modern design is the subject of a separate company profile (pages 106-107). Our Building Types Study focuses on a distinctly *modern* architectural form—the airport—and illustrates how architects working in Raleigh-Durham, Los Angeles, Harrisburg, Portland, and Boston have turned to old-fashioned creature comforts to enrich the air-travel experience (pages 130-141).

Finally, as early Modern office towers become 20th-century landmarks, questions regarding the long-term functional and structural viability of these buildings arise. This month's engineering section (pages 142-147) evaluates the condition of four mid-century commercial monuments—Lever House in New York, the PSFS Building in Philadelphia, the Equitable Building in Portland, and Crown Zellerbach in San Francisco—and concludes that with proper maintenance and careful upgrading, these Modern icons can continue to lead productive lives.



*Lipschutz/Jones Apartment, New York City  
Frank Lupo and Daniel Rowen, Architects*

an miller





Herman Miller Showroom  
Atlanta  
Seogin Elam and Bray Architects

**Spatial craft**

*Combining a painter's eye for color and illusion, a sculptor's sense of materials, and an architect's intuition for space, Scogin Elam and Bray have given Herman Miller a state-of-the-art showroom.*

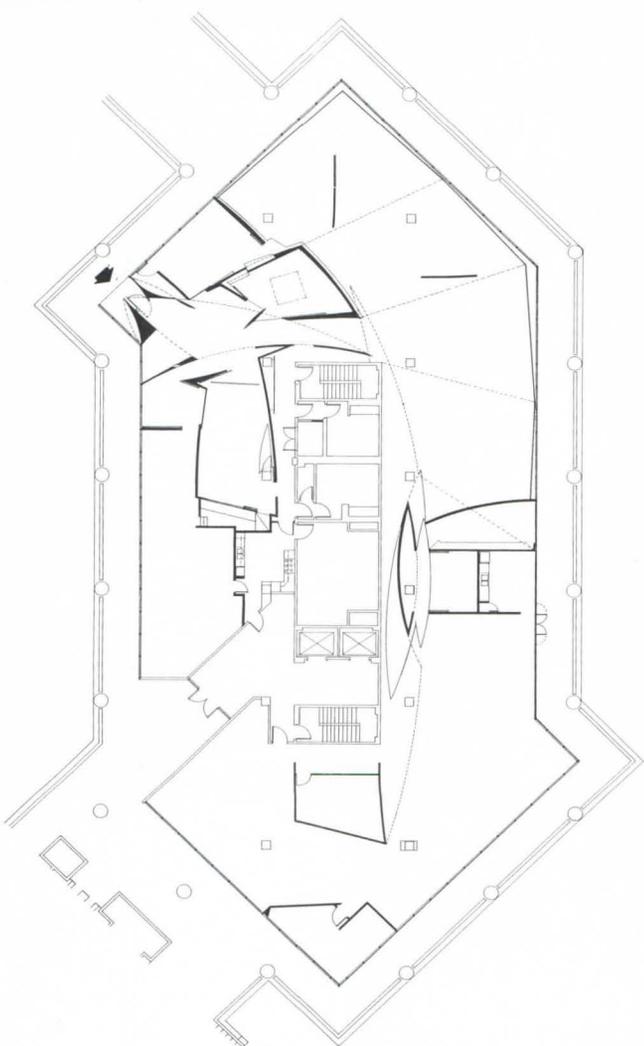
©Timothy Hursley photos



More often than not, an architect commissioned to do showrooms is given little room for esthetic invention: the client is inevitably afraid that the merchandise might not end up the center of attention. Happily, Herman Miller eschewed the notion of an anonymous backdrop when it invited Scogin Elam and Bray to design the company's Southeast regional outpost in Atlanta. Known for its unusual blend of design savvy and family-style management (see a company profile on pages 106-107), the Michigan-based furniture manufacturer asked the architects to turn a 10,000-square-foot shell into "another world," according to Mack Scogin, that would embody the company's dual image of high-style design in a no-nonsense setting. The architects embraced the program's seemingly conflicting goals, transforming ground-floor space in a suburban office park into a journey from illusion to reality—an almost magical, mystery tour whose surreal quality is only heightened by the showroom's location within a complex of faceless Modernist boxes.

The carefully charted voyage begins at the entrance—a glass door that the architects wedged between two monolithic, curved concrete forms (after completing their design, the architects discovered that the curves are a three-dimensional representation of Herman Miller's logo). Screened by raw steel plates, the hulking forms have a pink cast from red lights recessed into the soffit above (previous pages). Inside, the architects countered the effect of a compressed exterior by carving out a wide corridor with splayed angles that create the illusion of an elongated path (cover and page 102 top). Although Scogin calls the sculpture that dominates the foyer "a light fixture," the glass and steel assemblage also seems a symbol of some centrifugal creative force that appears to have exploded within the showroom's core, skewing the partitions around it (left and opposite). Curved, intersecting walls demarcate the showroom's principal functional areas, while teak floor boards define residual areas in between. The architects rejected standard geometric rooms in favor of more loosely defined zones whose overlapping spaces were considered more conducive to the South's informal way of doing business. By distorting the edges of the conference room and meeting rooms, all furnished with classic pieces from Herman Miller's line, the architects were able to make each appear larger than it actually is. Wood panels hung from standard barn-door transoms sustain the illusion of expansive space, at the same time providing a flexible layout. Although there is an underlying rigor to the architects' perspectival illusions, the planar surfaces are all rendered with an artistic sensibility. The contrast of acid-bathed steel and amber-colored varnished wood, for example, reinforces the duality of Herman Miller's image. The architects' special effects reach a climax in the conference room (page 102 bottom), where a projection-room window reflects a random assortment of halogen fixtures in a seemingly infinite galaxy of lights.

The architectural odyssey concludes almost abruptly as one approaches the more traditional furniture gallery that lies beyond the central corridor, where demountable partitions serve as tasteful frames for office vignettes (page 103 bottom). As if to further mark the threshold between the conceptual thrust of the scheme and the more workaday surroundings of the display room, the architects wrapped the shared edge in a 140-foot-long arched canopy of gypsum board, wood, and plaster (page 103 top and 104). Here, in a striking amalgam of the extraordinary and the downright ordinary, architecture and furniture share the spotlight. *Karen D. Stein*

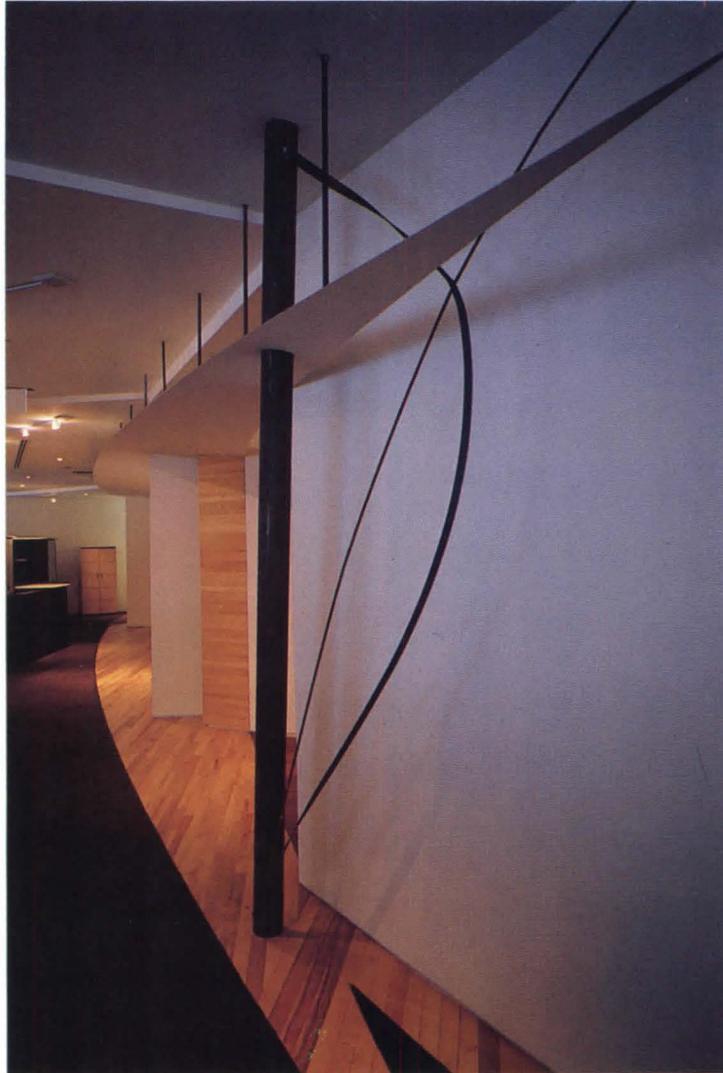








The central zone of Herman Miller's Atlanta showroom serves as a meeting area (opposite), while the remaining U-shaped portion accommodates flexible furniture displays and private offices (below, and bottom page 103). Scogin Elam and Bray concentrated its spatial effects on the first portion of the program, creating a series of interconnected rooms that are distinguished from the circulation route by contrasting materials on the floor and walls. One wall of the conference room is studded with rubber drawer-pulls, for example, creating a tackable surface for hanging presentation drawings (bottom page 102). The stippled effect is repeated on the ceiling in a random pattern of halogen light fixtures, which are mirrored in a tilted window to the projection room. A fin-shaped canopy, pierced at one razor-sharp end by a canted steel pole, dramatically wraps the width of the showroom in a technical tour-de-force of plaster, wood, and gypsum board (right, and page 103). Its outline is reflected in the wood floor, whose flawlessly finished joints are further evidence of an exacting contractor.



*Herman Miller Showroom  
Atlanta*

**Owner:**  
*Herman Miller, Inc.*

**Architect:**  
*Scogin Elam and Bray  
Architects—Mack Scogin,  
Merrill Elam, and Lloyd Bray,  
principals-in-charge; Frank  
Venning, Susan Desko, Monica  
Solana, Carlos Tardio, Jeff  
Attwood, and Criss Mills,  
project team, with Doug  
Zimmerman, Rick Van  
Gelderens, Dyan Van Fossen,  
and John Scholten of Herman  
Miller, Inc.*

**Engineer:**  
*Newcomb and Boyd  
(mechanical/electrical)*

**Consultants:**  
*Axis Twenty (artwork and  
accessories); Newcomb and  
Boyd and Ramon Luinance  
Design (lighting design);  
Williamson & Associates, Inc.  
(specifications); Costing  
Services Group (estimating)*

**General contractor:**  
*Welch Tarkington, Inc.—  
Marcus Whatley, project  
manager; Mickey Daniel,  
construction superintendent*



# Designs to live by



Above: chair, Gilbert Rohde, 1939  
Opposite: Equa chair,  
Don Chadwick and Bill Stumpf, 1984

Photographs courtesy of Herman Miller, Inc.

This year, in *Fortune* magazine's annual poll of America's most admired corporations, Herman Miller placed ninth out of 305 listed companies. Herman Miller's unprecedented high rank is doubly significant. Not only is the company the sole member of its industry group among *Fortune*'s top 10, but the survey, which measures the combined impact of "earnings growth, product innovation, and ambitious operating goals," also puts the relatively modest-sized furniture manufacturer, whose 1988 sales totaled \$714 million, in a league with multibillion-dollar conglomerates like Exxon, PepsiCo, and Boeing. As a visit to any one of the company's three impressive manufacturing facilities near its Zeeland, Michigan, headquarters, or its 23 showrooms and sales offices nationwide, will attest, Herman Miller's preeminent position is no accident.

While smaller furniture companies are gradually losing their distinctive identities in a tide of corporate mergers and acquisitions, Herman Miller remains remarkably faithful to its roots. The company may have built its reputation among architects on its association with such innovative designers as Gilbert Rohde, George Nelson, and Charles Eames, but its hallmark among industry insiders is its participatory style of management. Founder D. J. De Pree instituted profit-sharing long before it became a fashionable job incentive, and, more recently, the company adopted a "silver parachute" clause to assure benefits to all employees in the event of a hostile takeover. Today, the professional ethics of 97-year-old De Pree, a devout Dutch Reformist who purchased the Michigan Star Furniture Company in 1923 and renamed it for his father-in-law and principal financial backer, still reign, perhaps explaining why even competitors often refer to Herman Miller as "nice folks." With De Pree's son Max as chairman and Richard Ruch as CEO, Herman Miller steadfastly endeavors to reconcile the apparent incongruity of old-world values and up-to-the-minute design, producing furniture that, as Ralph Caplan observed in his 1976 book *The Design of Herman Miller*, seems "the perfect amalgam of the square and the hip."

Herman Miller hasn't always achieved such a happy balance. The company's earliest introductions, in fact, were ornately

1930

1940

1950



Bedroom set, Gilbert Rohde, 1933



Molded plywood chair, Charles Eames, 1946

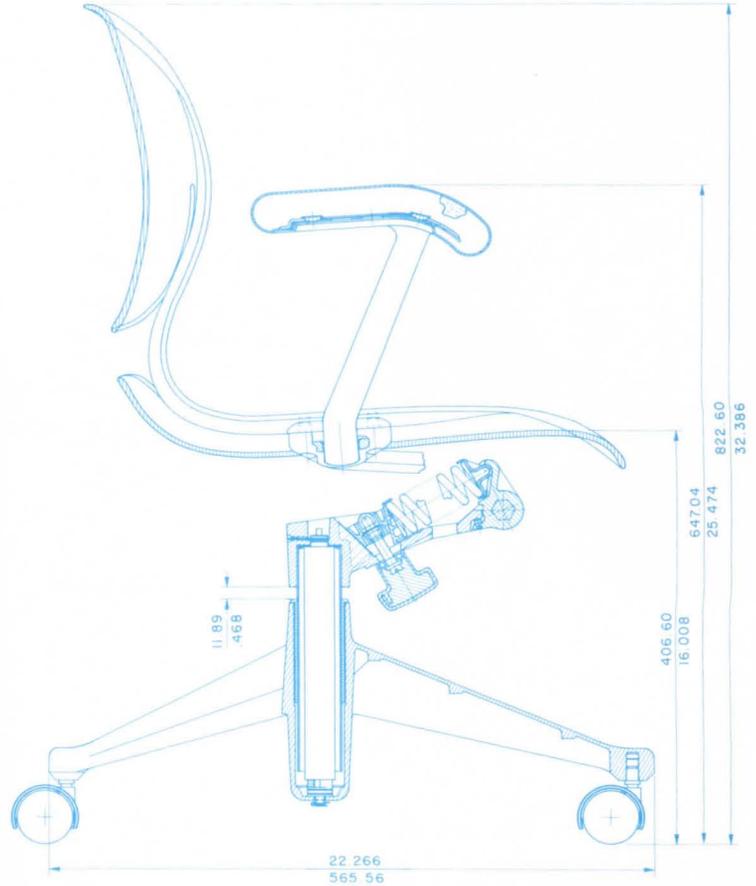


Coconut chair, George Nelson, 1956

*As Herman Miller contemplates its history of outfitting the “modern” home and its future as arbiters of the ergonomic office, the company continues to bridge the gap between tradition and innovation.*

carved pieces best described as Spanish Colonial in inspiration. The transformation from a company of revivalists to trend-setters began in 1930, when De Pree met Gilbert Rohde, who was in Grand Rapids peddling his notion of “modern” furniture to local manufacturers. He eventually sold De Pree not on his designs but on himself, a self-styled “student of living.” Although De Pree was not initially taken by what he considered to be the overly austere appearance of Rohde’s furniture, its unadorned simplicity “struck a religious chord,” as Caplan recently noted. Rohde, who in recent years has become a cult hero among aficionados of American Art Deco design for his “unique combination of streamlined simplicity and mass production,” in the words of New York graphic artist and furniture collector Terry Koppel, helped Herman Miller distinguish itself from its competitors by becoming an advocate of a “modern” lifestyle. The company continues to prepare its audience of specifiers and end-users for each new-product introduction by discussing the evolving home and workplace in its literature and sales presentations: De Pree and Rohde’s sincere belief in being “design and research driven” has been formally codified into corporate policy.

Over the years, Herman Miller has accommodated a range of designers under its loosely defined Modernist house style. Bob Harvey, vice president of design, characterizes the similarity among the some 20 designers currently working for Herman Miller in surprisingly unarchitectural terms: what they all have in common with each other and the company is, Harvey claims, “shared values.” Herman Miller’s current projects range in scale from furniture, such as Geoffrey Hollington’s new chair (below), which is being formally unveiled this month, to architectural commissions like a new factory in California, designed by Frank O. Gehry. The company’s deliberate open-mindedness is perhaps best exemplified by the unlikely choice of Gehry as architect of the new factory. Recalls senior vice-president Tom Pratt of the selection process: “We looked at our list of top choices, and we asked ourselves ‘Who will be the best teacher?’” As Herman Miller joins rank with America’s corporate giants, it is the company’s ability to play the more humble role of design student that may be the secret of its continued success. *K. D. S.*



1960



Action Office, Robert Probst, 1964

1970



Ergon chair, Bill Stumpf, 1976

1980



Hollington chair, Geoffrey Hollington, 1989

# Contemporary transformations of Modern architecture

By William J. R. Curtis

*"Born of the most mysterious tendencies of our instinct, artistic inspiration remains entirely free; no one can, in the name of the past, assign it a direction or impose limits upon it. It will always evade rules and theories by some route no one has thought of; but just as the most unexpected dreams we have in our sleep always, on reflection, stem from some event or some thought we had while awake, so the works which this inspiration engenders will always later find their explanation in what preceded them."*

Roger de la Fresnaye

*Architectural historian and critic, William J. R. Curtis is the author of Modern Architecture Since 1900 (Phaidon 1982; Prentice-Hall 1983), which has been widely hailed as a classic, and which in its 1987 second edition included an addendum Search for Substance: Recent World Architecture. He also wrote Le Corbusier: Ideas and Forms (Phaidon 1986; Rizzoli 1987), which some reviewers considered the best single work on the master, and, most recently, Balkrishna Doshi: An Architecture for India (Rizzoli 1988). Curtis was awarded the medal of the Society of Architectural Historians of Great Britain in 1984, and the outstanding critics' prize of the Comité Internationale d'Architecture in 1985. Paul Gapp (Chicago Tribune, April 3, 1987) has called him "the best architectural historian writing in the English language."*

When future historians of Modern architecture look back at the 1980s, they may well find it strange that so much effort went into publicizing fads when so little was done to identify works of lasting substance. New "isms" have been announced with bewildering rapidity, but critical discussions have usually dwelt upon superficial aspects of style. Distinctions between quick tricks and true inventions, shallow pastiches and genuine transformations of tradition, have rarely been drawn. No doubt this transience has something to do with expendability in consumerism and with the swift turnover of images in a marketing economy, but it also suggests a soft, sticky state of intellectual corruption in which there is narcissistic retreat from standards of any kind. Little wonder that recent architecture smacks so often of visual glut, arbitrariness, and trashy confectionery. The past is aped and distorted into grimacing shapes but nothing long-term is supplied.

Fashion knows that history is its enemy, for an accurate perspective on the present is the strongest weapon for overthrowing a dictatorship of opinion. A new critical map is required that measures contemporary production alongside the high points of past ages, and which is more honest about current debts to earlier modern architecture. The cliques in charge of media and schools imagine themselves to be at the center, and think of the rest of the world as a retrograde periphery, but they cannot avoid the fact that much of the best work of our time is emerging remote from the babble of their discourse. The sanctioned version of contemporary architecture is more a diagram of willful ignorance and parochialism than anything else. The map that replaces it has to be global in its scope: able to chart remarkable recent buildings in the third world as well as the first. It needs to identify truly seminal works instead of just retracing well-advertised trends.

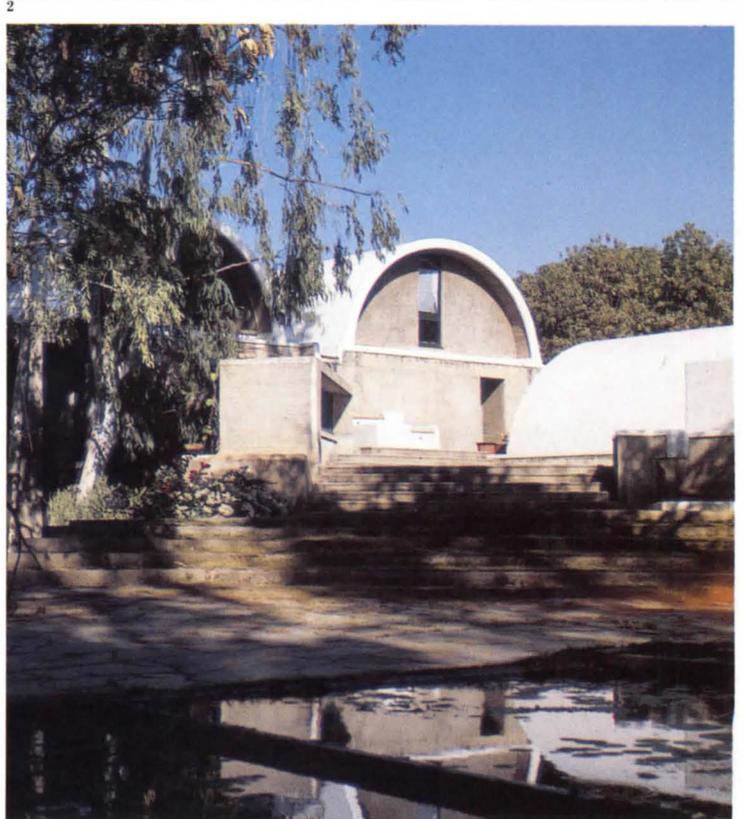
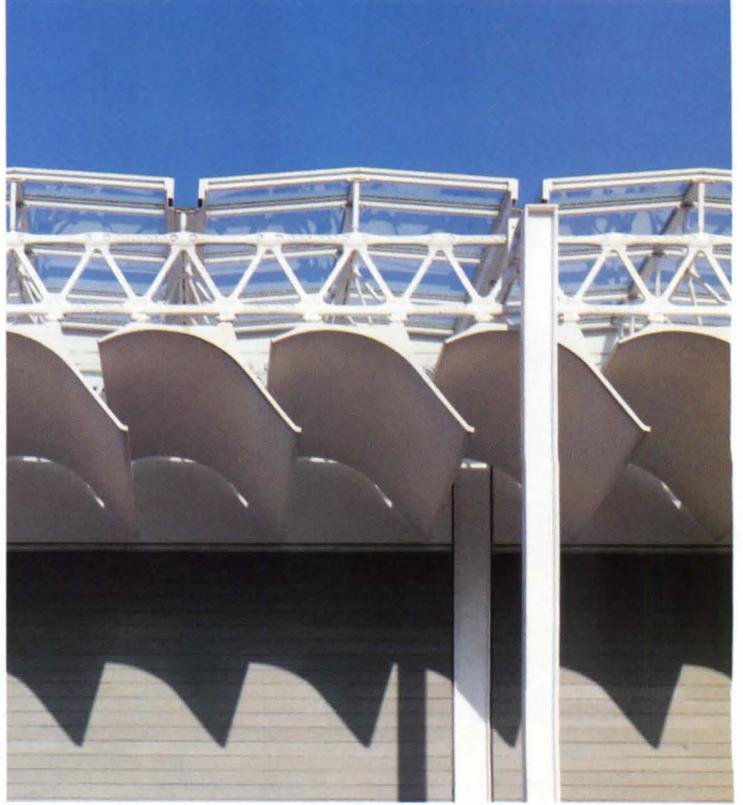
A critical method that relies too heavily upon the notion of movements renders itself incapable of distinguishing buildings of a high order from those that simply wear the acceptable period dress. This is one of the reasons why the so-called debate between Modernism and Postmodernism was misleading, for it very soon degenerated into a confrontation of caricatures. As usual, historical accuracy was one of the first casualties. The complex development of Modern architecture earlier in this century was set aside in favor of a monolithic demonology combining such ills as functionalism, lack of symbolism, loss of tradition. That the model was wildly misleading did not matter, apparently, as its main function was propaganda.

On the other side the debate soon trapped itself in the promotional interests of a limited cabal mostly, alas, bereft of talent. As a result

*Continued on page 110*

1. Mario Botta, *Casa Rotonda*,  
Stabio, Ticino, Switzerland  
(1980-81), Y. Futagawa; 2. Renzo  
Piano, *The Menil Collection*,  
Houston, Texas (1987),  
R. Bryant;

*Museum of Roman Art*,  
Merida, Spain, (1981-5),  
W. Curtis; 4. Balkrishna Doshi,  
*Sangath Studio*, Ahmedabad,  
India (1979-81), W. Curtis.



1

2

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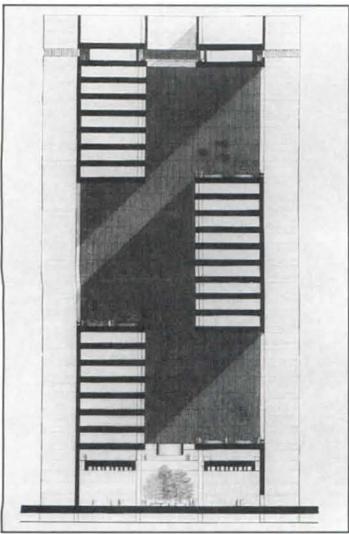
4



5



6



5a



7



8



9

5-5a. Skidmore, Owings & Merrill (main designer Gordon Bunshaft), National Commercial Bank, Jeddah, Saudi Arabia (1979-83), G. Murphy; 6. Norman Foster and Associates, Hong Kong and Shanghai Bank, Hong Kong (1979-84), R. Bryant; 7. Paul

Rudolph, Architect's Apartment, New York City (1986), ©Peter Aaron/ESTO; 8. Louis I. Kahn, Kimbell Museum, Fort Worth, Texas (1972), ©Ezra Stoller/ESTO; 9. Frank Gehry, Spiller House, Venice, California (1980), Tim Street-Porter.

whole vast areas of contemporary experimentation were simply excluded, especially when it could be demonstrated that they bore any taint of "Modernism." The monopolists of architectural hemlines tailored fashions mainly to the demands of property investment and information capitalism, especially in the field of skyscraper design. Here the primary requirements were instant visibility, media coverage, and a pretense at civic concern. The essential type to match these social conditions was the billboard dolled up with cultural graffiti.

We have been told *ad nauseum* that Modern architecture is dead, but few people actually pause to ask what the statement really means, and if it is really true. It has taken on the status of a voodoo spell for exorcising undesirable spirits. But to anyone who has his eyes open and who takes a broad view of contemporary world developments, it is entirely obvious that Modern architecture is very much alive. From Tokyo to Ticino, from rural India to Madrid, strands of Modern architectural traditions continue to be extended, critiqued, mannerized, enriched, regionalized, and crossbred with other traditions. Although no one is supposed to say so, it is also obvious that classic works of the Modern masters are now proving their longevity as touchstones of excellence for many younger designers. (A long list could be assembled. For the moment, consider such diverse talents of the younger generation as George Ranalli in New York, Bill Bruder in Phoenix, and Andreas Brandt in Berlin.) So we do not seem to be at a dead end, and to judge from the paltry products of recent revivalism, we are certainly not at a radiant new beginning. Rather we are in the position of inheritors of a major tradition, the Modern one, with all its internal complexities and variations.

#### Modern architecture as a tradition

To speak of inheriting and extending a tradition does not mean copying what has gone before, and it certainly does not imply a single-line trajectory of earlier period styles. It rather means absorbing the principles behind earlier solutions and transforming them into new vocabularies suitable to changed conditions. The best followers are often those who imbibe the spirit without mimicking the style. To get to the heart of a masterwork is also to encounter fundamentals that are timeless. The contemporary talent draws what it needs from predecessors, but the aim is a new amalgam that touches deep levels. Profound works articulate a philosophy of life, a vision of the way things ought to be. They also make a permanent addition to the stock of architectural ideas. The critical map therefore has to be concerned less with trends than with individual buildings of a high order.

The architect absorbs and rejects in defining his position towards predecessors. Sometimes the inheritance occurs within the family of a building type: skyscraper, housing, museum, or whatever. The new building then takes its place in a chain of type solutions stretching back over different generations and phases of style. Norman Foster's Hong Kong and Shanghai Bank (6), for example, constitutes both a rejection of the notorious glass box and a redefinition of the structural and social anatomy of the tall office building. With its atria in the air, its megastructural expression, its mechanistic imagery, and its engagement with High Tech craftsmanship, it reveals new (albeit expensive) possibilities for the building type. Despite the functionalism of the designer's approach, the building is actually loaded with symbolic

values related to its position on the capitalist edge of the Pacific Rim. Moreover, the building takes its place in a worthy lineage that includes Prouvé, Le Corbusier, Wright, Constructivism, and 19th-century engineering.

The National Commercial Bank in Jeddah by Gordon Bunshaft of SOM (5, 5a) crossbreeds the normal office-building typology with a response to regional climate and culture. The seminal importance of this building seems to lie in its section, and especially in the way that the offices are drawn back from the facade plane into giant shaded apertures, oases in the air, which are in turn rotated about the central wind-tower core. This siphons the hot damp air upwards and with the thick insulation of the outer walls, reduces the load on the air conditioning. The National Commercial Bank reacts against the standard international box; equally it avoids the easy solution of an instant regionalism dressed up in appliqué of horseshoe arches or *mashrabiyyas*. It is an intelligent reinterpretation of the principles behind local courtyard design in the entirely unexpected situation of the office tower: a regional critique of an inherited Modern form.

Renzo Piano's museum for The Menil Foundation in Houston (2) also belongs unapologetically in a strand of the Modern tradition. Its guiding ideas have come about in response to the sometimes conflicting demands of climate, museum viewing, and context. The roof is a sort of perforated parasol lifted up above the substructure on slender stanchions. A secondary system of wooden walls exists underneath and this lives comfortably alongside the domestic scale of neighboring buildings. The poetry of the building arises not only from its fine scale, its proportions, and its unfolding transparencies, but also from the intellectual precision of the lighting system of the roof: a series of double curved blades that vaguely recall the idea (though not the form) of Kahn's Kimbell Museum in Fort Worth (8), but which also have the character of some natural, vertebrate structure. A richness of effect is achieved with limited means in a building that extends earlier solutions without mimicking their style. There is the spirit of the Miesian method but without the parody of his forms.

### Formalists and Mannerists

The utopian content of the "white architecture of the 1920s" has long since faded, but architects still raid these prototypes for their formal devices. Richard Meier, for example, continues to explore the possibilities of a Purist vocabulary of grids, curved partitions, ramps, free facades, white planes, etc., but the results have a somewhat arbitrary character like merely pleasant exercises in formal manipulation: an adornment of Corbusiana rather than a profound transformation (12). Like all revivalists, "Neomodernists" have to inject a new content into the forms that they take.

This applies to the recent Constructivist Revival about which so much fuss has been made. In this case the loop back to the late teens and early '20s has been undertaken at the level of form alone: the original political and ideological content is virtually ignored. This said, it has to be admitted that the "Deconstructivists'" favorite tricks of fragmentation, suspension, diagonality, and collage are capable of generating a peculiar sense of unease. Coop Himmelblau's mechanistic insects munch through the stolid rooflines of Viennese buildings as an image of discontent with the status quo, while Daniel Libeskind's shattered

ski jump leaps to challenge the Berlin Wall. Zaha Hadid's bent Lissitskys slice into the Hong Kong Peak, while Peter Eisenman's deliberate deformations seem rather dry and over-calculated.

The mental atmosphere behind Deconstructivism seems to find its true destination in Bernard Tschumi's follies for La Villette Park in Paris (11), which derive from a systematic "decomposition" of a previous ideal form, the cube, and which result in a series of giant red toys dotted around on the grass. The language of an earlier revolutionary polemic is thus effectively anesthetized and rendered harmless through the device of parody. Some would see a just portrait here of the bogus revolutionary rhetoric of the current French cultural establishment. In any event, vogueish terminology from French literary criticism (Derrida et al.) is used to sanction a series of displaced ironies upon the supposed inability of architecture to carry a cogent cultural content. Instead there is a discourse about the impossibility of discourse that causes a shimmer of delight in the boudoirs of New York and Paris. Almost in spite of himself, Tschumi produces quite coherent buildings.

Frank Gehry's place in the Deconstructivists' scenario is altogether unclear. He had worked adequately with fragmentation for many years without going out of his way to claim a pedigree in Russian Constructivism. He has probably learned from Cubist collage and its later derivatives (such as the rubbish pictures of Schwitters or the newsmagazine abstractions of Rauschenberg), but the main impulses behind the work seem to lie in the colliding scales of the Los Angeles cityscape, the social pluralism of the local community, the special character of the Southern California light, and the commonplace character of materials such as chain-link fencing and bare wooden studs. Nor should one underrate that Californian tradition of nuts-and-bolts building that includes late Schindler and mature Maybeck. Out of all this, Gehry seems to have evolved an evocative style of his own (9).

Then again, it is possible to draw upon a tradition in which one no longer fully believes while making a sort of Mannerist commentary upon this inheritance. One of the most sophisticated examples of this attitude is surely James Stirling's Neue Staatsgalerie in Stuttgart (10). This combines a collage method for dealing with the context, decapitation of a revered neo-Classical prototype (the Altes Museum by Schinkel), and self-conscious inversions of devices derived from Modern masters like Aalto and Le Corbusier. Figure and ground are held in an intriguing balance, and a free plan with diagonal ramp and *promenade architecturale* is spliced together with the reminiscence of a monumental and symmetrical armature. Polarities and contrasts continue at the smaller scale where High Tech pieces collide with masonry veneers in a deliberately jarring way. The building takes a stance on a range of recent preoccupations from ornament, to context, to communication, to polychromy, and is perhaps overloaded with obvious jokes and commentaries. Its real irony lies deeper, for Staatsgalerie flirts with past forms without accepting past systems of belief. It also takes types from the Modern Movement and puts them in quotation marks, while giving them a new twist for significance. The double-curved glazing by the entrance, for example, is a clever way of resolving multiple directions but is also surely a deliberate "commentary" upon such analagous devices as the curved side chapel at La Tourette. Here, though, the cavernous concrete wall is done in green High Tech steel and glass—a typical Mannerist inversion.

10. James Stirling (with Michael Wilford) Neue Staatsgalerie, Stuttgart, West Germany (1978-84), R. Bryant; 11. Bernard Tschumi, La Villette Park, Paris, France (1982-85), R. Bryant; 12. Richard Meier, Frankfurt Museum, Frankfurt, West Germany,

(1985), © Ezra Stoller/ESTO; 13. Hans Hollein, Municipal Museum Abteiberg, Mönchengladbach, West Germany (1982).



10



11



12



13

Hans Hollein's museum at Mönchengladbach (13) is less coherent in overall form than Staatsgalerie, but more elegant in its details. Here the received canons of earlier Modern architecture are pushed to an extreme level of elaboration. Fragmentation is employed to blend the building into the landform on one side, and into the grain of the city on the other. The terraces cascade down the hill while the interiors define a series of nodes and events of varying intensity. The free-plan grid with objects dropped into it in various ways comes fully into its own, though Hollein deliberately rotates and erodes this type form of early Modernism so that it is inflected to pressures of setting and circulation. The route is threaded back and forth by means of vistas and stairs, and toplighting is used to great advantage to highlight key places or exhibits. Junctures and hinges are handled by variations on circular or amphitheatrical steps (rather as in a country house by Lutyens), and similar devices are used outside as well. As in Staatsgalerie, there are knowing displays of virtuosity in the solution of difficult problems: the Mannerist stance again.

#### International perspectives on Modern architecture

Perspectives on Modern architecture vary considerably from place to place and depend, in part, upon the version of Modernism that has been prevalent. In the United States, polemics against Modern architecture have usually been against debased versions of a Miesian formula for tall buildings and have sometimes excluded mature talents from due recognition: one thinks for example of Paul Rudolph, whose richly layered spaces extend the impulses of both Wright and Le Corbusier into new expressive territories (7). In England the fuss has usually been directed at ugly tower blocks erected under the patronage of the welfare state. In neither country has there been much attempt to discriminate between Modern architecture of a high order and merely run-down formulae. Nor have the antidotes been very profound since they have usually involved a thin application of half-digested elements from past architecture. In England, for example, the answer has been supposed to lie in an orgy of contextual imitation, neo-Georgians, and off-the-peg Postmodern Classicism from America—the last well represented by Venturi's project for the National Gallery extension.

In Spain, by contrast, Modernism tends to be associated with liberal experimentation after the dark years of Francoism and cultural isolation. In Holland, an ethos of social emancipation is also involved. In the Scandinavian countries, there is a sane realization that it might be best to build upon the substantial foundations supplied by the likes of Asplund and Aalto. Thus one finds architects as varied as Utzon, Pietila, and Erskine devising a wide range of solutions that still reflect humanist intentions. It is noticeable that the waves of international fashion encounter resistance in places that have had a few generations to form a regionally sensitive Modern architecture of their own.

While American capitalism plays its games with polychrome classicisms, revamped Art Deco and the like, French state socialism uses a version of High Tech to support its myth of Paris as the hub of an efficient, technocratic, yet somehow populist mechanism dispensing information, services, and culture to all corners of the nation. This is evident in the *grands projets* that are now drawing close to completion—such structures as I. M. Pei's glass pyramid at the Louvre, Jean Nouvel's Arab World

14. Johan Otto von Spreckelsen, *The Great Arch of La Défense, Paris, France (scheduled completion 1989)*, photomontage: Dumage-Studio Littré, aerial view: Jean-Claude Solomon; 15. Arata Isozaki, *Museum of Contemporary Art, Los Angeles (1986)*, R. Bryant;

16. Tadao Ando, *Chapel on Mt. Rokko, Kobe, Japan (1986)*, Satoru Mishima; 17. Fumihiko Maki, *Fujisawa Municipal Gymnasium, Japan (1984)*, Taisuke Ogawa.

Institute or Johan Otto von Spreckelsen's huge arch at La Défense (14). All make a showy use of glass, structure, and polished surfaces to convey a crisp, mechanistic, and abstract monumentality. They perhaps draw upon esthetic conventions that were set in place by Piano and Rogers's Pompidou Center, but the pyramid and the arch in particular also make their appeal to the grand monumental traditions of French Classicism; they could hardly do otherwise given their situation at each end of the long axis running from the Louvre through the Arc de Triomphe to the Avenue de la Grande Armée. The land of the TGV train, the Ariane rocket, and the Minitel computer in every home has evidently opted for a technocratic iconography of progress; Modernism has become the official state style.

Modern architecture in Japan offers its own dilemmas, especially as the country has been defining its own balance of imported and indigenous for nearly a century. While Arata Isozaki has kept neatly abreast of Western fashions, his particular eclecticism has an undoubtedly Japanese character, yet the obligatory witticisms are played out over an order of primary geometries with an undoubtedly Modern pedigree (15). Tadao Ando has extended the lessons of Louis Kahn and combined these with an intuition of abstract order in Japanese timber structures of the past (16). Meanwhile, Fumihiko Maki speaks without hesitation of the need to expand Modernism and not reject it. From recent buildings such as the Spiral, the Kyoto Museum, or the Fujisawa Gymnasium (17), it is evident that this means a continuing commitment to structure as a generator of form and space, an interest in precise and mechanistic detail, a feeling for the impact of primary geometries, and a refusal to play the game of attached references. However, this does not mean that Maki's buildings are bereft of imagery or sources. There seems to be a slightly self-conscious extension of hallowed Modern precedents—Wright's Guggenheim in the case of the Spiral, Kahn's Mellon in the case of Kyoto Museum—as well as subliminal echoes of earlier traditions. The Fujisawa Gymnasium draws upon both Saarinen's curved structures and aspects of Utzon's Sydney Opera House, but these are merely springboards toward a vital sculptural expression of Maki's own. The stainless-steel roof exists on a subtle knife edge between science fiction and hermetic Japanese images from tradition (temple roofs, armor, etc.) and manages to evoke the complex realities of a society torn between technological progress and tradition.

### Context and local traditions

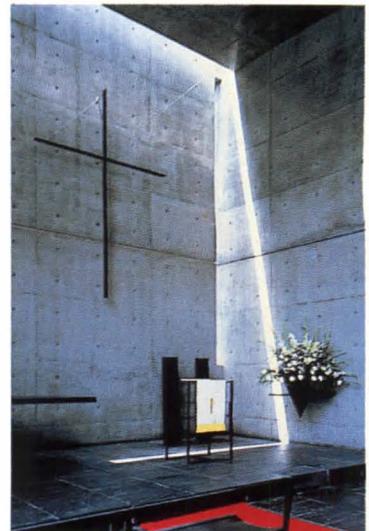
Contextualism has obviously been a dominant obsession for a number of architects in recent years, especially those appalled by the anti-urban ravages of slab and object planning. The search for a civic realm in the chaos of the industrial city has taken many forms from the doctrinaire assertion of street lines to the application of a number of problematic historical models such as the French *hôtel particulier* and the Renaissance palace. The deeper reading of context requires penetration to the spirit of a place and attention to the traditional grain. Unfortunately much contextualism involves little more than lining up with the moldings of neighbors and mimicking their colors and textures. It then degenerates into a sentimental imitation of the status quo: a cozy packaging for the yuppie consumption city that helps to calm the nerves of preservationists, but not a vital civic architecture.



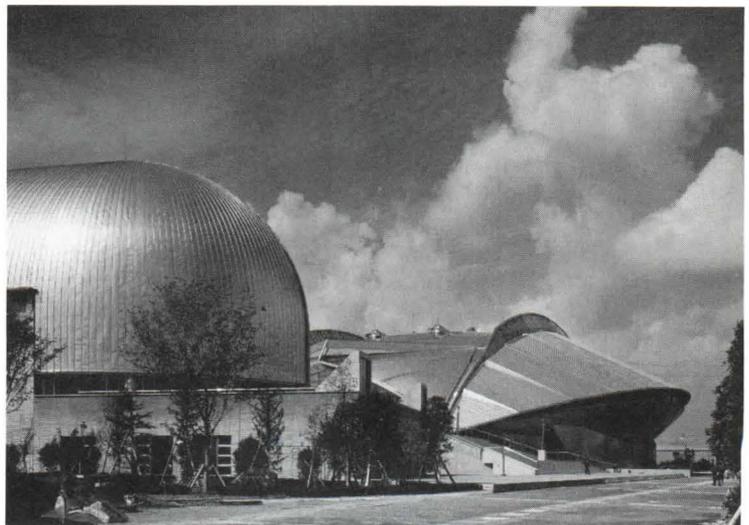
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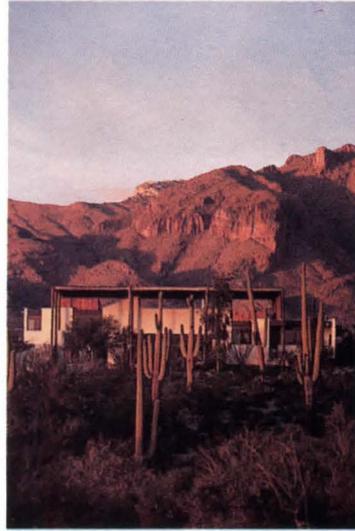
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18. Kohn Pedersen Fox (design partner William Pedersen), 333 Wacker Drive, Chicago (1982-83), Barbara Karant; 19. Judith Chafee, Ramada House, Arizona, 1980, Glen Allison; 20. Denys Lasdun, Project: Hurva Synagogue, Jerusalem, Israel (1981); 21. Ralph Erskine,

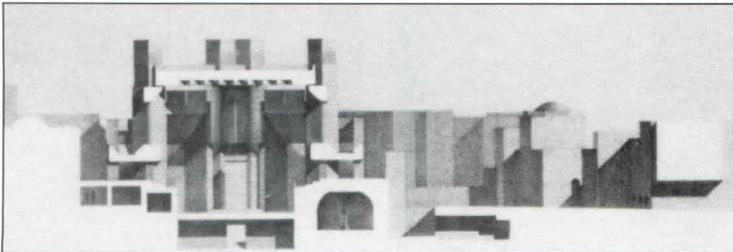
Multiple Staff Housing, Resolute Bay, N. W. T., Canada (1976); 22. Luis Barragán, Architect's House, Tacubaya, Mexico City (1947), ©Rene Burri.



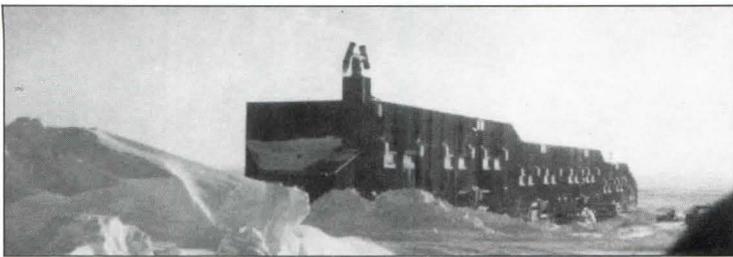
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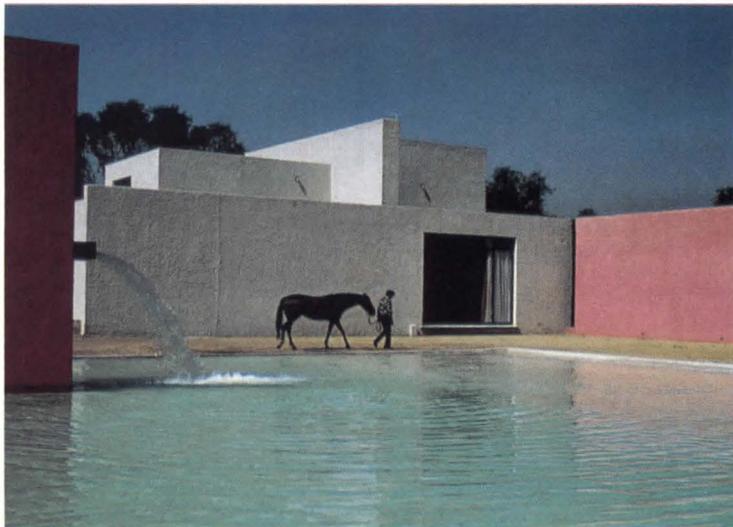
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Nevertheless, a considerable body of work has emerged on the basis of a dialogue with the existing city—all the way from Kohn Pedersen Fox's 333 Wacker Drive (18), which manages to handle the juncture between the Chicago grid and the river with both elegance and tension, to the fragmented insertions into the Portuguese cityscape of Alvaro Siza. The latter develop from a nexus of projections of surrounding pressures and combine the irregularities of Aalto with the abstraction of whitewashed walls, streets, and squares from the vernacular. Denys Lasdun's masterly project for the Hurva Synagogue in Jerusalem (20) grows from his "urban landscape" philosophy: it is an intensified version of the outdoor rooms of the city placed under the shadow of a protective parasol. The richness of the scheme lies in its three-dimensional reading of the setting and in the haunting force of the main space, which evokes a sense of ritual and a mood of memory derived from past levels in the ancient city. But this is done without a trace of bogus quotation, and the hovering slab with fragmented walls beneath is clearly in a Modern pedigree.

Judith Chafee's Ramada House in the southern Arizona desert (19) also uses the idea of the parasol above a substructure, in this instance to protect from the fierce sun while harmonizing with the stunning landscape. Seen as a set of drawings, the building reveals its debts to Le Corbusier (grid of posts, free plan, hovering slab) and perhaps even to Mies and Wright, but this skeleton of organizational principles is given a palpable Southwestern character by materials—logs and beams covered in saguaro twigs with whitewashed adobe below—as well as by the transformation of two regional archetypes: the twig shelters of the nomads and the pit houses of the sedentary populations. Modern architecture is here blended with indigenous wisdom.

Regionalisms of whatever kind run the risk of producing hackneyed imitations of the vernacular. The result is then a sort of easy vacation *kitsch* done up with Mediterranean arches, thatched roofs, or whatever. Hopefully it is possible to translate regional principles for dealing with climate and cultural patterns into a vocabulary able to handle a range of modern conditions. This has been attempted by Ralph Erskine in his designs for communities north of the Arctic Circle (21), where facade elements and deep sections exclude snow and freezing winds yet encourage winter sunlight. The rightness of a regional response cannot be dictated by a handbook: it relies upon the intuition of what will sit best with the natural or artificial order of a particular place. The Beach House for a Doctor by Australian architect Rick Le Plastrier, for example, sits in a clump of rain forest and has the air of a Robinson Crusoe hut: the copper hoop roof rides above a substructure of pink mud walls with brass struts laid into joints. The canvas flaps at the ends of the roof are gathered together by ropes as in a wagon and harmonize with the fans of the palms. Some of the best recent domestic work in Australia is haunted by the image of the shack with a tin roof: Glen Murcutt manages to translate this into an architecture of sharp Miesian precision.

#### Regionalism and third-world identity

Excavation of regional culture takes on a special meaning in the third world, especially in those places concerned with defining a sense of cultural identity after colonialism. Too frequently Western forms are imported thoughtlessly. Invariably wrong for the climate, they usually lack any link to local culture. The

23. Sedad Hakki Eldem, *Social Security Complex, Istanbul, Turkey (1970)*, A. Dundar/*The Aga Khan Awards*;  
 24. T. González de León, A. Zabłudovsky, *College of Mexico (1975)*, Julius Shulman;  
 25. Geoffrey Bawa, *Architect's Office, Colombo, Sri Lanka*

(1963), R. Bryant; 26. Skidmore, Owings & Merrill, *Haj Terminal, Jeddah, Saudi Arabia (1981)*, Jay Langlois/*Image Source Inc.*; 27. Raj Rewal, *Housing for the National Institute of Immunology, New Delhi, India (1983-85)*; 28. Henning Larsen,

*Ministry of Foreign Affairs, Riyadh, Saudi Arabia (1979-83)*, R. Bryant; 29. André Ravereau, *Medical Center, Mopti, Mali (1976)* Christopher Little, *The Aga Khan Awards*.

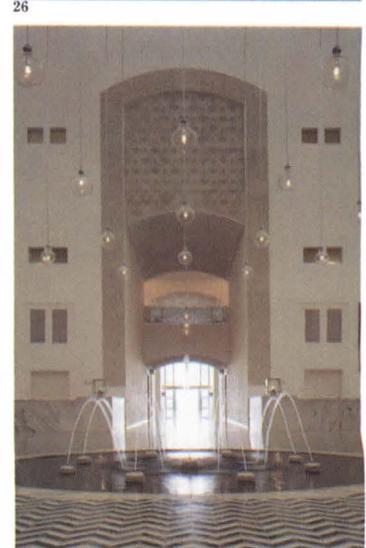
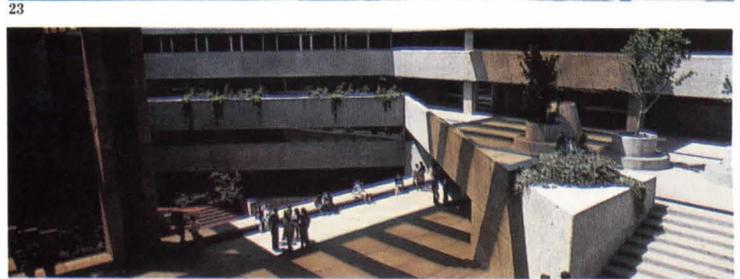
vernacular is fine for the rural base, but it has a relatively slight application in conditions of rapid urbanization. Moreover, there is the ever-present danger of ending up with a caricature of regional forms in the rejection of international homogenization.

Over the past 30 years, a number of architects have crossbred international and regional traditions. One thinks of Luis Barragán in Mexico, for example, whose haunting labyrinths of patios fuse Modern abstraction with a metaphysical quest for essentials in Mexican tradition (22); or of the Turkish architect Saded Eldem, who has managed to explore analogies between concrete and timber frames, the Turkish vernacular, and Wright (23). More recently, the Mexican Teodoro González de León has combined the ruggedness of late Le Corbusier with reinterpretations of ceremonial courtyard spaces (24), while the French architect André Ravereau (drawing sustenance from the ideas of Hassan Fathy) has transformed sub-Saharan vernaculars to modern purposes (29). The Sri Lankan architect Geoffrey Bawa builds sensitively for the steaming tropical climate of the island by making a valid synthesis of Southeast Asian and colonial prototypes. His own office in Colombo (25) is a magical place through which the air circulates freely while overhanging tiled roofs protect from glare and rain. In all these cases tradition is penetrated for its principles and not just imitated in a thoughtless way.

Larger institutional programs pose a special challenge to the architect interested in conveying regional character. Even when a building is bound by strict conventions, as is the case with many mosques, there is still a problem of re-invigorating the type. Often, though, there is no such direct guide in tradition, and it is then that inventive and lateral leaps of thought are necessary. This is surely the special interest of Henning Larsen's Ministry of Foreign Affairs in Riyadh (28), which combines references to both Saudi and Pan-Islamic prototypes but within a disciplined order that touches tradition at a deeper level than just imagery. The inward-turning courts with their geometrical watercourses, gardens, and covered thoroughfares amount to an emblematic reinterpretation of both Arab house and Arab city, but the plan also owes much to Kahn while the chaste white surfaces and hovering ceiling call to mind Le Corbusier.

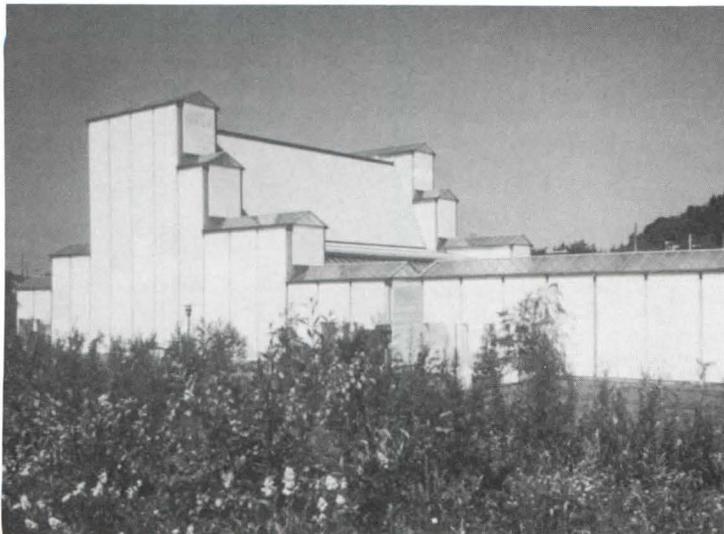
If Larsen returns to the dense weave of the *souq* for inspiration, SOM evidently reinterpreted the tent in its Haj Terminal near Jeddah (26). The vast Teflon surfaces in high tension cut down the glare and form an impressive shelter for the thousands of pilgrims who arrive by air, but the imagery also conveys something of the dialogue between modernity and tradition that is fundamental to Moslem societies. Jørn Utzon's Kuwait National Assembly combines both *souq* and tent, the latter into a monumental concrete awning intended to convey the protection that the ruler extends to the people. In this instance the architect has tried to strip down his interpretation of tradition to essentials of structure, light, space, and formal presence.

The current Indian situation shows how Modern prototypes, notably those of Le Corbusier and Kahn, may be transformed to deal effectively with the needs of a traditional society in rapid change. Charles Correa, for example, has evolved an entire system around the linkage of courts, platforms, verandas, and terraces that recalls the open-air rooms and ambiguous connections of the Indian village; yet his architecture still sits firmly in the Modern tradition. Raj Rewal, the Delhi architect, has

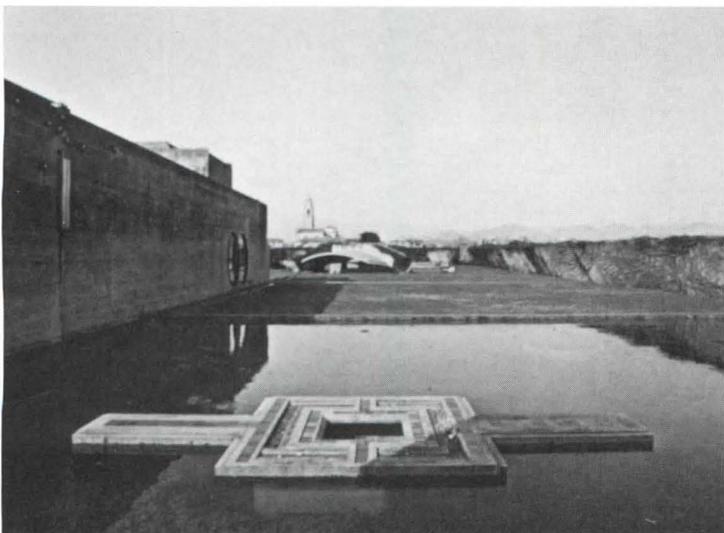


30. Jørn Utzon, Church at Bagsvaerd, (near Copenhagen), Denmark (1969-75), Y. Futagawa; 31. Carlo Scarpa, Brion Cemetery, San Vito d'Altivole (near Bassano), Italy

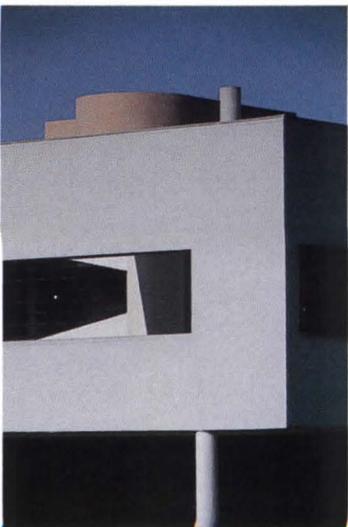
(1969-78), Giorgio Boschetti; 32. Le Corbusier, Villa Savoye, Poissy, France (1928-29), W. Curtis; 33. Frank Lloyd Wright, Robie House, Chicago (1908), W. Curtis.



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explored the common ground between the concrete frame and traditional trabeation. His housing for the National Institute of Immunology (27) is organized around a sequence of shaded courts linked by vistas and axes in a way that recalls such seminal Indian inspirations as the palace complex at Fatehpur Skiri or the townscape of the desert city of Jaisalmer. In a similar spirit, traditional devices for dealing with the sun have been reinterpreted in a new form. Balkrishna Doshi's studio Sangath outside Ahmedabad (4) is formed from a series of low vaulted spaces half buried in the earth. In this instance the vault prototypes of Le Corbusier have been infused with quite a different meaning, which has to do with the quest for a complex spatial order inspired equally by the mood of temples and the rhythms of Indian music. At the heart of Doshi's vision is a commitment to social betterment that includes the idea of harmony with nature; in effect Sangath is a microcosm of this dream—a garden of grassy humps, water channels, and Gujarati clay jars that lives between the rural and urban worlds.

#### Excavating tradition

To those who understand them properly, the Modern masters offer many avenues into earlier traditions. This seems to be the level on which Mario Botta has learned from such mentors as Le Corbusier, Kahn, and Scarpa. Botta makes no bones about being a Modern architect, but this does nothing to stop him from drawing lessons from both the Ticino vernacular and Palladio. Botta's Ticino houses evoke the bold forms of barns and rely upon classical planning strategies, but they are constructed according to today's techniques and in response to contemporary domestic requirements. They subvert recent suburban sprawl by casting back to an earlier time when the dwelling was more attuned to the rhythms of nature. The Casa Rotonda in Stabio (1) is bisected by a stair that floods light into the interiors, and other apertures are arranged to frame the distant landscape now being despoiled. The building is like a philosopher's tower or an observatory. Its stair resembles a column, but this form grows naturally from the construction and logic of the design. When Botta is at his best (and not imitating himself), he manages to combine modern and ancient in an effortless way.

Botta has certainly learned from Aldo Rossi's conception of type. Tradition is penetrated for its substructures and not its superficial effects. A similar attitude surely underlies Rafael Moneo's Museum of Roman Art in Merida (3), which cuts back to the anatomy of Roman engineering. The museum is organized as a series of parallel bays in Roman brick that are penetrated by arches. The main space is an aisle of noble proportions and sober lighting. The fragments of stone sculpture and classical architectural details on display complement the stern proportions of the building. At the lower level, the street patterns of the antique city pass by on a different geometry. This basement has the mood of a Piranesian ruin or ancient cistern, though Kahn and Behrens seem to be in it, as does Soane. Moneo's reading of a place and its memories has involved him in an imaginative excavation of the past to unearth not only Roman engineering (Merida is a city of bridges and aqueducts) but also later transformations, such as the 8th-century mosque at Córdoba. The Museo de Arte Romano is one of the strongest recent antidotes to cheap Postmodern Classicism, for it transforms tradition into a vital new order.

### Significant content, significant form

Profound architecture is always rare, but there are two buildings in the middle distant past that touch timeless levels. Both, it so happens, are religious buildings and both defy easy historical categorization. Both are also very much about the deeper meanings of their respective institutions and religions, the one being a Protestant church, the other a Catholic cemetery.

Bagsvaerd Church (30) stands in a suburb near Copenhagen and was designed by the Dane Jørn Utzon. It rises in steps to its highest point over the main chamber, then descends again to the level of a low walkway that flanks the church on both sides. Silver gray concrete panels are set into a frame. Light is brought in through glazing on top of the walkways. The exterior conveys a strict impression, and the corrugated metal on the tower lends the whole thing the character of a modern barn. The rise and fall of the forms hint at the complexity of the section within.

A sensuous curved concrete ceiling painted pure white runs like a rippling wave through the entire building, capturing light and shadow in its sinuous folds, and evoking Utzon's generating image of a cloud above an assembly of people on a platform. This ceiling comes to its highest point over the altar, then flows on in ever quieter waves to the parish offices at the back. There is a sane rationalism in the simple carpentry and polished concrete surfaces, but this can scarcely restrain the building's underlying poetry. A sense of the religious is achieved through the direct impact on the mind and senses of light, space, proportion, and subliminal rhythm.

Bagsvaerd belongs in a Scandinavian tradition of Modern architecture, and the section is a reinterpretation of Aalto while the exterior angles and lateral flanges contain vague memories of Asplund. But the massing and parallel slots of structure also constitute a subtle reinterpretation of a Zealand country church with its stepped gables in brick—the barn turned over to the purposes of a religious meeting house. All such allusions are held in check by the discipline of the forms, which in turn reveal the impulse of the building's guiding ideas. A masterwork has an order and hierarchy of its own: unique and inimitable.

Carlo Scarpa's Brion Cemetery (31) lies on flat land to the west of Venice outside the village of San Vito d'Altivole. It is a field of the dead, which wraps itself around the back of the communal cemetery as an L and contains the tombs of the Brion family as well as Scarpa's own. The path from the side entrance is guided by rectangular patches of sky, which hint at infinity, and then turns left into the family chapel, which is flanked by cypress trees and sits in a dank pool of water full of tangled plants. Concrete edges are faceted, gather moss, and convey a poignant sense of ruin and decay. The Brion couple repose in two tilted caskets of stone under a bridge-link form with blue mosaic on its soffit. There is the hint of arrested motion, as if they were floating alongside each other on some river of the afterlife.

The tomb is set on the diagonal and this helps to turn the route in the direction of a shaded concrete tunnel lit through two intersecting rings, an emblem perhaps of the indissolubility of the Brion marriage after death. A heavy glass door sinks into the ground on pulleys—a transparent veil of time marking the beginning of the world beyond—and admits one to the final chamber, a pool with an island in it. Here another casket is lifted up on stilts with a curious wooden curtain hanging from it: a proscenium to unseen souls. The pool brings the sky down to the

ground and hints at some Stygian world beneath. A cruciform stone plaque floats on the surface, an image perhaps of redemption. Brion Cemetery is pregnant in half-revealed implications; abstract, it also seems to be dense in hieroglyphs and associations of the artist's own. Scarpa manages to evoke the sense of life after death and thus to embody Catholic belief in a haunting sequence of architectural events. The methods are modern, the mood is archaic, the content is perennial.

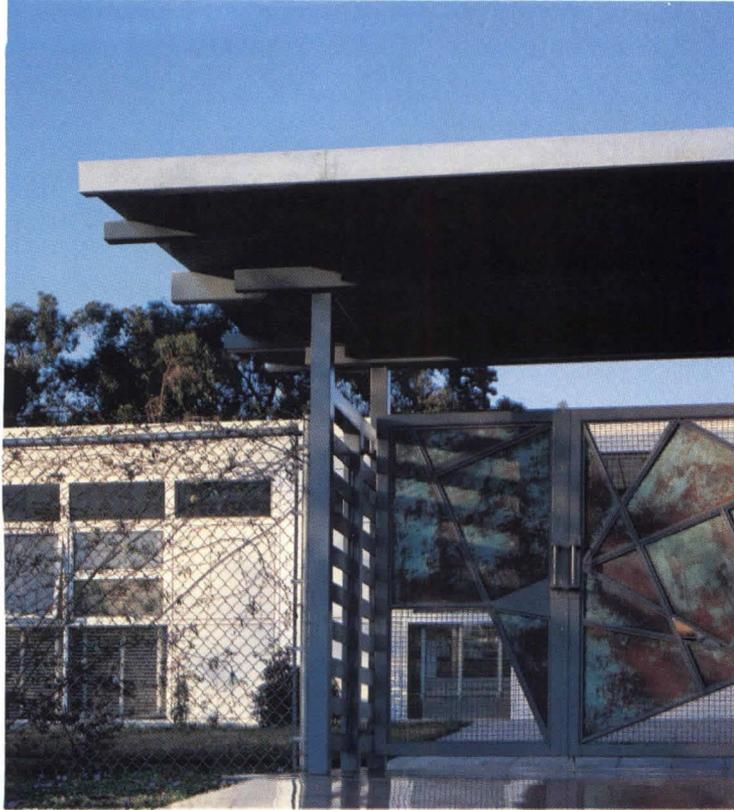
### Search for substance

Modern architecture never was the unified phenomenon that either its promoters or its detractors pretended. It was always, from the beginning, a development that combined many strands. Evidently we are very far today from a consensus on style. It is also evident that research continues into a wide array of issues from the uses of history, to context, to structure, ornament, region, and climate. Nevertheless, there are many architects who continue to draw sustenance from the seminal works created earlier in this century in confronting the new tasks. Possibly this article has been able to hint at the complexity of current transformations, for it is clear that each architect has his or her own debt to, and dialogue with, predecessors. A lot depends on the problems that have to be solved, and upon the temperament and culture of the designer. The principles of Wright, Aalto, Le Corbusier, and Kahn continue to go through chemical changes in regions thousands of miles away from the points of origin. The overall situation may be compared to a delta with the main currents still flowing down tributaries; some have silted up, some have been renewed by deep sources, some are advancing with renewed strength; overall the river continues to move.

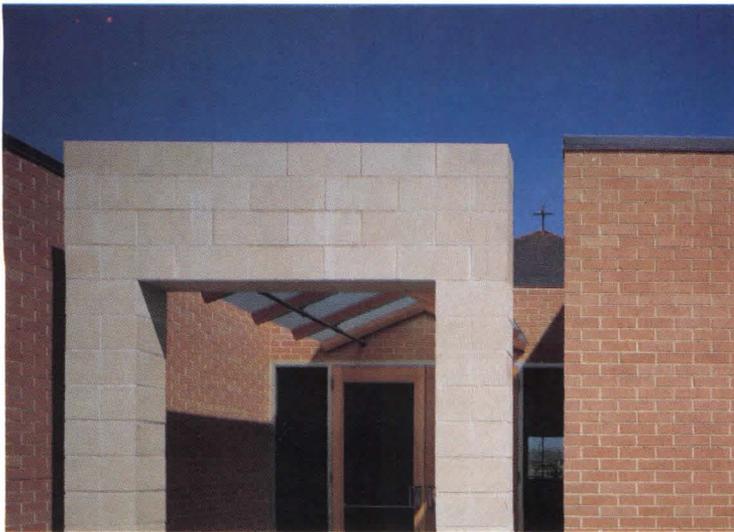
Evidently this is not a period of masterpieces, but the reader may judge for himself whether or not he finds the works mentioned here to be of high value. He may also wish to compare the likes of the Hong Kong and Shanghai Bank, the de Menil Museum, Sangath, the museum in Merida, Bagsvaerd, and Brion to the products of contemporary revivalist fashion with their historical one-liners, ironies, recycled images and literary asides, and then pose himself the questions: which are more likely to endure once the pressures of current taste mafias have died away? Which supply the stronger starting point for the future? Which are grounded in principles, and which are merely games in style? He may perhaps concur with an observation of André Malraux: "The period which abandons the style at its disposal soon finds itself empty-handed."

Major revolutions in the history of architecture are altogether rare, and the changes that took place earlier in this century have altered the ground on which we stand. The high points of the modern traditions—buildings like the Villa Savoye (32), the Robie House (33), or the Kimbell Museum—have something to teach each generation. From the present perspective, it is their sheer power and their probity which are most challenging. Such buildings render critical oppositions between form and function, image and structure, modern and ancient, irrelevant. They articulate deeply held beliefs about the human condition in a way that suggests inevitability rather than arbitrariness. And they possess the sort of symbolic *pregnancy that guarantees longevity*. They are liable to influence architecture for a long time to come.

# The young Moderns



Tom Bonner



James F. Wilson

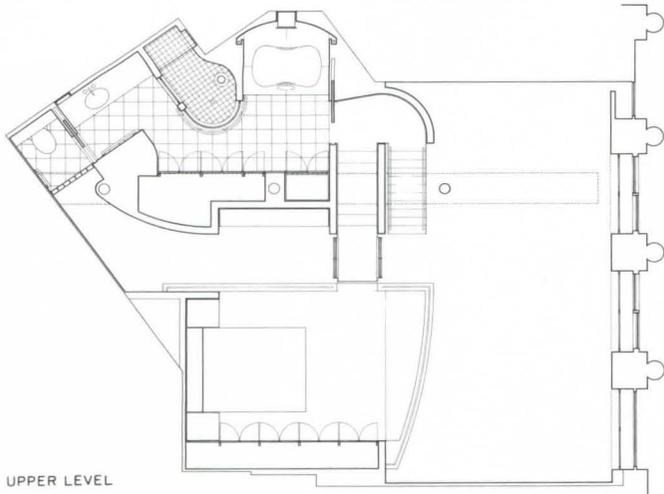
Modernism is alive and well. That message, proclaimed by William Curtis on pages 108-117, is being echoed by a younger generation of American architects. Rejecting the pastiche of Postmodernism, many practitioners under the age of 40 are embracing neither stylistic appliqué nor trendy fragmentation. They are attempting to create architecture of substance and quality through expression derived from the logic of materials, technology, and structure. To illustrate how, we offer a portfolio of built work by three young firms: a New York City apartment designed by Frank Lupo and Daniel Rowen, Architects (opposite); a suburban Dallas church by Cunningham Architects (bottom left); and a child-care center in Los Angeles by the Office of Charles and Elizabeth Lee (top left). Tutored in the Modern legacy from an early age—some grew up in flat-roofed, International Style houses, all served apprenticeships with recognized Modern practitioners—these under-40 architects hold the unwavering belief that less is certainly more meaningful, if not relevant, to late 20th-century America. “We’re trying to make architecture expressive of its time, not the past,” says Rowen, whose denunciation of historicism is reiterated by the other two firms. Unlike their antecedents, however, these firms claim no revolutionary solutions to the problems of contemporary life. “Modernism is less polemical these days,” notes Frank Lupo. “It’s not going to change our lives in a radical way.” Adds Gary Cunningham, “We seek an esthetic appropriate to the situation, not a formula.” Pursuing a more realistic, less universal Modernism, these architects vary their language to suit a specific task, client, and context. Part of this experimentation, of course, stems from the fact that they are still developing their craft and focusing their design direction. In learning from their progenitors, the three firms have drawn strength from the best of classic Modernism: the sculpted formalism of Le Corbusier (opposite), the poetic materiality of Louis Kahn (bottom left), and the modular assemblies of Charles and Ray Eames (top left). Proving that new possibilities lie within older traditions, this younger generation is firmly committed to assuring the longevity of abstraction. As Elizabeth Lee points out, “Modernism never died, it just slowed down.”

*Deborah K. Dietsch*

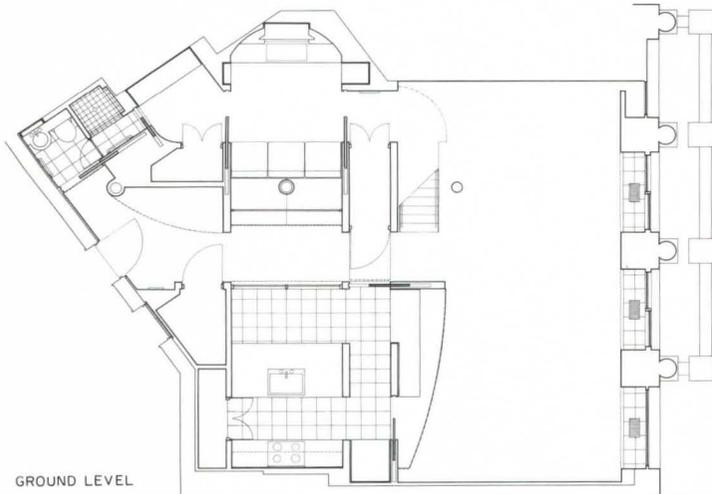


Lipschutz/Jones Apartment  
 New York City  
 Frank Lupo and Daniel Rowen,  
 Architects

## Balancing act



UPPER LEVEL



GROUND LEVEL

*Lupo and Rowen claim that their design has "elements similar to a large cabinet or small house." A kitchen and office, relegated to the innermost portion of the loft, support a master-suite mezzanine (top plan). From the regularity of this bilevel structure, a curved wall projects into a double-height living/dining area (right), and a steel staircase provides vertical circulation (opposite).*

Frank Lupo and Daniel Rowen characterize their practice as a blend of the intuitive and analytical. As the more "painterly" of the duo, Lupo's experience includes working for the Los Angeles-based firms of Morphosis and Studio Works, while Rowen's more rational approach stems from an apprenticeship with Gwathmey Siegel & Associates, a firm for which both young architects worked until 1985. After winning a competition for a proposed tower in Times Square, the two struck out on their own, and have since designed furniture showrooms, galleries, and apartments in a finely detailed and disciplined idiom that they acknowledge is sympathetic to Corbusian and other Modern precedents. Lupo and Rowen's most recently completed project, a 1,500-square-foot residence in lower Manhattan for two financial traders, represents "the best of both our instincts more than any project to date," according to Rowen.

Arranged within the irregular envelope of two one-room apartments, the interior consists of a double-height living/dining space at the perimeter (below) and a kitchen and office/guest suite nearest the entrance (bottom plan), over which are superimposed a master bedroom and bathroom (top plan). The architects cleaved the bilevel arrangement with a high, narrow corridor flanked by book shelves that leads from the entrance to the main living area. To connect the upper and lower levels, they designed a staircase and a bridge (opposite), which, in revealing its cantilevered structure, doesn't quite touch the opposite wall.

While the interior exhibits traces of Gwathmey Siegel's zonal clarity, Lupo and Rowen have interrupted their spatial logic with sculptural forms that are more lyrical than their former employer's restrained modulations. Elements such as curved walls in the entrance vestibule and living space, a glass shower capsule in the master bathroom, and sharp-edged stair and bridge infuse the tightly knit organization of rooms with a subtle dynamism. Similarly, materials such as pigmented plaster, figured maple, slate, granite, acid-etched glass, and burnished steel enrich the project's neutral tonality.

"We try to articulate each object in the composition with its own identity, while still maintaining a sense of the whole," says Lupo. It's a balanced abstraction that is neither fashionably fragmented nor formulaic, but thoroughly Modern. *D. K. D.*



Michael Moran photos





1

1. A cantilevered steel bridge connects master bedroom to master bathroom.  
 2. The staircase connecting the apartment's two levels features bowed, stainless-steel handrails that echo the curved volumes in the apartment.  
 3. View from the master



2

bedroom reveals the corridor between stair and bridge, shelves lining the corridor below, and steel handrails.  
 4. Translucent glass transoms conceal the 19th-century cast-iron building's window arches. Slate sills complement pigmented plaster walls.

5, 6. The architects screened the kitchen with etched-glass jalousie blinds—"less of a cliché than glass block," says Rowen—to allow views into the office/guest room across the corridor. Their horizontal lines are repeated in adjacent library ladder and shelves.



5



6



3

7. Positioned above the kitchen, the master bedroom is open to the living area below and bordered by maple-veneered shelves and closets.

8. The master bathroom is divided from a dressing area by a shower capsule sheathed in curved glass and tile.

*Lipschutz/Jones Apartment  
New York City*

**Architect:**  
*Frank Lupo and Daniel Rowen, Architects—Frank Lupo, Daniel Rowen, partners-in-charge; Alissa Bucher, Richard Blender, project team*

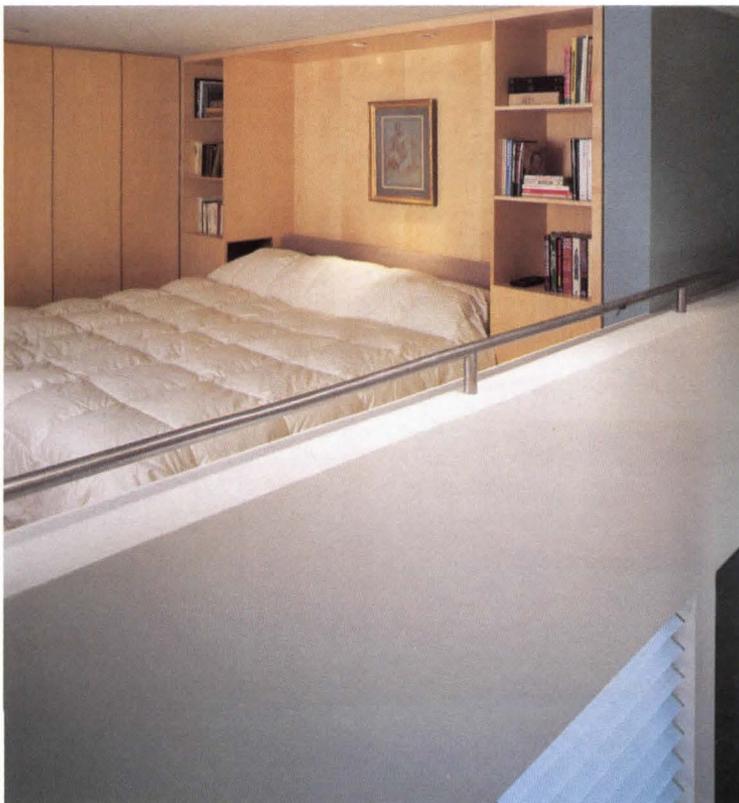


4

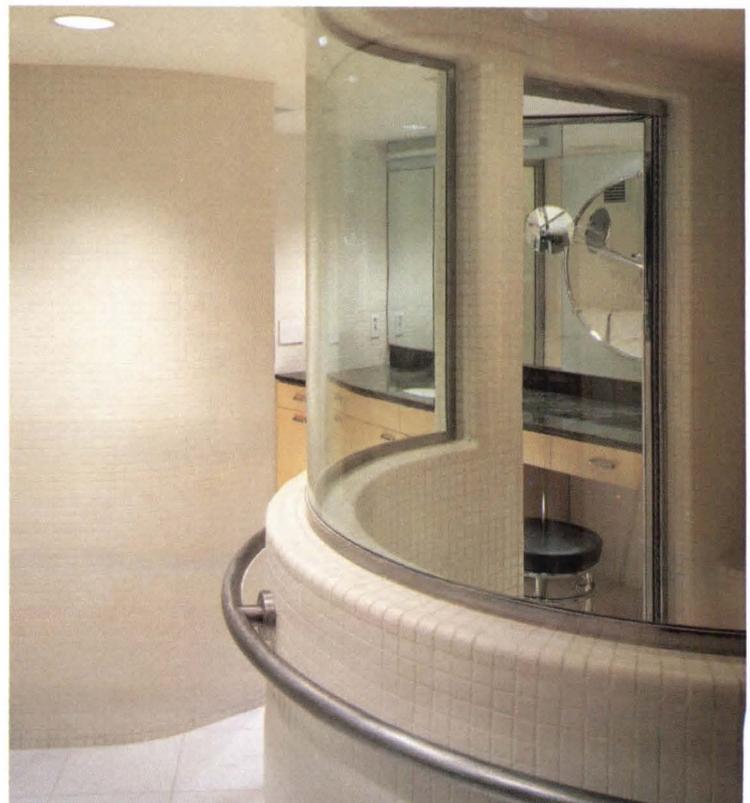
**Engineers:**  
*Severud-Szegezdy (structural); Ambrosino, DePinto & Schmieder (mechanical)*

**Metal fabricator:**  
*Aileron Design Inc.*

**General contractor:**  
*Gordon Construction—Steven Dvorak, project supervisor*



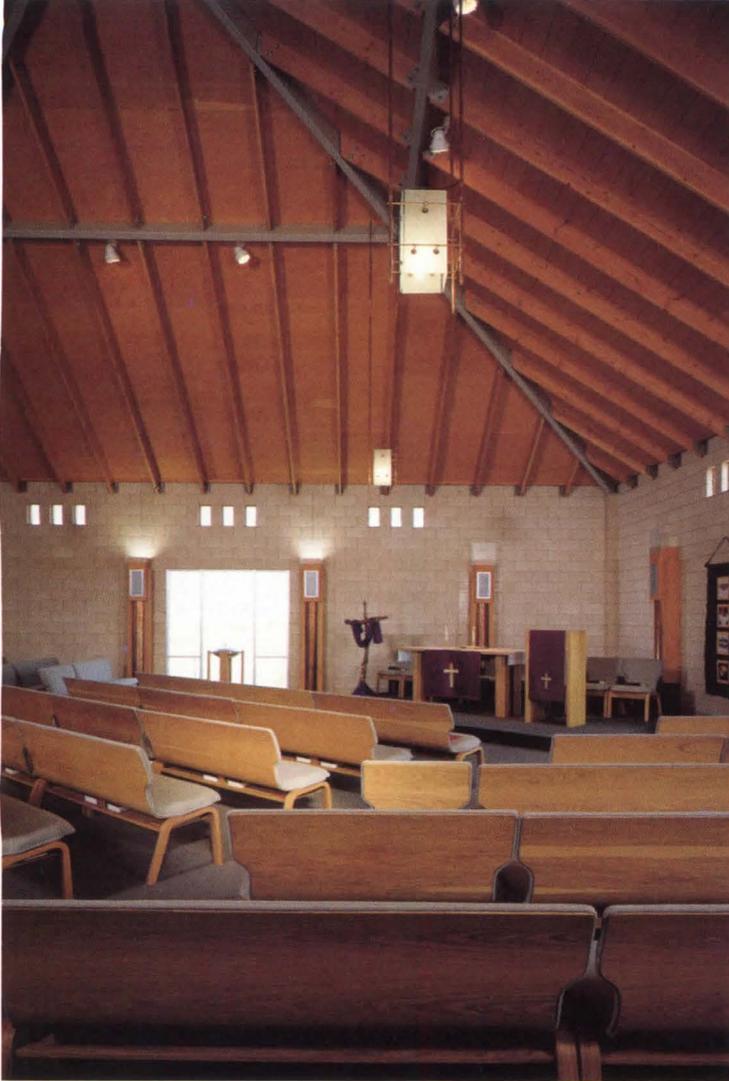
7



8

## No frills

James F. Wilson photos

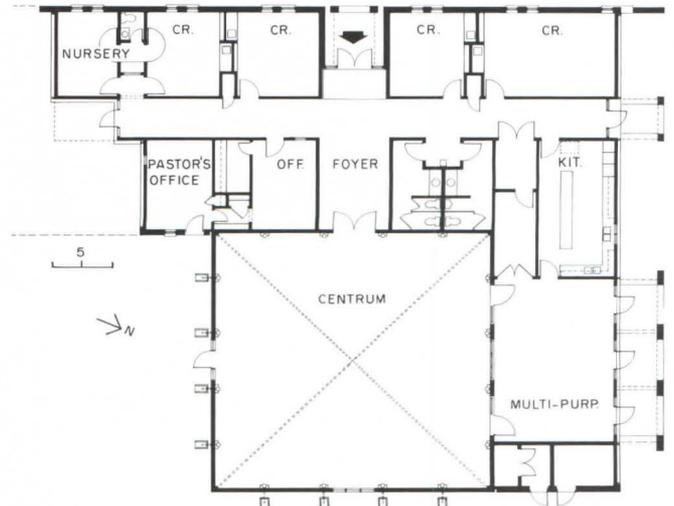


Gary Cunningham covered the worship hall with a wood-framed pyramid constructed of 2 by 10s bolted to steel connections (above). He suspended light fixtures from copper tubing and topped exposed air ducts with uplights to illuminate the space.

Loathe to admit that he is a Modernist—"I don't like rigid dogma"—Gary Cunningham prides himself on his ability to achieve powerful spaces no matter how prosaic the building type. Since starting his office eight years ago, Cunningham has designed projects ranging from spec office buildings to the renovation of a 1923 power station into a luxury residence. "I like architecture that expresses its function in a straightforward way," he says, referring to his work as "buildings without airs." Spare and crisply detailed, the young architect's structures stand out from the stylistic gimmicks that crowd the skyline of his native Dallas, conveying an impression of solidity and strength.

A recently completed example of Cunningham's esthetic restraint is Grace Lutheran Church. Located in a Dallas suburb, the 6,500-square-foot building is the first of a three-phase project that will ultimately include a school and large sanctuary. At its core is a square worship hall, eventually to be transformed into a multipurpose room, that is crowned with a pyramidal roof and surrounded by classrooms and ancillary spaces. Cunningham differentiated the functions of the building through separate volumes rendered in different types of masonry. He designed the chapel in concrete block, separating the copper-shingled roof from the top of the masonry walls by supporting its timber structure on interior steel connections (opposite bottom left). In contrast, he arranged the layer of support spaces at the western entrance within a symmetrical brick enclosure (opposite top), and framed the north elevation (opposite middle) with an arcade, aligned on axis with a future garden. Inside, the architect left the sanctuary's concrete and wood-framed structure and mechanical ducts exposed, complementing the raw finishes with hanging light fixtures fashioned from glass and copper tubing (left).

Despite severe budget constraints—construction totaled \$65 per square foot—Cunningham managed to infuse his no-nonsense design with a poetic spirit sympathetic to the work of Louis Kahn, recalling the late architect's material directness, volumetric simplicity, and servant/served relationships. Although obviously pleased by such a comparison, Cunningham claims he has no idols. "I try to avoid the latest craze and strip down my esthetic to the pure thought and emotion of a particular project," he explains, a sentiment that sounds very Modern, indeed. *D. K. D.*



The concrete-block sanctuary of Grace Lutheran Church is nestled within an L-shaped block of brick-clad classrooms (plan and top photo) and clapboard-sheathed support spaces (middle). Cunningham underscored the building's various layers by extending the

front facade beyond the northwest corner (bottom right), framing the north elevation with freestanding arcades (middle), and recessing the chapel's pyramidal roof, which is drained by extended copper tubing (bottom left).

Grace Lutheran Church  
Carrollton, Texas

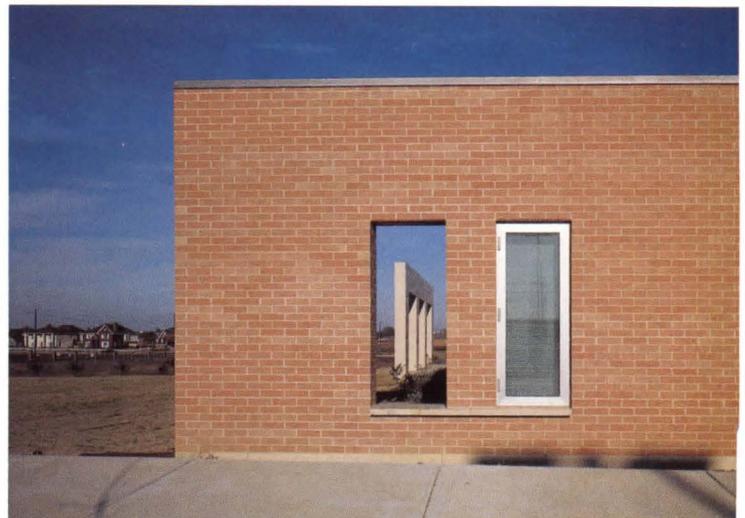
**Architect:**  
Cunningham Architects—Gary Cunningham, Dale Browning, Sharon Odum, John Parker, Del Shuford, project team

**Engineers:**  
Hennessey Engineering

(structural/civil); M.E.P. Systems Design (mechanical)

**Consultants:**  
Pam Wilson (lighting); Deano Nottestad (graphics)

**General contractor:**  
Goodberry Construction



## Prefab preschool

Tom Bonner



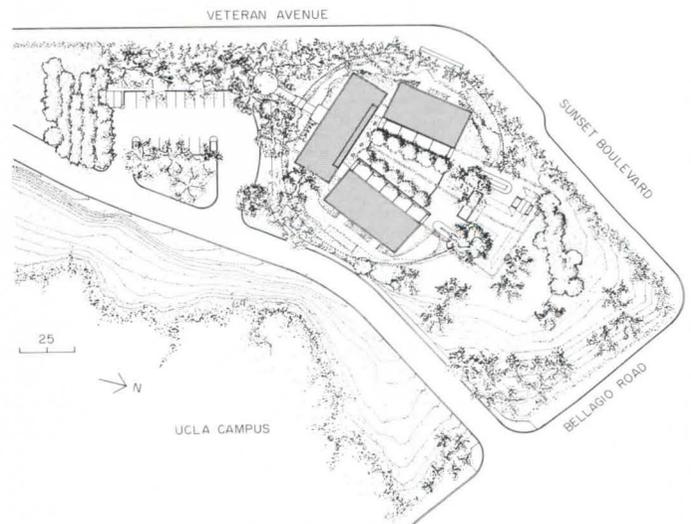
*Charles and Elizabeth Lee tucked their child-care center into the northwest corner of the UCLA campus, a site formerly used by the university's horticultural department for planting specimen trees (top and site plan). The complex is entered from the parking lot*

*through a gate to the administration block (above). Extending from this central building are two classroom wings, constructed of steel framing and aluminum panels (opposite top) and shaded by arcades canopied in fiberglass (opposite bottom).*

Los Angeles architects Charles and Elizabeth Lee opened their office in 1986 after working for Foster Associates on the Hong Kong Shanghai Bank. While acknowledging the influence of Foster's high-tech precision, the husband-and-wife team also cite sources of inspiration as diverse as the engineer Robert Maillart, fashion designer Issey Miyake, and sculptor Isamu Noguchi. The ultimate model for their design and practice, however, is the office of Charles and Ray Eames. "They took as much care in the making of a project as its concept," explains Charles Lee, who admires the Eames's versatility in filmmaking, graphics, and furniture design. The young architects' fascination with the craft of architecture is most evident in their design of a child-care center for the University of California, Los Angeles.

Nestled into a former orchard at the northwest corner of the UCLA campus, the facility consists of a central administrative block flanked by two independent classroom wings, splayed to embrace the northern portion of the site. The three buildings are constructed of steel modules infilled with aluminum frames, a kit-of-parts esthetic that recalls the paneled assemblies of Eames and the steely elegance of Foster. In developing the prefabricated system, the Lees tapped the Los Angeles office of Ove Arup and Partners, the engineering firm responsible for many high-tech monuments, to help them comply with the client's demanding four-month completion schedule. Assembled on site, the resulting exposed structural and mechanical systems of the center "allow the children to discover the inner workings of architecture," according to the architects. To shade the interiors from sunlight, while maintaining a connection to the landscape, the architects inserted translucent glass and fiberglass between solid panels, and extended porches from the classrooms into the central courtyard to provide outdoor play areas.

In explaining their attraction to Modernism, the Lees cite the "serenity" of abstraction and its "material interpretation of our age," pointing out that factory-built systems are not their only means of expression. Elizabeth Lee, for example, would like to fashion structural members of glass—"it's a great material in tension." For now, the pair are content to oversee construction of their addition to UCLA's recreational complex, a \$5-million project that will be completed late this year. *D. K. D.*





The Lees articulated their steel structure (axonometric opposite) with aluminum frames, infilled with panels of frosted glass in the administration block (below left) and fiberglass in the classrooms (below right and opposite) to screen sunlight.

*UCLA Child Care Center*  
Los Angeles

**Architect:**  
Office of Charles and Elizabeth Lee

**Engineers:**  
Ove Arup and Partners California (structural/mechanical); John Silver and

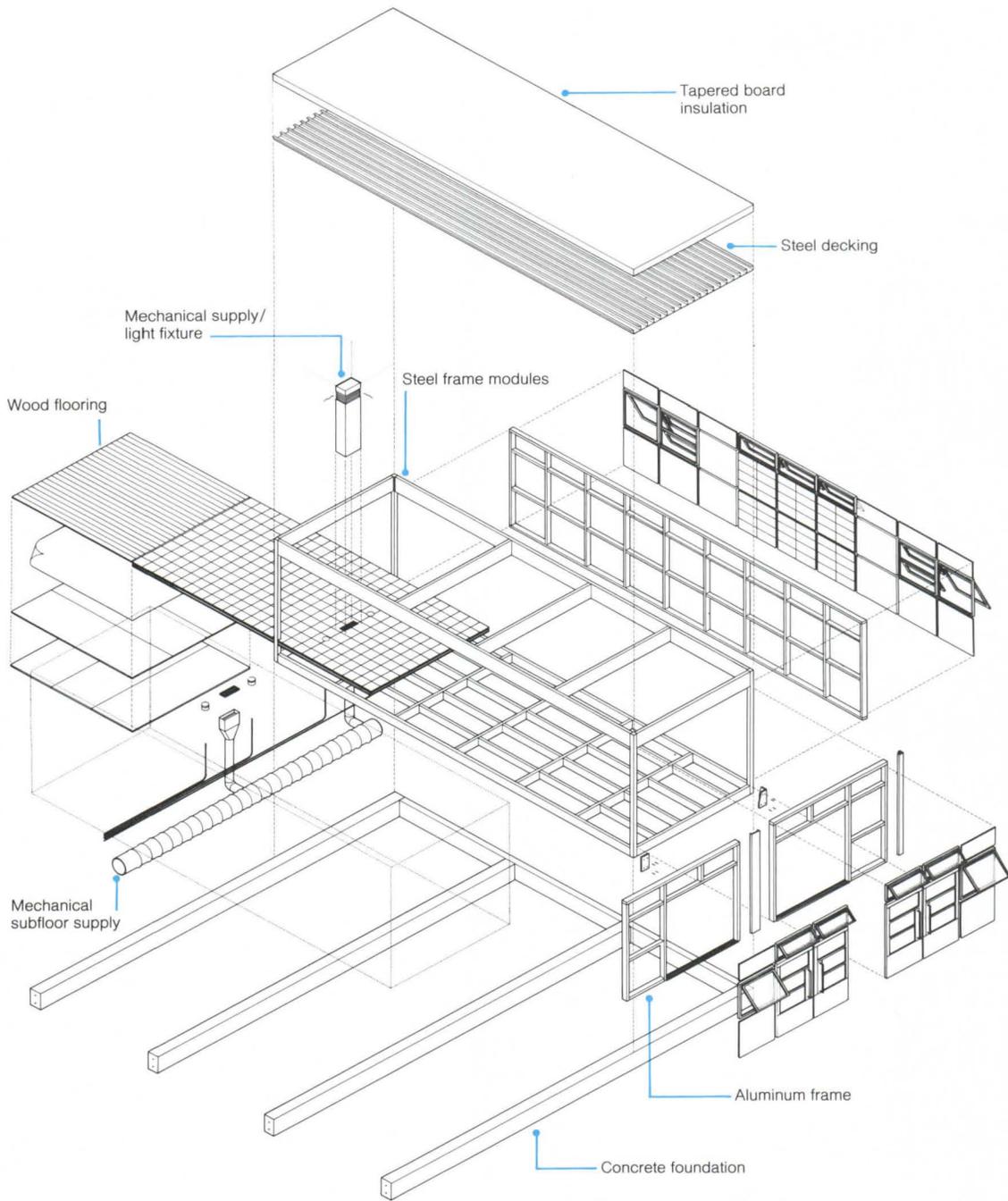
Associates (site electrical);  
Lew Hughes Partnership (civil);  
Ralph Stone & Company  
(geotechnical)

**Consultants:**  
Emmet L. Wemple and Associates (landscape);  
Hanscomb Associates (cost estimator)

**Contractors:**  
Profile Structures; C. & B. Engineering; Akatani Landscape; M. S. Construction & Electrical

1. Sleep room/quiet play area
2. Activity room
3. Entry
4. Changing room
5. Outdoor play area
6. Sick room
7. Administration offices
8. Waiting area
9. Director's office
10. Lobby
11. Therapy room
12. Teachers' work room
13. Community room
14. Kitchen
15. Staff lounge
16. Outreach program offices





# Winged victories

RECORD's editors travel around the country quite a bit and, like most people, we don't especially enjoy the time we spend in airports. What is it about this distinctly 20th-century building type that we find so objectionable? Just about everything, alas, from trudging down anonymous gate concourses and waiting out flight delays under unforgiving fluorescent lights set into shiny metal ceiling panels, to eating overpriced substandard food in poorly designed restaurants and searching for signs that might point the way to public transportation into the city.

It was not always like this. During the three decades following World War II, when air travel was still considered an exotic enterprise reserved primarily for the well-to-do, the prospect of flying was accompanied by anticipation, not resignation. Communities viewed their airports as a source of civic pride, and even people who couldn't afford a trip to Miami came out to the airport just for the vicarious thrill of watching those who could. A few architects working during this period responded to the public's romantic notions of flight by designing airports as space-age waystations to the heavens—witness Eero Saarinen's birdlike TWA Terminal at Kennedy International and the cantilevered main terminal at Washington Dulles. Most, however, took the esthetic and budgetary path of least resistance, producing the efficient, but bland collections of ticket lobbies, gate concourses, and baggage-claim areas that make up most contemporary airports. In these buildings, any lingering air-travel fantasies are tied less to architectural imagery than to the futuristic design and technological sophistication of jet planes. (A notable exception, of course, is Helmut Jahn's United Airlines Terminal in Chicago, which, with its dramatic glass-roofed gate concourses and subterranean sound-and-light show, has transformed the nation's busiest airport into a kinetic monument to American mobility, rivaling the spatial grandeur of a 19th-century train shed.)

In recent years a drastic increase in the number of people taking to the skies has heightened the sense of anonymity at American airports. Due in part to the 1978 Airline Deregulation Act, which loosened the federal government's control over routes and fares, the number of passengers enplaning at U. S. airports rose from 240 million in 1977 to nearly 500 million last year. Despite this growth, no new airport has opened during the deregulated period. (The last new facility, Dallas-Fort Worth International, was completed in 1975; the next one, a proposed \$1.3-billion airport that will replace Denver's overburdened Stapleton International, will not open before the mid-1990s, if at all.) What has occurred over the past decade, and what will continue to occur during the 1990s, is an ongoing expansion of existing facilities, not only in large metropolitan areas like New York, Chicago, and Los Angeles that historically have handled the bulk of the nation's air travelers but also in medium-sized cities—Nashville, Dayton, and Kansas City, to name three examples—that the airlines have selected as uncongested transfer points of newly developed hub-and-spoke route structures.

The Federal Aviation Administration has targeted 15 of the country's 22 largest airports for substantial expansion over the next 10 years, and a variety of recent construction forecasts cite airports as one of the most active markets for architects and engineers well into the 21st century. What is more, some aviation experts have called for the development of a radically new airport typology—the “wayport”—which would siphon off millions of passengers who currently change planes at congested hubs like

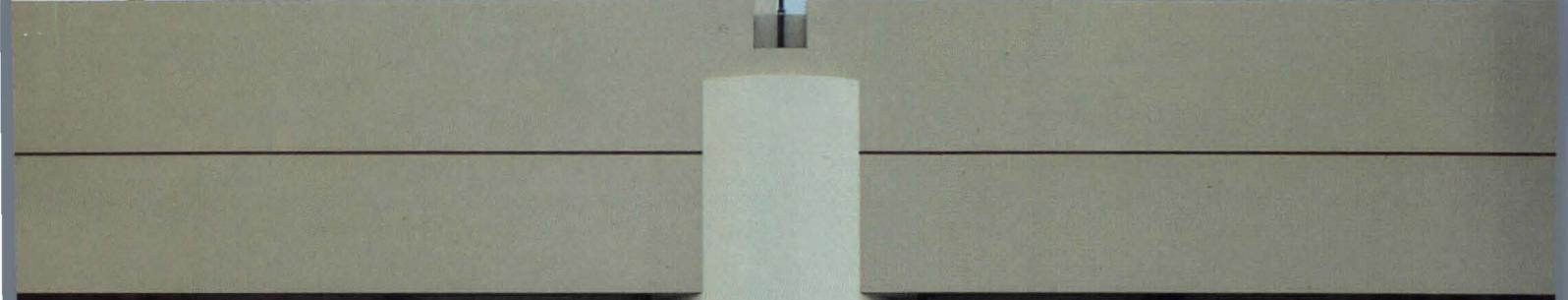
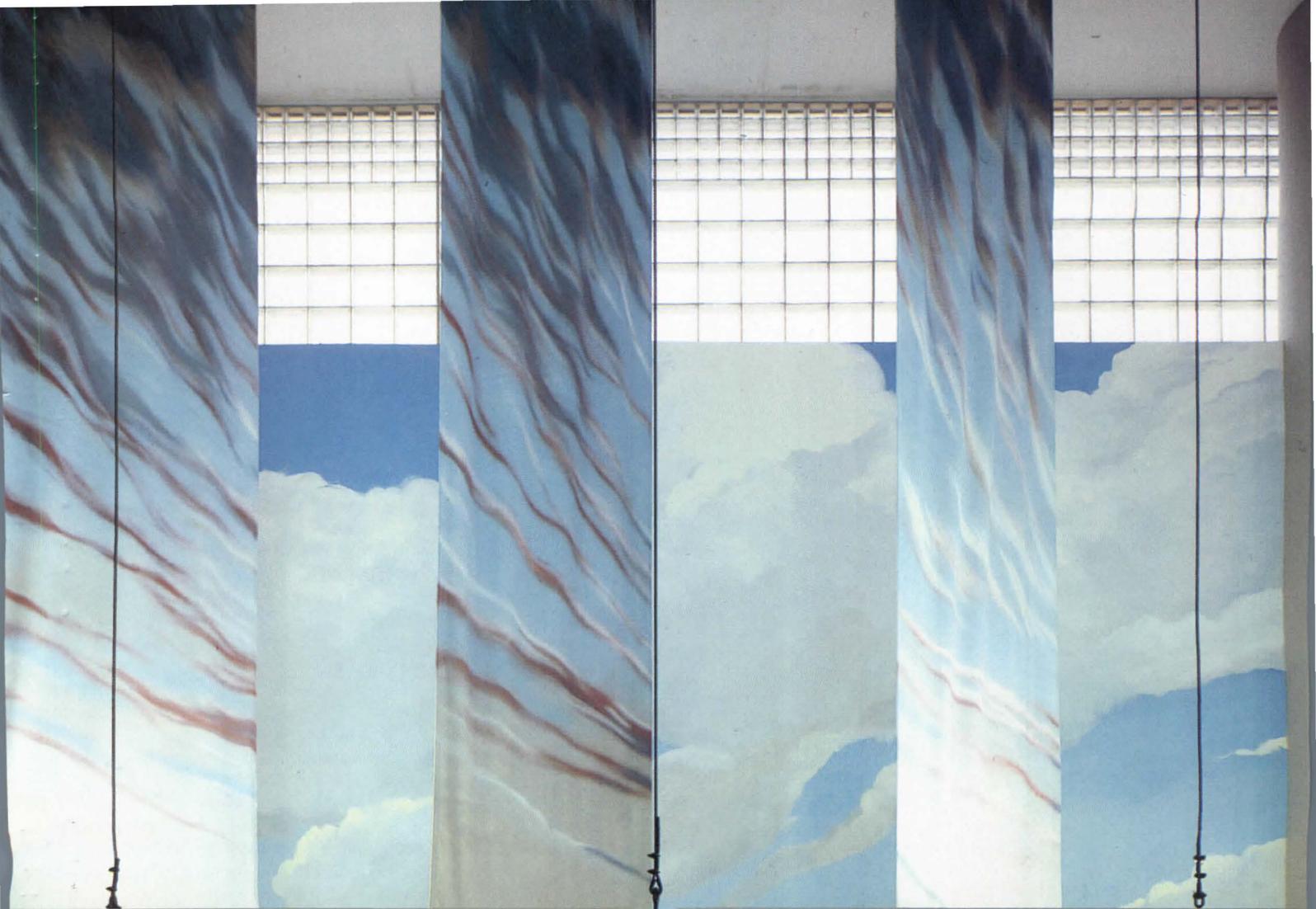
O'Hare and Atlanta to remote new airfields whose sole purpose would be as transfer points for the major airlines. To be sure, wayports and some less visionary current proposals like Greater Pittsburgh International's new \$500-million midfield terminal or the multibillion-dollar plan to consolidate the nine buildings of Kennedy's unwieldy Terminal City with an internal transit system radiating out of a new 3-million-square-foot central terminal fall into the megaproject category. Other proposals, however, will be more modest and if the past is any indication of things to come, most of the commissions will be awarded to locally based firms.

Amid all this activity, a major question remains: what are architects and operating authorities doing to enhance the American airport experience? The answer, hinted at in the five projects featured on the following pages, might be summed up by the three Rs of regionalism, retail, and retrofit—together with a welcome new regard for the physical and psychological comfort of the traveling public.

At Los Angeles International, for example, Gensler and Associates organized its remodeling and expansion of Delta Air Lines' passenger terminal around a series of light-filled palm-lined concourses, finished in a surprisingly luxurious palette of marble and glass, that might be mistaken for the comfortable lobby of a Southern California hotel (pages 134-137). For American Airlines' new regional hub at Raleigh-Durham International (opposite and pages 132-133), O'Brien/Atkins Associates chose the time-honored imagery of a soaring roof to convey the symbolism of flight. In both Los Angeles and Raleigh-Durham, the architects diminished the perceived length of gate concourses (900 feet at Los Angeles, 1,600 feet at Raleigh-Durham) by clustering shops, restaurants, and other services at measured intervals along the route. For the much smaller four-gate main terminal at Harrisburg International (pages 138-139), Bohlin Powell Larkin Cywinski borrowed an element from railroad-station architecture—a monumental central stair and escalator hall connecting the ticketing and baggage-claim level with the gate concourse—that functions as a dignified civic gateway to the Pennsylvania state capital.

One of the most striking trends in current airport design is the incorporation of elaborate retail facilities that go far beyond the newsstands and souvenir shops of the past. The steel-and-glass atrium of the new terminal at Milwaukee's General Mitchell Field, for example, features, among other shops, an excellent bookstore that attracts customers who have no intention of flying, while the most impressive interior space in the new main terminal at Palm Beach International is given over to a 600-foot-long barrel-vaulted “concession mall” lined with national fast-food outlets, a “white-tablecloth” restaurant, and upscale shops that reflect the Florida resort city's high-toned image. One of the most successful new airport retail facilities is the Oregon Market at Portland International (page 140), a refurbished commercial court designed by the SRG Partnership that showcases products of the Pacific Northwest under natural illumination filtered through a floating cloud of perforated metal.

Finally, if shopping isn't your bag, try Boston Logan's renovated Terminal C (page 141), a 1960s-vintage facility that Cambridge Seven Associates has enlivened by collaborating with three artists on a series of large-scale sculpture and wall murals. Though hardly a panacea, these delightfully distractive works, designed for both adults and children, will at least begin to ease the tedium that flyers must so often endure. *Paul M. Sachner*



Position Closed

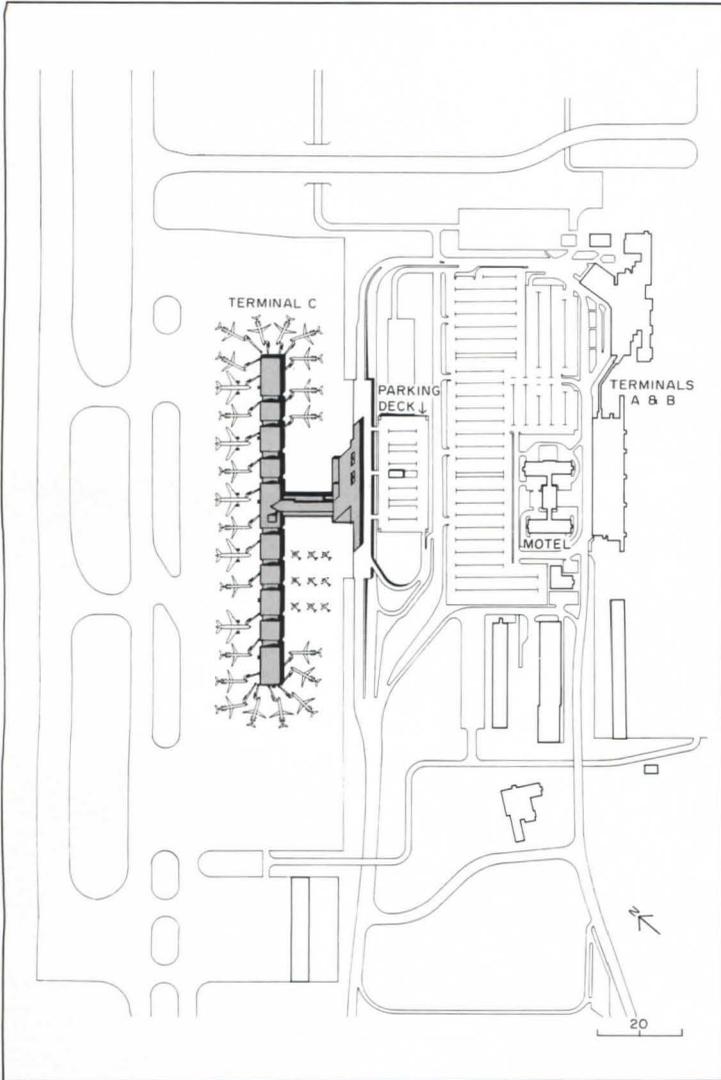
Position Closed

Pos



Terminal C  
 Raleigh-Durham  
 International Airport  
 Morrisville, North Carolina  
 O'Brien/Atkins Associates,  
 Architects

# Hitting the roof



Just as Le Corbusier saw a house as a "machine for living," Philip Freelon sees an airport as a machine for traveling. In designing the newest terminal at Raleigh-Durham International Airport, Freelon, project architect for O'Brien/Atkins Associates, created a building that works efficiently to move travelers from street to ticket counter, from concourse to airplane. And like the best machines, this terminal steps beyond pure function to provide the symbolism required of a gateway to the skies.

Located on a narrow site 30 feet lower than the two older terminals at the airport, Terminal C called for a strong feature that would identify the building from the airport's loop road. Freelon decided that feature would be the roof. Rising at a 45-degree angle and painted bright red, the winglike roof addresses the road with a striking image of flight, while serving the more mundane role of concealing hvac equipment. And because it is cantilevered over the elevated roadway, it provides covered curb frontage for its entire length. The roof's 45-degree angle is echoed by the front doors of the building and the carpeting inside, which are placed at diagonals to direct travelers to ticket counters and beyond, minimizing the need for signage.

The 320,000-square-foot terminal consists of three major parts: the ticketing lobby, the gate concourse, and a connector between the two. To draw people to the areas beyond the lobby, Freelon placed escalators leading to the connector in a dramatic four-story atrium, which is flooded with light from a 60- by 80-foot wall of clerestory glass. Because Terminal C is a major hub for American Airlines, roughly 80 percent of all travelers using it are transferring from one flight to another. The 1,600-foot-long gate concourse could have been intimidating, but Freelon softened the perception of distance by breaking the concourse into a series of "houses," with waiting areas on one side and concessions on the other. He also modulated ceiling heights, alternating vaulted spaces over the 120-foot-long houses with lower ceilings for the 30-foot-long service areas in between.

Outside, the terminal is neatly dressed with precast concrete panels at the base and aluminum-plate panels and glass higher up. The building's exteriors, like its interiors, project the image of an efficient, high-mileage structure in which all of the parts fit tightly together. *Clifford Pearson*



Terminal C's soaring roof gives the building its flight-inspired identity (below and lower left opposite). Overhead banners in the gate concourse (lower right opposite) serve as backdrops for edge-lighted acrylic signage and progress in color from one end of the spectrum to another.

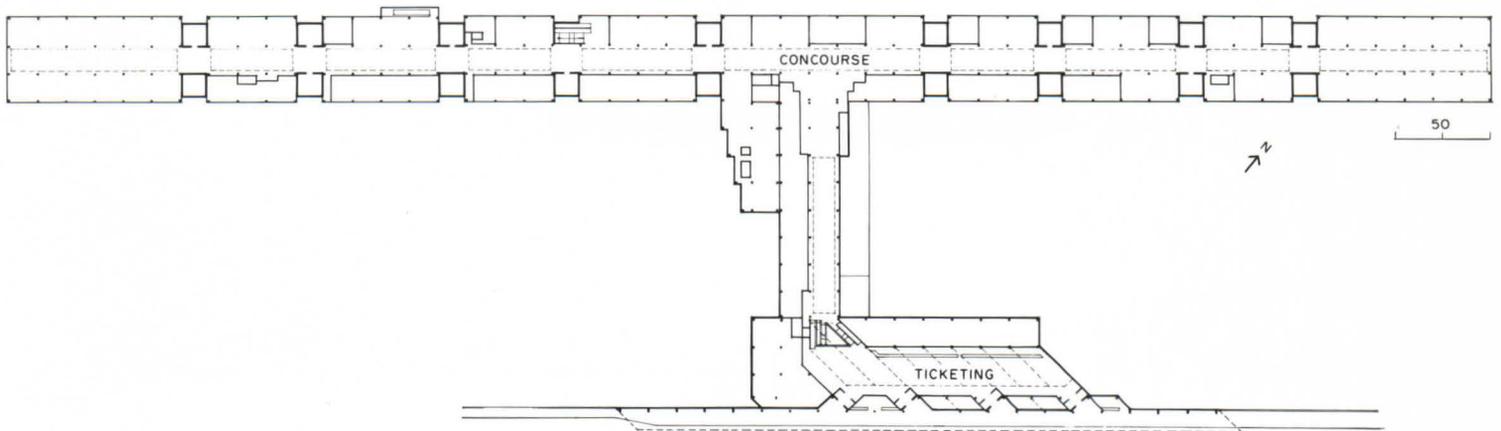
**Terminal C**  
 Raleigh-Durham International Airport  
 Morrisville, North Carolina  
**Owner:**  
 Raleigh-Durham Airport Authority  
**Architect:**  
 O'Brien/Atkins Associates—

*John L. Atkins III, principal-in-charge; Philip G. Freelon, project designer; Chris Brasier, Trent Brintle, Rachel Schade, Betsy Snipes, design team; Michael Edmondson, Tom Phoenix, Margaret Boulware, hvac team*

**Engineers:**  
 GKC Associates (structural);  
 Knott & Roberts (electrical)  
**Consultants:**  
 Works/Wissing Gengler Group (graphics);  
 Illuminating Concepts (lighting)  
**General contractor:**  
 Castle Construction Company



Philip Freelon



Terminal 5, Delta Air Lines  
Los Angeles International  
Airport  
Los Angeles  
Gensler and Associates/  
Architects

## A sense of place

©Nick Merrick, Hedrich-Blessing photos



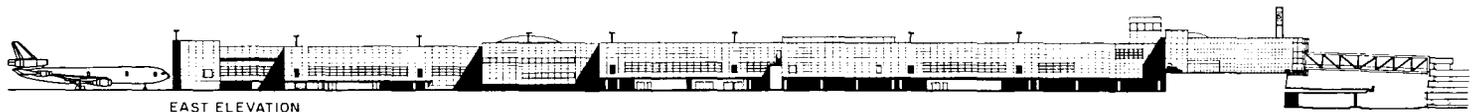
As a transplanted New Yorker, Andrew Cohen remembers anticipating his first glimpse of a palm tree as the signal confirming arrival in Southern California after the long coast-to-coast flight. As Gensler and Associates' project designer for the newly revamped Delta terminal at Los Angeles International Airport, he has made sure future travelers will make the sighting early and often.

Dubbed "the oasis" by airport habitués, the expansion and remodeling focuses on a lively concourse tricked out in the guise of a truer-than-life Los Angeles boulevard, complete with lavish subtropical plantings and files of rustling palms. The terminal's transformation is in keeping with the growing recognition that the typical airport's blend of tedium and pandemonium too often turns travel into travail, and the airlines' concomitant attempts to counter the bland anonymity of look-alike ground links, especially at major hubs where thousands of passengers must while away the time between connections. But the modifications originated with measures to expand operations and boost efficiency.

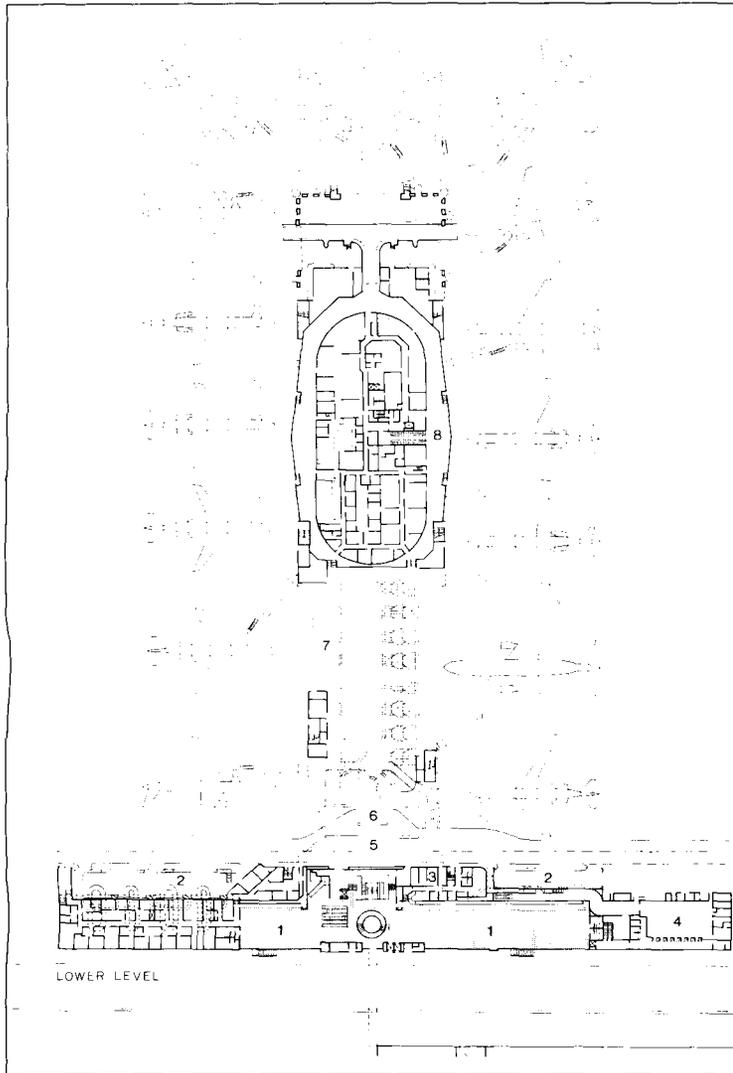
The original configuration was a dumbbell consisting of a



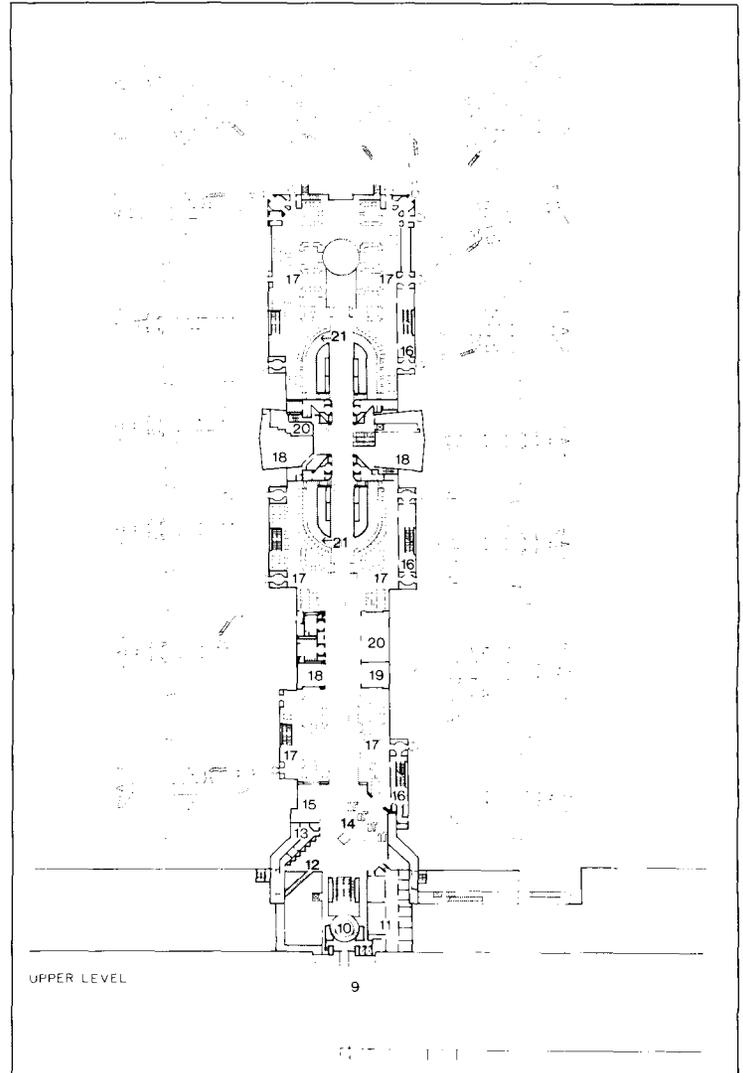
NORTH ELEVATION



EAST ELEVATION



LOWER LEVEL



UPPER LEVEL

passenger processing area (ticketing, check-in, baggage) connected by tunnel to a satellite gate pier. To make room for a new total of 16 gates, all with second-level loading bridges, the link became an above-ground concourse, extending from the terminal proper to just beyond the oval-shaped former satellite (plans above), which forms the nucleus of the interior streetscape. The receiving area was lengthened to accommodate more traffic, including international flights, and baggage-handling relocated to the lower level of the concourse, convenient to both check-in and baggage-claim facilities. Most strikingly (photo opposite), the main entry and overhead bridge from the adjacent parking garage were shifted to align with the new passageway, and the upper lobby was exploded to form an airy, glass-fin-supported crystalline cage—a beacon to departing passengers, a window on the city for new arrivals. Beyond this introductory rotunda, the journey through the concourse is a diverting promenade along a palm-bordered avenue where gateside lounges are interspersed with clusters of shops and restaurants, sidewalk cafés and parks, flower-banked terraces and shaded nooks. *M. F. G.*

- |                              |                      |
|------------------------------|----------------------|
| 1. Ticket lobby              | 12. Down to baggage  |
| 2. Inbound baggage           | 13. Business center  |
| 3. ATO                       | 14. Security         |
| 4. Immigration               | 15. Beverage service |
| 5. Bus lanes                 | 16. Sterile gate     |
| 6. Service vehicles          | 17. Holding room     |
| 7. Outbound baggage handling | 18. Food service     |
| 8. Operations                | 19. Duty-free shop   |
| 9. Bridge                    | 20. Newsstand        |
| 10. Bridge lobby             | 21. Terrace lounge   |
| 11. Administration           |                      |

*Departing passengers approach Delta's "oasis" from the parking-garage bridge or main-level ticketing areas, both of which converge on a skylit lobby rotunda (below) matched by a similar rotunda at the outer end of the terminal (bottom opposite). Beyond the*

*security checkpoints (top opposite), the long, narrow concourse becomes a lively palm-lined streetscape given comfortable human scale by clusters of lounges, shops, and restaurants dotted with "parks" and gardens (bottom this page). The outdoor illusion*

*is abetted by varied floor and ceiling planes as well as by a deft combination of natural illumination from windows and skylights with warm indirect light from tiered ceiling soffits and "streetlights."*



*Terminal 5, Delta Air Lines  
Los Angeles International  
Airport*  
**Owner:**  
Los Angeles Department of  
Airports  
**Architect:**  
Gensler and Associates/

*Architects—M. Arthur Gensler  
Jr., president; Edward  
Friedrichs, vice president and  
managing principal; Ronald  
Steinert, vice president and  
project manager; Andrew  
Cohen, vice president and  
project designer; Imre Takacs,  
job captain; Carlos Jahen,*

*construction administration;  
Lee Pasteris, designer*  
**Engineers:**  
Daniel Mann Johnson &  
Mendenhall (structural,  
mechanical, electrical,  
plumbing)  
**Consultants:**  
TCI/Thompson Consultants

*International—Gary  
Blankenship, partner-in-charge  
(airport planning,  
programming)*  
**General contractor:**  
Swinerton & Walberg



Passenger Terminal Building  
Harrisburg International  
Airport  
Middletown, Pennsylvania  
Bohlin Powell Larkin Cywinski,  
Architects

## Back to the future

©Otto Baitz photos



Once an event calling for your best suit, smartest hat, whitest gloves, matched luggage, and a carload of friends and relations to wave the plane out of sight, air travel these days kindles in most of us all the thrill of adventure we bring to a crosstown bus ride. But even the jaded might be titillated by transit through the new four-gate International Terminal in Harrisburg, Pennsylvania, which recaptures the lost sense of occasion with a spirited blend of technical prowess and "Streamline Moderne" nostalgia.

Although Harrisburg itself is a town of only 54,000 people, as the state capital and an emergent regional hub it attracts a flow of commuter and commercial passenger traffic grown too heavy for the converted hangar that previously served as its gateway. The 110,000-square-foot replacement, accordingly, is planned not only to meet present needs but to double in capacity over the next 15 years. Its placement was substantially determined by site constraints: the fixed locations of existing taxiway, control tower, and terminal (which had to remain in operation while the new one was built), the necessary enlargement of aircraft aprons and passenger parking areas, and the need for a new access roadway and expanded terminal loop road. Together with the gate spacing required to handle planes as large as the Boeing 727—and, later, wide-bodied jets as well—these factors suggested a linear configuration that allows the terminal to grow by adding gates at both its east and west ends as passenger volume increases.

In addition, the long skinny plan minimizes the building's depth from the curbside drop-off at the front to the waiting areas interspersed between aircraft gates, lending movement through the terminal an immediacy reinforced by its easy-to-read section. At ground level, a canopied, 480-foot-long concourse stretches along the road from ticketing functions on the west to the baggage claim area and a small commuter wing on the east (axonometric opposite and photo center left). The upper level, which gives direct access to aircraft, offers a second concourse lined by restaurants and other passenger services as well as waiting rooms at each gate.

The architects liken the terminal's profile (elevation bottom opposite) to an airfoil, which swoops up from the roadside canopy to a high point above the second-level circulation concourse before curving to a lower sheltering roof over the waiting areas, and is suitably clad in a sleek metal and glass skin with subtle horizontal "pinstripes." For cues to the treatment of interior spaces travelers use enroute to their flights, however, the designers turned from airborne images to the earthbound model of the classic railroad station, borrowing from it such trademark elements as repetitive form, airy concourses, open waiting areas, and the sculpted roof. The association is continued with an iconic clock at the landing that opens onto the upper concourse, and even extends to posting gate numbers on metal "flags" mounted on columns adjacent to each gate area.

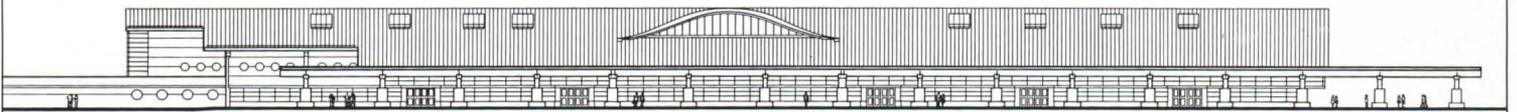
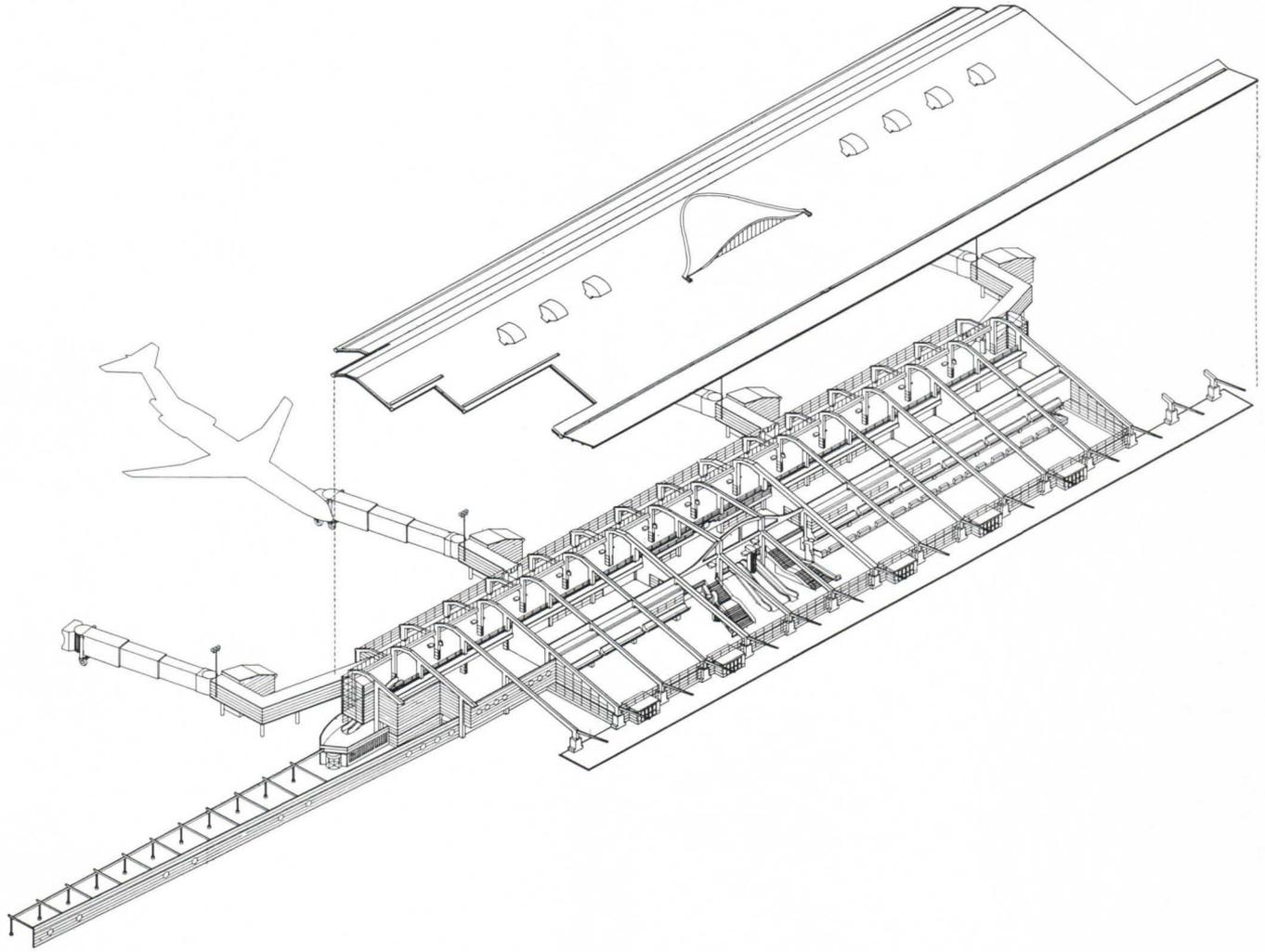
The transition from the terminal's landside entry to its airside departure gates is celebrated by a monumental central stair and escalators (photo bottom left), flanked by Deco-style pylons that support metal-shrouded uplights. Set above the upward passage, an eyebrow window marks the path of travel and adds emphasis to the flow of daylight poured from continuous clerestories over the tall circulation concourse. The lower-ceilinged waiting areas too are naturally lighted, although extended eaves shield the window walls from direct light during the summer cooling season while admitting low winter sun. *M. F. G.*

*Passenger Terminal Building  
Harrisburg International  
Airport  
Middletown, Pennsylvania*  
**Owner:**  
*Department of General  
Services, Commonwealth of  
Pennsylvania*

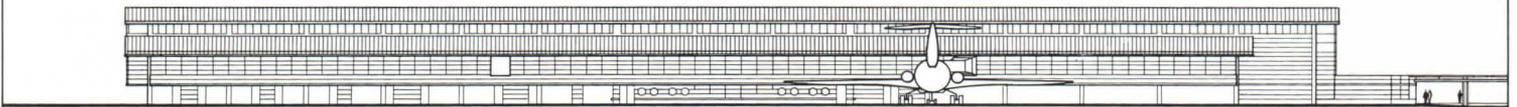
**Architect:**  
*Bohlin Powell Larkin  
Cywinski—Bernard J.  
Cywinski, principal-in-charge;  
W. Dan Haden, project  
manager; Peter Q. Bohlin,  
Edward Barnhart, Mark  
deShong, William Gladish,*

*Donald Maxwell, Michael  
Peters, Michael Stoneking,  
project team*  
**Engineers:**  
*Harry E. Purnell, P. E.  
(structural); Vinokur-Pace  
Engineering Services, Inc.  
(mechanical/electrical)*

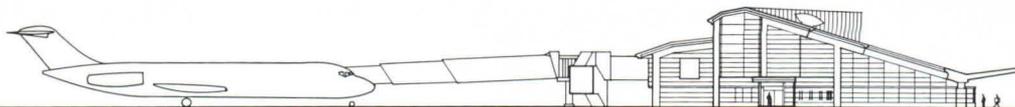
**Consultants:**  
*Lighting Design Collaborative  
(lighting)*  
**General contractor:**  
*Norflor Construction Corp.*



NORTH ELEVATION



SOUTH ELEVATION



EAST ELEVATION

# The waiting game



*"Excuse me, could you please direct me to ladies' better dresses?"*

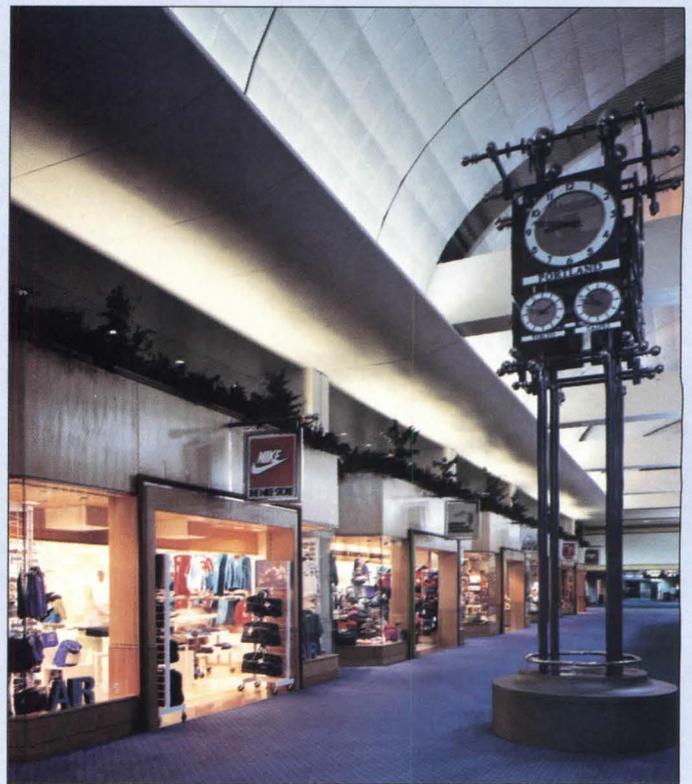
## Buy now, fly later

After generations of gearing airports to the efficient accommodation of aircraft, planners are turning their attention to the convenience of passengers, who endure ever-lengthening waiting times: the average business traveler, it is estimated, spends up to 21 days a year "in transit." At the same time, airport operators are eyeing the potential of air terminals as immense marketing machines, both for the cities and regions they serve and, more directly, through revenues from concessions quartered there.

The Portland (Ore.) International Airport, for

example, has capitalized on both trends in a concessions lobby recently transformed from a mundane outlet for souvenir mugs and T-shirts (photo top right) to an upscale showcase for Northwest regional wares, from Nike running shoes to the wares of the Oregon Mountain Community. Part of a major revamping of the airport's public spaces, the new "Oregon Market" (above right) doubles the leasable space in the retail strip from 5,000 to 10,000 square feet. In addition to enlarging and streamlining storefront displays and improving pedestrian passages within the mall, the

redesign literally raises the roof. A key element of the concept, according to principal-in-charge Jon R. Schleuning of the SRG Partnership, is the flow of natural light from upper-level monitors, which is filtered en route to the mall by a half-vault of perforated metal that captures the changing face of the sky. The local color is carried through storefronts and wall surfaces clad in natural wood, and an overall palette of blues and greens. For vivacity and scale, the mall is enlivened by lighting standards, colorful signs and banners, and a multizone clock tower. *M. F. G.*



Ed Hershberger photos



## Entertaining art

Charged with rejuvenating the circa 1967 Terminal C at Logan Airport in Boston, Cambridge Seven Associates, with architect/engineers Burns & McDonnell, went beyond a facelift to a transformation of personality accomplished, as is the firm's wont, by liberal injections of art. Not that practical improvements were neglected. The renovation, which added 40,000 square feet to the terminal's existing 100,000, introduced streamlined ticketing, check-in, and baggage-claim procedures as well as new waiting and concession areas. To improve pedestrian flow and give the reorganized operations both

clarity and elbow room, the plan "activates the edge" of the terminal by placing concessions around the perimeter, opening cross-concourse views for orientation to gates and services.

The stage thus cleared is set with large-scale artworks that are both dynamic and integral to the space. The ceiling, for example, is cloaked by Susumu Shingu's "Flying Cloud" (top left), a sculpture of 1,184 suspended three-foot squares of white sailcloth wafted by air currents to suggest clouds and flight. On the end walls, "Passing Reflections" by James Seawright snare passersby in

murals composed of their own images fragmented by a grid of nine-inch reflective squares.

The concourse waiting areas are augmented by two smaller adjacent spaces overlooking incoming flights—one an ice-cream parlor enlivened by colorful flights of winged cones (above right), the other featuring an interactive video program (above left) and a play space developed by the Children's Museum of Boston. Each is introduced by a George Rhoads kinetic sculpture in which balls thread and bump their whimsical way through a maze of ramps and chutes (top right). *M. F. G.*

# Icons of Modernism or machine-age dinosaurs?

*Modernism was bound up with the exploration of technology, but how have buildings constructed with innovative techniques fared? Has today's emphasis on engineered systems versus empirical methods consigned us to a throwaway building culture?*

Did Modernism bring on the age of the ephemeral building? It sometimes seems so with news of the reconstruction of such celebrated—and relatively recent—projects as Walter Gropius's Massachusetts house, and Le Corbusier's Villa Savoye. So much of architecture's 20th-century expression has been bound up in the possibilities inherent in technologically advanced materials, products, and construction methods. Yet, as time has shown, many such elements were not founded in long-lasting construction practice: the daring cantilevers have sagged, the shining metal surfaces have oilcanned and corroded.

Many of the early works of American Modernism were so influential that their forms have been translated into standardized products. Though not exactly a post-occupancy evaluation, the following examination of four important Modern buildings includes a look not only at how their incompletely refined technologies have fared, but also at the architectural ideas they embodied, since both aspects of their design are so intrinsically bound together.

## Learning from Lever House

Lever House, erected in 1952, has to be considered the most *imitable*, if not the most influential postwar commercial building. But it is important to separate Lever from its flush-glass progeny. The structure's lightness and elegance spring in part from its modest size. The usual space devoted to banks and newsstands in the lobby was eliminated by the client, and the whole ground level remains open as a public space. SOM design partner Gordon Bunshaft overtopped his raised podium with a slim 19-story tower and tucked its core neatly to the back. Nearly every square foot is within 25 ft of a window, a far

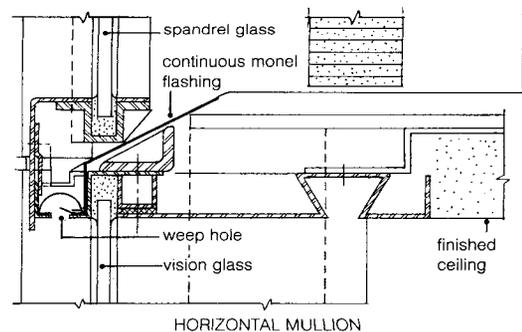
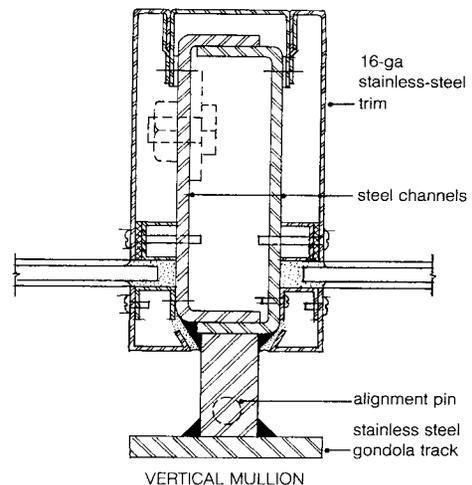
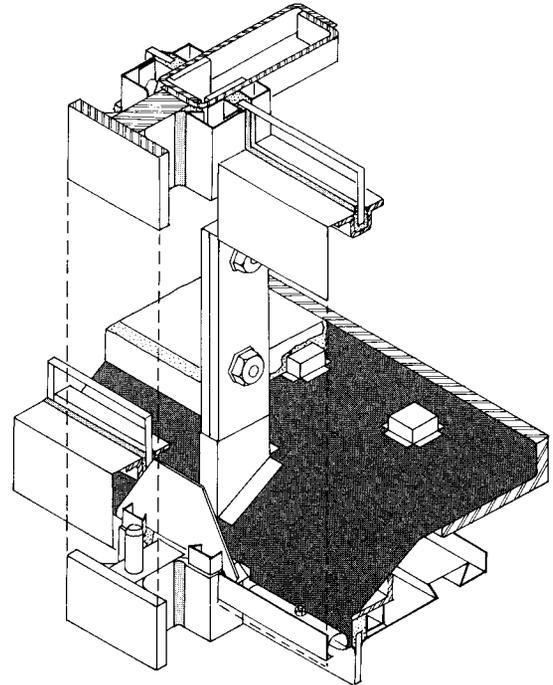
cry from the highrise floor plan preferred by today's developers, which can place workers as far as 70 ft from the exterior wall. The planning legacy of Lever House, however, is the now-discredited tower-in-a-plaza building type that was incorporated into zoning codes throughout the country during the 1960s. As an interruption of a continuous street wall, Bunshaft's plaza seemed elegant when built. As a patchwork solution mindlessly applied anywhere, Modernist plazas now often read as chaotic urban intrusions.

## Seamless skin

Bunshaft's tubular mullion, with its nearly invisible abutment of metal and glass, became the standard stick frame for curtainwall buildings. Though the system nowadays is efficiently fabricated from extruded aluminum, Lever House was framed in steel. The flush-jointed, stainless-steel-clad profile of the curtainwall framing belies its complex internal construction, which was cobbled together from off-the-shelf parts (right). Since the building is sealed, the framing of operable window sections was eliminated, as well as the clutter of opening hardware. A nearly invisible stainless-steel T-shaped track has been mounted every sixth vertical mullion to guide the roof-mounted window-washing gondola.

## Latest landmark

Lever House is the youngest building in New York to achieve city landmark status. A protracted battle was fought over designation because the owners wanted to demolish the 1952 building and erect a much larger structure. Lever Brothers, no longer an owner but the holder of a long lease, continues to occupy the building and did not take sides. The owners



*In Lever House, wall elements are reduced to an almost Oriental simplicity. Lacking today's highly developed products, SOM surrounded nested steel channels (for rigidity) with a shop-fabricated stainless-steel cover (details opposite). T-shaped tracks,*

*visible every sixth vertical mullion (below), guide window-washing machinery—a rolling advertisement for Lever's soap and detergent products.*



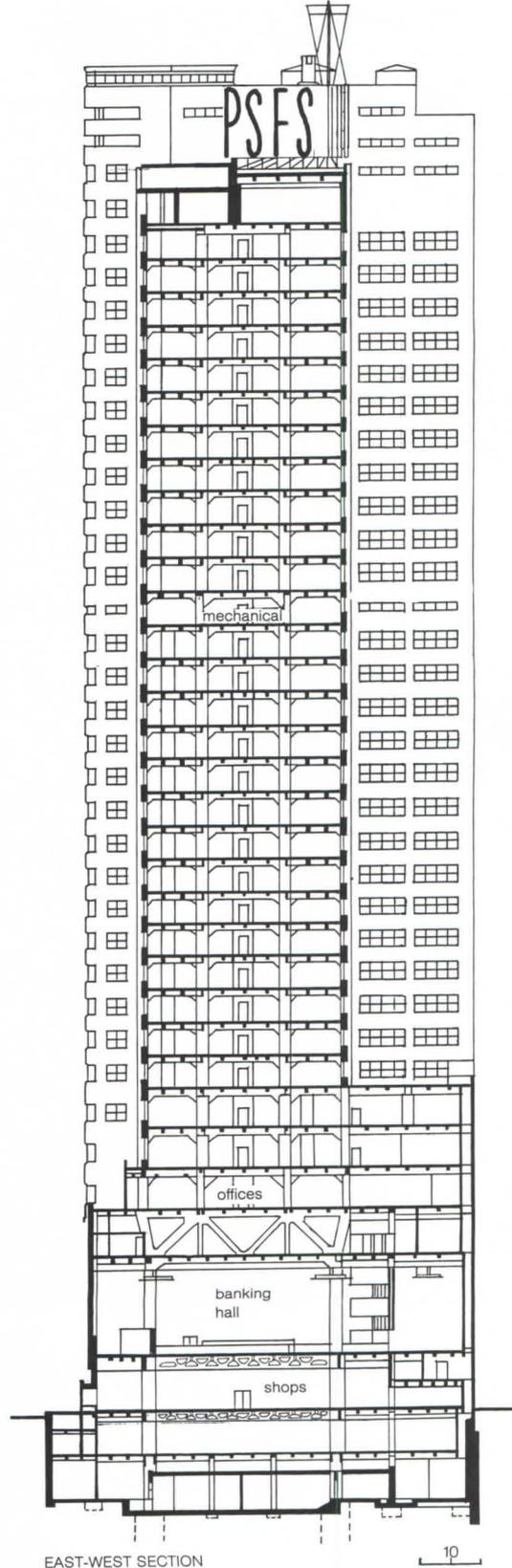
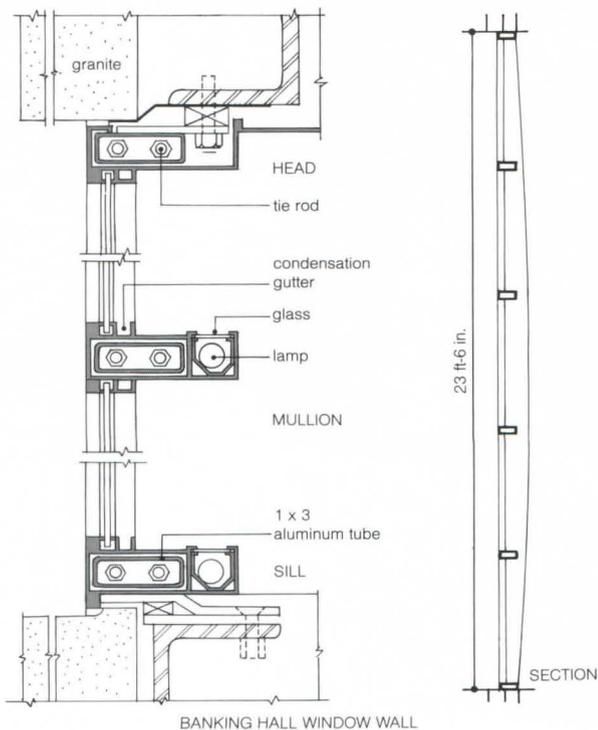
© Ezra Stoller/ESTO

*In the Philadelphia Savings Fund Society Building, still located at the center of Philadelphia's shopping district, ground-floor shops are crowned by a powerfully expressed banking hall. To eliminate two rows of columns within the hall, the weight of 32*

*office floors was transferred through a 17-ft-deep truss (section). Sightlines were minimized in extruded-aluminum mullions that frame the monumental glazed wall (photo) through the use of tie rods and a 23-ft-high tapered support (details).*



© Peter Olson, Philadelphia



prepared detailed reports on the building's condition (to buttress their contention that the building would be too expensive to repair), which sheds light on the viability of early curtainwall technology.

The worst and most visible problems reported by the consultants (Welton Becket Associates and later Swanke Hayden Connell) are in the opaque, wire-glass spandrels. Inherently less resistant to temperature fluctuations, the spandrels over the years suffered from a lack of ventilation, which likely subjected the lights to greater thermal stress than was understood to be the case at the time of design. About 30 percent of the panels have been replaced, but matching glass was not obtainable, so the surface of the building now has a visibly checkered look. Some vision panes have cracked as well, which may be due to the failure of early polysulfide sealants, thermal movement, or degradation of the steel subframe that has corroded due to leakage and condensation in the spandrels. The deterioration of the subframe will eventually require substantial, if not complete, replacement of the curtainwall.

#### **Mechanically obsolete?**

Efficiency was subsumed to performance in the original heating and air-conditioning system, which now has unacceptably high operating costs. The consultants indicated that updating equipment and ductwork would cut expenses, but reducing the building's extensive areas of glass as well as double glazing would be required to bring the structure into line with modern energy codes. These changes would be costly and compromise landmarked features. Some lights at the lobby level are as large as 14 feet square, and

replacement with safety glass—a current code requirement—would not be possible without introducing additional mullions, since the maximum single dimension of such glass produced without special techniques is about 8 feet. On the other hand, advanced lighting controls now on the market may increase energy efficiency through greater use of daylighting.

#### **PSFS: 67 years and counting**

William Jordy called the Philadelphia Savings Fund Society Building (PSFS) "an American synthesis." He was not just complimenting style, but a design so thorough that even standard door frames and hardware were considered anew. The building's striking and complex forms (opposite) wrap an inventively packaged plan. The office floors are T-shaped, with the core articulated on the exterior as a shaft with glazed, black brick and punched windows. Projecting from this core, offices are expressed as trays by horizontal dun-colored brick spandrels and bands of aluminum double-hung windows. The grand banking hall on the second floor is clad in a curving, polished-granite base. A 17-ft-deep truss (supporting all 32 office floors) spans 63 ft within the hall to free the 3-story-high space of columns (section). On Market Street, Philadelphia's primary shopping avenue, sans-serif letters announce the entrance to an escalator lobby, which leads dramatically up to the banking floor, and permits leasing of the ground floor to retail tenants. This deft inclusion of street-level activity sets the 1932 building apart from all but its most recent stylistic descendents.

Each tower floor is about 8,000 sq ft, a size considered uneconomical to build so high today. There are no dropped ceilings (except where some

tenants have altered the building standard), yet, with its generous bands of windows, the space seems loftlike, belying its skimpy 12-ft floor-to-floor height. PSFS was only the second major structure in the U. S. to be completely air-conditioned, and the system is rather unconventional by today's standards. Air for the internal half of the floor is distributed from ductwork furred out under the ceiling along the inner row of columns and fed to the space horizontally. Separate induction units cool and heat the perimeter space. Return air flows through door louvers to the corridors, where it is ejected through a single mechanical shaft, a technique current fire codes would not likely allow. Rooftop cooling towers are disguised by the building's iconic neon sign.

The inventive early use of aluminum is seen in the monumental glass wall of the banking hall, which was fabricated out of extrusions designed specifically for the job (details opposite). To keep the horizontal pieces as thin as possible, steel tie rods were run through the voids. Tiny light fixtures were affixed to the 1- by 4-1/2-in. horizontal mullions. The 23-ft-high vertical supports are gracefully tapered at each end, indicative of the relative resistance at different points to wind-induced bending moments.

#### **Continuity and change**

The building still contains the headquarters of PSFS and has been little altered since its completion (much of the architect-designed furniture still is found in the banking hall). Remarkably, little more than regular maintenance has been required. Although the mill-finished exterior aluminum is pitted and discolored, it has not been structurally affected by the ravages of air pollution (anodizing has essentially eliminated corrosion as a

problem for aluminum today). To reduce energy consumption, storm windows have been mounted on the interior, since the windows lack both double glazing and a thermal break. Underfloor ducts (another pioneering feature) now carry computer cables as well as telephone wires. The central system that once piped radio programs to each floor has been abandoned, however. The percent of floor space rented "has consistently been in the high 90s," according to John Fatula, once the bank's staff architect and archivist.

#### **Prescient Equitable**

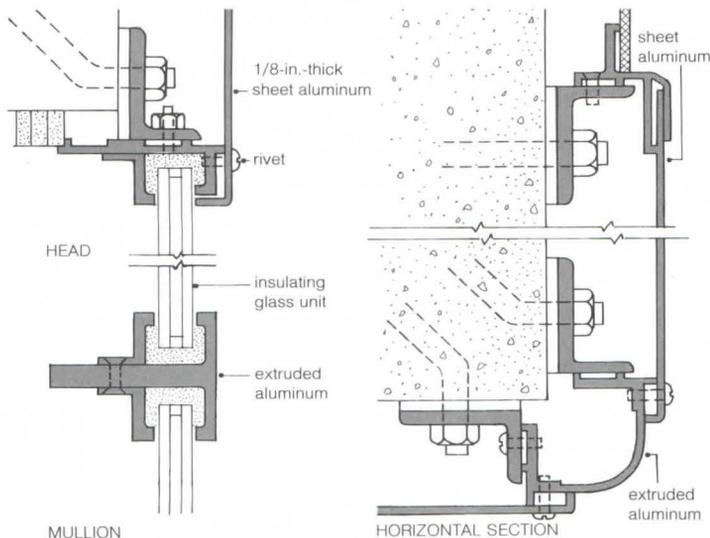
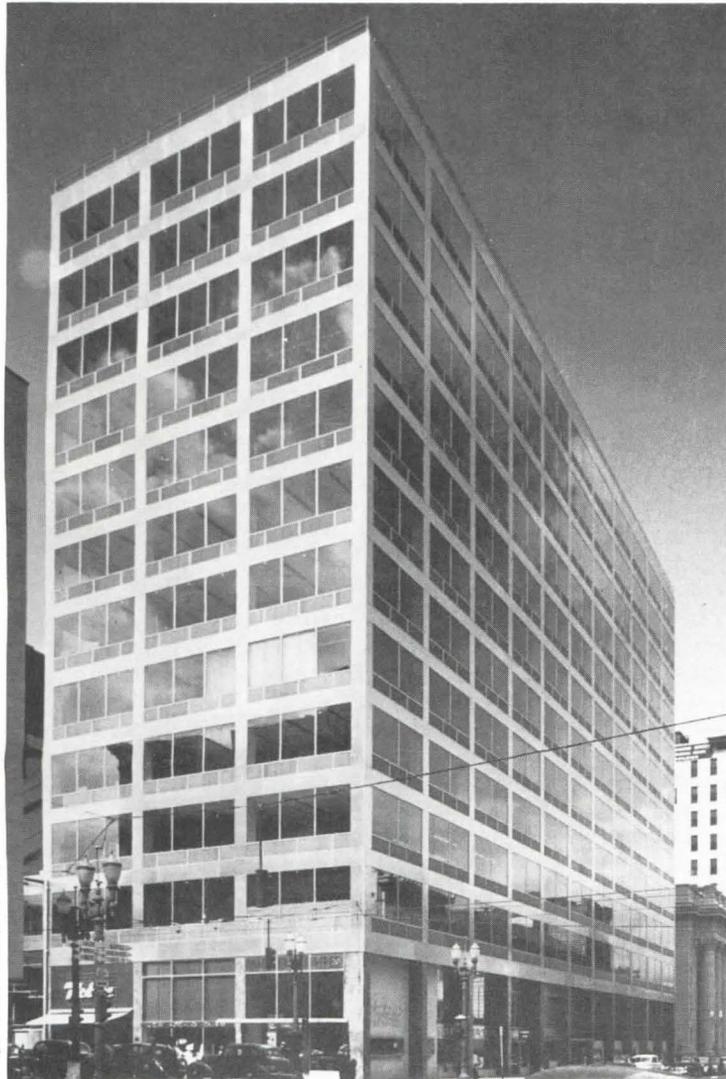
Pietro Belluschi's unprecedented use of aluminum in the Equitable (now Commonwealth) Building was a synergy of material supply and design intention. He was able to take advantage of leftover aluminum stockpiled for World War II by nearby smelters and assembly techniques derived from West Coast airplane assembly plants. Completed in 1948, the Portland, Oregon, structure stylistically presaged the flush aluminum-and-glass skins to come, but it was also innovative in its large-scale use of sealed-insulating-glass units and its heat-pump system, which used deep wells and the area's cheap electricity for efficient heating and cooling.

Though fabricated in aluminum, the shapes of Belluschi's curtainwall details (page 146) look like built-up steel sections. The panels are rolled sheets of aluminum, and the glazing frames are simple extruded shapes. The minor differences in the plane of the wall surface, in the finish of the aluminum rendered by the differing fabrication techniques, and in the barely visible pattern of rivets contribute a subtle patina to the curtainwall. Portland's climate is mild, and the building has held up very

Although Pietro Belluschi's Equitable Building, completed in 1948, has been renamed the Commonwealth, it still retains its trail-blazing mill-finished aluminum panels, most of its original insulating-glass units, and the heat pump that was itself made an engineering

landmark by the American Society of Mechanical Engineers. The curtainwall's combination of rolled sheets and extruded clips was fabricated and assembled using methods similar to those employed in World War II airplanes.

Oregon State Preservation Office



well. Even the unprotected aluminum has only dulled; it is not pitted or corroded. Both owner and architect profess amazement that most of the original Thermopane insulating-glass units continue to perform 40 years after installation. The lobby was restored this year by Soderstrom Architects, of Portland, with the advice of the 89-year-old Belluschi.

Not all of Belluschi's innovations proved themselves in the long term. Cold cathode tubes, surface mounted on a furred ceiling, provided general lighting. With good color balance and low brightness, the 8-ft tubes did not require diffusers or lenses, but they did have to be laid much closer together than the fluorescents that have supplanted them. Above the ceiling, metal raceways were laid which served the wiring needs of the floor above. While less expensive than trenching the slab, this system would certainly run afoul of current fire codes, and has been replaced. Office space today is served by a conventional suspended acoustical-panel ceiling incorporating standard 2-by-4 fluorescent lighting.

"The building is in extremely good shape, especially considering that it has had several owners," notes Tom Enger of Landsing Advisers, the building manager. It is an official landmark in Portland (the heat pump was designated an engineering landmark), and won the AIA's 25-Year Award in 1982.

#### Updating SOM's Crown Zellerbach

Often called "the West Coast Lever House," the 17-story former corporate headquarters in San Francisco has been renamed One Bush Street and undergone a \$25 million restoration, a significant test case of the viability of restoring relatively new buildings.

Completed in 1959, the tower contains 320,000 sq ft of office space. In 1986, its owners had to face significant problems: asbestos removal; inadequate power, telephone, and life-safety systems; a configuration that turned its back on Market Street (which since the beginning of subway service in the 1960s had become an important business address); and a tired overall appearance.

Once landmark designation assured its future (there were rumors that a much larger building had been planned), renovations undertaken by Kaplan McLaughlin Diaz aimed at restoring its crisp elegance. The site is now surrounded by tall buildings, so the architects replaced dense olive trees with diaphanous willows to let in more light, and built a new bridge across an existing moat—identical to one that existed—to open the building to Market Street (site plan, opposite). The owner contracted for asbestos abatement, and the design team updated power and telephone, and brought the entire building up to tough new life-safety codes. Sprinklers, smoke-detection and control systems, and a central annunciator system were installed.

The 69- by 201-ft office floors are unencumbered because the core is articulated as a separate, tile-sheathed tower (opposite) and columns placed at the exterior walls. In multi-tenant layouts, exit distances to the existing stairs in the core did not meet new regulations, so the architects negotiated a system of fire doors with magnetic hold-opens that will separate the floors into fire zones. Additional work was more prosaic: a facelift for the lobby, reworking toilets for handicapped accessibility, and replacing worn architectural finishes throughout. The exterior wall had few problems, according to the architects, requiring only a thorough cleaning.

One Bush Street (formerly the Crown Zellerbach Building) was completed in 1959 by the San Francisco office of Skidmore, Owings & Merrill. To reorient the building to Market Street (foreground in photo), a new bridge—matching one that existed—

spans a lushly replanted plaza. Architect for the renovation, which included updating electrical and life-safety systems, was Kaplan McLaughlin Diaz.

**Age of the disposable building?**

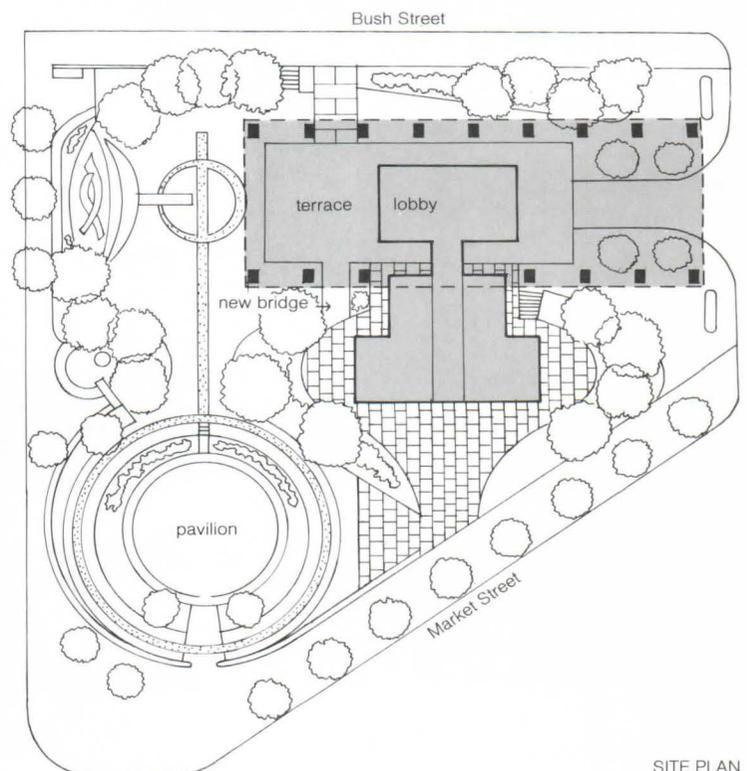
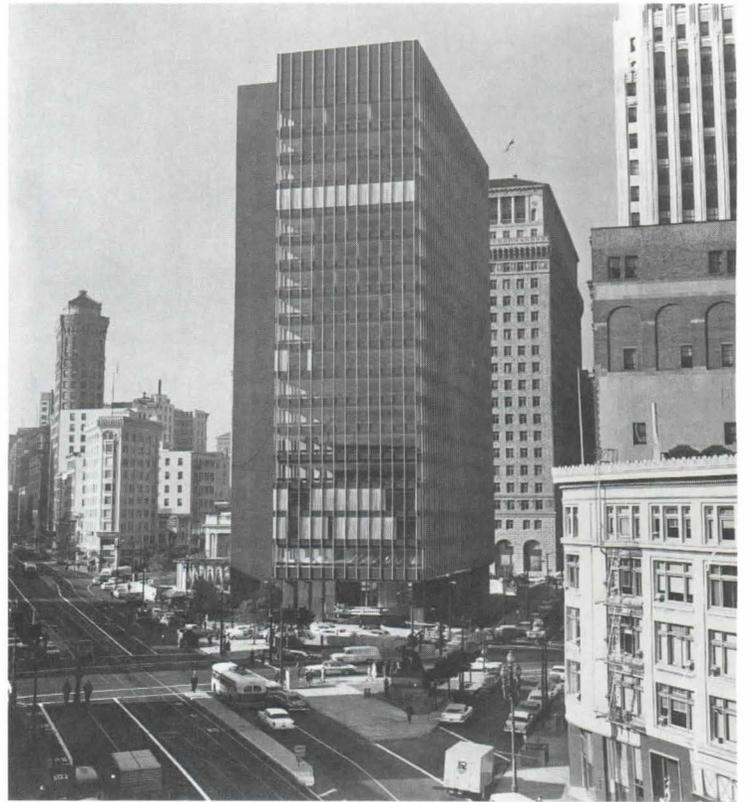
Architect Theo Prudon has made a study of some early Modern buildings for his firm, Swanke Hayden Connell, and he is not optimistic about the long-term viability of many postwar office buildings. Among difficult-to-correct problems he has found are the high costs of removing asbestos, and floor-to-floor heights as low as 11 ft 6 in. that preclude inexpensive updating of ductwork to accommodate more efficient mechanical systems. The replacement of leaky, inefficient curtainwalls often cannot be justified economically, in his analysis. "If you do it, it's because the owner wants to improve the image of the building," he says. Even energy-saving strategies can be hard to implement, because from the building owner's point of view, energy costs are almost always passed on to the tenant anyway. Scott Smith, of PPG, has offered technical advice on several curtainwall resheathing projects. He says occupancy has an enormous influence on the cost of replacing components, especially a curtainwall: "Will the tenant vacate? If they can't, how much of the wall can you do at a time? How do you protect tenants and passersby while operations are taking place?" Other factors to evaluate in a potentially obsolete building are its ability to handle air-conditioning and electricity loads imposed by desktop computer terminals, and wire management for telecommunications and computer networking.

Accompanying the trend to greater use of industrially derived materials and techniques, architects report increasing pressure from contractors and manufacturers to employ engineered systems that are dependent on careful installation (because of minimized safety factors) over more expensive but tried-and-

true empirical methods.

Likewise, owners are increasingly oriented to short-term results, moving away from architecture as an object intended to last for decades to a building constructed only to survive its tax-depreciation schedule.

What do these trends tell architects about how to build? Unfortunately, there are as many answers as there are currents in contemporary design. Many who turned to Postmodernism for an esthetic connection to the past have become converts to traditional methods of construction as well. Richard Rogers (Centre Pompidou, Lloyd's Bank), however, is chief among Modernist architects who argue that permanency in building is achieved by placing the elements that wear out at the exterior envelope, where they can be expeditiously replaced. On the other side of the spectrum is Frank Gehry, who is quoted in the *Los Angeles Times Magazine* as saying, "Sure it would be better if architecture lasted. But it's not in the cards. Land is going to become more valuable, and it's going to become more expedient to tear buildings down. It's a throwaway culture." Though the structures chosen for this article are hardly representative, they do suggest that thoughtful design—even using untried and sometimes risky techniques—can produce buildings of lasting esthetic and functional value. And when cities all over the country are running out of places to put used fast-food containers, where are they going to throw away obsolete buildings? *James S. Russell*



SITE PLAN

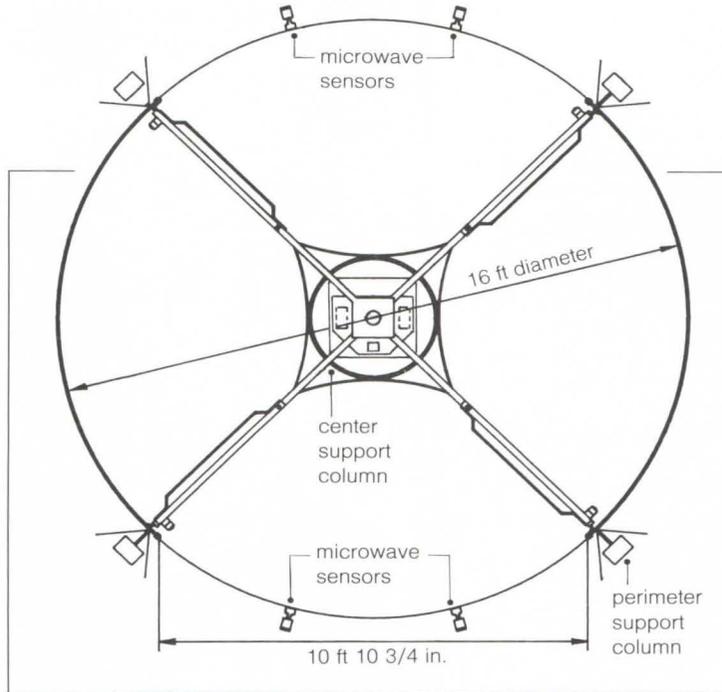
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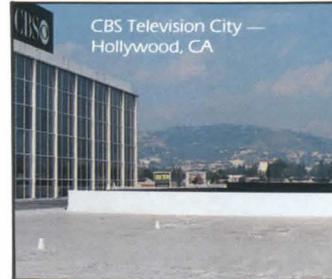
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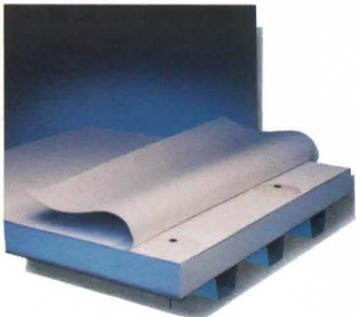
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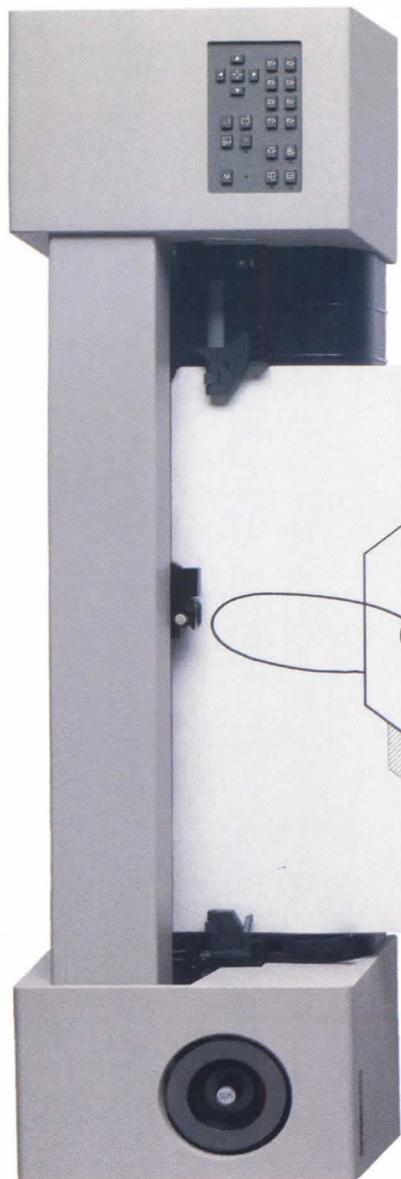
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# Software reviews for architects

By Steven S. Ross

## AutoCAD 10 for the Macintosh

The long-awaited Mac version may infuriate those who are fanatically opposed to Macintosh software that does not follow the standard Mac menu and mouse conventions. But offices with both Macintosh and DOS or UNIX computers will find the interface congenial. Version 10 offers true 3-D drafting and modeling capability. The initial release supports digitizing tablets imperfectly. There is as yet no version of AutoCAD AEC for the Mac, either, but small AutoLISP programs written by many architects for in-house use on IBM-type computers can probably be transferred with little modification to the Mac environment.

**Equipment required:** Macintosh II, IIcx or IIx, fixed disk, 4 megabytes of random access memory (at least 5 recommended, and 8 is even better), System 6.0.2 or higher, MultiFinder 6.0.1 or higher (or Finder 6.1 or higher). AutoCAD 10's initial release supports many digitizing tablets, but incompletely and through the Mac serial ports instead of the ADB (Apple Desktop Bus) port. It also supports many plotters and printers, including the Apple LaserWriter.

**Vendor:** Autodesk, Inc., 2320 Marinship Way, Sausalito, Calif. 94965. 415/332-2344. \$3,000.

**Manuals:** Exactly the same as

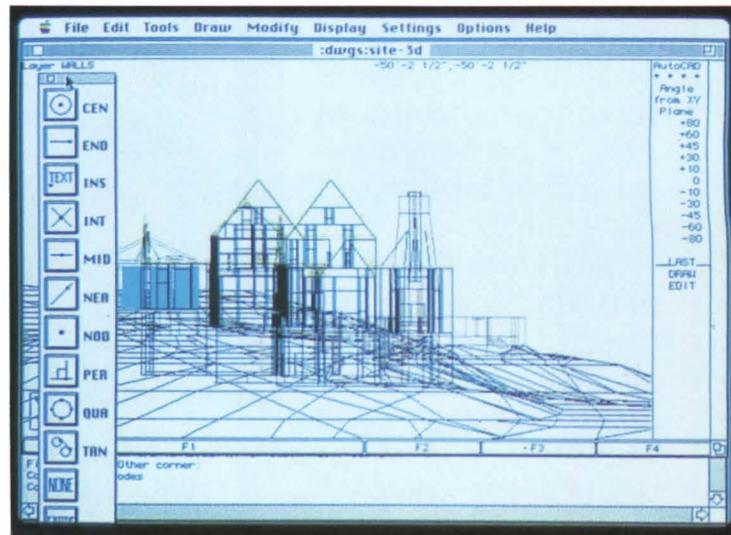
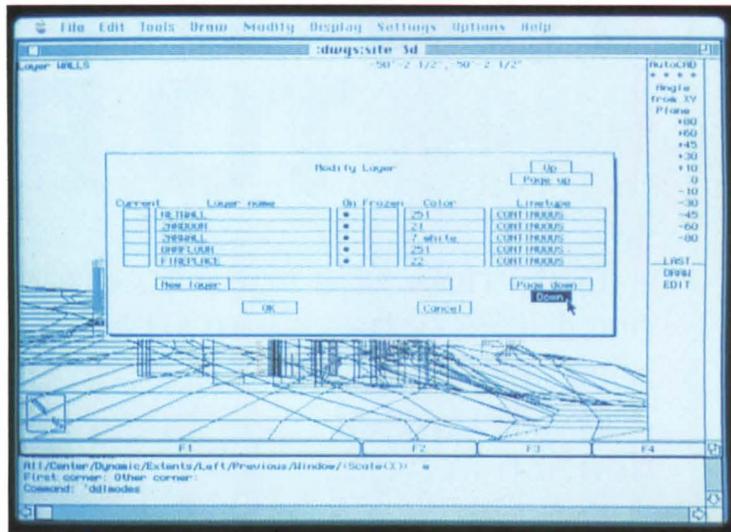
*Steven S. Ross is past president of CCM, an educational software company in New York City, and now teaches journalism at Columbia University, where he also runs a large computing laboratory for students. He is often consulted on quality-assurance matters; his 1984 book, Construction Disasters: Design Failures, Causes and Prevention, was published by McGraw-Hill.*

supplied with DOS versions, except for the installation manual. Documentation is not up to Macintosh standards, although it is reasonably clear. The tutorial is adequate, although users should become familiar with the Apple Macintosh desktop (the screen and mouse movements) for an hour or so before using the non-machine-specific tutorial itself.

**Ease-of-use:** As good as AutoCAD gets. This is a complicated package that does lots of complicated things. Installation is a breeze. Architects will miss not having the AEC add-on or a substitute for the time being. Unless a user takes the trouble to write an AutoLISP routine, AutoCAD 10 for the Mac cannot even draw a double line in one step. Even if one is using a digitizing tablet, the mouse must remain enabled because the tablet cannot be used to invoke a menu function. Only the mouse, in this initial release, can pull a menu down. Menus can be "torn away" from the top menu bar and placed elsewhere on the screen. But long menus (especially the one containing the drawing tools) will not scroll if they extend off the edge of the screen. Thus, some commands will not be available unless the menu is pulled down and torn again to reposition.

**Error-trapping:** Good, but again, not quite up to Macintosh standards. One nice feature is the warning that a disk is getting full. AutoCAD allows you to save your work before the disk is too full to hold it. But—as with any Macintosh CAD software—importing a large drawing into an existing one can put you over the limit without warning. This can happen on a DOS computer as well, of course, but the largest generally available Apple fixed disk for the Mac is now only 80 megabytes. So disk space is more critical than for DOS and UNIX systems.

*Continued on page 155*



*Even dialog boxes do not bow to the Mac interface style (top). Instead of scroll bars, the AutoCAD 10 display listing is scrolled with buttons on the*

*right. Tear-off tool menu (above) is too deep for the screen. Want to refer to the bottom tools? Tear off the menu again.*

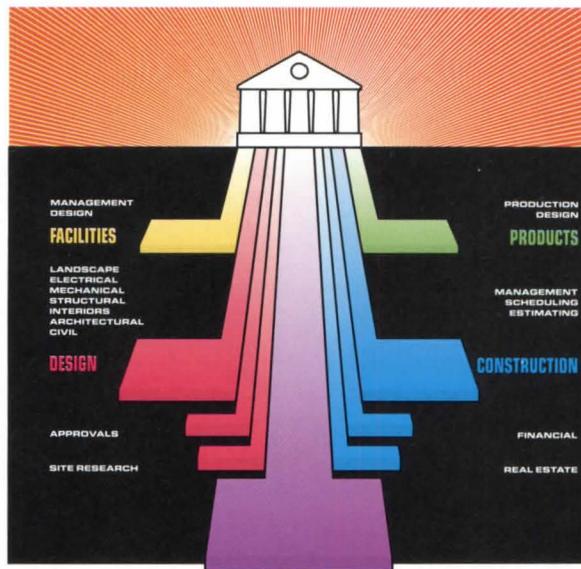
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*By keeping the command structure similar, AutoCAD has made it easy for third-party vendors to modify their add-on software for the Mac.*

AutoCAD, like all Mac software, falls prey to infirmities in other software that might be running at the same time under MultiFinder. It is possible to delete temporary files from inside AutoCAD, but doing so will usually destroy your work. It is also possible to change the monitor color configuration during a drawing session. But when the session is ended and the file is saved, then brought back to the screen later, the colors may be different from what the user expects.

#### Review

Autodesk, with its Macintosh release, continues its pattern of making AutoCAD run as identically as possible on all types of computers it supports. Commands are similar for AutoCAD running on UNIX workstations, IBM and compatible PC-DOS and MS-DOS, and now the Mac. File structures are identical. If users conform their file names to the most restrictive standard—PC-DOS and MS-DOS—they can move files back and forth among any computer that runs AutoCAD.

In addition, by keeping the command structure similar, Autodesk has made it easy for third-party vendors to modify their add-on software for the Mac. Thus, we expect a large number of third-party suppliers to announce Mac versions of their products, even as this review goes to press.

Because AutoCAD can be run with the Macintosh MultiFinder, it appears fairly easy to adapt the popular HyperCard software that comes with all Macs to write exciting new add-on applications that do not use AutoLISP.

Snakebitten DOS users and dealers, who have had some difficulty cramming AutoCAD 10 into available memory (there's a lot of fine-tuning of expanded and extended memory, the

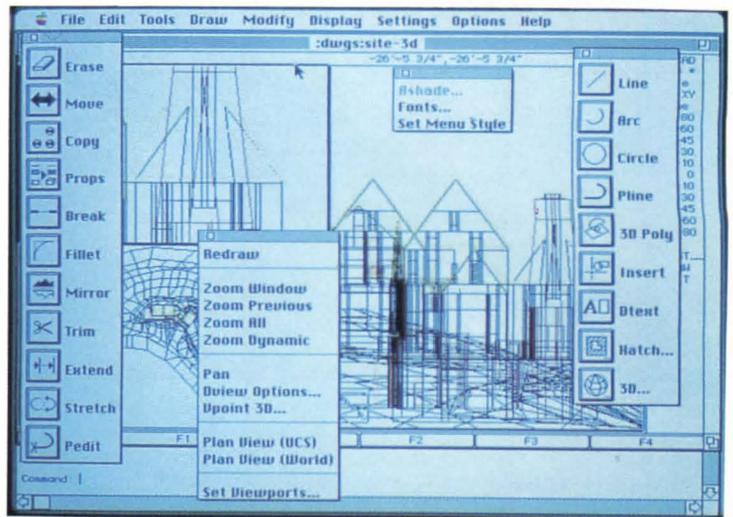
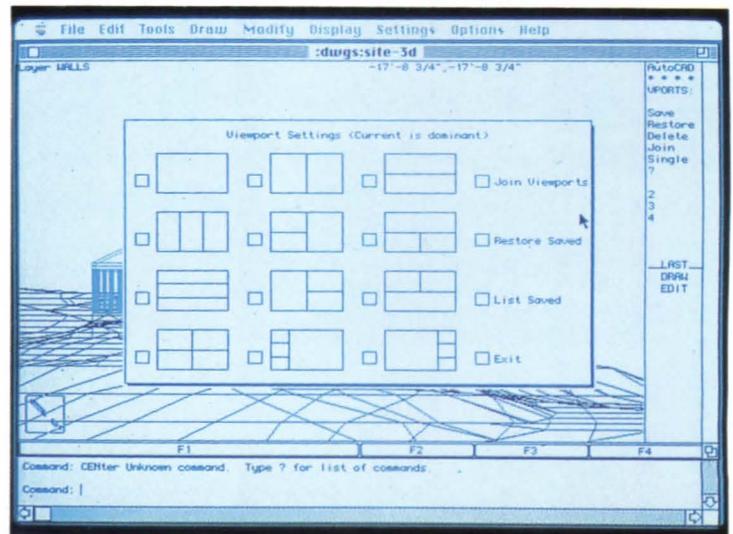
LISPheap and LISPstack) will find the Mac refreshing. RAM is RAM, and the Mac uses it seamlessly, allocating what is needed for video, add-ons, and AutoCAD itself. Even the print spooler is straightforward. The Mac, of course, requires more memory than does a DOS machine to do the same thing, but RAM chip prices have been coming down.

Having said all that, the disappointment is that AutoCAD 10 does not take better advantage of what the Mac has to offer. The worry is not the inadequate digitizing tablet interface (Autodesk will have that fixed soon, and perhaps by the time you read this). Nor is there much complaint with the lack of an AEC package—AEC will probably be available for the Mac soon, and so may GeoCAD.

Even the incomplete support of the Mac clipboard—AutoCAD can export to it, but cannot import PICT files through it—can be forgiven in this early release, although competitors such as VersaCAD have been able to manage the trick for more than a year.

Autodesk makes it easy to forgive such shortcomings because of its liberal upgrade policy. It typically costs users only \$150 to take advantage of new releases. And the Mac's simple memory management makes it easy to install such releases, too.

But what is one to make of the tear-off menu system that has a tool menu so deep that not all of it can be seen on the screen at once? Or on-screen dialog boxes that do not always make use of the familiar Mac slide-bars to scroll long lists? Or a scheme that allows multiple viewports on-screen, but only in preset formats and only as "tiled" images, not overlapping ones? Or on-screen menu buttons that, as in DOS versions, do not make the entire image of the command



*There are a number of viewport options, but they cannot be customized or overlaid in normal Macintosh fashion. They can be tiled only (top).*

*After a user "tears away" and repositions three windows and four menus (above), AutoCAD 10 for the Mac becomes easier to use.*

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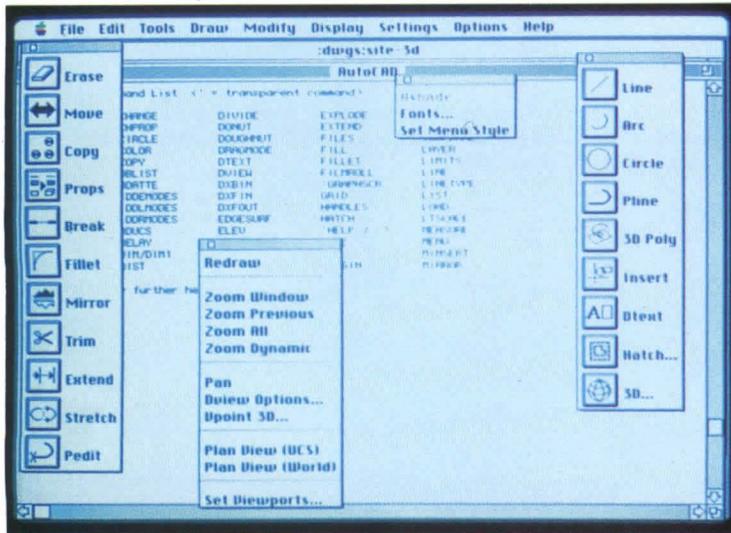


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*But what is one to make of the tear-off menu system that has a tool menu so deep that not all of it can be seen on the screen at once?*



*Torn-off menus stay on the screen when help is called. The menus have to be closed one by one, then replaced when*

“active?” (Users must click on little boxes next to the images, instead.)

Redraw time is fairly slow, too, on a Mac II. All views are redrawn at once. But even when there is only one view on the screen, the redraw time is about the same as when using a slow IBM AT or compatible, without fancy graphics board. Problem is that there is a wide variety of such boards available to speed up an IBM or compatible. Marketers of add-on boards for the Mac concentrate on making the image more colorful or finer-grained, not faster.

The Mac IIx or IIcx will speed things up two- or three-fold at least, compared to the Mac II. But that will still be slow compared to what a less-expensive MS-DOS or PC-DOS computer with a \$1,200 graphics processor can do.

Why use AutoCAD on a Macintosh at all, then? First, there's ease of installation for the basic program. There are three steps:

1. Create an empty folder on your fixed disk.
2. Copy the AutoCAD

*drawing is resumed. Notice the small amount of space the menu pages take up on the screen.*

installation program from disk 3 (of the three disks that come with the package) into the new folder.

3. Click on the installation program and change disks when prompted to on-screen. In 10 minutes, the job is done. Installation on a DOS computer can take hours of fiddling. And while the dealer will do it the first time, more fiddling may be necessary when new add-on software is introduced into the office.

Although the three disks that contain the AutoCAD software and sample files take up only 800 kilobytes each, they fill about 4 megabytes when actually installed on the fixed disk.

Installing a tablet is more difficult at the moment because AutoCAD does not yet support the Apple Desktop Bus (ADB). Instead, as on DOS computers, a serial port is used to connect the tablet to the rest of the system. You cannot do away with the regular Mac mouse, either. You'll use it to reach the pull-down menus. Then you push the mouse so the pointer is off-screen. That activates the tablet again.

The best advice: Forget about using a tablet right now. Use the mouse only. When AutoCAD issues an upgrade that supports the ADB, buy a tablet that plugs into the ADB instead of a serial port.

The Mac's standard color screen is an excellent display, easier to stare at than the typical DOS screen.

And the Mac offers generally faster, easier-to-use software for desktop publishing and for routine 2-D drafting. That makes a mainly-Mac office with a mix of AutoCAD and simpler software such as MacDraw or Claris CAD an attractive possibility. The advantage is enhanced with the AutoCAD SlideLibrarian. This utility, included with AutoCAD 10, allows images to be saved in sets for easy filing and display. How easy is it to move .DXF or .DWG files back and forth from a Mac to an MS-DOS or PC-DOS computer? Very. If the DOS computer already has a 3.5-inch drive, an add-on board from Central Point Software (The Copy II PC Deluxe) listing for under \$160 will allow the DOS computer to read and write Mac disks. And new Macs (the x and cx series) can read and write DOS disks. Or a simple AppleTalk network can be set up. AppleTalk is built into the Mac. An AppleTalk board for a DOS computer costs \$300 to \$500.

AutoCAD 10 for the Mac includes all the standard drawing tools. It also uses the new 3-D scheme introduced last fall for DOS computers, with a “world” coordinate system, and a local coordinate system that can be twisted to bring one surface of a 3-D object into the plane of the viewing screen for editing.

But do not think that because AutoCAD 10 now runs on the Macintosh it is somehow easier to use.

## ei: IntelliFile

*Vendor:* Eclat Intelligent Systems, Inc., 14470 Doolittle Dr., San Leandro, Calif. 94577. 415/483-2030. The basic CD-ROM disk containing product catalogs is \$100 per year (free to qualified specifiers); added features are available on a subscription basis. A package including a one-year subscription to ei: IntelliFile (four releases), a CD-ROM player, and ei: QuickSpec is \$1,495 for the first year.

Those heavily involved with interior design should take a close look at Eclat's new catalog-on-a-disk. The company sells space on a CD-ROM—an optical disk that looks like an audio compact disk but instead contains computer-readable information—to manufacturers. The disk, in turn, is sent free to qualified architectural firms, along with a simple program, ei: Browse, that allows users to view the information.

The current CD-ROM contains electronic catalogs for Herman Miller, Steelcase, Westinghouse, Haworth, Harter, Harpers, and CorryHeibert. Catalog images can be viewed on a VGA monitor (or Number 9 or Targa graphics). There are also symbol libraries connected to the catalogs, so that they can be moved into CAD software along with specification information. The major limitation: Some CAD software can only deal with one symbol library at a time. Using the symbols requires ei: QuickSpec. A special bridge to VersaCAD, called VersaSpec, is being prepared. The bridge to AutoCAD is called AutoSpec. IntelliFile is to include the interiors edition of the AIA's MASTERSPEC and Contract Furniture Information Services' Knowledge Base to create *comparative listings of products* such as desks or chairs. That database will cost \$995 a year, and the software to use it, \$795.

# TCS and the Corporate Ediface

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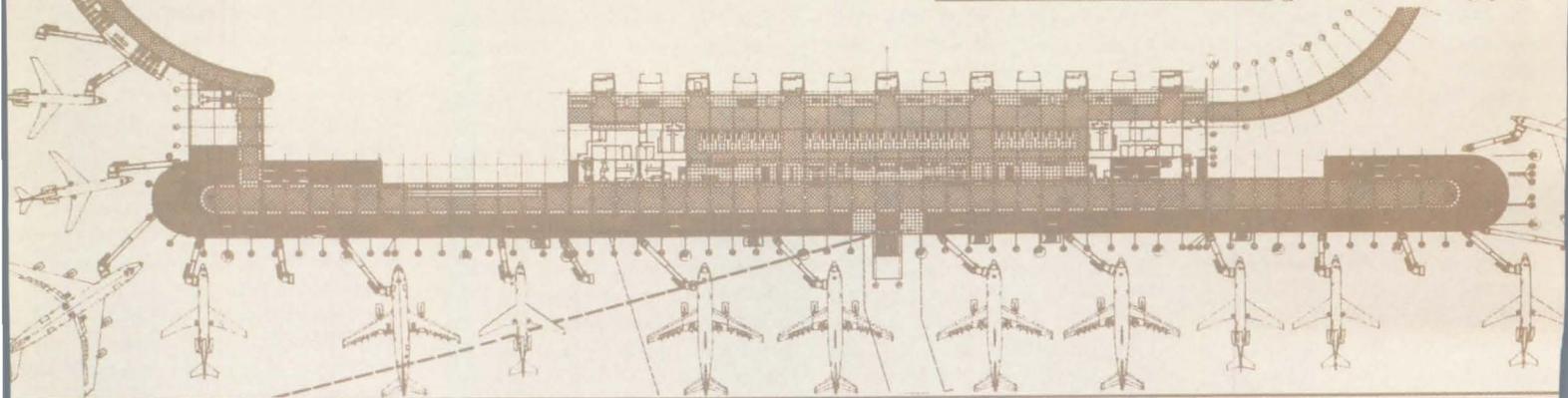
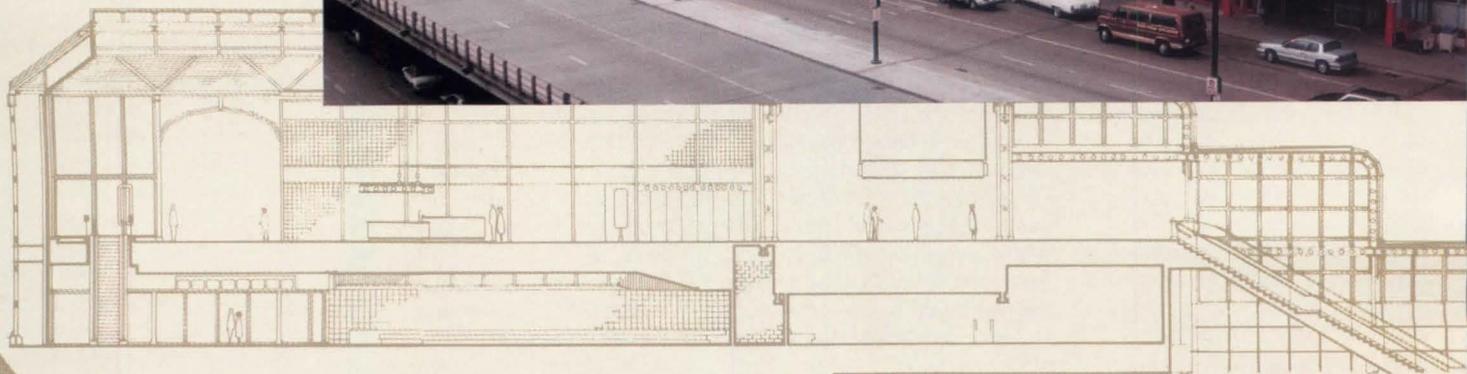
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## Expert panel explores the pros and cons of computerized building specifications

### Panelists

*Martin Bloomenthal*  
Architect and manager of specifications  
The Hillier Group

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

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

*Miriam Eldar*  
Vice president  
Electronic Sweet's  
McGraw-Hill Information Services Co.

*Alan Glassman*  
Senior research architect  
Armstrong World Industries

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

*Arthur T. Kornblut*  
Architect and attorney  
Kornblut and Sokolove

*Barry Milliken*  
Associate partner/systems director  
Skidmore, Owings & Merrill

*William Mitchell*  
Professor of architecture  
Harvard Graduate School of Design

*Theodore L. Stanton III*  
Executive Vice President  
Yearwood Johnson Stanton & Crabtree, Inc., Architects

*George B. Terrien*  
President, NCARB  
Terrien Architects, Inc.

*Hugh Thompson*  
Associate/CAD manager  
Swanke Hayden Connell Architects



Stanton

Terrien

Thompson

This spring, RECORD held a roundtable on computerized building specifications, with a distinguished panel in a day-long discussion. The response underlined the fact that there are no simple answers.

The roundtable was prompted by the introduction of two new computerized products from Sweet's, the producers of those bulky printed catalogs that have become the industry standard for architects' selection of building components. Under the blanket name Electronic Sweet's, the products are SweetSearch and SweetSpec—the former designed to greatly streamline the selection of the right component from the printed catalogs and the latter, to write complete specs [see RECORD, March 1989, pages 137-141 for a complete review].

But the scope was much broader. Participants not only explored the state of the art in computerized specs, they also projected how we can be better served by its continuing development. C. K. H.



Moderator Steven Ross laid out the importance of the topic: "Architecture is an information-intensive business. The number of variables—the different operating environments, finishes, types of construction and labor, zoning codes, and so forth—present problems of magnitude greater than the problems that, for instance, even rocket scientists deal with. Yet architects cling to this quaint belief that they are in a low-technology industry and sit with all of this paperwork, saying they don't have time to design. Unfortunately the paperwork is probably going to get worse."

Then, Ross ended his opening remarks on an upbeat note. Far from being behind in technology for information-handling, systems for architects (despite their long development period due to their complexity) are indeed on the cutting edge, he said.

### There was general agreement that we are moving ahead

"Back at the end of the '60s," reminded architect Alan Glassman, "a survey on automated specifications was commissioned by the Construction Specifications Institute. It identified six levels of development. I think we have now gone from level four to level five, defined as integrated

design-and-specification systems, because we are certainly capable of producing drawings and specifications simultaneously."

Architect Barry Milliken told of experiences in the early '70s at Skidmore, Owings & Merrill with the rudimentary production of specs that went beyond word processing. It could only be done on a mainframe. For instance, certain paragraphs could be defined as mutually exclusive and others as requiring correlative material. "If you had this, you had to have that." Now, at least one system—he cited SweetSpec—has this internal logic. "Up until now all that we have been doing is using word-processing technology, which doesn't have any understanding of its own content."

Architect Martin Bloomenthal agreed: "You need to draw a distinction between where the profession and technology are now because I'm convinced at the moment they are not really the same." The current technology for producing specs in most offices is word processing, he said, used to selectively edit from a guide specification such as MasterSpec. On the other hand, "expert systems" ask the specifier questions about each product. They analyze each answer and present subsequent questions based on what has been learned. With all questions answered, the program compiles a finished spec. "It's a giant leap forward from where we've been."

*Continued on page 161*

*Moderator Steven Ross is a prominent computer consultant and a regular contributor to RECORD.*

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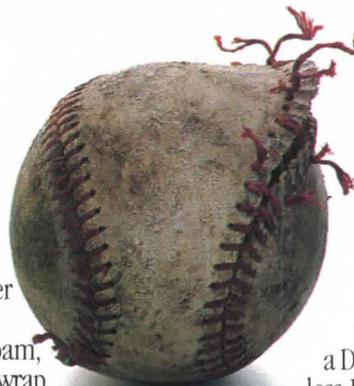
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*"If we were to impose national standards on our contractors, there would be a blank stare and they would go on and do what they always did. Much of the practice in this country is still localized and there may even be an argument for using local materials and manufacturers."*

**Are current systems coming close to replacing specification specialists?**

"Extremely close," replied architect Robert Paul Dean. Bloomenthal agreed to a point, saying that a large office would probably always have a spec department, while the new systems would make it possible for any architect in a small office to do his own specs. "A central spec department is, by simple virtue of repetition, going to become inherently better versed on what the options are and how to combine computer expertise with its own to improve specs even further. An additional advantage is the luxury, frankly, of being able to apportion our time in materials research that can be amortized over a whole broad base of projects."

Architect Hugh Thompson was even less enthusiastic about getting rid of professional specifiers: "Expert systems are fine, provided they come with the expert. I agree with you that large firms that have the expert can only be made better by an expert system." He also cited the reluctance of many architects to get involved in such specific technology.

Said Dean: "Since we need to attract people who are creative by nature, there is a hesitation to adopt something that somehow seems at first dehumanizing."

Architect Theodore Stanton talked of the reluctance of architects towards all areas of technology. "In my office, if drawings were not handcrafted, somehow they were evil."

It was Bloomenthal who supplied one of the most compelling reasons to get a broad segment of architects involved. He described the two-week, full-time training course his office gave to those learning CAD. "By contrast, using one of the expert specification systems available today simply requires that someone know how to turn on the computer and can read a



*From left to right: Miriam Eldar, Robert Paul Dean, Warren Hoppe, and Alan Glassman.*

question and punch a yes or no or 1-2-3-4 key; it doesn't really involve learning very much about computers to produce computerized specifications."

"A lot of this issue," concluded professor William Mitchell, "is a generation issue. The current generations coming out of some architectural schools have grown up with computers and they are not the least bit fazed by it."

**Computerized specifications are faster and easier. Are they better?**

The consensus was that they could be—that they *could* be more accurate, take into account many more variables, and produce the best building products for the application at hand. For one reason, a comprehensive computerized specification system requires all information in a standardized form—comparing apples to apples. Armstrong's Glassman talked about his problems in producing the sort of proprietary disks that manufacturers are putting out these days for individual products. He had visited some three dozen specifiers and found them using almost as many word-processing formats. Bloomenthal saw the selection of one comprehensive system solving the battle between the different section-organization formats that architects use. And he welcomed the fact that manufacturers would be forced to reveal data

needed to compare products, which they sometimes now omit.

But there were worries. Glassman asserted that a system not properly constructed could limit product choices. "The program might not anticipate all the variables and, looking at it from a product manufacturer's standpoint, I could think that would give a designer a false sense of security." Kalwall manufacturer Bruce Keller spoke from the audience: "We offer an infinite number of variables that, from our point of view, would be impossible to fit into a little box."

Architect and Sweet's vice president Miriam Eldar responded that these objections failed to take into account the evolving nature of spec systems: "Their virtue is that they attempt to find a common ground, encouraging through dialogue a much more widely acceptable and accepted result than we could attain in any other way." Swanke Hayden's Thompson elaborated: "Computers handle lists. We have been able to make those lists very sophisticated. I don't think Kalwall is saying their product can't be represented on a list. If we can find the right words, then we have solved the problem for Kalwall."

From the audience, product representative Vincent Salvo with U. S. Gypsum raised the opposite possibility—that automated specs could be too

broad and encourage the dreaded words, "or equal," producing substitutions inferior to what was intended. Responded SweetSpec development director Dean, "I encourage manufacturers of anything for buildings to get together with their competitors and establish minimum-performance criteria." He pointed out that the or-equal issue was not just a problem of computerized specs.

"The expertise of a system is obviously dependent on its writer," concluded Hillier's Bloomenthal. "In the case of SweetSpec, the basic text is MasterSpec, a resource that is well recognized within the profession. It is the best resource our profession has."

**What about regional variations, intuitive processes, and abstract representations replacing real product samples?**

Architect George Terrien is president of the NCARB, but he runs a relatively small office in Maine. "There is a great deal of regionalism in our practice—in materials, availability, the kinds of standards. If we were to impose [national] standards on our contractors, there would be a blank stare and they would go on and do what they always did. Much of the practice in this country is still localized and there may even be an argument for the use of local materials and for the support of local manufacturers. That is what I think is difficult about specifications systems."

Responded Eldar: "Once we have a national database, we can go on to create a lot of regionalized ones much better than can individual design firms." Bloomenthal: "In fairness, I have to acknowledge this lack as one of the current weaknesses of the technology. We have had to manually manipulate our systems to make

*Continued on page 163*

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*"Most products must be seen and it is very difficult to do that with an expert system. You have to look at a catalog. You have to look at samples. You have to feel them, touch them, test them."*

them do what is needed to fit them to particular geographic regions."

Armstrong's Glassman worried that automation would replace the old system of browsing through catalogs—that designers would zero in on one product too quickly without examining the virtues of others. "That goes against human nature," said Eldar. "People will browse."

Product representative Julio Schiralla with Pella windows spoke from the audience. "If we produce a restrictive specification or a unique detail, it is something a designer is not going to feel comfortable with because he is losing his freedom." Kalwall's Keller: "The more we move into this computerization, the more disconnection between the designer and the specifier."

"The design process," pointed out architect Kellen Chapin, "precedes specifications, so designers are not going to be sidetracked by this particular technology or process. Rather, in production, it facilitates proceeding toward what the designer has detailed."

"Most products must be seen," said Glassman, "and it is very difficult to do that with an expert system. You have to look at a catalog. You have to look at the samples. You have to feel them, touch them, test them, etc." Terrien: "We're talking about an icon that's immediately perceivable—the catalog or the sample. It is a direct representation. And you have a mental map of where it is in your office. A magnetic medium is so abstract it loses that—disappears into that mindless map that many things in our lives disappear into."

Said architect Warren Hoppe: "Visual representation is within the state of the art today with CD ROM. It really comes down to the development money necessary to represent each



*From left to right: Kellen M. Chapin, Martin Bloomenthal, Arthur T. Kornblut, Barry Milliken, and William Mitchell.*

product." Even without this, no one at the moment, reminded Bloomenthal, is talking about getting rid of catalogs—at least in Sweet's case—just making them easier to use. And, as the roundtable would reveal, no one was talking about getting rid of hands-on research either.

#### **How expert are these "expert" systems?**

Harvard's Mitchell: "I would never use the term 'expert system' these days. I accept the term knowledge-based system. The experience of the artificial intelligence industry is that it is extremely difficult to build a system that approaches true expertise. It is particularly the case when there are questions of value involved. The kind of discourse that unfolds with a knowledge base, as we have here, is very limited. It is valuable. But I don't think we should oversell what it really is."

SOM's Milliken opined that there is more expertise in the way these systems are assembled than in their use: "What we're really talking about here is something not very much different from a spreadsheet program. There is mathematical knowledge. This row of numbers answers a form down at the bottom there. The logic behind it may be something that users just don't want to have to go through. They are happy with an

automatic method similar to a spreadsheet. This is not what people think is meant by expert systems, as Mitchell said."

"We don't refer to SweetSpec as an expert system," concluded Eldar. "It is solely a knowledge-based system." So much for semantics.

#### **The traditional role of product representatives would probably not be greatly affected**

Architect Richard Gorman with I. M. Pei & Partners spoke from the audience: "We backed off on calling these expert systems, but there still needs to be somebody who is an expert pulling the spec together. In my office I'm that expert. I rely on a vast network of technical salespeople to provide me with good answers if I ask the right questions, and I am a little worried that, if a system like Sweet's becomes universal—because it is amazing—these people are going to disappear. Are all the manufacturers going to spend their money on systems instead?"

"The knowledgeable architectural reps have been becoming scarcer," replied Eldar. "It is a process that started many years ago and has been progressing. Firms like Pei or like Skidmore still get the full attention of those who are left, but there is this very large number of smaller architectural

firms—and this is something we have researched and know—that are having tremendous trouble getting a representative to call when they need one. So no matter how intelligent the questions they might want to ask, there is no one to answer them. I certainly hope that manufacturers will retain knowledgeable architectural reps and treasure them for what they are worth, but the knowledge-based systems can certainly be of tremendous help to the vast majority of practitioners who do not have ready access to this information source." Moderator Ross concurred, citing the rising costs of putting reps in the field and the consequent concentration on the large firms.

#### **Do it right or not at all**

"How many people," asked Ross, "have seen misuse of product information, specing, automatic specing, and so on in their offices? By misuse, I mean reading something wrong, putting the wrong information in, or not looking at all the alternatives?" Fully half the panel and some in the audience responded in the affirmative.

"Automation can really hurt if people misuse it," he continued. "If the designer is lazy or doesn't fully understand the limitations and strengths of computer technology, he can badly misuse it. This is analogous to what happened in engineering, say, 15 or 20 years ago. Engineers were saying maybe they didn't need as many engineers because they were going to be automating design. What happened of course is that, as computer technology began to come in, the engineers were spending the same amount of time. What they were doing was using the computer to explore more design options and so, ultimately the good engineer comes out with a better design. The bad engineer, who would

*Continued on page 164*

have been sloppy in the first place, went to play golf and was slowly driven out of business. Clients are not that stupid.

"Architects who are in charge of quality control are trying to make sure that professionals coming in are up to the new environment and do it right. The promise there of course is that it helps the client and it helps the people who are directly selling the windows and the walls and so forth to the profession."

**Despite computers, there will always be research needed the way we have always done it** Architect and attorney Arthur Kornblut: "Product evaluation [beyond what systems supply] is very important. The client hires the architect not to produce perfect drawings and specifications, but rather to provide a professional service that encompasses making

*"What I don't see automation changing in any way at all is the responsibility of an architect to research the products that he or she is putting into building design."*

professional judgments. He can not rely blindly on canned specifications.

"I think an architect has an obligation to talk to other architects and to contractors and owners to see what kind of experiences they have with a particular product. An architect has to be satisfied that a particular product is one that a reasonably competent contractor could fulfill the specification requirement for—and that, if it has a limited warranty of three, five, or seven years, the manufacturer is going to be

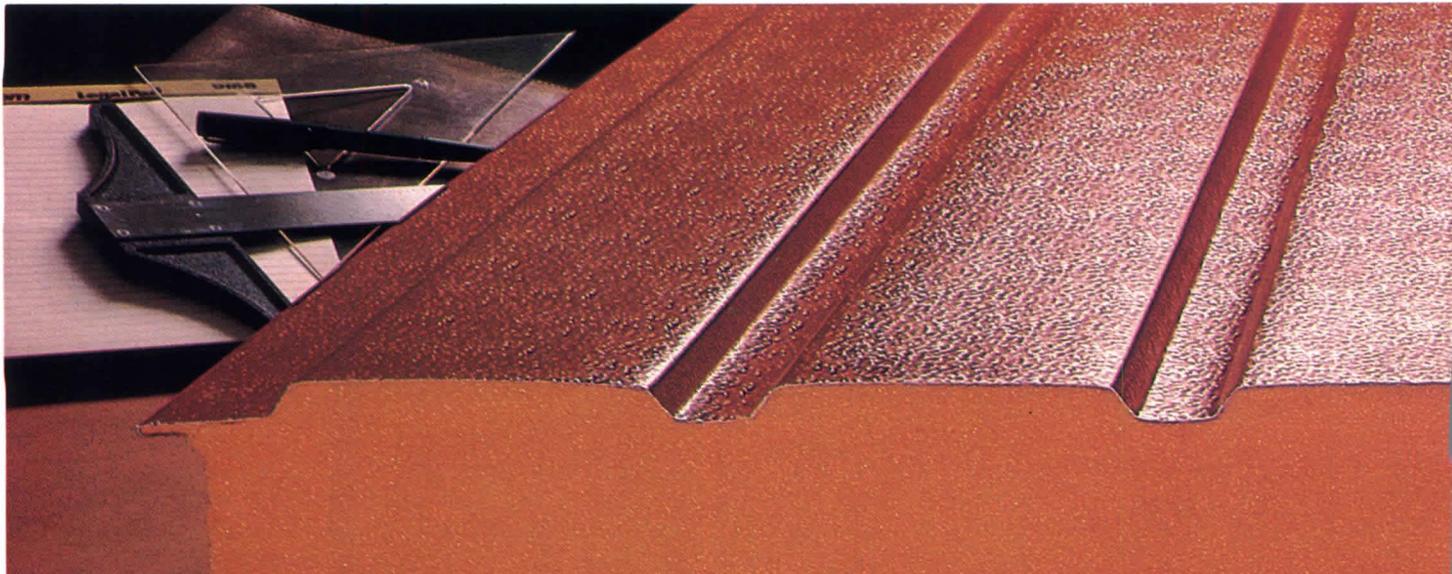
around that long. Does a manufacturer have the capacity to produce a specified product in the quantity needed, when needed, to avoid the problem of either a delay claim by the contractor on the one hand or a costly substitution on the other? An architect has an obligation to meet with his client if there are serious enough questions."

Bloomenthal: "What I don't see automation changing in any way at all is the responsibility of an architect to research the products that he or she is putting into building design."

Glassman: "That's exactly right. The points Kornblut brought up are exactly the same points that we looked at before computer-aided specifications."

"I find no differentiation between product evaluation now and 20 years ago," said architect Edward Harter of Pasanella & Klein, speaking from the audience. "Then I was told I needed a hammer, a Zippo lighter, and a crochet hook to properly evaluate products."

"Architecture is a visual profession," said architect Margaret Ott Winslow of Taylor and Clark, also in the audience. "We make our choices visually. I could not work without my reference library of catalogs and the specification is simply a translation into words of the visual process and visual images. I don't see any conflict here. I see electronic specifications as part of a total process."



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"What I have been hearing," concluded Sweet's vice president Eldar, "are two distinct processes—one, the process of product evaluation and selection, and second, the somewhat overlapping but quite distinct process of creating specifications. Now, one of the instruments of product evaluation and selection is a catalog, another is a knowledgeable representative or a combination thereof. A catalog is a very complex document which contains numerous and very diverse elements. All that we have done is take a bite out of one aspect of that catalog and put on computer some very easily encapsulated product characteristics in uniform format and facilitated—I like that word very much—finding what you

*"To say that new technology is useless because it doesn't solve all the problems is absurd. It has to be regarded in the context in which it is being offered—one more tool to help the professional practice better."*

want faster, easier, and maybe a little better.

"I can see within the next few years other aspects of catalog information capable of being queried in a similar manner. Let's take detailed drawings and put them up on computer and query them. Let's put up warranties or guarantees. So what we are doing is taking elements of information and slowly putting them on computer without in any way supplanting either the catalog or the representative."

"What the manufacturer is

hearing," added Dean, "is that we are going to use systems to get to them faster. It should be music to their ears.

"There has been a tendency in this discussion to point out the pitfalls and shortcomings of technology where it is now. There is always a tendency to regard every new technology as a panacea. I don't think any of the systems we're talking about here are being presented as a panacea. These are new tools and anyone who uses them needs to learn their capabilities and limitations. To say that new

technology is useless because it doesn't solve all the problems is absurd. It has to be regarded in the context in which it is being offered—one more tool to help the professional practice better."

"I make this prediction," said Ross. "Two years from this date, there will not be any architectural firm in the country that is big enough to get Sweet's that will not be using some form of computerized spec writing—two years, not a five-year or ten-year phase-in, but two years. It is that good, that important, that advanced, and that inexpensive. So I think the readers of RECORD who aren't doing it better get used to it quickly."

*Charles K. Hoyt*

*Part two of the roundtable report on computerized specs will appear in a forthcoming issue.*



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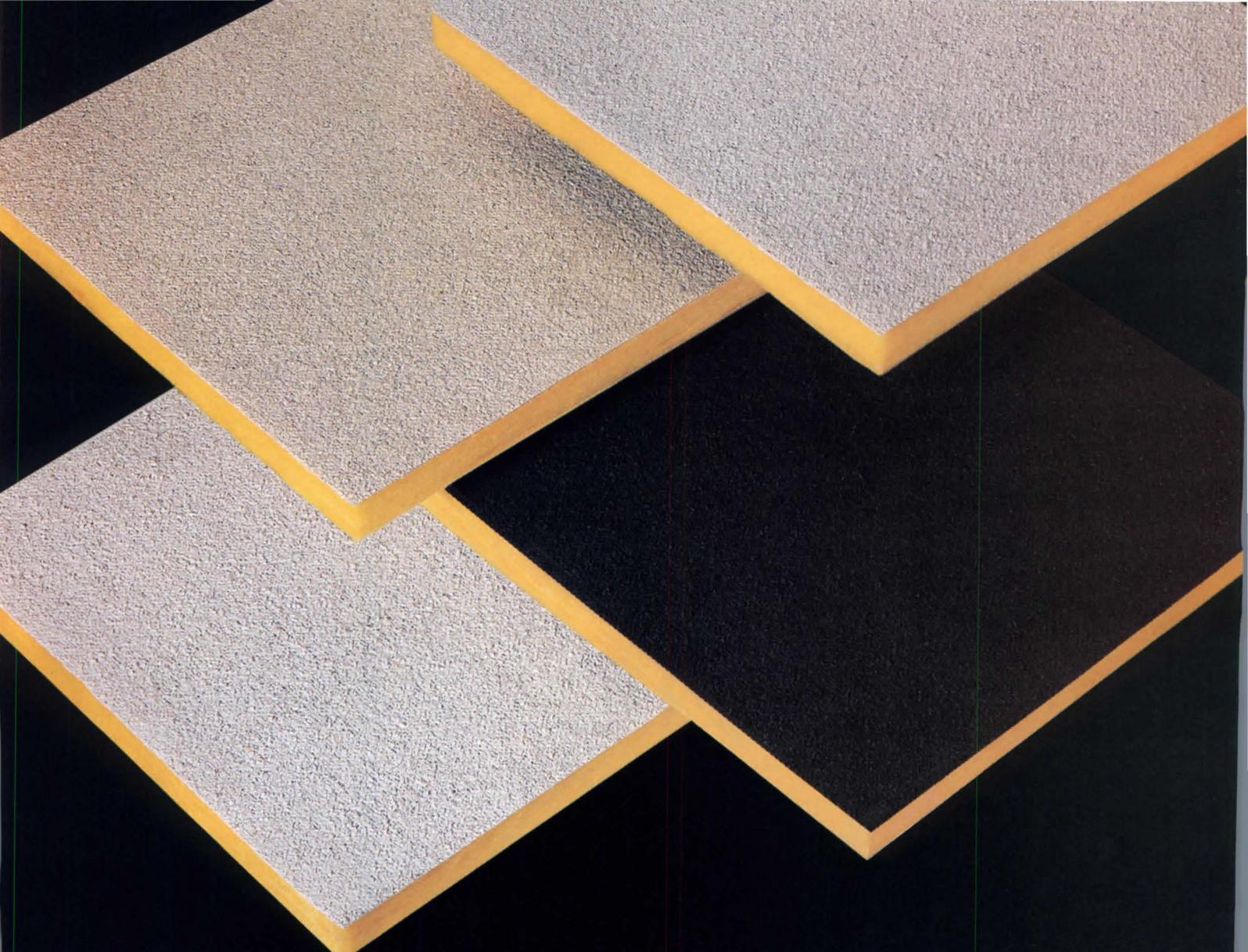
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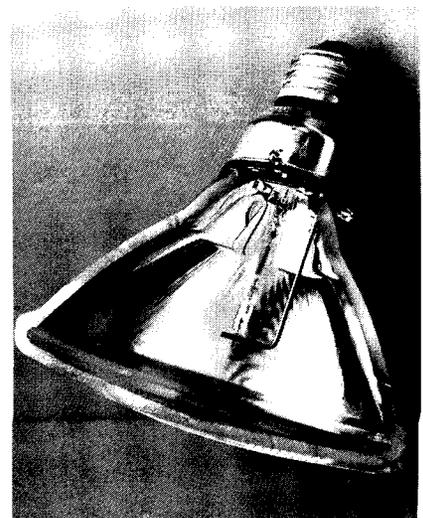
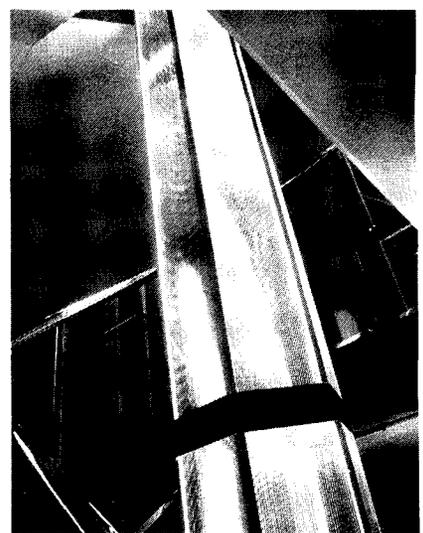
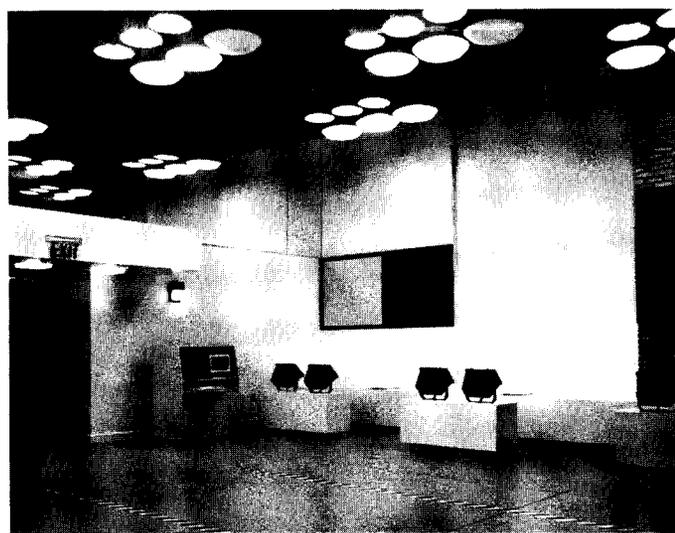
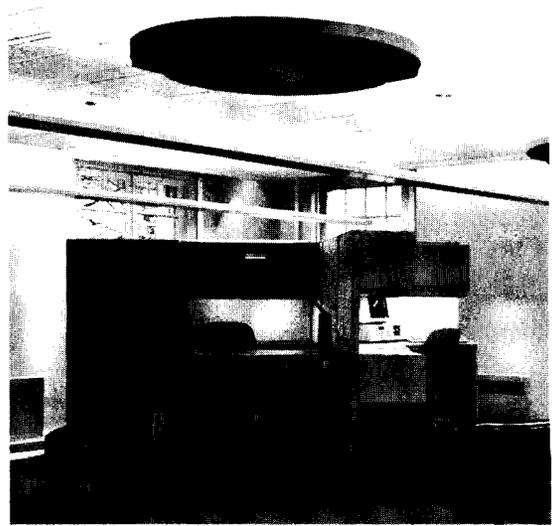
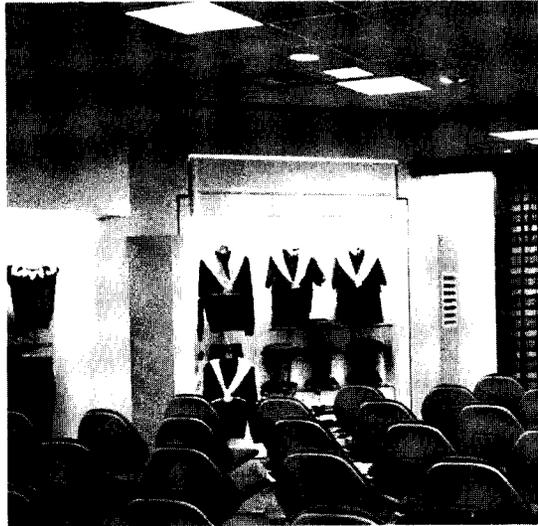
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## College of Electrical Knowledge reopens

The granddaddy of lighting labs, General Electric's Lighting Institute at Nela (National Electric Lamp Association) Park is once again prepared to demonstrate the realities of light to the architect, lighting specifier, and contractor. Closed for over a year during a complete renovation by Brubaker/Brandt, Architects-Planners of Columbus, Ohio, the Cleveland facility reopened in April. Starting this month, it offers a year-round series of conferences for specifiers, lighting designers, architects, and distributor sales representatives, as well as workshops for specific applications, such as retail, office, and security lighting. A major component of the Institute is full-scale demonstration areas, some of which are shown here.

A Merchandising Center (1) compares light sources and systems against any type of retail environment, demonstrating the effect of different lighting on various materials. An office setting (2) and three conference rooms incorporate direct, indirect, wall, and daylighting techniques. An 18-ft-high space (3) simulates an industrial interior, and displays exterior lighting against standard wall materials. A stairwell (4) is lit by a light pipe illuminated by both electrical and daylight sources.

The fixture gallery (5) offers a walk-through dramatization of the impact fixture design can have on light from identical sources. Nela Park is also the headquarters of GE Lighting, with research, development, and testing laboratories that provide state-of-the-art products, such as a new Halogen-IR PAR 38 spot (6). A line-voltage replacement for 150W PAR 38 lamps, the bulb has an infrared-coated filament tube which reduces energy use by 60 percent while producing 27 percent more light. General Electric Co., Nela Park, Cleveland. Circle 301 on reader service card. More products on page 173



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# Product literature: restoration

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## Ornamental plaster

A 14-page catalog highlights moldings, cornices, and other architectural ornamentation made from original molds, and describes the creation of accurate restorations. Felber Studios, Inc., Ardmore, Pa.  
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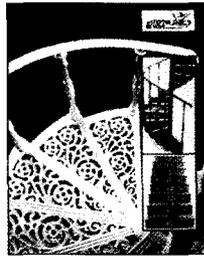
## Paint removal

A data sheet explains the Peel-Away method of removing as many as 32 coats of paint in one application, even from ornately carved wood, masonry, or metal surfaces. Dumond Chemicals, Inc., New York City.  
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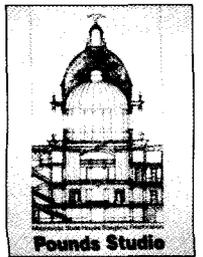
## Cast metal

Restoration of a 100-year-old facade using economical custom casting techniques is described in a color brochure. New finishes can replicate stone, terra cotta, and other materials. Historical Arts & Casting, Salt Lake City.  
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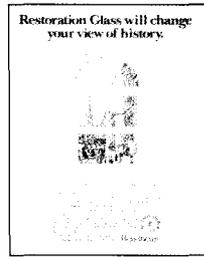
## Authentic artifacts

A condensed catalog features wrought- and cast-iron stairs, brass railings, tin ceilings, and architectural woodwork offered for period architectural restorations. Steptoe & Wife Antiques, Ltd., Toronto.  
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## Scagliola restoration

An illustrated case study on the replication and restoration of marbled ornamental plaster in the Mississippi State House exemplifies the techniques used by a Louisiana workshop. Pounds Studio, Covington, La.  
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## Colonial-era glass

Installation-site profile sheets explain how Restoration Glass is used in the authentic reglazing of commercial and residential buildings. Handmade samples are available. S. A. Bendheim Co., New York City.  
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## Architectural woodwork

Reproduction trim and ornamentation, licensed by the National Trust for Historic Preservation as duplicating authentic details in modern materials, is shown in a catalog. Focal Point, Inc., Atlanta.  
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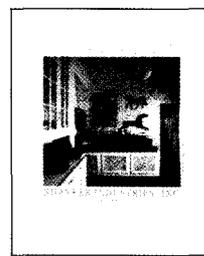
## Plasterwork

Detailed cornices, mitred corners, archways, and ceiling medallions, made of reinforced plaster material, are shown in a six-page catalog. Plaster Corp. of America, Edmond, Okla.  
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## Masonry restoration

Water-soluble paint removers and masonry restoration products, safe for the most fragile building fabric and capable of encapsulating leaded paint, are explained. Diedrich Chemicals, Inc., Milwaukee.  
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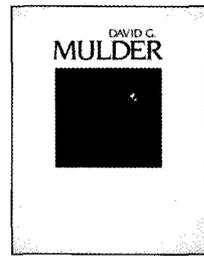
## Metal ceilings

Tin, copper, brass, and stainless-steel ceilings and cornices, shown in an eight-page catalog, are offered for both nail-up and drop-in applications. Shanker Industries, Inc., Secaucus, N. J.  
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## Cast iron

Several recent restoration and custom-design cast-iron planters, sculpture, railings, and interior metalwork projects are illustrated in a four-page design catalog. Robinson Iron, Alexander City, Ala.  
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## Raised-panel wood doors

Hand-crafted interior and exterior doors and custom wood staircases are illustrated in a six-page brochure. David G. Mulder, Battle Creek, Mich.  
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*Continued on page 171*

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**Office layout**

An eight-page brochure explains how a rounded connector allows Private Spaces office panels to be joined at angles of from 90 to 270 deg. Rosemount Office Systems, Lakeville, Minn.  
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**Fire-retardant upholstery**

A free videotape on Naugahyde 2-200 Flame Blocker fabric demonstrates the Boston full-scale chair-burn test, and shows the material used in hotels and healthcare facilities. Uniroyal, Inc., Mishawaka, Ind.  
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**Architectural window products**

A 24-page capabilities booklet highlights curtainwalls, skylights, doors, windows, and other products manufactured by the six divisions of the Wausau Metals Corp. Wausau Metals Corp., Wausau, Wis.  
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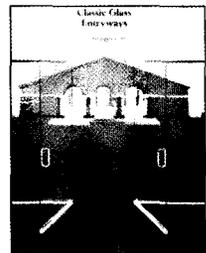
**Awning design**

An Awnings and Architecture literature kit shows fabric used for shade, shelter, and decoration; provides design and technical data; and diagrams framework. Industrial Fabrics Assn. International, St. Paul.  
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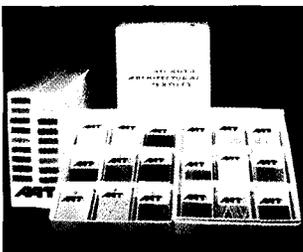
**Locksets and door hardware**

A short-form catalog covers architectural hardware such as heavy- and standard-duty locks, locksets, and trim; new products include door closers and exit devices. Arrow, New Haven, Conn.  
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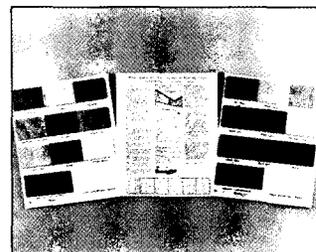
**Glass doors and railings**

A 12-page technical catalog pictures Tuf-Flex swinging and sliding doors, transoms, fittings, hardware, and metal and glass railings. Structural Glass Systems, Inc., Houston.  
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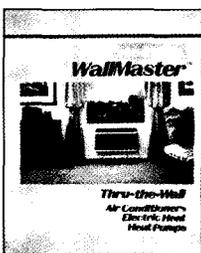
**Contract fabrics**

Offered for the design professional, a compact sample set provides swatches of all colorways for 30 of this mill's most popular fabric patterns. Atlanta Architectural Textiles, Atlanta.  
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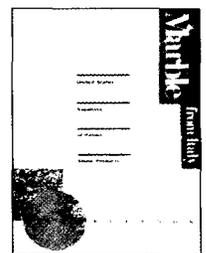
**Hardwood flooring system**

Boards contain samples of the exotic and pastel-finished wood used in a prefinished, three-layer flooring system, which includes an adhesive underlayment and sound/vapor barrier. Rowi USA, Inc., Syracuse.  
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**Room air conditioners**

A catalog introduces new heat-pump, heating, and cool-only units that fit existing through-the-wall sleeves, making them suitable for retrofit as well as new retail, hospitality, and commercial buildings. Friedrich, San Antonio.  
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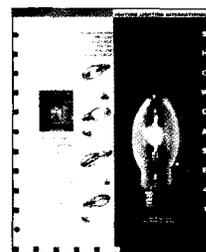
**Italian building stone**

A 40-page state-by-state sourcebook lists U. S. suppliers of Italian marble, granite, and other stones, giving the size, scope, and services offered by each firm. Italian Trade Commission, New York City.  
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**Listed exit devices**

New A-label Series 3000 push bars, for wood, metal, and glass doors, offer the finish, latching, and mounting options illustrated in a color catalog insert. Adams Rite Mfg. Co., City of Industry, Calif.  
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**Low-wattage HID**

Color photos demonstrate the warm temperature value, lighting efficiencies, and compact size of new single-ended metal halide lamps, ranging from 35 to 175 watts. Venture Lighting International, Cleveland.  
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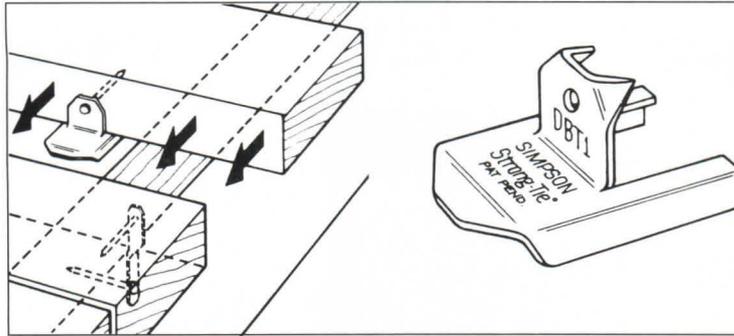


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**Slate-tone shingle**

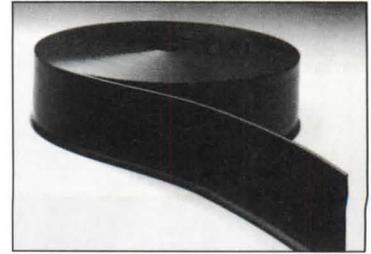
Two colors—a slate blue/gray and a lighter shade of blended blue tones—have been added to the Independence Shingle roofing line. Both are said to complement popular gray-blue paints and stains. CertainTeed Corp., Valley Forge, Pa.  
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**Decking connectors**

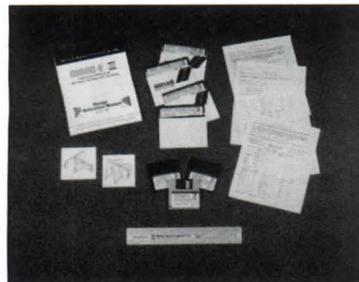
Galvanized-metal Deck-Tie connectors simplify the construction of a smooth wood deck surface, unbroken by water-collecting nailheads. Fasteners are

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Offered in 28 colors, flexible Infinity cove base comes in 120-ft rolls that require minimal seaming, wrap around outside corners, and miter easily. Roppe Rubber Corp., Fostoria, Ohio.  
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 Continued on page 175



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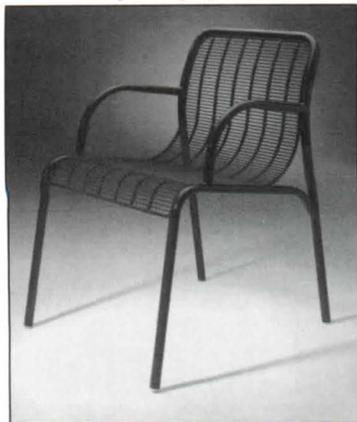
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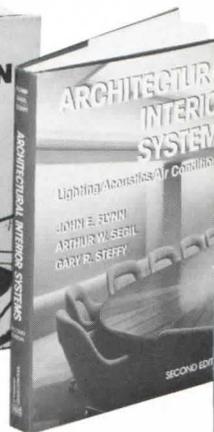
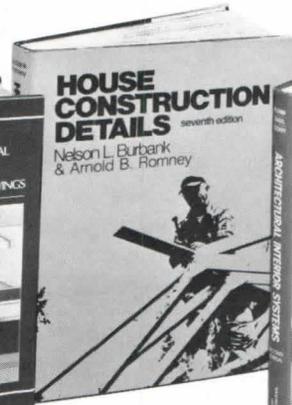
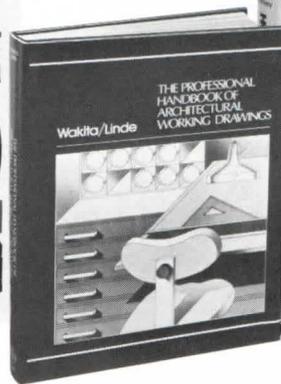
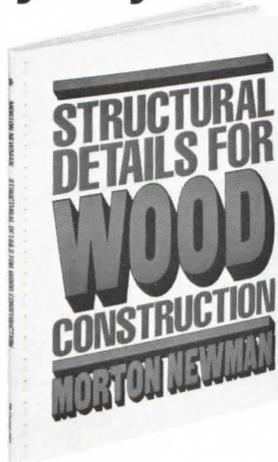
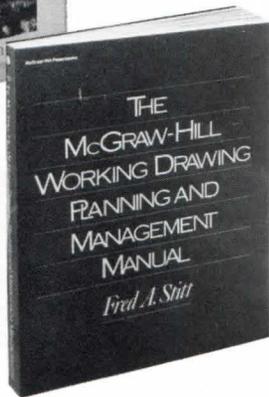
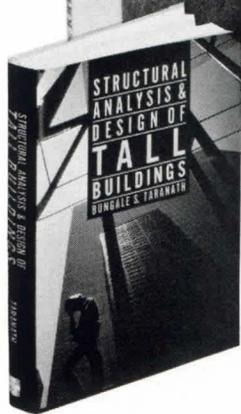
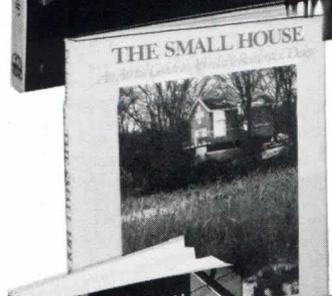
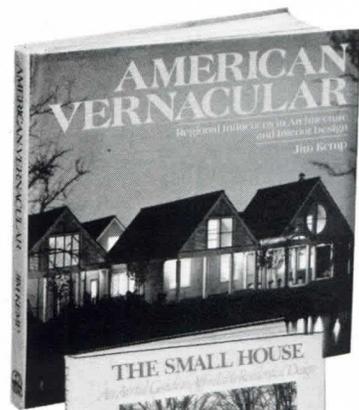
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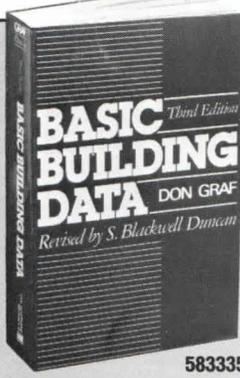


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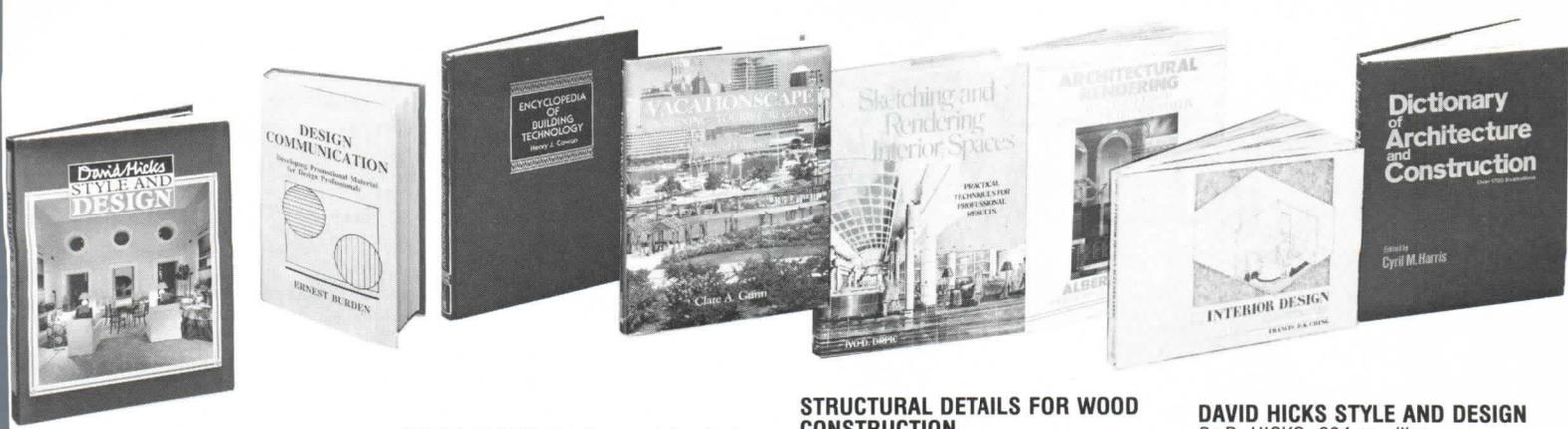
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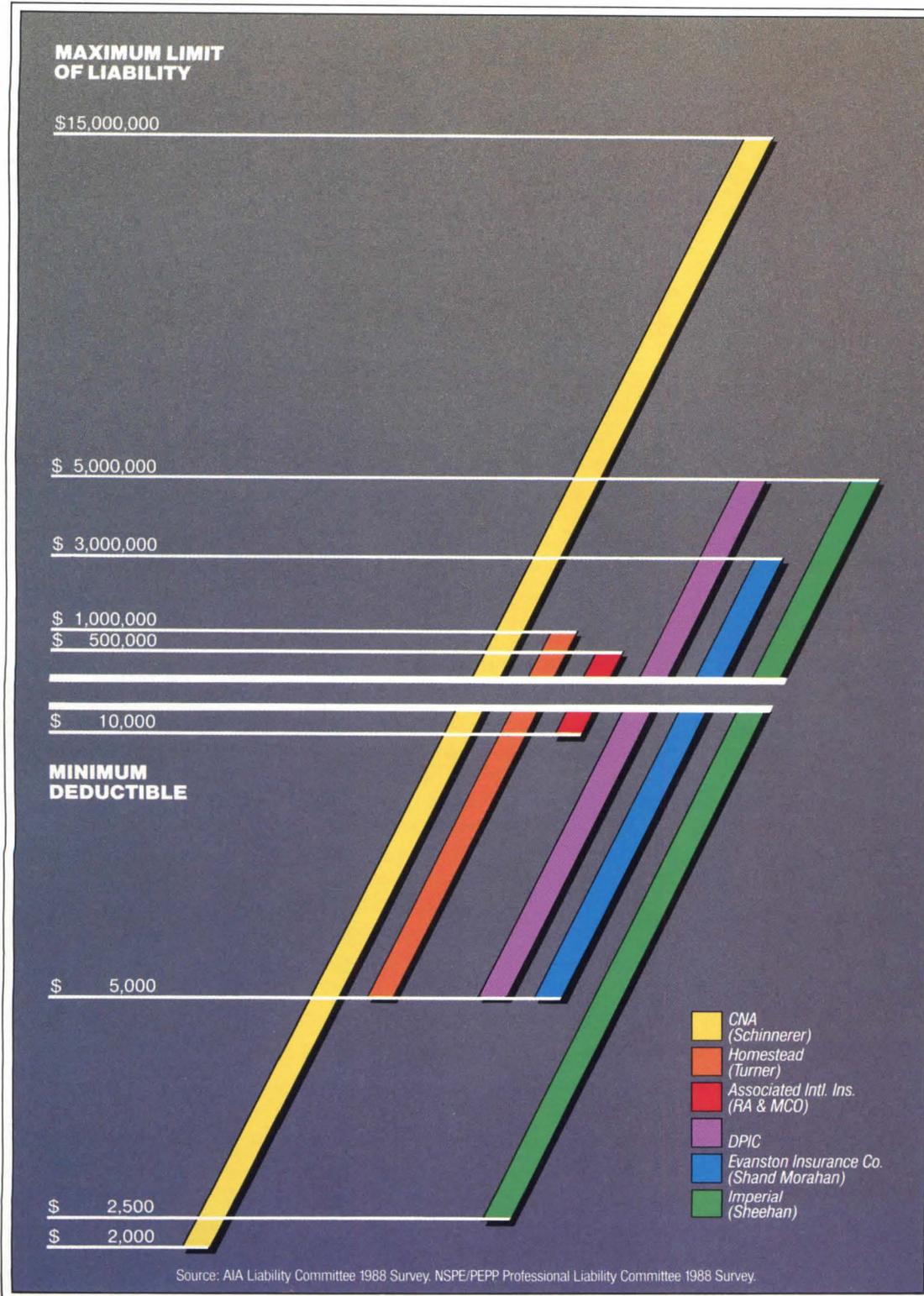
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# Manufacturer sources

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

## Pages 98-107

Herman Miller Showroom, Atlanta  
 Scogin Elam and Bray Architects  
 Wood flooring: Robbins, Inc.  
 Carpeting: Interface Flooring Systems. Paint: Duron, Inc.  
 Partitions: Herman Miller (Vaughan Walls). Wood doors and special shapes: W. P. Stephens. Steel sculptures: Advanced Metal. Lighting: CSL; Luma; Halo; Day Brite. Ceilings: Donn.

## Pages 118-119

Grace Lutheran Church  
 Cunningham Architects  
 Copper-coated shingles: Design Performance, Inc. Windows: Efco Corp. Entrance doors: Lone Star. Locksets: Schlage. Seating: UniFlex. Pendant lighting: Lazin. Wall fixtures: custom by architects.

## Pages 120-123

Lipschutz/Jones Apartment  
 Frank Lupo and Daniel Rowen, Architects  
 Doors: custom. Hinges: Grasse; Stanley. Locksets: Schlage. Paints: Pratt & Lambert; Benjamin Moore & Co. Ceramic tile: Dal-Tile. Flooring: Horner Wood Flooring. Slate: Vermont Structural Slate. Wall-wash scoops: Guth (Q-Lux). Downlights: Edison-Price. Chaise: Stendig (Transat by Eileen Gray). Floor light: Mario Fortuny (Projector Lamp). Adjustable stools: Maison Desney. Window louvers: Uni-Vue. Switchplates: Lutron. Bath mirror: Eileen Gray. Custom stainless-steel railings: Aileron Design, Inc.

## Pages 126-129

U.C.L.A. Child Care Center  
 Office of Charles and Elizabeth Lee, Architects

Pages 126-127—Steel moment frame: Profile Structures, Inc. Storefront, hopper, and fixed windows; entrance and sliding doors: United States Aluminum Corp. Glazing: Guardian Industries Corp. Exterior lighting: Lightolier, Inc. Rolling doors: Cookson Co. Roofing: Flintkote.

Pages 128-129—Translucent wall panels: Kalwall Corp. Perforated metal ceiling panels: Profile Structures, Inc. Paints:

Frazer. Pine flooring: Saima. Sealant: Thompson's. Laminate surfaces: WilsonArt. Vinyl tile: Azrock Industries. Uplighting: Guth. Track lighting: Halo.

## Pages 131-133

Terminal C, Raleigh-Durham International Airport  
 O'Brien/Atkins Associates, Architects  
 Clerestory glass block: Pittsburgh-Corning Corp. Metal roof: H. H. Robertson Co. Plate aluminum cladding panels: custom by E. G. Smith  
 Construction Products, Inc.

Porcelain tile: Fiandre. Modular carpeting: custom by Interface Flooring. Holding-area seating: Knoll International.

## Pages 134-137

Terminal 5, Delta Air Lines  
 Gensler and Associates/Architects

Page 134—Curtainwall: Tempglass Western, Inc. (Stackwall). Exterior and interior cladding panels: Forms + Surfaces (Neoparium). Built-up roofing: Conglas. Skylights: Super Sky Products, Inc.  
*Continued on page 204*

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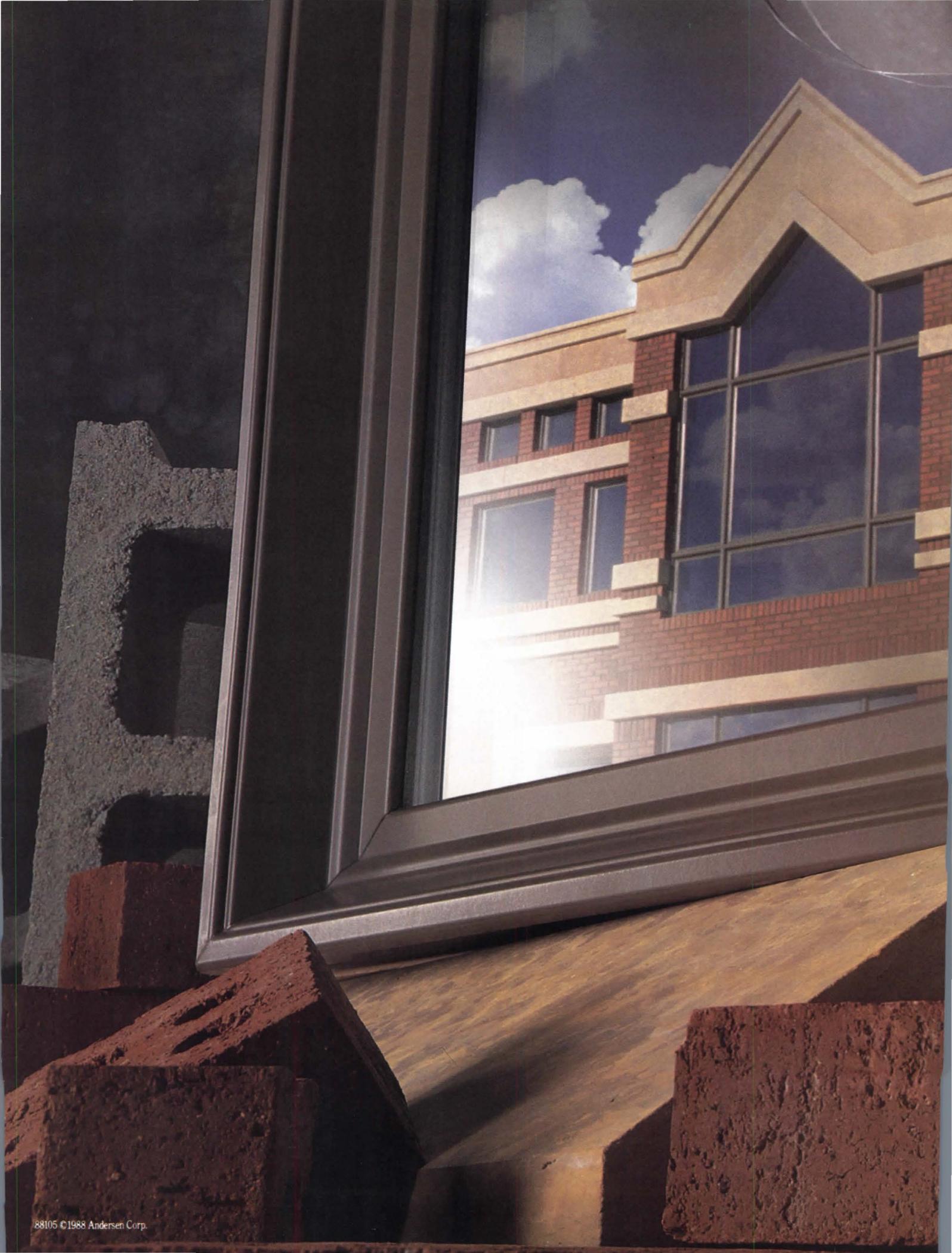
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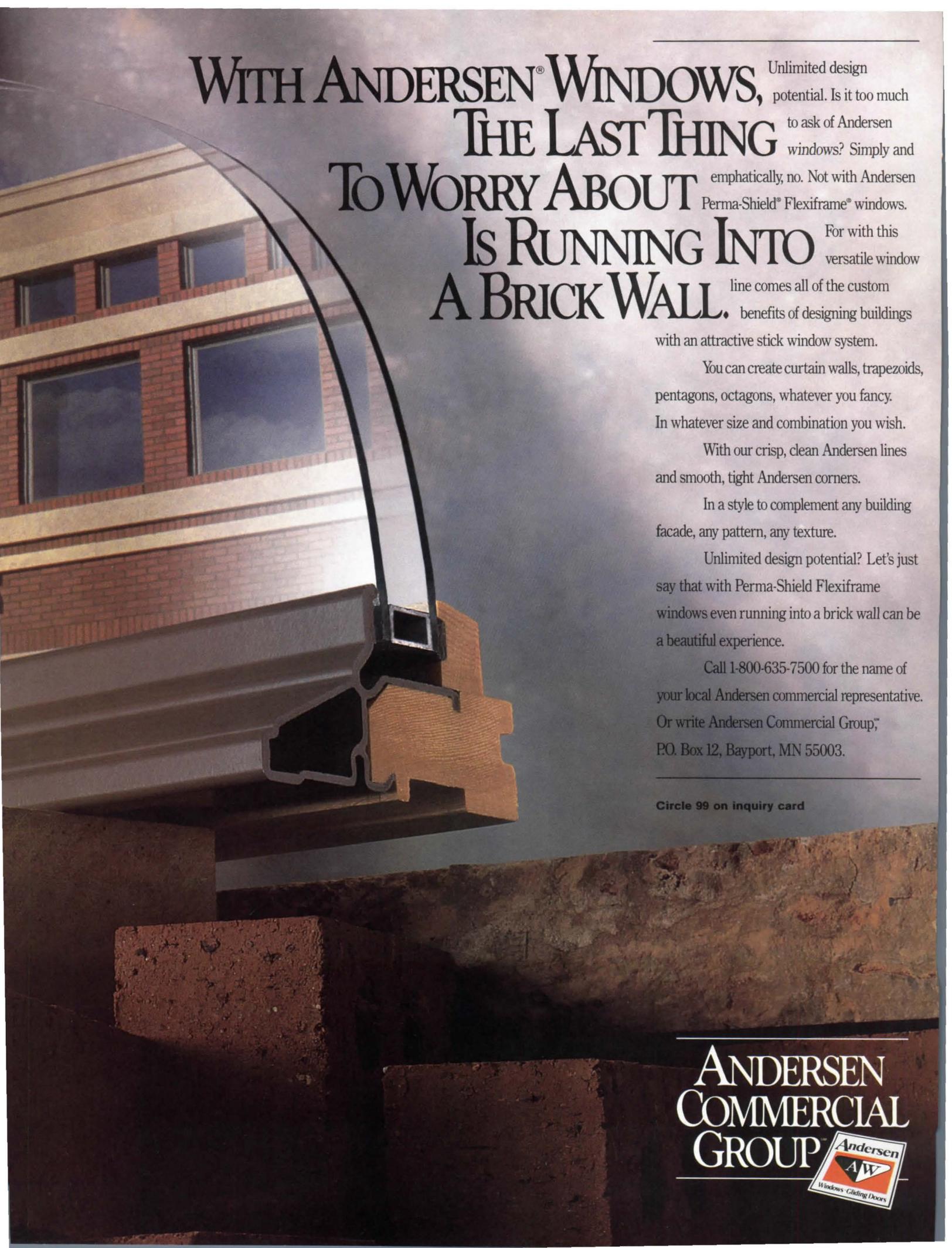
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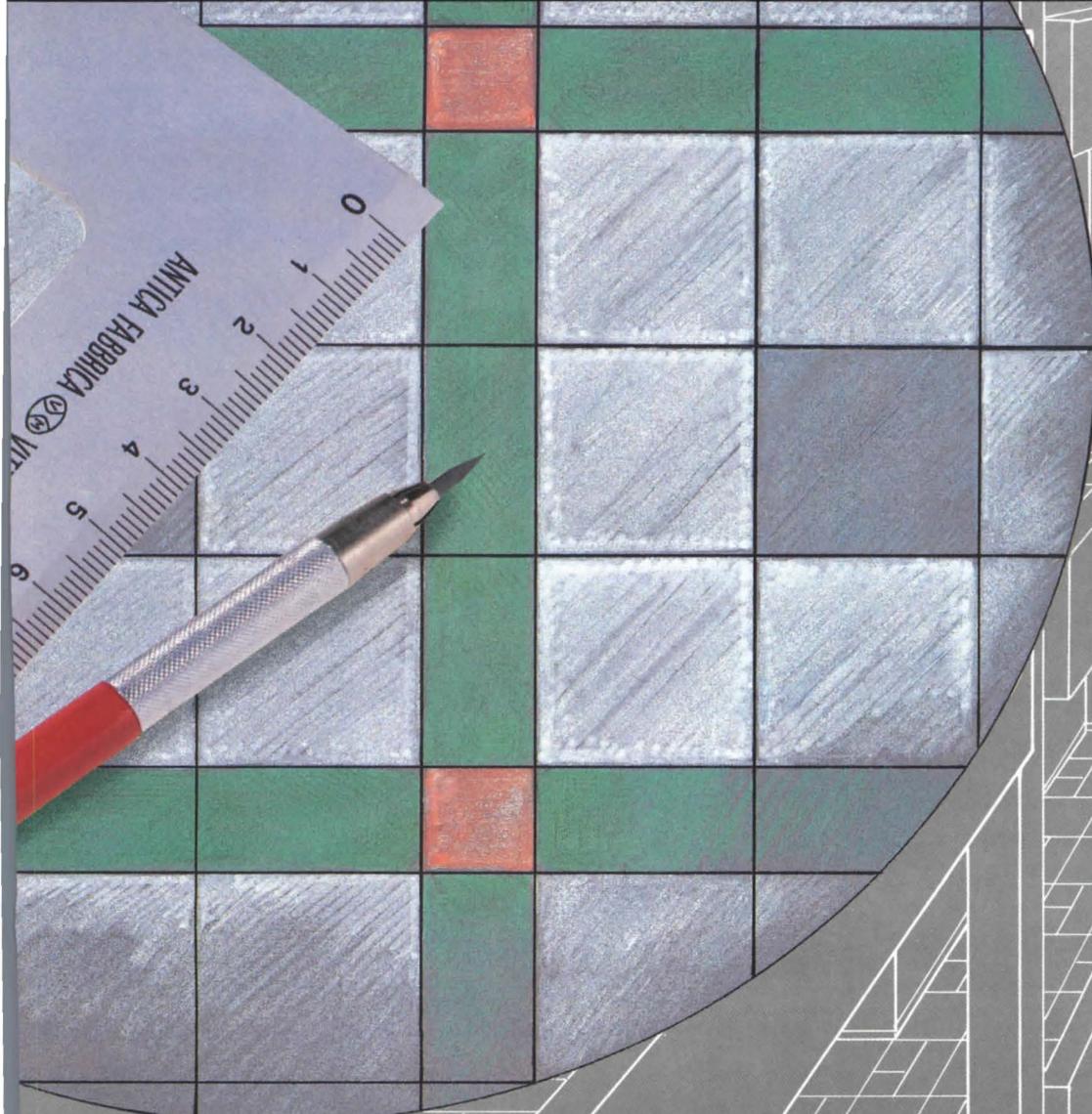
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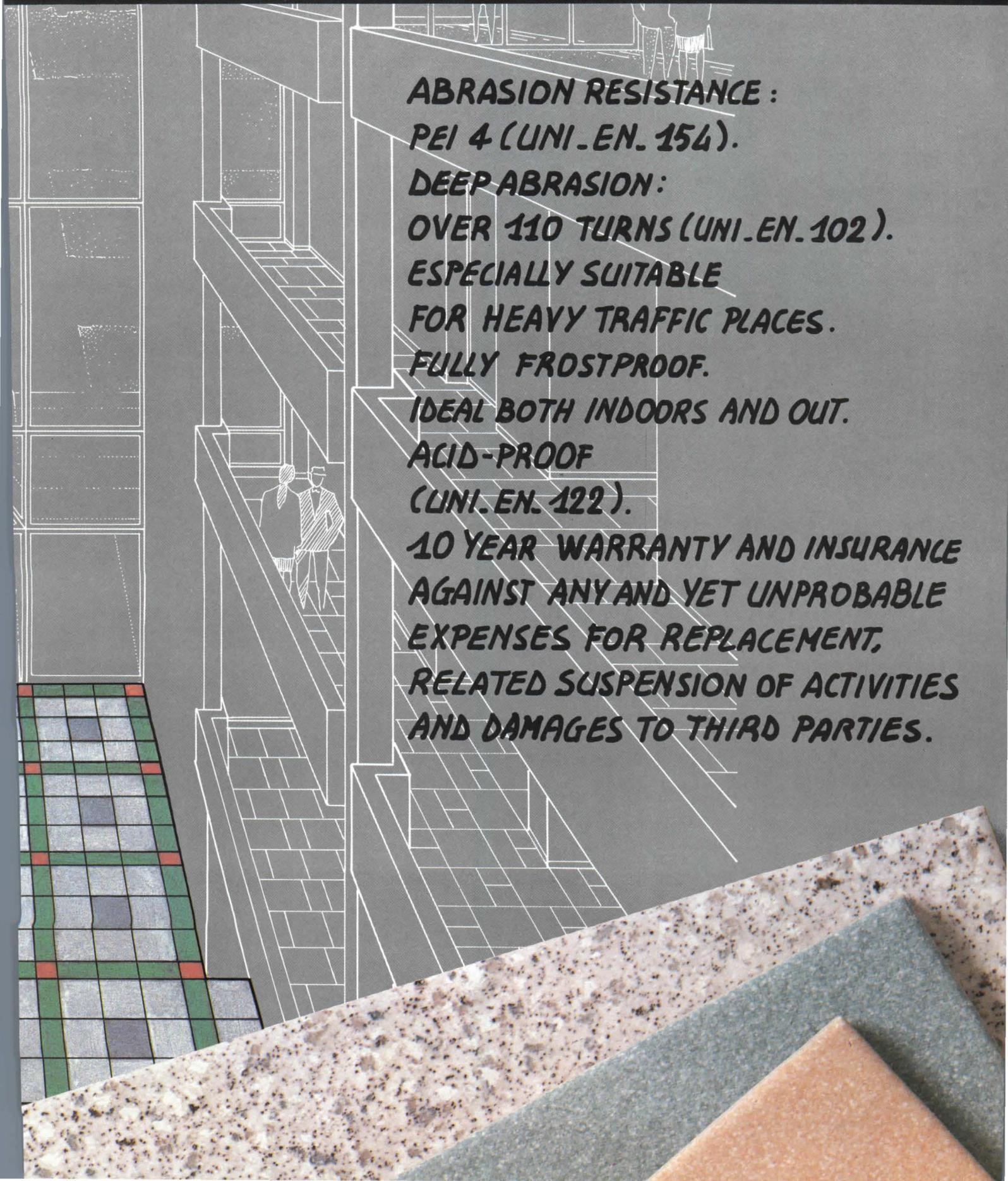
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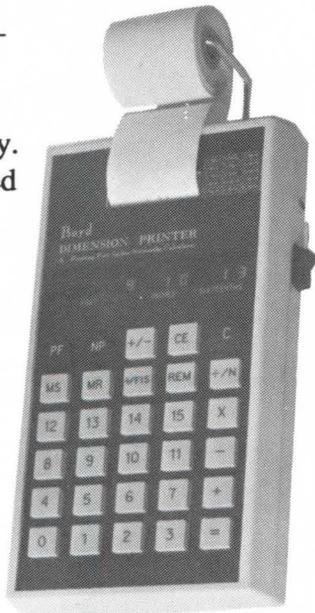
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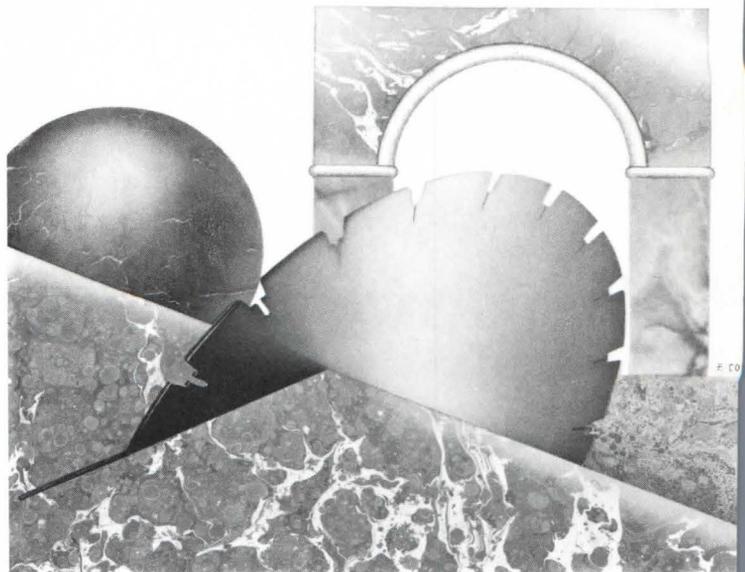
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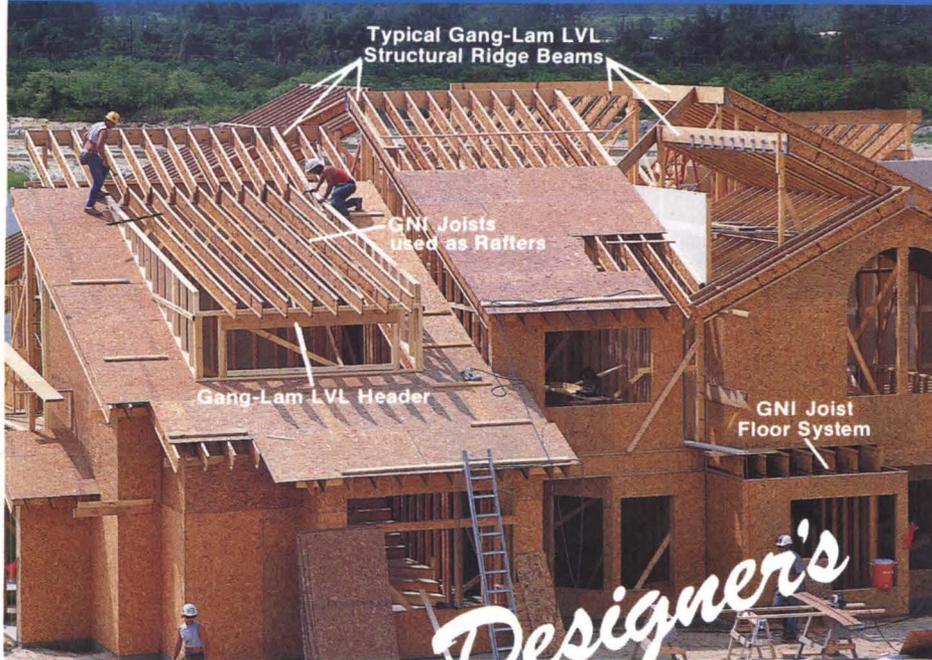
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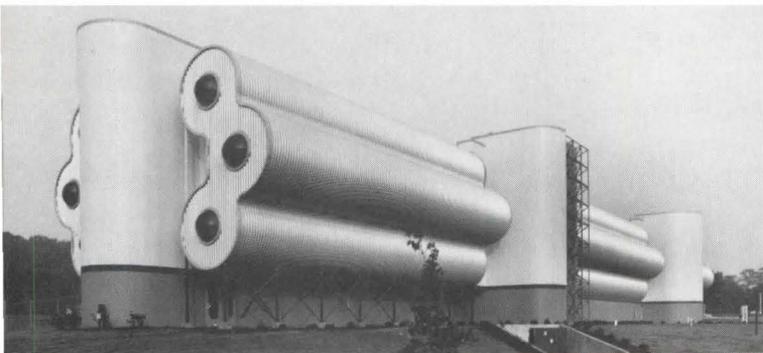
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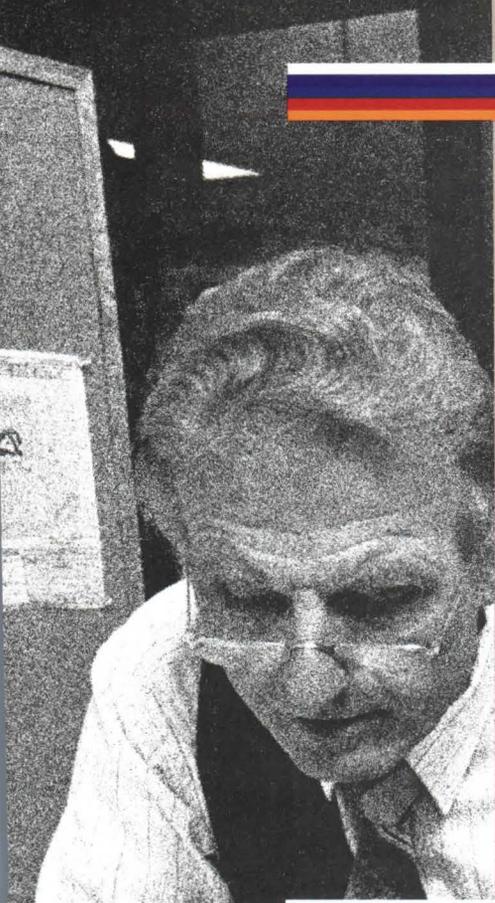
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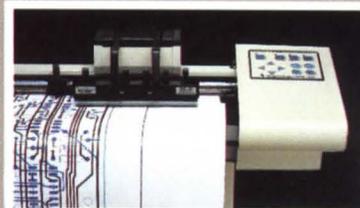
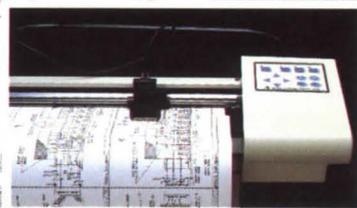
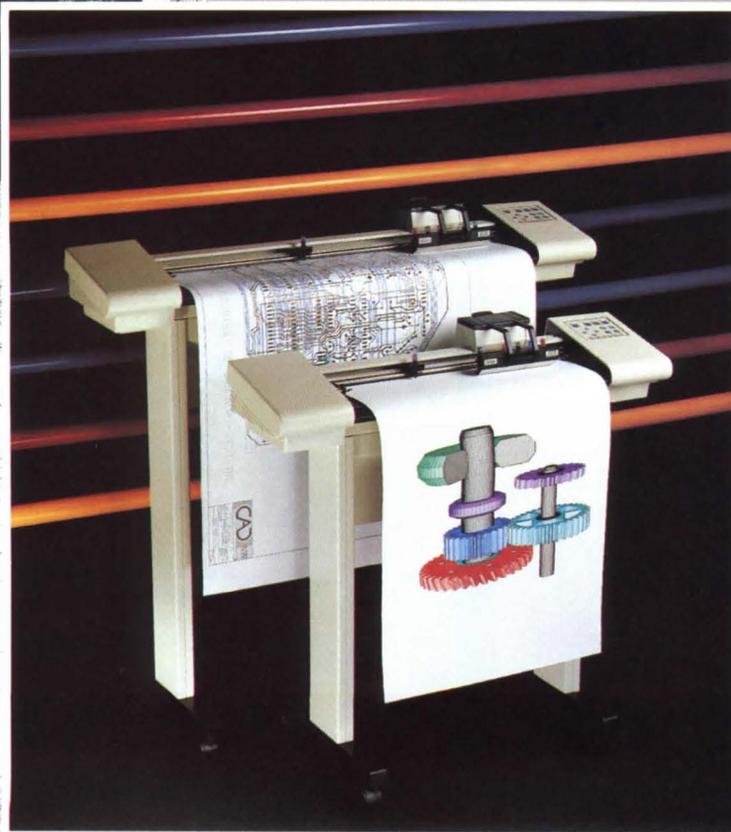
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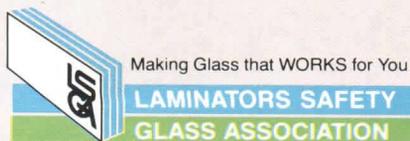
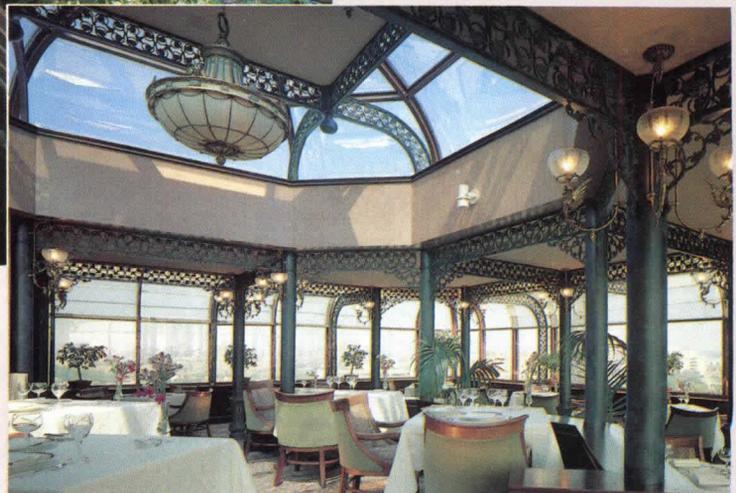
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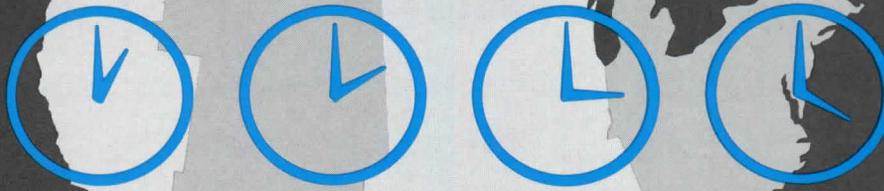
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#### The Time

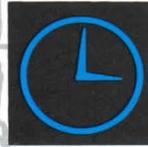
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MULTISTORY BUILDINGS II (SESSION G)  
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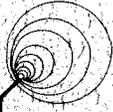


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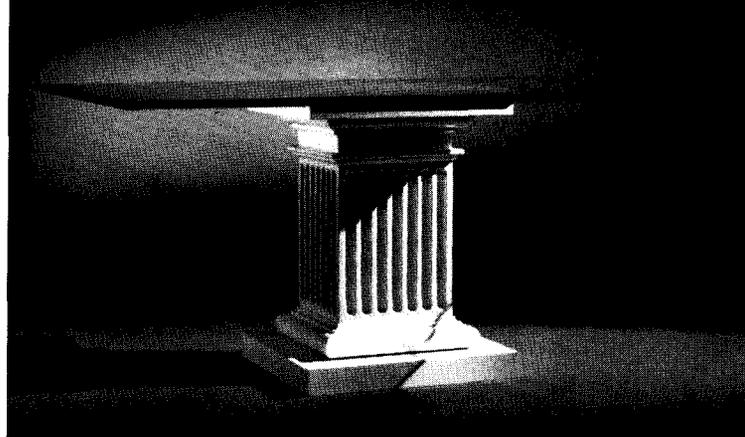
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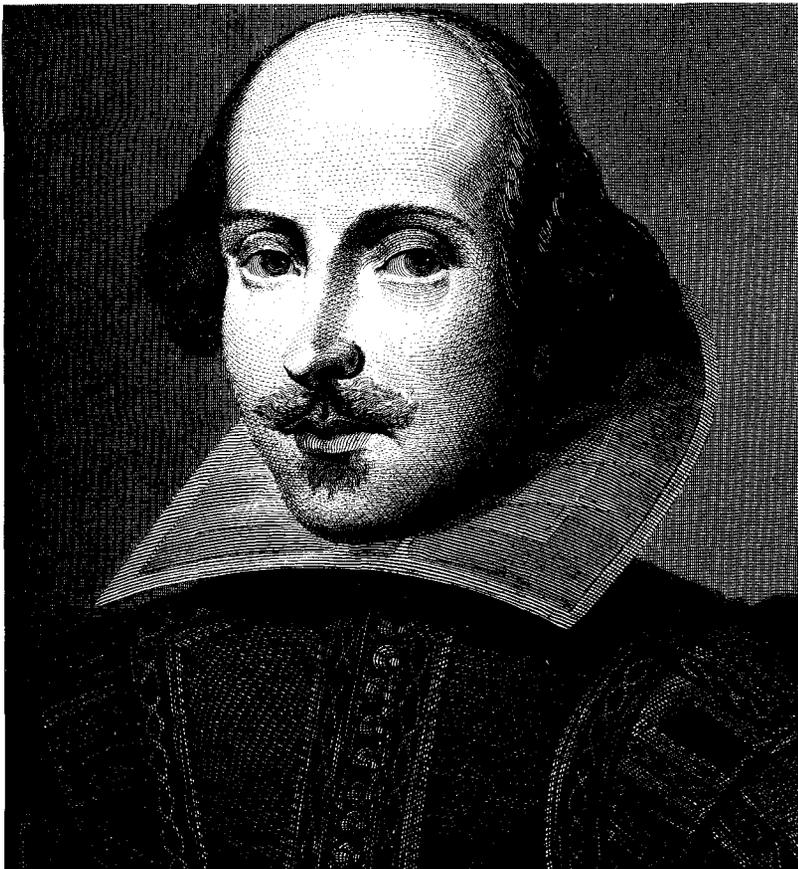


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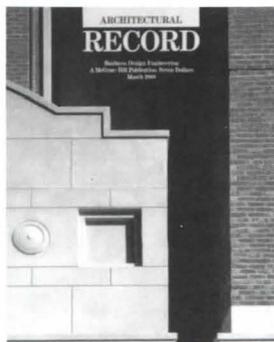


After you get the slate out of the ground, you have to break it to find the grain, and then someone like J.J. Beayon, with me in the picture, starts to split it, by hand, dividing by two over and over again. The machine

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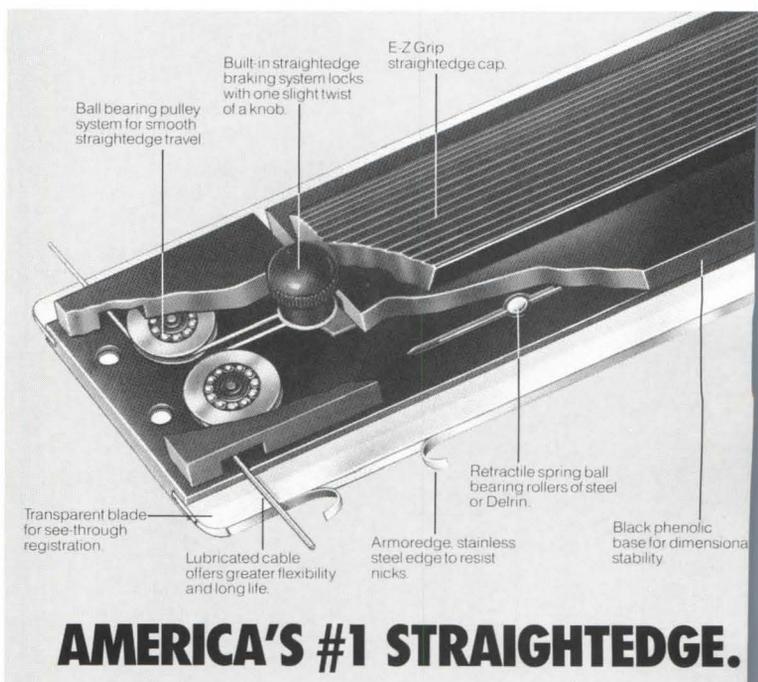
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### Pages 138-139

Harrisburg International Airport Bohlin Powell Larkin Cywinski, Architects  
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### Page 140

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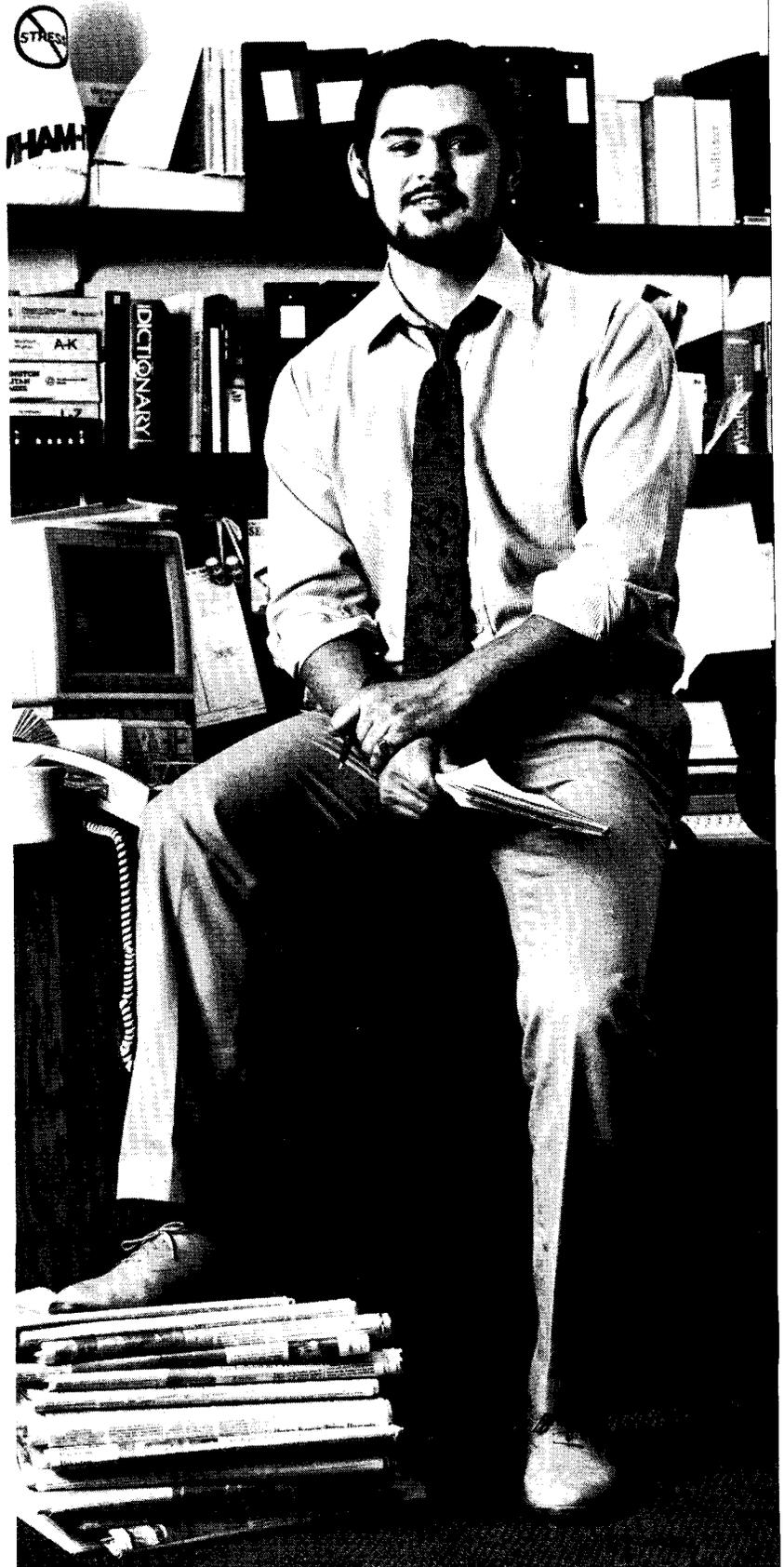
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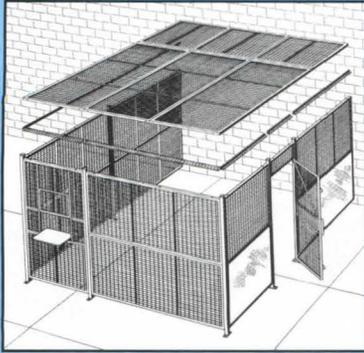


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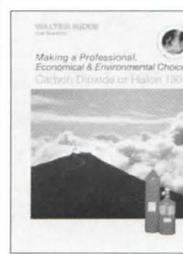
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