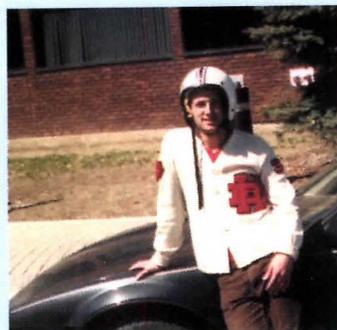


in this issue

Here are some of the faces behind some of the faces you'll see in this issue:



Elizabeth Felicella photographs architecture and urban landscapes. She is working on a book entitled *Idlewild: An Atlas of the Periphery of Kennedy International Airport*.



Jason Fulford recently moved to Scranton, Pennsylvania, where he blends in. His photographs have appeared in *Life* and *Harper's*.



Originally from Toronto, **Blaise Hayward** has been living in New York City for four years. His work has appeared in *Paper* magazine, *The Source*, and *Manhattan File*. He is working on a fine art portfolio and is expecting his first child in September.

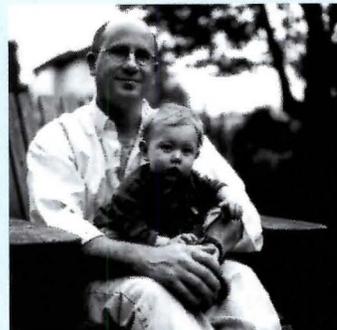
San Francisco-based **Todd Hido's** work has been featured in *Artforum*, *Doubletake*, and *Speak*. His photographs are in the permanent collections of The San Francisco Museum of Modern Art and the Oakland Museum of California.

Houston's **Earlie Hudnall, Jr.**, documents aspects of African-American life. He began photographing while in the U.S. Marine Corps in the late 1960s and is currently the university photographer at Texas Southern University.



Mark Mann is a Scottish transplant to New York City who shoots fashion and portraits. He contributes to *The Source*, *The Sunday Telegraph*, and *Fortune Magazine*.

Paul Markow is an advertising photographer in Phoenix. He recently published his first book, *Professional Secrets of Advertising Photography*.



Robbie McClaran's award-winning photographs have been exhibited widely and published in *The New York Times Magazine*, *Time*, *Newsweek*, *Fortune*, and *Condé Nast Traveler*.

New York City-based **Anne Katrine Senstad** is a fine art and editorial photographer whose work has appeared in the last seven issues of *Architecture* as well as in *2wice* and *The New York Times Magazine*.

Jason Schmidt is a New York City-based photographer currently documenting elephant art academies in Thailand with the Russian artists Komar and Melamid.

Documentary photographer **Maggie Steber's** award-winning work has been published in *National Geographic*, *The New York Times*, and *The New Yorker*.

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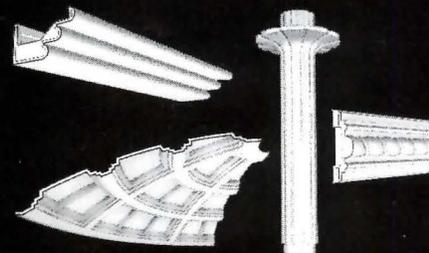
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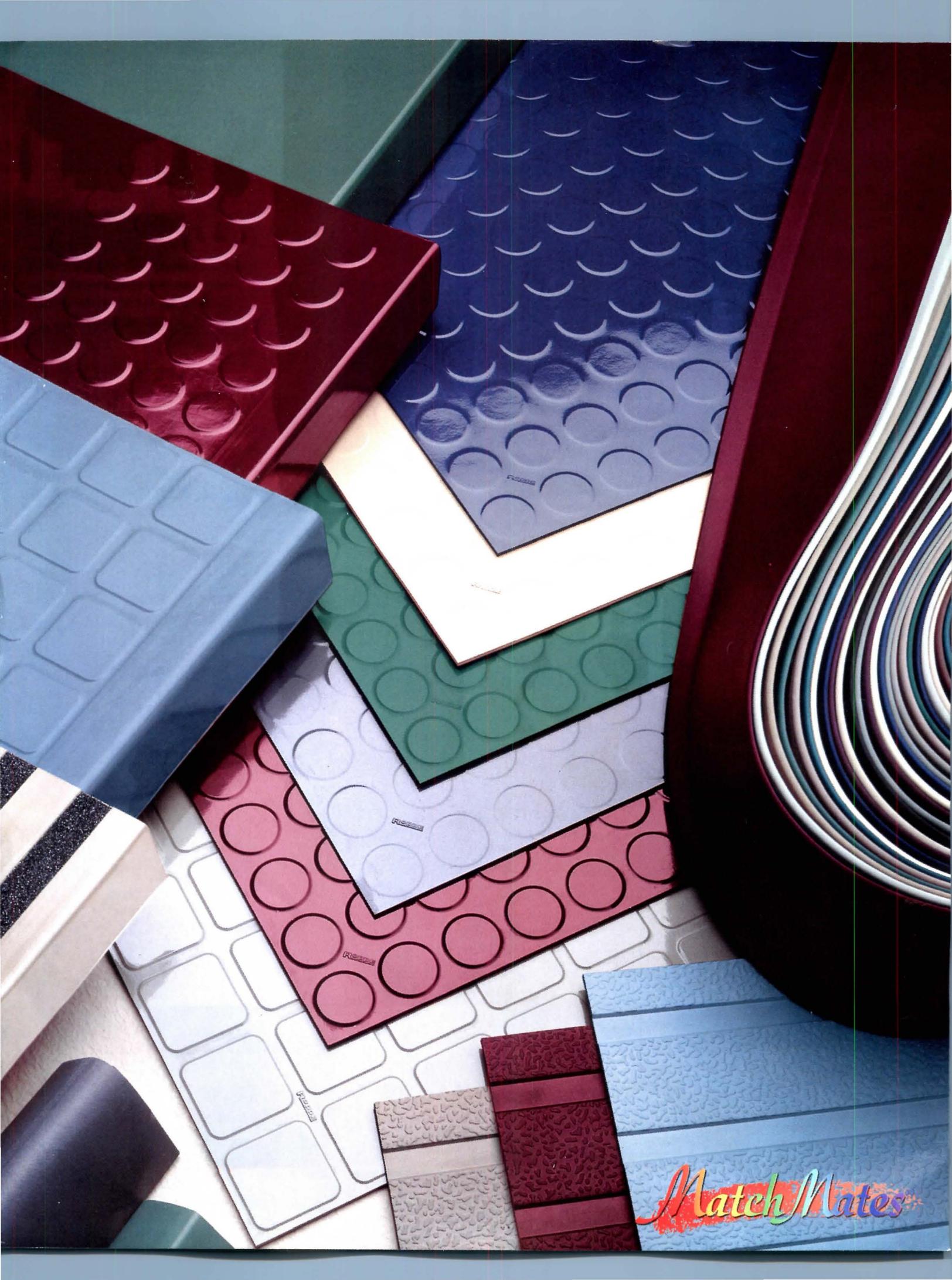


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Match Mates



They don't cost much, they don't mind lots of overtime, and they don't have family responsibilities. Sound like a Dickensian catalogue of the virtues of child labor? Guess again. This is what registered architects, responding to a survey, told the National Council of Architectural Registration Boards (NCARB) they liked best about their interns.

The information drew gasps of disbelief at last month's Summit on Architectural Internship in Lexington, Kentucky (page 40). And though not representative of the profession in general, the comments did underscore the need for the summit: Internship in this

Responsibilities don't change measurably with licensure; neither do salaries. Why bother with the liability?

Make no mistake. This is a serious problem. If internship is discouraging young architects from getting licensed, the profession is headed for trouble. Architects, the American Institute of Architects and its student organization AIAS, NCARB, and the schools must respond now with a concerted effort to reform the system. Streamline the Intern Development Program. Improve mentoring. Or if necessary, scrap the process altogether and start fresh. The 1996 Boyer

Architects must reform internship now.

By Reed Kroloff

country is broken, and to fix it, architects must start looking at the next generation as something more than cheap labor.

What's clear from the NCARB poll is that no one is winning the internship game. While practitioners find their interns eager, computer-ready, and design-savvy, they decry the younger generation's poor communication skills, lack of technical knowledge, and shaky understanding of business. In turn, interns enjoy the learning experience of the real world, but are frustrated by low pay, the NCARB paper mill, and poor mentoring from their employers.

NCARB also reported a disturbing parallel statistic. Since 1990, the number of Architectural Registration Exam divisions completed has dropped by nearly 75 percent. Some of the decline can be explained by the shocking increase in the cost of the exam (pages 150-154), and the fact that it can now be taken piecemeal over time. But the numbers were tumbling before NCARB introduced the new, computerized test, despite climbing pass rates and a robust economy.

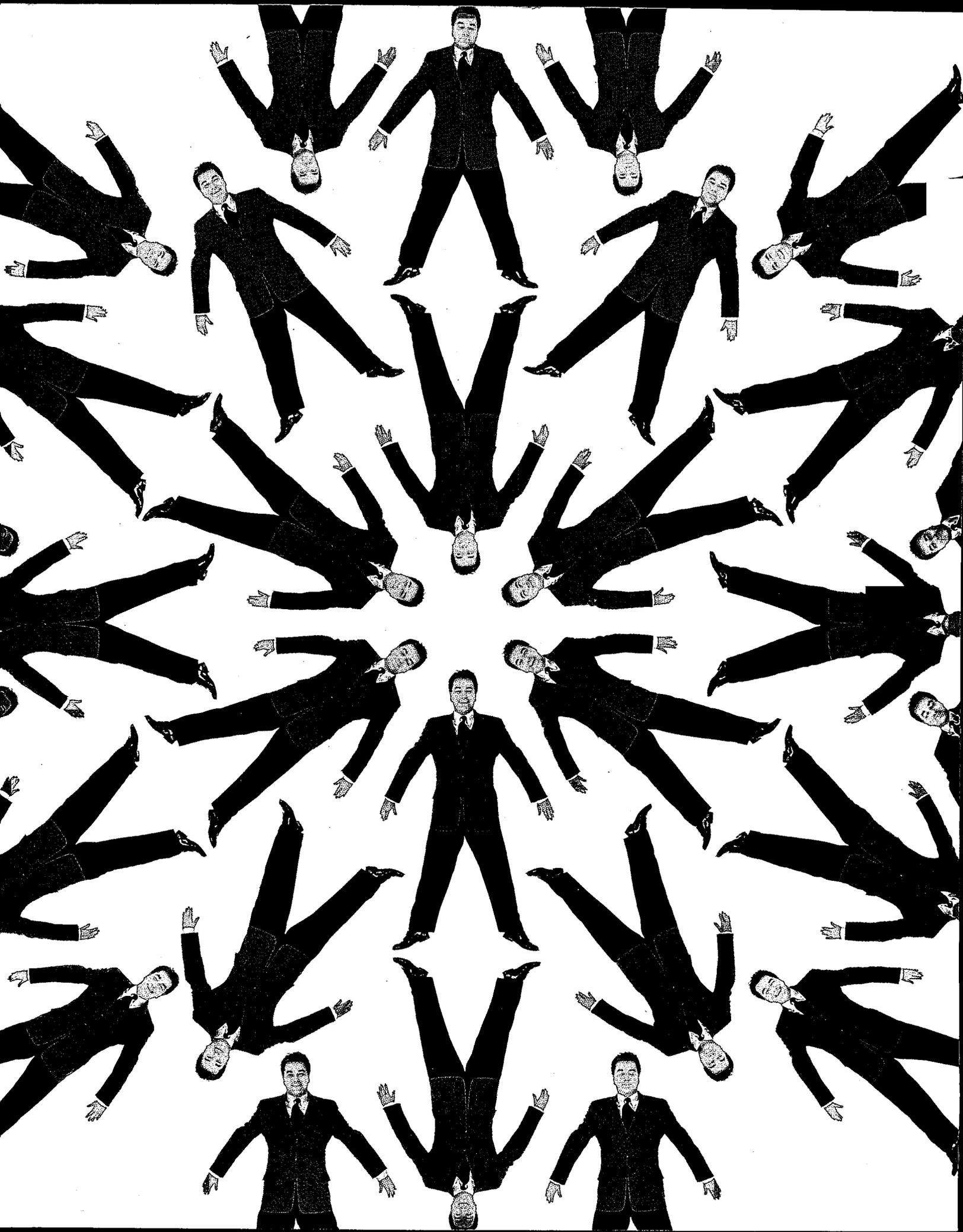
Little wonder. NCARB's survey reveals that internships are utterly failing to inspire young architects. Nearly half rate their internship experience as merely adequate—or worse. Further, they feel that offices provide little incentive for them to get licensed:

report and other studies have offered credible alternatives, none of which have been given serious enough consideration.

Ironically, with continued economic strength and more graduates than ever pursuing a traditional professional path, this should be the easiest time to fix internship. In researching this issue—our annual review of American architecture—we found a generation for whom architecture is a consuming passion. Nurtured on the speed and self-sufficiency of the digital world, these young Americans are more capable and willing than any before them to energize a slow-moving profession.

In this issue, we set out to create a snapshot of what it means to be a young American architect today. We weren't looking for stars; this isn't a top 10 list. We weren't looking for architecturally trained video game designers either. We wanted real people who want to be architects, no matter what path they take to get there, and we want you to meet them face-to-face. Our only criteria were that the subjects had to be under 35, and they had to be interesting.

We found more than we could possibly publish in one issue, so we present only a selection here. They're an engaging, inspiring lot. But unless this profession begins to care for its own early on, they could be the last of their kind. ■



New Urbanists outdated?

A few weeks after the recent Exploring (New) Urbanism conference at the Harvard Design School on March 4-6 (*Architecture*, April 1999, page 35), many students are still shocked by the hubris, guile, and duplicity displayed by delegates of the Congress for the New Urbanism. They came to Harvard in an effort to win souls. To the contrary, students are organizing to express support for the pursuit of principled and aggressive urbanisms. A number of projects aimed at expanding discussion among students at Harvard and beyond are under way. In repeating ad nauseum the once-necessary criticisms of late modernism of forty years ago, the New Urbanists reveal the generation gap between the era of those criticisms and the work that has been done since to formulate new urbanisms—urbanisms that have already internalized the critiques the New Urbanists simply regurgitate.

Peter Laurence
Congress for Modern Urbanism
Department of Architecture
Harvard Design School
Cambridge, Massachusetts

Contract disputes

Barry B. LePatner's article "Seeing the Light" (*Architecture*, March 1999, pages 136-140) might have been written 20 years ago. With the exception of mediation, the articles he addresses have been around for a long time. The B141 has always tried to extract key elements of the architect's responsibility during construction. With the exception of dispute resolution and termination, his comments apply to the issue of General Conditions (A201), the foundation upon which the method of project delivery has been built for generations. In simpler days, when the architect was the full confidant of the owner, the architect guided the owner through the entire process. Today, in many instances, the architect "participates" in the process in many varied ways. Article 2 of B141 must be carefully crafted to reflect that participation.

Richard T. Ray
Principal
O'Donnell Wicklund Pigozzi and
Peterson
Chicago

Esherick tribute

Thank you for your tribute to Joseph Esherick (*Architecture*, February 1999, page 37). He not only won the 1982 AIA Topaz medal for teaching; he is also the first and only architect to receive awards for all three of America's most important architectural achievements. In 1989 he received the AIA Gold Medal, and in 1986 his firm Esherick, Homsey, Dodge and Davis received the AIA Firm of the Year Award. But these awards are not the measure of this man; it is his buildings, along with his partners, and his influence as a teacher at the University of California at Berkeley for two generations. On another note, the Bay Area School has certainly not come to an end. It lives on in the rich tradition established by the buildings in the region's landscape by architects like Maybeck; Wurster and Emmons; and Moore, Lyndon, Turnbull, Whittaker; and now through the teaching and work of Richard Beard; and Ross Anderson, among many others.

Frederic Schwartz
Schwartz Architects
New York City

CORRECTIONS

Kristen Kaiser and Jason Johnson were assistants on Two Scupper Houses or The Dogtrot and the Shotgun, Revisited by Andrews / LeBlanc (*Architecture*, April 1999, pages 90-91).

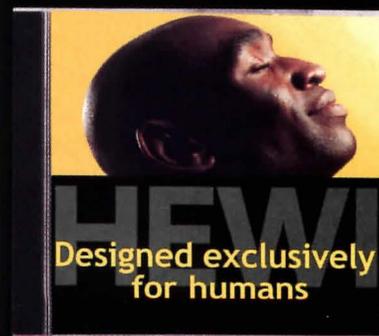
James Carpenter Design and R. A. Heintges Consultants were light laboratory consultants on the Cranbrook Institute of Science by Steven Holl Architects (*Architecture*, March 1999, pages 80-89). Tim Bade was a project team member.

Castro-Blanco Piscioneri and Associates is the architect of record for the Latimer Gardens Community Center in Queens, New York City (*Architecture*, February 1999, pages 38-39).

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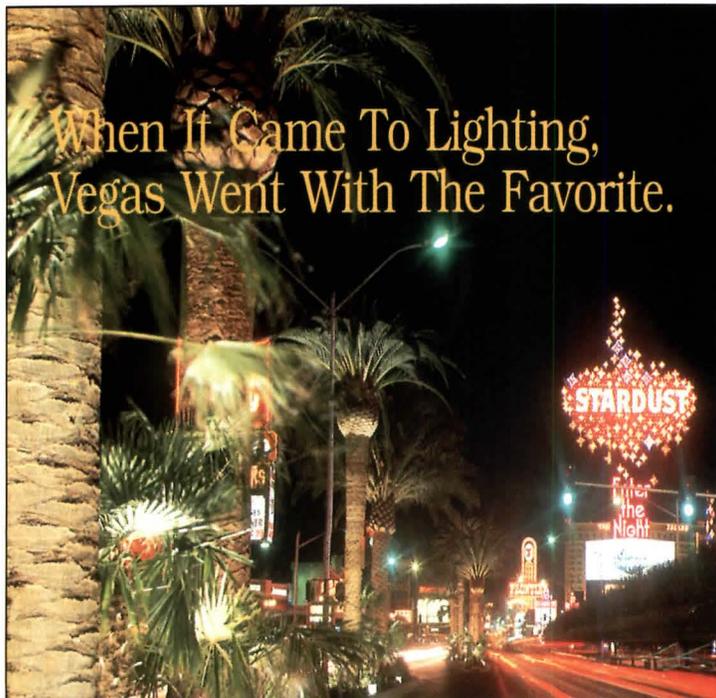
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exhibitions

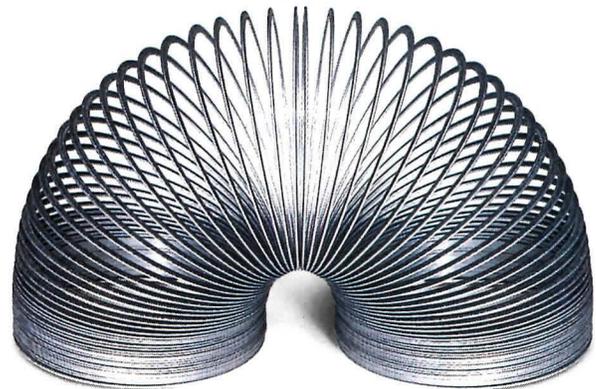
city	dates	exhibition	contact
Denver	through October 3	Paper Architecture: Hand Versus Machine at the Denver Art Museum	(303) 640-4433
East Hampton, New York	June 25-August 1	Weekend Utopia: The Modern Beach House on Eastern Long Island, 1963-1973 at the Guild Hall Museum	(516) 324-0806
Minneapolis	through July 25	Ralph Rapson: Sixty Years of Modern Design at the Minneapolis Institute of the Arts Minneapolis Institute exhibit of modernist architect Ralph Rapson's product designs includes this 1938 sketch of pitchers, pots, pans, and vases.	(612) 870-3131
New York City	through June 18	Between Tradition and Memory: Constructed Shelters, Black Architects at the Institute for Research on the African Diaspora in the Americas and the Caribbean at the City University of New York	(212) 650-6999
Washington, D.C.	through July 4	George Washington, Architect at the Octagon	(202) 626-7387



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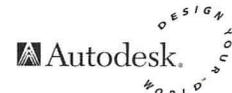
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conferences

city	dates	conference	contact
Boston	September 12-16	Annual Meeting of the American Society of Landscape Architects	(202) 898-2444
Charleston, South Carolina	October 7-9	Urban Waterfronts 17 sponsored by the Waterfront Center	(202) 337-0356
Chicago	June 7-9	NeoCon 99 at the Merchandise Mart	(312) 527-4141
Los Angeles	June 24-27	Construction Specifiers Institute '99 Annual Convention and Exhibit	(703) 684-0300
Perry, Iowa	October 28-31	Uniting the Useful With the Beautiful: Ideas That Formed the Arts and Crafts Movement at the Hotel Pattee Brass signage in Perry, Iowa's Hotel Pattee (1913) acts as functional backdrop for Arts and Crafts conference.	(515) 243-4123
San José, Costa Rica	June 30-July 3	Mundaneum International Conference on Architecture , sponsored by the Faculty of Architecture at the Universidad del Diseño	(506) 234-5514



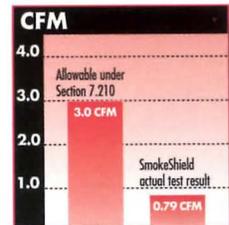
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competitions

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2000 Southern Home Awards , sponsored by <i>Southern Living</i> magazine	May 31	(800) 366-4712, ext. 6288
1999 Architecture + Energy: Building Excellence in the Northwest , sponsored by the American Institute of Architects, Portland Chapter	June 4	(503) 223-8757
National Endowment for the Arts FY 2000 Grants to nonprofit projects with a programming history of at least three years	August 16	(202) 682-5400
Boston Society of Architects Unbuilt Architecture Design Awards Stull and Lee's Boston Police Headquarters received 1998 BSA Design Award.	August 24	(617) 951-1433, ext. 221
		
The 1999 James Marston Fitch Charitable Trust Mid-Career Grants	September 1	(212) 777-7800

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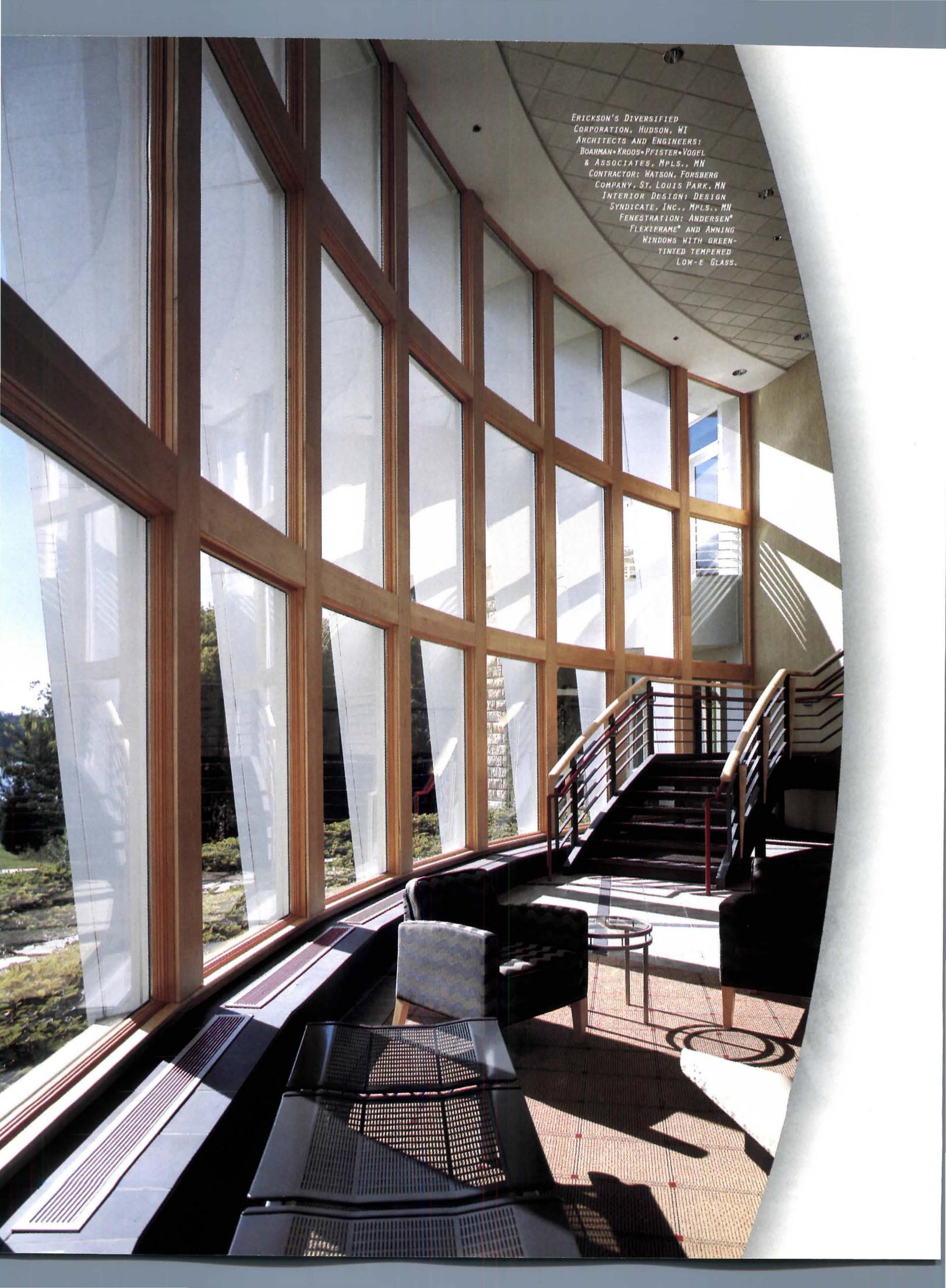
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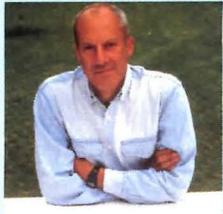
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A large, curved interior space, likely a lounge or office area, featuring floor-to-ceiling windows with wooden frames. The space is bright and airy, with sunlight streaming in. A staircase with a wooden handrail and metal railing is visible in the background. In the foreground, there are several modern chairs and a small table. The ceiling is a curved, grid-patterned structure.

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Foster Wins Pritzker

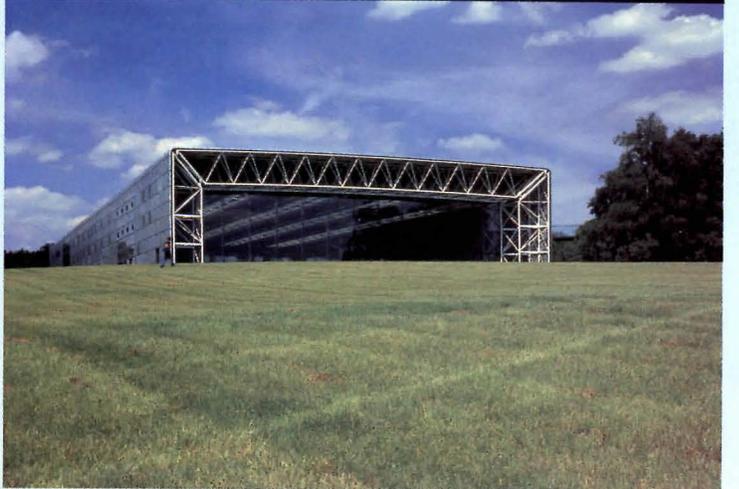
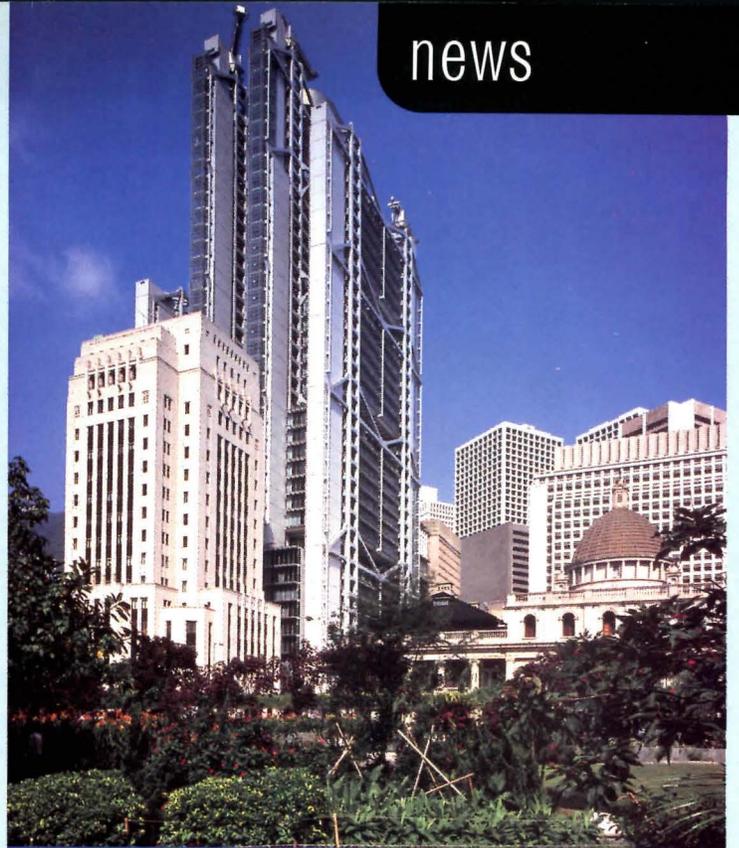
Norman Foster, one of Britain's most celebrated and influential contemporary architects, a leading exponent of technological innovation, and a key member of the British High Tech fraternity, has received the prestigious Pritzker Prize. Born in Manchester in 1935, Foster studied architecture at Manchester and Yale universities. On his return to Britain in 1963, Foster founded the firm Team 4 with his wife, Wendy; Richard Rogers (whom he had met at Yale); and Rogers' wife, Su.

Foster established his own practice in 1967; a succession of 1970s commissions posited him as an architect of world stature. The Willis Faber Dumas headquarters (1975) in Ipswich, England, is a voluptuously curved volume with sleek glass walls that reflect the surrounding city. This was followed by the Sainsbury Center for Visual Arts (1978) in Norwich, England, a vast exhibition space spanned by tubular structural frames clad in aluminum panels.

With the Renault Parts Distribution Center (1983) in Swindon, England, the simple intensity of the Sainsbury building gives way to a more complex structural form. This expressive articulation of structure was spectacularly developed in the building that many believe to be Foster's magnum opus—the Hong Kong and Shanghai Bank headquarters (1986). Towering 41 stories above the Hong Kong waterfront, the building symbolized the bank's power, prestige, and commitment to the island colony. Internally, the spatial set piece is a huge, top-lit atrium 10 stories high, surrounded by gallery offices.

The success of the Hong Kong and Shanghai Bank attracted other Asian commissions, including Hong Kong's new airport at Chek Lap Kok (1998), but in the 1990s, European commissions have dominated the practice's workload. Among the most notable are the delicate Carré d'Art (1993) in Nîmes, France, and Europe's tallest building, a new 60-story headquarters for the Commerzbank (1997) in Frankfurt, Germany. Later this year, Foster's conversion of the Reichstag in Berlin to house the relocated German parliament will set the seal on the country's political reunification. Surprisingly, he has only built once in the United States, with a characteristically understated extension to the 1930s Joslyn Art Museum in Omaha, Nebraska (*Architecture*, December 1994, pages 66-71).

Combining a prolific output with a high level of architectural and technical innovation, Foster's practice continues to attract commissions and win competitions, most recently for the new assembly building that will house London's revived local government on the edge of the Thames River. Foster adds the Pritzker Prize to Gold Medals from both the American Institute of Architects (1994) and the Royal Institute of British Architects (1983). *Catherine Slessor*



Foster's dominant **Hong Kong and Shanghai Bank** (top) represents next generation of colonial architecture; **glowing wireframe dome** (center) contrasts with solidity of Berlin's imposing stone-clad Reichstag; **Sainsbury Center** (above) gently recedes into hillside.

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EDUCATION

Interns Vent at Summit

When facilitators asked the 66 participants in the first-ever Summit on Architectural Internship to describe the "burning issues" they wanted to discuss, interns criticized bad mentors, low pay, and long hours, among other things; practitioners questioned the effectiveness of academic preparation and how the profession values itself and its young members. Everyone asked whether the current process of internship and licensure is the most efficient and effective route possible.

The summit, held April 10-12 in Shaker Village, Kentucky, was organized by the Collateral Boyer Task Force, which comprises the American Institute of Architects (AIA), the American Institute of Architecture Students (AIAS), the Association of Collegiate Schools of Architecture (ACSA), the National Architectural Accrediting Board (NAAB), and the National Council of Architectural Registration Boards (NCARB).

Participants hoped to critically assess the internship process, as well as the relationship between practice and education in preparing future architects. The often passionate debate generated suggestions including taking the registration exam immediately after graduation, reconsidering use of the term "intern," allowing alternative paths to practical experience, facilitating national and international reciprocity, integrating practice into education (and vice versa), and improving the profession's mentoring skills. A steering committee will convey the summit's results to the profession.

Interns who participated say they think the meeting was successful, but are concerned that few specific issues were addressed at the conference, and that the results were not definitive. "I am glad that the group decided to make the process more interactive and global," says Roseville, California, intern Edward Mojica. "But I was hoping for something more concrete. At least this event is a positive first step." *Eric Adams*

ECONOMICS

Wright Library to Close



In one of California's wealthiest areas, Marin County (just north of San Francisco) library commissioners have voted to close the library at its Frank Lloyd Wright-designed civic center (1962)—his last major project—to offset a \$1.4 million deficit. The sculptural Marin County Civic Center, which features a teal blue tinted concrete roof and a gold spire, was recently tapped by Hollywood location scouts for the futuristic sci-fi thriller *Gattaca* (1997).

While the library comprises only a small portion of the 450,000-square-foot complex, it was central to Wright's design concept, according to San Francisco archi-

tect Aaron Green, a protégé of Wright. Green oversaw the civic center's construction after Wright's death in 1959. "[Wright said] ... the children of the county should have to go through the halls of government to get to the library," Green recalled. The library sits at the apex of the stepped complex. Gheda Gayou, of the Chicago-based Frank Lloyd Wright Building Conservancy, plans to send a letter to the county protesting the closing of the library. Although county officials haven't reached a final decision, they will probably utilize the domed library for much-needed county office space. *Michael J. O'Connor*

THE GREENING OF AMERICA

Lucasfilm In Bid To Develop Presidio



A small portion of The Presidio, San Francisco's lush 1,480-acre national park by the bay—and, for 223 years, home to the various military enterprises of Spain, Mexico, and the United States—will be developed for commercial and civilian purposes under the stewardship of the President Clinton-appointed Presidio Trust.

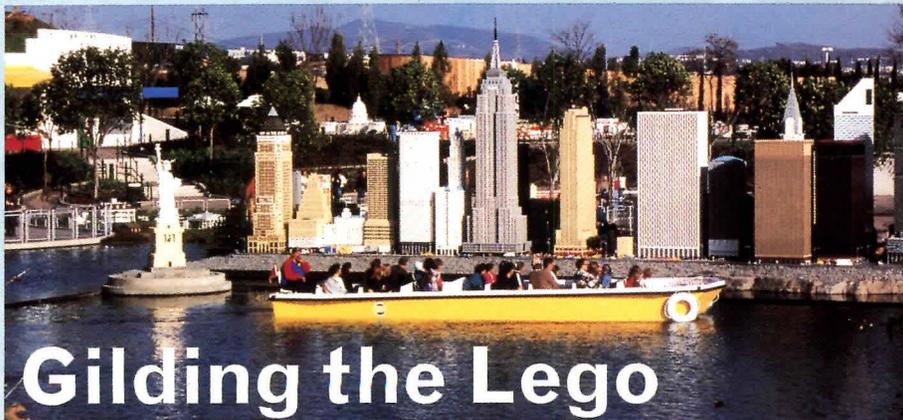
The trust selected the unremarkable, 1960s-vintage Letterman Army Medical Center and Institute of Research complex for demolition. It anticipates that commercial development of this 23-acre site will make the entire park self-sufficient by a self-imposed 2013 deadline.

Of the four proposals under construction, published reports indicate that Letterman Digital Arts Limited—a subsidiary of Lucasfilm Limited—is the front-runner, in part due to the prestige of *Star Wars* creator and Lucasfilm CEO

George Lucas. Responding to the trust's mandate for environmental responsibility, the Lucas team has proposed a campus of new and existing buildings to house many Lucas enterprises, including Industrial Light & Magic, Lucas Arts Entertainment Company, Lucas Learning Limited; 15 acres of open space, including public promendades, a café, and a 5-acre great lawn with lagoon; and underground parking for 1,500 cars. The total commercial-use space would be 900,000 square feet.

The design team includes renowned landscape architect Lawrence Halprin, Gensler's San Francisco office, and William D. Browning of the Rocky Mountain Institute, a nonprofit research and educational foundation focusing on sustainability issues. The trust's seven-member board of directors will choose the Letterman site winner at the end of this month. *Sara Hart*

SPACE



Gilding the Lego

Working in the medium of 30 million tiny plastic blocks, Danish toy manufacturer Lego Group has unveiled a \$130 million, 128-acre monument to their namesake, a product that many an architect has cited as their introduction to building concepts. Located in the San Diego suburb of Carlsbad, Legoland California is the company's third such endeavor, joining outposts in Denmark and England. Among the park's 40 attractions is Miniland, where visitors can study Lego-by-Lego scale models of New Orleans, Washington, D.C., and San Francisco. Interestingly, as a local news reporter set up a shot of the New York City skyline (above) at the park's March 20 opening for her next remote segment, her producer mistook it for the real thing and pulled the plug on her satellite feed. *M.J.O.*

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ON THE HILL

In 106th Congress, AIA Pursues Liability, Livability, Taxability

The American Institute of Architects (AIA) is lobbying this year to get Congress on the side of the architects and the communities in which they work. Specifically, its legislative agenda seeks to reduce liability while increasing economic development through tax credits and livable communities initiatives. What follows is a list of the AIA's main agenda items for 1999. *E.A.*

TAXES: The AIA wants the 106th Congress to adopt the Commercial Revitalization Tax Credit (CRTC), which helps reduce construction costs in distressed urban areas; allows full deductibility of health insurance premiums; and reduces capital gains taxes, which supporters claim will help stimulate economic development and thus spur development.

LIABILITY REFORM: Hoping to minimize architects' potential liability, the AIA is pushing for an end to frivolous lawsuits through restrictions on punitive damages and assessing liability through degree of fault; a clarification of the Americans With Disabilities Act through consistent enforcement and clearer definitions of the act's requirements; and limits on liability of product failure and general architectural services.

LIVABLE COMMUNITIES: To help generate community revitalization, urban and regional growth, neighborhood planning, and school improvements, the AIA wants to increase funds for school construction and modernization; pass the "Better America's Bonds" program, which will provide tax credits to improve infrastructure, clean up abandoned industrial sites, and preserve green space; and increase spending under the Transportation Equity Act for the 21st Century (TEA-21), which funds historic preservation projects, pedestrian and bicycle facilities, transportation museums, and transportation planning.

PRESERVATION



Preserving Gray Matter

Sadly, design history often carries a sexist twist: Men create the buildings; women feather the nest. The fate of E.1027, a seaside villa in Roquebrune, Cap Martin, France, that Eileen Gray designed and built with Romanian architect Jean Badovici, is proof. Mention Gray's name and tubular steel tables or a richly lacquered screen may come to mind. Rarely does anyone discuss her architecture.

Constructed between 1926 and 1929, while Badovici and Gray were allegedly lovers (E.1027 is code for the couple's entwined initials), the secluded house directly overlooks the Mediterranean. Le Corbusier, with whom both Gray and Badovici had a somewhat tortured relationship, later built a cabin and a hostel next door. (Roquebrune is where Le Corbusier died while swimming in the sea.) Corbusier had even painted a series of wall murals (1937-1939) at E.1027. Although influenced by and an admirer of Corbusier's work, Gray disagreed with much of his rhetoric, stating: "A house is not a machine to live in. It is the shell of man, his extension, his release, his spiritual emanation."

E.1027 is rapidly deteriorating, having been inhabited by vagrants since the last owner was murdered there by his gardener. Manhattan gallery owner Sandra Gering has formed a committee called Friends of E.1027 to aid the French government in the purchase, refurbishment, and maintenance of the house as a public museum. The group will host a fundraiser on May 24 in New York City. For information, call Samuel Ong at (212) 327-3160 or E-mail sam@forwardmiller.com. *Susanna Sirefman*

New York City-based architect Susanna Sirefman is the author of New York: A Guide to Recent Architecture (Ellipsis, 1997).

AWARD

RIBA Honors Barcelona

First City to Receive Gold Medal

The jury of this year's Royal Institute of British Architects (RIBA) Gold Medal for Architecture has made the unprecedented decision to recognize the urban renewal efforts of the entire city of Barcelona, Spain, as opposed to the works of an individual architect. Although the award effectively celebrates citywide strategy, the jury singled out the ambition and leadership of five individuals: Narcis Serra, mayor in 1979 when these efforts began; Pasqual Maragall, mayor from 1982-1997; Joan Clos i Matheu, the city's current mayor; and Josep Acebillo and Oriol Bohigas, architect-urban planners who have worked in various capacities for the city over the past two decades.

While by no means an exclusive list, the award embodies such projects as Richard Meier's Museum of Contemporary Arts (1995), the Collserola Telecommunications Tower (1992) by Foster and Partners, the Olympic Stadium and Village (1992) that incorporates Enric Miralles and Carmé Pinos's Archery Facilities, and many lesser-known parks and squares. RIBA President and jury chairman David Rock will present the award to the five politicians as a gift of Queen Elizabeth II from RIBA on June 23 in London. He says that the award is "about the significance of a client body so knowledgeable about, and appreciative of, architecture and urbanism, about a series of mayors driving through an agreed long-term program." *Marie Coupland*



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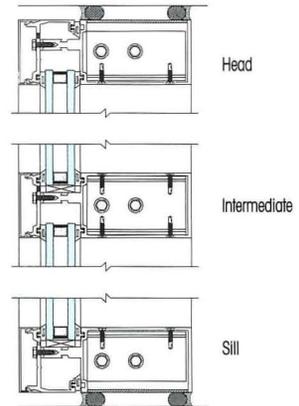
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Ye who suffer sweaty palms and queasy stomachs just waiting to board your plane, beware! A new installation at the Philadelphia International Airport may send you running for an airsick bag. Brooklyn, New York-based artist and architect Vito Acconci has "loosened" the floors of the airport's main ticketing pavilion, sending terra firma in whimsical swooping arcs that connect the terminal's levels and create clever seating nooks and small gardens. Painted steel, terrazzo, and carpet finishes complete the ruse. *M.J.O*



Let Freedom Ring

A new proposal by a Philadelphia architect could bring a dusty icon of the City of Brotherly Love into the 21st century. Alan Johnson, 56, principal of the firm Alley Friends, has designed a 1:120 scale model of a 200-foot-tall, 200-foot-diameter inflatable replica of the Liberty Bell he would like to erect as part of Philadelphia's New Year's Eve 2000 celebration. He envisions the 1-inch-thick steel cable-stayed, polyester-reinforced vinyl shell to be used as a shelter and projection screen. The natural question is: Why? Why not, says Johnson, who likens his self-described "goofy" idea to that famous ball in New York City's Times Square. "Who thought of that?" he asks.

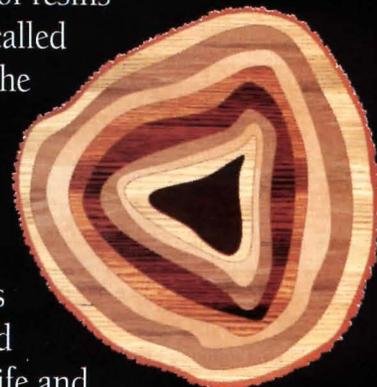
Johnson estimates a \$1 million price tag, mostly due to the air-exchange technology necessary to fill the bell with 3 million cubic feet of air at a rate of 25,000 cubic feet per minute. The architect is approaching interested corporate sponsors. (It screams Goodyear!) Amy Needle, director of Millennium Philadelphia, the city agency that oversees the festivities, acknowledges that the city probably doesn't have the budget for the bell at this late date, but would love to see it incorporated in some way. "Sure, why not?" she avers. "I think people would get a big kick out of it." *M.J.O.*

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Buzz

Renovations of a racy sort are taking place at Denver's last surviving bordello, the Victorian **House of Mirrors** (1890). After the restoration, the building will reopen as an upscale restaurant called **Mattie's**—an homage to the former madam of the house.

The American Society of Landscape Architects has unveiled their "100 Parks, 100 Years" program, which will underwrite the beautification of 100 public spaces nationwide including inner-city parks, public gardens, playgrounds, and waterfront areas.

Media mogul **Ted Turner**, the **Heinz Endowments**, the **James Irvine Foundation**, the **John D. and Catherine T. MacArthur Foundation**, and the **Joyce Foundation** have founded **The Sprawl Watch Clearinghouse** (www.sprawlwatch.org), an information and advisory organization that will advocate measured urban growth.

After resolving a series of embarrassing health, fire, security, and safety violations at the U.S. Capitol in Washington, D.C., the **Architect of the Capitol's** office is again under scrutiny, this time because of the discovery of a potentially dangerous mold found eating through the walls of the new Senate Day Care Center that was scheduled to open this spring.

The latest "cultural monument" planned for Las Vegas will be **The Boat**, a 1,000-room hotel-casino with a luxury liner theme. Architect **Don Stoecklein** and developer **MRA Corporation** created a 700,000-square-foot, \$30 million building with the same dimensions as the *Titanic*.

Blair Kamin, architecture critic of the *Chicago Tribune*, has received the Pulitzer Prize for criticism for his writings about the redevelopment efforts on the *Chicago waterfront*.

Wilkes-Barre, Pennsylvania-based **Bohlin Cywynski Jackson** will design a 28,000-square-foot admissions building for **Trinity College** in Hartford, Connecticut. In addition to a new performing arts center for Trinity, New York City's **Weiss/Manfredi Architects** is hard at work on an arts center for Northampton, Massachusetts-based **Smith College** and an addition and renovation to the business school at **Columbia University** in New York City.

Hardy Holzman Pfeiffer Associates is designing an administration building at **California State University at Northridge** and is renovating Los Angeles's **Griffith Observatory**.

Wendy Evans Joseph, formerly a senior designer at **Pei Cobb Freed & Partners**, where she worked on Washington, D.C.'s **United States Holocaust Memorial Museum**, will design **The Women's Museum** in Dallas, the first official millennium project of the United States.

The Alpha Phi Alpha Fraternity has announced that they plan to spearhead a campaign for a national memorial to Dr. Martin Luther King, Jr., in Washington, D.C. See www.mlkmemorial.org for details.

The shortlist to design a \$80 million expansion and renovation of the **Nelson-Atkins Museum of Art** in Kansas City, Missouri, comprises Osaka, Japan's **Tadao Ando & Associates**, Zurich, Switzerland-based **Gigon + Guyer Architects**, New York City's **Steven Holl Architects**, Carlos Jimenez **Studio** of Houston, Boston's **Machado and Silvetti Associates**, and Paris-based **Christian de Portzamparc**. The museum will announce the winner in July.

OBITUARY: Sydney Lewis, 79, cofounder of **Best Products**, who commissioned **SITE** and **Venturi, Rauch & Scott Brown** to design the seminal big-box retail outlets.

THE LIST

Century's Top 10 Construction Feats

At the annual CONEXPO-CONAGG meeting in March in Las Vegas, more than 400 construction officials named the top 10 building achievements of the 20th century.

- 1** The Channel Tunnel, between Dover, England, and Calais, France
- 2** The Golden Gate Bridge, San Francisco
- 3** The U.S. Interstate Highway System
- 4** The Empire State Building, New York City
- 5** Hoover Dam, Nevada and Arizona
- 6** The Panama Canal, Panama
- 7** Sydney Opera House, Sydney, Australia
- 8** Aswan High Dam, Egypt
- 9** The World Trade Center, New York City
- 10** Chek Lap Kok Airport, Hong Kong

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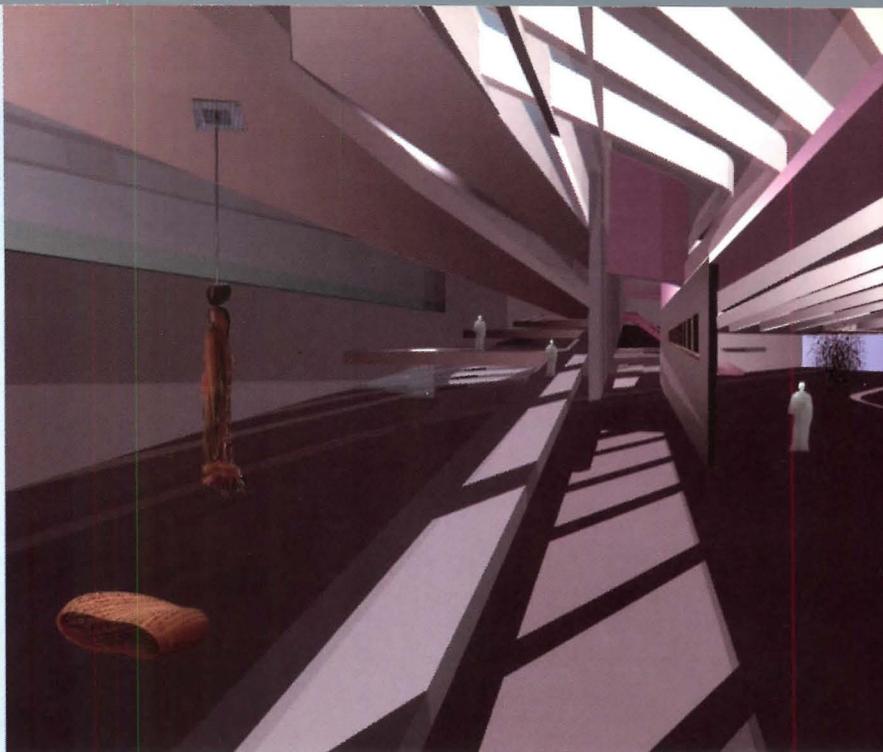


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Hadid Says, "Ciao, Italia"



Zaha M. Hadid, Center for Contemporary Art, Rome

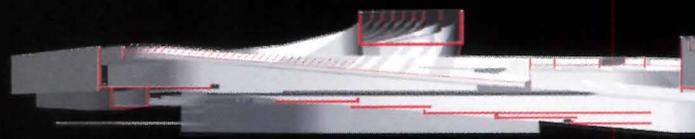
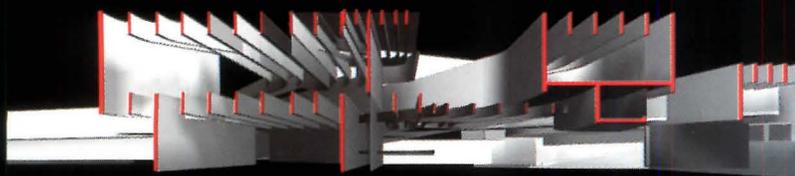
After a spell of stop-and-go-and-stop-again projects, Zaha Hadid seems to have finally shaken the curse. Her office is flush with work, having recently completed a garden center in Germany, a pedestrian bridge at the University of North London, and designs for several forthcoming projects in the Middle East. Continuing this streak, in February, Hadid beat out notables Steven Holl, Toyo Ito, Rem Koolhaas, and Jean Nouvel to design a significant new addition to Rome's Center for Contemporary Art. While her nearly 280,000-square-foot, three-story scheme can't exactly be called contextually sensitive, it does look to its site—the Flaminio area of northern Rome—for its forms.

Across the Tiber River to the north of Flaminio is a grouping of stadiums—including one designed by Pier Luigi Nervi for the 1960 Olympic Games. To the south lie such major tourist destinations as the Colosseum, the

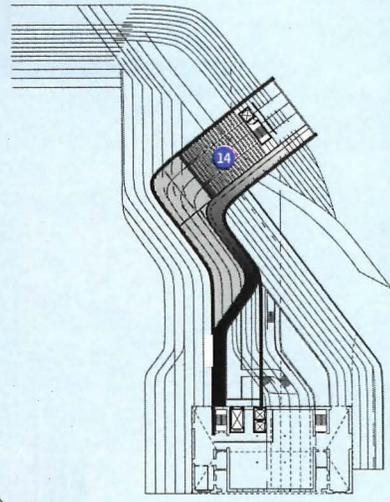
Palatine Hill, and the Forum. Populating the site itself is a series of turn-of-the-century industrial sheds that the Italian military uses as barracks. The buildings' siting allows for a public promenade through the museum, which completes this dominant north-south axis.

Two barracklike buildings at the site's eastern and southern edges—the current home of the museum—will remain. Hadid will retrofit their workaday blocks in deconstructivist finery: pitched glass roofs, cantilevered stories, and extensive interior reprogramming for the museum's administrative functions. The new building will snake through the remainder of the site, housing the daylight temporary and collection gallery spaces that flow into one another. Sinuous elevated walkways and sloping ramps connect the galleries with the complex's new freestanding elements that house an architecture center, archives, and a gift shop.

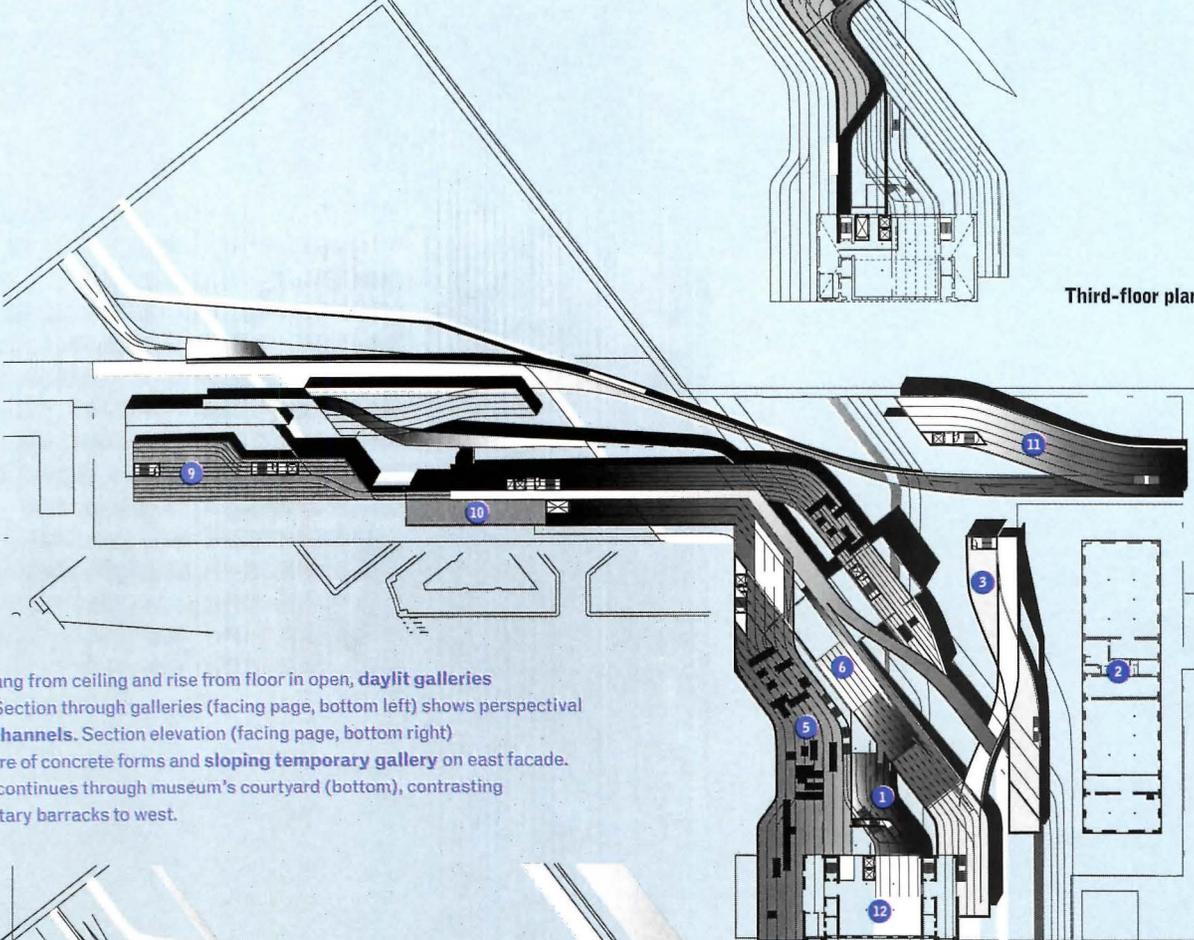
While specific materials decisions have yet to be made, Hadid staffers suggest that the Center for Contemporary Art will probably be a composition in concrete and glass. But they also envision incorporating new technologies like projection screens as exterior cladding. Inside, concrete channels will hang from the varied-height ceilings to force the galleries' serpentine perspectives. The architect has suggested using flexible gallery dividers—some hang from the ceiling channels, others grow from the floor—to customize the spaces as needed. Working with an \$80 million budget, Hadid will begin the first of three construction phases, which will gradually transform the museum from its current condition to the design depicted here, next year. The museum hopes to stage its debut in 2005. *Michael J. O'Connor*



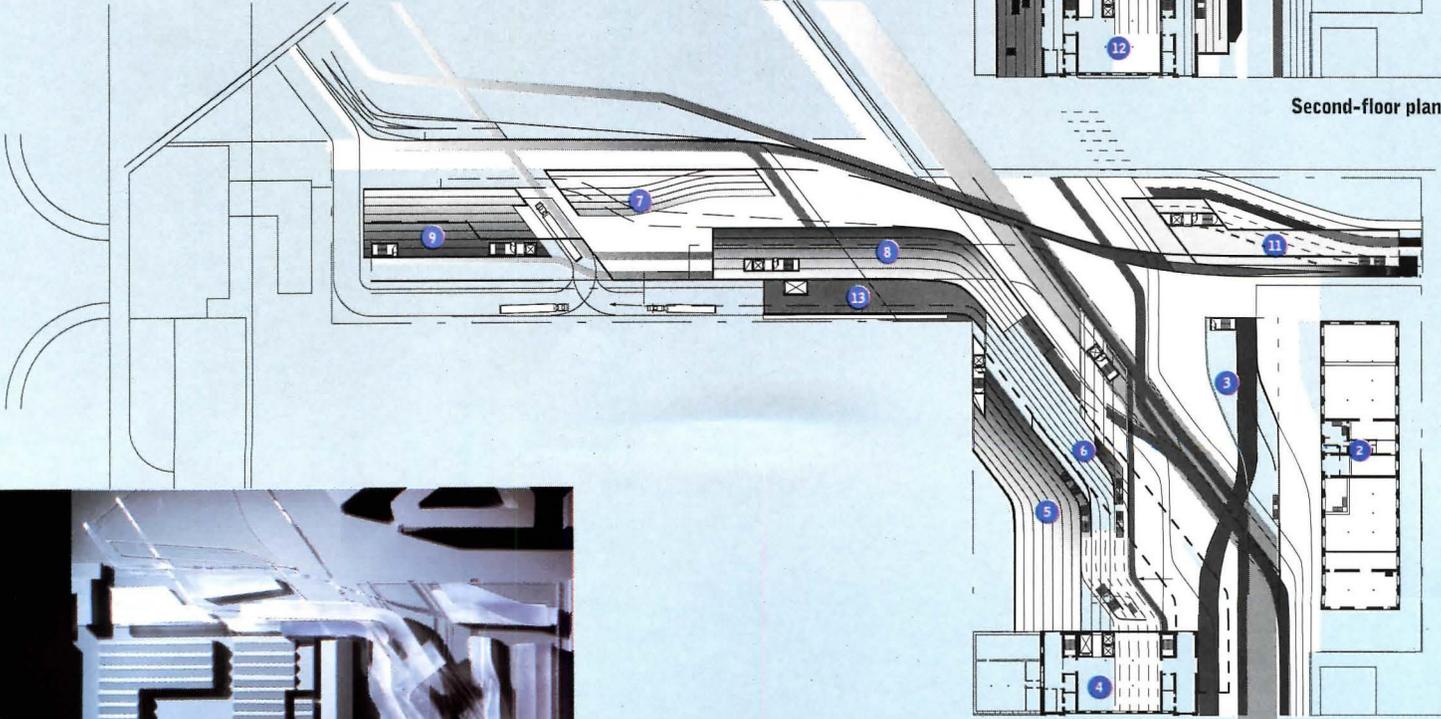
- 1 entrance
- 2 offices
- 3 gift shop
- 4 café
- 5 collection gallery
- 6 temporary gallery
- 7 independent gallery
- 8 experimental gallery
- 9 library
- 10 conservation
- 11 architecture center
- 12 multimedia
- 13 art handling
- 14 auditorium



Third-floor plan

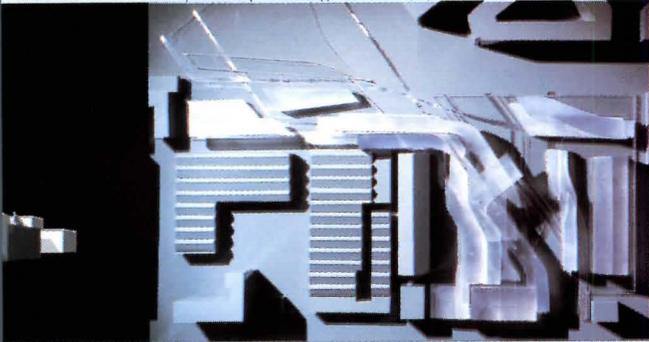


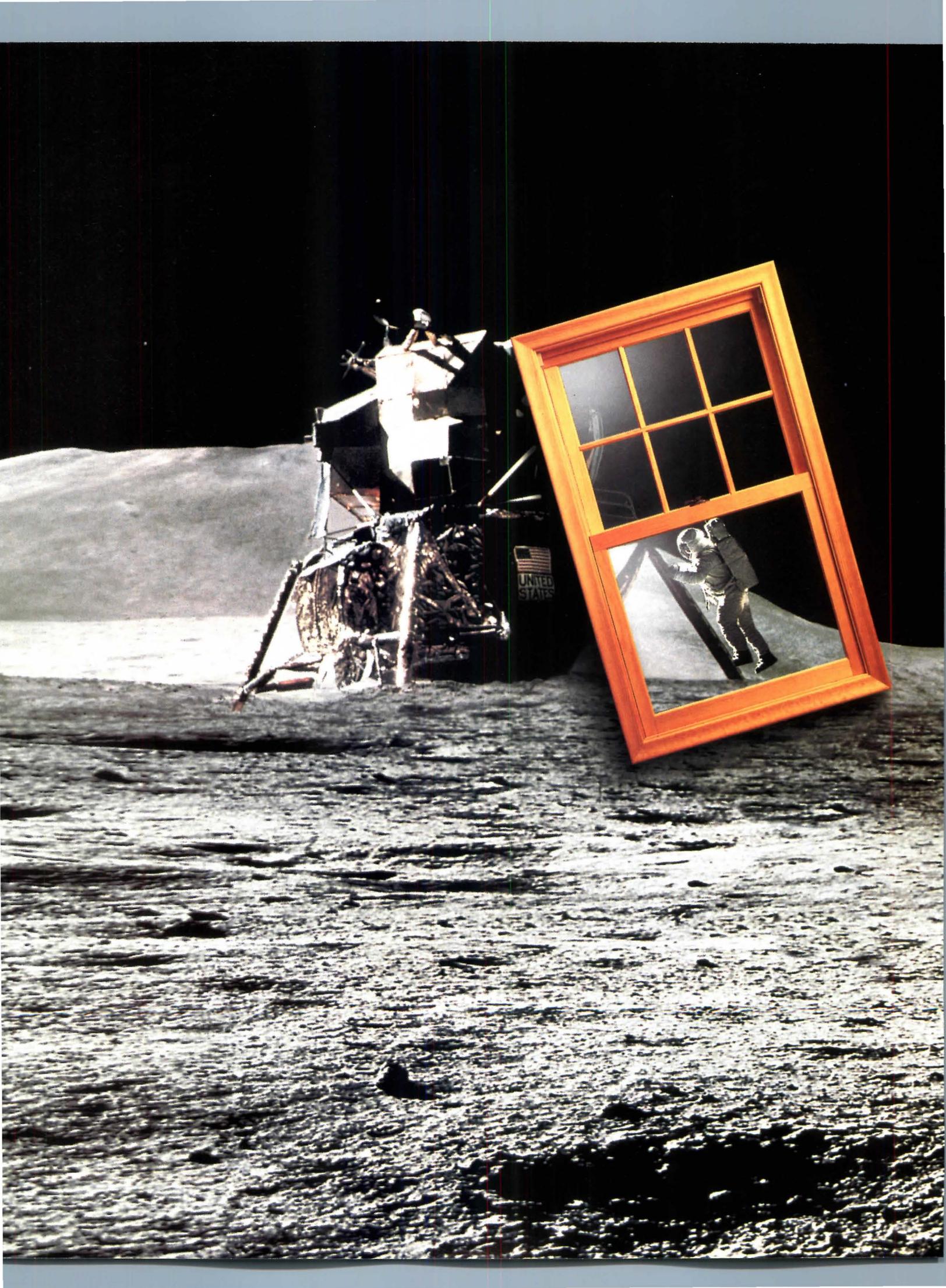
Second-floor plan



First-floor plan 1" = 66'/20m

Movable dividers hang from ceiling and rise from floor in open, **daylit galleries** (facing page, top). Section through galleries (facing page, bottom left) shows perspectival interest of **ceiling channels**. Section elevation (facing page, bottom right) reveals curved nature of concrete forms and **sloping temporary gallery** on east facade. **North-south axis** continues through museum's courtyard (bottom), contrasting with rectilinear military barracks to west.







The Architectural Urge

In his new book, art historian George Hersey explains the birds and the bees of architecture.

Review by Ned Cramer

The Monumental Impulse: Architecture's Biological Roots
by George Hersey (MIT Press)

Architecture, these days, is all about science. A decade ago it was French literary theory, and who knows where it will be in as many years from now, but today it's physics and biology and mathematics. The most cutting edge of cutting-edge architects—Steven Holl, Sulan Kolatan and Bill MacDonald, and Greg Lynn among them—are turning to the intricacies of chaos theory and other principles to inform the way they make architecture. Graduate-school pin-ups are full of schemes derived from Möbius strips and fractals. And writers and thinkers about architecture are backing these deeds up with words, among them George Hersey, author of *The Monumental Impulse: Architecture's Biological Roots*. While biology is as good a place as any to look for the intellectual juice that helps architects do what they do, and helps critics explain what they have done, it's doubtful that this thought-provoking but inconsistent new book will prove seminal to architecture's budding scientific set.

Hersey asserts that mankind shares a collective "urge to build." There's nothing threatening in this: Some of the greatest scholars of the modern age, such as anthropologist James Frazer, psychologist Carl Jung, and philosopher Friedrich Nietzsche spent lifetimes asserting humanity's predisposition to one thing or another—sex, religion, power. It's explaining why mankind feels an urge to build that's the tricky part. For Hersey it's in the genes, and even though he acknowledges the uncertainty of this theory, throughout *The Monumental Impulse* he relies upon the possibility nonetheless. In the absence

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of laboratory research to back up this genetic hypothesis, he demands quite a leap of faith, especially given his background: Hersey is a professor of art at Yale University, not a geneticist.

As the author develops his argument in scale from single cells to mammalian reproduction, he demands suspension of disbelief again and again. Egyptian hypostyle halls, he notes, have a plan diagram sim-

While the discussions Hersey does conduct under the umbrella of biology and architecture are often extremely interesting, the author's excursionary approach is tenuous.

ilar to the molecular distribution of a liquid colloidal solution of silver bromide. Never mind that the Egyptians had no microscopes. "That is not the point," Hersey insists. "What is important is that this is how we are all made." Does a genetic predisposition to build—assuming we have one—necessarily entail a familiarity with molecular structures?

Some of the author's assumptions are even more tenuous given his scattershot approach to the subject of biology and architecture: Hersey leaps from genetic coding, to the serendipitous formal relationship between honeycombs and a hexagonally coffered dome by Giovanni Lorenzo Bernini, to the psychology of obelisks as phallic symbols. Some of these discussions seem self-evident, underdevel-

oped, or unrelated, but even so, many of them are fascinating in their own right. In discussing the accurate botanical terminology for the foliage on Corinthian capitals, for instance, Hersey notes that Mark the Evangelist says Christ's crown of thorns is made of acanthus branches: "Thus do a capital's botanical aspects suggest further sacred meanings for it."

In the concluding paragraph of *The Monumental Impulse*, Hersey himself seems to acknowledge this quandary:

The discussion has illuminated a long and, I hope, fascinating drama of encounters, enactments, fusions, and correspondences between biology and architecture. It is as if our subject were a huge unvisited museum, its exhibits all set up but unlighted. I have shone a flashlight here and there in some of the galleries, indicating the vastness of the collections. But for now, just knowing that they all exist, waiting to be studied, has to be enough.

The Monumental Impulse is far from a comprehensive survey of its topic. And while the discussions Hersey does conduct under the umbrella of biology and architecture are often extremely interesting, the author's excursionary approach is tenuous—making the commitment of Frazer's *The Golden Bough*, which ran to a colossal 12 volumes, or even the bravura of Sigfried Gideon's authoritarian *Space, Time and Architecture*, seem appealing by comparison. It's a shame that Hersey's own impulse wasn't quite monumental enough to finish the job. ■



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The G-Man

Mark Robbins, the National Endowment for the Arts' new design director, discusses the state of design in America, and what he plans to do about it. Interview by Bradford McKee

Through little fault of its own, the National Endowment for the Arts (NEA) has attained a reputation in recent years for being retrograde—at least compared with the arts ministries of governments that really take their culture seriously. But say what you will about this chaste new era, the beleaguered arts endowment has made an intellectual leap forward with the appointment of Mark Robbins as its new director of design.

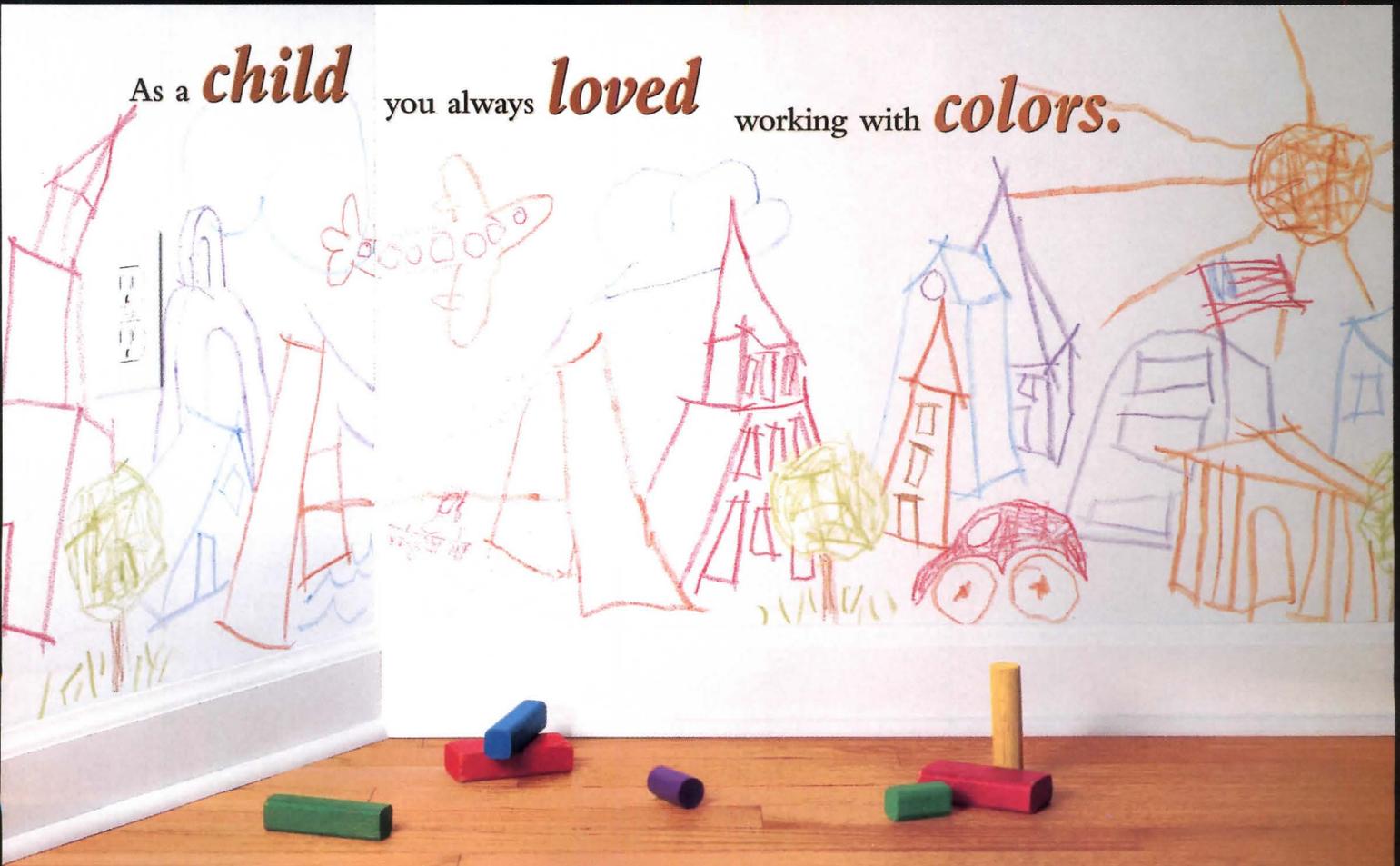
*It's easy to see why the NEA would recruit Robbins, an architect and artist who previously worked as curator of architecture at the Wexner Center for the Arts in Columbus, Ohio. There he mounted such piquant exhibitions as *On the Table*, which used tables from the 19th- and 20th centuries to comment on American modernism, and *Fabrications*, a show of four full-scale architectural installations that had simultaneous counterparts in New York City and San Francisco (Architecture, March 1998, pages 44-45). But it's less obvious why Robbins would want to leave a sophisticated boutique institution like the Wexner—a place seemingly devoted to thought as much as to exposition—for the NEA, which, thanks to Congressional restrictions on the grant-making process, many “serious” artists have reflexively come to regard as a populist backwater.*



Robbins' 1994
Borrowed Landscape
installation (detail,
left) at Museum of
Modern Art in Saitama,
Japan, examined
relationship between
Japanese and
Western culture.

PHOTO COURTESY OF MUSEUM OF MODERN ART, SAITAMA, JAPAN

As a **child** you always **loved** working with **colors**.



Having barely unpacked the boxes in his new office in downtown Washington, D.C., Robbins recently elaborated on his interest in serving the NEA and pushing an agenda for better design—from the ordinary to the outré—in this country.

BRADFORD MCKEE: Why did you want this job?

MARK ROBBINS: I view it as service. Not to sound like a Pollyanna, but this is really about giving something back. The first grant that I ever got was from the NEA in 1987, and that helped me do an installation project about cities that went on to The Clocktower Gallery in New York City and the Wexner Center. That's how I ended up as the curator there. What's remarkable about the NEA—the sums of money aren't always great and its funding has been cut a good deal over the past four years—is that the NEA imprimatur can really help.

I'm also really impressed with what this agency does. If I hadn't been on a review panel this past summer I might have a different opinion, but I was so impressed with the level of discussion. It was really lively, not the Hallmark Cards version of a design discussion.

Ten years ago, I would never have thought about myself as being in government. This wasn't what I thought about doing with my training in architecture or art or film. I was very happy at the Wexner Center, where my position combined curatorial work, teaching, and the ability to do my own work as a visual artist and architect. But this was an exciting opportunity. As designers, we generally feel that our profes-

sion is overlooked or misunderstood, doesn't even register in the national consciousness. I thought that there might be a possibility that through the NEA, design could have a higher national profile.

Given that you'll be working in all 50 states, are your efforts going to focus on local issues or are you planning to overlay a common discourse?

The Design Program really works in two streams: One is at the level of national initiatives and the other is through grants. One that I think is really wonderful is the Mayors' Institute for City Design, which acts as a clinic, putting policy makers together with resource people in design, landscape design, architecture, and urban sociology. This clinic, which might appear very simple to professionals, is a first step in helping mayors and policy makers come to grips with how design can be used to remake the public realm. The Mayors' Institute is not just an NEA project, it's now done in a consortium with the American Architectural Foundation.

One city that participated in the Mayors' Institute was Macon, Georgia. Through this process, the mayor decided to sponsor a competition to redesign the downtown, which is built on either side of a long planted boulevard. Walter Hood, an architect and landscape architect in Berkeley, California, got the commission. So the Mayor's Institute not only helps mayors understand what urban design might do, these discussions create the basis for projects that actually happen.

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Robbins' 1996
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Another corollary program is called Your Town—the rural equivalent to the Mayors' Institute for City Design. Your Town, which is done in partnership with the National Trust, works with smaller towns. And in these several-day sessions, issues that are pertinent to small towns are discussed: what to do to keep your downtown alive when a regional mall moves in, or ways of preserving rural landscapes while not deterring development.

Those are two very good programs that have national scope. There are other leadership initiatives as well. For instance, the NEA works with the General Services Administration (GSA) on the Federal Design Improvement Program. That's something that [GSA Chief Architect] Ed Feiner has been working on for some years—to try to change the quality of design associated with federal projects. Some of the most interesting design in the country was done under federal sponsorship. Not just buildings—the great post offices from the 1930s—it's also the Tennessee Valley Authority; it's Hoover Dam. Ed's intention vis-à-vis what design can do in the federal realm is really to be applauded. Another program started by the NEA and now done in collaboration with the GSA is the Presidential Design Awards. I'd like to see some other national initiatives put into place.

Who do the grants go to?

Grants can no longer go to individuals. They're for organizations. As the head of design, I'm committed to graphic design, landscape

design, interior design, architecture, industrial design, product design, and fashion. This is a very wide scope, so about two months before I actually started here I sent out a note to people involved in these disciplines, saying, "Hi, we're on board. The first design deadline is March 29. Please consider applying." In this first year, I'm going to be talking to anybody who will listen. I hope to speak in every region in the country and let professionals and people affiliated with universities know that design is once again a thriving part of the agency and that I'd like to see greater activity. This position has been vacant for about two years, so I need to get the word out.

What portion of the grant budget is dedicated to design?

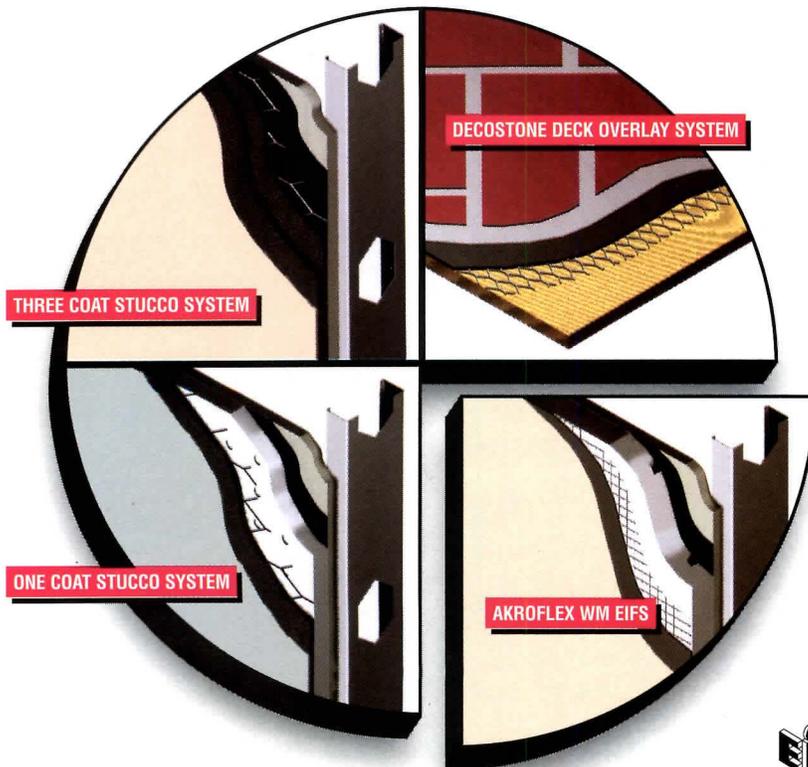
We're never quite sure what our budget is going to be, but we work very hard to make sure that there's an equality of representation of all the disciplines that are represented by the agency. So design has a place at the table that's as strong as music or visual arts or dance.

In recent years the NEA's been in the doghouse on Capitol Hill.

What's the feeling around here? Is this a probationary period? Will the budget go back up if the NEA is a good kid?

I'm definitely too new in Washington to predict. Hopefully the budgets will grow. There seems to be a great deal of optimism and a moderate political climate that I hope will assist the NEA's growth. We're working to assist cultural production at so many levels, not just at

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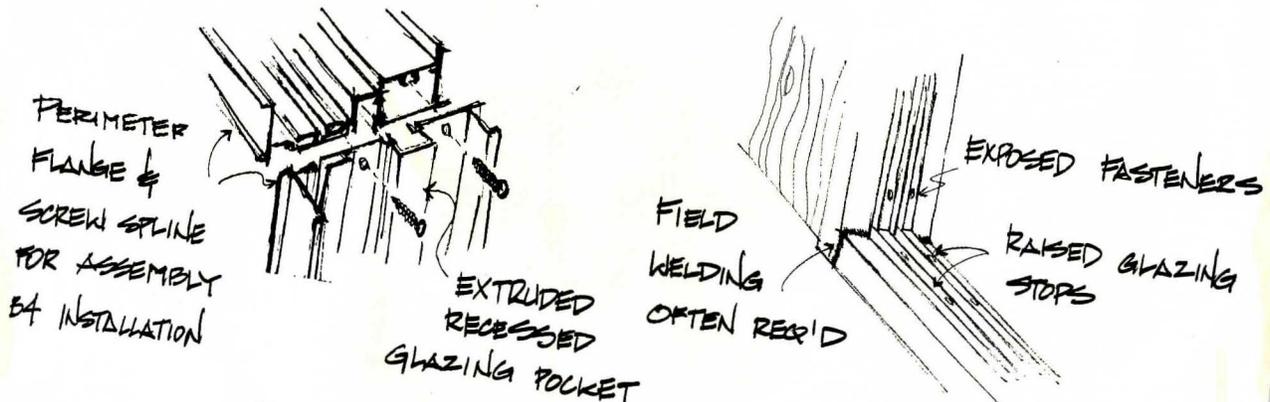
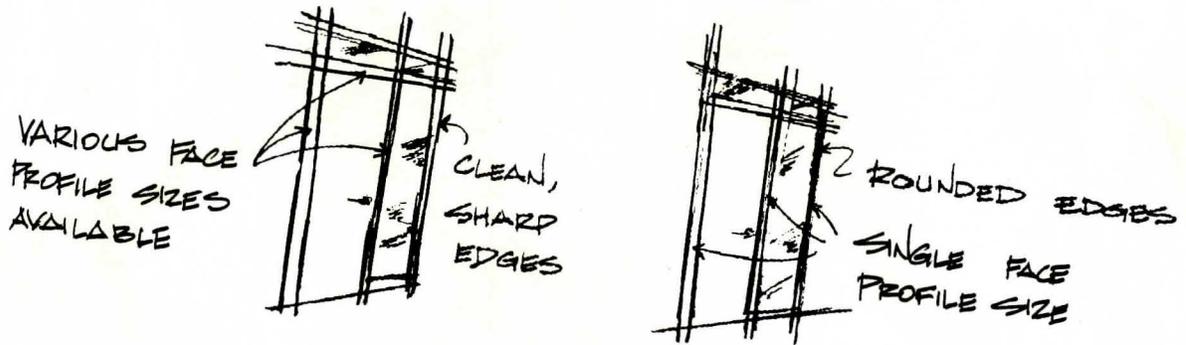
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a rarefied level. It's really across the board, and I wish more people were aware of that. I don't know how many people actually read the fine print on the bottom of programs and panels in museums. They'll find "National Endowment for the Arts" in the majority of those places.

What are your feelings about moving from a boutique organization like the Wexner to this bureaucracy?

There's always a level of adjustment when you move from one institutional culture to another. It's been said that art and government are fundamentally incompatible. But there's a sense even within government that the NEA is fairly exceptional—that things do get done.

What do you want to achieve while in this position?

This is a wish list. I would like to find a way, possibly through competitions, to really up the ante on design in the public realm—and that has to do with landscape and architecture as well as graphic design. Perhaps we could get more aggressive in funding competitions if somebody wanted to do a town hall in a small town. And I'd also like to focus on landscape, to think about ways of reusing rights of way, to use bits of land that are thought of as waste: next to highways, old canal beds, unused defense plants. I don't know that anyone has really rethought how the strip or commercial development can happen in ways that don't deny the pedestrian, completely privilege the car, and continue to use vast amounts of infrastructure. Most of us inhabit that

in-between that isn't the historical center. And so I'd like to think about that environment as a place. How do you mark place there?

With Michael Graves designing for Target, do you have any sense that sophisticated design is becoming more mainstream?

It's difficult to talk of sophisticated or unsophisticated design. Good design resonates like good art. So rather than think about the notion of taste, which we can never legislate, I'd like to think about ways in which design can actually change the way we live. So when somebody designs a kitchen or a bathroom, it's not about how expensive the materials are but about changing our view of these activities.

We can't go to Target or K-Mart and say, "Why don't you try Karim Rashid?" But Karim can get one of his tables in the Wexner and explain his design process. Karim is a young and energetic designer who has been able to get Nambé, for instance, to retool its plants so that they could produce a series of remarkable objects. Or his Garbo plastic garbage can for Umbra—it was a kick to walk through Staples when I was buying boxes to make this move and to see this designed piece that was only \$19.95. So good design doesn't remain out of most people's reach. Ikea is remarkable—this sociological mix of races, classes. It's not an American native, though. So far, Target's production is more interesting at their ad campaign level than their product level. Probably because of my training as a modernist, this notion of bringing good design to a mass audience is very appealing. ■

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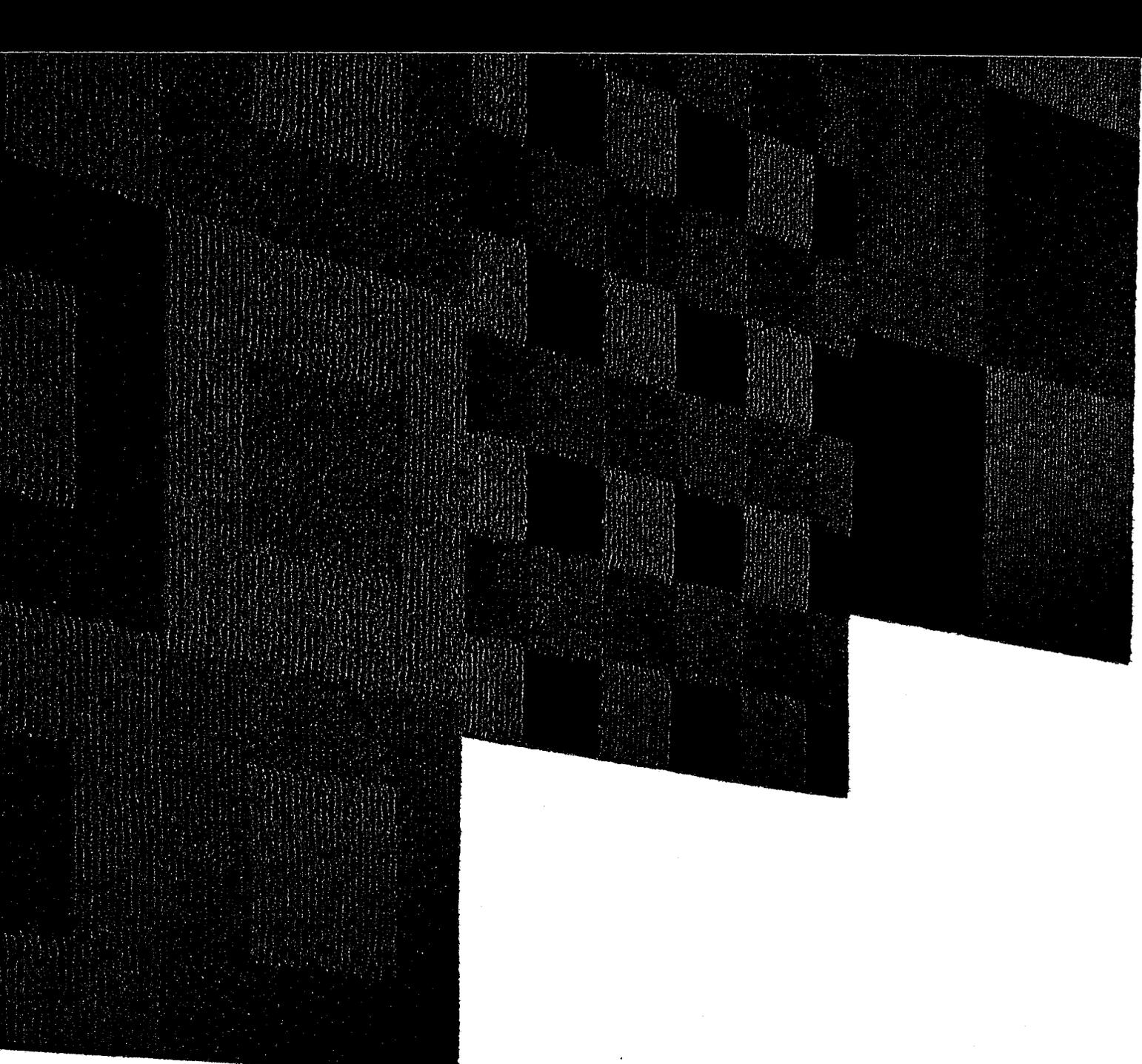
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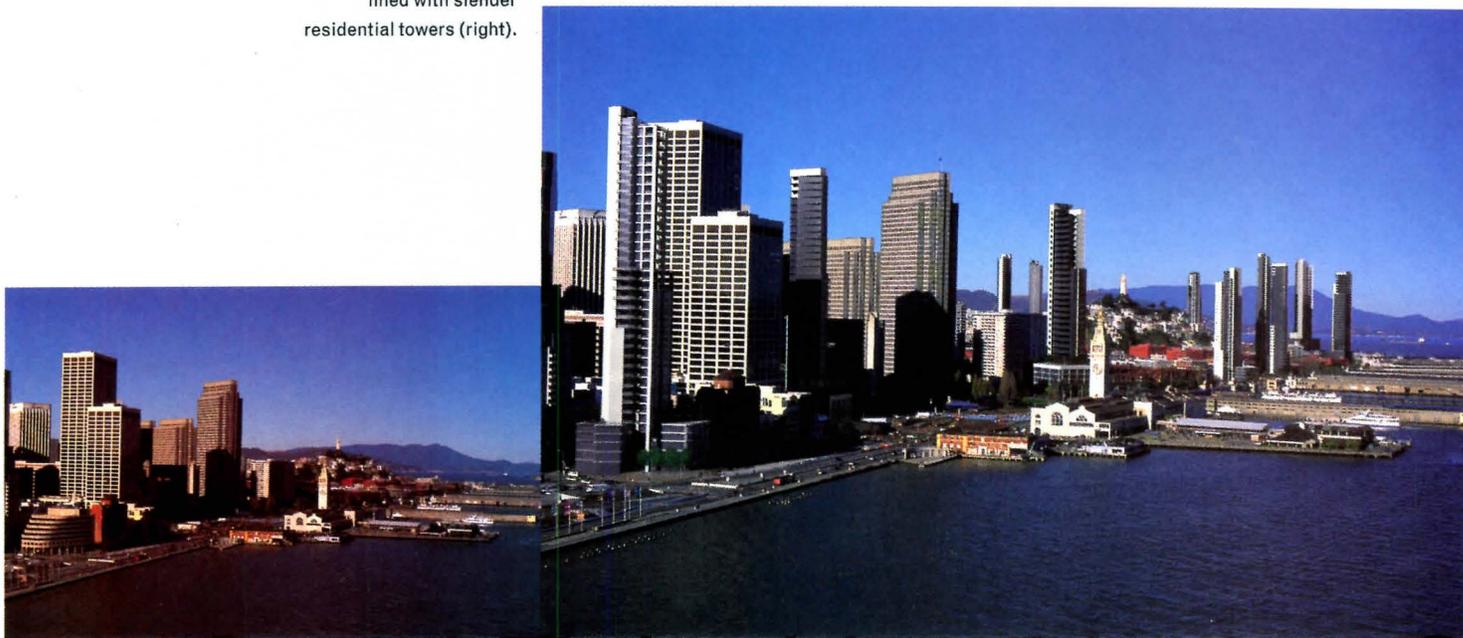
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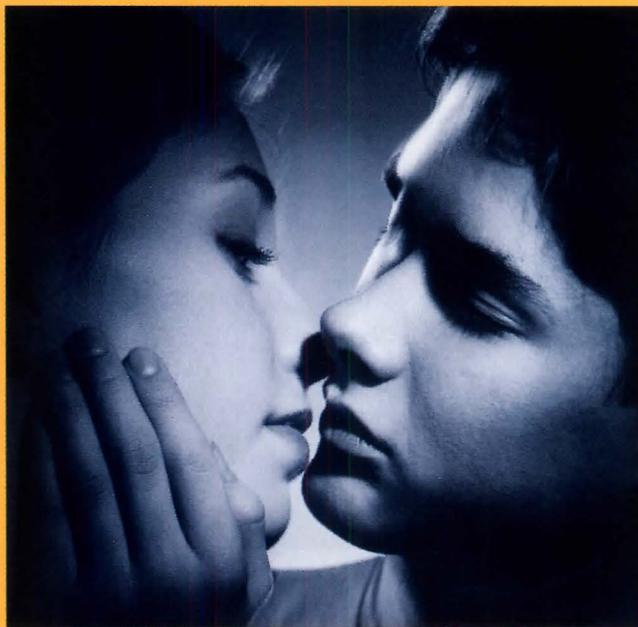
Why the United States needs more skyscrapers. By Aaron Betsky

The future of the American city might be in Canada. Vancouver has emerged as an example of a metropolis that literally stands tall in the face of the twin threats of congestion and sprawl that have engulfed most American Gothams. In response to a demand for housing that pushed development further away from the city center while strangling downtown in traffic and various restrictions on new construction, Vancouver has for the last two decades encouraged the emergence of a forest of slender residential skyscrapers on the edges of its inner city. Today these towers stand as a model, if not of great architecture, then of good urbanism. We might be able to apply their soaring lesson to situations from San Francisco to New York City.

"We learned from Americans' mistakes in Seattle and San Francisco," says Vancouver City Councillor Gordon Price. "In your desire to preserve what you had, you forgot how residential high-rises can make a neighborhood vital. You wound up losing a tradition of elegant urban living in favor of endless suburbs." Vancouver saw outlying neighborhoods fighting with developers over how much density to put in these low-rise areas. Meanwhile, downtown lacked such basic amenities as supermarkets and waterfront esplanades, so its politicians started working with developers to build dense urban neighborhoods at the heart of the city. "You get the developers to pay

fees for infrastructure improvements up front, and you mandate a human-scaled base of retail, with no parking garages above grade," says Price of the basic rules Vancouver developed. "Then you allow slender high-rises above these plinths. You space them at least 200 feet apart for privacy and place them so as to preserve and enhance views out to the water and the mountains beyond the city." The result is False Creek, a neighborhood whose liveliness depends as much on the presence of supermarkets (which, as Price points out, each need 13,000 people within easy walking distance to make economic sense) as it does on the revitalized mass transit and waterfront walkways development fees have made possible. False Creek also makes Vancouver look like a city: Its mass of spires defines the urban edge and formally responds to the mountain peaks around this Pacific Northwest metropolis.

"We can do the same thing in San Francisco," says urban designer and former member of the city planning staff Evan Rose (this issue, pages 120-121). "We can use tall buildings to highlight the city, to create a sense of hierarchy and order in our landscape." What is even more important, Rose points out, is that San Francisco needs to build a lot more housing: "We are facing a huge affordability crisis. Not even middle income families can afford to live here." In a city where the



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average price of a home is above \$250,000, developers can barely build any new housing because of height limits, strict zoning regulations, and strong neighborhood opposition. Their only loophole is the construction of "live-work" lofts. Intended for artists, these blocky, virtually light- and airless behemoths are now becoming housing barracks for the young who flock to this Pacific Rim boomtown. Over 2,000 units are currently under construction, turning large areas of "Baghdad by the Bay" into a mush of closely packed stucco boxes.

The current director of San Francisco's city planning department, Gerald Green, agrees that residential high-rises might provide an answer: "It would let us build some affordable housing in the city and take pressure off the market. It would also

In San Francisco, developers can barely build any new housing because of height limits, strict zoning regulations, and strong neighborhood opposition.

pay for all of the transit improvements we need to make so that people can live and work downtown."

"It's a family values issue," says Rose. "It's about making dense and vibrant neighborhoods, investment in infrastructure, and sustainable development." The last point presupposes that inner city high-rises would replace the spread of cities like San Francisco into the far reaches of their surrounding regions. Sprawl, as it is currently practiced, wastes land, time, and natural resources. The number of car trips Bay Area residents take are growing at a rate of 10% every five years, and most of its roads are already hopelessly congested. Many commuters now drive in from the Central Valley, almost two hours from San Francisco, every day. That pattern is repeated in cities everywhere: new developments in Tucson, Arizona, and Las Vegas are eating up an acre of desert an hour.

At the same time, sprawl itself is becoming dense. "The cities with the least amount of density downtown have the most amount of density spread out overall," says University of Illinois at Chicago Professor of

Architectural History Bob Bruegman, who is writing a book on sprawl. "The density of Orange County, California, and Phoenix, Arizona, is just amazing." He points out that this pressure is already pushing those areas up in height as well. What were neighborhoods of one-story, single-family homes are now becoming blocks of three- to five-story apartment and condominium buildings. "Such density and height could be a good thing, if it

were carefully controlled," he concludes. "Sprawl may be a good thing, if it is done well."

New York City-based architect Steven Holl, in a 1990 series of proposals for cities such as Dallas and Phoenix, has suggested "edge of the city" buildings that would condense sprawl into man-made spirals and mountain ridges of roughly 10 to 40 stories. Suburbia may not acquire such crystalline moments of high architecture (in both senses



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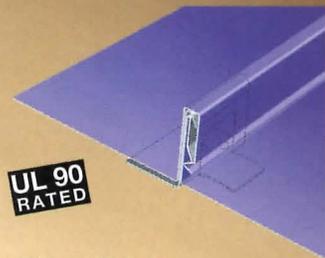
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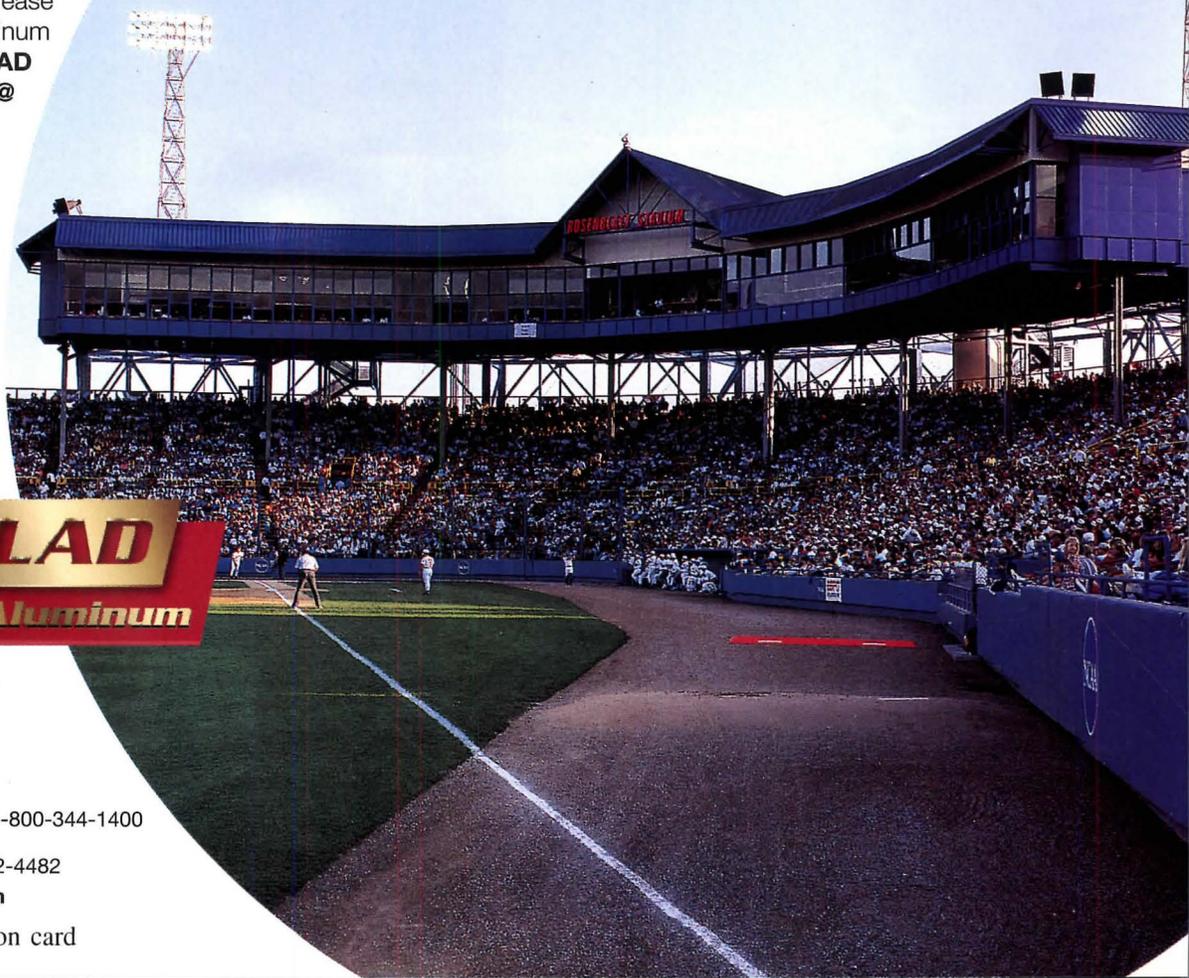
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of the phrase). But it is certain that residential versions of the office building clusters that journalist Joel Garreau calls "Edge City crystals" are sprouting at freeway intersections across the United States.

"The problem with all of this is that it will be mid-level, mid-rise, mid-quality," says *The New Yorker* architecture critic Paul Goldberger, who wrote a 1981 book titled *The Skyscraper*. "We're not interested in piercing the sky anymore. What we get instead is trickle-down modernism done by greedy devel-

Lars Lerup rhapsodizes about a city with towers where we could rise above the plain: "It would be very democratic."

opers." Though Goldberger dreams of skyscrapers in Queens, New York City, answering their historical cousins across the East River in Manhattan, he has little hope it will happen: "We have gone so far in our concern about urban fabric that we are missing the chance to make the city a living, active thing."

Perhaps this is only a problem for dense, traditional cities like New York City and San Francisco. In a recent article in *San Francisco* magazine, I called for residential high-rises, and it resulted in cries of outrage by citizens. They believed I was threatening the "Mediterranean character" of this century-old city. Newer cities, however, are already turning into what Lars Lerup, dean of the Rice University School of Architecture, calls "stim and dross": miles of mediocre sprawl with moments of high intensity where people and building mass come together. Lerup, who himself lives on the 29th floor of a residential high-rise in Houston, believes that "instead of ignoring the nature of the city, we should fictionalize it." He rhapsodizes about a city with towers "like the Copacabana" in Rio de Janeiro, Brazil, where we could rise above the plain: "It would be very democratic: Everybody would be able to see the landscape and come together in a few active places."

"I went back to Post Oak in Houston recently," agrees urban planner and dean of Harvard's Graduate School of Architecture and Design, Peter Rowe. "It seemed okay to me, a place of a great deal of activity, where you could look out over the landscape and understand it. It made me think that we

should do something like that with Harvard Square. Here's a place with a great deal of transportation infrastructure and a lot of people. We should move all that activity up into the air." Like most observers, Rowe is quick to point out the problems with residential high-rises: "You need good transportation first. You need to build in a sustainable way. You need to space out the buildings. Most importantly, you need to counter the American association of single-story, single-family homes with wealth and of residential high-rises with subsidized poverty."

The model Rowe proposes is a "lattice of nodes, links, and networks." Instead of one downtown with sprawl all around it, which wastes energy both in bringing goods and people to a single location and in then spreading them out over the landscape, he proposes linked points of intense development served by dense transportation systems. The land in between would then be open. It is a model that closely resembles what has historically grown in certain European countries, such as the "rim city" made up of Amsterdam, Rotterdam, The Hague, and Utrecht in the Netherlands. It is

an extrapolation of the hubs of road and railroad intersections that colonized much of the American midwest. It also resembles Broadacre City, Frank Lloyd Wright's often misunderstood 1935 model for the development of American suburbia.

What this model needs in order to work is one thing Vancouver has and most American cities, with the highly attractive exception of Portland, Oregon, do not: regional planning. When Bill Clinton first ran for president in 1992, he made such coordinated thinking about how and where we live, work, and use our resources a central part of his election platform, "People First." Those ideas disappeared as soon as he was elected. Now Vice President Al Gore is using the fight against sprawl as part of his campaign. His thinking is still, like that of most neighborhood groups, city planners, and New Urbanists, reactionary: It wants to simply stop growth. If politicians such as our vice president could become committed to a more thorough rethinking of how we can all have an affordable, exciting, and sustainable place to live, we might take the whole question of urban development to a higher plane. ■

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Miesian Therapy

Ludwig Mies van der Rohe's pivotal Tugendhat House in Brno, Czechoslovakia, took on an unexpected new identity under Communism.

By Peter Blake

In the summer of 1965, I spent some time in Prague, Czechoslovakia. One of my friends there, a woman architect called Jindra Richterova, suggested one day that we should drive to the town of Brno, in the general direction of Vienna, to try and find out what had happened to the famous Tugendhat House that Ludwig Mies van der Rohe had completed in 1930. I thought it was a great idea, so we got into her car and headed south.

Once we got to Brno, about two hours away, we realized that there would be a slight problem: The Tugendhat family had been driven out of their beautiful house and fled to South America during Nazi occupation. As for the Communist authorities in Brno, they claimed they had never heard of the house—or of the Tugendhat family. My friend and I decided to visit the local Chamber of Architects for help. They were evasive; modern architecture had been outlawed by Joseph Stalin, and Czechoslovakia, in those days, was even more Stalinist than the Soviet Union. They also said they had never heard of Mies, or of the house, or of the Tugendhat family.

Peter Blake interrupted **children exercising** in Tugendhat House's living area.

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It seemed to us that we might be able to reconstruct the location of the place from the memory of photographs—if the house had, in fact, survived the bombardments of World War II. We figured that the place had to be in a wealthy, suburban part of Brno. Moreover, its site must have been quite hilly, since I recalled that its entrance was on the top floor, with two more floors stepping down the hill toward a garden. Its famous garden facade was also probably not visible from the street.

So we started driving around the town's perimeter suburbs, looking for a flat-roofed, one-story pavilion along the street. After an hour or so we found exactly that: a flat-roofed, one-story pavilion, part stucco and part glass, with a curved entrance. Not in perfect condition—in fact, rather dilapidated—but unmistakably Tugendhat. We knocked at the door and were invited in by a teenager in a gym outfit. Jindra persuaded him to take us downstairs and introduce us to someone in charge.

The downstairs—the famous living area—was now rather barren, stripped of all the beautiful, original Mies furniture and curtains, the Lehmbruck sculpture, and the semicircular Macassar ebony screen that once embraced the original dining area. In lieu of those elegant fixtures, there were now about two dozen kids in gym outfits, stretched out on the floor doing push-up exercises. We introduced ourselves to the gentleman in charge, who was a physical therapist, and explained that we were architects who knew all about the house in which he and his teenagers occupied. Almost all, that is.

The therapist was most accommodating, and introduced us to his charges, who had never met an American before, or for that matter, an architect. He explained to us that the house had been turned by the authorities into a gymnasium to help rehabilitate disabled children, and the doctors in charge occupied the building's lowest floor, which was originally service quarters. The therapist was delighted to show us around, and we spent an hour or two looking at every part of the building: the beautiful onyx marble wall in what used to be the living room; the chromium-plated, cruciform columns; the elegant hardware on all the doors. Many interior details seemed in excellent condition, although the floor of the living area, which had originally been finished in white linoleum, was painted bright red. Much of the built-in cabinet work had been ripped out by the Nazis or their Soviet successors. As for the floor-to-ceiling, sliding glass walls, those had apparently been demolished during World War II, and replaced by smaller-scale fenestration. That, more than anything else, seemed a deplorable loss.

Our Czech guide, who was intrigued by what we told him about the original owners and their architect, allowed us to take photographs wherever we went. (That was hardly common then in Eastern Europe, and we were highly appreciative.) His English was excellent, and Jindra pitched in whenever he lost me, or I, him.

Several weeks later, after I returned to the United States, I went to see Mies in Chicago to show him my snapshots, many of them in color. Knowing that he was a perfectionist, I was a bit nervous about showing him what the Nazis and the Soviets had done to his beautiful pavilion. No need to worry: Mies looked at every one of my photos and slides, again and again, delighted to see the house was still standing. Then he looked up, smiling: "Given the political situation," he said, "I suppose they had to paint the linoleum red." ■

Architect Peter Blake is former editor of Architectural Forum and author of such books as God's Own Junkyard and No Place Like Utopia.

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ROSWELL

CHALLENGE/CHARGE

ROSWELL is an open ideas and architectural design competition.

ROSWELL's charge is the design of housing for Roswell, New Mexico, the renowned UFO and alien capital of the world.

The designer is asked to choose between local and foreign, contextual and strange, residential and transient, known and unknown, possible and impossible, classic and contemporary, conventional and avant-garde.

ROSWELL seeks down-to-earth housing and out-of-this-world housing, a place for immigration; a time for imagination.

JURY/JUDGE

The jury will be composed of residents and tourists in Roswell, New Mexico at the time of judging.

Judging proceedings will be held at the Roswell Museum and Art Center and Robert H. Goddard Planetarium in Roswell, New Mexico and shall be open to the public.

The jury will hear arguments and presentations by the Advocates and Critics regarding works submitted by all registrants. Final jury deliberations shall be closed.

The jury will be unpaid.

The presiding judge will be a neutral dispute resolution professional. The presiding judge is Anonymous.

ADVOCATES/CRITICS

The Advocates consist of:

- Barbara S. Solomon
- Dwight Atkinson
- Thom Wilkins
- James Scott O'Brien.

The Advocates will advocate Modernism and oppose the Critics.

The Critics consist of:

- Duo Dickinson
- David Rockwood
- John Bryant
- Michael Pinto.

The Critics will advocate the New Urbanism and oppose the Advocates.

The Critics and Advocates will be compensated as determined by the jury.

CALENDAR/DOCKET

Registration closes June 30, 1999

Submissions due posted September 20, 1999

Submissions due received September 30, 1999

Judgment proceedings October 6-10, 1999

Judgment proceedings coincide with the eastern New Mexico rodeo and parade to be held in Roswell.

Submissions in this competition need not be anonymous and may bear the mark of the designer.

An appeal, with costs borne by the appellant, may be filed after judgment proceedings.

The appellate judge is architect Arthur Erickson.

PRIZES/JUDGMENTS

Prizes will total between \$5,000 and \$25,000.

The jury alone will determine compensation for the authors and designers of the prevailing schemes as per the procedural rules laid out within the official ROSWELL competition book.

ROSWELL is neither rigged nor prejudged in any way, fashion, sense or manner whatsoever.

No offer of a commission is made by ROSWELL.

Odds of prevailing in ROSWELL are estimated at 1 in 150.

This offer void where prohibited by law.

REGISTRATION/FEE

Registration fee: \$50.

To register and to receive a limited edition copy of the ROSWELL competition book, please send name, address, phone number and registration fee to:

ROSWELL
c/o Court of Architecture
Box 281
Riverside, California
92502 USA

Credit cards are accepted

phone/fax: (323) 296-62

email: clerk@frank.org
<http://www.frank.org>

The judgment proceedings will be the subject of a live CBC radio documentary

HOUSING COMPETITION

Circle 104 on information card



Roche Dinkeloo's new NYU student center will trash an early modernist gem and compromise the university's town-gown sensitivity. By Michael J. O'Connor



Harrison and Abramovitz's Loeb Center (left) has **street-level activity** that windowless first story of Roche Dinkeloo's Kimmel Center (above) lacks.

This Center Cannot Hold

Although **New York University (NYU)** is a private institution, it has always been burdened with a quasipublic reputation owing to its cheek-by-jowl downtown Manhattan siting. In many cases, NYU has made sound architectural decisions in its historic Greenwich Village neighborhood. This is why the recently unveiled design for the new Helen and Martin Kimmel Center for University Life comes as such a shock. Perhaps most disappointing is the performance of the new building's architect—Kevin Roche John Dinkeloo and Associates.

Successor to Eero Saarinen's office, Roche Dinkeloo once designed innovative buildings like the Ford Foundation (1967)—the urbane Manhattan landmark that helped launch the atrium lobby boom of the 1970s—hailed by this magazine and many others as a model high-rise. Has their best output really been reduced to the level of the proposed student center? With a burgeoning resident population and untold off-campus and commuter students, it's clear that NYU needed to supplement Harrison and Abramovitz's Loeb Student Center (1959). After attempts to incorporate the existing Loeb into a new design, Principal Kevin Roche and the university decided to level the building this summer to make way for the 12-story Kimmel Center.

The Loeb is a formal relative of Skidmore, Owings & Merrill's Lever House (1952) uptown—with a catch. Defining the corner of La Guardia Place and Washington Square South is a similar scale-friendly composition of vertical glazed slab atop raised horizontal plinth. But attached to the west is a sculptural, brick-clad auditorium. Taken as a whole, the project looks like a collision of Mies and Corbu, yet it oddly but effectively paraphrases mid-century modernism.

Although the Kimmel Center will be the same height as the Loeb, it will balloon to nearly twice the square footage (210,000 in all), casting the southeast corner of Washington Square Park into darkness. Not that students will enjoy the benefits of the center's proximity to the park anyway. While Roche Dinkeloo seems to evoke its predecessor with a required setback and second-story terrace, it lacks the street-level activity of the Loeb, greeting passersby with blank granite walls and entrance canopies better suited to a suburban strip mall.

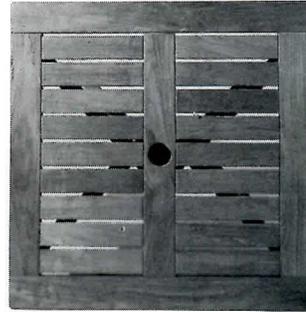
A fritted glass, McDonald's-style Mansard roof is a clumsy choice to crown the center's blandly fenestrated tower. Principal Kevin Roche claims that it minimizes the height of the tower, but in a building that's already twice as high as many of its neighbors (including McKim, Mead & White's Judson Memorial Baptist Church [1892] to the west and Philip Johnson and Richard Foster's Hagop Kevorkian Center for Near Eastern Studies [1972] to the east), do two transparent stories really matter? On the east facade's fourth and fifth floors, blind "windows" indicate a 700-seat auditorium housed within. Wisely, a 1,000-seat theater is relegated below grade to avoid other blank facades.

Admittedly, squeezing in the diverse elements of a student center is a serious challenge. The Kimmel will house lounges, a 700-seat dining hall, a meeting and conference center, computer facilities, and myriad student organization offices. Surely a more cohesive, contextually thoughtful design would better serve the university and its community. Civic-minded NYU should reevaluate Roche Dinkeloo's proposal before it destroys the university's unique parkside property—and its reputation. ■

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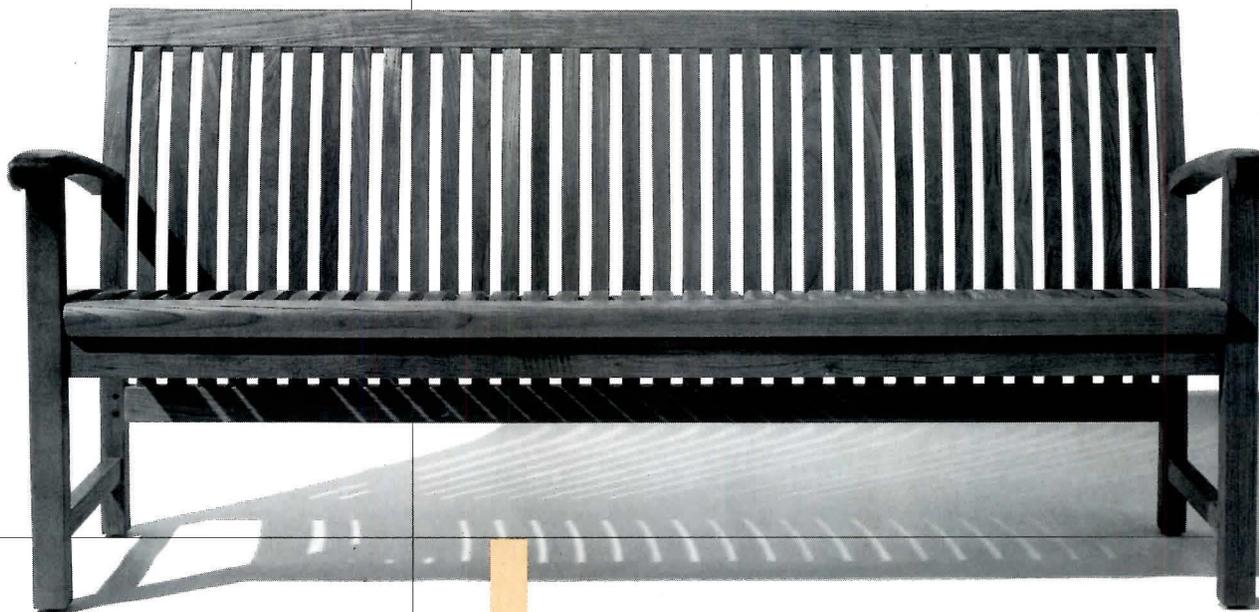


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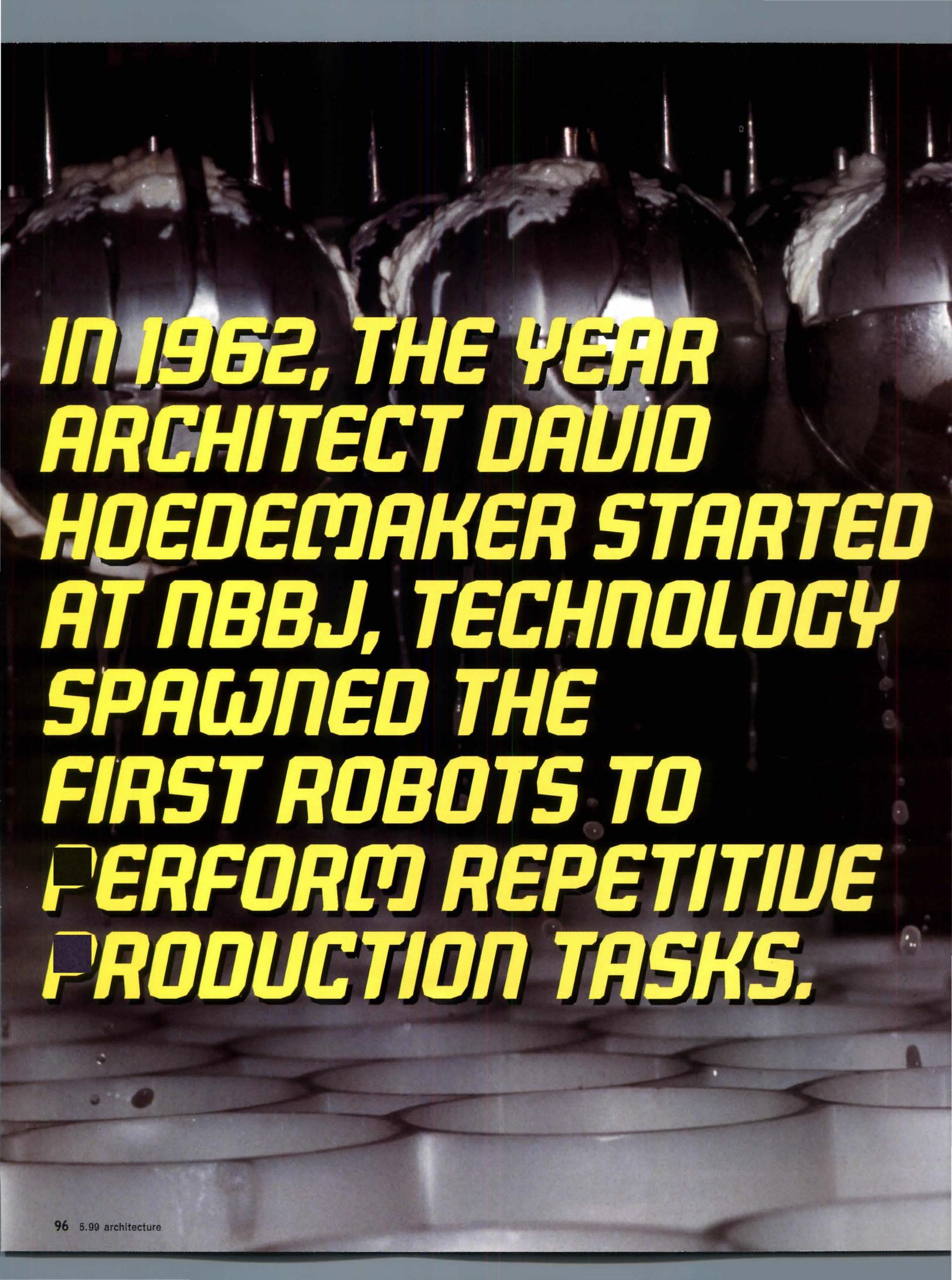
architecture



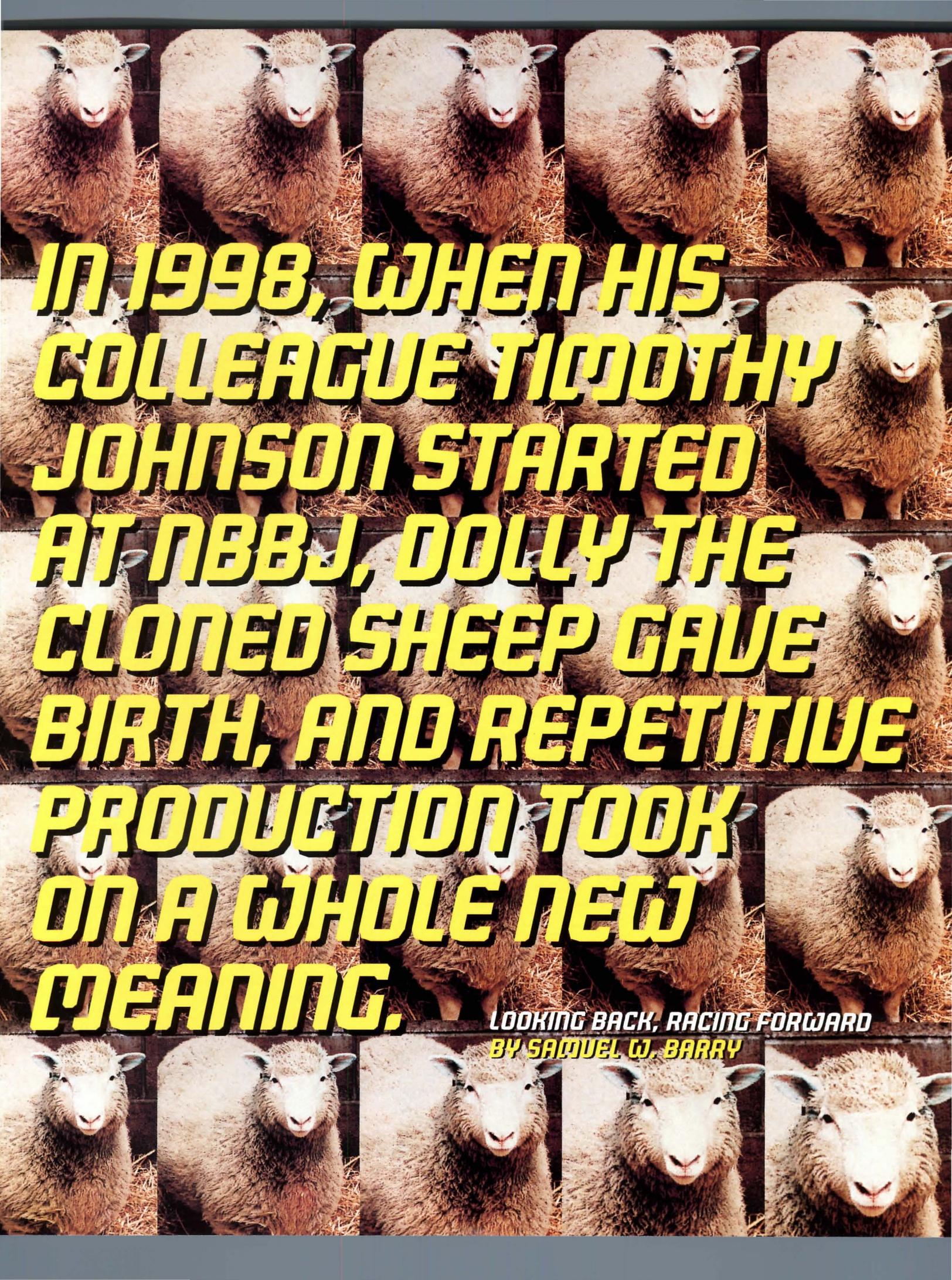
YOUNG AMERICANS

By the early 1970s, the hippie movement had blurred beyond recognition the once black-and-white distinctions between teen conformity and rebellion, cool and uncool. In their place arose an increasingly permissive plurality. Kids in America began changing identities with the change of an outfit, or a song, or an expression, in unapologetic juxtapositions of old and new, familiar and strange. No cultural figure personified this restlessness better than the British import David Bowie. Exemplified by his 1975 album *Young Americans*, Bowie's record titles of the era read like a tone-poem of American youth culture: *SPACE ODDITY* / *PINUPS* / *DIAMOND DOGS* / *CHANGES*. With each concert tour, it seemed, he assumed a new stage persona, lending gravity to the freakish with the androgynously alien Ziggy Stardust, and sex appeal to the establishment with the decadently aristocratic Thin White Duke. Through the 1980s, adolescents heeded Bowie's call to try it out and, if it didn't work, to try something else.

Now in their 20s and 30s, the young architects who grew up with this relentlessly rapid-fire media culture still defy typecasting: Unafraid to be different, or even to be normal, and armed with a healthy sense of irony, self-awareness, and inclusiveness, *Young Americans* are kicking the slow-moving profession of architecture into high gear.



**IN 1962, THE YEAR
ARCHITECT DAVID
HOEDEMAEKER STARTED
AT NBBJ, TECHNOLOGY
SPAWNED THE
FIRST ROBOTS TO
PERFORM REPETITIVE
PRODUCTION TASKS.**

A grid of sheep faces, likely clones, arranged in rows and columns. The sheep have thick, brown wool and are looking directly at the camera. The background is a dark, textured surface, possibly a wooden fence or barn wall.

IN 1998, WHEN HIS COLLEAGUE TIMOTHY JOHNSON STARTED AT NBBJ, DOLLY THE CLONED SHEEP GAVE BIRTH, AND REPETITIVE PRODUCTION TOOK ON A WHOLE NEW MEANING.

**LOOKING BACK, RACING FORWARD
BY SAMUEL W. BARRY**

WHO ARE THE YOUNG AMERICANS?

They are the generation that followed the Baby Boom. The oldest is 35 years old, the youngest, 25. They are a group immersed in technology who adapt to rapid change. To understand them is, in some ways, to understand the culture in which they were born; therefore, we've traced their development from birth, to high school graduation, to college graduation. The eldest was born in 1964, graduated from high school in 1982 and from college in 1986; parallel dates for the youngest are 1974, 1992, and 1996.

1964 North Vietnamese artillery reputedly falls on a U.S. warship in the Gulf of Tonkin, foretelling the Vietnam War. Civil rights take center stage on the domestic front as three civil rights workers are murdered in Mississippi during "Freedom Summer."

Cassius Clay defeats a heavily favored Sonny Liston, knocking him out in the seventh round for the heavyweight boxing title.



Four lads from Liverpool, England, known as **THE BEATLES** drive pubescent teens into a frenzy during their debut on the *Ed Sullivan Show*.

Richard Meier and Michael Graves blow out 30 candles on their birthday cakes. Eero Saarinen's St. Louis arch, James Stirling's History Faculty Building at Cambridge University, and Archigram's "Walking City" and "Plug-In City" make architectural headlines; *Architectural Forum* ceases publication.

1974



The Symbionese Liberation Army abducts **PATTY HEARST**, daughter of publishing

magnate Randolph Hearst. Later that year, Hank Aaron smacks his 715th career home run to break Babe Ruth's career mark.

IN 1962, 29-year-old architect David Hoedemaker strolled into NBBJ's Seattle office for his first day on the job. There he found a central drafting room filled with 60 architects, all men, in white shirts and black ties, drawing industriously with T-squares, triangles, and mechanical pencils. Le Corbusier, Ludwig Mies van der Rohe, and Eero Saarinen constituted architecture's ruling triumvirate, but NBBJ's 93-year-old, black-suited founding partner Floyd Naramore—who patrolled the drafting room for waste and sloth as he billowed lacy wisps of cigarette smoke—structured Hoedemaker's professional universe. At home in the evening, Hoedemaker watched Chet Huntley and David Brinkley deliver news of a divided Berlin, dogs and monkeys in orbit, and the Cuban Missile Crisis. "It was like a gray cloud hanging over everything," recalls Hoedemaker of The Bomb. "The weight of the Soviet menace was tremendous." The threat of chaos lurked on the edges of Hoedemaker's carefully structured world and seeped into society at large, sereptitiously infecting a generation with existential angst.

Thirty-six years later, Hoedemaker hires 32-year-old architect Timothy Johnson. The young lion, fresh from stints at Ellerbe Beckett and his own firm, roars into NBBJ's New York City office, steps into his cubicle, boots up a personal computer loaded with AutoCAD 14 and Form-Z, and joins the ranks of the firm's 579 architects. He drafts only on the computer, designs virtual reality walkthroughs for clients, and carries a cellular phone. He does not own a T-square. Frank O. Gehry, Rem Koolhaas, and Renzo Piano are architecture's heads of state. The World Wide Web supplies his news: He knows a single Germany that leads a unified Europe, monitors the progress of a space station the United States and Russia are collaborating to build, and remembers the Cold War and the Soviet Union as historical relics.

Although Hoedemaker and Johnson hail from the same firm and are separated by only a generation or so, the social, cultural, and professional climates in which the two cut their teeth are vastly different. Hoedemaker's career path is archetypal

of his generation: architecture degrees from the University of Washington and Yale University; a stint in the U. S. Air Force; an internship in Eero Saarinen's office; then off to Seattle to blaze his own trail. Hoedemaker settled at NBBJ, with a commitment to improving the firm's design profile and a distaste for what he saw around him: so many architects content to make a career of the drafting room and a permanent resting place on the corporate ladder's associate rung. "I lowered my head and went for it," recalls the ambitious Hoedemaker, "and I didn't look up for 14 years." By the time he did, in 1976, he was NBBJ's managing partner. Today, Hoedemaker and his contemporaries are passing the baton to Johnson and a generation of architects we've dubbed the "Young Americans." They are a group reared in a fast-paced culture who are altering the profession and its pace.

Young American architects currently enjoy the second longest economic surge in history—95 months as of February 1999, a mere 11 months short of the record expansion of the 1960s. Some are too young to remember the oil shortages and hyperinflation of the 1970s that sent gas prices soaring and brought the stock market to its knees. Many of this generation have never suffered through a recession in their careers, and they recently watched the Dow shatter the plexiglass ceiling of 10,000. Firms are hiring like mad, corporations are investing in real estate and construction, and some economic analysts wonder if technology hasn't eliminated economic Sturm und Drang altogether. It is not only the domestic market that is ushering prosperity either: Today, China, Russia, and the former Soviet states are regular markets for architects, a concept Dave Hoedemaker still finds hard to believe. Europe remains strong, and, recent recessions aside, Latin America and Southeast Asia are hiring more American architects than ever before. In short, opportunities abound.

As economies swell and markets multiply, the profession diversifies. In the early 1960s, as Hoedemaker recalls, women largely "stayed home, cared for their families, and supported their husbands' successes." In 1962, however, the birth

control pill arrived, offering women greater reproductive freedom. An increasingly active feminist movement identified pathways to social and economic liberation as well. The working girl became a career woman. Today, more women are working than ever before; only 38 percent punched time-cards in 1962, while 60 percent do today. Although still woefully underrepresented, women architects are an expected and accepted part of the workplace for the first time in history. Approximately 6,400 (just under 10 percent) of Johnson's fellow American Institute of Architects (AIA) members are women; in March, NBBJ named Susan Jones its first-ever female partner. Ethnic minorities are also knocking on architecture's door, constituting 7 percent of AIA membership. The next generation promises to shake things up even more: More than 40 percent of architecture graduate students are women; 18 percent of students are minorities. The profession is clearly changing, albeit more slowly than society.

Young Americans are inured to change, accustomed to lightning-fast vicissitudes. They have been raised on speed: FedEx ships their packages crosscountry overnight; microwaves prepare their dinners in less than 10 minutes; cable television presents breaking news as it happens; the Internet keeps them hyperconnected. Computers have revolutionized this generation's architectural education, design methodologies, and business strategies. Today, Johnson can quickly modify a construction drawing on AutoCAD in his New York City office, arrange a video teleconference for his boss in Seattle to review the modification, then post revisions on the company's Intranet, where project architects in Indonesia can access it instantly. Want to spec a window? Pop in a CD-ROM. Rethinking a cladding choice? Hit a key and the rendering program modifies your drawing instantly. Need a topographical site map? Download it from the Web within seconds. The Young Americans have come of age in a high-tech, instant-gratification era.

Technology, which threatened to abrogate life on earth as Hoedemaker started his family, now

has the power to create it. In February 1997, Doctors Ian Wilmut and Keith Campbell introduced the world to Dolly—a lamb with the heady distinction of being the first animal ever cloned from an adult. Technology has created life. Existentialism is dead. Ontology reigns.

But has technology created opportunities that didn't exist for Hoedemaker? Has it changed the shape of the profession? Yes and no. There are still some constants in architecture, such as licensing exams and internships. It still takes quite a while to design a building, regardless of what medium one uses to do it, though computers have made it possible to modify designs on the fly. Technology has generally quickened the tempo of the profession and, to a far greater extent, society at large.

What is striking about the Young Americans we present in this issue is that they exist comfortably in different yet overlapping time signatures: They shift deftly back and forth between a society that moves at ever-accelerating speeds and a profession that shuffles along, often at a dirgelike pace. They are aware of the past but are part of a culture hurtling into the future more briskly than any of their predecessors. Some, like Johnson (pages 112-115) follow standard professional paths but navigate them at extraordinary clips. Miami traditionalists Caruncho, Martinez and Alvarez (pages 132-135) exemplifies a small, emerging firm following a clearly defined, highly personal program. New York City's FACE (pages 104-109) adds a hands-on, design-build note that resonates with their individual personalities. Others, such as Evan Rose in San Francisco (pages 120-121) or Houston's Mardie Oakes (pages 110-111) work in related fields, structuring and augmenting the work of their architectural peers.

What the Young Americans demonstrate is that it doesn't matter whether they are in a corporate setting, a small firm, or a collateral discipline; whether their esthetic is old-fashioned or modern; whether they are moving posthaste or deliberately. They are the shape of architecture to come, and they are going to play it at their own tempo and in their own style. ■

1982 Henry Thomas and Drew Barrymore help **E.T. THE EXTRATERRESTRIAL** get home.



Future architects moonwalk to Michael Jackson's *Thriller* at their senior proms. Maya Lin dedicates her Vietnam Veterans Memorial in Washington, D.C.

1986 Space shuttle **CHALLENGER** explodes 74 seconds after lifting off from Cape Canaveral, Florida, killing all seven astronauts.



1992 U.S. President George Bush and Russian President Boris Yeltsin announce the Cold War is over. Later that year, Bush is defeated by William Jefferson Clinton in the presidential election. The Prince and Princess of Wales announce their separation. Frank O. Gehry's fish makes waves at the Barcelona Olympics.

In April, four Los Angeles police officers accused of beating motorist Rodney King are acquitted, sending the city into spasms of violence.

1996 Philip Johnson celebrates his 90th birthday. Britain endures mad cow disease; hysteria spreads to the human population. In July, Trans World Airlines flight 800 to Paris explodes off Long Island, New York, killing all 230 passengers on board.

It is a better year for women, however: The Virginia Military Academy admits them for the first time, and **MADELEINE ALBRIGHT** is sworn in as the first female U.S. secretary of state. —S.W.B.



A DAY IN THE LIFE

of a young architect may not sound like the stuff of photo documentaries; why would anyone want to see what 20- and 30-something designers do all day? By arming a handful of young architects and interns with cameras and asking them to photograph a typical work day, *Architecture* hoped to illustrate that their careers are far from stagnant. These photos reveal an energetic generation that can't wait to make its mark on the profession.



FRED BOTELHO, 28
Project Manager, Frankel & Associates
Miami Beach, Florida

Thursday, March 11



ELISSA SCRAFANO, 35
Principal, Scrafano Architects
Los Angeles, Chicago, and Southfield, Michigan

Thursday, March 18



ALISON DORUILLIER SMITH, 28
Partner, Bennett & Smith Architects
La Jolla, California

Wednesday, March 17



JOE DAY, 32
Principal, Deegan-Day Design
HEDGE Design Collective
Culver City, California

Monday, March 15



ALICIA ABOUSSIE, 27
Designer, Kuhlmann design Group
St. Louis

Thursday, March 11



KERL LAJEUNE, 30
Project Manager, Booth/Hansen & Associates
Chicago

Thursday, March 18



GEORGEEN THEODORE, 28
Project Manager, Eric Kuhne Associates
London

Wednesday, March 17



VICTOR SIDY, 24
Intern architect, Taliesin Architects
Flagstaff, Arizona

Friday, March 5

7:00
Wake up, eat breakfast.

8:00
< Arrive at the office, check E-mail, and download images sent from Wood and Zapata (former employer) for a meeting later.

9:00
< Meeting to discuss additional work required by the fire marshal at the Publix supermarket, designed by Wood and Zapata. 12:15 Call Wood and Zapata in Boston to brief them on the meeting.

6:00
Wake up.

6:30
Leave my apartment in Chicago's Lincoln Park to drive to the office. >

9:00
< After breakfast and a brief stop at the office, drop by a lighting showroom to borrow fixtures for client meeting in Michigan this afternoon.

9:30
Take elevated train to pick up tile samples, also for this afternoon's meeting.

10:00
< Begin the 4-hour drive to Bloomfield Hills, Michigan. 10:05 Drive up to the exact change lane at a toll booth—without exact change. >

6:00
Wake up.

6:15
Get coffee before my daily walk along the beach in La Jolla. >

8:30
< Walk through a new project, a 2,000-square-foot addition and interior remodel of a house in the contractor.

9:20
< Walk through another residential project with contractors, this one a 1,500-square-foot addition.

11:15
< Meeting with the cabinet maker to approve custom work. 11:30 Lunch and presentation at the general contractor's office.

7:15
< Wake up.

8:00
< Demolition check and contractor meeting at Micheltorena house in Silverlake.

9:00
Review ad layouts for my Dayware line of clothes with a graphic designer in Echo Park.

10:00
< Location scouting for Daywear in Silverlake. She wears Dayware cordcoat; he wears Dayware shortshirt and longcoat.

12:00
< In HEDGE offices, revising design of Micheltorena House with the project manager.

6:00
Alarm goes off.

6:30
Wake up.

7:30
< Drive to work. Traffic's not too bad.

9:00
< After an hour at the office preparing, meet with the client of a country club project.

10:15
< Return to the office; discuss changes that result from the client meeting with the project architect. 10:20 Work on a memo and drawings at the computer. >

6:30
Wake up.

8:30
< In the office, standing in front of a model of a residential high-rise.

9:00
Inspect a residence model about to go into construction.

9:30
< Work on a LEGO model of a cubic house for a fundraising event for children's charity.

10:00
Review computer drawings of a project currently in design.

10:30
< Sketch.

12:00
Ride the subway to O'Hare Airport. > Take five students who I teach at the University of Illinois, Chicago, on a field trip.

6:35
Wake up, look out the window at Camden Town. >

7:35
Take the tube to work. Commute: 6 stops and a brief walk to the office. >

8:05
Spanish lessons to improve communication with the client and consultants on a project in Spain. >

10:06
Finish a drawing before a design session with my boss and the associate architect.

11:15
< Attend a meeting, then review the latest sketches before starting a working session to resolve planning permit issues.

5:30
Wake up in the pavilion I designed and built on the Wright compound. 6:45 Eat breakfast. >

8:45
Meeting to discuss an upcoming exhibition of alumni work. >

9:30
Talk with a colleague in the studio. >

10:45
Design charette meeting. >

1:PM

2:PM

3:PM

4:PM

5:PM

6:PM

12:30
Meet with coworkers to discuss a design/build project for a school in West Miami.>



FRED BOTELHO



2:30
<Lunch in the office.>

3:15
Continue to work on school documents.>



4:15
<Site visit to the Bass Museum of Art (Frankel is the local architect for Isozaki design) to verify existing conditions.>

5:45
Return to the office. Mark up plans and review county specs on the school project.>



2:00
<Arrive at the job site, a 5,000-square-foot house, after spending most of the drive on the phone with clients and contractors.>



3:30
<Meet with the client, review the concrete pour of basement walls.>



4:00
<Still onsite, review the design of a guard rail, ceiling details, and a shower in the main bath.>

5:00
Kill two birds with one stone: a client meeting over dinner.>



ELISSA SCARFARO



1:30
<Meet with the framing contractor on a third job site to review details.>



2:45
<Return to the office in sunny downtown La Jolla.>

3:00
Review progress on jobs in the office and return phone calls.>



4:00
Meet with a financial planner to discuss a 401(k) plan for the company.>



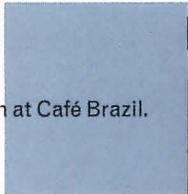
5:30
Potential client appears at the office for an interview (could be the firm's biggest fee yet).>



ALISON DORVILLE SMITH



1:00
<Lunch at Café Brazil.>



3:00
<On the jury of Erick Kahn's midterm studio review at SCI-Arc.>



5:00
<Visit the Minardos House in Ocean Park with the project designer.>

6:00
Client meeting for Corith Ceramics Studio in West Los Angeles with the project designer.>



JOE DRY



1:50
<Pick up plots sent yesterday.>



2:00
<Verify dimensions on drawings.
2:15
Proofread the memo on this morning's client meeting.>



3:50
Take a break to read *Architecture* with a colleague.>



4:30
Back at the computer on AutoCAD.>



ALICIA ABOUSSIE

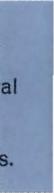
12:30
In O'Hare. Our flight to Atlanta leaves at 1:00pm.>



3:30
Arrive in Atlanta (local time).>



5:30
<With students, inspect structural details of John Portman's Marriott Marquis.>



HERL LAJUNE



2:33
After working out at the gym during lunch break, return to the office.
<Call the client in Spain.>



3:58
<Draw and fax.>



5:15
<Collect images and information on brick detailing to prepare for next week's client presentation.
6:27
Research on brick includes looking at local building systems familiar to client and consultants.>

GEORGEEN THEODORE

1:20
<Have lunch with coworkers at the food bar.>

2:20
Work on a model.>



3:20
<Clip my lawn.
3:50
Take a quick nap in the studio.>



4:30
Back on the lawn, reading.>

5:20
Review drawings.
5:50
The only one working in the studio.>



VICTOR SIDY

7:PM

8:PM

9:PM

10:PM

11:PM

AFTER MIDNIGHT

7:15
Leave the office to have dinner.>



8:45
Arrive home, update my portfolio, and practice 3-D modelling software.>



12:30
<Bedtime.



7:00
<Leave the car at Detroit airport, check in for flight to L.A.

7:30
The flight is delayed 45 minutes, leaving time to catch up on billings and write memos. A seat near an electrical outlet is key: I can plug in my laptop and recharge my cell phone.>



9:00
On board, the neighboring seats are empty, which means one tray table for food and drinks, one for paperwork, and a third for the laptop.

10:00
Arrive in L.A. (local time) and head home to my other apartment. Client meetings in the West Coast office tomorrow.

7:45
At a local tavern for green beer, corned beef, and cabbage—it's St. Patrick's Day, after all—before heading home to pack for a 7:30 am business trip to Phoenix the next day.

10:30
Bedtime.



7:00
<Back at HEDGE studio. Sketch.

8:00
HEDGE weekly meeting.>



9:00
<Read E-mails about an upcoming lecture at L.A. Forum.

10:00
Still at HEDGE; dine on take-out.
11:00
Back to work: Review specs and schedules.>



12:00
Work on a metal screen design in the office.
1:00
<Bedtime.

7:00
After I update drawings, distribute the memo, and eat lunch leftovers for dinner, I clean my desk.>



8:00
Meet my boyfriend for beers.>



12:30
<Finally home. Check messages, then good night.

6:30
Still surveying the Marriott.>



7:00
Go on a driving tour of Atlanta architecture, then drive 2 hours to Montgomery, Alabama, to see Maya Lin's memorial to Martin Luther King, Jr.

1:30
Bedtime. Tomorrow, the students and I go on a two-day workshop/exchange program at Tuskegee University.



7:08
<Finish the day looking through the office library.
7:45
Hop into a cab to have dinner with friends from the New York office.



9:30
<Sit down to dinner after a drink at the bar.

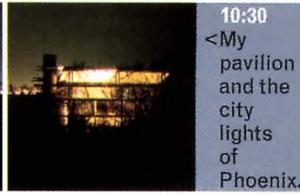


11:25
<Ride a double-decker bus home from the restaurant.
12:30
Home, moments before dropping into bed.

6:20
Cocktails on the terrace.>



8:00
An audience gathers for a lecture.>



10:30
<My pavilion and the city lights of Phoenix.



11:00
<Good night.

THE GUILD

Ages: Todd Fouser, 35; Chris Otterbine, 30; Reuben Jorsling, 34 (from left to right)
Education: Fouser: University of Kansas; Otterbine: Cooper Union; Jorsling: Cooper Union
Current positions: Principals, design and fabrication studio, New York City.
Claim to fame: Constructed pivoting steel facade of Steven Holl-designed Storefront for Art and Architecture in New York City.

FACE

BY SARA HART

"The architect creates a design. It goes out to bid. The contractor takes over and compromises the design. The designer loses control." This brusque and pessimistic assessment of the architectural profession today is what steered the founders of New York City-based FACE Design and Fabrication off the typical postgraduation march into professional practice. Partners Reuben Jorsling, Todd Fouser, and Christopher Otterbine believe they come from the so-called "old school," defined as the defunct, perhaps even mythical, one in which architects built what they designed. Although they have an office in Manhattan, they spend most of their time in their fabrication shop, a chilly and dark converted garage in Brooklyn. Here they cut, grind, drill, and weld steel sections into what they call "spatial equipment"—light fixtures, furniture, kinetic storefronts, interior partitions, and portable structures.

Jorsling and Otterbine were classmates at the Cooper Union. After graduation they built models for architects in New York City and met Fouser in Steven Holl's office while consulting on a project. In February 1993, the three created FACE and began making furniture for architects they'd met around town. Now they design and fabricate interiors and furniture for corporate clients as well, including Chrysler, Viacom, and Polo by Ralph Lauren.

FACE's pride in the physical aspect of their work is evident. It might not qualify as reverse snobbery, but Otterbine admits that they take a "vocational approach," which means they prefer small-scale jobs for which they can do all the work themselves, with assistance from four employees. "When a project gets past a certain scale, we lose control of it," insists Fouser. Maintaining control means rejecting glitzy computer rendering tools to convey their ideas in favor of physical models and full-scale mock-ups of details or conditions. They learn what works by first making it and then testing it. Jorsling calls this "intuitive engineering," and it works well for small-scale production. They rarely produce working drawings, opting instead for the occasional full-size shop drawing, but they rely mostly on the all-important cut sheet (an inven-

tory of kind, quantity, and finished dimensions of a project's materials). In 1997, they designed, fabricated, and built a house in Belize. "We put precut steel members, a gas-powered generator, and construction tools on a barge, and then flew to the site," explains Jorsling. They walked the site, followed the sun's path, and located the prevalent winds, finally determining experientially the ideal location and orientation for the house. Then they built it.

"We know materials and have architectural training, so when we fabricate work for other designers and architects we have a lot of freedom," says Jorsling. "Sometimes the idea is just a sketch on a napkin, or it evolves from a conversation." FACE has a design vocabulary—a brand recognition of sorts—that operates from a simple palette through the tacit expression of structure and function. So straightforward is their approach that they carry the elements of this vocabulary—small sections of standard steel tubes, rods, channels, flanges, and plates—in a red toolbox like some heavy-metal puzzle. At any time, they can demonstrate for clients, rather than explain or draw, how a combination of parts can create a space or form.

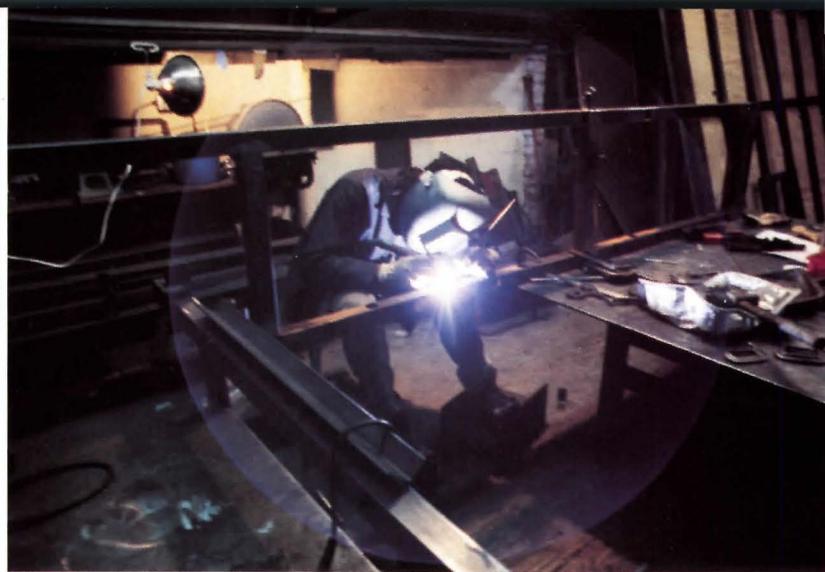
Unlike many artists and architects who believe that any alteration to their work demeans it, the FACE partners are not so precious. They build systems more often than objects, which they expect to be adapted or expanded to accommodate changing programs. This concern with adaptability originated when both the designers and their clients were building businesses on shoestring budgets.

FACE doesn't advertise. All their jobs come word-of-mouth, and there are plenty of them. "We've never had to bid a project," claims Fouser, clearly pleased that they have a reputation and a business model that is exponentially more lucrative than the modest porch additions after which most architectural novices scramble. The shop has evolved into a laboratory where they conduct experiments. Inspired by Frank Lloyd Wright's Usonian vision, the partners expect to break ground in a few months on the first of several experimental houses in a cherry orchard they bought in upstate New York. ■

PORTRAIT BY MARK MANN







FACE designed steel and glass demountable plaza pavilion in New York City, completed in August 1996, to extend restaurant's outdoor dining season with 60 percent enclosure and radiant floor heating. Prefabricated components include a 40-foot steel spine and six 9-by-13-foot asphalt tiled floor planes. Photographs (top, left to right and center, left to right) show design-build sequence: one-quarter full-scale model for testing structure, butterfly connection assembly, punchout specifications for inserting low-voltage lighting system into structural conduits, welding connections, roof-truss assembly, design phase in situ, transportation from shop to site, removal of prestressed, longitudinal plexiglass and steel panels. FACE completed final assembly sequence (bottom, left to right) in eight hours.



FACE delineated photographer's 1,800-square-foot studio with "spatial equipment"—freestanding steel-and-glass partitions on levelers (above) and steel desk (below left). Detachable storage units and workstations (facing page bottom) are suspended from steel framing system. Translucent sand-blasted glass (below right) diffuses light that enters through large skylights and south-facing windows (facing page top), which creates atmospheric shifts in space throughout day.





MARDIE OAKES

THE ADVOCATE

Age: 27

Education: Rice University

Current position: Construction Manager, Fifth Ward Community Redevelopment Corporation, Houston

What sparked her devotion to nonprofit work: Growing up in Austin, Texas, she participated in a local desegregation program.

BY LISA FINDLEY

"Good design is an essential part of successfully revitalizing a community," insists Mardie Oakes, a 27-year-old graduate of Rice University's architecture program. As a project manager with the Fifth Ward Community Redevelopment Corporation (CRC), a nonprofit, grassroots organization in Houston, Oakes puts her beliefs to the test every day. She finds investors, negotiates with banks, writes grant proposals, works with architects, haggles with contractors, and does everything in between to realize the CRC's building projects.

The Fifth Ward is a struggling, traditionally African-American neighborhood just northeast of downtown Houston, where, despite poverty and blight, community morale still runs high. After Habitat for Humanity built several houses in the Fifth Ward in the mid-1980s, the community founded the CRC to rebuild the area through the multiple goals of home ownership, job development, beautification, and neighborhood safety. Oakes came on board in 1996, fresh out of Rice.

Her dedication to social causes began much earlier: during her childhood in Austin, Texas. Her parents, both educators, chose to participate in a desegregation program that included busing white children to schools in mostly African-American East Austin. There she experienced through her classmates the impact of economic and racial disadvantage. During her summers at Rice, Oakes returned home to work with community programs. She was struck by the huge gap she perceived between the esthetic focus of her education and her motivation to address social injustice.

She attempted to close that gap by spending the year-long internship Rice requires of all its bachelor of architecture candidates at a local architecture firm that took on socially oriented projects: AIDS clinics, elderly housing, and community planning. But Oakes was frustrated by the lack of contact with the people she was trying to help, and by the feeling that the bottom line was driving many design decisions. Disappointed, Oakes returned to Rice to finish her degree, wondering whether or not she would ever find a venue for her concerns in the

architecture profession. Then, during a field trip during her last year she discovered the Fifth Ward CRC. It seemed like the perfect place for Oakes to give back to the community, and she began convincing director Stephen Fairfield that she could be of value to the organization.

"It was certainly to my benefit," muses Oakes, "that the CRC, as a nonprofit, couldn't afford to hire anyone with a lot of expertise." They hired her right out of school. Her lack of experience has meant a steep learning curve. However, in the supportive and relaxed environment of the nonprofit group, Oakes's natural entrepreneurial skills have blossomed. "What shocks me most," she confides, "is how much I am interested in the business end of things: real estate financing, mortgage packages, grant writing." While her architectural education has made her a critical and informed client, she misses designing and hopes to integrate it into her work at the CRC. To that end, Oakes is collaborating with a Rice architectural studio on the renovation of a local theater (facing page) into a community arts center.

Oakes is also moving beyond the edges of the Fifth Ward, turning her attention to "spreading the word" about good design in nonprofit community development work. Together with Rice faculty members she co-curated a show in Houston of single family houses in the Fifth Ward designed by 16 prominent architects (*Architecture*, January 1999, pages 47-53). She is also frequently asked to participate in panels and symposia on design in community revitalization.

Oakes believes that architecture requires more crossdisciplinary knowledge and skills than ever before, and thus the experience she is gaining at the CRC will give her more freedom in designing her own future. For now, though, she is enthusiastic about her career path: "It's amazing to discover that I have found work I have a passion for, and how much dedication I am capable of." ■

Oakland, California-based Lisa Findley is an architect and writer who teaches at the California College of Arts and Crafts.



PORTRAIT BY EARLIE HUDNALL

TIMOTHY JOHNSON

THE COMPANY MAN

Age: 33

Education: University of Minnesota; Columbia University

Current position: Principal, NBBJ Associates, New York City

Survival tactic: "To try to crank up an office in New York City is a huge thing: You could literally work constantly. You have to learn to say, 'Enough is enough.'"

BY NED CRAMER

At first glance, Timothy Johnson looks like a stereotypical Wall Street wunderkind: expensive suit, impeccable grooming, confident demeanor. But Johnson isn't an investment banker, he's an architect. (Look closely: There aren't any lapels on that suit.) Nonetheless, Johnson is an astonishingly successful businessman who segues easily from Bauhaus to brokerage house. At 33, he's the youngest principal at 850-person NBBJ, charged with the daunting task of reviving the firm's moribund New York City office.

This may seem like a lot of responsibility for someone so young, but Johnson's been operating in the spotlight practically from day one: While an undergraduate at the University of Minnesota, interning at Ellerbe Becket in Minneapolis, Johnson joined a team of young designers at the firm working with experimental IBM 3-D modeling software. Soon, he recounts, "we got every project that had any kind of image orientation." The edgy, dynamic buildings the group envisioned with the software helped propel Ellerbe Becket to the forefront of corporate design practice in the late 1980s and early 1990s, and earned considerable attention for the group's members: *Progressive Architecture* profiled them in a 1993 issue devoted to the profession's rising stars.

After graduating with a bachelor of architecture in 1990, Johnson transferred to Ellerbe Becket's New York City office to work part-time with high-profile design principal Peter Pran, while earning a one-year master of architecture at Columbia University. Even with this hectic schedule, Johnson quickly took on significant responsibilities under Pran, thanks to his interest in the business side of architecture: "We could create some really crazy things on the computer," he recalls, "but the real test was budget and program and constructibility." Pran himself acknowledges Johnson's role in such major projects as the

New York State Psychiatric Institute in Manhattan by including the young architect's name on the cover of his most recent monograph.

Ellerbe Becket closed its New York City office in 1996, and in so doing, unwittingly presented Johnson with an unbelievable opportunity. "We had a major project in Jakarta, Indonesia," he recalls. "The clients called me and said, 'If you leave, we're no longer going to have a contract with Ellerbe Becket. We're tying this to individuals, not a company.'" Given the opportunity to pick up a more than 860 million-square-foot, \$100 million project, and the potential for much more work, Johnson quickly established his own New York City-based practice, ARC•NYC.

For more than two years Johnson commuted between Manhattan and Asia, drumming up new commissions and continuing the projects he inherited from Ellerbe Becket. These frequent long hauls began to take their toll: Johnson and his wife Karen Melk had to squeeze in quality time with weekends in Amsterdam. "We focused on our relationship in really dense blocks," Johnson recounts. But with the 1998 downturn in the Asian economy, several projects began to falter, and Johnson accepted his current position at NBBJ, finally able to settle down in New York City full time. The couple have just bought a brownstone in Brooklyn and become legal guardians to a 15-year-old girl, who attended the Harlem school where Karen is director. Simply put, Johnson is not the kind of mogul-in-the-making you'll find screaming into a speaker phone.

His speedy ascent up the corporate ladder is due to a reasoned approach to risk-taking—and no small amount of stamina. "Everyone talks about the Midwestern work ethic," says the Minnesota native of speculations about his success. "That's just an endurance issue. An opportunistic attitude is very important. It's not threatening to me to come into a challenge. That's what interests me." ■



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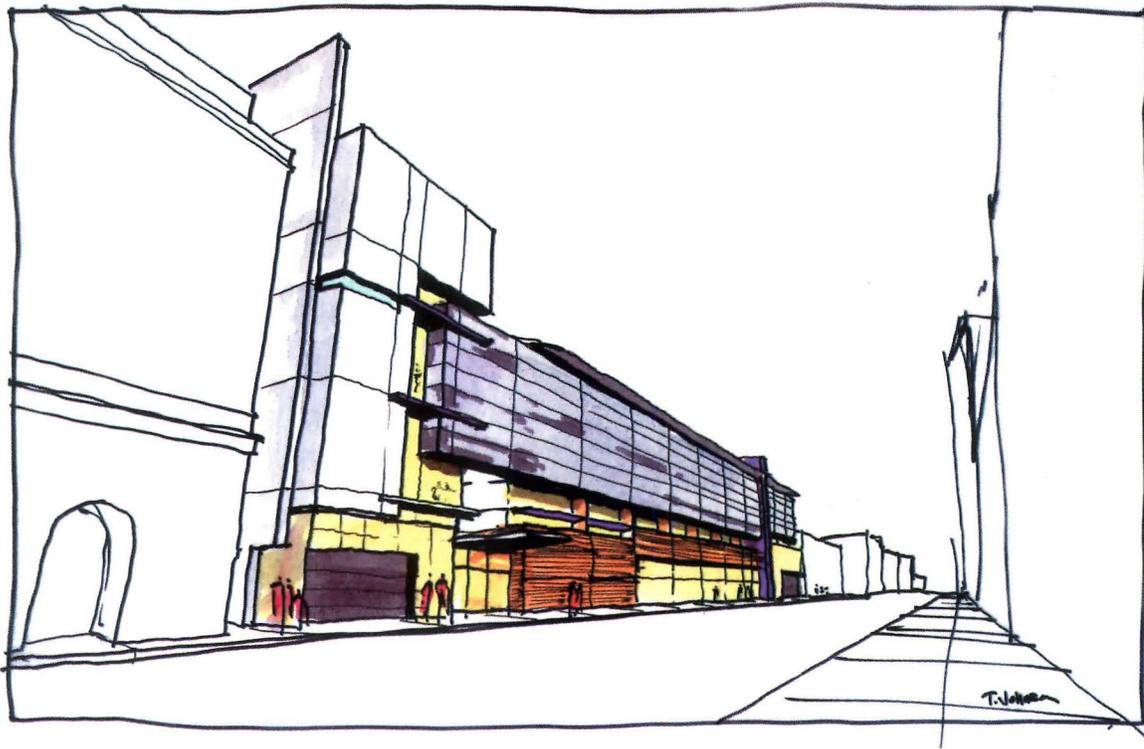
POST

Rebuilding Your Transportation Network

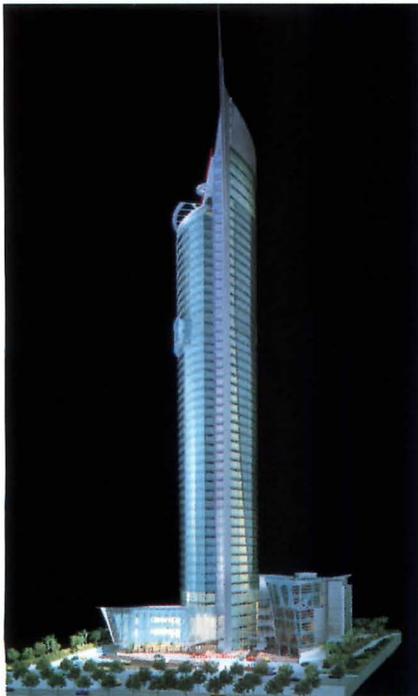
MTA construction projects are making mass transit more reliable and more comfortable for our customers.

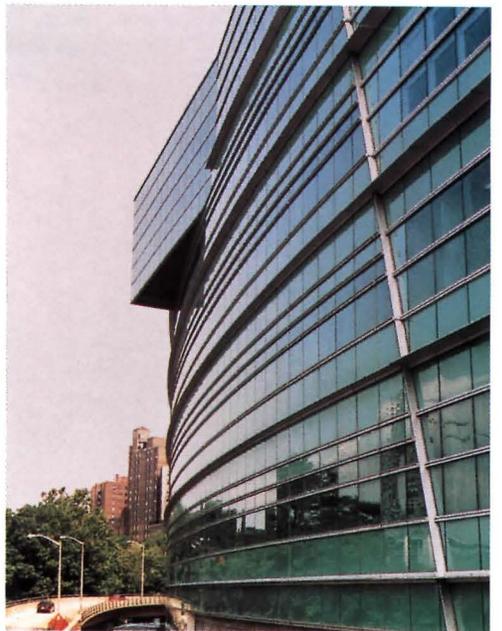


What's New
at MTA
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Projects

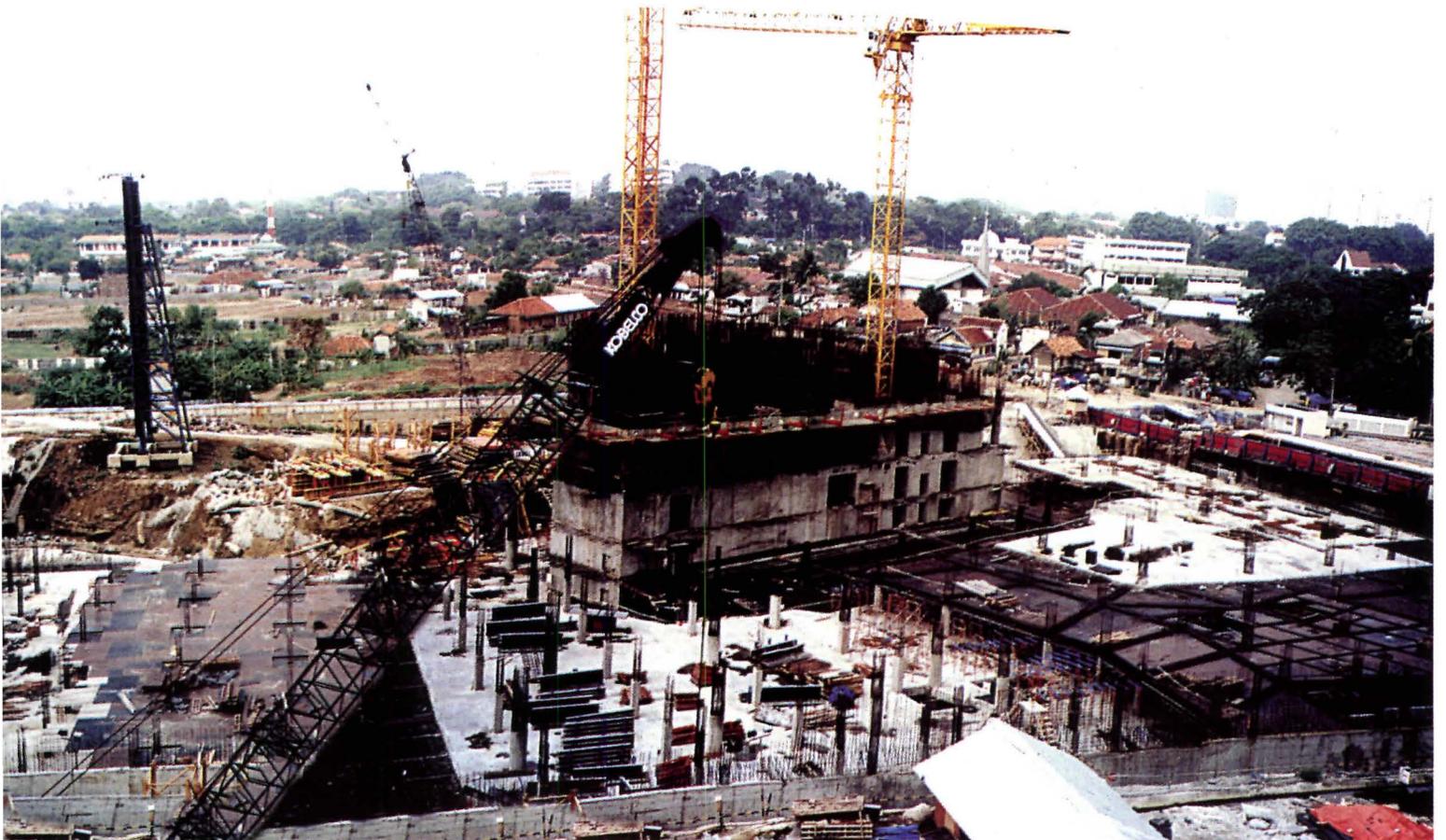


Johnson designed New York City Transit's Rail Control Center (above) while at Ellerbe Becket; the project, which serves as operations hub of New York City's subway system, is currently under construction (previous page). Graha Kuningan tower (below left and right) in Jakarta, Indonesia, combines 50-story commercial office building with four-story podium that houses retail. Project began under Peter Pran at Ellerbe Becket, with Johnson serving as senior project designer. Last year construction halted (facing page, bottom) because of downturn in Indonesian economy.





While at Ellerbe Becket, Johnson also helped design newly-opened New York State Psychiatric Institute on constricted, freeway-entangled Manhattan site (above left) with Pran and Jill Lerner, now of Kohn Pedersen Fox. Bridges connect new building with existing medical research complex. East-facing, six-story atrium (above center) fronts open plaza and medical complex. It also links laboratories on building's north side to patient rooms on south. Curving, glazed west facade (above right) overlooks Hudson River.





JACK DEBARTOLO 3

THE RISING SON

Age: 30

Education: University of Arizona, Massachusetts Institute of Technology

Current position: Partner, DeBartolo Architects, Phoenix, Arizona

Radical career change: Used to work for desert shaman Will Bruder; now works with his father, Jack DeBartolo 2 (at left).

BY LAWRENCE W. CHEEK

They share a name, an architectural practice, and a passion. But when they meet at Starbucks on Monday mornings, they sketch on separate napkins. "Dad and I have a teeter-totter approach to design," says Jack DeBartolo 3. "Our strengths are complementary. Having to explain our ideas to each other makes us galvanize them."

Jack 3 and Jack 2, aged 60, created the Phoenix, Arizona, firm of DeBartolo Architects in 1996. The son had worked as a project architect with Will Bruder for two years; the father had recently jettisoned his partnership in Anderson DeBartolo Pan (ADP), which at its peak employed nearly 200 people. "We spent a week in California just walking on the beach," says Jack 3. "Dad had a phenomenal opportunity to design a recreation center in one of the most troubled neighborhoods in Phoenix, and he said, 'I can't do it alone. I need to find a guy just like you.' So we agreed to try a one-year honeymoon to see if it worked."

Jack 3 had some misgivings. "We have a great friendship," he says. "But he can be an intimidating person because he has such a presence. If you're not confident, you may not be able to hear yourself think. My concern was falling into the 'son' role and not being able to express myself. But it's worked; our approaches marry wonderfully."

Jack 2 also wondered if he were moving into uncharted emotional territory. He felt that his son had been a remarkably obedient child, and he didn't want an "obedient" partner—he needed to be intellectually challenged. But their history provided the foundation for real communication. "I used to help him throw newspapers," says the elder DeBartolo. "We'd get up in the morning and fold them, and we would have these phenomenal conversations in the garage at 4 A.M. I never beat up on a question I didn't like. And he became a strong person, too."

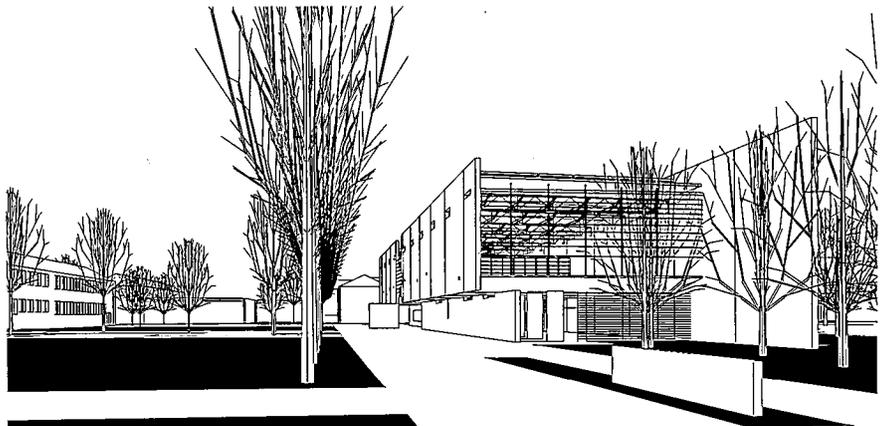
Their Tucson, Arizona, home literally resonated with architecture. It had been designed by another architect, and the elder DeBartolo was always adding something or restirring the floor plan. "He did most of the design work, but I was involved in it from the time I was 13 or 14," says Jack 3. "He never pushed me into architecture, but there was always the influence of being around a father who loved what he did."

The larger ADP grew, however, the less Jack 2 liked it. Meanwhile, Jack 3 instinctively knew he didn't want to deal with the tumult of management, and almost veered away from the profession altogether. An intense pre-architecture summer program at Carnegie Mellon University rekindled his passion, however. He went on to earn a bachelor of architecture at the University of Arizona and a master of architecture at the Massachusetts Institute of Technology, writing his thesis on how the qualities of natural light can bring meaning to architecture.

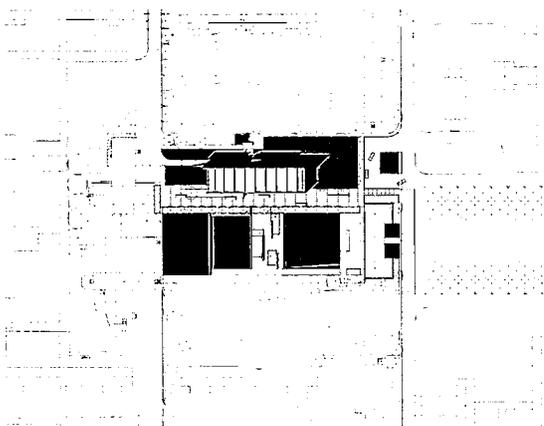
Jack 3's work on light began to draw the DeBartolos closer as professionals. At ADP, Jack 2 had designed a number of health care facilities, and one of his crusades was to invite in as much daylight—"God's light," in his words—as possible. Jack 3's research helped renew his father's passion for light, and perhaps even for architecture itself.

The firm has five people and plenty of work. Under construction are an inner-city recreation building and an early childhood education center in Phoenix, and the Valley Forge Christian College Library in Valley Forge, Pennsylvania. Design work for five churches is under way—an area of practice that Jack 2 avoided despite his deep Christian faith, because he felt so many churches were looking for cheap, spiritually impoverished design. That has changed; nearly 90 percent of DeBartolo Architects' current work is for churches or nonprofit organizations. But the firm doesn't rule out secular projects. "Our marketing strategy is to answer the phone," say both DeBartolos.

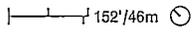
Whatever they design, the pair work to imbue it with meaning beyond the mere enclosure of space. "My passion," says Jack 3, "is creating environments in which people's souls can emerge." The elder DeBartolo chooses more specific words. "I see part of our Christian mission as taking care of the poor, physically or spiritually. If I had a choice between designing an art museum or an inner-city gym, today I might choose the gym." As the younger partner, Jack 3 views part of his role as working to invigorate the practice with "the energy of having no disbelief in what we can do." His personal mission for the next 30 years: "To not lose that naïveté, but undergird it with experience." ■



Perspective

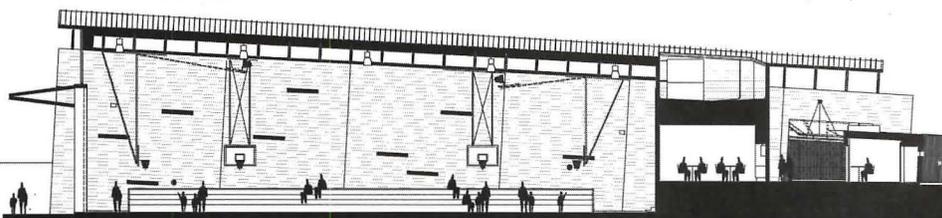
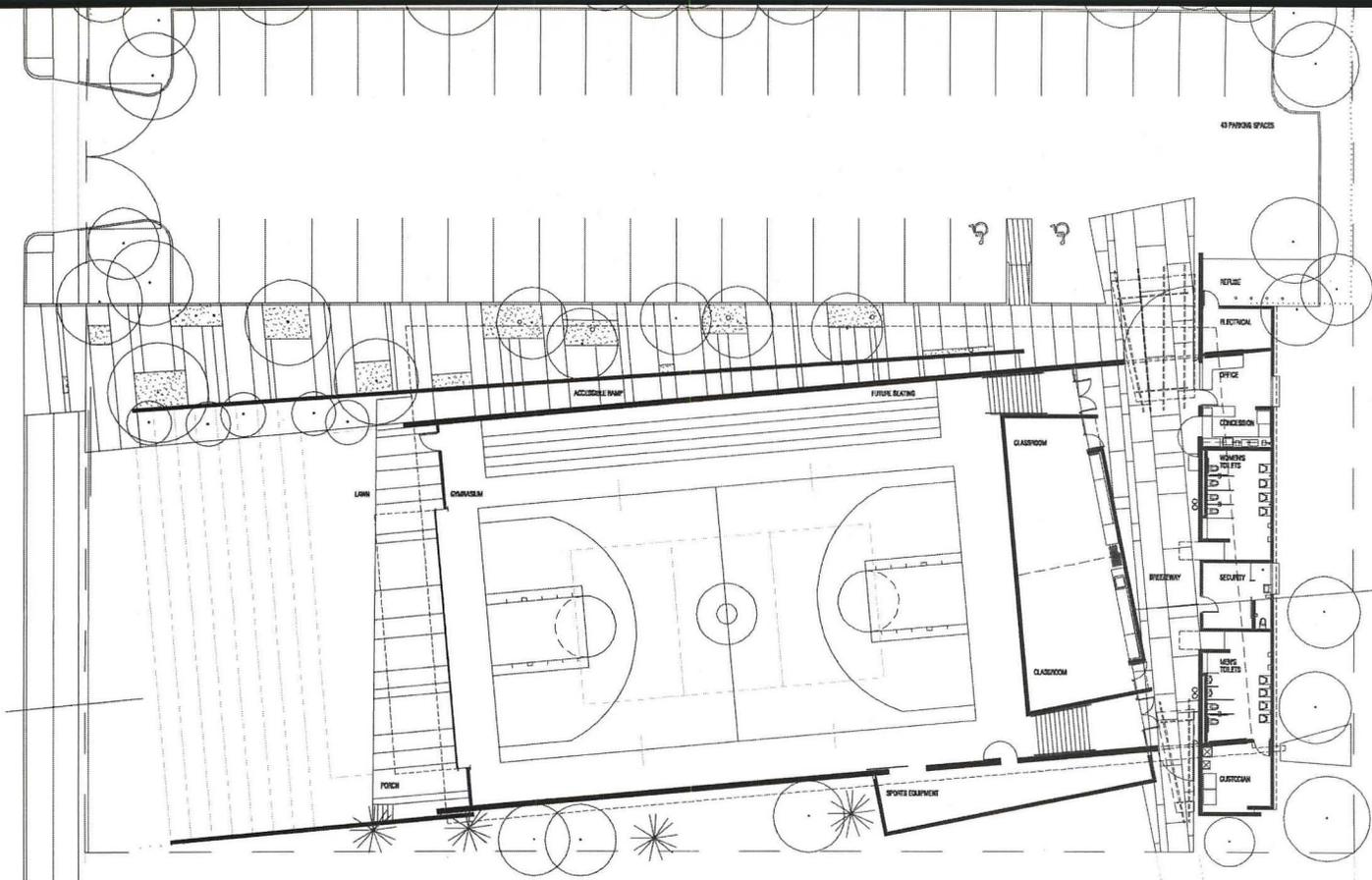


Site plan

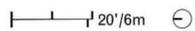


Perspective

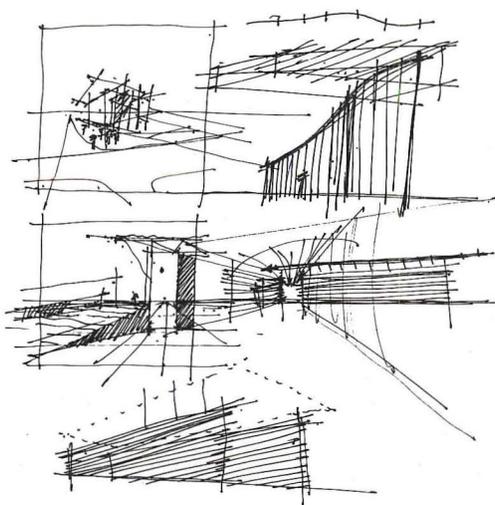
Library/media center under construction at Valley Forge Christian College (above), outside of Philadelphia, will be built of precast concrete walls, and forms edge of new campus yard. Second-floor reading room will be illuminated entirely by daylight filtered through clerestoried ceiling. Center will be completed in 2000.



Floor plan and site section



Del Corazon Recreation Center in Phoenix, Arizona (above and below), to be completed in 2000, will be gathering place for young people in troubled neighborhood. Masonry walls with slot windows will enclose basketball court; airplane hangar door will open most of north wall, which doubles as backdrop for outdoor stage.



Concept sketches



Model

EVAN ROSE

THE MAN ABOUT TOWN

Age: 34

Education: Reed College, University of California at Berkeley

Current position: Associate, Simon Martin-Vegue Winkelstein Moris, San Francisco

On-the-job problem: "I'm still trying to figure out why people are afraid of urban space."

BY LISA FINDLEY

"I have had this single-minded passion for almost 17 years," declares 34-year-old Evan Rose, "an intense interest in how people live together and understand each other." At first glance, this might suggest a career in psychology, but for Rose it has led to that curious terrain between architecture and planning known as urban design.

Born and raised in the Flushing area of Queens, New York City, Rose wanted to be an architect from the time he was a little boy. However, his parents' insistence that he first get a strong liberal arts education prevailed, and he enrolled at socially progressive Reed College in Portland, Oregon, majoring in international studies. Rose also spent a year studying anthropology and social policy at the London School of Economics. After graduating from Reed in 1986, Rose stayed in the Portland area working in academic administration and playing music.

However, his childhood dream of becoming an architect never flagged and in 1989 Rose entered the architecture program at the University of California at Berkeley, where his social science background found alliance with his interest in buildings. While working on his master of architecture thesis, which investigated written guidelines for promoting discourse on public spaces, Rose took an unpaid internship with the San Francisco Urban Planning Department. During the internship, he worked on the city's Downtown Pedestrian Project. "I was in the right place at the right time," he says of the planning department. "I got to spend an afternoon a week walking around downtown making maps of the pedestrian realm."

Rose built upon this experience in a later paid internship with the planning department, which ultimately led to a five-year stint in various full-time positions. Within two years, he was a senior urban designer

with the planning department. And with projects like the Civic Center Historic Improvement project, the port of San Francisco, and the Waterfront Urban Design Element under his belt, Rose's name became synonymous with urban design for San Francisco's architects, planners, and politicians. "I definitely think he represented urban design well, especially in a department where urban design was not at the top of the agenda," maintains architect and planner Dan Solomon. "He increased the presence and profile of urban design."

By 1997, however, Rose was ready for a change. He wanted to get licensed as an architect and felt he needed new challenges. That year, he joined the San Francisco architecture firm Simon Martin-Vegue Winkelstein Moris (SMWM), where he has continued work on urban design-oriented projects.

Rose credits his passion for his work as a key component of his success. "This is a profession known for eating its young," he laughs. "You need to be passionate in order to make it. No one can possibly succeed in architecture by just skating along or by just doing what is put on your desk." He also believes that his liberal arts background plays a part in his success: "Architecture is a renaissance activity. One needs to be widely read and broadly focused." He admits, however, that the long hours combined with an obsession for his work are detrimental to his personal life.

Rose is thrilled by the random qualities of cities and believes that urban designers need to recognize these qualities and work with them. He advocates a lighter touch by designers, preferring the development of an urban framework that allows continuing improvisation. "Urban design," says Rose, "is about responsibility. It's a conscious effort to recognize the city's public realm and how our interventions contribute to the vision of community that the very idea of 'cityness' manifests." ■

PORTRAIT BY TODD HIDD





BY MARK ALDEN BRANCH

Four happy years as an undergraduate at Bennington College made 35-year-old Kevin Alter consider teaching as a career, but it was his experience as a student at Harvard University's Graduate School of Design that sealed his fate. While Alter valued the exposure to "amazing architects and thinkers" at Harvard, he found student support to be lacking. "The reason I'm teaching now is because I had a problem with the atmosphere at Harvard," Alter says. "It was hyper-competitive and could be really mean-spirited."

Alter, who has taught at the University of Texas (UT) at Austin's school of architecture since 1991, knows that education doesn't have to be that way. At Bennington, he constructed a major in architecture, ceramics, and mathematics, and enjoyed personal attention from teachers. "There was an unbridled generosity among the teachers at Bennington," he says. "It was a fantastic immersion into architecture."

While Texas doesn't have the per-capita resources of tiny Bennington, Alter tries to be a humane teacher who respects the experiences his students bring to their education. "Too often people treat beginning design students like blank slates," he says. "I try to teach people to look carefully at what they know. I see myself more as a tutor or a guide." But teaching is just one part of what Alter calls "living a life in architecture." He has also been an active scholar, writing on contemporary Swiss architecture and the mass-produced modernism of postwar developer Joseph Eichler, among other things. He is also the associate director of UT's Center for American Architecture and Design, where he organizes exhibitions and lectures.

Such academic commitments make for a busy life, as Alter's current obligations demonstrate: "I have papers due for the Society of Architectural Historians, an exhibition opening, a lecture at Tulane, a paper for the Association of Collegiate Schools of Architecture, and lots of independent-study students," he says. "I'm overloaded, not sleeping enough. And I've got a tenure review coming up." Not surprisingly, he has found precious little time to practice architecture, counting only a gelato

shop in Austin and an elegantly spare house in the Hill Country west of Austin (designed in partnership with fellow faculty member David Heymann) among his built works. "It would be nice to be building more," says Alter, "but it's hard to develop a practice when so much time and energy is spent elsewhere. Through writing and teaching, though, I've been able to explore a lot of interests. I've had an opportunity to grow much more quickly than if I were only practicing," he suggests. For instance, Alter counts the Swiss modernist Peter Zumthor—one of the subjects of his scholarship—as an influence on his own design work, along with former thesis adviser Rafael Moneo. "Both their wisdom and the integrity in their buildings are influences," explains Alter.

The demands of teaching, scholarship, and practice leave Alter without a "personal life" as most people understand the term. "My personal life is completely intertwined with my professional life," says Alter, who is single. "A friend asked me if I had any hobbies, and I realized that I'm no longer someone who makes pots, for instance. I'm involved with architecture in a larger sense."

Despite—or perhaps because of—this total immersion in his architecture, Alter's design inclinations are toward subtle, open-ended gestures that yield to the natural landscape and quietly support the business of life. "I'm interested in how one makes architecture that supports contingencies and changes," he says. "I don't want to be one of those architects who designs all the tiles in the kitchen." And while he admits that his youth and academic commitments keep him from realizing "dream projects" (a small New York City hotel, a civic building), he is excited by the work he is doing. "There are so many amazing opportunities open as a young architect," he says, "and so many different ways of construing what an architect is." ■

Mark Alden Branch, a former senior editor of Progressive Architecture, is coauthor of Devil's Workshop: 25 Years of Jersey Devil Architecture (Princeton Architectural Press, 1997).

KEVIN ALTER

THE THINKER

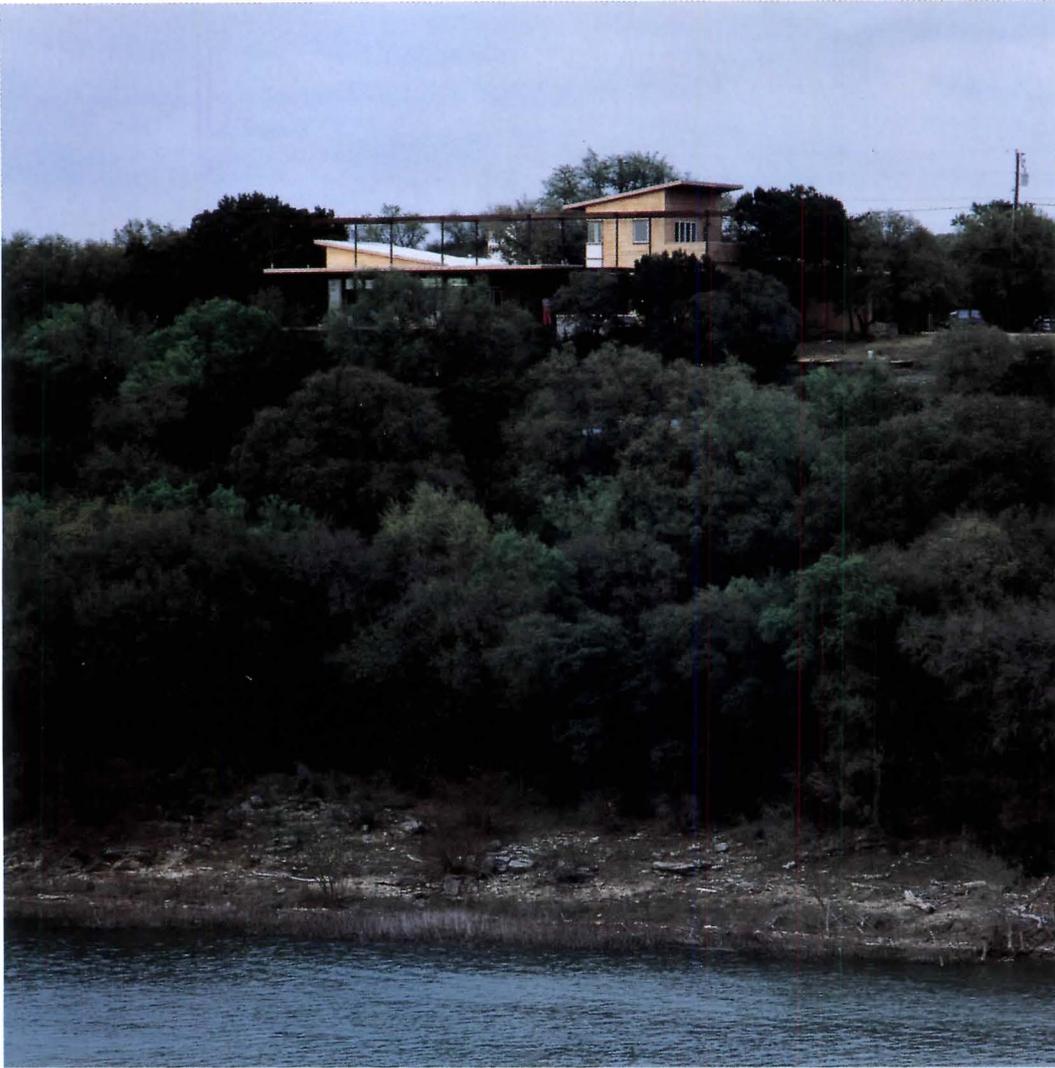
Age: 35

Education: Bennington College, Harvard University

Current position: Assistant Professor, University of Texas at Austin

Custom-made undergraduate major: Architecture, ceramics, and mathematics

PORTRAIT BY ANNE KATRINE SENSTAD

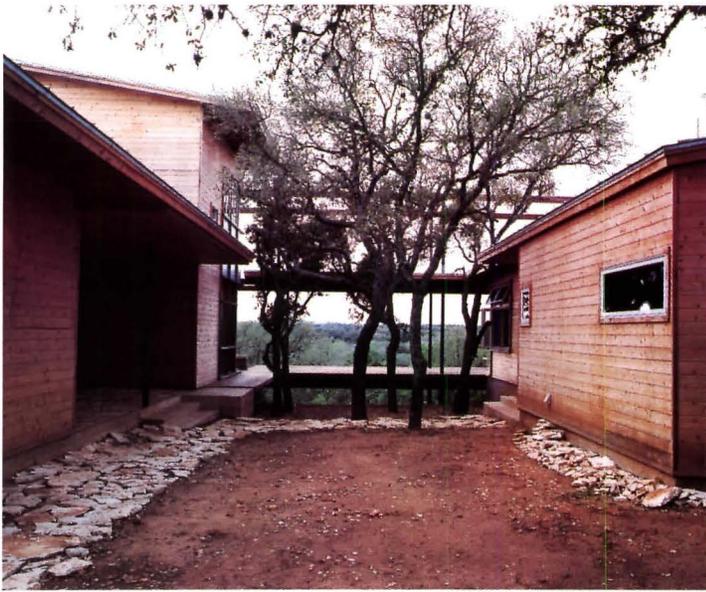


Tonnesen House in Texas Hill Country (above) by Kevin Alter and David Heymann crowns bluff over Pedernales River. Occupied on weekends by couple with grown children, it comprises two compact wooden blocks linked by 96-foot-long covered deck on west side (below, at left). Garage (below, at right) flanks cedar trees left undisturbed on site. Breezeway (facing page bottom) between garage and screened porch storage leads to stand of live oaks in unpaved entrance courtyard (facing page top).



Site and floor plan | ——— | 37'/11m ⊙







Roof joists that span deck (right) rest on C-channels welded to lally columns and braced by tension cables anchored in wood frame above joists. Deck is structurally independent of enclosed spaces. Glazing (top) is composite of fixed glass and commercially produced operable windows installed in wood frame. Living room fireplace (above) occupies 14-foot-tall space that reflects Alter's interest in postwar modernism.





THE APPRENTICE

Age: 33

Education: University of New Mexico

Current position: Associate, Antoine Predock Architect, Albuquerque, New Mexico

Quirkiest research project at work: Scanning the Internet for images of UFOs to paste into conceptual collages.

KIRA SOWANICK

BY LAWRENCE W. CHEEK

"It's really wonderful to be in his midst," says Kira Sowanick. "Is that the right word?" Yes, decidedly. Anyone who's ever talked with Antoine Predock knows it's like standing in a meteor shower. Ideas can vector in from any level, any dimension. Sowanick, one of five associate architects in Predock's Albuquerque, New Mexico-based firm, immerses herself daily in that shower—in his midst.

Sowanick has chosen to orbit a star architect as a long opening act of her career. Perhaps, more accurately, Predock chose her: He plucked her out of graduate school at the University of New Mexico (UNM) and put her to work as an intern during her final year. "She had a spark and an intensity that was quite obvious," Predock says. That was in 1993, and she has been with the firm since. In 1998 she earned her registration, and Predock made her an associate on the same day.

Sowanick grew up on a farm in Dixon, New Mexico, a sleepy village in the achingly picturesque Rio Grande valley 100 miles north of Albuquerque. Her parents were counterculturalists and part-time artisans, so throughout her childhood she absorbed the lessons of self-sufficiency and making things. Architecture never occurred to her—then. She enrolled at UNM as a meandering liberal arts major, eventually focused on fine arts, and finally enrolled into the Non-Architectural Graduate master's program in the School of Architecture and Planning. "For the first time I was completely consumed by what I was doing," she recalls. "It brought together the physicality of making things and the notion that architecture affects our lives in so many ways, including many that we aren't aware of."

Her work in Predock's office ranges so widely that tedium is never an issue. When a design project begins,

she travels to the site to research and build one of Predock's trademark collages—an omnium-gatherum of images that draws on a community's entire cultural and natural history. She may photograph a road cut that illustrates geology, borrow a line of poetry by a native, or even lift a blurry photo of a local UFO sighting off the Internet. When the collage is unveiled for the client, she always sees pieces of it striking chords of recognition—and later, watches Predock use it as a fountainhead for his ideas.

Predock generates the "intention, vision, and design" of the projects, and then Sowanick and the other associates wrench all that into reality, sweating the details. Sometimes, Sowanick says, they have to wrench Predock himself back to reality: "He may want to do something that can't be done." Sowanick also functions as the office's project shepherd.

"She can do just about anything," Predock says, seeming delighted to answer questions about Sowanick's role. "She has great management skills, instincts about the chemistry on a project. She is great about taking ephemera, the intangibles of place, and going right into the work. She just understands."

So, the inevitable questions: Does she ever feel unfulfilled working in the shadow of a great creative light? Does she ache to break out, to be a star herself? "I don't know if 'ache' is the right word," she hesitates. The question resonates somewhere deep inside. "I'm taking care of my mother, and that's another full-time job. I don't have the resources to—at this time in my life. Ultimately, I will.

"But I really love what I do. I love being around this energy. I promised myself I would stay as long as I'm learning, and there's still something new every day." ■

PORTRAIT BY MAGGIE STEBER



Frank Don
For the Community
Collegiality

primal knowledge

Collegiality tree-shaded gardens

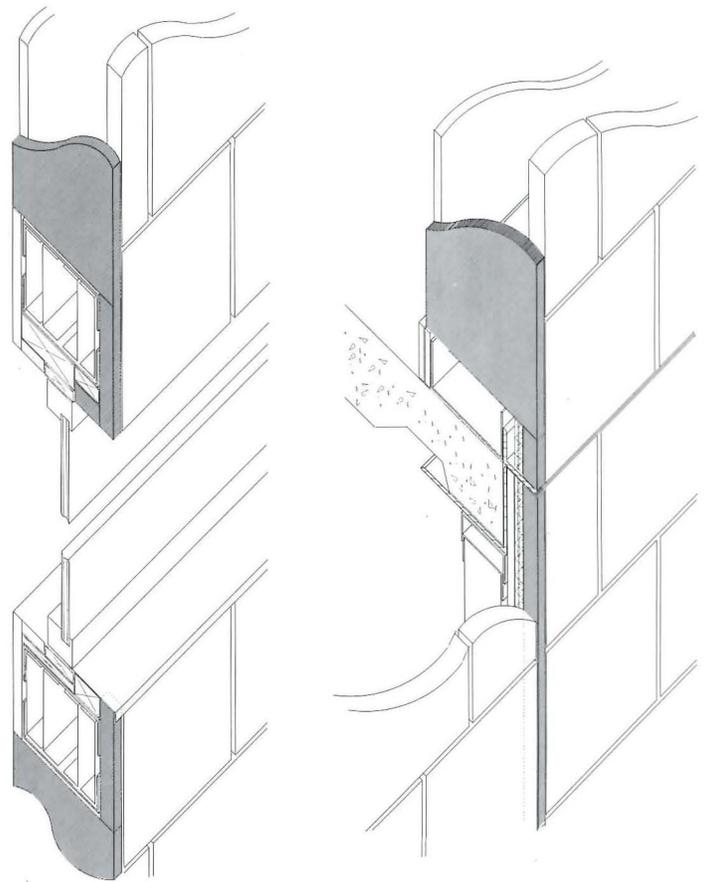
ARCHITECTURE

The Desert Smells Like Rain

To the edge of the earth

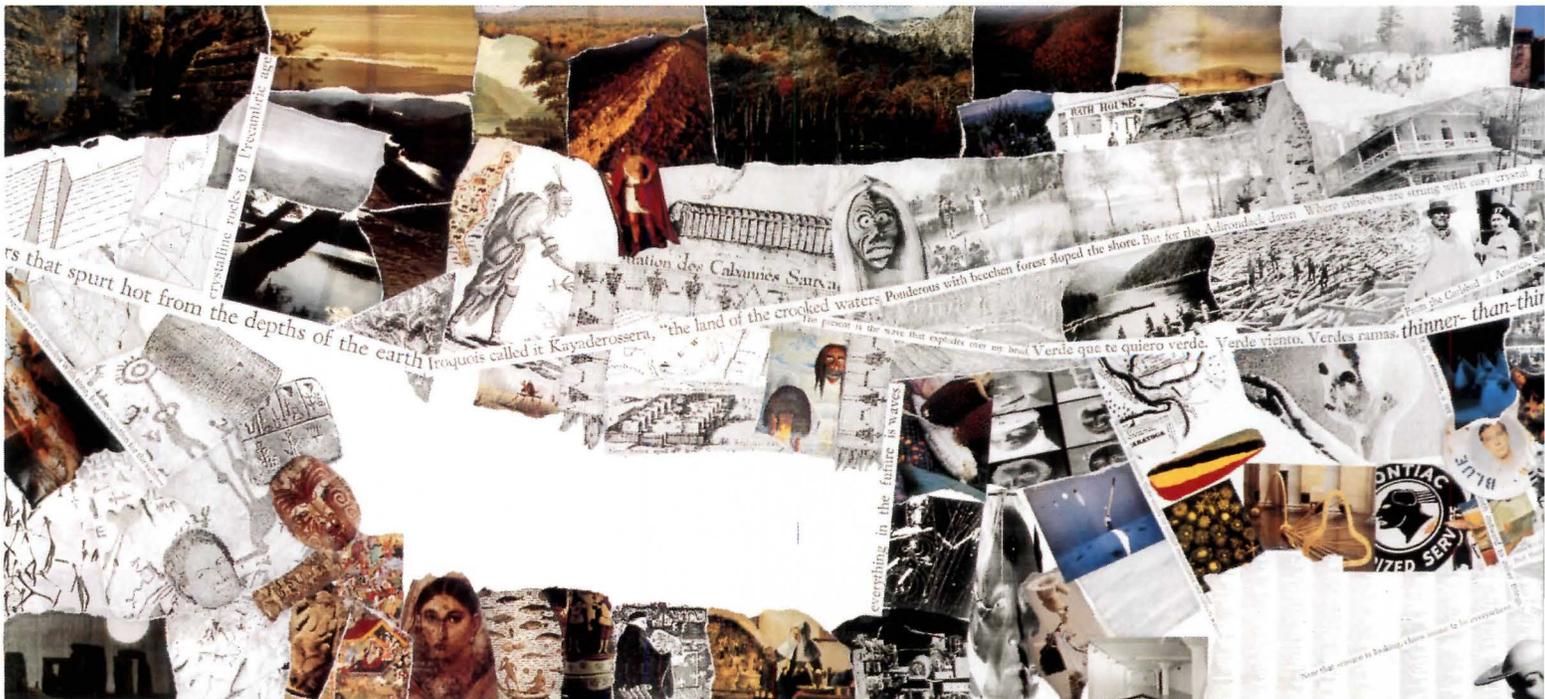
There is a point from which the city shows as the geometric library
glow from an invisible thread that binds one being to another

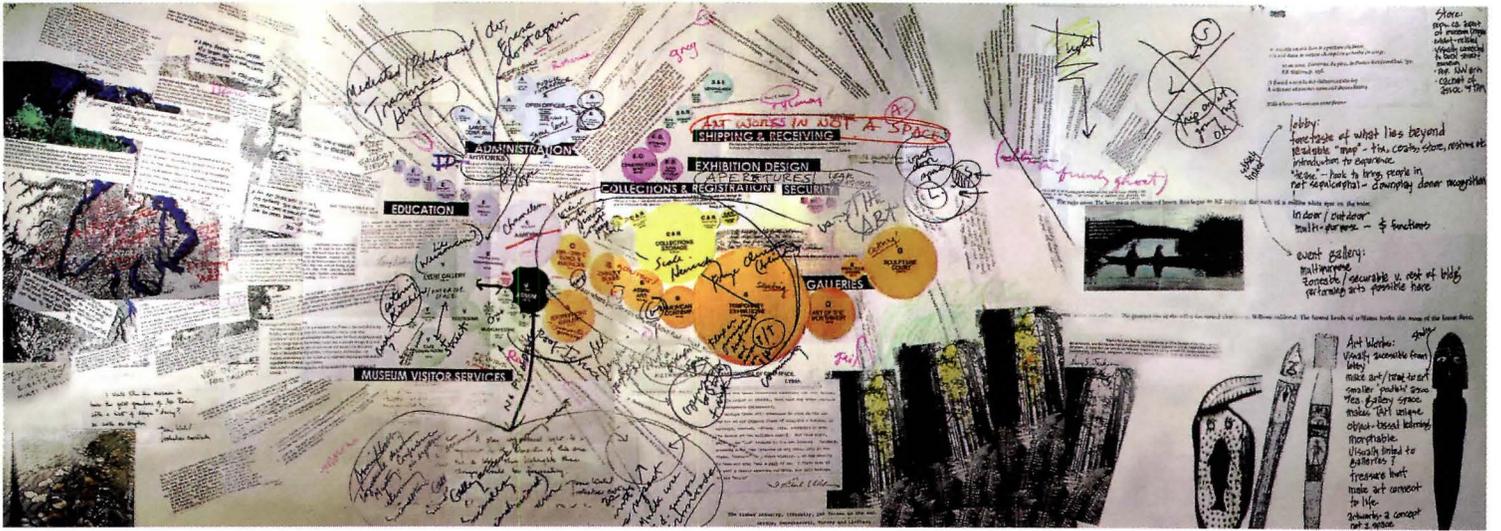
Sowanick worked on construction documents for University of California, Santa Barbara's Student Affairs and Administrative Services Building (1996, below). Axonometric wall sections drawn by Sowanick (right) reveal 3/4-inch glazing, inserted perpendicular to courses of thin CMU blocks to create fissures through the facade.



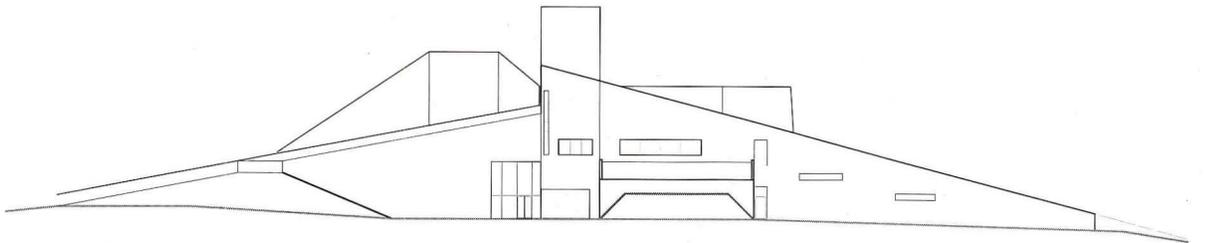
Axonometric details, fissure glazing | 6' / 2m

Sowanick and Predock created collage in 1996 (below) to generate ideas for Tang Teaching Museum and Art Gallery, Skidmore College, Saratoga Springs, New York (below); it comprises images and texts from artists, authors, historical accounts, and geological data that describe the site and inspire Predock.

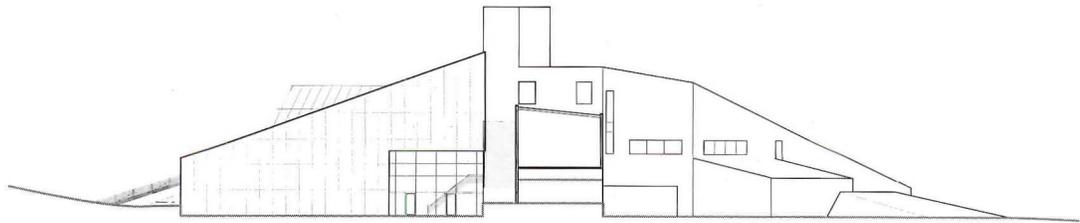




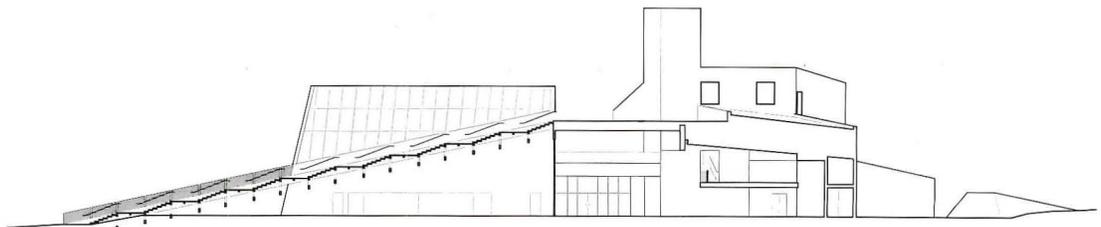
Tacoma Art Museum programming collage (above), which Sowanick and Predock initiated in 1998, was basis for discussion at meeting with museum staff and trustees. Their comments, noted by architects, create second layer of script on collage.



West elevation



North elevation



East-west section | 1" = 23'7m



THE TRADITIONALISTS

Ages: Juan Caruncho, 41; Frank Martinez, 35; Ana Alvarez, 30 (from left to right).
Education: Caruncho: Dade County Community College, University of Miami; Martinez: University of Miami, Princeton University; Alvarez: University of Miami, Harvard University
Current positions: Principals of a 5-person, Miami-based firm
Their philosophy: "Yes, we're traditionalists, but only in that our work is based on time-honored principles and techniques."

CARUNCHO, MARTINEZ AND ALVAREZ

BY RAUL A. BARRENECHE

Posed for a portrait on the front porch of their studio, architects Juan Caruncho, Frank Martinez, and Ana Alvarez look like members of a patrician Latin American family. Their quiet, dignified air seems fitting for a group of young designers with a portfolio full of elegant houses in upscale, neotraditionalist communities. But don't mistake their cool, conservative appearance and their high-brow client base for detachment and social diffidence. The backdrop in the portrait is not the sumptuous veranda of a Caribbean estate, but the porch of their office, a modest wooden bungalow in Miami's Little Havana that doubles as Martinez and Alvarez's home. In addition to posh houses, the firm's work includes studies of this inner city neighborhood, sponsored by the University of Miami, that aim to remedy social and economic ills through design. Despite their youth, the trio takes old-fashioned values to heart.

Alvarez met future husband Martinez in the late 1980s while they were completing bachelor of architecture degrees at the University of Miami. Partner Juan Caruncho was in Martinez's graduating class. Alvarez went on to complete a master in design studies at Harvard University and Martinez a master of architecture at Princeton University. The three had talked about going into practice together, so when Alvarez returned to Miami from Boston in 1993, the trio secured two private house commissions, hung out their shingle, and went into business.

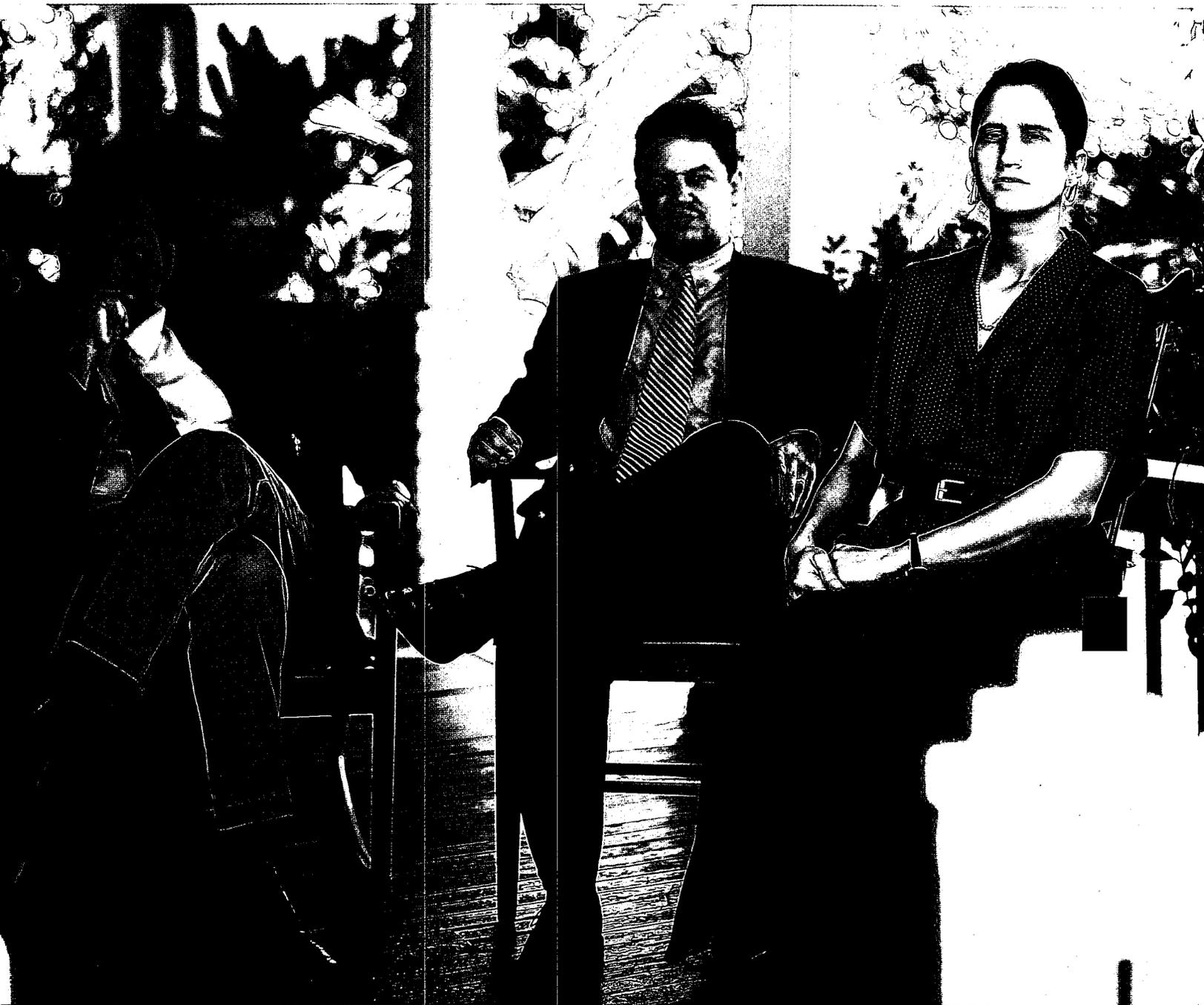
All three designers worked at Duany, Plater-Zyberk Associates (DPZ)—Alvarez as a student intern, Caruncho and Martinez after graduation—and their first solo projects were houses in the DPZ-designed communities of Orange Beach and Tannin, both on Alabama's Gulf Coast. They later designed courtyard villas and tennis cottages in another DPZ-planned New Urbanist town, Windsor, Florida. Given this track record, is the group worried about lingering in Andres Duany and Elizabeth Plater-Zyberk's shadows, or being branded as another of Miami's neotraditionalist firms? "We expect that people will label us traditionalists, because a lot of our work has been in these towns," maintains Alvarez. "If they see us that way, that's okay; we're happy with the work we've done there. But I think we'll be viewed differently with our new work,"

which includes townhouses in Ayvali, Turkey; a residential compound in the Philippines; and a campus master plan and a student services building for the traditionally African-American Florida Memorial College in Miami Gardens. Though the sites of these latest projects are free from the prescriptive codes used in Windsor, Tannin, and Orange Beach, the architects haven't strayed far from the traditional forms and meticulous detailing of their earlier work.

Alvarez and Martinez rehabbed their 1921 bungalow, transforming the first floor into their home and the upstairs into their office, so Alvarez could supervise the office—and her two young children—while Martinez teaches at the University of Miami. The front porch functions as the firm's conference room as well as an alfresco family room. "Our home reveals the same attitudes about our work: that we value the art and craftsmanship of the house, and we want to be in the vibrant, active neighborhoods of the inner city," says Martinez. "We choose to live here because of the sense of community. My parents live across the street, for instance, so my kids are growing up near their grandparents."

All three still draw the old-fashioned way: Beautiful, lush pencil renderings reveal the meticulous detailing of their work. "Andres Duany tells us, 'You guys put a lot of love into your drawings, and that's what sets you apart,'" offers Martinez. As for the work itself, the architects insist that it's traditional or historicist only in its pursuit of art and craft, and it is not about re-creating history. "We look to the vernacular to learn how to put buildings together, using history as a stepping stone," explains Alvarez. "There are details in our buildings you might typically find only in furniture." This attention to how buildings are put together is part of what Martinez sees as their generation's charge: "We have to delve deeper into the art of building, and strengthen the discourse and base of knowledge that the generation ahead of us started."

For the moment, the firm is content to keep the office small—just two employees in addition to the three principals—to preserve the collaborative, hands-on design process. "We would love to have more projects, but we're scared to have too big an office," confides Alvarez. "We could stand to grow a little, but not too much." ■

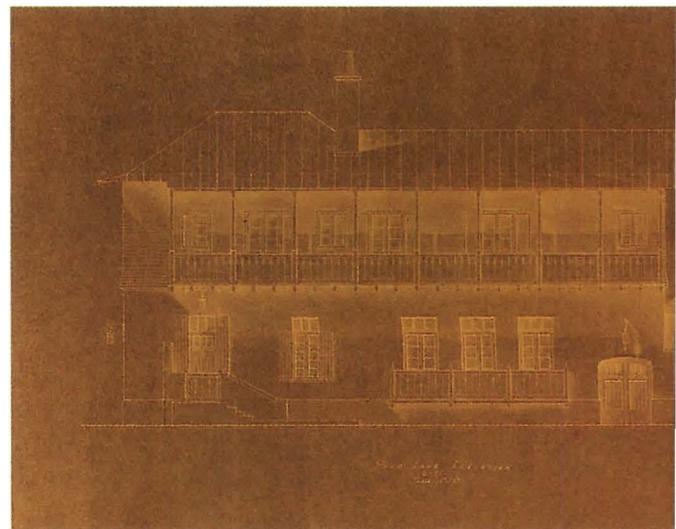


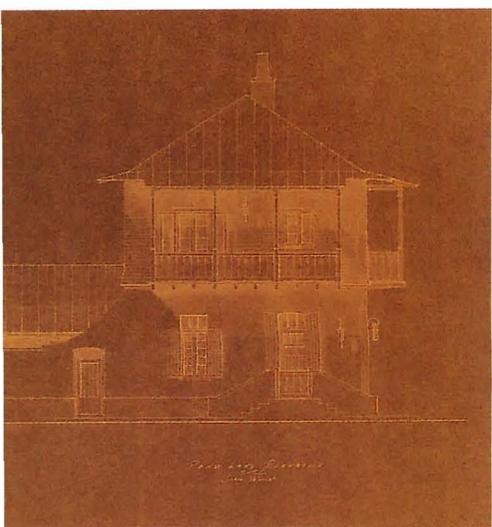
PORTRAIT BY ELIZABETH FELICELLA



In 1996 and 1997, Caruncho, Martinez and Alvarez completed Courtyard Building and Tennis cottages in Windsor, envisioned as a densely settled, affluent town—an alternative to distended new resorts typical of Florida. In Courtyard Building (facing page, right and bottom right), which borders croquet lawn, narrow central door leads to colonnaded entrance court for three apartments with generous floor plans. Elegant balconies admit views to lawn.

Tennis cottages in Windsor (above and below) comprise two contiguous residences whose approaches by car and by foot are carefully orchestrated. Each cottage incorporates one-car garage, which is next to courtyard. In pencil rendering (these pages), one-story wall screens garage and courtyard of cottage on right; stoops provide pedestrian access.





BY RAUL A. BARRENECHE

RIGGA, a small workshop in Portland, Oregon, runs its five-person practice with what principal James Harrison calls "a mixture of studied irreverence and religious orthodoxy towards architecture." Though Harrison and founding principals Ean Eldred, John Kashiwabara, and Peter Nylén all trained as architects, they clearly emphasize the group's artistic tendencies over the architectural. On RIGGA's letterhead, for instance, they tout the office as an art and design studio, not an architecture firm. Their mission statement speaks of producing "art, design, and architecture through an intensive, hands-on studio practice." And since launching their business in 1997, the group's most high-profile jobs have been commissioned installations at the Marylhurst College Art Gym in Marylhurst, Oregon, and the Center on Contemporary Art in Seattle. It's not that the group eschews building or that the members don't see themselves as architects. (Two principals are licensed; two are close to qualifying.) Rather, their artistic endeavors inspire an architecture firmly rooted in craft. "We all approach architecture from a maker's point of view," explains principal Peter Nylén.

Nylén credits the group's education at Cooper Union in New York City with honing the craftsman's point of view. Nylén, Harrison, and Eldred became friends during architecture school there, and had all met Kashiwabara, who was two years older. The four migrated separately to the Pacific Northwest after graduation. They eventually reconnected while volunteering at the Portland Institute of Contemporary Art, and decided to collaborate on an art installation at Marylhurst College. The experience convinced the foursome to work together perma-

nently. They launched RIGGA in January 1997 with an old-fashioned vision of the architect's office as a collaborative workshop. Ideas develop through prototypes, models, and mock-ups, but RIGGA's youth ensures that computers are a key part of the studio environment. "It's funny that computers are often thought of as something that distances us from physical materials; but I think our generation views the computer as a tool that brings us closer to materials," Nylén explains.

Since its inception, the group has added just one new member: Principal Richard Garfield, a protégé of Louis Kahn and former principal of Garfield Hacker Associates in Portland, joined the firm this past winter. With Garfield's addition, RIGGA is now exactly the size they want to be. The group refuses to sacrifice the cooperative dynamic they've created—they even admit to turning away new projects that would require adding staff members too quickly. This year, however, Nylén concedes that they will have to confront growth seriously, or risk missing projects that require more manpower.

For the moment, RIGGA's work continues to walk the line between art and architecture. The fivesome is working on designs for custom light fixtures and furniture; a rooftop garden for an art collector; the transformation of an abandoned viaduct into a neighborhood portal; and an urban-scaled sculpture, part of a percent-for-art project in Portland. RIGGA's self-proclaimed irreverence allows them to consider each of these projects as architectural, no matter what the scope. Their religious fervor toward the art of architecture ensures a universal attention to exacting craft—always from the maker's point of view. ■



RIGGA

THE INDEPENDENTS

Ages: Ean Eldred, 32; Richard Garfield, 55; Peter Nylén, 32; John Kashiwabara, 34; James Harrison, 31 (from left to right)

Education: Eldred: Cooper Union; Garfield: University of Pennsylvania; Nylén: Cooper Union; Kashiwabara: Cooper Union; Harrison: University of Florida, Bennington College

Current positions: Principals, interdisciplinary workshop, Portland, Oregon

Oddest commission: For an art installation based on the writings of Jorge Luis Borges, the group constructed such imaginary devices as a cerebraphone and a photon rake.



PORTRAIT BY ROBBIE McCLARAN



RIGGA designed and built lyrical garden pavilion in Portland (these pages). Panels made of bamboo poles (above) and translucent fabric sheets pivot open and shut. Unpolished yet carefully assembled components such as steel columns (below), slatted wooden walls (top), and aluminum roof reflect RIGGA's simple, hands-on approach to craft.



PHOTO COURTESY OF RIGGA



EUREKA!

Maturing designers reflect on the events that helped signal their professional coming of age. **COMPILED BY ANDREA TRUPPIN AND NED CRAMER**

The year I turned 40 I drew a line in the sand and looked at what was happening in my career: I hated the work I was doing, and I didn't like any of my clients. I fought with them over what they wanted because I accepted every commission that came along. I decided from that day forward only to work for people who would listen to what I had to say and would build my ideas. I spent two years showing people the door. I've been extremely fond of every client I've had since then, and proud of the projects. **VICTORIA MEYERS, NEW YORK CITY**



HOLABIRD & ROOT PRACTICES TEAMWORK

At Holabird & Root in the late 1970s, I remember presenting a design for a gymnasium that I was madly in love with, and it wasn't accepted. Having to go back and redo those ideas really bothered me. I wasn't mature enough to recognize that the first idea isn't necessarily the right one. Ownership is really bad. It prevents an open mind. Now, if

someone at my company starts talking about "my design," we put them on a different project.

CAROL ROSS BARNEY, CHICAGO

I was hired by Emilio Ambasz, who was then a design curator at the Museum of Modern Art in New York City, to draw his projects for publication. At that time he was working on the Luis Barragán exhibition, and when I saw the photographs for it, I got very excited. It was a window on a kind of modern architecture that could be more inclusive. It's poetic, it's colorful, it includes landscape, it's open, it's material, and it still has some rigor about it. All of those things triggered in me some kind of affinity: I thought that this may be a direction I'd want to go. **MARK MACK, LOS ANGELES**

recognize that I didn't have enough experience to solve it, but that next time around I'd get that much closer. That was a really important realization: You don't have to solve 100%. Save 1% for tomorrow. **KAREN BAUSMAN, NEW YORK CITY**

I think other people noticed we were onto something before we did. When Seaside, Florida, began, I thought it was pretty cool, but that was about it. There was very little in the ground yet, but an architect called Ernesto Buch said, "This is the most important project in the country at this time." I thought it was ridiculous, rather than prescient. Then Leon Krier visited a year later and said, "Andres, you've done it." This was in 1982 or '83. In 1984, after I had presented Seaside at a conference, at which everyone else ignored us, Rem Koolhaas said, "We must discuss Seaside—we have a time bomb among us." That was the first time that people saw Seaside as something more than just the sum of its parts. **ANDRES DUANY, MIAMI**

When it was time to leave Skidmore, Owings & Merrill in 1977, I had certainly had my ups and downs. I got some great training there, but I had no credentials. I wasn't even an architect yet. I had nothing at all to fall back on. It wasn't courage, just the overwhelming knowledge that I had spent 11 years in a place so political and crushing of women that I had to go. When I left it never occurred to me to ever work for anyone else again. **MARGARET MCCURRY, CHICAGO**



JAMES MODELS HIS FUTURE

I quit my job at a large, corporate firm in 1990 and literally went into my basement and painted and designed and read for a year. The solitude gave me time to think. I wasn't really comfortable with what was going on in architecture at the time. Postmodernism seemed superfluous. That period was one of the most productive in my career: I had one small residential project, and the ideas that I generated then still under-

pin what we do now. In fact, though the project stalled, the client held onto the property and now, ten years later, we are in design development for it again. **VINCENT JAMES, MINNEAPOLIS**



FRONT PORCH FUN WITH HOUSTON'S TAFT

In school I wanted to be a rock-and-roll star. I was Craig Hodgetts' teaching assistant, and through Craig I realized that you could actually get the same satisfaction in doing architecture as in doing music; that you could have fun. After graduating, my classmates Lili Milani, Danny Samuels, and Bob Timme decided that we had had so much fun in studio that we could create the same energy working together. We started Architects Incahoots Associates —

AIA—in 1972. This name was a problem for some corporate clients, so we changed it to Taft Architects, after the name of the street our studio was on. So even though it sounded conservative, we were in the know. **JOHN CASBARIAN, HOUSTON**

In 1996, after 10 years as Richard Meier's partner, I won a fellowship to the American Academy in Rome. I had sensed that architects in the United States felt they could make a building by tossing a design over their shoulders and telling the engineers what it was going to be: the architect as master builder. It was an eye-opening experience to see that in Europe, architects collaborate with engineers on buildings.

TOM PHIFER, NEW YORK CITY

I'm from Milwaukee. I went to Arizona to work with Paolo Soleri on Cosanti in 1967, and the world has never been the same since. It was about really understanding the place; about going on hikes and discovering weird, wonderful geology, geography, and archaeology of the place; about discovering a body of work. **WILL BRUDER, NEW RIVER, ARIZONA**

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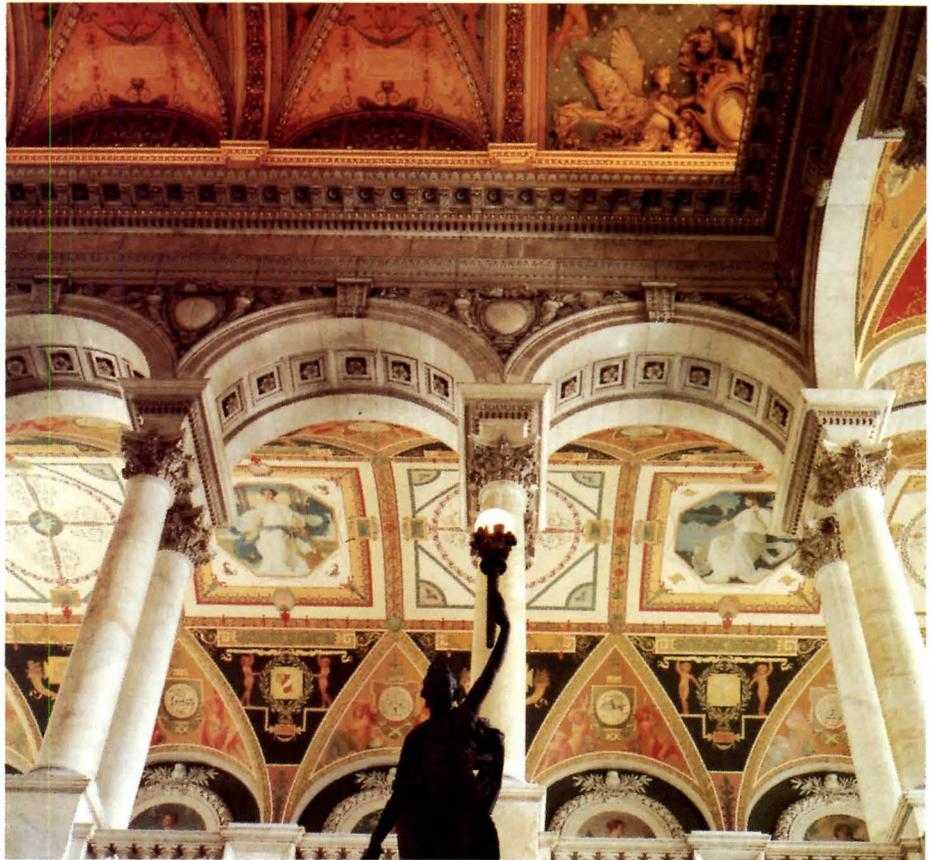
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Overlooking Cold War missile launch pad, **newly renovated military warehouse** (above) in Golden Gate National Recreation Area, near San Francisco, now houses artists' studios belonging to Headlands Center for the Arts.

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NCARB spent millions computerizing its registration exam. Now they're suffering mightily for it. *By Eric Adams*

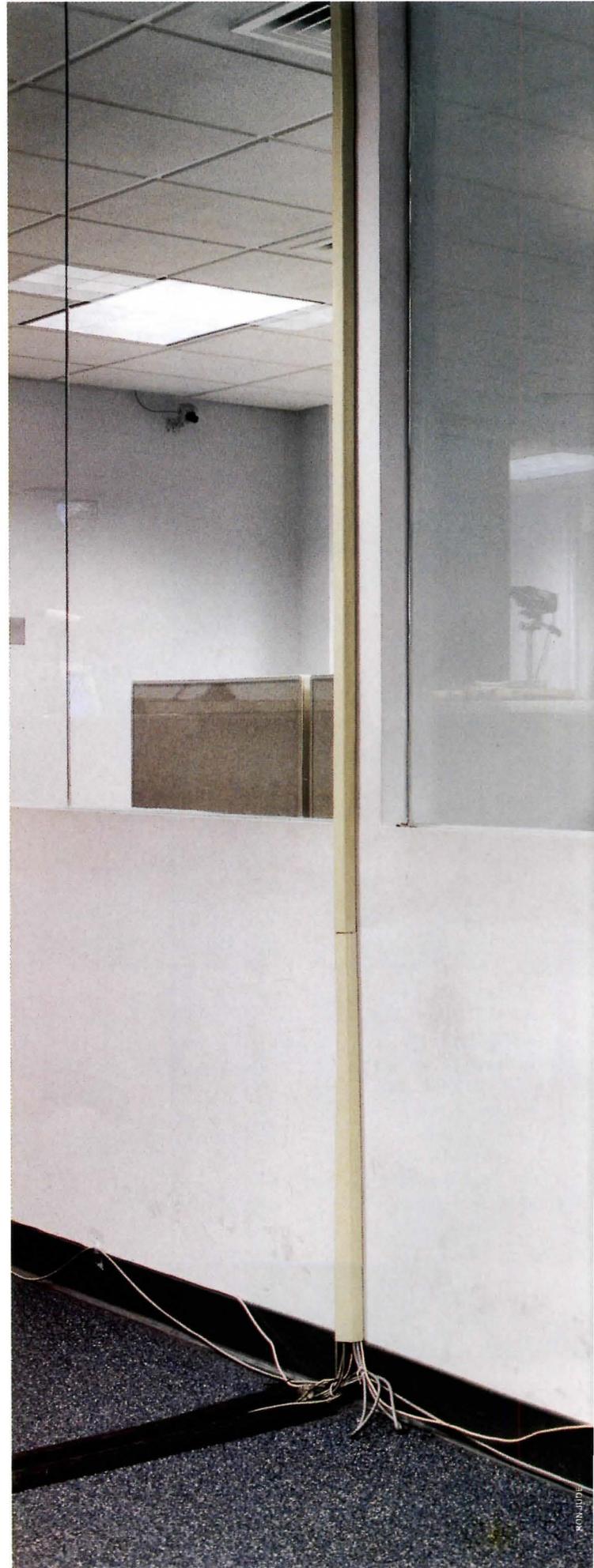
First of a two-part special report on NCARB

The Price Of Progress

The National Council of Architectural Registration Boards (NCARB) is learning the hard way that technology has a price—or, more precisely, *inventing* technology has a price. The Council's new computerized Architect Registration Examination (ARE)—the product of an eight-year, multimillion-dollar development effort—is bleeding the organization dry. NCARB loses up to \$1.5 million per year in exam administration costs, plus \$500,000 in new development costs every time it replaces one of the 15 CAD-like vignettes in the three graphic divisions, which it must do periodically for security reasons. NCARB isn't the only one paying through the nose for this technological boondoggle: Licensure candidates now pay nearly double to take the exam—\$980 compared with an average, depending on additional state fees, of \$500 prior to the computer exam's February 1996 debut. For this and other reasons, the number of candidates taking the test, and thus supporting NCARB, plummeted when the exam came online, from 57,000 individual divisions taken in 1996 to 12,062 in 1997, the first full year that NCARB offered only the computer version.

The pain doesn't stop there. Adding insult to NCARB's injury, many candidates, architects, and registration boards—55 of which comprise Washington, D.C.-based NCARB's United States, U.S. territorial, and Canadian membership—are wondering out loud not only if the exam is an adequate test of a potential architect's skills and competencies, but also if it was NCARB's lack of business acumen that allowed the program's costs to spin so far out of control. "It was a very long process to develop the computer exam," notes William Martin, executive secretary of the New York State Board for Architecture, "and it certainly appears that the numbers weren't quite accurate."

From a distance, things seem rosier. In its first two years of service, the new exam has generated many fans. Candidates applaud the fact





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Examination in any
of hundreds of
**Sylvan Learning
Centers**
nationwide, like
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New York City.

The test costs NCARB up to \$2.6 million per year to administer, of which only about \$1.2 million will be generated through exam fees.

that they can now spread out the testing effort, taking the nine divisions separately whenever they are ready or when their schedules permit, and in any of hundreds of cushy Sylvan Technology Centers nationwide. The old pencil-and-paper exam, on the other hand, would only be given by each state twice a year, and generally in large, uncomfortable auditoriums in marathon four-day ordeals. The new format allows would-be architects to focus their preparations on single divisions, rather than the entire exam—something that many argue contributes to current higher pass rates. “Taking the test at one’s own pace adds incredible convenience,” says Tracy Smith, a recently licensed architect with Bohlin Cywinski Jackson Architects in Seattle, “and it reduces some of the stress of the previous method.”

Candidates also note that many of the hidden costs previously associated with the exam, including large blocks of time taken off work when the exam was offered and travel expenses to and from the testing centers, have been eliminated. Further, they applaud the exam itself, which can, thanks to its tightly focused vignettes, test a greater number of facets of professional practice—that is, more components within any given subject area—than its predecessor, leading candidates to feel they are being more thoroughly tested. Finally, the new test offers what many see as more consistent computerized grading of the graphic divisions.

But significant problems lurk. First is the dramatic overall drop in the number of test-takers. “Part of this is the mystery of the [new] exam, part is the student’s ability to procrastinate, and part is the exam’s cost,” says NCARB president Susan May Allen, who admits that while NCARB anticipated a modest drop in test-takers, it was not at all prepared for the percentages they are now facing. “We should have realized this would happen.” Other problems go further back. NCARB began with an ambitious, arguably premature idea that was intended to increase cost efficiency as much as make the exam easier to take, but whose ultimate price far exceeded anyone’s estimates.

Costly development

While developing the computer exam, the project partners—NCARB, Princeton, New Jersey-based Educational Testing Service (ETS), and ETS’s for-profit spinoff, The Chauncey Group—broke considerable new ground. “Nothing like this exists in the world,” gushes Chauncey Director of Test Development Dick Devore of the unique system they developed to administer and grade graphics-oriented examinations. The development of that system spanned eight years, beginning in 1988, and included input from NCARB boards, architects, computer scientists, and psychometricians (ETS and Chauncey staff people who specialize in developing mental measurement techniques). The team overcame numerous technical challenges, including a conversion from “linear” technology to “object-oriented” programming that enables the computer to recognize graphic images in the vignettes, which, though common in current CAD software, was then new to the computer industry. The research team also tackled challenges relating to the exam content and grading. For example, the computers had to be programmed to look for key details in a test-taker’s response—such as plans that meet pro-

gram requirements and dimensions that meet code requirements—and yet not be overly harsh in terms of measurements and tolerances. Also, the programmers inserted a function that allows the computer to terminate an exam early if it feels a candidate will, based on his or her performance, definitely pass or definitely fail. Borderline cases are fed more questions until a determination can be made.

While the multiple-choice divisions are a relatively straightforward conversion to computer format, the graphic divisions’ new vignette system allows test takers to use a CAD-like computer interface to address a series of very specific site planning, building organization, and building technology problems, with each vignette providing separate program parameters. Pull-down menus contain trees, building footprints, and other predrawn items ready for placement, and a menu of drawing tools is available for the candidates to complete the problem. A built-in calculator further aids the candidates.

The cutting-edge product that Devore and his colleagues are so excited about cost a lot of money. NCARB contributed some \$3.5 million to the program’s development, and Chauncey/ETS a similar sum. No one involved, however, seems to know—or will disclose—the total cost of development; each organization admits the project went over budget, but won’t say by how much. And unfortunately, charges didn’t stop accruing after the development phase. Depending on the number of divisions taken, the test costs NCARB up to \$2.6 million per year to administer, of which only about \$1.2 million will be generated through exam fees, plus the \$500,000 hits NCARB will absorb each time they have to create a new vignette, a procedure intended to prevent exam content from circulating. (Neither The Chauncey Group nor NCARB will disclose how often that happens.)

As for how the cost of development got so high, some of the state, Canadian, and territorial boards feel that NCARB stuck its neck out too far in trying to invent a technology that didn’t exist, and others say the organization didn’t control costs sufficiently. Unfortunately, only one bid came in when NCARB put out a request for proposals in the late 1980s, so there were no competitors against which to compare, and NCARB won’t divulge the development cost breakdowns. “NCARB has been less than forthcoming about how costs formed,” says Bryan, Texas, architect John Only Greer, chairman of the Texas Board of Architectural Examiners. His board has been particularly vocal about the increased exam costs, and is even considering creating its own exam. “These are state dollars that the boards are paying to be members of NCARB,” he says. “Yet when my legislature asks me why these kids have to pay \$980 to take this exam, I can’t answer that.”

The fees charged to the candidates because of exam development and administration costs increased more than many of the boards anticipated, eventually wiping out any savings from travel and accommodations candidates may have incurred when taking the old exam. Of the current charge, \$426 goes to NCARB and \$554 goes to The Chauncey Group and its exam administrator, Sylvan Prometrics, the computerized testing division of Sylvan Learning Systems. Though Chauncey and Sylvan work profits into their fees, neither will disclose

NCARB A.R.E.

Index Task Information

Program

A reflected ceiling plan for a medical office is to be prepared. The space is enclosed by leaseable office space on two opposite sides, a fire-rated corridor, and a glazed exterior wall. The client wants flexibility for furniture placement, efficient lighting levels, and a comfortable environment.

Comply with the following requirements to develop the reflected ceiling plan:

SUSPENDED CEILING SYSTEM

1. Provide a 2 ft X 4 ft grid with lay-in acoustical tiles in all spaces.
2. All ceiling heights are 9 ft above the finished floor.
3. Typical walls terminate 6 inches above the finished ceiling; bearing walls and fire-rated walls extend to the bottom of the floor deck above.

LIGHTING SYSTEM

Lighting layouts should be efficient and should minimize overlighting and underlighting.

1. For all spaces except the waiting area, use only recessed fluorescent fixtures to provide uniform light distribution with a light level of approximately 70 footcandles measured at desk level (3 ft above the finished floor).
2. For the waiting area, use only recessed incandescent fixtures to provide uniform light distribution with a light level of approximately 70 footcandles measured at desk level (3 ft above the finished floor).

HVAC SYSTEM

The space is served by the supply and return risers within the shaft indicated on the floor plan. The HVAC system should provide for uniform air distribution with an economical duct layout conforming to the following restrictions:

1. Provide a minimum of one supply diffuser and one return-air grille in each space. An acceptable air distribution pattern includes one supply diffuser and one return-air grille for every 144 ft² of floor area in each space.

NCARB A.R.E.

Select an Icon

NORTH

NCARB A.R.E.

PROGRAM - SPACES

Abbreviation	Space Name	Required Area (sq ft)
VE	Watchroom/Entrance	700
CR	Community Room	750
AB	Apparatus Bay	2100
ES	Equipment Storage	250
TR	Tarp Room	250
LR	Living Room	600
KP	Kitchen	150
RR	Restrooms	200
BH	Barracks	300
QO	Officer's Quarters	300
BO	Barracks	300
TT	Terrace (Outdoor)	400

LEGEND: DIAGONAL INDICATES FUNCTIONAL RELATIONSHIPS OF SPACES; DOUBLE LINE INDICATES REQUIRED DIRECT ACCESS.

Select an Icon

NORTH

NCARB A.R.E.

Select an Icon

Graphic divisions of new computer exam use controversial vignette format to test architects' knowledge. In practice program provided by NCARB, candidates work with sample vignettes to familiarize themselves with computer interface. Program for **mechanical and electrical plan** (top left) provides candidate's goals for vignette (top right) in creating reflected ceiling plan for medical office. **Block diagram** vignette (above left) asks candidate to position new fire station in place of older facility. **Site section** vignette (above right) requires candidate to adjust grading to accommodate nature study facility, observation tower, and stone terrace on sloping mountainside.

how much. (Chauncey President Judith Moore contends that it, too, is losing money on the exam.) With the old exam, the cost to the candidate was only \$485, plus administration fees that varied from state to state. The old test actually cost several hundred dollars more to administer, but the state boards would subsidize the balance, paying for it with income from license renewals that are now being diverted back into state coffers. While the cost of the new exam is, thus, not that much higher than the old one, the fact that NCARB didn't somehow compensate—or at least better prepare candidates—for the lost state subsidies has many peeved. "Cost creates an undue financial barrier to entering the profession," posits Casius Pealer, a past vice-president of the American Institute of Architecture Students who is currently employed at Tulane University. "And this profession is already seen as elitist and nondiverse."

Unfortunately, the costs aren't going to come down. If anything, NCARB needs more money from the candidates. "At this time we cannot reduce the cost of the exam," NCARB's Susan Allen says. "But we are researching ways to at least not let the cost escalate."

Multiple problems, single solution

While the multiple-choice portion of the program operates well and has been well-received by the professional community, the effectiveness of the vignette system is under scrutiny. Some candidates complain that the CAD-like interface is unsophisticated, and that they had to wrestle with the controls. But the main question is whether the vignettes adequately test the ability to incorporate the solutions to multiple problems in a single effort. "While we agree that the new computer exam is a better instrument for determining the competency of those entering the profession," says Stephen Sands, executive officer of the California Board of Architectural Examiners, "we are concerned that in the transition from the previous exam we lost, in the design vignettes, some measurement of the architectural skill that should be on a licensing exam." An architect, Sands continues, has to know how to put a building together, and while California supports the concept of the vignette, the state feels strongly that it needs to be re-evaluated to see if it could or should include problems that test overall, rather than piecemeal, competency.



Texas floated a resolution in late March to its legislature requesting permission to investigate developing its own exam.

Other states—including the entire southeast region of NCARB member boards—agree. The Council’s Region 3, which comprises nine southeastern states, recently introduced a resolution, which will be voted on at NCARB’s annual meeting in June, urging NCARB to evaluate how well the vignette system is working. “Designing a fire stair or organizing parking are isolated little problems,” says John Carter Wyle, an architect with Atlanta-based Rosser International and board member of the Georgia State Board of Architects. “When it comes to a creative response to large, comprehensive projects, we are not convinced that this exam really tests what an architect does.”

Candidates, too, are concerned that the vignettes are too simple. Grace Kim, a former Skidmore, Owings & Merrill, Chicago, staff member now at the International Masonry Institute, also in Chicago, says that architecture is more comprehensive than the exam implies. “We need to coordinate the ceiling plan with the floor plan as well as the interior and exterior elevations while also observing code and ADA [Americans with Disabilities Act] requirements,” Kim says, explaining that judging minimum competency—NCARB’s goal with this exam—should include more than the vignettes’ content.

NCARB’s response to these claims is testy. “NCARB is a consensus-driven organization,” Allen argues. “We could not have done this if member boards had not agreed that this was the way to go. I’d like to see people prove that it’s not as good as the paper-and-pencil exam.”

There are those that feel the vignette system is appropriate. “Combining multiple programmatic challenges in one solution would not allow any better assessment of the candidate’s abilities,” argues Mike Mariano, a recently licensed architect with OWP&P Architects in Chicago. “If one understands a simple program, an architect can quite easily incorporate more. Broadening the vignettes would only introduce more variables and make the test more difficult to grade fairly.”

But the question remains whether or not NCARB can even afford to alter the format, should they decide to do so. Georgia board member Wyle and California Executive Director Sands suggest a more comprehensive series of problems that combine several of the problems presented in the current vignettes. However, if merely adding a vignette costs \$500,000, it is unlikely that cash-strapped NCARB would be able to muster funds for a whole new—and significantly more complicated—system anytime soon.

Larger problems

Everyone has suggestions for how the problems can be addressed. As for the computer exam’s effectiveness, Region 3’s proposal merely suggests evaluating the test to seek continued improvements, something NCARB says it is already committed to. Sands goes a step further, suggesting that NCARB conduct an occupational analysis to determine what type of exam is necessary. “By knowing what architects are doing in today’s practice and how often they are doing it, they can determine how they need to be prepared,” Sands says. “Theoretically, this could result in a different exam; for example, one with only four or five components that would be cheaper to develop and administer.”

Texas, led by State Representative Jessica Farrar, herself an architecture intern, is going still further: The state floated a resolution in March to its legislature requesting permission to investigate developing its own exam. It would still offer NCARB’s test to candidates who wanted to take it, but if they expected they would stay in Texas for their careers, they at least had another option. Allen hopes Texas doesn’t take that route. “I would be saddened if they did, because it would create impediments for reciprocity to their candidates,” she says.

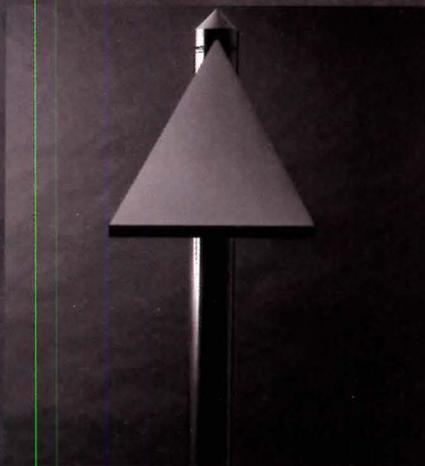
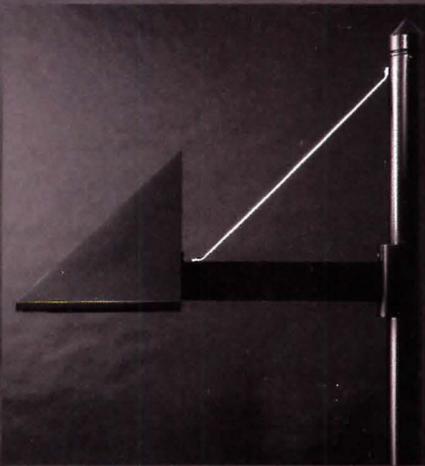
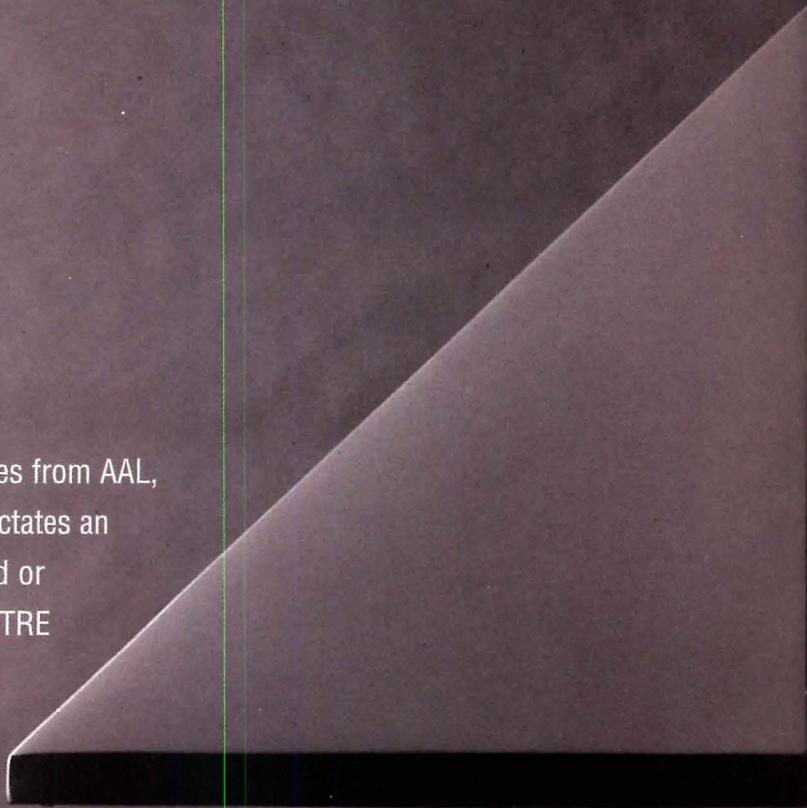
Speculative solutions aside, these are the facts on the ground: the new exam costs interns twice what it did only three years ago, yet somehow NCARB and Chauncey are both losing money. That either means Sylvan is cleaning up—the company won’t discuss its financials—or an enormous amount of money is going down the drain. Either way, all fingers point toward a gross miscalculation by NCARB. Council President Allen’s rose-tinted solution has her organization recouping losses by cutting costs, increasing sales of its educational monographs and other services, or by increasing the number of interns sitting for the test. But that’s the problem: Far fewer candidates are taking the test, and their numbers are growing at only a snail’s pace. And what makes Allen think there will suddenly be a multimillion-dollar increase in the demand for NCARB’s other materials?

Cutting costs is more problematic. Many of the boards angry with NCARB because of the exam say their frustration is rooted in a deeper uncertainty about the Council in general—in particular, how it spends its money and its unwillingness to share operational information with its member boards. To many, the problems associated with the computer exam are merely the tip of the iceberg. ■

Next month: Though NCARB has improved its image in the last two years, the Council is still known more for its secrecy than its customer service, and more for its spending habits than its prudence.

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In an era dominated by instant communication and overnight delivery, prefab construction seems as though it should be a natural. For the most part, however, manufactured buildings emerge from factories with social and cultural stigmas having nothing to do with actual quality. Whether the construction is called “manufactured housing” (built to federal building codes and equipped with a permanent chassis for transport), modular (built 85 to 95 percent complete in-plant to state, local, or regional codes), or panelized (including interior and exterior wall panels, roofs, and floor trusses), long-standing prejudices still associate these buildings with trailer parks, spartan institutional buildings, and suburban sprawl.

Despite the preconceived notions, new computerized production techniques, CAD systems, and architectural innovations are making it possible for factory-produced buildings to be more intricate and distinctive than their boxy predecessors. High-end residential neighborhoods, mixed-use planned communities, and, increasingly, office buildings, hotels, overseas embassies, and other commercial-sector projects are being manufactured offsite. An annual market survey by the industry trade magazine

Automated Builder shows that “special unit production” (an industry term for nonresidential buildings), has grown steadily for the past nine years. While the survey expects a 4 percent dip in 1999, offices, schools, and other commercial facilities are expected to remain strong over the long term.

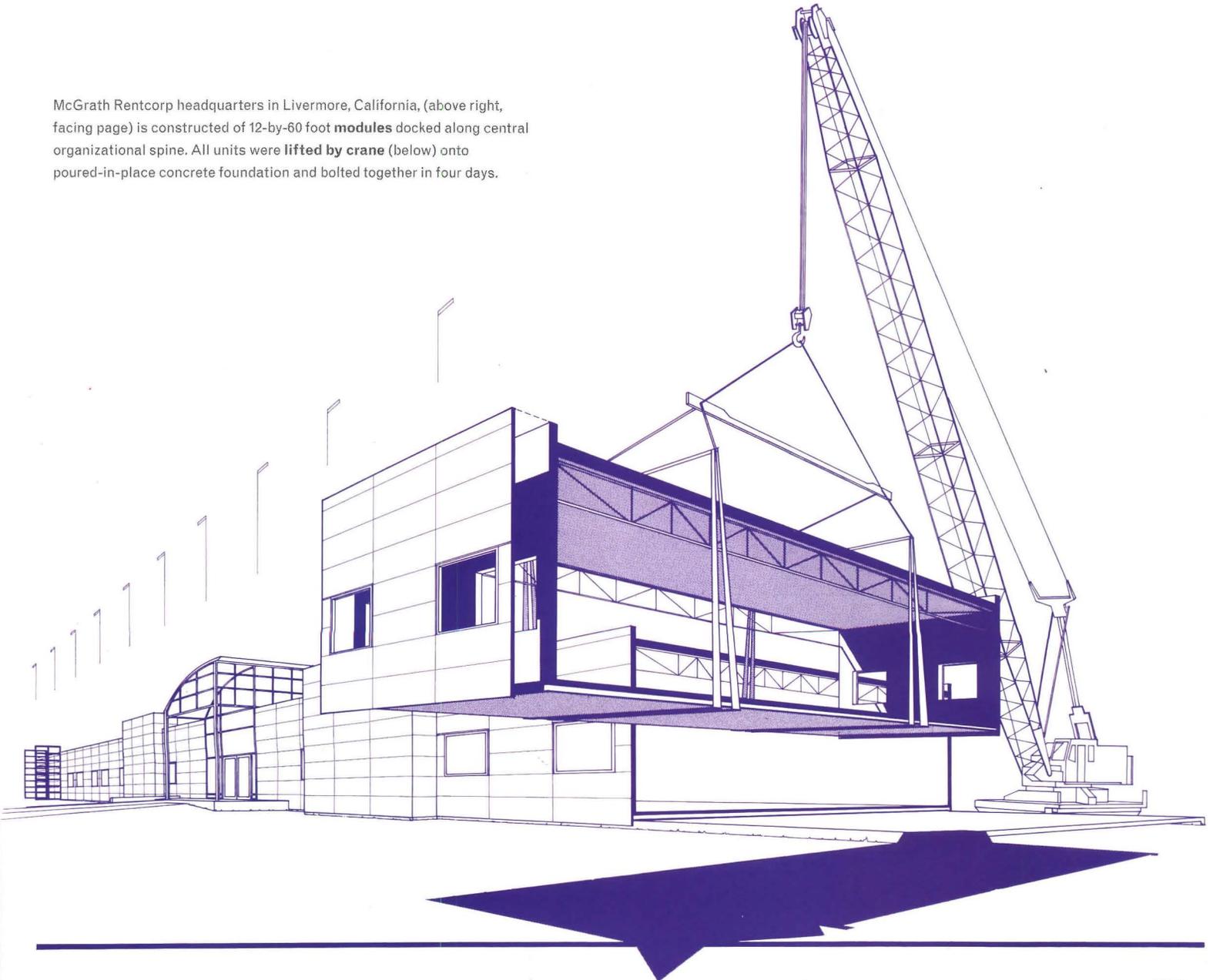
Old guard pragmatists

Philadelphia architect Susan Maxman recently served as a consultant to the Manufactured Housing Institute’s “Urban Design Demonstration Project,” a two-year program aimed at proving the affordability and architectural appropriateness of manufactured housing for infill sites in urban neighborhoods. Working with manufacturers, developers, local governments, and community associations in six U.S. cities (Milwaukee; Denver; Louisville, Kentucky; Birmingham, Alabama; Washington, D.C.; and Wilkensburg, Pennsylvania), Maxman’s team got to know the character of the neighborhoods, market-price ranges, the residents’ perceptions of what made a “good” house, permitting and approval standards, and other issues. The architects also worked closely with the manufac-

Prefab construction is gaining respect slowly but steadily due to new technologies and a few determined advocates.
By James Parsons



McGrath Rentcorp headquarters in Livermore, California, (above right, facing page) is constructed of 12-by-60 foot **modules** docked along central organizational spine. All units were **lifted by crane** (below) onto poured-in-place concrete foundation and bolted together in four days.





turers to ensure that the design elements could be produced efficiently and affordably. To date, five houses have been constructed in four of the test cities—with more on the way—with positive feedback from neighbors and local housing authorities.

Having been involved with modular design since the early 1960s, Kansas City, Missouri-based architect Charles McAfee knows that prefab construction's traditional limitations are actually opportunities for nonresidential projects such as multi-unit residential complexes, assisted living facilities, and, most recently, commercial lodging. McAfee and JM Limited, a development firm the architect founded with Val and Gene Jackson, are working with Cedant Hotels to build 30 Days Inn, Howard Johnson, and Ramada properties over the next five years in locations around the country. "Most of these proposed locations are rural, far from the specialized labor and material resources necessary for stick construction," explains McAfee. "By leasing factory space in strategic locations around the country, we'll still capitalize on the inherent time and cost savings, and provide local workers the opportunity to learn more about modular construction."

Automated Builder's editor Don O. Carlson suggests that the modular concept also makes sense financially. "Generally, interest on construction loans is about three points above the prime rate," he says. "If you can have the building ready in 90 days as opposed to 180, you'll save thousands of dollars in interest and begin generating revenue sooner."

The technology factor

Technology has played a key role in these and other prefab construction successes. Domestic manufacturers have imported computer-controlled sawing and shaping systems from Scandinavia, long a leader in modular construction. These programs enable multiple-saw machines to cut components to exact angles and lengths, thereby increasing production efficiency and product detailing, while reducing waste caused by less-precise machinery and human error.

Carlson notes that the new technology required measurement adjustments. "When the multiple-saw cutting systems were first introduced, there was some difficulty getting their metric-oriented controls to conform to our English measurement system," he says. "Once computer-operated saws resolved those problems, manufacturers could cut thousands of different-sized truss parts each day. Before, it might take the entire work day to change blade positions manually for a few dozen cuts on truss members."

Different materials are also making their way into prefab construction. Peter Smith, founder and director of Unibuild Technology of Australia, describes his company's applications of concrete technology. "We can produce a panel 150 millimeters thick that includes 110 millimeters of insulation and satisfies all the building codes," he says. "We mix a steel fiber into the concrete and make it three times stronger than ordinary concrete. And design limitations are not a problem."

New converts

The new 35,000-square-foot headquarters for McGrath Rentcorp in Livermore, California, offers a high-profile example of modular construction's versatility. As a company that specializes in the sale and rental of modular building systems, it was only natural that McGrath wanted to make its new corporate home its showpiece. It was up to architects Ted Mahl and Jerry Gabriel of RMW Architecture + Design of San Francisco to do some "out of the box" thinking.

Two-story prefab house in Wilkinsburg, Pennsylvania (facing page, top to bottom), assembled by Susan Maxman, is part of Manufactured Housing Institute's two-year, five-city **demonstration project**. Architect Charles McAfee designed and JM Limited manufactured **three-bedroom modular house** (below) as infill on narrow inner-city lot in Wichita, Kansas.



Arranging 12-by-60-foot modules in a grid, RMW created a four-wing complex that houses McGrath's modular sale and rental operations, administrative/executive functions, and the company's electronics rental business. The architects created an outdoor courtyard and a 180-by-12-foot gallery through the center of the building simply by eliminating modules from the grid. The units were trucked to the site, lifted by crane onto the poured-in-place foundation, and bolted together at the corners. The entire process took only four days. The roofs were then sealed together, allowing construction to proceed on the interior spaces and the exterior cladding.

Mahl says that while the modules were generally standardized, the design team worked with the manufacturer to facilitate some key changes. "Some were simple, such as moving windows from the side of the module to the ends to bring in natural light," he says. "Others required adjusting the roof slope to ensure proper drainage, and adding rooftop package units for the HVAC system. We also specified moment frame modules with 9-foot ceilings, which allowed us to create more open space and add future flexibility."

Otherwise, Mahl adds, the design used standard, readily available modular components. The architect fitted the exterior walls with aluminum-coated Reynobond aluminum honeycomb cladding and movable planters. "These pieces are no different from custom building pieces; they're just manufactured offsite," says Mahl. "And for about \$75 per square foot, including interiors and site work, the client got a great deal."

A prefab 21st century?

A recent study released by the U.S. Department of Housing and Urban Development (HUD) reports that manufactured home shipments reached 363,000 units in 1996, more than double the amount in 1991. The overall size of manufactured homes has grown significantly, and two-story units are becoming more common. In the modular market, "mansions" of 3,000 square feet or more are appearing in suburban neighborhoods.

Will the next century see more applications of prefab construction? That depends on a number of factors. The HUD study predicts that the residential market will continue to grow as design enhancements improve building appearance, innovative financing strategies emerge, and zoning restrictions disappear.

However, the study also notes that factory-built housing has done little more than remove the stick-built production processes from the building site and consolidate them under one roof in order to avoid the cost of expensive craft labor. It suggests that the technologies and practices that are already in use in the factories need to be taken to a higher level to provide the variety that consumers demand, while also achieving the inherent economies of scale. "By producing smaller component modules, processing smaller batches in short production runs, and making frequent changeovers," the study reports, "manufactured housing producers and production site builders could increase the variety of their product and respond flexibly to individual customer demands."

Architects too can play an important role in expanding the range of prefab construction applications. All it takes, says Susan Maxman, is a willingness to work within the constraints of the medium. "We haven't made great leaps in design, but are incrementally developing a better product for the industry," she says. "It would be great to have more architects involved to develop new designs and technologies." Adds Unibuild's Smith, "Assembly-line production works for aircraft and motor construction. In time, architects will learn that it will work for many types of buildings as well." ■

James Parsons is a Manassas, Virginia-based freelance writer.

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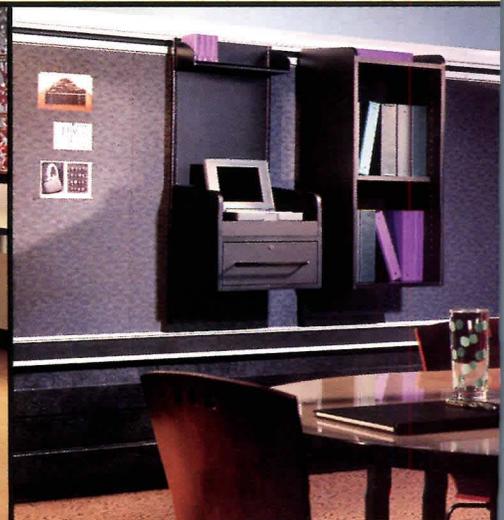
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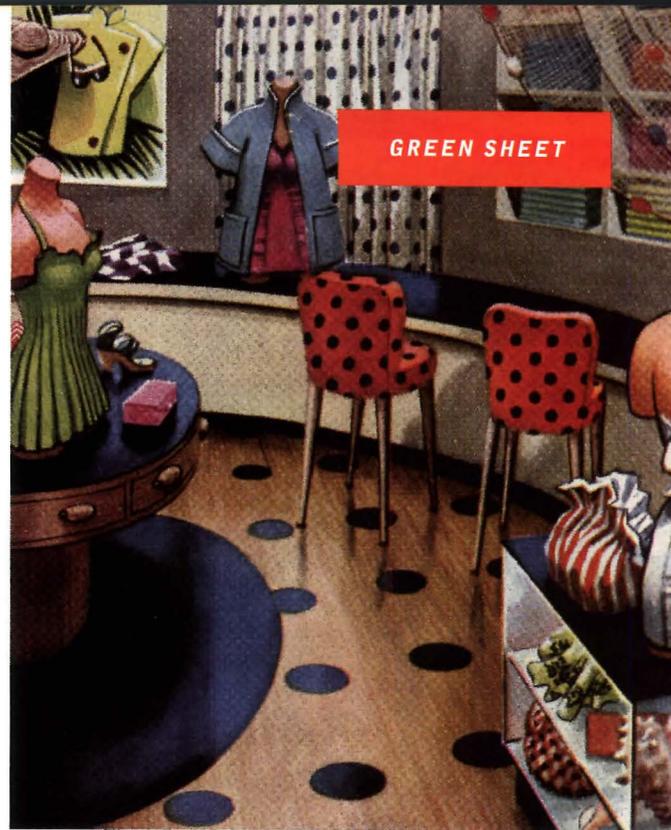


OUTRIGGER TOPS PIVOT FOR VARIOUS USES.



RAIL-MOUNTED UNITS ROLL ALONG THE RAIL

After virtually disappearing from North America for 20 years, ecofriendly linoleum is making a comeback.
By Alex Wilson



Linoleum, Naturally

After pretty much disappearing from the North American market following the closing of Armstrong's Lancaster, Pennsylvania, plant in 1975, natural linoleum is making a comeback. This renewed interest is driven both by the green design movement and by various performance and design advantages compared with competing products. Linoleum was invented in the mid-1800s in England and widely produced beginning in 1860 in Europe and in 1872 in the United States. By the 1960s and 1970s, however, synthesized plastics and vinyl (PVC) were the hot innovations—inexpensive and durable, and with properties that could be easily altered during manufacture by adding plasticizers. Linoleum was old-fashioned, it couldn't be mass produced as quickly or easily as vinyl, and the natural ingredients had to be sourced from several different geographical areas. Today there are only three companies producing linoleum: Forbo Industries in the Netherlands, DLW Linoleum in Germany, and Linosom Linoleum in France.

Sheet vinyl, vinyl tile, and vinyl composition tile (VCT) are often called linoleum, but true linoleum is quite different. First, true linoleum is made out of nearly all natural ingredients: linseed oil, cork dust, sawdust (wood flour), pine rosin, limestone, mineral pigments, and jute backing. There is a small amount of zinc used as a drying agent, and an acrylic topcoat is typically added, but the rest of the ingredients are minimally processed from their natural state. Furthermore, linoleum doesn't contain the petrochemicals and chlorine found in vinyl and VCT flooring, nor the plasticizers found in vinyl sheet flooring. Because it contains no synthetic chemicals, true linoleum is readily biodegradable. If it's incinerated at the end of its useful life the products of combustion are relatively inert.

Like vinyl, linoleum can be heat welded to create complex inlaid designs while maintaining a continuous impervious surface. Linoleum requires regular maintenance in commercial applications, but not as fre-

quently as its primary competitor, VCT. The linseed oil in linoleum continues to oxidize over time, which helps prevent biological growth, so antibacterial additives are not needed. And linoleum is naturally anti-static, making it a popular choice in environments with lots of computers or other electronic equipment.

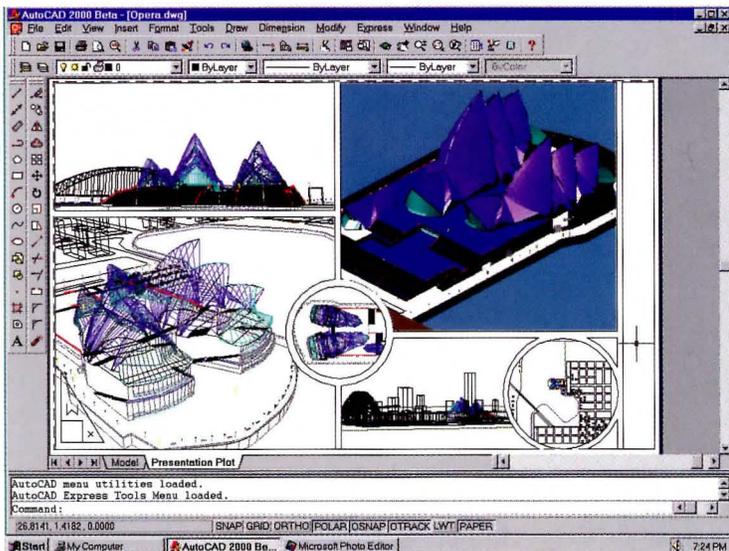
If linoleum has a drawback it is the fairly strong smell emitted when the flooring is newly installed. The smell comes from linseed oil's oxidation products, most of which are fatty acids—compounds that have a strong smell even at very low concentrations. Some green designers are avoiding linoleum because of the smell and the more significant indoor air quality problems those odors might portend. But other green designers are not concerned about the offgassing.

Linoleum costs more than VCT but is competitive with higher-quality grades of sheet vinyl. Installed costs typically range from \$3.50 to \$3.75 per square foot according to commercial flooring contractor John Kamencik of Don-Vac in Williston, Vermont. If properly installed and maintained, linoleum should last at least 30 to 40 years—and it actually gets stronger with age as the linseed oil oxidizes. At New York's Radio City Music Hall, the high-heeled Rockettes have kicked their way across the same linoleum floor for more than 25 years.

Linoleum's revival is attested by Armstrong Industries' recent purchase of the second-largest linoleum manufacturer DLW. If the market warrants it, Armstrong may ultimately use DLW's state-of-the-art technology to rebuild its mothballed Lancaster plant. In any case, linoleum appears to be on its way back into the mainstream of commercial design. ■

Alex Wilson is editor and publisher of the Brattleboro, Vermont-based Environmental Building News.

Advertisement for Armstrong linoleum from *Progressive Architecture*, December 1950.



Making the (Up) Grade

AutoCAD 13 was a dog. AutoCAD 14 works great. Now Autodesk, the largest developer of CAD software, wants users to upgrade to AutoCAD 2000. But is it really necessary? Or is AutoCAD 2000 and its new file structure meant to hurt competitors by making their software less AutoCAD-compatible? Many of AutoCAD 2000's features are enticing. Architects who deal with large projects handled by multiple designers and drafters simultaneously will especially like the numerous improvements that allow synchronization of changes and propagation of standard styles. But there's a nagging feeling that Autodesk has gone out of its way to make life as hard as possible for the competition, and thus for designers who might be using non-AutoCAD products, or even older versions of AutoCAD itself.

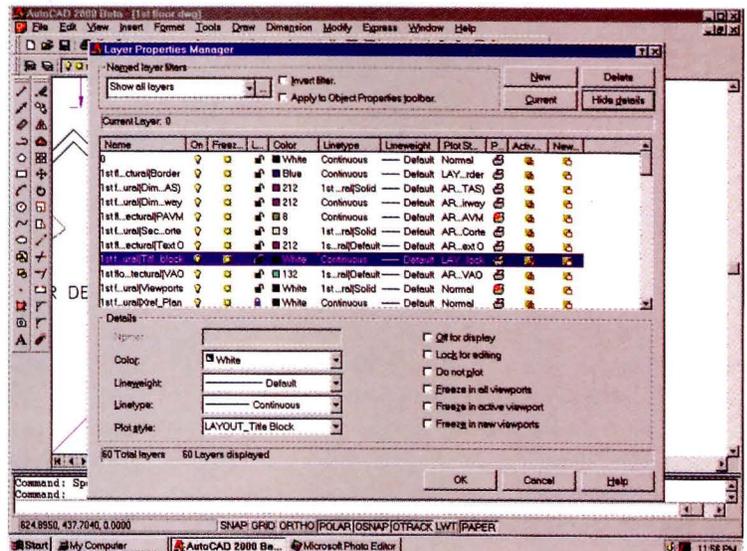
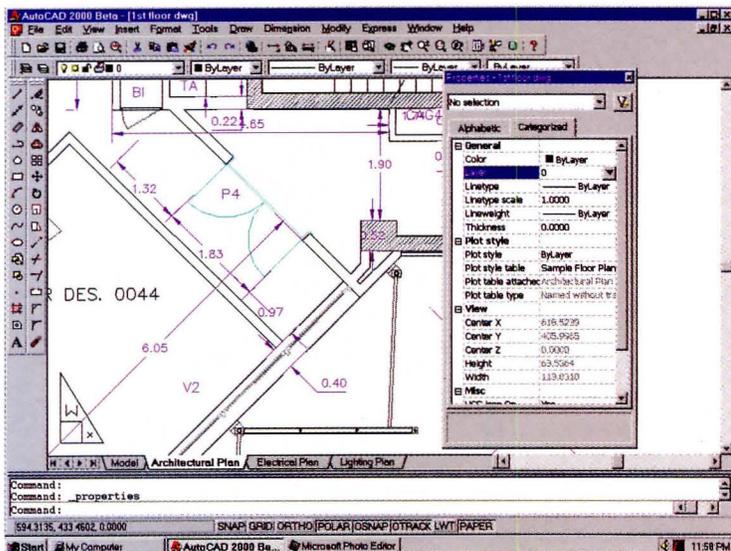
Even though Autodesk claims it runs 10 to 20 percent faster than AutoCAD 14 (with the AutoGauge benchmark developed by AutoCAD's User Group International), I had six experienced AutoCAD users try an advanced beta copy on a variety of machines and found the minimum recommended hardware (133 MHz Pentium, 64 MB of RAM) somewhat sluggish. Of course, no one even sells a machine that slow these days, even for home use. But a machine that slow is good enough to run AutoCAD

Release 14 comfortably. Thus, the buyer might consider budgeting some new hardware along with the purchase price (\$3,750; upgrade from Release 14 at \$495).

Speed

The AutoCAD 2000 beta version does not appear faster than Release 14. However, the testers did not get a chance to fully mate AutoCAD 2000 with the latest OpenGL (graphics application) drivers on specific graphics cards from Matrox, Number Nine, and others. That would have increased on-screen speed for rendering as well as for some other functions. Also, many of the productivity upgrades improve upon the time it requires to complete specific drawing tasks, even if there's a slight hesitation on screen. Setups for plotting and for 3-D visualization are much faster than with AutoCAD 14.

Overall, there are several important modifications: a streamlined interface that puts more control in your mouse hand (Autodesk calls this "Heads-Up Design"), easier output to online and hard copy, and more abilities to customize. Autodesk has even upgraded the venerable LISP engine so that LISP routines (programs) can now access Microsoft's ActiveX technologies (object



AutoCAD 2000 offers some new drawing tricks and new plotting and display tools. But is it better than AutoCAD 14? By Steven S. Ross

linking and embedding across a network), and there are more integrated tools for getting information from online sources.

Intelligent drawings

The big payoff won't come until vendors routinely create object-oriented catalogs and offices convert their 2-D libraries to 3-D. AutoCAD 2000's file structure is better suited than the R14 version for accepting drawing "objects." Objects have intelligence that goes beyond lines on the screen, and beyond anything widely available now: doors that know what walls they might be inserted into, and what equipment (knobs, light switches, closing mechanisms) might be associated with them.

To accomplish this, Autodesk has made quite a few changes under the hood. They have updated most of the remaining DOS 16-bit code in AutoCAD 14 to 32-bit code (faster, and there's more of it), and they have enhanced 3-D graphics. Many changes, scattered throughout the package, make it easier to track down and reuse pieces of projects. In fact, AutoCAD 2000 encourages users to do just that. Users can view and copy sections of any drawing from the AutoCAD DesignCenter viewer, even if the drawing itself isn't open in AutoCAD. The Center (new to

AutoCAD) looks something like Microsoft's Windows Explorer and displays sections by block, layer, or xref (external reference drawing). A source drawing can be on a local machine, network, or on the Internet, and can be dragged into an open drawing.

"Multiple Design Environment" is in-place block and xref editing that allows multiple drawings to be opened at once. (It's about time.) But it also lets you copy from one drawing to another in one step, by drag-and-drop, as well as by copying to the clipboard and pasting. There's a Microsoft Office-style "property painter" that copies layer, color, scale, linetype, and other properties from one drawing to another. You can also move from drawing to drawing without canceling a command.

AutoCAD 2000 can translate R14 files complete with custom multiline styles, custom menus, and toolbars in the newer version. It will probably, but not necessarily, translate all the features of drawings made with third-party add-ons. Individual dealers can provide information about incompatibilities.

Drafting

All this aside, the key reason architects buy drafting packages is for, well, drafting. As with the latest version

AutoCAD 2000 allows viewports of any shape to be **edited individually** (facing page).

Construction of **Sydney Opera House** in pre-CAD era was delayed for years while engineers figured out how to build it. Object Properties dialogue box (above left) has **searchable text** and allows for added information. Layer Properties Manager (above right) offers opportunity for **more detail** in AutoCAD 2000.

Autodesk is particularly proud of AutoCAD 2000's 3-D features. The user can orbit around a 3-D shaded or wireframe model, for instance, viewing or editing it from any angle.

of AutoSketch, various "AutoTrack" features of Release 2000 make drawing easier. The automatic snapping to add features to existing geometry is already in AutoCAD 14. New geometry snaps to old in an intelligent manner. This has been enhanced with extra construction lines that can appear on the drawing to help guide placement of new items. Autodesk has added extra hooks into AutoCAD to help third-party developers create specialized "snaps" for specific tasks.

The amount of text associated with professional-drawing sets has been increasing rapidly. AutoCAD 2000 certainly encourages text-heavy descriptions for objects by allowing for greater detail. Even font handling and the spell-checker are better. The package offers a global "find text" feature: It will search for text throughout the drawing and its associated data. There's also an improved system for selecting classes of objects by their text and nontext properties (layer, position on the drawing, color, line type and so forth). One warning: AutoCAD loads its own versions of some TrueType fonts by default. Translation of those fonts on other systems where the fonts haven't been installed is not absolutely perfect; what you see depends on what substitute fonts might be available.

3-D features

Autodesk is particularly proud of AutoCAD 2000's 3-D features. The graphics core, as in several previous releases, is HEIDI. But now the display is 3-D floating-point rather than 2-D integer. It works particularly well with graphics cards optimized for OpenGL and Microsoft's DirectX (multimedia application). Because everything is strictly 32-bit code, the on-screen display and hardcopy output are somewhat faster.

Going 3-D on the display leads to a host of features that allow faster 3-D visualization. The user can orbit around a 3-D shaded or wireframe model, for instance, viewing or editing it from any angle. You can also invoke front-and-back "clipping planes" to view only sections. This simplifies visual complexity.

AutoCAD 2000 implements ACIS 4.0 solids modeling, which isn't the most recent version. ACIS 5.0 code is in the latest stand-alone modeling packages. But full-featured CAD packages are always a little behind when it comes to ACIS, because it's hard for vendors to tie ACIS into complex CAD software. Because AutoCAD itself adds to ACIS, the extra functionality won't be missed.

A balancing act

How does all this add up? First, AutoCAD 2000 will make life easier for those who collaborate across a LAN or the Internet—or for those who might want to. Second, the mouse acts more like a sketch pencil in AutoCAD 2000. That has good points and bad. Even during the review, as I performed lightweight drawing tasks, my mouse hand felt a bit fatigued. All of the experienced AutoCAD drafters we let test AutoCAD 2000 avoided the problem: By force of habit they continued to occasionally enter commands manually.

Third, it speeds output to a plotter. However, the biggest offices—the ones most likely to crave 2000's other features—often split the plotting and drafting functions anyway, so the speed-up may not be that vital to them. Fourth, it better integrates 3-D modeling into the user's design process. Fifth, its new file structure (both on the DWG and DXF side) will allow more detail and more intelligence.

Users can expect it to take some time to reap a few of the benefits while suppliers of building materials and third-party software developers catch on. Meanwhile, other CAD vendors will be in hot pursuit. It is clear that major players, including Graphisoft and Bentley, are moving to provide the same functionality. Still, AutoCAD's improvements are significant enough to make the upgrade worthwhile, even if it means new hardware purchases. ■

Steven S. Ross is an associate professor at Columbia University's Graduate School of Journalism. He first wrote about AutoCAD in 1985.

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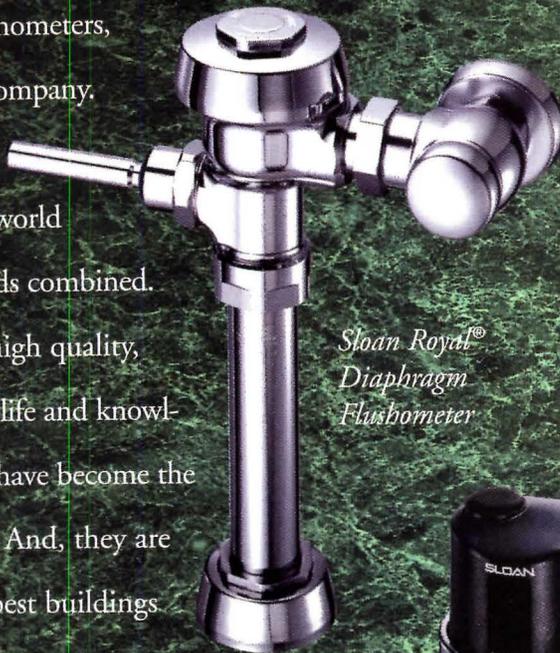
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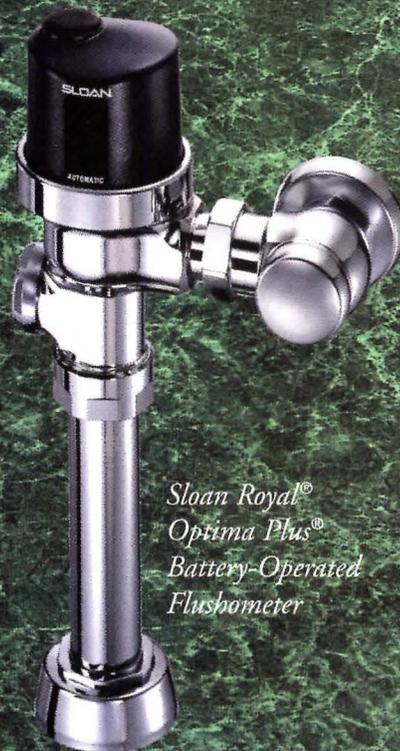
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About Face

In Marin County, California, an architect and an artist collaborate to convert Building 960, a turn-of-the-century military warehouse, into bucolic studios for artists.

By Zahid Sardar

Artists have always drawn inspiration from nature. With that in mind, in 1982 the National Park Service (NPS) helped to establish the Headlands Center for the Arts (HCA), a nonprofit artists' residency program located just north of San Francisco in Marin County's Golden Gate National Recreation Area (GGNRA). Last February, when a team led by architect Mark Cavagnero and Leonard Hunter, a sculpture professor at San Francisco State University (SFSU), converted an historic but dilapidated military warehouse in the park—Fort Barry Building 960—to studios for HCA, the effort vivified HCA's commitment to provide a unique laboratory for visiting artists in a natural setting.

This laboratory—a 12,000-square-foot collection of spacious studios marked by slanted walls, rolling partitions, and a dramatic cantilevered central steel stair—is part of a long transition within the park. For more than a century beginning in 1866, the U.S. military commanded the 13,000-acre Marin headlands. The seaport fortifications hidden within this wooded setting remained there until 1972, when the NPS inherited the well-maintained site and its 200 buildings. They included forts Cronkhite, Barry, and Baker as well as numerous barracks, warehouses, and Cold War missile launch pads. The NPS offered several of these structures to HCA, one of 11 such “park partners,” on condition that the buildings—many of which were rundown in spite of the site's overall excellent condition—be revitalized and maintained.

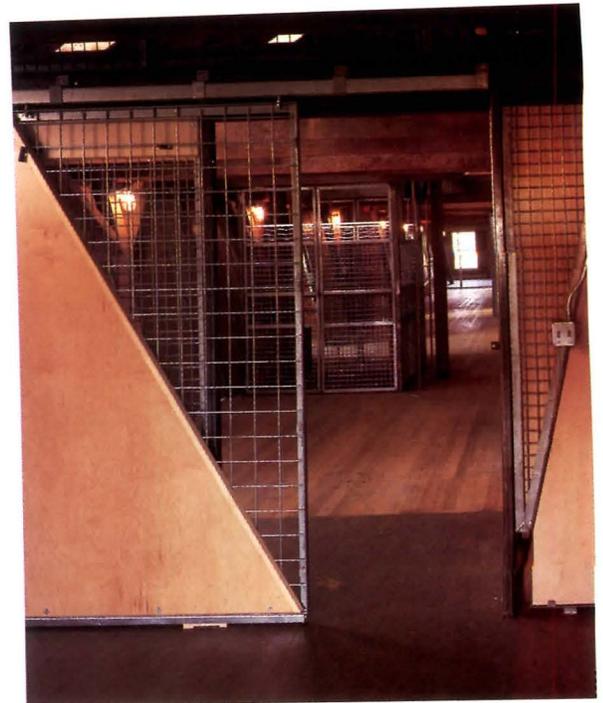
Artistic growth

HCA's presence in the park began with its 1986 renovations of Fort Cronkhite's Rodeo Lagoon beachside barracks and Fort Barry Building 944—the HCA's main headquarters. The center gradually became an internationally known arts organization model and, among preservationists, a creative reuse benchmark. A growing number of local affiliate artists rented the center's subsidized beachside barracks for day-use studios. Eventually, however, the park was unwilling to extend the year-to-year lease on the beachside properties. “There was and is a master plan that calls for certain uses within the park to be clustered,” explains Kathryn Reasoner, HCA's executive director, and the pressure was mounting particularly because artists with blowtorches in tinder-dry barracks made the NPS nervous. Losing the studios could have been a crippling blow to the affiliate program.

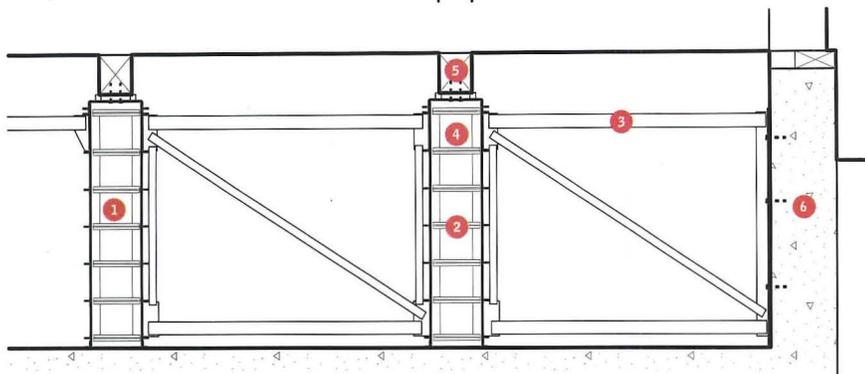
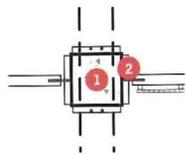
The center got a break—and new space for studios—in 1994 when it secured a 20-year renewable lease for nine buildings, including its headquarters, Building 944, totaling 71,000 square feet of space. Landscaping by artist Mel Chin, when complete in 2002, will cluster HCA's old and new studios, a community center and a park. Among the center's new acquisitions and its latest creative reuse triumph is Fort Barry Building 960, the largest of a group of board-and-batten warehouses loosely dubbed the “Three Sisters” that sit just above a former



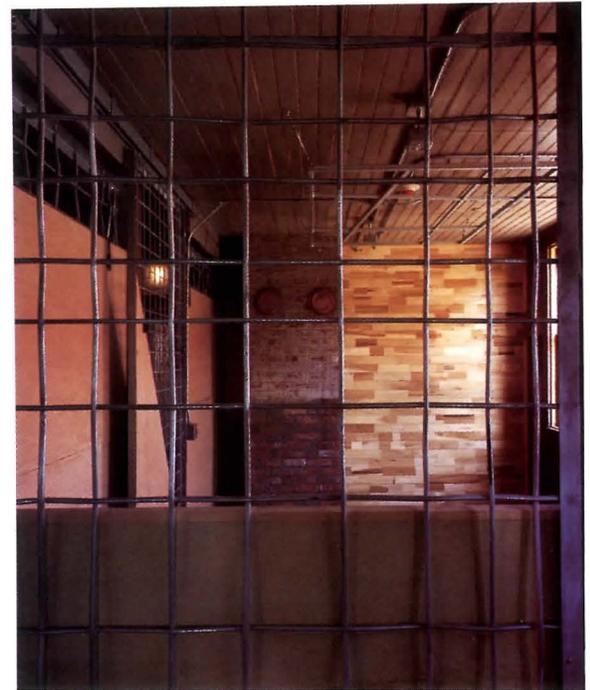
Building 960 suffered **considerable neglect** after military handed it and adjacent buildings over to National Park Service. Peeling paint bared much of old redwood siding to UV radiation (top), deteriorating it beyond repair. Architect Mark Cavagnero **stripped historic building** to raw studs, added seismic plywood sheathing and new electrical wiring, and covered it with new matching redwood siding and fresh paint (bottom).



- 1 existing concrete column
- 2 steel angle
- 3 steel strut
- 4 steel plate
- 5 existing wood beam
- 6 wall



North-south basement section and detail | 2/5m



Nike missile site. Building 960 had long been abandoned, and NPS even considered tearing it and its sister buildings 961 and 962 down. “There was dry rot in the sill plate and it needed seismic shoring all the way to the roof,” says San Francisco-based Cavagnero, an HCA board member who donated his services to this effort.

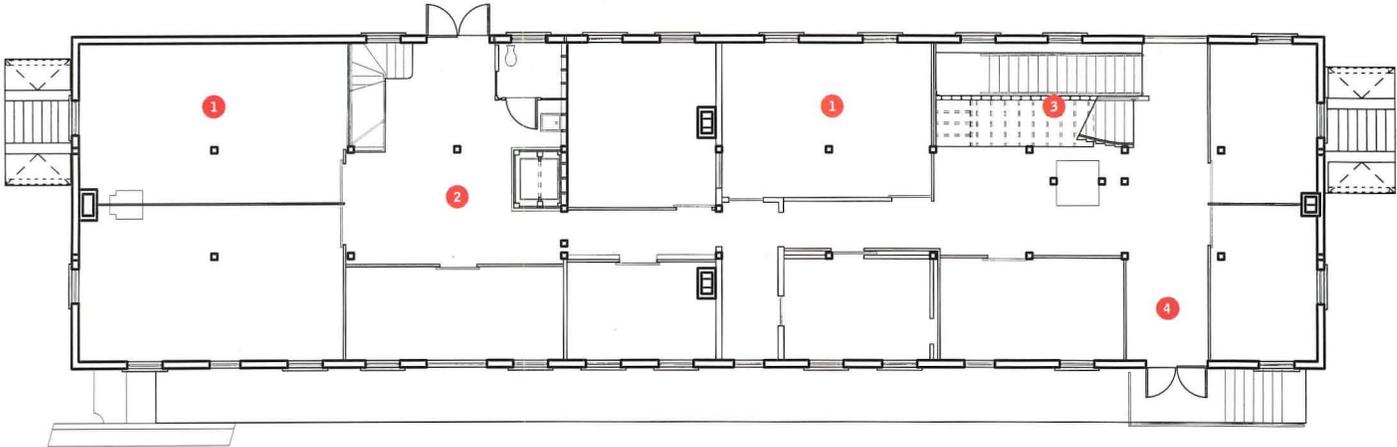
Clean palette

Unlike Building 944, which features plaster walls, pressed-tin ceilings, and wood details, Building 960 was not architecturally significant. But it was an equally

important historic “bookmark.” Formerly a U.S. quartermaster’s supply depot, the simple, rectilinear pre-World War I structure was built of old-growth redwood and Douglas fir and is a valuable example of army architecture adapted to site-specific conditions. In the attic, for example, posts are angled to brace the roof against gale force coastal winds. “Army engineers had pretty high code standards, and they wrote a code for site-specific conditions. They also had the budgets to build well,” says Paul Ryan, another board member and builder. “Building 960 is not as slap dash as it looks.”



Small, **skylit attic studios** for writers and musicians have wire mesh walls—with detachable verdigris-stained plywood panels—aligned to slanted posts that brace roof from high winds (facing page, top left). Walls and panels stop 2 feet shy of the ceiling (facing page, top right) to allow **new sprinkler system** unencumbered range in case of fire. Sculptor Leonard Hunter and his team wove galvanized steel rods onsite for walls and doors for **textural interest** (facing page, bottom right). Building 960 (left) and its smaller “sisters”, buildings 961 and 962, will all eventually accommodate day-use art, writing, and music studios. Building 961 (at left), makeshift **metal shop during** Building 960’s rehabilitation, is already being used for installations.



First-floor plan | ——— 7'2m ⊕

HCA found virtues in the building’s simplicity. Neither office nor barracks, it had no defined rooms: the three-story-high, peaked-roof building with a pair of symmetrical dormers was an open-plan, 12,000-square-foot storage space originally partitioned by chicken-wire dividers; its roughly north-south axis on a west slope allowed views of the Pacific Ocean and rolling hills below; and it contained a concrete basement with a west side loading entrance. A rickety wooden stair connected all levels, and occupants used a pair of simple pulley hoists in the center to haul materials up from the basement. Restoring such a build-

ing and adapting it to accommodate informal day-use spaces, Cavagnero emphasized, was yet another opportunity for artistic exploration.

Cavagnero advocated a partnership between contractor John Caletti and artists, despite the HCA board’s misgivings over insurance liability. “We let the contractors do the engineering, as well as the work that had the most physical risk and the least visual gain,” says the architect, who reserved the interior fabrication of the 18-month-long restoration for Hunter. Cavagnero convinced Rick Borjes, the GGNRA’s historic architect, that

- 1 studio
- 2 lobby
- 3 stair
- 4 vestibule



although rehabilitation standards established by the U.S. Secretary of the Interior typically required that historic building shells remain unscathed, in this instance, to attempt to salvage the shell with interior seismic sheathing or even a crisscross steel brace would do history a greater disservice. "More than 40 percent of the exterior was so degraded that we could never have salvaged it anyway. It was mostly because the Park Service had not painted it," laments Cavagnero.

Contractors peeled away rotting siding from studs that could then be threaded with electrical lines and sheathed in plywood for seismic stability, and then covered the plywood with new redwood siding and fresh paint that matched the historic exterior. "It's a plywood shoebox, and the roof is also encased," says Cavagnero.

Inside, custom steel ties attach the rafters firmly to wall studs and the base sill is bolted to the foundation. Hidden under new siding, the exterior sheath screwed onto the balloon frame from sill plate to rafters distributes both lateral and vertical loads evenly to the original concrete foundation, which is still sound because it sits on bedrock. The architect replaced damaged doors and windows and removed one space-hogging hoist. To compensate for the extra 1/2-inch exterior cladding and siding, workers adjusted all the trim and mullions so that the shadow relationships remained true to the original.

Hunter, one of HCA's cofounders, knew Building 960 well since his students had used it for art installations in 1991. Using welding equipment on loan from SFSU, he installed a metal shop in Building 961 that allowed student fabricators remarkable agility and spontaneity. "We built prototypes on site and we could look at the scale of things rather than making educated guesses," says Hunter. They manufactured custom parts, including a showy curvilinear, cantilevered steel stair that connects all three levels. "I did very precise drawings for the stair showing minute variations," Hunter explains, adding that he eventually discovered that it had to be custom-fitted like everything else.

Inside, sheetrock walls with firetight rooms off a central hallway might have complied with the fire marshal's codes, but Cavagnero convinced Rolf Jensen Associates, the author of the Uniform Building Code (widely accepted in the Midwest and West), to support his argument that by installing an efficient sprinkler system they could arrive at an equally fire-resistant but more lyrical solution. As a result, transparent walls of galvanized steel rods were woven together to form 20 studios that don't overwhelm the building's rough-hewn character; the noncombustible partitions, built 2 feet shy of the ceiling, allow the sprinklers unencumbered coverage. These ephemeral walls mark bound-



Sculptor Hunter's meticulously planned curvilinear, **cantilevered steel stair** (facing page) proved challenging to build. Many adjustments, and addition of more nuts than planned to stabilize vertical cables, make it slightly less lithe visually than artist and architect had hoped. Building 960 was consciously remade as studio space for artists who draw inspiration from nature. The gold and gray-green **Marin headlands** inspired Hunter's team to use a similar palette for stains and glazes in interior (left).

aries in much the same way that the military once demarcated areas for helmets, blankets, or clothing with chicken-wire and wood studs; for privacy and noise reduction, the designers supplied stained plywood shields that can be hung onto the mesh.

To determine the plan for studios, the designers polled the HCA's resident artists. "No painter wanted to be in the basement and no sculptor wanted to be in the attic," says Hunter, explaining that the smaller, more contemplative spaces in the attic would not have suited sculptors with heavy equipment. Thus, top-floor studios, with new west-facing skylights, dormer views, and slanted walls aligned to the roof truss, are for writers, painters, and musicians. Their tilted doors on tracks run smoothly on thin Rollerblade wheels. On the main floor, old military mattress springs enliven studio walls for painters, and in the rugged concrete basement, sculptors' studios sport heavy roll-away doors of glazed-and-woven steel strips that recall lyrical bamboo fences in a Zen garden.

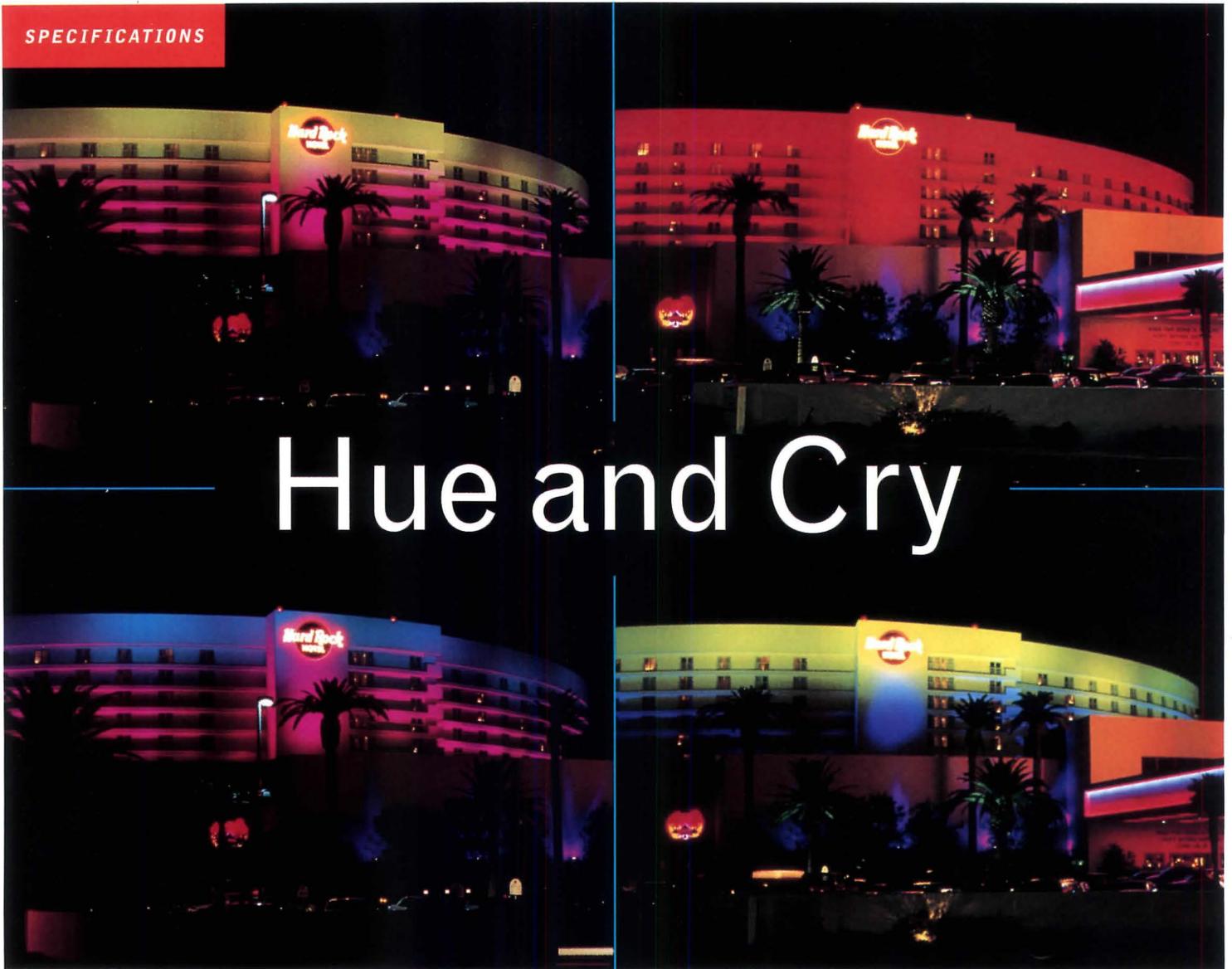
Is the design too metal-heavy, and does it try to build in too many metaphors where it might have concentrated instead on, say, better heating strategies? Perhaps, says Hunter. "Still, except for the new code-required stair hole, in two weeks time I got the inside of the building to look the way it did. Except for the hidden shear walls, it is all

reversible." And steel and concrete additions, he points out, don't touch the old walls.

The team's final nod to historic preservation came in the basement. There, contractors reinforced substandard, unreinforced concrete, horsehair, and jute columns with metal jackets that allow much of the old textures to show through. "We usurped the qualities of the old shell," says Cavagnero, "so it was a little easier for me to convince the engineers to think differently." The architect likens it to heavy-timbered Japanese architecture, with the trick being "to cleverly incorporate the seismic engineering." Inside, the interplay of historic patinas against new steel make it a place like no other, but outside, Cavagnero is proud that the building appears to have received little more than a good paint job. ■

Zahid Sardar is architecture & design editor at The San Francisco Examiner Magazine.

CLIENT: Headlands Center for the Arts; National Park Service
ARCHITECT: Mark Cavagnero Associates, San Francisco—Mark Cavagnero (principal), James McLane (project architect)
ENGINEER: Murphy, Burr, Curry (structural); John C. Hom (geotechnical) **CONSULTANTS:** Leonard Hunter (artist); Ryan & Associates (construction management); Davis Energy Group (energy); Daniel Stingle (interiors) **GENERAL CONTRACTOR:** Caletti Construction **COST:** \$800,000 **PHOTOGRAPHER:** Richard Barnes



Hue and Cry

For many architects, the thought of projecting colored lights onto their building exteriors is akin to spray-painting designs onto a new Mercedes—it's graffiti at best, an atrocity at worst. But where these architects worry that colored lights draw attention from their design, dilute it, or debase it, others see colored lights—when tastefully done—as a way of enhancing and enlivening their work. "Architects think of their design as three dimensions, but light can add a fourth dimension," says lighting designer Marty Peck, principal of Creative Light Design and Engineering in Milwaukee, Wisconsin.

Gaining access to this fourth dimension means specifying lighting systems that are esthetically appealing and compatible with the

building's design—options range from subtle detailing to the projection of large, kinetic patterns—and also minimize maintenance cost. "Maintenance is the most important factor in making sure the project looks good for the next five years," says Stefan Graf, design director of Ypsilanti, Michigan-based lighting designer Illuminart. He explains that the budget for lamp replacement might be higher than for landscaping maintenance—some colored lamps cost \$100 each and need to be replaced every two to three months. He recommends that owners agree to a serious lighting maintenance program with a policy or a contract.

While most large-scale color lighting projects require independent consultants, architects may find themselves specifying these

products on smaller-scale projects or overseeing consultant selections. Among the more critical aspects they must consider in the process are duty cycles. Although some lamp manufacturers claim that their products have long life cycles, some may require that lights be turned off after a few hours—thus cooling them down—to be able to produce the long life advertised, explains Vinny Finnegan of Group One, a Farmingdale, New York-based distributor for Clay Paky, an Italian colored lighting systems manufacturer. He recommends seeking systems that can be left on all night or at least have duty cycles that match the project's duration requirements. Architects can also reduce maintenance costs by ensuring lamp replacement is easy. For example, lighting manufacturer

Outdoor luminaires from High End Systems change look of Hard Rock Hotel and Casino in Las Vegas on a night-by-night—or hour-by-hour—basis (above). System designed for hotel employs several dozen Studio Color fixtures that project **computer-controlled light patterns** on building facade.



Colored lighting can dramatically change a building's appearance, but the systems must be easily maintained—and the architect willing to accept a splash of color. By Chris Santilli



Offering a rich spectrum of dichroic color, **High End Systems' Studio Color 250** interior fixture (top) offers full cyan, yellow, magenta subtractive mixing with high-specification dichroics. The system includes six independent colors to supplement the mixing, and the fixture features full variable beam shaping. The unit also features fast, smooth, and quiet yoke movement with optical encoders that automatically correct the beam head's position if it is manually moved from its programmed position. *Circle 292 on reader service card.*

For precise color placement in outdoor applications, **Irideon's AR500** exterior wash luminaire (bottom) features a computer-controlled, dichroic color-changing assembly and optional diffuser or douser mechanisms. The AR500 provides precise and dynamic control of beam distribution, full-field dimming of beam intensity, and is designed and certified for use in wet locations. *Circle 293 on reader service card.*

In addition to its stealthy profile for interior architectural applications, the new **AR6 recessed luminaire from Irideon** (top) supports multiple lamp options and features automated beam positioning, two wheel positions for color or pattern assemblies, and a variety of lens configurations. Specifiers can select patterns from Irideon's catalog or request custom patterns. *Circle 294 on reader service card.*

Packing a lot of power in compact packages, Italian lighting manufacturer **Clay Paky's new washlight, Stage Color 300** (bottom, at left), and effects luminaire, **Stage Light 300** (bottom, at right), can be used in many indoor applications, including traditional surface illumination and dynamic stage settings. Stage Color 300 features a 50-degree aperture with uniform light and color intensity, and Stage Light 300 features a compact lens and a variety of effects filter options. *Circle 295 on reader service card.*

When housed in High End Systems' Ecodome modular housing unit, the new **EC-1 exterior architectural luminaire** (top) offers both powerful lighting effects and solid protection of equipment against the elements. The EC-1 features rotatable, variable beam shaping, convection cooling, smooth dichroic color mixing, and easy lamp replacement. *Circle 296 on reader service card.*

Both energy-efficient and low-temperature, **ETC's Source Four interior spotlight** (bottom) features up to 40 percent more light than other 1,000-watt ellipsoidal lights, as well as a compact filament lamp. The die-cast aluminum unit's interchangeable lens tubes adapt to any application, and its dichroic reflector removes 95 percent of heat from the beam. *Circle 297 on reader service card.*

Irideon/ETC of Middleton, Wisconsin, offers fixtures that allow lamp replacement without breaking the light's focus, which is especially important if that light is combined with a pattern that shines a hard-edged colored shape on a wall.

Designers have many product choices for adding colored lighting to exteriors. Most use a white light lamp that shines through a colored material, but metal halide colored lamps from Venture Lighting of Solon, Ohio, are now available too. Although costly compared with standard white lights and limited to one color for each lamp, these lamps offer the convenience of easy replacement. The halide lamps are only available in four colors—pink, aqua, green, and blue—but their light can be combined from separate fixtures pointing at the same point.

Tinted glass filters mounted on lamps provide low-cost, permanent color, compared with more common and short-lived colored polyester theater gels that are applied to glass within the fixture. But glass filters absorb colors, especially blue; they are more efficient with reds. "With blue color filters, 90 percent of the light is absorbed as heat, which can shatter the glass in a fixture if rain or snow hits it," Peck says. Anne Militello, principal of Vortex Lighting in Hollywood, California, uses colored glass filters only when the lamp is not going to be especially hot.

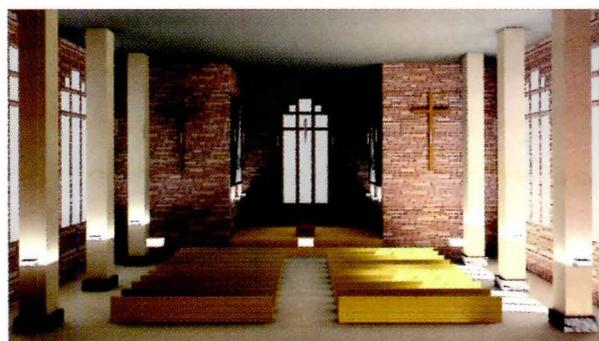
Specifying dichroic glass filters, which may cost \$150 to a regular glass filter's \$20, helps avoid overheating the glass in a fixture. Dichroic glass bends wavelengths back into the fixture instead of out toward the glass. Though this process causes the fixture itself to get hot—possibly weakening it and limiting usage—dichroic glass provides richer, more vivid colors than regular glass filters because it has better light transmission. Militello ensures that all dichroic glass she uses is tempered to handle high heat levels—her most frequent source of such glass is lighting manufacturer High End Systems in Austin, Texas. Militello also pays close attention to color matches: Exact colors don't always match from batch to batch. She admits, however, that the average person may not notice the difference.

Some designers say they don't have much choice in equipment because only a couple major lighting companies have reliable products and excellent service. But the market is expanding. Peck says any company with color lighting products out for five years is worth evaluating, because the industry is just starting to grow as architects gain interest in adding a new dimension to their work. ■

Chris Santilli is a Villa Park, Illinois-based freelance writer.



Gray-scale rendering of church generated by Lighting Technologies' Lumen-Micro (above left) helps evaluate basic lighting schemes. Same rendering imported into Lights* (below left) allows addition of colors and textures to further judge effects and improve presentation values.



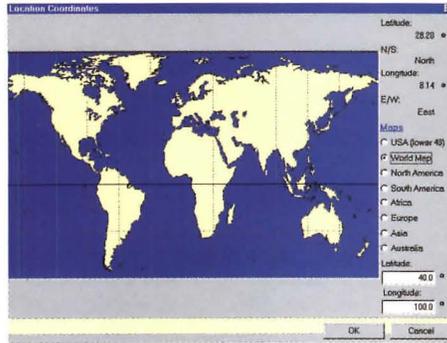
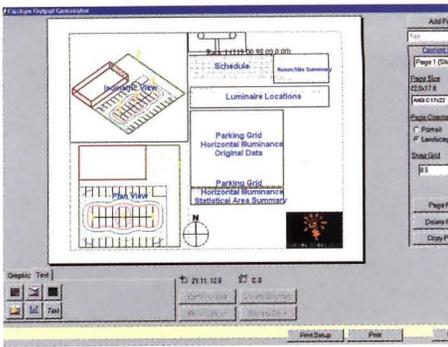
As more lighting design software programs hit the market, specifiers must choose between packages offered by independent publishers and the lighting manufacturers themselves. By Chris Santilli

Programming Light

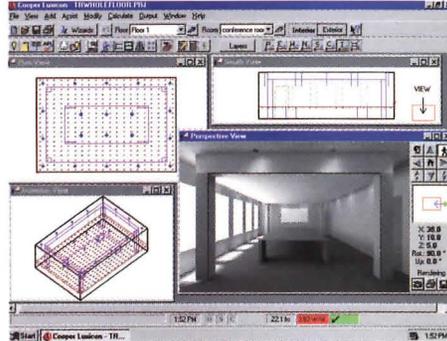
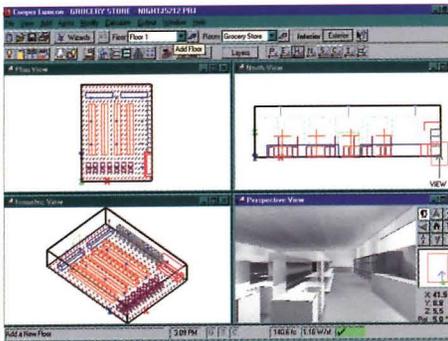
Computer software now exists for virtually every phase of building construction, and lighting systems design and specification is no exception. The number of such programs has grown dramatically, and architects now have a multitude of options, from advanced design software to somewhat less sophisticated but still helpful packages produced by lighting manufacturers—programs that, not surprisingly, include easy access to the manufacturer's own product information.

Of course, specifying lighting systems involves more than merely choosing one product over another—it requires careful selection and placement of fixtures to achieve a desired effect. So if an architect intends to use software to help develop lighting schemes, he or she needs to choose these resources—from about two dozen available—as carefully as the lighting systems themselves.

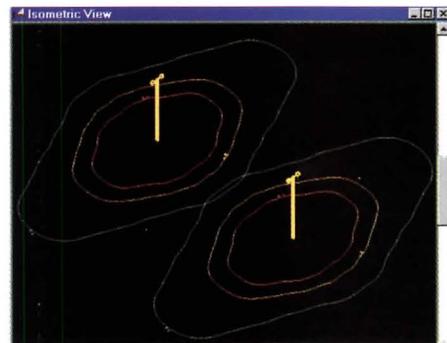
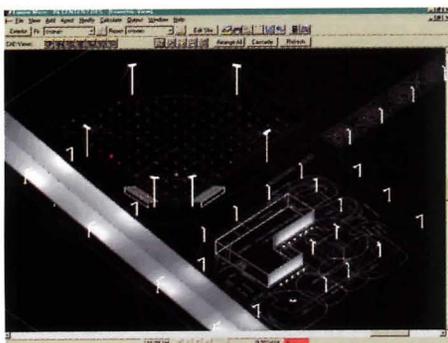
Available software today includes a range of features: Architects can import files from CAD software or create rough models from scratch; visualize proposals in 3-D renderings; select appropriate products for a given application; and compare the efficiency of various fixtures in the same locations. When choosing a system, it helps to know not only what your own needs are in terms of software usability—such as detail of presentation, nature and quantity of information offered, and ease of use—but also what clients will want to see. "Know your final goal before you start looking for software," says Emlyn Altman, a light-



Lumen-Micro's Custom Output Generator (far left) allows users to customize documents, with options ranging from standard reports to full plotter output. Software also allows user to select global position (left) for daylighting calculations, including longitude, latitude, time of day, and sky conditions.



Cooper Lighting's Luxicon 2.1 calculates changes caused by interior obstructions, such as in grocery store (far left) as well as daylighting, as in office conference room (left). Output options include isocontours, 3-D model views, and traditional plan and section views.



Sample of **Lumen-Micro's "site wide" orientation** (far left) includes building exterior, athletic field, and roadway while illustrating point-by-point values, contour maps, and gray-scale surface renderings. Contour template (left) quickly lays out exterior pole configurations, which may be inserted into CAD files.

ing designer at Kling Lindquist Architects in Philadelphia. "Find out what your client wants: some want numbers, some want to see details. It's okay to use more than one software package to see different elements of the design." For example, designers could use one for foot-candle lines, one for a speedy rough rendering, and one for photorealism. Some programs, such as Lite Pro 1.0 (\$209.95), published by Columbia Lighting, permit simple modeling in full color; others such as Light* (formerly LightScene; \$495.00), from Discreet, a division of Autodesk, require CAD file imports to see the building in near virtual reality detail.

When software comes from a lighting manufacturer, the library of lighting products included are usually only the manufacturer's. Usually, though, other manufacturers' product files can be imported into the system. Lumen-Micro 7.5 by Lighting Technologies (\$495) is an independent product, so its library assembles an industrywide product database containing more than 30,000 interior and exterior products.

When it comes to detail, the level varies not only from program to program, but also computer to computer. "The user doesn't always need to see every mullion detailed," Altman says. "It's sometimes better to keep the drawing simple. A big file can create a time problem." Waiting hours to calculate a complicated lighting design may not be unusual for some software, Altman continues, and even the simplest programs require fast, high-powered computers and considerable memory. Some

programs are easier to use than others. Luxicon 2.1 from Cooper Lighting (\$200) offers a facade lighting "wizard," or guide, for setting up a simple lighting plan design with one type of light fixture. All the Windows-based programs use simple drag-and-drop techniques, but some have more complicated menu bars. And not all software allows architects to render curves, angles, and irregular shapes. Lumen-Micro, for example, rotates planes to simulate curves, but when the user closes the software and reopens the file, it returns to the original angular configuration. Light* works better with curved surfaces—Megan Strawn, a lighting designer with Candela Architectural Lighting Consultants in Seattle, used it to add light to the sides of an orb-shaped building. While Light* is practical for complex geometries, Strawn says she uses Lite Pro for everyday jobs because it's quick and easy.

Consider also technical support availability and the kinds of changes programs can make once the calculations are complete. Some programs permit users to change the color of the light and its brightness, but actually moving the fixture requires complete recalculations. Many other software packages now on the market can soar to thousands of dollars. Most projects, of course, don't need that level of assistance. The under-\$500 programs mentioned here can take care of most specifier's needs quite well—and their initial costs are negligible in comparison to the time and effort they can save. ■

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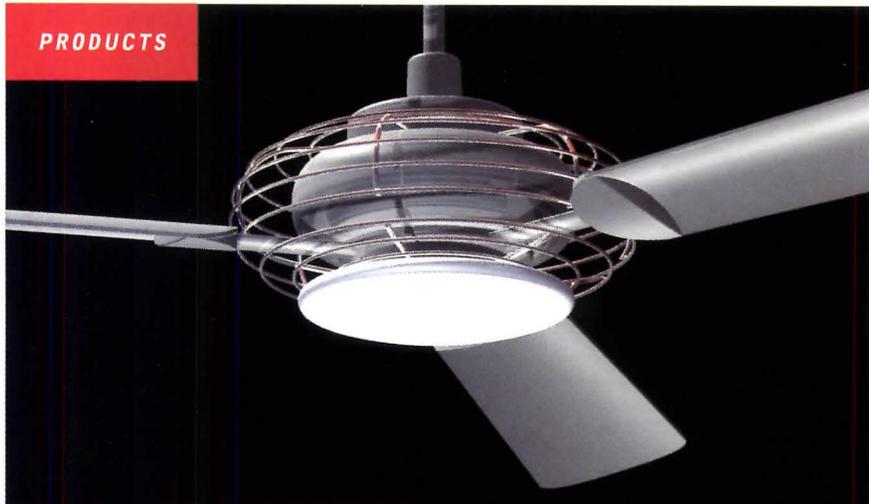
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PRODUCTS



Clean Lines



FROM TOP TO BOTTOM: **Air of Nostalgia** Designer Mark Gajewski introduces the latest addition to his G Squared Design line, the Acero fan. A high-tech nostalgic solution to the age-old problem of air circulation, Acero's motor and curved blades facilitate the movement of air. The fan is equipped with a 100-watt halogen light and is available in white or a brushed stainless-steel finish. **Circle 298 on information card.** **Aeron and On** Herman Miller introduces their ergonomic task chair, Aeron. Like its predecessor, the Caper Chair is designed for user comfort, with an aerated seat and

a polypropylene back contoured to distribute body weight. The chair is available in a stackable version and in red, blue, green, and yellow, as well as a neutral palette. **Circle 299 on information card.** **Puts a Lid On It** Butler Manufacturing introduces MR-24 SG, a stainless-steel laminate panel roof system that reportedly has 50% sound reduction over other roof types. The panels are made from .006-inch stainless steel and a 24-gauge viscoelastic material, which helps prevent corrosion. **Circle 300 on information card.**

Compiled by Joelle Byrer

CONSTRUCTION COST COMPARISONS PER SQUARE FOOT • MAY 1999



HOTEL

15 story building with 10' story height and 450,000 square feet of floor area



SCHOOL, VOCATIONAL

2 story building with 12' story height and 40,000 square feet of floor area



BANK

1 story building with 14' story height and 4,100 square feet of floor area

	2nd Q 1999	2nd Q 1998	2nd Q 1999	2nd Q 1998	2nd Q 1999	2nd Q 1998
Atlanta	\$ 76.46	74.77	72.69	71.23	124.18	121.34
Boston	101.03	98.55	96.05	95.16	164.08	159.92
Chicago	95.34	93.24	90.64	88.81	154.84	151.30
Dallas	74.56	72.92	70.89	69.72	121.10	118.33
Kansas City	82.23	80.42	78.18	76.61	133.56	130.51
Los Angeles	95.94	93.40	91.21	89.94	155.82	151.57
New York City	116.37	114.56	110.63	108.90	189.00	185.91
Phoenix	77.41	75.70	73.59	72.43	125.72	122.85
St. Louis	88.18	86.24	83.83	82.15	143.22	139.95
San Francisco	107.66	105.29	102.36	101.02	174.86	170.86
Seattle	90.94	88.60	86.46	85.12	147.70	143.78
Washington, D.C.	82.75	81.35	78.67	77.49	134.40	132.01

Each month Architecture takes a snapshot of U.S. construction – looking at average costs and upcoming projects for different building types. News on projects is provided by Construction Market Data and cost information by R.S. Means – both CMD Group companies.

NOTE: Cost comparisons shown here are for the basic building without site work, development, land, specialty finishes or equipment. Actual square foot costs vary significantly from project to project based on quality, complexity and local economy.

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UPCOMING PROJECTS

Crown Plaza Hotel

Location: Harbor Boulevard & Chapman Avenue, Garden Grove, CA
Project Value: \$25 – \$27.5 million
Size: 250,000 sq ft, 384 units, 9 floors above grade, 1 structure
Current Project Stage: Working Drawings
Status: Working Drawings in Progress; GC to Take Subbids Approx. 03/99
Project Scope: Executive Stay Hotel Suites, Conference Rooms, Restaurants, Swimming Pool, Laundry Facilities
Developer: OHI Resort Hotels, LLC; Peter Robinson; 911 Wilshire Boulevard, Suite 2200; Los Angeles, CA 90017
Phone: 213.629.0100
Architect: Leo A Daly; Ken Rogerson/David Arrondo; 911 Wilshire Boulevard, Suite 2200; Los Angeles, CA 90017
Phone: 213.629.0100; **Fax:** 213.629.0070

Marriott Hotel

Location: 8550 West Bryn Mawr Avenue, Chicago, IL
Project Value: \$60 – \$70 million
Size: 392 units, 14 floors above grade, 1 structure
Current Project Stage: Working Drawings
Status: Working Drawings in Progress; Bid Schedule Not Set
Owner: Marriott International: Full Service Hotel; One Marriott Drive, Department 55/934.47; Washington DC 20058
Phone: 301.380.9000
Architect's Representative: Kenny Construction Company; 250 Northgate Parkway; PO Box 909F; Wheeling, IL 60090
Phone: 847.541.8200; **Fax:** 847.541.2570

Betty Carol Graham Textile Center

Location: Cherokee Road, Alexander City, AL
Project Value: \$5 million
Size: 35,000 sq ft, 2 floors above grade, 1 structure
Current Project Stage: Masterplanning
Status: Masterplanning in Progress; Bid Schedule Not Set
Project Scope: Office, Classroom, Computer Labs
Owner: Central Alabama Community College; Ronnie Harkins; PO Box 699; Alexander City, AL
Phone: 256.234.6346
Architect: PH&J Architects Inc.; Griff Harris; 807 S McDonough Street; PO Box 215; Montgomery, AL 36104
Phone: 334.265.8781; **Fax:** 334.265.9208

Technical Training Center

Location: West Road, Woodhaven, MI
Project Value: \$7.25 million
Size: 30,000 sq ft, 1 floor above grade, 1 structure
Current Project Stage: Conceptual Drawings
Status: Conceptual Drawings in Progress; Bid Schedule Not Set
Project Scope: 30,000 Square Foot Single-Story Building to Accomodate a Repair Shop to Train Apprentices in Robotic Repair, Small Appliance Repair & Computer Training Area
Owner: Henry Ford Community College; Terry Stollsteimer; 5101 Evergreen Road; Dearborn, MI 48128
Phone: 313.845.9602; **Fax:** 313.845.9658

First American Bank

Location: Dace Street & Gordon Drive, Sioux City, IA
Project Value: \$.3 – \$.6 million
Size: 1 floor above grade, 1 structure
Contract Type: Negotiated
Current Project Stage: Preliminary Plans
Status: Preliminary Plans in Progress; Bid Schedule Not Set
Project Scope: Vault, Teller Area, Conference Room, Offices, Reception Area
Owner's Representative: L & L Builders; Charles Salmen; 2205 E 4th Street; PO Box 1497; Sioux City, IA 51102
Phone: 712.255.0657; **Fax:** 712.255.8205

Bank One BOCC

Location: Phoenix, AZ
Project Value: \$7 – \$8 million
Size: 80,000 sq ft, 1 structure
Current Project Stage: Conceptual Drawings
Status: Conceptual Drawings in Progress; Bid Schedule Not Set
Owner: Bank One Corporation Real Estate Services; Jim Brown; PO Box 71, Department A957; Phoenix, AZ 85001
Phone: 602.221.4680
Architect: DMJM; Steve Lichtenberger; 2777 E Camelback, Suite 200; Phoenix, AZ 85016-4302
Phone: 602.337.2777; **Fax:** 602.337.2620

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Before a stage-set backdrop of Deco nostalgia, the fabulous denizens of Miami Beach teeter on the edge of obsolescence. By Andrei Codrescu

My Pastel Nightmare



In the pastel nightmare of Miami Beach, where shallow meets kitsch like ice cubes meet gin in a cocktail shaker, there floats the faded cumulus of the Fontainebleau Hotel, once the most glamorous digs on the beach, now just a conventioneer holding tank. In the 1960s, Frank Sinatra moved through here with his bodyguards and visitors needed formalwear just to sit in the lobby.

Morris Lapidus, architect of the Fontainebleau and of many other Miami Beach odes to leisure, was a visionary. He looked down the flesh-padded vistas of the future and saw that they needed glamour and glitz. Miami Beach is a man-made island, dredged out of the harbor in the teens of the century by Carl Fisher, a real estate entrepreneur who dreamt up the whole seaside city.

That dream had its ups and downs, much like the stock market, but it's up now. There is a building boom under way in Miami Beach, enough Deco to make even the roundest person feel like an angular proto-Fascist. Despite periods of decay and neglect, Miami Beach has always proved its founder right. Fisher is reputed

to have said, during a real estate slump after World War I: "When a thing doesn't sell, raise its price." The strategy worked beautifully, and that's been the story, more or less, ever since.

My good friend Cyn Zarko, a photojournalist who makes her living catching the glamorous set in their hangouts, told me that her condo in South Beach, purchased more than 10 years ago at a reasonable price, is now inestimably pricey. Cyn gave me a tour, stopping now and then to click at an Armani- or Givenchy-wrapped somebody going by.

We strolled by designer hotels and cafés called The Pelican, The Albion, The Clevelander, The Delano. Cool jazz blew from terraces, the gold sun crumbled like tinfoil into the lavender ocean, the breeze ruffled the palms and the cashmere foulards on swan-long necks atop rail-thin bodies, and the air was redolent of cigars and suntan lotion.

We ate stone crabs at a 1930s-style movie-set café on Ocean Drive and watched perfect bodies stream by in capri pants and platform sandals, rollerblades and thong bikinis, short shorts, velvet cutoffs, and mini-brassieres. I had a strong feeling here that the high-living late 1990s were a replay of the roaring late 1920s. The language of Deco all around reinforced this historic déjà-vu. From the café terrace, I watched two young satyrs frolicking in the surf, collegiate, tan, and built, like a *Look* magazine cover circa 1929. The stock market crash and the war would have been far from the thoughts of such golden idols in 1929, and, doubtlessly, no gloomy thoughts attended these boys now.

I kept feeling a chill, even in the perfect weather. There was something so blithe, so profligate about this *paradis artificiel*. I kept a wary eye on the beach, watching for the paw of some monster from the deep. ■