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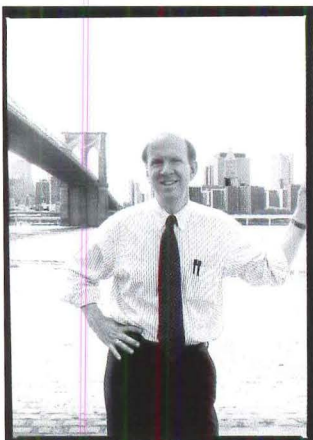
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EDITORIAL

The Language of Peace

BY ROBERT IVY, FAIA



Imagine this scene: Standing in a hotel room, headed for a client interview or for dinner on the town, flush with the prospects of work, you are momentarily transfixed and moved by pictures from Kosovo. The images from the field appear surreal, a juxtaposition of up-to-the-minute and ancient details—of knocked-down and burned-out houses still bristling with TV antennas, and of kids in Nikes weeping for lost parents. You realize the suffering people could be your cousins; the lost village could be your birthplace. CNN makes it real: Yugoslavia seems both familiar and far away.

The evening news jolts our priorities. Suddenly our architectural debates seem petty, washed away in the flickering blue light from Kosovo. This is a moment of supreme irony and poignancy for developed nations, when, poised at the cusp of an era, confident from a continually upwelling economy, techno-proud and rich, we are once again witnessing ethnic hatred, mass dislocation, and destruction in a nearby corner of civilization. We ask ourselves what humanity has learned in this destructive and gifted century to allow such an irrational conflict in 1999.

Despite the necessity of NATO's intervention in Yugoslavia, it is sobering to consider the power of a single bomb aimed at Belgrade or Pristina. With memories of Iraq still fresh in our collective memory, another building in Yugoslavia shatters in a flash, destroying a solid-looking structure that had taken great effort to construct. Such radical surgery is painful, and it may take decades to heal. Ironically, after 50 years, Berlin is only now knitted back together and announcing, through the revitalization of the Reichstag, its triumphant rebirth as the capital of a unified Germany. As of this writing, the letup in aerial bombardment of the Balkans lies far off.

Our healthy tendency as a profession is to devise answers for physical puzzles, even for those as complex as the remnants of war. What would

we do to improve the living conditions for 700,000 displaced persons? How could those refuse-strewn camps be better organized or cleaned up? What sorts of new villages and replacements could be devised for the ruined houses left by the Milosevic regime?

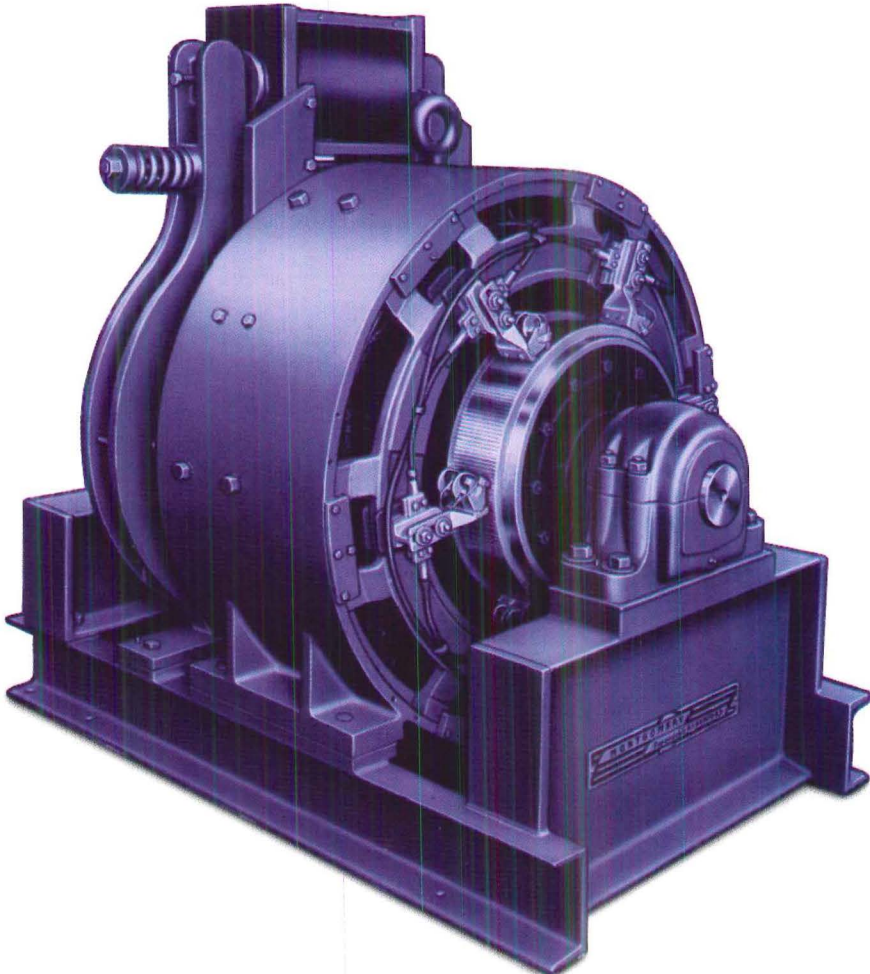
As architects, we can help find shelter. We can propose creative solutions for the refugees, such as inflatable or tensile structures to quickly house the crowds. Improved sanitation and order would mean that no mother need stand ankle-deep in mud to cook a meal, no child lose her way. Accustomed to joining relief teams, like those the AIA organized following destructive earthquakes in Armenia and Japan, we can help rebuild and heal a shattered Yugoslavia, when the time comes.

In the intervening days, we can throw ourselves into our work, examining our own communities, applying our skills and our passions into towns and structures that are life-enhancing, wherever they may be located. Although architecture offers no panacea for underlying social or cultural disparities, good planning can provide an intellectual relief valve—outlining disagreements and seeking consensus, giving voice to fear and hope, and, on occasion, suggesting artful, unanticipated resolution to conflict.

Architects may feel a sense of impotence in the face of the massive disruptions occurring in Europe. Without basic accommodation and concurrence within the social order, there can be no peace and, therefore, no growth, no commerce, and no building. Kosovo reminds us, with the clarity pain brings, that architecture arises at the intersection of physical reality with the social contract. It is a vital, but fragile, vocabulary in the language of peace.



One is extinct. The other is about to be.





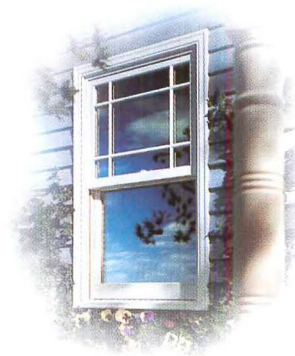
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LETTERS

Medalist lauded

Having recently been a member of the National Board (and having witnessed two years without Gold Medals), I was pleased to read more about a recipient who should have won long ago. The January RECORD article on Frank Gehry [page 45] made me even more supportive of him than I have been. "I still leave at six o'clock and I don't work weekends," was encouraging. But the most wonderful part of the article was Gehry's comment: "You think your brothers don't think much of you, and then you find out they really love you."

—Richard E. Fry, FAIA
Fry & Partners Architects, Inc.
Ann Arbor, Mich.

Viva chinoiserie

Wendy Moonan's article on megahouse projects in November [page 74] implied that a Chinese-style

interior may harm a custom-designed house. I understand that an ill-suited or poorly designed interior is a horrendous offense to architecture, but Moonan seems to have suggested that chinoiserie is tacky in general. She mentioned many elements of classical Chinese design that I believe can enhance the luxury, poetry, and elegance of a variety of different settings. I hope you will not mislead readers who are less acquainted with the style, to presume that chinoiserie is a tacky and tasteless extravagance.

—Rosa Lin
Imigis
Berkeley, Calif.

Wendy Moonan responds:
Of course I'm not against chinoiserie. I write about it all the time for my column in the New York Times. I just don't think that it should be the leading determinant of decorating style in every single room in a house. Too much is too much.

**Boston plaza railroad**

Changes proposed for City Hall Plaza are not intended to make it more livable, as Jonathan Hale reported in the February issue of RECORD [page 51]. This issue has been the subject of both urban design and political debate in Boston for almost five years, and only the threat of litigation by the General Services Administration has stopped private development (for commercial uses) of Boston's central civic space.

Although some open space will remain, it's widely recognized that the plaza will become a privatized precinct—as the forecourt of the proposed upscale hotel. Despite a number of community meetings held to hear "input," the Trust for City Hall Plaza is a nonprofit shell for a group

of investors and developers. I have found it to be a closed, private, decision-making body that does not even allow outsiders to attend board meetings as observers.

—Shirley Kressel
Boston

Getting out of prisons

If the AIA is serious about "livable communities" for the next millennium, it should dismantle its professional interest area in Criminal Justice and recycle that talent and energy into other areas ["Detention Facilities: Locking Them Up," December, page 69]. Perhaps I'm overheated, but I believe that, by serving an industry that is systematically incarcerating the least advantaged, we are basically helping to reinstitute slavery in this country.

Soon enough, there may not be much difference between our big houses and the big house, and we may all be living in gated communities of one sort or another. If we, as

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a profession, want to earn and keep the high regard we would like architecture to have in our society, we need to consistently and conscientiously speak and design. Otherwise, we'll be seen only as slightly more stylishly dressed members of the money moguls' entourage.

—John L. Wilson, FAIA, Founder
Task Force to End Homelessness
Boston

As seen on TV

A few days ago, I watched the first of the AIA's new television commercials promoting architectural services [March, page 56]. The ads themselves begin with slick images bathed in liquid green, blue, and black along with a smattering of primary color. I was captivated. But despite these provocative images, my unease grew as I listened to the description of what I was seeing: "Architect" was used exclusively in the singular, and the underlying message seemed to be that the quest for making space is the solitary pursuit

of lone individuals. Both ads end with a pair of chic-looking architects, a man and a woman looking very statuesque, clad in black.

The chance to render design as a collaborative process is missed. For all the time taken to make architecture more accessible to ordinary people, the ads seem to perpetuate the myth of the glamorous individual in a quest for making space. But perhaps I've missed the point. Maybe these ads are about the creative ego, the genius working alone in his or her studio, miraculously producing the single building. —Fatima Amir Hirji
Colorado Springs

Trivida spectacle

In the April issue, Suzanne Stephens responded to criticism leveled at the Culver City Trivida building by Eric Owen Moss: "Few architects are willing to question conventional aesthetics and torture uninteresting materials into such unexpected forms" [Letters, page 20]. The truth

is that architects are trained to know better. Wisdom is the part of the service that we offer.

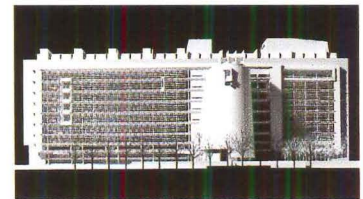
Experimentation certainly has its place in architecture. But when Louis Kahn asked the brick what it wanted to be, the brick did not literally answer "an arch." It was Kahn's experience, intellect, and sense of history that answered for it. If Eric Owen Moss had asked the aluminum windows and concrete blocks what they wanted to be, I don't think the answer would have been "a wart."

—Stephen Gilliss, AIA
Westminster, Md.

Credits/corrections

In the March 1999 issue of RECORD, the contact number for Phifer Wire Products was not listed correctly in the New Products section. The correct number is 800/874-3007.

With Richard Meier and Partners, associate architect The Spector Group is responsible for the United States Courthouse and Federal Building in Islip, New York.



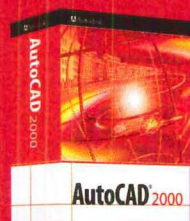
The group's name was not listed in the March 1999 issue.

The associate architect of the Chatham apartment tower by Robert A.M. Stern Architects (March, page 50) was not mentioned. Ismael Leyva Architects P.C. should have been credited as architect of record and residences designer.

In the April Correspondent's File (page 47), the description of a "stagnant employment environment" referred to downtown Dallas only, not to the entire city, as was implied due to an editing error.

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SPEAK OUT Young graduates entering practice are still getting a raw deal. It's time to change—let's start by doing away with the term “intern.”

BY RAYMOND H. DEHN

Raymond H. Dehn, Assoc. AIA, is an intern at Leonard Parker Associates in Minneapolis, Minnesota, and builds architectural models for Feyereisen Studios. He is working toward a master of architecture at the University of Minnesota, where he earned a bachelor of arts in 1993. Dehn was president of the American Institute of Architecture Students from 1996 to 1997 and is active in the AIA's Minnesota chapter.

What's in a name? In our culture the term “intern” is usually associated with someone who is either getting exposure to a career through a low-paying summer job, a congressional aide, or simply a person who works for free to get a foot in the door.

In the architectural profession, however, the term is used to refer to a specific period of employment, fraught with training requirements outlined by the Internship Development Program (IDP), which is required by most jurisdictions. For recent college graduates with architecture degrees, this is typically their only source of income. The proper documentation of an intern experience, combined with a professional architecture degree, qualifies applicants to take an exam and apply for licensure.

What is required of an architectural intern is a far cry from running errands and making copies, which is what the general population perceives as an intern's duties. If you describe yourself as an intern, people often think you are still a student, rather than a graduate of a professional program. This misperception is debilitating to young architects.

Engineers are called engineers on graduation, although they are in training. During residency, medical school graduates—while sometimes referred to as interns—are called doctors, though they are not licensed to practice medicine. To top it off, a recent graduate in another discipline might employ the term “information architect” or “computer architect”—but those with a professional degree in architecture can't

go near the word “architect.” Our profession needs to be inclusive and expansive, rather than controlling and reductive.

We should consider returning to the term “apprentice architect.” Not only is it understood by most in the general public, but also many architects might take a more serious interest in the careers of individuals called apprentices instead of interns.

In addition, it is my belief that the term intern suppresses the wages of new graduates of professional architecture programs. Those who have recently completed engineering programs earn in the neighborhood of 20 percent more—even though many architectural interns put in long hours and receive no overtime pay for workweeks in excess of 40 hours.

You might say this is the way the market works—engineers make more money. Some would argue that early in their careers they went through the ordeal, and so will you, the intern. The problem is that these attitudes have allowed developers, builders, contractors, and engineers to diminish the control over the built environment that architects used to command.

It's true that many young people in the profession have accepted that they will need to “pay their dues.” The pervasive attitude reinforces the stigma that a recent graduate is ill-prepared to enter practice. While apprentices may not be ready to handle all tasks in an office or to take all sections of the exam immediately on graduation, they do bring many skills to

the table. They should be allowed to use them, and their value should be acknowledged.

It is critical for the architectural profession that relative novices work to change their image in society—in particular among potential clients. This will only begin when the profession addresses how it treats newcomers to the field. By welcoming them immediately with the designation of apprentice architect—rather than forbidding them to use the title architect or any derivative—we elevate the whole profession.

We could start a dramatic process just by changing the official designation of professional degree holders who are completing their experience requirements on the path to licensure. It may not have a huge impact initially, but over time, it could make architecture more inviting to young people and a more flexible practice. Architecture needs to make substantive changes in the experiences of those entering the field, and revising the way we label those who are new in the profession is a good start. ■

Contributions: *If you would like to express your opinion in this column, please send submissions by mail (with a disk) to Speak Out, Architectural Record, Two Penn Plaza, New York, N.Y. 10121; by fax to 212/904-4256; or by E-mail by visiting www.archrecord.com and clicking on News/Features/Dialogue. Essays must not exceed 700 words. The editors reserve the right to edit for space and clarity. Where substantial editing occurs, the author will receive text approval.*





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MENTORS *A strategic speaking engagement is an effective way to raise your profile and impress prospective clients.*

Jane Cohn, Assoc. AIA, and a fellow of the Society for Marketing Professional Services, is principal of Jane Cohn Public Relations in Sherman, Connecticut, and New York City.

Architects learn how to design buildings in school, but they don't learn how to woo potential clients. For many architects, selling and promoting their firm is a necessary evil at best. But there are methods to smooth the proceedings. RECORD asked consultant Jane Cohn to delineate one way architects can make themselves known to clients: Public speaking.

An architecture firm searching for clients is like someone looking for a relationship. The issues are similar: Where's the best place to meet the kind of person I need? How do I make a good first impression? If I do meet someone, what can I do to build a lasting relationship?

In business, as in affairs of the heart, the best opportunities lie in face-to-face encounters. Though it's only one part of a full-scale promotional campaign, strategic speaking—giving a talk or presenting a panel at a non-architectural professional association's convention or conference—can provide sizable returns on a relatively small investment. Even better, it puts you in front of a captive audience of prospective clients; everyone there wants to be there, and they're eager to learn from your expertise.

It's a sure bet that successful rivals owe some of their good fortune to strategic speaking. You can take advantage of the same opportunities. All it requires is paying close attention to a few basic rules.

First, target your audience carefully. Ask your current clients which associations they belong to. For general information, go to the

library to consult the Encyclopedia of Associations, which lists organizations by type (its publisher also has a Web site, www.gale.com). Once you've compiled a list of promising organizations, write to them for information, such as upcoming conference dates.

Plan ahead. Most professional organizations require speakers to submit proposals for their conventions a year ahead of time, and sometimes longer. It will take research, thought, and effort to design a proper proposal, so don't wait until a day before the deadline.

Also, you don't have to go it alone. Conference planners find proposals for panel discussions very attractive. If you decide to bring together a team of copresenters, include a satisfied client on the panel—especially if the client is a member of the group you'll be addressing. An in-person testimonial strongly underscores your expertise.

When putting together a proposal, respond to the guidelines fully and precisely. Call the conference planners for tips; they're as eager as you are for the event to be a success, and they'll know which presentations drew the biggest audiences at past conferences.

In choosing a topic, make sure you directly link your own knowledge to what the audience wants to know. To discover what your listeners are interested in, study the trade magazines they read. The association itself probably has a newsletter, and there's no better source for finding out what's on members' minds. Your topic should be timely, fresh, and new. Develop a hook—and a session title—that doesn't sound like the same old schtick.

If the thought of public speaking makes you as nervous as someone on a blind date, get help. There are plenty of skilled coaches who can help work through your fears. And it's always a good idea to do a trial run: Invite your colleagues to watch and offer frank advice. As for your audience, they're coming to you for information they can use, so don't be vague, self-serving, or muddled. If you want to use audio-visual aids, make sure they're lively, clear, and informative. But don't rely too heavily on AV technology; the more complicated the presentation, the likelier something will go wrong.

Stick around for questions after your presentation, and make sure the audience knows how to contact you. Invite people to call. Leave behind handouts summarizing your main points—and lots of business cards. Collect as many audience members' business cards as you can: add their addresses to your mailing list. And remember: No matter how good a first impression you make, it's just the beginning of a courtship. For a relationship to flourish, you must follow through, and document the lessons you have learned for future endeavors. ■

Questions: *If you have a question about your career, professional ethics, the law, or any other facet of architecture, design, and construction, please send submissions by mail to Mentors, Architectural Record, Two Penn Plaza, New York, N.Y. 10121; by fax to 212/904-4256; or by E-mail by visiting www.archrecord.com and clicking on News/Features/Dialogue. Submissions may be edited for space and clarity.*



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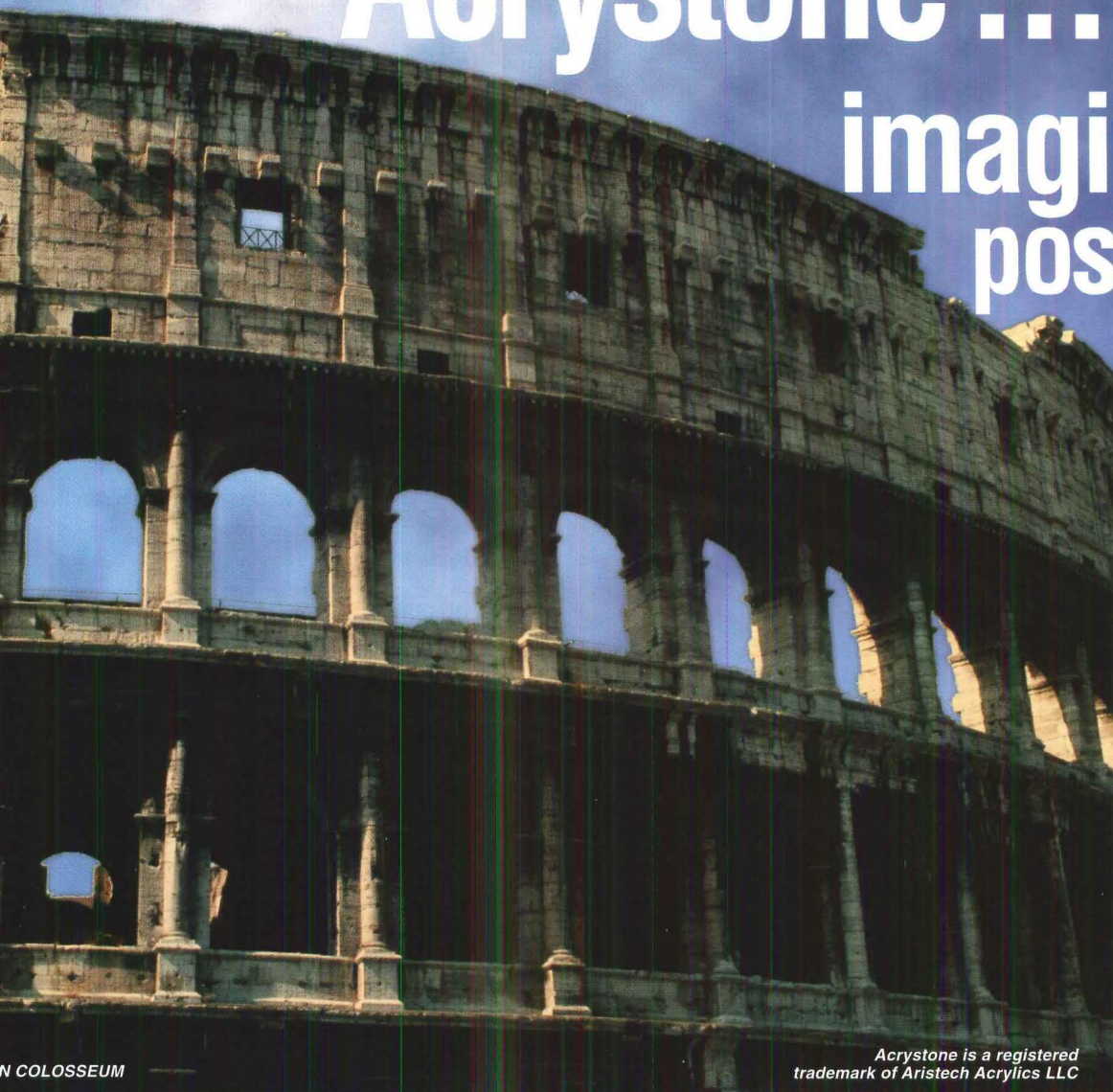
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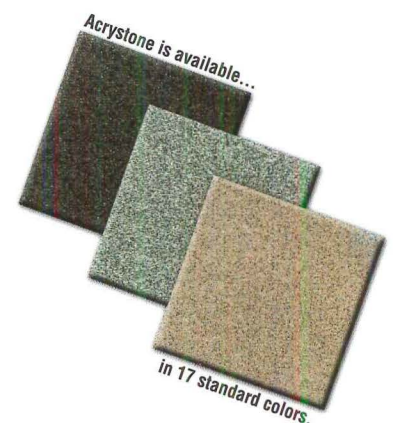
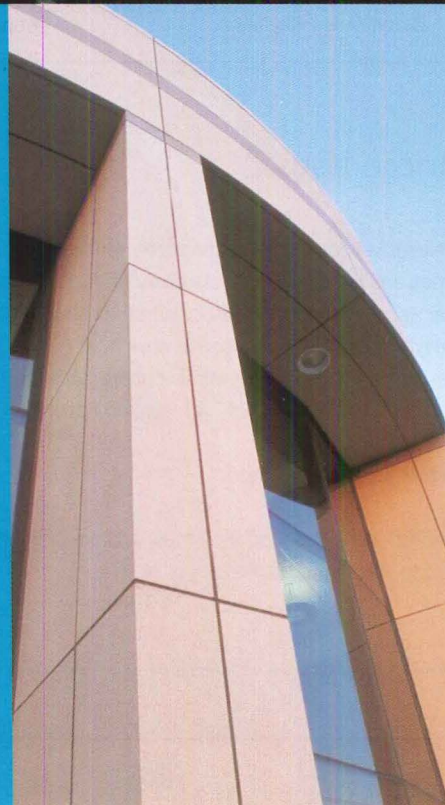
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PULSE RECORD readers were asked: Can architecture's power to affect human behavior be quantified?

Yes: For seven years, our firm conducted research on the idea that well-designed hotels and resorts appeal to guests. We found that visitors respond by staying longer and returning more often—translating into higher revenues for hotel owners. We also have anecdotal evidence to support the idea that hotel design can affect the behavior of employees. A number of general managers have told us they feel our designs help contribute to increased morale, higher productivity, and lower turnover and absenteeism.

—Howard J. Wolff
Wimberly Allison Tong & Goo
Honolulu

Yes: Retailers have proven that people stay in stores for longer periods of time when interiors are lighted and decorated in an interest-

ing manner. Cutting-edge music stores now include amenities like cafes and listening stations, proving that affecting the human spirit ties to the bottom line.

—Nick Pappas, AIA
New York City

Yes: My entire practice is measured by the ability to impact the consumer (and the client's cash register). Our design must be motivational; otherwise, it's seen as an exercise in aesthetics which, while appreciated by customers, is not particularly valued by them. By creating places where "customers would rather be" (and by delivering an "experience"), we know that customers will not only buy more, but feel better for the experience.

—Kenneth Nisch, AIA
Catp Consulting Group
Bloomfield Hills, Mich.

Yes: I'm less interested in the dollars than in the cultural impact. With the Bilbao Effect, certainly we've seen that architecture has become a destination. The possibilities of the experience can be powerful. If something moves us—and generates a kind of interest among architects and lay people—then we go there. The number of tourists who have traveled to Bilbao to experience the building is a very exact measure.

—Laurie Hawkinson
Smith-Miller+Hawkinson Architects
New York City

Yes: Without question, architecture can be quantified. Ask anyone if they would rather work in a basement, versus on the 20th floor with a view of the city. Both daylight and color have a significant effect on people's state of mind. The average

person may not be conscious of it (particularly in the United States). But talk to people about their relationship to their living space, and they will tell you what they like or do not like—and why.

—Peter Leoschke
Eckenhoff Saunders Architects
Chicago

Yes: If people are adversely affected by limited sunlight, which can make them seriously ill, then imagine these people working in a space deprived of sunlight. As architects, we need to recognize the influence that we can have in shaping positive behavior through the structures that we design. Each time we begin a project, we have an opportunity to make the world a bit better.

—Judson A. Kline, AIA
Herschman Architects, Inc.
Cleveland

This Month's Question

Can you spot an American house?

For years, Record Houses focused exclusively on American projects. Yet this April, breaking with that custom, RECORD published homes designed by architects based in Australia, Japan, and Switzerland. In the same issue, critic Robert Campbell questioned the continuing importance of our expectations and memories. "Maybe it doesn't make sense anymore," he wrote, "to think of a house as an expression of individual national, regional, or ethnic culture." Are there certain aspects of new American houses that give them a distinct, homegrown flavor?

Can you spot an American house? Yes No

Copy and fax this form to 212/904-4256, or, to respond by E-mail, visit www.archrecord.com and click on News/Features/Dialogue to voice your opinion.

Note: Pulse reflects individual responses to each month's question and is not meant to be construed as formal research.

What makes our houses American?

May an editor contact you for comments?

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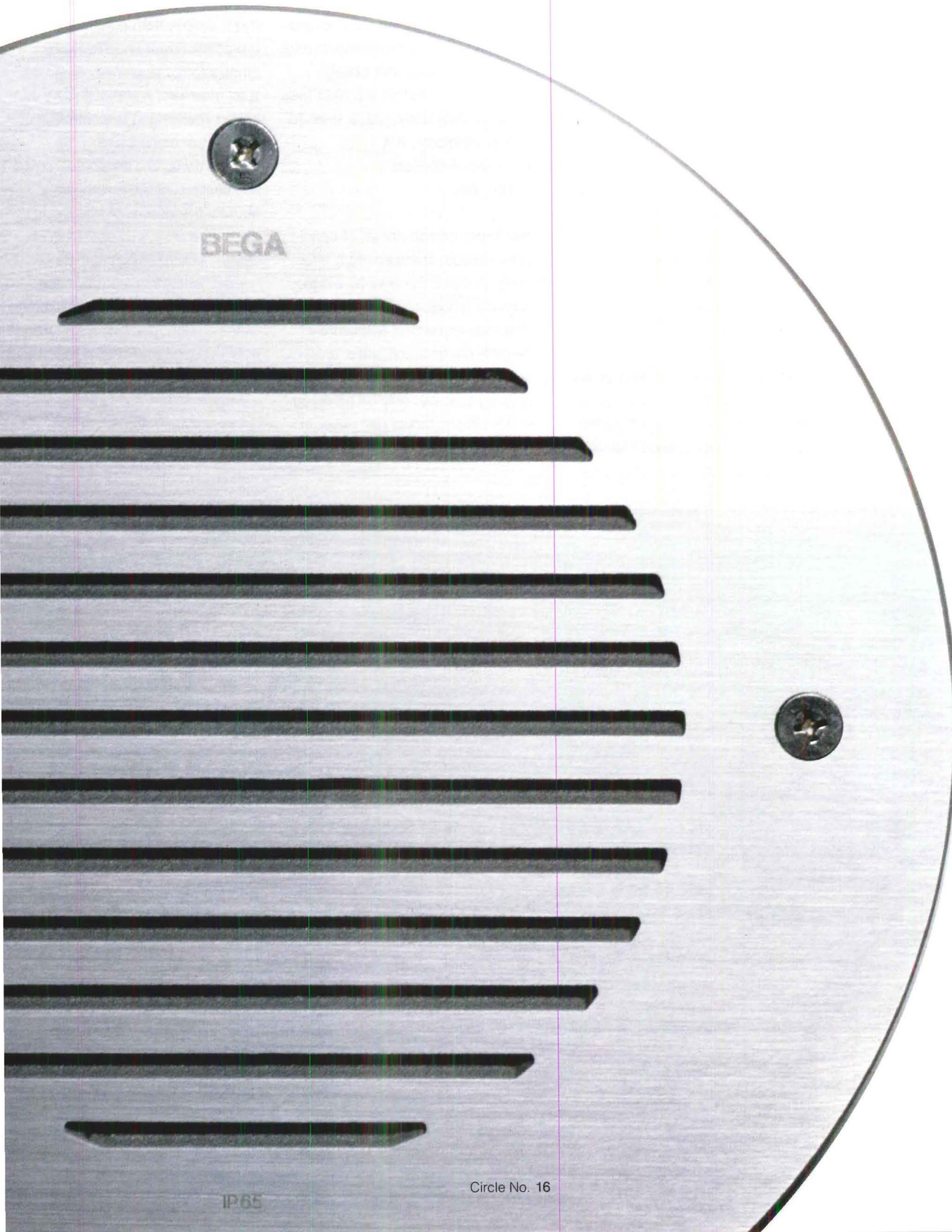
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Yes and No: I believe that architecture's ability to influence human behavior can be statistically measured with regard to society at large, as can the influence of any sensual stimulation. If that were not the case, then a lot of advertising executives would be out of work. The aesthetics and functionality of any structure have an influence over our reactions and feelings about that structure both as a singular entity and in relation to its built and natural environments. However, it is a much more difficult endeavor to measure analytically the effect that architecture has on an individual's psyche due to the fact that architecture affects everyone on a conscious and subconscious level. It is in the subconscious mind where an individual's predispositions influence to what extent he or she can react to certain stimuli, which I believe is virtually impossible to measure.

—James H. Harkrider III
Lawrence Jones & Associates
New York City

Yes: It isn't often that architects are presented with numerical proof of our ability to influence human behavior. But it does happen. The department of behavioral health at Waterbury Hospital in Waterbury, Connecticut, opened its new in-patient unit in March of 1997. By the following May, the number of hours patients spent in restraints had fallen by a dramatic number. Nurses attributed this change to the design of the new unit, which gave patients a sense of control over their environment (and, in turn, control over their own behavior). Architects may not be healers, as Winifred Gallagher suggests in her article [February RECORD, page 75], but we can certainly help those who are.

—Dan Meus, AIA
Graham / Meus Architects, Inc.
Boston

Yes: There are ways to determine if someone will say "I am more comfortable" or "I am less comfortable." But is it an exact science? No. (It's

still very imprecise.) Will it ever be? I hope not. We'll have new data, which I think will be fascinating to designers. But data should never take the place of our experiences as humans.

Nonetheless, I think that the whole field of planning is about to be upended by the information revolution. I predict that the evaluation of proposed plans will be made by professionals and nonprofessionals alike, using 3-D imagery that closely approximates whether a project feels right. It's democratic with a small "d."
—Ben Heimsath, AIA
Heimsath Architects
Austin, Tex.

No: There can be no set of definitive, absolute standards that effectively measure the level by which humans emote, respond, or react. One may argue that architecture has the power to influence, enlighten, or inspire, but to specifically quantify that can only be achieved in the circumstantial and never in the scientific. Let us remain satis-

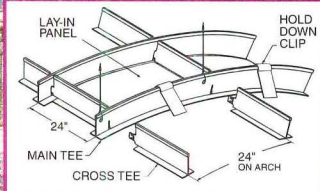
fied that the human spirit "enjoys" a well-lighted space, or a consumer "appreciates" an architect's effort in creating a functional structure.

—Timothy P. Jones
Writer
New York City

Yes: Architecture has the power to move people, both emotionally and physically. Power is achieved by emphasizing the primacy of structure, materials, and thoughtfully conceived spaces and by controlling of the craft of architecture.

I grew up in a geopolitical collection of adjacent but isolated tract houses. The lessons of what wasn't there have always compelled me to design public buildings that affect human behavior in a positive way. The collective power of architecture to create a public place where people want to spend their time is measured by the need for people to be together.

—Robert Siegel, AIA
Garrison Siegel Architects
New York City



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CRITIQUE The return of vitality to our cities suggests an architectural sea change in America—though academia is missing the boat.

BY CARTER WISEMAN

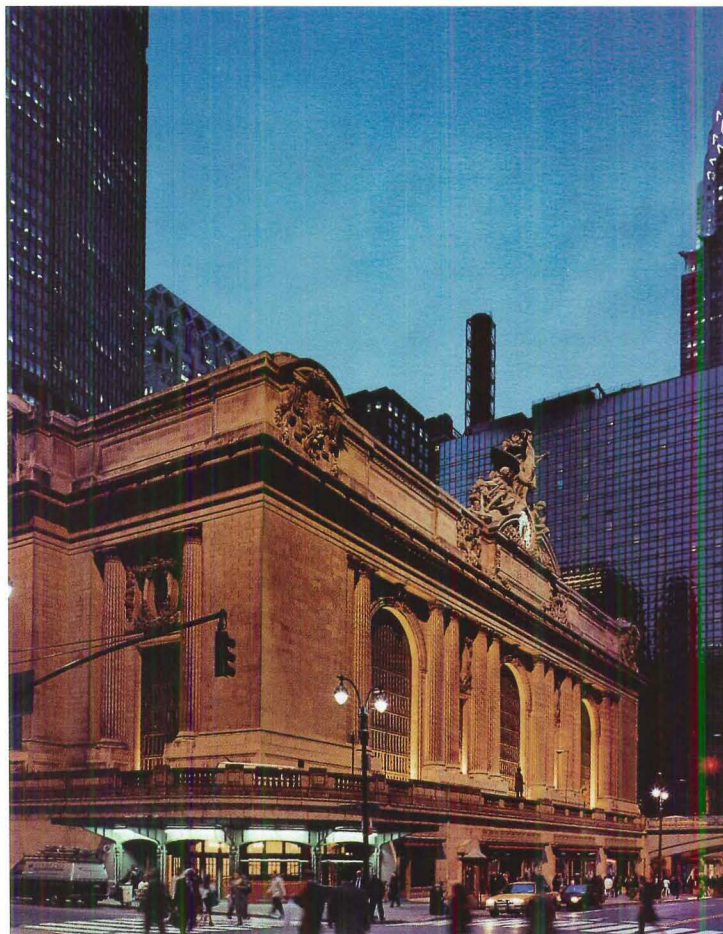
Carter Wiseman, the architecture critic for New York Magazine from 1980 to 1996, is the author of Shaping a Nation: Twentieth-Century American Architecture and Its Makers (W. W. Norton, 1998).

Cast back for a moment to the days when the hot shots were really hot. Remember the breathless press that greeted Michael Graves, FAIA's 1982 Portland Public Services Building? And Philip Johnson, FAIA's 1984 high rise for AT&T? Or Peter Eisenman, FAIA's 1989 Wexner Center for the Visual Arts?

Consider that with the passage of time Graves' building proved, according to the Portland municipal employees I talked to, almost uninhabitable, and that the AT&T's pedestrian space was so off-putting to the lunchtime crowd that the new owner, Sony, decided to fill it in with display windows. The Wexner Center opened without a work of art on the gallery walls, and it was probably then at its best, since its failings as a gallery were immediately apparent thereafter.

But such oversold blockbusters are fewer and farther between now, and even the newest seem to belong to an earlier age. Richard Meier, FAIA's Getty Center, despite its price tag of more than \$1 billion, appeared dated at its opening last year, a citadel of art designed largely to give Los Angeles an East Coast stature at a time when the West Coast has more than enough stature of its own. And Frank Gehry, FAIA's Guggenheim in Bilbao, spectacular as it may be, is a one-off, a sort of lunar lander in search of its moon.

Architects and the public are left with a question: Where do these buildings lead? (The question takes on added relevance when Michael Graves is celebrated by the *New York Times* more for his Toast



Modern kitchen appliances than his buildings.) Clues to the future, I think, lie elsewhere.

Urban renewal

One of those clues is the normal generational impatience with the older establishment. Also, a refreshing globalization of architectural thinking is contributing to a healthy level of formal innovation. But another prime influence on the built environment in this country appears to have little to do with design: The decline of crime in cities across the

New York's Grand Central Terminal has been redefined as a focus of social interaction.

nation. According to reliable statistics, the sort of crime we most fear—assault—is at its lowest level in more than 30 years.

Yet design *is* involved, if only because one result of the decline in dangerous behavior is a gradual but unmistakable resurgence of confidence in urban life. Americans are beginning to peek out of their bunkers and gated communities.

You know something is afoot when developers start talking about punching windows in the walls of their once-impregnable malls, literally turning them inside out. John Portman Jr., FAIA's concrete refuges are losing out to Main Street—even if the mom-and-pop tenants have been replaced by the Gap and Starbucks. The trend toward the “fortressing of America,” as the late urbanologist William H. Whyte called the phenomenon, may finally be changing.

Downtown digs

A recent study of 24 major American cities by The Brookings Institution and the Fannie Mae Foundation found every one of those cities poised for population growth in their downtown areas—a dramatic reversal of the urban contraction that began after World War II. In Denver for example, crime has decreased 25 percent over the past five years, and local developers credit that change, in large part, with stimulating demand for downtown housing and \$1 billion in new residential construction.

If the cities are becoming attractive again, suburban dwellers are no less concerned with the quality of their environments. In the November elections, voters across the country approved some 200 state and local ballot initiatives intended to curb suburban sprawl. Early this year, the federal government launched its Livability Agenda, a \$10 billion initiative to restrict the loss of open space and promote instead the concept of smart growth. The idea may seem almost un-American, but it suggests that we are now thinking differently about the alleged virtues of unchecked development and the sort of architecture that has so often been its result: High rises-as-hood-ornaments and corporate headquarters in the woods.

New York's Battery Park City, the early phases of which began opening 15 years ago, is old and successful enough to have proved the wisdom of its planning and

design guidelines. And the New Urbanists, who owe much of their doctrine to that bold initiative on the Hudson River, are beginning to focus on the rehabilitation of existing cities as well as the creation of squeaky-clean developments from scratch.

Back to the classics

With this redirected focus has come a reevaluation of those vintage civic monuments that have escaped demolition. Surely, two of the most dramatic examples are in New York City: The library and Grand Central Terminal.



The main reading room at the New York Public Library, designed originally by Carrère & Hastings and completed in 1911, has been virtually reborn after a \$15 million renovation funded by the Rose real estate family of New York and carried out by the architectural firm of Davis Brody Bond under the leadership of its founding principal, Lewis Davis, FAIA. As somebody who frequented the dreary precincts of the reading room as a boy, I can say that this rehabilitation makes one not only proud to be a New Yorker, but an American. There is the same democratic mix of denizens: Students, scholars, dozers, and down-at-the-heels citizens-on-break. But the room itself, which now includes computer

ports at most seats, is breathtakingly, aristocratically, new. The oak gleams, the brass shines, and the baroque clouds of the freshly painted ceiling soar heavenward beyond the surrounding office towers.

There are few comparable gestures anywhere of such confidence in the experience of urban civilization. Certainly the closest competition is the much more extensive renovation of New York's Grand Central Terminal. Designed by Reed & Stem and Warren & Wetmore and finished in 1913, the building suffered decades of abuse

The main reading room at the New York Public Library, built in 1911, reopened last year as a shining example of urban civilization.

and threats to its existence before its salvation was finally assured by the Supreme Court in 1978—an act, of course, that also secured the very foundations of New York City's landmarks preservation law.

Like the New York Public Library project, the Grand Central undertaking is not merely about restoration, but also about the integration of contemporary uses into an existing structure. Led by John Belle, FAIA, principal in the firm of Beyer Blinder Belle, the architects redefined an aging transportation facility as a center for the city's social interaction.

Restaurants, shops, and assorted services have been threaded into the old spaces to create a hub of activity that complements and expands the function of serving the train travelers. The best of the old has become the best of the new.

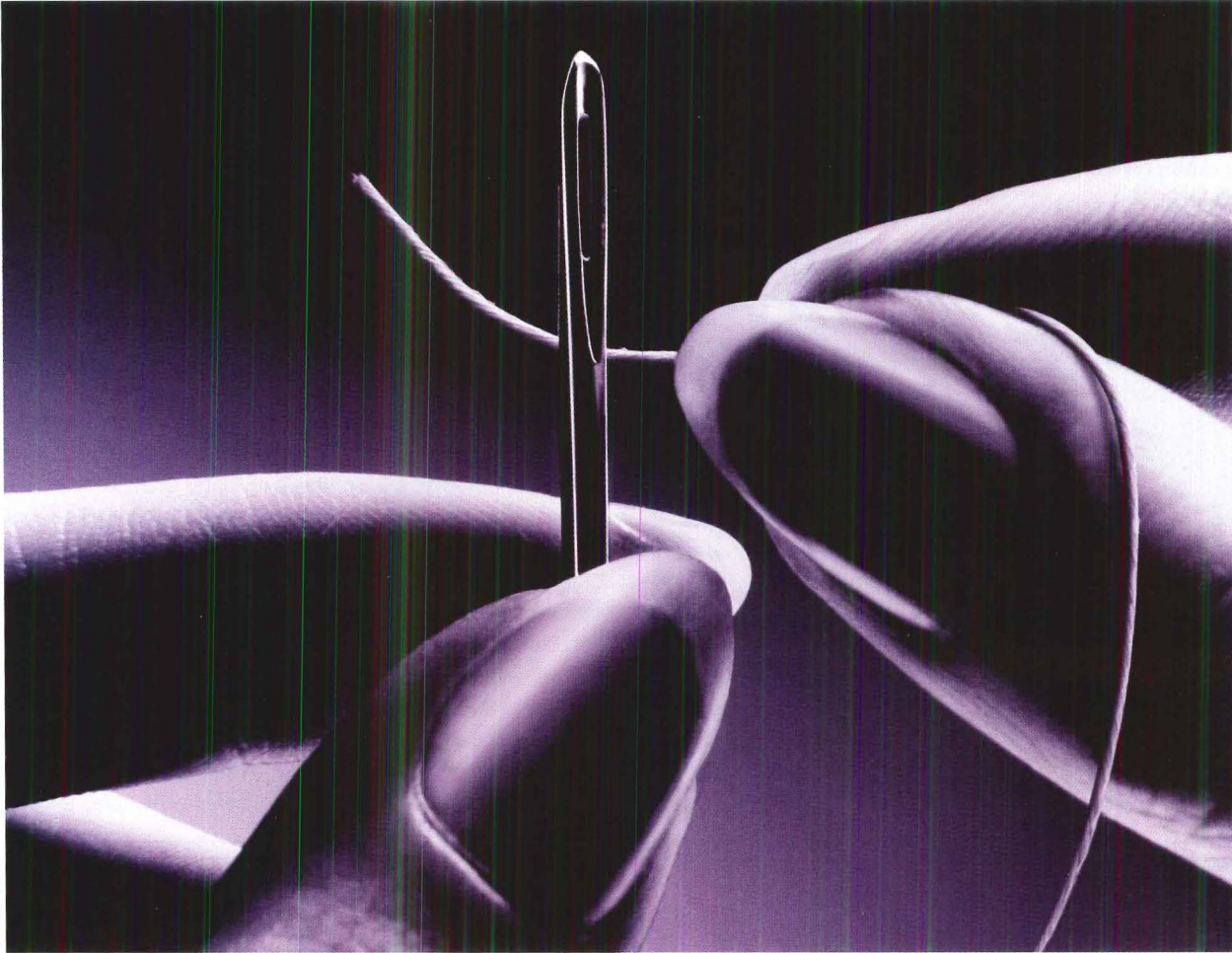
The people giving form to these projects are hardly household names. Davis and Belle have both been creating admirable civic architecture since the 1960s, but neither has been on the covers of national magazines, and if they make the newspapers, they tend to appear in the real estate section. They are members of an expanding cohort, however, and one need not look far in New York, at least, to find similar energies at work.

Several years ago, the firm Butler Rogers Baskett, led by principal James G. Rogers III, FAIA, took on a set of four dilapidated piers in the Hudson River and has since turned them into a massive sports complex called Chelsea Piers, the most successful thing of its kind in the country. The owners expect to receive nearly 4 million users this year, leaving only the Metropolitan Museum of Art and Madison Square Garden as more popular New York destinations.

Meanwhile, the firm Robert Kliment & Frances Halsband, winner of the 1998 AIA Architecture Firm Award, is completing a characteristically elegant transformation of the old federal bankruptcy court in Brooklyn. Marilyn J. Taylor, FAIA, of Skidmore, Owings & Merrill is overseeing an even larger makeover—moving Pennsylvania Station to McKim, Mead & White's nearby General Post Office building, a 1913 structure no longer needed for its original purpose.

The academic angle

These projects exploit existing urban resources while enriching the civic experience for the future. I would like to think the success of these projects, in the context of a renewed appreciation of city life and urban



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values, indicates a new cultural maturity in America. There seems to be a feeling among private and public clients alike that the country's architectural legacy not only is wor-

Chelsea Piers, a wildly successful renovation of a cluster of rotting piers in the Hudson River.



thy of preservation, but also is capable of creative evolution.

But such developments seem lost on some of the leading institutions charged with advancing our cultural ambitions. Indeed, some of the most prominent architecture schools in the country are clinging to an outdated sense that they

must be new and different. The avant-garde, as the historian and critic William J. R. Curtis accurately put it (RECORD, May 1998), "has retreated into the arms of one of its traditional enemies, academia."

One has to squint to penetrate the happenin' graphics, not to mention the text, of the newsletter put out by the Columbia School of Architecture, Planning, and Preservation, which celebrates subjects such as "homologous relations between parts," and "twofold movement that is both an extrusion and intrusion." Yet its dean, Bernard Tschumi, AIA, recently appeared on a list of the most artistically influential people in the country.

Discussion endures at Princeton and Harvard of "discourse," of course, and "master narrative" versus "personal narrative." Even those who applauded the recent appointment of Robert A. M. Stern, FAIA, formerly of Columbia, as dean of Yale's architecture school

were dismayed by his first list of lecturers, which led with—you guessed it—Johnson and Eisenman.

A dynamic world exists out there that the mandarin still doesn't appreciate. If the likes of Belle, Davis, Rogers, Taylor, and such other steady members of the architectural citizenry don't wow the magazines with innovative shapes or exquisite details, at least they are protecting our design legacy from self-absorbed celebrities.

We may still be waiting for a contemporary architecture that fulfills both artistic and communal needs with the skill of Carrère & Hastings and Warren & Wetmore (or Ralph Adams Cram, Bertram Grosvenor Goodhue, and Louis Kahn).

Meanwhile, I'll bet a tall stack of chips on the people who have the sensitivity and patience to bring the work of these past masters into a new age while celebrating their fundamental excellence. Even children can tell you that the tortoises have been beating the hares for generations. ■



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DIGITAL ARCHITECT Emerging standards for computer-aided design will improve communication within the design industry.

BY JERRY LAISERIN, AIA

Without standardized ways of sharing information, CAD cannot live up to its promise of faster, more economical, and better coordinated project documentation. A virtual Babel of file formats, document layouts, and project systems impedes the flow of computer-aided design (CAD) information and confuses users in the fields of architecture, engineering, and construction. Software translations of CAD files are error prone, requiring costly, time-consuming tweaking.

Features that spice up new versions of CAD software may be indigestible by competing products or even previous releases of the same software programs. Two architects using the same version of the same software may organize digital drawing elements so differently that automatic file exchange is impossible.

Responding to these problems, several groups have been working throughout the past decade to define common approaches to such issues. The questions they have addressed include: What is the best way to describe drawing geometry? What is the most logical way to sort and label drawing elements? Which is the clearest arrangement of details on a sheet or sheets in a project set? Who defines the digital attributes of building industry products and materials represented in CAD files?

Some codifying efforts for digi-

Jerry Laiserin, AIA, consults, lectures, and writes about the impact of information technology on the practice of architecture. He is an editor of ACADIA, the journal of the Association for Computer-Aided Design in Architecture.

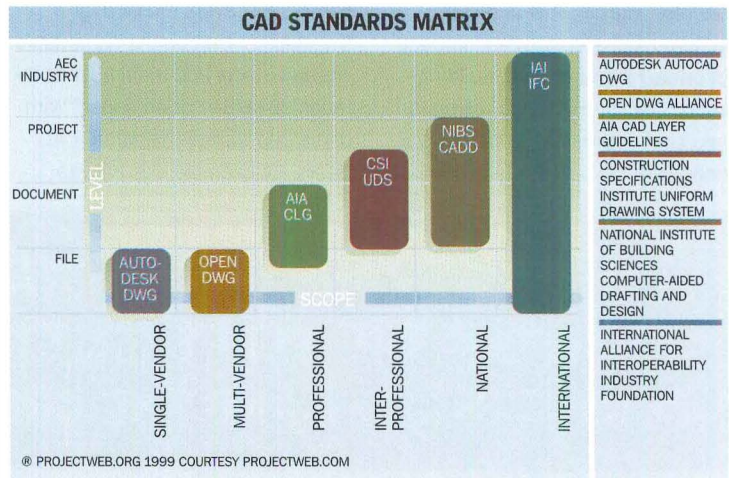
tal architecture are nearing fruition. Architects, clients, and consultants should prepare to adapt to these emerging standards so that they can benefit fully from them.

Why standardize?

Ideally, building information created by a firm using any CAD software should be equally accessible to another firm using different CAD software. At the file level, this degree of standardization requires either sophisticated file import and export routines in each program or the ability to read from and write to a common format.

Document-level standardization involves grouping drawing elements into sets, called layers or levels in most CAD programs. The term "layer" harkens back to the days of pin-bar overlay drafting, in which building elements were drawn on separate sheets that were then overlaid as needed. To share their work, early CAD users organized CAD information according to similar layers. Walls and doors, for example, are grouped separately. Most design firms develop an in-house layering standard, but few agree on the same one.

Facility owners with many buildings can manage their operations more effectively if CAD documents for all their buildings follow the same layering standard. Some large client organizations impose their own layering systems on their consulting architects. For the design firm, the resulting multiplicity of standards followed for different projects is almost as bad as having no standards at all.



The absence of a universal layering standard prevents client A from working with CAD files prepared by architect B, even when both use the same program. Similar incompatibilities arise when CAD programs translate internal representations or models of building designs into traditional plan, section, elevation, and detail drawings.

Who's standardizing what?

In the competitive world of software development, innovation nurtures new markets. In the case of CAD, this occurred in the early 1980s. As software markets mature, various organizations promote standards intended to streamline user interaction with the software. CAD is now in this more mature phase.

At one end of the standardization spectrum is a file-level proprietary format promoted by a single vendor. Autodesk's AutoCAD developed the DWG format, which has become the de facto standard—simply because billions of DWG files exist.

To accommodate architects, consultants, and building owners who prefer working with DWG files without using AutoCAD, several other CAD vendors formed the OpenDWG Alliance to develop a publicly documented description of a DWG file's inner workings. According to OpenDWG's executive director, Evan Yares, the group "focuses on documenting a standard DWG that is not publicly documented by its originator [Autodesk]." This allows participating CAD programs to read from and write to a common format.

IAI, not AIA

At the other end of the spectrum is the International Alliance for Interoperability (IAI). This group initiated a bold attempt to replace traditional drawings and specifications with collections of software "objects." These represent physical objects and simulate their behavior and attributes, like the swing, handedness, and fire rating of a door. IAI refers to collections or classes of such objects as

Industry Foundation Classes (IFCs).

Vladimir Bazjanac, chair of IAI's Research/Advisory Committee and staff scientist in the building technologies department of Lawrence Berkeley Laboratory, points to proof-of-concept demonstrations in which 10 computer programs from six different countries, communicating via IFC files, advanced a building design through the following phases: Space allocation spreadsheet, bubble diagram, 2-D and 3-D schematics, graphical simulations of energy performance, building-code checks, HVAC duct designs, and cost estimates. All of this was done with 80 percent less comput-

Guidelines (CLG), drawing organization through the Construction Specifications Institute's Uniform Drawing System (UDS), and translation of model information into drawings via the U.S. Coast Guard's plotting system.

CLG spans file and document standardization. Michael Schley, AIA, president of FM Systems, a North Carolina developer of computer-aided facility management software, and chairman of the AIA's CLG Task Force, says layers function by "mediating between the computer's internal model and the final presentation on screen or on paper." With doors and walls on separate CAD layers, for example, it is easy to

weights to the pen widths recognized by plotting devices.

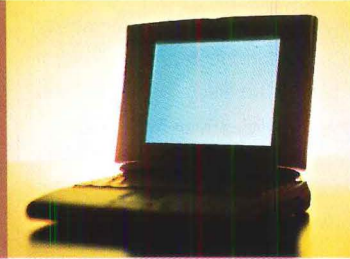
Adopting Standards

Initially, the NIBS CADD standard will be more of a recommendation than a fiat. Dana K. Smith, an architect who works with NIBS and serves in the Naval Facilities Engineering Command, expects his command to be the first in the Department of Defense (DOD) to require architects to comply with the NIBS standard. McCaffrey anticipates such implementation will "expand within the federal government beyond initial usage in the DOD and trickle down to state and municipal projects. Ultimately the

transition depends on the type of practice. Firms with DOD and other federal clients will feel the pain first. They will be required to implement new layering systems, drawing layouts, and plotter settings for these jobs. But many of their existing projects or those commissioned by nonfederal clients will maintain the old standards. Managing these simultaneously will be difficult. Meanwhile, firms that specialize in single-family residential work may never be compelled to switch to the new system.

Most practices fall somewhere in between, with a grace period before the inevitable conversion crunch. These firms should acquire the standards documents and

THE HOT ZONE OF CAD STANDARDS LIES BETWEEN THE NITTY-GRITTY OF DWG FILE COMPATIBILITY AND THE DREAMS OF IAI.



ing effort than traditional design tools normally require.

For IAI, proving that its standard works is only the first step in the process. Implementing a comprehensive system of IFCs will require the entire AEC industry, and all the software vendors and building product manufacturers, to alter current business practices and design procedures.

A national CADD standard

The hot zone of CAD-standards development lies between the nitty-gritty of DWG file compatibility and the lofty dreams of IAI. A coalition of professional associations and federal agencies, led by the National Institute of Building Sciences (NIBS), is finishing a national standard for CADD (the government acronym for computer-aided drafting and design).

The NIBS standard, scheduled for release later this year, addresses three broad areas of document- and project-level standardization: Model file organization through the AIA's CAD Layer

show the doors on a floor plan but omit them from the corresponding reflected-ceiling plan.

UDS consists of a series of modules that cover document- and project-level standardization. For example, the first module, Drawing Set Organization, spells out the order for arranging sheets of drawings in a project set. The initial release of the CADD standard also will include UDS modules for Sheet Organization and for Schedules. Drafting Conventions, Terms & Abbreviations, Symbols, Notations, and Code Conventions will be available soon after, according to John Patrick McCaffrey, AIA, a specifications consultant and chairman of CSI's Task Team for UDS.

The final CADD standard component, developed by the coast guard, defines plotting from CAD files. This project standard addresses issues such as the scaling of plotted drawings and translations from the computer's internal representations of line

weight of government construction will influence private construction."

As more clients require compliance with the standard, architects will have an incentive to abandon their homegrown standards, or lack of the same. McCaffrey adds, "large A/E firms benefit if multiple owners adopt one standard, and smaller A/E firms benefit by having a predefined standard they can work to, rather than developing their own."

Consultants likely will follow the architects' lead, according to Luis Eguiluz, CAD supervisor at engineering giant Syska & Hennessy. "If all architects use one standard it will make design communication easier for consultants."

CAD vendors, who were invited by NIBS to participate in developing the standard, will have a strong commercial incentive to incorporate into their software the templates and setup routines necessary for architects and engineers to adapt traditional, prestandard drawing habits to the new regime.

For architects, the trauma of

assess their differences from and similarities to current procedures.

They should also verify that their CAD software provides the layer flexibility and plotter setup necessary to implement CADD standards. Most consultants advise firms to standardize layer organization and plot settings first, then they move to their symbol libraries, notations, and abbreviations. Architects should also plan to implement parts of the standard gradually, over a year or two, to allow existing non-standard projects to move through the office, while introducing new projects that conform.

"Everyone appreciates the need for standards," says Barbara Heller, AIA, a partner at Heller & Metzger and 1999 chairman of the AIA Specifications and Building Technology professional interest area. "But, the time, effort, and expense involved in standardizing means the issue ultimately is not about standards, but about coping with change." And, as everyone knows, that's never easy. ■

BOOKS Looking at the big picture, three books take stock of the world and the last hundred years of architecture.

BY CLIFFORD A. PEARSON

Contemporary World Architecture, by Hugh Pearman. London: Phaidon Press, 1998, 512 pages, \$90.

Taking on the world is one of those tasks that usually only fools accept. Luckily, Hugh Pearman, the architecture critic for *The Sunday Times* of London—and no fool—is up to the challenge. In this hefty and handsome tome he looks at the last 30 years of architecture from around the globe, highlighting both recurring themes and important shifts in architectural

thought. By organizing all this material into 13 building types, rather than a bunch of stylistic movements or 'isms, Pearman is able to discuss the way functions have changed or stayed the same and to compare different approaches to similar problems. This method saves him from the trap of addressing only form-making issues, a failing of many other architectural surveys. Building categories range from visual arts and performance centers to religious structures and towers. Although well illustrated with more than 1,000 color photographs and drawings, the book includes mostly the usual suspects (the Guggenheim in Bilbao, the Tokyo International Forum, Lloyd's of London, etc.) and few surprises in terms of buildings or architects. Another quibble is that South America seems to

be underrepresented in the works shown. But Pearman has a remarkable ability to bring order to a vast amount of information and quickly identify the key issues, forces, and trends driving the development of each of his 13 species of buildings.

At the End of the Century: One Hundred Years of Architecture, organized by Richard Koshalek and Elizabeth A.T. Smith. New York: Abrams and the Museum of Contemporary Art, Los Angeles, 1998, 336 pages, \$65.

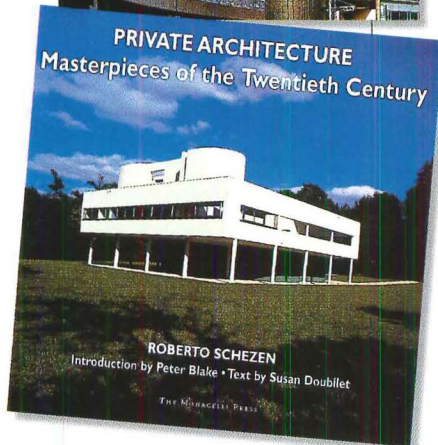
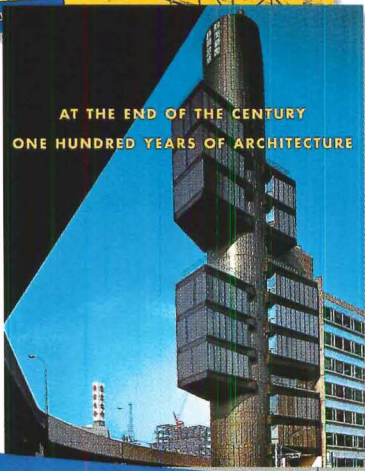
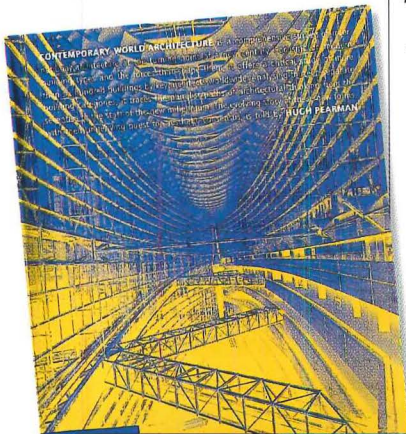
Assembled to accompany an exhibition that was launched in Japan last year and will land at the Museum of Contemporary Art (MoCA) in Los Angeles in 2000, this book is an engaging group effort. Seven essays tackling key issues in 20th-century architecture serve as the armature on which the weight of 100 years' worth of buildings have been attached. By and large, the book's structure holds up. An opening essay by Elizabeth Smith, a curator at MoCA, provides a clear overview of major forces that shaped the century's architecture.

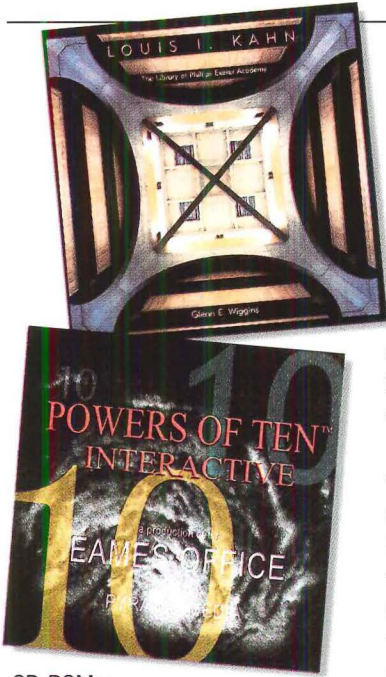
Subsequent essays focus on more specific issues—ranging from architectural historian Anthony Vidler's examination of "space, time, and movement" to architect Beatriz Colomina's look at "the exhibitionist house" to Hajime Yatsuka's thoughts on "internationalism versus regionalism" and Argentine historian Jorge Francisco Liernur's article on Latin America. Some of the century's highlights don't fit into the book's structure (the skyscraper, for exam-

ple, gets short shrift), but a lot of ground is covered—in terms of both geography and ideas. The book also includes some buildings and projects not always found on everyone's top-10 list.

Private Architecture: Masterpieces of the Twentieth Century, photographs by Roberto Schezen, text by Susan Doubilet, introduction by Peter Blake. New York: Monacelli Press, 1998, 360 pages, \$75.

Twenty-nine houses and one residence for the dead are the focus of Roberto Schezen's camera in this handsome book. One can question whether Peter Eisenman's House VI belongs in the same company as Antoni Gaudí's Palau Güell, Carlo Scarpa's Brion-Vega Cemetery, and Ludwig Mies van der Rohe's Farnsworth House, or whether the Rachofsky House in Dallas is the one example of Richard Meier's residential work to be included in a book of 20th-century masterpieces. But overall, these houses work well together and serve as an attractive best-of collection. Schezen tends to hone in on interiors and a few details, which can leave readers wanting to see more exterior shots. And a couple of houses beg for more than the few photographs they are allotted. But then the sprawling images of Le Corbusier's Villa Savoye and Adalberto Libera's Villa Malaparte take your breath away, and all is forgiven. Peter Blake contributes a lucid introduction and Susan Doubilet does an excellent job with the concise texts for each house.





CD-ROMs:

Louis I. Kahn: The Library at Phillips Exeter Academy, by Glenn E. Wiggins. New York: John Wiley & Sons, 1997, with book \$40.

Powers of Ten Interactive, by Eames Demetrios. Pyramid Media, 1998, \$80 (www.eamesoffice.com).

Glenn Wiggins' CD-ROM presenting the architecture and theory of Louis Kahn functions almost like an interactive coffee-table or text-book. Focusing on Kahn's design for the Library at Phillips Exeter Academy (1965-72) in Exeter, New Hampshire, the disc, which comes with a companion book, allows viewers to intensively examine the structure inside and out in a variety of ways.

A pictorial and verbal overview, very much like an electronic slideshow, introduces the project. Eminently user-friendly, the disc is full of well-photographed, high-resolution images, and users can click through them, both forward or backward, at their own pace (a clear advantage of the digital medium).

In addition to the library, five other Kahn projects are featured, including the Yale University Art Gallery in New Haven and the Kimbell Art Museum in Fort Worth, Texas. For all of these works, users can examine site plans, floor plans,

interiors, and exteriors. There is also an icon labeled "analysis," which offers still more subtopics for investigation: Fenestration, use of materials, design ideas, and "miscellaneous issues." You can also view video footage, or listen to the architect, in his own voice, expound on such subjects as form versus shape, technological innovation, and the importance of natural light to humans.

By contrast, Eames Demetrios's ambitious *Powers of Ten* CD-ROM—based on the 1977 short film of the same name by his grandparents, Charles and Ray Eames—is, as Demetrios describes it, "an interactive essay on scale." The original Eames film takes viewers on a visual journey through the powers of 10 by moving the camera back 10 times further every 10 seconds, so that within a brief interval viewers are transported from the farthest reaches of the universe to the interior of a single atom. The CD-ROM follows the same basic

premise (each click of the mouse represents a view 10 times larger than the previous one), but Demetrios has added a vast collection of material, including videotaped interviews, photographs, and virtual installations about everything from scientific experiments to art history. Users navigate by clicking on powers of 10 and one of six "strands," such as the Space strand, the Time strand, and the People strand. Every click reveals another example of scale, illustrating the "order of magnitude" chosen.

If the content seems encyclopedic and fortuitous, blame it on the medium's capacity to store vast quantities of information. The sheer scope and magnitude of the material is fascinating. As one navigates the contents of the disc, it is a bit like negotiating your own relationship to the universe at large, a thoroughly immersive experience, and in its own freeform way, as informative as the Kahn CD-ROM. *Christine Liotta Sheridan*

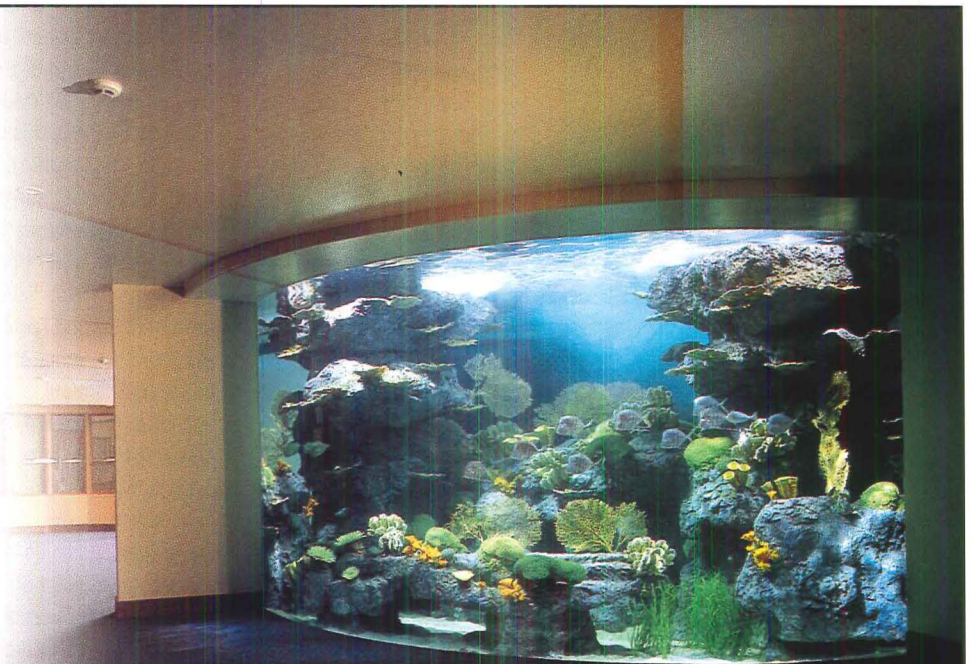
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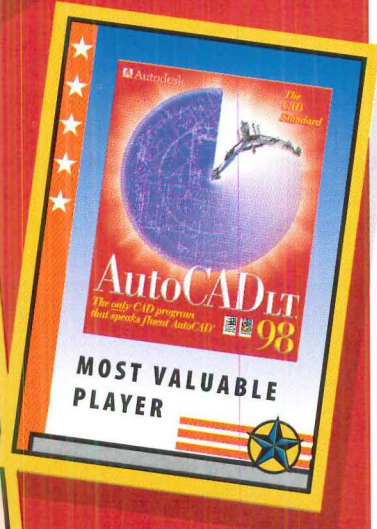
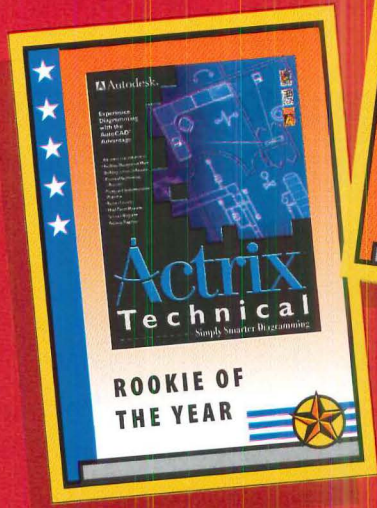
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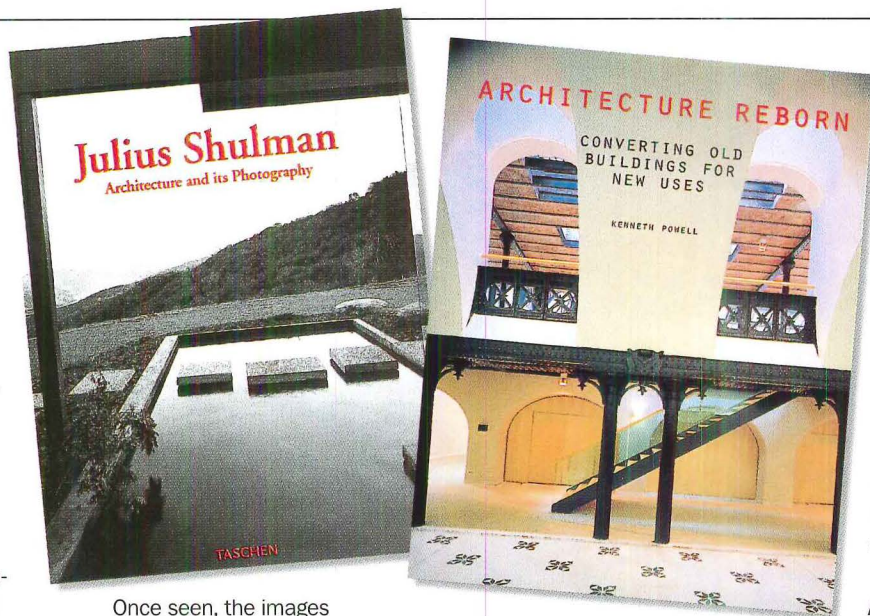
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Julius Shulman:
Architecture and Its
Photography, edited by
 Peter Gössel. Cologne:
 Taschen, 1998, 300
 pages, \$40.

Don't let the subtitle of this book fool you; the photographs of Julius Shulman go way beyond architecture. Well before Ralph Lauren started conjuring consumerist worlds in glossy advertising spreads, Shulman was creating seductive images of a southern California where tanned young ladies in flowing white dresses converse in a glass-enclosed living room hanging above the dancing lights of Los Angeles; where a dapper man reveals a really cool hi-fi hidden inside a wooden cabinet while a lovely redhead in a blue dress relaxes on a leather Mies couch; where shirt-sleeved friends hang out by their backyard pool.



Once seen, the images stay with us forever—not because the architecture is always so powerful, but because the places are so alluring. Who wouldn't want to be the one bringing the martinis and *bon mots* to the girls in the glass living room? Who wouldn't want to leave Kansas or Connecticut for the good life under the palm trees? Looking back on these photographs

from the distance of a few decades, we find them only more enticing, as they capture the essence not only of a particular place but a particular time. Although Shulman began taking photographs professionally in the 1930s and is still very much alive at age 87, the majority of his best images date from the 1950s

and '60s. That's when he consistently crafted the perfect shots of work by Pierre Koenig, Charles and Ray Eames, and Richard Neutra. This book does a good job of showcasing these photographs, except when certain pages' background color inexplicably changes to powder blue or citron. A preface by Frank Gehry serves as a lovely aperitif before the main course of photographs. Shulman's text, which is organized chronologically, is less compelling than his photographs. CAP

Architecture Reborn: Converting Old Buildings For New Uses, by Kenneth Powell. New York: Rizzoli, 1999, 256 pages, \$60.

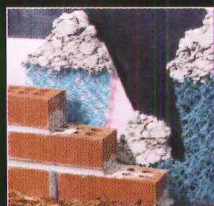
An English architecture critic and journalist, Kenneth Powell has assembled a stellar collection of renovation projects—most of which come from Britain and continental Europe. (continued on page 354)



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EXHIBITIONS The Dutch invade America, bringing with them their own take on commercial development and the American suburb.

BY SUSAN DOUBILET

"Big Soft Orange" at the California College of Arts and Crafts, Logan Gallery, San Francisco, through June 5.

Form Zero Bookstore and Gallery, Santa Monica, California, September 4 through November 8.

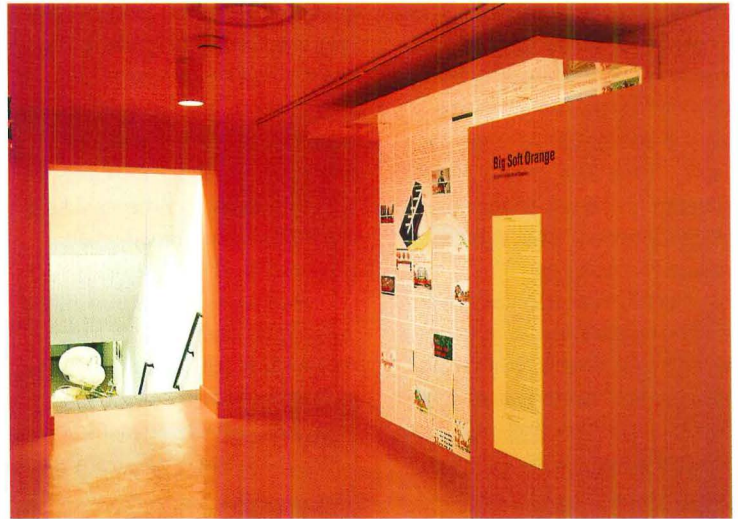
Americans are paying increasing attention to Dutch design, from fashion and furniture to architecture. But the opposite is true, too. The European love/hate affair with things American seems to have blossomed in Holland into true romance, or so one might deduce from an exhibition showcasing the megascale, provocative work of four young Dutch architecture firms.

"Big Soft Orange," which was curated by Michael Speaks, director of graduate studies at SCI-Arc in Los Angeles, is so named because the projects in it are 1) large in scale, 2) focused as much on process, or "software," as on form, and 3) from Holland, whose national color is orange. This color is also linked, in the exhibiting architects' minds, with our era's omnipresent commercialism and stands in contrast to nature's green.

The show was seen last fall at Yale University and this past winter in New York City at two venues: Columbia University and Storefront for Art and Architecture. It's now on the West Coast through the fall.

The show originated from Speaks' interest in the Rem Koolhaas-influenced Dutch design scene, which, he explains, "is as responsible for developing a new approach to contemporary modernity as [Dutch architecture] was in helping to initiate the heroic period of Modern architecture."

Furthermore, the Dutch government's VINEX report of the early 1990s, mandating over a million new housing units to be constructed in the Netherlands by 2015, afforded the 30-something genera-



At Columbia University (above), the installation was designed by Evan Douglis. At Storefront for Art and Architecture (right), a site model was the focus.

tion of architects an unusual opportunity to think big. As it happens, it provided ample material for a dense and fertile exhibition.

From housing to heat exchange

The work included in the exhibition ranges in type from housing estates to a heat-exchange station. The largest project is Leidsche Rijn, a development of more than 30,000 houses near Utrecht, which was designed as a collaborative effort by Crimson, an office of architectural historians, and MAX 1, a Rotterdam-based architecture firm. Part of a move in Holland to develop an economic model combining features of the American free-market system and the German state-planned one, the VINEX program has as one of its



goals to build 70 percent of its units using private developers.

So the architects in the program are driven not by the traditional philosophical or political directives, but by a market economy dominated by a concern for quantity. Given the need to adapt to changing conditions over the span of the long design and construction process, the architecture offices focus on "orgware," or organi-

Susan Doubilet is coauthor of the books American House Now (Universe/Rizzoli), Private Architecture (Monacelli), and the upcoming European House Now (Universe/Rizzoli).

zational software, to establish flexibility, with the ultimate building form being only one of the factors in the complex process.

Other highlights of the show include two designs for elements in Leidsche Rijn: A sample housing subdivision, unbuilt, by One Architecture, and a heat-exchange station, now completed, by NL Architects (whose name comes from Holland's international license plate). In the residential subdivision, the architects propose placing tennis courts on each house roof to satisfy a fantasized Hollywood-style community that is sports-minded and, of course, eternally young. The architects also suggest stringing tennis-ball-shaped lamps along high-power lines to make a virtue of a necessity.

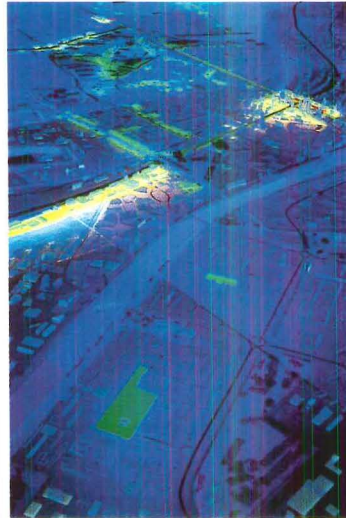
For the heat-transfer station, a blob-shaped structure is covered by a durable, flexible, waterproof, polyurethane membrane originally developed for parking-garage roofs, and incorporates a climbing wall,

basketball hoop, and water chute into its form.

Suburban nostalgia

The architects' affinity for things American is revealed more in their stated attitudes and general approach than in the details of their projects. They love the spaciousness of American suburbs: 1950s suburbs with cul-de-sacs, not just turn-of-the-century ones with village greens. And after decades in which public transportation was the holy grail of European officialdom, they love the freedom the car affords. They also love the bigness and looseness and lack of inhibition, which they interpret exuberantly, if at times naively, as American. As a result, they take a broad-brush approach to urban design.

Most fascinating is their willingness to blur distinctions in a very un-American and un-European way, to merge elements that are normally compartmentalized. They question the traditional divisions



A site model of the Leidsche Rijn development shows how big it is.

between both organizational and physical entities. Why shouldn't new suburbs follow both 19th- and 20th-century patterns, so that the two intermingle, as in Leidsche Rijn? Why shouldn't a golf course serve as the village green? Why shouldn't seductive aspects of the town's

peripheries—for example Rotterdam's harbor—infiltrate and enliven much of the city? Why shouldn't art galleries be intermixed with suburban houses? Or why shouldn't sports arenas revitalize destitute parks in the most impoverished areas of town?

These architects offer an alternative to the prettifying instincts of the New Urbanists and the banality of the Modernist agenda. Most important, they attempt to use features of the interstices and fringes of the city, the very features to which Modernists, designing neat packages between these difficult zones, have turned a blind eye. Betting on the potential of these ideas, Speaks and others have established a non-profit group in Los Angeles based on the "Big Soft Orange" concept, to work on alternative planning modules. One caveat: The Europeans approach these and all ideas with a healthy dose of skepticism; the Americans would be well advised to do the same. ■

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CORRESPONDENT'S FILE *A decade after the fall of communism, Polish architects are regaining their art in a country strewn with construction cranes.*

BY WOJCIECH LESNIKOWSKI

Wojciech Lesnikowski is the Don Hatch Distinguished Professor of Architecture at the University of Kansas. He earned a master's degree in architecture in 1961 at the Polytechnic Institute School of Architecture and Urban Planning in Krakow, Poland. Lesnikowski is the author of several books, the latest of which was The Modernism in Czechoslovakian, Hungarian and Polish Architecture (Rizzoli, 1995).

The Polish economy has expanded rapidly since the collapse of communism 10 years ago. Its seven percent average annual growth rate helps generate plenty of building activity and offers creative opportunities for Polish and foreign architects alike. In fact, Warsaw is said to be the second most active city in Europe (after Berlin) in volume of construction.

The sophisticated, modern designs of many buildings now going up in Warsaw, Krakow, and elsewhere in Poland demonstrate how far—and how quickly—Polish architecture has moved away from the oppressive and crude communist legacy. The country has become fertile territory for foreign investments: Warsaw is fast developing into the business capital of Central Europe, and Krakow, Gdansk, Poznan, and Katowice form a booming market for investors and architects.

There are signs that Warsaw soon will be a city of skyscrapers. At present, several new office towers are rising, among them the 32-floor Warsaw Financial Center, by Kohn Pedersen Fox of New York City, and the 680-foot-high Warsaw Trade Center, by RTKL of Baltimore. Plans are also under way for several more towers in the 300- to 600-foot-high range.

After the country opened its borders, foreign investors often brought architects with them, citing Polish architects' lack of Western experience. Thus, initially, most large-scale projects in Poland were designed by Western architects; a few Western architecture firms even opened offices in Warsaw, among them HOK,



Epstein, HNTB, ARUP, Denton Corker Marshall, and Black and Veatch. Sir Norman Foster and Ricardo Bofill also have substantial buildings under construction in the city.

Recently, however, the Western monopoly on large-scale design has met with fierce competition from the larger Polish offices. More and more, foreign investors are trusting local architects and selecting them for their projects. Some investors also are seeking out Polish architects practicing abroad.

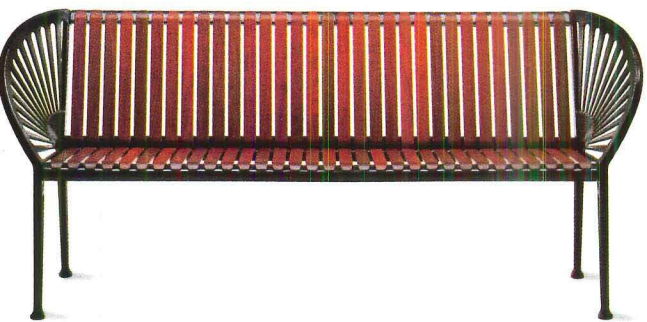
Another pattern has been to establish collaborative practices between Polish and foreign architects, a solution widely accepted in Poland today. Polish architect Tadeusz Spychala provides an excellent illustration of the collaborative trend: He works out of Vienna but is the author of many outstanding projects in Poland, a result of developers seeking architects well versed in Polish ways and familiar with Western techniques. About 10,000 registered

DDJM's three-level design for the Krakow headquarters of the Commercial Bank of Warsaw displays Le Corbusier's influence.

architects practice in Poland, most independently, and about 269 architecture firms are registered, 136 of them in Warsaw. Each employs an average of 10 to 20 architects. Few among them count up to 50 employees. The larger offices in Warsaw, Krakow, and Poznan have emerged as the best equipped to face the complex tasks presented by contemporary architecture. Poland also has nine schools of architecture, which train about 6,500 students each year.

Though their numbers are increasing and skills improving, Polish architects still must deal with the legacy of 40 years of communist dictatorship. In architectural terms, the period essentially consisted of two parts: An era of monumental Stalinist architecture, referred to as social realism, and a time of com-

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munist pragmatism associated with the construction of massive prefabricated housing estates.

Social realism left a considerable mark on Polish architecture; the rebuilding of Warsaw and other cities was conducted in this style and was identified with the revival of classical monumentalism and formal city planning. Ironically, the Stalinist era, if compared to the technocratic period of prefabricated housing estates that followed, appears relatively sophisticated, particularly because it represents a late manifestation of Beaux Arts-inspired formal city planning.

The communist pragmatism of the 1960s and 1970s completely devastated the Polish urban landscape. Although modeled on Corbusian and Bauhaus ideas about open urban planning, its crude and pragmatic character—alluding to the dominance of industrialized construction techniques—yielded an environment of depressing, monotonous, enormous, and crudely built and furnished blocks of housing, which stand today as the architectural remainder of this pitiful epoch.

The 1980s featured the slow devolution of the Communist regime, ushering in a more liberal political system that led to freer creative thought in every domain. Since the Catholic Church played a significant role in this process, the decade saw the construction of myriad churches. The architecture of religious buildings from this period shows excessive formal emotionalism and romanticism and tends toward regionalism, corresponding with the first, confused attempts to return to the once-cherished ideas of Modernist architecture.

During the second half of the 1930s, Poland—inspired by the theories of the Bauhaus, Dutch architect de Stijl, and Le Corbusier—had emerged as a leading center of Modernism in Europe.

The skylit chapel of Romuald Loegler's funeral facilities is housed in a simple structure of white concrete, with ample transparent glass.



Hundreds of Modernist villas, apartment buildings, hospitals, sports stadiums, and public buildings were erected. There is no doubt that, as the country emerged from the disarray of the post-Communist period, this legacy turned out to be significant for leading Polish architects.

But after 40 years of enforced stylistic and technocratic conformity, Polish architects found it difficult at first to recover the Modernist language. The church phase quickly evolved into imitations of Western Postmodernism. Evocations of the architecture of Graves, Rossi, and Boffill appeared in recent buildings such as the Benedictine Convent in Krakow, the Supreme High Court in

The "gateway" of Romuald Loegler's funeral facilities in Krakow leads to a complex of ceremony rooms, a chapel, and a cemetery.

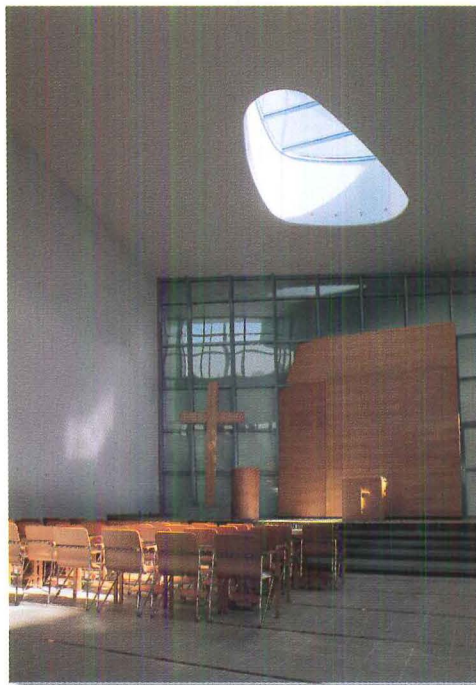
Warsaw, and the Law Department of Warsaw University. In a parallel fashion, many of the new housing estates in Krakow, Warsaw, and other Polish cities used the clichés of Postmodernism and the motives of the regional architecture.

Gradually, a desire for architecture of a more substantial and novel character started to emerge.

To reestablish a more ambitious profile for Polish architecture, leading Polish designers have deliberately focused on Western

examples at the highest levels of creativity and originality.

Ironically, many Western designers active in Poland still express the spirit of developer-friendly, commercialized Postmodernism, but established Polish architects prefer to take inspiration from the works of leading Modernists such as Nouvel, Foster, Grimshaw, or Piano. Within the world of native Polish architects, a comparison among designers in Krakow and Warsaw is



illuminating. Krakow is the old intellectual center of Poland, where architectural debates often center on theoretical and regional issues, while Warsaw—which was totally destroyed in World War II—tends toward more businesslike, cosmopolitan attitudes. What Polish architects of the new generation have in common is a strong technology-inspired Modernism.

Stefan Kurylowicz is among the most successful of this new generation. His Warsaw office employs roughly 40 architects and is responsible for a series of projects with a consistently high level of design. Kurylowicz has considerable foreign experience; he practiced in Canada, a background that allows him to work with Polish and foreign clients with considerable ease. His practice is diverse and includes industrial buildings, office buildings, and public housing.

Kurylowicz's 53,000-square-foot office building for Arcon Industrial Services in Warsaw won the award for design excellence from the Polish Association of Architects in 1998. This simple, cubical office-and-depot building is made interesting by the rich and varied sculptural treatment of its metal skin. The architect combined sun shades, screens, window openings, and aluminum cladding into a boldly horizontal composition supported by a system of sophisticated detailing. The result is an elegant example of industrial architecture.

Another Kurylowicz project in the works is the 770,000-square-foot headquarters of the Polish insurance company PZU. The architect's design consists of two parts: A low, 80-foot-high base that fits into the low, surrounding context, and an oval, 41-story tower with a dynamic and sculptural top.

Within the tower, suspended gardens were placed every seven floors to enliven the interior and break the monotony of the vertical shaft. The tower's skin features a double glazing, which allows the space between the two layers of glass to

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Stefan Kurylowicz's building for Arcon Industrial Services in Warsaw won an award for design excellence.

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JEMS Architects is another large Warsaw office that has produced several excellent designs recently. The firm's scope of work is broad, consisting of public housing, churches, offices, and cultural and commercial buildings. Recently, JEMS collaborated with Sir Norman Foster on the design of a new office building on a site adjacent to the Warsaw Opera House.

The firm has also completed a design for a housing complex in

Warsaw's Zoliborz district that takes inspiration from current French designs, exemplifying how quickly the demand for aesthetically sophisticated urban housing surfaced in Poland after decades of communist repression.

In Krakow, architectural debates are much more concerned with theoretical and contextual issues than in Warsaw. This does not mean, however, that the architectural emphasis in this city is less ambitious than in the capital. One recent project, the Japanese Cultural Center—designed by Arata Isozaki in association with the Krakow architecture firm Jet

Atelier, which also designed the Polish embassy in Tokyo—foreshadowed much of the innovative construction in this expanding city.

The latest designs by the local DDJM Partnership clearly point to the ambitious Modernist approach taken by more and more Krakow architects. The firm's urbane and creative approach to design results in part from involvement with its partners at the local school of architecture.

DDJM's design for the Krakow headquarters of the Commercial Bank of Warsaw eloquently displays Le Corbusier's influence. The three-part formal division of its south elevation, the horizontal strength of its composition, and the sculptural treatment of its roof strongly evoke Le Corbusier's Villa Stein. The 35,000-square-foot building is also a fine illustration of the kind of attention to detailing and use of first-class materials that would have been impossible only 10 years ago.

Another bank facility, designed by DDJM for the Commercial and Industrial Bank of Opole in Silesia, shows similar tendencies. The 17,000-square-foot project, which DDJM was awarded after a competition, is under construction in a historic district of the

city of Opole, adjacent to the main plaza and a historic convent. The extensively glazed building boldly uses transparency as its primary formal characteristic.

Simultaneously, thanks to its carefully composed volume and scale, it achieves a dual purpose: To be successfully integrated into its context, while standing apart from its historic surroundings as a modern, technologically defined object.

The architecture of Romuald Loegler and Partners also illustrates the forward-looking and proactive stance of recent Polish design. Loegler, involved in teaching and the staging of architectural exhibitions, is the creator of the pioneering, Krakow-based *Architektura i Biznes* review that features the latest Polish and international designs. Loegler also founded Krakow's International Biennale of Architecture.

One of Loegler's recent projects in Krakow is a complex of funeral and cemetery-related buildings built on a 20,000-square-foot site, for which the architect created a series of ascetic shapes using simple materials like concrete and glass. A main gateway with a transparent facade and sculpted roofline leads through dematerialized walls to ceremony rooms, doctor's and technical offices, and a morgue. A simply designed chapel with a single skylight provides a peaceful sanctuary.

The up-and-coming Polish architects and their foreign counterparts have been competing to design an ever-growing number of commercial projects, including large shopping malls being developed by French, British, and German companies; new hotels, motels, and other tourism-related facilities; service facilities related to the auto and food industries; office buildings; industrial parks; and housing.

Poland also needs to build new highways, bridges, airports, and hospitals, as well as university, laboratory, and industrial buildings on a massive scale. At this rate, the future of Polish architecture—its creative potential and its job market—promises to be one of the brightest in Europe. ■



Demand for aesthetically sophisticated urban housing has surfaced in Poland after decades of communist



repression; above left, JEMS Architects' housing complex in the Zoliborz district of Warsaw, which



takes its inspiration from current French designs. Above right, the firm's "Saturn" offices in Warsaw.

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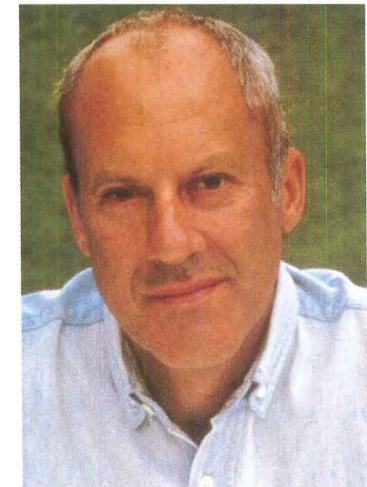
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do and then leave it to others to make judgments.

Perhaps the most fascinating observation for any building is how well it's weathered change. The people at the [Hong Kong and Shanghai Bank] claim it's still unique in terms of corporate high-rise buildings; we had made a conscious decision at the outset to fragment the central core and disperse the functions to the edge, and I think that's been quite a benefit. [1975's Willis Faber & Dumas building] has similarly adapted to the information revolution. At that time, nobody had any thoughts about it. Now, [the client] would claim its competitors have had to build new buildings to accommodate new technology.

This year's Pritzker Architectural Prize goes to Sir Norman Foster, a 63-year-old English architect who has been quite busy of late. After gaining prominence with such technological breakthroughs as the Commerzbank in Frankfurt and the Hong Kong and Shanghai Bank in Hong Kong, Foster has continued altering cityscapes around the globe; lately he's refurbished Berlin's Reichstag—with an energy-conserving design featuring a transparent glass dome—and completed a plan for the new London Assembly (see sidebar). Though his work is cited for up-to-date technology and for paying attention to environmental issues before they were hip, Foster told RECORD his basic concerns are still natural light and quality of life for a building's inhabitants. (A full interview with Foster is on www.archrecord.com and will appear in the July issue.)

RECORD: What aspects of your work do you think led to the Pritzker?

Foster: I think that's something you have to pose for the jurors. [Architects are] too close to what we do—we never have that perspective and it's probably a good thing, because we'd become far too self-conscious. I think you just have to be totally immersed in what you

RECORD: What themes have you pursued in your work?

Foster: There's always been an interest in the humanizing quality of natural light. And I think there's been the quest to raise the quality of life, the spirit of a building. That might have meant roof gardens, or a swimming pool, or works of art in the office space. In a way, the things we were doing in owner-occupied buildings in the '70s were considered very radical, with unheard-of amenity provisions. Now, in the buildings we're doing for developers, facilities like that are simply normal.

RECORD: Have any other aspects of your work become standard practice?

Foster: Well . . . on that theme, at [London's] Stansted Airport, we turned the terminal upside down—if you imagine the typical previous-generation terminal, it had a roof full of duct work and sprinklers, with a suspended ceiling. If you turn that

literally upside down and put all that heavy servicing underneath, you free the roof up, so it just keeps off the rain and lets in natural light. That model has now become an absolute standard. Also in the '70s, we were pushing the idea of an ecological architecture—buildings that would consume less energy, not pollute as much, have a softer impact. It was actually the unbuilt projects of that time that set the groundwork for projects that have been able to stretch that agenda much further.

RECORD: What's next for you?

Foster: I think continuing to try to make every project special. It's the pattern we have a passion for. So... more of the same! In the end we're all driven by that quest to create, and you have to be driven, when you think about all the obstacles that stand in the way of a building's getting built. If you weren't an optimist, it would be impossible to be an architect. *Soren Larson*

FOSTER'S LATEST FOR LONDON Dramatically fulfilling an election pledge to reinstate municipal government in the capital, the city of London has selected Foster and Partners' competition entry for a new headquarters for the mayor and assembly. The new building—whose futuristic, elliptical shape will be widely visible—was chosen over Alsop and Stormer's proposed renovation of a landmark 1920s building in Bloomsbury.

The new 10-level, 185,000-square-foot headquarters will be on the south side of the River Thames, prominently sited near the Tower of London and Tower Bridge, opposite the financial center (the brownfield site is part of a mixed-use master plan by Foster and Partners). Drawing on the symbolism of open government developed for Berlin's Reichstag, the assembly's design will be largely transparent and provide civic space in and around the building. At ground level, a new square—lined with cafes and restaurants—will open onto the riverfront, with a stepped terrace connecting it to a floating pontoon and a relandscaped park next to it. The top of the building will have a flexible space for exhibitions and banquets and a public roof terrace. Below will be the mayor's office and secretariat, with more public functions, such as the assembly chambers and committee rooms, on lower floors.

The minister for London praised the design's environmental credentials: The fully glazed north elevation will admit a high level of natural light, and with stack ventilation behind the facade, a natural underground aquifer as a heat sink, and chilled ceilings to avoid the need for air conditioning, Foster boasts that it may be the first truly green building in the city. The elections for the mayor and assembly—political entities discarded by Thatcher in the 1980s—take place in May 2000, with the building slated for occupation in 2001. *Steven Spier*



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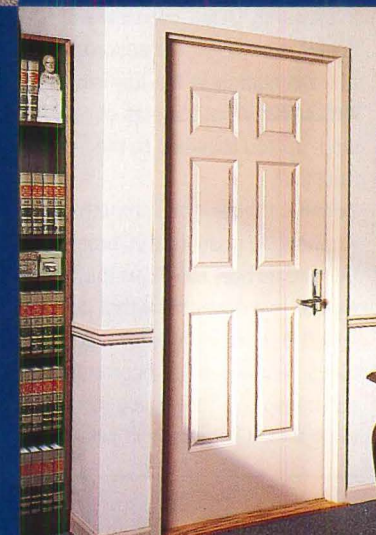
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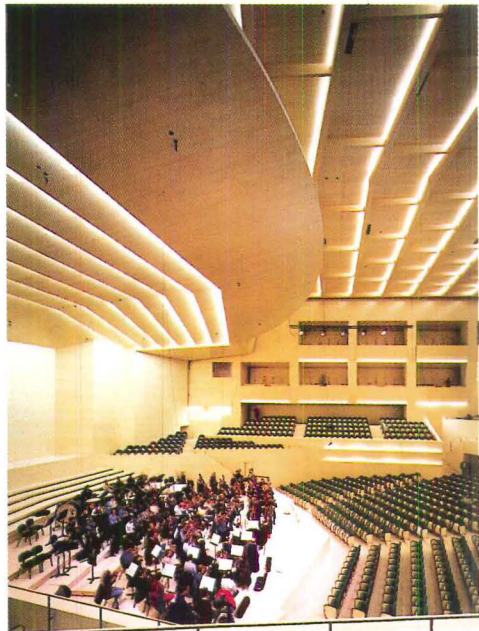


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INTERNATIONAL PAPER

MONEO'S NEW AUDITORIUM REVITALIZES BARCELONA NEIGHBORHOOD

Rafael Moneo's Barcelona Auditorium, first begun in 1989 but delayed due to a lack of funds, was finally inaugurated in March with a gala concert.

The new \$45 million home of the Symphonic Orchestra of Barcelona and Catalunya stands



beside Ricardo Bofill's 1997 National Theater of Catalunya in the north-east section of the city. The two buildings form the centerpiece of a city effort to revitalize the area around the Plaça de les Glories, currently a confluence of rail lines, highways, and declining industries.

While Bofill responded to the bleak surroundings with theatrical flamboyance, wrapping his amphitheater-style hall in a glass-walled Greek temple lined with oversized columns, Moneo's tough rectangular volume could almost pass for a factory or loft building.

Packing 450,000 square feet of space, the building covers two city blocks. Its repetitive, exposed-concrete frame is infilled with oxidized Corten steel panels, recalling Louis Kahn's Yale Center for British Art in New Haven, Connecticut. The small side street that it spans will be incorporated as a roofed entry plaza, with access to

the twin lobbies of the concert hall and a still-unfinished chamber music hall. The two will open together with a music school and a library next year.

The 2,340-seat concert hall is finished entirely in Canadian maple. The light-colored wood and the pale

ash-green upholstery create a cool, crystalline atmosphere, contrasting with the rugged exterior. The hall is classically proportioned as a double square for acoustical reasons, while the seating wraps around three sides of the stage area in emulation of Hans Scharoun's Berlin Philharmonic.

The auditorium will be joined in October by the Liceu Opera House, a 19th-century hall gutted by fire in 1994 and rebuilt by

architect Ignasi Solà-Morales. It is the last of several cultural projects planned for the 1992 Olympics but delayed by overspending, including Richard Meier, FAIA's Barcelona Museum of Contemporary Art, which opened in 1995. *David Cohn*



NEW PLANS FOR FALLINGWATER COULD SAVE AN ICON FROM DISASTER

Fallingwater won't be in danger of falling down much longer. After years of analysis, a team of architects and engineers has proposed a strategy to prevent the Frank Lloyd Wright house's famous cantilevers from sagging any further, while waterproofing the roof and other surfaces to prevent more cracking.

In the mid-1990s, researchers ascertained that the two main cantilevers were deflecting between five and seven inches, while general cracking as a result of water damage had intensified. In 1997, a steel support was installed under the living room, effectively stopping the house—constructed in 1936 in Mill Run, Pennsylvania, for retail magnate Edgar Kaufmann—from continuing downward.

Now, Robert Silman, the New York-based engineer who installed

the supports, has devised a way to prevent further sagging. His idea calls for posttensioning, the installation of steel cables alongside the house's four main foundation beams, which, when pulled taut, would theoretically create enough tension to provide the needed support. Meanwhile, New York's Wank Adams Slavin and Associates has created a waterproofing and drainage system to slow other deterioration.

The proposals were met with general enthusiasm by a panel of engineers and experts in Pittsburgh on April 10; the next step is approval from the Western Pennsylvania Conservancy, the nonprofit organization that oversees the house. Work could begin late this year on the project, which might cost as much as \$7 million. *Soren Larson*

THE BATTLE OF CHICAGO Architects can be fierce about protecting their home turf, none more so than Chicagoans. With a rash of recent coveted jobs going to outsiders, many Chicago architects are furious at being passed over. But others say the trend is symptomatic of the new global economy—and a relative lack of local design talent. Anger peaked in March when the Art Institute of Chicago announced its selection of Renzo Piano to design a gallery building of about 75,000 square feet, the museum's first addition since 1988. Said one local, who preferred to remain anonymous: "The rest of us claw for scraps while the plums go to the out-of-town architects of notoriety."

Meanwhile, Frank Gehry, FAIA, is expected to sign a deal with city officials to design a bandshell and outdoor seating area in Chicago's Grant Park. The University of Chicago has hired Cesar Pelli, FAIA, for an athletic center and Mexico's Ricardo Legorreta for dorms. Also, Rem Koolhaas of the Netherlands is shaping a campus center for the Illinois Institute of Technology.

The projects follow a string of major commissions that have gone to outsiders in recent years: The Chicago Museum of Contemporary Art by Berlin's Josef Paul Kleihues; a convention center expansion by Atlanta's Thompson Ventulett Stainback; and several office buildings by Kohn Pedersen Fox of New York City.

Still, some Chicago architects say the infusion is a healthy phenomenon, reflecting the reality that Chicago no longer has a dominant figure such as Mies van der Rohe. In addition, they note, Chicagoans have never shied from grabbing work in other cities. "We can't be provincial. I get on planes all the time," said Joe Valerio, FAIA. "What am I supposed to do? Tell Renzo he can't get a job in Chicago?" *Blair Kamin*



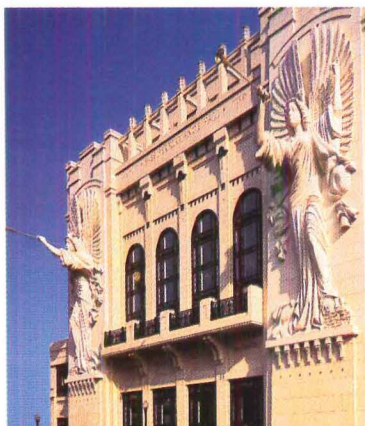
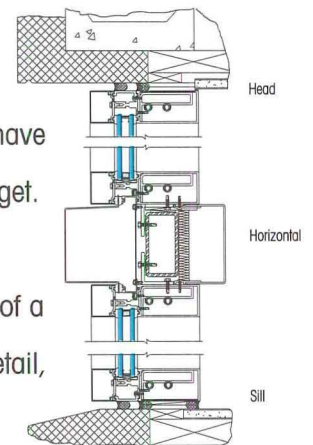
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REDEFINING THE INTERN: A SUMMIT OFFERS ALTERNATIVE VIEWS

Blend more practice into education, and vice versa. Let architecture graduates take the registration exam right after school. Foster life-long learning and intern mentorship. And speaking of internship, maybe it's time to banish that debilitating term altogether.

These were among the ideas that gained wide consensus at the Summit on Architectural Internship, held April 10-12 at Shaker Village, Kentucky. The 66-person gathering was led and organized by John M. McRae, FAIA, architecture dean at Mississippi State University, and W. Cecil Steward, FAIA, the University of Nebraska's architecture dean and chairman of the Collateral Boyer Task Force, formed in 1996 to help realize the principles in the Carnegie Foundation report.

The summit, which proceeded with a startling lack of rancor, matching the serene bluegrass setting, included top delegates from the five national "collateral" architectural organizations, a dozen interns and recently licensed architects, and a seven-person Canadian delegation.

Rather than hand down hard solutions, participants sought to coalesce around a broad design for how the profession might break free of what many consider a rigid, bureaucratic, and poorly connected path from school to internship to licensure, and move instead toward a more flexible and seamless approach that would feature more options for students, continued diversity in educational offerings, and a far richer blend of practice and learning throughout the process.

"We thought maybe it's time to pull the engine, take a look, and see if there are ways to strengthen internship," says McRae. "That was the starting point for looking more broadly at the full implications of internship in a changing profession with global practice, with the electronic age upon us, with the implications of alternative careers available."

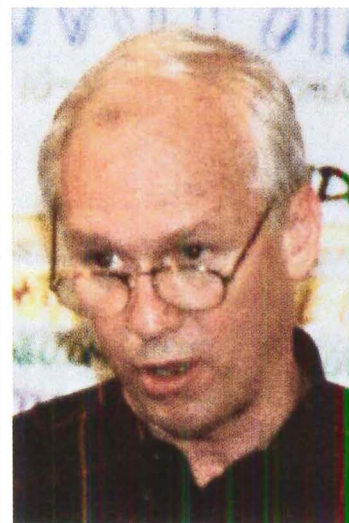
Changing the ARE

The content and timing of the Architect Registration Examination (ARE) became a dominant subject.



In advance of the summit, the boards of both the AIA and the American Institute of Architecture Students advocated allowing professional-degree graduates to take part or all of the exam immediately on graduation from an accredited program and before completing a state's training requirement.

Currently, only Florida, California, Arizona, and Wisconsin permit that, according to NCARB. The idea gained virtually unanimous support from summit participants, however, on the belief that moving the test closer to graduation might prompt welcome reconsideration of



W. Cecil Steward (left) and John M. McRae (right).

school curricula and create more choices for young architects.

Debating definitions

Another hot topic was the word "intern" itself (see Speak Out, page 30). Most agreed the term is not descriptive, even professionally demeaning. Interns pressed for a new title containing the word "architect." But elder delegates cautioned that might expose interns to unwanted legal liability and would likely run afoul of state legislators, not to mention veteran architects covetous of the title. In the end came a more open-ended consensus: That the term intern be "reconsidered."

To sustain the summit's momentum, leaders of the five collateral organizations agreed to form an internship steering committee, and possibly a new Web site, to promote dialogue across the profession about the summit's ideas.

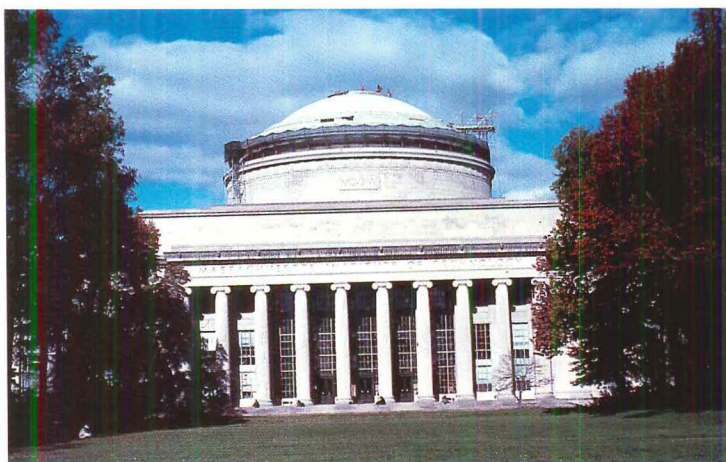
"Our hope," says McRae, "is that the profession would see the potential of these ideas and use them as a backdrop for healthy discussion about how we can incorporate these elements into the present structure, or how we can adjust what we're doing to make a more effective program for training future architects—and then implement the necessary points to make it happen." *Lee D. Mitgang*

THE INTERN LIFE: FROM BAD TO SO-SO? A pair of surveys by the AIA and the National Council of Architectural Registration Boards (NCARB) suggests that while far from ideal, life for many interns in a strong economy no longer neatly fits the caricature of disillusioned, overworked CAD-drones with uncaring employers. The surveys, released at the Internship Summit, include responses from nearly 2,000 recent architecture school graduates in the AIA poll, and nearly 1,000 current and former interns and 300 practitioners queried by NCARB.

Among the AIA findings: Average 1999 entry-level salaries stand at \$28,000, compared with \$24,500 in the mid-90s, according to preliminary data, and rising to \$40,000 on average by the fourth year on the job. Also, more than 95 percent of recent graduates polled are employed, and a striking 86 percent work in traditional practice. According to NCARB's data, the mean number of hours interns say they work per week is 45, while employers say their interns work 39 hours. Overall, 87 percent of current interns queried by NCARB rate work satisfaction as "better than expected."

On the downside, interns told NCARB they spend an average of 68 percent of their workweek on CAD tasks. Majorities also say they're still dissatisfied with pay and hours. Half of former interns and one-third of current ones say they aren't compensated for overtime. Thirty-nine percent of former interns say they've considered leaving the profession because of money. According to the AIA, more than half left their first job within a year to chase better pay.

The surveys gave similarly mixed notices to the quality of professional preparation in architecture schools and the Intern Development Program (IDP) administered by NCARB—nearly 9 out of 10 interns and 75 percent of practitioners in NCARB's survey give schools passing grades or better in how they prepare their graduates for future practice. But many in the AIA's poll cite weaknesses in graduates' preparation for workplace realities, especially technology; only 22 percent of interns from the class of 1994 and 10 percent the 1995 class have passed the ARE, according to data from the AIA. In addition, there was no significant difference in the way IDP and non-IDP interns in NCARB's poll felt about how much they were learning from employers or the diversity of their work experience. *L.D.M.*



AS RESTORATION CONTINUES AT MIT, MAJOR NAMES PREPARE NEW WORKS

The Massachusetts Institute of Technology (MIT) has undertaken an extensive plan to restore its 10 original campus buildings, designed by William Welles Bosworth early in the century. The project's primary architect, the Boston office of Einhorn Yaffee Prescott, has completed an evaluation of the buildings and is leading the restoration of the 100-foot-in-diameter Building 10 dome, built in 1915, that is the campus centerpiece (above).

In addition, Boston firm Perry Dean Rogers & Partners is overseeing a \$24 million rehabilitation of Baker House—the dormitory designed by Finnish architect Alvar Aalto in 1949, one of just two permanent structures by Aalto in the U.S.—and construction is about half complete.

But preservation isn't the only thing on the mind of the MIT administration. A number of architecture's top names have been commissioned to contribute designs for what should soon be a dramatically transformed campus.

Frank Gehry, FAIA, is designing a major new building for computer and information sciences, called the Stata Center, and is more than halfway through schematics, according to William J. Mitchell, dean of MIT's school of architecture and planning.

Japanese architect Fumihiko Maki is designing the Okawa Center, a new building of around 140,000

square feet that will house MIT's media laboratories. Steven Holl, AIA, is doing a new undergraduate residence that is also at an early schematic stage. Kevin Roche, FAIA, has completed plans for a new central athletic facility, which will have a pool and other amenities, while Harry Ellenzweig, AIA, is doing a new parking structure and work on the physical plant. To top it off, Laurie Olin, Hon. AIA, was appointed campus landscape architect and is at work on a new campus master plan.

As for the dome, EYP is undertaking full stone repointing and adding new copper flashings, while the base and glass oculus are being rebuilt to repair waterproofing details. *Soren Larson*

SAN FRANCISCO FIRM CONTRIBUTES TO AN EVER-EXPANDING SAO PAULO

The San Francisco firm Kaplan/Laughlin/Diaz (KLD) has won an international competition for the design of the headquarters of Brazilian media group GLOBO, based in Sao Paulo. The program calls for a 1 million-square-foot master plan for the variety of spaces the broadcasting and print-media facility requires.

Like many cities without definite edges or growth limits, Sao Paulo's business district has shifted over time. As one area becomes more dense and real estate prices rise, development moves elsewhere. Earlier cores in Sao Paulo have included the historic downtown and later, in the 1960s, the Paulista Avenue area. The new GLOBO headquarters, to be built in three phases, is located on the banks of the Pinheiros River, just beyond the current downtown business district. The project, with its stage and sound studios, journalism department and office tower, will serve as an anchor for the emerging riverfront district.

The first phase, containing 200,000 square feet of studios and the journalism department, was completed by GLOBO on its own in December. KLD is designing the next two phases, with the central element being the 15-story office



tower (above), topped by a multi-level glass-skinned atrium and spire. Suspended within the atrium is a spherical conference/board room, clad in satin-finished titanium. It is intended that the sphere, illuminated from within the tower, will provide a striking landmark when seen from the nearby landscape.

The building will also feature various "smart skin" strategies of passive and active solar control to adjust to the climate, while a ground-level plaza will feature gardens and fountains. Work begins soon on the second phase. *Ellen Sands*

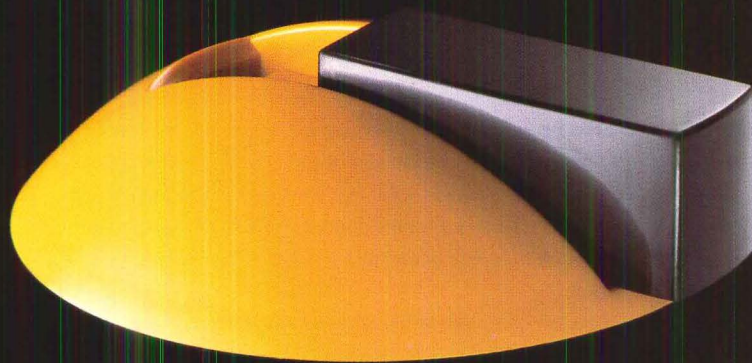
CUBE SHAPES YOUNG MINDS Early this month, Detroit is hosting the National Town Hall Meeting for a Sustainable America, an event sponsored by the President's Council on Sustainable Development and the Global Environment & Technology Foundation. One of the more engaging messages will likely come from a feisty Kansas City-based nonprofit group called the Center for Understanding of the Built Environment, or CUBE (www.cube.org). The organization, explains founder Ginny Graves, "brings together educators with community partners to effect change that will lead to a quality built and natural environment." Graves will discuss how activities led by CUBE and other groups can be powerful tools for community revitalization. One such activity—CUBE's hands-on planning game, Box City—will take center stage at the meeting. In the 30 years since its creation, Box City has been used by thousands of teachers and nearly a million students. The essence of the approach is to have kids work at creating their own cities—one building and park at a time—from cardboard boxes. According to Graves, "the kids create the way real communities get built, through collaboration, regulation, necessity, and entrepreneurship."

In the weeks before Box City is constructed, older students take on roles such as mayor, developer, preservationist, small-business owner, and city council member; during the Box City event, they come together for their own "town meeting." To Graves and her colleagues, training future architects, planners, mayors, clients, and citizens to be sensitive to the built and natural environments is a no-brainer. "Isn't it time that we realized that a city accessible and understandable to children would be more accessible and understandable to everyone?" she asks. "If children are dependent on parents and cars to get anywhere, how will they learn to navigate—or even see—their surroundings?" *Kira L. Gould*

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EASTERN EUROPEAN CHIC: HUNGARY TO BUILD A FASHION CENTER



Budaors, a town just outside Budapest, can soon lay claim to having a model building in Hungary. Indeed, a gaggle of stylish mannequins will no doubt be undulating down the catwalk at Central Europe's first one-stop wholesale fashion facility after it opens early next year.

Construction begins this summer on the 480,000-square-foot, \$45 million Fashion Center Magyarorsag on a site seven miles from Budapest's city center. Designed by architects Franz von Gnielinski of Lubeck, Germany, and Gyula Szigeti of Szekesfehervar, Hungary, the complex will consist of a trio of three-level buildings sur-

rounding a glass-roofed exhibition hall. The first two 105,000-square-foot buildings are scheduled for completion in early 2000 and phase two, a 270,000-square-foot structure, will be ready by mid-2001.

On about 10 acres, the Fashion Center will encompass space for some 200 to 240 clothing and accessories showrooms and an exhibition hall for fashion shows and the like. Amenities will include banking, courier and postal services, a food court, and underground parking for 1,600 vehicles.

"The buildings will be modern-style, steel-reinforced concrete structures with lots of glass and open space. We want to eliminate dark areas," says Gnielinski, the project's planning director. "The underground parking will permit the use of the outside green area for fashion shows, parties, and even an outdoor cafe."

Dusan Dobrijevic, the project's marketing director, says that Budapest "has about 6,000 fashion, textile, sportswear, and accessories wholesalers. We also hope to draw buyers from all the neighboring countries, even Russia." In fact, the first building is already preleased. *Carl Kovac*



IN AN UNUSUAL MOVE, RIBA'S GOLD MEDAL GOES NOT TO AN ARCHITECT, BUT A CITY

The Royal Institute of British Architects' Gold Medal was inaugurated by Queen Victoria in 1848 and is conferred annually on a distinguished architect or person "whose work has promoted either directly or indirectly the advancement of architecture." In a dramatic break with tradition, the 1999 RIBA Gold Medal has been awarded to a city—Barcelona, Spain.

The move reflects the Institute's decision to recognize the importance of urban design and the collaborative commitment needed for cities to change. "Instead of going through the usual long list with slides and photographs, we decided to go for a

theme relating to the RIBA's own architectural interests," says RIBA president David Rock.

The award recognizes not just the big landmark projects, such as the Olympic Stadium and Village, the new World Trade Center, the Contemporary Art Museum, and the restored Liceu Opera House. It also honors many smaller projects, including parks created on former industrial land, the new and restored squares in the suburbs and the city, and various hospitals, schools, and arts buildings.

The award notes that Barcelona's transformation was set in motion by Narcis Serra, the first democratic, post-Franco mayor, and Oriol Bohigas, coordinator for urbanism for Barcelona from 1980-84. But most of the transformation was achieved by Pasqual Maragall, mayor from 1982 to 1997, and Jose Antonio Acebillo, director of urban projects from 1980 to 1987 and director of the Municipal Institute for Urbanist Promotions from 1988 to 1993. It continues today under the current mayor, Joan Clos i Matheu.

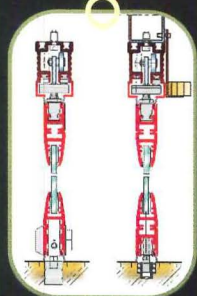
The city's continuing ambition is demonstrated by its plans to develop the Sagrera-Sant Andreu area around a new international transportation hub, in the expectation that it will do for this part of the inner city what the \$8 billion invested in the 1992 Olympics did for the old docks and their decaying hinterland. *Katherine MacInnes*

YOUTH MOVEMENT Could a healthy dose of architectural knowledge and methods strengthen the thinking skills of elementary and secondary schoolchildren and give a much-needed lift to teaching and learning? The American Architectural Foundation is making the case in a 39-page pamphlet, "Building Connections: Enriching Learning Through the Power of Architecture and Design." Written in collaboration with The Carnegie Foundation for the Advancement of Teaching and aimed primarily at classroom teachers and school administrators, the booklet marks a fresh phase in the AAF's nearly three-decade long crusade for inclusion of architecture and design in K-through-12 curricula.

"Building Connections" is not about teaching architecture per se or luring more youngsters into architectural careers. It does offer gently worded recommendations aimed at giving architecture greater due in precollegiate learning. It suggests that all elementary students should participate in at least one serious design exercise before leaving fourth or fifth grade, that middle-school youngsters get the chance to apply architectural study and thinking to issues like community health and their own personal growth, and that students should leave high school armed with some understanding of their responsibility in shaping and preserving the environment.

Alan R. Sandler, the AAF's director of education programs, said an upcoming companion guide, "Starting Points," will contain curriculum materials already in use. For example, at Hahnville High School in Boute, Louisiana, Lloyd L. Sensat Jr. won an American Teacher Award for art classes in which students "adopt" a New Orleans building and use architecture as a catalyst for examining the structure through art, drama, research, and creative writing. Information about teaching resources is available from the AAF, 1735 New York Avenue NW, Washington, DC, 20006-5292. *Lee D. Mitgang*

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MLK'S CONGREGATION IN ATLANTA GETS A STRIKING NEW SANCTUARY



When Atlanta's Ebenezer Baptist Church grew too small for its burgeoning congregation, it literally took an act of Congress for a replacement to be built. That's because Ebenezer is no ordinary church: Its pulpit hosted the orations of the Rev. Martin Luther King Jr., his father, and maternal grandfather (who built the Gothic church

in 1922). Also, King Jr.'s mother was murdered there by a deranged gunman.

Because of the church's historical and emotional significance, it's been standing room only at the 600-seat sanctuary every Sunday since the 1960s. But expanding Ebenezer, a listed landmark, was out of the question. The con-

gregation looked for a suitable site for years before a complex deal was struck, according to William Stanley III, FAIA, NOMA, principal in the Atlanta firm of Stanley-Love-Stanley, and designer of the new church, the New Horizon Sanctuary.

The city of Atlanta deeded a piece of land directly across the street from Ebenezer to the National

Park Service, which oversees the Martin Luther King, Jr., National Historic Site. (The Park Service will spend \$2 million to restore the old church and plans to expand the historic district further by acquiring Dr. King's birthplace.) Through the act of Congress, the Department of the Interior, which oversees the National Park Service, gave part of the parcel back to the church.

For Stanley, who has been working on the master plan with church elders and city fathers since 1989, the frustration of the timetable was far outweighed by the "honor and opportunity" of creating a building that was "culturally relevant, while paying homage to Rev. King, and creating a building that fit organically with the rest of the historic district."

The \$8 million New Horizon, which opened in March, is three times the size of Ebenezer and makes frequent design references to both its predecessor and the earliest Christian houses of worship,

the Coptic churches in Ethiopia. The light-filled sanctuary is fan shaped, telescoping out before tapering in again toward the pulpit, a circular form with a choir loft and baptismal pool. It will be topped by the *Dome of Peace*, a mosaic version of the *Ascension of Jesus*, by artist Paul Goodnight.

The stepped roof form is clad in copper, which, after acquiring a patina, is meant to evoke the thatching common in Africa. The exterior palette repeats the brick of the original and refers to black southern masonry traditions. Inside, the palette and pattern of soft furnishings are based on African textiles, while 10 of the interior columns, along with the 55-foot bell tower, are decorated by Coptic glyphs. "I hope the church will be seen as an alternative to the traditional European houses of worship," Stanley said. "Meantime, its function will very much be like a cathedral, as a public performance space."

Julie Moline

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A DESIGN CROSSING TIME AND SPACE: NEW YORK CITY'S NEW PLANETARIUM

This is not your father's planetarium. More than 60 years after the Hayden Planetarium alighted on Manhattan's Upper West Side, a replacement facility is under construction—with a program its architects and developers consider to be light years ahead of typical planetarium structures of the past.

The Polshek Partnership's design for the Frederick Phineas and Sandra Priest Rose Center for

Earth and Space focuses on an 87-foot steel sphere—in contrast to the hemispheres employed by past planetariums—which appears to be floating in the center of a giant glass cube. The sphere actually rises from a tripod of steel legs that hold a circular truss, which supports the upper hemisphere and suspends the lower hemisphere.

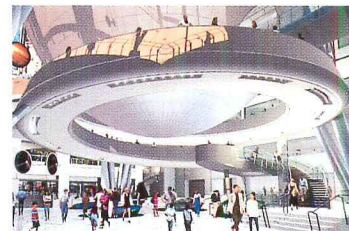
The upper hemisphere will hold the 432-seat Space Theater, where

a star projector and video projector will cast images of the night sky on a dome overhead. In the lower half will be the Big Bang Theater, where viewers will stand on a circular platform to see the first moments of the formation of the universe on a screen below. Additional exhibits and learning centers (at right, the Lewis B. and Dorothy Cullman Hall of the Universe) will be to the sides.

The theaters will be reached by a 320-foot spiral ramp that wraps around the sphere one and a half times. A journey along the ramp takes a visitor on a tour of the roughly 13 billion-year history of the universe, with various major events represented along the way. A distance of one inch on the ramp signifies 3 million years.

"Unfortunately, architecture is often very static," says Todd Schliemann, AIA, a design principal at Polshek. "We tried to find any way we could to make it move, and to move you."

The architects chose a transparent design, according to James



Stewart Polshek, FAIA, because "it was fundamentally important from the beginning that this be accessible visually. We wanted to minimize the architecture, make it as refined as possible." To create the huge, clear cube, the glass panels will have no mullions between them; they will abut one another, fastened at the corners by contraptions attached to struts, which will then connect to wall trusses or the roof.

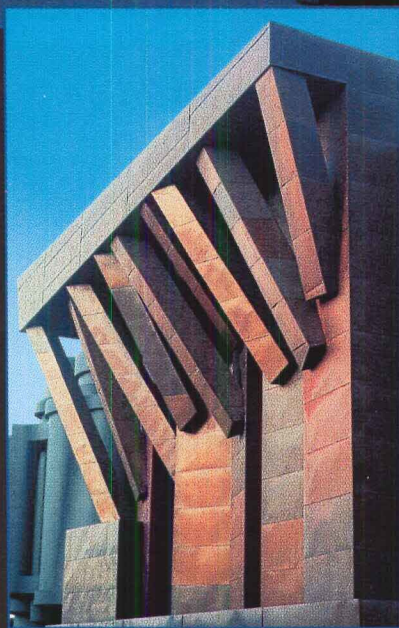
In addition, the public space outside the new facility has been redesigned by landscape architect Kathryn Gustafson as a one-acre terrace with visitor amenities. The new center is slated to open in early 2000 and will cost \$210 million. *Soren Larson*

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Architect: Frank O. Gehry & Associates

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PRAGUE CASTLE, ONCE A ROYAL HIDEOUT, WILL NOW HOST A PUBLIC PARK



A portion of majestic Hradcany (Prague Castle) is being turned into a public park designed by Geneva-based BRS Architects. The Prague Castle Administration held an international competition in 1997 for the

site and immediate environs—a giant Renaissance “food court” in the era of Austro-Hungarian Emperor Rudolf II, replete with carp pond, pheasantry, and orchard—with the intention of creating a public space in contrast to the more royal and formal courtyards, terraces, and gardens of the castle enclave.

Literally in the shadow of Slovenian architect Josip Plecnik’s works for

First Republic President Thomas Garrigue Masaryk (1850-1937), the BRS proposal takes a low-key approach to the overall structure of the site. Starting in the east, at the Baroque Riding School, the plan

subtly incorporates vestiges of the past into a sweeping tableau that invites comparison to many of the parks lately introduced to postindustrial sites in Paris.

The plan respects existing structures, utilizing the diagonal Renaissance wall as a serial entrance and edge for a meadow and orchard. The sole artifact of Plecnik’s work north of the moat, the Masaryk Overlook, is adopted into a revised sequence of terraces following the edge of the moat and incorporating a Communist-era heating plant. The plan grows in complexity as it brushes up against the existing enterprises of the castle gardeners. Flower, fruit, and vegetable production for the castle are to remain an integral part of the park. BRS quadruples the area for horticultural programs at Cernin Field, a natural amphitheater, with educational pavilions and public-access fruit and flower gardens.

The BRS concept for the park, dubbed “Small Planet,” also

addresses the social and environmental aspects of the site, including the flora and fauna of the former pheasantry. The educational, recreational, and historical implications of the concept are developed in a series of thematic landscapes: Bocage (hedges and meadow); Cultivated (orchard, berry and vegetable gardens); and Sensuous (ornamental and fragrant gardens).

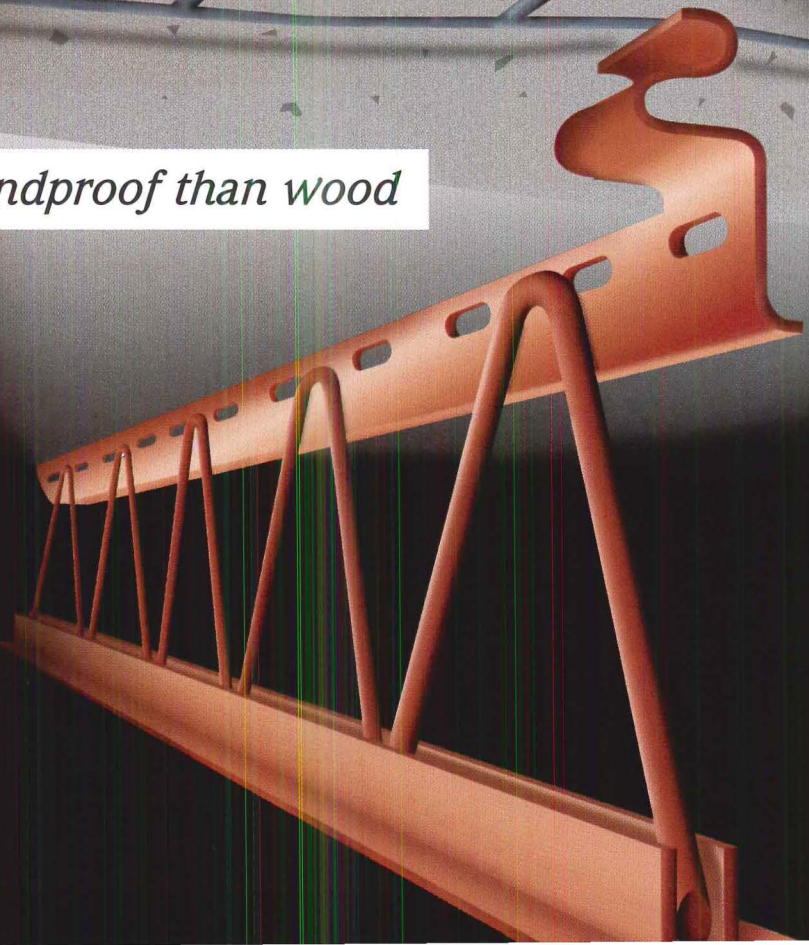
The Prague Castle Administration intends to develop the scheme in phases, as part of an ongoing makeover. The plan includes the recent renovation and redesign of a historic orangery in the Royal Garden by Eva Jiricna, the now restored Plecnik gardens, and the contemporary and Fauve designs by official castle architect Borek Sipek in the castle courtyards and galleries. In all, Prague Castle is in the process of shedding its former dour political skin for a sprightly, public-spirited one representative of the “reign” of Vaclav Havel.

Gavin Keeney

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NEW YORK CITY SET TO ERECT AMERICA'S FIRST MUSEUM OF SEXUALITY

New York City, long a bastion of architectural conservatism, is soon to be home to a rather progressive new building: Mosex, North America's first museum of sexuality. The museum's young cofounders, Daniel Gluck and director Alison Maddex, appear to have found a compatible architectural mate in New York firm SHoP/Sharples Holden Pasquarelli.

SHoP's principals, five 30-

some things, first hooked up to work on competitions together while students at Columbia University's Graduate School of Architecture, Planning, and Preservation. They founded the firm two years ago, and their background in paperless studios has led them collectively to explore novel design and construction possibilities.

The physical realization of Mosex—an R-rated (no unaccom-

This building will be stripped down to hold the new museum.

panied minors admitted) adult venue—will come in phases. After temporarily occupying an existing building on Fifth Avenue, the institution will eventually jilt that building for a brand new one. The initial insertion of 12,000 square feet of exhibition galleries, offices, retail, and an "aphrodisiac cafe" is scheduled to open in December, and Mosex hopes to raise enough funds to break ground on its new structure in two years on the same site.

The replacement, a seven-story, 35,000-square-foot edifice, will be organized around four vertically layered, undulating surfaces—somewhat like a cream-filled *millefeuille* turned on its side. SHoP's renderings and shimmery, stereolithographic model seem to embody the Mae West quip, "Sex is emotion in motion." But SHoP partner Gregg Pasquarelli is quick to point out the abstract quality: "The

building performs like sexuality. It doesn't look like sexuality."

The narrow, L-shaped building has been fitted with a conventional series of spaces that will be distorted by the vertical topographies. Each of these programmable skins (of varying thicknesses) slices through the building, fulfilling functional and experiential goals. The curve of the innermost wall conceals necessary building infrastructure. The most complex skin, the exterior wall, is a fusion of several translucent glass and coextruded layers that merge and cleave and merge again. Street-level onlookers will see visitors moving through the curving membrane.

This outer skin will be supported by an intricate grid composed of flat-rolled steel mullions, made with boatbuilding techniques. SHoP partner Christopher Sharples thinks of the facade as "a thickened membrane of experience which is like sexuality, both hidden and revealing." *Susanna Sirefman*

3

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CIRCLE 55 ON INQUIRY CARD

TAKING OUT THE TRASH: A NEIGHBORHOOD GOES GREEN



The Green Institute, a grassroots organization founded in 1993 to find alternative uses for a proposed garbage transfer site in Minneapolis, is now constructing the Phillips Eco-Enterprise Center on the site—signifying a hard-won victory for a neighborhood that wanted no part of the local government's plans.

For more than a decade, the Phillips neighborhood in South Minneapolis had been the battleground in a struggle between

residents and Hennepin County over the proposed transfer station. Phillips residents, among the city's poorest and most ethnically diverse, felt they shouldn't have to shoulder the burden of the facility's heavy truck traffic and garbage intake and

thought the project offered little hope for area betterment. Still, 28 homes and five businesses were razed before lawsuits and protests compelled the county to back down in the early 1990s.

That's where the Green Institute comes in. The institute's Re-Use Center—a retail building-material center in a nearby strip mall—has been demonstrating, since its opening in 1995, the value of building salvage and deconstruc-

tion in reducing the waste stream and in creating neighborhood jobs. Building on the success of this endeavor—and armed with market research demonstrating a shortage of high-quality, leasable space for small and midsize businesses in south Minneapolis—the Institute is building the Eco-Enterprise Center on the proposed transfer station site, which was purchased from the county.

A 64,000-square-foot business center opening this summer, the facility—a hybrid of light manufacturing and office space designed by LHB Engineers & Architects—demonstrates sustainable principles in a multitenant, commercial building. Environmental considerations are far-reaching: The building includes nearly 100 percent daylighting (facilitated by sun-tracking skylights), geo-exchange heating and cooling, heat-recovery systems, and energy controls. Together, these features will contribute to a projected energy savings of 45 percent

compared to similar facilities. Salvaged structural steel, bricks, doors, and tile will help meet a goal of having 10 percent of the construction materials derived from salvaged sources. The Eco-Enterprise Center's space is already 55 percent accounted for—a success rate that will move up the original prediction that it would take two years to move the endeavor into the black.

The new center's funding comes from a \$3.1 million private loan and a \$1.5 million state legislature grant through the Department of Trade and Economic Development, along with donations of products that will be showcased in the building. The center will anchor the intersection of a proposed greenway—now an abandoned railway bed—that will join a series of lakes in Minneapolis to the Mississippi River and will include the Hiawatha corridor, a diagonal artery linking the airport to downtown. *Todd Willmert*

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A NEW TOWER IN VANCOUVER WILL DOMINATE THE SKYLINE

Against a backdrop of mountains and ocean, a striking 46-story residential tower is on the rise in Vancouver, forming a new dominating presence in the city's commercial core. While the building will have a forceful impact on the skyline, it may also set a new construction standard for environmental sensitivity, according to its architects.

The elliptical, 320,500-square-foot Wall Centre Garden Hotel tower is being built with 347 hotel suites on the lower 30 stories and 74 condominium units on the upper 16 floors. Three or four Vancouver office towers are slightly taller than the new building's 450-foot height, cheating it out of the city's "tallest building" distinction—but because the new tower's 2.8-acre site is on

the highest elevation in the urban core, it will appear to be in a commanding position upon completion in 2001. And while the height and mixed-use character of the project will set it apart in the downtown area, its design will be aesthetically consistent with the neighboring light, transparent looks.

Wall Financial Corporation of Vancouver already built separate Sheraton hotel and condo towers on an adjacent site several years ago and is now returning for this, the final phase of the location's development. Brian Ellis, an associate and senior project architect with Vancouver-based Busby + Associates Architects, designers of this new phase, described its green features: "We're using a high-performance double-glazed system on the curtain wall, with an optically clear film sandwiched in between to create a second pocket of air that improves the thermal and acoustic performance. Silver-coated clear glass also maximizes the interior

daylighting and creates less demand for [electric] lighting."

Other environmental features include shading devices on one facade to reduce westerly afternoon heat gain and related cooling loads; operable windows in each hotel suite and condo; energy recovery from electrical vault and elevator machine rooms; sensors to control outside air usage in the ballrooms and meeting rooms; low-voltage fixtures; and water-conserving plumbing fixtures.

The wood, carpeting, and paint, Ellis says, were all selected for their environmental correctness. "We've also made a real effort to use as many recycled and indigenous materials as possible," he adds.

A major public space on one corner of the site, water elements, formal planting articulating the street edges, and a pedestrian link to the law court complex across the street and beyond to the downtown core will fit the project into the city's core. *Albert Warson*

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CIRCLE 56 ON INQUIRY CARD



NEWS BRIEFS

Canadian controversy A team composed of KPMB Architects of Toronto; Gagnon, Letellier, Cyr Architects of Quebec City; and Smith Carter Architects of Winnipeg has been named to design a new Canadian embassy in Berlin—but that's not the end of the story. Locals are mad about perceived favoritism on the part of Foreign Affairs Minister Lloyd Axworthy, who picked the winners—even though six of eight competition jurors had chosen a scheme by Saucier & Perrotte with Dunlop Farrow Architects. The architectural community is miffed, and critics have maligned the chosen design (right). The government said its reasons for overruling the jury are confidential; meanwhile, construction of the new facility should begin later this year.

Building by the bay The first new high-rise housing construction in



San Francisco in a decade was topped off in March. The 226-unit Avalon Towers apartments—designed by local firm Theodore Brown & Partners—were built in the ever-burgeoning South of Market district, near Yerba Buena Center, where the San Francisco Redevelopment Agency has created a group of cultural attractions. Speaking of Yerba Buena, Skidmore, Owings & Merrill has been tapped to design a building for the last remaining property on the site. SOM will design an approximately 40-story condominium-and-hotel tower with an African American cultural center within.

Dispelling a rumor

A story has been making the rounds that German architect Daniel Libeskind is planning to sue New York architect Peter Eisenman, FAIA, on claims that Eisenman stole ideas from

Libeskind and used them on his winning proposal—a field of stone pillars—for Berlin's Holocaust Memorial. Libeskind denies the story. "We don't know where it started," says a spokeswoman in his Berlin office. "We're not taking any legal action against anybody."

Safdie in Salt Lake Boston firm Moshe Safdie Associates has won a competition to design a new main library in downtown Salt Lake City. Safdie and local partner Valentiner Crane beat out firms from Los Angeles, New York, and Phoenix to win the contract for the \$53 million building. Safdie's proposal calls for a

triangular structure of acid-etched concrete, encircled with a descending wall. On the south side of the triangle, an elliptical bay window would shower each of six floors with sunlight. On the north, reading rooms would overlook an atrium between the curving wall and the main building. Sunken gardens would lead to a children's library, an auditorium, and meeting rooms. Though library officials say the design may change somewhat, construction is scheduled to begin in summer 2000, with a budget of \$4.2 million.

Saudi situation As with many cities around the globe, Riyadh, the capital of Saudi Arabia, is struggling to manage sprawl. In a move that will be watched around the Middle East, the Riyadh High Commission has launched a study to determine how to accommodate an anticipated increase from today's population of 3.5 million to a predicted 10.5 million by 2021. The city

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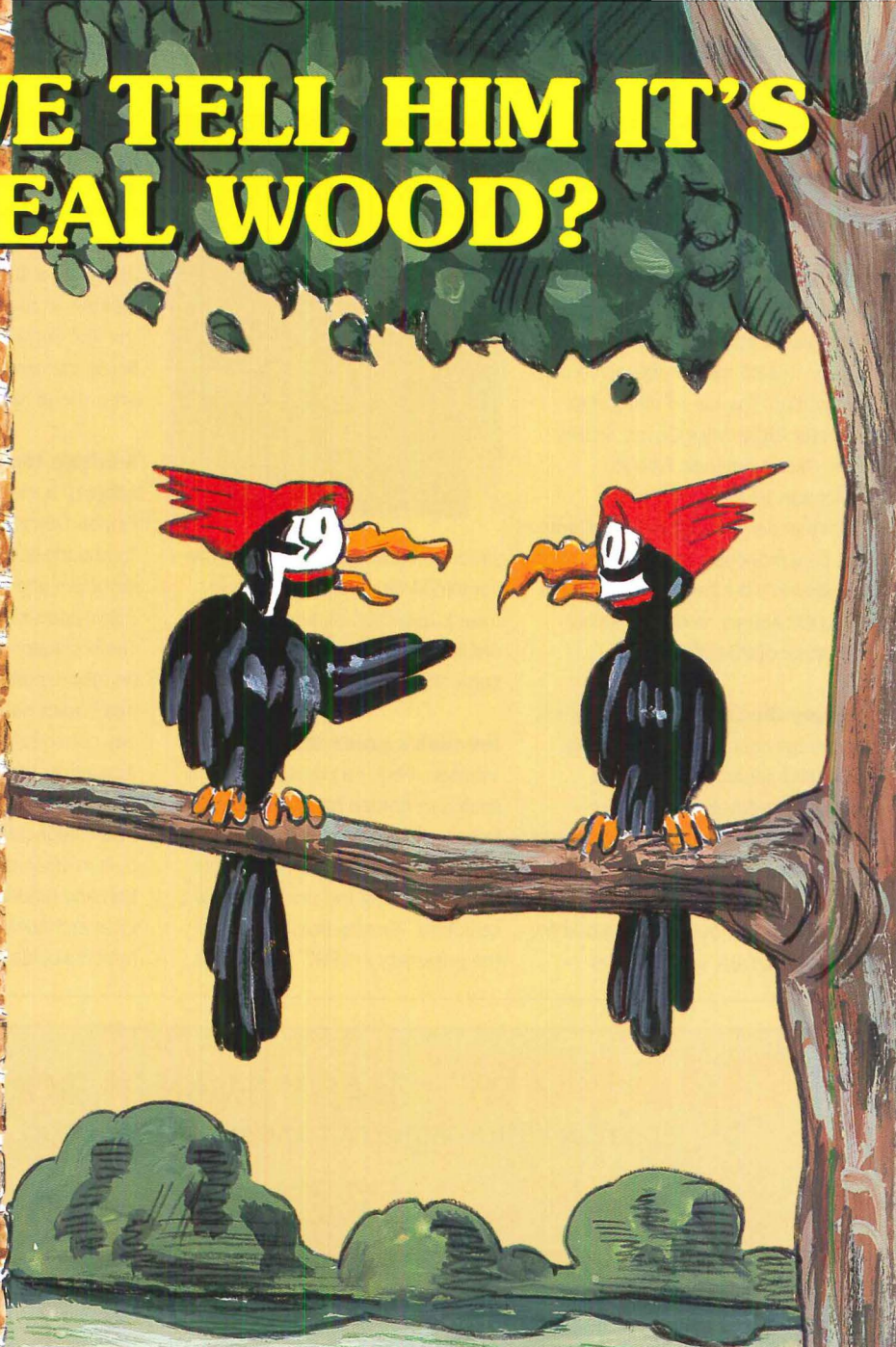
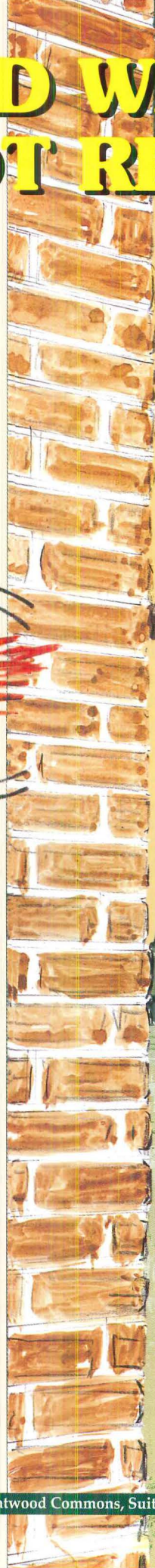
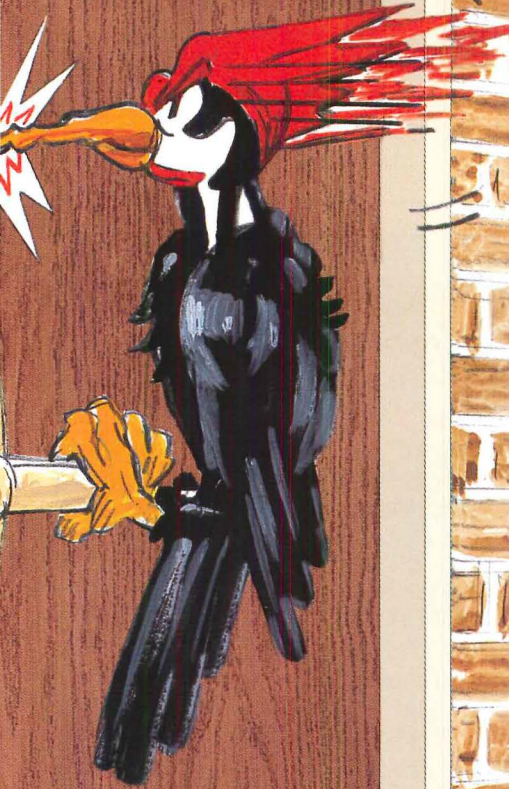
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has already suffered from poor planning and developmental haste; for instance, low-slung office blocks are interspersed with vacant lots.

K.C.'s new look The Neoclassical Nelson Atkins Museum in Kansas City has shortlisted six architects to design its \$80 million expansion and renovation. The six—Tadao Ando, Annette Gigon/Mike Guyer, Steven Holl, Carlos Jimenez, Rodolfo Machado/Jorge Silveti, and Christian de Portzamparc—will submit final proposals in late June. The expansion will bring the museum to 375,000 square feet, from its current total of 234,000.

Canary flies high Citigroup, which is already constructing a 17-story, 560,000-square-foot tower at London's redeveloped Canary Wharf, apparently is quite enamored of the site. The corporation now plans to lease 600,000 more feet in a new 42-story building designed by Cesar Pelli, FAIA, (right) that is



slated to break ground shortly. The combined Citigroup complex will total 1.16 million square feet, with offices for 6,000 employees of Citibank and Salomon Smith Barney.

Johnson's green thumb Philip Johnson, FAIA, has designed a new sculpture garden for Case Western Reserve University in Cleveland. The garden will include four sculptures, complementing the architect's own sculpture "Turning Point," given to the university in 1997. The largest

part of the design involves a bowl-like amphitheater with seating for 50 people; terraced landscaping nearby will provide seating for an additional 30. Another of Johnson's designs—a 105-foot cylindrical fountain in the interior courtyard of the IDS Center in Minneapolis—was finally completed this year, 25 years after the architect planned it.

A bridge too far The AIA has adopted a resolution critical of a Florida Department of Transportation (FDOT) plan to demolish and replace the city of St. Augustine's historic Bridge of Lions. The resolution urges that the bridge be fully restored—an option that had earlier been approved by the city commission and mayor of St. Augustine, the oldest continual European settlement in the U.S. The FDOT's concern was that the bridge, built in 1927, causes traffic congestion and hinders barge safety, but local architects say the replacement option wouldn't solve the prob-

lems—and would cost \$5 million more than restoration would.

Just ducky Employees at the Original Wisconsin Ducks—an amusement ride near Wisconsin Dells—have discovered that a decorative concrete panel placed years ago along the ride's 8.5-mile route is originally from Frank Lloyd Wright's Midway Gardens in Chicago. While how it got to the duck route is unclear, it was likely salvaged at the garden's demolition 70 years ago. The piece has now been donated to the Chicago Historical Society.

A Pulitzer for Kamin Blair Kamin, a RECORD contributing editor based in Chicago, has been awarded a Pulitzer Prize for criticism. Kamin snared the honors for his six-part series on developing Chicago's lakefront. Kamin, a graduate of the Yale School of Architecture, has also written extensively about public housing.

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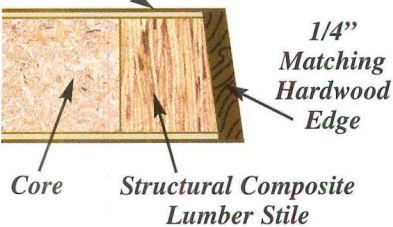
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Calendar

Lebbeus Woods: Lines of Flight, Drawings 1981-1991

New York City

Through May 15

Some 70 of Woods' visionary architectural drawings (he evokes da Vinci, Piranesi) show a sci-fi, gravity-free world, among other fancies. Henry Urbach Architecture Gallery. 212/627-0974.

Digital Interpretations of Eight Projects by Louis I. Kahn

Philadelphia

Through May 21

A tracking system helps museumgoers tour photo-realistic computer renderings of the architect's unbuilt projects. Kroiz Gallery, Architectural Archives, Fisher Fine Arts Building, University of Pennsylvania. 215/898-8323.

Maya Lin: Topologies

Des Moines

Through May 21

Includes prints, drawings, models, and large-scale installations in wood, glass, and wax—all dealing with the ecology of landscape—by the creator of the Vietnam Veterans Memorial in Washington, D.C. Des Moines Art Center. 515/277-4405.

Architecture and Revolution: Escuelas Nacionales de Arte en La Habana

Los Angeles

Through May 30

Historical and contemporary photographs and blueprints of Cuba's national postrevolution art-schools complex showcase its Baroque curves, cupolas, and domes—a structural system of Catalan vaults by a mason who once worked with Antoni Gaudí in Barcelona. MAK Center for Art and Architecture. 323/651-1510.

Bauhaus on the Carmel:

Modernism in Haifa

Chicago

Through May 31

Photographs of residential, commercial, and civic Bauhaus-style buildings depict development in Haifa during the first half of the century. Atrium Gallery, Chicago Architecture Foundation. 312/922-3432.

Big Soft Orange

San Francisco

Through June 5

This traveling exhibition curated by Michael Speaks, which inaugurates the California College of Arts and Crafts' Logan Gallery, features innovative designs for housing in the Netherlands by four young Dutch architecture firms. 415/551-9210

Graphic Architectural Images of Russia's Past

New Brunswick, N.J.

Through July 3

These works on paper by European and Russian artists document the Kremlin, cities such as Novogorod, and examples of wooden architecture. The Jane Voorhees Zimmerli Art Museum, Rutgers University. 732/932-7237.

Venice: The New Architecture Venice, Italy

Through June 13

Models, drawings, and photographs prove the historic city is a site for contemporary architectural and cultural debate. Giorgio Cini Foundation, Island of San Giorgio. 39-041/524-2792.

Hugh Newell Jacobsen

Washington, D.C.

Through August 15

A retrospective includes the architect's gabled-pavilion houses, where farmhouse facades conjoin with mirror-glass curtain walls. National Building Museum. 202/272-2448.

Black Architects: Between Tradition and Memory

New York City

Through June 18

Curators present work by black architects, seeking to place them as a group within a global and historical context. The Institute for Research on the African Diaspora in the Americas and the Caribbean. 212/650-8951.

Merchant Prince and Master Builder: Kaufmann and Wright

Pittsburgh

Through October 3

An exhibition exploring the belief shared by Frank Lloyd Wright and his client Edgar Kaufmann—for whom he designed Fallingwater in 1936—that good design had the power to change lives. Heinz Architectural Center, Carnegie Museum of Art. 412/622-3131.

Paper Architecture

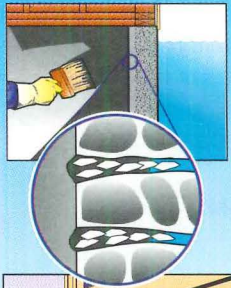
Denver

Through October 3

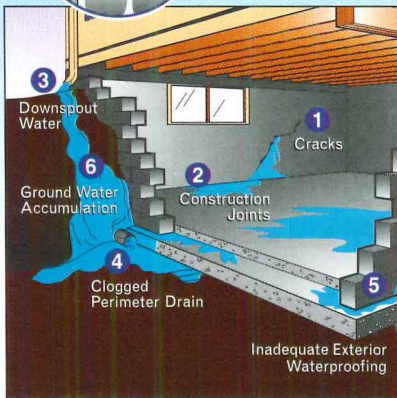
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and Piranesi (among others) are on view.
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Pioneer of Lighting: Edison Avery Price New York City

May 4

Participants, including New York architect Richard Gluckman, remember this pioneer, who is credited with the invention of track lighting. Illuminating Engineering Society. 718/951-6773.

American Institute of Architects National Convention

Dallas

May 6-9

The theme of this year's AIA national convention is "Think Big, Make It Happen." Architects can earn all 36 learning units needed for AIA accreditation by attending seminars and exhibitor education sessions. Dallas Convention Center. For information on exhibiting at the convention, contact Hill, Holliday Exhibition Services at 617/572-3553. For information on attending, visit www.aiaonline.com/convention98.

L.A. Modernism Show Santa Monica, Calif.

May 7-9

An eclectic assemblage of design and artwork from the past 100 years: Art Deco tables, Bauhaus chairs, 1950s loungers, Austrian glass, posters. The show traces history through the creations of graphic, industrial, furniture, and fashion designers and artists. Santa Monica Civic Auditorium. 310/455-2886.

Mies van der Rohe—Stuttgart, Barcelona, And Brno Glasgow, Scotland

May 14-August 29

This exhibit provides a detailed look at three of Mies' extremely influential and significant European projects. Models of the WeiBenhof building, the pavilion in Barcelona, and Villa Tugendhat in Brno will be featured alongside rare production runs (dating to before 1935) of the architect's furniture. The Burrell Collection. 44-0141/649-7151.

Environmental Graphic Design Annual Conference

Cincinnati, Ohio

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Architects and others discuss time and space, in relation to the design of graphic elements that identify, direct, inform, interpret, and visually enhance spaces. Registration fees begin at \$525. For more information, call 202/638-5555.

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The Work of Charles and Ray Eames Washington, D.C.

May 20-September 4

Displayed will be some 500 items by these two essential U.S. Modernists: Their furniture prototypes, production pieces, models, photographs, films, and architectural models. The Library of Congress, Thomas Jefferson Building. 202/707-2905.

Competitions

The Van Alen Institute Dinkeloo Fellowship

Submission deadline: May 7

A two-month stay at the American Academy in Rome will be awarded to the entrant who best demonstrates how architecture and technology can be environmentally conscious. Open only to those who have graduated or will graduate from U.S. architecture degree programs between May 1990 and September 1999. For a competition packet, call the Van Alen Institute at 212/924-7000, E-mail vanalen@vanalen.org, or write to 30 West 22nd Street, New York, N.Y. 10010.

Shinkenchiu Residential Design Competition 1999

Submission deadline: May 13

This brief requests a theater for 200 people on a square surrounded by four-story buildings, in a city of 100,000. Entrants are asked to design a two-story block of approximately 6,500 square feet containing a theater, a bar/cafe/tergia, shops on the ground level, and a small library on the second level. The theater is to be complete with all necessary equipment and amenities. Open to students and professionals. Contact Shinkenchiu-sha Co., Ltd., 81/3/3811-9375.

Extension of WIPO Headquarters, Geneva

Latest submission date: May 15

Winner(s) of this open competition will be awarded a commission for construction of an office building for 500 workers, a delegate conference room with seating for 600, and enlargement of the lower floors of the existing

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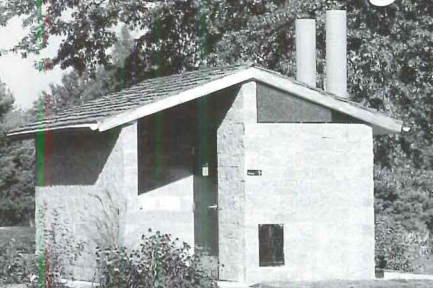
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World International Poverty Organization building. Entrance fee of \$225 must accompany entry. To register, send your name, address, and telephone number to Mr. Gurry via mail (Architectural Competition, 34 chemin des Colombettes, 1211 Geneva, Switzerland), fax 41-22/733-3168, or E-mail francis.gurry@wipo.int

California's Central Valley: Housing the Next 10 Million

Submission deadline: May 21

This ideas competition, focused on less-land-intensive housing models and urban planning implementation tools, will help local decision makers deal more effectively with the projected growth of California's Central Valley. Open to students and professionals. Contact William Liskamm, AIA California Council, 916/448-9082, or visit www.aiacc.org.

2000 Southern Home Awards

Submission deadline: May 31

Winners will be published in an upcoming edition of *Southern Living* magazine. Homeowners, architects, designers, builders, and developers may submit new homes, renovations, and additions located in the southern U.S. Homes may not have been published in any national consumer magazine; entries may, however, have been published in trade or professional magazines. Official binder is \$10; entry costs an additional \$40. Include your name, address, telephone, and fax number, and make check payable to "Southern Living," and send to Southern Home Awards, 2100 Lakeshore Drive, Birmingham, Ala. 35209. Or, call 205/877-6000.

Ermanno Piano Scholarship

Submission deadline: May 31

Open to 1998 architecture graduates, this scholarship helps further education through a six-month internship with the Renzo Piano Building Workshop in Genoa, Italy. The winner will also receive a \$10,000 grant. Applicants must send an 8½-by-11-inch portfolio (maximum of seven pages in Italian, French, or English) to Renzo Piano Workshop Foundation, Via Rubens 29, 16158 Genoa, Italy.

Architecture + Energy: Building Excellence in the Northwest

Submission deadline: June 4

Administered by AIA/Portland and sponsored by the Northwest Energy Efficiency Alliance, this competition seeks successful integration of architectural design in commercial buildings in Idaho, Montana, Oregon, and Washington. For

information, call 503/223-8757 or E-mail aeprogram@aiaportland.com.

Design Housing for Roswell, New Mexico

Submission deadline: June 10

The flood-prone cow town infamous for alleged UFO sightings is seeking designs for housing. As much as \$10,000 may be awarded. Call 323/296-6226 for registration information.

The American Wood Preservers Institute "Century's Best" Awards

Submission deadline: August 2

This competition seeks designs for deck, dock, garden, playground, or other treated wood construction. The grand-prize winner will be awarded a trip to the Sundance Resort in Utah. To obtain an entry form, call 800/356-2974 or visit www.awpi.org.

Boston Society of Architects Design Awards Programs

Submission deadline: August (call for details)

The Boston Society of Architects announces two awards programs. The Architectural Design Honors Awards Program is open to projects anywhere in the world by Massachusetts architects, and to built projects in the state designed by any architect worldwide. The eighth annual Unbuilt Architecture Design Awards are open to architects, architectural educators, and architecture students throughout the world. For submission guidelines, call the BSA at 617/951-1433 x221 or E-mail bsarch@architects.org.

1999 James Marston Fitch Charitable Foundation Mid-Career Grant Awards

Application deadline: September 1

A \$20,000 research grant will be awarded to a professional with an advanced or professional degree and at least 10 years of experience, as well as an established identity in historic preservation, architecture, landscape architecture, urban design, environmental planning, law, engineering, archaeology, architectural history, or the decorative arts. The grants are intended to support original research and creative design that advances the practice of preservation in the United States. Smaller grants of up to \$10,000 will be made at the discretion of the trustees. For more information, call Margaret Evans at the offices of Beyer Blinder Belle, 212/777-7800. ■

Please submit information for events and competitions at least six weeks prior to the magazine's publication date (May 15 for the July issue).

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American Institute of Architects

1999

Honors & Awards

architecture p.132

interiors p.142

urban design p.148

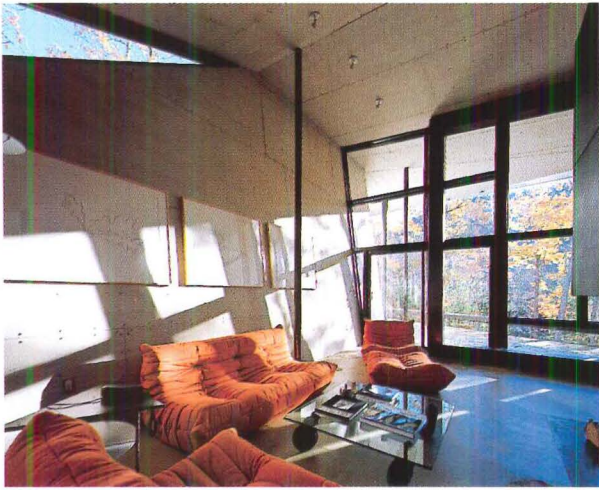
firm award p.152

25-year award p.154

Like “Best of...” albums of contemporary music, the AIA Honor Awards program aims to bring together outstanding works from a given stretch of time. And like those “best” melodies, some of the award-winning projects are well known while others are more obscure. In this year’s group, for example, Steven Holl’s *Kiasma* art museum in Helsinki has already basked in the international limelight, while Richter Architects’ Rest Area in Brooks County, Texas, is less high profile. Like music, some of the award-winning projects will become classics as they age, while others may grow dated. It’s often hard to predict how architecture (or music) will harmonize

with changing times.

To gain insight into the jury selections, we sent our contributing editor, distinguished critic Andrea O. Dean, behind the scenes to interview the jurors and find out what recurrent themes or trends they detected in the 1999 entries—to fathom what most surprised, impressed, and disappointed. Our intrepid reporter also drew her own conclusions as she looked closely at the work in all three award categories: Architecture, interior architecture, and regional and urban design. Ultimately, she considered how the submissions and winners resonate with the cultural overtones at this fin-de-millennium.—The Editors



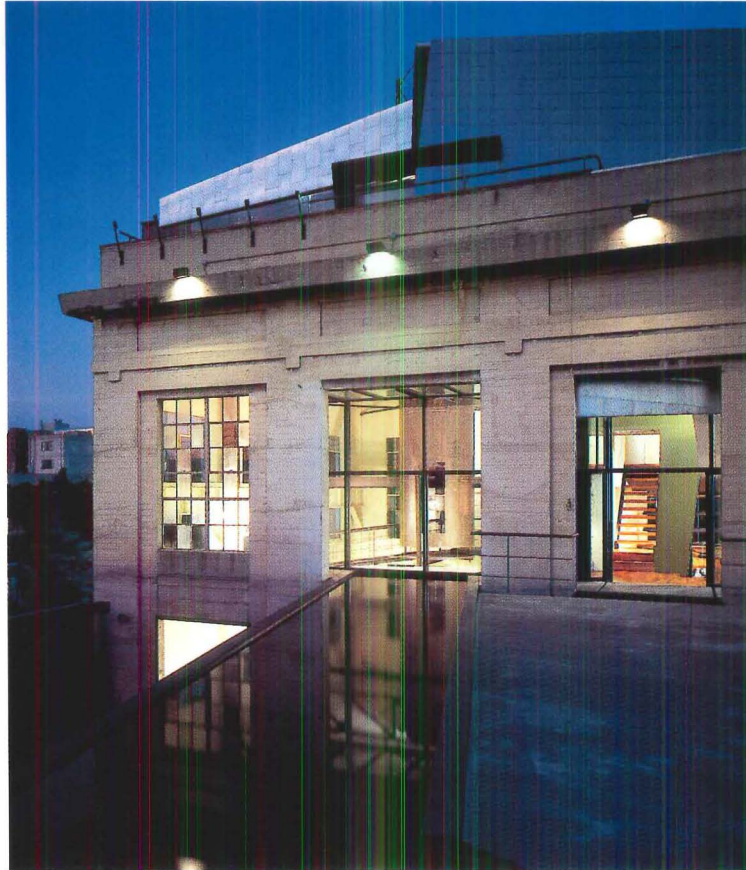
Nomentana House

Stoneham, Maine

Architect: Scogin Elam & Bray
Architects, Inc.

On a wooded pondside site in Maine, the architects designed a house partly raised on pilotis that sits lightly on the land. With a focus that is both outward and inward, it opens toward the landscape, while wrapping around a glazed lightwell that allows views from one interior space to another. The materials tend to be luminous yet discrete, including cementitious fiberboard and zinc cladding, concrete floors, and wood and aluminum window frames.





Carlson-Regis Residence

Los Angeles

Architect: RoTo Architects, Inc.

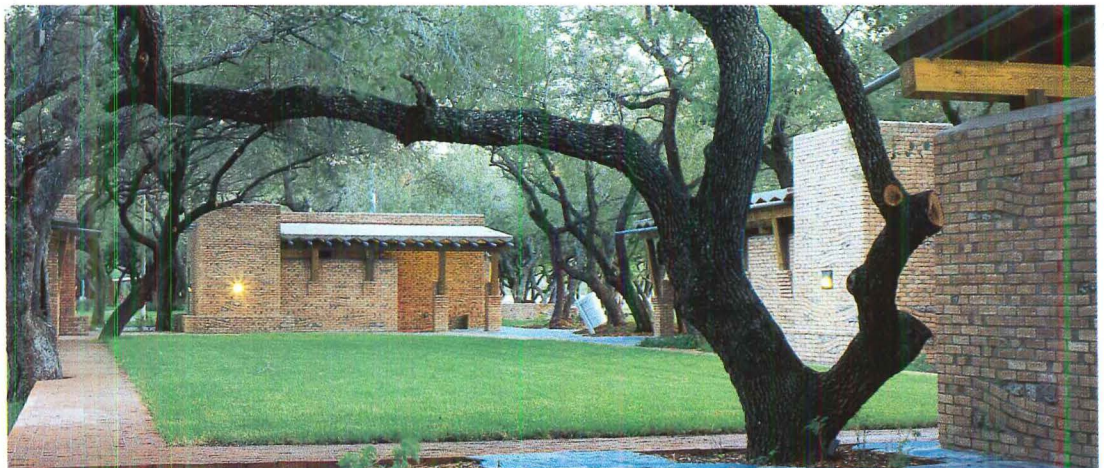
The architects transformed a classically proportioned electric-company edifice into a home for a builder and dog breeder. This design-build project, executed by the owners, incorporated salvaged on-site materials and industrial artifacts. With minimal construction documents, the architects and owners collaborated improvisationally, fashioning many details at the site.

Brooks County Safety Rest Area

Brooks County, Texas

Architect: Richter Architects

In a South Texas oak grove, the state has long operated a wayside park and travelers' rest area—a shady oasis in the arid landscape, the gateway to the Lower Rio Grande Valley. Its 1960s facilities bore little relationship to the surroundings and fell into disrepair. This project involved complete redesign of the park and its structures.





Kiasma Museum of Contemporary Art
Architect: Steven Holl Architects

Kiasma refers to the intertwining and crossing over of DNA strands during cell division—and to the geometry of this building, a 130,000-square-foot art museum in Helsinki. Among the major challenges facing architects in competition for the project was its site at the center of Alvar Aalto’s urban master plan. Many of the 516 competition entrants seemed so daunted by Aalto’s legacy that it impeded their design solutions, while Holl devised an original and inventively sculptural scheme whose sightlines correspond to Aalto’s city-planning objectives. The building’s curved form exploits available daylight. Inside, a great ramp acts a skylit spine, interconnecting the galleries. [RECORD, August 1998, page 86]

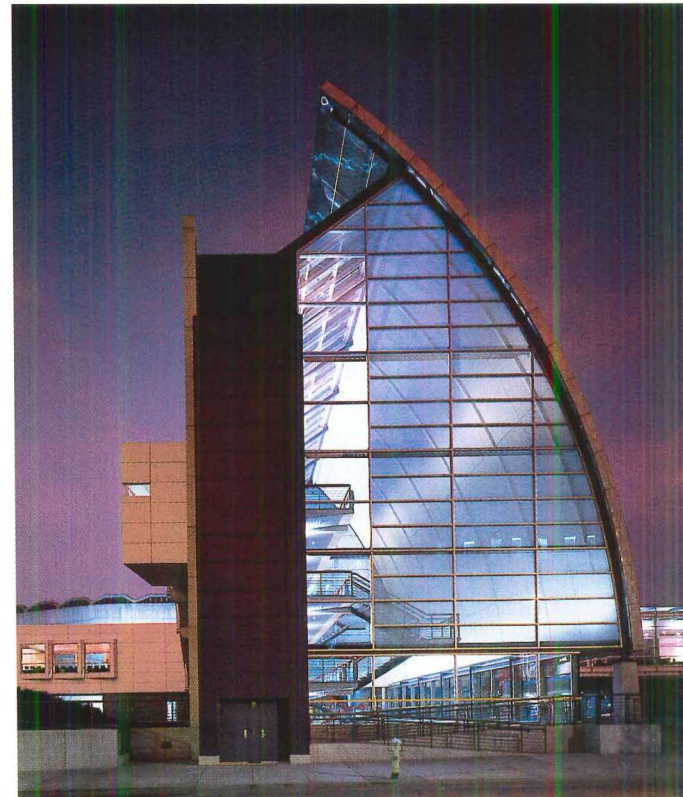
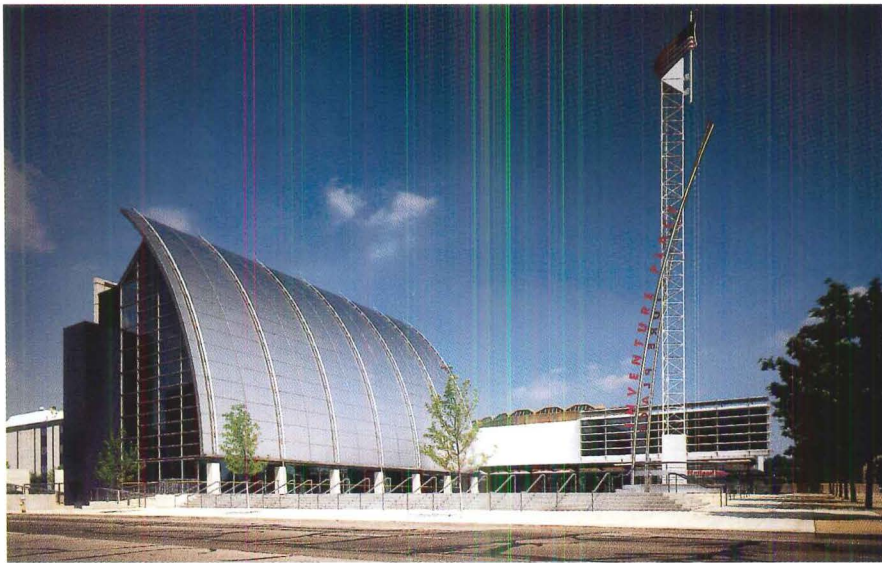


Inventure Place

Akron, Ohio

Architect: Polshek Partnership
Architects

This 77,000-square-foot building combines a museum for the National Inventors Hall of Fame with an Inventors Workshop, in which the visitor effectively becomes an inventor. Playing on the themes of ingenuity and inner workings unmasked, the building features a billowing stainless-steel-clad, sail-like roof, whose external trusses and sweeping gesture celebrate its structure. The museum is housed within the grand curve while the 20,000-square-foot workshop—with its chorus of clanking and bleeping interactive toys and gadgets—lies at its base and extends beneath the building's plaza. Visitors ascend an escalator to the top of the sail and descend through the exhibits.





Olympic College Shelton
 Shelton, Washington
 Architect: The Miller/Hull Partnership

In designing the first building for a community college, the architects had to weave unusually disparate resources into a coherent whole. Almost one-third of the \$1.4 million construction budget came from donations of services and products—including cedar siding and glue-laminated beams from a timber company. While the limited budget dictated a modest form, the oversized roof gives the project a presence greater than its 8,000 square feet. [RECORD, November 1996, page 90]



McNitt Building
 Oklahoma City, Oklahoma
 Architect: Elliot + Associates Architects

Transcending the limitations of a tight budget and tilt-up concrete work, this project showcases the expressive potential of a mundane construction method. As the headquarters of K. J. McNitt Construction Company, the building itself becomes an ingenious marketing tool. [RECORD, October 1998, page 101]



Robert L. Preger Intelligent Workplace

Carnegie Mellon University
Pittsburgh, Pennsylvania

Architect: Bohlin Cywinski Jackson

On the roof of a historic structure at Carnegie Mellon University, this 7,000-square-foot project is a living laboratory for researching office environments and innovations. The new structure's modular bays, beneath a sawtooth roof, make the addition sympathetic with the scale of the campus roofscape and, with energy efficiency, maximize solar orientation.



Minneapolis Pathways

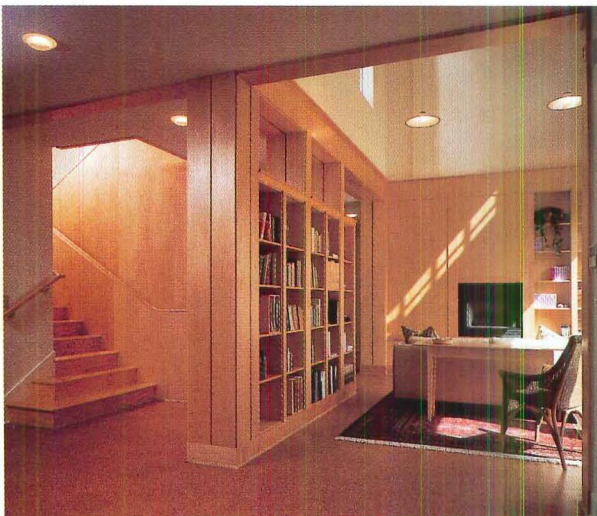
Minneapolis, Minnesota

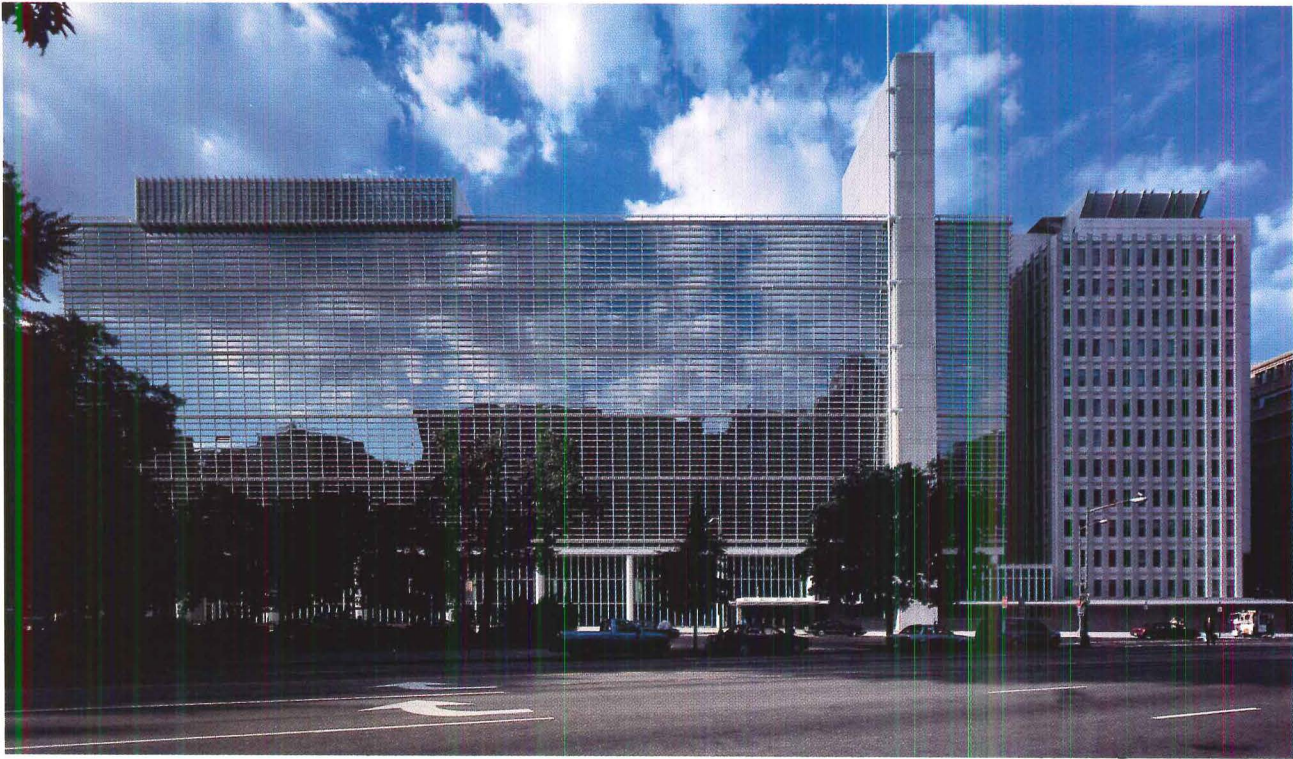
Architect: Anmahian Winton Architects

When this health crisis resource center—a meeting place for people with life-threatening illnesses—outgrew its previous quarters, a small Victorian house, architects Anmahian Winton Architects designed a building that

respects the existing neighborhood scale.

With a palette that's rich yet purposefully limited and austere, the facades incorporate bleached, custom-milled wood siding and sandblasted concrete. While the exterior maintains a subtly nonresidential character, the interior is more homelike. A private garden provides an outdoor meeting space that is visible from the library and lecture room. [RECORD, July 1994, page 78]



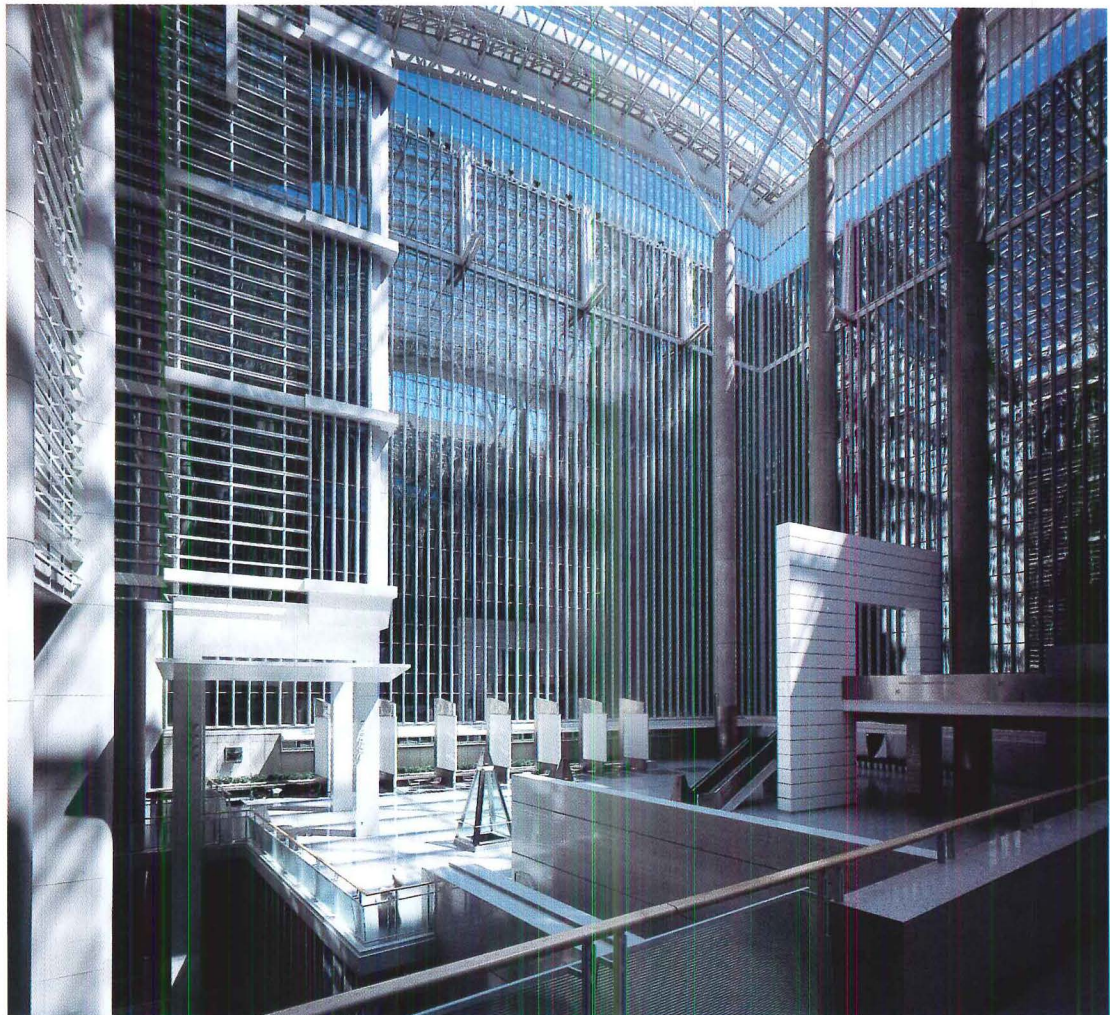


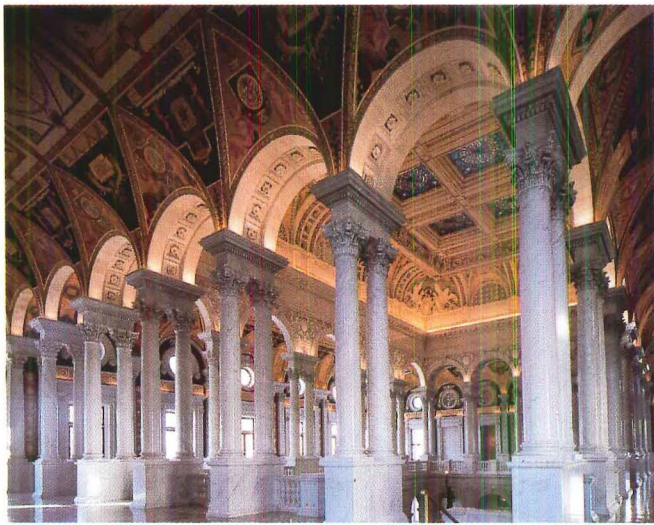
World Bank

Washington, D.C.

Architect: Kohn Pedersen Fox Associates, PC

By integrating two 1960s structures into their scheme for the World Bank, the architects realized the headquarters' master plan 10 years ahead of schedule. Building on existing elements, they created an architectural metaphor for the bank's philosophy toward developing economies. A large atrium at the center of this pinwheel composition brings light into internal offices.



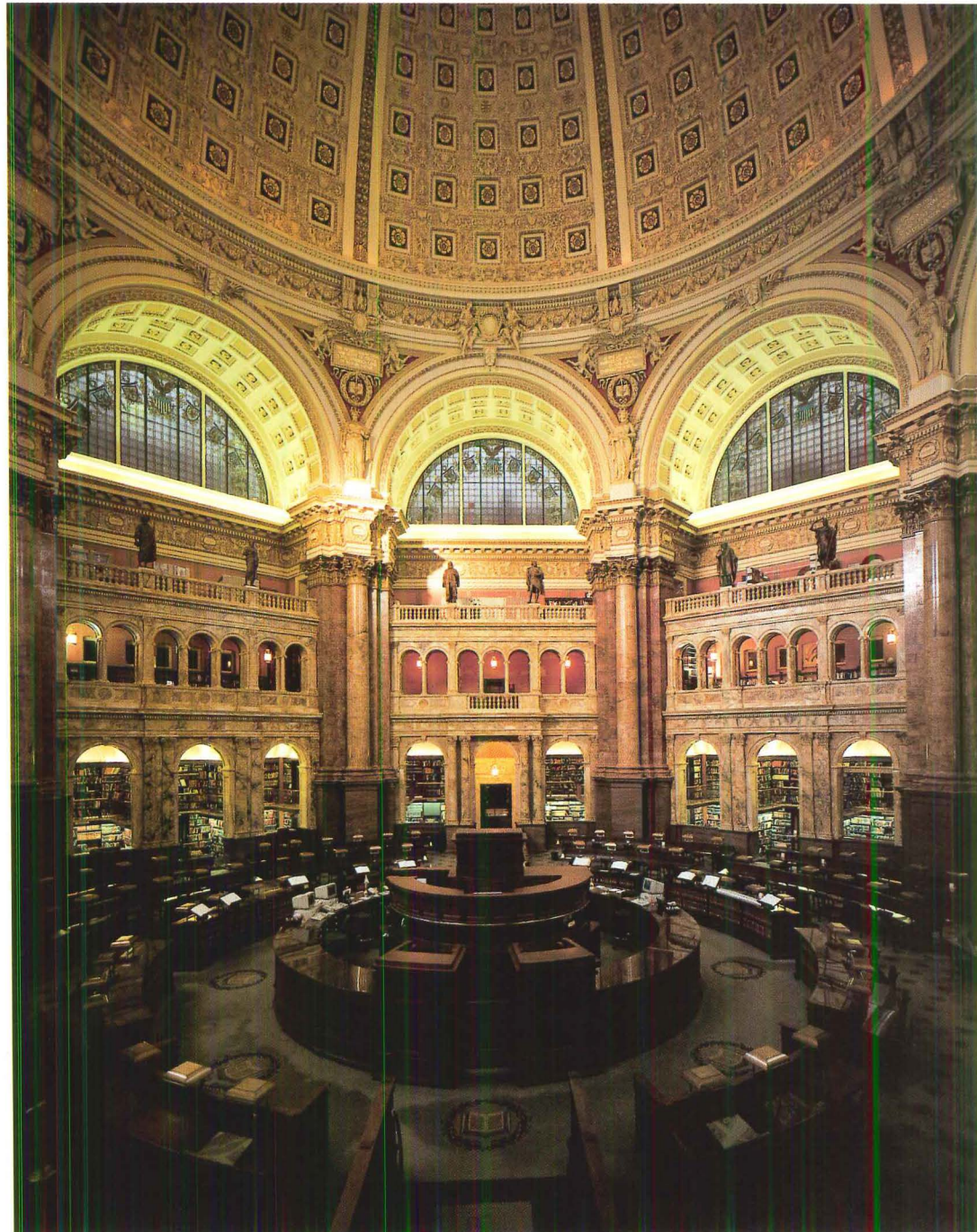
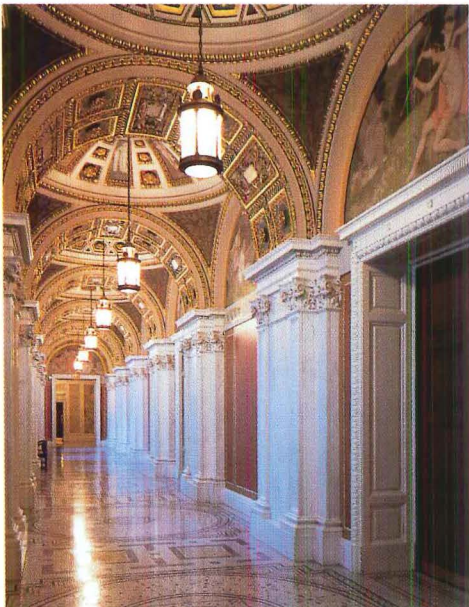


The Thomas Jefferson Building of the Library of Congress

Washington, D.C.

Architect: Arthur Cotton Moore/
Associates P. C.

This exuberantly ornate 600,000-square-foot neo-baroque building, designed in 1897 by Smith Meyer and Pelz, needed restoration, plus the integration of new programmatic functions and technologies (including HVAC, power, security, fire, communication, book-retrieval, and storage systems) while remaining in continual use. The 17-year project was executed in two phases and entailed inventive strategies for concealing sprinkler heads, diffusers, and other modern devices within the newly restored ornamentation.



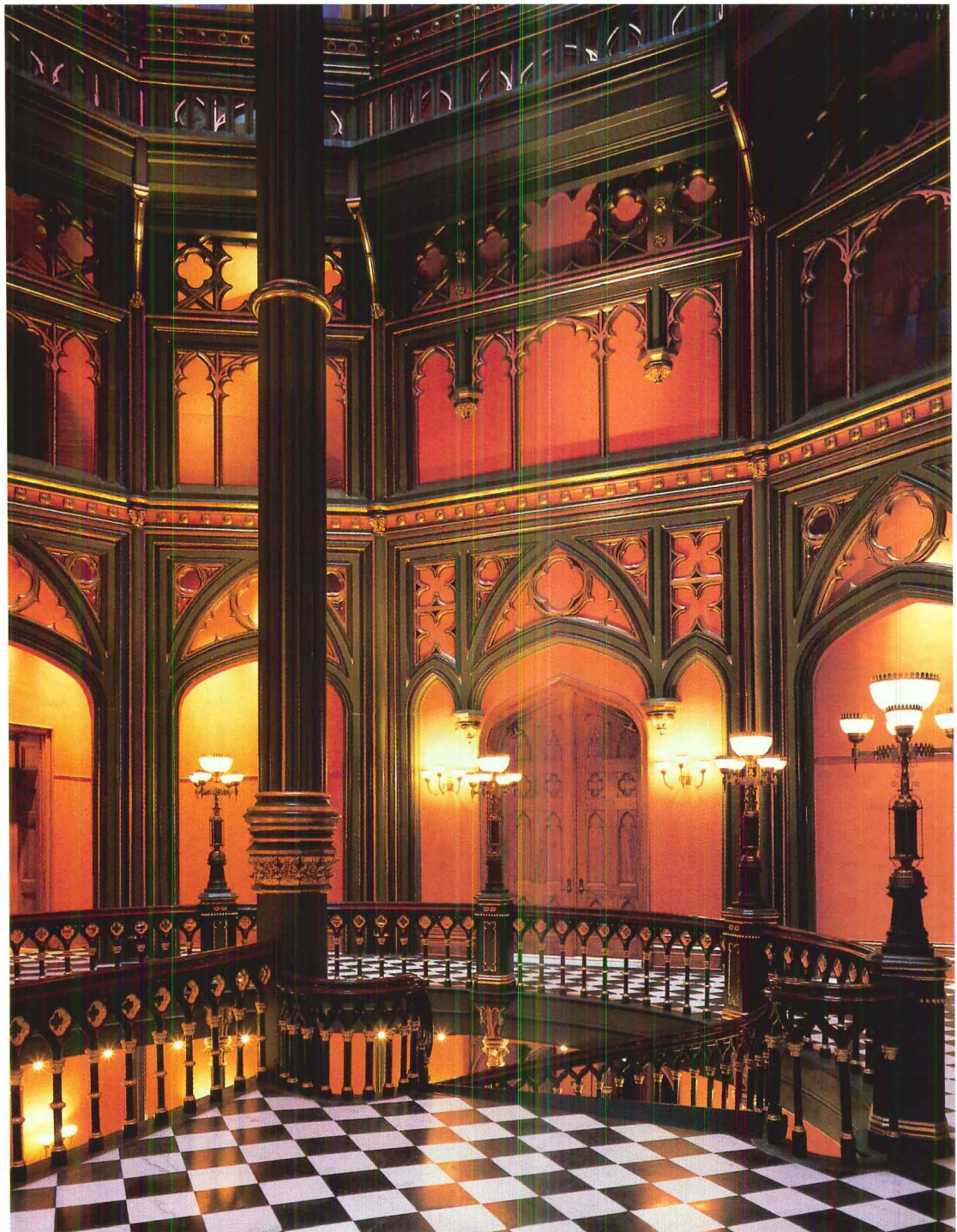


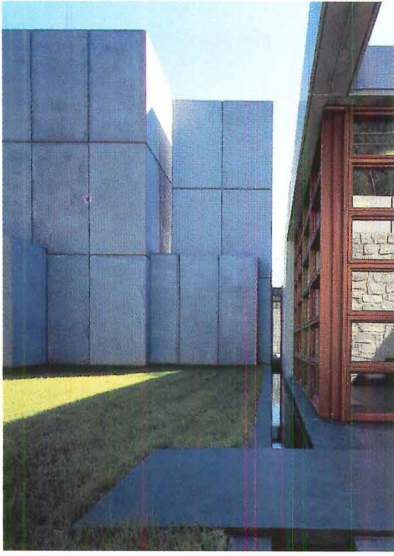
Old State Capitol Restoration

Baton Rouge, Louisiana

Architect: E. Eean McNaughton
Architects

This neo-Gothic castle on the Mississippi River survived a tumultuous history after the original 1852 building, by architect James Dakin, was fire-gutted in 1862. Reconstructed between 1880 and 1882 by architect William Freret, the marble-and-stucco brick castle was abandoned 50 years later, when then-Governor Huey Long built a new Louisiana statehouse. Though listed on the National Register of Historic Places in 1972, it suffered continued neglect and threats of demolition. In 1982, McNaughton began the process of restoring the building and converting the old capitol into a museum. All historic elements, including the stained-glass and cast-iron rotunda, were faithfully restored or recreated.



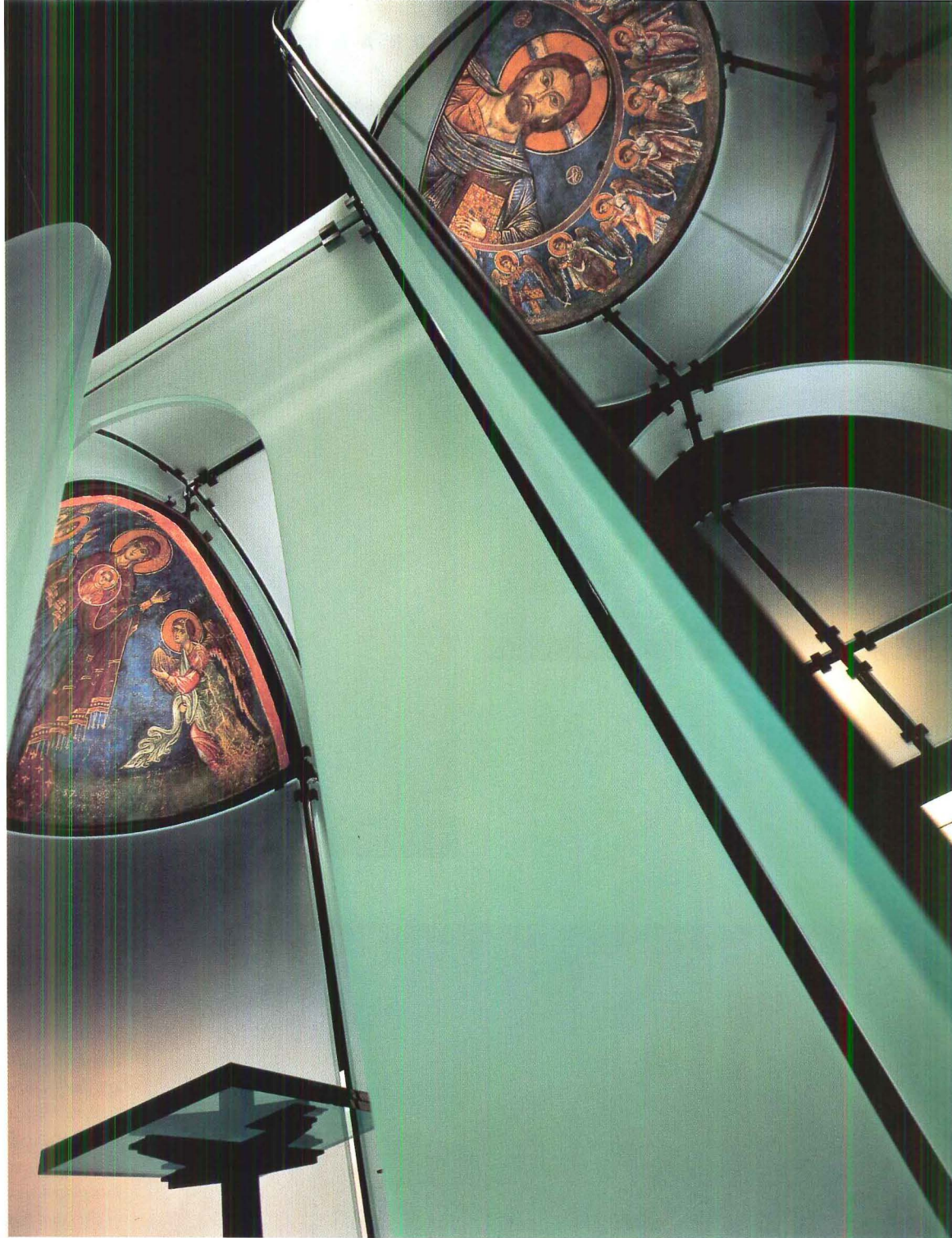


Byzantine Fresco Chapel

Houston, Texas

Architect: François de Menil,
Architect, P.C.

In designing a home for two 13th-century Byzantine frescoes, the architect evoked the original context, a Cypriot chapel, without slavishly reproducing it. Integrating modern, clean-lined materials—cast concrete, translucent glass, black slate, mahogany, and tubular steel—François de Menil's chapel museum offers a concise and poetic analysis of a traditional apse. With a mysterious quality of light, the small chapel's interior is like a fine reliquary that feels both modern and spiritual. The serene Modernist exterior—with simple rectilinear forms—provides a subtle foil to the treasures within.
[RECORD, August 1998, page. 144]





The Gagosian Gallery

Beverly Hills, California

Architect: Richard Meier & Partners

With its white winglike roof element and its play of shadows, translucent layers, and transparencies, the Gagosian Gallery draws attention to an otherwise minimal transformation of the storefront. The street elevation is dominated by a glazed overhead door—an expanse of clear and frosted glass within a lattice of aluminum mullions and white sun-screening blades—that rolls up like a garage door, opening the gallery for alfresco events. Daylight plays an essential role in this bright white interior—especially in the soaring main gallery, which is toplit by clerestory windows at the north and south ends of its bowed ceiling. The gently pitched rooftop monitor, with its airfoil profile, was carefully designed to bring sunlight indirectly into the gallery. The carefully proportioned expanses of wall, broad grids of mullions, and solid-and-void ceiling configurations all form calm and visually balanced compositions in white.



Jil Sander and Ultimo Boutique

San Francisco

Architect: Gabellini Associates

In a landmark structure near San Francisco's Union Square, the architects fashioned a pair of retail spaces for the client, Ultimo of Chicago. Rich materials—silk scrolls, white mirror panels, and custom walnut furniture—enhance a dramatic setting for the collections on display. The 3,500-square-foot Ultimo boutique is a veritable crimson chinoiserie box in which the vaulted ceiling plane seems to float.



Jil Sander Offices and Showroom

Hamburg, Germany

Architect: Gabellini Associates

The landmark villa, housing Jil Sander's offices and showroom, was built in the mid-19th century and damaged considerably during World War II. In converting the building, the architect balanced new and old. Plaster reliefs and moldings were meticulously restored while sleek, new, hard-edged elements appear decidedly modern.

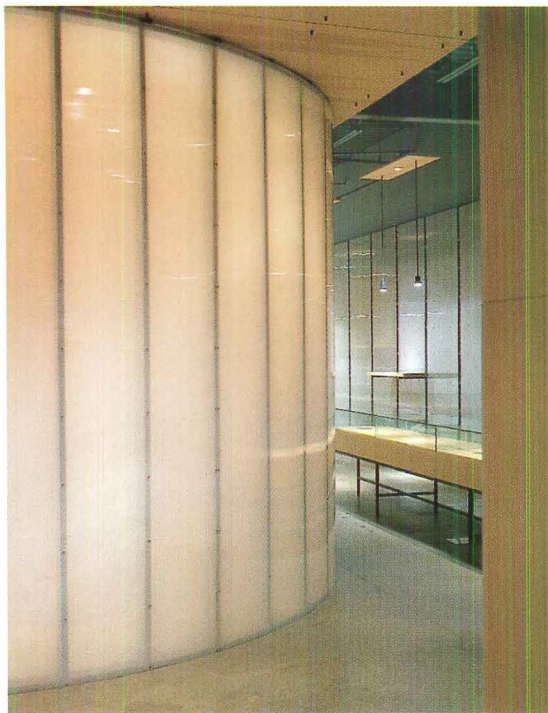


M.C. Ginsberg Objects of Art

West Des Moines, Iowa

Architect: Herbert Lewis Kruse Blunck Architecture

Despite its location in a bland suburban shopping strip, this jewelry and fine accessories shop has a gallerylike aesthetic. Each item for sale appears as an art object within a highly flexible space. A palette of everyday finishes creates an elegant but neutral backdrop for gold, silver, precious stones, and china. Built in just 10 weeks, the interior scheme was designed to be reconstructed elsewhere when the current lease expires. [RECORD, September 1998, page 133]



Little Village Academy

Chicago

Architect: Ross Barney + Jankowski

At the center of Chicago's Mexican community, the 68,000-square-foot Little Village Academy occupies a small footprint that dictated a very efficient plan. A curved, skylit stairwell—the spiritual and functional heart of the school—is marked by a three-story vertical sundial above the building's main entrance. Other key programmatic elements also receive bold expression on the exterior.



Studio/Residence

Omaha

Architect: Randy Brown Architects

In designing his own studio/residence, architect Randy Brown combined adaptive use, business promotion, and formal experimentation. He converted a 1970s passive-solar preschool into a four-person architecture office and home for himself and his wife. The interior incorporates salvaged doors, lumber, and light fixtures, as well as galvanized corrugated steel, ordinary steel cable, and off-the-shelf hardware. [RECORD, September 1997, page 97]

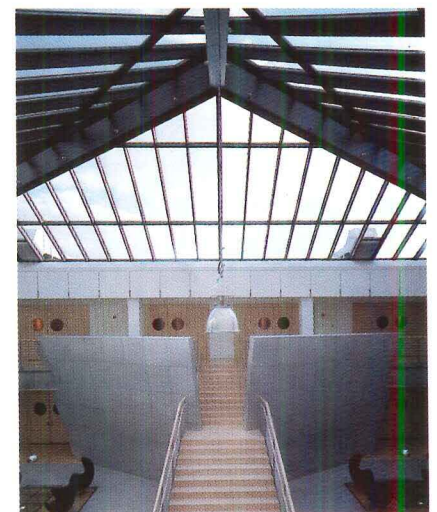


FILA Corporate Headquarters

Sparks, Maryland

Architect: Shelton, Mindel & Associates

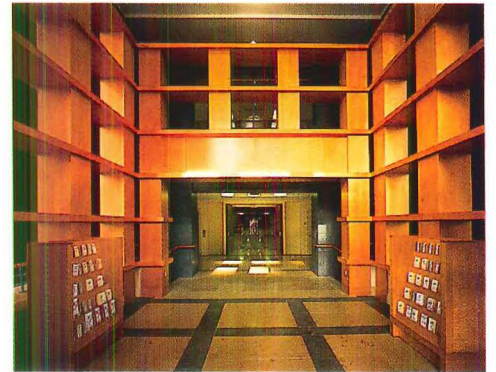
With the FILA Corporation's move to this former bank building came an opportunity to establish a strong corporate identity with architecture. The architect converted the dark existing interior to a more open plan organized around a luminous triangular atrium. The dynamic play of FILA's corporate colors and logo, along with sports themes, celebrates the company's image.





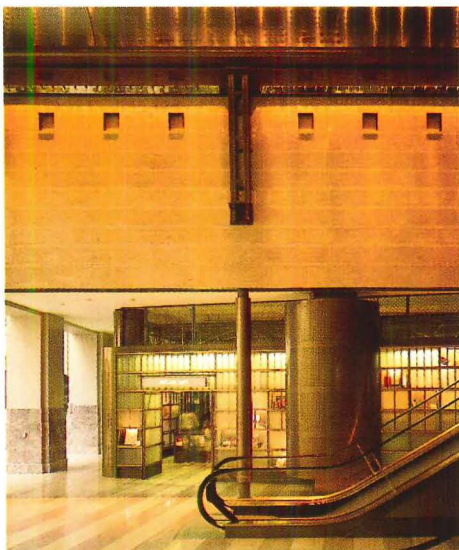
The Denver Central Library
 Denver
 Architect: Michael Graves, Architect

The rebirth of this library entailed the renovation of Burnham Hoyt's original 150,000-square-foot 1956 library and the construction of a 390,000-square-foot addition that enhances the library's civic presence. Inside the expanded building, a three-story Great Hall provides the main public space.



National Postal Museum
 Washington, D.C.
 Architect: KCF/SHG

Occupying 75,000 square feet in D.C.'s historic City Post Office, the National Postal Museum of the Smithsonian Institution is America's first major museum devoted to postal history and philately. With its galleries, museum shops, and research facilities, the design draws on the imagery of the postal process, including the graphics of stamps and cancellation marks.

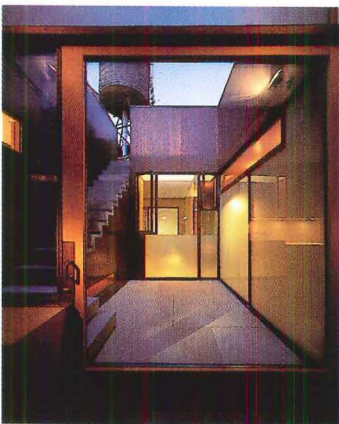
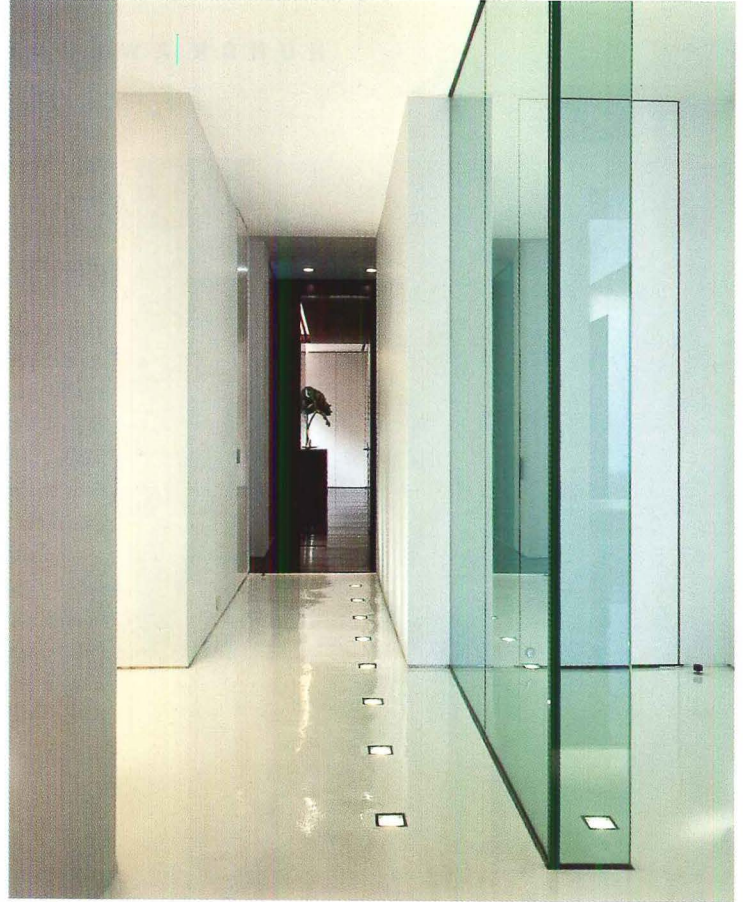


Fifth Avenue Residence

New York City

Architect: Architect: Shelton, Mindel & Associates

This project sought to transform the dark, enclosed spaces of a 4,500-square-foot prewar apartment into an open, light-filled interior with views of the Guggenheim museum and the Central Park reservoir. A glass vestibule within a larger white plaster box marks the entryway. To visually dematerialize the plaster form, the architect treated all surfaces similarly—from the ceilinglike poured resin floor with inset lights to the plaster walls and ceiling. The design's abstraction and luminous, multilayered transparency draws on a sleekly Modern architectural vocabulary that is unexpected in a traditional 1920s apartment building.



Urban Interface Loft

New York City

Architect: Dean/Wolf Architects

This loft is the realization of the architects' long-held dream: To create a dwelling where New York City meets the sky. Acting as their own general contractors, they converted raw space in a dilapidated six-story warehouse into living and working quarters for their family of three. With an ethereal quality, the stair rises from a copper-clad courtyard to the rooftop, ascending toward the sky. [RECORD, September 1997, page 106]

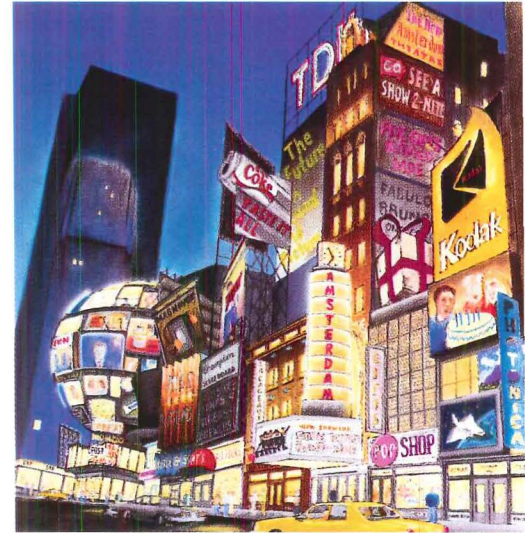


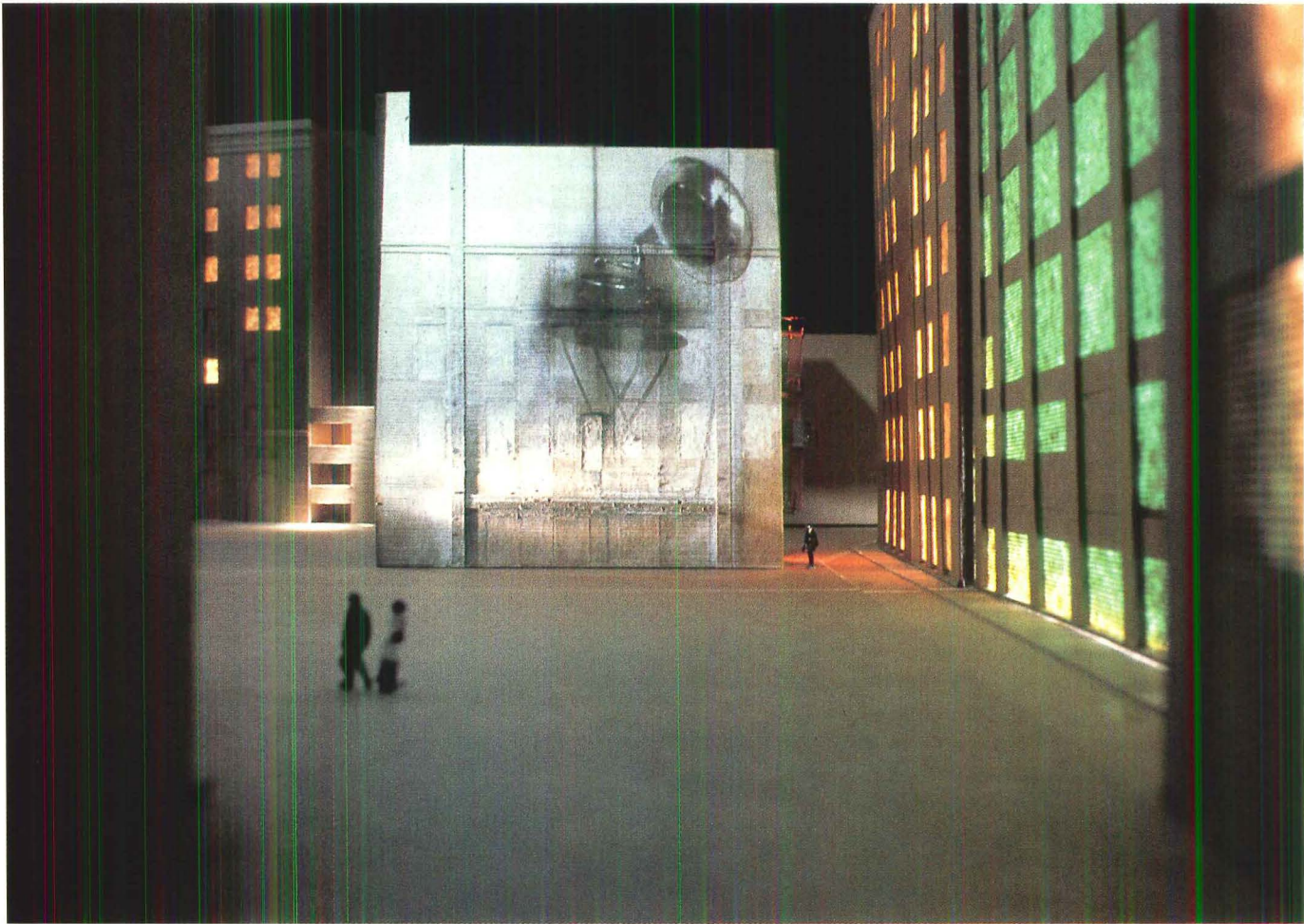
42nd Street Now!

New York City

Architect: Robert A. M. Stern Associates

This master plan, whose realization is currently under way, seeks to revitalize 42nd Street between Seventh and Eighth avenues—to transform it from a bleak urban stretch into a premier entertainment capital. With signage guidelines, the master plan attempts to restore the neighborhood's original sense of visual rhythm and vibrancy—to override its crime-ridden, pornographic character with a return to its historic role as a center for first-class entertainment.





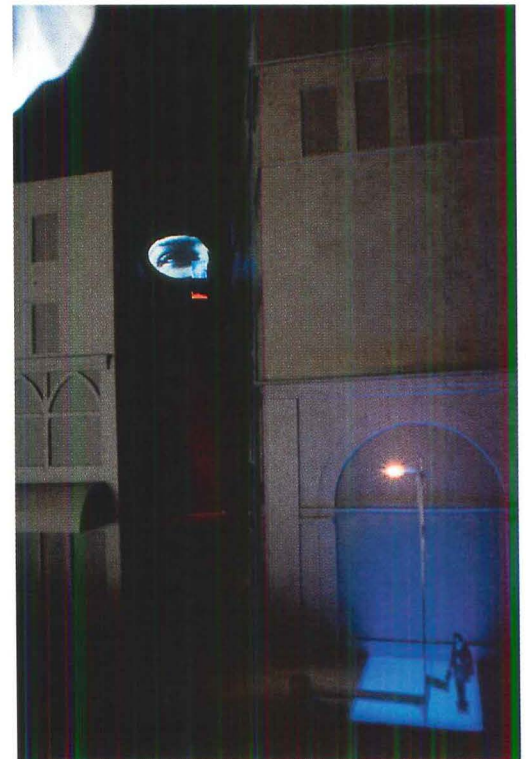
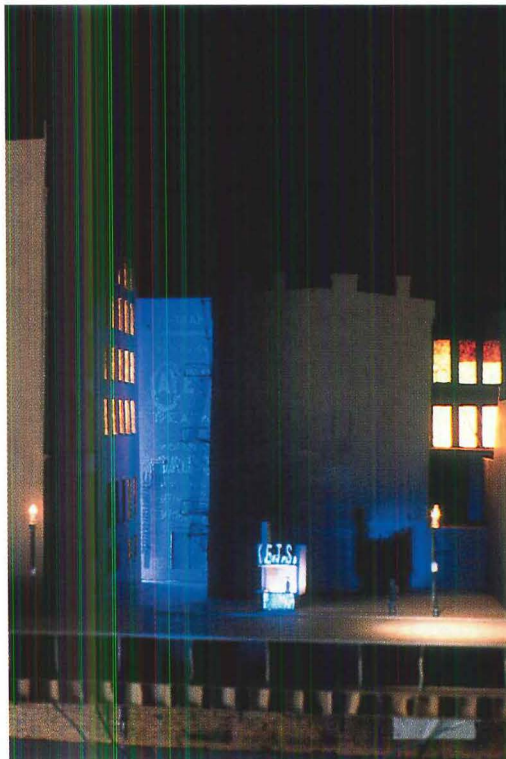
Theater District Streetscape

Master Plan

Boston

Architect: Kennedy & Violich
Architecture

To improve the quality of streetscapes in Boston's growing theater district, this master plan honors the eroded and unused interior sections of the city blocks. The guidelines propose exposing and illuminating the backstage workings and infrastructure of the district's 19th-century theaters. (For example, the Opera House, one of the area's largest theaters, is almost invisible from the street, as it stands boarded up awaiting future renovations.) Highlighting the 12-block historical context of these older playhouses and the neighboring contemporary theaters, the master plan would reveal rather than mask the textures and apertures of their brick party walls. The old theaters themselves would become part of the public life of the street—and also part of the spectacle.



Diggs Town

Norfolk, Virginia

Architect: Urban Design Associates

This urban design used HUD modernization funds to transform a public-housing project into a true neighborhood. Built in the 1950s, Diggs Town was an institutional setting that became seriously blighted by crime, drugs, unemployment, and physical decay. The Norfolk Redevelopment and Housing Authority commissioned Urban Design Associates to work with the residents to reclaim the dangerous and dilapidated place. The design focused on forming front- and backyards for individual units—defined by elements such as porches, fences, plantings, and lighting—that created individual addresses and much-needed parking. New streets broke the typical housing-project superblocks into smaller-scale, more residential blocks. The existing community center and management buildings were also redesigned. The results led to a dramatic drop in crime and a blossoming of neighborhood pride and self-esteem.

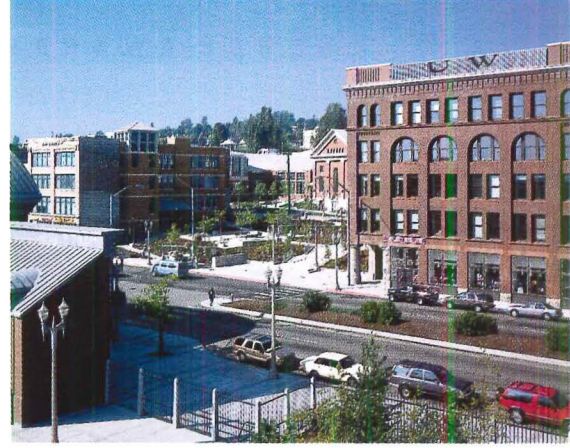


South Dade Watershed Project

South Dade County, Florida

Architect: Daniel Williams Architect
(with town planner Erick Valle)

Acknowledging the inextricable connection between water resource management and future growth in south Dade County, Florida, this project analyzed variables such as annual rainfall, stormwater runoff, soil drainage, and hurricane patterns to propose guidelines for future sustainability. The study examined different areas of the county with a view toward water storage and treatment, “hydric” parks, greenways, and wetland conservation.



**University of Washington, Tacoma
Campus Master Plan & Phase I
Buildings**

Tacoma, Washington

Architect: Moore Ruble Yudell
Architects & Planners

This master plan aims to revitalize a derelict 46-acre historic site and transform it into a mixed-use commercial district and university campus. Seeking a balance between preservation and intervention, the architects retained the character of the industrial district's 19th- and early 20th-century warehouses and railroad buildings, while reinforcing the existing street patterns with superimposed axes and open green spaces.





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PERKINS & WILL NAMED FIRM OF THE YEAR FOR SIX DECADES OF ACCOMPLISHMENT

A quintessential American success story, Perkins & Will grew from modest beginnings in 1935—a two-person Chicago-based firm focused on residential work—to an organization with 400 design professionals and offices in Chicago, Atlanta, Charlotte, Los Angeles, Miami, Minneapolis, New York, and Paris. Spanning the realms of architecture, engineering, and interiors, it has completed projects in 49 states and 37 foreign countries.

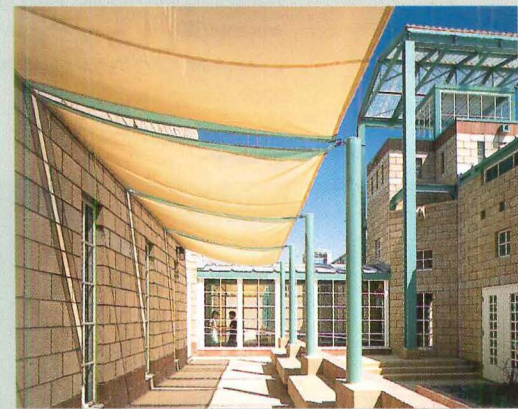
Perkins & Will first gained national attention for its design of education facilities. One of its earliest such commissions, the 1940 Crow Island School in Winnetka, Illinois, a collaboration with Eiel and Eero Saarinen, is now a National Historic Landmark.

In the 1950s, Perkins & Will

began designing medical buildings and, a decade later, expanded its repertoire to include corporate and commercial work—ranging from headquarters buildings to hotels and conference centers.

Throughout its 63-year history, Perkins & Will has tried to promote architecture as a “social art.” As the firm’s credo (or official design philosophy) confirms, its architects see “the needs and requirements of the client as the most important basis of any solution.”

Above, left to right: Henry A. Mann, AIA, chairman & CEO; G. William Doerge; Gary E. Wheeler, FASID, IIDA; David A. Hansen, AIA; Ralph E. Johnson, FAIA; and Jocelyn L. Frederick, AIA, principals. (Not pictured: 34 other firm principals.)



2

On the boards:

- 6. AMA Tower, Manila, Philippines.
- 7. Pediatric Medical Research Building, Washington University, St. Louis, Missouri.
- 8. Nature Museum, Chicago Academy of Sciences, Chicago.
- 9. One North Halstead, Chicago.

Right and opposite: 1. Morton International Building, Chicago. 2. Desert View Elementary School, Sunland Park, New Mexico. 3. O'Hare International Terminal, Chicago. 4. Perry Educational Village, Perry, Ohio. 5. Temple Hoyne Buell Hall, University of Illinois, Urbana.



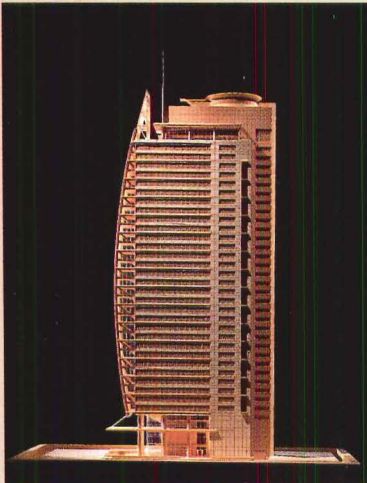
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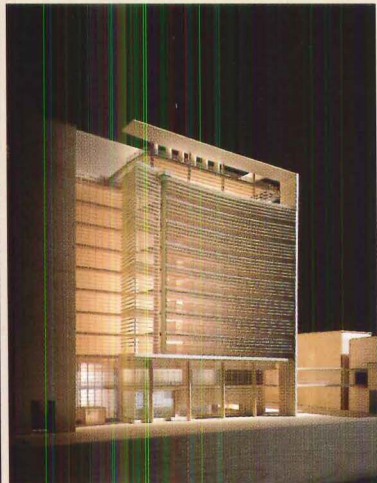
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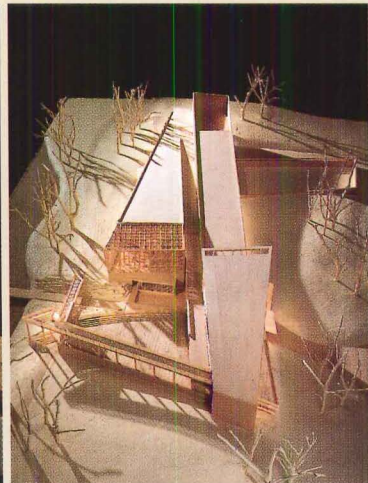
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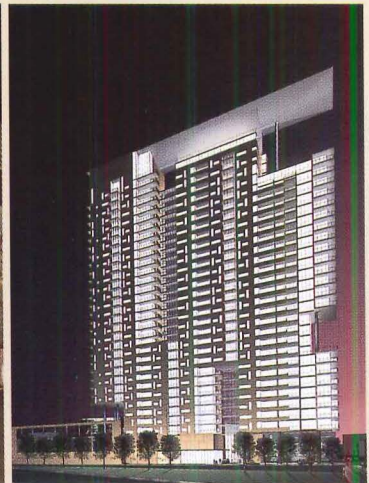
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CHICAGO'S "BIG JOHN" HANCOCK TOWER STILL STANDS TALL ON THE WORLD'S SKYLINE

Unlike most skyscrapers, the 100-story, 2.8 million-square-foot John Hancock Center is something of a chimera: Part apartment building—with a skydeck swimming pool and 700 hundred dizzyingly high residential units—and part office, parking, and commercial structure. Sited in an urban residential neighborhood just off Chicago's Lake Shore Drive, it was the world's biggest multiuse building and the second tallest tower when completed in 1970.

Since its construction, the John Hancock building has stood as a major technical achievement. Seeking an innovative and visually

compelling tour de force that could efficiently serve multiple programs, Skidmore, Owings & Merrill's Bruce Graham, FAIA, and structural engineer Fazlur Khan devised a clearly articulated system of megascale diagonal steel tubes that reinforce exposed exterior columns and spandrel beams. With remarkable simplicity and structural economy, this configuration, tapering toward the building's top, was achieved without any high-strength steel—allowing less than 30 pounds of steel to support each square foot of floor area. And in contrast to most high rises preceding it, notes Graham, "It was as essential for us

to expose the structure of this mammoth as it is to perceive the structure of the Eiffel Tower."

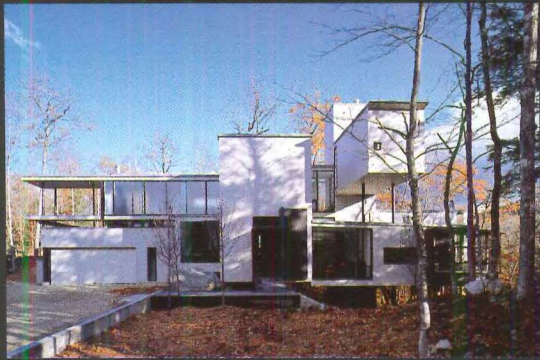
Strongly identifying this landmark with Chicago's skyline, locals and city officials rallied in 1989 to save it from an atrium addition. In 1994, a \$22.5 million redesign of the plaza and lobbies added amphitheater steps and an outdoor cafe. But "Big John" has remained virtually unchanged in the nearly three decades since its completion. As critic Paul Goldberger characterized it, the John Hancock is "a powerful, spirited building that by breaking the rules oddly ends up reinforcing them." ■



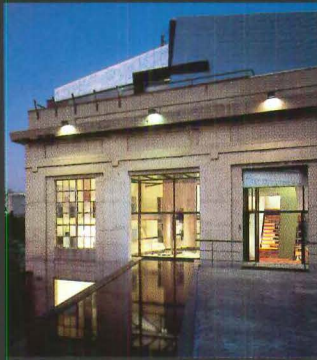


The megascale exposed steel structure with diagonal reinforcing members has a powerful presence on the exterior (above and right), and at key points on the interior (below).





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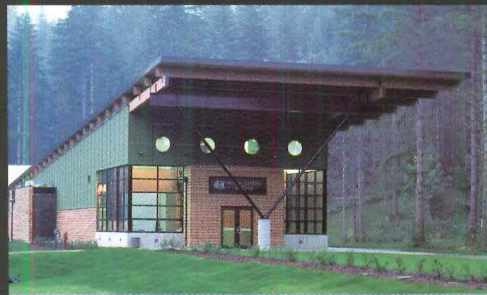
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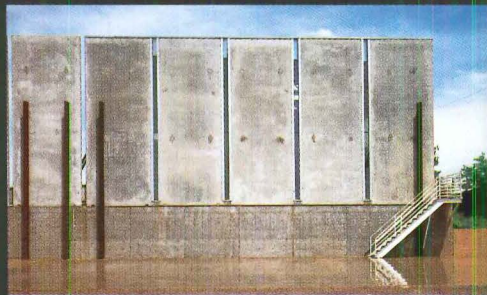
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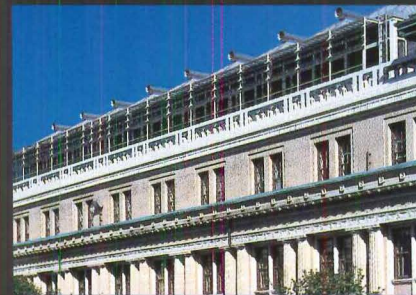
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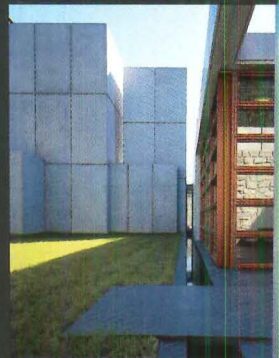
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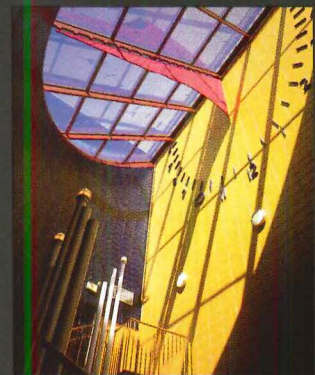
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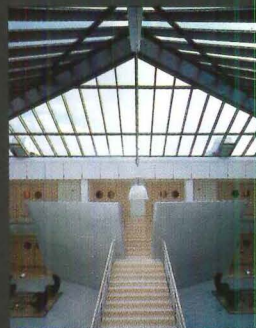
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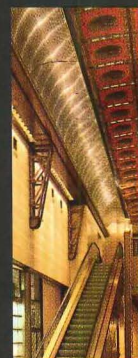
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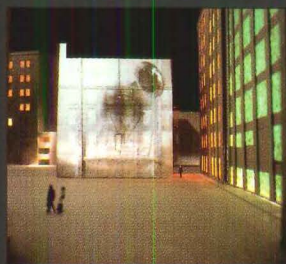
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Our Critic Goes Behind the Scenes At This Year's AIA HONOR AWARDS

by Andrea Oppenheimer Dean

If you talked, as I did, to jurors for the 1999 AIA Honor Awards, they would tell you that a passion for quality has replaced the preoccupation with dogma and style that characterized far too many architects and critics a decade ago. Members of all three juries—architecture, interior architecture, and regional and urban design—would observe that the tides of history-defying Deconstructivism and history-laden Postmodernism (and nostalgia) have receded. They would explain that this year's winners evinced less interest in the stylistic trappings of architecture than in its message and content—and in communicating clearly and with feeling. They would agree that the winning entries share the common tongue of this century's defining design approach: Modernism. But the jurors would note that the new generation of Modernists seems mellow and tolerant, having replaced confining old convictions and grandiose schemes with a belief in cool aesthetics and incremental change—a reflection of the larger American culture at decade's end.

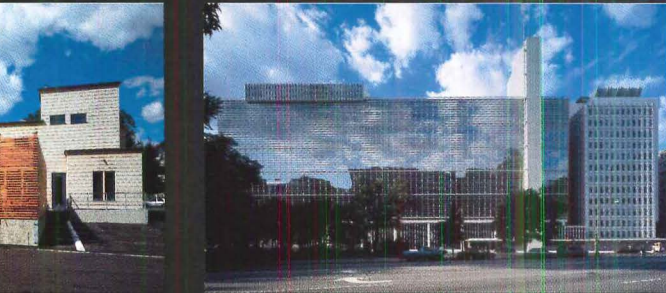
Listen, for example, to the architecture jury's chair, Robert J. Frasca, FAIA, of Zimmer Gunsul Frasca Partnership: "Over the decades I've watched each dogma that was supposed to be the living end come, disappear, and invalidate itself. What's different about Modernism today is we realize we aren't going to save the world but can use architecture to intervene in personal, often small ways to enrich and dignify people's lives." Architects, suggests Frasca, have given up the search for comprehensive solutions, in favor of custom-tailored, thoughtful, and modest interventions that cumulatively will become substantial over time.

Not surprisingly, the designs that the architecture jury found most convincing complement their surroundings with strong ties to the larger community, its past, and its culture. Such qualities fueled the jury's enthusiasm for Helsinki's Kiasma Museum of Contemporary Art, in which Steven Holl, FAIA, meshed abstract architectural forms with the Finnish capital's built and natural geometries. Integral relationships between architecture and its setting also influenced the jury's selection of two dissimilar residences: An idiosyncratic wood-and-steel Maine house, by Atlanta's Scogin Elam & Bray Architects, that makes sweeping gestures toward the wild landscape, and a Los Angeles residence by RoTo Architects

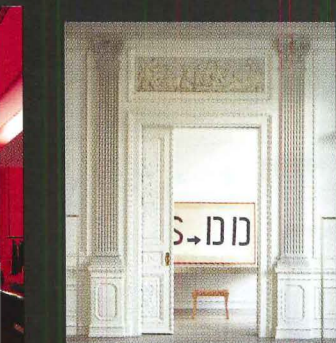
Andrea Oppenheimer Dean, a contributing editor at RECORD, is former executive editor of Architecture, a fellow at the American Academy in Rome, and author of Bruno Zevi, On Modern Architecture and Centerbrook 2.



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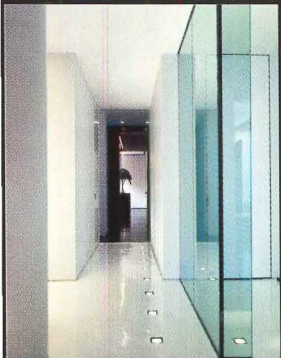
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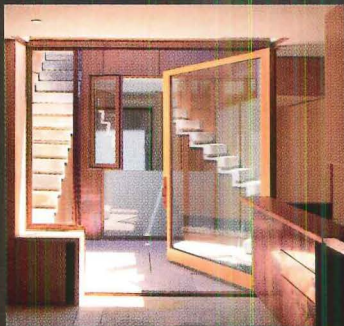
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that offers an improvisational response to a gritty industrial site.

Back to basics architecturally

The jury selections, Frasca believes, mark a return by the profession and its clients to architecture's fundamentals. We're seeing, he says, "almost indigenous architecture," mainly by small and midsize firms—an approach he likens to "the way buildings were designed and conceived long before there were magazines to tell people in one part of the country

WE'RE SEEING, OBSERVES FRASCA, A RETURN TO FUNDAMENTALS—TO AN "ALMOST INDIGENOUS ARCHITECTURE."

how people [elsewhere] think they should be designing."

As Krista Dean, Assoc. AIA, an intern who served on the jury, observes, "Maybe because we're headed toward a future in which we're bombarded with information, we seem to be going back to the basics—restraint, respect, scale—remembering that humans still occupy the buildings." She adds that clarity, environmental sensitivity, and respect for site and materials played major roles in the jury's evaluations. Architecture, as Frasca puts it, has always been "a reflection of the particular generation." Young jury members, Dean and Joseph J. Hittinger, a Catholic University master's-of-architecture candidate, tended to favor flexibility in client relations and excellence in execution over novelty or fireworks.

This commitment to basics addresses critics who increasingly perceive the built environment as insubstantial and filled with props for a consumption-and-entertainment-obsessed culture. In *The Unreal*

America: Architecture and Illusion, critic Ada Louise Huxtable describes this theme-parked world as a place where "distinctions are no longer made, or deemed necessary, between the real and the false, the edge usually [going] to the latter, as an improved version with defects corrected."

Missing building types

The substantial and authentic nature of the award-winning projects, by contrast, is not hard to explain. The AIA Honor Awards program represents a narrow sampling with few submissions and winners. Among the building types that forcefully shape the American landscape, shopping malls and strips, hotels and office buildings were not represented. And most of the office-building entries, reports Frasca, lacked character and content with the architect's work restricted to skin-deep cosmetics. In these projects, a "sense that everything has been integrated and pulled together," says juror Joseph Valerio, FAIA, "was missing."

Scarce, too, among the winners were corporate headquarters, a dominant building type in the market and awards programs of the '80s. The wild ride and continual change that profitable, high-flying technology businesses, in particular, are currently experiencing seems to discourage investment in such permanent fixtures as flagship buildings. Only two corporate office projects received awards: The K. J. McNitt Construction Company in Oklahoma City, which Elliott + Associates Architects designed as a showcase for the corporation's expertise in precast concrete panel construction; and the FILA Corporate Headquarters in Sparks, Maryland, an interior for which Shelton, Mindel & Associates took inspiration from the company's signature colors and themes.

Also notably absent among the winners were entertainment and

Winners

Architecture (page 132)

1. *Nomentana House*, Scogin Elam & Bray Architects.
2. *Carlson-Regis Residence*, RoTo Architects.
3. *Brooks County Safety Rest Area*, Richter Architects.
4. *Kiasma Museum of Contemporary Art*, Steven Holl Architects.
5. *Inventure Place*, Polshek Partnership Architects.
6. *Olympic College*, Shelton, The Miller/Hull Partnership.
7. *McNitt Building*, Elliott + Associates Architects.
8. *Robert L. Preger Intelligent Workplace*, Bohlin Cywinski Jackson.
9. *Minneapolis Pathways*, Anmahian Winton Architects.
10. *World Bank*, Kohn Pedersen Fox Associates.
11. *The Thomas Jefferson Building of the*

- Library of Congress*, Arthur Cotton Moore/Associates.
12. *Louisiana's Old State Capitol*, E. Eean McNaughton Architects.
13. *Byzantine Fresco Chapel*, François de Menil Architect.

Interiors (page 142)

14. *The Gagosian Gallery*, Richard Meier & Partners.
15. *Jil Sander and Ultimo Boutiques*, Gabellini Associates.
16. *Jil Sander Offices and Showroom*, Gabellini Associates.
17. *M.C. Ginsberg Objects of Art*, Herbert Lewis Kruse Blunck Architecture.
18. *Little Village Academy*, Ross Barney + Jankowski.
19. *Studio/Residence*, Randy Brown Architects.
20. *FILA*

- Corporate Headquarters*, Shelton, Mindel & Associates.
21. *The Denver Central Library*, Michael Graves, Architect.
22. *National Postal Museum*, KCF/SHG.
23. *Fifth Avenue Residence*, Shelton, Mindel & Associates.
24. *Urban Interface Loft*, Dean/Wolf Architects.

Urban Design (page 148)

25. *42nd Street Now!*, Robert A.M. Stern Associates.
26. *Boston Theater District Streetscape Masterplan*, Kennedy & Violich Architecture.
27. *Diggs Town*, Urban Design Associates.
28. *South Dade Watershed Project*, Daniel Williams Architect.
29. *University of Washington Tacoma Campus*

- Master Plan & Phase I Buildings*, Moore Ruble Yudell Architects & Planners.

Firm Award (page 152)

30. Perkins & Will, Architecture Engineering Interiors

25-Year Award (page 154)

31. *John Hancock Center*, Skidmore, Owings & Merrill.

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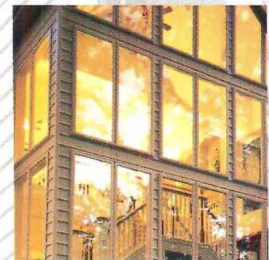
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hospitality projects. Stanford Hughes, AIA, of San Francisco, an interior-architecture jury member, was surprised that “in this time of hotels and entertainment resorts there were no phenomenal new buildings.” The reason, he speculates, is that large corporate operators with “a particular way of doing things,” are dominating the industry and franchising their product—with an express lack of interest in surprise or innovation.

Jury character and selection process

All three juries were diverse and relatively large. The architecture jury, with nine members, was the biggest and undertook the most painstaking vetting process. Along with Frasca, it included the two junior designers, Dean and Hittinger; James P. Alexander, FAIA, a preservation specialist at Finegold Alexander Architects in Boston; landscape architect Susan Child of Boston; Julie Snow, AIA, director of her own small Minneapolis practice; Valerio, a principal in the midsize Chicago firm of Valerio Dewalt Train; Steven Ehrlich, AIA, head of his own midsize practice in Santa Monica, California; and Nestor Infanzon, AIA, director of architecture at the Dallas office of Leo A. Daly Architects.

From approximately 400 entries, the architecture jury whittled the list to 20-plus finalists and dispatched a juror to see and experience each project. Some visits confirmed the jury’s best hopes; others underscored architectural photography’s capacity to distort or conceal. After the visits, the group made its final choices. “Nine people each spent a week of their time over two months,” stressed Ehrlich. “That’s a big investment.”

How did the jury’s size, make-up, and time expenditure affect the outcome? The winners, like the jurors, were diverse. The projects ranged from Richter Architects’ modest rest area in Brooks County, Texas, designed in a regional style with local materials, to the new World Bank Headquarters Building in Washington, D.C., a Modernist glass-and-steel pinwheel composition that departs from the city’s prevailing neoclassicism. This design by Kohn Pedersen Fox Associates drew the jury’s attention in part for its incorporation of two structures, one from 1964 by Vincent Kling and the other from 1969 by SOM’s Gordon Bunshaft.

Awards also went to four renovation projects: Two for architecture, two for interior architecture. Together, they indicate a more mature and adventurous approach to renewing prized old buildings than prevailed a decade ago. Working with the Architect of the Capitol, Arthur Cotton Moore/Associates restored the Library of Congress’ Thomas Jefferson Building, while adapting the 19th-century design to 21st-century needs. More extensive were the changes in KCF/SHG’s conversion of Daniel Burnham’s 1914 former City Post Office in Washington, D.C., into

THE JURY CELEBRATED TECHNOLOGY WHERE IT IS WORKING WITH ARCHITECTURE, “RATHER THAN FIGHTING IT.”

the National Post Office Museum. The message of both D.C. projects, according to preservation expert Alexander, is an acceptance of “stronger interventions even with buildings of great significance. That’s the way it should be; we should be able to interpret.” His observation indicates a sea change from architectural attitudes in the wake of public reaction against new design and construction. The willingness to change old buildings suggests a vote of confidence in new architecture.

Design innovation

But what about new design directions? What do the awards tell us about them and about innovations with, for example, new technologies? Maybe the jury’s size—or the prosperous times we live in—reduced risk taking

with cutting-edge design. But the jurors agreed that the innovations were more matters of nuance than large gestures, and they found scant evidence of breakthrough technologies. “We celebrated people,” says Valerio, “who were figuring out how to make technology work with a building rather than fighting it.” Two of the winning projects were devoted programmatically to explorations of technology: The Robert L. Preger Intelligent Workplace at Pittsburgh’s Carnegie Mellon University, an addition by Bohlin Cywinski Jackson, is a laboratory for studying advances in contemporary office life; and Inventure Place in Akron, Ohio, by Polshek and Partners, houses the National Inventors Hall of Fame. In

DESIGNERS SEEM TO BE REASSESSING THEIR ROLES AND THE “QUALITIES THAT MAKE GREAT BUILDINGS.”

both cases, however, the client dictated the technologies, and none of the projects, says Snow, evidenced a “physical manifestation of the information technologies that are changing the way we live. We’re still doing buildings as we did 100 years ago.” Also missing among the winners, in her view, were sustainability, housing innovation, and new relationships between the built and natural environment.

As Infanzon sees it, the architecture jury and winners reflect an “introspective moment” in the late 1990s, at which designers are reassessing their roles and the “qualities that make great buildings, looking at how form is made, how details are put together, how buildings fit the context.”

Current directions in interior architecture

The five interior-architecture jurors, like their architecture counterparts, formed a varied group. Two come from large West Coast firms: Chair Lauren Rottet, FAIA, of DMJM Rottet in Los Angeles, and Stanford Hughes, AIA, of Braden & Hughes in San Francisco. Two are small-firm practitioners, Mark McInturff, AIA, of Bethesda, Maryland, and David D. Salmela, AIA, of Duluth, Minnesota, and one, Michael Bierut of Pentagram Architectural Services in New York City, is a graphic designer. As with the architecture jury, the interiors group showed a disinclination toward -isms and ideologies and a bias for refined design that reflects a vision as consistent in the large-scale gestures as it is in the details.

Rottet says her jury looked for atypical and technically compelling projects. The group favored public over high-end residential work though it selected three designs with at least partial residential programs: A studio/residence in Omaha by local architect Randy Brown, AIA, and in New York City, a live/work loft by Dean/Wolf Architects and a Fifth Avenue apartment by Shelton, Mindel & Associates. Shelton, Mindel won two interior awards—the second for FILA’s Maryland headquarters—says Rottet, for projects that present “a whole package,” applying “minimalism with a free spirit.” Many entries were eliminated for weak finishes and furnishings, and she adds, “nothing stood out as really, really unique.”

Hughes praises “the power of restraint—subtle rather than in-your-face innovation” evident in Gabellini Associates’ conversion of a Hamburg villa into a low-key Jil Sander couturier showroom. And in projects such as Brown’s Omaha residence, he detected the beginnings of a language that builds on and transcends minimalism, creating “tension and mystery” through invention with lighting and materials.

In comparing the submissions to a comparable group of 20 years ago, says McInturff, you’d find more attention to detail now, “not willful, capricious work.”

Salmela says, “there was no excess, no pretension. The projects that won were orderly, conservative, formal. No, they didn’t show a new

direction.” With their predominantly hard, metallic, and glassy materials, the winners looked very urban to Salmela, a rural Minnesotan. “That’s where our country is,” he concludes. “All the farmers are going broke. Everyone’s in the city. All the attention is toward urban areas.”

On a regional and urban scale

This brings us to the regional and urban design awards, whose jurors apparently had very different expectations and experiences than the other two juries. At least two members went home with regrets—disquieted not by the winners but by the promising projects eliminated for lack of a con-

is that urban planners and designers don’t know how to make downtown areas work. “It’s not a matter of planting trees and putting in brick sidewalks,” she says, pointing out that New York is “blessed with a good framework,” while other cities are struggling to find the bones on which to flesh out revitalization. Also problematic, says Chin, is convincing the proverbial rugged American individualist to accept controlled land development.

As thorny an issue as any was the architect’s role in large-scale development. Eckstut sees the awards program’s separate regional and urban design category as a catch-all for complex projects that may not fit

“WE’RE TORN,” SAYS FRAKER, “BETWEEN WANTING SIMPLICITY AND REVELING IN THE RICHNESS OF THE WORLD.”

sensus. Eclectic and nonideological in its approach, this jury sought projects that not only were well-executed, but also took risks. The jury included Susan Chin, FAIA, assistant commissioner of New York City’s Department of Cultural Affairs; Harrison Fraker, FAIA, dean of environmental studies at the University of California, Berkeley; Stanton Eckstut, FAIA, of Ehrenkrantz, Eckstut & Kuhn Architects of New York City; John E. Kaliski, AIA, of Aleks Istanbullu John Kaliski Architecture in Santa Monica, California; and Roger Schluntz, FAIA, dean-designate of the University of New Mexico’s School of Architecture and Planning.

Four of the five winners, says Fraker, represented relatively modest interventions that could have a “powerful impact”—including, most prominently, the HUD-assisted Diggs Town housing project in Norfolk, Virginia. Here Urban Design Associates of Pittsburgh transformed a crime-ridden institutional setting by adding porches and fencing, thereby differentiating private from public space. The jurors chose Kennedy & Violich Architecture’s scheme for defining and renewing Boston’s 12-block theater district almost solely with dramatic lighting effects. A more traditional project, Moore Ruble Yudell’s master plan for the University of Washington at Tacoma, won jury approval for anchoring the campus to the urban context and surrounding mountains and for preserving the existing buildings “without hype or nostalgia.” The group also commended the environmental and educational merits of the most ambitious and only unbuilt award winner, the South Dade Watershed Project in West Palm Beach, Florida, by Daniel Williams, FAIA, and town planner Erick Valle, for the South Florida Water Management District. While some disagreement centered on whether Robert A.M. Stern Architects’ design guidelines for New York City’s 42nd Street were primarily a graphic treatment, the proposal won an award largely for allowing raw, real-world competition—rather than cuteness—to define the place.

Mirroring the contradictions and conundrums that currently plague urbanists, the jurors’ debate reflected a desire for a vocabulary that would authentically and meaningfully engage the contemporary world, rather than 19th-century planning ideas. “We’re torn,” says Fraker, “between wanting more simplicity while reveling in a multi-layered richness of information and knowledge and sensory involvement in the world.” More fundamental, suggests Chin,

neatly within the architectural rubric. He insists that separating urban design from architecture “belittles the role of the architect in large-scale projects that benefit the public.”

The issues raised by the regional and urban design jury—how to make cities and towns work, how to control sprawl, how to adapt New Urbanism to contemporary conditions, and how to define a significant role for architects in major and complicated planning projects—remain unresolved. But casting a gimlet eye, the jurors asked the right questions, laying groundwork for the 21st century. ■

Jurors

Architecture/25-Year Award

Robert J. Frasca, FAIA (chair), Portland, Oregon; James P. Alexander, FAIA, Boston; Susan Child, Boston; Krista Dean, Assoc. AIA, Dallas; Joseph J. Hittinger, Washington, D.C.; Steven D. Ehrlich, FAIA, Santa Monica, California; Nestor I. Infazon, AIA, Dallas; Julie V. Snow, AIA, Minneapolis; Joseph M. Valerio, FAIA, Chicago.

Interiors

Lauren L. Rottet, FAIA (chair), Los Angeles; Michael Bierut, New York City; Stanford Hughes, AIA, San Francisco; Mark C. McInturff, AIA, Bethesda, Maryland; David D. Salmela, AIA, Duluth, Minnesota.

Regional and Urban Design

Harrison Fraker, FAIA (chair), Berkeley, California; Susan Chin, FAIA, New York City; Stanton Eckstut, FAIA, New York City; John E. Kaliski, AIA, Santa Monica, California; Roger Schluntz, FAIA, Coral Gables, Florida.

Firm Award/Gold Medal

Michael J. Stanton, FAIA, San Francisco; Frank F. Douglas, FAIA, Houston, Texas; the late Joseph Esherick, San Francisco; Richard A. Meier, FAIA, New York City; Joseph M. Valerio, FAIA, Chicago; Katherine Schwensen, AIA, Des Moines, Iowa; John Beveridge, AIA, Glastonbury, Connecticut.

GEHRY Ascendant

THE 1999 AIA GOLD MEDAL SIGNALS A
DEFINING MOMENT IN FRANK GEHRY'S CAREER



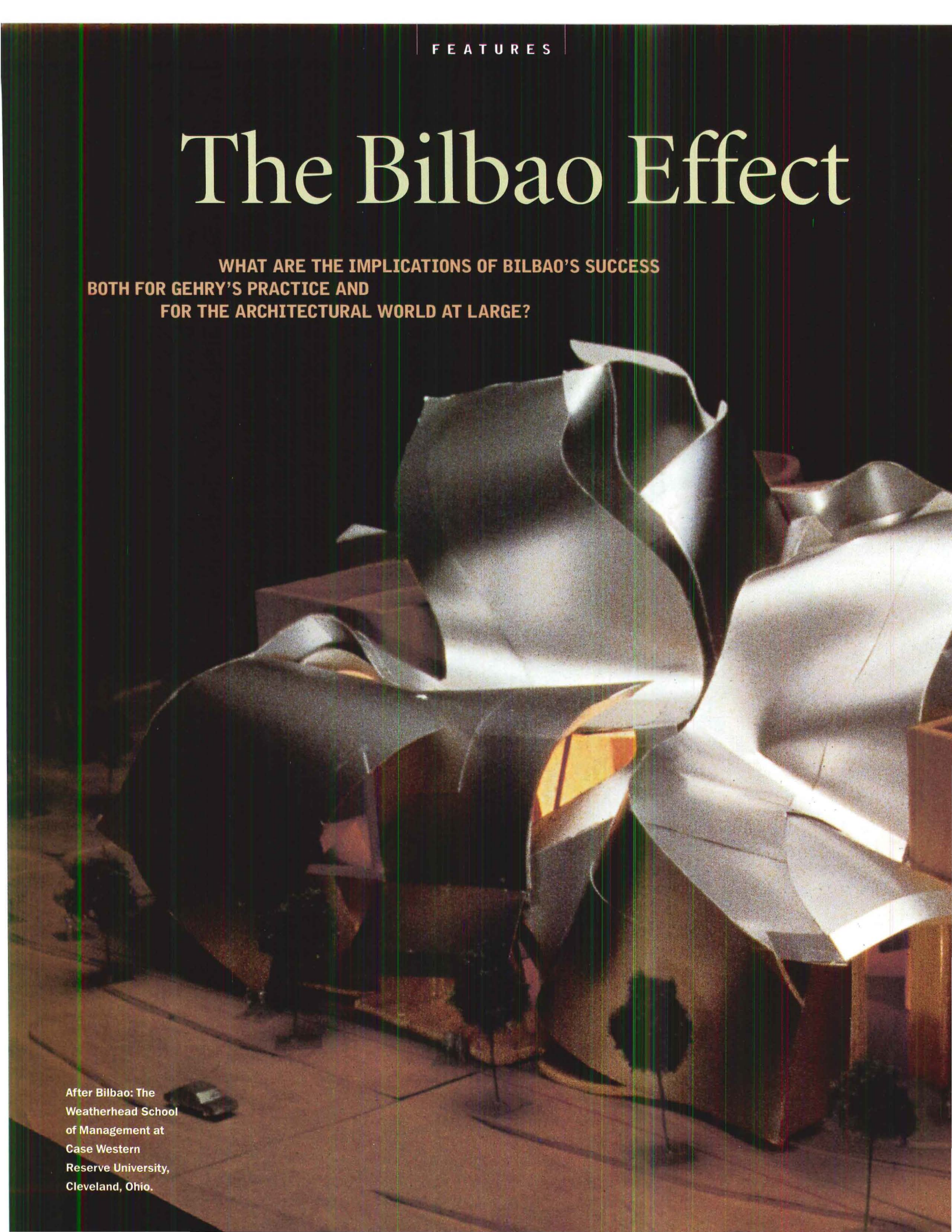
The reaction to the Guggenheim Museum in Bilbao sealed it: Frank Gehry, FAIA, is now considered America's leading creative architect, on par with the 20th century's major innovators. And winning the AIA's 1999 Gold Medal reinforced this status. "Frank's time has come," wrote Kevin Roche, FAIA, in support of Gehry's nomination, reminding the AIA that he had written to say so once before in 1996, when no Gold Medal was awarded. But that was then.

Most recent in a series of prestigious honors bestowed on Gehry, the Gold Medal caps an astonishing career. In the following pages, RECORD analyzes Gehry's singular position in American architecture and presents an emblematic selection of his projects from the last 40 years. In an exclusive interview, Gehry discusses his reaction to the brouhaha and offers insights into his design process, the structure of his practice, and the conceptual thinking behind his recent work.

FEATURES

The Bilbao Effect

WHAT ARE THE IMPLICATIONS OF BILBAO'S SUCCESS
BOTH FOR GEHRY'S PRACTICE AND
FOR THE ARCHITECTURAL WORLD AT LARGE?



After Bilbao: The
Weatherhead School
of Management at
Case Western
Reserve University,
Cleveland, Ohio.

by Suzanne Stephens

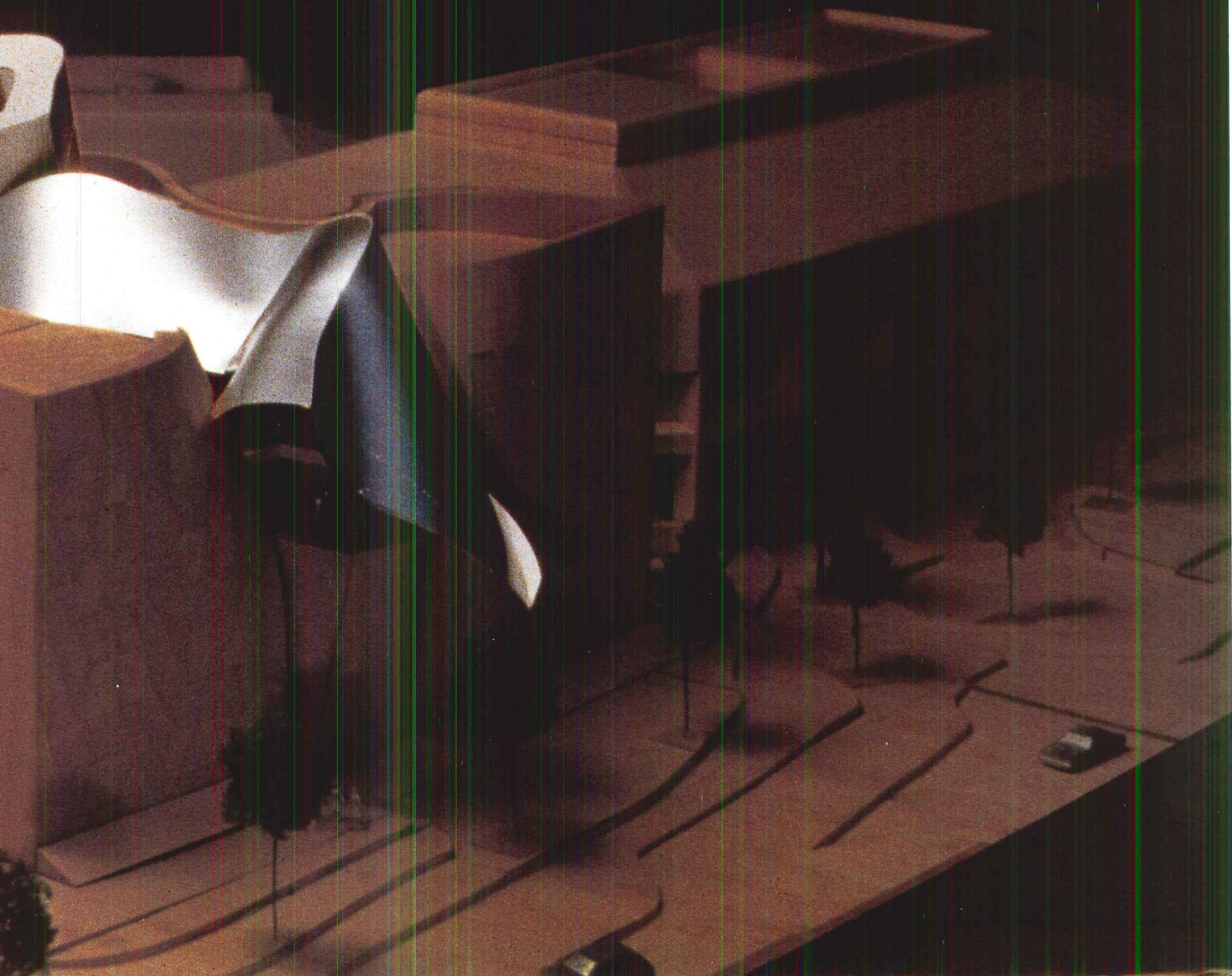
With the unprecedented success of the Guggenheim Museum in Bilbao, Frank Gehry, FAIA, has ascended from the ranks of being "America's most obscure great architect," as Martin Filler described him in 1986, to being a "genius," as reported in *RECORD*, October 1997. While Gehry has received any number of raves for previous work, Bilbao put him into a special category. It is the Big Whammy that every architect dreams about.

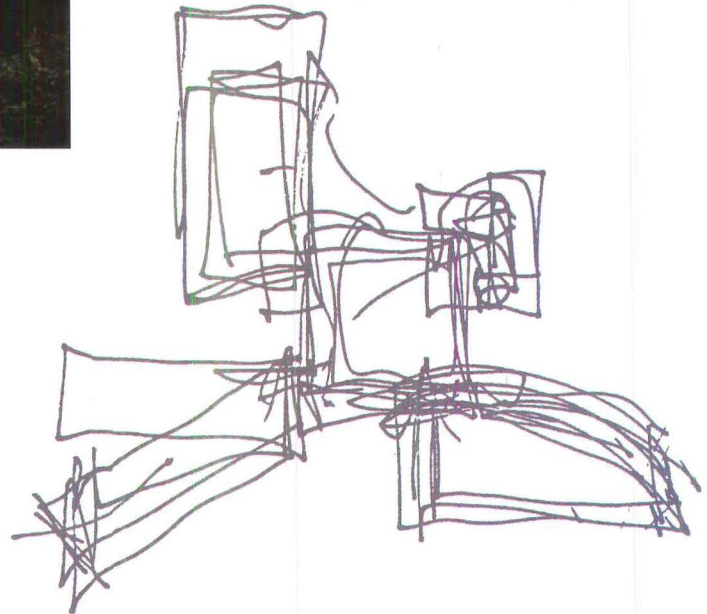
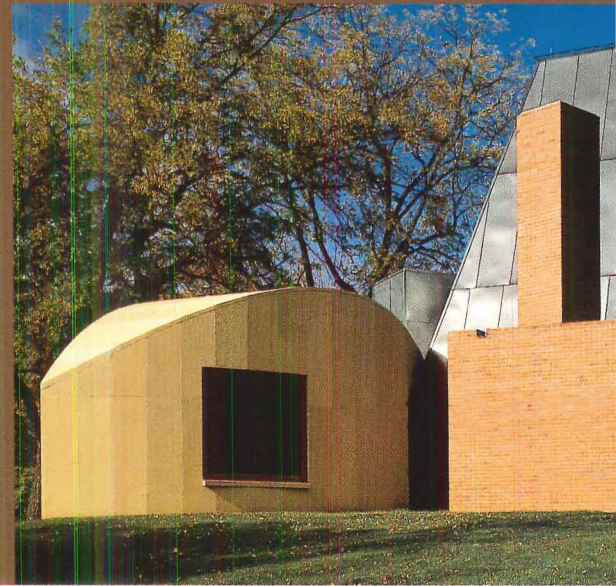
Not only did Bilbao open 20 months ago to ecstatic accolades from critics and architects, but also it has been an unparalleled success with the public. Tourism to Bilbao was galvanized by the museum, with 1.4 million visitors tallied in the first year. "Bilbao," observes Kurt Forster in *Frank O. Gehry, the Complete Works* (Monacelli Press), "will not only go

down as one of the most complex formal inventions of our time, it will stand as a monument to the productive capacities at our disposal if an architect, such as Gehry, puts them to imaginative use." Clearly the world has been inexorably drawn to the gleaming effervescence of its exterior and to the high-powered oomph of the spaces inside.

In this light, Bilbao could be terrific for architecture. As part of the "Bilbao Effect," cities, regions, countries reportedly are looking now at arty architects to design innovative buildings to lure tourism. "Bilbao has brought back the significance of the real artifact to the public, not just as a structure, but as a spectacle," Peter Eisenman, FAIA, comments. "The sense of exaggeration, scale, and climax all come into consonance in Bilbao."

With all the carrying on, there are some nagging questions. First,





what does it mean to be a “creative genius” in architecture these days? Is not such a label just playing into the hands of the hyperventilating media, which inflate reputations of celebrities and architecture-as-spectacle to sell magazines? Will success spoil Gehry—especially when clients just want Bilbaoesque buildings that shimmy and gleam? And what happens when others knock off Bilbao? Will spectacle spoil architecture?

To examine the situation, let’s go back 25 years. Louis Kahn was the last American architect described as a creative genius, on the level of Frank Lloyd Wright, Mies van der Rohe, and Le Corbusier. When Kahn died in 1974, the question “Who will be the next one?” was frequently answered with long disquisitions about the day of such heroes being over. The world of architecture needed to succumb to bottom-line budgets and restrictive construction schedules to stay competitive in the building industry.

Despite such prognostications, however, the individual creative architect was not entirely subsumed within the large corporate firm. Boutique operations continued to flourish. And at the time of Kahn’s death, the “the next one” had been running his own office in Los Angeles for 12 years.

In those early days, in the 1960s, only local and regional papers and magazines paid attention to Gehry’s work on concert pavilions, exhibition design, and projects for the Rouse Company. Gehry had designed the serenely cubiform Danziger House in Hollywood in 1964–65. But not until he produced the laminated-cardboard Easy Edges furniture (1969–73) did the national press discover Gehry and the professional journals start anticipating his next move. Still, in 1977 Gehry’s earlier work was classified by historians David Gebhard and Deborah Nevins as “part of the vernacular-built architecture of Southern California,” with exceptions made for the Danziger House (1964–65), Gemini G.E.L. Studios (1976–79), and the Ron Davis house (1968–72).

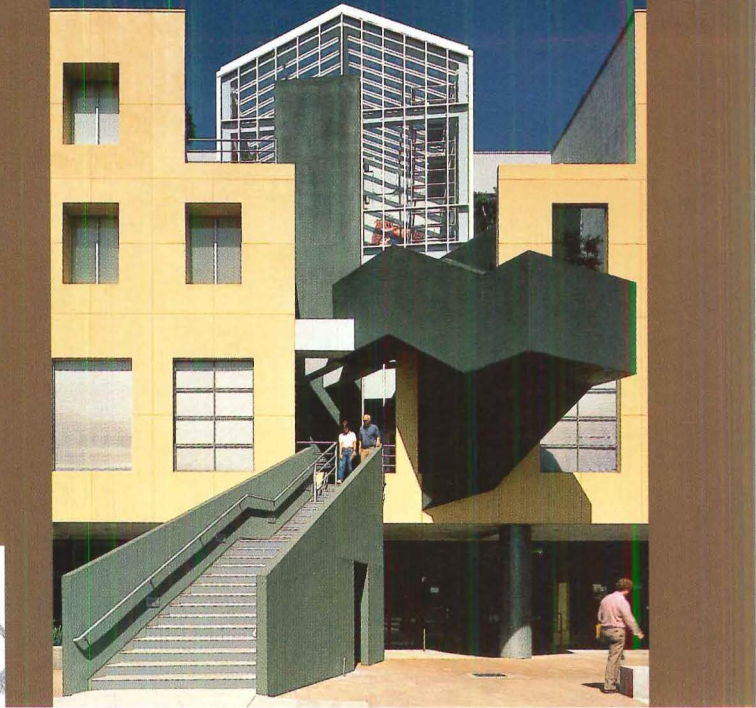
Then Frank Gehry finished his own controversial and ground-breaking home in Santa Monica in 1978. Suddenly eyes were riveted on him. Press coverage went international. His house, a 1920s cottage

stripped down to stud walls and wrapped with a carapace of aluminum siding, chain-link fence, glass, and plywood was definitely avant-garde. Even the neighbors complained of its being an eyesore. But while the architectural community recognized the innovation and daring in its formal combustion of parts and pieces, the Santa Monica house came across as an experiment in challenging assumptions about art and architecture, rather than establishing the direction for the future. As Philip Johnson, FAIA, now recalls: “Even with his own house, who knew?”

After a string of dramatic projects, such as the evocative village of buildings of the Loyola University Law School (1978–85), the collaged assemblage of the California Aerospace Museum and Theater (1982–84), and the clustered, minimal forms of the Winton Guest House (1982–87), the architectural world recognized a new phase. Gehry was moving away from the earlier plywood and chain link, planar, two-dimensional layered architecture to more volumetric design. His swerve to distorted Platonic solids was suggestive of Aldo Rossi’s explorations, Vincent Scully argues, except that Gehry began to push the solids out of shape. His capability to change and transform his art continued to surprise Gehry-watchers. He could still do “normal” Gehry, for example, using his industrial vocabulary



Left to right: Guggenheim Museum, Bilbao, Spain (1991–97); Winton Guest House, Wayzata, Minnesota (1982–1987); Gehry's Santa Monica House (1977–78); Fritz Burns Building, Loyola University Law School, Los Angeles (1978–82).



to turn a scuzzy warehouse into the spatially modulated Temporary Contemporary exhibition space (now the Geffen Contemporary) in 1982.

Honors and awards and ample press became a matter of course in the late 1980s when Gehry finished the complexly figured Schnabel House (1986–89) or the more explosively dynamic Vitra Museum (1987–89). Gehry, trying to capture movement in his architecture, had already begun to “fiddle with fish forms,” as he puts it. The fish became more abstracted and left its trace as a nongeometric shape in his succeeding projects. In the 1990s the colliding, exploding forms of metal cladding or stone of the Frederick R. Weisman Museum in Minneapolis (1990–93), the University of Toledo Center for the Visual Arts (1989), and the American Center in Paris (1988–94), all dynamically pointed the road to Bilbao.

Gehry's rational use of intuition

In many ways, Gehry has subverted the role model for the “creative” architect by not staying within the traditional patterns or expectations established by his illustrious predecessors. They came out of a Modernist age in which their architecture was based on a system of rational principles with construction, materials, and program determining interior spaces and the exterior envelope. “Gehry,” as Scully notes, is “figural” in contrast to someone like Kahn, who was a “constructor.” Architecture was codified in ways that could be transmitted to other architects. “This is not a judgment as to value,” says Eisenman, “but you can’t teach Bilbao to students. You could teach Le Corbusier because he was interested in typology, systems, and proportions. Corbu was aesthetic, didactic, and theoretical.”

Le Corbusier’s plans, sections, and elevations provided a syntax used by architects for years to come. When he made a radical break from that rational language with Notre-Dame-du-Haut at Ronchamp (1950–55), it caused some disquiet for the young, relatively unknown James Stirling. Stirling wrote about Ronchamp in 1956: “Remembering, however, that this is a product of Europe’s greatest architect, it is impor-

tant to consider whether this building should influence the course of modern architecture.” Stirling concluded that Ronchamp’s “sensational impact” would not last, since its emotional appeal took precedence over intellectual engagement. Ronchamp survived this critical attack. Gehry, in fact, claims that it is his favorite building.

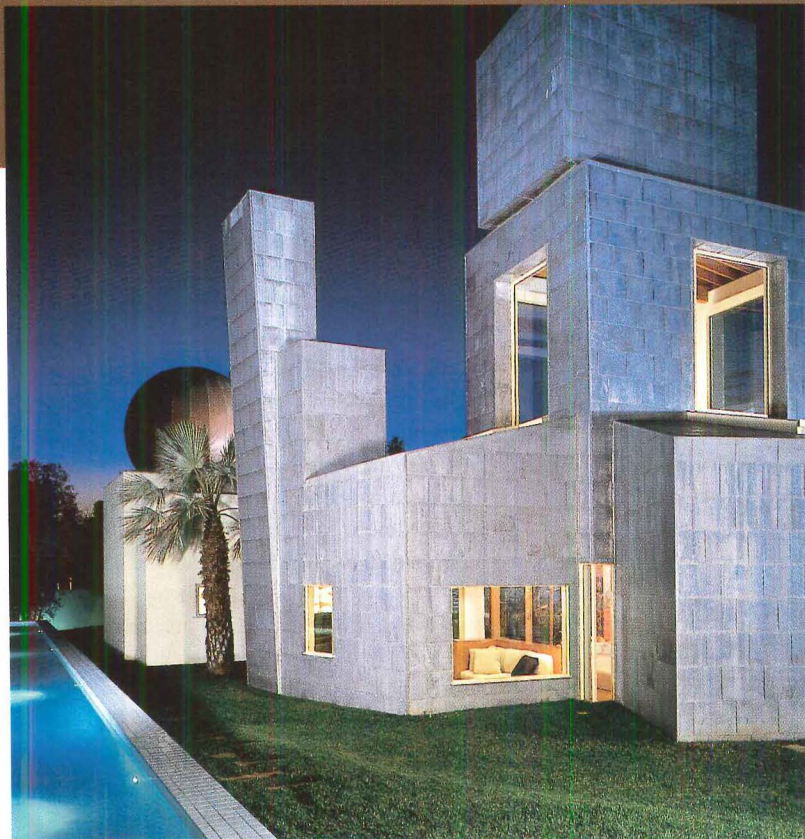
Like Ronchamp, Bilbao’s forms are expressionist rather than rational, and the structure is not explicitly revealed. Bilbao’s titanium-clad surface-as-form is attached to, but does not call out the lineaments of the frame. Here, structure follows form, not the other way around, and the frame is distorted to allow those shapes and continuous surfaces to happen.

While Gehry’s own design process appears intuitive, it is bolstered by advanced scientific resources. The computer technology used by his office for Bilbao subverts the notion he is a head-in-the-clouds sculptor. CATIA software, engineered by Dassault Systems, the French aerospace company, is an important computer-modeling building tool that Gehry began using with the fish form in the Vila Olimpica in Barcelona (1989–92). In Bilbao it enabled his artistically derived, manually rendered models to be quantified, digitized, and mapped as continuous surfaces. The data could be given to a contractor who, with another software program, BOCAD, would generate the brace-framed and secondary steel structures for the museum.

GEHRY'S WORKING METHOD BEGINS WITH FUNCTIONAL DECISIONS.

Those who have been associated with Gehry describe his design method beginning with functional decisions before the artist takes over. Michael Lehrer, a Los Angeles architect, teacher, and president of the Los Angeles chapter of the AIA who worked closely with Gehry in the early 1980s, observes: “Frank starts out by solving basic problems straightforwardly in the true Modernist manner. Then he begins to change the scheme and to incorporate the unknown into his method.” Part of the unknown relates to Gehry’s well-known absorption with contemporary art. His relationships and sometimes collaborations with artists Claes Oldenburg, Richard Serra, and Coosje Van Bruggen, among others, have

Right: Vitra Design Museum, Weil am Rhein, Germany (1987–89). Below: Schnabel House, Brentwood, California (1986–89). Far right: Center for Visual Arts, University of Toledo, Toledo, Ohio (1989).



been influential, as noted by Francesco Dal Co in *Frank O. Gehry*. The art idea is transformed in the process of being integrated with the architectural concept: It is not a matter of sticking windows and doors onto overblown sculptures.

A critical vs. nonverbal approach

The top creative architects of the century usually expounded systematic theories of design in rhetorical or polemical writing. Gehry feels no need to validate his work in this way. The contrast is all the more unusual in an era when theory, influenced by philosophy and literary criticism, has penetrated deeply into architectural consciousness. As Johnson puts it, “Gehry’s work is nonverbal, noncommunicable. That’s what art is about. I’ve always said “The word kills art.”

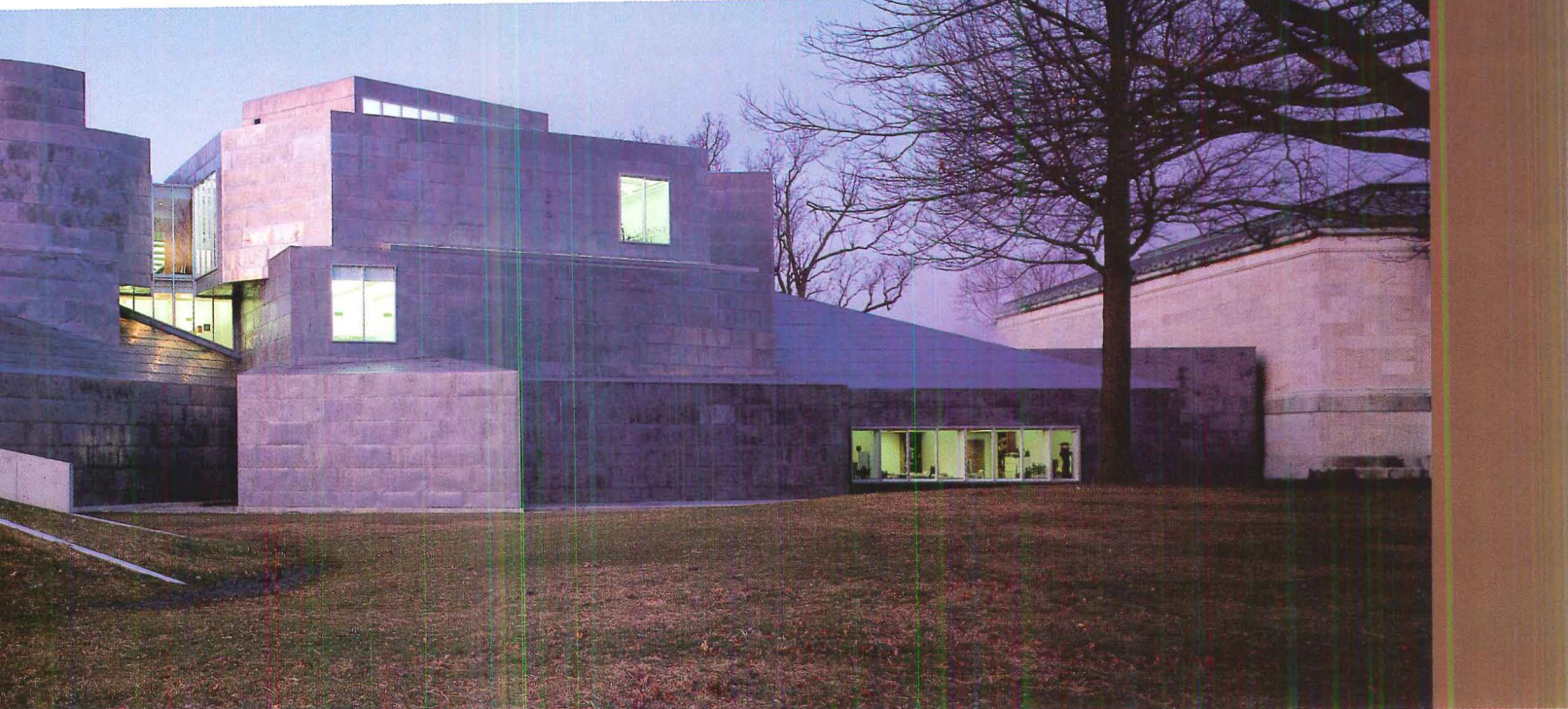
So, is Gehry’s hybrid of art and architecture critical, self-consciously questioning the language and traditions of architecture in a way that advances it? “Gehry’s Bilbao is singular and personal,” Eisenman says. On the other hand, Stirling’s Staatsgalerie in Stuttgart is a statement of

critical architecture in which “Stuttgart says something about the museum as a type, and something about context.” Gehry’s architecture is more like the films of Steven Spielberg, Eisenman contends: “Spielberg is able to zero in on the collective unconscious of the audience. He produces films of incredible art, but they are not necessarily critical. They are totally emotional experiences. Gehry also has that unerring aim.”

Spielberg comparisons aside, Gehry has brought the visceral and experiential element to architecture. And, like Spielberg, Gehry is known to watch finances and production. He has not been branded as a reckless artist-architect famous for leaky, over-budget, uncomfortable buildings. To be sure, the American Center in Paris did shut down, but the blame was placed on an insufficiently planned operating budget, rather than on cost overruns by the architect; and if the bids for Disney Concert Hall originally came in too high, the glitch was with the production drawings by an outside firm. If Bilbao’s titanium has been stained by the roof’s polyurethane, Gehry’s defense is also convincing. His buildings are made of Teflon, as far as complaints are concerned.

Gehry’s architecture never has been known for its high level of detail, something he has frequently admitted. The razzle-dazzle of his forms, however, increases with the precision of construction. With Bilbao, it does seem as if technique of construction was able to almost match the amazingly bold artistic concept. At least for now. Yet some visitors are complaining that the construction inside as well as outside Bilbao is not quite up to par. A “Bilbao Backlash” could be forming.

The Bilbao Effect, or the influence Bilbao’s success is having in encouraging more and more private and public clients to go after the big whammy, was much scrutinized in a conference titled “Urban Spectacle,” held in March at the Museum of Modern Art in New York City. Although Gehry was not one of the participants (among them Bernard Tschumi, AIA, Zaha Hadid, Daniel Libeskind, and Eisenman), his presence was palpable in the packed auditorium. The danger with a Bilbao, that is with an architecture that grips the public, Eisenman warned, is that architects won’t be sufficiently critical of the society for which they design. They risk becoming “part of the system of spectacle.” By this, Eisenman alludes to a fear that architects have with popular success. When the spectacle is



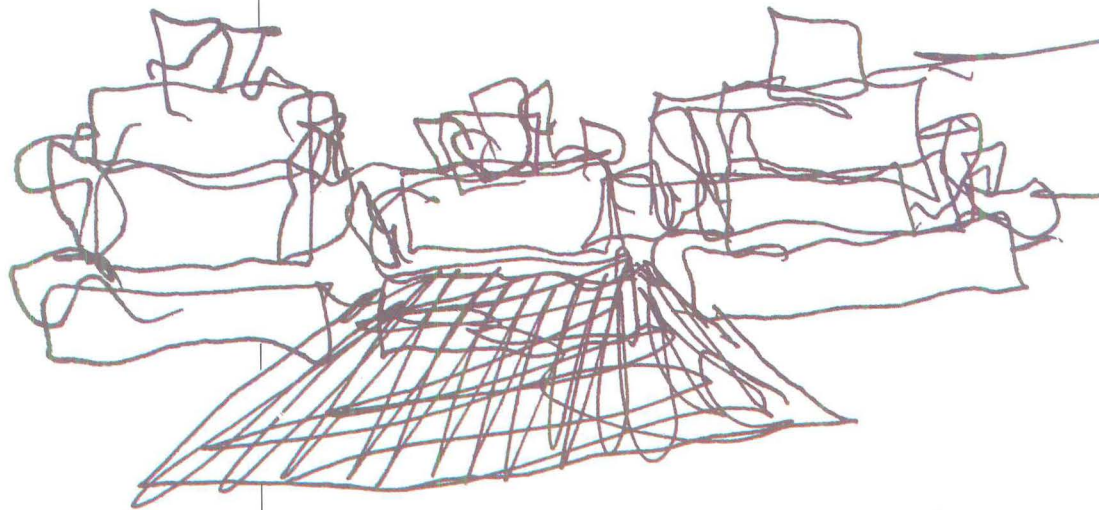
sought, the criteria for evaluating architecture shift: The adulation may not rely on thoughtful evaluation as much as it does thrill per square foot.

The question is, can an architect be consciously critical of his or her work, as well as create the “spectacular” work? Michelangelo was capable of both, argues Judith di Maio, an architect who teaches at Yale. His Sistine Chapel, she says, astonished the public with its vivid colors, its size and scale. “He challenged the conventions of painting a barrel-vault ceiling, reinterpreted the Biblical narrative, and transformed his style as he went along, thereby critiquing the style of the period and his own style at the same time,” Di Maio notes.

One could argue that Gehry is critical on a more restricted level of his own architectural history and language. While it is not the same architecturally referential critique that Stirling made with Stuttgart, the trajectory of Gehry’s work shows a transformation occurring every 5 to 10 years. During each period, he moves his architecture into a new area, enriching (and usually improving) it as he goes along.

Gehry himself now faces pressures to duplicate his success at Bilbao—with the same level of accomplishment. The Bilbao Effect has already affected Gehry’s clients, many of whom want that shiny, curvy stuff: Bilbao’s babies can be found among his current projects. Warren Schwartz, of Schwartz Silver in Boston, finds Bilbao successful because it engages in dialogue with the psyche of the Basque people and with the context of its culture and place. He fears other cities “may wrongly assume they can transpose the particularity of Bilbao and have it work elsewhere.”

The problem goes further: Bilbao’s success could generate too many frenzied efforts by lesser talents to come up with flashy sequels. Half-baked results of unquestioning, uncritical attempts by architects to imitate Bilbao would be disastrous for the significant gains to architecture made by Gehry. The Gehry example suggests that creativity still depends



more on feeling than on verbalized design principles and more on innate talent than on the acquisition of a design language. But only a few can squeeze into this exclusive category.

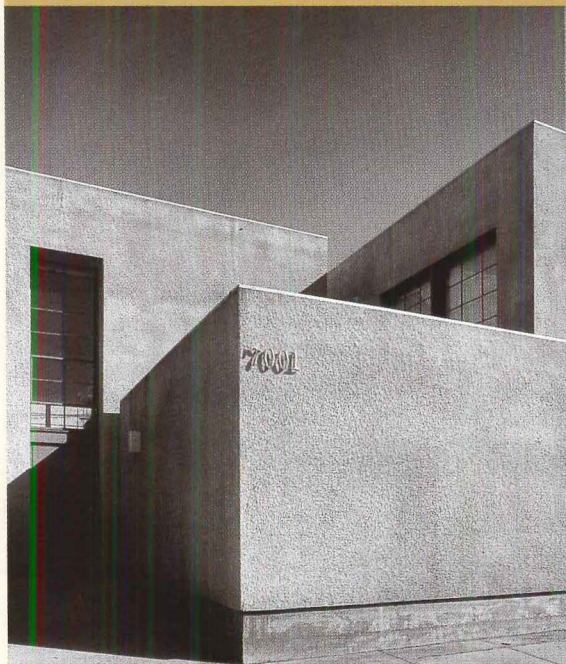
“If a creator becomes astonishingly successful by his own criteria,” states Howard Gardner, the Harvard psychologist who wrote *Creating Minds* (Basic Books), “he runs the risk of repeating himself. What typically happens is that the creator himself increases the challenge by veering off in a new direction.” This Gehry has managed to do before. “But,” warns Gardner, “the desire on the part of the artist to create and respond to new challenges does not always work.”

Be that as it may, Gehry’s achievements are nevertheless formidable. Unlike his predecessors, he has reaffirmed the possibility of the intuitive architect generating a major creative body of work in a day of increasingly technological and financial domination. Ten years ago Ada Louise Huxtable, a jury member for the Pritzker Prize, wondered if success with institutional clients would spoil Gehry’s “nonformulaic art.” A decade later Gehry’s architecture still emerged as fresh and as transformative as ever. Success hasn’t spoiled Gehry yet. And it’s too soon to tell if the spectacle will spoil architecture. ■

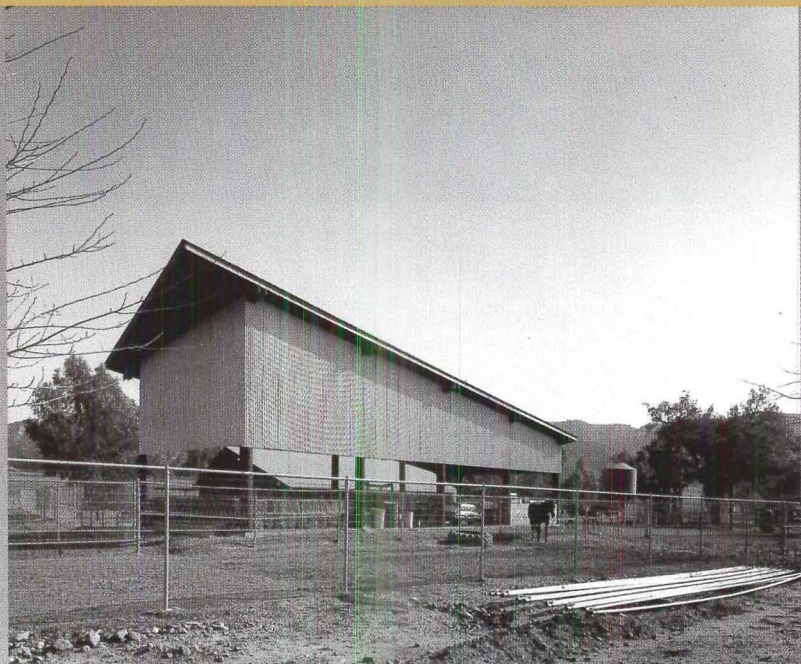
Frank Owen Gehry was born in Toronto, Ontario, in 1929. His family moved to California in 1947, and Gehry began to take night courses in art at Los Angeles City College. Eventually, he became a fulltime architecture student at the University of Southern California, graduating in 1954. After working for Victor Gruen Associates, Gehry served in the army and then entered the urban planning department of the Harvard

Graduate School of Design in 1956. In early 1957, he left Harvard without a degree, returning to Los Angeles, where he worked for Pereira and Luckman Architects, before joining Gruen again in 1957. In 1961 Gehry moved his family to Paris, where he took a job with André Remondet. In 1962 he went back to L.A. and began his own practice with Gregory Walsh. In 1967 Gehry formed his own office, Frank O. Gehry & Associates.

Late 1950s – Late 1960s



2



3

1. Steeves House
Brentwood, California
1958-59

2. Danziger House and Studio
Hollywood, California
1964-65

3. O'Neill Hay Barn
San Juan Capistrano, California
1968

PHOTOGRAPHY: © MARVIN RAND

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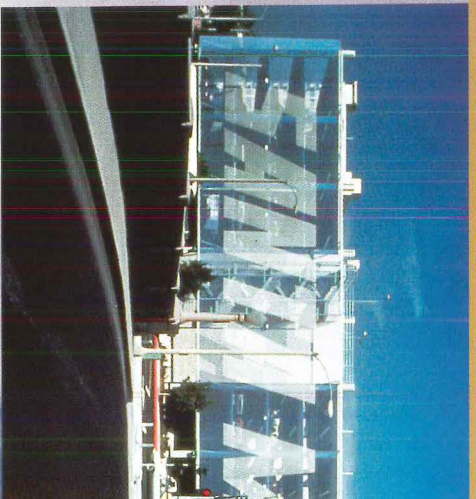
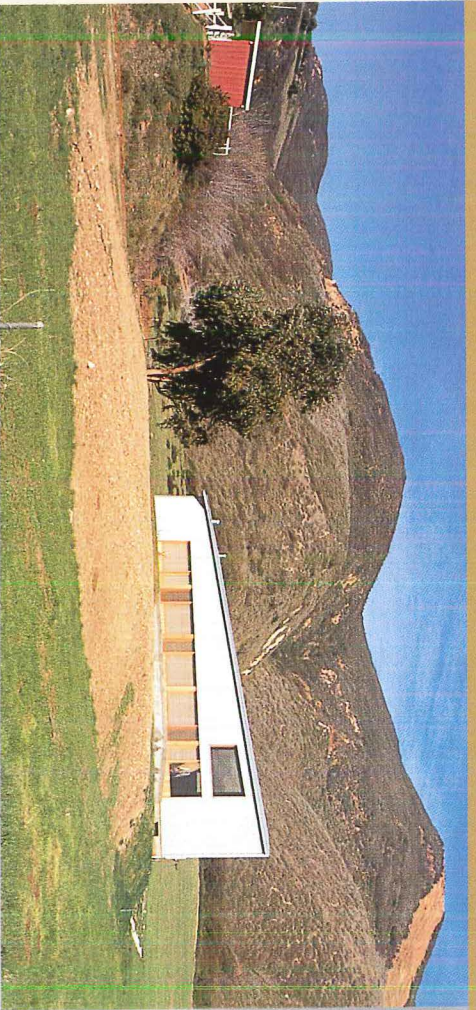


Trajectory through Time

SELECTED PROJECTS FROM THE WORK OF FRANK GEHRY OVER THE LAST 40 YEARS SHOW
HIS CONSTANT INVESTIGATION OF THE PLANAR AND VOLUMETRIC PROPERTIES OF ARCHITECTURAL FORM



The 1970s



4

PHOTOGRAPHY: © MARVIN RAND (4); TIM STREET-PORTER/ESTO (5 AND 7); JOSHUA WHITE (8); MICHAEL MORAN (9)





5

4. Ron Davis House and Studio
Malibu, California
1968-72

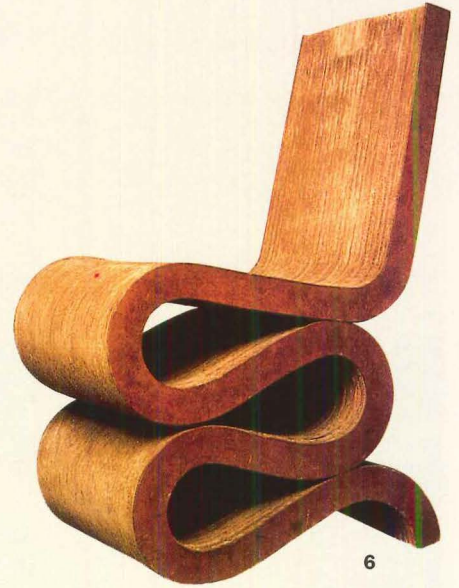
5. Santa Monica Place
Santa Monica, California
1972-80

6. Easy Edges cardboard furniture
1969-73

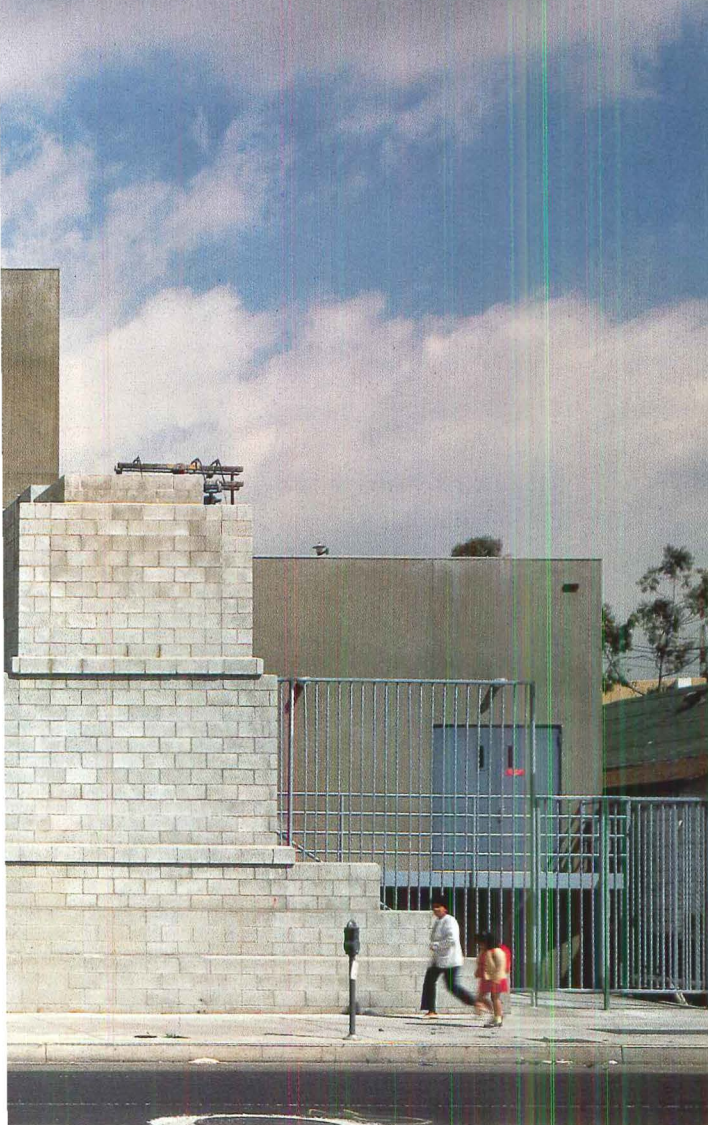
7. Frank Gehry House
Santa Monica, California
1977-78

8. Familian House (unbuilt)
Santa Monica, California
1978

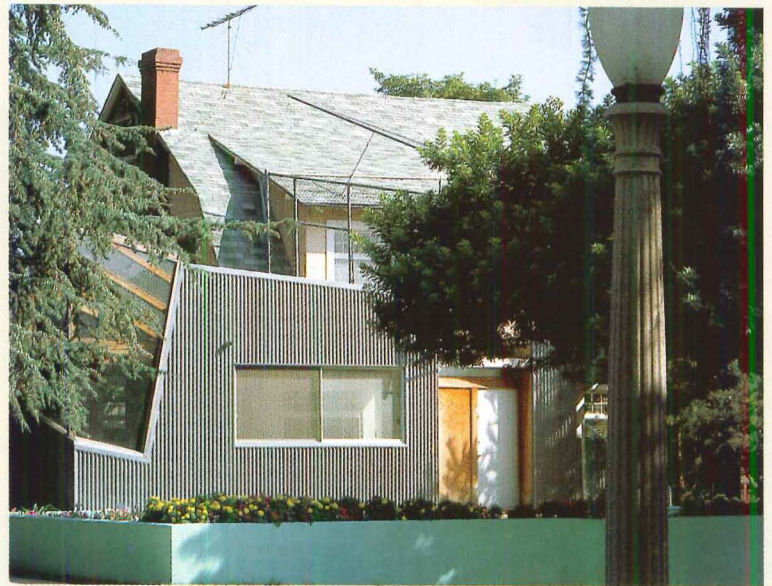
9. Loyola University Law School
Los Angeles, California
1978-91



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The 1980s



10. California Aerospace Museum and Theater
Los Angeles, California
1982-84

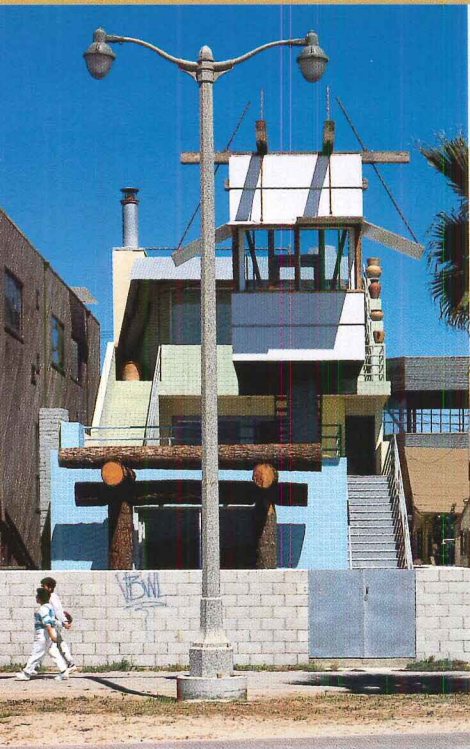
11. Norton House
Venice, California
1982-84

12. Information and Computer Science/Engineering Laboratory and Engineering Center
University of California, Irvine
1983-88

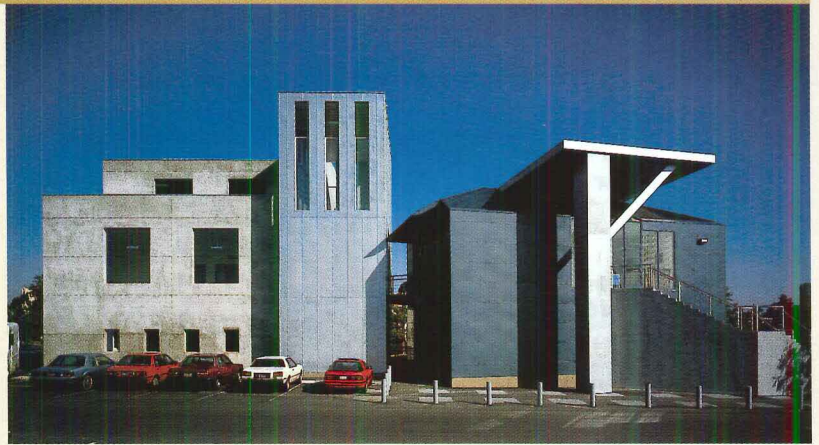
13. Schnabel House
Brentwood, California
1986-89

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Late 1980s – Early 1990s



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14. Chiat/Day Building
Venice, California
1985-91

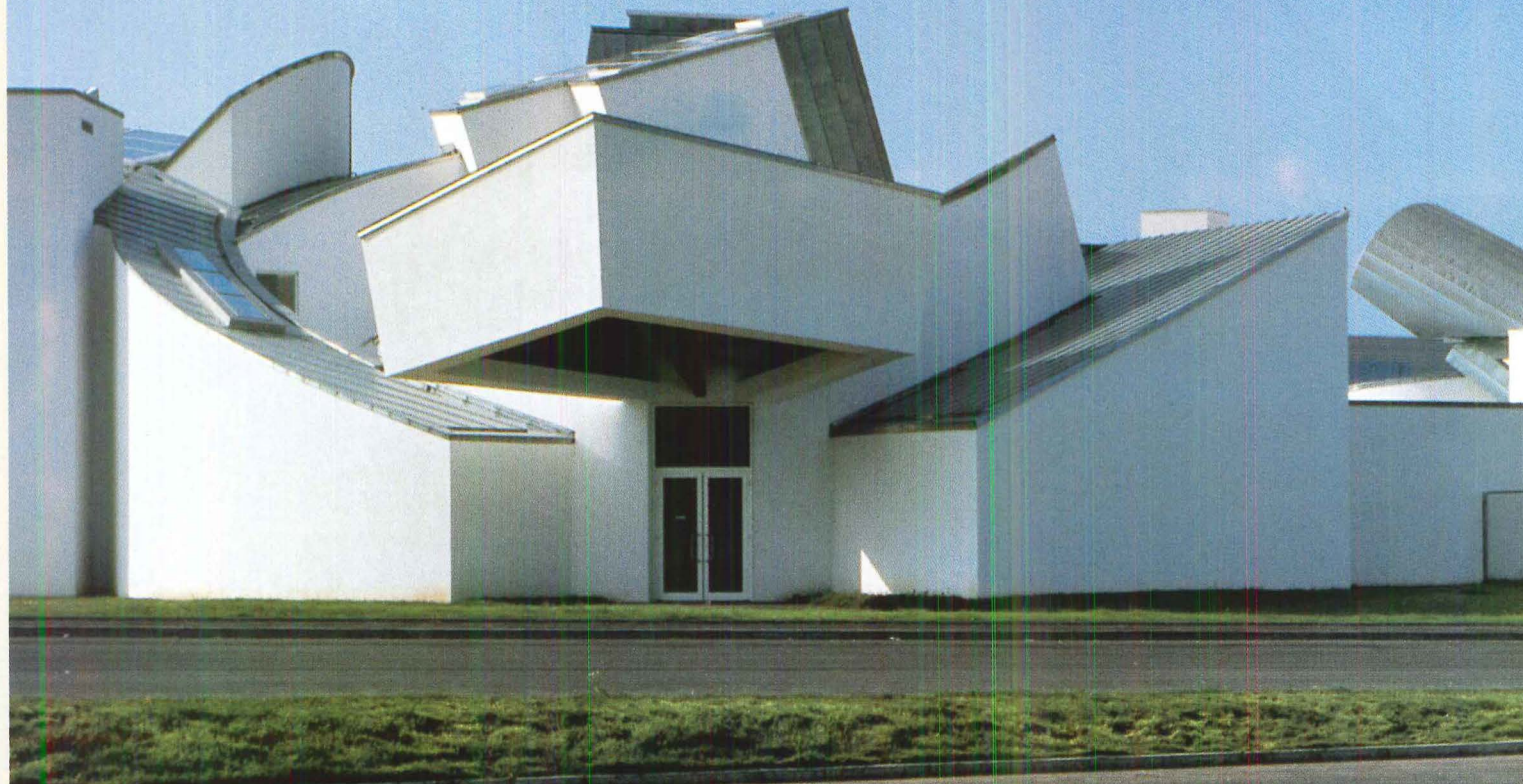


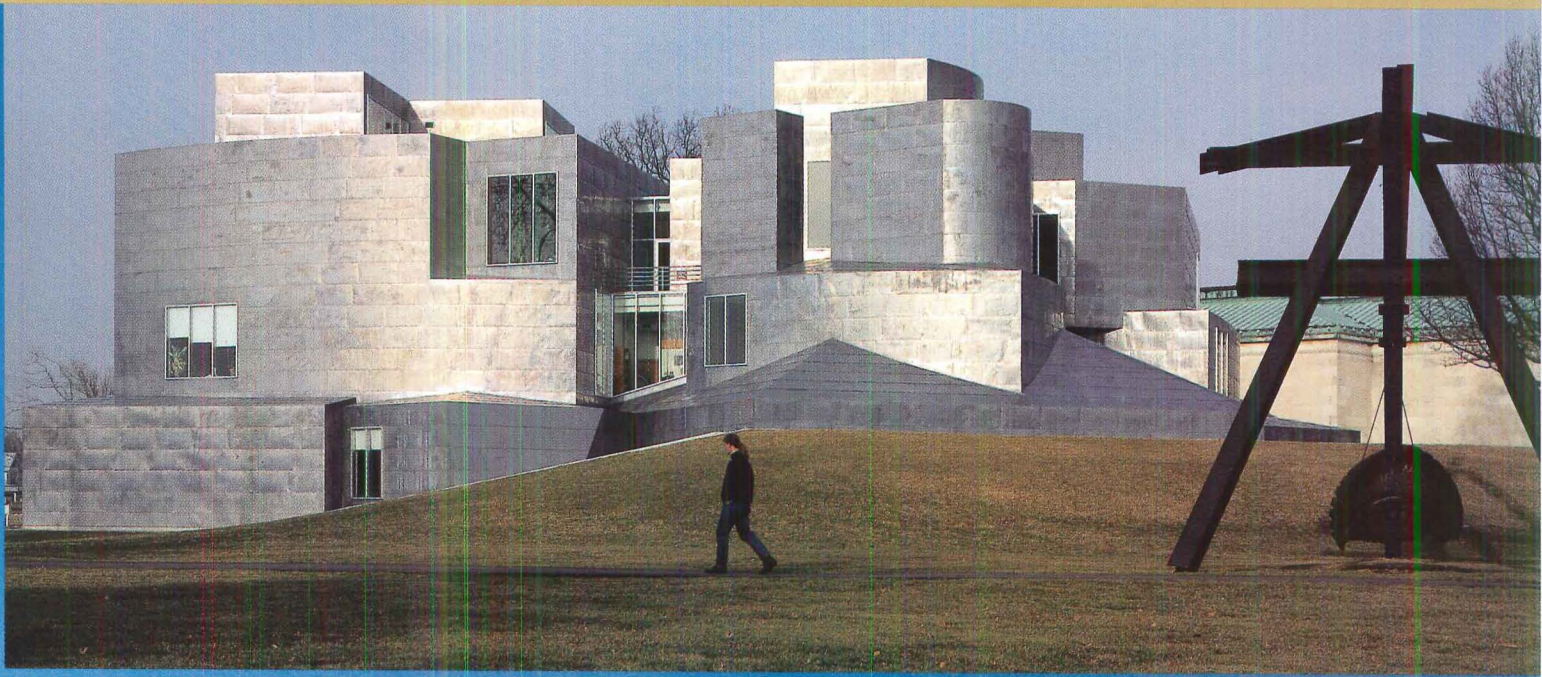
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15. American Center
Paris, France
1988-94

16. Center for the Visual Arts
University of Toledo
Toledo, Ohio
1989

17. Vitra International Furniture
Manufacturing Facility
and Design Museum
Weil am Rhein, Germany
1987-89

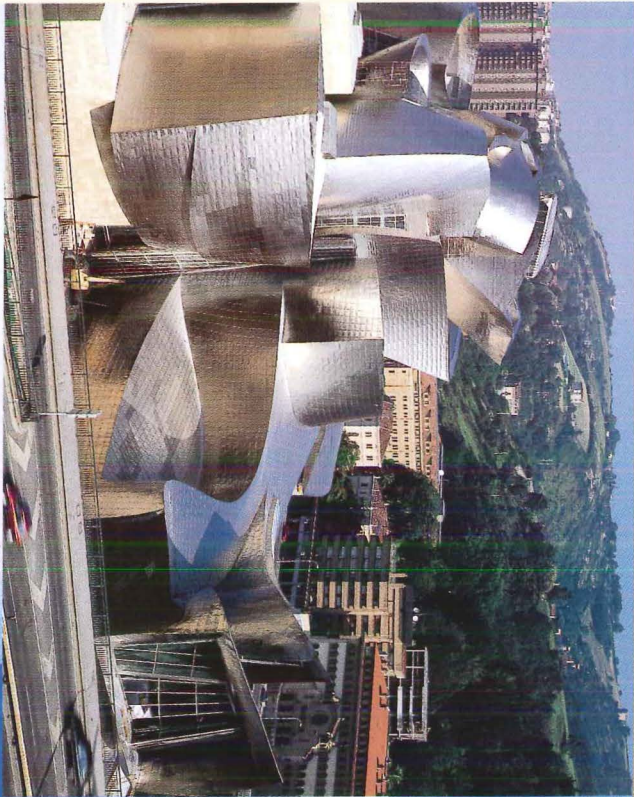




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The 1990s

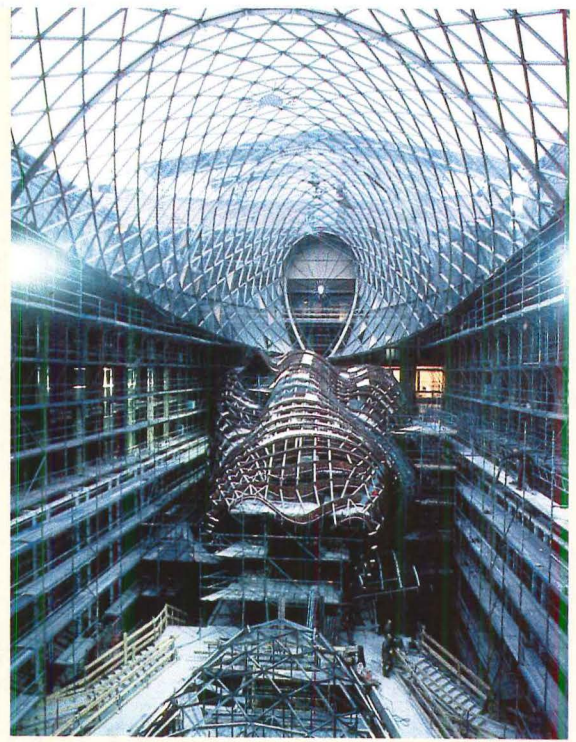


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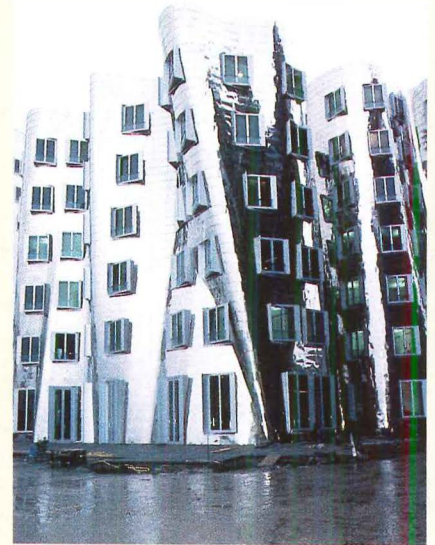




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17. Guggenheim Museum,
Bilbao, Spain
1991-97

18. Nationale-Nederlanden Building
(a.k.a. Fred and Ginger)
Prague, Czech Republic
1992-96

19. Pariser Platz 3
Berlin, Germany
1994-Present

20. Der Neue Zollhof
Dusseldorf, Germany
1994-Present

21. Frederick R. Weisman Art and
Teaching Museum
Minneapolis, Minnesota



The architect considers the Big Idea: Gehry superimposed on his own sketch of the Lewis House, (unbuilt, 1989–95).

Frank Gehry:

HIS PERSONAL VIEWS ON ARCHITECTURE,

Plain Talk

ART, AND PHILOSOPHY — A FREEWHEELING

with a Master

INTERVIEW WITH THE GOLD MEDALIST

by Robert Ivy, FAIA

In November 1998, architect Frank Gehry, FAIA, learned that he had received the AIA Gold Medal. He was in an expansive mood when he met *RECORD's* editor in chief, Robert Ivy, FAIA, shortly thereafter. The two conversed on two occasions in early December—first, during an evening session at Gehry's offices in Santa Monica, and subsequently over breakfast at his favorite delicatessen on Wilshire Boulevard. Their conversation, which spanned architecture, art, and Gehry's personal philosophy, follows.

ARCHITECTURAL RECORD: This must be an extraordinary moment for you. What sort of pressure does all the attention put on you and your office?

FRANK GEHRY: We all know that success is harder than failure. But I have a very stable practice here, and it has always been very well run. I don't think people realize that because it looks kind of hokey. But I never borrow money, and everybody here is paid, and everybody gets their Christmas bonuses. And it has been like that for years.

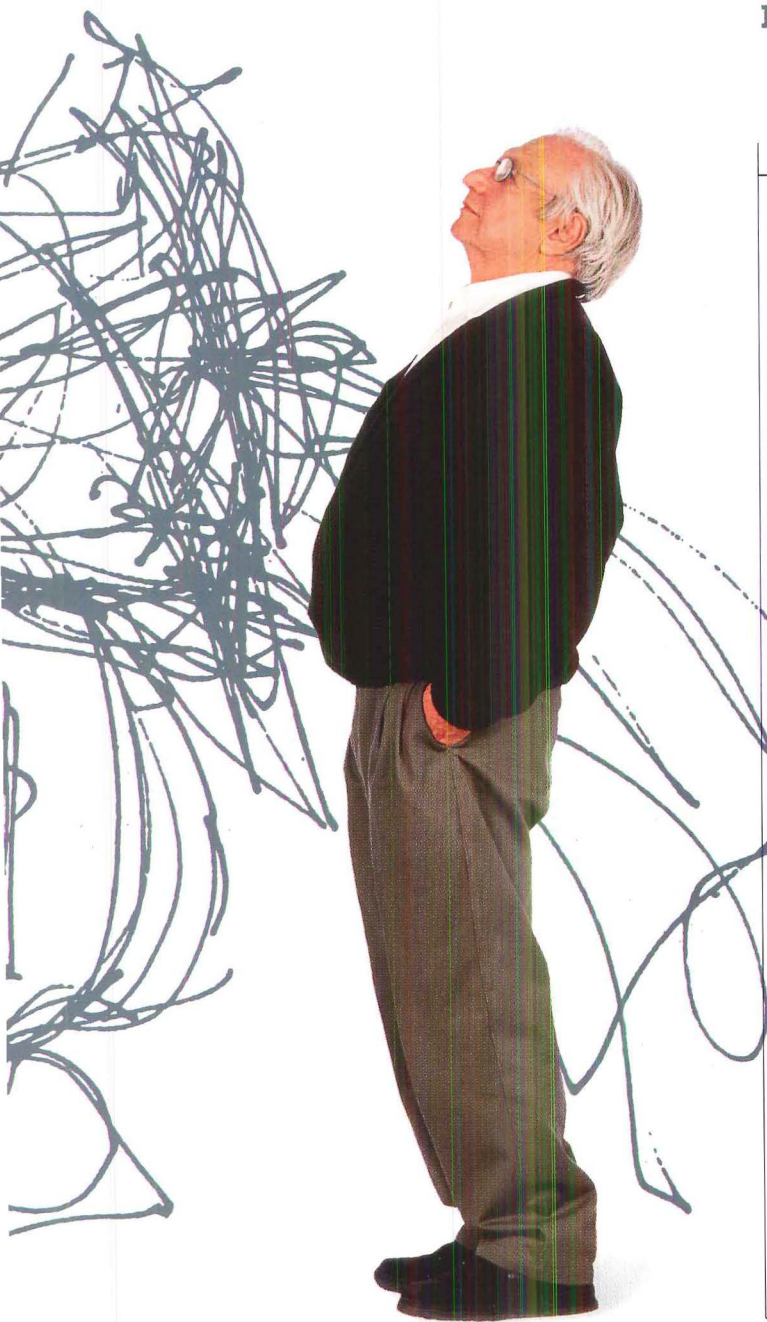
So it's not a hokey-pokey place. That stability is reassuring. My wife works with me and handles the checkbook, and that gives me comfort. And I have had a terrific team for the last 10 years.

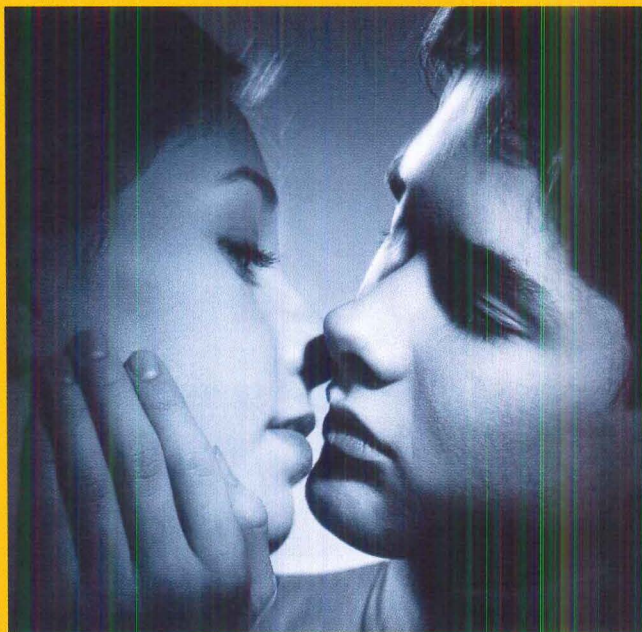
I have two partners, Jim Glymph and Randy Jefferson. Maybe you should talk to them too. I would have liked to get the AIA Firm Award, because it is really them working with me that has made this possible.

AR: So your firm is committed to more than high art?

FG: When the MIT facilities department went to Bilbao with me a few weeks ago in the pouring rain, they fully expected to find buckets on the floor. They didn't. And that is to Randy Jefferson's credit. I've got that kind of technical and financial comfort, and that gives me a lot of freedom to play. And I've got two extremely talented design guys, Edwin Chan and Craig Webb, who have been here for a long time. We shorthand each other a lot.

I work about the same amount as I always have. I go home every night at six and I don't work on Sundays. I take it easy. But I never go on





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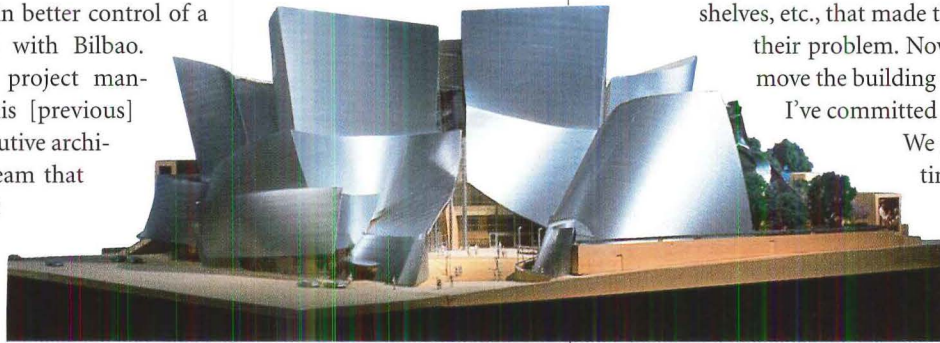
vacations. I'm very committed and involved. I probably travel too much.

AR: Your office is bustling and almost busting out of the building. How many employees are toiling on these two floors, and what are they doing?

FG: 120. We've started to do production in the last three or four years; that is why the numbers have gone up. Before that, you could run an office with this kind of load with 40 or 50 people. I think the production staff that we have is as good as anybody's in the country right now. They are really at the leading edge.

AR: When did you decide to do production? Did a specific job lead you into working drawings?

FG: It was to gain better control of a job. We started with Bilbao. Randy was the project manager. A lot of his [previous] work was as executive architect. He had a team that he wanted to put in, and he controlled the process. We don't always get to do it. But we find that we're much more efficient when we do.



Walt Disney Concert Hall, Los Angeles (1989–)

They are doing the production of Disney Hall now. You see the drawings that were done by the executive architect. Day and night. It gives us a better handle on cost control, and then we can sleep at night. The other way, if the building leaks, it is not your fault. But when you're high profile, if the building leaks, you don't have time to explain to them that there was an executive architect and they screwed up. You get blamed, so I realized that we had to be responsible anyway. I would rather take the responsibility myself.

AR: Tell me how you work. Where do you start with a project? Where does it come from? I've seen your gestural models on tables and boxes all over the studio.

FG: Sketches. They make a block model of the program and many models of the site. I work at two scales at once so that I don't get enamored of one, the 'object of desire,' I call it. It is seductive. When I was a kid I could draw pretty well, and I would get suckered by my own drawings—thinking I was doing something [great], and then you build it. . . Focusing on the real building while you're working is a trick, because you get lazy. Shifting scales forces you to [be careful]. It is a lazy man's way of being careful.

AR: Are the ideas all yours? Who provokes them?

FG: We work with the client a lot. I listen to the client a lot. A lot. I spend more time with clients than people could guess. That is the way we move forward and [how] they get what they want and feel comfortable about it. It lets them know you're listening to what their problems are. But it also creates opportunities for invention, because it is that interaction that makes the process exciting and rich. And I love the process most of all, the

people process—better than the final building, actually.

There are three projects of mine I've never been to see and people are pissed off. By the time the buildings were finished, the people I was working with weren't there. There was nobody to celebrate with, so I didn't go. And I like the buildings.

AR: You referred to the blocks in the outer studio. How do they figure into the way you work?

FG: See over there on the wall, those yellow blocks. [He points to the far wall in his studio.] Those are the blocks of Case Western University and those are offices. Each faculty group had a requirement for their offices and they were worried about where their desks would be. We made a design of an office right in scale with their furniture and bookshelves, etc., that made them understand that we understood their problem. Now, once you do that, if I deform and move the building and change things, at least they know I've committed myself to honoring those criteria.

We play in very neutral blocks for a long time until we get the organization on the site and the scale right. While we're doing that is when I do the sketches, because as soon as I understand the scale of the building and the relationship to the site



Interior model, Walt Disney Concert Hall

and the relationship to the client, I start doing sketches, those sketches. [He points to drawings pinned casually around the room.]

Those sketches give Edwin and Craig a sense of where I want to go, and they start making rough study models with some inkling of scale and architectural language; we go through that for what feels like months. I go back and forth.

That states the basic idea, and then we use the computer to calculate the area of metal and figure the exterior surface. We know cost-wise that we can only afford "X" as a certain amount. Then we modify the designs. We use that as a way to understand the cost. We get area counts and surface counts to an accuracy of seven decimal points—really clean.



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Vontz Center for Molecular Studies, University of Cincinnati, Ohio, (1993–99).

Very clear and very precise. [Some days] I say, God, the design looks good, but you've got to take 10 percent of this away. It is a matter of refining until we get it right.

AR: It seems that the world is focusing on those exterior forms, almost to the exclusion of the interiors.

FG: The shapes have to be clearly related to what is going on inside. That is another misconception about my work—that I just make shapes and there is no inside. I don't know how [people] see that or get that idea.

It looks like we're tearing up paper to make models, and I just roll up the paper and throw it all out. It is not like that. It is much more precise and careful. We work from the inside out, mostly.

AR: The perception might be that you work quickly, that the buildings collide into formal resolution. Do the final designs gel quickly?

FG: It takes a long time. It is like watching paint dry, and I will move things. Sometimes it goes too far and then we pull it back. That is why we have such a neat archive, because when we're in the heat of it, we'll record [changes] on a daily basis, because I know that I go too far and I want to go back and recall things, so we can rebuild.

AR: How active do you get once the things get out of the office?

FG: Once I've designed it and we've finished the development package, I'm pretty much out of it. During working drawings, they come to me with inevitable things you can't do, or technically, there is a problem, and we resolve it. I'm involved in those visual things. When construction starts I usually have to go for a ground breaking and they always make me give a lecture at the ground breaking—that's a given. I don't really visit the site much until the finishing, toward the last three or four months of construction when you have to deal with the things that went wrong and with the changes you couldn't control.

I go often during the finishing touches. I go to the opening, and then I go home. I try to leave them alone.

AR: Have computers changed the way you think? The CATIA program has become a signature of your office.

FG: I haven't used it as a design tool. I know the younger kids are all into it. The next generations will design with it, I'm positive. My problem with it is that the imagery on the computer takes the juice out of an idea; I can't stand it. You have a great idea and you're dreaming of this thing, then somebody builds a model or a drawing, and it looks like hell. Oh shit, you think, my idea is in that. You get that icky feeling.

You have to hold the image in your head while you're doing it, and I can't hold the image for longer than 3—I think I made 3.4 minutes. I clocked it. I can see that it is possible, but I don't know that I'm going to be the one that does it.

AR: What does technology do for you, then?

FG: You can demystify the shapes for the contractor and make them to within several decimal points of accuracy. The steel bids in Bilbao came in 18 percent under budget. Six bidders were 1 percent apart. On a building like that: How did they do it?

It's not me that is doing this. This is Jim Glymph and Randy Jefferson. It leads to a new way to practice, where the architect gains more control. I would say the architect becomes parental instead of childlike in the equation between the owner and the contractor. In our normal construction equation, the owner gravitates to the contractor as the person who is going to control the purse strings. I think the computer allows the architect to take that role, and that excites me.

Chiat Residence, Telluride, Colorado, (1996-)

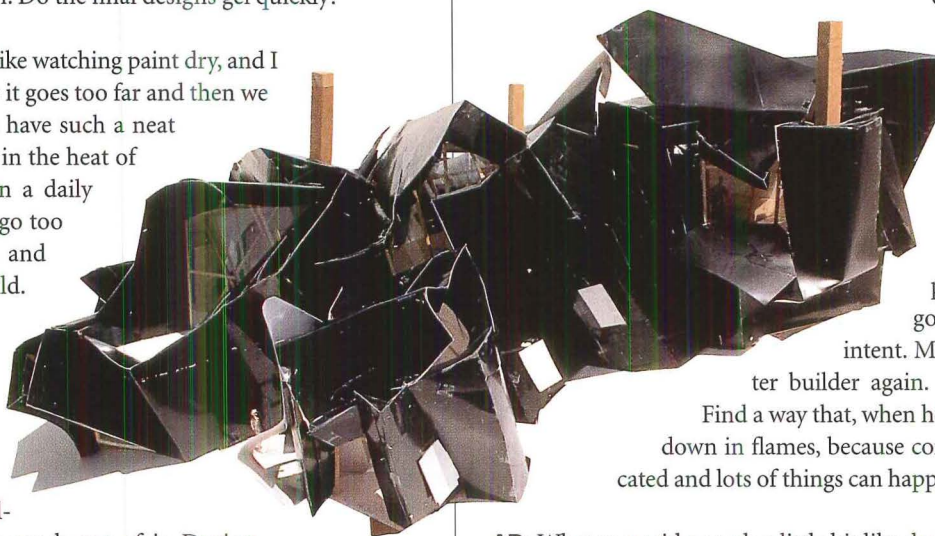
AR: The computer puts the architect back at the center of the equation?

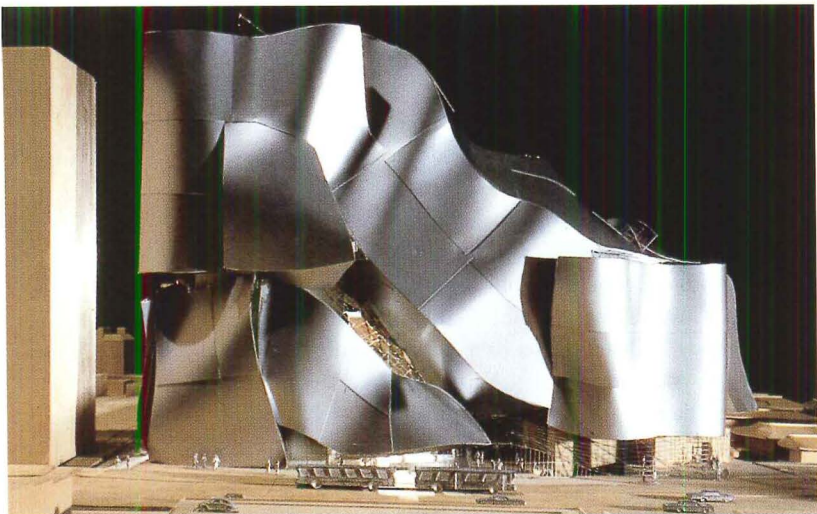
FG: I'm suggesting [putting the] centralized responsibility in the architect, because he's the only one that knows the whole picture and why it was done, the philosophy behind it, the goals of the owner, the intent. Make the architect the master builder again. But protect him as well.

Find a way that, when he goes down, he doesn't go down in flames, because construction is very complicated and lots of things can happen.

AR: What you said sounds a little bit like design-build.

FG: No, I don't want that. Design-build is dangerous. Design-construct is not the way to go. [Instead], give the contractor a more precise definition of what they are doing, so they are not at risk. We're doing shop drawings with the computer that are better than the shop drawings the contractor does. The computer is a tool that can change architectural practice.





Samsung Museum of Modern Art, Seoul, Korea (1995–)

AR: Any materials that you want to use that you're not using now? Your studio is like a lab. People are over there trying things.

FG: I saw a product that Jet Propulsion Labs made more than five years ago already. They won't market it or they won't talk about it. They sort of buried it. But it's a bubbly metal surface that is flexible that could make a continuous metal building with a beautiful texture.

AR: What other work would you consider innovative?

FG: Smart walls. We've done a lot of experimenting with the curtain wall [at MIT], and Bilbao is quite innovative. I didn't want the heavy structure on the outside. I said why don't we separate the structure from the frame and just support it at points, and we ended up with a system that came out of a design intent, but then they made it work.

We're experimenting now with glass for the Conde Nast building, and we are pushing the envelope. We are right at the edge. I think we're making it, but it's delicate because of the glass.

AR: Innovation like that requires nailed-down detailing.

FG: I work from the inside out. There is that quibbling stuff that says I detail wrong. I don't like the fussiness of it. I like the big picture. [Actually] I spend as much time on detail as Pei does, but I do it in a different way. It's just a different philosophy. It's my imperfection. That kind of detailing [by Pei and others] is about perfection and suggests people are perfect, and I don't believe we are. So we might as well quit being so goddamn pompous about it and live with the way life is.

AR: What do you say to the academic world right now, which is engrossed in theory, about all the conversation and lip-service required to make architecture?

FG: I teach at MIT because they don't do that. Since I'm not that kind of

intellect, it is easy for me to dismiss it. But my feeling is that there are a lot of different kinds of architects. There are a lot of different kinds of people. People do what they do best. And I love to read some of the stuff they write: I'm interested in philosophy, but I'm not a student of philosophy.

If anything, I've honed and spent time developing my visual intellect. I don't sit down and say, 'Okay I'm going to hone my visual intellect.' I spend a lot of time looking. Looking at the space between objects. I used to sit and just fantasize about cities. That is something you can do all day long. And I have a good visual memory.

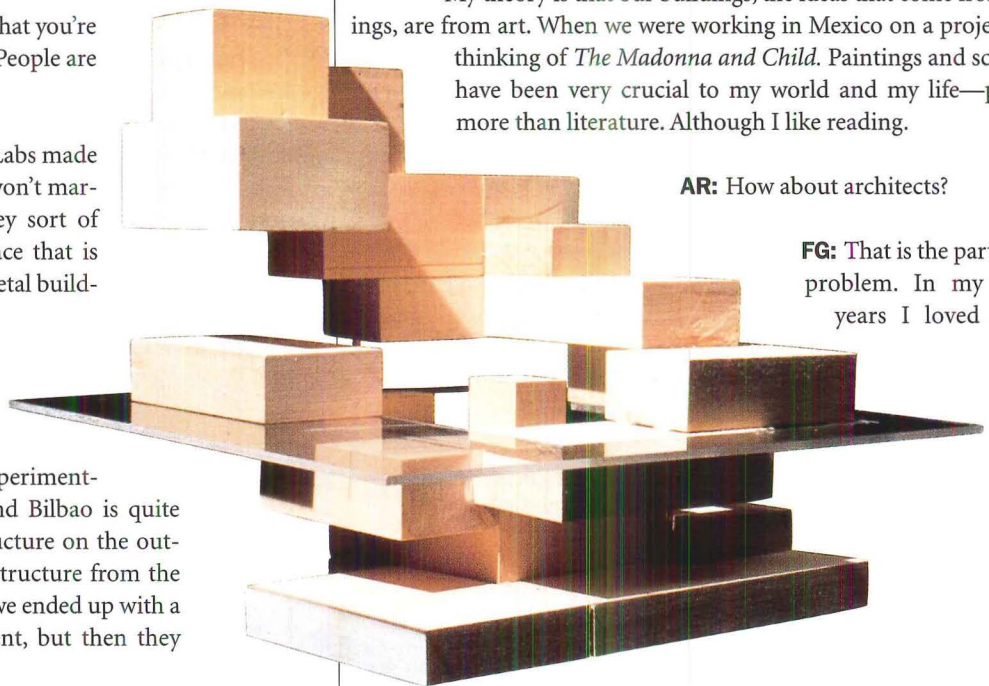
AR: You've been associated with painting and sculpture. Who do you like? Who has been most important to you as a painter?

FG: Rothko. And Jasper Johns. Of the Modern, I mean I look at everybody. Matisse. Picasso. Everybody. I have always loved stuff that I find in museums, and I would get excited. See *The Madonna and Child* [he points out a Bellini print].

My theory is that our buildings, the ideas that come from buildings, are from art. When we were working in Mexico on a project, I was thinking of *The Madonna and Child*. Paintings and sculptures have been very crucial to my world and my life—probably more than literature. Although I like reading.

AR: How about architects?

FG: That is the part that is a problem. In my student years I loved Harwell



Early study model, Samsung MOMA

Hamilton Harris and [Rudolf] Schindler. I went through a Frank Lloyd Wright thing. And I just flipped out for Le Corbusier. I think Le Corbusier was the greatest architect of the century.

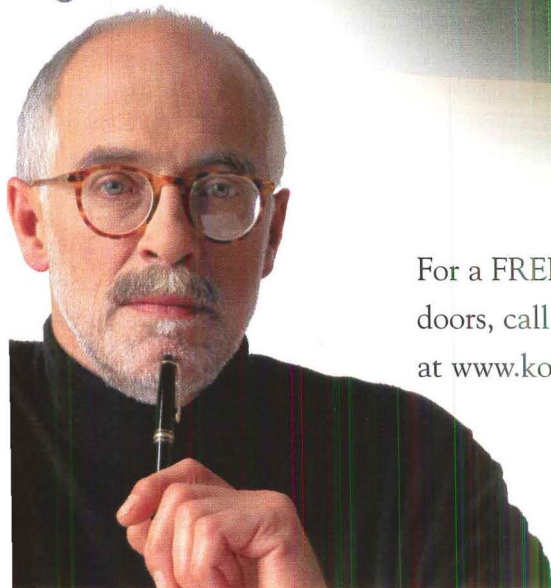
AR: You loved Ronchamps?

FG: Yeah. I went to Europe and lived and worked in Paris. On weekends, I would go driving everywhere I could. We didn't have a lot of money. I had two little girls at the time, and not the present wife. I flipped out for history. When I went to Chartres, there was a lot of denial about history. And when I got to France, when I got to Chartres, I practically cried at how beautiful it was.

AR: You weren't prepared to love the historic architecture?

FG: I was really angry with my professors. You go through that. I spent a lot of time studying Romanesque, French Romanesque. I went to all of

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them and just loved it because of the toughness of the sculpture. I came back and started practicing with no money. I got a job. A crummy little job that led to another little job. One of my first works was the Danziger House, the little Danziger House in Los Angeles. When I was walking around the structure, I would meet artists there. A lot of the artists—Kenny Price, Ed Moses, mostly Ed Moses—were on strike. I knew their work, and I was excited to meet them.

At the same time, the architecture community ragged me for those buildings. They were really nasty about it. They didn't think I was [serious]—I don't know why. They thought that using industrial windows in a real building was some kind of terrible thing to do. I wasn't welcome with them, and I couldn't talk to them. I found I could really talk with the artists. So I became more a part of their community.

I kind of like to hide out, too. I think of myself as an outsider. I felt at home with the artists and I learned a lot from them. I did some work for some of them. I ended up doing the Ron Davis studio. But I was intellectually intrigued with their process, their language, their attitudes, their ability to make things with their own hands. It wasn't this detached thing. It was hands-on and felt more comfortable. I became more and more detached from the architecture world, [though] I was doing architecture. More and more, the architects were treating me like Joe Idiot anyway. Very few people were very interested at the beginning.

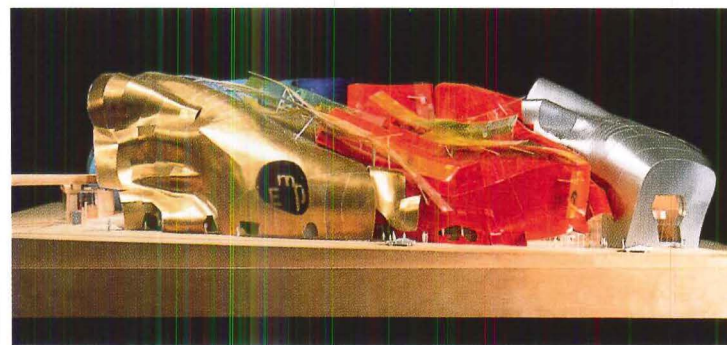
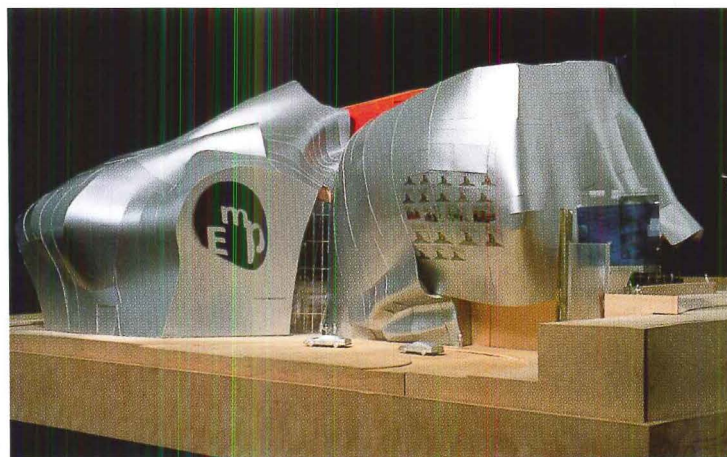
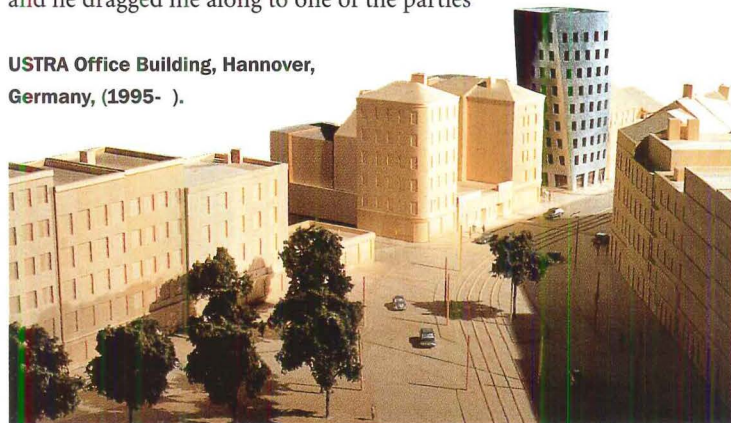
AR: Were you on the outside looking in to the real world of architecture in the early days?

FG: Tim Vreeland was teaching at UCLA and he created a thing called The Five Days of May [1974] where they had the Whites, the Silvers, and the Grays. They didn't include me in any of them. But they included people that were working for me, and I knew about it. And that was all right. I was doing Santa Monica Place and they saw me as this successful commercial architect [because of commercial work done with the Rouse Company]. They asked me to host a party for the architects, in a big loft. I thought, "That's pushy to ask—they didn't invite me to the party, but they invited me to host one."

I said, "Okay, I will"—I'm a gentleman. It was [to be] the same day as the urban design conference at Harvard, and I wasn't even planning to be [at the party]. I was just going to split. By some fluke, I went to UCLA in the morning and heard [Peter] Eisenman speak, and it clicked. He was doing his little houses at the time. Four, three, six, five—whatever. He talked about the joy he got in drawing. He explained the joy of drawing those drawings. And the tactile quality. He was talking like an artist. I connected with him. I was fascinated with him.

I went up and started talking to him, and he dragged me along to one of the parties

USTRA Office Building, Hannover, Germany, (1995-).



Experience Music Project, Seattle Center Campus, Seattle (1996-99)

that they were going to. By the end of the evening, I was into discussions with all of these guys. The next day came, and I didn't take the plane. I decided I would go to the party.

AR: The party has been extended into quite a worldwide event, but you are involved in significant local work, too. You're no longer the kid looking in the window. I'm thinking particularly about the Walt Disney Concert Hall in Los Angeles, a project that has stretched over a long period of time and spurred much controversy.

FG: Disney has been a 10-year haul, but it seems to be finally going in the right direction. We're finishing the working drawings. We redid the working drawings completely from scratch because the former executive architect was not capable of doing them. You couldn't build our building from his drawings. They were pigheaded. They wanted to do it in the way they always did it. And we kept telling them you can't do it that way.

Now, we have a set of drawings you can build from. They will be done at the end of January 1999. I took advantage of the two years to be self-critical, and while nobody wanted to change the design, there was a lot of pressure after Bilbao to use metal. In the beginning I had proposed the combination of metal and plaster. An expensive plaster. It is indigenous here. I was just laughed out of the place 10 years ago about that.

I came into the office one day and I said, "Okay, let's pretend we're going to do it over again." We did a week-long charrette; it was exhilarating to make the project new again. It changed the whole psychology of the office, the attitude of everybody—even the client. Everybody was reinvigorated and happy. We just went with it; we just started to go. I think most of the people who see it [think], like Philip [Johnson] yesterday said, "God, it's so much better."

(continued on page 356)



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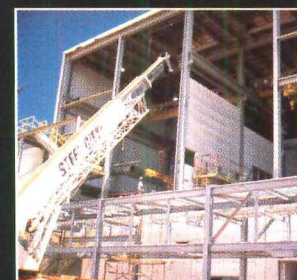
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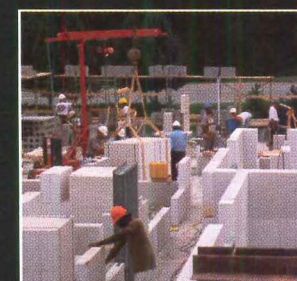
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On the main facade, a bay of horizontal metal louvers above the stone base screens the upper two stories of windows.



The intimate, localized design of the **MAHON COURTHOUSE** on Minorca reflects its Mediterranean island setting.



by David Cohn

intuitive process of interaction with the site, the program, and the issues at hand. In the Mahon Courthouse, his design draws on the island's rich history and special character and reflects the intimate scale of public life in a small provincial capital. Minorca is one-fifth the size of its closest neighbor, Mallorca; it measures only 30 miles long and 10 miles wide and has a winter population of 67,000. First settled around 5000 B.C. by a Bronze Age culture that scattered the island with megalithic monuments, it was later occupied by Romans, Arabs, and the British, all of whom left their mark.

Mahon is still largely a British town, with Georgian townhouse facades that, in the translation from London brick to Mediterranean stucco, reveal their origins in the engravings of Serlio and Palladio. But a short walk into the countryside reveals a remarkably different landscape. Thousands of years of cultivation have produced a complex melding of natural topography and human settlement. The low hills and wind-torn brush have been molded by rubble-walled embankments, ramps, and walls into protected, sunken fields and dry upper terraces—occupied by houses with high narrow profiles—connected by a scattering of raised paths and roads.

The traditional character of this landscape is being erased by graded streets and apartment blocks, which are appearing at the fast-growing edge of town near the new courthouse. But this will be counteracted somewhat by the future park that will face the courthouse, preserving a zone of existing walled gardens and fields behind older houses.

Navarro's design offers a bridge between Minorca's new construction and its undeveloped past, while molding distinctly local identity through his crisp, abstract forms. The tall, white profile of the building, with its simple rectangular massing and paucity of openings, could be likened to that of a wind-battered farmhouse. Its first floor and grounds are wrapped in a rubble stone base and freestanding stone

The Barcelona Olympics and Seville Universal Exhibition of 1992 offered the world a glimpse of the rich panorama of contemporary Spanish architecture. The talented professionals introduced at the events were expected to equip Spain's young democracy with a modern public infrastructure and give form to its fresh, optimistic spirit. This architectural flourishing continues today in a range of public projects throughout the country, from convention centers, concert halls, museums, and libraries to plazas, parks, hospitals, university campuses, subsidized housing, and complex urban developments.

The small courthouse in Mahon, capital of the Mediterranean island of Minorca, is just one outstanding example of Spain's ongoing regeneration. It was designed by Juan Navarro Baldeweg, at the invitation of the Ministry of Justice and the local city government, as the centerpiece of a new park sited on the city's growing outskirts. Navarro, who turns 60 this year, is one of Spain's most respected architects; he is best known for the 1992 Congress Center in Salamanca, where he suspended a spectacular floating dome over the auditorium. A less well-known contemporary of Rafael Moneo, he is finally gaining recognition in the U.S. and Europe: His Scheide Music Library at Princeton University was opened in 1997, and he has taught at Harvard, Princeton, Yale and the University of Pennsylvania.

Like Moneo's, Navarro's approach to each architectural problem has little direct reference to his previous work, relying instead on a more

David Cohn is an international correspondent for ARCHITECTURAL RECORD and lives in Madrid, Spain.

Project: Mahon Courthouse, Minorca, Spain

Client: Ministry of Justice, Madrid

Architect: Juan Navarro Baldeweg, *Arquitecto*—Juan Navarro Baldeweg, project architect; Veronica Scortecchi, Pau Soler Serratos, Andrea Lupberger, associates

Technical architect: Eduardo González Velayos

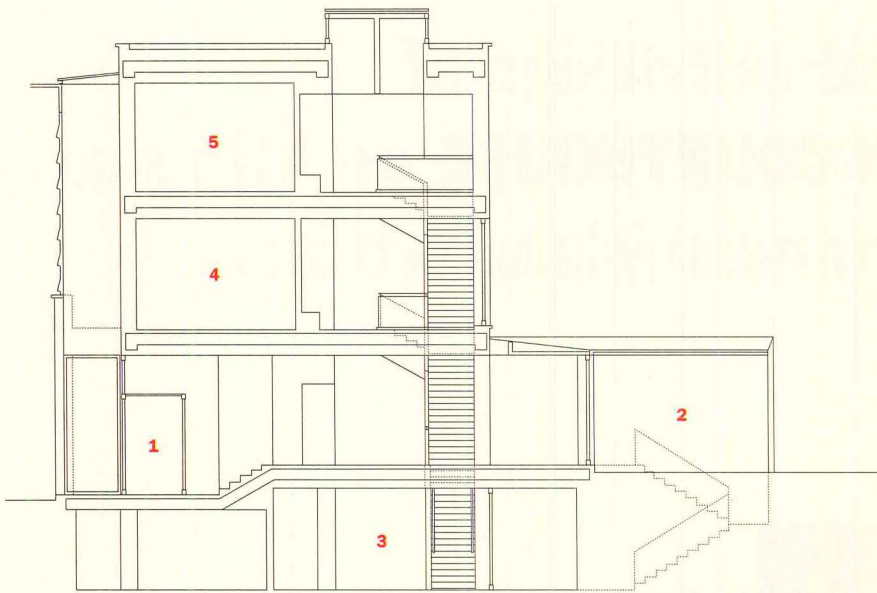
Site supervision: Juan Navarro Baldeweg and Veronica Scortecchi

Structural engineer: Juan de la Torre

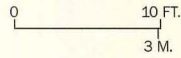
Mechanical engineers: ARGU, S.A.

Contractors: Cubiertas and MZOV

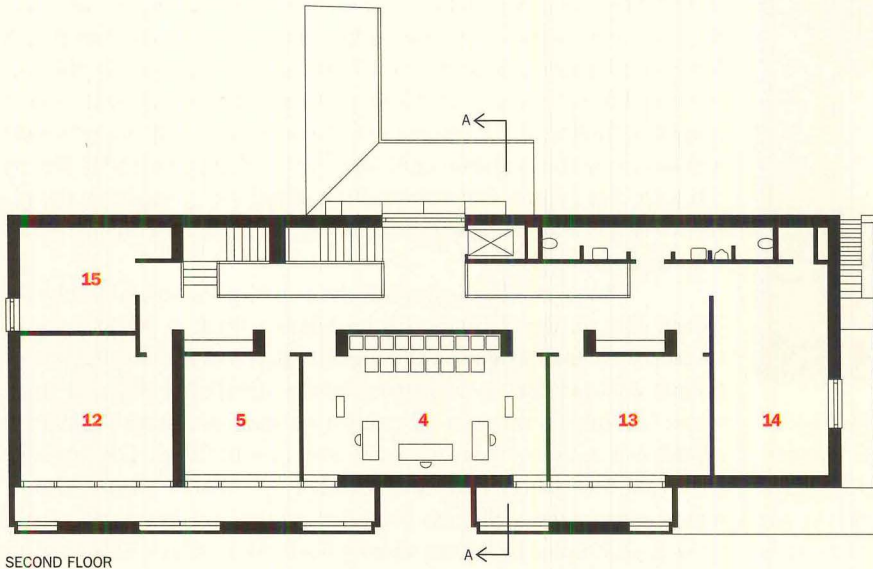
Size: 16,800 square feet.



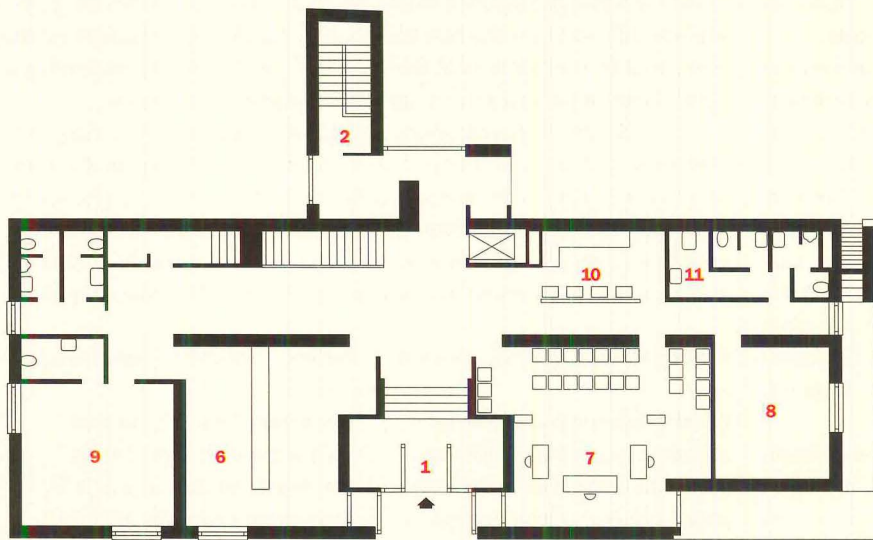
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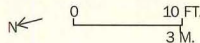
1. Main entrance
2. Rear stairs
3. Lobby near holding pens
4. Hearings chamber
5. Offices
6. Civil registry
7. Hearings and weddings chamber
8. Attorneys' offices
9. Forensics office
10. Witness room
11. Handicapped restroom
12. District attorney's office
13. Penal office
14. Civil office
15. Staff office



SECOND FLOOR



FIRST FLOOR



The building's white profile has a simple rectangular massing and paucity of openings. The first floor and grounds are wrapped in a rubble stone base and freestanding stone walls, an allusion to the countryside. Inside, three floors of hearing rooms and offices are aligned behind the main facade, while a three-story circulation and waiting area occupies the eastern end.





walls in a clear reference to the countryside. The stone veneer is slightly tapered in profile, as revealed at window openings and corners, discreetly suggesting the forms of stone talaiots, or mounds left behind by Bronze Age inhabitants.

Navarro compares the design to a house enlarged in scale to civic proportions, an appropriate image for a town where everyone seems to know each other. The main western facade overlooking the

THE DESIGN IS COMPARED TO A HOUSE ENLARGED IN SCALE TO CIVIC PROPORTIONS—AN APPROPRIATE IMAGE

park is arranged like an oversize two-story house front, and a bay of wide horizontal metal louvers over the stone base projects from the facade, screening the upper two stories of windows behind it. The metal louvers are cut in the middle by the vertical indent of the main entrance, which produces a gap in the bay from its projecting metal cornice to the ground. Navarro explains that this mask, with its exaggerated openings, helps distinguish the courthouse from an ordinary small office building, denoting its character as a setting for solemn public acts. In a way, according to the architect, the strategy echoes the traditional treatment of public buildings as civic palaces in Spain and other European countries, though in the more immaterial terms of the light metal louvers and voids.

Inside, three floors of hearing rooms and offices are aligned behind the main facade. They open to a three-story circulation hall and

waiting area, which is bathed in indirect sunlight that cascades from rooftop clerestories to the lower floors. Judges, lawyers, staff, and the public interact and greet one another on the stairs and may also pause to chat in wide wood doorway recesses or along the bronze and glass railings of the galleries.

Vertical circulation and service spaces line the opposite, eastern side of the circulation hall in a narrow band, while the basement contains two holding pens and a suspect lineup room, with separate access via a sloping driveway for police vehicles. The presence of daylight is a constant surprise as one moves through the building. In the ground-floor courtroom, which is often used for civil weddings, the tribune is lighted indirectly from lateral windows cut out of the sides of the facade's projecting bay. On the top floor, windowless to the exterior on three sides, an unexpected walled patio at one end opens to the sky to admit light to a corner room. The stainless-steel doors of the main entry are soberly framed in planes of milk-colored glass. Even the prisoner holding pens in the basement can be flooded with light.

While Rafael Moneo's architecture often addresses the physicality of building materials and construction, Navarro, who is also a well-known painter, works from a more visually based and less tangible concept of form and perception. He is interested in "what lies between things," he says, in the working and interpersonal relationships that a work of architecture joins and influences. "The building as an object has no value in itself," Navarro says. "Architecture must attend to what is born from architecture. It must aspire to a certain degree of invisibility, because the ultimate destiny of this object is to be dissolved into a larger whole." ■

A three-story circulation hall and waiting area is bathed in indirect daylight that cascades from rooftop clerestories to the lower floors.



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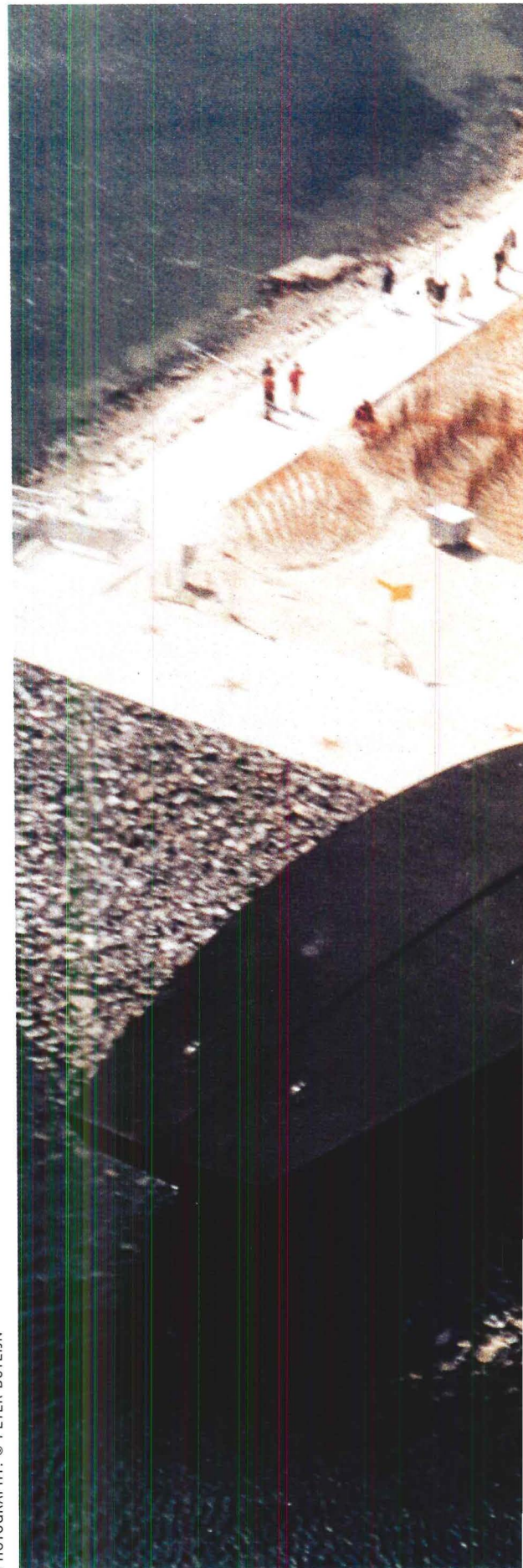
by Tracy Metz

Water has always been the Netherlands' most intimate enemy. If it were not for all the dikes, dams, polders, and pumps that the Dutch throughout the centuries have designed and installed, the western half of this delta—most of which is below sea level—would simply wash away. As the saying goes: God created the world and the Dutch created Holland.

Two futuristic water pavilions on Holland's southwestern coast, one devoted to salt water by Kas Oosterhuis of Oosterhuis Associates, the other to fresh water by Lars Spuybroek of NOX Architects, are the newest expressions of Holland's close relationship with water. And much of the pavilions' significance lies in their location.

In 1953 a flood in the southwestern province of Zeeland resulted in 1,800 deaths and tremendous damage. The Delta Project—a series of 11 dams, sluices, locks, and storm barriers sealing off the estuaries between the ports of Rotterdam and Antwerp—was undertaken to prevent a recurrence.

Work on the Delta Project was conducted from a man-made island called Neeltje Jans, where salt and fresh water mingle. To portray the natural water cycle in an abstract, not didactic fashion, the Dutch government commissioned the two young architecture firms to each design one portion of the linked pavilions on the island. The resulting cutting-edge architecture can be seen as a celebration of the engineering that made this place possible. ■



PHOTOGRAPHY: © PETER BUTEIJN



The two linked water pavilions, one a pod-like shape, the other a twisting metallic structure, sit on the edge of the island of Neeltje Jans (left).

Visitors enter the parametric-like ensemble at the rear through the freshwater pavilion and leave in a side door of the saltwater portion.

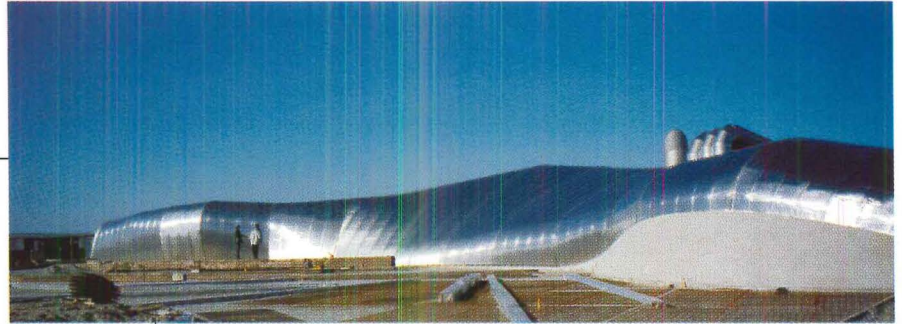


THE FRESHWATER PAVILION BY NOX ARCHITECTS COMPLETES THE WATER DISPLAY WITH A SHIMMERING AND TWISTING METAL-SKINNED BODY.

The man-made dunes surrounding the Freshwater pavilion at the Delta Project, on the southwest coast of the Netherlands, are covered by chicken wire in an attempt to anchor them against the merciless wind. The FreshH2O eXPO pavilion, made of hundreds of steel ribs covered in shiny rubber-insulated, waffle-patterned stainless-steel sheeting, seems to have risen to the surface like a buried artifact gradually revealed as the sand blew away. Designed by NOX Architects and attached to the Saltwater Pavilion by Kas Oosterhuis, it is beached on the man-made island of Neeltje Jans, in the middle of the storm barrier across the Eastern Scheldt. It is NOX's first executed building, whose principal Lars Spuybroek, 39, is part of the increasingly visible Dutch wave of computer-obsessed architects. Both water pavilions are conceived as fluid three-dimensional computer-driven concepts, and in the final built result no two cross sections are alike.

The 213-foot-long FreshH2O eXPO pavilion passes through a series of 14 deformations as its shape is transformed from a vertical ellipse to a horizontal one, where it meets its saltwater counterpart. There is no one vantage point from which to view the building, for every spot yields a different perspective: It has a skin, but no facade. NOX has taken leave of the traditional Euclidian geometry of points and lines, in favor of "blob" tectonics.

You enter the narrowest part of the pavilion through a small door (the vertical ellipse) and find yourself standing in a nose cone with the texture and temperature of ice. A second entrance leads you past the ticket window. From here you see the main space curving away in a blue mist past undulating floors and walls. An inflatable ventilation system contained in a series of awkwardly joined sections follows the curve, while



a backbone supporting cables, lights, and projectors winds its way above the spectators' heads. This breathing, heaving space helps you understand what Jonah must have seen inside his whale.

FreshH2O eXPO is not informative or entertaining in the usual sense. In an attempt to give visitors the feeling that they are getting their money's worth, the client has projected facts and figures on the floor and walls. But the effect is rather forlorn. A large stylized crater on the left symbolizes a well, or as Spuybroek puts it, "a vertical horizon." The well was to contain 120,000 liters of water into which a single drop would fall, and you could see under the water's surface the path and the deformation of the drop as it travelled. Problems with corrosion, however, have plagued the well, which is now under repair. Next to the well is a rain "bowl," in which you can watch cloud formations appear and change.

Project: *Fresh H2O eXPO (Fresh Water Pavilion), Neeltje Jans Island, Zeeland, the Netherlands*

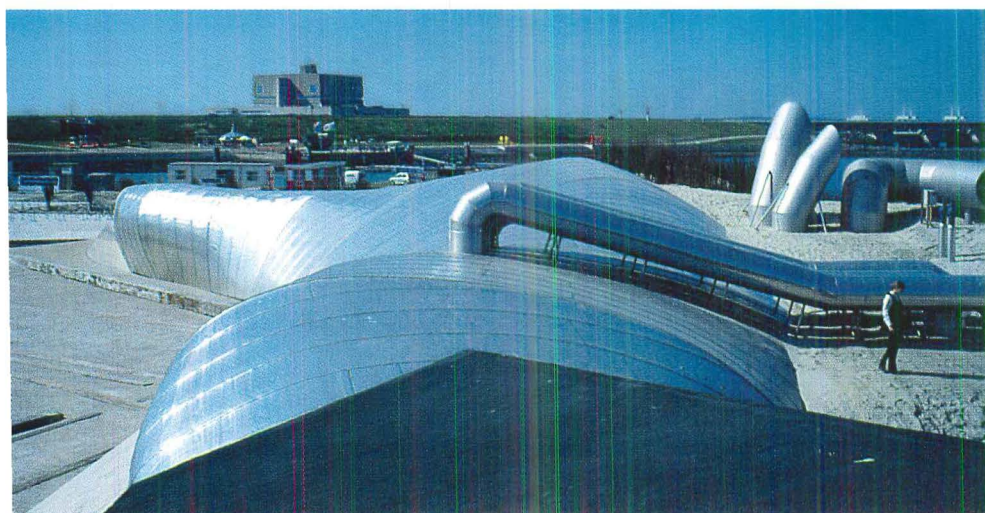
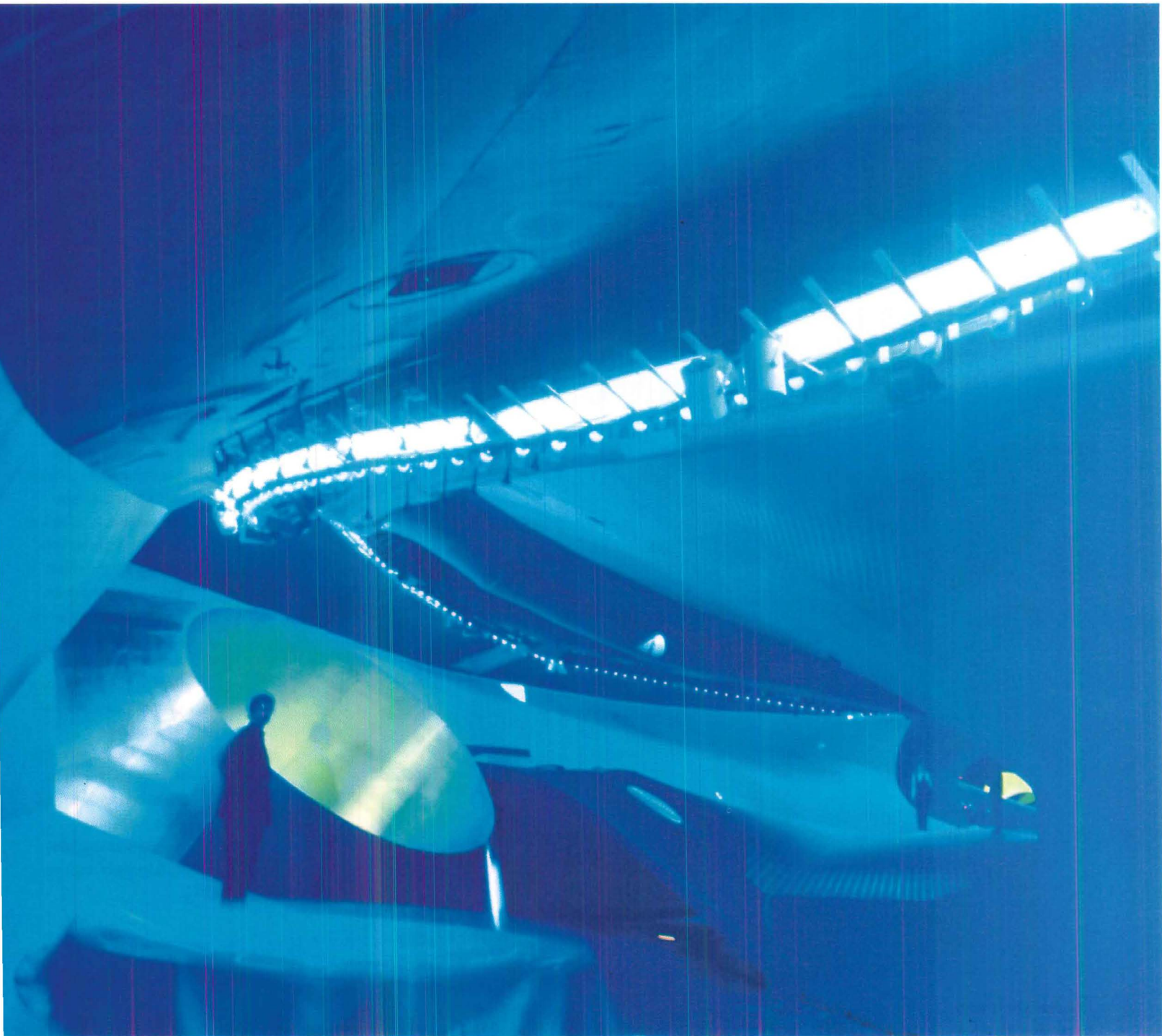
Owner: *Delta Expo "Waterland" and Dutch Ministry of Transport, Public Works and Water Management*

Architect: *NOX Architects; Lars Spuybroek, principal; Joan Almekinders, Maurice Nio, Pieter Heymans,*

William Veerbeek, project team

Consultants: *HNS (landscape); Edwin van der Heide, Victor Wentinck (sound); Bert Bongers (sensors); Ingenieursbureau Zonneveld (building); euroGenie-Lauren van Manen, Matthijs van Manen, Floris van Manen (light programming); Instituut Calibre-Walther Roelen, Jo Mantelers, Daniel Dekkers*

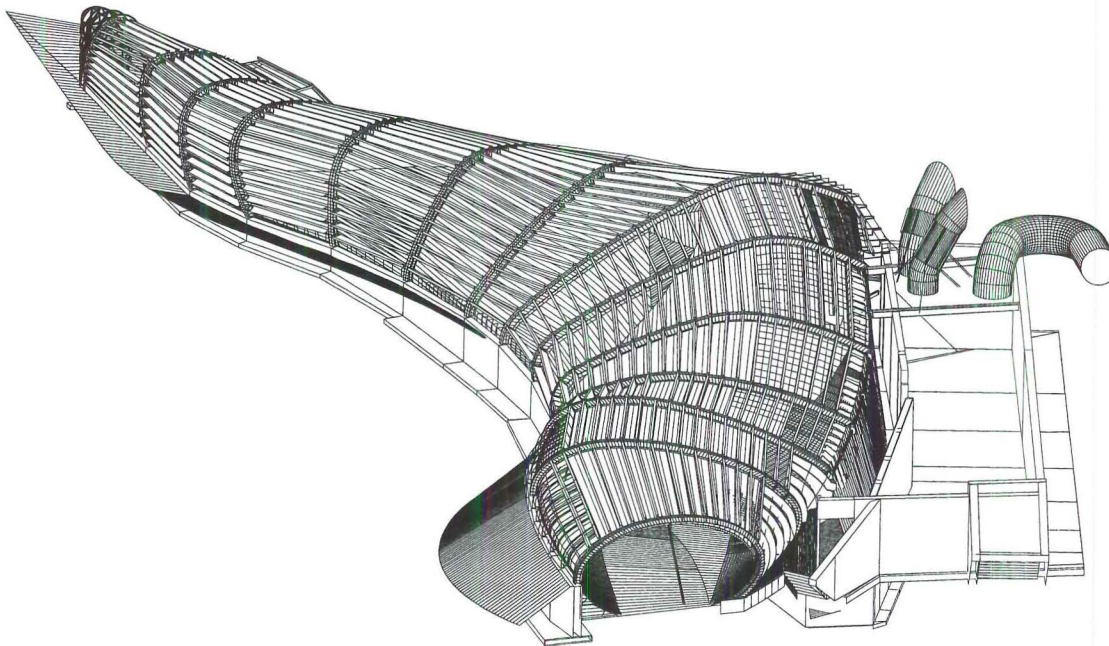




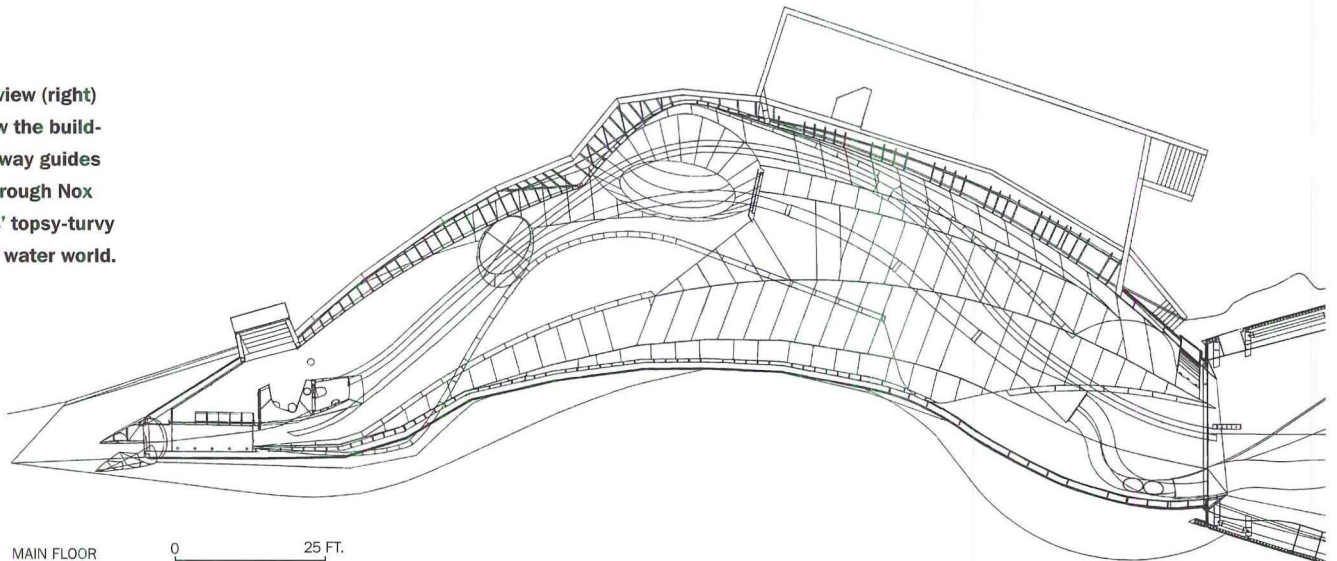
The shiny amoeboid exterior of the pavilion (bottom) is a clue to the fluid nature of the multimedia display, inside (above). Water, sound, light, and free-form shapes create an environment that can shift depending on wind, dunes, and water.



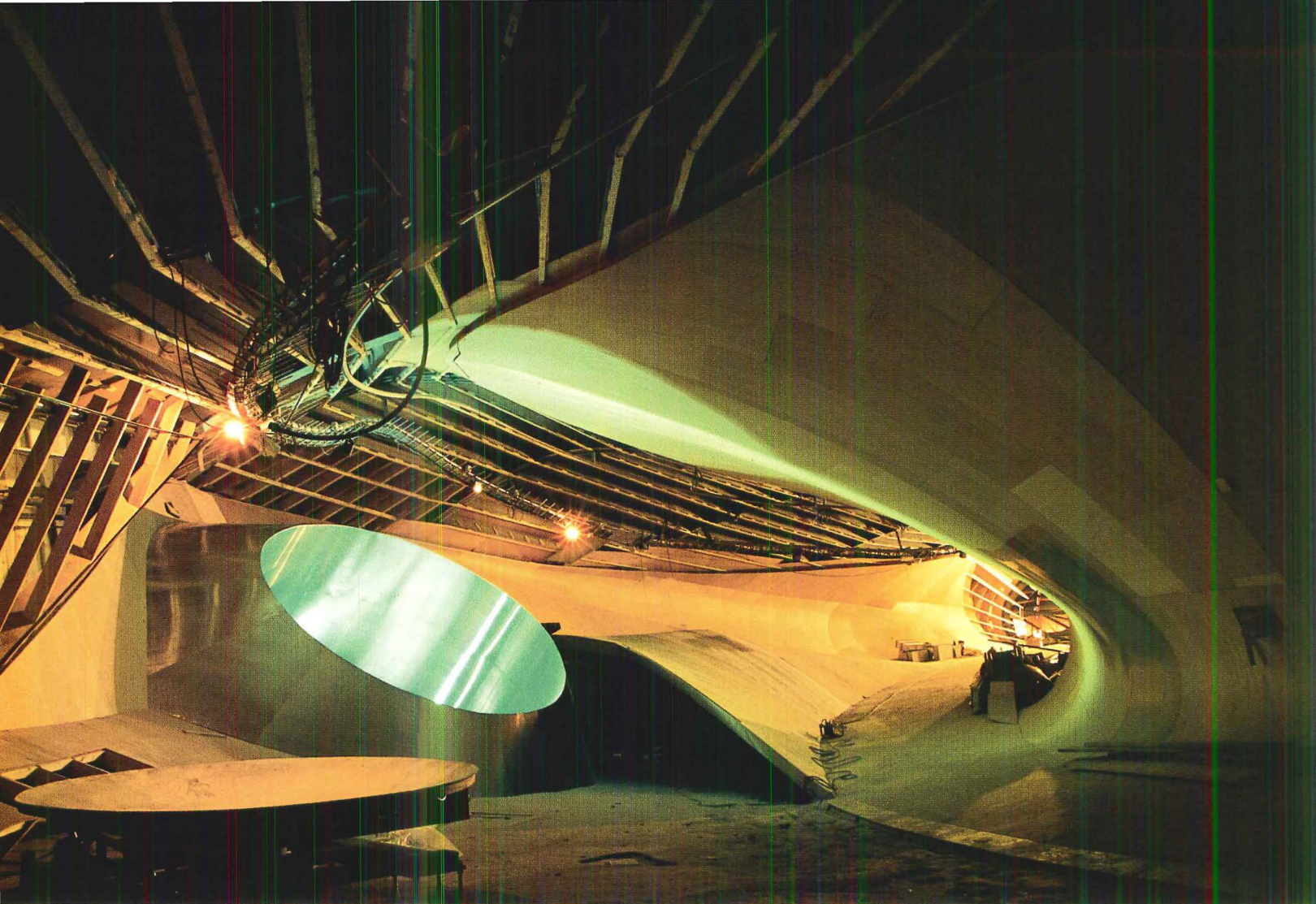
In designing the multi-media Freshwater Pavilion, Nox Architects created a series of structural ellipses of variable sections made of steel (left). The 213-foot-long object is joined by 14 lateral seams and clad in a light metal skin. Inside, sounds, computerized sensors, and a longitudinal backbone of blue lights snaking through the pavilion keep visitors on their toes—and fingers. The light projection of a wireframe grid on the floor (opposite) changes shape with visitors' movements.



This plan view (right) shows how the building's walkway guides visitors through Nox Architects' topsy-turvy version of water world.



MAIN FLOOR 0 25 FT. 8 M.



Along the route you can activate computer displays by touching or standing on 17 different sensors. Spuybroek wants his architecture not merely to house interactive displays, but also to be interactive: Rather than just strolling through a building, you *feel* your way through. As you go, you manipulate the sensors, causing the pavilion to react. One of the most interesting computerized components is a grid projected on the floor, like a wireframe, that ripples and contorts as your feet move.

If the visitors' behavior influences the building, the building's behavior, in turn, influences the visitors. As Spuybroek says, "Here your whole orientation, your sense of the horizontal and the vertical, is upended. You are continually having to rediscover your sense of balance." In the Freshwater Pavilion there is, of course, a surface that you walk on, but what we usually call the "floor" forms one continuous surface with the walls, creating what Spuybroek calls "abstract geometric movement." The building itself is static, but the elasticity of the interior is intended to influence, even to destabilize one's perception of the architecture, so that the borderline between body and building softens and fades.

In Spuybroek's thinking the complexity of a design like this gives the architect, perhaps unexpectedly, more control of the building process. "The contractor can't depend on his usual routine, so we have to work much more closely with him than usual." Nor was it easy to convince the contractor that the concrete floor could be poured the way the architect wanted it. But it turned out to be cheap and easy: The computer plotted out the shape of the sand mold on the spot; the machine followed

the contours, and the concrete—a drier mixture than usual—stayed put.

Spuybroek enjoys the controversy his ideas and architecture generate, but he also points out that "In the design of ships, planes and cars, the use of this kind of complex geometry and three-dimensional design process is quite common." Unfortunately, the execution is considerably less sleek than in transportation design: The electronic concept

"THE BORDERLINE BETWEEN BODY AND BUILDING SOFTENS AND FADES."

loses quite a bit of its elegance in the translation into wood, steel, and concrete. That, in turn, is detrimental to the intended effortless flowing sensation that the building is supposed to impart, in which both the subject and the object are in a continuously reciprocal relationship.

Given the fluid, anti-right-angle shape of this building, you might be tempted to call it organic. The architect disagrees. He calls his work liquid. "If you look at designs in nature, you see that they are strictly symmetrical. Buildings like these move back and forth between the motorized and the sensory, from the crystalline to the fluid. We draw less and calculate more—and the result is increasingly autonomous and unpredictable." ■

Sources

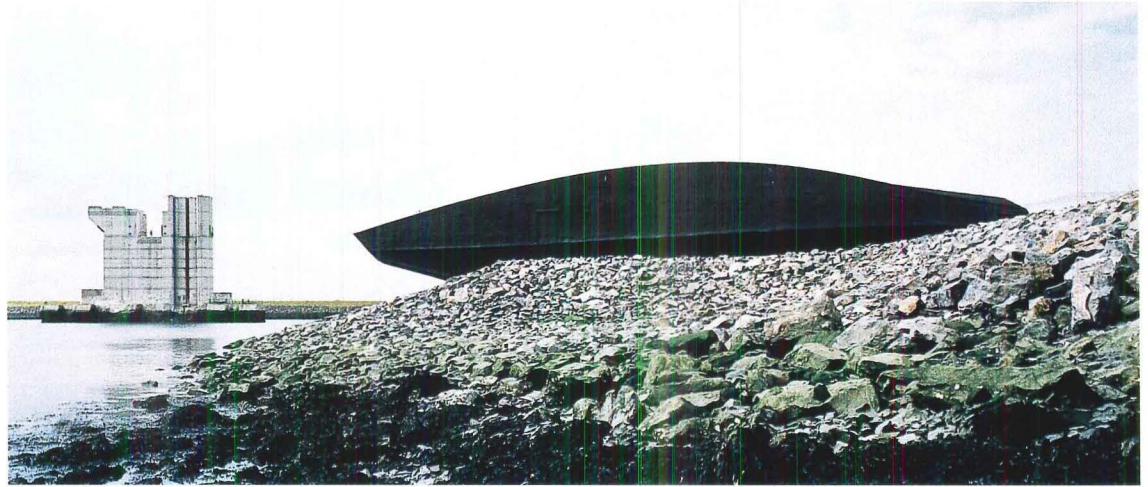
Steel: *Meijers Staalbouw*

Metal: *Soprema, Inox Sopralast*

Elastomer: *Piuijmers*

Downlights: *Sent*

A SALTWATER PAVILION BY OOSTERHUIS ASSOCIATES IMMERSES VISITORS IN A FLUID, WATERY EXPERIENCE, INSIDE A LANDLOCKED POD.



Kas Oosterhuis' Saltwater Pavilion, located on the small, man-made island of Neeltje Jans in the Netherlands, looks like a black pod preparing to lunge into the lake behind the Eastern Scheldt storm barrier. You've probably never seen a building like this before. Its function is simply to be a display, and not a very didactic one at that. The shape is smoothly streamlined, with small fins curving down its length from a large rectangular window at one end to the joint with its slithery, silvery counterpart, the Freshwater Pavilion designed by Lars Spuybroek of NOX Architects. The skin is black elastomer, an industrial coating chosen for its capacity to weather both the constant salty wind and the interventions of local sea gulls. As you approach the structure from the side, you see a doorlike shape highlighted in yellow, but only at the end of the visit is it revealed that this is the exit (raised hydraulically from the inside); the entrance is through NOX's pavilion. Although joined, the two buildings are quite distinct.

Upon entering Oosterhuis' pavilion, you arrive at a vertical junction between the upper and lower levels, as if you were precisely at sea level: Above is the Sensorium, but first, you are led down through the cavernous WetLab, a dark, moist environment literally dripping with water. At irregular intervals, a "wave" rushes across the walkway, forcing you to wait until "low tide." Shifting patterns of colored light are reflected on the

wet surfaces. Via a ramp and stairs—an interesting puzzle for the architect in a building without any right angles—you climb toward the window and its panoramic view of the landscape. Cantilevered 40 feet over the inland sea of the Eastern Scheldt, this window is the only point where the pavilion opens to the outside world. But even here, the amount of daylight admitted to the interior is variable. An airbag at the bottom of the window inflates and deflates in an unpredictable rhythm, alternately concealing and revealing the view. A massive, undulating wave-floor divides the WetLab from the Sensorium, the airy upper level containing virtual

EVERYTHING ABOUT THIS STRUCTURE WAS CONCEIVED IN 3-D.

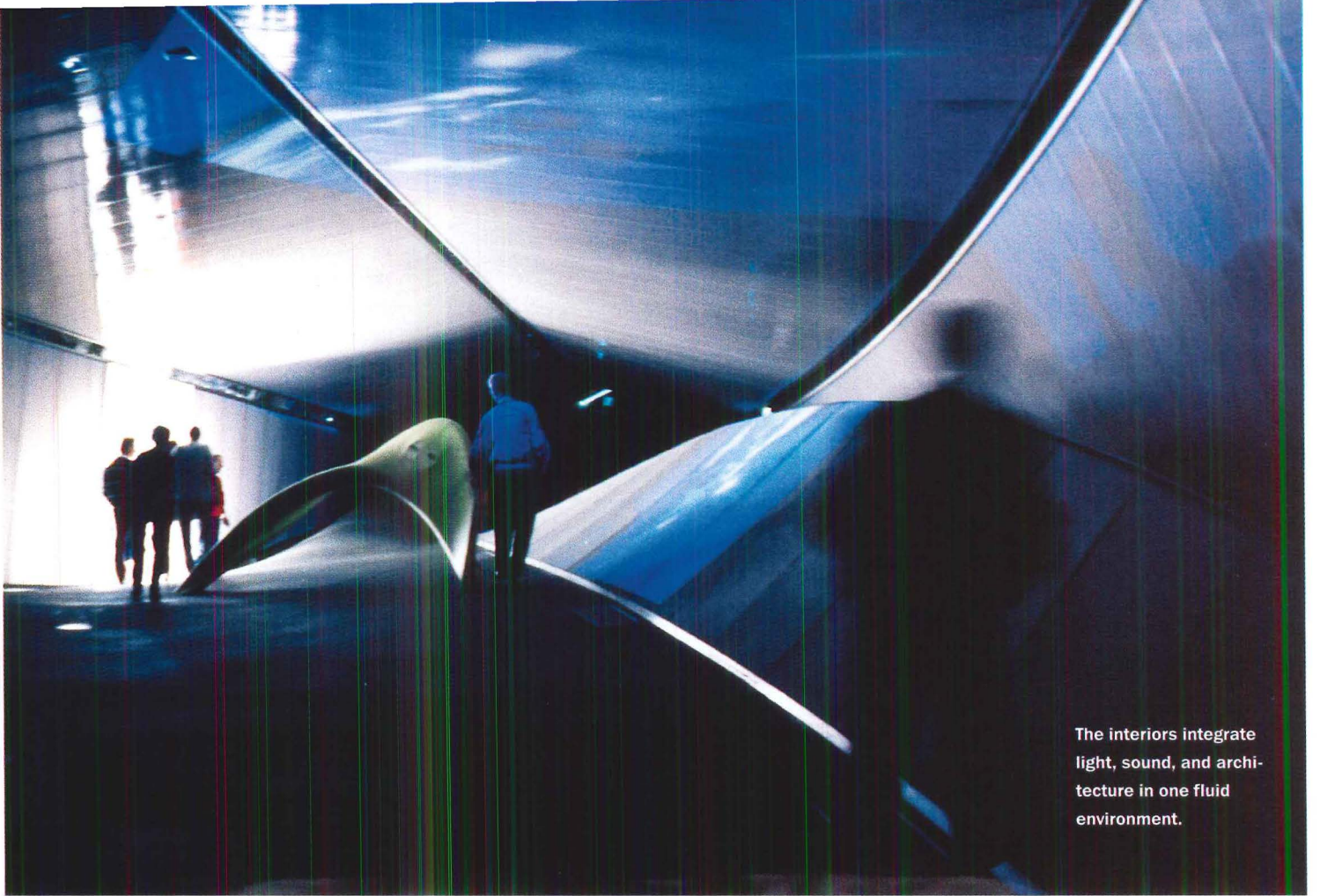
representations of water. The sensory experience is heightened by interactive displays, eerie waves of sound, and color diffused by translucent polycarbonate panels.

Woven through both levels of the pavilion is the Hydra, a continuous, glowing, linear object (or "giant seaweed," as the architect calls it) that transmits light and sound. Designed by Oosterhuis' wife, visual artist Ilona Lénárd, the Hydra's multiple lines loop and wind through the entire pavilion, penetrating the wave-floor. Embedded within the Hydra are fiber-optic cables and speaker systems that react to visitors' interventions, changing weather conditions, and preprogrammed algorithms.

Everything about this structure, from its shape and its contents to its inner workings, was conceived in three dimensions and made possible by advanced computer technology. From the very start of the design process, the body of the pavilion was modeled in 3-D, which allowed for

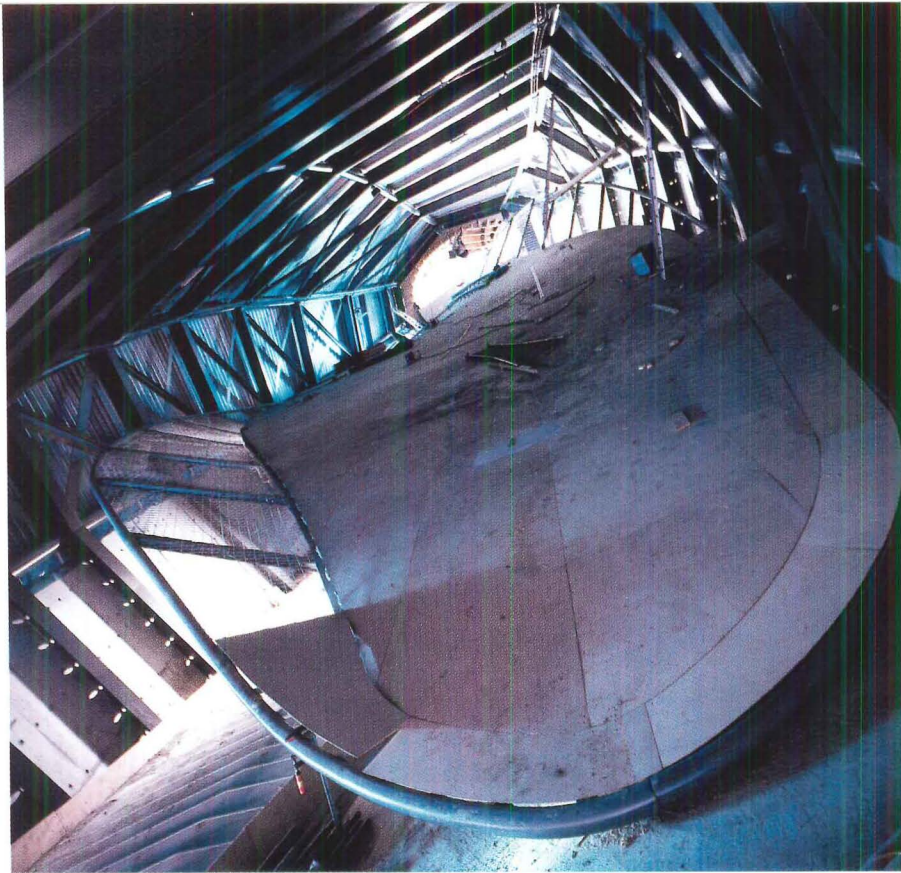
Project: *Saltwater Pavilion, Neeltje Jans Burgh-Haamstede, Holland*
Architect: *Oosterhuis Associates—Kas Oosterhuis, principal; Menno Rubbens, Ilona Lénárd, project team*

Consultants: *HNS (landscape); Edwin van der Heide, Victor Wentinck (sound); Bert Bongers, Arjen van der Schoot (sensors); Ingenieursbureau Zonneveld (building); ABT (installation)*



The interiors integrate light, sound, and architecture in one fluid environment.

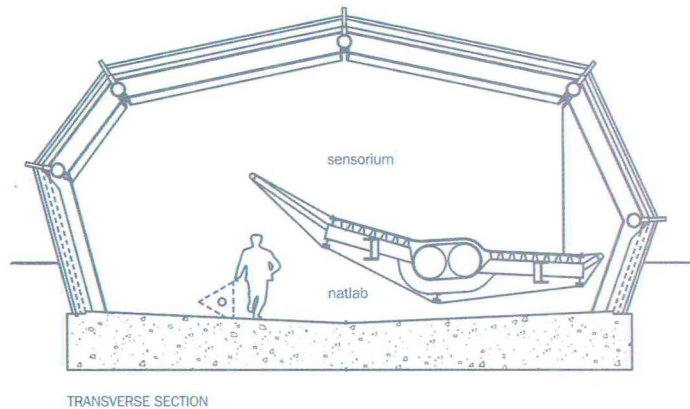
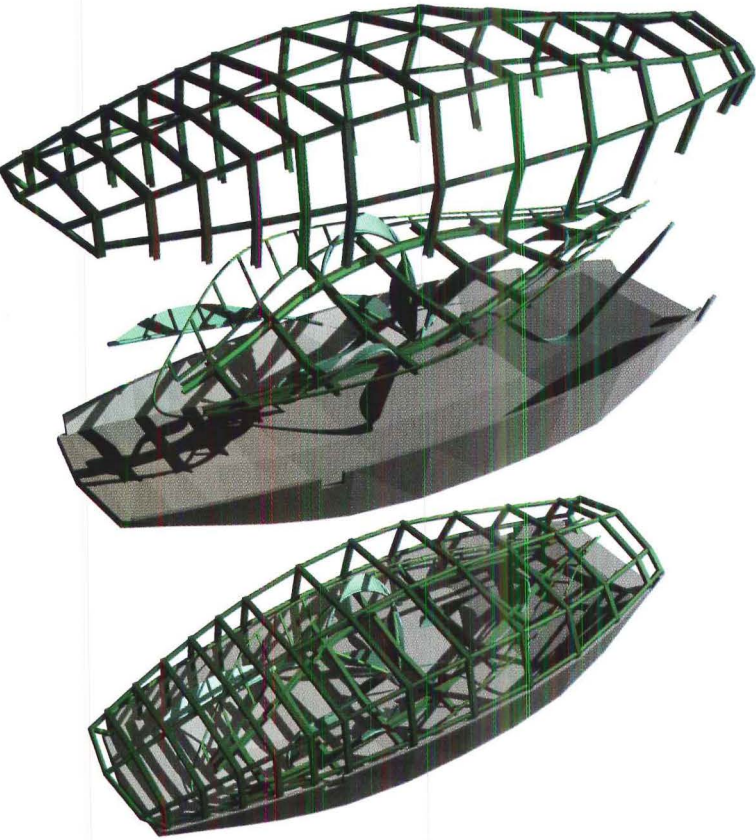




Dividing the humid WetLab from the airy Sensorium is the wave-floor, a gigantic torsion volume that torques and rolls like a parking garage on acid (left). The Hydra, a linear object that transmits light and sound, penetrates the asphaltlike wave-floor (below).



Exploded axonometric drawings and a short section describe the positions of the wave-floor and the Hydra within the pavilion.



the delineation of extremely fluid contours. The geometry of the pavilion is best characterized as one complex formula in which the parameters change—"parametric design," Oosterhuis calls it.

In Spuybroek's pavilion, all the interaction takes place inside the building, but Oosterhuis' structure also reacts to external stimuli. Its computers receive signals on wind speed and wavelength from a weather station at sea. A battery of mixing panels in the pavilion's basement translates these signals into a database that ceaselessly renews itself. The shifting colors, lights, and sounds, and the force of the wave in the WetLab are all decided electronically. As you walk through the pavilion, your senses strain, in vain, to identify a pattern in the surrounding colors and sounds. The architect determined the script, but the variables are provided by nature itself. "We don't invent anything, we only combine techniques," explains Oosterhuis. "That's a way of pushing architecture forward." His goal, he says, was to create a building in three dimensions in which sound, image, and architecture are completely integrated.

Does it work? Yes and no. It must be noted that until very late in the building process, it was unclear what the contents of the pavilions were to be and who was to design them. Even now, it is not always apparent what the various electronic "events" are telling us about water and fluidity. Nowhere, unfortunately, is the visitor told the fascinating story of the pavilion's "biorhythm" as determined by the wind and the weather.

There is, inevitably, a theme-park element of pure entertainment to both pavilions, but in their drive to push the envelope of computer-driven architecture ever further, neither Oosterhuis nor Spuybroek seems to acknowledge this banal fact. Innovative and inspiring as this integration of architecture and electronics is, the user interface lags sorely behind.

There is also some discrepancy between the sophisticated concept and state-of-the-art technology on the one hand, and the roughshod materialization on the other. The pod's black skin is grayish and wrinkled, for example, and at certain points inside the pavilion, detailing is makeshift at best. But that doesn't worry Oosterhuis. He is convinced that materials and building techniques will be quick to catch up. "It won't be long before the production process is just as flexible as the design process," he declares imperturbably. "Then it will be just as cheap and simple to make a single curved piece of metal or plastic or steel as a large number of flat pieces. Then the transition from virtual space to physical space will really be seamless." ■

Sources


Steel, doors: *Meijers Staalbouw*
Elastomer: *Pluimers*
Polycarbonate paneling: *Rodeca*

Lighting: *Fairlight, Fridato*

Sound: *Haine Audio*

Virtual reality: *Green Dino*

Wageningen, Silicon Graphics 02

A photograph of a modern building facade. The building features a prominent balcony with a metal railing and a textured, light-colored wall. To the right, a brick wall is visible. The scene is set against a clear blue sky with some foliage on the left. The building has a white door on the ground floor and a window above it. The balcony is on the second floor. The brick wall is on the right side of the image. The overall scene is bright and clear.

The south side of the new museum wing (this page and opposite right) recalls a buttressed city wall that was destroyed during World War II. The addition is tucked underneath the piazza of the Monastery of the Dominican Fathers (opposite left).

Embedded in its physical and cultural landscape, Ricci & Spainì's MUSEO MICHETTI adds new layers to a site with a rich history.



Once a monastery, now an art center, the Museo Michetti is a focal point of memory in a seaside town facing the Adriatic. It shows how new and old can be locked together as a sequence of spaces conceived virtually as fragments of urban landscape. In the process, it excavates past levels of a place and creates new ones.

This is the sort of project that can emerge when a town becomes acutely aware of its cultural heritage, a heritage that includes, in this case, a deeply rooted connection with a painter, Francesco Paolo Michetti. The artist, who lived from 1851 to 1929, was involved with the folklore, landscape, and history of the surrounding region, the Abruzzo. For many years, he lived in Francavilla in a convent converted into a house and collected around him a circle of like-minded artists. He established a national, even an international reputation, but in the early 20th century he was increasingly ignored. So one of the functions of the Museo Michetti is to reinstate a once legendary figure and to establish a place for the study of his art.

Francavilla al Mare is just south of Pescara in central Italy, where the mountainous landscape gives way to a plain with endless sandy beaches. Earlier in this century the main activity was fishing, although well-off families and some artists used to come here for the summers. Now, the seaside has been thoroughly commercialized as a resort, stretching as a long narrow strip of hotels, restaurants, and shops between the

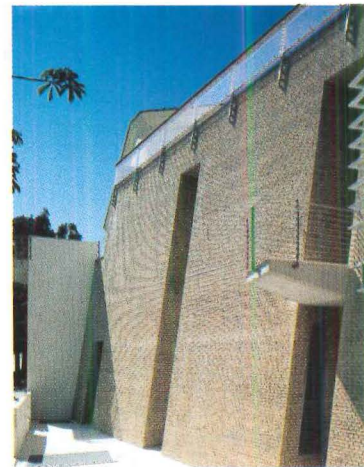
William J.R. Curtis is a historian and the author of Modern Architecture Since 1900 (Phaidon Press, Third Edition, 1996). He received the Tau Sigma Delta National Honor Society's 1999 Gold Medal in architecture and allied arts.

by William J.R. Curtis

railway line and the beach. The old, upper town of Francavilla climbs up from the landward side of this dividing line over an irregular hillside combining wooded slopes, shaded alleys, and narrow streets with picturesque views toward the horizon of the sea. Several historic buildings of quality are found along the way; they emerge from the landscape at various angles and take on the character of a constructed topography.

The Museo Michetti, as designed by Rome-based architects Mosè Ricci and Filippo Spainì, occupies one of these old buildings, the Monastery of the Dominican Fathers, and extends at lower levels to an adjacent site. The monastery, which dates back to the 13th century, was remodeled in the 18th century and then again after World War II. Now, the historic building with its restrained facades and interior courtyard (or *cortile*) has been remodeled yet again, this time to house the museum's temporary exhibitions and provide a venue for occasional cultural events. The new subterranean spaces (which allow views over the rooftops toward the ocean because the site drops away on the easterly, seaward side) are devoted to the art of Michetti. But the matter is not that clear-cut from the outside, for the architects have used the new wing as an opportunity to reconstitute a buttressed city wall in brick along one edge, and a piazza on the flat roof on top. These were destroyed in a bombing raid in World War II, and some of the drawings for the project even show an obelisklike monument "to the fallen" toward one end of the piazza on one of its axes; this remains to be constructed.

With its old building resting above and its new galleries tucked below the rebuilt piazza, the Museo Michetti is rooted in its setting and encourages visitors to experience it at several scales. First, it is understood



Project: Museo Michetti, Francavilla al Mare, Italy

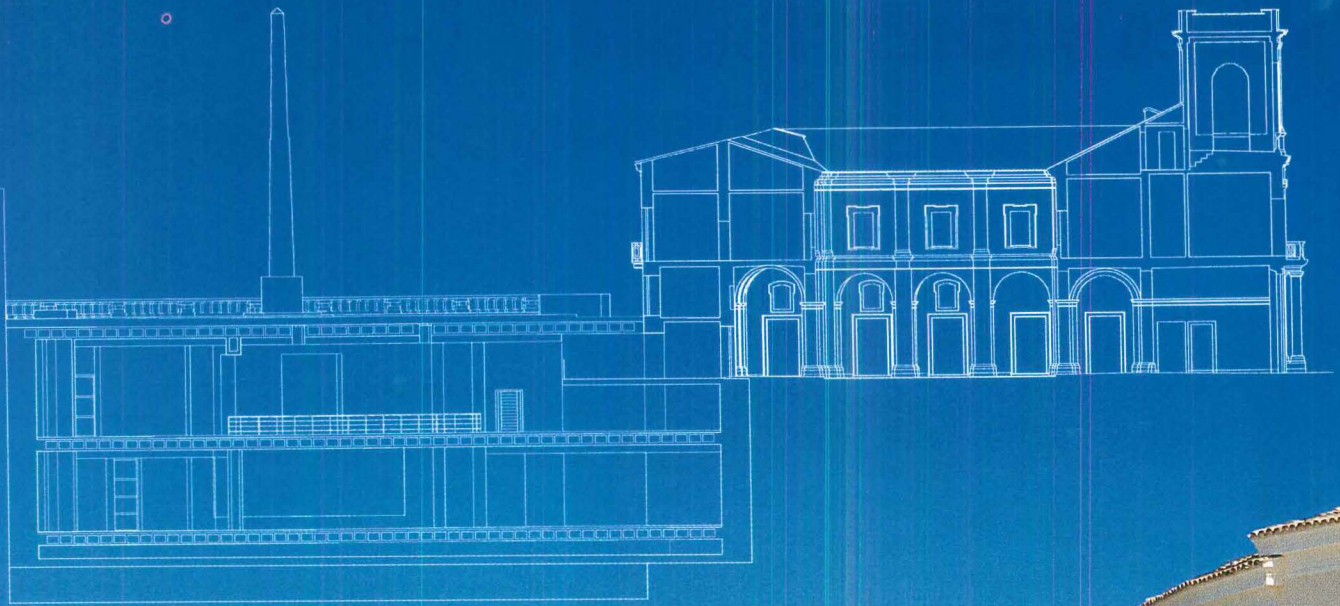
Architect: Ricci & Spainì—Mosè Ricci, Filippo Spainì, project architects; Carla Ghezzi, Luigi Novelli, Severine

Solcourt, project team

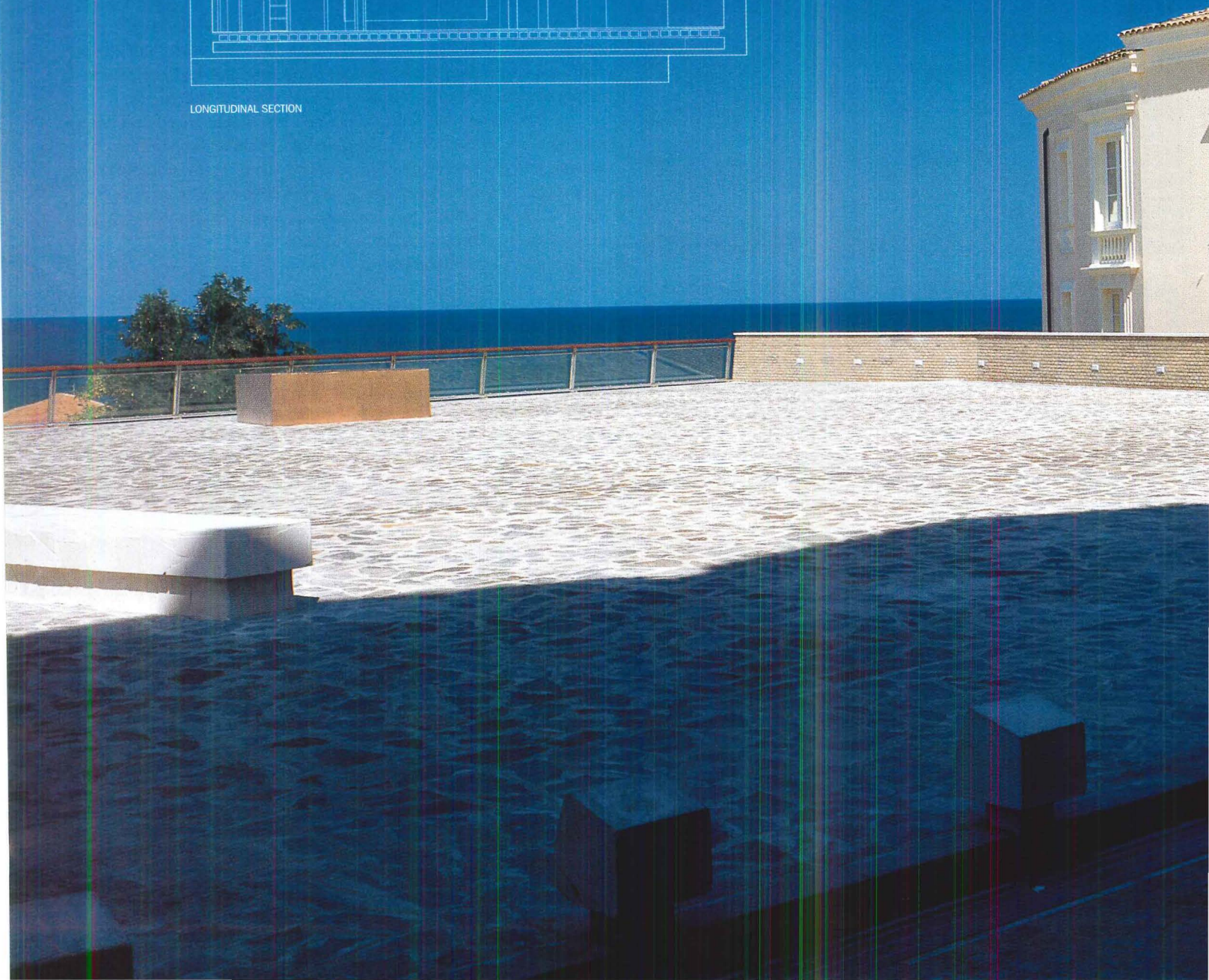
Engineers: Mario Desideri and Francesco Bellotti (structural)

Consultant: Baldieri (lighting)

General contractor: Gastone Guerrini



LONGITUDINAL SECTION



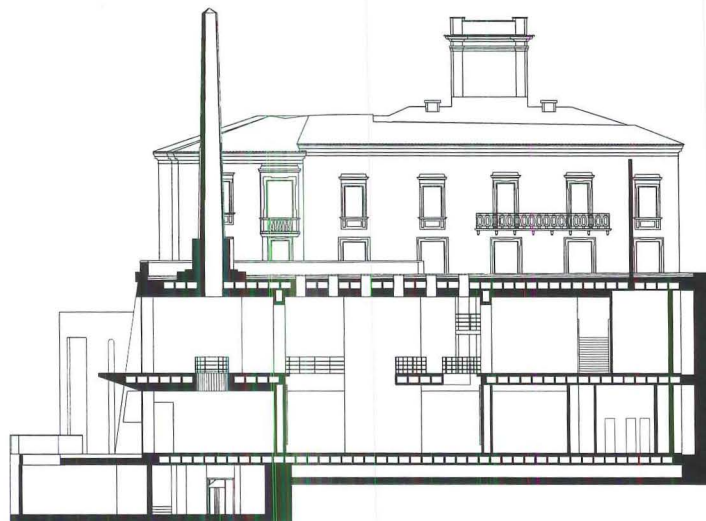


FRANCISCA DE RIVERA
MESTRA DE ESCUELA DE NIÑOS CIEGOS
EN SAN PABLO DE CALZADA
QUE LLEVARE SUFRIDA EN LA CATEDRAL
DALL'ESTERNO ALLA AL CANTO DELLA
TORRELLA DE LA MONJA DELA
POR LA LANCHE DE LA CATEDRAL EN LA DERECHA
DE LA CATEDRAL
QUE HA SUFRIDO LA SUFRIDA POR SUFRIDA
CIEGOS EN LA CATEDRAL EN LA DERECHA
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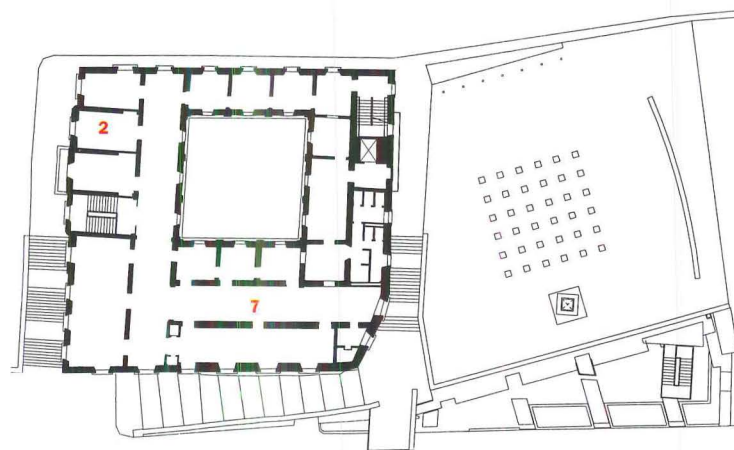
The architects rebuilt the piazza and adapted the monastery building for use as temporary exhibition space, a cafe, and for holding

cultural events. Ricci & Spaini's drawings show an obelisk memorializing "the fallen" (section above), but this monument has not been

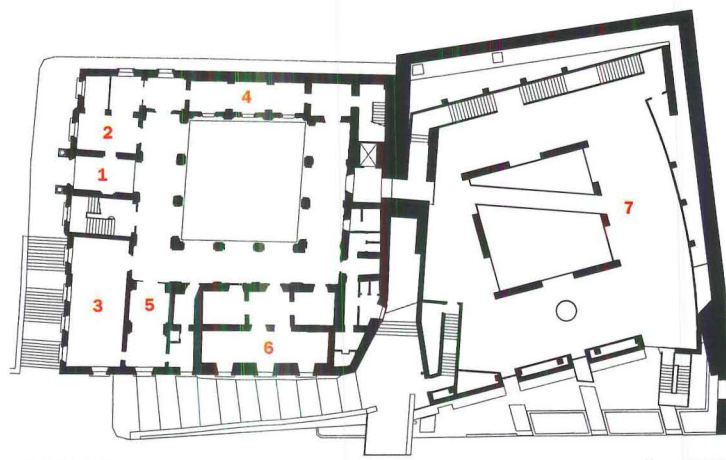
built. Old and new are linked together as a sequence of spaces that are conceived almost as fragments of urban landscape.



TRANSVERSE SECTION



FIRST FLOOR



GROUND FLOOR

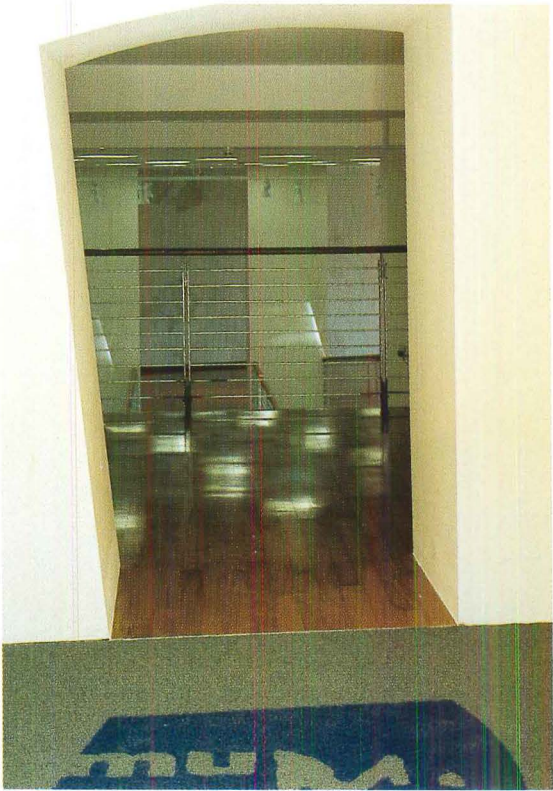
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A set of steps (top) runs along the south side of the monastery toward the new building. The courtyard of the old building (above)

retains the quiet beauty of the cloister it once was. Today, concerts and other kinds of cultural events take place there.

- 1. Entrance
- 2. Office
- 3. Conference
- 4. Tickets

- 5. Cafeteria
- 6. Retail
- 7. Exhibition



A cafe (right) has been inserted within the fabric of the monastery, juxtaposing new materials with the old ones.

The entrance to the new wing is over a threshold (above) that leads to a landing with views to lower levels.



as part of the hillside sequence of platforms, slopes, and levels. But it also relates to the alternating rhythm of urban spaces (piazza, courtyard, outdoor stairs) and surrounding buildings, which form a tight pattern. The architects have interpreted the setting as a sauntering promenade of “events,” changing views, and diverse degrees of enclosure or expansion. In turn, they have been attentive to open-air places and to the variety of stone textures in the neighborhood, especially on pavements, steps, and ramps approaching the building.

The ancient monastery is an event along this promenade. Inside, it has been given an innocuous, rather neutral treatment of white painted walls, white gauze blinds, and inserted ceiling lighting. It is stripped down in feeling, a sequence of neutral rooms that receive a variety of traveling exhibitions. Its best features were inherited: The nicely scaled courtyard, which supplies a pleasant setting for receptions or small concerts on warm evenings, and the panoramas through the windows over the city and the sea. More attention could have been given to new fixtures and fittings, such as door frames and railings, as they do not always have the finesse that a historic building of this quality deserves.

The other main architectural event is the subterranean extension devoted to the art of Michetti, which is reached across the courtyard of the old building and through a narrow threshold with one side slanted. One arrives, after this tight transition, on a landing that affords a view of

the two main levels below and even a glimpse (underexploited) of the horizon through a vertical window diagonally to the right.

The anatomy of the project becomes clear at this point. The

THE ARCHITECTS HAVE INTERPRETED THE SETTING AS A PROMENADE OF “EVENTS” AND CHANGING VIEWS.

addition is a single volume of space sliced by floor levels. A kind of central bridge continues the axis of the old building’s courtyard into the new scheme, but one level down. Otherwise, the dominant geometry of the extension is skewed off that of the monastery to fit the site. Toward the center, the space extends all the way down to the bottom floor as a generous “well.” This is poorly lit by daylight brought in through glass-block openings in the piazza above; electric fixtures help, but don’t succeed in turning light and shade into positive architectural features.

At the bottom of the central well is a formal gallery, defined by symmetrically placed partitions, on which are hung two of Michetti’s most important paintings: “Le Serpi” (the Serpents) and “Gli Storpi” (the Cripples). Created as a pair for an exhibition in Paris in 1900 and each measuring 32 feet long and 12 feet high, the works depict Catholic folklore in the Abruzzo in the late 19th century.



The new wing of the museum is a large volume sliced by several floor levels and crossed by an angled bridge (above). At the bottom of the “well” is a gallery with two of Michetti’s most famous paintings—one a depiction of ancient serpent rites of the region and the other a heroic portrayal of bulls (right). Daylight enters through glass blocks in the piazza above (opposite bottom).





Michetti was well traveled and kept in touch with the cosmopolitan movements of the second half of the 19th century. A close friend of the poet Gabriele D'Annunzio, he was also a founder of the Venice Biennale in 1895. In addition to sketchbooks, Michetti used the camera to register his impressions of day-to-day existence. He had almost the eye of an anthropologist where peasant culture was concerned. In time, he translated his observations into symbolic scenes pervaded by an otherworldly mood. Michetti was overtaken by the advent of modern art and has been neglected in the general histories of art. But as a local hero he has never been forgotten. An inscription on a building in the lower town refers to the convent in which Michetti lived in Francavilla in his later years and to the inspiration he drew from "the genius of the people of Abruzzo."

The underground portion of the museum is almost a shrine devoted to Michetti and to his vision of the deep cultural roots of this part of Italy. A moment's reflection and one realizes that the extension is an abstraction of the old monastery (a central court with surrounding walkways) twisted onto another geometry and inserted into the ground. A long flight of stairs (beautifully crafted from tropical timber) descends gradually along the landward wall, offering views across the large space. The terminating wall opposite the entrance landing slightly curves, extending through the roof to become a bench in the piazza above.

THE EXTENSION IS AN ABSTRACTION OF THE OLD MONASTERY, TWISTED ONTO ANOTHER GEOMETRY.

The architects' overall intentions are quite rich, especially in their interpretation of the place and in their response to the symbolic importance of Michetti, but they are not always carried through in the forms and materials of the architecture. The relationship between interior walls in the extension is loose and the partitions do not help guide the visitor through space. The broken white stone pieces in the perimeter walls of the lower areas risk being distracting and have a slightly vulgar air. The bridge running across the central well may look all right on a floor plan, but ends up sitting awkwardly in the museum's key symbolic space. Details sometimes interfere with Ricci and Spain's larger moves and intentions, as when crude window mullions do nothing to enhance important views. In general, the fabric is not up to the quality of the thought behind it.

As a work of architecture, the Museo Michetti works better at a large scale than at a small one: It is more effective as a piece of city and landscape than as a museum, and it is guided by an interesting hierarchy of ideas but does not always succeed in giving them convincing forms. Even so, it creates an institutional framework for a neglected artist who captured a moment in the history of a local culture through the international artistic tendencies of his time. As such, it is a reminder that one of the functions of architecture is, at once, to conserve and to reinvent the cultural landscape. ■

Sources

Marble cladding: *Patricelli Marmo Arredo (Calicia Capra marble)*
Douglas fir windows: *Agnolet*
Aluminum windows: *Sam*
Glass-block skylights: *Fidenza Vetraria*

Parquet wood flooring: *Listone*

Giordano-Margaritelli

Exterior lighting: *Erco*

Ambient lighting and downlights:

Guzzini

Elevator: *Samer*

Reception furniture: *Uniform*



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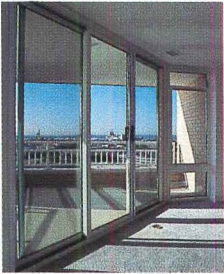
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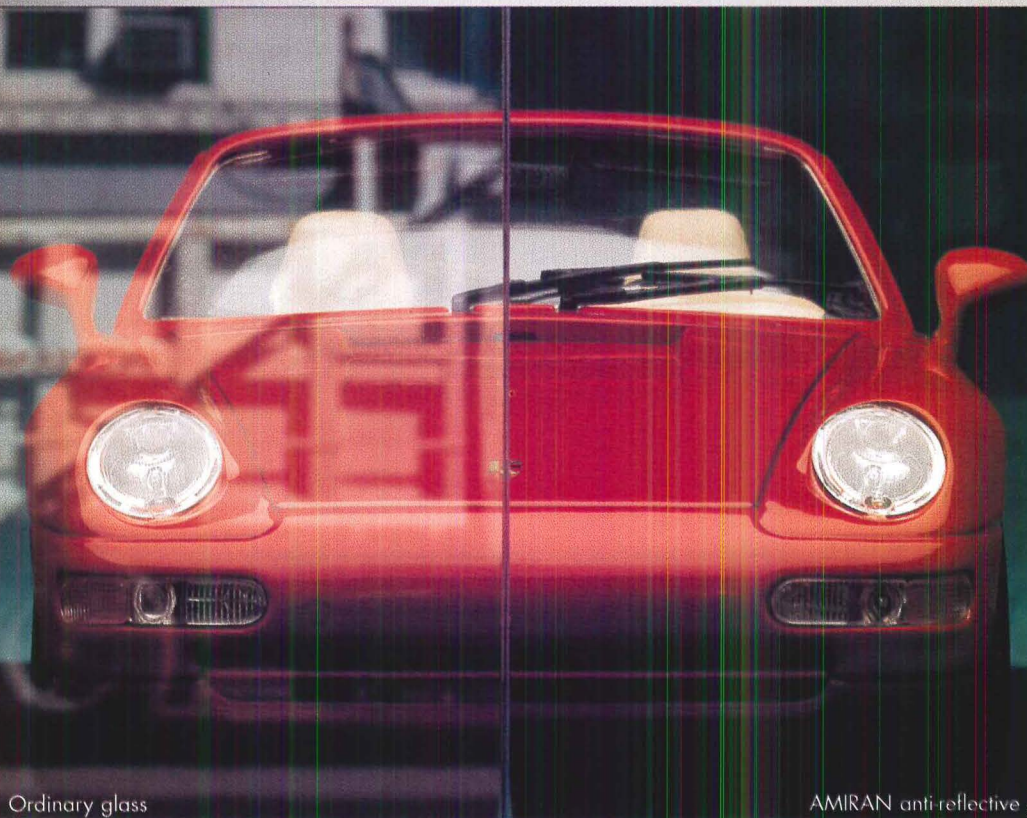
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PERFORMING ARTS CENTERS

Using Art to Revive Cities

NOT ONLY DO PERFORMING ARTS CENTERS HAVE TO DELIVER GREAT SOUND,
BUT NOW THEY'RE EXPECTED TO ACT AS CATALYSTS FOR DOWNTOWN RENEWAL.

by James S. Russell, AIA



1

Dijon, France

A 1,600-seat auditorium designed by Arquitectonica bridges a busy street and acts as an emblem for a changing part of Burgundy's capital city.



2

Denton and Fort Worth, Texas

Separated at birth, these fraternal twins were both designed by Hardy Holzman Pfeiffer Associates for college campuses. One stands out from its surroundings with bold architectural forms, while the other takes a more contextual approach to working with its neighbors. Inside the concert halls, the architects and acoustical consultants also took different approaches to the challenge of designing performance spaces for music.



3

Seoul, South Korea

An unusual mixed-use building by Hak Sik Son, AIA, packs a private concert hall, restaurant, offices, and music studios onto a tight site.



4

Niigata, Japan

Itsuko Hasegawa surrounded her performing arts center with islandlike gardens and helped bring back some glory to one of Japan's old port cities.



There's not much to entice visitors to Miami's Biscayne Boulevard from 13th to 14th Streets. This part of town has a depressed, passed-over feeling to it. The boulevard itself is a rushing torrent. Just to the south, a jumble of ramps and overpasses carries streams of speeding vehicles from the city to Miami Beach. But Miami has a great deal riding on this largely empty stretch. On it will rise a 2,400-seat ballet and opera house, a 2,000-seat concert hall, and a 200-seat black-box studio theater. The forthcoming \$225 million performing arts center, designed by Cesar Pelli, FAIA, is the most ambitious undertaking of its kind planned in America today. The Miami Performing Arts Center is expected not just to be a handsome house for its six resident companies, but also is intended "to vitalize the neighborhood and catapult our cultural community to the next level of international significance," says Michael Spring, the executive director of the sponsoring Miami-Dade cultural affairs council.

But Miami is not alone in pinning high hopes on the performing arts. Seattle, Newark, Cincinnati, and Fort Worth have opened impressive new halls recently, while Chicago, San Francisco, and Santa Fe have unveiled ambitiously renovated ones. On the boards or in construction are major projects in Philadelphia, Los Angeles, Houston, and Pittsburgh. Midsize metro areas like Mesa, Arizona; Orange County, California; Raleigh-Durham, North Carolina; and Dayton, Ohio, have announced new facilities. "The 17 projects in development that I am aware of add up to almost \$2 billion in arts development going on," says Steve Wolff, president of AMS Planning and Research in Fairfield, Connecticut, who consults on the development of performing arts centers and museums. It's no longer enough to get the acoustics right or accommodate the latest stage technology: "City building, rejuvenation, and community development are prime reasons such projects get built," says Wolff. But it is as yet unclear whether these facilities actually can accomplish all that.

Cities eye affluent patrons

Several cities can make impressive claims. Playhouse Square, a four-theater complex created from former vaudeville houses in Cleveland over a period of years, has spurred investment of more than \$225 million in the surrounding neighborhood, according to Art Falco, its president. It also has increased audiences for its resident companies by over 50 percent in 10 years. In the Pacific Northwest, seats are almost unattainable for Seattle

1 Auditorium de Dijon Dijon, France

WILL ARQUITECTONICA'S HIGH-SPEED FORMS PLAY IN FRANCE? AND CAN THEY SERVE AS A NEW EMBLEM FOR A FRAYED NEIGHBORHOOD?

by **Françoise Vonier and Thomas Vonier, AIA**

Project: Auditorium de Dijon,
Dijon, France

Client: City of Dijon

Architect: Arquitectonica
International—Bernardo Fort-Brescia,
FAIA, Laurinda Spear, FAIA, *princi-
pals-in-charge*; Dean B. Lewis, AIA,
project manager; Sergio Bakas, AIA,
Marc Compton, Andy Gruber, George
Murillo, Natalie Pollet, Derek Sanders,
Carlos Prio Touzet, AIA, Larry Levis,
project team

Engineer: Sechaud & Bossuyt (*struc-
tural and mechanical*)

Consultants: Artec Consultants Inc.
(*acoustical and theater design*);
L'Observatoire 1 (*lighting*)

General Contractor: City of Dijon

Sources:

Aluminum cladding panels:
Alucobond

Steel cladding panels: Sollac

Glazing: PlastAlu/Millet

Acoustical ceilings: Ecophon

Wall paneling: PanoFrance

Concert hall ambient lighting: Erco

Downlights: Mazda

*Françoise Vonier is editor of
ArchitectureEurope, the newsletter of
the AIA's Continental Europe chapter.
Thomas Vonier, AIA, has a consulting
practice and is a contributing editor of
RECORD. Both are based in Paris.*

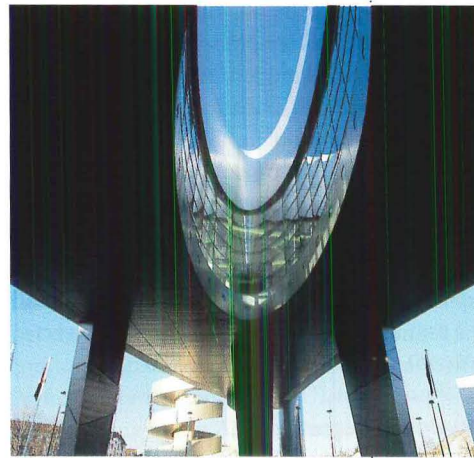
Late last year, nearly two centuries after the opening of its Grand Théâtre opera house, the city of Dijon inaugurated a much-awaited auditorium building designed by Miami-based Arquitectonica International. The building, which has earned praise for its acoustics, is the centerpiece of a typically French grand scheme.

Perhaps taking cues from former president François Mitterrand's *grand projets*, Dijon's longtime mayor, Robert Poujade, organized an international design competition for the project in the early 1990s. It called for a multi-use auditorium flexible enough to host symphonies, ballets, chamber music, and popular events. But Mayor Poujade also wanted the winning design to be both a powerful new emblem for Dijon and a catalyst for much-needed renewal of a 40-acre urban wasteland in the city's Clemenceau-Boudronnée district, home to a 1950s convention center and hangarlike exhibition halls.

Cultural infrastructure

The new auditorium and the improvements to the exposition center would constitute a critical mass of public cultural infrastructure aimed at attracting private investment for a 550,000-square-foot business center, a hotel, and shops.

Renovations to the convention center included a new entrance and



the addition of a 600-seat conference center, as well as underground parking structures. These elements, along with the auditorium, are now completed; yet to be built are the office, hotel, and retail components.

Arquitectonica's design was selected by the jury in 1991. "Winning was great," enthuses firm co-founder, Bernardo Fort-Brescia, who says he always dreamed of working in France, where one side of his family has its ancestral roots. "In the U.S. we build sports stadiums to attract business investment; France builds cultural centers."

The 2.5-acre, triangular auditorium site—described by Fort-Brescia as a "really difficult challenge"—is separated from the 40-acre exposition-center site by the Boulevard de Champagne, a four-lane avenue with much traffic. Arquitectonica's design spans

the two parcels with a glass-enclosed bridge, which rises 36 feet above grade and is pierced by an elliptical light well (left). Visitors enter from grade level by climbing a large spiral stair or taking an escalator to the lobby bridge, which leads to the auditorium on the other side of the boulevard.

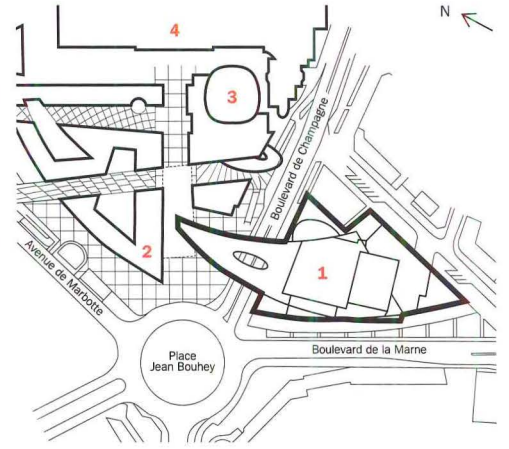
For the time being, the entry and the northern half of the bridge lobby are exposed to Dijon's often windy weather, a situation that will change when a large glass atrium is completed. Billed as an indoor street and neighborhood gathering-space, the glazed enclosure will run from the auditorium entry to the exposition center, and eventually will link the future hotel, retail, and office components.

The auditorium's sinuous edges and boldly juxtaposed geometric shapes are familiar elements of Arquitectonica's formal vocabulary. The firm's design reinforces the site's geometric constraints by superimposing two angular, winglike shapes, splayed in opposing directions and reminiscent of a grand piano. The beige-hued stone exterior is punctured by oblong windows at random heights, suggesting piano keys.



Surrounded by roads, the project was designed to catch the attention of people in moving cars (below).

The building spans the Boulevard de Champagne (above), tying two separate parcels together.



- 1. Auditorium
- 2. Office/hotel complex
- 3. Conference hall
- 4. Exhibition hall (1950s)



1. Street
2. Foyer
3. Auditorium
4. Stage
5. Backstage

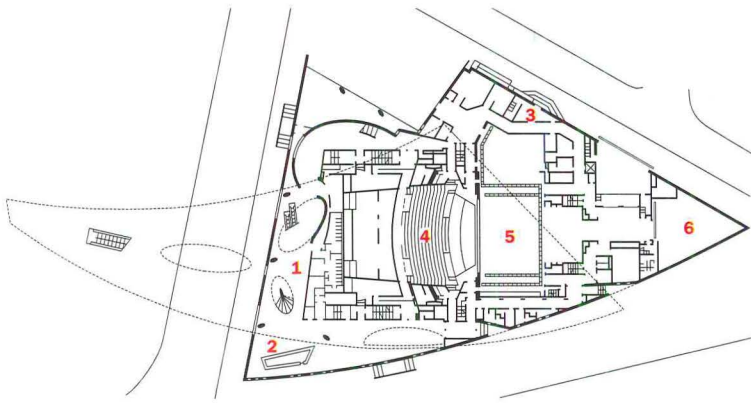


NORTH-SOUTH SECTION

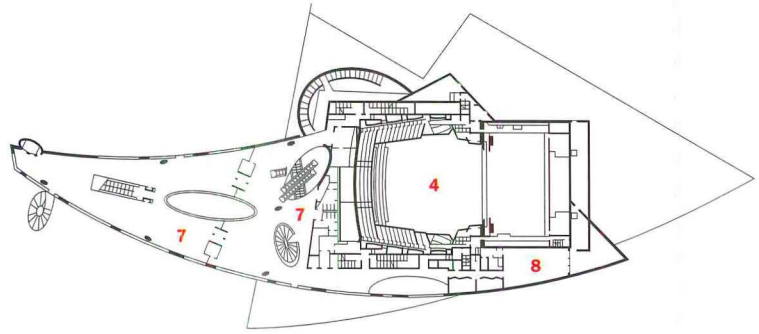


Height and big views of the city give the main foyer of the auditorium (right and below) a sense of grandeur. Arquitectonica used bold combinations of wood and stone, along with the building's sleek curves, to inject a dynamic quality to interiors (opposite).



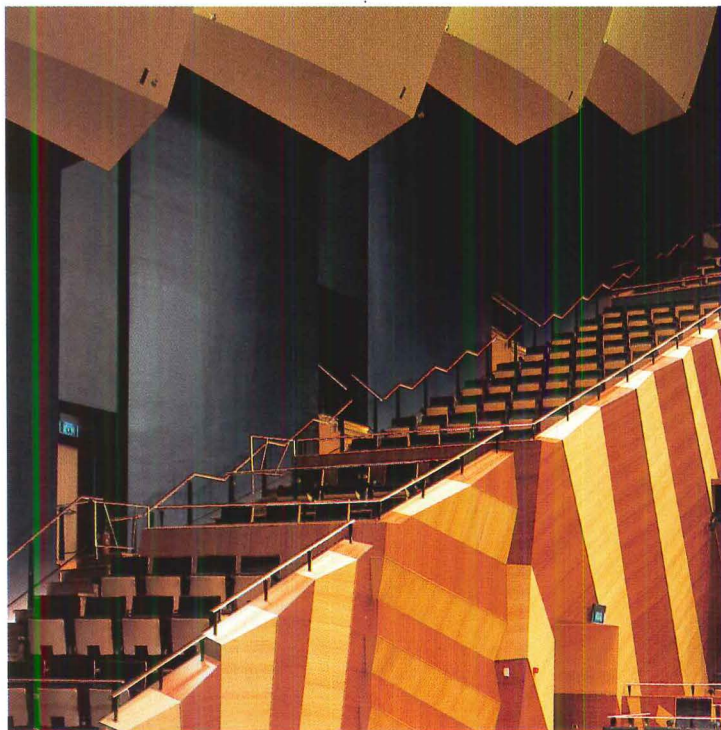
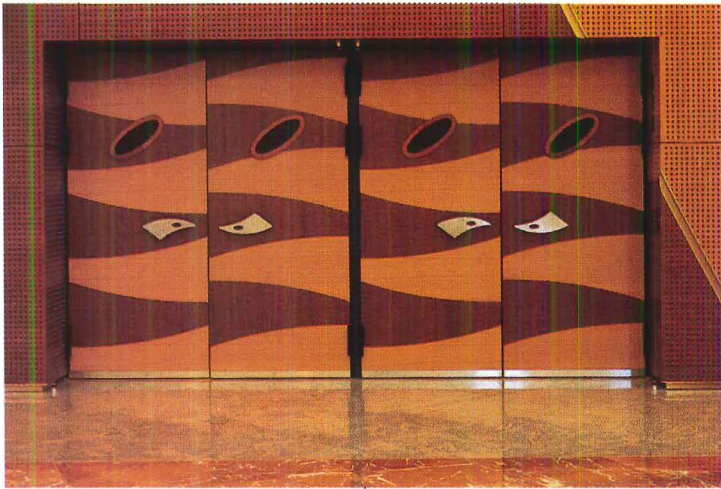


GROUND FLOOR



SECOND FLOOR

- | | |
|----------------------|------------------|
| 1. Lower foyer | 5. Stage |
| 2. Bar | 6. Storage |
| 3. Artists' entrance | 7. Main foyer |
| 4. Auditorium | 8. VIP reception |



The architects call the bridge a "promenade architecturale." But on a gray day it can resemble an "oasis" over a toll road: a little blank and scaled for automobiles. Working from the perspective of a moving car and treating facades as urban billboards are familiar *Arquitectonica* approaches. Here, these devices work best at night, showing off the auditorium's interior life from nearby roadways. Known also for punching large openings into building elevations (such as the Atlantis apartment building in Miami), here the architects carved an elliptical hole in the bridge floor, allowing daylight to reach the street.

Geometrical juxtapositions

Evelyne Philippe, director of public relations for the auditorium, says the building has surprised concertgoers, due in part to the rich rewards waiting at the end of the long entrance journey. The great hall echoes the shapes and geometrical juxtapositions of the overall building forms, through combinations of materials and colors. "We thought the building should be adorned, should have grandeur," says Fort-Brescia, who calls the decorative art elements, achieved in wood, stone, and marble, "painterly, graphic details."

The great hall was designed by *Arquitectonica* in collaboration with *Artec*, the New York City-based

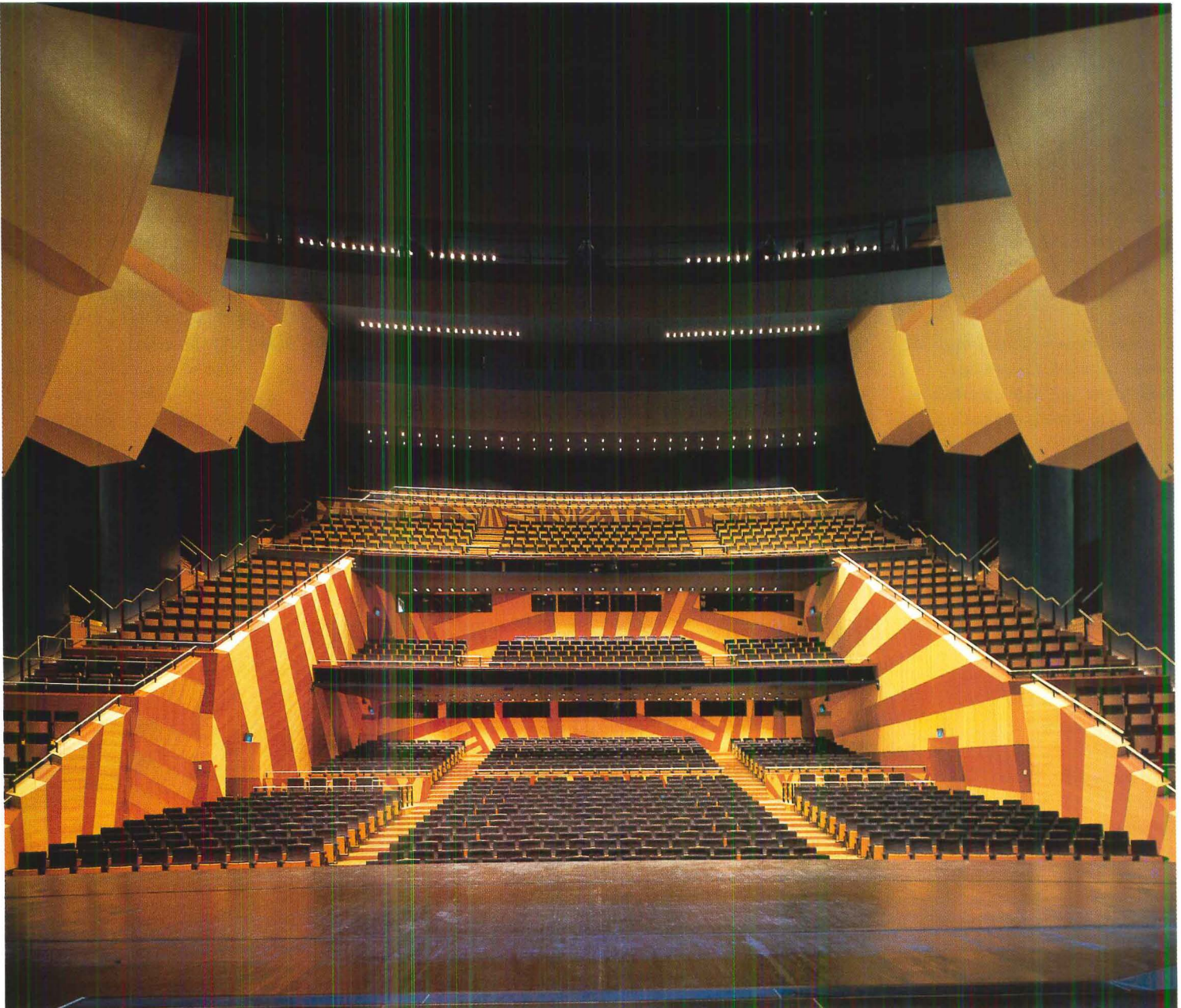
acoustical and theatrical design consultants. "There was a paranoia about acoustics," says Fort-Brescia, explaining that some expensive facilities recently built in France had earned poor reputations. "Dijon wanted its auditorium to be perfect." Whether or not that perfection was achieved, the hall has been hailed by music critics, audiences, and performers alike.

The 1,600-seat auditorium can accommodate ensembles ranging from a 120-member symphony orchestra to a quartet, and can be used for large seminars as well as musical performances.

"The city and the mayor are very satisfied with the project," says Jean Gueydan, Dijon's chief municipal engineer. "The auditorium has transformed the neighborhood. It was completed on time and stayed within budget, which is something quite remarkable in France."

Although unable to offer a firm date for completion of the planned office, commercial, and hotel development, the city and *Arquitectonica* are confident that the auditorium's presence will provide the economic catalyst needed for the area. But few signs have emerged yet that would suggest an influx of new private investment. "Prices here have not changed one iota," reports a city realtor long active in the area. "But it is still early," she adds, "and everybody is hopeful." ■

The 1,600-seat auditorium was designed to accommodate a range of performances, from full orchestral works to chamber music and ballets. The architects worked with Artec on the acoustics and theater design and the results have been praised by audiences.



2

A Pair of Performing Arts Centers in Texas

**MURCHISON CENTER, UNIVERSITY OF NORTH TEXAS
DENTON, TEXAS**

by David Dillon

Project: Lucille “Lupe” Murchison Performing Arts Center, University of North Texas, Denton, Texas

Architect: Hardy Holzman Pfeiffer Associates—Malcolm Holzman, FAIA, partner-in-charge; Robert Almodovar, project manager; Carl Karas, AIA, Douglas Moss, Ky Mikagi, design team
Architect of record: KVG Gideon Toal, Inc.—Randy Gideon, FAIA, principal-in-charge; Scott Martsolf, project architect

Engineer: Freese & Nichols (structural, mechanical/electrical/plumbing)

Consultants: Jaffe Holden Scarbrough (acoustical); Fisher/Dachs Associates (theater)

Sources

Curtain wall: Kawneer

Elastomeric roofing: Schuller

Metal roofing: Galvalum

Aluminum windows: Kawneer

Auditorium seating: Irwin Seating

Architectural glazing: DGB Glass

Elevators: Dover

Resilient flooring: Armstrong

Carpet: Mannington

Contributing editor David Dillon is the architecture critic for the Dallas Morning News.

WWW On The Web: Take a virtual tour of this project at www.archrecord.com.

Hardy Holzman Pfeiffer Associates (HHPA) has thrived on inconsistency and incompleteness. From early projects such as Artpark (1973) in Lewiston, New York, and Minneapolis’ Orchestra Hall (1974) to the recent United States Customs Center at Niagara Falls, the firm has celebrated multiple effects and startling juxtapositions rather than obvious unity and elegance.

These qualities are abundantly displayed in two new Texas projects: The Lucille “Lupe” Murchison Performing Arts Center at the University of North Texas (UNT) in Denton and the Mary D. and F. Howard Walsh Center for the Performing Arts at Texas Christian University in nearby Fort Worth.

Both had modest budgets—\$17 million for the first and \$12 million for the second—and were

designed for students and teachers, meaning that they are fluid, playful, and improvisatory.

“Students need an environment that nurtures them and makes them want to continue with their art,” explains project architect Malcolm Holzman, FAIA. “So these buildings are all about scale and intimacy.”

Making music in north Texas

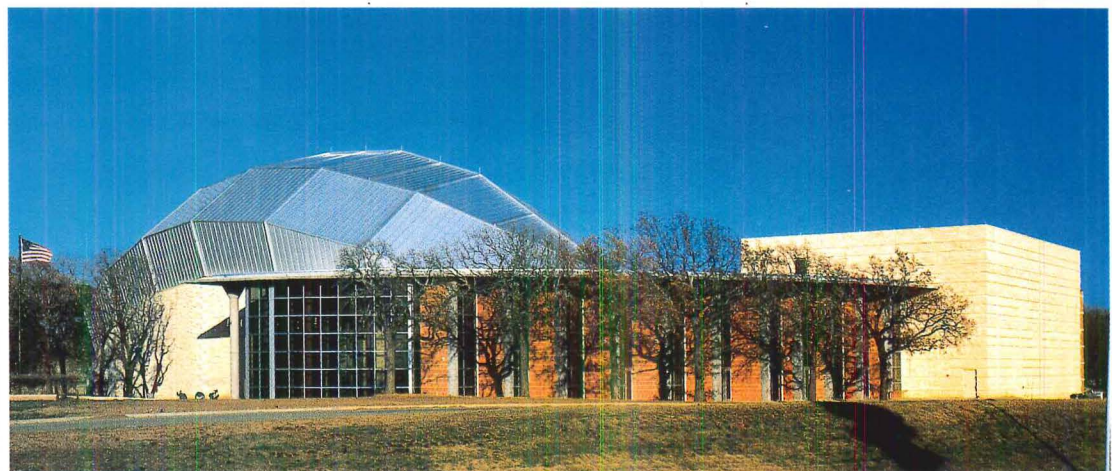
Named for a Dallas philanthropist and longtime university regent, the UNT arts center is the showpiece of the school’s renowned College of Music, which has had great success in getting its students onto the world’s stages and considerably less success in getting the world to come to its own. Embarrassing would be a charitable description of UNT’s existing halls, known for hard chairs, mushy acoustics, and

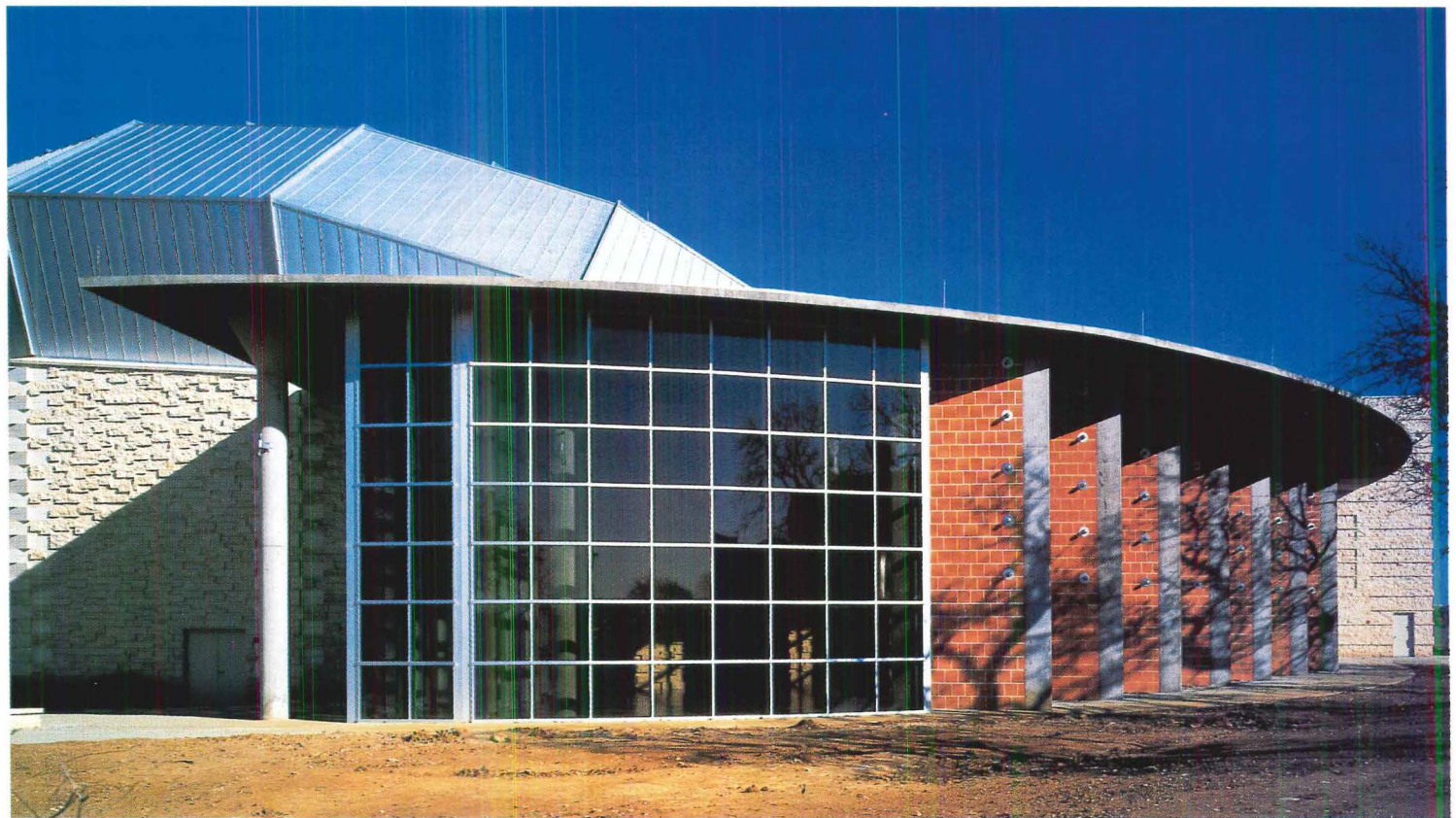
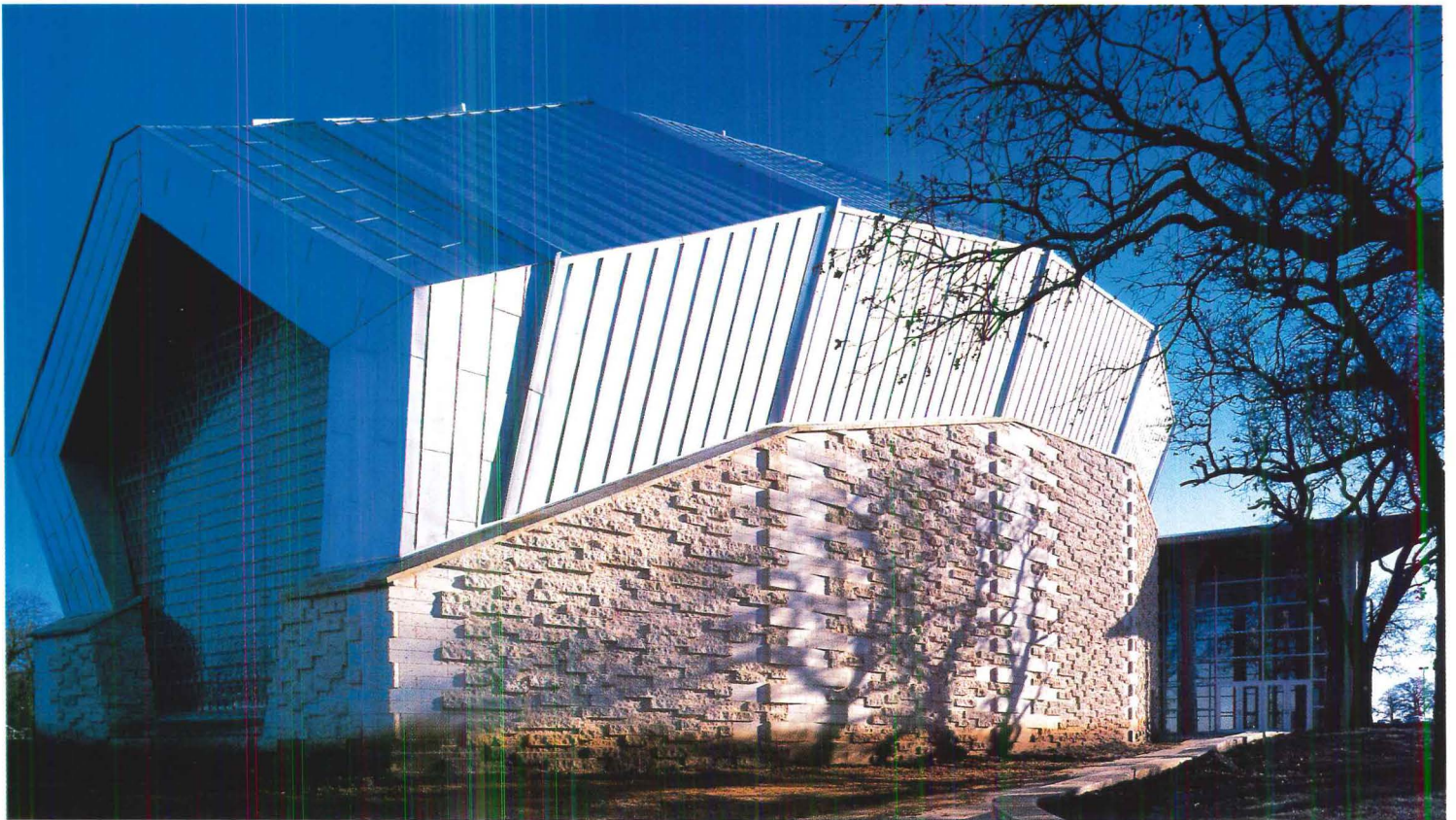
inscrutable locations. For a school that presents more than 1,000 concerts and recitals each year, the situation had become desperate.

Instead of another invisible building in the middle of campus, school administrators wanted a flashy roadside attraction that would promote the music program and the university as a whole. Eventually, they chose a broad sloping site along Interstate 35, midway between a McDonald’s restaurant and a Radisson hotel.

“The key to getting people interested in the building was the site,” says music dean David Shrader. “I wanted high visibility so that when they saw it they would know that music really matters at UNT.”

The city of Denton responded by pumping several million dollars into a new boulevard leading from

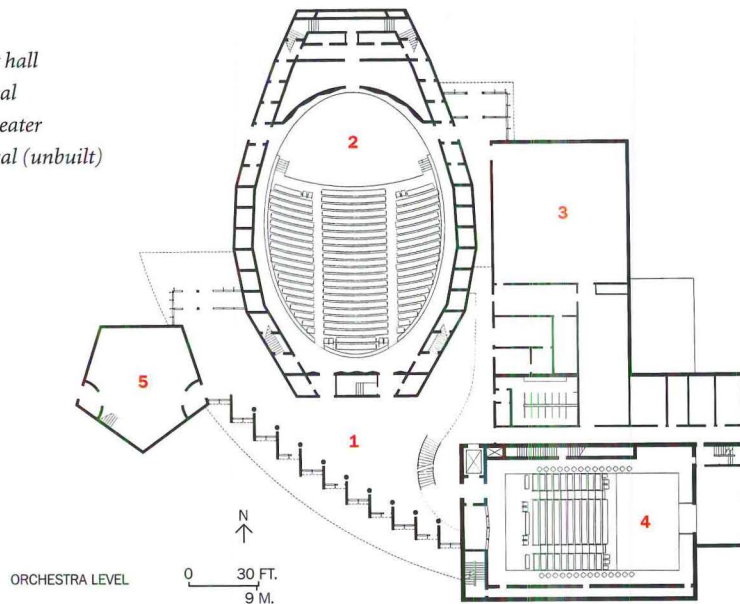




The vaulted metal roof of the 1,100-seat concert hall hovers above a curving lobby (above and top). A 400-seat

lyric theater and faculty offices are tucked into simple brick boxes off to one side (opposite).

1. Lobby
2. Concert hall
3. Rehearsal
4. Lyric theater
5. Rehearsal (unbuilt)



the freeway to the center of campus; the university is planning to construct an administration building across from the performing arts facility.

The 72,500-square-foot Murchison Center, designed with KVG Gideon Toal of Fort Worth, contains the 1,100-seat Margot and Bill Winspear Concert Hall, a 400-seat lyric theater for opera

and musicals, and an assortment of rehearsal rooms, support spaces, and faculty offices.

The concert hall is wrapped in creamy Texas limestone that has been sawed, split, and polished to create different textural effects. Its vaulted roof is covered with galvanized zinc and from a distance appears to hover mysteriously above the freeway. The offices and

rehearsal spaces, on the other hand, occupy simple brick boxes with flat roofs and conventional aluminum windows. A choral rehearsal room will eventually be constructed on the north side, completing the complex.

The Murchison Center is the kind of building in which students can relax and be themselves instead of worrying about the aura of performance. The interiors feature bright colors—mostly red, coral, blue, and yellow—and inexpensive materials, such as painted particleboard walls in the concert room. The ceiling is yellow pine, stained to look like redwood, and is supported by the same laminated trusses found in many school gymnasiums. Air ducts resembling recycled gasoline pumps encircle the balcony. Yet the overall effect is rich and sophisticated rather than thrifty.

The lobby connecting Winspear Hall and the lyric theater is framed by rows of prefabricated metal ducts and soaring concrete columns that make it seem both grand and casual, like a pop version of the Temple of Karnak. The lobby also faces west, giving evening concertgoers a view of the dramatic Texas sunsets.

One of the building's most surprising features is the pentagonal window behind the stage, consisting of five layers of glass

that filter natural light into what is typically a dark, hermetically sealed room. "Nothing says you have to listen to music in the dark," notes Holzman.

Different notes for TCU

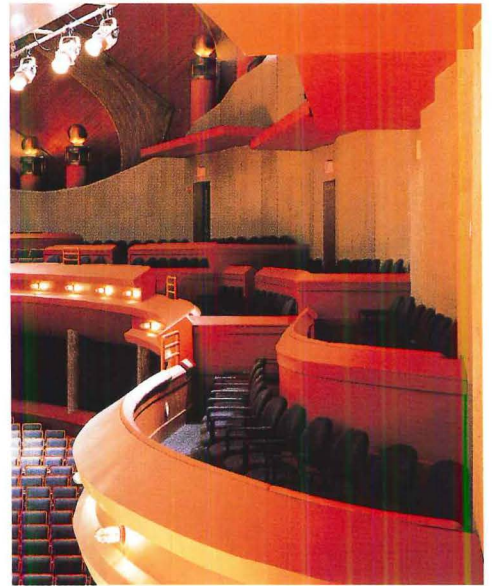
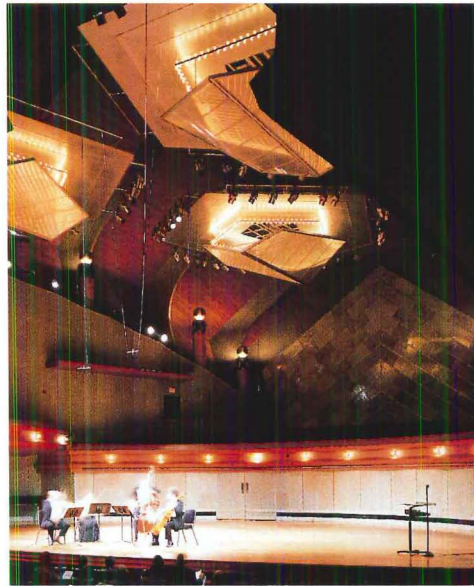
The architects faced a different challenge at TCU, where they were told to be both polite and aggressive, to respect the existing campus architecture and also to design a building that would give the school's performing arts program a sharper public profile.

The 56,000-square-foot Walsh Center consists of the PepsiCo Recital Hall, seating 325, and the Spencer and Marlene Hays Theatre, a modified black box with a thrust stage and 233 seats. Rehearsal rooms and piano studios are tucked in between. Linking these various spaces is a tall open lobby filled with nooks and crannies where students can schmooze, rehearse, or stage impromptu performances. The swirl of ramps, staircases, and balconies creates a sense of movement and purposeful chaos that identifies this as a social not a ceremonial space.

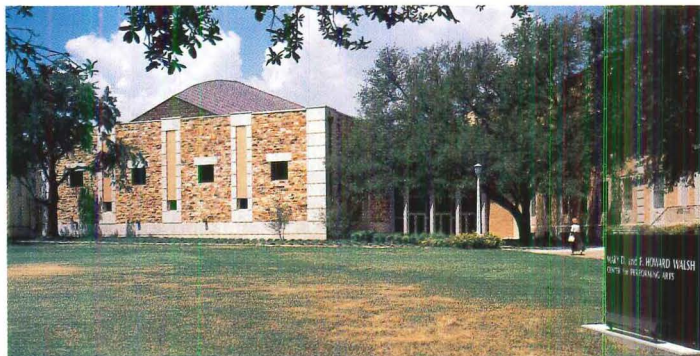
Responding to the mandate to fit in and not take over, the Walsh Center is clad in the same yellow brick as other TCU buildings but with the rough or frog side out to give its massive walls more scale



The acoustical canopies suspended from the ceiling (right and below) can be adjusted depending on the type of performance. The lobby between the hall and lyric theater is framed by rows of ducts and columns (opposite).



WALSH CENTER, TEXAS CHRISTIAN UNIVERSITY FORT WORTH, TEXAS



Project: Walsh Center for the Performing Arts, Texas Christian University, Fort Worth, Texas

Architect: Hardy Holzman Pfeiffer Associates—Malcolm Holzman, FAIA, partner-in-charge; Nestor Bottino, AIA, project architect; Kris Nickolich, Cleveland Adams, AIA, Catherine Minervini, Steve Benesh, Geoff Thune, Eddie Kung, Michael Connolly, design team

Associate architect: KVG Gideon Toal, Inc.

Engineers: Walter P. Moore & Associates (structural); Freese & Nichols (m/e/p)

Consultants: Jaffe Holden Scarbrough (acoustics); Fisher/Dachs Associates (theater)

Sources

Elastomeric roofing: Firestone

PVC roofing: Sarnafil

Metal shingles: Berridge

Aluminum windows: Wausau

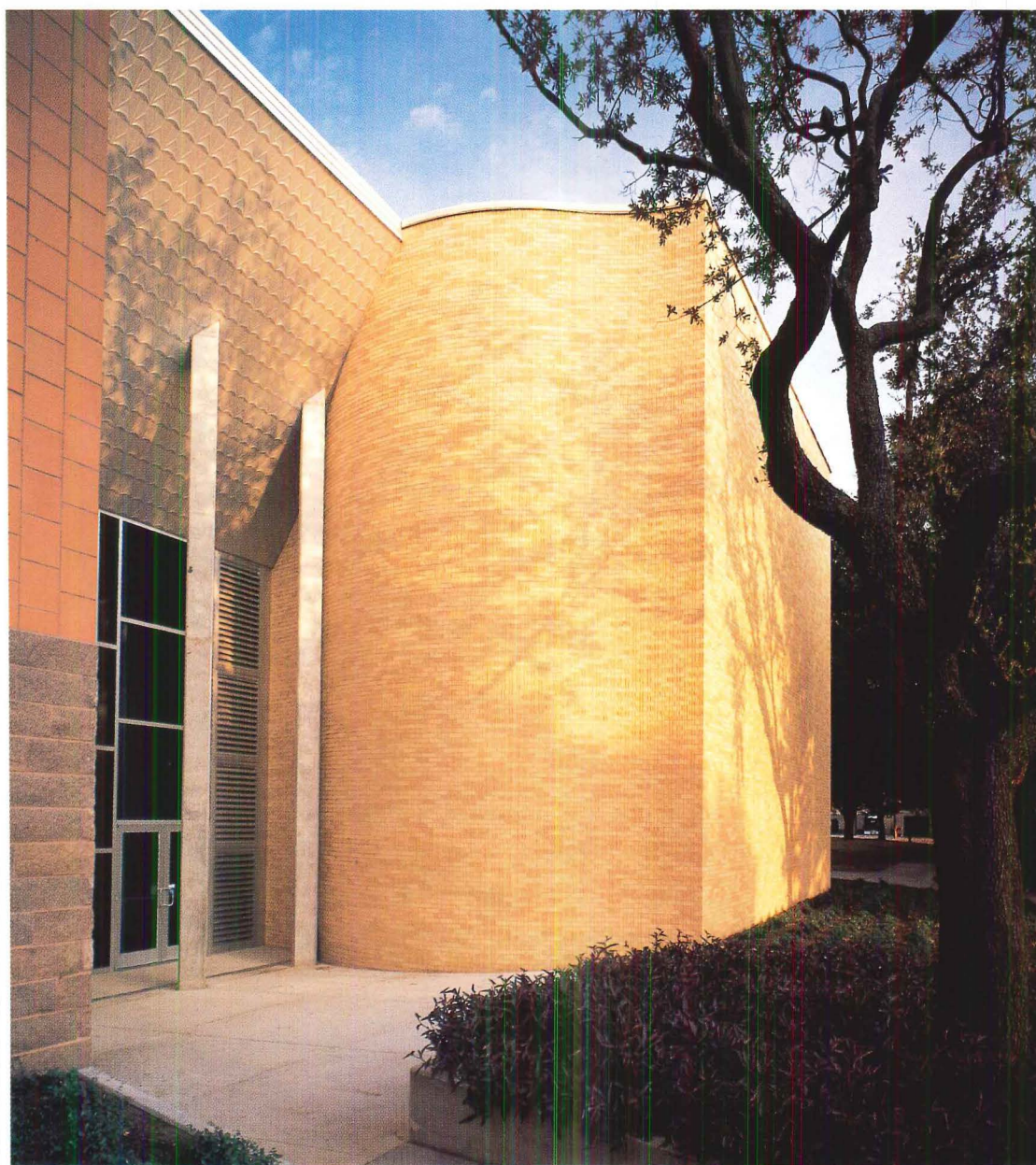
Skylights: Kalwall

Acoustical ceilings: Armstrong

Resilient flooring: Mannington

Wall coverings: Valley Forge Fabrics, Clarence House

Carpet: Prince Street, Whitecrest



The rough stone exterior of the recital hall (below and opposite top) contrasts with the yellow brick of other TCU buildings. The red-tile theater (right) and the aluminum-shingled rear entry (opposite bottom) help energize and call attention to an important public facade.



and texture. Aluminum shingles, similar to the stainless-steel versions found on older university buildings, frame the doorways.

As a visual counterpoint, the PepsiCo Recital Hall is finished in combinations of travertine, limestone, granite, and clay tile and is topped with a gleaming copper roof. The Hays Theater has an exterior wall of red clay tile that creates a dramatic focal point for the west side of the university campus, like a distant abstraction of Utah's Bryce Canyon.

Sound advice

Acoustician Christopher Jaffe, of Jaffe Holden Scarbrough, took a conservative stance on one project and a more innovative approach to the other.

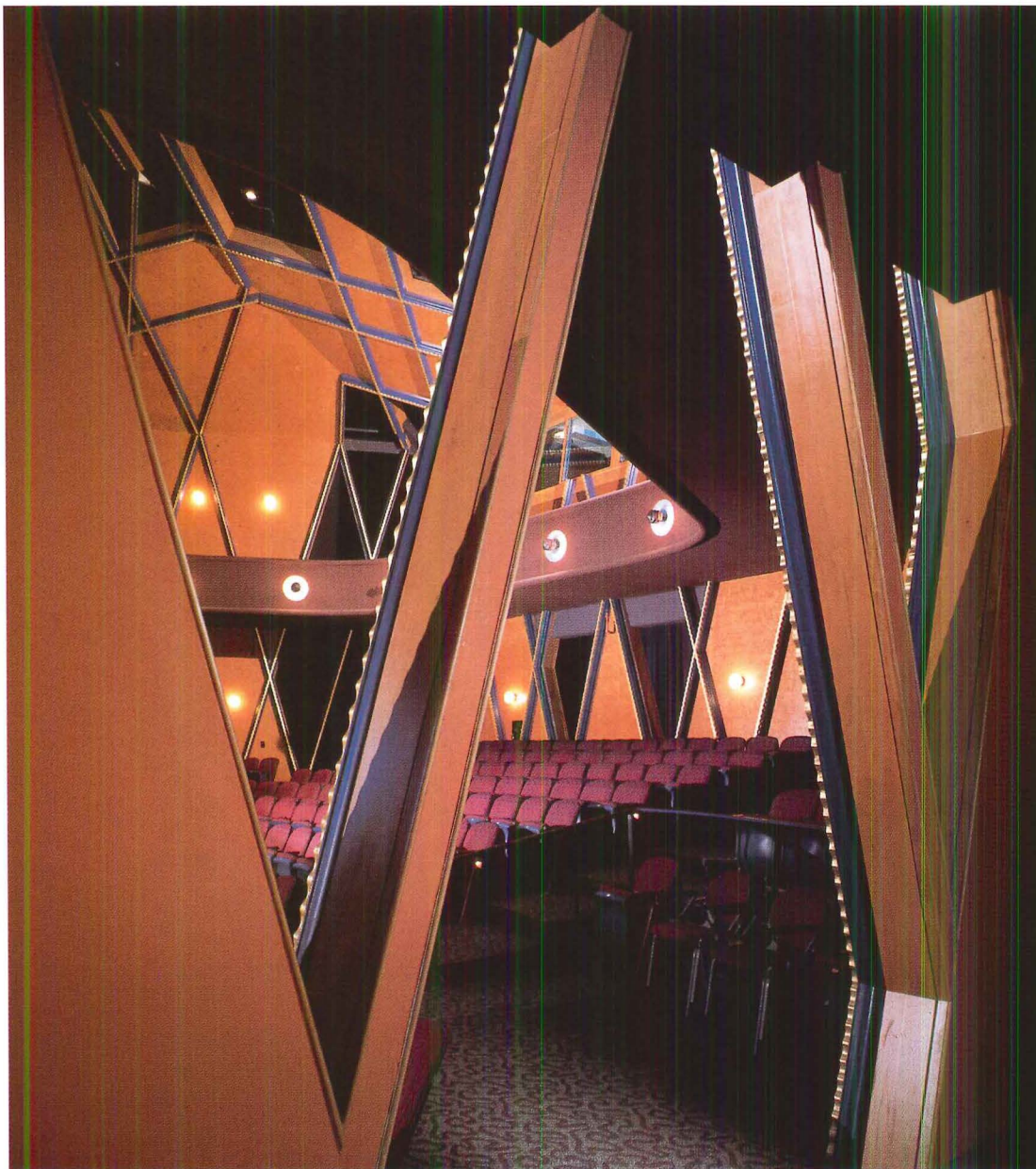
Because of budget constraints, the UNT hall is not a traditional room-within-a-room. What you see is what there is: No hidden reverberation chambers or other mechanical devices. The only moving parts are the acoustical canopies above the stage, designed by Holzman with the sleek, swept-wing profile of a fighter jet.

The PepsiCo Recital Hall, on the other hand, consists of a concrete box and a wooden acoustical shell that fits over the stage like a fancy geodesic dome. The goal, says Holzman, was to combine a small enclosure for the audience and the





The black-box theater (left) has a thrust stage and 233 seats. The lobby (far left) connects the theater and the recital hall (below and opposite), which has a wooden acoustical shell set within a concrete box.



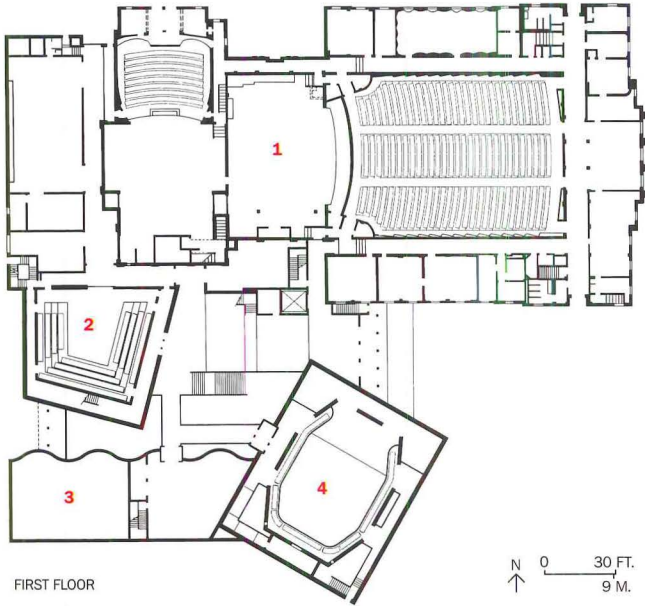
performers with a grand sound. Fixed openings in the shell allow the sound to escape into the larger room and then reflect back to audience members with no loss of intimacy.

The musicians are only now getting comfortable with their new surroundings, so a definitive assessment of the acoustics will have to wait. Early reports indicate that the sound in both rooms is clear and extremely bright.

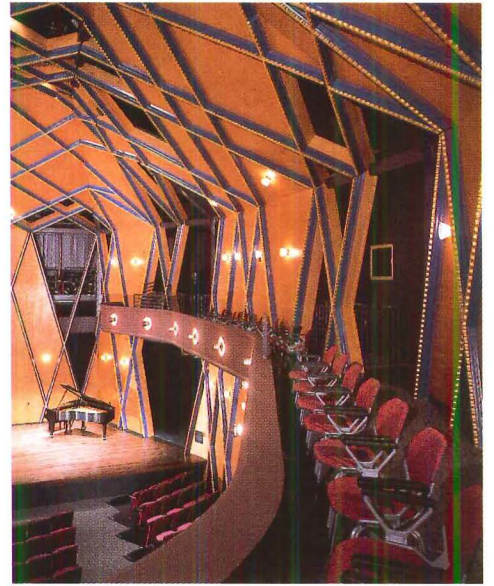
HHPA has sometimes been accused of going overboard with materials and textures; that criticism has some legitimacy at the Walsh Center. Although the constant play of rough against smooth, flat against curved, inside against outside sets the building apart from the pervasive blandness of the rest of the TCU campus, some effects—the red tile wall of the lobby for example—seem overwrought and gratuitous.

Shifting tones and textures

At UNT, the special effects are more controlled and purposeful. The concert hall is like a piece of intricate modern music, with frequent shifts in tone and texture and occasional dissonance unified by an underlying sense of order. An exotic measure of its success is the shimmering zinc roof of the performing arts center, now a landmark for pilots approaching Dallas/Fort Worth International Airport. ■



1. Auditorium (existing)
2. Hays Theater
3. Rehearsal
4. PepsiCo Recital Hall



3

Opus Building Seoul, South Korea

FIVE FAMILIES GET TOGETHER TO CREATE A MIXED-USE BUILDING WITH A CONCERT HALL TUCKED BELOW GRADE. ARCHITECTURE BY HAK SIK SON.

by Alice Kimm, AIA

Project: *Opus Concert Hall Building, Seoul, South Korea*

Owner: *Jae Soon Chang*

Architect: *Hak Sik Son, AIA, Architect—Hak Sik Son, principal-in-charge; C. Gregory Walsh Jr., Ken Min, Rene Ilmstre, William Kim, Oh Seop Lee, project team*

Associate architect: *Inter Architecture, Inc.*

Engineers: *Inter Architecture, Inc. (structural); Saeyun Engineering Co. (mechanical); Bowoo Engineering Co. (electrical)*

Consultants *Oikos Ecological Landscape Architecture (landscape); McKay Conant Brook (lighting)*

General contractor: *Yoo Pyung Construction Co.*

Sources

Elevator: *LG Industrial Electronics*

Plumbing: *Daelim Inc.*

Locksets: *Yale*

Hinges: *Stanley*

Chairs: *Vitra (Philippe Starck)*

Task lighting: *Artemide*

Alice Kimm, AIA, is a partner in the Los Angeles firm John Friedman Alice Kimm Architects.

The city of Seoul boasts an imposing facade of big office towers and high-rise apartments. Behind it, however, lie small, crowded, and lively neighborhoods filled with hidden treasures. Opus, an eight-story mixed-use building that houses an underground 150-seat concert hall, is one such surprise.

Designed by Santa Monica-based architect Hak Sik Son, AIA, and located in the congested, pedestrian-oriented Shinsa neighborhood, Opus is a facility that offers its own treasures in addition to its performance venue: A restaurant, music studios, and a graphics design agency are wrapped within a corrugated metal-and-glass skin.

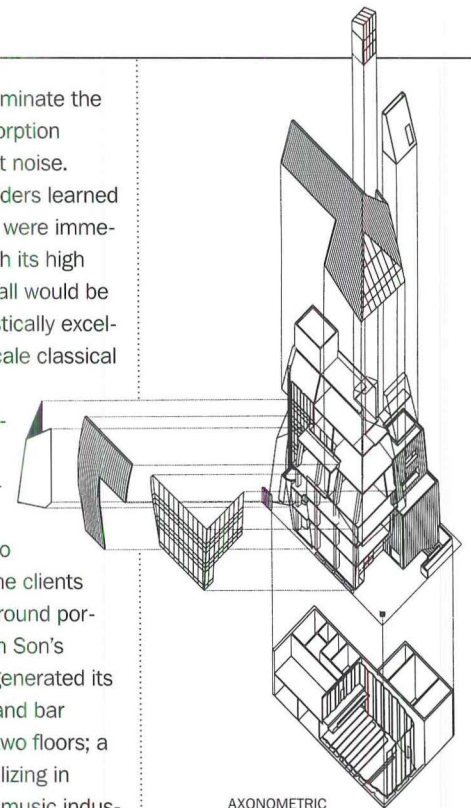
The clients, five couples whose children are all classical musicians and close friends, envisioned a building where the children could practice, perform, and interact with their peers. They approached Son and asked him to design the building and help in programming it.

The first question to arise was whether it would be feasible to place a concert hall on the tight urban infill site. Son discovered that it would fit if placed underground. Only below grade was the site free of stringent setback requirements. Unfettered by any excavation depth restrictions, Son proposed a 20-foot ceiling height for the hall. In addition, he noted that the basement location would provide excellent

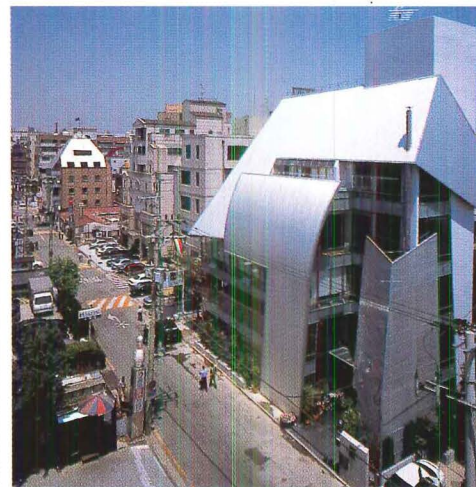
sound insulation and eliminate the need for expensive absorption materials to block street noise.

Music industry insiders learned about the proposal and were immediately enthusiastic. With its high ceiling, Opus' concert hall would be one of a very few acoustically excellent venues for small-scale classical music performances in central Seoul. Their support gave the clients confidence to move forward with their plans.

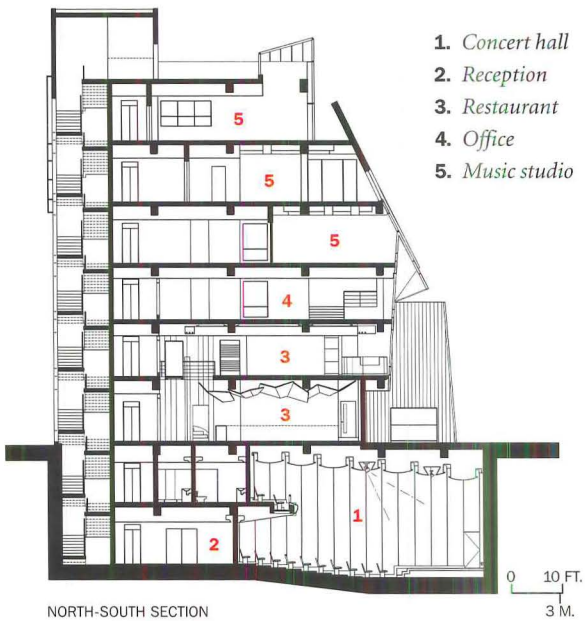
Following the decision to bury the concert hall, the clients addressed the above-ground portion of the building. With Son's assistance the clients generated its program: A restaurant and bar would occupy the first two floors; a graphics agency specializing in advertisements for the music indus-



AXONOMETRIC

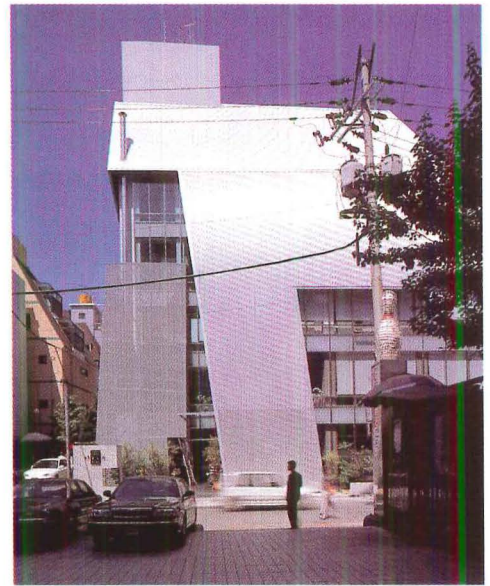


The angled planes of the building respond to the daylight envelope set by city regulations. Set in a dense, pedestrian-oriented neighborhood, Opus makes the most of its small site (left).



1. Concert hall
2. Reception
3. Restaurant
4. Office
5. Music studio

Although the concert hall is hidden below the street, the building engages the city with its use of transparent materials and its public restaurant. Angled walls on the top floors provide better acoustics for studios.

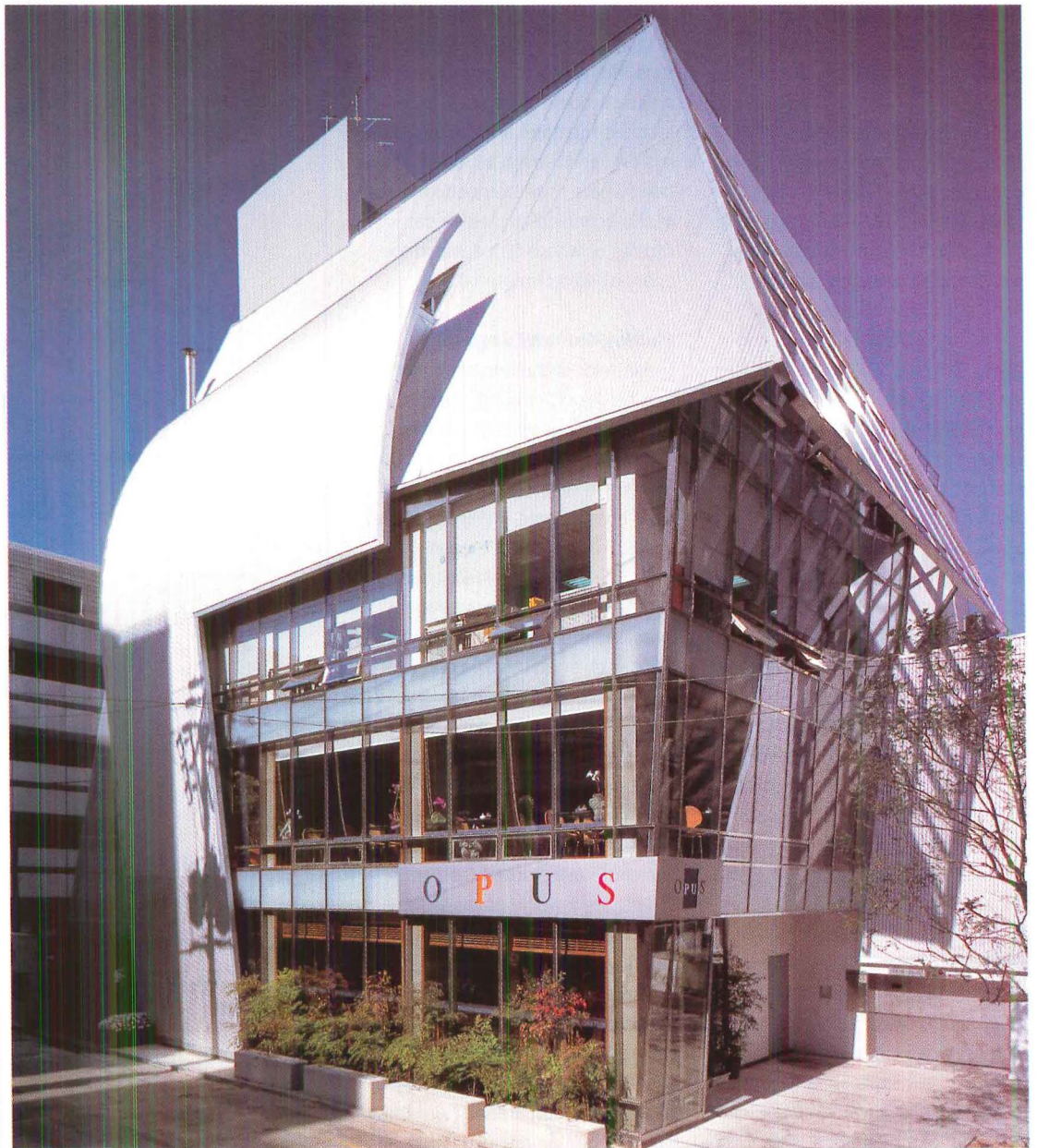


try would lease the third floor; the fourth, fifth, and sixth floors would be music studios for their children.

A lot of building on a small site

In working out the massing of the building, Son confronted both his clients' desire for maximizing volume and a code that protects neighboring buildings' access to daylight by dictating planes beyond which the new building could not project. Son responded to both challenges by tilting exterior walls in line with the angle of the daylight planes. What resulted is a maximized building mass that, rather than stepping up like a ziggurat, is relatively monolithic in form. This strategy had several positive results: Unifying the disparate building functions into one form, creating a strong visual identity, and blurring the distinction between wall and roof. Son also found that the nonorthogonal configuration of walls in the upper-floor music studios improved acoustics.

Two other key planning issues affected the building mass. First, Son opened up one corner of the site as a practical solution for finding space to access required parking. He placed a large tree there, to give a gift to the street and to add a soft natural form as a counterpoint to the building's hard surfaces. Second, realizing that the main stair would serve as the pri-





many means of circulation for all users of the building (despite the presence of an elevator), Son placed it to the southwest to receive abundant natural light, deepened it to more than the minimum required by code, and placed benches at each landing to make it a social space. Perforated metal screens filter the light and cast changing patterns of shadows inside the stairwell.

Using corrugated metal and glass, Son cloaked the building to varying degrees. At the first three levels, large expanses of glass reveal the activities of the restaurant and rental space. The glass performs the same function as the ubiquitous signage that is everywhere else in the neighborhood; the transparency is a natural advertisement for Opus and its interior activities and allows the building to breathe without being draped with messy graphics. Elsewhere, fluid surfaces of corrugated metal set Opus apart from neighboring buildings, which are clad mostly in tile and granite. Son carved away the metal at key points to bring in light, air, and views.

Whereas the exterior skin of Opus unifies the building's mass, the above-ground interiors contain fragmented, dynamic forms aimed at enlivening it. In the double-story restaurant (which is open to the public) sculptural elements fabricated out of metal, wood, and

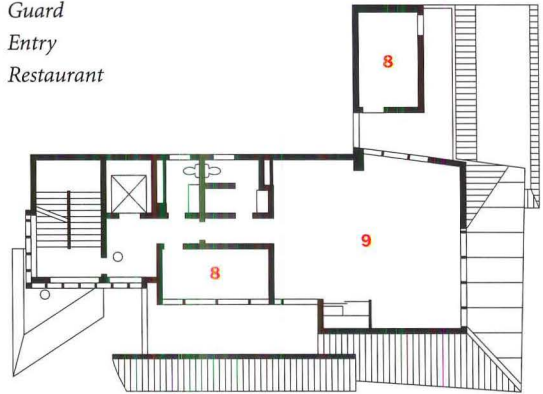
plaster cut through or float in space. On the second floor, a long table runs the length of the room to form a casual, communal bar. The concrete ceiling here is left exposed, as it is on upper floors. Dropped planes hang where they are needed to conceal mechanical and electrical fixtures or where Son decided to change scale or material.

Making the hall serene

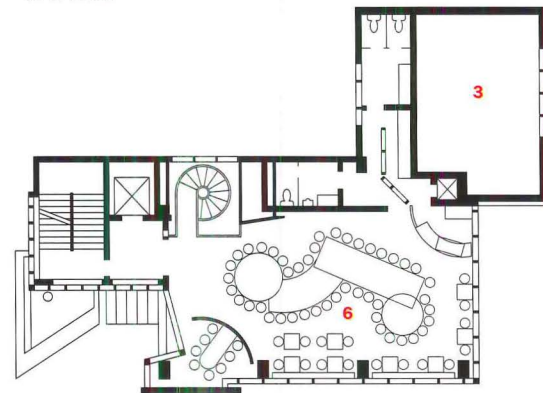
The interior of the buried concert hall, on the other hand, is direct and serene. Simple plywood-backed chairs, a clear-sealed concrete floor, and generous proportions are its main components. Walls are slightly angled for acoustical reasons.

In Seoul, cultural facilities are usually found on major thoroughfares and are mostly unimpressive edifices dwarfed by rows of office towers. In the neighborhoods behind them, where the real heart of the city beats, such venues are not to be found. Opus, however, begins to fill this void. Although the concert hall itself is buried below grade, the building as a whole engages the public realm in its use of transparency and lightness. Conceptually, programmatically, and formally, Opus welcomes the city inside. The building shows that cultural institutions can find a place even in tightly configured urban areas where they have not had a presence before. ■

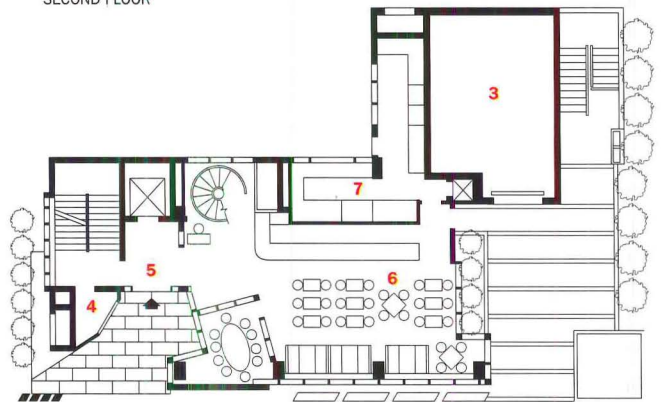
- | | |
|-----------------|-----------------|
| 1. Reception | 7. Kitchen |
| 2. Concert hall | 8. Office |
| 3. Parking | 9. Music studio |
| 4. Guard | |
| 5. Entry | |
| 6. Restaurant | |



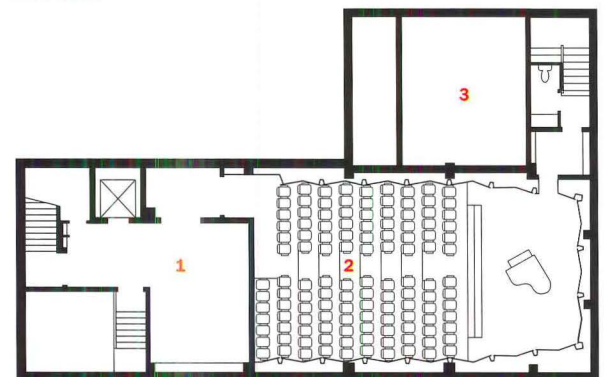
FIFTH FLOOR



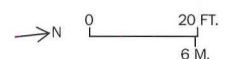
SECOND FLOOR



FIRST FLOOR



LOWER BASEMENT





Dynamic forms and views out to the street energize the restaurant (left). In the concert hall, though, simple elements such as a clear-sealed concrete floor and plywood-backed seats, along with generous proportions, create a serene setting for music (below).



Niigata Performing Arts Center, Niigata, Japan

ARCHITECT ITSUKO HASEGAWA BROUGHT A VARIETY OF PERFORMING ARTS SPACES UNDER ONE BOLDLY LANDSCAPED ROOF.

by Naomi R. Pollock, AIA

Project: Niigata Performing Arts Center, Niigata, Japan

Architect: Itsuko Hasegawa Atelier—Itsuko Hasegawa, principal-in-charge; Masaki Shitaka, Takehiko Higa, Akihiro Tamura, Jun'ei Shida, Masami Tsueda, Taiji Fujimori, project team

Engineers: Kimura Structural Engineers (structural)—Toshihiko Kimura, principal; Kankyo Engineering Inc.—Takafumi Wada, principal

Consultants: EPK Corporation (lighting); Yamaha Corporation (acoustics)

General contractor: Joint venture between Kajima, Fukuda, Homma, Kagata, Daiichi, Maru-un (main building)

Sources

Dot-pointed glazing and tempered laminated glass: Central Glass

Aluminum curtain wall and vertical pivoting windows: Shin-nikkei

Built-up roofing: Nisshin-kogyo Co.

Layered glass with fiber core: FIGLA

Lobby carpet tiles: Tajima

Concert-hall seats: Kotobuki

Theater seats: Aichi

Stage mechanics: Kayaba

Stage lighting: Marumo Lighting

In a rush to jump start its sputtering economy after the bubble burst in the late 1980s, the Japanese government became a leading patron of architecture. As federal agencies began pouring funds into public works and construction projects, Japanese designers pursued commissions for everything from national museums and libraries to regional sports arenas and schools. While a number of these new facilities have been criticized as either unnecessary or planned without sufficient consideration for how they

will be used, others appear to be adding real value to their local communities. And nearly all have helped ratchet up the standards for public architecture throughout Japan.

Completed last May, the Niigata Performing Arts Center by Tokyo architect Itsuko Hasegawa shows how much impact these

Six “floating” gardens surround the oval-shaped performing arts center, which also has a garden on its roof. A network of elevated walkways and bridges connect all of the features.

facilities can have. The project, which combines the renovation of a 35-acre site and the design of a new building with state-of-the-art facilities for contemporary and traditional performing arts, has turned an asphalt-covered wasteland into a tree-filled, riverfront oasis.

Located on the country's west coast, facing the Japan Sea, Niigata is a city of 500,000 people, two hours north of Tokyo by bullet train.

While this area was all but overlooked by post-World War II development, which concentrated in communities along Japan's east coast, Niigata benefited from a number of infrastructure improvements in the 1970s thanks to native son, Kakuei Tanaka, who was the prime minister then. Even so, the city today has neither car factories nor major financial institutions to call its own; instead, its main claims to fame are the local sake and the highly prized Koshihikari rice cultivated nearby.

In its heyday during the Edo period (1603-1867) Niigata was one of five ports open to other countries, making it an important gateway at a time when Japan was essentially cut off from the rest of the world. Situated between the mouth of the Shinano River and the sea, the city was riddled at that time with canals that linked the two bodies of water and divided its landmass into a cluster of islands. As

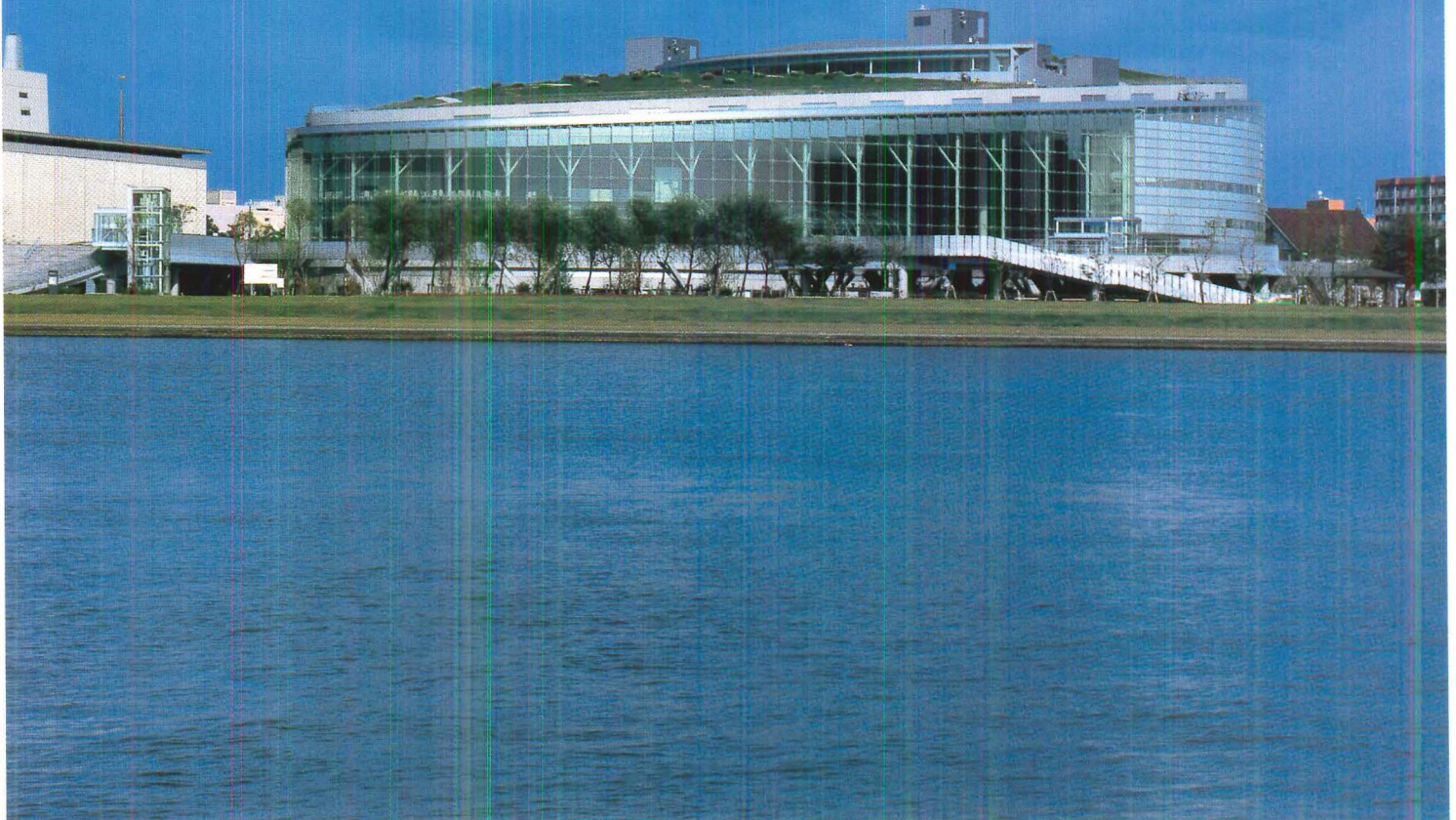


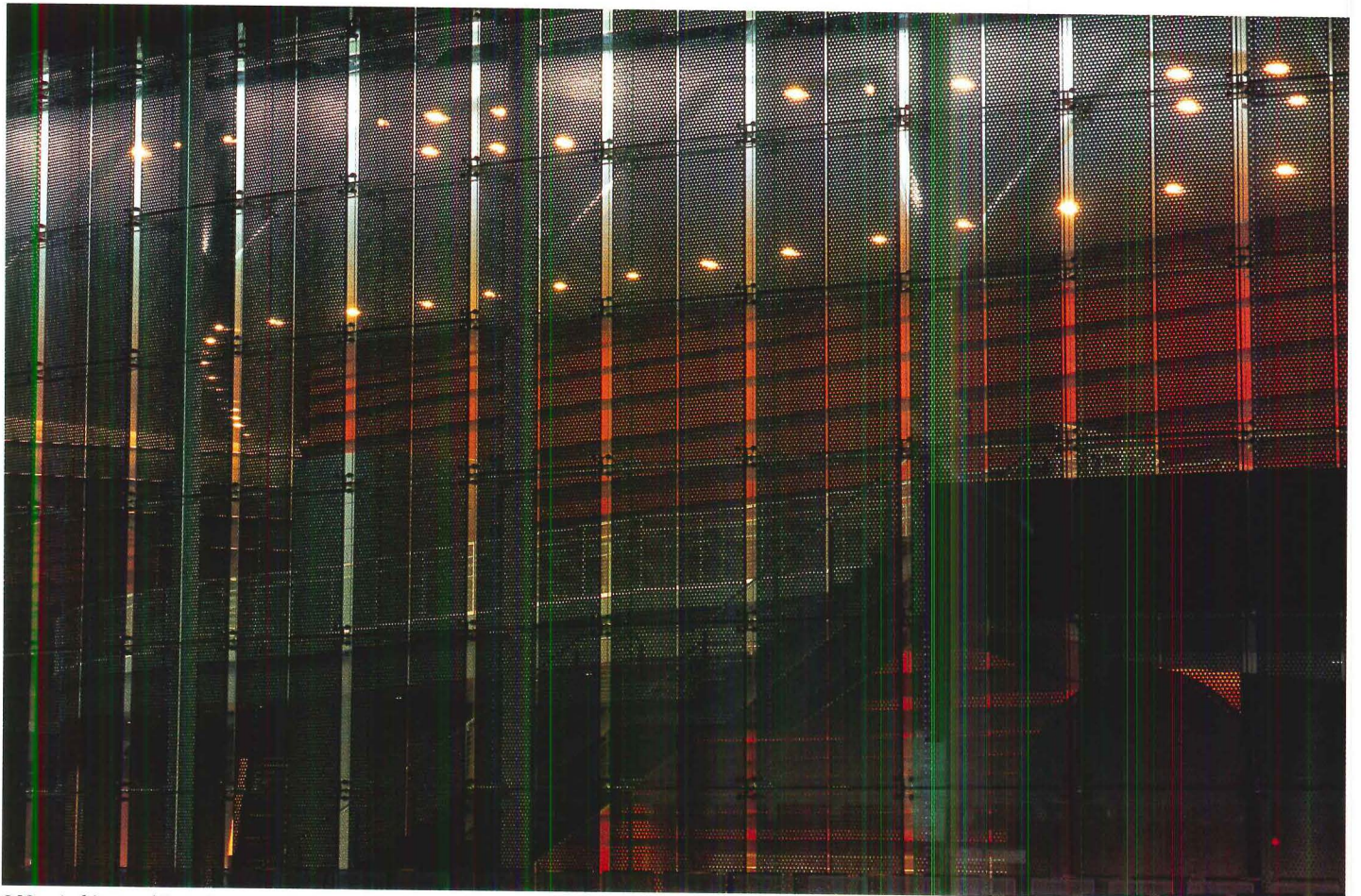
Naomi R. Pollock, AIA, is RECORD's Tokyo-based correspondent and the coauthor of Japan 2000.



Fixed shoji-like sheets in the curtain wall protect the north end of the building from the sun (right in photo

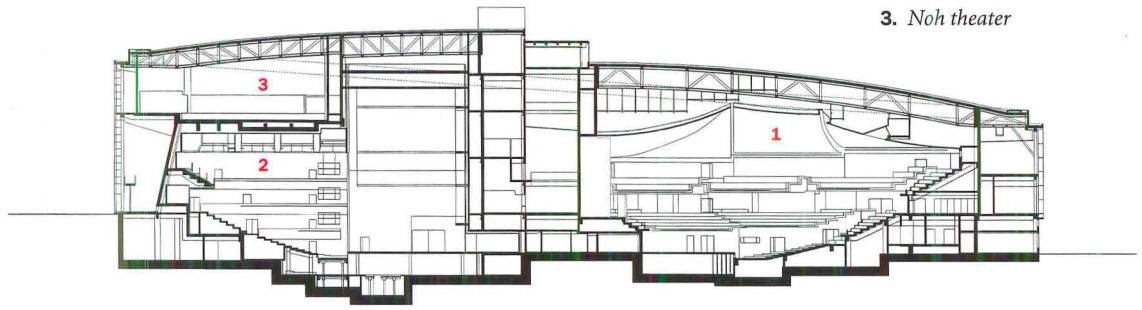
below). On the other sides of the building, punched-aluminum shades can be rolled up or down (above).



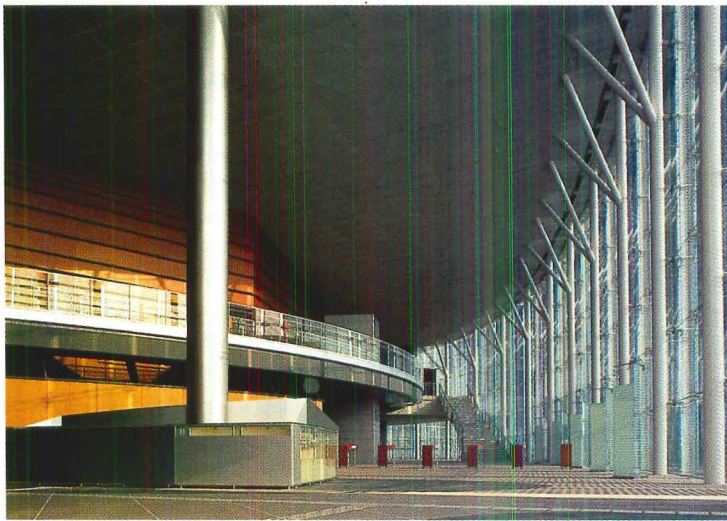


The curtain wall (opposite and bottom) was inspired by *manmaku*, a temporary screening device used at Japanese festivals. The curtain wall has two layers of glass and is held in place by four-point steel cables. The lobby (below and opposite top right) stays open even when no events are scheduled.

1. Concert hall
2. Theater
3. Noh theater



SECTION A-A



the city evolved, however, waterways were turned into roads and riverbanks padded with landfill.

Set on the river's edge on landfill built in the 1930s, Hasegawa's competition-winning scheme recalls the city's historic plan. The complex consists of seven figurative "islands"—a 361,000-square-foot egg-shaped building and six elevated park areas supported by tree-shaped columns. "I did not want to make a symbolic building but rather to create an environmental architecture," explains Hasegawa. While the distinctive, monolithic form of the performance building stands out against a backdrop of tile-roofed houses and low-rise commercial buildings, it mediates effectively between Hasegawa's jewel-like parks, the expansive riverfront to the south, and the five-lane thoroughfare bordering the east side of the site.

Tying the complex together

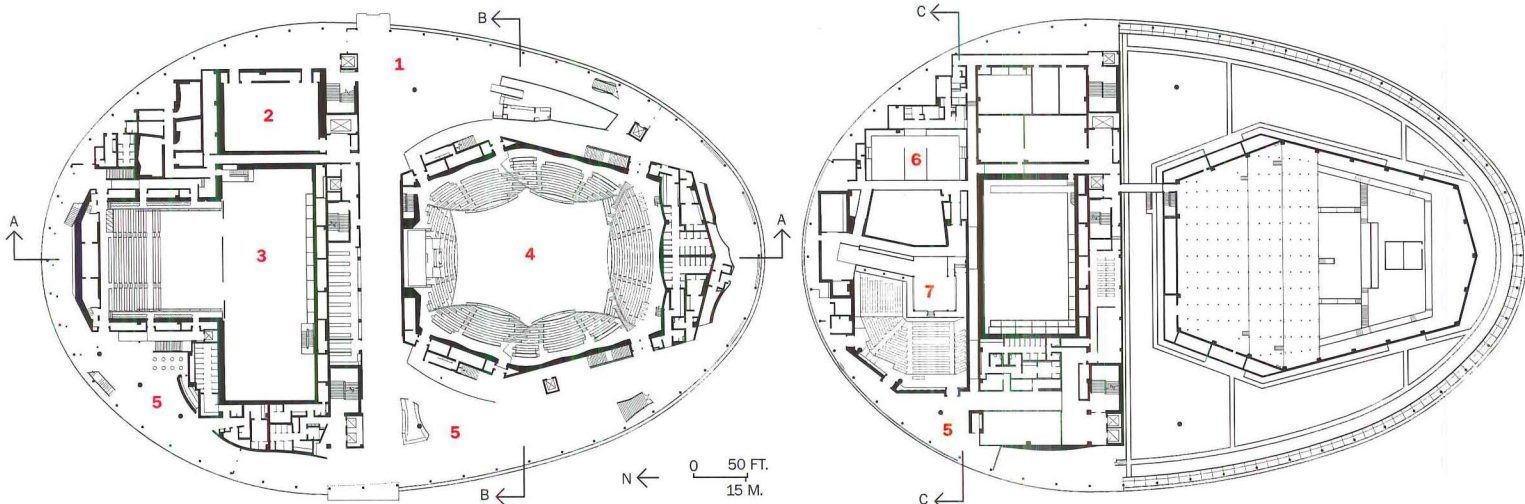
An elaborate two-tiered circulation system separates vehicular traffic from an elevated network of pedestrian bridges. Running from a riverside promenade to two municipal buildings from the 1960s to the "floating" gardens and the new building's second-floor main lobby, the elevated circulation holds the entire complex together. The dual levels not only enabled Hasegawa

to tie in with the sidewalks and roadways of the surrounding urban fabric but also to mask service drives, truck docks, and parking for 700 cars, all of which had to be built above ground due to poor soil conditions. Exterior, glass-enclosed stairs and elevators, as well as numerous ramped walkways, connect the two levels vertically.

To maximize the landscaped areas, Hasegawa ganged all of the performing arts components together inside the oval, shell-like building. By putting all of the theaters and the concert hall under one roof, she also hoped to stimulate synergy between different kinds of artists as well as collaborations between professionals and amateurs.

Though a spatially efficient enclosure, the oval form offers few clues about where to enter. A modest, canopied main entrance on the second floor perforates the building's taut skin on the building's west side. With barely a wind break to mark the transition from outside to in, the entry vestibule deposits visitors right into the main lobby where the ceiling soars to 39 feet.

Part connective tissue and part public gathering place, the lobby is open all day. "Public architecture is valuable only if it is well used," says Hasegawa. Even when no events are scheduled, local residents come to use practice rooms,



SECOND FLOOR

FIFTH FLOOR

- | | | |
|---------------|-----------------|-------------|
| 1. Main lobby | 3. Theater | 5. Foyer |
| 2. Rehearsal | 4. Concert hall | 6. Dressing |



A wide corridor (above) slices through the center of the building, separating the concert

hall from the theaters. Each of the performance spaces works almost as an

autonomous component and has its own character and architectural vocabulary.

take tea with friends, or let their children run around.

A broad corridor lined with enormous elliptical mirrors on one side divides the lobby roughly in half. To the south is a 2,000-seat concert hall that can accommodate full orchestras as well as solo presentations. While red stained-wood walls cover the hall's exterior, blonde-spruce veneer is featured inside where the light, airy space is ringed with scalloped banks of seating and capped by a billowing, tentlike ceiling.

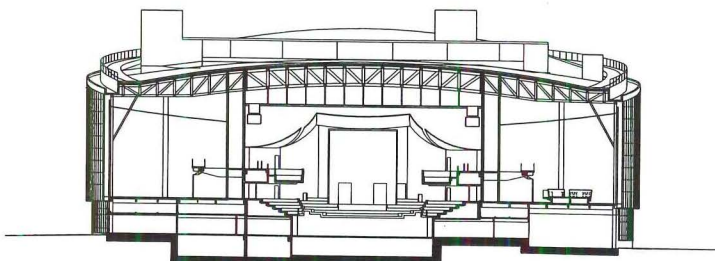
By contrast, the 900-seat the-

ater is all hard edges and sharp corners. Clad in black wood on the inside, the theater can be modified for contemporary productions as well as for Kabuki and Kyogen.

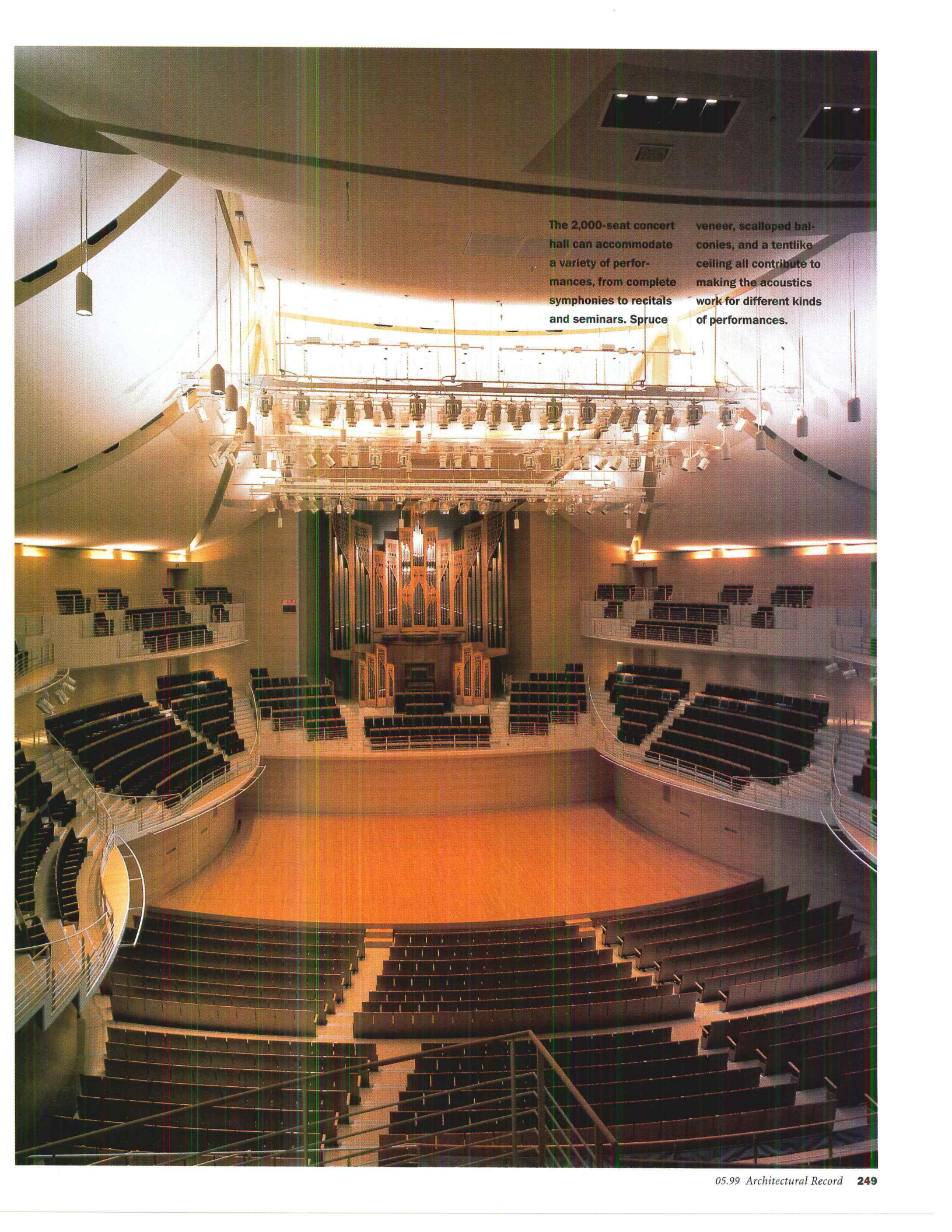
Stacked above the theater on the fifth floor, a 380-seat Noh theater sits tucked behind a sliding wooden grille. A suite of traditional tea-ceremony rooms overlooking a top-lit garden doubles as the dressing area for the actors who don many-layered kimono and white masks before going on stage. Green rooms, dressing rooms, and rehearsal spaces for other performers are clustered around the concert hall and theater on the first and second floors.

Separate together

Like autonomous buildings within a building, each performance space has its own character, architectural vocabulary, and reinforced-concrete structural system. As if to hold the disparate pieces together, Hasegawa wrapped the entire building with a curtain wall inspired by *manmaku*, a temporary screening device used at festivals. The wall is composed of two layers of glass separated by 28 inches and held in place by four-point steel cable supports. While fixed *shoji*-like sheets inserted between the panes insulate the building's north end, punched-aluminum shades control heat gain and sunlight at the south.



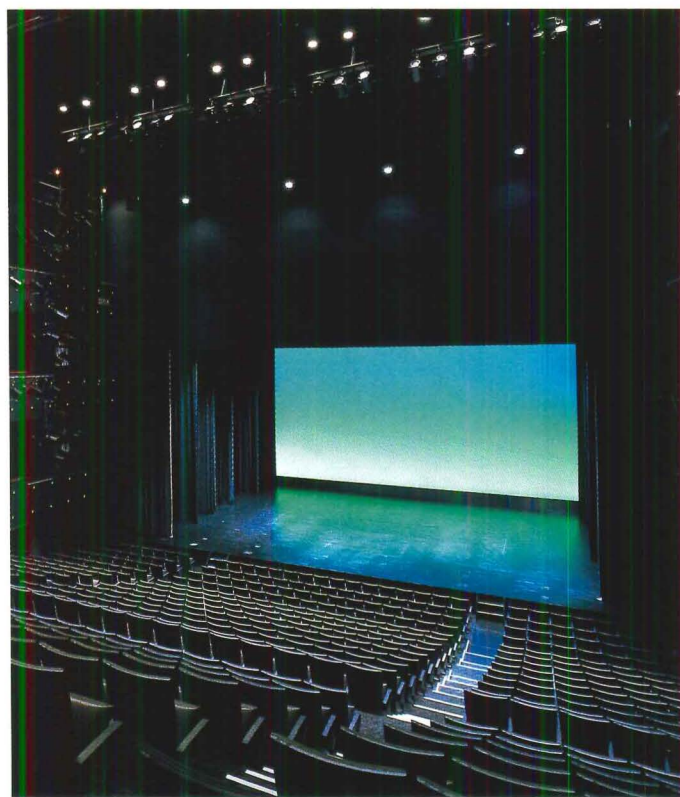
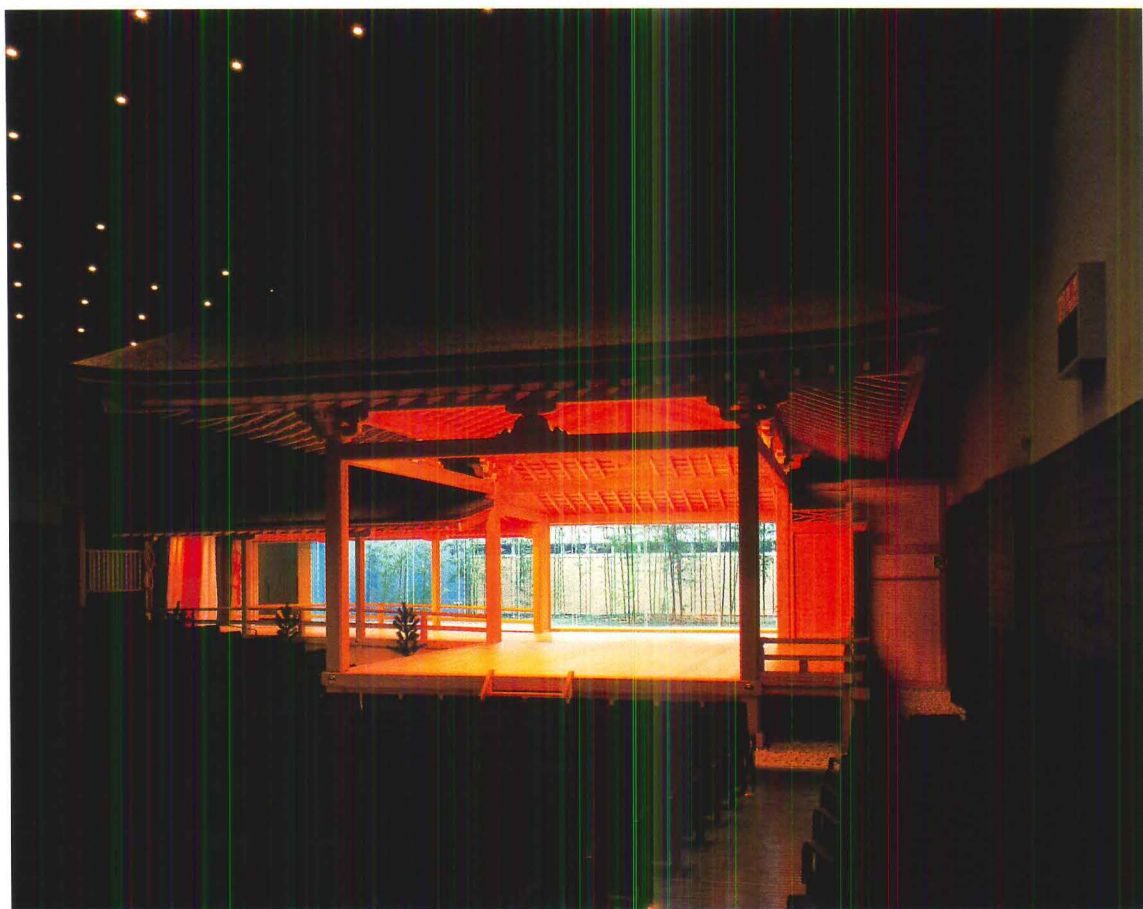
SECTION B-B



The 2,000-seat concert hall can accommodate a variety of performances, from complete symphonies to recitals and seminars. Spruce

veneer, scalloped balconies, and a tentlike ceiling all contribute to making the acoustics work for different kinds of performances.

Daylight shines in from a large skylight (section below right) to form a dramatic backdrop to the stage in the 380-seat Noh theater (right). A theater for more modern presentations (below) seats 900 people and occupies the space below the Noh theater.



A mere 0.0075-inch thick, the shades, which are controlled by a computerized sensor, can be rolled up in 6.5-foot increments or overlapped side-to-side to adjust the alignment of the punched openings and fine-tune sun protection as needed throughout the day.

Surrounding the building on the interior side of the wall are 56 tree-shaped steel columns that, together with 74 interior columns, transfer loads from the truss-supported, garden-covered roof to 98-foot-deep piles below.

broken new ground. For while Japan has a rich culture and access to ideas from around the globe, it normally separates old from new. Hasegawa's bold design may have perplexed some local citizens who would have preferred a conservative red-carpeted, chandelier-bedecked center, but the building's acoustic and technical capabilities have garnered accolades, and the overall response has been favorable.

But for Hasegawa another barometer of success will be whether the center's creative layout spawns new art experiences. If it does, then she really will have put Niigata back on the map. ■

The Art and Science of Sound

ARCHITECTS AND ACOUSTICIANS MUST LISTEN TO ONE ANOTHER TO INTEGRATE GOOD DESIGN AND GOOD ACOUSTICS IN PERFORMING ARTS CENTERS.

by William Weathersby Jr.

Goethe called architecture frozen music. That metaphor, though beautiful, isn't likely to calm a nervous world-class symphony conductor trying out a newly designed concert hall for the first time. The acoustic performance of an interior space is one of the most crucial and widely debated aspects of architectural design for the performing arts. From musicians and actors to critics and opening-night patrons, "How does it sound?" is the first and most important question on everyone's mind.

For a venue designed to support any type of live performance, whether musical or spoken word, the number of variables that affect what both performers and audience members hear is staggering. These include the number and configuration of the seats; the shapes and juxtapositions of the stage and audience chamber; the volume of the space; and the mass and finish of every structural component and surface, including details such as the carpeting in the aisles and the upholstery fabric on the seats. The nature of the performance, from the quality of the musical compositions and instruments used to the timbre of the actors' voices, also affects the acoustics.

No single architectural algorithm ensures perfect sound. "The final assessment of the suitability of a room's acoustics is subjective and entirely dependent on human perceptions and preferences," says acoustician David Schwind of Charles M. Salter Associates. And it is important to remember that the European concert halls of the 19th century that are still revered today "were not designed on the basis of contemporary archi-



tectural acoustic criteria," notes Christopher Jaffe of Jaffe Holden Scarbrough Acoustics. "At best, architects copied the geometries of halls that the musical community considered successful for the music being composed at the time." A deft combination of art and science, acoustical engineering calls on practitioners to combine a technical background in musicology and physics with intuition. "Today's room acoustics, like many arts, is an opinion-dominated field," Schwind asserts, "one that is influenced as much by history as it is by technology."

As the end-users who often drive the design requirements of a theater, performers and arts administrators have personal preferences. In symphony spaces, for example, terms such as warm, lush, velvet, and dark can mean different things to different musicians. A primary function of the acoustical consultant, as the architect's ally, is to take such subjective preferences and translate them into objective criteria and design requirements. Ultimately, the architect and other members of the design team evaluate the cost impact of acoustical design elements, including mechanical noise and vibration control, soundproofing, and special finishes. The challenge then lies in seamlessly incorporating the acoustical mechanics and requirements into the physical detailing of a space.

William Weathersby Jr. is a freelance writer specializing in architecture. He is based in Westport, Connecticut.

CONTINUING EDUCATION



Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/AIA Continuing Education article. To receive credit, turn to page 264 and follow the instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. Describe the role of the acoustical consultant on a design team.
2. Explain a sabin unit and its origin.
3. Describe the characteristics of desirable wall, ceiling, and mechanical system construction for performing arts centers.
4. Understand how changing acoustic technology influences concert-hall design.

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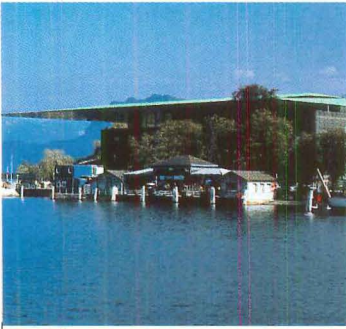
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CASE STUDY

At the new Culture and Congress Center in Lucerne, Switzerland, designed by Parisian architect Jean Nouvel, acoustical accoutrements are an integral part of the architectonic design. The first phase of a civic complex that will encompass a convention center and fine arts museum, its facade features a cantilevered roof projecting 115 feet beyond the edge of the building. On the lake-facing north and east elevations, steel cladding—in varying shades of blue, green, and Bordeaux red—creates a collage of rectangular forms.

The audacious palette carries through inside, with mottled red walls in lobbies and corridors leading into the stark white auditorium itself. Nouvel had initially planned to wrap the audience chamber's interior walls in dark blue, but the client preferred a more neutral backdrop that would not compete for attention with the orchestra on stage. Nouvel's ultimate design is all the more dramatic: 50 curved white doors line the perimeter and pivot to

reveal the crimson envelope. The 50 hinged-wall elements serve as sound diffusers, with the surrounding entry alcoves linked as a U-shaped reverberance chamber of 107,000 feet cubed in total volume. Depending on the requirements of the music being performed, the computer-controlled doors can remain closed or open to any angle up to 90 degrees to optimize sound vibrations.

Nouvel collaborated with the project's acoustician, Russell Johnson of Artec Consultants, on the articulation of the plaster-tile-on-concrete door panels, which feature wafflelike grids of five different patterns to avoid a predominance of any one narrow band of sound frequencies. The visual contrast between inner and outer spaces is heightened prior to concerts with bright white illumination blazing in the inner hall and red lights "giving the antechambers the look of Pompeian villas," Johnson says. In the moments after the audience is seated and before a concert begins, the lighting and acoustical-door positions gradually change; Nouvel achieves his own architectural overture.

The shoe-box form of the 1,840-seat venue is a successor to the tradition of 19th-century European concert halls. "It remains the configuration conductors and music lovers prefer," Johnson says. Four narrow balconies stretch out on either side. Along with a choir loft and organ, a mobile sound-reflect-

ing ceiling canopy forms the horizon sight line for the audience. Faced in cherry wood, the two-part ceiling can make the sound of the hall appropriate to each symphonic work. An adaptable stage floor is fitted with individual motorized gliders

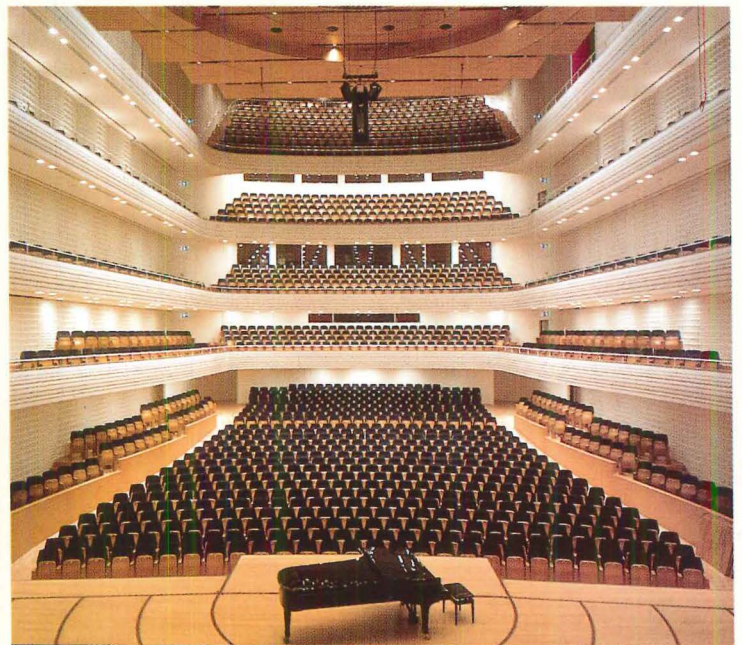
and podiums to support various on-stage configurations. At the rear of the hall, translator booths, projection rooms, and broadcast facilities accommodate events other than concerts, such as recording sessions and lectures.—W.W.



A ceiling canopy hovers over the stage (above) and reflects

sound. Pivoting doors serve as sound dif-

fusioners (left). The hall's traditional European form is popular with audiences (below).



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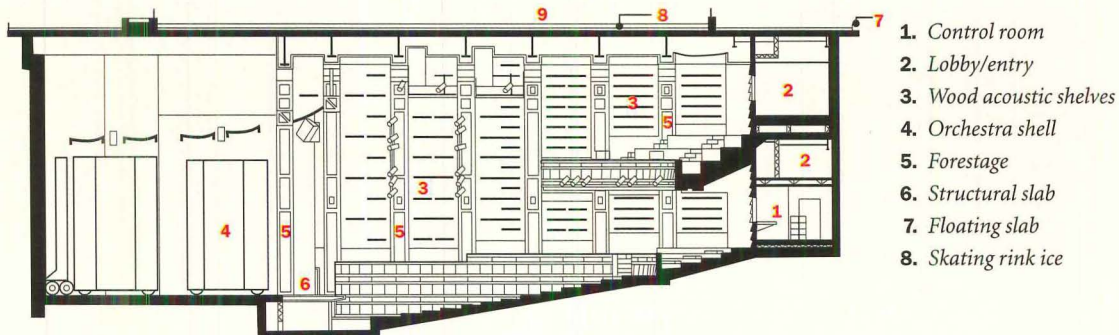
CASE STUDY

In designing the Vilar Center for the Arts, Hardy Holzman Pfeiffer Associates was saddled with an unusual site. The 530-seat auditorium in Beaver Creek, Colorado, is entirely underground, beneath an outdoor ice-skating rink and plaza, and less than 100 yards from the base of a ski slope. Running below the theater is the creek for which the town is named. "Sound isolation from the skating rink was the crucial concern," says principal acoustician Ron McKay of McKay Conant Brook.

Steel trusses spanning the theater's width were stiffened to support the load above and to provide a sturdy substrate for the ceiling's many layers of insulating material. The hall's height and width limitations complicated this engineering challenge.

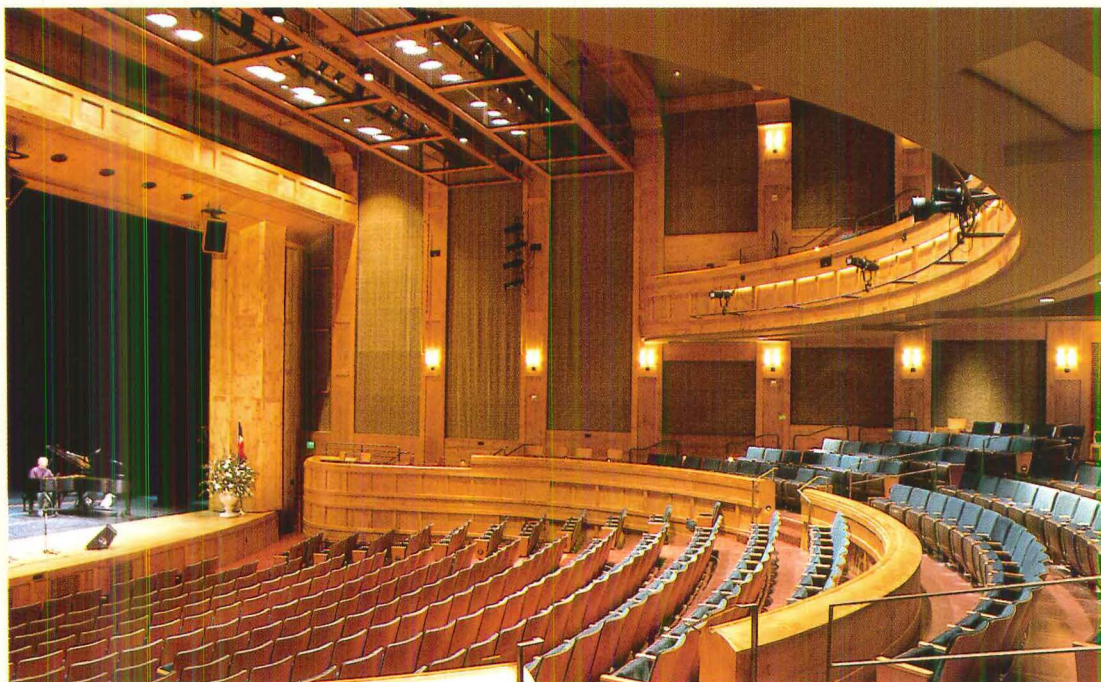
Purlins, a steel deck, and concrete fill formed the structural slab atop the trusses; a waterproof membrane was applied over this. A 9-inch-thick upper slab supports the ice surface. This floats over the structural slab on neoprene isolators, each of which is fitted top and bottom with a steel cup. A peg projects through the center of each cup. "The steel peg touches the bottom of the cup only when the weight of the ice-cleaning Zamboni is applied from above," McKay says. For additional isolation, the auditorium's plaster ceiling, lighting, and ductwork were suspended from the main structure on springs.

Solutions for isolating the mechanical systems included framing the mechanical-room floor separately from the adjacent auditorium wall. A multilayered auditorium wall several feet from the mechanical-room wall also dampens sound transmission.



SECTION THROUGH THEATRE

1. Control room
2. Lobby/entry
3. Wood acoustic shelves
4. Orchestra shell
5. Forestage
6. Structural slab
7. Floating slab
8. Skating rink ice



Spring vibration isolators are under all mechanical equipment. Ductwork is routed, sized, and lined to prevent noise transmission.

The stage wings and flyspace (the open volume over the stage used to store scenery out of sight) are enlisted as reverberation chambers to create sufficient volume in the hall for symphonic performances. Musical sounds produced by the orchestra are channeled through the volume of surrounding spaces and into the hall via calibrated openings in the shell.

To adjust the acoustics of the room for varied performance types, 3,000 square feet of fabric banners can be raised or lowered over side and rear wall surfaces.—W.W.

Wood acoustic shelves diffuse musical sound (above). Drapes absorb sound for spoken word (right).

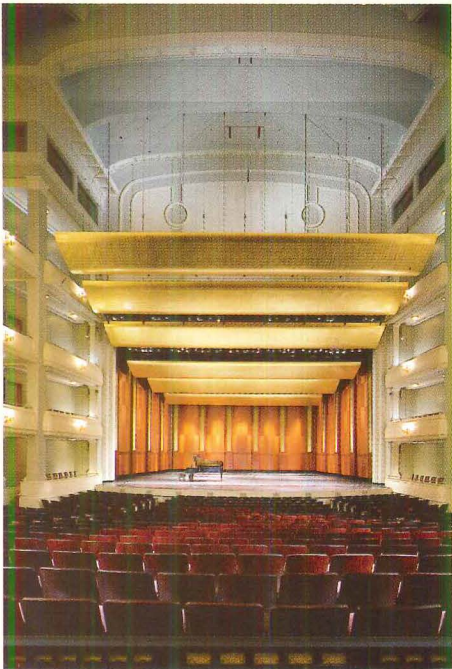




CASE STUDY

The Nancy Lee and Perry R. Bass Performance Hall in Fort Worth, Texas, designed by architect David M. Schwarz, AIA, with architect of record HKS Inc., is an adaptation of a classical 19th-century European opera house. The bold facade of the \$68 million multi-purpose hall features a pair of 48-foot-tall limestone angels—a design solution to an acoustical problem that arose from the constricted site. “To achieve good acoustic separation between the mechanics of the building and the hall, ducts were placed at the outer edge of the footprint,” Schwarz says. “That created sections of blank wall, which the sculptures mask.” To save space, the mechanical plant is across the street.

Sound isolation in the auditorium is provided by an acoustic slab



below the roof and above a domed plaster ceiling. The slab combines 9 inches of concrete atop a 3-inch-thick metal deck. A 6-inch-thick lightweight-concrete roof slab is paired with a 10-inch-thick topping slab over the flytower. The audience chamber is isolated from the lobby and support areas with concrete-block walls sheathed in plaster. Each seating level is further buffered from outside noise by anterooms and corridors lined with acoustic fiberglass.

The horseshoe-shaped plan wraps 2,100 seats around the room in five tiers and 21 boxes. “This arrangement worked to our advantage acoustically,” says Mark Holden of Jaffe Holden Scarbrough Acoustics. “They required careful detailing and angling to insure that sound wasn’t lost or trapped.”

Bass Hall is home to the city’s symphony, opera, and ballet companies and hosts concerts and touring Broadway shows. Accommodating all these meant combining both reflective and absorptive surfaces within the venue. Adjusting the room’s acoustics for symphonic performances included creating a concert-hall “shaper”—a term the acoustician uses to describe the mobile stage ceiling, adjustable reflectors, and orchestra shell towers with adjustable grills. The ceiling element cuts off the volume of the fly-loft 40 feet above the stage to improve sound reflection for instruments on stage. The wood ceiling folds down when not in use. Seven adjustable reflectors direct sound toward on-stage performers and the audience. Mobile shell towers reduce the size of the stage and reflect sound to the audience. Absorptive banners and draperies are used for large-scale musicals and pop concerts.—W.W.



Exterior angels announce the hall’s presence and mask blank areas on the facade (top, far left). The wood ceiling (left

folds down when not in use. The horseshoe-shaped array of boxes and balconies improved acoustics (top, left and right). To

isolate the dramatic domed ceiling (above) from outside noise, there is a 12-inch-thick acoustic slab between the dome and the roof.

The Steinberg Pavilion
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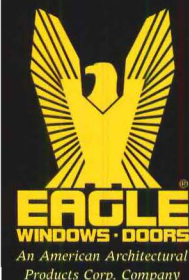
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The Alfred Newman Recital Hall, formerly the Hancock Auditorium, at the University of Southern California School of Music in Los Angeles was recently renovated to enhance its use as a versatile recital venue. SMP-SHG Architects collaborated with acoustician Kirkegaard & Associates and theater consultant Auerbach + Associates on changes to the 3,800-square-foot space, designed in 1941 as a lecture hall.

More than one-third of the \$1.6 million budget went toward a new mechanical system of handlers, ductwork, sound traps, and diffusers that allows quiet air circulation during performances. Another third of the budget supported code upgrades. The balance encompassed acoustical and aesthetic improvements to the 300-seat hall.

During a renovation in the 1980s, the hall's absorptive materials were removed, making it more suitable for recitals. "But because the geometry and basic surfaces were left intact, the room's acoustics swung too far in the opposite direction," says acoustician Joseph Myers. "It had a very clattery sound quality, harsh for any instrument with strong staccatos or attacks. The room became easily overloaded and uncomfortably loud."



The design team solved this imbalance by replacing the existing plaster atop the poured-in-place concrete walls with dense layers of drywall and plaster reinforced with steel framing. A series of curved wood panels, exposed plaster surfaces, and flattened wood pyramid structures placed along the perimeter bounce sound evenly throughout the hall. This shell, combined with wood panels above the stage, creates an acoustically "live" space; a solo harpist can now be heard equally as well in the back corner of the hall as from a front-row seat. The suspended stage reflectors, which also act as a proscenium, provide performers with acoustical options, such as modulating reverberation, depending on where they position themselves.

The back and side walls have three-dimensional pilasters containing retractable acoustical curtains. The pilasters give scale to the space and link the walls to the coffered ceiling. During a performance by larger ensembles, such as a 40-piece orchestra, the curtains are pulled out to absorb sound.—W.W.

Curved wood ceiling panels (top) help distribute sound through the hall, while wall bays (left) can be curtained (right) to absorb sound.

Elements such as curved balcony parapets, horseshoe- or fan-shaped seating plans, and grillwork or ornamentation can be harnessed in various ways to tweak a room's sound.

Evolution of acoustics

The mathematics and study of sound started with Pythagoras in the 6th century B.C., but the field of modern-day acoustics developed from stud-

CONSTRUCTION TECHNIQUES OF 100 YEARS AGO YIELDED HALLS STILL PRIZED FOR THEIR ACOUSTICAL QUALITY.

ies conducted by Harvard physics instructor Wallace Clement Sabine in the late 19th century. In 1895, he collaborated with Charles McKim on Boston Symphony Hall, a rectangular space with 2,600 seats that is renowned as one of the best sounding concert halls in the world today. The hall is patterned after the 1870 Veriesaal Music Hall in Vienna, also lauded for its remarkable sound quality. Sabine, who was denied tenure from Harvard after debate at the time over the Boston Hall's sound, is

considered the first acoustical consultant. He patented the earliest acoustical tile and opened a laboratory dedicated to the measurement of sound absorption of materials and sound transmission of wall structures. His techniques are still part of the contemporary acoustician's repertoire. The *sabin*, the unit of measurement of acoustic absorption, is named for him.

In this century, acousticians have continued to research the relationship between sound and an interior space's surface finish (paint, varnish, oil), materiality (wood, plaster, brick, stone), and structure (wall massing, construction techniques, and mechanical underpinnings). "It is no surprise that the construction techniques of 100 years ago yielded halls that are still prized for their acoustical qualities," says acoustician Joseph Myers of Kirkegaard & Associates. "With masonry bearing walls measuring 30 to 48 inches thick and sheathed in plaster, the construction of these halls virtually guaranteed the strong bass response and overall warmth of sound pleasing to the human ear."

When steel and poured-concrete construction methods replaced solid masonry at midcentury, the interior surfaces of new performance spaces were often still plaster, but it was mounted over hollow cavities. "The lack of solidity behind the plaster would not support the

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low-frequency sound created by bass and percussion instruments,” Myers says. “Because the human ear is better at hearing middle and high frequencies, a room must be more supportive of low frequencies so that everything balances out properly. Architects had to build a few of these rooms that were insufficient in order to realize how much structure influences sound. When constructing a concert hall today, walls may not be load-bearing, but they should be very heavy masonry or concrete.” Although wood-lined halls provide tactile, warm environments, paneling in large rooms often results in thin-sounding symphonic performances

Symphony performances require reflective surfaces that increase a sound’s reverberation time, for example, while opera and theater productions need absorptive surfaces that limit excessive reflections. Combining both qualities in one hall is possible, but only with a substantial investment in acoustical components that are properly configured and operated to address the specific needs of each performance.

In the past 20 years, industry technology has advanced to the point at which consultants can complete acoustical measurements and calculations that are correlated with computer analyses, sometimes with

COMPUTER MODELING IS SOMETIMES USED AS AN ACOUSTIC DESIGN TOOL, BUT MOST ACOUSTICIANS BASE THEIR JUDGMENTS ON PAST EXPERIENCE.

robbed of bass response, unless it is bonded to massive wall construction.

Typically, the acoustician collaborates with the architect in the design phase, adjusting factors such as the reflective and absorptive qualities of surfaces and finish materials, volumes of the stagehouse and audience chamber, seating rakes, and isolation of mechanical systems. Most modern halls also require adjustable acoustical features that may call for orchestra shells and movable towers, sound reflectors, and absorptive draperies.

Sound dilemmas

A current challenge facing architects designing for the performing arts is how to program large single venues as multipurpose halls. “There is often the belief that multiuse means ‘no good use’ because of the many compromises involved,” says Mark Holden of Jaffe Holden Scarborough.

computer modeling. Through such data has come a better understanding of why certain classic design details, such as shoe-box-shaped halls, acoustical clouds, and diffusive surfaces, work so well. Still, newfound computer-based techniques have their naysayers in the industry. Historically, acousticians have been slow and even resistant to technological change, and there remain many conflicting opinions. “Judgment based on experience and an understanding of the interrelation between acoustics and architecture must accompany and often override information gained by computer models,” asserts one consultant.

“Acoustics as a field of study is constantly evolving,” Myers says. “When you weigh the various sound qualities of a room in new ways—how sound reflections come from the side walls versus from overhead, say—you begin to strike the right balance of integrated acoustics and architecture tailored to the uses of each building.” ■



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- ◆ Read the article “The Art and Science of Sound,” using the learning objectives provided.
- ◆ Complete the questions below, then check your answers (page ???).
- ◆ Fill out and submit the AIA/CES reporting form (page 174), or file the form on ARCHITECTURAL RECORD’s Web site at www.archrecord.com to receive two AIA learning units.

QUESTIONS

1. What are the functions of the acoustical consultant and the design team?

2. What is a *sabin* and how did it acquire this name?

3. Why are thick masonry bearing walls prized for their acoustical qualities?

4. Why are multipurpose halls a dilemma for architects designing performing arts centers?

Building a Technology Staff

FIRMS MUST DEVELOP MULTILEVEL STRATEGIES TO FOSTER AN APPROPRIATE RANGE OF COMPUTER SKILLS AMONG DESIGN, TECHNICAL, AND ADMINISTRATIVE STAFF.

by Jerry Laiserin, AIA

To realize an effective return on their investments in computer and communication technologies, architects must master an ever larger body of new, rapidly changing, and often arcane knowledge about the workings of these systems. From the smallest proprietorship to the largest megafirm, every design practice needs a variety of skills, representing many levels of expertise, that address all aspects of computer technology, including multiple software, hardware, and networking systems. To establish such an inventory of skills, a firm must first decide which skills are appropriate to the regular staff, which should be reserved for designated technology staffers, and which should be handed off to outside consultants. Next, the firm must develop a plan for hiring, training, and supporting—in the right proportions—the personnel who use the technology.

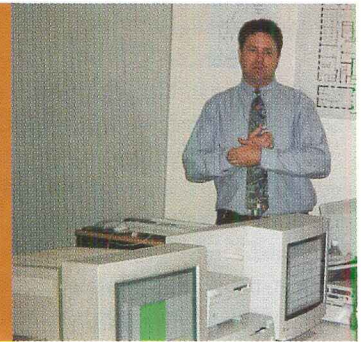
A recent survey of several hundred North American businesses by management consultants PriceWaterhouseCoopers found that difficulties faced in hiring, training, and providing support accounted for nearly three-quarters of all reported problems in plan-

ning into the hiring and professional development practices of an office. Paradoxically, one of the oldest, continuously operating firms in the United States, 130-year-old Shepley Bulfinch Richardson & Abbott (SBRA) of Boston, also is one of the most successful in managing and staffing for the latest technologies. SBRA's experience, as well as that of other firms mentioned below, provides valuable insights into hiring, training, and providing support for design technology.

Whom to hire

According to SBRA's information technology (IT) manager Brad Horst, AIA, the first rule of technology staffing is distinguishing IT, which deals with applications, from information systems and services (IS). The former includes the software, procedures, and standards for accomplishing practice-specific tasks, like computer-aided design (CAD) or desktop publishing (DTP). Systems and services (the latter) includes computing infrastructure, like hardware and networks, common to any computerized business. Strictly speaking, in-house systems, like local area networks

COMPUTERS ARE STILL RECENT ENOUGH ADDITIONS TO MOST ARCHITECTURE FIRMS THAT FEW SENIOR PRINCIPALS HAVE HANDS-ON EXPERIENCE WITH THEM.



ning or using computer information systems. Fortunately, since these three activities are interrelated, resolving problems in one area helps eliminate those in another.

For example, hiring better prepared workers reduces the need for training and support, while an intensive hand-holding style of support minimizes the demand for well-skilled hires or time-consuming training. Striking a balance is an increasingly important pursuit, as personnel-related costs of computer technology now outweigh the direct costs of hardware and software.

Computers are still recent enough additions to most architecture firms that few senior principals have hands-on experience with them. Unfortunately, this lack of understanding at the top makes it more difficult to integrate an appropriate level of technological aware-

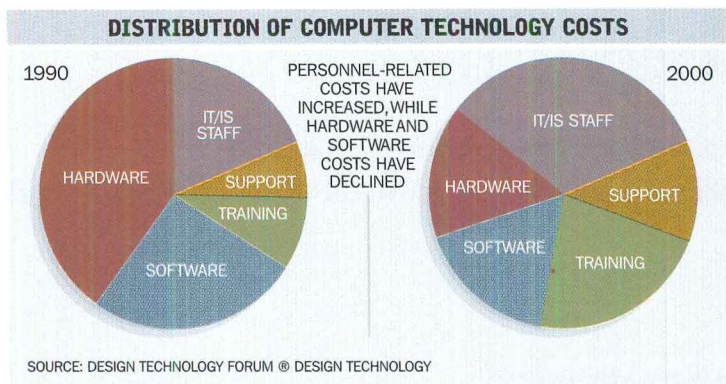
(LANs), are distinct from services such as external Internet connections, but most design firms lump them together under IS.

While everyone in a design firm needs to work with applications, only a few need to become experts. Most architecture firms, including SBRA, promote such experts from within. IS, with responsibilities that relate more to computers than to architecture, can be staffed by nonarchitects or, as is virtually the rule with smaller firms, outsourced entirely. Often, the same companies that sold and installed the systems to the architects act as consultants.

At SBRA, all hiring other than for IT or IS positions is still based primarily on architectural talent. But consideration of computer skills ranks a close second.

These are top priorities, echoes Susan Appel, director of recruiting at Gensler, the world's largest architecture practice with a staff of 1,500 worldwide. "These days, many talented people also have some computer skills, but some of the 'real 3-D kids' actually are a little scary. We

Jerry Laiserin, AIA, consults, lectures, and writes about the impact of information technology on the practice of architecture.



worry that they'll be bored working on 2-D drawings, because not every project justifies the cost of 3-D," she says. "We also have to be sure that we have more experienced designers available to supervise and mentor individuals whose computer skills exceed their architectural knowledge."

With regard to IT staff, both Gensler and SBRA try to hire applications specialists from their own ranks. Before filling an open position, Appel first verifies whether the job requires "someone who is an architect, an applications expert, or a combination of both." When screening candidates, she tries to gauge their "interest and passion to be a computer maven plus the ability to work with design staff." Often the trickiest part of promoting IT staff from within is reassuring candidates that they are not abandoning architecture by shifting from design to technology.

Rus Davary is IS manager for SBRA, which has a staff of 200. Horst and Davary, one an IT manager and the other an IS manager, serve as equals, heading up SBRA's 10-person technology group. This group reports to the firm's information council, one of several such councils through which the firm is managed. Horst stresses the importance of hiring "people who can learn quickly, because the technology is constantly changing."

When hiring IS staff from the outside, Horst avoids search firms that specialize in IS recruitment. Architecture firms "can't compete with the higher salaries paid by high-tech businesses," he says.

Appel at Gensler also finds it increasingly difficult to recruit people. "It takes longer than it once did to fill tech positions, and the salary demands have steadily increased," she says. "Want ads in traditional print media may not be as effective as online services like monster.com." Diligent networking among friends and colleagues also is useful, but Appel worries it can degenerate into "a game of musical chairs, where firms raid each other's IT/IS departments and drive up salaries without expanding the pool of technical talent."

Both SBRA and Gensler have learned that the most attractive lures for new IT/IS hires include offering candidates the opportunity to work with the best technical tools, a clear path for career advancement,

and professional development through access to outside technical training. The same incentives that work for hiring are crucial to retaining staff. While SBRA and Gensler point with pride to low turnover rates among their respective IT/IS staffs, other prominent architects have suffered major setbacks when a key applications staffer, like a CAD manager, jumped to a more lucrative position with a software developer—in some instances, with the very outfit that sold the architects their software.

Deciding how big an IT/IS staff to hire, relative to overall firm size, is a quandary. A comparison of the number of full-time equivalent computer-technology staff positions to total staff over the past two decades shows a steady trend toward maintaining larger technology staffs. Not surprisingly, it also indicates a growing performance gap between firms with a strong commitment to IT/IS versus those with less commitment. Firms that do understand the issues and hire accordingly appear to perform better than the technology laggards. A recent study by Zweig White & Associates points to a correlation between increased spending on technology staff and overall firm growth.

At one extreme, there are firms trying to get by with staffing levels their competitors outgrew early in the 1980s. "Part of the problem is the principals over 40 who grew up in a culture without IT and, therefore, don't understand the nature of many jobs and positions they're hiring for," says Marjeanne Pearson, an Oakland, California-based design management consultant specializing in talent identification and recruitment.

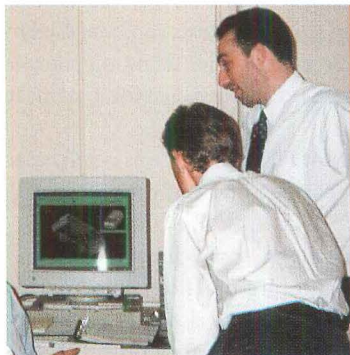
How to train

Hiring the right mix of people is only a first step. To keep computer users afloat in the continuous flood of software upgrades and conversions, every design firm needs to treat training as a kind of technology lifeline. Given the highly specialized skills required in either area, IT and IS staff must go outside the firm for training—most often to the software vendors who provide the upgrades and conversions.

For example, half the members of SBRA's technology group are studying for the Solaris administrator's exam to master the Solaris operating software used on Sun Microsystem servers and workstations. Similar programs are available for users of Novell and Microsoft operating systems, as is administrator or manager training for word-processing, project management, or CAD applications.

Few if any architectural practices can sustain or justify full-time trainers in house, so they rely on their in-house IT group or resort to outside training courses to provide end-user applications training to the rest of the staff. Outside trainers are especially helpful for smaller firms with overtaxed IT staff. While generic training in entry-level skills can be obtained through local community colleges or vocational schools, or even through self-study, most design firms need training programs tailored to the specific ways in which they use software to help make architecture.

Emmanuel Garcia, a Los Angeles-based CAD consultant and



TO KEEP AFLOAT IN THE CONTINUOUS FLOOD OF SOFTWARE UPGRADES, EVERY DESIGN FIRM NEEDS TO TREAT TRAINING AS A TECHNOLOGY LIFELINE.

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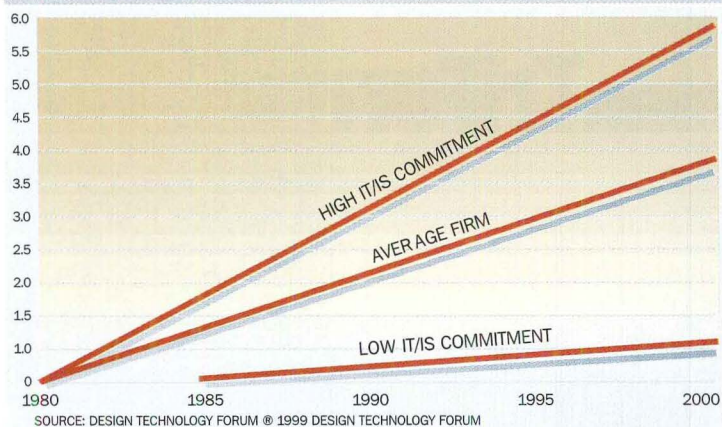
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FULL-TIME EQUIVALENT IT/IS STAFF AS A PERCENTAGE OF TOTAL STAFF



trainer specializing in 3-D modeling for architecture, notes that “training should be customized, it should be hands-on, and it should provide immediate feedback.” Garcia aims to “teach what people need to get their job done.”

At SBRA, newly hired architects get four days of in-house training on Bentley Systems’ MicrostationSE CAD software, SBRA’s firmwide standard. The technology group also offers training in a range of other software, from Netscape’s Navigator Web browser to the Filemaker Pro database. Each member of the technology group takes a turn teaching end-user classes in a dedicated training room with eight workstations. In addition, some of SBRA’s training in Microsoft Office applications, like

ware, networks, or procedures. A major component of overall computer support comes under the heading of systems and services and focuses on hardware and network issues. Because these are computer problems not architecture problems, architects usually get this kind of support from outside vendors or from IS staff, depending on firm size.

Applications support is also necessary. This type of support is a highly personalized form of just-in-time training. An end user experiencing difficulty plotting a CAD file, formatting a Word document, or attaching an image file to an E-mail wants only that one task-specific bit of information that was either never learned or just forgotten.

From the perspective of the applications staffers in IT who are expected to provide answers, the trickiest part often is figuring out whether the question concerns a defect in the user’s software or a deficiency in the user’s knowledge. In corporate America, entire departments, known as help desks, are dedicated to addressing these questions. Such digital concierges are a luxury few architects can afford. The result, even in very large firms, is a multilayered system of self-help.

“Up to three or four years ago we had a designated CAD person on each project,” recalls SBRA’s Horst. “Now we try to build knowledge into the whole team.” Gensler formalizes the self-help process with a buddy system that pairs more experienced users with novices.

Such diffusion of knowledge throughout a firm often is embodied in the “go-to guy.” This person is any expert user whom other employees treat as a resource—whether or not he or she is formally part of the IT staff. Many firms have begun to codify some of this informal expertise and publish it, along with their in-house CAD standards, in a browser-accessible intranet (see RECORD, March 1999, page 39). The

INTEGRATING THE TRAINING PROCESS INTO THE OVERALL CULTURE OF THE FIRM MAKES PROFESSIONAL DEVELOPMENT PART OF EVERYONE’S JOB.



the Excel spreadsheet or Microsoft Word, is delivered by expert users of those tools from among the firm’s administrative ranks.

Gensler integrates the training process into the overall culture of the firm. “This firm is a learning organization, in which professional development is part of everyone’s job.” The scope of the subject matter goes far beyond technology, but the end-user resources available include formal seminars, coaches, and brown-bag lunches at which computer users share tips and tricks. Every new employee fills out a questionnaire to identify their level of knowledge about a slew of applications, from Adobe PhotoShop image-editing tools to Form*Z 3-D modeling software. Gensler’s human resources department tracks these skills and encourages everyone in the firm to upgrade them constantly.

Getting support

“Support” is one of the most poorly defined terms in the world of computer technology. Perhaps this explains why so few architecture firms, even some that excel in hiring and training, do a really good job in this area. Generically, support refers to any on-the-spot, problem-specific advice to solve or work around difficulties with computer software, hard-

goal, according to Appel, is “to make sure everybody knows where to look and whom to ask for any help they need.”

While software vendors offer some support, it is most useful to IT/IS staff, who have the technical skills to decipher the vendor’s jargon-laden replies. For many software applications, user groups supplement vendor support. Although some user groups, like AUGI for AutoCAD, or the Microstation Community, hold face-to-face meetings, much of the mutual support takes place in online forums. Evan H. Shu, AIA, of Shu Associates in Melrose, Massachusetts, pioneered this movement as a cofounder in 1987 of DBUG, the DataCAD Boston Users Group. “In larger firms the tech people are removed from hands-on users and the most proficient users forget what it is to be a beginner,” Shu observes. “But user groups provide a safe place to ask dumb questions.” Another advantage of these groups for architecture-specific programs, like DataCAD or ArchiCAD, Shu says, is that “all the participants are architects, contrasted with vendor support that typically comes from software developers.” Most software vendors can provide lists of online and local groups related to their products. Membership is normally free.

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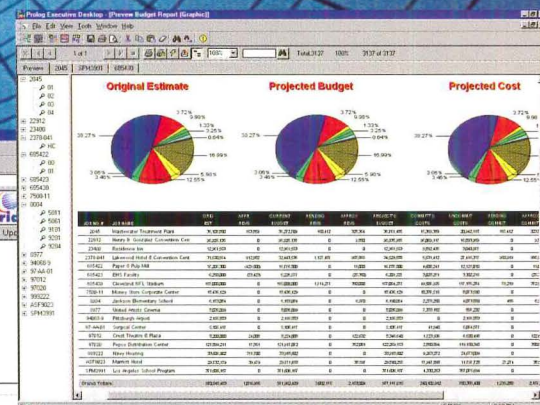
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| Description | Done | Amount | Incl in Total | Notes | Amount | Incl in Total | Notes | Amount | Incl in Total |
|------------------------------|------|--------------|---------------|-------|--------------|---------------|-------|--------------|---------------|
| 1 General Analysis | | | | | | | | | |
| 2 Base Bid | | 1,555,000.00 | | | 1,681,250.00 | | | 1,578,640.00 | |
| 3 Bond | | 22,500.00 | | | 17,150.00 | | | 16,000.00 | |
| 4 Safety Cabling | | 38,750.00 | | | 22,000.00 | | | 29,150.00 | |
| 5 Subtotal: | | 1,616,250.00 | | | 1,691,250.00 | | | 1,607,790.00 | |
| 6 Addenda Analysis | | | | | | | | | |
| 7 Alternate Analysis | | | | | | | | | |
| 8 Revised Welding Detail (1) | | -12,500.00 | | | -8,000.00 | | | -8,750.00 | |
| 9 Special Pricing Notes | | 53.00 | | | 57.00 | | | 55.00 | |
| 10 TOTAL: | | 1,603,750.00 | | | 1,592,750.00 | | | 1,599,040.00 | |

PROLOG EXECUTIVE

Project Portfolio Management for the Enterprise



With Prolog Manager 5.0, state-of-the-art advances and powerful standard features enable the contractor, engineer, architect or owner to control any project with ease from a single database.

Features in New Prolog Manager 5.0:

- Manage Buyout Items, Bid Packages, Bid Analysis, Contracts, Change Orders, Billings, Budgets and more!
- Track Submittals, RFI's, Drawings, Meetings, Issues, Daily Reports, Inspections, Punch List and more!
- Use Microsoft® Word® as your integrated word processor
- Powerful Query, Reporting, and Security functions

PROLOG WEBSITE

Project Collaboration for the Internet

New Prolog WebSite interfaces directly with Prolog Manager 5.0 and allows users to create project specific Web sites without ever having to learn HTML.

Project Collaboration with New Prolog WebSite:

- Access Prolog Manager through the Internet for powerful collaboration
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New Prolog Executive enables you to aggregate multiple Prolog Manager databases, query and report across every project under secure conditions—all from one enterprise-wide database.

Project Portfolio Management with New Prolog Executive:

- Track an unlimited number of projects in one enterprise-wide SQL database
- Report across all Prolog Manager projects by geographic regions, types of projects, types of construction, etc.
- Set advanced levels of security per user group
- Create and save an unlimited number of queries



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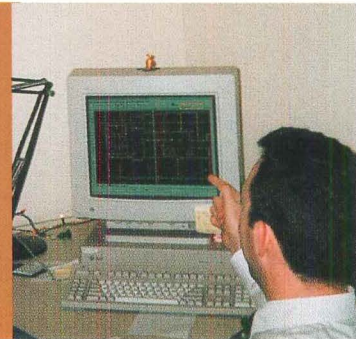
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CIRCLE 96 ON INQUIRY CARD

Architects located in metropolitan areas have another option that is a hybrid of the in-house self-help and vendor or user support group: Independent support companies founded and staffed by technical people with architectural training. In Boston, New York, Los Angeles, San Francisco, Chicago, and other major centers of architectural practice, firms lacking a full-time technology support person or

With the booming demand for architectural services, staffing for technology management is emerging as one of the critical bottlenecks in design practice. As firms grow and evolve, architects will continue to face tough choices between hiring in a tight job market or nurturing in-house talent. Although architectural skill will remain paramount, mastery of job-specific technology will play an increasingly important

WITH THE DEMAND FOR ARCHITECTURAL SERVICES, STAFFING FOR TECHNOLOGY IS BECOMING ONE OF THE BOTTLENECKS IN DESIGN PRACTICE.



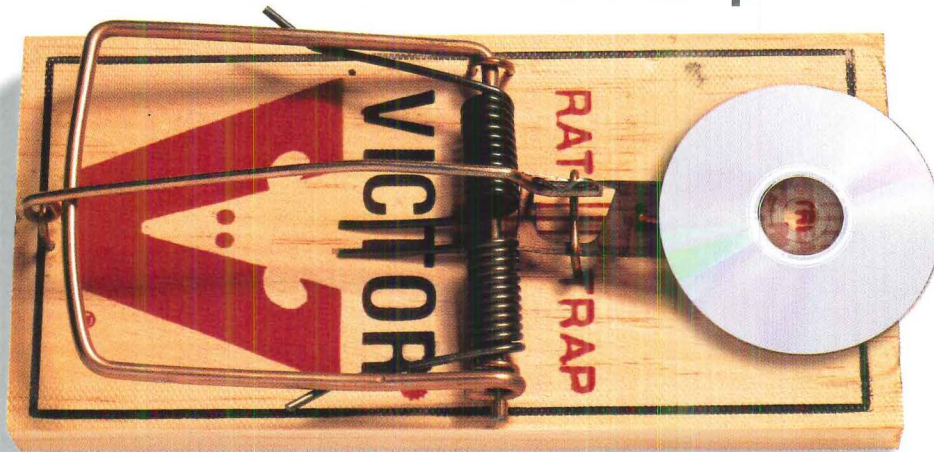
looking to supplement their in-house technical support capabilities can call on these support companies, such as San Francisco's Tech Strategy Group (TSG).

As described by Principal Roy Lew, Assoc. AIA, TSG functions as a roving IT/IS support resource. Bay Area design firms contact TSG staff, wherever they happen to be, via cell phone or E-mail, and TSG responds by dialing in remotely to troubleshoot the customer's system or, if need be, sending a consultant to the site. Lew, who also chairs the San Francisco AIA chapter's computer forum committee, notes that most support specialists have prior experience as in-house IT or IS staff.

role in hiring and advancement for every design firm position, from the network system gurus down to the rank and file.

As formerly obscure computer techniques become mainstream, tasks that previously were farmed out are moving in house, while new specialties emerge. Few architects rely on service bureaus for word-processing, accounting, or general-purpose CAD, but many design firms still do go outside for 3-D rendering and animation or for advanced database and Internet programming. Over time, these new specialties also will be handled by the staff, requiring new hires, more training, and more intensive support in this iterative loop of advancing technology. ■

Don't fall into the trap.



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SOFTWARE REVIEWS Help with project Web sites; a CAD training CD for firms that lack a strong computer-support department.

BY JERRY LAISERIN, AIA

Project Web sites in a box

ActiveProject, Framework Technologies Corp.

Delivery of architectural services requires presenting design ideas to a host of collaborators who help transform the ideas into buildings. While most architects have become proficient at CAD and automated specifications writing, few have explored the full potential of communication technology to improve the collaborative process.

The Internet, especially the World Wide Web, provides an ideal medium for sharing information. Every document created for the Web has a unique identifier and can instantly be located by anyone from a computer equipped with Web browser software—as long as the user has the proper permission to access the document.

The Web is easy to use and costs little. Project documents, like CAD files, meeting minutes, and field reports, are easy to publish as a project Web site—like a virtual job trailer to which project team members have the digital keys or passwords.

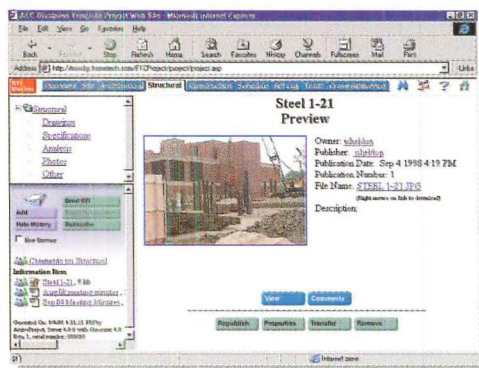
Project Web sites, however, are more than repositories for project documents. They are online centers for transacting project business, such as processing requests for information. As a result, specialized server software is necessary to keep track of online proceedings—which documents changed and why, when transactions took place, who participated, and so on.

ActiveProject is one example of this tracking software. It is one of only a few such servers on the mar-

ket and is perhaps the most affordable. (A server literally serves-up information to the Web, allowing browsers to access it.)

ActiveProject has two main components: ActiveProject Builder allows anyone who can use a mouse in Microsoft Windows to instantly create a complete project

ActiveProject lets users build and modify Web sites.



Web site by simply dragging and dropping project files into desired locations. ActiveProject Server stores and manages the resulting Web sites and enables project collaborators to modify them. Only “licensed” collaborators can add, delete, and edit project files, but any project team member with a browser and a password can access the site to view project information.

Alternatives to ActiveProject include dozens of Internet service startup businesses that offer similar services and functions by renting out project space on their own servers. These project-site landlords appeal to firms that do not have the technical capability or are unwilling to host and manage their own project Web sites. But

midsize and large practices that have sufficient technology infrastructure and who expect to manage multiple projects on the Web should seriously evaluate ActiveProject for its project Web sites.

The \$16,495 price includes 15 collaborator licenses, unlimited viewers, and unlimited projects (additional licenses are available for an extra cost).

System requirements: WindowsNT Server4.0 with SP3 and IIS4.0, Pentium200 Processor, 64MB RAM, Web browser (Microsoft Internet Explorer 4.01 or Netscape Navigator 4.06) Framework Technologies Corporation, 23 Third

Ave., Burlington, MA 01803; 800/644-1002; www.frametech.com

Training time

AutoCAD Essentials for the Workplace, *Referentia Systems, Inc.*

Big, full-featured design programs, like AutoCAD from Autodesk, cost several thousand dollars and contain several thousand commands, functions, and operations. While this ratio of features to price makes AutoCAD a good value, it also makes it difficult to master without extensive training and on-the-job experience.

Instructor-led training is effective, but it is also expensive and time consuming. Computer-based training (CBT) can be integrated with

the subject software so that users learn just what they need, just when they need it. Autodesk includes its own Learning Assistance CBT software with AutoCAD, but many users will benefit from more extensive and interactive training.

Referentia Systems, developers of CBT programs for other complex software systems, now offers a series of AutoCAD CBT titles on multimedia CDs. The latest, *AutoCAD Essentials for the Workplace*, includes more than 50 lessons, ranging from getting started to advanced file management techniques. Access to these lessons is integrated with AutoCAD’s “help” function, and all concepts are explained with text, animation, and voice-over narration. An especially useful “Try it” feature allows users to practice the concepts of a lesson they have just seen on-screen in AutoCAD.

Although geared to AutoCAD R14, the underlying concepts in the Referentia CDs will remain relevant to newer AutoCAD versions. Referentia’s CBT tools are especially useful for small firms without an in-house CAD manager who provides training, as well as for larger firms seeking to conserve the time and attention of their in-house CAD experts.

System requirements: Windows 95/98/NT4.0, Pentium133, 32MB RAM, 8xCD-ROM, 1024x768x16-bit graphics, 16-bit audio. Referentia Systems Inc., 6600 Kalanianaʻole Hwy., Suite 225, Honolulu, HI 96825; 800/569-6255; www.referentia.com/autocad



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INDOOR ENVIRONMENTAL MANAGEMENT

Thoughtful Design Elevates Indoor Air Quality

Public concern over the quality of the air in our indoor environments began to grow in the late 1970s, based in

large part on scientific reports of higher levels of contaminants indoors, where the average person spends a considerable portion of the day. Concern was especially strong around higher risk pollutants, such as radon and "environmental tobacco smoke." Today, the causes of poor indoor air quality are better understood, yet options

that would lead to better air are sometimes overlooked. Not only are basic design elements such as ventilation systems critical, but architects and designers need to also recognize the impact of building materials and furnishings.

The fact that contaminants can be higher indoors than outdoors should not surprise anyone. Building materials, people, and their activities can contribute pollutants additional to those found in outdoor air. Although most of the time, contaminant levels have no impact on people, the general population exhibits a wide range of susceptibility to air contaminants. For example, a freshly painted office may drive some people from the space, whereas others may not be affected. Unfortunately, the science of assessing risk can not always tell us who will have problems with an environment and when these problems will arise. As a result, we are left with managing the build-up of contaminants to the extent feasible with a combination of ventilation (dilution) and contaminant source control.

Clearly, poor indoor air quality does affect millions of people each year, leading to decreased productivity and, for some, severe medical problems.



AIA/ARCHITECTURAL RECORD Continuing Education

Use the learning objectives below to focus your study as you read Indoor Environmental Management. To earn two health, safety, and welfare learning credits, answer the questions on page 280 and follow the reporting instructions on page 382. Or use the Continuing Education self-report form on Record's website www.architecturalrecord.com.

Learning Objectives.

After reading Indoor Environmental Management: Thoughtful Design Elevates Indoor Air Quality, you will be able to:

1. Describe the relationship between VOC emissions, exposures and risks.
2. List the causes of most indoor air problems.
3. Describe how to select materials for a low VOC space.

With respect to the typical problems encountered with poor building air quality, the architect and designer can play important roles. For example, some ventilation problems have been traced to poorly designed and poorly maintained HVAC systems.

In an effort to reduce visibility, fresh air intakes have been located in places where the air is actually not very fresh. They are put at street level too close to car and truck exhaust, in parking garages, or too close to odor emitting dumpsters. Improperly sized units may result in inadequate dehumidification of chilled air, which can lead to condensation in the building and, ultimately, potentially, unhealthy, fungal growth. Difficult to maintain or hard to reach systems can also be trouble — undetected moisture problems can lead to growth of mold and bacteria.

THE INDOOR ENVIRONMENT

- The levels of some pollutants in indoor air have been found to be considerably greater than in outdoor air.
- The average person spends approximately 90 percent of his or her time indoors.
- Many illnesses can be caused or aggravated by polluted air (e.g., Legionnaire's Disease, asthma).
- EPA estimates 15,000 to 20,000 lung cancers due to radon exposure.
- Environmental tobacco smoke may contribute to 3,000 to 16,000 deaths per year.
- OSHA estimates 30 percent of commercial buildings have indoor air quality problems — potentially affecting about 21 million persons.
- OSHA estimates the economic impact of poor air quality totals \$8 billion per year in lost productivity and medical costs.

materials tend to be rare; however, there are some pressed wood products that use binder systems that emit long-term odors. Other examples would be adhesives made from urea-formaldehyde resins, which slowly decompose in the presence of moisture in the air to release formaldehyde.

Not surprisingly, complaints of objectionable odor and irritation typically occur the first few weeks after occupancy of the new or renovated space. Over the long term, health effects found in "problem" buildings are rarely a result of product VOCs.

There is a growing consensus that dusts and bioaerosols are common contributors to ongoing poor indoor air. (Bioaerosols can be fungal, bacterial, pollen, or mites.) Therefore, it is essential that buildings be kept clean and dry. Poor

cleaning practices will contribute to the accumulation of dusts and biological debris, which is tracked and blown into the building.

Finally, managing moisture in a building is critical because fungi does not grow to any significant degree at relative humidities below 65 percent. Bacteria requires much higher humidity or standing water before it grows well. Elimination of leaks, cold spots (condensation), and stagnant water in ventilation systems, and the control of relative humidity will minimize growth of fungi and bacteria.

DESIGNING FOR GOOD IAQ

Architects and designers can impact indoor air quality over both short and long terms. Although the science elements of IAQ and health risks continue to evolve, many problems can be avoided with a little forethought and common sense.

Ventilation versus source control.

There has historically been some debate on the best means of managing indoor air quality — diluting contaminants or keeping contaminants (VOCs, inorganic dusts, or bioaerosols) out. Both methods are essential for a healthy environment.

The National Institute of Occupation Safety and Hazards attributes indoor air problems to:

- Ventilation
- Moisture
- Microbial growth
- Dusts and particles
- Volatile organic compounds (VOCs)
- Odors

Architects

And

Designers

Can

Impact

Indoor Air

Quality

CONTRIBUTORS TO IAQ PROBLEMS

Materials and furnishings can also be sources of volatile organic compounds (VOCs). Most materials are short-term or relatively short-term emitters of VOCs — i.e., they decay to very low to undetectable levels in a few days to a few weeks. Emission decay curves, however, can vary widely. For example, early emissions from new paint and carpet may differ as much as 10,000 times; however, within one to two weeks they could both have nearly undetectable emission levels.

There are two cautions around high, short-term emitters, which would include some paints, stains and adhesives.

First, high exposure in the initial few hours after application without adequate ventilation may lead to irritation, headaches, and nausea. These are acute and reversible health effects, but nonetheless unpleasant. In addition, while these VOCs are short-lived, other materials such as carpets, textiles, and wallpaper can adsorb them, and slowly re-emit them. Therefore, these VOCs will be present in the environment for long periods (known as the sink effect), although at much lower levels than the original source.

Long-term transmitters tend to be materials that can emit detectable quantities of VOCs several months to years after installation. These types of



Volumes on ventilation have been written by experienced HVAC engineers, so this will not be a major thrust of this discussion. Rather, we will focus on how materials contribute to indoor air quality. However, one should not lose sight of the need to deal with human-activity-sourced contamination, carbon dioxide, and relative humidity control. For these, ventilation is the only viable solution.

Material selection. Historically, VOC emissions have not been a priority when selecting products.

In large part, this is due to scarcity of, and difficulty in, interpreting the data. In fact, unless the information is provided in a way that allows some means of determining levels and duration of exposure, it will not be of much value.

A common approach is to use the material safety data sheet (MSDS) to determine the risk of adverse health effects associated with exposure to a substance. This tack has limits in that the MSDS will typically provide insight only into the hazards of overexposure. To illustrate this more clearly, consider the chemical contents of a cup of coffee with a focus on caffeine. An MSDS for caffeine tells us the hazards of ingestion are serious central nervous system effects. Yet, we regularly drink coffee and colas without danger, because we are not consuming very large quantities — the dose is below any adverse effect level. (Interestingly, the MSDS information for caffeine is based on the amount found in approximately 100 cups of coffee.) Therefore very potent substances can have no ill health effects when exposure is kept to a minimum.

Many specifiers have been advised to obtain MSDSs for the products they select. These are important documents, but have their drawbacks. Evaluating products solely on hazard gives an incomplete picture. Levels of exposure must be factored in to determine the risk.

Another limitation of the MSDS arises when evaluating a component of a material. If you separately examined the MSDS for the components of table salt (which are sodium and chlorine), table salt would appear to be a very dangerous product. In other

words, the properties of the composite product may not be similar to its building blocks.

For a chemist, toxicologist, or an industrial hygienist, sorting through chemistry data is routine. But how does the average architect or designer deal with VOC emissions? It turns out you actually do have a few options. If you have a good and trusted relationship with the product manufacturer, check with that manufacturer to interpret VOC emissions levels. You can also retain an independent expert — in this case check references and make sure you are dealing with someone qualified. In addition, you can look for industry standards or programs, such as the effort supported by the Carpet and Rug Institute (CRI). Other industries, for example, the furniture and wood industries, are starting to talk more about VOC emissions from their products.

The CRI program was created for several reasons, the most important of which was to reduce VOCs. Although carpet per se is a low short-term emitter, it is not unusual for a combination of new products in a new or recently renovated space to contribute to poor air quality effects (e.g., irritation). Therefore, it makes sense for product manufacturers to reduce the impact of their individual products to the extent feasible.

Established in 1992, the CRI's "Indoor Air Quality Testing and Labeling Program" is a performance-based program of testing carpets, carpet cushions, and carpet adhesives for VOC levels. The program has effectively raised the understanding of carpets and VOCs, and has even led to reduced VOC products.



OTHER PATHS TO GOOD IAQ

Installation. Some basic building material installation practices can help reduce the accumulation of VOCs in an indoor environment, as follows:

- Coordinate installations.
- Let high VOC sources decay before introducing large sinks, such as drywall and textiles.
- Ventilate while installing.
- Avoid occupancy during the installation.
- Keep the HVAC operational 24 hours per day for a couple of weeks after installation.

When something is installed may be as important as what is installed. It can be very difficult to coordinate installations; however, it can be very helpful in the final analysis. For example, high-emission source products (wet products, such as paints and stains)

In Order to
Determine
Risk,
Factor in
Levels of
Exposure

Given the following list of VOC emissions from a specific product, would you use this product indoors? (See page 279 for product.)

- Methacrolein
- Myrcene
- 3-Methyl-2-butenal
- Limonene
- p-Cymene
- Pentadecane
- Benzaldehyde
- Benzyl cyanide

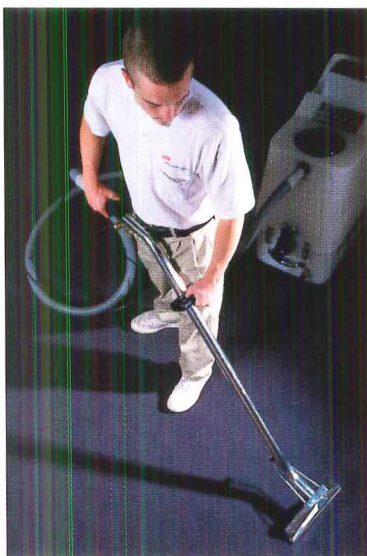
should be applied early enough to allow them to decay considerably before occupancy.

Avoidance of the sink effect — the absorption of VOC from one source onto high surface area products such as textiles — is another reason to let high emission sources decay before installation of carpet, drapes, and textile-covered walls or partitions.

If this cannot be done, make sure there is a high level of ventilation in the space while painting, staining, etc. As long as a lot of fresh air is pulled through the space, there won't be the opportunity for the VOCs to accumulate on a high surface area material. In other words, if you don't coordinate, ventilate.

If possible, avoid installation when a space is occupied. And make sure the space is isolated from other work areas. After the renovation or new construction is complete, run the building's ventilation system 24 hours a day for a couple of weeks to flush out the building.

Product life expectancy should also be a consideration. Better quality, longer-lasting products require less frequent replacement, thus reducing exposure to VOCs associated with new materials and installations.



Cleanability. It's common sense to design a space that is easy to clean, but many spaces aren't. Choose layouts and furnishings that allow the use of proper cleaning equipment and techniques. Avoid anything that is cluttered or tight. Cubicles are notorious for this. Dust builds and can be discharged into the air when those surfaces are disturbed.

Involve a facility manager or cleaning expert early in the design process as you consider the maintenance needs of selected materials. Finally, be aware that some surfaces require cleaning with odiferous or high VOC products, which can also have a short-term impact on indoor air quality.

CONCLUSIONS

In summary, think about your design and product options with an eye for the short- and long-term air quality of the space. For the short term, look for low VOC products or products with rapid VOC decay rates.

Ventilate well during and after installation, and coordinate the latter whenever possible. Remember, exposure and risk are the key considerations around possible health effects from VOCs. Risk and hazard are not interchangeable terms. For the long term, it's important for the building to be kept dry and clean. ■



The substances listed on the previous page were emitted from an orange blossom. If you had analyzed MSDS for each compound, you may have concluded the product was unacceptable. Without some sense of exposure concentrations, it is difficult to judge the risks associated with VOC.

As a manufacturer of many products used in interior furnishings and building construction, DuPont has taken an active interest in the study of indoor air. Over the past 10 years, DuPont has conducted research into how building materials relate to indoor air quality. In the early 1990s, DuPont created a highly specialized testing facility to study emission properties of carpets and other materials. This laboratory utilizes small environmental chambers and is one of only a couple dozen labs in North America with this research capability. This is the only widely accepted technology for the determination of material emission rates, which can be used in human exposure models and risk assessments. DuPont is also actively involved in sensory irritation research on chemical mixtures—i.e., levels of exposure that could lead to irritation of the eyes and upper respiratory tract. Recent research has investigated relationships between floorcoverings and airborne particles.

DuPont manufactures Antron® nylon, which is used in a large percentage of the carpet installed in commercial interiors today. A carpet of DuPont Antron® nylon provides superior resistance to wear and excellent cleanability for the most demanding commercial installations. DuPont also provides flooring installation, carpet maintenance and carpet reclamation/recycling through its subsidiary, DuPont Flooring Systems.

**Coordinate and
Ventilate
Building
Material
Installations**



FOR MORE INFORMATION CONTACT:

ANSWERS

1. The National Institute of Occupation Safety and Hazards attributes most indoor air problems to: ventilation, moisture, microbial growth, dusts and particles, volatile organic compounds, and odors. There is a growing consensus that dusts and bioaerosols are common contributors to ongoing poor indoor air.

2. The location of the fresh air intake for the HVAC system can determine the quality of the air to be circulated. If the location of the intake is too close to car and truck exhaust or near dumpsters, the air taken in will not be fresh. If the system is too small, it may result in inadequate dehumidification of chilled air, which can lead to condensation in the building and potential fungal growth. If it is difficult to clean, there may be undetected moisture problems that can lead to growth of mold and bacteria.

3. The manufacturers safety data sheets typically provide insight only into the hazards of overexposure. Levels of exposure must be factored in to determine the risk, which is the probability of adverse health effects.

4. VOC emission problems can be avoided by timing of the installation. Most materials and furnishings emit short-term VOCs that decay to very low or undetectable levels in a few days to a few weeks. Since paint, stains, and adhesives emit high VOC levels in the initial applications, preferably, they should be applied when the building is not occupied, ventilation is available to remove the odors, and absorbent materials such as textiles are not present. Carpet, textiles, and wallpaper should be scheduled a few days after paint and stains or varnish so they will not absorb the VOCs and slowly re-emit them (sink effect). Long-term emitter, such as some pressed wood products, can emit detectable quantities of VOCs several months to years after installation.

5. This answer is complicated because the general population varies widely on their susceptibility to air contaminants. Some people will become sick when exposed to contaminants, while others will not be affected. The best way of handling build up of contaminants is to dilute or ventilate as much as possible and reduce the contaminants at their source.

5. When do indoor exposures to contaminants present significant health risks to the building occupants?

4. How can the problems of VOCs be avoided?

3. What are some limitations of using MSDS information as a guide to product selection?

2. How does HVAC design and maintenance affect a building's air quality?

1. What are the causes of most indoor air problems?

QUESTIONS

INSTRUCTIONS

Refer to the learning objectives above.

Complete the questions below. Then turn the page upside down and check your answers.

Fill out the self-report form (page 382) and submit it or use the Continuing Education self-report form on Record's website www.architecturalrecord.com to receive two health, safety, and welfare AIA Continuing Education units.

LEARNING OBJECTIVES

After reading *Indoor Environmental Management: Thoughtful Design Elevates Indoor Air Quality*, you will be able to:

1. Explain how to avoid the problems of VOC emissions.

2. List the causes of most indoor air problems.

3. Describe the reasons why ventilation is necessary in interior spaces.

LIGHTING...

Occasionally—not always—a lighting designer may have the opportunity to add what I consider a structure's crowning touch: Night lighting. In some rare cases, that opportunity may not arise until a decade or even generations later. What happens to make this possible?

Sometimes it is the introduction of a new technology. The invention of high-intensity discharge (HID) lamps and advanced optics have made possible the illumination of many structures that would have been very difficult to light using incandescent lamps, which are less efficient and don't last as long as HID sources. For example, when the lighting for the Golden Gate Bridge was originally proposed in 1937, it would have taken 140 1,000-watt incandescent lamps to do what 20 HID lamps using only 16,000 watts did when the bridge was finally lit 50 years later. Gio Ponti's vision for the Denver Art Museum (top, story on page 306) was finally realized with the introduction of prismatic light-guide technology, recently added to the building by George Sexton Associates. Now, light guides are used to highlight the overlapping planes that make up the building's facade. These surfaces were originally lit with cold-cathode lamps, which were not bright enough to achieve the effect that Ponti desired and were difficult to maintain.

There are also cases when, after many years, someone realizes that night lighting can be one of a building's greatest assets. The Orange County Performing Arts Center (middle, story on page 287), in Costa Mesa, California, was illuminated by Ross De Alessi some 15 years after the building was completed. Before then, opening nights were virtually indistinguishable from nights when the venue was dark.

Nowadays on opening nights the building shines along with the stars.

Sometimes structures are lit during a renovation project. Robert Shook had the chance to light Alexander Calder's sculpture Flamingo (bottom, story on page 312) during the rebuilding of the plaza on which it is installed. The famous Chicago landmark had never been lit before. The original idea was that the plaza needed security lighting, but Shook demonstrated that the entire plaza would seem safe if only the sculpture was illuminated. Calder would have approved, no doubt.

These days, when architects and lighting designers seem to have all the work they can handle, the question is often asked, "What will we do when the work runs out?" A great market may still lie in adding the magic touch of night lighting to structures that have thus far gone without it.

—Charles Linn, AIA

287 Creative Uses

299 Disney Magic

Imagination

306 Denver Art Museum

George Sexton and Associates

309 Sepia Gallery

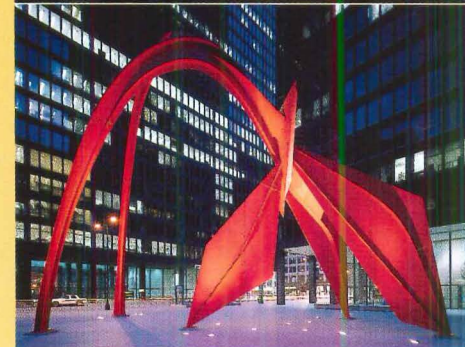
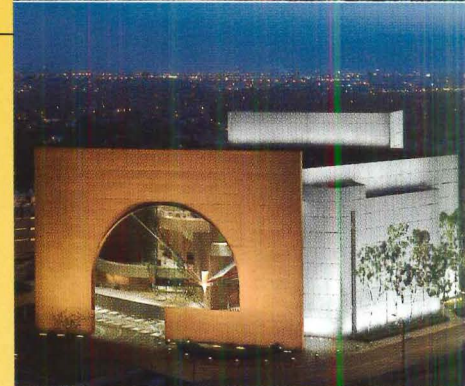
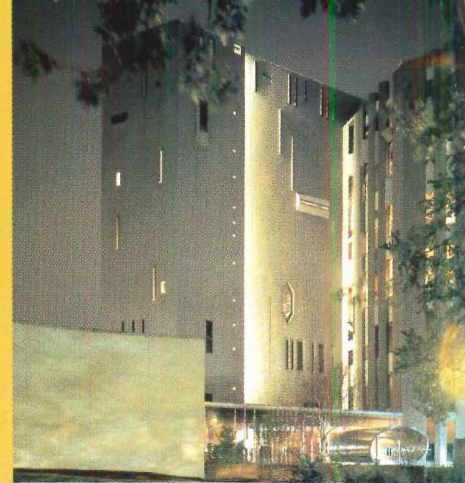
Donald Holder Lighting Design


312 Picasso, Chagall, and Calder Sculptures

Schuler & Shook, Inc.

315 Technology: Electrodeless Light Sources Emerge as Practical HID Alternative

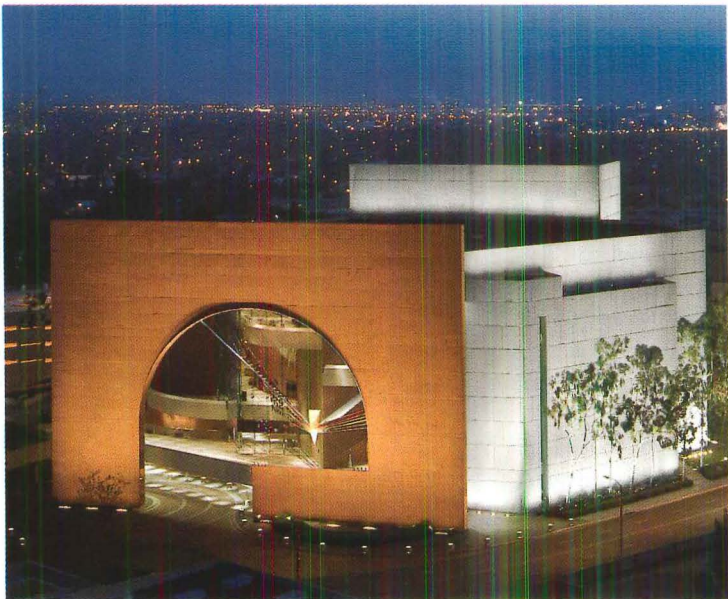
317 Lighting Resources





The Dusseldorf Stadttor: monument, archway, city ingress, office tower... and lightplay masterpiece. Conceived as the project itself went forward, Stadttor's lighting systems were integral with its architecture. Hoffmeister, JJI's major European subsidiary, was named to lead their development. Several notable concepts evolved.

CREATIVE USES



PERFORMING ARTS CENTER LEFT DARK FINALLY FINDS ITS LIGHT

The Orange County Performing Arts Center, in Costa Mesa, California, is not a “black box” venue—but it has looked somewhat like one for most of its 15-year life. Its flat, rust-colored Napoleon granite and salt-finished concrete facades—which would have been excellent for floodlighting—were originally left unlit, leaving the building to play second fiddle to the bright lights of a large nearby shopping mall.

Lighting designer Ross De Alessi was brought in to rectify the situation. De Alessi is no stranger to the task of lighting the exteriors of prominent structures—possibly his most well-known project was the illumination of the Palace of Fine Arts in San Francisco [Architectural Record Lighting, February, 1991, p. 44], which received a number of high-profile lighting awards.

But De Alessi’s first experiences as a lighting designer some 25 years ago prepared him in a unique way for this assignment. He started his lighting career working in the theater and with dance companies. “In a way,” De Alessi muses, “lighting a facade is not unlike lighting a flat or a scrim. You just light it from the bottom, the

ground in this case, rather than hanging lights and shining them down toward the stage. The idea was that the Arts Center’s wall planes would glow, and almost appear to radiate their own light. It’s a dainty approach, but this building is not one you want to hammer: You would not want to go much higher than the standard 15 to 20 footcandles.”

When lighting planes such as those that make up the facade of the performing arts center, the lights graze the surface at a steep angle, and must be properly spaced for an even wash. The architectural lighting designer has advantages over someone lighting a stage flat. One is that there are a multitude of exterior fixtures fitted with optics that are especially designed for wallwashing. “These make such an even light, they make the building really luminesce, rather than appearing to be lighted,” De Alessi says. Another advantage is that highly efficient HID lamps can be used, which can produce a wash of light that is bright and evenly distributed although it is being thrown a great distance.

For washing surfaces of the

building, De Alessi used ceramic-metal-halide lamps to bring out the color of the granite. Ceramic metal halide is a relatively new technology, which offers warmer color than conventional metal halide. “The spectral distribution is vastly superior to the older metal halide,” says De Alessi. “It isn’t quite as good as quartz halogen, but it’s getting there.” Manufacturers say that the color of this light is consistent from lamp to lamp, and will not shift noticeably over a lamp’s lifetime. The ceramic metal halides were mounted in fixtures with linear-spread-lens optics, which can be aimed appropriately and locked into place. Some were in-ground burial types and others were stanchion-mounted, depending on whether they were installed flush with the plaza or over ground-cover materials. Where eucalyptus and pine trees were uplit, De Alessi used standard metal halide, which is better for bringing out the greens in foliage.

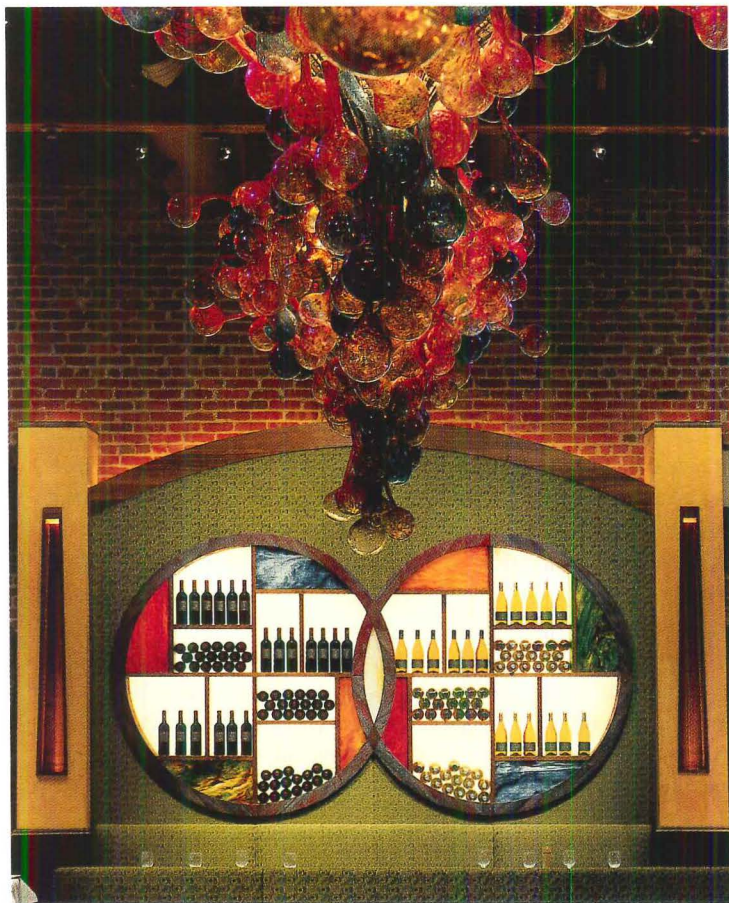
In addition to floodlighting the building, De Alessi relamped and cleaned the original fixtures used to light Richard Lippold’s 120-foot-long by 60-foot-wide *Fire Bird* sculpture. New quartz accent lighting was added to bring up the artwork’s red, gold, and silver aluminum tubing, and improved-color high-pressure sodium lamps were added to light the walls surrounding it. “Lighting the planes behind the sculpture really helps bring it out,” says De Alessi.

The floodlighting on and around the building now operates every night, making it visible to airplanes landing at nearby Orange County Airport. There are two light levels for the *Fire Bird*, one for performance nights, and a lower level used when the theater is dark. C.L.

Lighting designer Ross De Alessi used ceramic-metal-halide lamps to bring out the color of the Napoleon granite on the the Orange County Performing Arts Center.



LIDIA'S COMBINES A WARM FAMILY ATMOSPHERE WITH A DASH OF SPICE



For her first restaurant outside of New York City, Lidia Bastianich wanted a warm, comfortable Italianate ambiance, evoking the memory of hearty family dinners. The flamboyant New York designer David Rockwell delivered the order, but added a liberal dash of spice. In the design as well as in the lighting, the restaurant, located in a 1920s freight house in Kansas City, Missouri's warehouse district, is composed of many strong design and lighting elements, which were pulled together with Rockwell's signature bravura.

The brick walls and post-and-beam ceiling construction of the turn-of-the-century building have been restored, and the space broken up into a dining room, a bar, and a private party space. A large terrace facing the railroad tracks will be open for dining in summer.

A two-story stone fireplace brings comfort to the main dining

room, while colorful, blown-glass chandeliers inspired by grappa bottles set a festive atmosphere. Wines are displayed in showcases, like art in a country living room. Local craftspeople were employed to create the art glass used in the lighting fixtures.



The warm even glow of light in the restaurant is the result of sophisticated layering of a variety of sources. At first glance, the space seems to be lit by the three 5-foot chandeliers that dominate the space. Made up of colored glass balls strung together in wire mesh, the chandeliers are lit from within by 25-watt clear torpedo lamps. But, "the extra sparkle actually comes from outside of the chandeliers, from 50-watt MR16 downlights with color filters, concealed in ceiling beams" says Paul Gregory, principal of Focus Lighting.

Gregory also felt that the even glow of light was more congenial to an informal, family restaurant like Lidia's than putting spotlights directly over tables. Accordingly, ceiling-mounted PAR38 downlights are used as the primary light source. In addition, the large room has been layered with lights to eliminate dark spots and shadows.

At the perimeter of the room, adjustable PAR20 and PAR30 fixtures highlight structural pilasters, while wall sconces with art-glass shades mounted on these elements

A relaxing family-style atmosphere was created by layering a number of different light sources—neon, low-voltage, and PAR spots and floods.



create decorative interest. In the center of the room, two rows of columns have decorative shades containing standard 60-watt A lamps mounted on them, to bring additional light to the row of family-sized tables in the center. Wine display units are highlighted with theatrical framing projectors, lit from the front, so that each bottle casts a shadow onto the acrylic diffuser that serves as the back of the display. At the end of the space, large wine casks have been backlit with neon, chosen for its long life and ease of maintenance.

In the bar area, linear, low-voltage light strips at the top of the wine displays wash the wall and columns above with light. A two-circuit track integrated into the overhead beams in the bar allows for flexibility while providing multiple locations for accent lights.

"By mixing a wide range of sources—neon, low-voltage, spot and downlights, low-voltage strips, the decorative lighting, and theatrical framing projectors—we were able to give each area a unique look while maintaining an even overall picture," says Gregory. *Nayana Currimbhoy*



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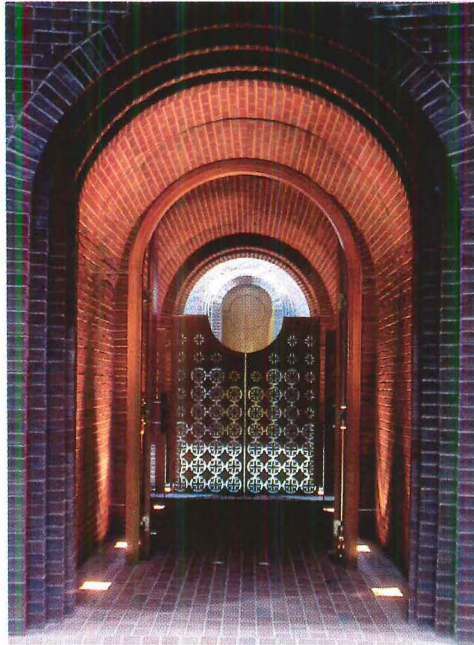
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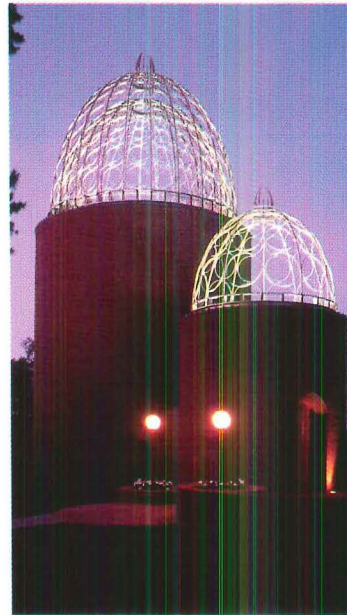
CIRCLE 107 ON INQUIRY CARD

JOHN BEGLEY CHAPEL LIGHTING INDIRECT AND CONTEMPLATIVE

The two circular brick buildings of the John Begley Chapel evoke a feeling that is familiar to those acquainted with the red grain silo



shapes common on the rural American landscape. The chapel was the last personally designed by Fay Jones before his retirement in 1997, and is located on the campus of Lindsey-Wilson College in Columbia, Kentucky. Like other chapels designed by the architect of Thorncrown Chapel, the Begley is informed by both vernacular architecture of the region, and the architectural traditions established in earlier churches. The sanctuary building, for example, has a pair of exterior domes, one nested inside the other. The domes on both buildings are uplit at night using metal-



The arched passageway that starts in the smaller building (left) uses MR16 uplights to create a ceremonial entrance to the larger sanctuary structure (above).

halide floodlights. "This is a historical reference to the double dome

common to many of the Italian Renaissance cathedrals," says David McKee, of the Fayetteville, Arkansas firm of Maurice Jennings and David McKee, named for the principals who worked with Jones and have taken over his practice since his retirement.

The smaller building serves as the entrance to the chapel. It is connected to the larger structure by an arched passageway, also constructed of brick. The passage is lined with two rows of dimmed, recessed 75-watt MR16 uplights. These lead to a laser-cut, patterned-metal gate that opens into the sanctuary space.

Daylight enters the sanctuary of the church through a circular oculus in the flat ceiling. At night, 250-watt metal-halide lamps concealed in a perimeter trough provide a scalloped wash of light around the circumference of the space. A series of five 250-watt metal-halide downlights highlight the altar and the wooden screen behind it. *N.C.*

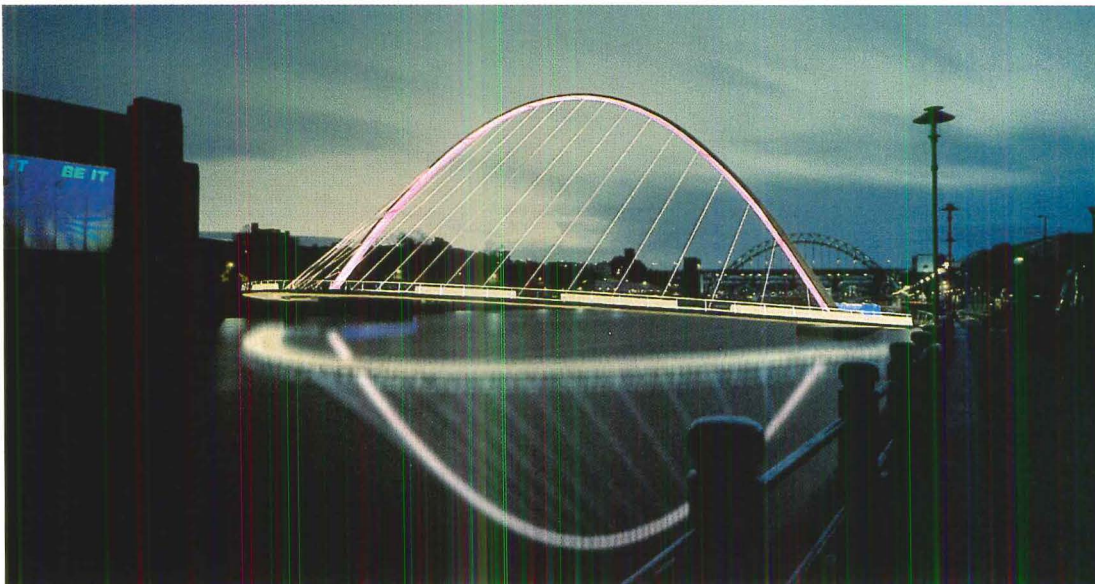
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Eight Irideon fixtures, which slowly change color, will uplift the main arch structure of the bridge.

structure, which is designed to tip to one side so its deck can be raised to allow tall ships to pass, has been lit with eight luminaires manufactured by Irideon. They slowly change color over time—extended fade periods ensure that subtle graduations of color evolve over an evening. Narrow-lamp beams limit the amount of light that can spill beyond the arch. A curved walkway and cycle-way, both of which tip along with the arch when ships are passing, have paired groups of marker lights made from LEDs to identify the deck edges. The “rib lights” are to be PAR20 metal-halide spotlights that will run the length of the bridge. Metal-halide floods will highlight the hydraulic ramps used to open up the bridge. The project is scheduled for completion in time to make a colorful splash at the Millennium party. *N.C.*

EVER-CHANGING HUES UPLIGHT BALTIC MILLENNIUM BRIDGE ARCH

The Baltic Millennium Bridge, designed by Chris Wilkinson Architects, will span the River Tyne between Gateshead and Newcastle in northeast England. Its sophisticated lighting scheme, designed by

the Edinburgh firm of Jonathan Speirs & Associates, involves an array of lighting techniques.

From a distance, the bridge is defined by colored light projected at its main support arch. Motorists,

cyclists, and pedestrians traveling across the bridge will see there are sculptures and wire-mesh barriers lit by cold cathode tubes. Below the bridge, the structural ribs that support the deck will be fitted with lights aimed to create a fan-patterned reflection in the water.

The bridge's principal arch



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EVEN LIGHTING IN LUXURY APARTMENTS FOR SENIORS; ONLY SLIGHTLY BRIGHT



nity operated by the Episcopal Homes Foundation. Designed by the San Francisco firm of Wurster Bernardi & Emmons, the building's three towers contains a total of 250 residences, ranging from studio apartments to deluxe penthouses.

As peoples' life spans stretch, and increasing numbers of elderly people expect to lead active and fruitful lives, design for aging has become a burgeoning field. As baby boomers edge towards their sixties, more homes, more assisted living condominiums, and more nursing care facilities for the elderly are being renovated and constructed.

Located in the lower Pacific Heights area of San Francisco, The San Francisco Towers is a 14-story assisted-living retirement commu-

Given the scale of the project, the challenge for interior and lighting designers was to create a comfortable, homelike environment. Traditionally styled furniture upholstered in soft tones of green and peach, and expensive materials designed by the Los Angeles interior design firm of Teixeira, impart a look that lies somewhere between a grand home and a luxury resort.

The lighting design, by Michael Souter of the San



Francisco-based firm of Luminae-Souter Lighting Design, is a result of both research and aesthetic considerations. That eyesight deteriorates with age has always been common knowledge, but only over the past decade has understanding how aging affects the eye, and what kind of lighting helps vision and comfort levels in the elderly, become an area of study.

According to Naomi Miller, adjunct professor at the Lighting Research Center at the Rensselaer Polytechnic Institute in Watervliet, New York and lighting consultant, the degeneration of sight with age takes several forms. One is that the lens of the eye yellows and thickens, causing color perception to shift a little. The lens can also become damaged over the years, causing light to be refracted or scattered instead of passing straight through.

Another major factor affecting vision in the elderly is the reduction of pupil size. The pupils become smaller with age, reducing the amount of light reaching the cornea. "It is estimated that for the same amount of light available, a 60-year-old person receives only about 40 percent as much light at the retina as a 20-year-old," says Miller. In addition, reduction in pupil size also causes a delay in responding to changes in brightness. Elderly people are also more sensitive to glare.

In the dining room, decorative chandeliers, cove lights, and recessed downlights are used together to create evenly distributed light.

"For failing vision, slightly increased overall light levels help, but significantly increased light levels at task locations helps more," says Miller.

In the San Francisco Towers, Souter's lighting design attempts to create an even distribution of light in all areas. Shadows and patterns, which are difficult for the aging eye, were avoided by creating layers of light with the use of table lamps, cove lighting, and downlights. Custom-made crystal chandeliers and decorative sconces and lanterns are a part of the overall lighting scheme. All public areas of the Towers have dimmable lights, with four preset scenes.

In the foyer/atrium, a four-circuit track system utilizes three lamp sources: halogen PAR 38 lamps for general downlighting; low-voltage halogen PAR 36 lamps for statuary and surrounding plants; and metal-halide PAR 38 lamps to assist plant growth. Metal-halide uplights on the columns provide fill light to help prevent shadows. In the lounge, recessed downlights are equipped with adjustable MR16 lamps, while cove lights have 3000K T8 lamps for ambient light. N.C.



Kim Theory of Relativity

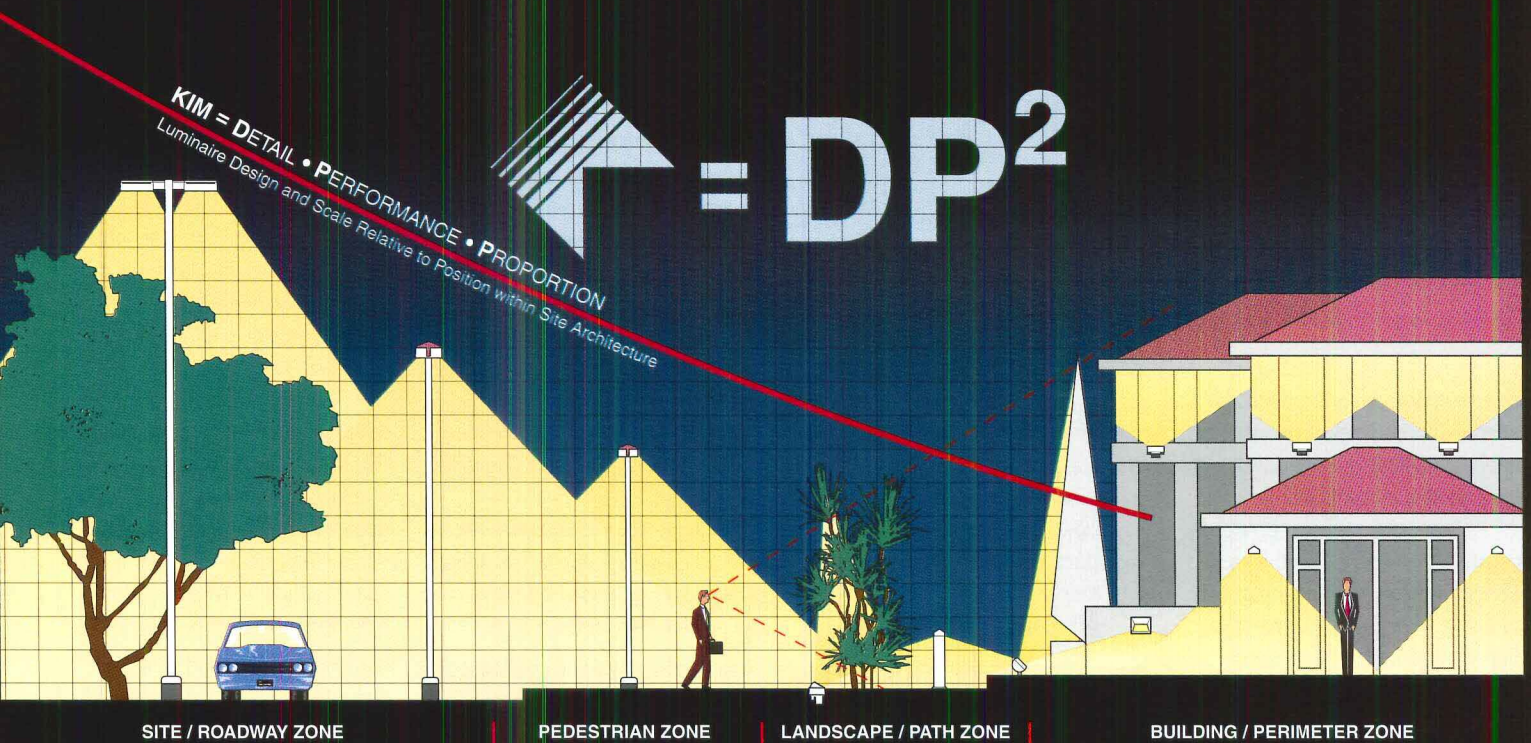
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CIRCLE 110 ON INQUIRY CARD



NEW OFFICES FOR UNIFORM COMPANY ANYTHING BUT STANDARD ISSUE

Unitog, a Kansas City, Missouri-based manufacturer and supplier of uniforms for business and industry, had grown steadily since 1932, until they needed a new building.

"They wanted their new headquarters to do the usual things, like bringing employees closer together to improve communication," says Cary Goodman of Gould Evans Goodman Associates, "but also to express the high levels of quality and service that the corporation represents." The site for the new building was in a Kansas City neighborhood replete with historic office buildings and homes, and access to the central business district and the freeway nearby.

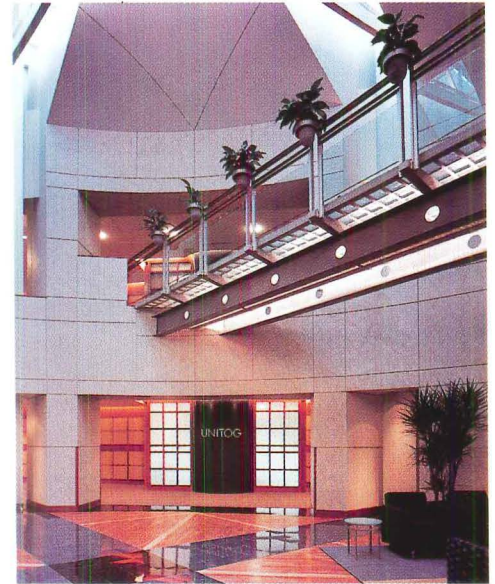
Unitog's new headquarters fulfills it planners' hope with a light-filled fresh approach. It's central space is an elliptically shaped lobby finished in Venetian plaster surmounted by a pair of intersecting trusses inserted into slots which interrupt the surface of the domed ceiling of the space. The trusses, inspired by the structural systems found in local industrial buildings,

have narrow bands of skylights directly over their top chords, but, with an architect's sleight-of-hand, also support the roof and ceiling structure. Opening these slots to the sky allows slashes of daylight into the space that play along the walls and floor of the lobby.

After dark, the slots and roof



Skylights trace the top chords of the trusses, which support the ceiling and roof of the lobby, allowing daylight to enter the space. The glass-block floor of the bridge is illuminated by simple fluorescent strips fitted with 3500K high-color-rendering lamps. These are mounted in a perforated, bent-steel enclosure that hides the strips as well as acts as a reflector (left, right, and below).



trusses are illuminated by simple fluorescent strips fitted with 3500K high-color-rendering lamps, inside perforated bent-steel enclosures, attached to the bottom chords of the trusses. These were designed in collaboration with lighting consultant Bruce Yarnell.

A bridge spanning the lobby connects an elevator to the parking garage below the building, and to executive offices and conference rooms. The bridge, custom-detailed

The undersides of the beams and purlins are illuminated by the same fluorescent strips that light the glass-block floor of the bridge.

by Gould Evans Goodman, is constructed of a pair of deep, wide-flange steel beams punctuated by large, round holes that have been cut through the beams' webs. The floor of the bridge is made of glass block supported by steel purlins uplit by fluorescent strips, and also illuminated by 3500K high-color-rendering lamps.

The light from the strips is reflected upward through the glass block and onto the surfaces of the steel beams and purlins by another enclosure of bent, perforated steel, also designed in collaboration with Yarnell. The lighting strip cover is also visible from the underside of the bridge, and picks up the industrial appearance of the roof trusses. The side walls of the bridge, made of safety glass, are set into mullions supported by the same steel structure that supports the glass-block bridge floor. The mullions are topped by wooden handrails.

The shoji-screen-like walls of the office and conference rooms around the perimeter of the lobby space have been given a warm wash of light by 75-watt, PAR30 lamp-strips set into 12-inch by 12-inch deep pockets immediately in front of them. A-lamp downlights with 100-watt lamps were set into the ceilings in front of the entrances to these rooms to give them a slight accent. C.L.

Colorful Effects Create Magic Aboard Disney's First Cruise Ship

by William Weathersby, Jr.

LIGHTING



The Oceaneer's Lab (left), a kids' activities space aboard the Disney Magic (above), features cold cathode, LED, and end-emitting fiber-optic effects cued to music.

worked with Disney on the design of pavilions and exposition environments and respected the company's careful attention to the smallest detail," says Imagination (no relation to

Imagineering) project director Paul Scott. "We were the first to say, 'We've never lighted a ship before.' That proved to be a plus, since we came to the project with few preconceived strategies. We approached this project as a collaborative effort with WDI. Lighting is only one integral element of the whole design."

Following Disney's mandate for an ambiance that recalled classic transatlantic cruise liners like the *Normandy* and the *Queen Mary*, Imagination "aimed for flattering light levels with a romantic, 1930s or 40s feeling," says lighting designer Tony Rimmer. "From our research, we felt that many modern ships have tended to overlight public areas. We reduced the light levels, especially on the open decks, to an absolute minimum. Taking a stroll on the upper decks at night, passengers can look at the stars without overbearing illumination spoiling night vision. Pools of light and soft washes on the deck create a more intimate feeling."

Ambient lighting levels indoors also were kept fairly low, so that the structure of the ship and its finishes are not overpowered by bright

The Walt Disney Company, whose multimedia products and entertainment environments have helped shape the global landscape of popular culture for the past half-century, is making waves in new territory: Out to sea. Launched last summer, the *Disney Magic* marks the conglomerate's expansion into the cruise industry with its own passenger ship. Rather than being an overtly themed Disney World on water, however, the vessel celebrates the legendary ocean liners of the 1930s with interiors and furnishings that embrace the look of an upscale hotel. Though their appearances are limited, beloved characters like Mickey Mouse and the Little Mermaid still appear in on-board stage productions.

The 83,000-ton ship accommodates up to 2,400 guests in 875 staterooms on cruises sailing between Port Canaveral and Disney's private island in the Bahamas, Castaway Cay. The ship has been outfitted to charm travelers of all ages. One entire deck is devoted to children's activities, while discrete nightclub and spa sectors provide adults with their own on-board getaways. Design of the public spaces—including a cinema, live performance theater, five restaurants, three pools, retail shops, sports club, and assorted lounges and bars—was overseen by Walt Disney Imagineering (WDI). Nine design consultants—from graphics firms to interior architects—were enlisted to orchestrate the look of various on-board enclaves.

To design architectural lighting that seamlessly connects the converging realms of this floating minicity, Disney commissioned London-based Imagination, an independent, multidisciplinary design studio that nevertheless knew the Disney ethos well. "We had previously

Project: Disney Magic

Client: Disney Cruise Line

Architects: Walt Disney Imagineering; Njal R. Eide; Deltamarin; Yran & Storbraaten; Brand & Allen Architects; Robert Tillberg

Design Consultants: Rockwell Group (*Animator's Palate, Offbeat*); Wilson & Associates (*Walt Disney Theater*)

Lighting designer: Imagination—Paul Scott, project director; Tony Rimmer, Kate Wilkins, lighting designers; Steve Latham, show lighting designer

Entertainment systems consultant: Glantre Engineering

Signage and graphics consultant: David Carter Design



A ceiling detail in The Walt Disney Theater (left) features a starburst of abstracted skyscrapers made of crystal and backlit with white cold cathode. The central atrium (facing page) showcases a glass chandelier by Dale Chihuly that glows via internal fiber optics.

fixtures. About 90 percent of lighting in the public venues is indirect, according to Rimmer. “We didn’t want to festoon the whole ship with standard lamps or a lot of decorative sconces,” Scott adds. And since passengers will encounter each space time and again over the course of a three- to six-day cruise, the lighting design team plotted different lighting settings controlled by time clocks to vary the look throughout the day.

The three-story lobby atrium, which serves as the ship’s central circulation hub, is graced with a dramatic chandelier by artist Dale Chihuly. The colored-glass sculpture is internally illuminated with end-emitting fiber optics, supplemented by recessed downlights fitted with color-changing discharge lamps. “The chandelier is quite difficult for maintenance personnel to reach, so we used the fiber optics with remotely positioned illuminators that are easy to access,” Rimmer says. Another layer of downlighting is a ring of recessed fixtures fitted with 70-watt metal halides. Warm white cold cathode surrounds friezes and coves, while low-voltage MR16 fixtures illuminate balcony levels. The staircase is spotlighted with programmed automated luminaires for a theatrical touch.

One of the ship’s main restaurants, Animator’s Palate, pays homage to Disney’s legendary animation film department. Here, lighting is the central ingredient engaging diners in a kinetic experience. Design consultant Rockwell Group developed the concept of a dining room that changes from stark black and white to technicolor over the course of a meal, like an animation cel come to life. “One of the things I love about

live theater is the aspect of transformation,” says architect David Rockwell, “Things change right in front of you. Animator’s Palate is our version of a room that is literally transformed as you enjoy your dinner and look around. You are enveloped in a fantasy environment, like Alice’s in *Through the Looking Glass*.

The effect is achieved “through the theatrical trick of using a scrim—dissolving a mesh wall with strong back lighting,” Scott says. Diners arrive at their table amid the fanciful black and white environment composed of cartoonlike outlines of sketchbooks and supplies in an artist’s studio, which accompany drawings from Disney cartoons without their trademark hues. The components forming the room’s exaggerated perspective, including columns that look like giant paint brushes, are constructed of glass-reinforced fiberglass.

House lighting at the beginning of the meal is provided by 50-watt AR70 downlights over each table in clusters of four. As the first course is served, MR16 track spots fitted with colored dichroic glass lenses and mounted behind the scrim begin to wash the perimeter walls in a swirl pattern of orange and red, while the paintbrush bristle “capitals” of the columns glow blue via end- and side-emitting fiber optics. Over the course of the meal, color wheels alter the hues of the fiber-optic details of the columns and oversize palates on the ceiling seven times. The custom fiber-optic hues were color-matched to animated images from Disney’s archives. Gradually, deep blue cold cathode outlines perimeter walls, and MR16 lamps and continue to change the look of the scrim.





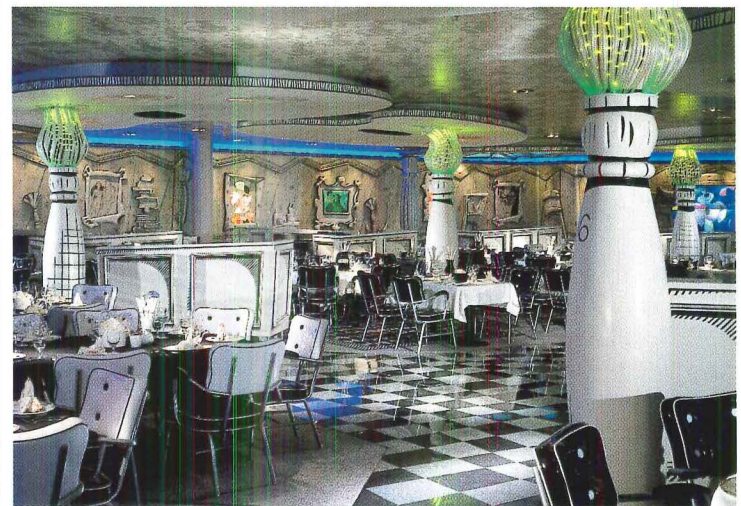
The Promenade Lounge (left) features MR16 downlights and spots. Fresnels light the bandstand. During dinner, the look of Animator's Palate (below) changes from black and white to "Technicolor" via lighting and video effects.

Synchronized light, sound, and video accompany each magical change, until every aspect of the room is colored in. Static images along the wall turn into video clips from animated classics such as *Jungle Book* and *101 Dalmations*. By dessert, even the waiters' vests have switched from monochrome to multicolored. "It's like a themed attraction in itself," Scott says. Steve Latham of Imagination worked on the show lighting elements, while Scott oversaw the production of the multimedia show. "We tapped out the power load for the multimedia equipment in this space," says Rockwell Group project designer Nancy Thiel. "Coordinating the various elements and working with a ceiling that had to be completely demountable was an engineering challenge."

The night spots

Rockwell Group also designed the ship's trio of adult night spots, collectively called Beat Street, a dance club, jazz lounge, and improvisational comedy club. A corridor tying the spaces together features a skyline cutout backlit with fiber optics. Punctuated by colorful supergraphics and finishes, the design motif of the Offbeat comedy venue is "the Laugh-In love bus meets the Twister board game," says Rockwell. For house lighting, halogen capsule lamps are inset into abstract flower forms hung from the ceiling. Halogens also downlight the stage, which features a multicolored bus backdrop with cut-out windows highlighted with ultraviolet projector lights. Bubble-glass stanchions at the end of the bar are internally lit with white cold cathode.

The primary lighting challenge within the ship's sister spaces, a cinema and live performance theater designed by WDI with Wilson & Associates, was to support a range of activities from bingo games to religious services. "For versatile house lighting, we specified 250-watt halogen downlights that give good distribution within a broad beam width," Scott says. Sections of the ceiling in both spaces feature coves set on a curve, so the downlights feature flexible front plates to accommodate the arc. For a retro look in the cinema, custom sconces interpret Art Deco style while





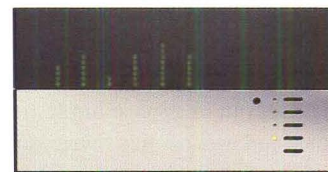
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CIRCLE 115 ON INQUIRY CARD



The Offbeat comedy club incorporates ultraviolet light projectors and halogens fitted with dichroic lenses to play off colorful shapes and surfaces.

supporting halogen dichroic lamps. The side walls of the live theater feature fiberoptic endpoints in each of the pilaster niches. The theater's ceiling showcases a starburst pattern of glass crystal backlit with white cold cathode. When the Disney pixie Tinkerbell takes flights during one of the stage shows, a night-sky effect sweeps across the ceiling via end-emitting fiber optics.

In the Oceaneer's Lab, an activities area designed for children, "we were more adventurous since the space is built more around a Disney theme," Scott says. Surrounded by computer carrels in the center of the room, the Disney character Buzz Lightyear—the astronaut hero of *Toy Story*—rises out of a spaceship resting on a bed of fluorescent light. The antennae and eyes of alien figures surrounding the ship feature LED elements. The vignette is spotlighted with halogen downlights. A back wall showcasing an oversize computer monitor is accented with rings of blue cold cathode, as are portholes and activities platforms kids can stand on. "The blue rings dim and vibrate in tandem with the computer-controlled

action that's happening on the video-game monitors," Rimmer says. Support columns dressed to look like objects including a rocket ship and a mad scientist's test tube are detailed with cold cathode and fiber optics cued to the room's sound effects. "The idea is that the rocket is taking off, the experiment is bubbling over, and so on," Scott says. "Lighting drives the theatricality and completes the illusion."

For quieter lighting in staterooms and corridors, Imagination consulted on a lighting package—specified and installed by architect Robert Tillberg and Susan Orsini Design Associates—that encompasses indirect compact fluorescent and halogen fixtures. ■

Sources

Recessed halogen downlights: *Erco, Leucos, Marlin, Selecon, Modular Int.*

Fiberoptics: *CIE*

Cold cathode: *Technolux*

Track spots: *Iguzzini*

Stage curtain spots: *Thomas*

Dimmers, controls: *Strand Lighting, Electronic Theater Controls, Walt Disney Imagineering*



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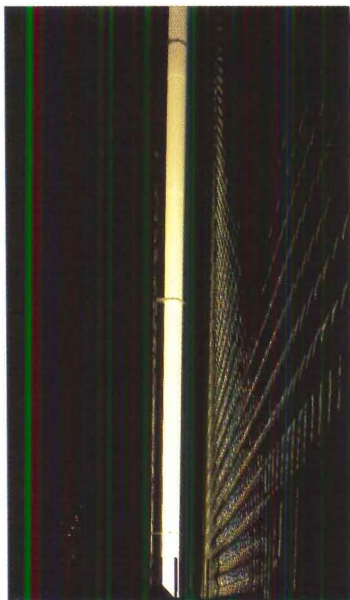
CIRCLE 116 ON INQUIRY CARD

Light Guides Reveal Gio Ponti's Hidden Vision for Denver Art Museum

by Nayana Currimbhoy

In the last decade of his life, Gio Ponti became fascinated with facades. Always pushing the envelope and exploring the boundaries between art and architecture, the Italian architect and founder of *Domus* magazine evolved from using the facade as a vessel to get light into a building to using it as a decorative element in itself. One prominent example has recently leaped into the spotlight.

The Denver Art Museum, which Ponti built in 1972 in collaboration with James Sudler and Associates, is faced with more than a million ceramic tiles. The interconnected, overlapping seven-story museum towers are covered entirely with the tiles, which were designed by Ponti and developed specifically for the project by Dow Corning. Textured and highly reflective, the tiles create a changing pattern of light and shadow on the building's facade, to illustrate Ponti's vision of building walls that would create a "musical protection" for the building. The facade is punctured by six poetically composed narrow and vertical slots, so that from certain angles it resembles a fortress. In fact, Ponti himself supposedly referred to the museum as a fortress for art.



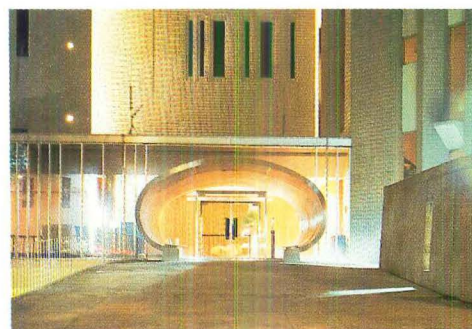
Ponti's seven-story towers created an unusual arrangement of stacked art galleries: Each floor houses one 10,000-square-foot, self-contained gallery space.

The exterior lighting of the museum was integral to Ponti's vision of the historic building. He conceived of a vertical strip of light at each of the points where one plane of the building facade overlaps another. In keeping with the technology of the time, cold-cathode strips were installed vertically along the overlapping planes. The cold cathode, however, provided uneven and inadequate amounts of light and was expensive to

maintain. Relamping was an elaborate and fairly spectacular procedure, requiring that the installers rappel along the vertical surfaces of the building like rock climbers, with glass tubes in hand.

George Sexton and Associates, a Washington-based firm specializing in museum lighting design, has replaced the cathode strips with prismatic light guides, a technology popularized in the 1990s. Light

Nayana Currimbhoy is a regular contributor to the lighting section of Architectural Record. Her book Designing Entrances was published by Rockport this spring.



Light guides, strategically placed where building planes overlap, throw the building's facade into relief and highlight the textured surface of its reflective ceramic-tile walls.

guides were placed vertically in the spaces between the overlapping planes of the building, so these areas seem to glow from within.

The light pipes that line the vertical spaces consist of two primary components: A light guide, which is a long, hollow translucent prismatic pipe lined with special reflective optical film, and an adjacent but separate luminaire whose light is projected the length of the pipe. Here Sexton chose to use a metal-halide source but other light sources can be used [RECORD, November 1998, page 165].

"This revolutionary technology is a highly efficient way to uniformly light a run of this length," says George Sexton, principal of the firm. Because of the scale of the surface to be covered, light guides had to be developed specifically for the project. "This project employed the largest diameter and longest run with a metal-halide source ever produced by the manufacturer," says Sexton. The eight-inch-wide, 132-foot-long pipe is lit by 1,000-watt PAR64 compact-source metal-halide lamps placed at either end. The light source was selected for its high output and its narrow distribution. The light pipes emit twice the amount of light as the cold cathode along the entire length of the run. Because the light sources are located at the ends of the run of each light pipe, the museum's maintenance problems have been solved; relamping points are now easily accessible from the roof and the base of the building.

The art museum has become a dramatic presence in the Denver night, and a creative yet deceptively simple lighting solution has finally given the structure the mystery and depth merited by Gio Ponti's design. ■

Project: *The Denver Art Museum*

Owner: *The Denver Art Museum; Dr. Lewis Sharp, director*

Lighting designer: *George Sexton Associates*

Original Architects: *Gio Ponti and James Sudler Associates*

Architect of record and construction

manager: *CyberCon Corporation*

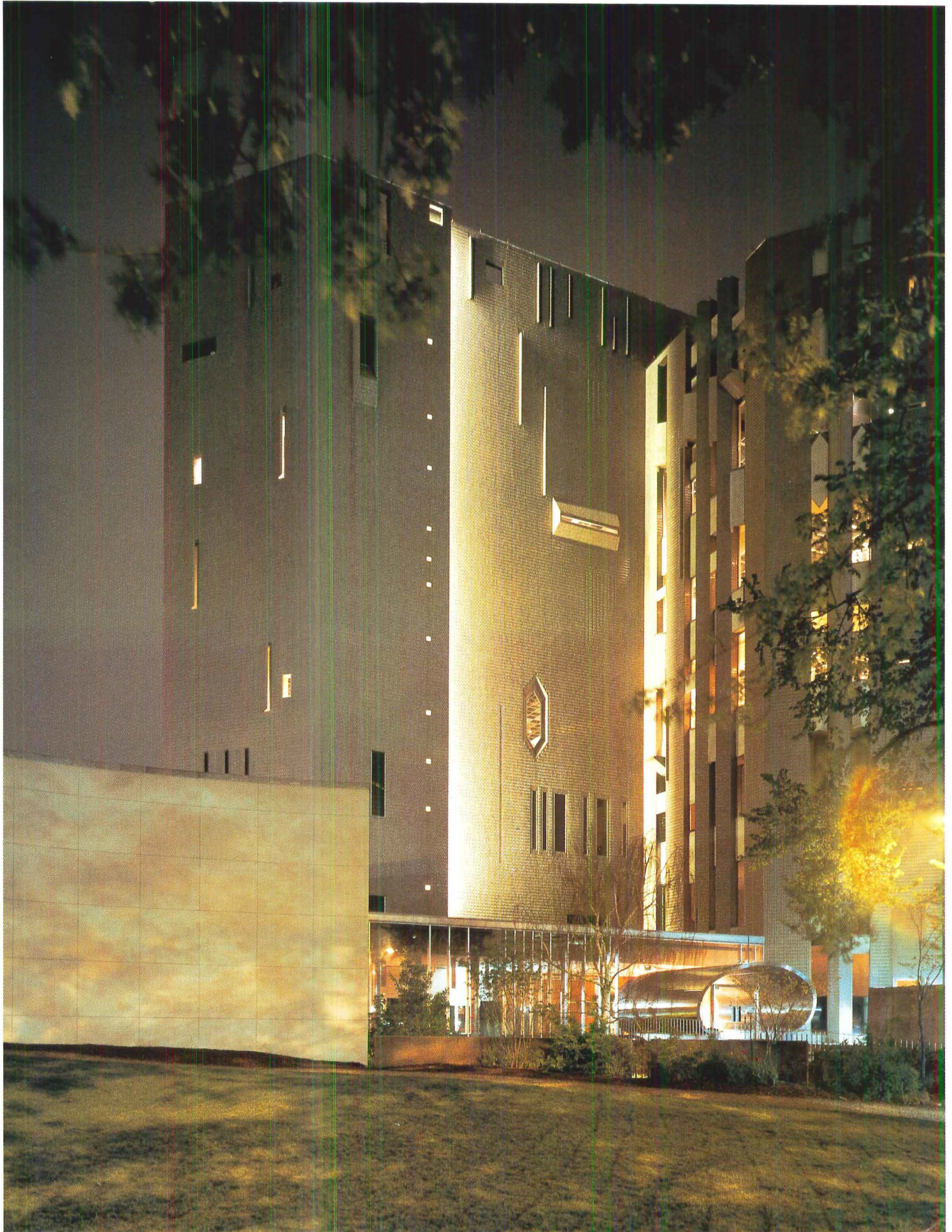
Architectural consultant: *Joal Cronenwett*

Sources

Prismatic light guides: *TIR Systems*

Illuminator units: *North Star Lighting*

Light sources: *General Electric*





STRIP

3"x29"x7" (2x17W FL)
3"x29"x15" (4x17W FL)
3"x29"x26" (6x17W FL)

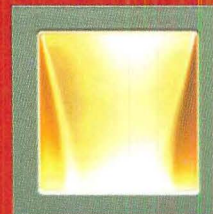
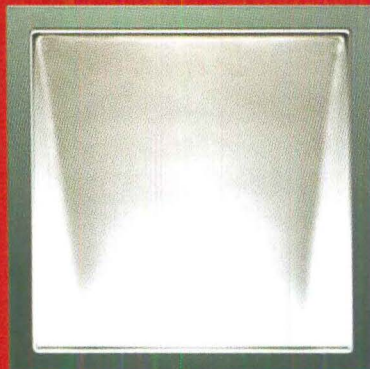
METROPOLI

Ø 22"
Ø 15"
Ø 10.6"
Ø 6.7"

ORCHESTRA

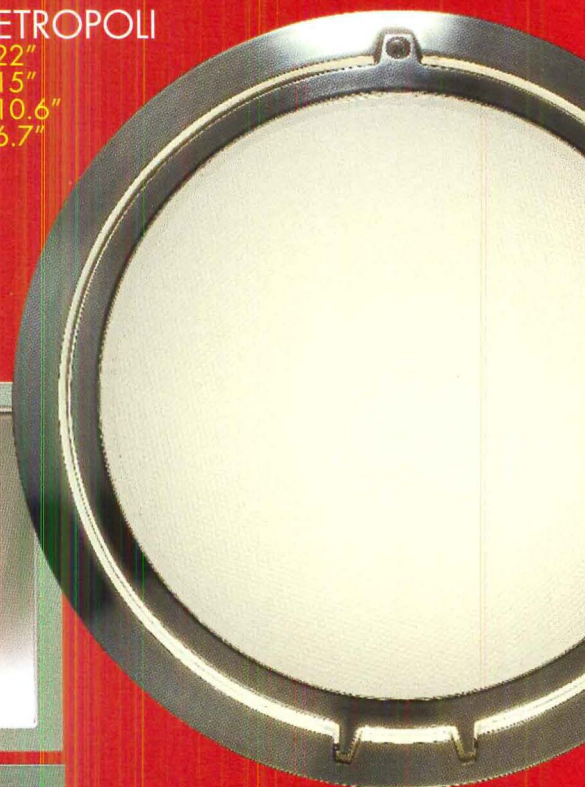
12"x12"

7"x12"



12"x7"

7"x7"



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Arm 14"/20"



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CIRCLE 117 ON INQUIRY CARD

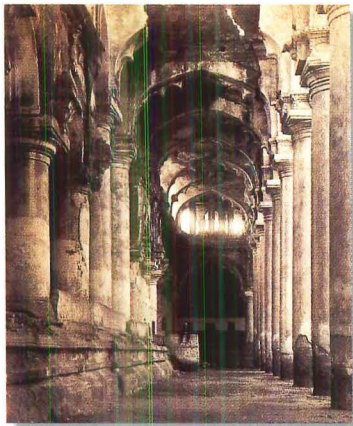
A New York Photography Center Provides a Passage to India

by William Weathersby, Jr.

Throughout his career as an educator, curator, and collector in India, Ebrahim Alkazi has pursued a passion for photography. Over the past quarter-century he has amassed a collection of more than 40,000 images that form a scholarly survey of South Asian photography since the invention was introduced in 1839. Comprising portraits, landscapes, military campaign studies, souvenirs of ceremonial pageantry, and archeological and architectural views, the photographs provide a passage to India: a window on the faded world of the British Colonial Empire. To share his historical trove with scholars and the public, Alkazi recently opened an outpost in New York that combines a commercial gallery, Sepia International, with a privately-owned archive, the Alkazi Collection of Photography. The research center is available by appointment to accredited professionals including architects and historians.

To design the 4,000-square-foot facility, Alkazi and executive director Esa Epstein turned to Indian-born New York architect Nandinee Phookan. The owner had previously commissioned her to complete renderings and elevations documenting the vernacular architecture of India, but this latest assignment represented challenges of another sort. “This center combines the programs of a museum and a gallery, and we wanted to create spaces rich in materials and detailing but also spare and clean-lined,” says Phookan.

The gutted space required architectural sleight-of-hand. A former apparel workroom in a factory building built in the Chelsea district of New York City earlier this century, the 11th-floor loft was wrapped with windows on three sides. To protect the rarest photography within the collection—such as daguerreotypes and silver prints—from daylight while retaining the ability to reveal the sweeping views during certain exhibitions and events, Phookan designed window-screening movable display walls that slide on tracks. The five-inch-thick drywall-upon-honeycomb partitions, the largest mea-



suring 17 feet long, also “add further depth to break up the boxiness of the two gallery spaces,” she says.

Phookan collaborated on the architectural lighting of the photography center with consultant Donald Holder, who also won a

Tony for lighting *The Lion King*. “There is an understated elegance to Nandinee’s layout and detailing for Sepia,” Holder says. “The spaces embrace a spare architectural vocabulary, and we lighted the opposing planes so that visitors could sense the visual boundaries. The lighting supports the display of the photography, but we also used the walls as reflectors to provide indirect ambient illumination that has fairly low light levels for an exhibition space.” Adds Phookan, “Lighting helps to provide visitors with the processional experience of moving from a brighter reception area to the more intimate photo galleries.”

The chief components of the reception area and entry corridor are a dark mahogany desk and cabinetry, offset by limestone flooring and an expanse of white walls. “It was important to create a strong first

Period photographs such as this albumen print of Samuel Bourne’s

Agra, The Fort, The Musamen Berj (Octagonal Tower, #1223), 1885, are shown at Sepia International and the Alkazi Collection of Photography.

Project: Sepia International/The Alkazi Collection of Photography, New York

Owner/client: Ebrahim Alkazi, founder; Esa Epstein, executive director

Architect: Nandinee Phookan

Architect—Nandinee Phookan, principal; Walter Froetscher, Caitlin Moore, project team

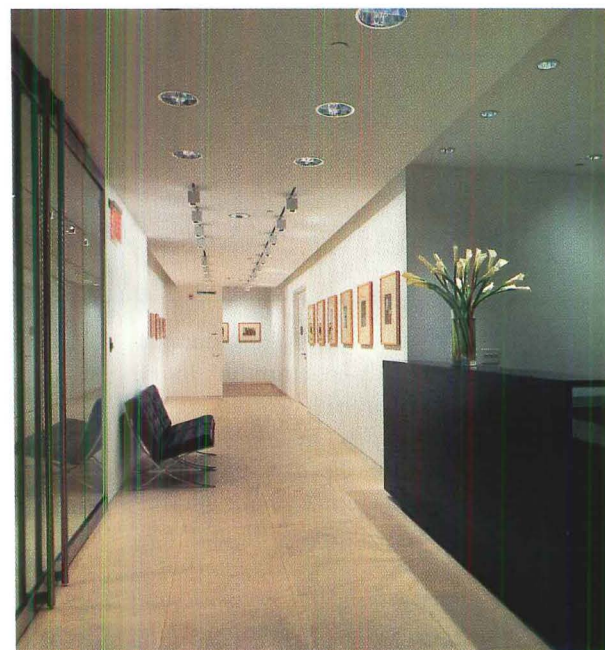
Lighting designer: Donald Holder Lighting Design



Track-mounted MR16s with prismatic spread lenses provide diffuse lighting in the main gallery (left).

Rectangular-profile track fixtures fitted with quartz halogens illuminate a corridor connecting lobby to

gallery (top right). Recessed fluorescents with specular baffles light work tables in the library (bottom).



impression for visitors stepping off the elevator and entering the glass-fronted lobby," Holder says. The designers created an attractive vista through the glass doors by bouncing light off the lobby's walls. A series of recessed wallwashers illuminate the wall behind the reception desk. Recessed accent lights provide task lighting atop the work surface. Holder specified a recessed track fitted with quartz halogen lamps to run the length of the adjacent corridor that serves as a link to one of the galleries. "The luminaires have a sculptural rectangular profile and excellent cut-offs with linear spread lenses for bayonet-mount lamps," Holder says. "The display wall is the most prominent architectural feature in the lobby, so we hit it with an even wash of light."

The lighting plan for the two main galleries was kept simple to create an even plane of illumination on the display walls. Track-mounted 75W MR16s are fitted with prismatic spread lenses for diffuse distribution along vertical planes. "The light bouncing off the walls provides the only ambient illumination in the room," Holder notes. "And curators have the option of changing the lenses or moving fixtures around to accommodate different exhibition configurations. Lighting levels are kept

relatively low to protect the rare prints, and careful focusing eliminated any glare problems off the glass-fronted photo frames."

The research center's library and archive room is enclosed at the center of the space like an inner sanctum. Mahogany cabinetry with aluminum channels holds the rare 19th-century illustrated books, portfolios, and albums. Along the perimeter, warm mahogany surfaces are accented with halogens. Cabinetry, shelves, and computer carrels feature integral halogen strip lights. Recessed, four-foot-long T8 fluorescents fitted with specular louvers offer glare-free illumination for the reading tables in the center of the room. The bright center of the room fades to a darker feeling around the edges, almost like one of Alkazi's prized sepia photographs. Four lighting presets accommodate lectures, video conferencing, film presentations, and research within the archives. ■

Sources

Reception track lighting: Edison Price
Reception and library wallwashers, downlights: Iris Lighting Systems

Recessed fluorescents: Zumtobel
Library cabinetry strip lights: Alkco
Gallery track lighting: Lightolier
Controls: Lutron



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CIRCLE 118 ON INQUIRY CARD

Schuler and Shook Give Chicago Public Artworks a New Nighttime Glow

by Charles Linn, AIA

Schuler and Shook, a theatrical and architectural lighting consultant, recently relit three of Chicago's best known works of public art: Chagall's *The Four Seasons*, owned by a local bank, First Chicago NBD; the Picasso sculpture at Richard J. Daly Plaza, owned by the Public Building Commission of Chicago; and Calder's *Flamingo* at Federal Plaza, owned by the General Services Administration.

The Four Seasons was lit as part of the second major restoration of Chagall's famed mosaic. First Chicago concluded that it could not continue to restore the work every few years, and sponsored a competition for a design to protect it from the elements. Skidmore, Owings, and Merrill won with a simple long-span canopy and a roof made of Pilkington glass. The glass is fitted with a plastic interlayer to diffuse daylight. The lighting designers were given the opportunity to improve the existing lighting, which was concealed in bollards. "These are always a maintenance problem," says principal Robert Shook. Now the mosaics are lit from above by light shining through the roof, with quartz-halogen floodlights fitted around the perimeter.

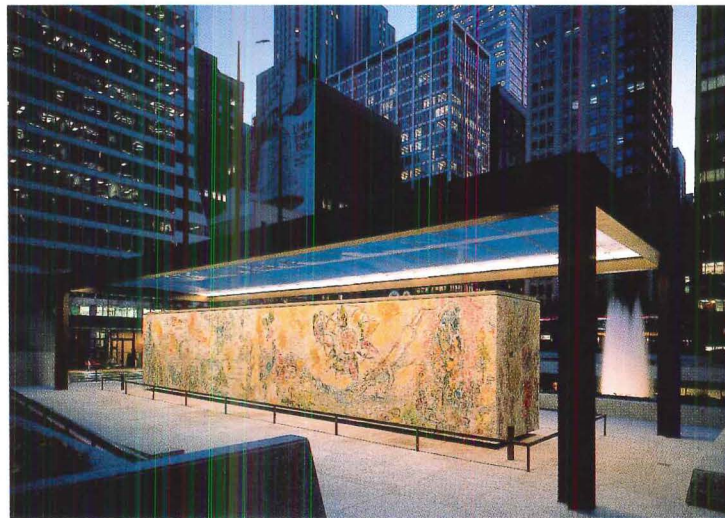
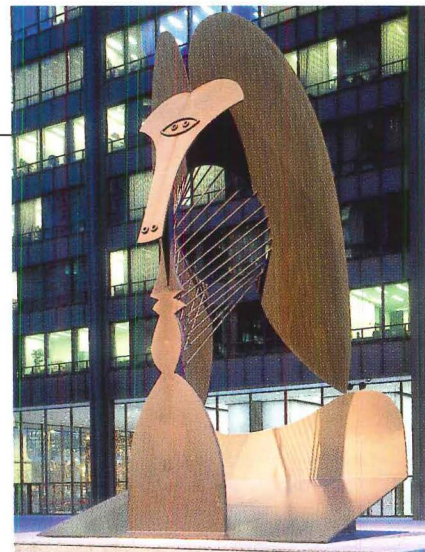
The Picasso sculpture was relit twice prior to Schuler and Shook's most recent scheme, first from the rooftop of a 45-story building across the street—creating excess spill light on the plaza. A later design used fixtures anchored 15 feet above the ground on streetlight poles, which created glare and resulted in very flat lighting of the piece. "The plaza was going to be renovated, and we were hired to do the lighting," says Shook. "Then the project was scaled back. All that was left for us was to light the sculpture." The lighting designers devised a scheme to locate fixtures with very tightly controlled ceramic metal-halide and deluxe high-pressure sodium sources 22 stories up on a Cook County-owned building across the street. "From this angle we were able to light the sculpture without throwing any light onto the building behind it," says Shook.

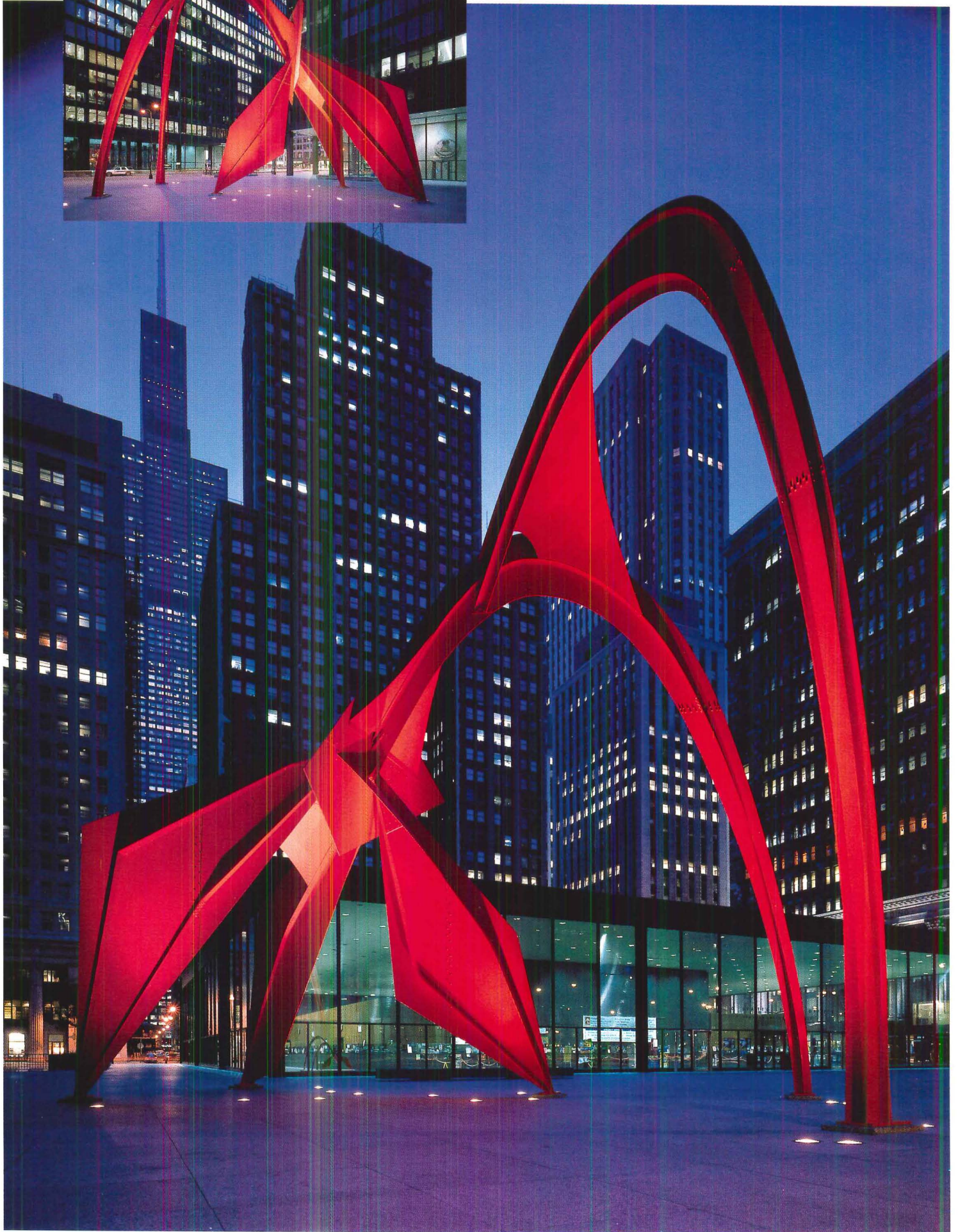
The firm lit Calder's *Flamingo* when Harry Weese Associates renovated Federal Plaza. "The primary directive of the owner was to provide security lighting. We felt that we could make the plaza feel safer by lighting the bright surface of the sculpture than we could by scattering poles or bollards around." The *Flamingo* would have been difficult to light from below because its members are so thin. Using PAR36 and PAR38 quartz-halogen spots in burial fixtures, the designers were able to focus the light directly on the sculpture and bring out the artwork's "Caldered" finish. In-line dimmers set the light at an appropriate level. ■

Project: A Picasso Sculpture, The Four Seasons, and Flamingo, Chicago, Illinois
Lighting designer: Schuler & Shook, Inc.—Robert Shook, principal, Jim Baney, Emily Klingensmith

Sources
Canopy light fixtures: Stonco
Floodlights: Arc Lighting
Burial uplights: Greenlee
Lamps: General Electric, Philips

Three landmark public art works in downtown Chicago have recently been illuminated by Schuler & Shook, architectural and theatrical lighting consultants: the Picasso (left), Chagall's *The Four Seasons* (below), and Calder's *Flamingo* (opposite).







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CIRCLE 119 ON INQUIRY CARD

Electrodeless Light Sources Emerge As Practical HID Alternative

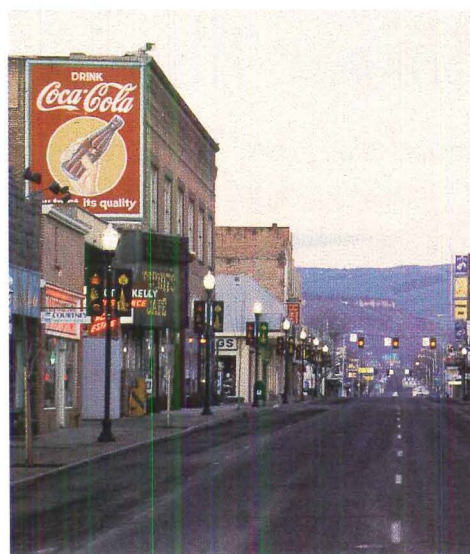
by Lindsay Audin

A new light source has come of age for illuminating America's open spaces. Electrodeless fluorescent lamps, energized by high-frequency magnetic fields, are appearing in new pole and street lighting, and eventually, they may replace some high-intensity discharge (HID) lamps in industrial and billboard lighting. For as long as most of us can remember, outdoor lighting has been dominated by mercury-vapor, metal-halide, and high- or low-sodium lamps. These powerful sources are energy efficient, long lasting, and sufficiently concentrated to allow a few fixtures to illuminate a large area, but they also have some annoying limitations. The color rendering of most sodium and mercury-vapor lamps is less than pleasing, while the color of metal halide tends to shift noticeably over its lifetime. All require minutes to restrike after a power dip, causing a possible driving hazard just when light is needed most. And, while lasting longer than incandescent and some fluorescent sources, their life expectancy is still only a few years, creating an ongoing expense and chore for street maintenance departments.

The new electrodeless system offers a better way. Originally called radio frequency induction lighting, this technology was introduced by Philips Lighting in Europe in 1990 and brought to the U.S. in 1992. Unlike fluorescent lamps that use electrodes and an arc to stimulate mercury vapor to produce ultraviolet light, which in turn excites phosphors coating the glass envelope, this new process uses high-frequency magnetic fields to achieve the same result without wearing out any electrodes. These fields were also converted to visible illumination using fluorescent phosphors, a process adapted by Intersource Technologies in 1992 in the heavily touted E-Lamp that was to revolutionize lighting. The E-Lamp never made it to prime time, and many dismissed this technology as too limited. Philips continued to develop its system, however, which is now marketed as QL induction lighting. In 1997, Osram Sylvania unveiled its own version of this technology as inductively coupled electrodeless (ICE) lighting and offered it most recently in an outdoor/industrial system cleverly called ICETron.

Both systems now boast an extraordinary rated life of 100,000 hours, high (80 to 84) color-rendering index, and 3,000-, 3,500-, and 4,000-degrees-Kelvin color options. An increasing stable of outdoor-fixture vendors, including names such as Poulson, Hadco, and Kim Lighting, employ this system in their products. Designed to maintain output over a very wide temperature range, each version uses improved amalgam phosphors to provide the instant strike/restrike capability missing from HID sources. Though the QL system costs several times as much to install as a standard metal-halide lamp and ballast, the reduced maintenance costs

Lindsay Audin is president of Energywiz, Inc., and lighting research consultant to E-Source, a Colorado-based energy consulting group.



The Philips QL lamps look like oversized A lamps and can be easily retrofitted into existing fixtures.

(including the cost of the lamps and relamping labor) associated with this system distinguish it from HID lamps. Over the 16-year replacement cycle for the QL system (having used 70 percent of its rated life), the electrodeless system saved

about \$1,000 per fixture, despite its lower energy efficiency. In most areas, night lighting is not subject to demand charges, so energy costs play only a minuscule part of the life-cycle cost.

The QL system is presently available in 55- and 85-watt units (with a 165-watt unit expected next year), producing 4,800 and 6,000 lumens, respectively, while the ICE lamps come in 100- and 150-watt sizes, offering 7,500 and 12,000 lumens. All produce light at a rate of 70 to 80 lm/W, making them somewhat less energy efficient than most HID sources. The largest, and in some cases the most important, difference between the types is shape. The QL bulb looks like an oversized A lamp: Round and symmetrical, with a base-down configuration being typical (though mounting orientation of either system is universal). The ICE bulb looks like two short T-12 tubes mounted in parallel a few inches apart. Both systems use compact, low total-harmonic distortion electronic ballasts to produce their high-frequency energy. Due to its symmetrical shape, the QL lamp is ideally suited for standard pole lamps, even allowing existing fixtures to be retrofitted with the new system. The ICE system, however, is aimed primarily at new fixtures, typically for industrial or custom configurations.

The QL system is not yet powerful enough to supplant HID lighting in cobra-head-style highway or urban street lighting; nevertheless, it is capturing the interest of cities wishing to maintain their historic character, while cutting operating costs. The ICE system, on the other hand, is moving rapidly into high-bay and other industrial settings where lamp replacement is problematic. And both systems offer continuous high-quality illumination to put the color back into our evening travels. ■

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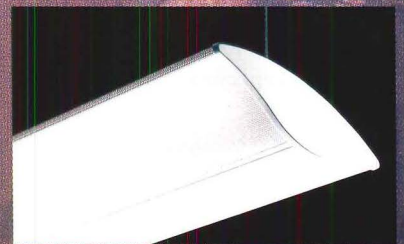
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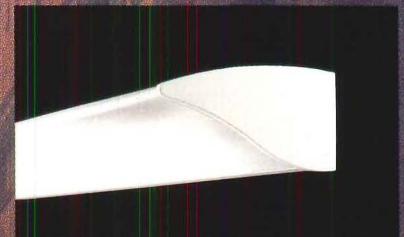
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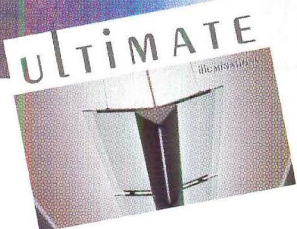
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LIGHTING BRIEFS

► Sleek track lighting

Hubbell Lighting's two-circuit track lighting is composed of a four-wire track system with two 20-amp-rated circuits. The system can be adapted in the field for one- or two-circuit wiring. Each circuit can be individually switched and dimmed. Tracks are available in 2-, 4-, 6-, 8-, and 12-foot lengths. The fixtures, which utilize MR-16 lamps, are unobtrusive, making the system suitable for installation in residential and commercial applications wherever task and spotlighting is needed. 800/270-3737. Hubbell Lighting, Christianburg, Va. **CIRCLE 266**



► Positive projections

Derksen's Graphic Projection Systems range from small units compatible with popular track-lighting systems for short projection distances to systems able to project logos and announcements over 200 feet. Options include analog clock projections, wind effects, and opening curtains that reveal text or images. Light outputs range from 2,600 to 110,000 lumens. 916/988-0390. Derksen (USA), Inc. Orangevale, Calif. **CIRCLE 267**



▼ Elegant reading

The Diva lamp from McGuire, a division of Kohler, features a horn-shaped, high-waisted design. The vertical fluting has an antique copper finish, adding an organic quality. The 62-inch-high piece has a 12-inch-diameter base, with a 26-inch-diameter shade. 415/626-1414. McGuire, San Francisco. **CIRCLE 268**

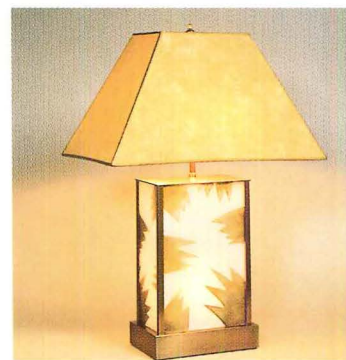


▲ SOS lighting

The May Day Collection, by Konstantin Gricic, offers designers a wide range of possibilities. May Day is suitable for use as a searchlight, portable table lamp, or hanging lamp. A handle in black, blue, orange, and green supports the white polycarbonate shade. Illuminated by a 60-watt A-19 lamp, the fixture features a waterproof ON/OFF switch and 16-foot plug-in cord. 516/549-2745. Flos USA, Huntington Station, N.Y. **CIRCLE 269**

► Classic style

The 1930s-inspired Matisse Table Lamp by John Protomaster is available in two finishes: Nickel with silver leaf and brushed light bronze with antique gold leaf. The base is 10 inches wide and 6 inches deep; the lamp is 29 inches tall. The base's bottom is removable, allowing for replacement of the 40-watt bulb. 212/807-6797. The Protomaster Collection, New York City. **CIRCLE 270**



◀ Sconce options

From the Classic Collection by Baldinger, the LesBois wall sconce (CC-292690) is available in five metal finishes: Polished, satin, or antique brass and polished or satin nickel. Diffuser options include white-opal glass or acrylic, and clear acrylic with a white or beige tint. Lamping options are incandescent or compact fluorescent. 718/204-5700. Baldinger, Astoria, N.Y. **CIRCLE 271**



◀ Analyzing energy usage

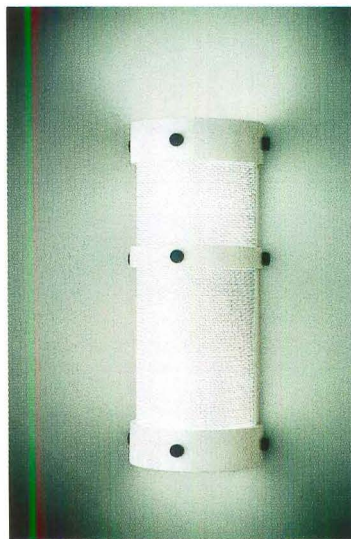
The Leviton Light Logger is a battery-powered energy analyzer that records occupancy and lighting-usage information, which is used to calculate energy savings, when occupancy sensors are installed. The device uses passive infrared technology to collect data, comparing how long a room is occupied with how long it is unoccupied with the lights on. The information can be downloaded to a computer for analysis. 800/323-8920. Leviton, Little Neck, N.Y. **CIRCLE 272**

LIGHTING BRIEFS



▲ **Pendant perfect**

Delray's Aspect line of fixtures includes pendant (shown) and wall- and ceiling-mounted models. The glass fixtures are available with optional downlight and/or indirect components. Lamping options include dimmable compact fluorescent (42-watt max), metal halide (100-watt max), or incandescent (150-watt max). Standard finishes include white and hammertone gray; custom powdercoat colors are available. Matte metal shades can be specified for industrial applications. 818/982-3701. Delray, North Hollywood, Calif. **CIRCLE 273**



▲ **Cylindrical sconce**

The model d1160 Buoy wall sconce from d'ac Lighting mounts vertically on a standard wall junction box. The fixture features a perforated-metal cylindrical shade with solid aluminum bands that span the fixture horizontally. A perforated bottom disc eliminates downward glare. The sconce uses a single 36-watt Dulux F four-pin energy-efficient fluorescent lamp. White baked enamel is the standard finish; brushed or polished aluminum and custom colors are available. 914/698-5959. d'ac Lighting, Mamaroneck, N.Y. **CIRCLE 278**



▲ **Curvaceous lighting**

Track lighting has taken a few new twists and turns. Tech Lighting's low-voltage halogen MonoRail system can be hand bent on-site to custom create simple linear shapes or smooth curves to add or highlight architectural details. Two individually switchable circuits on a single run allow separate control of ambient, dimming, and task lighting. A strip of color added to the bendable conductor blends the system into an interior or can be used as a design accent. 773/883-6110. Tech Lighting, Chicago, Ill.

CIRCLE 275

▼ **Digital drama**

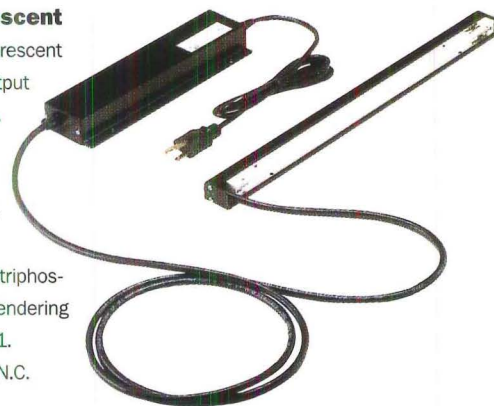
The iColor MR is a digital, color-changing lamp designed to fit in a standard MR-16 fixture, generating over 16.7 million colors using an integral microprocessor and RGB color mixing of LEDs. The lamps

► **Tight-space fluorescent**

Hafele's Sub-Miniature fluorescent bulb design allows high-output lights to fit in small spaces. Fixtures as small as ¾-inch high and 1-¼ inch deep with lamps that have an average life of 10,000 hours. Lamps have a pure triphosphor coating with a color-rendering index of 80. 336/431-3831.

Hafele America, Archdale, N.C.

CIRCLE 274



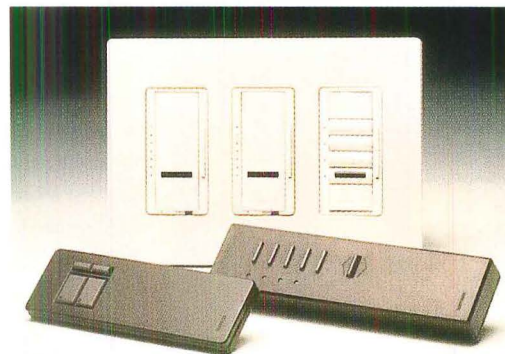
► **Wireless lighting control**

Lutron's Spacer System infrared lighting control kit can be programmed to recall up to five user-defined lighting schemes.

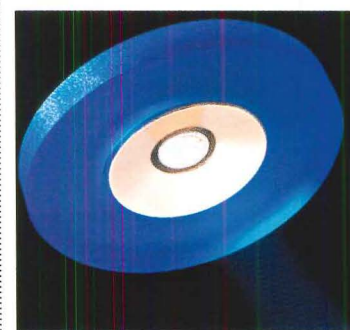
There are three control options: The Favorite Scene handheld remote recalls a single preset lighting scheme. A four-scene remote is available, as is a five-scene wall-mounted control. The system requires existing switches to be replaced with Spacer

System dimmers and is compatible with incandescent and halogen lighting.

610/282-3800. Lutron Electronics, Coopersburg, Pa. **CIRCLE 276**



require no external controllers for effects such as color cross fades, color washes, random color changes, or constant colors. The LEDs source life is rated at 100,000 hours. 888/385-5742. Color Kinetics, Boston, Mass. **CIRCLE 277**



▲ **Optic saucer**

Fiberstar's Fiberescent model FE-4134-XX is a 2-¼-inch-diameter saucer-shaped frosted-glass fiber-optic fixture for residential and commercial decorative ceiling-lighting applications. A single remote-source illuminator with a high-intensity halogen or metal-halide lamp can power several fixtures. Optional standard or custom color wheels inside the illuminator can add on-demand color changes. 800/327-7877. Fiberstars, Fremont, Calif. **CIRCLE 279**

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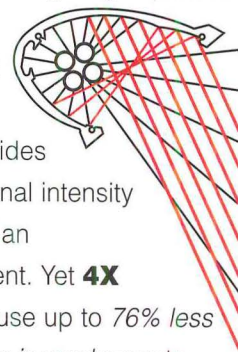
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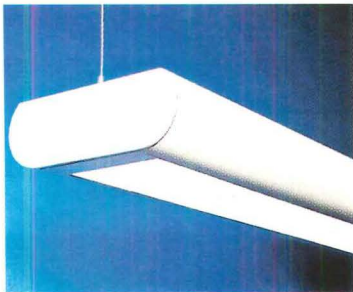
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LIGHTING BRIEFS

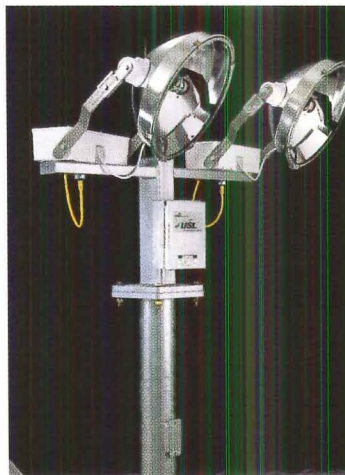
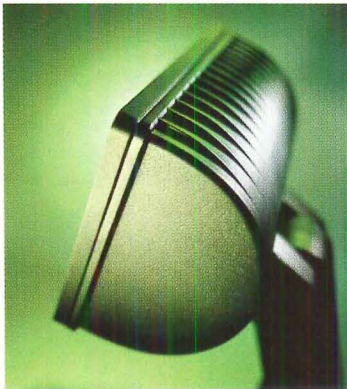


▲ Good grades

Designed for fast, low-cost installation, the A+ Classroom Lighter direct/indirect optical system combines 65 percent indirect light and 35 percent direct downlight (focused on the workplane to avoid computer glare). Two rows of three-lamp fixtures will illuminate a common 30-by-30-foot classroom, delivering wall-to-ceiling illumination for wall-mounted materials and visibility for desktop tasks. 604/888-6811. Ledalite, Langley, British Columbia. **CIRCLE 280**

▼ Point and shoot

Sterner Lighting's Infranor Polaris-12 floodlight features a wide variety of rectangular beam patterns and a heavy-duty, die-cast swivel with unlimited aiming angles. Available in 250- and 400-watt versions; a 1000-watt metal-halide version using a remote ballast box is also available. 612/906-7300. Sterner Lighting Systems, Eden Prairie, Minn. **CIRCLE 281**



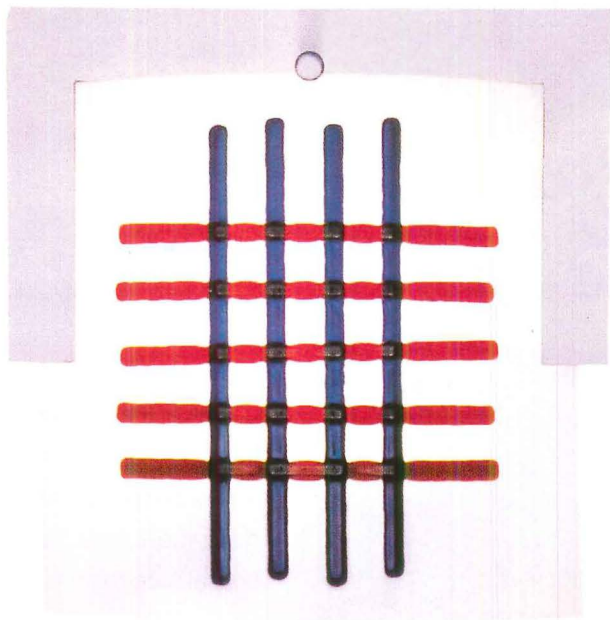
◀ Turnkey sports lighting

Cooper Lighting has teamed up with Universal Sports Lighting to produce the AllStar sports floodlight. The unit, which is compatible with TV broadcasts, is delivered on-site, fully preaimed and pre-assembled with components labeled for fast installation. The fixtures use internal louvers designed as integral optical elements, eliminating unwanted glare and light trespass, with no additional effective projected area (EPA) wind loading on the pole and structural systems. 847/956-8400. Cooper Lighting, Elk Grove, Ill.

CIRCLE 282

► Hot-air lighting

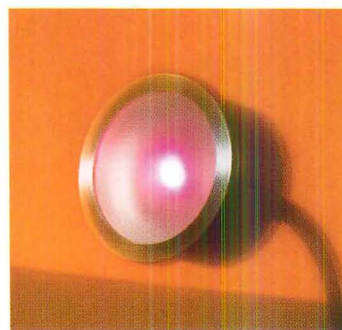
Designed for use at concerts, festivals, exhibitions, showrooms, and receptions, Airstar's Crystal self-inflating balloon diffuses light over a 360-degree area, illuminating from 13,000 to 26,000 square feet at operating heights from 7 to 15 feet. An internal fan keeps the balloon inflated with air, while a halogen (500-, 1000-, or 2000-watt) or HMI (700- or 1200-watt) lamp in a protected cage provides illumination. Colored covers with vinyl graphics can be fitted to the balloon for marketing and display purposes. 800/217-9001. Airstar America, Los Angeles. **CIRCLE 283**



▲ Artistic touch

Lightolier's ADA-compliant BowShield wall sconce features a subtly curved piece of handcrafted glass, either in an all-white architectural design or art glass that slips into a die-cast holder. The collection consists of seven styles of decorative glass shields, created by the Claritas Studio of California, that are stained, fused in layers, silk-screened, or

sandblasted. The glass proportions can be square or vertical. The die-cast holders are satin-brass or satin-nickel finishes. The sconces use incandescent or compact fluorescent lamp sources, and can be configured for either electronic or magnetic ballast; all configurations are suitable for use in damp locations. 800/215-1068. Lightolier, Fall River, Mass. **CIRCLE 284**

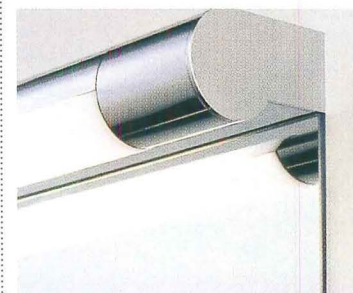


▲ Fiber-optic paver

Machined from aluminum and acrylic, Lucifer Lighting's fiber-optic Recessed Paver fixtures are suitable for in-ground, in-wall, and in-ceiling applications. Available finishes are machined aluminum, powdercoated white and black, and polished chrome or brass. The acrylic contoured interior can be clear or frosted; custom finishes are available. 210/227-7329. Lucifer Lighting, San Antonio, Texas. **CIRCLE 285**

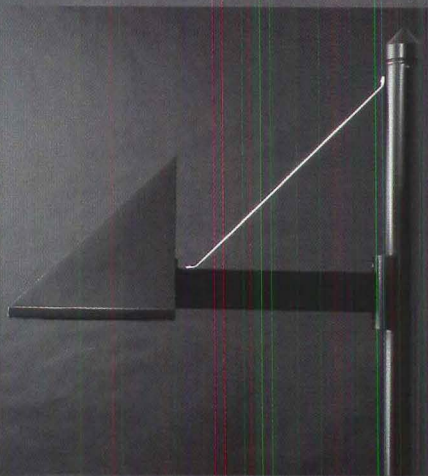
▼ All the angles

Tableau is a rotatable, overmirror fluorescent fixture. The 2-3/8-inch-diameter housing extends 3-3/8 inches from the wall, allowing the light to be adjusted through a range of 120 degrees. Illumination is provided by a single T8 linear fluorescent lamp, powered by a soft-start electronic ballast. The fixture is constructed from aluminum extrusions with die-cast end caps. Available in polished chrome and white. 847/451-0700. Alkco, Franklin Park, Ill. **CIRCLE 286**



MITRE

The new MITRE series from AAL, when your design dictates an alternative to a round or square form. The MITRE is scaled in three sizes, offering design continuity for all your site lighting. Available in multiple pole and wall mounting configurations as well as bollards.



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CIRCLE 122 ON INQUIRY CARD

LIGHTING BRIEFS

▼ Ultrathin fluorescent

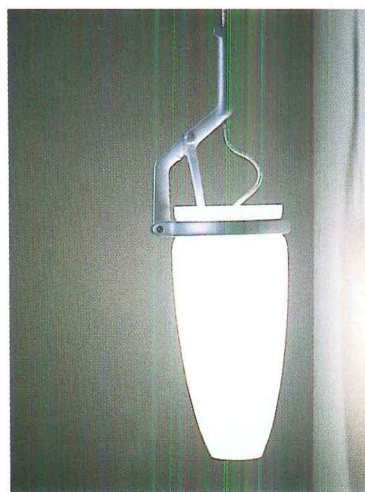
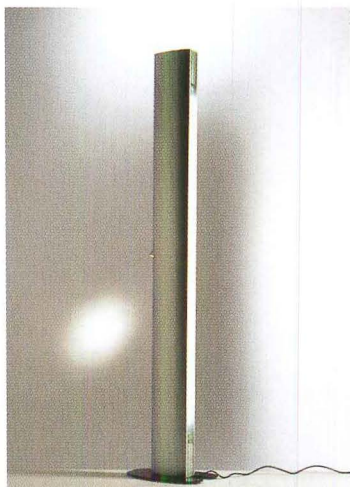
Lam's RX9 Series is available in indirect and semi-indirect configurations in 4- or 8-foot lengths. The narrow 1-3/4-inch



housing reduces visual clutter. Quick-start electronic ballasts and T8 linear fluorescent tubes provide illumination. 714/549-9765. LAM Lighting Systems, Santa Ana, Calif. **CIRCLE 287**

► Monolithic lighting

The seemingly 2001: A Space Odyssey-inspired Echos floor lamp by Jan Van Lierde, available from Artemide, can be used with a front or rear diffuser for indirect light—or even as an adjustable spotlight for circumscribed lighting. The designer has given the painted metal housing an aluminum finish. There are several lamping options, including 400-watt max halogen R7s with a dimmer, 58-watt G13 fluorescents, or 35-watt GU4 dichroic halogens with a dimmer. 516/694-9275. Artemide, Farmingdale, N.Y. **CIRCLE 289**



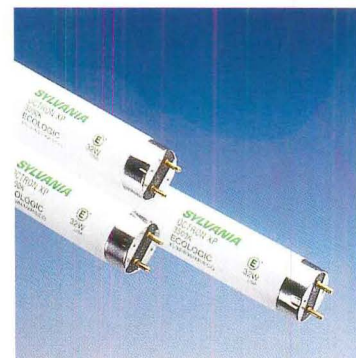
◀ Steel and glass pendant

Luceplan's glass hanging pendant uses a metal die-cast collar with a stirrup-type handle secured to the circular opening of a glass diffuser. The collar is attached to a metal socket support and suspended by a steel-mesh-wrapped power cord. Diffuser colors include mottled brick red, mottled green, and frosted white; metal accent colors are matte silver, gold, and chrome. Diffusers come in 11 sizes, from 10 to 22 inches high and 6 to 16 inches in diameter. 212/989-6265. Luceplan, New York City.

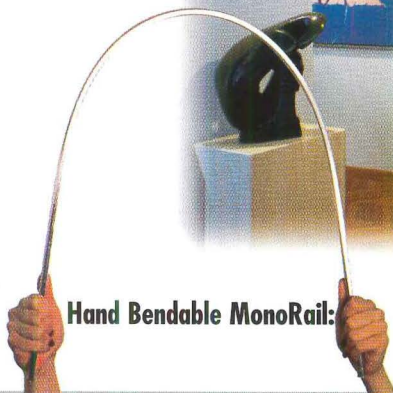
CIRCLE 288

► Longer lasting fluorescent

The filament design for Osram Sylvania's Ecologic version of the Octron XP linear fluorescent T8 lamp provides an average 24,000-hour lamp life, 20 percent more than standard T8s. New phosphor and coating technologies increase lumen output to 3,000 (93 lumens per watt) and improve the lamp's color-rendering index to 85. 978/777-2982. Osram Sylvania, Danvers, Mass. **CIRCLE 290**



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Architect: Richard Pollack & Associates
Photography: John Sutton 199, SF CA

CIRCLE 124 ON INQUIRY CARD

LIGHTING BRIEFS

► **Metal finishes**

The Cleante wall sconce, one of 14 styles from the Illuminating Experiences Lamp International collection, has a satin nickel wall bracket and rust-colored wrought iron and brass bracket. The Venetian glass shade comes in amber, white, gold leaf, and green. Companion table, ceiling, and chandelier options are available. 732/745-5858. Illuminating Experiences, Highland Park, N.J. **CIRCLE 291**



▼ **In-grade lighting**

Kim Lighting's Lightvault is an all-new in-grade fixture for architectural and landscape lighting uses. The housing is constructed of a composite material and the outer trim is solid brass. The tempered glass shield seals the unit. Incandescent, halogen, and high-intensity discharge lamping options are

available. The fixture has a 60-degree optical aiming range, allowing the in-grade fixture to produce similar lighting effects to above-grade floodlighting. The aiming range allows the light to be placed in-grade along walkways, without presenting a glare problem for passersby. 626/968-5666. Kim Lighting, City of Industry, Calif. **CIRCLE 292**



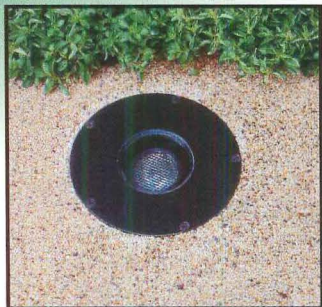
◀ **Weatherproof lights**

Spectra series outdoor lights from Architectural Area Lighting are constructed of cast aluminum and feature a seamless, nonyellowing impact-resistant acrylic lens. The series includes two sizes of fixtures for post or wall mounting, and a matching bollard. The fixture hoods come in four configurations and are available in natural copper and stainless steel or can be painted to match any of the five standard body colors. 714/994-2700. Architectural Area Lighting, La Mirada, Calif. **CIRCLE 293**



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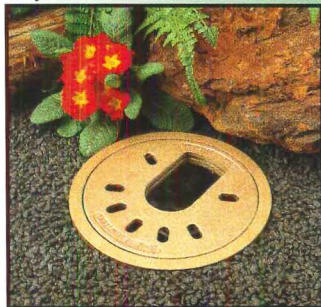
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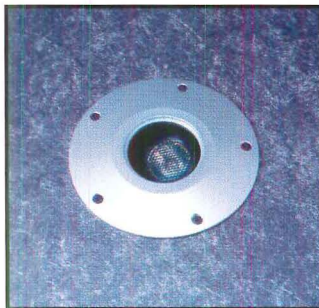
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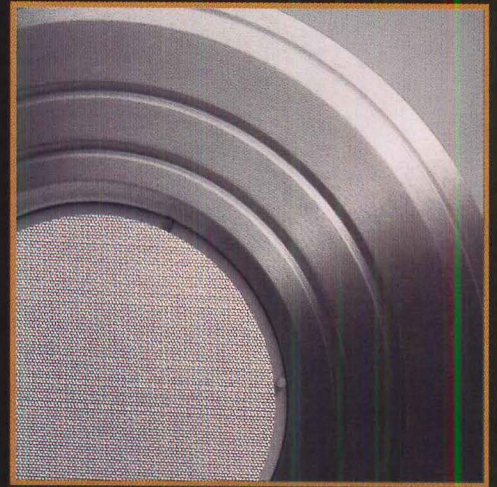
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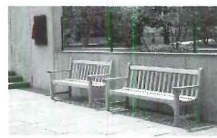


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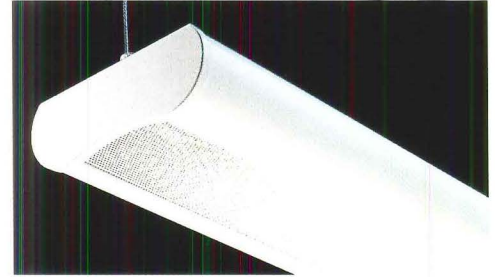
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LIGHTING BRIEFS

► **Small and shapely**

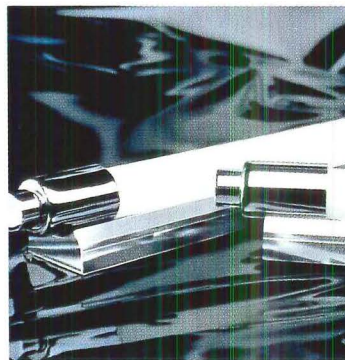
The new cable-hung indirect/direct Helix series from Metalumen is specifically designed around the energy-efficient T5 compact fluorescent lamp. Unique in shape and profile, the fixture measures 2.4 inches high by 7.3 inches wide. Four-foot lengths are standard, and units can be designed for continuous linear runs with a variety



of control systems. It is suited for interior offices, open offices with a low-ceiling condition, or anywhere a small fixture profile is required. 800/213-2534. Metalumen, Pittsburgh. **CIRCLE 294**

▼ **Compact, powerful spotlight**

Phoenix's CSI64/1000 spotlight utilizes a CSI PAR 64 1000-watt metal-halide lamp. The unit features a six-degree beam spread and provides 1,350,000 CBCP. Optical snoots to hold color dichroics, optical lenses, and louver glare guards are available. 414/438-1200. Phoenix, Milwaukee, Wis. **CIRCLE 295**



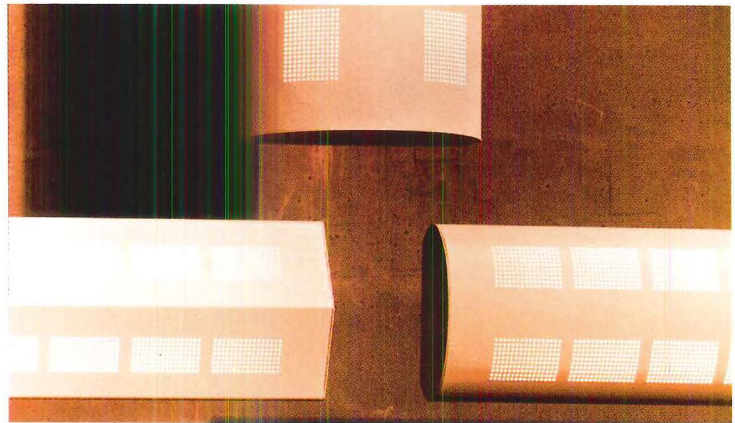
▲ **Low-profile vanity lights**

Starfire's Tru-Lux vanity lights utilize 14-, 21-, 28-, and 35-watt low-profile T5 linear fluorescent lamps. Internal ballast fixtures protrude 1.8 inches from the mounting surface. With a remote ballast, the housing protrudes only 0.8 inch. 201/656-7888. Starfire Lighting, Jersey City, N.J. **CIRCLE 296**

▼ **Indirect options**

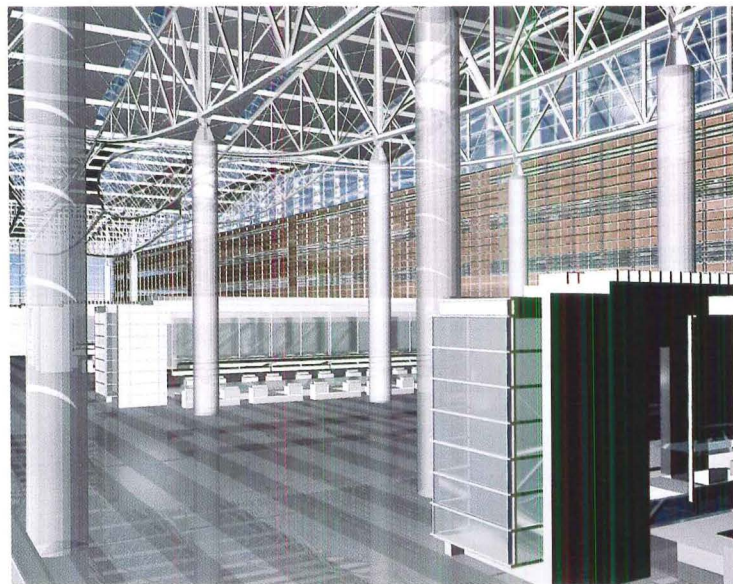
Peerless Lighting's Peerlite AERO and ENZO fixtures can be placed in low-ceiling areas for indirect lighting. Using two HOT-5 lamps, the pendant-mounted

designs improve visual conditions using fewer fixtures in areas where indirect lighting aids working conditions. 510/845-2760. Peerless Lighting, Berkeley, Calif. **CIRCLE 297**



For more information, circle item numbers on Reader Service Card

NEW PRODUCTS



CERTIFIED CHERRY WALL TO ACCENT SAN FRANCISCO AIRPORT TERMINAL

The centerpiece of San Francisco International Airport's current multi-billion dollar expansion program, the 1.7 million-square-foot International Terminal, spans the main airport access roadway, forming the gateway to the entire complex. When the terminal opens in May 2000, passengers will be greeted by a 650-foot-long wall of cherry veneer above the ticket counter, perhaps the largest specification of certified veneer to date.

When complete, a metal framework system with cherry veneer panel insets will extend from the northern end to the southern end of the departures hall.

Each panel is 5 feet wide by either 2 feet 6 inches or 1 foot 3 inches high, depending on where it's located in the wall. The 60,000 square feet of panels, designed by Architectural Forest Enterprises (AFE) in Brisbane, California, are cut to size, edge banded, and feature a nonemission UV cure finish. The veneer logs, harvested from the Collins Pennsylvania Forest for Kane Hardwood,

Kane, Pennsylvania, were turned into veneer for AFE by Freeman Corp., Winchester, Kentucky.

The architect of record, Joint Venture Architects, is a collaboration of three San Francisco firms: Skidmore, Owings & Merrill (SOM), Del Campo & Maru, and Michael Willis & Associates.

"During the early schematic design, we were looking for a material to give a sense of warmth and color to the glass and metal that was fairly prevalent in the hall," says Keith Boswell, associate partner, SOM, and project director, Joint Venture. After looking at several veneers, and aware of the benefits of sustainable wood, the team chose certified cherry.

"We need big projects like this to help deliver the message that if you own forest land, there is big business in managing it properly," says AFE president Lewis Buchner.

415/467-4800. Architectural Forest Enterprises, Brisbane, Calif.

CIRCLE 200



One method of achieving sustainability—improving our quality of life while protecting the natural world—is to use wood from certified forest sources. Worldwide, there are more than 16 million acres of certified forest lands, with 3.4 million in the U.S. Through the certification process, independent, third-party organizations use internationally recognized principles to audit a landowner's forest management practices. When complete, the high-profile projects described below—which plan to use large amounts of certified wood—will serve as examples of the mainstream potential for sustainable wood.—Rita F. Catinella, *Products Editor*

LARGEST USE OF CERTIFIED REDWOOD IN COFFEE CREEK CENTER COMMUNITY

In Chesterton, Indiana, a 640-acre New Urbanist community called Coffee Creek Center is under construction. Coffee Creek, whose lead planner is William McDonough + Partners, is planned as a showcase for environmentally sound developments and will feature sustainable wood products, including the largest single use of certified redwood in the U.S.

EcoTimber International, in Berkeley, California, supplied the redwood for several features including trusses, a garden sundial, and a main boardwalk. Douglas fir and salvaged redwood were also used.

"There needs to be an awareness that not everything is clean, perfect, and virgin-looking in wood," says Mike Gallagher, sales manager

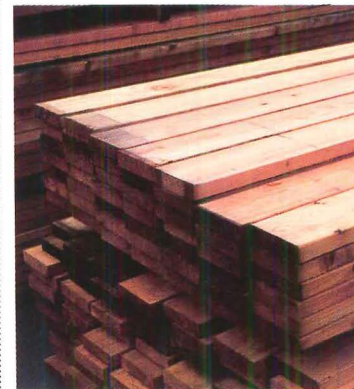
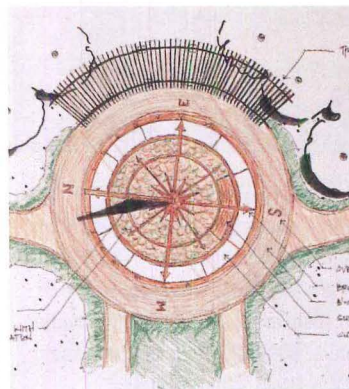
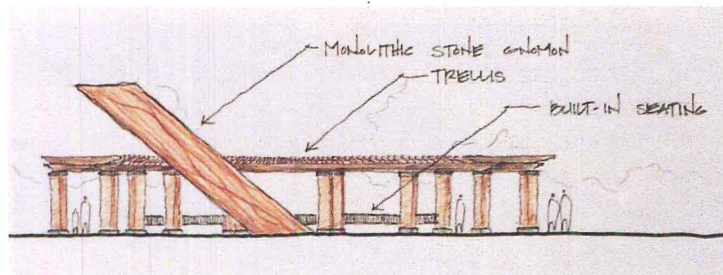
at EcoTimber. "They allowed for knots in what they were buying."

Important issues in the selection of the redwood included longevity (70 to 80 years), cost efficiency, and how well its color will blend into the native prairies, says Don Ewoldt, director of resource management for project developer Lake Erie Land Company.

"While cost was somewhat of a concern, redwood is not significantly more than what you would pay for yellow pine," adds Ewoldt.

510/549-3000. EcoTimber International, Berkeley, Calif. CIRCLE 201

Certified redwood (bottom right) will be used in several features of the project, including a sundial (below).

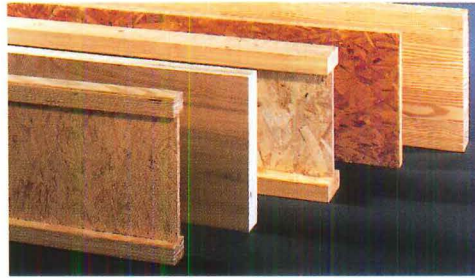


**SUSTAINABLE WOOD—
SAVING SOME FOR LATER**

While third-party certification remains the most important effort in wood sustainability, other products, such as engineered wood, reclaimed wood, and river-salvaged timber (recovering lost logs from river bottoms in milling towns), also help architects meet their clients' needs without taking away our children's ability to meet the needs of the future.

▼ Engineered lumber

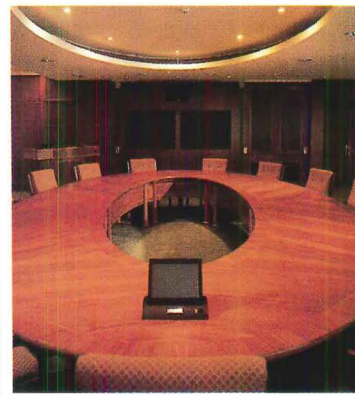
Since it is made using smaller, computer-evaluated lumber and plywood veneers,



naturally engineered lumber can make full use of trees. Younger, smaller trees grown on plantations can be incorporated efficiently. In

addition, engineered lumber requires 40 to 50 percent less wood fiber than the equivalent conventional lumber. 800/BUILD GP, Georgia-Pacific, Atlanta, Ga.

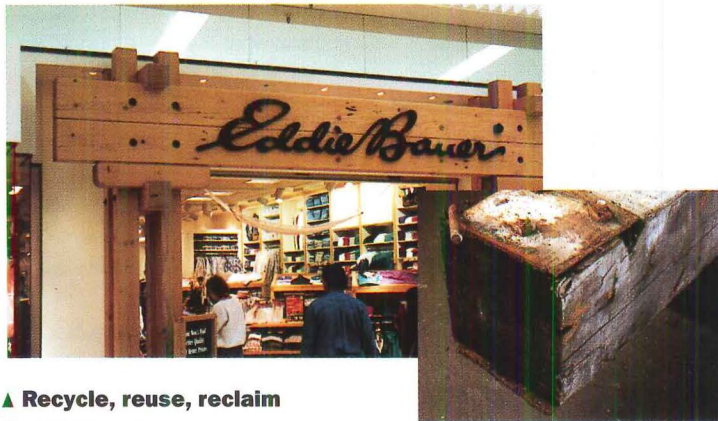
CIRCLE 202



▲ Wood from Down Under

Jarrah, from Bunnings Premium Hardwood, is grown in western Australia's temperate forests, which are carefully managed by the government to ensure sustained yield. 336/299-7755. Pat Brown Lumber Corp., Greensboro, N.C.

CIRCLE 203

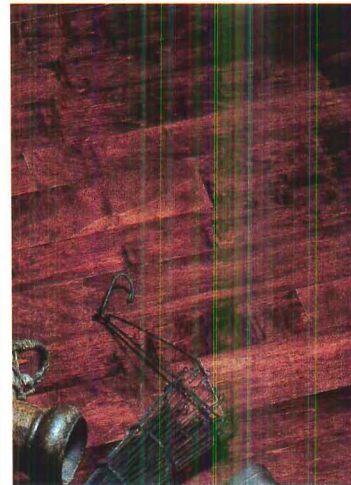


▲ Recycle, reuse, reclaim

The G.R. Plume Company recycles old-growth Douglas fir timbers from turn-of-the-century structures that have outlasted their current use. Raw timbers are cleaned, and all attached metals are removed. Sawyers then remove the outside layer of material, which is also

recycled. The final product is visible in projects such as the Eddie Bauer store in Seattle, Washington, by James Hamilton Architects. 360/384-2800. The G.R. Plume Company, Ferndale, Wash.

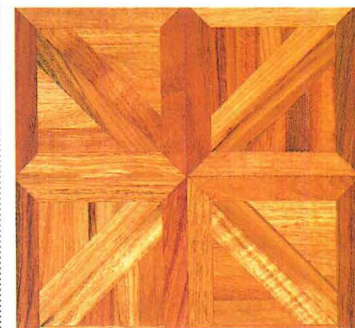
CIRCLE 204



▲ Earth-friendly flooring

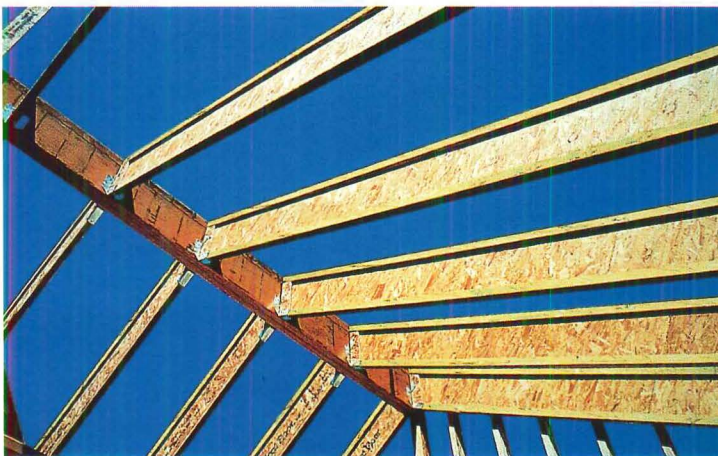
The FineWood Series prefinished hardwood flooring, from PermaGrain, offers certified wood species from North American forests. The series uses formaldehyde-free adhesives in the lamination process and rotary slicing techniques to maximize tree yield and reduce sawdust waste. 610/353-8801. PermaGrain Products, Inc., Newtown Square, Pa.

CIRCLE 208



▲ Versatile hardwood flooring

The Certified Forest Products Council has recommended the specification of Mayan walnut, first introduced by Kentucky Wood Floors in 1978, as a means of maintaining the availability of hardwoods while still retaining the diversity of design options. 502/451-6024. Kentucky Wood Floors, Louisville, Ky. **CIRCLE 207**



▲ Abundant timber resource

Trus Joist MacMillan's TJI joists with TimberStrand laminated strand lumber (LSL) flanges can be used to make roof joists, especially in vaulted ceilings. The joist flanges make efficient use of abundant timber resources, such as aspen

and poplar, reducing demand for fir and pine. Manufactured to be free of wood's naturally occurring defects, using Timber Strand LSL flanges may help to ensure an adequate supply of resources in the future. 800/338-0515. Trus Joist MacMillan, Boise, Idaho. **CIRCLE 205**

▼ Chemical-free hardwoods

Timber Holdings hardwoods are harvested from select tropical forests that

are managed to be sustainable, and every tree is processed in the country it comes from to protect the value of the



resource and prevent its conversion to nonforest uses. Timber Holdings Ironwoods require no chemical preservatives, water-repellent sealer treatments, or coatings to maintain their durability. 414/445-8989.

Timber Holdings, Ltd., Milwaukee, Wis.

CIRCLE 206

PRODUCT BRIEFS



▲ Flying tension structure

Designed by LMN Architects, the Boeing Commercial Airline Group building, Seattle, Washington, features a highly transparent combination of point supported structural glass backed up by a tension structure. Evoking memories of earlier flight, stain-



less rods and flying masts combine with suspended curved steel trusses. 800/323-0072. MERO Structures, Inc. Germantown, Wis. **CIRCLE 209**

▼ Certified cabinets

Neil Kelly Cabinets has developed and is now producing what is believed to be the first U.S. line of environmentally compatible cabinets using certified woods. The new line, known as the Naturals Collection, consists of a half-dozen distinct door styles offered with a variety of finishes, built using certified woods and

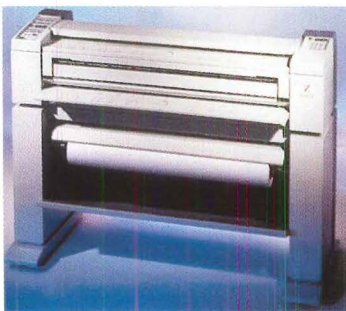
veneers or bamboo. The Naturals Collections uses certified maple, cherry and red oak (solid and veneer), madrona, alder and red birch, and bamboo, a grass that is grown and harvested in a sustainable manner. Finish options include several colors as well as clear. 503/288-NEIL. Neil Kelly Cabinets, Portland, Ore. **CIRCLE 212**



▲ Extendable surfaces

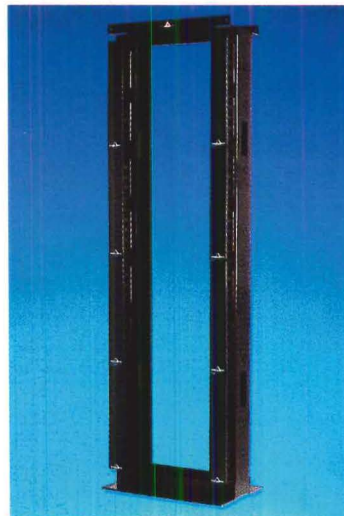
Herman Miller's Kiva collection of free-standing furniture supports the full range of active collaboration and individual performance. Six multifunctional pieces—two tables, two screens, storage units, and an "access post" that delivers power and telecommunication utilities—offer a

variety of ways to support and encourage collaborative work. The centerpiece of the Kiva collection is the "wing table," featuring side extension pieces that swing out to extend the work surface and configure to individual or group needs. 616/654-3000. Herman Miller, Inc., Zeeland, Mich. **CIRCLE 210**



◀ Engineering copier

The wide-format 3001 Engineering Copier, from Xerox, is an affordable option for small to midsize firms, including those involved in construction, architecture, and manufacturing. Features include an automated document handler and an electronic job-accounting option. 800/XES TALK. Xerox Engineering Systems, Rochester, N.Y. **CIRCLE 211**



◀ Cable management

The Siemon Company has introduced the RS2 Series enhanced cable management rack system, which features two vertical cable management channels with modular covers to conceal cabling. The vertical side rails provide space for easy routing of horizontal or backbone cables. Cable access holes on side rails allow cables to be routed between adjacent racks. Also included are hook-and-loop cable managers that can be custom located for quick cable additions or changes, and ladder channels on top of the rack. 860/945-4380. The Siemon Company, Watertown, Conn. **CIRCLE 213**

► Restoration cleaner

Safe n' Easy restoration cleaner features a super-active cleaning agent that lifts, separates, and emulsifies dirt without acid, alkaline, or hazardous solvents, as seen in this building restoration in urban Washington, D.C. The cleaner will remove airborne dirt, carbon, exhaust residues, and other stains and is recommended for

limestone, concrete, and cast-stone surfaces. 212/869-6350. Dumond Chemicals, Inc., New York City. **CIRCLE 214**



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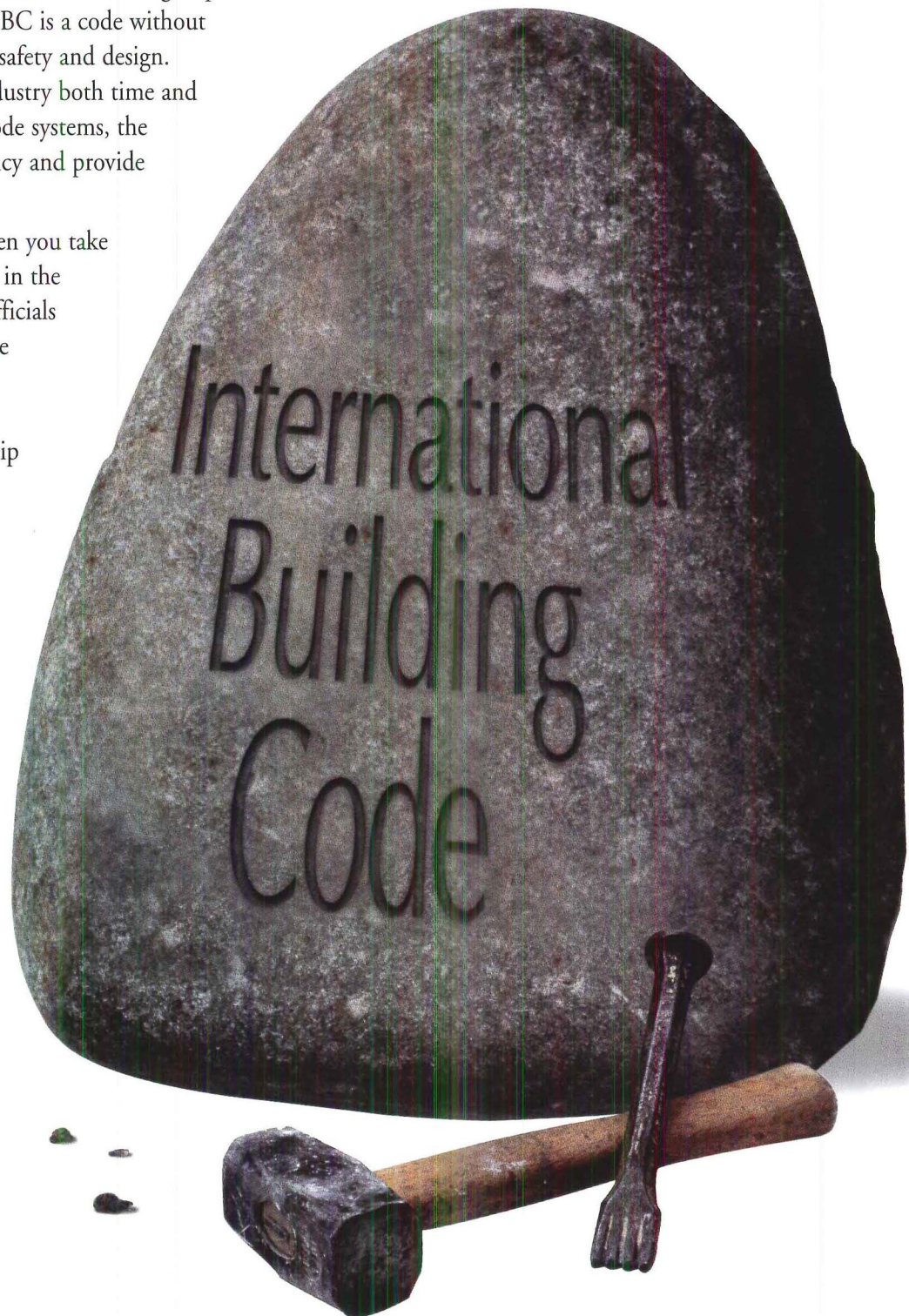
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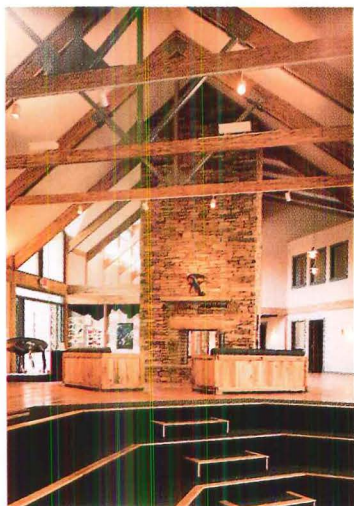
CIRCLE 135 ON INQUIRY CARD



PRODUCT BRIEFS

▼ Energy-efficient options

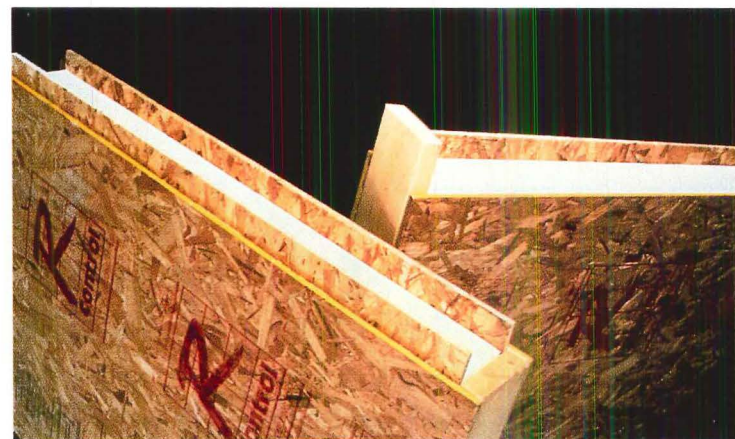
In the Eberle Family Environmental Learning Center, Bruceton Mills, West Virginia, architect Thomas Gray employed a variety of R-Control products to complete the envelope of the 14,000-square-foot learning center. The Firefinish panels used can span long distances (up to 24 feet), acting as a diaphragm for the engineered roof trusses. The R-Control insulated concrete forms combined with structural insulated panels (below) provide optimum energy efficiency for the building. 800/255-0176. AFM Corporation, Excelsior, Minn. **CIRCLE 215**



▼ New, "classic" glulam lines

Willamette Industries has introduced its "classic" glulam product line, which includes Classic Glulam, the new Premier Glulam, and Premier Plus Glulam. With 1.7 million acres of sustainably managed timberland, Willamette guarantees a stable supply of raw material for its manufacturing needs. Classic Glulams are manufactured with kiln-dried, high-quality lumber and are tested and certified under rigid standards.

They are readily available in stock sizes and architectural-appearance grades, as well as custom orders for unique applications. 503/227-5581. Willamette Industries, Inc., Portland, Ore. **CIRCLE 218**



◀ MDF moldings

For painted interior applications, SierraPine medium density fiberboard (MDF) moldings are an alternative to high-quality wood moldings needs. SierraPine moldings come factory primed with an environmentally friendly, water-based primer. The MDF used to make the moldings is made entirely from postindustrial and postconsumer waste. The moldings can be made from the Medite division's formaldehyde-free MDF. A moisture-resistant substrate is available. 888/633-7477. SierraPine Limited, Roseville, Calif. **CIRCLE 219**

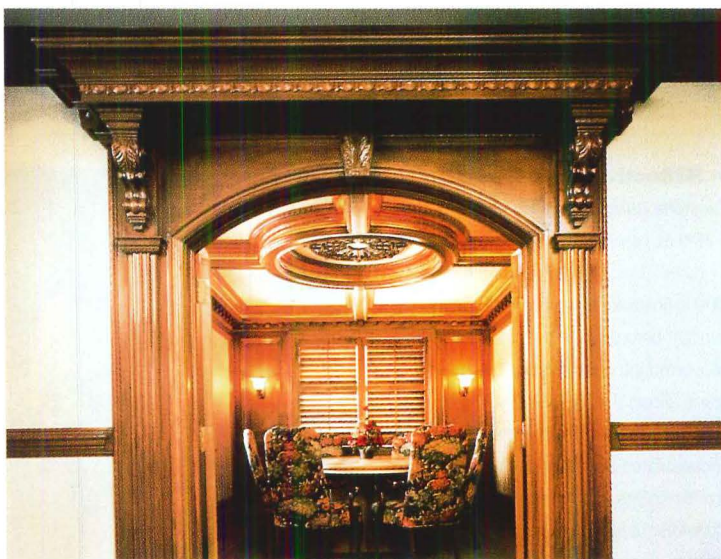
▼ Southern pine lumber

Wise forest management and favorable growing conditions assure a continuous supply of Southern pine lumbers. About half of all Southern pine lumber produced is pressure treated with preservatives to increase longevity and design versatility. A quarter of production is used in trusses and other structural framing applications. 504/443-4464. The Southern Pine Council, Kenner, La. **CIRCLE 217**



▲ Fashionable grilles

Weather Shield offers seven Fashion Grilles options for creating historically-accurate restorations and upgrading existing windows. Using a concealed pin system, grilles fit most Weather Shield windows and doors and are available in natural pine, maple, true oak, and cherrywood. 800/477-6808. Weather Shield Mfg., Inc. Medford, Wis. **CIRCLE 216**



▲ Popular poplar moldings

When White River Hardwoods, in Fayetteville, Arkansas, expanded its offices, it became a showplace for the molding lines they manufacture. Poplar (above) is

one of the most popular species requested, they claim, because it's sustainable, the least costly, and abundant. 412/281-4980. The Hardwood Council, Oakmont, Pa. **CIRCLE 220**

PRODUCT BRIEFS

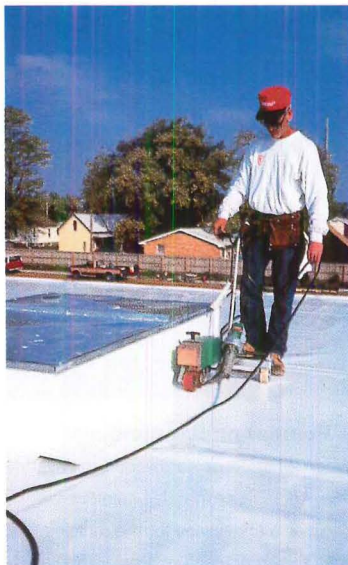
▼ When the sky is falling...

MCI Worldcom, a client of Teng & Associates, had a problem with ice falling from its communication towers (right) and damaging the company's expensive roof-mounted equipment. The firm's solution was to specify Roof Product's RPI Ice Deflector (below), which reduced flying-ice impact and snow build-up on valuable HVAC units and other equipment. The Ice Deflectors were mated to custom roof curbs, supports, and adapters, so no separate penetrations to disturb roof integrity were required. Formed of galvanized, expanded sheet metal with steel frames, the system protects equipment from ice and snow falling from towers, wires, or adjacent buildings. 800/262-6669. Roof Products, Inc. Chattanooga, Tenn. **CIRCLE 221**



► Reflective roofing

Firestone Building Products has expanded its commercial roofing product line to include UltraPly TPO, a white thermoplastic polyolefin membrane. By reflecting sunlight before it can be absorbed and converted into heat energy, the membrane allows the roof to remain cool in high temperatures. Reinforced with a fully encapsulated polyester scrim, the membrane exhibits strong resistance to ultraviolet radiation, ozone, and common rooftop chemicals. The systems combine weatherability and the puncture resistance of rubber with the heat weldability of a thermoplastic membrane. 800/428-4442. Firestone Building Products Company, Carmel, Ind. **CIRCLE 222**

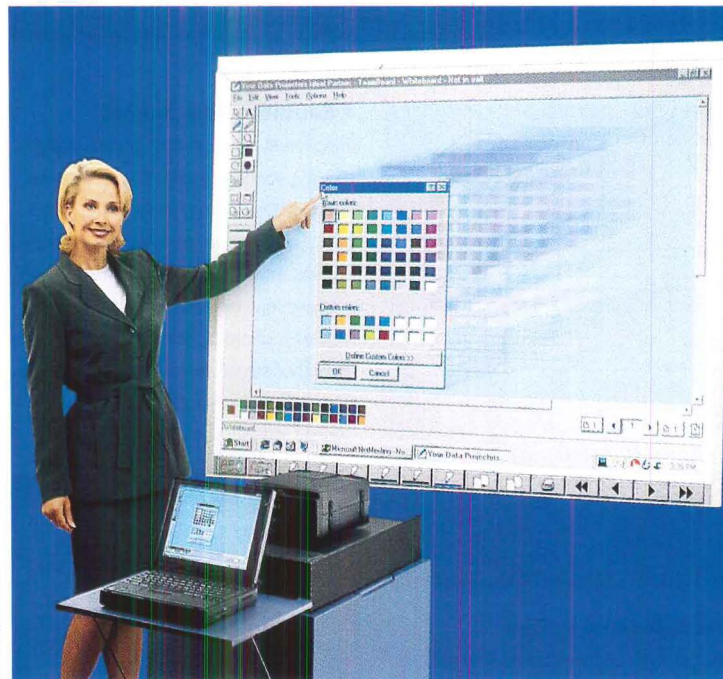
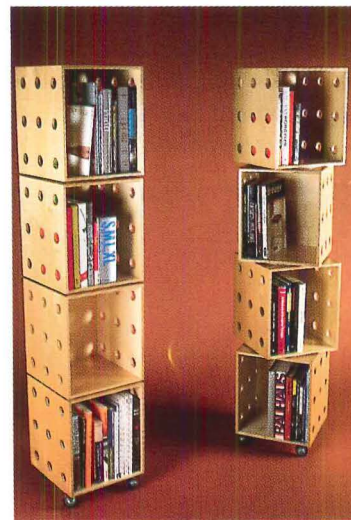


◀ Roof walkway pads

GenFlex Roofing Systems' line of TPO heat-weldable walkway pads provides protection for roof membranes under the heaviest foot traffic. An exclusive GenFlex "Tuff-Trac" surface tread delivers slip and skid resistance. 800/443-4272. GenFlex Roofing Systems, Maumee, Ohio. **CIRCLE 225**

► Stackable storage

In response to San Francisco's small urban living spaces, Bravo 20's products are designed for maximum flexibility and mobility. The Stacking Perf Boxes, a set of two, three, or four rotating boxes patterned with finger-sized holes, were designed for their functional and aesthetic values. The boxes are free of hardware and held only by gravity, making them easy to stack in various configurations. Clear and black-stain finishes are available, and casters are standard on all boxes. A leg option is also offered. 415/495-3914. Bravo 20, San Francisco. **CIRCLE 224**



▲ Touch communication

With Teamboard's interactive electronic whiteboard, notes and drawings can be captured directly on a personal computer. Teamboard sessions can be shared over a variety of networks, including the Internet, and the projection

screen is an appropriate companion to data projection systems. Teamboard has added Japanese- and Chinese-language versions to its growing list of internationally distributed software. 905/851-2826. Egan Visual Inc. and Teamboard Inc., Woodbridge, Ontario. **CIRCLE 223**

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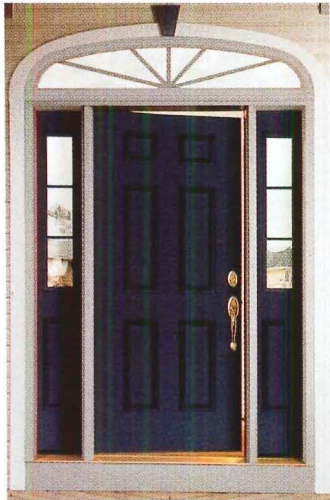
Grand
Award Winner

PRODUCT BRIEFS



▲ Victorian-inspired fittings

The Aero Collection, from Waterworks, was originally inspired by a section of Victorian telescopes that designer Thomas O'Brien picked up during his travels. The collection features a full selection of plumbed fittings, including faucets, tub mixers, lavatory sets, and a variety of showerheads, all available in hand-polished nickel-, chrome-, or silver-plate finishes. The telescope motif extends to an assortment of coordinating bath accessories, ranging from robe hooks to shelves. 203/792-9979. Waterworks, Danbury, Conn. **CIRCLE 226**



▲ Knock on fiberglass

Smooth-Star, a fiberglass entry door that captures the smooth look of painted steel, is now available from Therma-Tru. Featuring deep, detailed panels that produce crisp shadow lines unmatched by steel systems, the door's fiberglass technology projects the look of steel while eliminating the prospect of dents, dings, rust, warping, and other problems associated with that material. Backed by a 20-year warranty, the new line features a variety of styles, sizes, and glass patterns. 800/THERMATRU. Therma-Tru Doors, Maumee, Ohio. **CIRCLE 227**

▼ Commercial-grade planks

Tarkett Inc. has extended and enhanced its residential ReaLife Laminate Floors line with a stone design in a square format, a vintage plank look, and a water-damage guarantee. The commercial-grade plank line, a collection of eight popular wood-grain designs and colors features an extra-thick wear layer that is durable and scratch- and impact-resistant. 800/FOR-TARKETT. Tarkett, Inc. Whitehall, Pa. **CIRCLE 229**



▼ Vinyl window lines

Two new lines from CertainTeed offer the high performance and low maintenance of vinyl-window engineering plus the traditional look of wood. New Haven new construction windows and Haverford replacement windows have a real wood-grain interior that can be stained or painted for a genuine custom-wood appearance. 800/782-8777. CertainTeed Corporation, Valley Forge, Pa. **CIRCLE 228**



▲ Commercial-strength railing

A new structural vinyl railing from Kroy Building Products, Finyl Rail, is now available for use in commercial and residential installations wherever railing strength is especially critical. Finyl Rail is extruded from a specially formulated rigid PVC material, with a wall thickness of up to five-sixteenths of an inch, combined

with galvanized-steel reinforcements to meet the strength requirements of demanding commercial railings. A variety of custom-fabricated components are offered, including continuous stair rails, ADA-approved handrails, and special contours for radius balconies. 800/933-5769. Kroy Building Products, York, Neb. **CIRCLE 230**

► Woven carpets

All Tuva Looms carpets are woven, rather than tufted, for today's high-end contemporary commercial and residential markets. Made of Monsanto Solutia nylon, all carpets may be specified in wall-to-wall situations or as the border of an area rug. Shown here are Daisy and its coordinate, Glenplaid. 212/598-1021. Tuva Looms, New York City. **CIRCLE 231**



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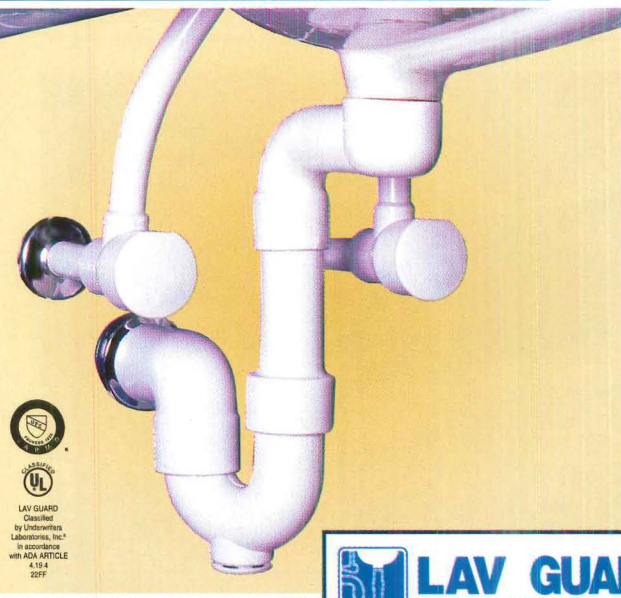
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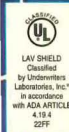
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PRODUCT BRIEFS

► **Large plasma display panel**

Pioneer has introduced a 50-inch, high-resolution, flat-panel display. Completely self-contained, the unit maintains a maximum cabinet depth of less than four inches and weighs less than 95 pounds. Ideal for video and graphic displays that demand precise image quality and detail, applications include public information and entertainment, on-premise

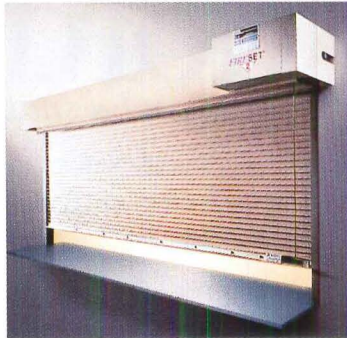


merchandising, and home theater. 800/926-4329. Pioneer New Media Technologies, Inc., Long Beach, Calif. **CIRCLE 232**

► **Fire-door operator**

Designed to be used with labeled shutters and small fire doors, Fireset 2 is a compact version of the Fireset 1 fire-door operator system. Like Fireset 1, Fireset 2 eliminates the hassle and expense of manual testing and resetting—users simply turn a switch and press the “open” button to reset. 888/553-5445. Clopay Building Products, Cincinnati.

CIRCLE 233

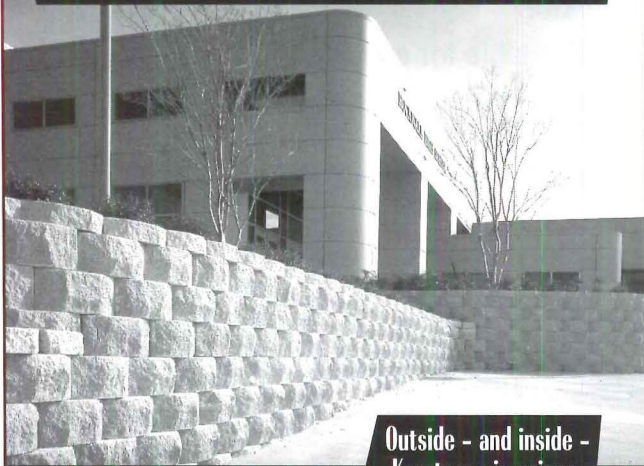


▲ **Art-enhancing skylights**

A major goal for the Thorne-Sagendorph Art Gallery at Keene State College in Keene, New Hampshire, was to incorporate controlled daylighting of the gallery spaces. The skylight chosen for the gallery is an 896-square-foot translucent

ridge-panel system from Kalwall Corporation. Kalwall's diffuse light properties deliver balanced natural daylight while filtering out harmful ultraviolet rays and eliminating harsh glare, hot spots, and shadows. 603/627-3861. Kalwall, Manchester, N.H. **CIRCLE 234**

WHAT YOU *DON'T* SEE IS WHAT YOU GET

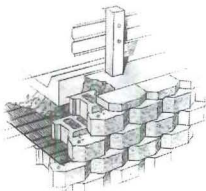


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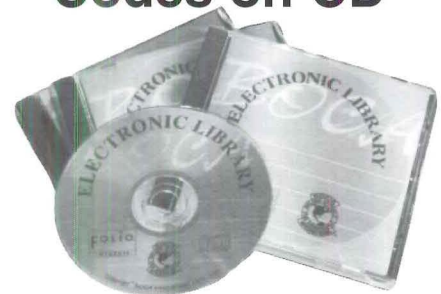
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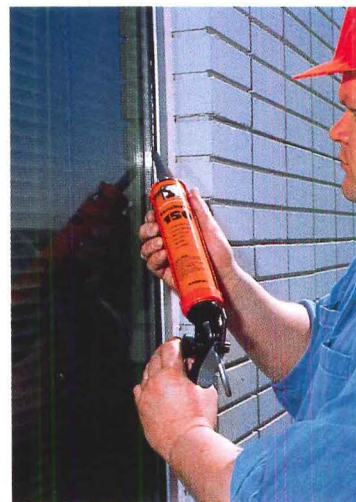


CIRCLE 139 ON INQUIRY CARD

PRODUCT BRIEFS

▼ Sealant technology

Sonneborn, a division of ChemRex, announces that Sonolastic 150 sealant exhibits the positive characteristics of urethane sealants with the extended durability of silicone. Sonolastic 150 has a higher tensile strength than silicone, making it more durable and resistant to tearing and fracturing. 800/433-9517. Sonneborn, A Division of Chemrex, Inc., Shakopee, Minn. **CIRCLE 235**



▲ Also...on the side

The Also chair, designed by Tom Deacon for Keilhauer, can work alone or as an accompanying side chair to Keilhauer's Tom chair. Also's options include stacking and ganging capabilities, as well as a tablet arm. Featuring a tubular steel frame, polypropylene seat and back, and zinc casting. Also available in several versions and 17 powder-coated finishes. 416/759-5665. Keilhauer, Scarborough, Ontario. **CIRCLE 236**

▼ Commercial broadloom

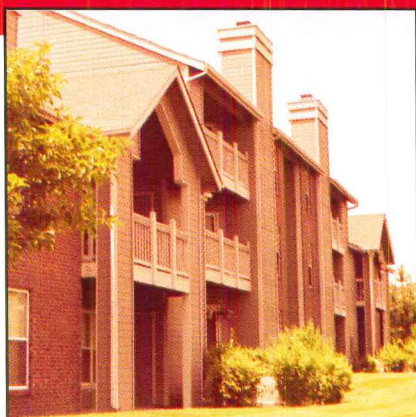
Clifden, from Beaulieu Commercial, is a multilevel cut/loop style, accentuated by a precise tip-sheared finish. This dense, 12-foot broadloom carpet is made of 100 percent solution-dyed nylon. Linear checks in a neutral tone alternate with other colors embedded at a lower pile height. 800/451-1250. Beaulieu Commercial, Chatsworth, Ga. **CIRCLE 237**



▲ Merchandising flexibility

The Pylon Collection, from ALU, is more cost-effective than custom build-outs, while accommodating the perimeter systems in specialty retail settings. All connections between the components are discreetly placed within the side-mounted track of the rectangular uprights. Made of aluminum and custom-wood veneer, the collection consists of cabinets, suspended shelves, floor-to-ceiling panels, bars, and lamps. 212/924-8674. ALU, New York City. **CIRCLE 238**

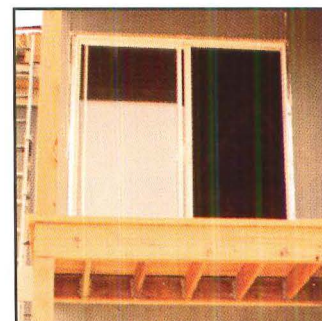
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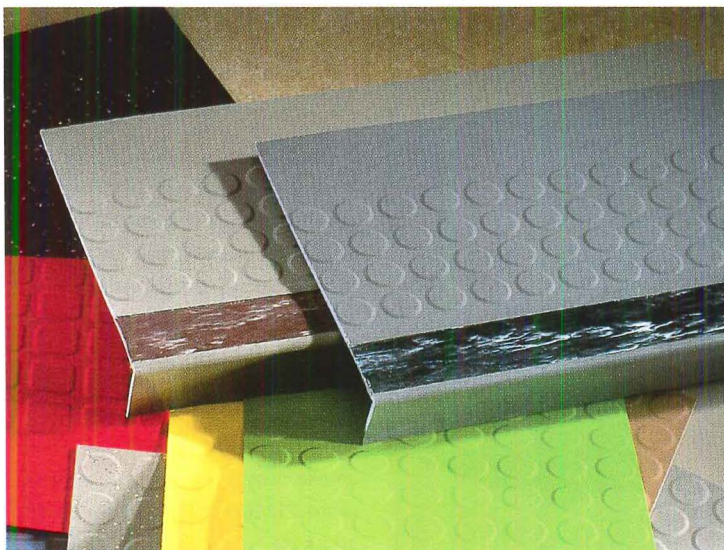
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PRODUCT BRIEFS

▼ One-piece wall base

Unlike a traditional wall base that sits on top of the floor covering, Johnsonite's new Sanitary (Butt-To) Base creates a one-piece, unbroken transition between wall and floor. The 90-degree, flexible "L" shape and two-inch hinged toe is designed to extend away from the wall at a right angle to actually become part of

the flooring. Ideal for raised-profile resilient flooring systems, the base creates a clean, continuous junction preventing mold-producing liquids from gathering at the intersection of wall and floor. Applications include commercial kitchens and food preparation areas, locker rooms, or anywhere moisture is a problem. 800/899-8916. Johnsonite, Chagrin Falls, Ohio. **CIRCLE 239**



▲ 3-D imaging scanner

Riegl USA has introduced a lightweight 3-D laser-imaging scanner for architects, builders, and engineers that accurately surveys images of objects ranging from buildings and structures to mine pits and quarries up to 1,150 feet away and portrays them as dimensionally correct 3-D images in a matter of seconds. 407/294-2799. Riegl USA, Orlando, Fla. **CIRCLE 240**

▼ Faux-wood color and texture

Extrudawood, from CPI Plastics Group, combines the flexibility and durability of plastic with the warm look and feel of natural wood. The technology uses a proprietary plastic composite that can be extruded to any shape in a myriad of wood colors and textures, for both interior and exterior applications. 416/798-9333. CPI Plastic Group Ltd., Mississauga, Ontario. **CIRCLE 241**



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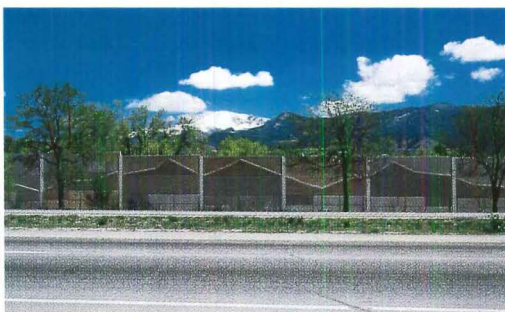
▲ Tactile architecture

HBF introduces a collection of fabrics designed by Laurinda Spear, principal of Miami-based Arquitectonica. The collection includes eight patterns, each abstracted from an element of one of the firm's buildings. Balcony Stripe, for example, is derived from the elevation of the Imperial Hotel, Miami, and features a field punctuated by square "windows" with a semicircular "balcony." 704/328-2064. HBF Textiles, Hickory, N.C. **CIRCLE 242**

► More colorful concrete

QC Construction's alliance with Bayer Corporation, manufacturer of Bayferrox synthetic iron oxide pigments, has resulted in Bayferrox by QC Construction. Available in 25 standard colors and an unlimited number of custom colors, Bayferrox is resistant to color-robbing agents

such as alkali, lime, sunlight, and UV radiation. 800/453-8213. QC Construction Products, Madera, Calif. **CIRCLE 243**



▼ PVC-coated steel table

Wausau Tile's Modular Table is another creation from the company's Metal Form

division. Available in a two-, three-, or four-seat configuration, the table is ADA compliant and can be permanently



mounted or left freestanding. Made of PVC-coated steel, the table is available in a selection of six colors with sand, gray, black, or silver for the frame. An umbrella hole is standard. 800/446-8020. Wausau Tile Inc., Wausau, Wis.

CIRCLE 244

▼ Inlaid sheet vinyl

Four new ArchiTextures Geo patterns round out Mannington Commercial's Architextures patterned inlaid sheet vinyl collection. Suitable for a wide range of corporate, retail, and health-care applications, the designs feature Mannington's patented Dimensional Sculpturing inlaid technology, which embeds color crystals in the inlaid pattern and combines chip texture with a low-gloss finish. 800/241-2262. Mannington Commercial, Salem, N.J. **CIRCLE 245**



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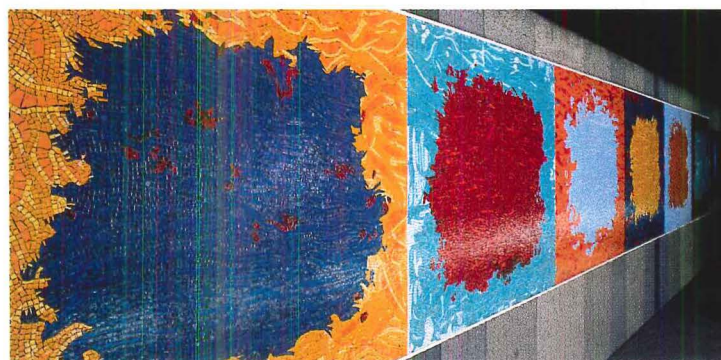
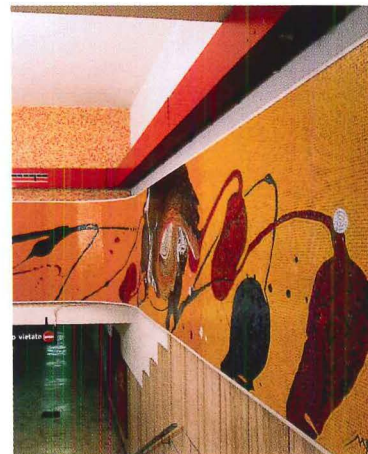
Solutia Inc. has introduced a new impact-resistant window made with Keepsafe glass. Windows made with KeepSafe glass are constructed with a tough, transparent plastic interlayer heat-and-pressure bonded between two pieces of glass. In addition to offering enhanced home security for families, KeepSafe windows provide other benefits, including sound control, and protection from nat-



ural disasters. UV screening protects valuable fabrics, drapes, and furnishings by filtering out 99 percent of the sun's UV rays. 800/551-5971. Keepsafe, St. Louis, Mo. **CIRCLE 246**

▼ The mosaic underground

Murano Smalto Mosaic, produced by SICIS, was chosen as the only effective medium for the "Arte Metro" project—the first Museum of Contemporary Art in Rome. The mosaics were chosen to decorate the stations of the Rome Underground because the glass paste is highly resistant to wear, hygienic, and easy to maintain. Shown here are mosaic panels by artists Ulrich Erben (right) and Mikhail Koulakov (below). 212/829-8341. SICIS USA, Inc., New York City. **CIRCLE 248**



◀ Italian-designed pulls

A line of drawer pulls designed by Italian sculptor Giacomo Benevelli is now available. Ranging from knobs to stand-alone pulls, the hardware is cast in solid brass and comes in several finishes. 800/523-1269. Doug Mockett & Company, Manhattan Beach, Calif. **CIRCLE 247**



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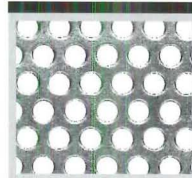
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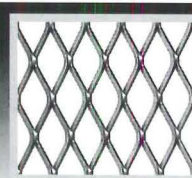
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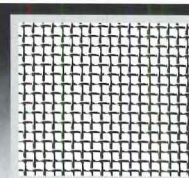
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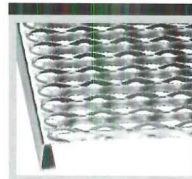
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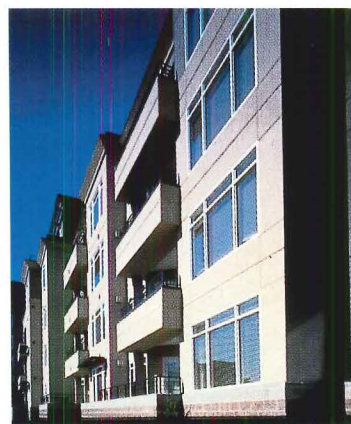
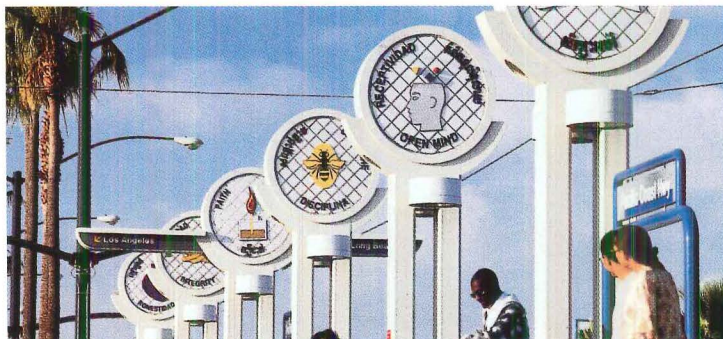
▲ Mobile seating

The Move Task Chair System utilizes the synchro-mechanized system developed for German Railway's advanced ICE Train and is the creation of industrial designer Ray Carter of Designworks USA, a BMW subsidiary. Based on the concept of a racing-shell boat, the seat slides forward and the backrest is automatically pushed forward at its lower pivot point, maintaining back contact. 212/832-8222. M2L, Inc., New York City. **CIRCLE 249**

▼ Public art, West coast style

Since 1989, more than 175 artists have been commissioned to design ceramic art works for the Los Angeles MTA. Artists typically use a mixture of frit and

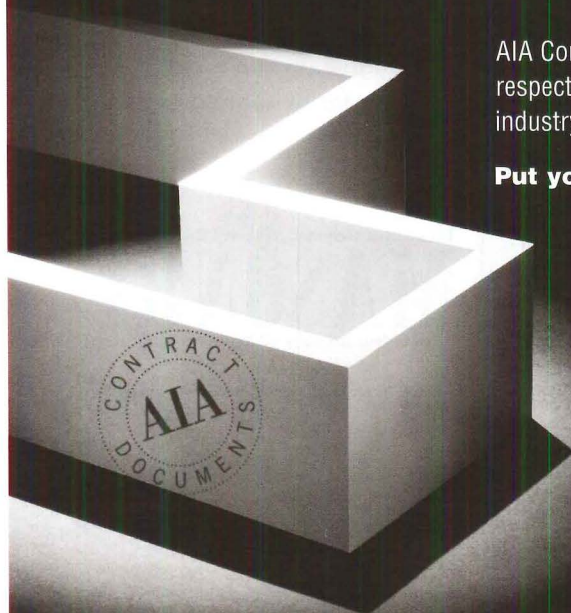
chemicals, applying it to the tile to form a thick, white glaze. After drying, the design may be painted on the glaze with ceramic minerals. 216/641-8580. Ferro Corporation, Cleveland. **CIRCLE 250**



▲ Fire-rated insulated glass

Technical Glass Products offers FireLite IGU, the first fire-rated, insulated glass ceramic unit that also complies with energy codes. FireLite IGU is constructed with FireLite or FireLite Plus on one side, a sheet of float or tempered glass on the other, and an air space in between. It is designed for use in exterior applications where energy codes require an insulated product, or for interior applications with special needs such as sound reduction. 800/426-0279. Technical Glass Products, Kirkland, Wash. **CIRCLE 251**

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PRODUCT LITERATURE

Furniture to the trade

Smith & Hawken has expanded the company's line of café and bistro furniture to steel, aluminum, iron, and other materials, as illustrated in the company's spring catalog. 415/389-8300. Smith & Hawken, Mill Valley, Calif. **CIRCLE 252**

Landscape lighting

The 1999 NightLife Landscape Lighting catalog from HADCO features an expanded product selection of low voltage, line voltage and HID systems for residential and commercial applications. 717/359-7131. HADCO, Littlestown, Pa. **CIRCLE 253**

Window and door showcase

Weather Shield Windows & Doors' latest Architectural Showcase piece focuses on a dream-home project in California. 800/477-6808. Weather Shield Windows & Doors, Medford, Wis. **CIRCLE 254**

Filtration systems

A new catalog offers Stark fiberglass filtration systems for commercial appli-

cations, including swimming pools, water parks, aquariums, zoos, and water treatment. 914/452-5500. Paragon Aquatics, LaGrangeville, N.Y. **CIRCLE 255**

Toilet and shower enclosures

Metpar's '99 catalog features conventional and new solid plastic materials for toilet, dressing, and shower enclosures. 516/333-2600. Metpar Corp., Westbury, N.Y. **CIRCLE 256**

Ornamental metal components

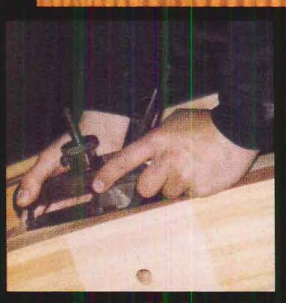
Julius Blum & Co.'s new brochure highlights several applications including handrail moldings, fittings and brackets, ornamental baluster bars and posts, and the company's glass railing system. 800/526-6293. Julius Blum & Co. Inc., Carlstadt, N.J. **CIRCLE 257**

Metal-halide lamps

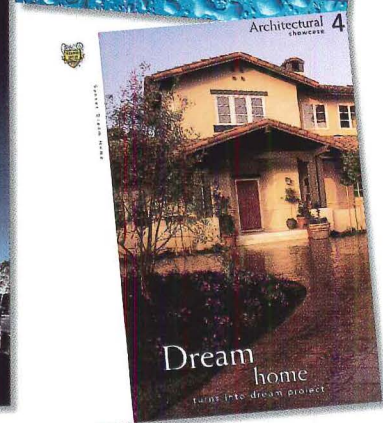
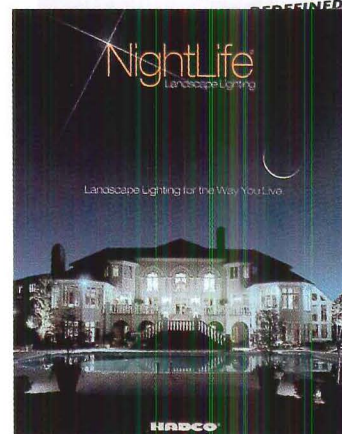
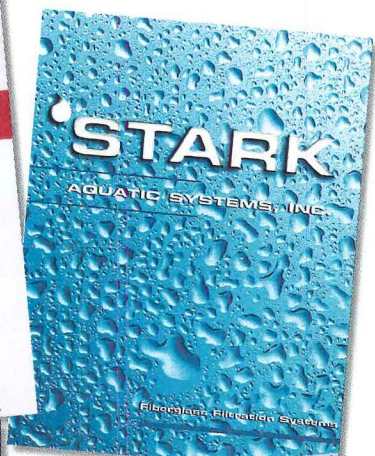
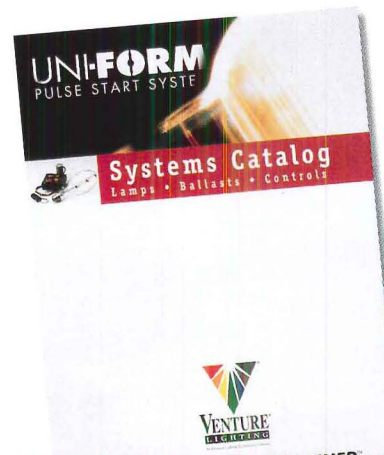
Venture Lighting's new Uni-Form pulse start catalog provides a display of optimized metal-halide systems for retail, commercial, industrial, and municipal applications. 877/MHALIDE. Venture Lighting, Solon, Ohio. **CIRCLE 258**

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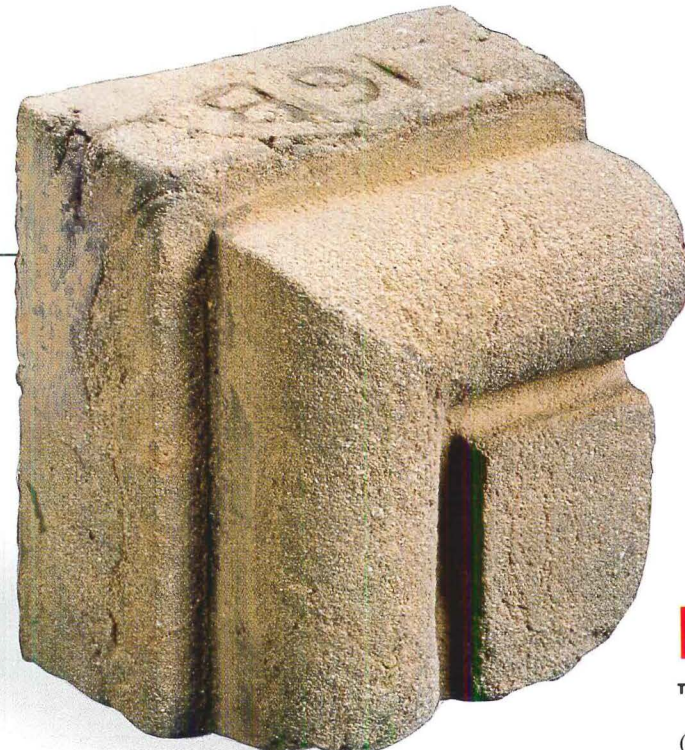
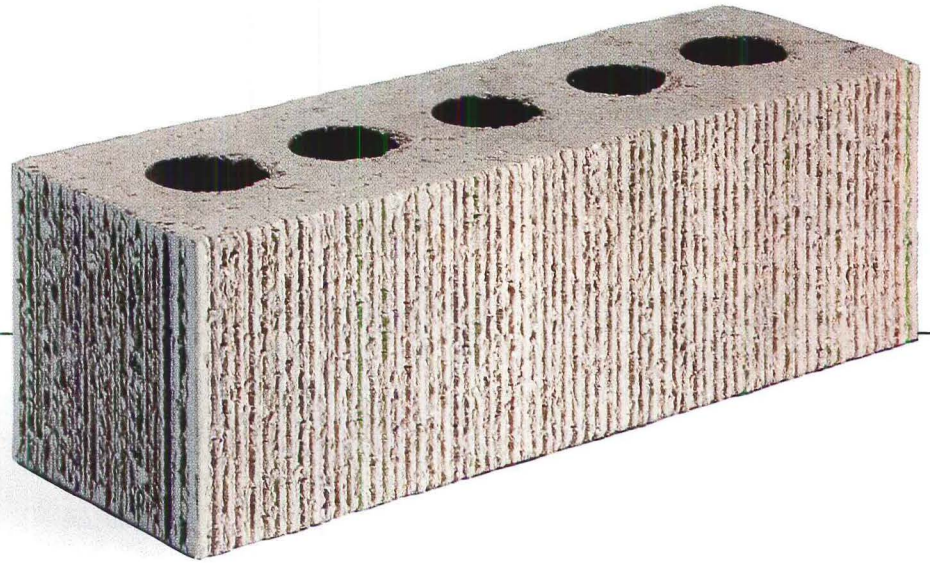
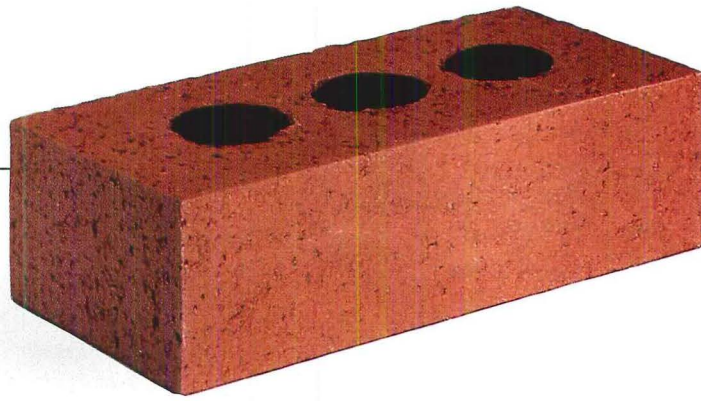
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PRODUCT LITERATURE**Fire and smoke protection**

The 1999 catalog for Zero International's complete line of door and window gas-keting, thresholds, saddles, and high-performance continuous hinges celebrates the company's 75th anniversary. 800/635-5335. Zero International Inc., Bronx, N.Y. **CIRCLE 259**

Sheet-flooring styles

The 1999 Tarkett stylebook showcases the company's full line of residential and commercial sheet, tile, and laminate products. 800/FOR-TARKETT. Tarkett, Whitehall, Pa. **CIRCLE 260**

Window line

A new brochure from Milgard Windows features the WoodClad product line. Color choices and hardware options are included. 800/MILGARD. Milgard Windows, Tacoma, Wash. **CIRCLE 261**

Architectural lighting

Lithonia Lighting's newest product selection guide features over 64 additional pages detailing dozens of new and

improved families of products. 770/922-9000. Lithonia Lighting, Conyers, Ga.

CIRCLE 262

Architectural copper

"The Copper Connection," a newsletter published by Revere Copper Products, features color photography and descriptions of high-profile projects using architectural copper. 800/448-1776. Revere Copper Products, Rome, N.Y. **CIRCLE 263**

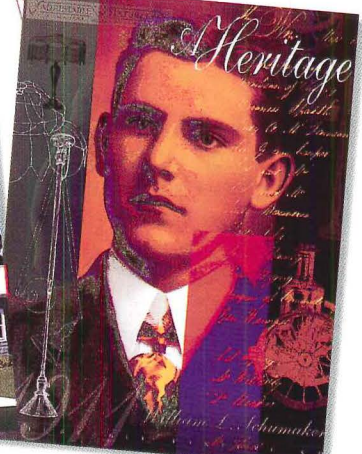
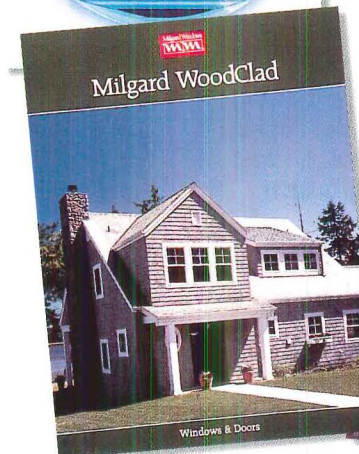
Fixturing components

Shapes Unlimited offers new product catalogs for 1999, for trade-show display components, store fixtures, pedestals, columns, and point-of-purchase displays. 800/811-1385. Shapes Unlimited, Inc., Little Chute, Wis. **CIRCLE 264**

Specialty lighting products

Adjustable Fixture Co.'s Heritage brochure traces the history of the company, founded in 1911, which manufactures lighting products for the health-care, multihousing, and industrial markets. 414/964-2626. Adjustable Fixture Co., Milwaukee, Wis. **CIRCLE 265**

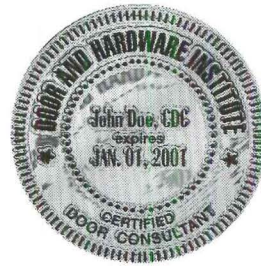
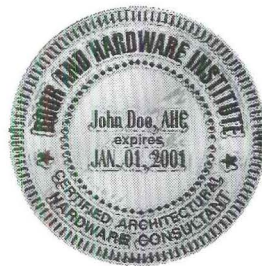
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(continued from page 64)

Ranging from Renzo Piano's Lingotto complex in Turin, Italy, and Richard Rogers' Billingsgate Market in London to Mecanoo Architekten's conversion of an 18th-century church into the Trust Theatre in Amsterdam, the book shows 44 projects of a uniformly high caliber. The book is organized into four chapters covering living and working, leisure and learning, museums, and the future. Texts accompanying each project are short but informative, and the photography is excellent. A few projects leave the reader wanting more coverage, but none deserve any less than they receive. *CAP*

Devil's Workshop: 25 Years of Jersey Devil Architecture, by Susan Piedmont-Palladino and Mark Alden Branch. New York: Princeton Architectural Press, 1997, 130 pages, \$30 (paper).

Hard to believe that those foot-loose, convention-busting guys who

call themselves Jersey Devil have developed enough of an oeuvre to fill a snazzy monograph. But it has been a quarter-century since three college buddies—Steve Badanes, John Ringel, and Jim Adamson—started designing and building off-beat, environmentally friendly structures. While some critics thought this nonfirm of designer-builders would go the way of bellbottoms and earth shoes, the Devils' loose association has been maintained by tightly held values that aren't likely to go out of style such as collaboration, ecological sensitivity, social responsibility, and fun. Susan Piedmont-Palladino tells the group's story and discusses its method of merging design and construction, while Mark Alden Branch examines its architectural forms and their origins. A brief foreword by critic Michael Sorkin informs us that Jersey Devil "put the funk back in functionalism." The book presents a baker's dozen of the group's projects. *CAP*

Writing for Design Professionals: A Guide to Writing Successful Proposals, Letters, Brochures, Portfolios, Reports, Presentations, and Job Applications, by Stephen A. Kliment. New York: W.W. Norton, 1998, 232 pages, \$37.

"As successful design practitioners know, words and images are linked together as an intrinsic part of professional life," writes Hugh Hardy, FAIA, in the foreword to Stephen Kliment's new book. "No matter how compelling their designs, all professionals are required to present themselves and their work using words, and all clients begin the process of design with a verbal expression of their needs."

Even in our increasingly visual culture, keeping a design practice afloat requires something that few architecture students learn: Solid writing skills. Writing matters, says architect, educator, and former *RECORD* editor Kliment; it is necessary to get jobs, for instance.

Clients "are consistently appalled by the turgid quality of writing delivered by designers," he writes. But there's a higher purpose, too; the public "continues to wonder why designers, when they write and talk, do not make more sense."

Kliment's own prose takes the reader through all the types of writing that a practitioner must be prepared to handle. He also offers some simple rules, including that practitioners write as they would talk, keep sentences short, shun "designer babble," be specific, keep it simple, use the active sentence form. Without slipping into condescension, Kliment offers guidance that's accessible, logical, and easy to follow. *Kira Gould*

Architectural Knowledge: The Idea of a Profession, by Francis Duffy with Les Hutton. London and New York: Routledge, 1998, 217 pages, \$40.

This collection of essays by Francis Duffy is a bracing and timely con-

sideration of what it means to be an architect. Duffy, a former president of the Royal Institute of British Architects (RIBA), is well known to Americans involved in office design, a field in which he has made important contributions.

The first essays trace Duffy's research since 1968 into "three sets of variables—organizational, behavioral, and physical," or the "relationships between job, worker, and building." Designs that respond to these relationships have become the hallmark of Duffy's London-based firm DEGW.

Other essays are set against the Thatcher-ite dismantling of Britain's welfare state in the 1980s and the Conservative Party's celebration of market forces. The book recounts Duffy's search for a new, commercially and intellectually sustainable footing for architecture, one that could stand up to the dynamics of the marketplace and not depend on a "star system" that "is basically defensive, a retreat into magic."

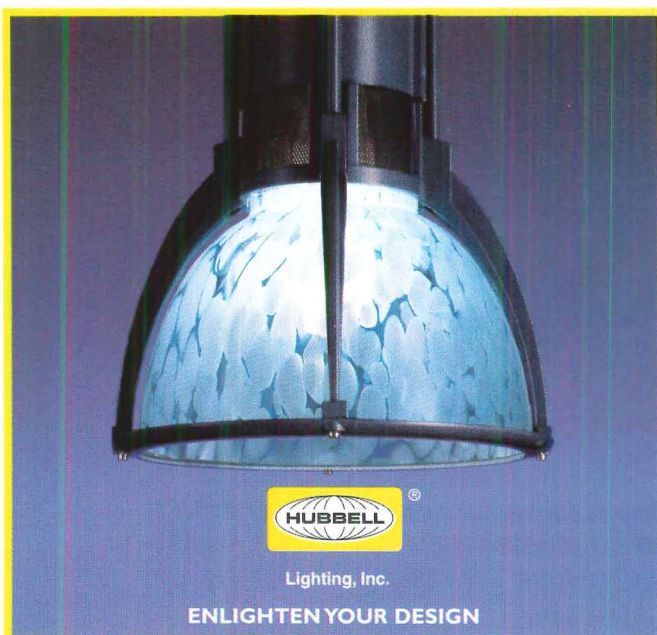
Duffy's presidency of the RIBA from 1993 to 1995, at a time when British architects were threatened with losing their status as registered professionals, saw him marshal a "defense of professionalism itself." The essays from this period are particularly powerful. His inaugural address, "Keeping Faith with Our Professional Concerns," expresses a refusal to duck "behind the barriers of exclusivism" or to capitulate to a conception of architecture as merely "a series of deals." He argues instead for architectural knowledge as "open-ended, action-oriented, value-laden, project- and precedent-based, ethical, and . . . concerned with what ought to be."

Duffy calls for a strategy in which architecture engages the world expansively, without losing sight of core values, and where the "dynamic development of knowledge" occurs in the context of action. This appeal to praxis, bolstered by serious commitments to education and research, is impressive for its vigor and specificity.

Todd S. Phillips, AIA ■

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GEHRY *continued from page 192*

AR: In what way is it different?

FG: It's subtle; there is clarity. But the changes to Disney are subtle. We don't know what metal to put on it yet because I'm doing the mock-ups of the different metals, really stainless and titanium. Titanium adds a couple of million dollars to the budget. But metal is definitely \$5 million cheaper than the stone. Even if you add titanium, you still save \$3 million.

AR: How does this fit in with Bilbao?

FG: The plans and shapes are pre-Bilbao. We've learned from Bilbao, obviously, and we're incorporating what we've learned. One of the reasons I didn't want to go to metal is

I DIDN'T TAKE THE PLANE; I DECIDED I WOULD GO TO THE PARTY.

because it makes something that was designed before Bilbao, 'son of Bilbao,' and I was worried about that. I said, 'Okay, if you don't care, I don't care. Critics will say that.'

AR: How deeply involved are you in the project? Are you embroiled in any of the fund-raising?

FG: We're in everything. They've raised 95 percent of the funds, so they are almost there.

AR: And what do you anticipate? When do you think it's going to happen?

FG: If all goes well, in April. Now, all may not all go well, because there are some glitches in things from the former consultants that we're running into in the garage. The garage was built, and it is possible there were some errors. We're looking into that now.

AR: What about other projects? When I was in the office, I was shown plans for Bard a couple of months ago. It has run into a wall, hasn't it?

FG: They don't want the 20th Century. That is what the body language is saying. Because if it's just about landscape, Laurie Olin and we can fix all their concerns. They just don't want the building. It is a travesty because, if you think about what Bard is trying to do, they are creating a Brooklyn Academy of Music on the Hudson, which is experimental.

AR: You've been ahead of the power curve for

much of your career. How do you handle it, when your new ideas aren't accepted? What do you do when you put that much effort into something?

FG: Well, I don't presume to know what is right for the world, and I don't presume that my ideas are it or nothing.

AR: You're not acting like Frank Lloyd Wright.

FG: No, I don't have that kind of passion about that. I love the process. I love working with the people. I love making the design. But I never go out looking for work, ever. I wait until it hits me on the head. Occasionally, I do a competition. But I only do the competition when somebody really lobbies me and says, 'Oh we want you to do this. If it goes, it goes. If it doesn't, I go on to the

next one. I've been pretty lucky. I mean, Bilbao. How many of those can you have in a lifetime?

AR: Speaking of that bellwether project, do you have any sort of special feelings for Bilbao? You say you don't go back and revisit projects, but how can you avoid that one?

FG: I go back to Bilbao because they drag me back a lot. The Basques have become family to



Experience Museum, Seattle, under construction.

me. My wife is Latin American, so it sort of fits. My family likes to go there, too. But I see all the mistakes. A part of me says what the hell are you guys all excited about? I'm pleased that it works for a variety of art. I'm still concerned that the big room has never been completely resolved, although the Rauschenberg painting is in there now, and it looks spectacular. It is the first thing that isn't diminished by the room.

The Serra piece, as powerful as it is, doesn't have its real power; just a few little walls

(continued on page 359)

GEHRY *continued from page 356*

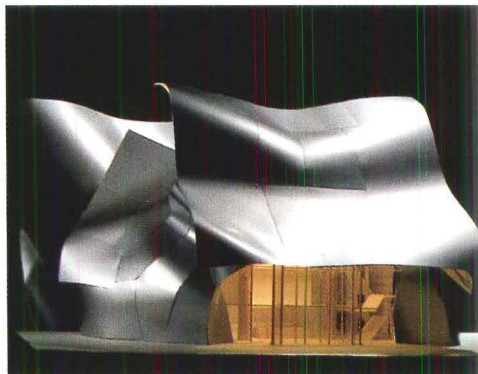
would help it, and I begged Tom [Krens] to do it and he won't. There is a big difference of opinion. It is possible to use [the big room], but with extraordinary pieces like that, there would be two in a century. If he doesn't want to put a wall in, buy the Rauschenberg and leave it there, because it fits perfectly.

AR: Have you done work on the building since its completion?

FG: I try not to get involved in their problems, because once you finish it, the kid has to grow up. It's the client's building. They have to be able to do what they want with it, so I back off as much as I can. We had to redo the restaurant because the original design for the restaurant was not executed. They said it was too noisy. It

THEY DON'T WANT THE 20TH CENTURY. THAT IS WHAT IT LOOKS LIKE.

was like it was my fault. I went back and retro-fitted it, and they like it. It functions for them. I end up doing all of that for free because I don't know how to charge. I just go and do it.



Bard College Performing Art Center, Annandale-on-Hudson (1997-), original site.

AR: Are there other unresolved issues there?

FG: The cleaning. When they had the walls of the titanium on, they were doing the roofing. 'What is that plastic stuff?' I thought. Polyurethane in the roofing spilled over the side, and there are some streaks of polyurethane over the side of the titanium. We begged them to clean it right away, because it will embed itself. And they wouldn't clean it.

Finally, when the building was finished, they said now we're going to clean it, and they couldn't clean it. It doesn't come off. Now there are these streaks, and I get calls from my colleagues that say, 'Oh, we got you. Your tita-

nium. You didn't know what you were doing.'

AR: Did you know when you had finished Bilbao that it was special? Did you see it as something that would attract more public attention?

FG: No. I thought it was out in the boondocks. I don't know what I thought. I was more focused on the artists. Whether it would work for them. That is all I was worried about.

AR: Post-Bilbao, what project has your attention at the moment?

FG: MIT is the most critical. It is in the most important stage for me. We've got all the client requirements, we understand all the budgetary things, we understand all the city planning and the issues of Cambridge. It is for their artificial-

intelligence guys. Labs and offices. And it's a tight budget, but not as tight as Case Western. It's all coming together, now. We're creating kind of a communal outdoor space.

AR: You have passed for the moment on the new town project in Guadalajara, but it involves the kind of collaboration that you really love, doesn't it? You seem to thrive on working with other artists and architects.

FG: I brought a lot of guys down to Panama last week [for another new development plan]. And I've collaborated with David Childs. And with Claes Oldenburg And Richard Serra. I do that, and I believe in that. I believe that is the way to deal with the world, rather than to do huge projects. I think the Getty Center, for me, would have been more successful had three architects done it instead of one.

AR: A lot of people would see your work as highly individualistic. It comes out with sort of a signatory look, and yet somehow your method includes putting new ideas and people together.

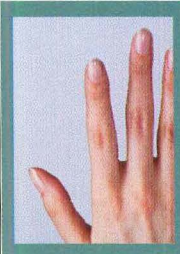
FG: Because the whole can be greater than the sum of the parts, and I found that this collaboration doesn't compromise my creativity.

AR: Does your partiality for collaboration come from your teaching experiences?

FG: I don't know. Maybe. I like teaching.

(continued on page 360)

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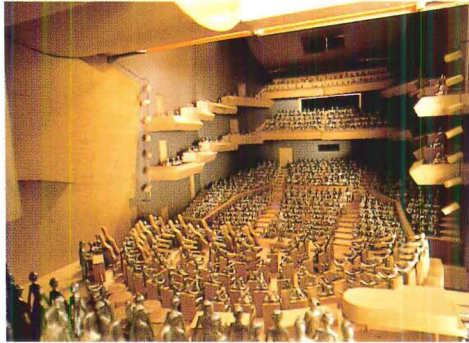
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GEHRY *continued from page 359*

AR: Bob Campbell wrote an essay in our magazine in 1996 called "The Boldness Gap," in which he said American architecture has lost its boldness. What do you think about the state of American architecture?

FG: It depends who is doing it. If you're talking



Bard College Performing Arts Center Auditorium, Annandale-on-Hudson (1997-) original site.

about the federal government of the United States, I would give it a zero. But they always giggle when I send in my stuff. There is some kind of consensual language that GSA and the government and certain clients agree on that has to do with detailing and what architecture is. I don't fit into that.

AR: Who are your clients? Obviously, not the U.S. government.

FG: Who do I get? I haven't gotten any—I don't even get called in L.A. to be interviewed, by government or by the major developers here. I know them all. We're all friends. I like some of them really well. I respect them. Of course, I never pursue them, but they don't think of me.

AR: Hasn't your client base shifted? Your

and then MIT. Those are three big buildings.

AR: What do you turn down?

FG: I turned down the \$2 billion casino in Atlantic City for Steve Wynn. That was a hard one to turn down. I bet there ain't many architects around that would turn down a \$2 billion job. And we had a wonderful fee.

AR: What kind of building do you want to do?

FG: I knew you would ask that, and I always wonder. But I think I would like to do an airport. I don't lust after anything; I guess I learned over time that I don't want to suffer disappointment.

AR: How would you characterize your new work since Bilbao? How is your work evolving?

FG: You have to look at it, but Philip [Johnson] can tell you. He picked up on it. It's probing into an unknown thing. That is what creativity is, and that is why it's scary, and that is why we avoid it. That is why you go to the office and clean the office for two hours before you start, because I'm scared shitless I'm not going to be able to do it.

I live by that. I know that. Every day it's like that for me. I don't know what I'm going to do. Now, definitely there is a pattern and trajectory, and I can see it when I start a project and see a few weeks of it. I try not to repeat myself, but I suppose Bard looks like the family of Disney Hall and Bilbao. There are just so many moves available. You can't come up with something new every time.

AR: How does it feel to get the AIA Gold Medal?

FG: Well, I never thought I would get it because I thought my work was weird. Wasn't it you

I HAVE FOUND THAT THIS COLLABORATION DOESN'T COMPROMISE MY CREATIVITY.

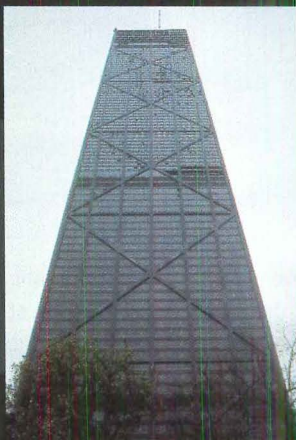
clients seem to be institutions and organizations operating at the large scale. They are universities or museums.

FG: There are not that many. Think about my career. The American Center, the first institutional thing. Then Disney Hall, a competition. I did the Yale Psychiatric Clinic, but that budget was so tight that I was really squeezed in a corner. Minneapolis is just a tiny little building. [There really are just] Disney Hall and Bilbao

who asked people in the magazine what they thought of Bilbao? And you got a lot of letters from people who think I'm an asshole and a fraud. I wouldn't know how to run an architectural business, I wouldn't be a realist.

Having said all of that, it's a wonderful honor, because it is like your brothers love you. It's like in your family: You know they don't think very much of you and then, all of a sudden, you find out they really love you. That's how it feels. ■

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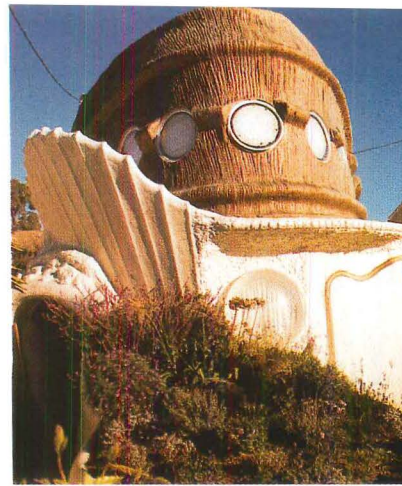
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THE FUTURE Architect Eugene Tsui uses natural elements as the basis for his extraterrestrial-like residences.

BY TED KATAUSKAS



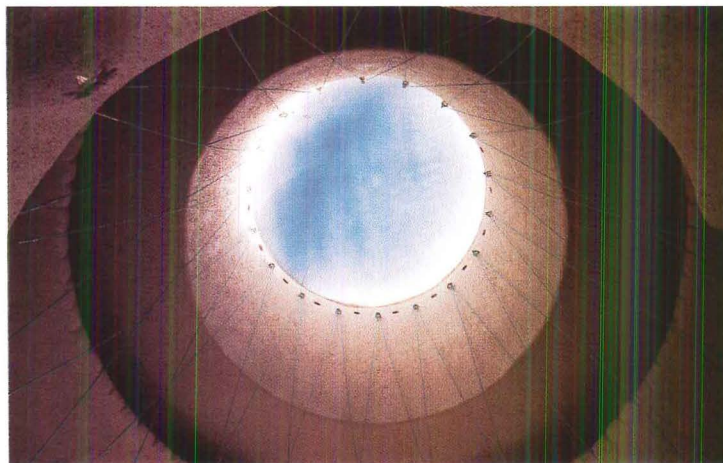
With its bulbous windows, fan-like dorsal fins, and cranium-shaped roof, Eugene Tsui's "Ojo del Sol," a three-bedroom two-story residence in Berkeley, California looks otherworldly, like an alien creature squatting between two ranchettes. But Tsui is quick to point out that the building's design, which one of his Berkeley professors has called an evolutionary leap in architecture, is a product of this world, of nature, and based on fundamental principles as old as the Earth itself.

"Nature has existed for five billion years and has, through trial and error, created structures that last, have durability, and function," says Tsui. "Once we start to practice architecture with the efficiency of nature, our buildings will start to look more like what we see in nature."

In other words, more like snail shells and wasp nests and less like shoe boxes. As evidence, Tsui cites results from stress tests he performed at his Emeryville, California, office and laboratory, which demonstrate that snail shells and wasp nests—both curvilinear forms—can withstand downward loads of more than 2,000 times their own weight. By comparison, a conventional two-bedroom rectilinear timber-frame house built on a concrete slab wouldn't withstand a direct load of even its own weight—40 tons.

With today's technology, says Tsui, architects can cast off "clumsy, wasteful, and odiously heavy" methods of construction and embrace the superior forms and systems of nature. In fact, Tsui argues, Darwin's theory of natural selection practi-

cally demands it. Tsui, 54, who studied with the maverick Bruce Goff before earning master's and doctoral degrees in architecture from the University of California at Berkeley, makes a compelling case in his recently published book, *Evolutionary Architecture: Nature as a Basis for Design*. Central to Tsui's theory of evolutionary architecture is the



idea that an architect should see every building as a living organism.

Fourteen corollary principles mandate, among other things, the use of recycled non-toxic materials that are strong, waterproof, and do not burn; innovative forms that best distribute stress and strain; a unified design in which every element, including furniture, is an integral part of the whole; generous windows and translucent ceilings that eliminate the need for electric light during the day; and a nonmechanical climate-control system that maintains a comfortable temperature year-round. To accomplish all this, Tsui stresses that architects will need to steep themselves in the

natural sciences to discover what nature has already done, then use the most advanced technology to emulate it. The inspiration of Tsui's "Ojo del Sol," for example, was a microscopic egg-shaped organism called a "tardigrade." When he examined micrographs of the creature's cross section, Tsui discovered that its body is a combination of a

A translucent rotunda dome (above) hovers above the naturally-inspired home that defines Tsui's brand of organic architecture (top, right).

continuous parabolic and catenary arch, an incredibly efficient and strong structural system. Tsui replicated the design by creating a curvilinear ellipsoid with walls that are angled inward, an earthquake-resistant form with a low center of gravity that distributes loads across its surface. Rejecting conventional wood-frame and masonry construction, he used hollow recycled polystyrene blocks to form walls. When glued together and filled with cement and rebar, the blocks, a

reinforced lattice structure similar to the skeleton of a cholla cactus, are extremely rigid, fireproof, and reduce noise levels by 50 decibels. For the domed roof, he used a system of plywood-covered parabolic trusses to create a post-stressed rigid surface that transfers loads uniformly throughout the building, a system modeled on the skeleton of the seagull. He then installed a network of flexible plastic solar radiant tubes between the roof's plywood and a layer of sprayed concrete, a passive heating system based on the capillary-filled sail that lined the back of the stegosaurus, which regulated its internal temperature.

Inside "Ojo del Sol," a spiral ramp supported by suspension cables corkscrews its way around an airy rotunda with a 30-foot ceiling, connecting the living room to three upstairs bedrooms. Furniture, fixtures, and bookshelves are all integrated into the home's structure. A translucent rotunda dome and a 15-foot-diameter fiberglass lens, the building's namesake, bathes the central space with natural light and warms the ramp, which radiates solar energy into the room at night. Light and fresh air also filter through a system of what Tsui calls "nostril windows," steel mesh tubes with Plexiglas vent caps that slide into and out of ceramic sewer pipes embedded in the walls (the vents can be easily removed for cleaning).

True to Tsui's central tenet of evolutionary architecture, "Ojo del Sol" almost seems alive. ■

Ted Katauskas is a freelance writer in Portland, Oregon.

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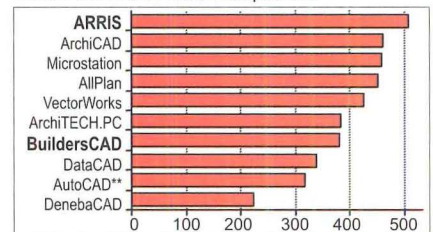
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