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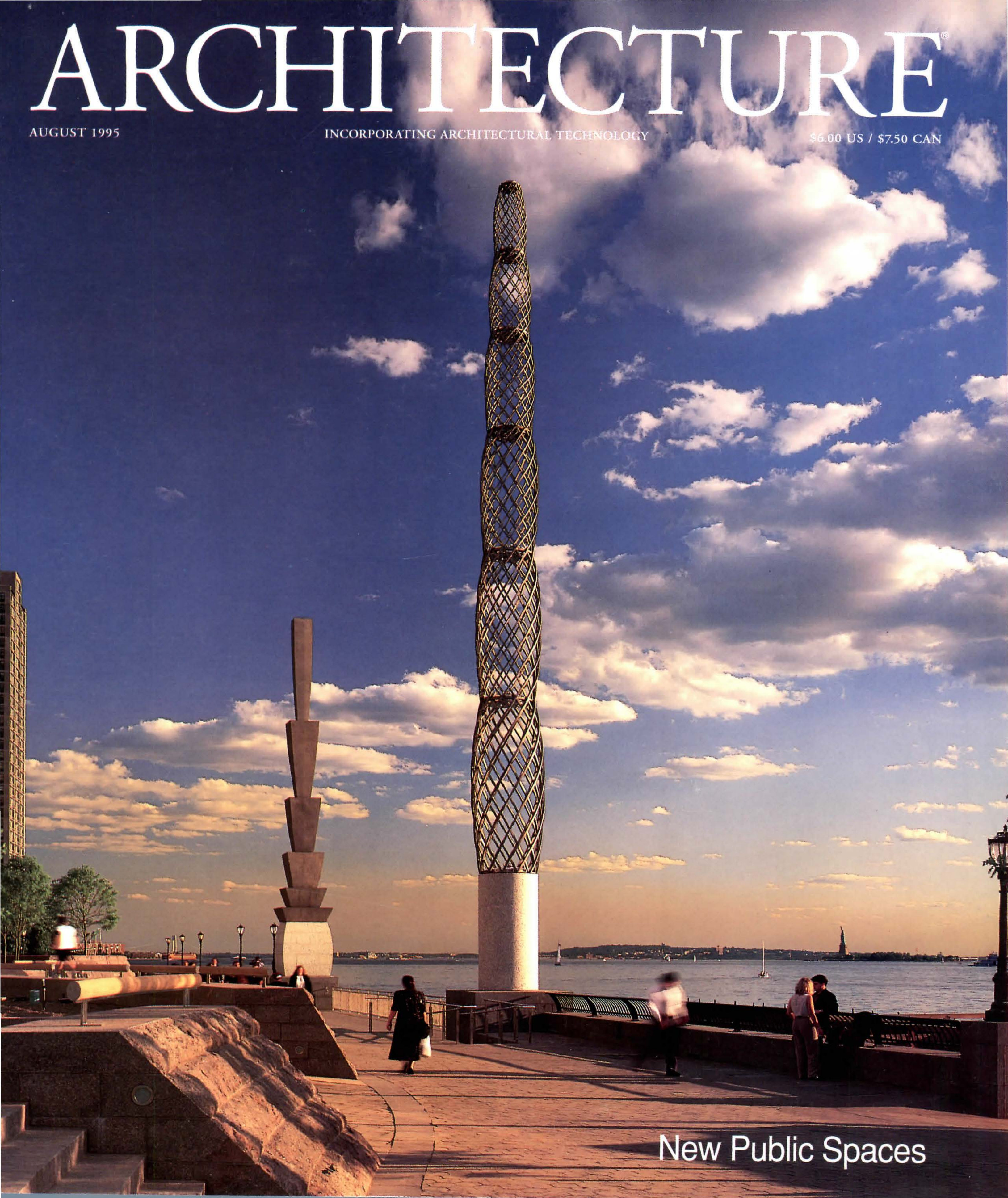

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Save America's Main Street

A closed stretch of Pennsylvania Avenue deserves public scrutiny and a thoughtful design.

One of America's most public spaces has been irrevocably altered. The two-block stretch of Pennsylvania Avenue in front of the White House was closed to vehicular traffic in May. Once bustling with cars, tour buses, and pedestrians, the avenue is now eerily quiet, blocked by a makeshift arrangement of concrete highway barriers and planters and patrolled by police.

In taking this action to boost security around the White House, administration officials did more than close a street—they put up a barricade to our vision of an open society. No longer can we drive by the front lawn of the Executive Mansion as if it were any other house in America. As a member of the D.C. Council recently remarked, the vacant, fenced-off Pennsylvania Avenue now resembles Checkpoint Charlie at the Berlin Wall, rather than the ceremonial centerpiece of our nation's capital.

With no plans to reopen Pennsylvania Avenue, the government is currently searching for a scheme to turn the six lanes of abandoned asphalt into a landscaped park or plaza. In June, several prominent architects, landscape architects, historians, and planners were invited to propose alternatives (ARCHITECTURE, July 1995, page 23), including a pedestrian mall and an extension of Lafayette Park up to the White House fence. Significantly, the group recommended that the administration consider holding a national competition to solicit designs for the new public space. Such a participatory effort would encourage debate over the fate of the closed avenue and give Americans a stake in the future of this important public space.

But the design competition seems to have been put on hold. President Clinton wants a "long-term design" for Pennsylvania Avenue to be "completed and constructed" by the next inauguration in January 1997 and an "interim beautification" installed next month. Clinton has put the National Park Service in charge of determining a strategy. Such a tight schedule leaves little room for contemplating a sensitive solution to the problem, let alone staging a competition.

Why rush to seal the fate of Pennsylvania Avenue and compromise the vitality of our nation's capital in the process? Closing the avenue to traffic is bad enough, certainly a move no respected urbanist would recommend. Cars and buses, as well as pedestrians, bring a street to life. And how will the pedestrians-only thoroughfare prevent another plane crashing into the White House or deter a gunman on foot?

If this stretch of Pennsylvania Avenue is to be permanently shut down, the government should use the closure as an opportunity to create an inspired public space. Why not involve architects, landscape architects, citizens of Washington, D.C., and the Pennsylvania Avenue Development Corporation (PADC) in a design competition or a charette? The PADC, after all, has spent the last 23 years beautifying the avenue and encouraging private investment with successful, long-term results. The fate of our most visible public space should not suffer from political expediency. Pennsylvania Avenue, the celebrated parade route of presidents, is America's Main Street. It belongs to all of us.

Deborah K. Dietsch

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Letters

IBM's public mandate

Thank you for the clear report by Mildred Schmertz covering the future use of the IBM greenhouse in New York City (June 1995, pages 51-57). As the architect of the IBM building, I simply want to say that the greenhouse is public space; IBM got several extra floors in exchange.

The full canopy of bamboo, the tables and chairs, and the food service, as well as the hours of opening are all mandated. This design does not preclude the possibility of some sculpture. But IBM's oasis of dappled shade and tranquility in midtown Manhattan should be inviolate. It belongs to the public.

Edward Larrabee Barnes, FAIA
Edward Larrabee Barnes/
John M.Y. Lee, Architect
New York City

Nonintervention at IBM

I would like to set the record straight on our involvement in the proposed renovation of IBM's public space (June 1995, pages 51-57). As the architect of the new PaceWildenstein Gallery in Beverly Hills, California, our firm was asked by PaceWildenstein to make drawings of the IBM atrium, which our client was considering as a sculpture gallery.

We completed drawings of the existing and proposed space at IBM, never intending to become involved further, either as design architect or as architect of record for the proposed changes. In fact, we stated initially that if requested by PaceWildenstein to redesign the IBM space for a sculpture court, we would decline.

As with our renovation of the AT&T building, which was undertaken in consultation with Philip Johnson, we would have insisted that Edward Larrabee Barnes be a supportive collaborator were we to undertake the IBM project.

During a phone call with Ed, I sympathized with his concerns about removing the bamboo from the IBM atrium and told him that I had resigned the day before his call, because my involvement was coincidental and not consistent with our practice. We are not, nor would we ever be, expediting architects.

I never made a presentation to the New York City Planning Commission, nor did I attend a single meeting to promote or defend the proposal for the IBM atrium. In your article, our firm was misrepresented as an insensitive interventionist, when we never intended to be involved in the design of the sculpture court.

Since your publication, I have been informed that Robert A. M. Stern has been retained by Minskoff to renovate IBM's public space.

Charles Gwathmey, FAIA
Gwathmey Siegel & Associates
New York City

Corrections

Rebecca Ingram was a project manager for the Mesa Public Library in Los Alamos, New Mexico, by Antoine Predock Architect (March 1995, pages 68-73). Undine Pröhl photographed several views of the Clark & Menefee house (June 1995, pages 131, 135).

Events

Exhibitions

NEW YORK. "Light Construction," international architecture exhibition, September 21-January 2, 1996, at the Museum of Modern Art. Contact: (212) 708-9750.

PITTSBURGH. "Monolithic Architecture," October 1-February 11, 1996, at the Heinz Architectural Center. Contact: (412) 622-5550.

Conferences

GAITHERSBURG. Roofing conference at National Institute of Standards and Technology, September 21-22. Contact: (708) 299-9070.

KANSAS CITY. AIA Kansas City chapter green products exposition, August 29. Contact: (816) 221-3485.

LOS ANGELES. Alternative Office Expo, September 29-30, at the Pacific Design Center. Contact: (310) 657-0800.

NASHVILLE. "Future Perfect: Aligning the Practice to Meet Client Needs," September 14-16, sponsored by AIA. Contact: (202) 626-7482.

OAKLAND. "Getting Down to Business," recycled products conference and trade show, September 6-7. Contact: (510) 618-2150.

SAN FRANCISCO. "Building Bridges: Diversity Connections," August 11-13, cosponsored by the AIA Diversity Committee and AIA San Francisco. Contact: (202) 626-7482.

SEATTLE. Acadia '95, "Computing in Design: Enabling, Capturing, and Sharing Ideas," October 19-22, at the University of Washington. Contact: (206) 543-2132.

VANCOUVER. "Contracting in Foreign Countries," September 28-29, cosponsored by the American Bar Association construction forum and the Canadian Bar Association construction law section. Contact: Barbara Barnes, (312) 988-5579.

WASHINGTON, D.C. Association for Preservation Technology International Conference, October 29-November 5. Contact: (202) 332-4772.

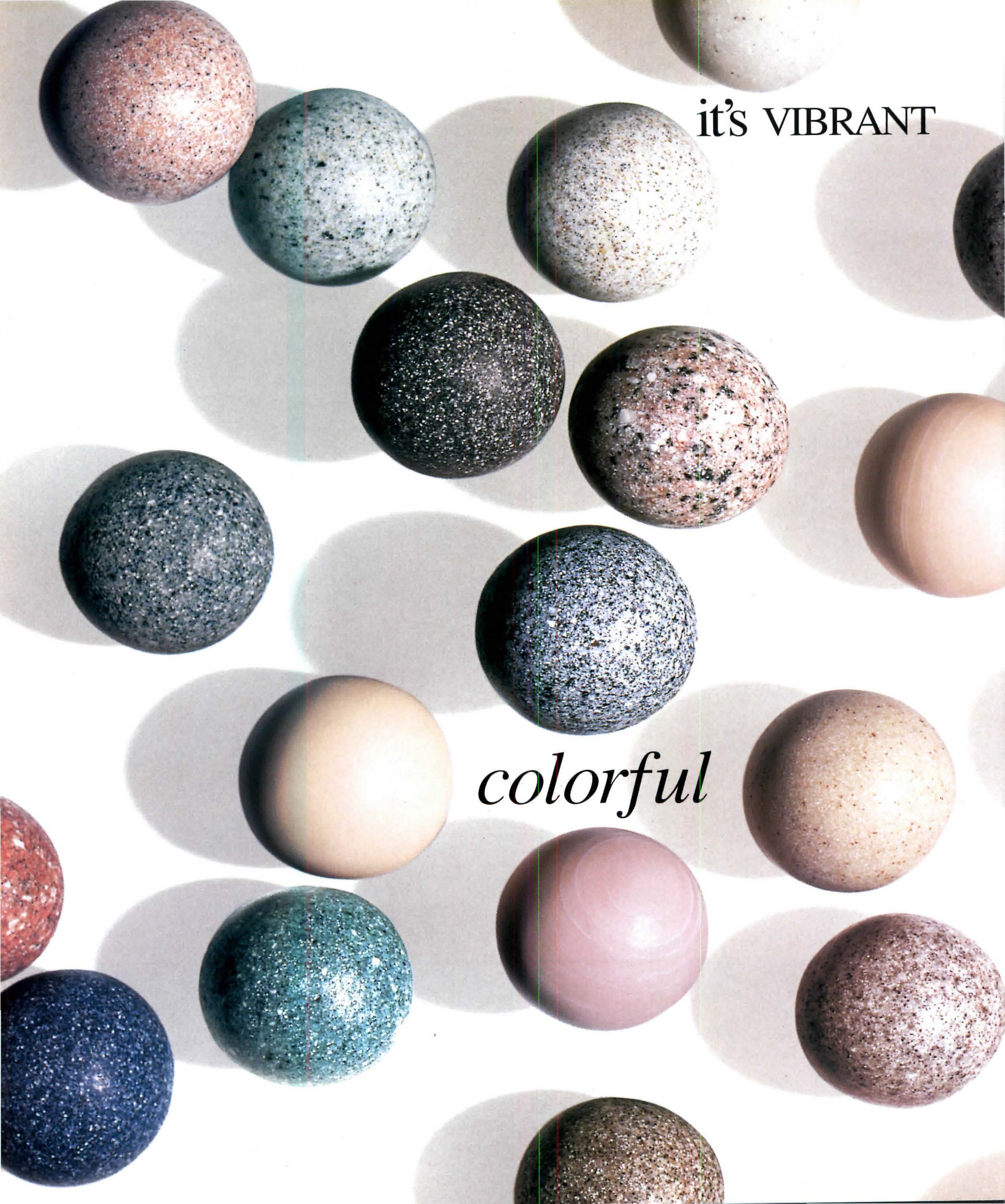
Competitions

Maryland World War II Memorial design competition. Applications due **August 15**. Entries are due **November 1**. Fax: (410) 333-5986.

NOVA Award sponsored by the Construction Innovation Forum. Nominations due **September 15**. Contact: (313) 995-1855.

American Wood Council's 1995 Wood Design Award Program. Submissions due **October 6**. Contact: (202) 463-2769.

Shinkenchiku design competition, to be judged by Jean Nouvel. Entries due **October 16**. Contact: Shinkenchiku-sha Company, 31-2, Yushima 2-chome, Bunkyo-ku, Tokyo 113, Japan.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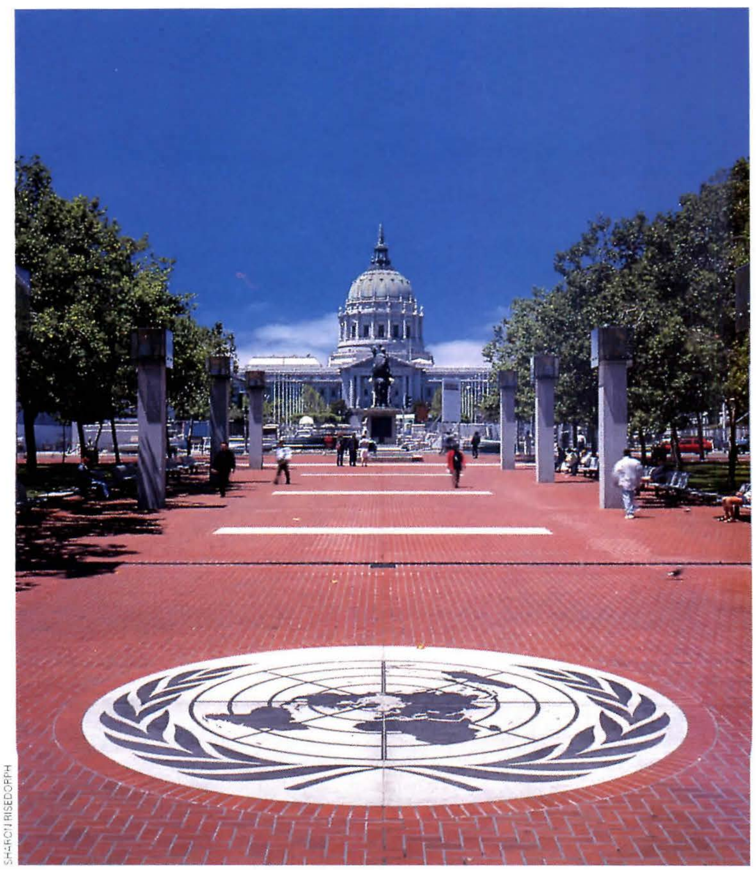


SHARON RISEDORPH

U.N.'s 50th Anniversary Sparks Design Events

Design-related events in New York and San Francisco marked the 50th anniversary of the United Nations in June. The Museum of Modern Art (MoMA) launched an exhibition chronicling the building of the United Nations headquarters in New York City. In San Francisco, delegates dedicated a United Nations memorial plaza revamped by landscape architect Andrew Detsch.

MoMA's "United Nations in Perspective," on view through September 26, documents the work of the international team of 10 architects responsible for designing the headquarters, including Le Corbusier, Oscar Niemeyer, Sweden's Sven Markelius, and New Yorker Wallace K. Harrison. Associate architecture curator Peter Reed organized the exhibit of 25 pencil and charcoal renderings by Hugh Ferriss, as well as photographs and a model.

In San Francisco where the U.N. Charter was formulated and signed in 1945, Andrew Detsch invigorated a public plaza designed by Lawrence Halprin and built in 1976 as part of San Francisco's Market Street redevelopment. Detsch inserted large granite panels that spell out the preamble to the charter in brass letters in the brick pavement and set the symbol of the organization in the center. The names of the 50 charter nations are inscribed on granite markers, and subsequent member nations are listed on granite light standards.

United Nations Secretary-General Boutros Boutros-Ghali presided over the dedication of the plaza, funded by private foundations and individuals.—*Ann C. Sullivan*

U.N. HEADQUARTERS: Four-building complex evokes Modernist strains.
SAN FRANCISCO PLAZA: Paving panels, stone plinths, and markers define City Hall axis in Detsch's redesign.

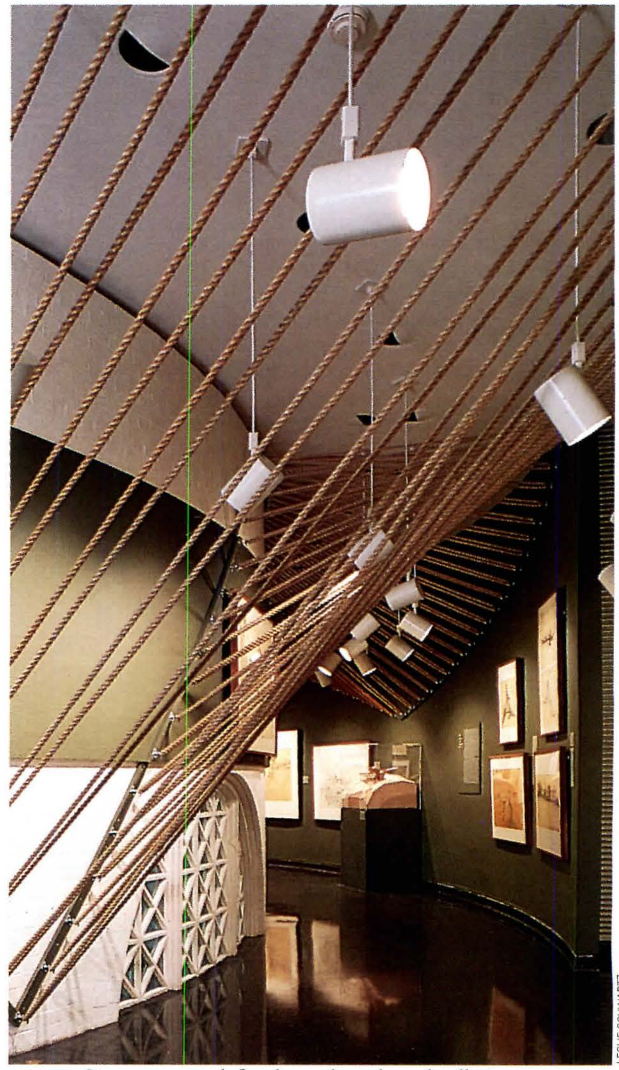
RODIN HOUSE: Unbuilt Libertyville, Illinois, residence.

LESLIE SCHWARTZ

PRICE STUDIO: New model of unbuilt Bartlesville design.

LESLIE SCHWARTZ

INSTALLATION: Prince design captures Goff's spirit.



LESLIE SCHWARTZ

CANOPY: Sinuous ropes define horseshoe-shaped galleries.

Goff Exhibit Opens at Chicago's Art Institute

More than a decade after his death in 1982, Bruce Goff remains best known as the highly idiosyncratic designer of organic, often bizarre, houses located in the heartland of America. An exhibition titled "The Architecture of Bruce Goff, 1904-1982: Design for the Continuous Present," continuing through September 4 at the Art Institute of Chicago, amply illustrates conventional wisdom regarding Goff's work, but fails to convince viewers of any deeper meaning that can be ascribed to his oeuvre.

Goff was a prodigy who designed work for a Tulsa architecture firm at the age of 14. He received no formal architectural education and, like his heroes Louis Sullivan and Frank Lloyd Wright, wore his autodidacticism as a badge of honor and a license for creativity.

The Chicago exhibit displays the full range of Goff's work, including his early Wright-inspired designs, quirky reinventions of the quonset hut, and intensely spiralling vortices. Each design demonstrates Goff's extreme interest in originality. This tendency produced wildly chaotic, almost structurally impossible, spaces and absurdly combined building materials, such as coal and crystals. Goff's gymnastics harbor the Modernist belief that different is original and, therefore, better. Of course, different is sometimes just different, as is generally the case in this exhibit of Goff's work.

It's unfortunate that the show relies almost entirely on Goff's drawings. The architect's intricate spaces and his intense, ad hoc application of unusual materials is only vaguely realized in this collection of two-dimensional representations.

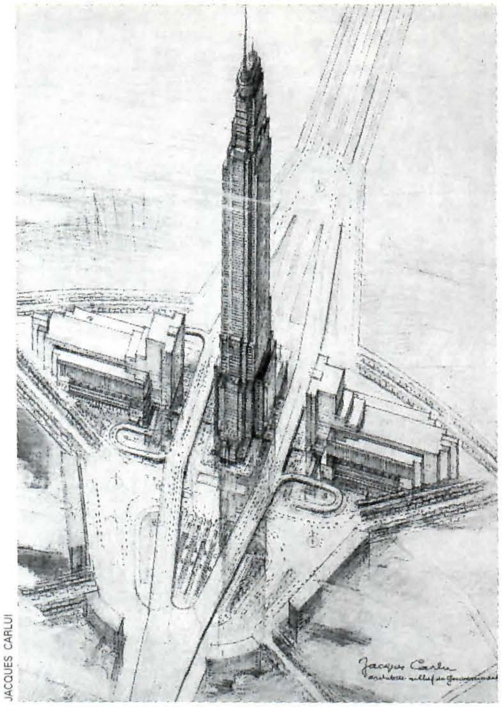
The gallery installation, designed by Goff's former employee and close associate Bart Prince, dramatically transforms the awkwardly configured Kisho Kurokawa Gallery of Architecture into a lyrical procession by weaving a sinuous canopy of ropes over and sometimes into the viewer's line of travel.

Prince subtly differentiates the walls of the horseshoe-shaped gallery by painting the outer one in a dark, earthy green; the inside wall retains its typical gallery white, but is bisected by a continuous strip of green that forms the field for hanging works. Imbuing an awkward space with spatial excitement, Prince captures the best aspects of Goff's work.—*Edward Keegan*

E. Keegan is a Chicago architect.

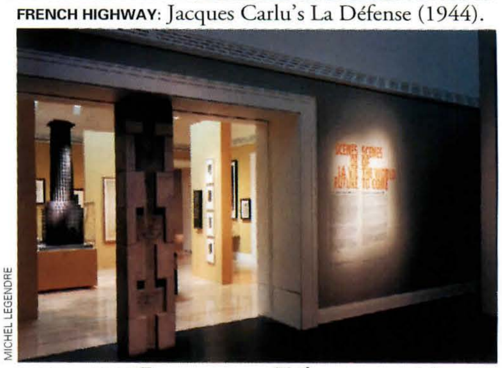
MUZEUM SZTUKI, LOOZ

FUTURIST AMERICA: Polish artist Kazimierz Podsadecki's *The City—Mill of Life* (1929).



JACQUES CARLU

FRENCH HIGHWAY: Jacques Carlu's La Défense (1944).



MICHEL LEGENDRE

INSTALLATION: Europe enters *Tribune* competition.

Montreal Exhibit Reveals Americanism Abroad

When architectural historian Jean-Louis Cohen was a schoolboy in France, he read Georges Duhamel's *Scènes de la vie future*, an account of the writer's American travels in the 1920s. Duhamel's awed, anxious, and indignant book characterized the technological innovation of American cities, and their chaos, as harbingers of Europe's future. For curator Cohen, the book was the germ of "Scenes of the World to Come," an exhibition analyzing America's symbolic and revelatory influence upon European architecture, on view at the Canadian Centre for Architecture (CCA) in Montreal through September 24.

Duhamel's book was published in Boston in 1931 as *America: The Menace*, but Cohen doesn't share that view. Beginning in 1892 with student entries for the Ecole des Beaux Arts' American Prize, the exhibition reveals the mixture of ambiguity and admiration that informed European architects' view of American urban models.

The World's Columbian Exposition of 1893 brought European architects to Chicago, where they first grasped the technical wizardry of America's iron- and steel-framed buildings. By the conclusion of World War I, European architects regarded the American skyscraper as a miracle cure for housing shortages and congested cities. European interpretations exhibited in "Scenes of the World to Come" include Mies van der Rohe's triple prism skyscraper, Hans Poelzig's Y-plan tower, and Martin Elsaesser's courtyard tower, all entries in Berlin's 1921 Friedrichstrasse competition.

That competition was followed by the American contest for the *Chicago Tribune* tower. The Montreal show includes Eliel Saarinen's graceful second-place winner and schemes by Adolf Loos, Walter Gropius, and Bruno Taut. Russians, preoccupied with civil wars and revolutions during the 1910s and '20s, skipped the *Tribune* competition but entered a 1929 contest for a Christopher Columbus Memorial Lighthouse in Santo Domingo. Of the entries, several embraced American-style communication technologies—most notably Ivan Leonidov's monumental antenna.

In short, everyone from Le Corbusier to Fiat magnate Giovanni Agnelli experienced an American epiphany that recharged or infected attitudes to design, often with futuristic results. "Scenes of the World to Come" captures this European fascination with America with painstaking thoroughness and rich detail. More than 350 objects from European and American collections are displayed in gorgeously hued galleries and elegant glass vitrines, designed for this exhibit by Montreal architect Luc Laporte. It is an eloquent, profound show, one that offers hours of meditation upon the complexities and dramas of European architecture's American undercurrent.

"Scenes of the World to Come" is the first of five shows, dubbed "The American Century," organized by CCA Director Phyllis Lambert, running through summer 1998. They examine America's impact on worldwide architectural culture, addressing Frank Lloyd Wright's landscapes; Frederick Law Olmsted's parks; Walt Disney's theme parks; and the suburban lawn.—*H.L.*

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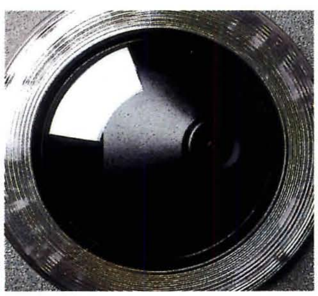

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Christo's Architecture of Folds in Berlin

After 23 years of effort, the Bulgarian-born artist Christo and his wife Jeanne-Claude finally wrapped the Reichstag. From June 25 to July 6, the former German Parliament building in Berlin was shrouded in 807,000 square feet of aluminum-coated polypropylene fabric and 26,247 feet of blue polypropylene rope. To protect and alter the silhouette of the upper part of the 1894 building, 441,000 pounds of steel armatures were erected.

The complete wrapping of the 445-foot-long by 315-foot-wide and 140-foot-high Reichstag required eight full days, and efforts were often hampered by bad weather and high winds.

A cascading, thin membrane of shimmering and breathing skin, Christo's design does not just hide what is behind it, but stands on its own as a completely new entity, a dignified structure that is a building in itself, an architecture of folds.

Like all of Christo's work, the wrap is temporary and financed by the artist at a projected cost of $8.2 million. Funds were gathered through sales of original artwork detailing the project.

Although the Reichstag has not housed a governing body since it was gutted by fire in 1933, the building still remains to most Germans the only symbol of their republic. Christo's wrap was narrowly approved on February 25, 1994, after a 70-minute Parliamentary debate. Later this year, the building will begin its renovation by Norman Foster and Partners, scheduled to be completed by 2000.—*Marius A. Ronnett*

M. Ronnett is Chicago-based architect.

REICHSTAG: Steel supports fabric.

WRAPPER: Fabric coated in aluminum.

MARIUS A. RONNETT PHOTOS

Gehry's Guggenheim on Display in Venice

Frank Gehry's competition-winning design of the $100 million Guggenheim Museum in Bilbao, Spain, is the focus of an exhibit that opened in June at the Peggy Guggenheim Collection in Venice, coinciding with the 100th anniversary of the Venice Biennale. "Frank Gehry in Bilbao: The Museum in the Expanded Field," on view through October 15, comprises five full-building models, 200 model parts, and 80 sketches and working drawings of the Bilbao museum, currently under construction.

Gehry conceived the new Guggenheim as a concentric field of twisting titanium shells wrapped around limestone-clad orthogonal volumes that are centered on an enormous atrium. Sited in the center of Bilbao's developing cultural district on the banks of the Nervión River, the museum is one venue of several intended to expand the city's public amenities. This initiative, funded by the Basque government, includes an airport expansion by Santiago Calatrava, 10 subway stations by Norman Foster and Partners, a transport interchange by Michael Wilford and Partners, and a waterfront master plan by Cesar Pelli & Associates.

The exhibit, designed by New York architect and ARCHITECTURE contributing editor Joseph Giovannini, is installed in the Guggenheim's two, newly acquired row houses. It traces the development of Gehry's design from schematics through shop drawings.

One of the more interesting aspects of the show is a four-video-screen demonstration of the three-dimensional computer modeling program, called Catia, that mapped the elaborately curved surfaces of Gehry's building design and produced drawings for fabrication.

When completed in 1997, Gehry's Bilbao museum will augment the Guggenheim Foundation's portfolio of buildings, which includes Frank Lloyd Wright's 1959 museum and 1992 addition by Gwathmey Siegel & Associates; Arata Isozaki's 1992 gallery in SoHo; and the Venice collection.—*A.C.S.*

MODEL: Galleries are clad in limestone and titanium.

MONITORS: Computer modeling maps irregular curves.

DAVID HEALD/GUGGENHEIM MUSEUM PHOTOS


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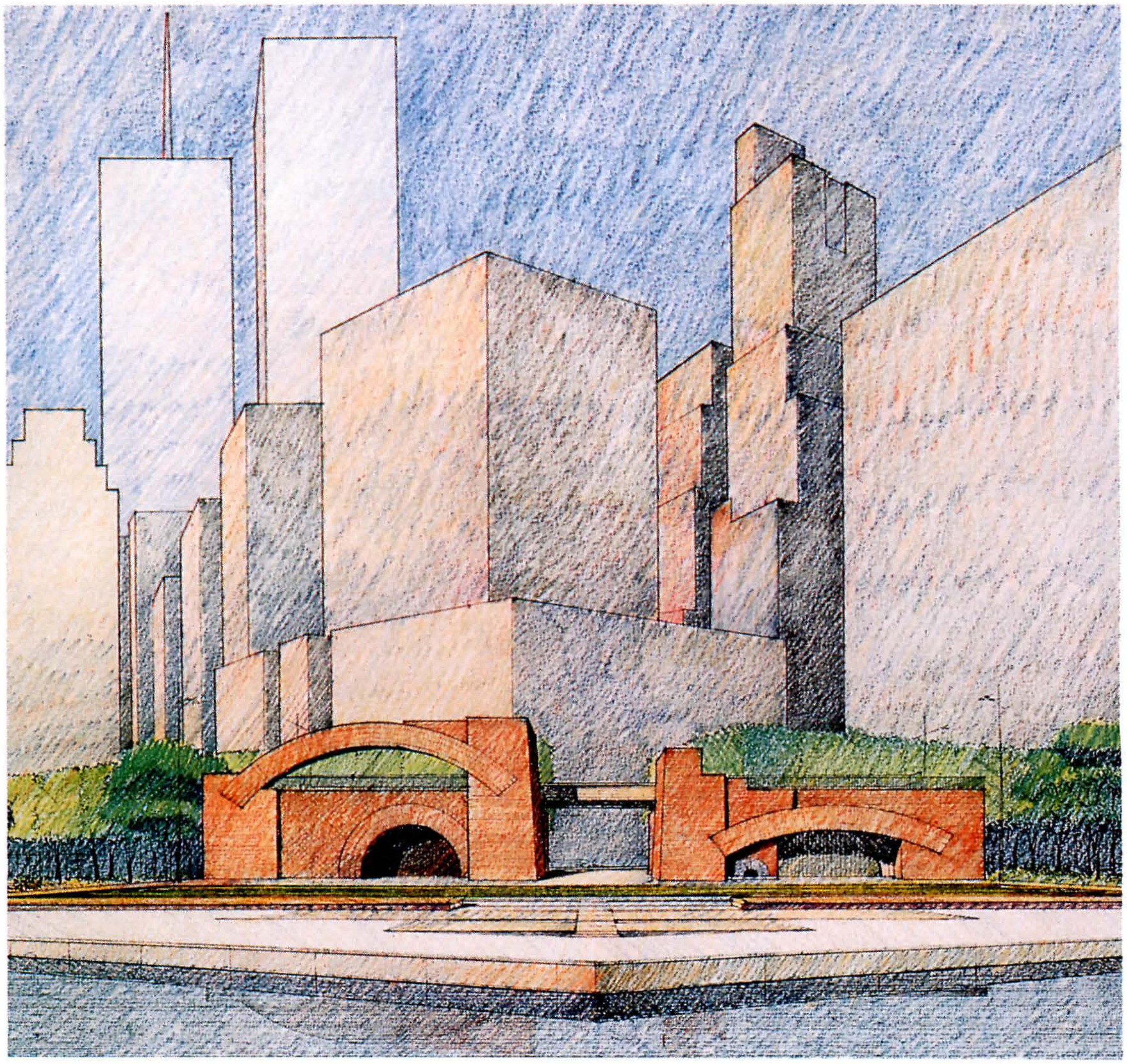
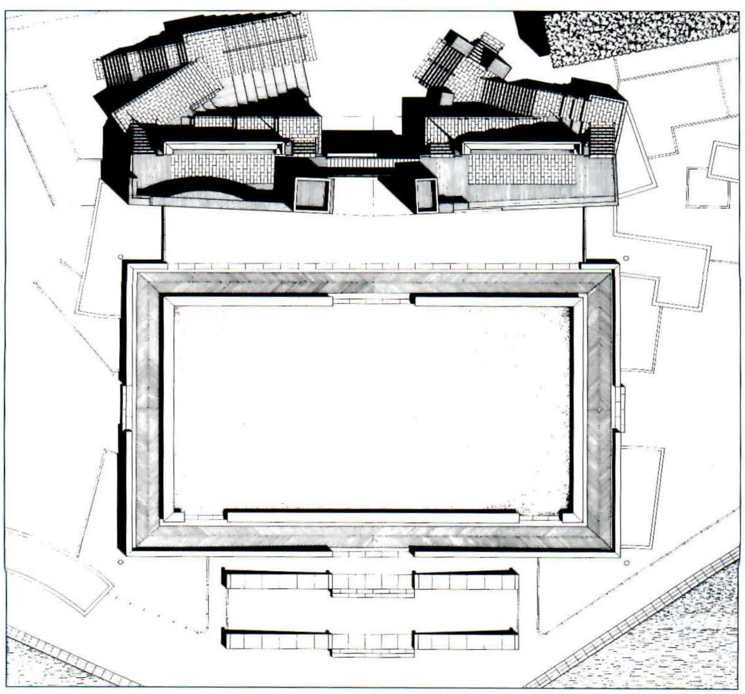
On the Boards

Battery Park City's final park takes advantage of spectacular harbor views.





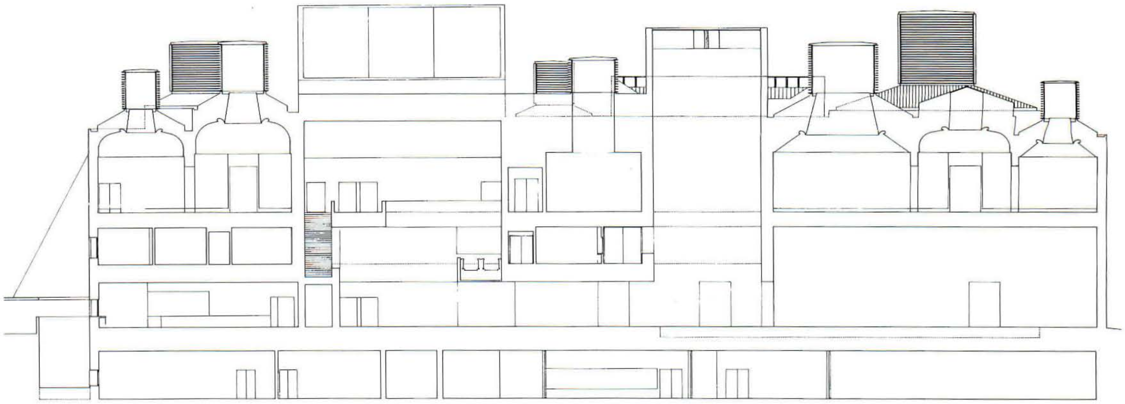
Robert F. Wagner, Jr. Park
New York City
Machado and Silvetti Associates

The culmination of Battery Park City's mile-long promenade of waterfront parks is finally under construction. Better known as South Park, the 3.5-acre site was originally designed as a tapestry of gardens by artist Jennifer Bartlett. But Bartlett's many plants required a wall to protect them, and community opposition to obscuring the harbor ultimately killed her design.

Redesigned by Machado and Silvetti, Hanna/Olin, and Lynden Miller, the park will bring people down to the waterfront. Two brick pavilions are linked by a bridge, with railed balconies offering spectacular views of New York Harbor. The northernmost pavilion contains a restaurant; the southernmost building houses rest rooms and a maintenance facility.—*H.L.*

On the Boards

Spanish architect Rafael Moneo expands Houston's Museum of Fine Arts.



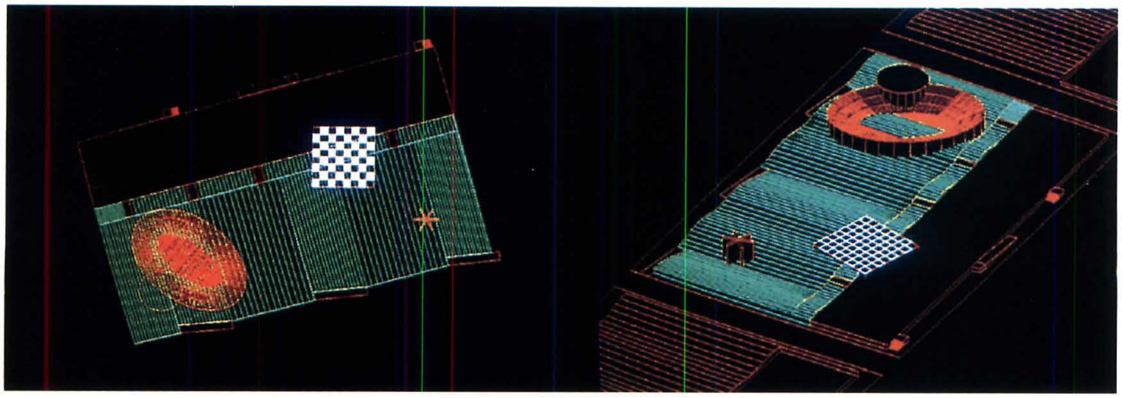
Audrey Jones Beck Building
Museum of Fine Arts, Houston
Houston, Texas
Rafael Moneo, Architect

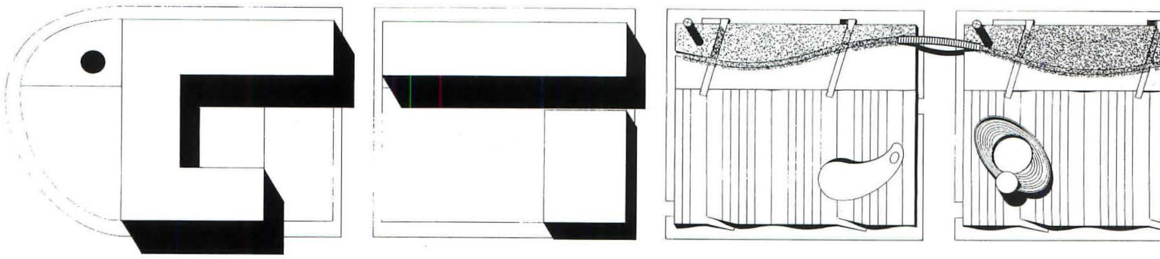
Commissioned in 1992 to design a new building for the Museum of Fine Arts in Houston, Rafael Moneo joins a roster of renowned architects enlisted to accommodate the museum's growth. In the late 1950s, Mies van der Rohe designed a master plan for the expanding art collection; his addition to the 1924 museum was finished in 1958. The second phase of Mies's plan, Brown Pavilion, was completed by Houston architect S.I. Morris in 1974, followed by a sculpture garden by Isamu Noguchi in 1986. Two years later, Venturi, Scott Brown and Associates developed a master plan that includes a new art school building designed by Carlos Jimenez.

Moneo's 185,000-square-foot limestone-clad addition, unveiled in May, will more than double exhibit space for the museum's 27,000-item collection. A 24-foot-high portico with angled panels and sculpted lettering shapes the west face and defines a passage to the main entrance. A concrete canopy enlivens the windowless north facade.

Like oversized chimneys, block-shaped skylights will jut out from the metal roof and filter natural light to the upper level European galleries, curators' offices, archives, and atrium. Terrazzo and wood finishes will adorn ground-level galleries for temporary exhibits, photography, and American art.

When completed in 1999, the Beck Building will be the 57-year-old Spanish architect's second building in the U.S., following his 1993 Davis Museum at Wellesley College.—*Ann C. Sullivan*





A linear park is the first evidence of Des Moines' new urban plan.

Gateway Green
Des Moines, Iowa
Agrest and Gandelsonas and Herbert Lewis Kruse Blunck Architects

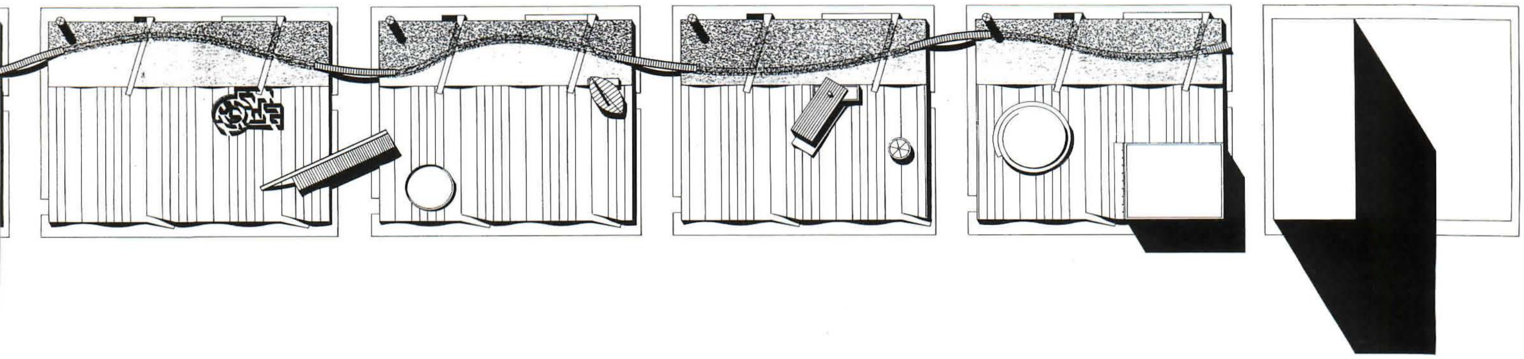
Gateway Green initiates the urban design program created for Des Moines, Iowa, by Agrest and Gandelsonas Architects of New York and Herbert Lewis Kruse Blunck Architects of Des Moines. Reflecting Agrest and Gandelsonas' search for alternatives to traditional master planning, the Des Moines Vision Plan structures redevelopment episodically: A series of places are first identified by the city and its architects as having significant design and development potential and then are developed through joint public/private initiatives that differ with each new project.

Gateway Green is the plan's most ambitious undertaking to date: six linear blocks set between two corporate headquarters along the western edge of downtown. The architects propose an understated park to upgrade the decaying area, which is viewed as a significant point of entry to Des Moines.

The park will blend two distinct characters: An undulating grassy plane along the south side of the site will abstract the Iowa landscape; to the north will be a serpentine promenade called the Boardwalk. The rolling plane ultimately may host several specialized facilities, such as an amphitheater, a chess garden, and a library (facing page).

The composition of the park respects the traditional midwestern grid. Its six discrete blocks can be built and sustained separately and will allow traffic to move in and out of the area easily.

Construction of the park's first phase is targeted for January 1996. To attract Meredith Publishing and Equitable Insurance, whose new Herbert Lewis Kruse Blunck-designed buildings bookend the Green, the city offered tax and development incentives. In an agreement intended as a model for the plan, Meredith and Equitable will contribute most of the park's construction costs.—*Reed Kroloff*



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Overdesigned lampposts in New York City ape the nostalgia of Main Street.

NEW LAMPPOSTS: Design incorporates signs and stoplights.

ACORN HEAD: Metal halides replace high-pressure sodium lamps.

Bad Lights, Big City

Overwrought light fixtures have been sprouting up in midtown Manhattan for nearly a year, ever since a coalition of businesses known as the Grand Central Partnership (GCP) began its ambitious program to reverse the area's physical decline. The GCP is one of New York City's most prominent Business Improvement Districts (BIDs), where commercial tenants pay a self-imposed tax to finance public improvements such as streetlights, benches, and granite curbs.

Last year, the 34th Street Partnership BID began upgrading the area bounded by 31st and 35th streets between Ninth and Madison avenues and, unfortunately, installed the same Neo-Victorian lampposts chosen by the GCP to illuminate the area between 38th and 48th streets and Second and Fifth avenues.

New York City architectural lighting designer Fisher Marantz Renfro Stone fashioned the light fixtures to replace the city's ubiquitous "cobra heads," designed by renowned industrial designer Donald Desky in the early 1960s. Desky's aluminum-colored lampposts suited the popular image of Manhattan at the time: a streamlined Deco metropolis where gray-suited men and women perpetually hurried into the monochromatic, soot-tinged buildings captured in the photographs of Alfred Stieglitz.

The new, green-painted streetlights, crowned by a pair of pendulous metal halide lamps, suggest a more nostalgic, Postmodern city. Their top-heavy design appears more suited to a Disney theme park than to the sophistication of New York. Fisher Marantz's Beaux-Arts wannabes merely clash with the simpler, verdigris originals that flank the Park Avenue approach to Grand Central Station.

The unceremonious cumulative effect of the new lampposts is most apparent on Madison Avenue. Unlike Desky's cobra heads, the new "acorn heads" don't project over the street to form a canopy; they merely crowd the avenue with visual litter.—*M. Lindsay Bierman*


Carolyn Iu, AIA, & Neville Lewis, FIIDA, ASID, of Iu and Lewis Design LLC.
Innovators. Interior Design Magazine Hall of Fame members. And specifiers of DuPont Antron carpet fiber.

What Makes a Good Park

The best open spaces are the simplest, maintains urban theorist Peter Katz.

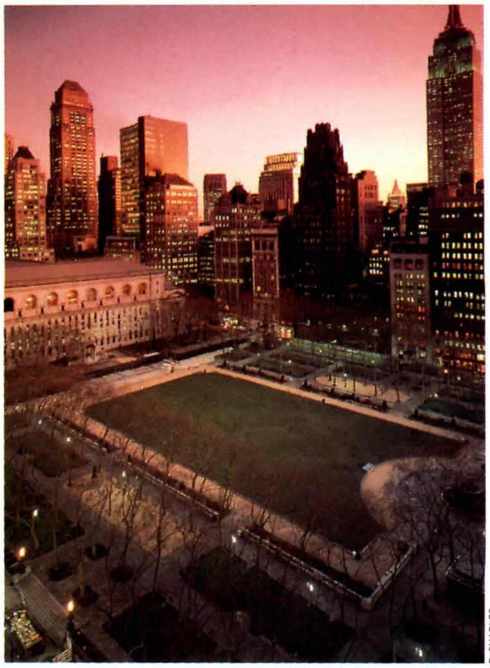
Like many downtowns and inner-city neighborhoods that surround them, urban parks are in trouble. For decades, the only new parks built in the heart of our cities were actually privately owned places that look and feel public, but invariably serve as amenities for nearby real estate developments. These include the heroic Modernist plazas of the 1960s and 1970s that frame corporate high rises; the interior atriums of office towers; and the elaborate courts of festival malls built in the 1980s.

Because such quasi-public spaces have become the norm in recent years, and there are so few successful models of real public space, it is not surprising that issues of public versus private space have become blurred. Architects in particular seem to be at a loss when determining criteria to guide the design of public spaces, their use, and long-term management.

Importantly, the public realm is more than just a place; it has an intimate and longstanding connection with the very roots of democracy and our notion of a civil society. During the American Revolution, for example, Lexington Green was the gathering point for the Minutemen. More recently, popular movements have been played out in the town square—Czechoslovakia's Velvet Revolution in Wenceslas Square and Beijing's student uprising in Tiananmen Square, to name a few.

Free speech and soapboxes don't stand much of a chance in the corporate plazas, atriums, and shopping malls of today. Uniformed security patrols would whisk an offending citizen away long before a crowd could ever form. Legal questions about private ownership versus public use have been debated in the highest courts in the land. Special booths for pamphleteers in many airports attest to the awkward compromises that have resulted from such decisions.

But more important than legal issues are the issues of public versus private "character."



F. CHARLES

GOOD PARK: Open spaces of New York's Bryant Park.

ERHARD PFEIFFER

BAD PARK: Renovated Pershing Square in Los Angeles.

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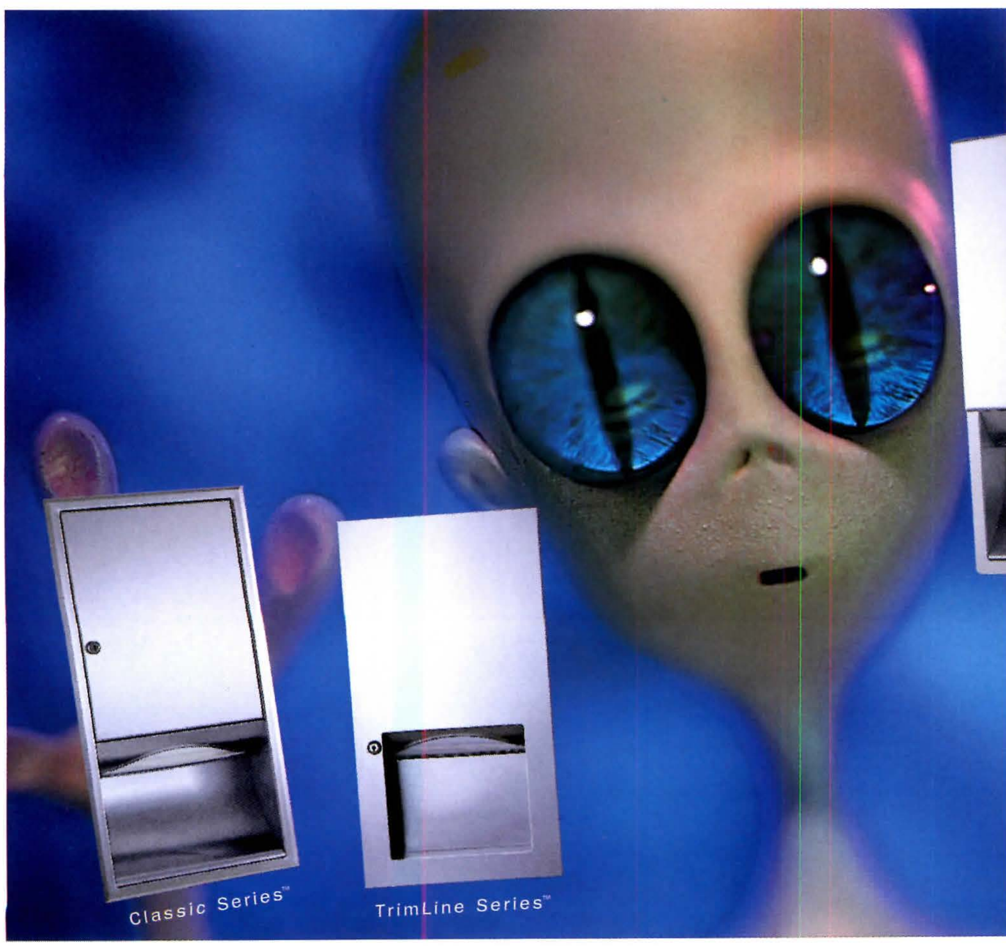

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Opinion

Just as many of the corporate plazas of the 1960s and 1970s assumed, albeit poorly, the role of public park, the newest generation of urban parks look and function too much like their private predecessors. Two high-profile city parks, San Francisco's new Yerba Buena Gardens and Los Angeles' renovated Pershing Square, reflect that trend.

My principal criticism of both parks is that they comprise a sequence of chopped up spaces, large sculptural objects, and walls at a variety of heights. Neither offers much usable open space. I blame this result on the fact that both parks were principally designed by building architects—MGA Partners with Romaldo Giurgola at Yerba Buena and Ricardo Legorreta at Pershing Square—rather than landscape architects. Architects just don't believe they've done their job until they've constructed a building, or at least something resembling one.

And while these efforts may be intriguing as designs, I worry that their architects have neglected the basic elements of a good park. Because of the many hidden spaces within each, these parks will be difficult to maintain and keep safe over time. More importantly, they lack the kind of multifunctional open areas that can be found in such classic parks as San Francisco's Washington Square or New York's newly restored Bryant Park.

Given the multiple constituencies that influence and shape the public space within our towns and cities, it is easy to see why the results are so often compromised. In Seattle, for example, citizen activists are currently battling the Chamber of Commerce and Nordstrom, the city's largest retailer, over the reopening of Pine Street within the Westlake Mall to vehicular traffic. That section of the street, decorated with a basketweave paving design by landscape architect Hanna/Olin, sits between several irregularly shaped plazas, themselves the remnants of an earlier street that intersected the downtown grid.

Seattle needs a real downtown park, and its citizens are right to seek one. Unfortunately, what they are fighting to save by keeping the street closed is a weak substitute —Westlake's closed-off street and adjacent hardscape areas feel more like a corporate plaza than a true urban park.

Asked recently by a reporter about the controversy in Seattle, which also happens to be my hometown, I began to think about my own criteria for a successful urban park:

A park should be nearby for everyone. Public open space such as a square or commons should be at the center of a neighborhood—no more than five minutes' walk for most residents. Public buildings, shops (a corner store, at minimum), and a transit stop should be at the center, too. Smaller parks should be scattered throughout the neighborhood so that no one is more than three minutes' walk from a park.

A public park should look and feel truly public. Being bordered by streets or sidewalks on all sides is one sure way to communicate "publicness." The presence of civic buildings and monuments also reinforces a park's public character.

Parks should be simple and not overdesigned. Trees, grass, some walkways, and a bench to sit on—these are the basics of my ideal park. Unfortunately, many of the new generation of parks are so cluttered with the nervous tinkerings of design professionals that it is hard to just find a patch of grass where one can sit on a sunny day, or a clear meadow to set up a volleyball net. Buffers (usually of various heights and angles), berms (formed of earth or concrete), and banners (usually faded, ripped, or missing) have for me become the unmistakable harbingers of public space in trouble. Such all-too-common band-aids usually appear in locations where there are more serious, deep-seated urban design shortcomings.

A park should retain or enhance the natural contours of the land. In densely settled areas, it is hard to get a sense of the way the land looked before it was built upon, terraced, or paved over. I'm particularly aware of this in my own hilly city of San Francisco. I feel that too many parks, both here and in other places, are reshaped beyond recognition.

Frederick Law Olmsted moved a lot of earth too, but he did it in a way that looked more natural than what he started with. My own city's legendary Union Square is a good park but flawed, I believe, by an oddly shaped hump at its center formed by an underground parking garage. Not far away is Washington Square, a truly great park that borders the neighborhood life of San Francisco's North

Beach. With its subtle ripples and rolls, I'm able to gain from it a sense of what many of the surrounding hills and valleys must have once looked like. First planted around 1850, the park's design is quite open with a few stands of trees, several monuments, and a simple, looping walkway. In and around the park, neighborhood life flourishes. Regulars claim its sunny benches to read and chat. Elderly residents practice tai chi. Schoolchildren play frisbee. Commuters disembark from buses along the edges of the park. Lunchtime picnics are daily events on its sprawling green lawn.

A good park should allow pedestrians to both see and walk through it. This point relates to obvious issues of safety and personal security, but also to the previously mentioned practice of overdesign. In many new parks, I feel as if I'm a victim of planning, forced to navigate an obstacle course just to traverse them. Some parks, such as Yerba Buena Gardens, don't allow short-cuts through them; instead, you're forced to walk around the park's perimeter if you want to reach the opposite edge of the block.

By contrast, most older parks have a simple network of walkways, clearly understood from many vantage points, which offer a variety of routes for those who are just passing through. Such fleeting moments in an otherwise hectic day may be the only time some city dwellers get to experience the pleasures of a park, to smell the flowers, so to speak.

As architects take a renewed interest in public spaces, I offer them all a bit of advice before they get back to their drawing boards: Go out and take a walk in a good park. Look at the elements that cause it to work so well. Talk to the people who use this park, and find out what features they value most. And while you're there, don't forget to smell the flowers.—*Peter Katz*

San Francisco-based Peter Katz is author of The New Urbanism. *Portions of this article appear courtesy of* Land and People, *published by the Trust for Public Land.*

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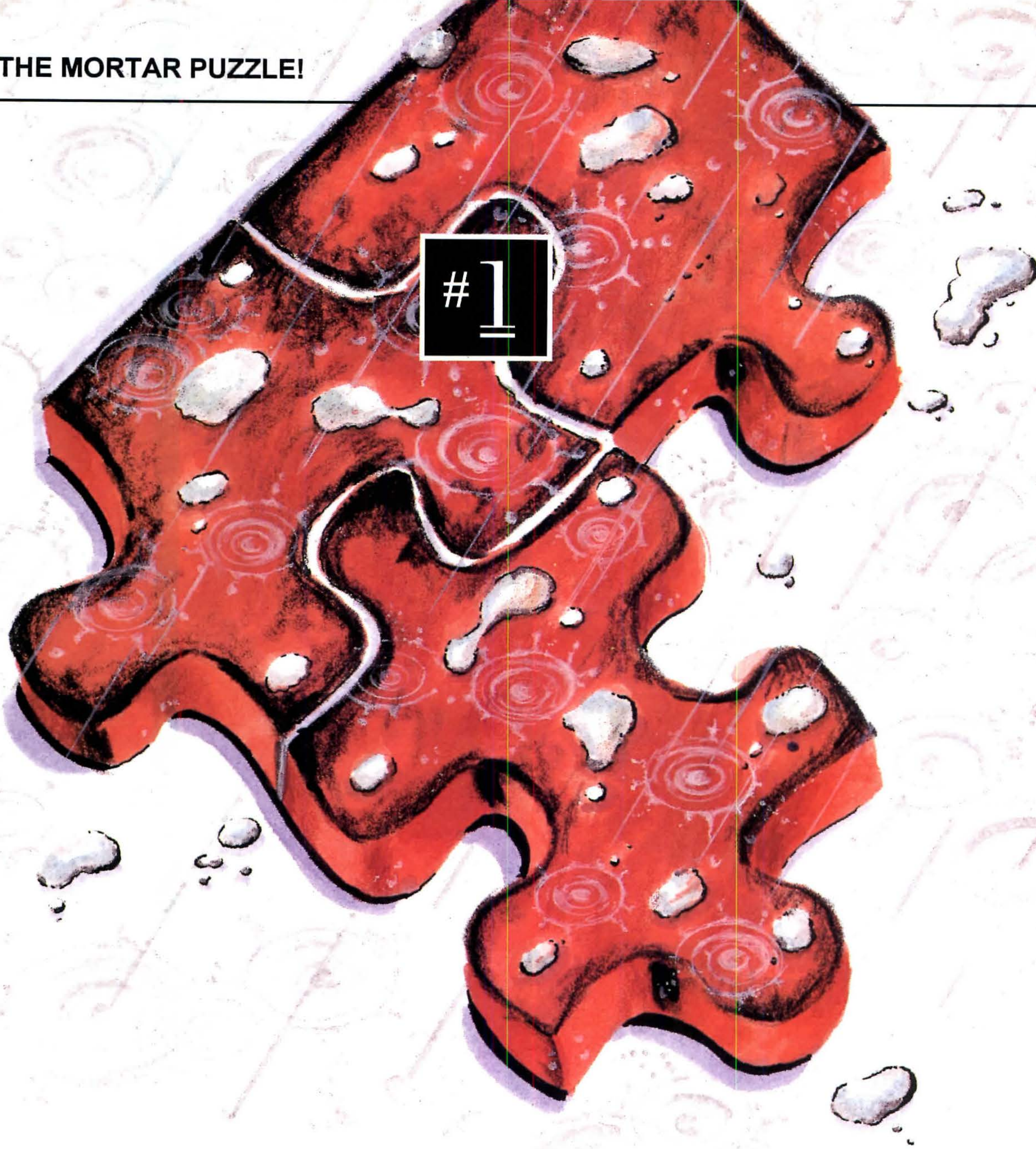

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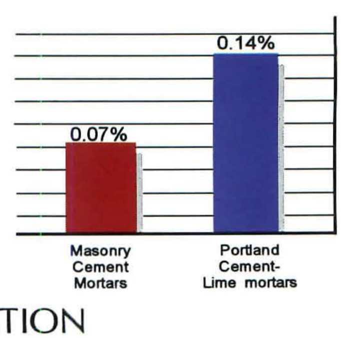

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New Public Spaces

Can architects design parks, plazas, and esplanades, or are these spaces better left in the hands of urban planners, landscape architects, and ordinary citizens?

"Overdesigned" is how urbanist Peter Katz describes many new architect-designed urban parks (pages 43-47). Katz contends that the best public spaces are the simplest, allowing pedestrians to walk through them easily and enjoy their greenery.

In this issue, we show how architects in fact design such public spaces with dignity and restraint. The new entrance pavilion for the Long Island Rail Road by architect R.M. Kliment & Frances Halsband, for example, establishes a new civic gateway to New York with elegant minimalism—a single room finely detailed in steel and glass. Others of our featured public projects succeed because they require architects to collaborate with landscape architects and artists: The newest park in New York's Battery Park City, for example, by Mitchell/Giurgola Architects and landscape architect Child Associates, simply focuses on a bosque of trees, with towering pylons by sculptor Martin Puryear to mark the harborfront (below). San Francisco designer Stanley Saitowitz, whose growing portfolio of public designs includes parks and memorials, also works with landscape architects to uncover the essential nature of a site. Other architects in this issue convert barren plazas and abandoned lots into new promenades and parks that offer respite from urban pressures. As more 1960s and '70s office buildings require upgrading, transforming their overlooked plazas into civic amenities will be architects' next challenge in designing for the public.

JEFF GOLDBERG / ESTO

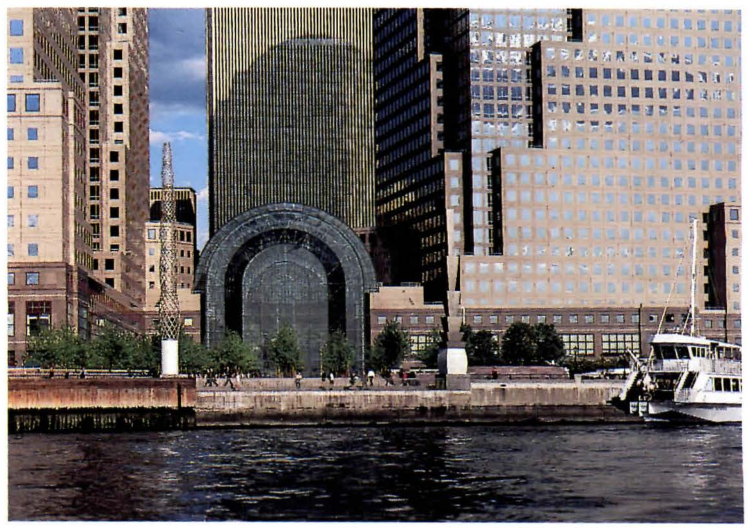
Waterfront Connection

The Belvedere
New York City
Mitchell/Giurgola Architects
Child Associates

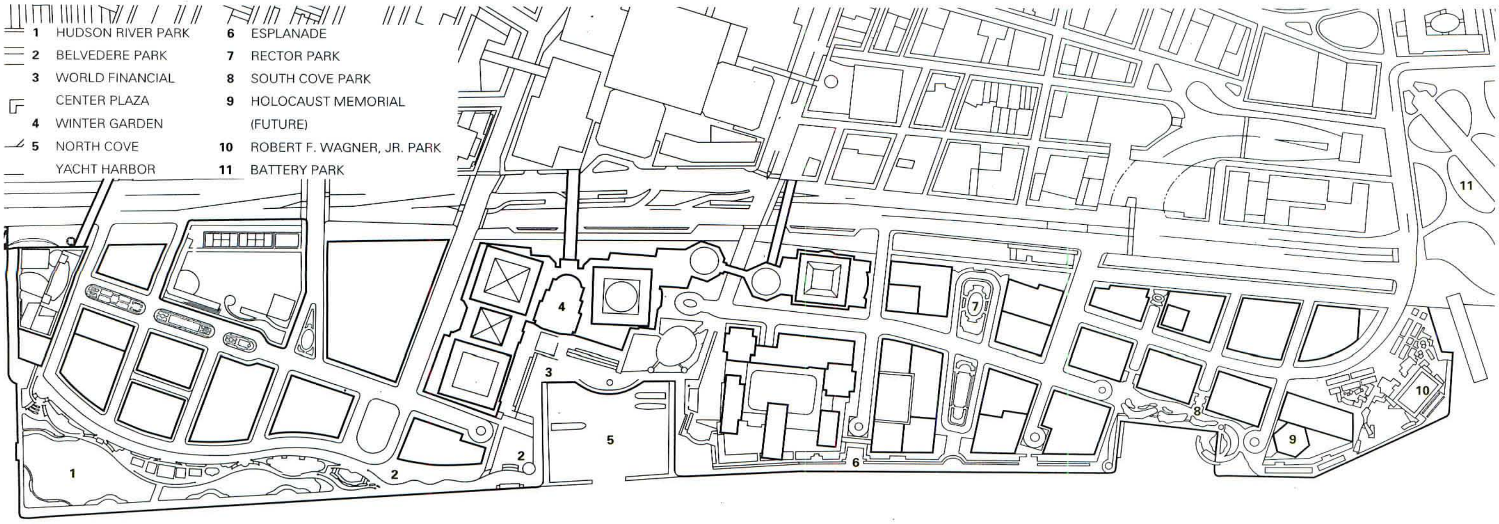
Shaped by its surroundings rather than by thematic aspirations, the 1.6-acre Belvedere is the penultimate park to be constructed in the mixed-used development of Battery Park City. To its west lies the Hudson River, with a classic view of New York Harbor, Ellis Island, and the Statue of Liberty. To the east loom the shiny towers of the World Financial Center, with Cesar Pelli's Winter Garden carefully centered among them. At the Belvedere's west shoreline, passengers from a New Jersey commuter ferry disembark to traverse the new park, disappearing into the glassy office buildings or the subway below.

Architect Steven Goldberg of Mitchell/Giurgola and landscape architect Susan Child of Child Associates reasoned that a slender park located among such portentous works of commerce and civility should make connections rather than establish new dramas or themes. Moreover, the Belvedere is one of a continuous chain of riverside parks built by the quasi-public Battery Park City Authority as incentives for development on the 92-acre tract. North of the Belvedere lies Hudson River Park, an Olmsted-inspired landscape completed in 1992; to the south, an esplanade leads to South Cove (1988), designed by Child with artist Mary Miss and architect Stanton Eckstut. "Our objective in designing the Belvedere," explains Goldberg, "was to make this sequence a seamless whole." Adds Child, "This piece was like a keystone fitting into an existing context of architecture and landscape. As such, it had to respond to its surroundings while creating a distinct sense of place."

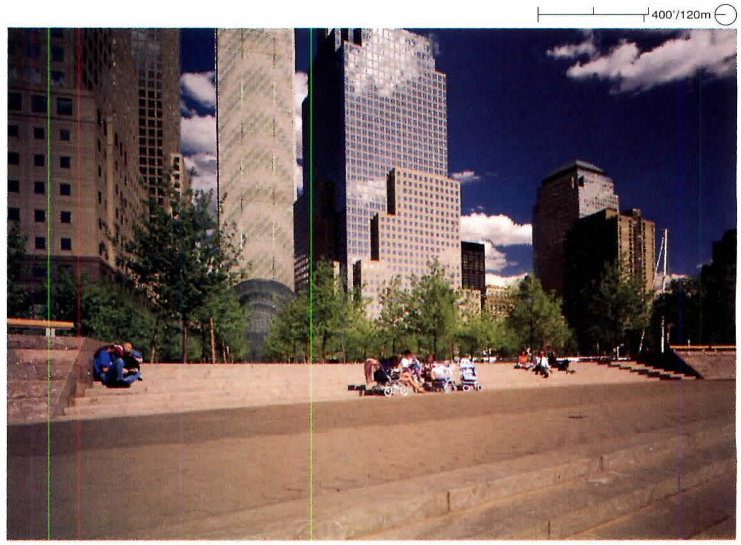
The new park achieves this integration with astonishing success. It is designed as a simple transition between the surrounding open space and office towers. To mediate between the World Financial Center plaza and the waterfront, Goldberg and Child established two levels separated by a serpentine wall, randomly broken by stairs and pathways. The upper level is planted with a dense

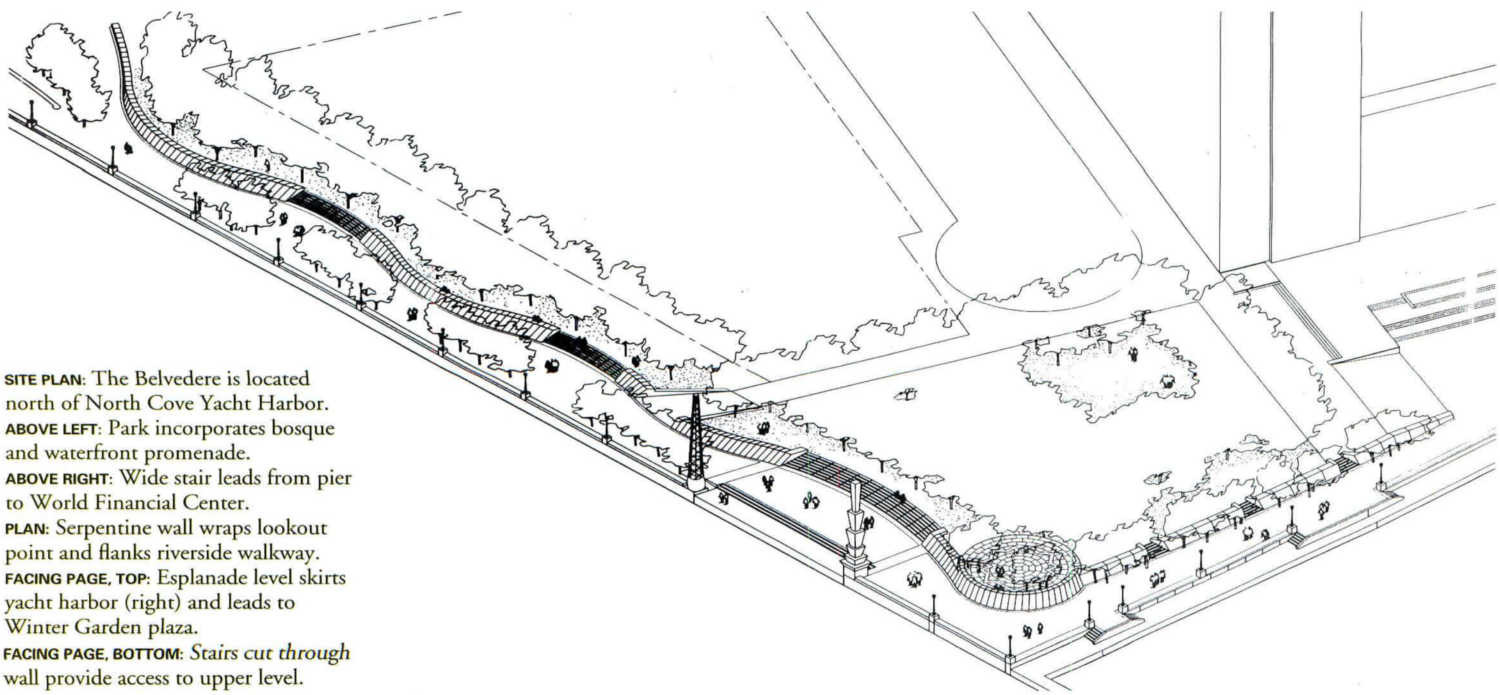


FACING PAGE: Pylons by sculptor Martin Puryear identify Battery Park City's newest public space. Battered stone wall encircles honey locust trees.
TOP: Commuters from New Jersey disembark at fabric-roofed ferry pier and traverse the Belvedere to office towers and public transit.
ABOVE: From Hudson River, pylons frame Cesar Pelli's Winter Garden and Belvedere's bosque of honey locusts.



SITE PLAN OF BATTERY PARK CITY





SITE PLAN: The Belvedere is located north of North Cove Yacht Harbor.
ABOVE LEFT: Park incorporates bosque and waterfront promenade.
ABOVE RIGHT: Wide stair leads from pier to World Financial Center.
PLAN: Serpentine wall wraps lookout point and flanks riverside walkway.
FACING PAGE, TOP: Esplanade level skirts yacht harbor (right) and leads to Winter Garden plaza.
FACING PAGE, BOTTOM: *Stairs cut through* wall provide access to upper level.

TOP: Elevated belvedere offers views of Statue of Liberty and Ellis Island.
ABOVE: Wall doubles as seating. Teak railing is designed as back support.
FACING PAGE: Martin Puryear's dramatically lit sculptures complement Statue of Liberty in New York Harbor.

THE BELVEDERE
NEW YORK CITY

ARCHITECT: Mitchell/Giurgola Architects—Steven M. Goldberg (principal-in-charge); John Kurtz (project principal); Stuart Crawford (project architect); Niall Cain, Carol Loewenson (project team)
LANDSCAPE ARCHITECT: Child Associates, Boston, Massachussets—Susan Child (principal-in-charge); Robert M. Corning, Jr. (project landscape architect); John Grove, Douglas Reed, Anita Berrizbeitia (project team)
ENGINEERS: Weidlinger Associates (structural); Lehr Associates (mechanical/electrical)
CONSULTANT: H.M. Brandston & Partners (lighting)
GENERAL CONTRACTOR: Raytheon Engineers & Constructors
COST: $5 million
PHOTOGRAPHER: Jeff Goldberg/Esto

bosque of English oaks, a direct counterpoint to the hardscape surrounding the World Financial Center. By repeating the grid established by the exotic royal palms inside the Winter Garden, the bosque echoes the rhythms Pelli established in his opulent greenhouse. The trees also wrap the site of the future New York Mercantile Exchange building, lured to Battery Park City by an unprecedented package of government subsidies and scheduled to begin construction this summer. At the southwest corner of the bosque, a belvedere planted with honey locusts provides a vantage point for viewing New York Harbor and the Statue of Liberty.

At the lower level, an esplanade along the river's edge links the new park with the north end of Battery Park City and its southernmost property at the tip of Manhattan. The Robert F. Wagner, Jr. Park on that site, the last in the waterfront sequence, is designed by Machado and Silvetti and will be completed next spring (page 31, this issue).

The Belvedere's battered wall of rusticated Dakota granite echoes the fortifications of nearby Liberty Island. Meandering up the esplanade, the wall doubles as seating, with a teak rail along the top designed as back support. Broad steps connect the esplanade with the upper level; at the bosque, an 80-foot-wide stair leads to the river's edge.

Following in the tradition of all Battery Park City's open spaces, the new park was designed by a collaboration, but Goldberg and Child knew that their scheme called for a dramatic element at the waterfront. Moreover, both architect and landscape architect had the sense to realize that the theatricality they were seeking could only be achieved by a work of art. Following a limited competition, New York state sculptor Martin Puryear was selected to design two stainless steel light pylons to serve as markers on the waterfront. The tall pylons, one solid, one open, provide a clearly defined gateway to the complex, especially for ferry passengers arriving from across the Hudson. Notes Puryear, "By day, the pylons identify the park; by night, they are beacons on the waterfront."

New York state's creation of what is now largely housing for the affluent and corporate workplaces has long made Battery Park City the target of criticism. But the public nature of its parks and the authority's evident care at maintaining them are cause for praise. The Belvedere, with its ample seating, waterfront access, and logical directions to important places, strengthens Battery Park City's civic contribution.—*Heidi Landecker*

Bay Adelaide Park
Toronto, Ontario
Baird/Sampson Architects

Urban Meditation

Bay Adelaide Park is so far the most architecturally ambitious of a new generation of public spaces in Toronto. Since the early 1980s, the City of Toronto Parks and Recreation Department has identified odd pieces of urbanscape—typically left over from demolition and construction—and sponsored design competitions, extending invitations to multidisciplinary teams led by architects. The city holds title and provides upkeep. So far, the procedure has been an unqualified success.

Bay Adelaide Park, named for a major crossroads, was to have been the finishing touch of Bay Adelaide Centre, a mammoth office and retail complex slated for Toronto's financial district. Instead, the park is the only above ground, built piece of the proposed development, 57 stories of late-1980s cornball. The owners were obliged to build the $4.5 million park, despite the collapse of the commercial real estate market, to meet the conditions of zoning approvals.

At a sunny noon in June, the park was awash in brown-baggers, though most conspicuous are couriers on their off-hours who have claimed the spot for skateboarding and cycling. This small clearing is remarkably diverse, incorporating a variety of seating, plants, and views. One of the competition requirements, a monument to construction workers, helped determine the overall concept.

The park is as much a meditation on cities as it is a part of one. The design team, led by Baird/Sampson Architects, spoke to the cycles of construction, erasure, and reconstruction that shape urban realities. "We thought of nature not as a picture, but a process," explains Partner-in-Charge Barry Sampson.

Inspired by such masters as André Le Nôtre, James Stirling, and Mies van der Rohe, whose Toronto-Dominion Centre stands nearby, Sampson created an illusory landscape with Piranesian overtones, complete with bridges, ramps, stairs, walls, and a plunging cascade—and that's just the eastern half.

The site's givens were unfinished brick party walls revealed by demolition and the roof of a parking garage, inauspicious remnants treated as the beginnings of ceremony. A system of terraced ramps gives a civic face to the party walls, while ensuring wheelchairs and couriers the freedom of the road. Faced in stone specially cut to emphasize its sedimentary character, the zigzagging ramps culminate in a conservatory built atop the plateau of the parking garage.

The terraces also give rise to a large square grid of steel I-beams painted rust-red: Is it the framework of a Miesian tower under construction, or the rusted skeleton of one being pulled down? Actually, it's the *Monument to Construction Workers*, a collective work conceived by Canadian artist Margaret Priest.

Vertical thrust is courtesy of a niagara of water that pours through copper sluice gates into a series of pools and channels, then disappears underground. The cool of the cascade is in marked contrast to the steamy interior of the conservatory, crisscrossed by ramps and catwalks for the up-close enjoyment of palms, tree ferns, and epiphytes.

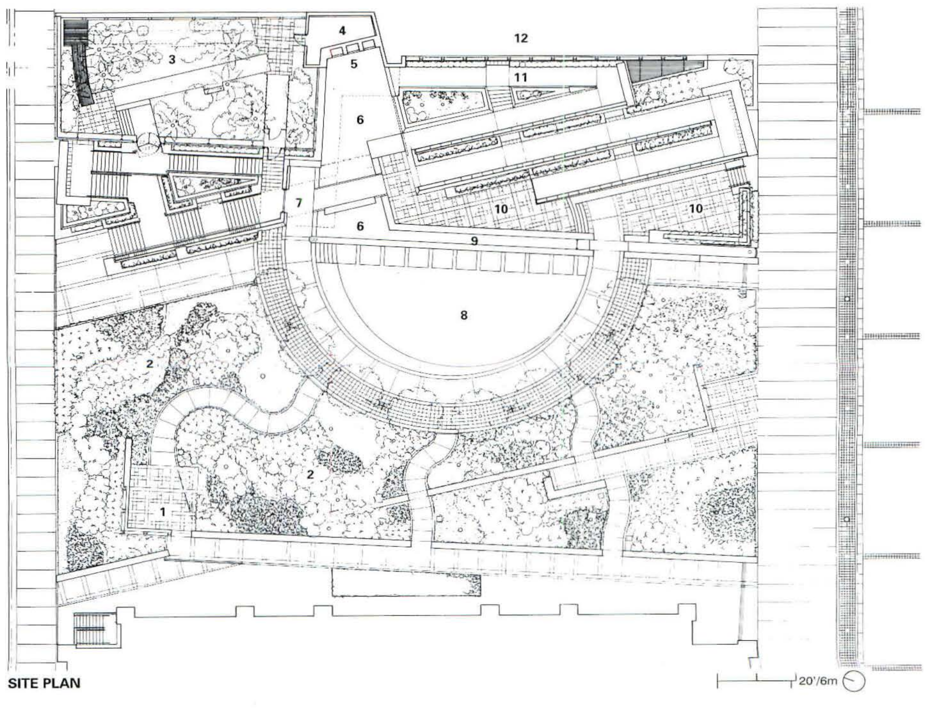
The park's shady western half is traversed by concrete retaining walls suggestive of abandoned foundations. Planting is intentionally shaggy and multilayered, reaching upward from ground-hugging creepers to a canopy of oaks and maples. Mediating between east and west is a semicircle of grass. Episodic, dynamic, and astutely scaled to the big buildings around it, Toronto's Bay Adelaide Park has become the destination it was intended to be.—*Adele Freedman*

Adele Freedman is the architecture critic for The Globe and Mail *in Toronto.*

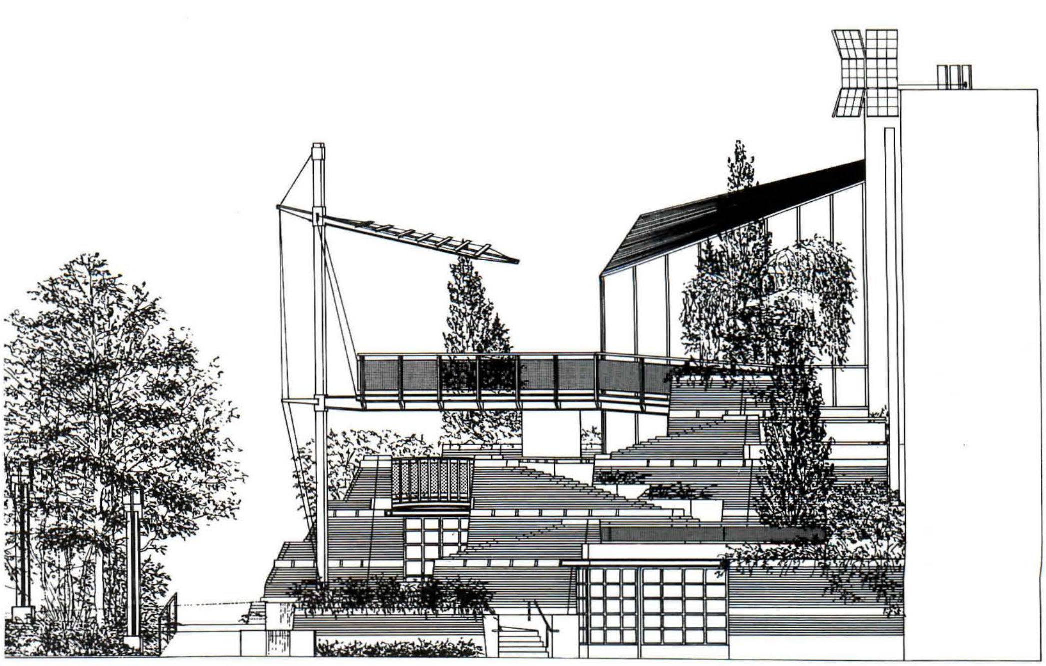
FACING PAGE: Bay Adelaide Park in downtown Toronto is designed by Baird/Sampson Architects with ramps, waterfall, and meandering path through grove of oak and maple trees.
ABOVE: Built on a leftover site above a parking garage, half-acre park is theatrically lit at night.

ABOVE: Principal route through park bypasses semicircular lawn, the softest of a wide variety of seating.
PLAN: Ramp system animates park's eastern half (top). Diverse, multilayered landscape dominates west (bottom).
FACING PAGE, TOP: Retaining walls meant to evoke abandoned building foundations have become popular places for sitting, lunching, and catching rays.
FACING PAGE, BOTTOM: Steel-canopied belvedere off conservatory affords views of park and towers of Toronto's financial district.
EAST-WEST SECTION: Exits from garage below park are located within ramps.

1	ARBOR	**7**	BELVEDERE
2	WOODED AREA	**8**	GREEN
3	CONSERVATORY	**9**	WATER CHANNEL
4	SERVICE ROOM	**10**	TERRACE
5	WATERFALL	**11**	MONUMENT
6	POOL	**12**	EXISTING BUILDING



SITE PLAN



EAST-WEST SECTION

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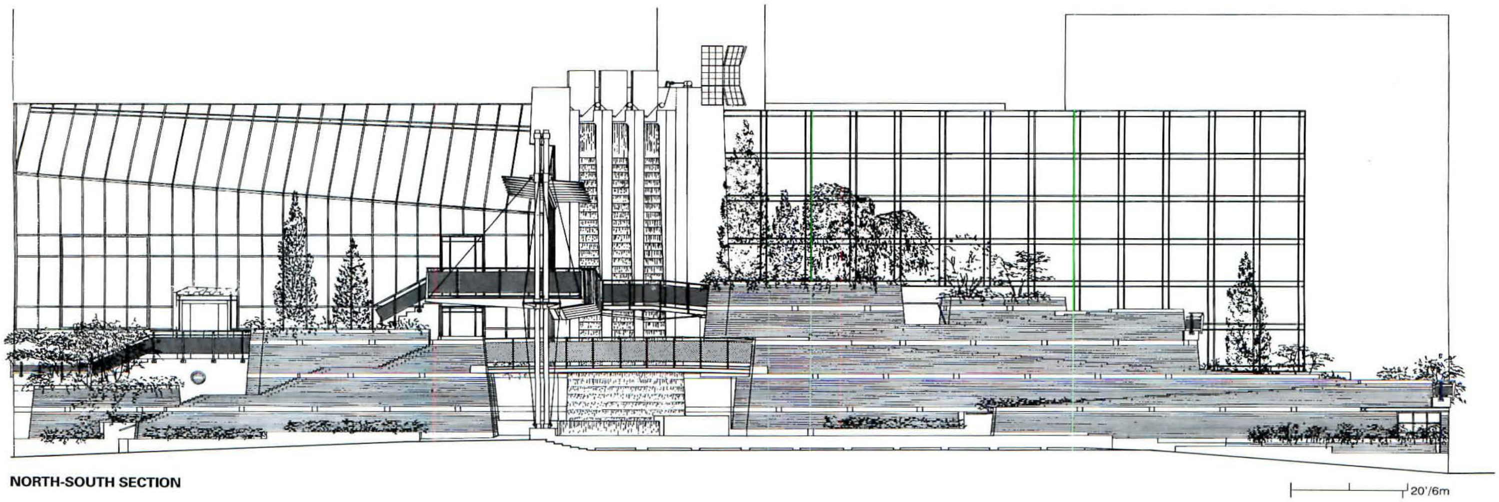


NORTH-SOUTH SECTION

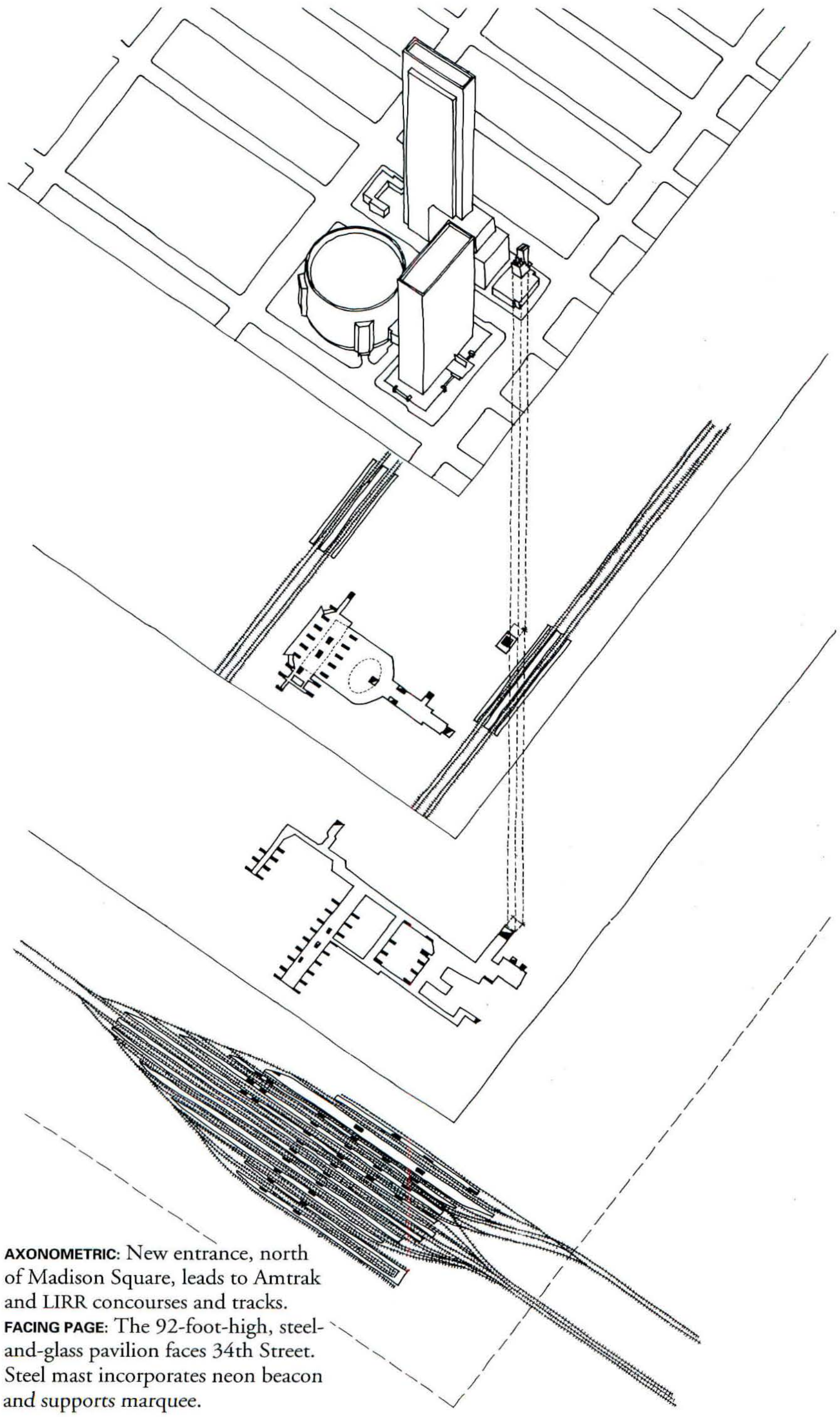
FACING PAGE, TOP: Fern-filled conservatory is designed to ensure that park becomes year-round destination.
NORTH-SOUTH SECTION: Conservatory (left) and monument (right) are joined by waterfall (center).
ABOVE: Flanked by waterfall, gridded *Monument to Construction Workers* is fabricated of metal panels executed by members of local unions.
LEFT: Waterfall pours through copper sluice gates into pools. A reminder of natural cycles displaced by construction, it also cools summer visitors.

BAY ADELAIDE PARK
TORONTO, ONTARIO

DESIGN ARCHITECT: Baird/Sampson Architects—Barry Sampson (partner-in-charge), George Baird, Jon Neuert, Jason King (design team)
EXECUTIVE ARCHITECT: Webb Zerafa Menkes Housden Partnership
LANDSCAPE ARCHITECT: Milus Bollenberghe Topps Watchorn
ENGINEERS: Yolles Partnership (structural); TMP: The Mitchell Partnership (mechanical); Mulvey & Banani MBI International (electrical)
ARTISTS: Margaret Priest and Tony Scherman
GENERAL CONTRACTOR: PCL Limited
COST: $4.5 million
PHOTOGRAPHER: Steven Evans, except as noted

MTA Long Island Rail Road Entrance Pavilion
New York City
R.M. Kliment & Frances Halsband, Architect

Civic Transit



AXONOMETRIC: New entrance, north of Madison Square, leads to Amtrak and LIRR concourses and tracks.
FACING PAGE: The 92-foot-high, steel-and-glass pavilion faces 34th Street. Steel mast incorporates neon beacon and supports marquee.

New York City's splendid Pennsylvania Station, designed and built between 1904 and 1910 by McKim, Mead & White, was demolished in 1966 and replaced in 1968 by an underground station buried beneath a mediocre office tower and sports complex. In mourning the loss of this landmark, architectural historian Vincent Scully writes: "Through it one entered the city like a God. Perhaps it was really too much. One scuttles through it now like a rat." Well, perhaps not quite like a rat. Nevertheless, the experience of departure or arrival within today's Penn Station had been unpleasant and dispiriting throughout the complex until the recent completion of the Metropolitan Transportation Authority (MTA) Long Island Rail Road's (LIRR's) handsome, elegant, and technologically adept new entrance pavilion.

For the first time, LIRR passengers enter their segment of the station from the street through a symbolic gateway that celebrates, if far more modestly than the promenade of McKim, Mead & White's masterpiece, the act of movement through the city. The LIRR serves 90,000 commuters each day, exceeding the combined daily passenger volume of Amtrak and New Jersey Transit, also located in the station. After Penn Station was torn down, however, what was left in the underground complex for the LIRR terminal was little more than a vast, non-air-conditioned, ugly basement, eventually filled with low-grade shops. In the summer, it was at least 10 degrees hotter than outside, and for New York City, that is very hot indeed.

The new entrance pavilion, for which R.M. Kliment and Frances Halsband were the design architects, was constructed as part of the $190 million Penn Station Improvement Project completed last year by the MTA, owner of the LIRR. Commuters now have an upgraded concourse; a new waiting room; new ticket booths; new artwork as part of the MTA's Arts for Transit program; and, of great importance, climate control. The ceremonial access defined by Kliment &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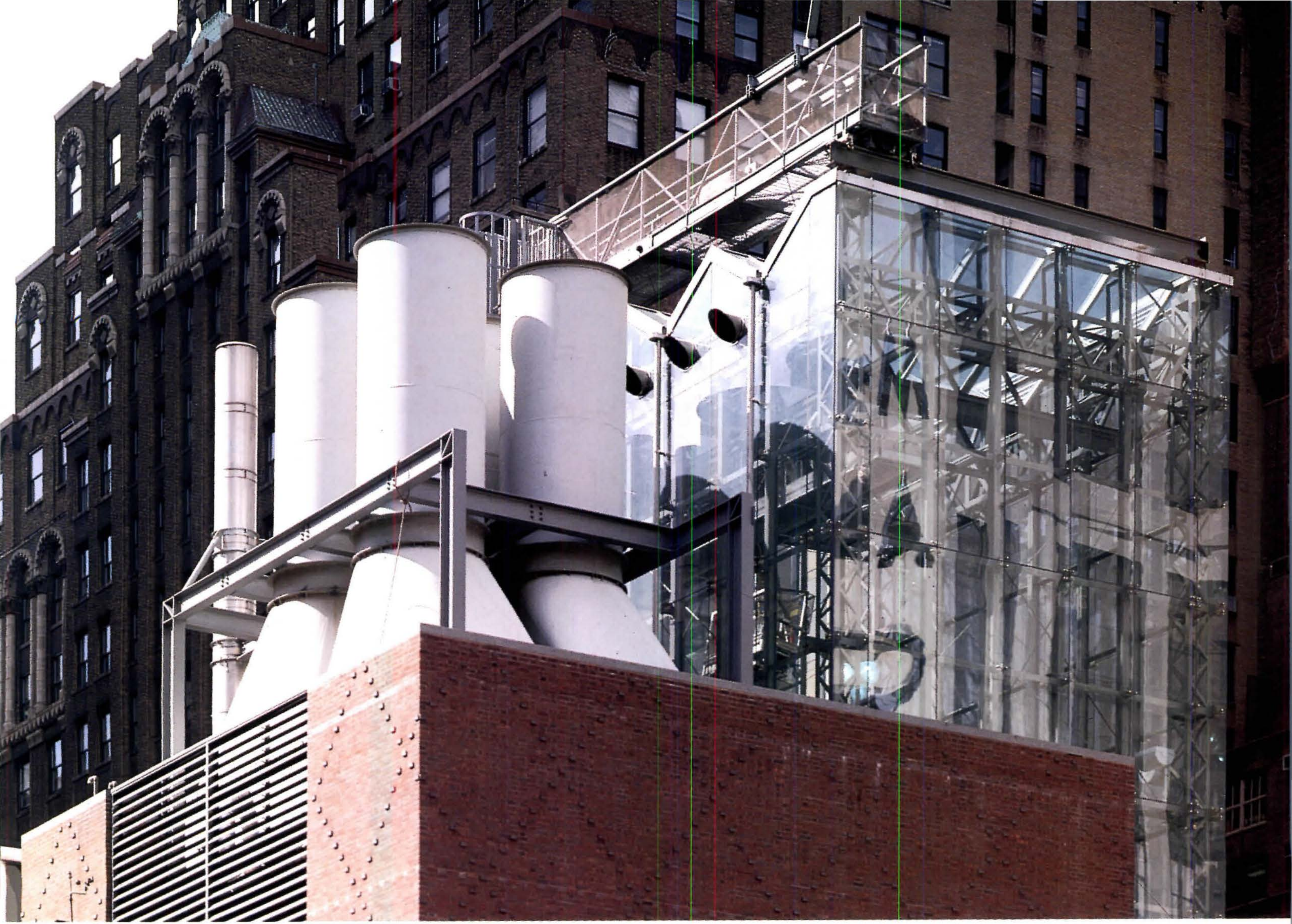
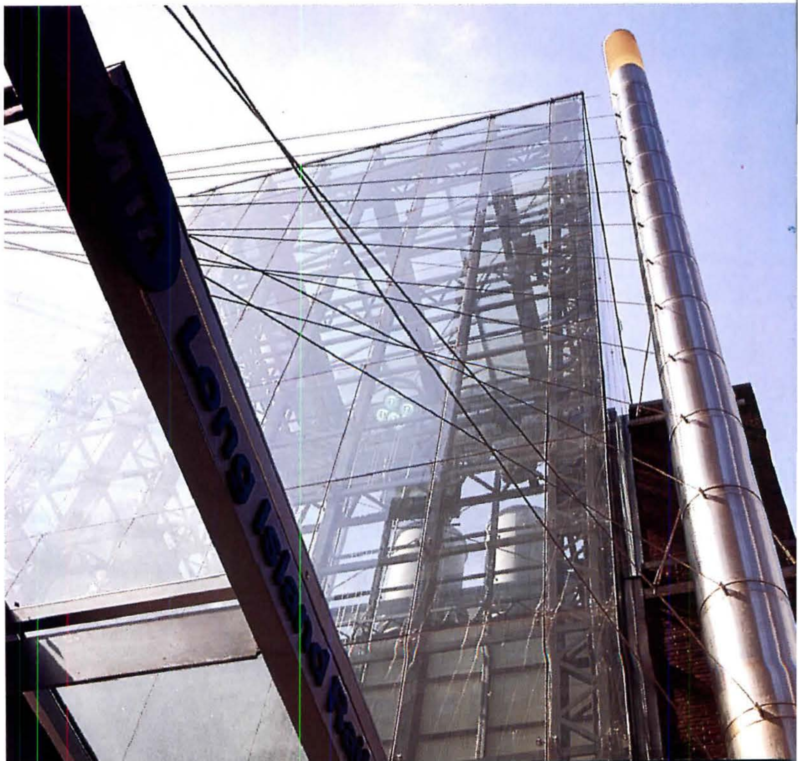
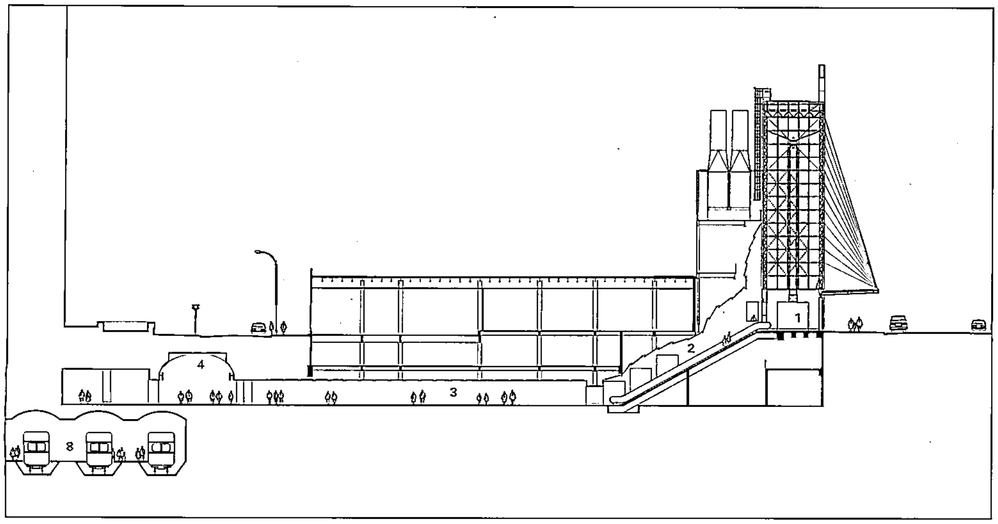



Long Island

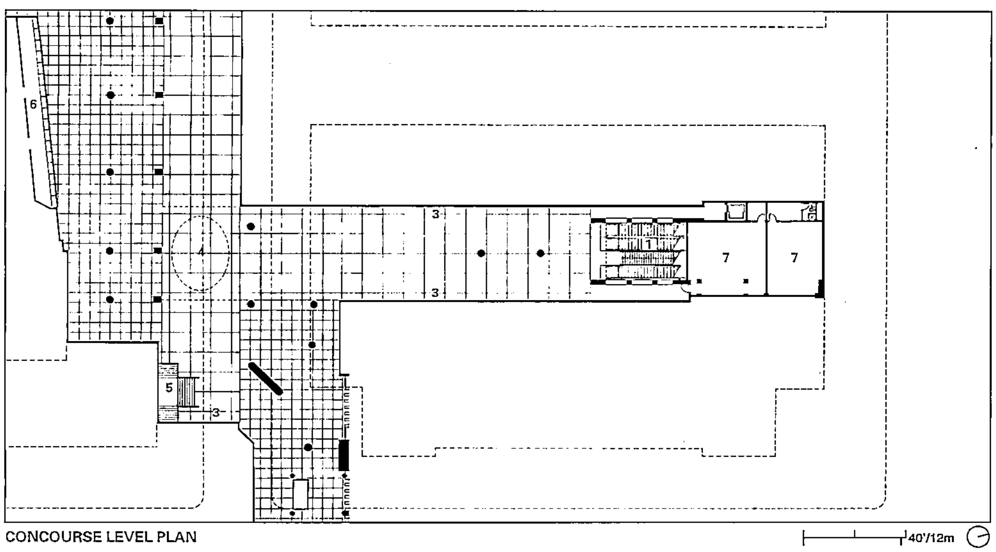

ROLEX
TOURNEAU
ROLEX
PATEK
PHILIPPE
EBEL
Long Island Rail Road
COHEN'S Fashion OPTICAL

PREVIOUS PAGES, TOP LEFT: Stacks contrast with glass-enclosed tower. Gantry atop tower supports cleaning mechanism.
PREVIOUS PAGES, BOTTOM LEFT AND RIGHT: Marquee is supported by stainless steel rods attached to a mast that consists of a 2-foot-diameter stainless steel tube. Fascia of marquee acts as a stainless steel counterweight.
PREVIOUS PAGES, RIGHT: Inside and out, steel-framed masonry shell is veneered in diaper-patterned brick.

FACING PAGE, TOP LEFT: Steel tower consists of laced columns, struts, and bracing. Skylight is framed in aluminum; steel frame supports glass.
FACING PAGE, TOP RIGHT: Clock from original Penn Station is mounted above escalator and staircase.
FACING PAGE, BOTTOM: Escalator/stair hall is finished in marble to match walls of new 34th Street corridor below. Panels of folded metal ceiling over escalators integrate lighting.



NORTH-SOUTH SECTION



CONCOURSE LEVEL PLAN

1 34TH STREET ENTRANCE
2 ESCALATOR AND STAIR
3 MURAL BY ANDREW LEICESTER
4 CLOCK BY MAYA LIN
5 STAIRS TO TRACKS
6 TICKET BOOTH
7 MECHANICAL
8 LIRR TRACKS

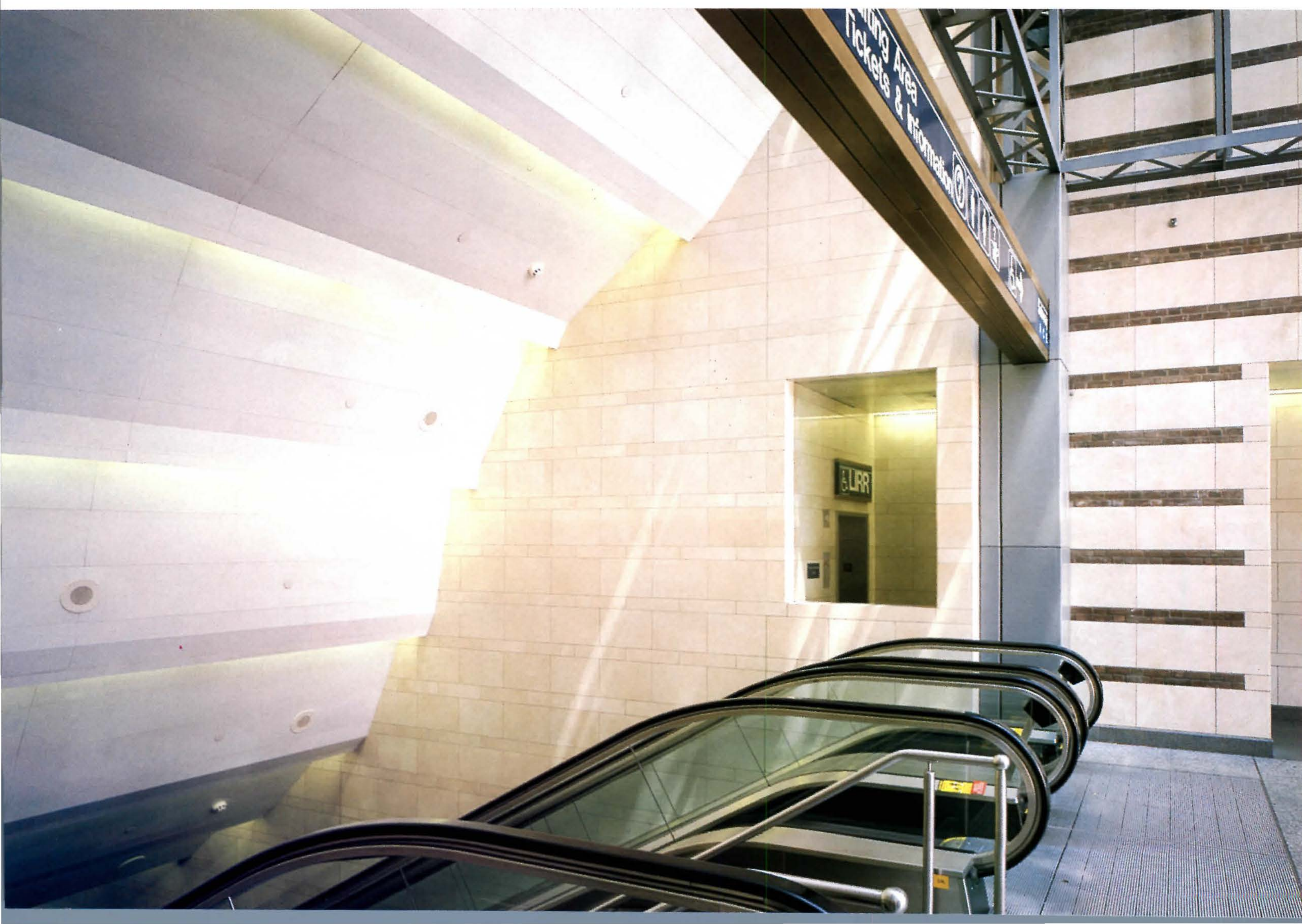
Halsband's pavilion offers the public the rarest of privileges, the daily use of an outstanding contemporary work of civic architecture.

The entrance pavilion also embodies a rare combination of functions: A steel-and-glass tower reaching 92 feet above street level is conceived as a great vertical lobby that directly abuts an industrial structure containing the climate control equipment that heats and cools the station. This odd conjunction, comprising a building footprint of 2,000 square feet, occupies an infill site of only 40 by 50 feet, near the corner of 34th Street and 7th Avenue. At this location, it was possible to construct a pedestrian tunnel under the block between 34th and 33rd streets to connect with the existing LIRR concourse underneath 33rd Street, thereby making the street entrance eminently practical.

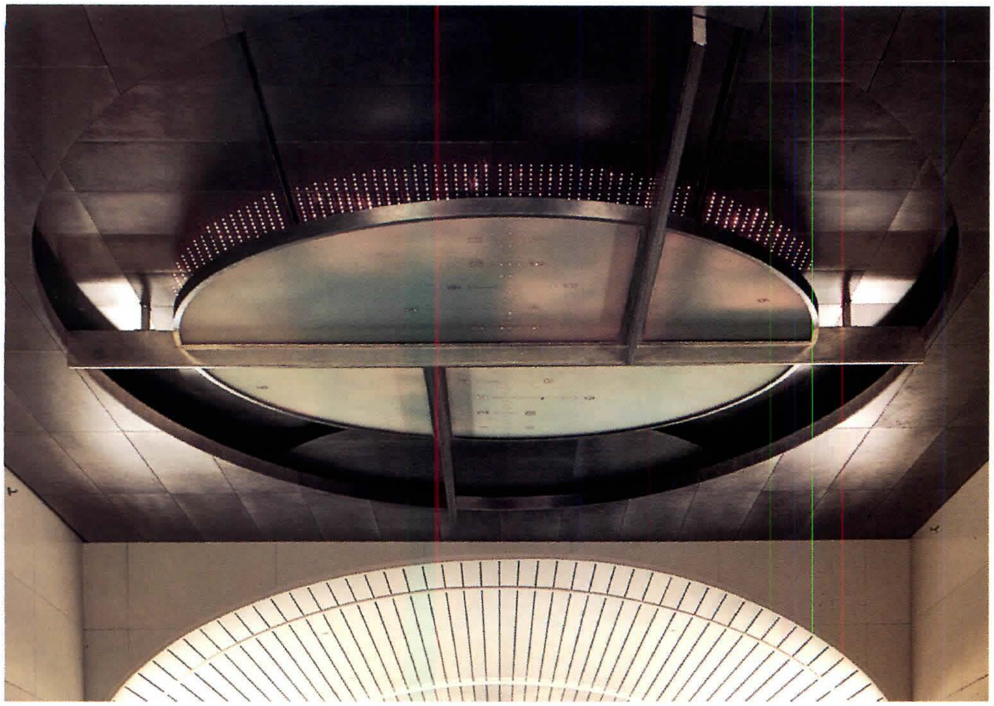
Kliment & Halsband chose to signify the existence and importance of the busy place below grade by designing an unadorned steel-and-glass structure as high as the second setback of an adjacent office building to the west. The tower is constructed of painted steel, laced columns, and struts, similar to those of turn-of-the-century train sheds, bridges, and the glazed concourse of the former Pennsylvania Station. A mullionless, stainless steel, flush-bolt system supports the clear plate-glass walls. A clock, salvaged from the old Penn Station, is suspended in the tower. At night, the translucent room is lit by a pendant fixture suspended in space and by uplights set in the four corner columns.

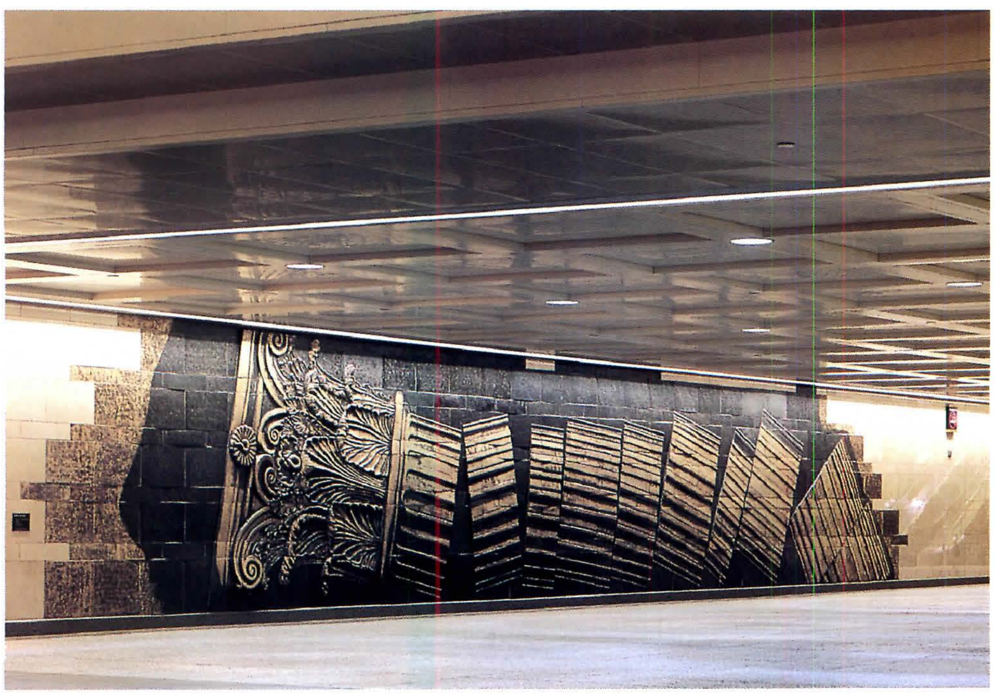
The marquee, supported by a stainless steel mast and rods, reaches over the sidewalk of 34th Street. It is made of glass and painted steel, with a stainless steel counterweight at its outer edge ("Details," this issue). The top section of the mast incorporates an illuminated beacon. This technologically playful, and very beautiful, abstract enhancement suggests that the architects were influenced by Russian Constructivist projects, although Kliment does not recall reference to that source. For client Robert Paley, director of


LIRR
Waiting Area
Tickets & Information
Subway
A C E


Tickets & Information
LIRR

BELOW: At juncture of new corridor that connects entrance pavilion with barrel-vaulted, east-west LIRR concourse, renovated by New York-based TAMS Consultants, is the sculpture *Eclipsed Time*, by Maya Lin. It is a clock that marks time based on the concept of a solar eclipse. A moving aluminum disk is suspended between a light source and a stationary glass disk. The solid disk eclipses the light source as it travels from east to west and back again. Hours and quarter hours are indicated on the glass disk. **BOTTOM:** Terra-cotta murals by Andrew Leicester depicting ruined Corinthian columns from the original Pennsylvania Station flank new entrance corridor. **FACING PAGE:** View toward entrance shows artwork by Maya Lin and Andrew Leicester, commissioned by Metropolitan Transportation Authority's Arts for Transit program.





real estate development at the MTA, the stainless steel mast and rods form an abstract sail, a happy reference to one of Long Island's most popular forms of recreation.

The masonry outer shell of the tower, framed in steel, supports the cooling stacks and other mechanical system components. Forming a stepped-back, partial enclosure, it is faced in light red brick with brown headers in a diaper pattern. The interior surface of the brick shell is similar, but with beige marble headers. Copings are gray granite.

Just inside the lobby, an escalator/stair connects the street to the concourse below. Its folded ceiling, formed by suspended metal panels with integrated lighting, recalls the work of Alvar Aalto. The ceiling parallels the slope of the escalators and conceals the basement and ground floor edges of the existing single-story structure above the new concourse. Kliment & Halsband intended to create an exhilarating experience for commuters ascending to the glass tower exit by escalator, and it is. The visual power of the skillfully detailed, skylit glass enclosure is gradually revealed as the escalator rises, offering the commuter a refreshing sense of release from the enclosed platforms and concourses left behind.—*Mildred F. Schmertz*

MTA LONG ISLAND RAIL ROAD ENTRANCE PAVILION
NEW YORK CITY

ARCHITECT: R.M. Kliment & Frances Halsband Architects, New York City—R.M. Kliment, Frances Halsband (partners-in-charge); Richard L. McElhiney (project manager); John Amatruda, Steven Baronian, Stephen K. Chrostowski, Elizabeth Cooper, Anne Reilly Fahim, Diane Frost, Deborah Laurel, Peter Wolff, Mark H. Wright (design team)
ASSOCIATE ARCHITECT: TAMS Consultants—Ernest J. Naples, Vijay Deodhar, Leonard Gersten, Arthur Fox, John Liu, Frank Motta, Philip Paolicelli, Richard Silverstein, Frank Wang (design team)
ENGINEER: TAMS Consultants (structural/mechanical/electrical)
CONSULTANT: H.M. Brandston & Partners (lighting)
CONSTRUCTION MANAGER: Bechtel Corp.
GENERAL CONTRACTOR: A.J. Pegno Construction Corp.
COST: $20 million
PHOTOGRAPHER: Cervin Robinson, except as noted

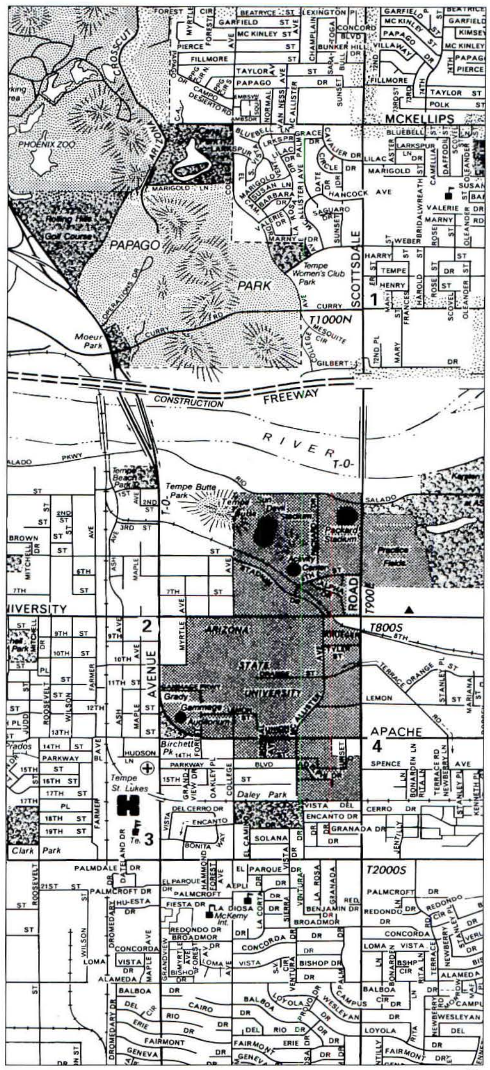
Bus stops
Tempe, Arizona

Gimme Shelter

1

2

3



SITE PLAN 0.5mile/0.8km

European artists and architects are injecting a new urbanity into downtown areas with clever, energetic designs for street furniture. In Hanover, Germany, commuters wait for buses beneath Frank Gehry-designed canopies. In Bordeaux, France, pedestrians read movie posters on a Norman Foster kiosk; in Toulouse, they hail a cab in the glow of a Philippe Starck streetlamp.

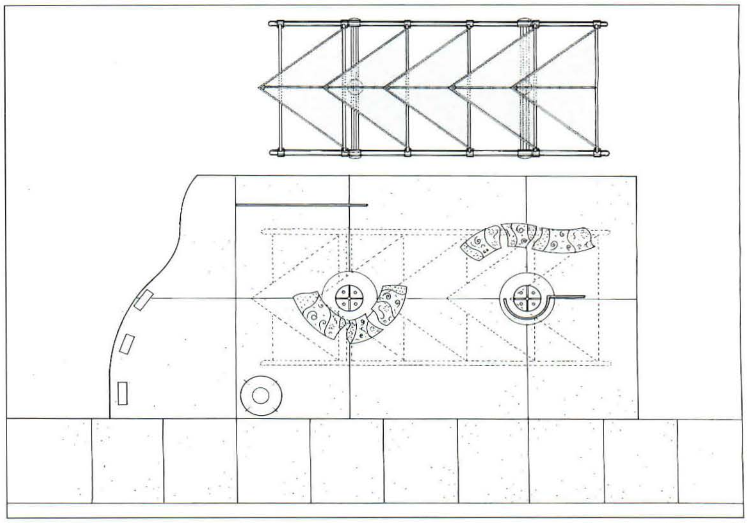
Tempe, Arizona, a sprawling suburb of Phoenix and home of Arizona State University (ASU), is now trying to incorporate some of this streetscape sophistication into its own center. In November 1993, the city's Municipal Arts Commission invited 49 Arizona artists and architects to design new public bus shelters. From the submissions it received, the city selected four projects to replace the standard plexiglass-and-steel shelters on three of its busiest boulevards near ASU.

Only one winning entry was designed by an architect: Senior/Oesterle Architecture + Art, a collaboration between architect Virginia Senior and metalsmith Jeff Oesterle. The duo's shelter (facing page) is crafted of truncated steel columns and bowed beams that support a canopy of perforated-steel sails. Finished in a gold powder-coat, the sails are a contextual nod to the golden dome atop the adjoining ASU visitors' center.

As Tempe irons out its plans to erect four additional shelters, architects should be encouraged to play a more visible role in creating significant urban landmarks for this civic-minded town.—*Raul A. Barreneche*

DELSASSO / VISUS LTD. PHOTOS

4



SITE AND CANOPY PLANS

4'/1.2m

SITE PLAN: Four new bus shelters surround Arizona State University. **FACING PAGE, TOP LEFT:** Metal shelter by Jeff Zischke on Curry Road incorporates desert motifs. **FACING PAGE, CENTER LEFT:** Galvanized-steel structure by Garry Price fits tight site on Mill Avenue. **FACING PAGE, BOTTOM LEFT:** Copper trees by Joe Tyler shade bus stop on Mill Avenue. **TOP:** Bus stop on Apache Boulevard by Senior/Oesterle Architecture + Art accommodates precast concrete benches, serpentine bike rack (left), and standing rail (right). **ABOVE:** Uplights mounted on columns illuminate perforated-steel sails. **PLANS:** Curved concrete slab (left) will house phones and expand waiting area.

Public Visions of Stanley Saitowitz

Since his 1978 architectural debut with a metal house rolling along the veldt near Johannesburg, Stanley Saitowitz has drawn his designs from the landscape. For the South African-born, San Francisco-based designer, the environment suggests the form of a roof, which he then intersects with a plan. This process yields a building that could only be conceived in one place in a particular set of circumstances—designs by Saitowitz carry the generality of nature and the specificity of client and program. "My work is at its best when the image results from process, when the plan and vault each interact, and form emerges from particular situations."

Saitowitz finds himself in very good company when he uses landscape to inspire form consonant with nature. But unlike generations of Japanese architects and Frank Lloyd Wright, the San Francisco designer does not practice in a time and place that allows him the luxury of ignoring the city and the public role of architecture. Despite his successes in the California countryside, the 46-year-old designer has built some of his most poetic works for the public realm and has begun to assemble a rich portfolio of public spaces.

For Saitowitz, working in the city has not required a philosophical conversion, as he merely interprets both city and country as different applications of the same design process. "I am interested in exposing the essential nature of each particular situation—of turning the site, through building, into a state of mind," he explains. Without a predetermined esthetic, Saitowitz abstracts specific features of a place to generate forms, even within the grid of a highly urbanized environment. The designer does make a distinction, however: "In the landscape, flow dominates; in the city, rigor." The recent projects presented in this portfolio of public spaces demonstrate the rigorous results of Saitowitz's urban work.

"In the city, the geography of human acts is the landscape," he writes, maintaining that the evolution of this urban landscape is simply accelerated by the intervention of man. For Saitowitz, this human urban geography provokes a different design response than the geography of his native South Africa: "Operations involve layering, revitalizing, infilling, marking, carving." But as in the open landscape, his approach to designing in the city is simply to work with the givens as found—"Nothing is created, but just reorganized." Again, there is no predetermined esthetic; form emerges from particular situations.

Saitowitz reads the cityscape as a broad cultural and physical phenomenon—as an expanded field of concerns revealed by the specific site. In a theoretical painting that portrays Manhattan, Saitowitz collapses the map of the city into an elevation of the Empire State Building to show how the character of the city potentially occupies each site, and vice versa. One is a key to the other: Geography and built culture reflect each other.

For Saitowitz, urban context is not merely a matter of matching cornice lines but of understanding a city's larger circumstances, and this full urban context exercises a power of determination over his public designs—akin, say, to how the earth's tectonics or astral alignments might affect one of his sheltering roofs. By acknowledging concerns wider than the brief given by a client and constructing design systems based on those concerns, Saitowitz releases control of the design as its auteur, allowing the design to happen beyond the reach of his will. Saitowitz believes geography is a question of matter evolving without particular purpose, and his buildings, whether in nature or the city, are in that sense geographical, evolving without design intention. They may have a strong presence, but they are more or less divorced from preconceived image. He says this is "close to nature's mode of operation."

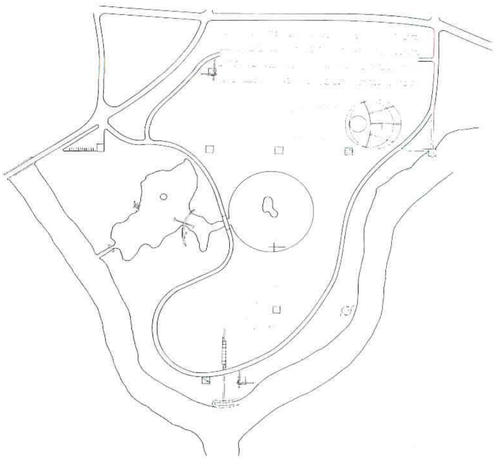
The designer's bright red pavilions for Mill Race Park in Columbus, Indiana, perhaps best represent the conflation of cityscape and landscape into the same issue. Here, on a floodplain where two rivers merge into a third, Saitowitz had every reason to evoke his sheltering roof forms, and he does. They hover over concrete seats and tables poured within circular precincts that, as earthworks, establish a territorial stake in the open fields. These pavilions could become another iteration of Saitowitz's Transvaal structures but for the fact that the park is adjacent to a town built on the design and production of engines. "The quality of the city reflects in the park," he explains. "In the way that a tree inhabits the street remembering nature, the structures inhabit the site remembering the city." The imagery of the steel pavilions in the park is both technological and urban; the structures' constructive appearance emphasizes the clear display of function.

It may be more difficult in the cityscape than the landscape to uncover the essential nature of a site, and in at least two public projects, Saitowitz expands the putative site to incorporate the mythology surrounding the commission. In the design of a plaza at Battery Park City, he includes descriptions of New Yorkers who might have occupied the square: In populating the design with exponents of this very particular tribe, Saitowitz gives space specific human identity. And for the design of the Holocaust Memorial in Boston, he quotes from survivors. The texts add another dimension to the voice of the design; words participate in the evocation and contribute to its impact.

The designer takes great pains to build with authenticity, using materials that are solid and have what he calls "the absence of surface." But form for Saitowitz—whether on a plain or in a plaza—is never an end in itself. The San Francisco designer is not interested in buildings as objects but as armatures that support their functions and make the landscape and cityscape more potent. "The essential medium of architecture is space: a void to be filled with life," Saitowitz explains. "I am interested in the field of emptiness that material liberates. I am interested in the invisible."—*Joseph Giovannini*

FACING PAGE: Stanley Saitowitz stands on a stretch of his 2.5-mile-long Embarcadero Ribbon Promenade in San Francisco, that runs along the waterfront. Model of Vesey Square proposed by Saitowitz for Battery Park City shows square and triangular seating, as well as quotations by famous New Yorkers inscribed in pavement.

Mill Race Park Structures
Columbus, Indiana

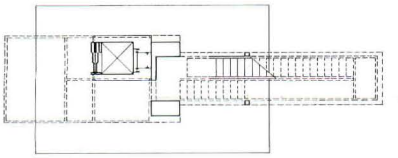


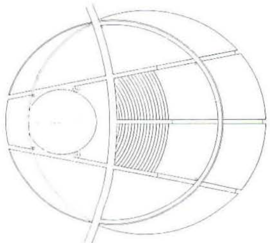
Since 1942, when Eliel Saarinen designed the First Christian Church, Columbus, Indiana, has cultivated architecture as a matter of civic pride, city policy, and public/private cooperation. With design fees for a roster of internationally known architects paid by the city's leading employer, Cummins Engine, this midwestern town of 33,000 people has acquired a collection of some 50 buildings that help keep its wide, quiet, tree-lined streets humane and attractive.

One of the city's newest architectural arrivals is an ensemble of garden follies designed by Stanley Saitowitz in the recently redesigned 83-acre Mill Race Park. The picturesque park, landscaped by Boston's Michael Van Valkenburgh, and its pavilions were a gift given by Columbus to mark 1992, the quincentennial of Christopher Columbus' discovery of America.

A newcomer admiring the mature specimen trees planted as though by nature on a plain bordered by three rivers could hardly intuit the depressed past of what is now such beautiful acreage. Known for many years as Death Valley, the area—which floods regularly—was an enclave of dirt-floor structures, many without running water, which housed the city's poor. After residents were relocated in better, healthier housing in the late 1950s and early '60s, volunteers rescued the area, turning it into a municipal park. Unfortunately, the park gradually acquired an unsavory reputation for its unscheduled after-hours nightlife and occasional vandalism. The social stigma of frequenting the area kept many people, especially families, away from a public facility originally intended for their use.

Architectural design was to play a significant role in turning Mill Race Park around in people's minds and transforming it into a legacy worthy of 1992. The ambitions were both





SITE PLAN: Pavilions in 83-acre Mill Race Park are conceptually planned in grid, modified by natural features. **FACING PAGE, BOTTOM**: Steel canopy projects over stage for outdoor concerts. **ABOVE LEFT**: Concrete and steel tower marks park's entry. **TOP RIGHT**: Amphitheater's concrete seating is terraced in a berm. **ABOVE RIGHT**: Steel canopy supports speakers and lighting. **PLANS**: Park's observation tower incorporates elevator; stage and seating for amphitheater form a circular plan incorporating artificial hill.

modest and grand: "We wanted this to be a park for families to enjoy special events, or just picnics and volleyball—a place where the beauty of the downtown park complements the beauty of downtown's architecture," explains Charles Wilt, director of the parks and recreation department. "We wanted the architecture to be unique."

What distinguishes Mill Race from most American parks is the presence of buildings conceived as architecture rather than as handmaidens of Nature. Saitowitz's understanding of buildings as intensifications of the landscape has never prompted him to make his designs disappear into the foliage, and in Mill Race Park, they don't.

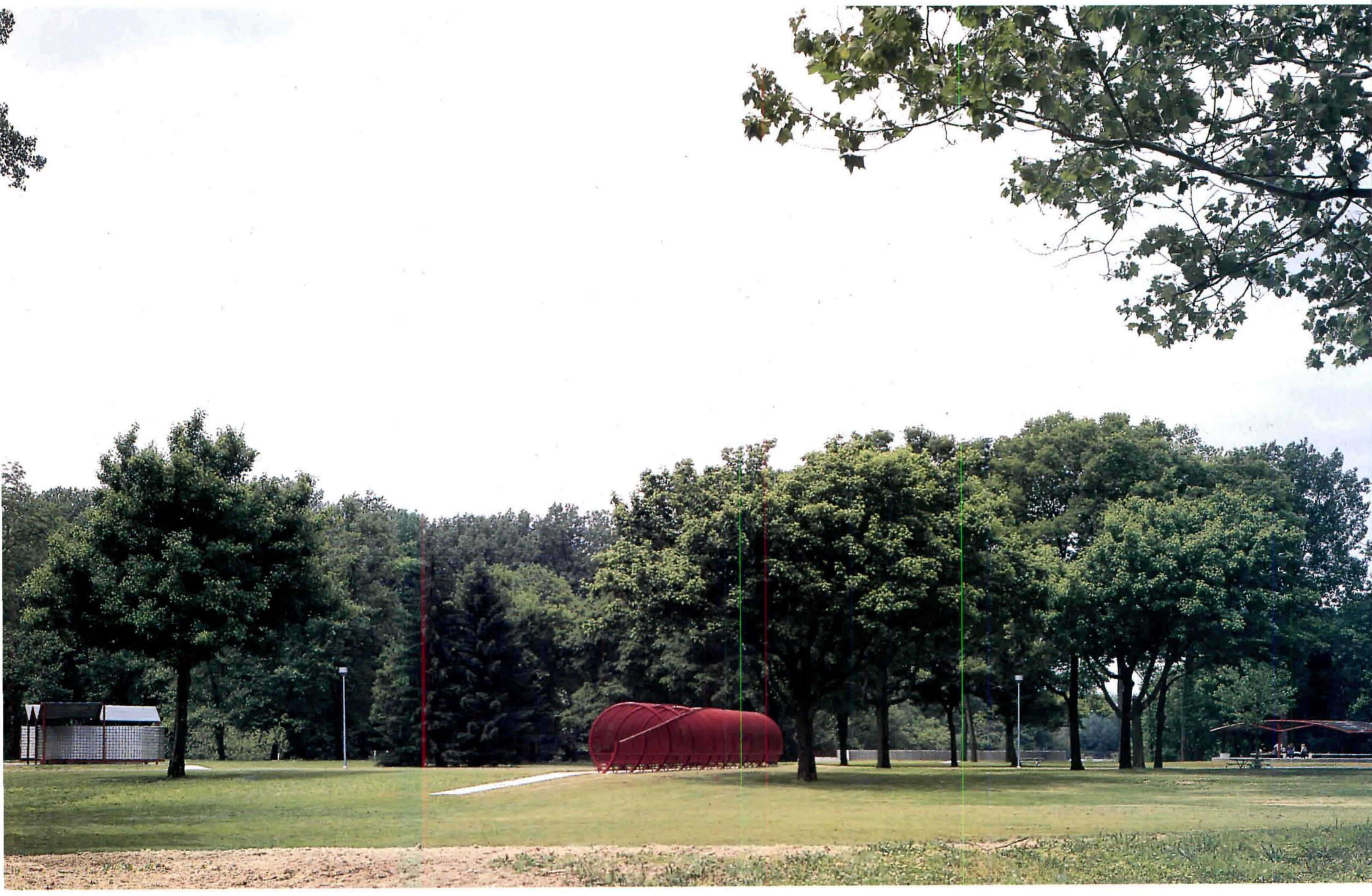
The San Francisco designer was asked simply to design a small number of garden follies—primarily rest rooms and picnic shelters—to be parsed across the grounds. During the project, as need was perceived, Saitowitz suggested several others. Today, there are 14 structures, including two fishing piers, a boat house, a performance pavilion, and a lookout tower.

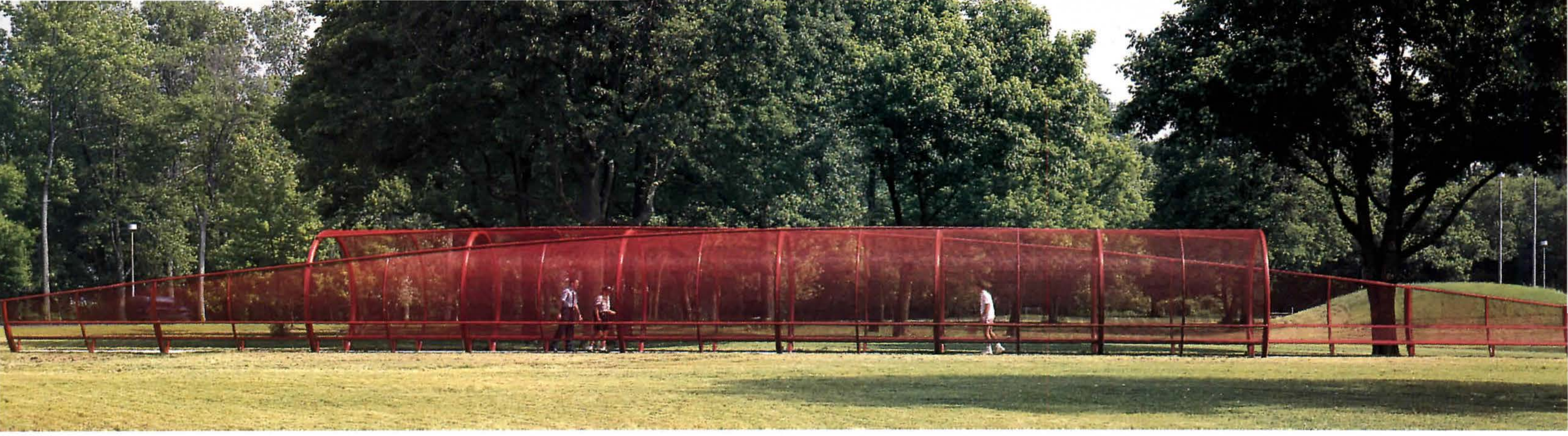
Saitowitz's first design reaction was conceptually corrective. "Folly" to him evoked Romantic notions of architectural whims dallying in scenery contrived to be picturesque. Instead, he was interested in designing pieces with a harder edge based purely on their function. The pavilions might be fun, but they would not be symbols of fun.

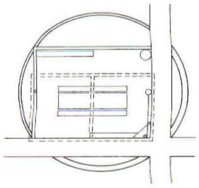
Just beyond the 80-foot observation tower at the east end of the park lies the first of three picnic pavilions. This shelter (facing page) is no more than a curved canopy made of perforated metal sliced at an angle and perched asymmetrically atop two steel columns set in a circular composition of short concrete walls and benches. It is a brief statement that performs a simple task with wit and a light touch. Saitowitz does not belabor the task, but states his piece decisively. The three picnic shelters are not identical, but they share a common design strategy, with the canopy cut obliquely across its shape. The consequence is a light and irregular form that escapes Euclidean terminology.

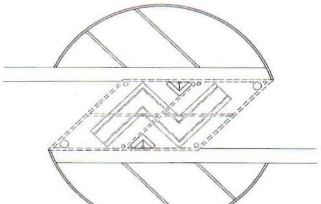
From any one pavilion, others—but not all—are visible. Their redness, the complement of green, is the color most opposite nature's palette, and it differentiates the pavilions from the surrounding grass and man-made lake. Originally intended to be placed with geometric regularity across the park, the pavilions instead occur episodically, often in apposition to a park feature, such as the rivers or the horseshoe-pitching pit.

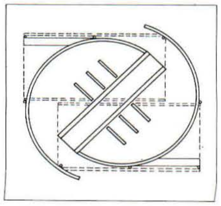
The next folly visible from the entrance is an arbor, shaped like the horizontal funnel of a hurricane twisting its way through space.











FACING PAGE: Tube-shaped steel arbor is flanked by glass-block rest rooms (left) and picnic pavilion (right). **CLOCKWISE FROM TOP:** Arbor is designed as seating alley directed from the center of Mill Race Park to the riverfront. Picnic pavilions are shaded by perforated-metal trellis; tables and seats are fabricated of poured concrete. Corrugated metal roof of women's rest room is shaped to resemble "W." **PLANS:** Saitowitz designed picnic pavilions and bathroom (right) with circular footprints.

Structured with regularly spaced steel ribs but wrapped in a wire mesh that spirals along the length of the tunneled shape, the arbor is the most delightful of all the pavilions, surrounding visitors in a gauzy redness that turns space and focuses the view. Like the other follies, the arbor acts as a visual event in the landscape and serves the valuable function of populating and animating the park—even when there are few people around—by virtue of its intriguing presence. Like a telescope, the arbor directs the view, linking the large circular basin designed by Van Valkenburgh to the confluence of the rivers, where a U-shaped fishing pier (facing page) meanders out over the water.

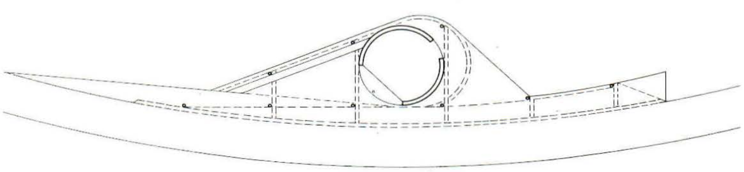
The curvilinear drive and a nature trail both lead past other pavilions in what proves a path of discovery. Hidden beyond a glade of trees, along a channel between the circular basin and a naturalistic pond, is a boat pavilion (below), with an intriguingly curved roof. The designer explains that the long, pointed forms were intended to recall the hulls of boats pulled from the water and set upside down to dry. Within view of the boat house is another fishing pier resting daringly atop a single column. Saitowitz terraced the adjoining embankment into tiers of grassy chaises longues extruded along the side of the lake. More than a joke, the embankment is enthusiastically used by visitors for sunning, reading, and just plain lazing.

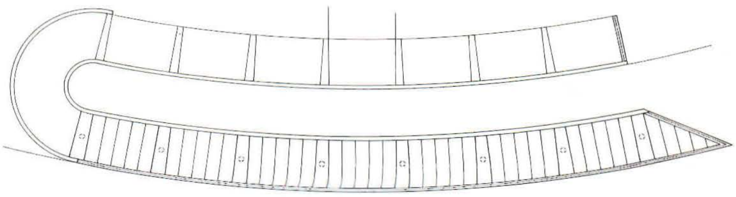
Perhaps the most difficult design task in a park is creating public rest rooms that escape the usual dankness that accompanies these closed, wet, unheated spaces. The designer solved the problem essentially by exploding it—by separating the roof from the walls and the walls from the floors and then glazing the walls in glass block. The bathrooms are washed with light while breezes aerate the precincts. As in all the other pavilions, Saitowitz lifts the structure above grade so that the water that predictably inundates these floodplains simply passes through.

Employing steel tubing, corrugated metal, concrete, and glass block, Saitowitz has intentionally avoided the sentimentalism of much park design, where woodsy materials combined with storybook forms too often form clichés so familiar that visitors no longer really see them. The designer instead brings in industrial materials fitted together so that they reveal their structure and serve their function with no hint of decoration. He urbanizes the park by bringing in a vocabulary usually associated with the city of industry. It is this juxtaposition of factory and woods that energizes the park and, in its unexpectedness, sparks the wit. At Mill Race Park, Saitowitz has not designed down to the public.—*J. G.*

MILL RACE PARK STRUCTURES
COLUMBUS, INDIANA

ARCHITECT: Stanley Saitowitz Office, San Francisco—Stanley Saitowitz (principal-in-charge); John Winder, Daniel Luis, John Bass, Vincent Chew, David Lynch (design team)
LANDSCAPE ARCHITECT: Michael Van Valkenburgh Associates
ENGINEER: Santos and Urrutia (structural)
CONSULTANT: S. Leonard Auerbach and Associates (stage)
GENERAL CONTRACTORS: W.C. Brown Welding; Dunlap; Rapp and Mundt; Taylor Brothers; Force Construction; Contractors United
PHOTOGRAPHER: Richard Barnes





FACING PAGE: Boat house is sited between pond and circular basin. **CLOCKWISE FROM TOP LEFT:** Transparent glass-block drum serves as boat rental office. Observation deck extends over confluence of Flatrock and Driftwood rivers. Fishing deck cantilevers over pond. Metal-grate flooring of observation deck is supported by concrete beams. Roofs of boat house resemble upside down hulls. **PLANS:** Boat house (left) aligns with curved pier; serpentine observation deck is delineated by concrete beams.

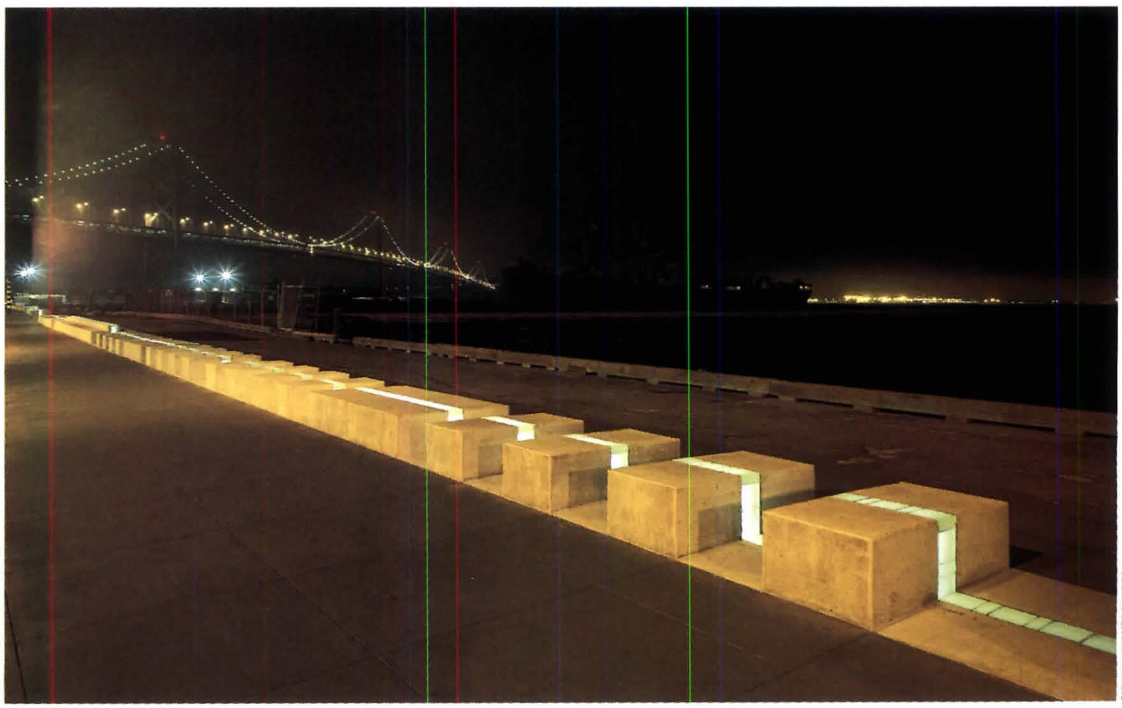
Embarcadero Ribbon Promenade San Francisco, California

Working with New York artist Vito Acconci and San Francisco landscape architect Barbara Solomon, Saitowitz designed a 5-foot-wide, 2.5-mile-long promenade along the Embarcadero, where San Francisco meets its bay. The site was once occupied by a freeway whose final stretch was dismantled; the project was financed in a 1 percent for art program to help reclaim the water's edge.

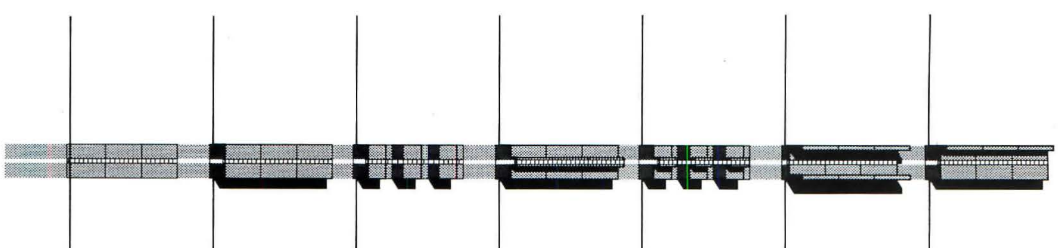
Space, like sentences, needs punctuation, and the long promenade marks the city's border along a roadway and waterfront. The promenade, however, is more complex than a simple period, changing along its length to respond to specific conditions.

Using glass blocks and cubes of poured concrete, the trio created the three-dimensional equivalent of the simple dotted line down the center of a road, turning the piece into a linear environment of variable height that transforms itself through self-permutation. When illuminated at night, the glass, with fiber optic cables running the entire length, recalls the stream of bay water that was the original idea of the piece. The glass is inlaid into the pavement or across the center of the concrete blocks. Within each block, the glass is depressed, raised, or flush. The concrete blocks are low, high, or nonexistent, depending on whether they are used as seats, tables, bollards, or passageways.

The swath recalls the famous fence that Christo built over rolling hills on the other side of the bay. If Christo's ribbon was more lyrical, the Embarcadero Ribbon Promenade has the virtue of solidity and permanence lightened by its glowing glass river: Usable during the day, it comes to visual life at night. The linear structure is intended as another layer of urban furniture—like streetlights and benches—that cumulatively texture the city.—*J. G.*



RICHARD BARNES PHOTOS



SITE PLAN: Embarcadero Ribbon Promenade stretches 2.5 miles along San Francisco's northeastern waterfront. **ABOVE LEFT**: Night views of promenade feature a river of light, constructed of glass block and fiber optic cable. **ABOVE RIGHT**: Promenade incorporates several variations of concrete seating, offering dramatic views of Oakland Bay Bridge. **PLAN**: Benches are configured as (left to right) flat ribbon, raised bench, seat and table, two-sided bench, two-sided seat, bridge seat, and single-sided bench.

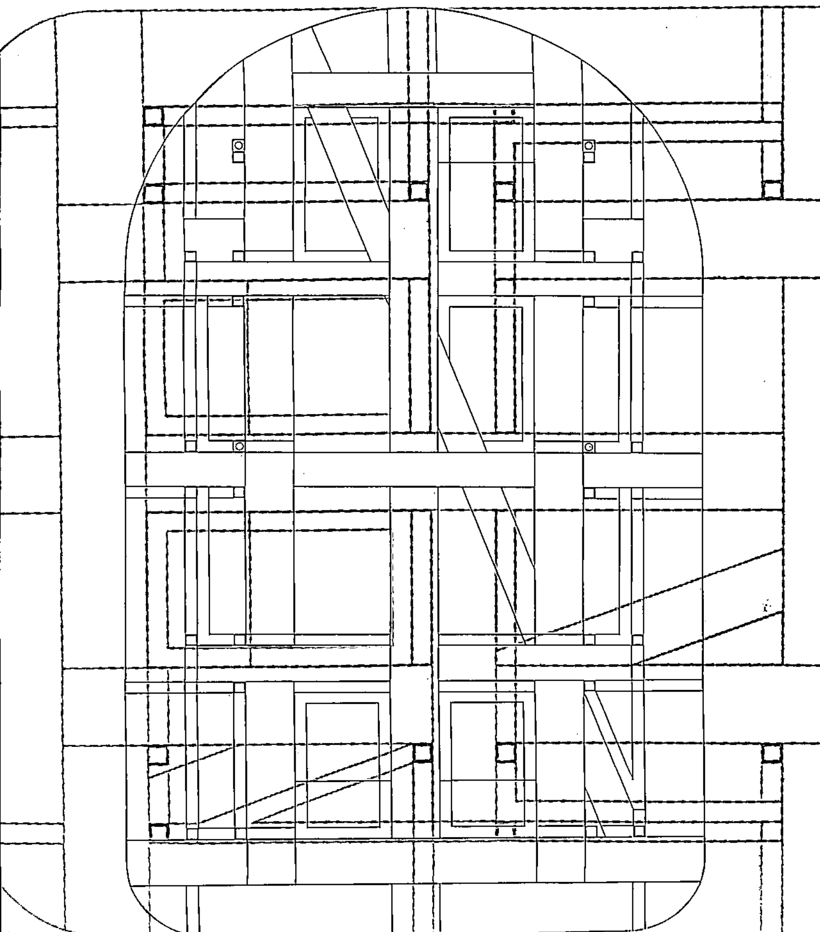
Vesey Square
New York City

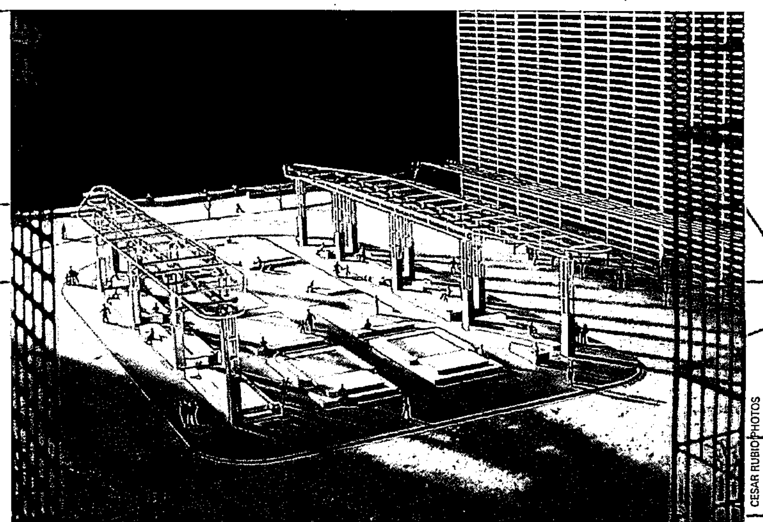
For the design of a plaza that doubles as an entry to Battery Park City and a gateway to the water, Saitowitz has proposed a cityscape of street furniture based on abstractions of Manhattan's plan and its high-rise architecture. The design is an analogue of the city.

A grid of pathways forms the basic layout of the square, and a diagonal crosses the grid—much as Broadway slashes through Manhattan. The pedestrian paths cross the square, demarking blocks that rise above grade to form a hardscape that can be occupied. Some of the raised blocks hold basins of plants; some offer steps and low walls for seating. There are drinking fountains, telephones, lights, and trash receptacles.

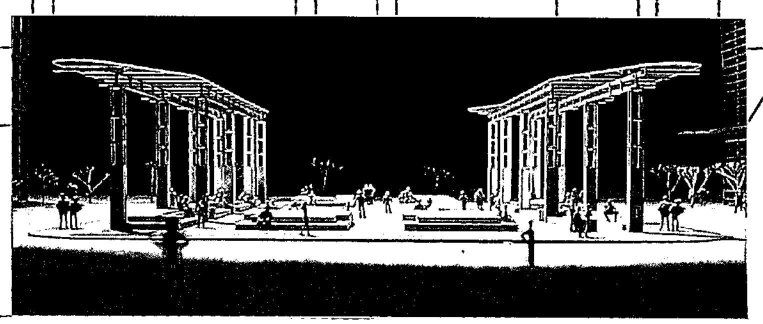
Columns emerging from blocks at two sides of the square support canopies of gridded glass whose height matches the level of marquees on surrounding buildings. The two canopies with their colonnades line a plaza. As in the Holocaust Memorial being built in Boston, Saitowitz dimensionalizes his design with a story by inscribing the biographies of Manhattanites who become virtual companions on the bench.

For occupants of all but the tallest buildings in New York City, there is an undesigned fifth facade—the rooftops of shorter buildings. Saitowitz acknowledges the verticality of the city by shaping the outline of the canopies as abstractions of the Manhattan map—structured with cross-braces that seem like New York's major cross streets. Another reading of these forms is that the canopies represent *high-rise structures* lying on their sides. The double reading recalls a drawing by Saitowitz in which the designer conflates the map of Manhattan and the elevation of a typical high-rise to show the consistency and pervasiveness of New York space.—*J. G.*





CESAR RUBIO PHOTOS



SITE PLAN: Vesey Square proposed for Battery Park City abstracts typical New York City street grid, diagonally crossed by Broadway. TOP RIGHT: City blocks outlined by street grid form raised islands or truncated towers that incorporate benches, planters, and steps. ABOVE RIGHT: Two sides of Saitowitz's design for Vesey Square are flanked by canopies of gridded glass supported on columns that emerge from blocks; roof plan of canopies abstracts Manhattan city map, *visible from nearby buildings.*

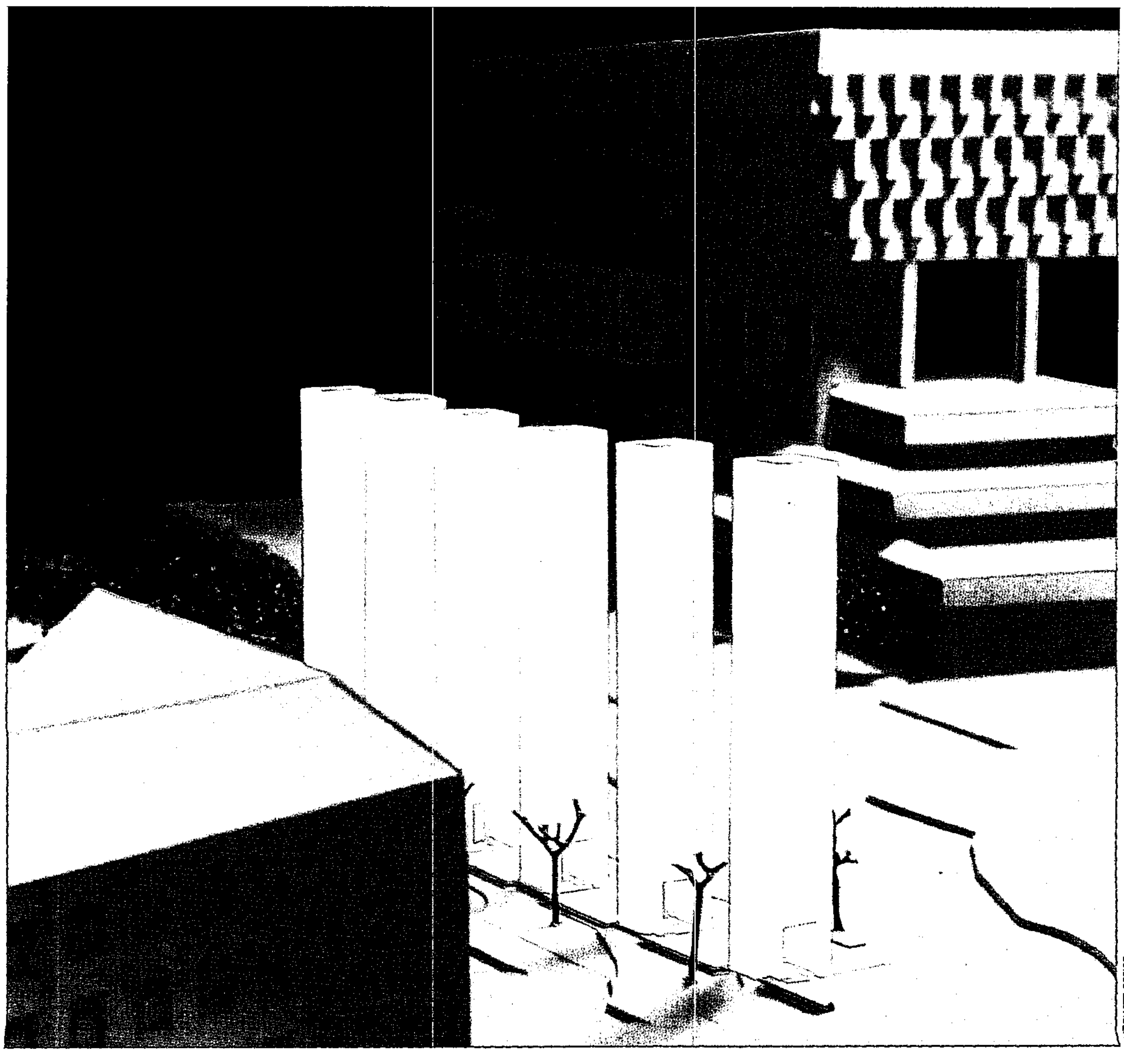
Holocaust Memorial Boston, Massachusetts

In 1994, Saitowitz won a competition for the design of a Holocaust Memorial in Boston on a square adjoining City Hall. The simplicity of the winning design—a colonnade of six glass towers lit from within—does not diminish its power or complexity, which ranges from urban issues to the primary purpose—commemorating the deaths of 6 million Jews.

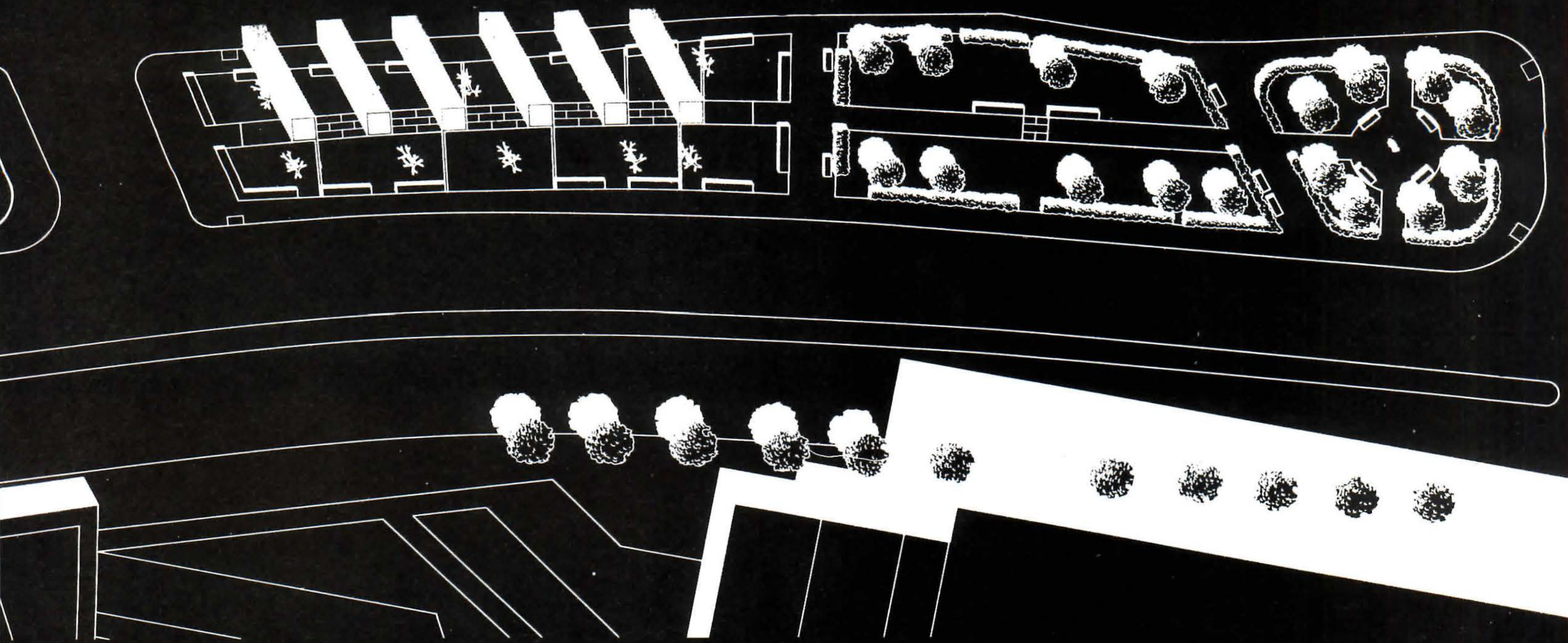
Urbanistically, the 56-foot-tall columns form a visual edge to the plaza that spills around the side of Kallmann McKinnell's monumental structure, and the colonnade marks a point along Boston's Freedom Trail. Lifted above grade, the open columns form an enfilade of passages at their base. Saitowitz intensifies the unexpected gauntlet by incorporating messages and symbols.

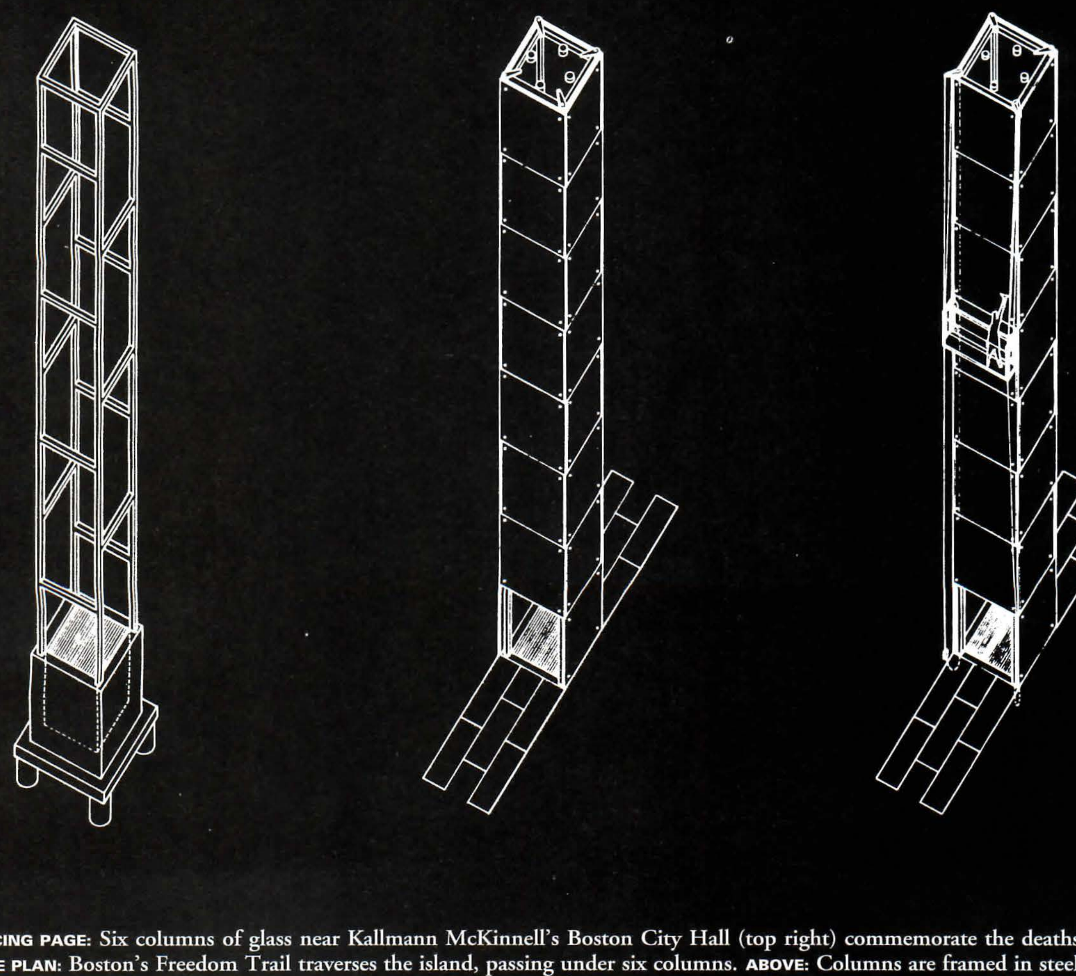
Saitowitz evokes loss, absence, and tragedy by emphasizing content over form. There are six columns of light, he says, because there were six death camps in Poland built to industrialize killing: Each column bears the name of one. Remembrances of survivors are displayed. Etched in the glass are 6 million numbers, and on a bright day, the sun tattoos numbers on the skin of anyone venturing into the promenade, turning innocent visitors into victims. Each column is built over a pit lined with black granite with a fire glowing in lava rock at the bottom. Standing on grates, visitors feel warm air rising, as though human breath were ascending the flues of what seem to be chimney stacks.

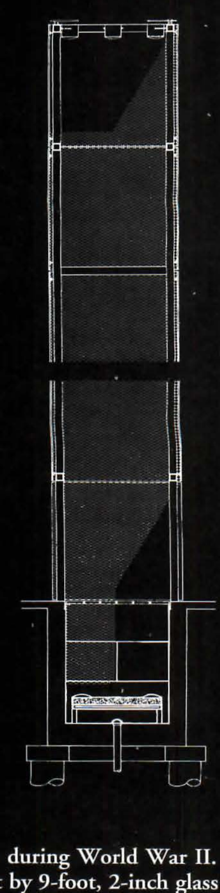
Saitowitz has created a monument that is the tablet and frame for evocations. The symbols are not representations of the Holocaust so much as triggers for the mind to remember, imagine, and dwell on the events, the people, the scale, and the inexplicable why. The power of this memorial finally rests in the mind more than the eye.—*J. G.*



SAITOWITZ OFFICE







FACING PAGE: Six columns of glass near Kallmann McKinnell's Boston City Hall (top right) commemorate the deaths of 6 million Jews during World War II. **SITE PLAN:** Boston's Freedom Trail traverses the island, passing under six columns. **ABOVE:** Columns are framed in steel and clad in 7-foot by 9-foot, 2-inch glass panels that are etched with 6 million numbers. **SECTION:** Pit under each column is lined with burning coals and designated with the name of a Nazi death camp.

Plaza Promenade

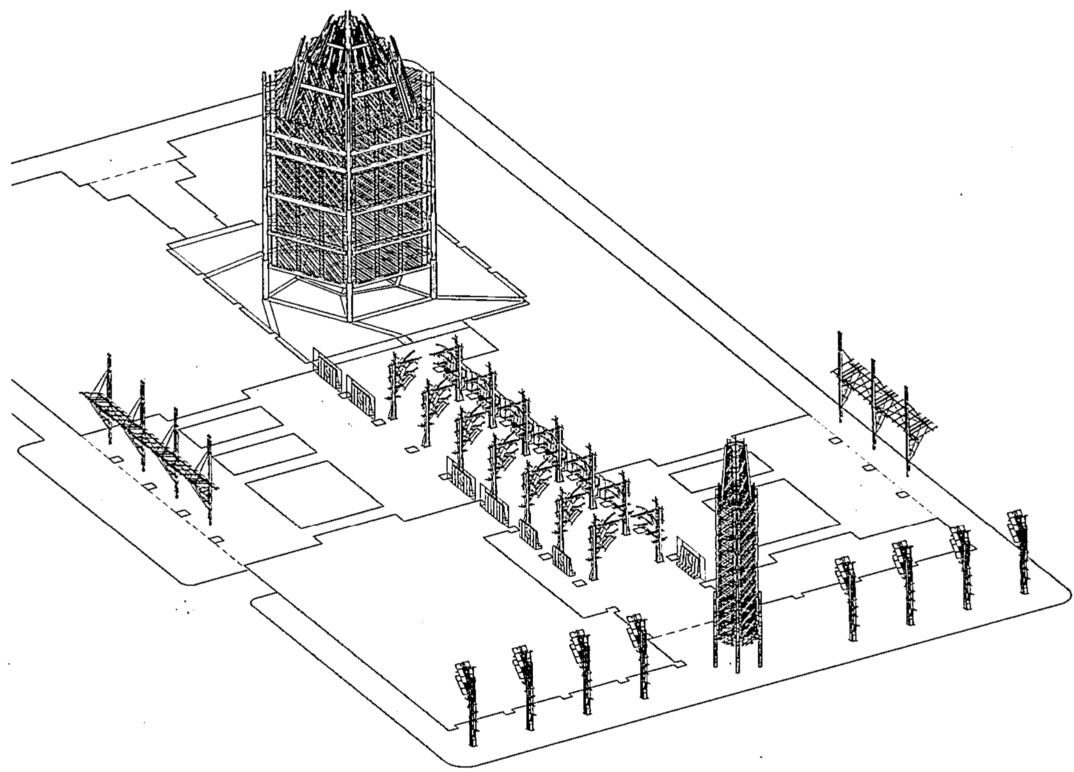
One Market Street Plaza
San Francisco, California
Cesar Pelli & Associates, Architect

Following the San Francisco earthquake of 1989, the Embarcadero Freeway was dismantled, and One Market Street Plaza became waterfront property almost overnight. This 1.5 million-square-foot complex of office and retail space could suddenly offer unobstructed views of the bay and the picturesque 1894 Ferry Building. To capitalize on this unexpected gain, the Yarmouth Group, developer of the complex, hired Cesar Pelli & Associates to spruce up its architecturally undistinguished, 20-year-old structures.

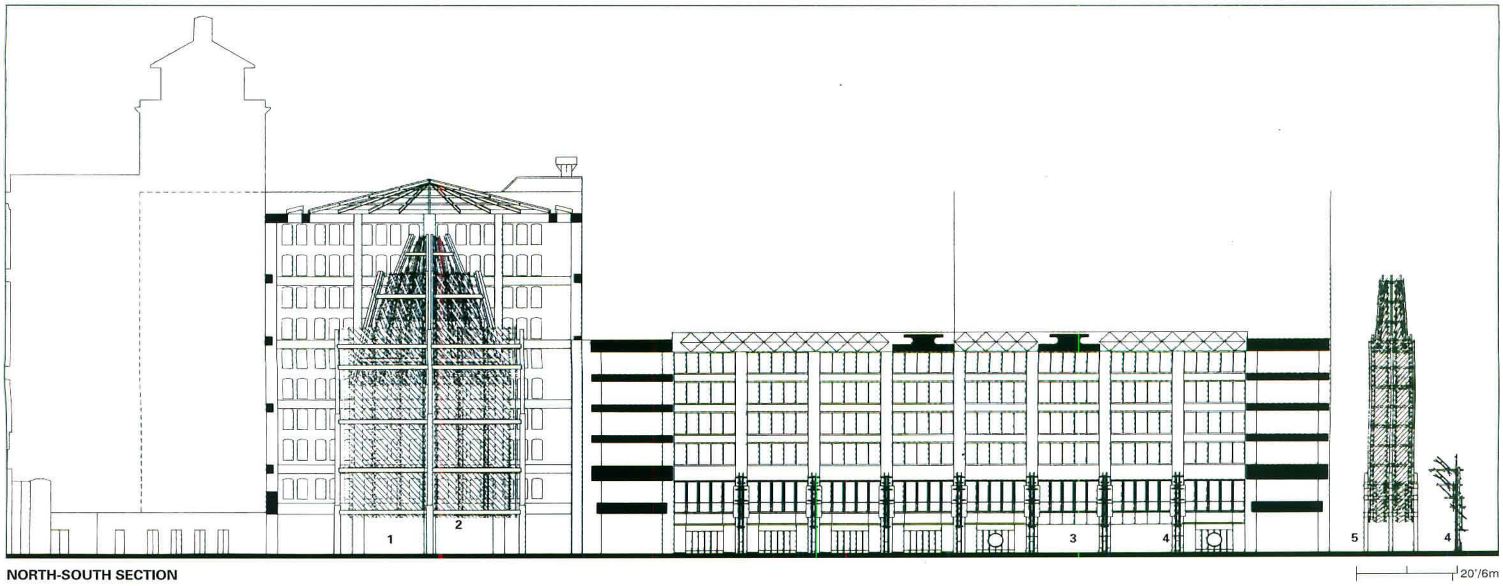
Inherent in the original buildings were urbanistic problems typical of 1970s high rises. Set too far back from the street in a barren plaza, these Welton Becket-designed buildings—a 42- and a 27-story tower joined by a six-story low rise—were, as design team leader Turan Duda describes them, bland "refrigerator box buildings" lacking pedestrian scale. To make matters worse, these cast-concrete monoliths suffered from dark finishes and an ill-defined spatial sequence within their common lobbies and concourses.

Since total reskinning would have been prohibitively expensive, Cesar Pelli & Associates devised an unusual strategy. As Duda explains it, they attempted to maintain a clear distinction between existing conditions and new elements—as if designing "furniture to enliven a space with little architectural character of its own." In this $37 million project, the new "furniture" achieves high visibility at Mission Street, where a six-story steel-lattice "gate tower" marks the main entry, and an enfilade of complicated steel lampposts borders the plaza. The architectural language of the sculptural elements forms a curious marriage between traditional garden pavilions, rendered in steel, as in the tower, and quasi-mechanical objects that appear kinetic, yet do not move, as in the streetlamps.

From the Mission Street entry, interior light stanchions, formally echoing the streetlamps, line the concourse in a gesture intended to reproportion the tall, narrow space. Replacing the original lobby's live trees, these

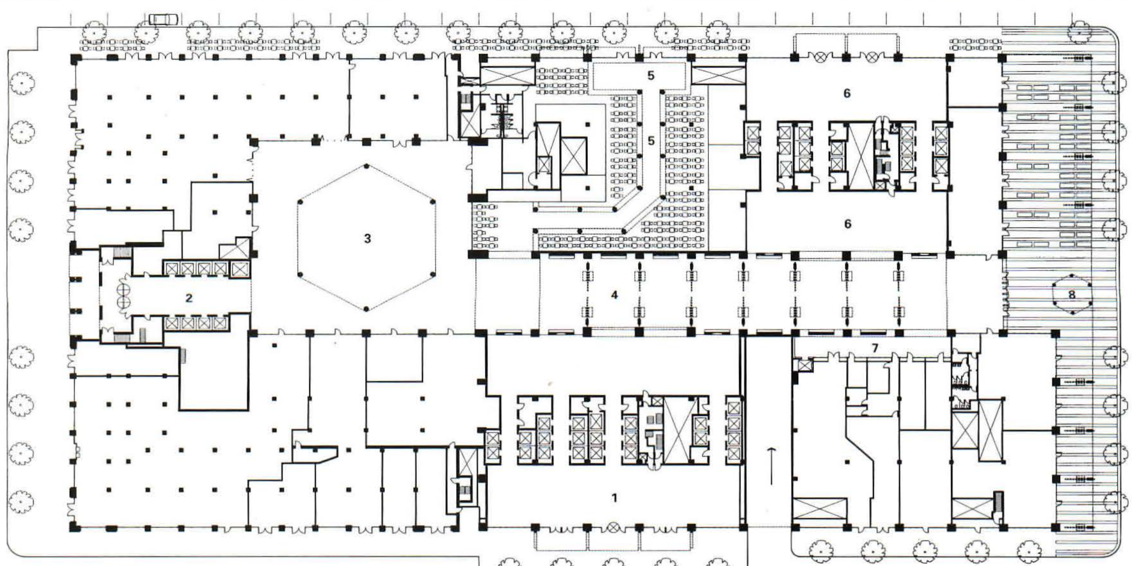


FACING PAGE: Painted steel lampposts define plaza's edge. Six-story-high, steel latticed tower marks entrance. Open volume of tower can be traversed at street level and is illuminated from within at night.
ABOVE: Axonometric illustrates procession from exterior to interior, punctuated by sculptural elements. Acrylic and aluminum light stanchions lining central concourse formally echo steel and acrylic lampposts bordering plaza. Hexagonal, steel-lattice pavilion in courtyard recalls entrance tower. Steel-and-glass canopies shade side entrances.



NORTH-SOUTH SECTION

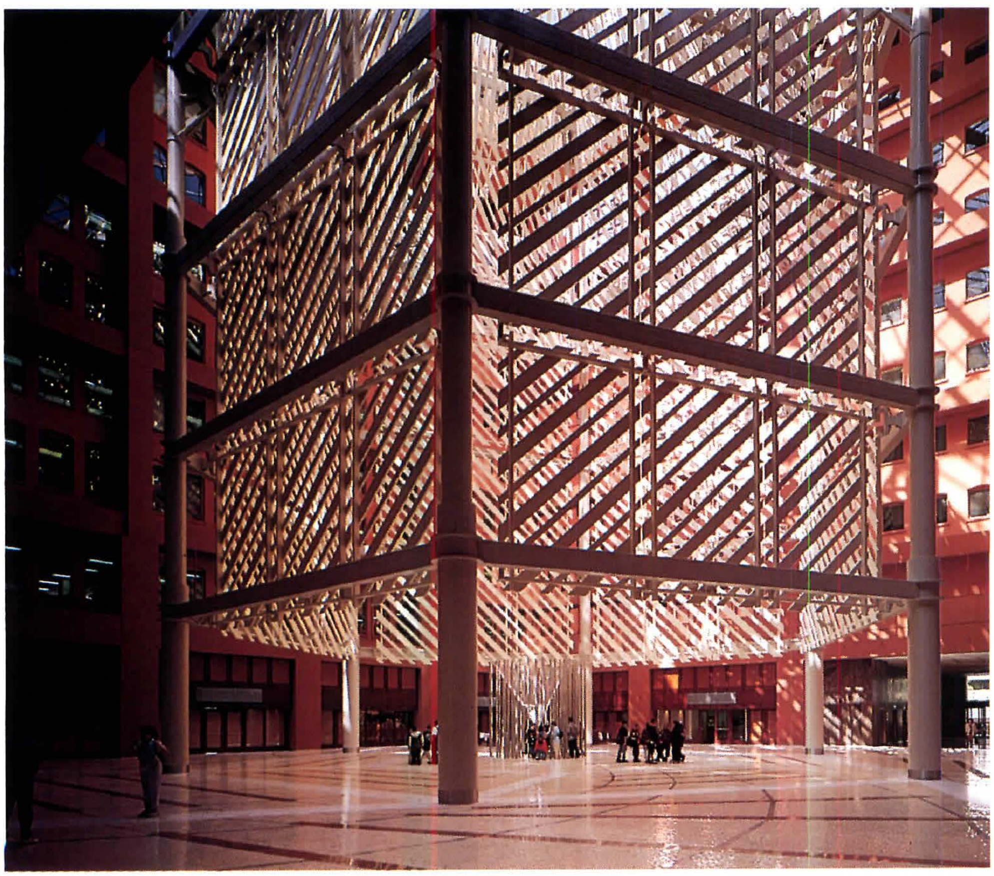
1 COURTYARD
2 LATTICE PAVILION
3 CONCOURSE
4 LAMPPOST
5 GATE TOWER



PLAZA LEVEL PLAN

1 SPEAR STREET LOBBY
2 SOUTHERN PACIFIC LOBBY
3 COURTYARD
4 CONCOURSE
5 FOOD PROMENADE
6 STEUART STREET LOBBY
7 SERVICE COURT
8 MISSION STREET PLAZA

FACING PAGE: To redefine plaza, Pelli introduced overarching lampposts, steel latticed tower, and bands of sandblasted concrete alternating with sand-set, 4-by-8-inch concrete pavers.
SECTION: Mission Street concourse illustrates scale of Pelli's intervention. Architect's building-within-a-building (left) is a 132-foot-high, 80-foot-diameter, steel latticed pavilion inside a 10-story skylit courtyard.
ABOVE: Arching aluminum and acrylic-paneled light stanchions reproportion tall, narrow concourse leading from Mission Street entrance to courtyard and pavilion.
PLAN: Street-level plan of renovated complex shows asymmetrically arranged elevator banks and new food court, clearly accessible from concourse and courtyard.



overarching elements read almost as a machine-honed arbor.

The culmination of this procession is a courtyard containing the "pavilion": a nine-story building-within-a-building, a latticed folly—geared with audio and lighting systems for gala events. Pelli replaced the existing glazed lean-to with a hexagonal skylight and raised it to a soaring 10 stories. Without the harbor views and palm trees of his World Financial Center Winter Garden, it will be interesting to see how this imposing, internalized structure is animated on a daily basis.

On a more intimate scale, Pelli relied on variegated floor patterns, glass-and-metal entry canopies, and much-needed signage to reinforce his new spatial definition. With marble from Spain, Italy, and Guatemala, and cherry wood panels for the new elevator cabs, the architect corrected the darkening effects of the original decor.

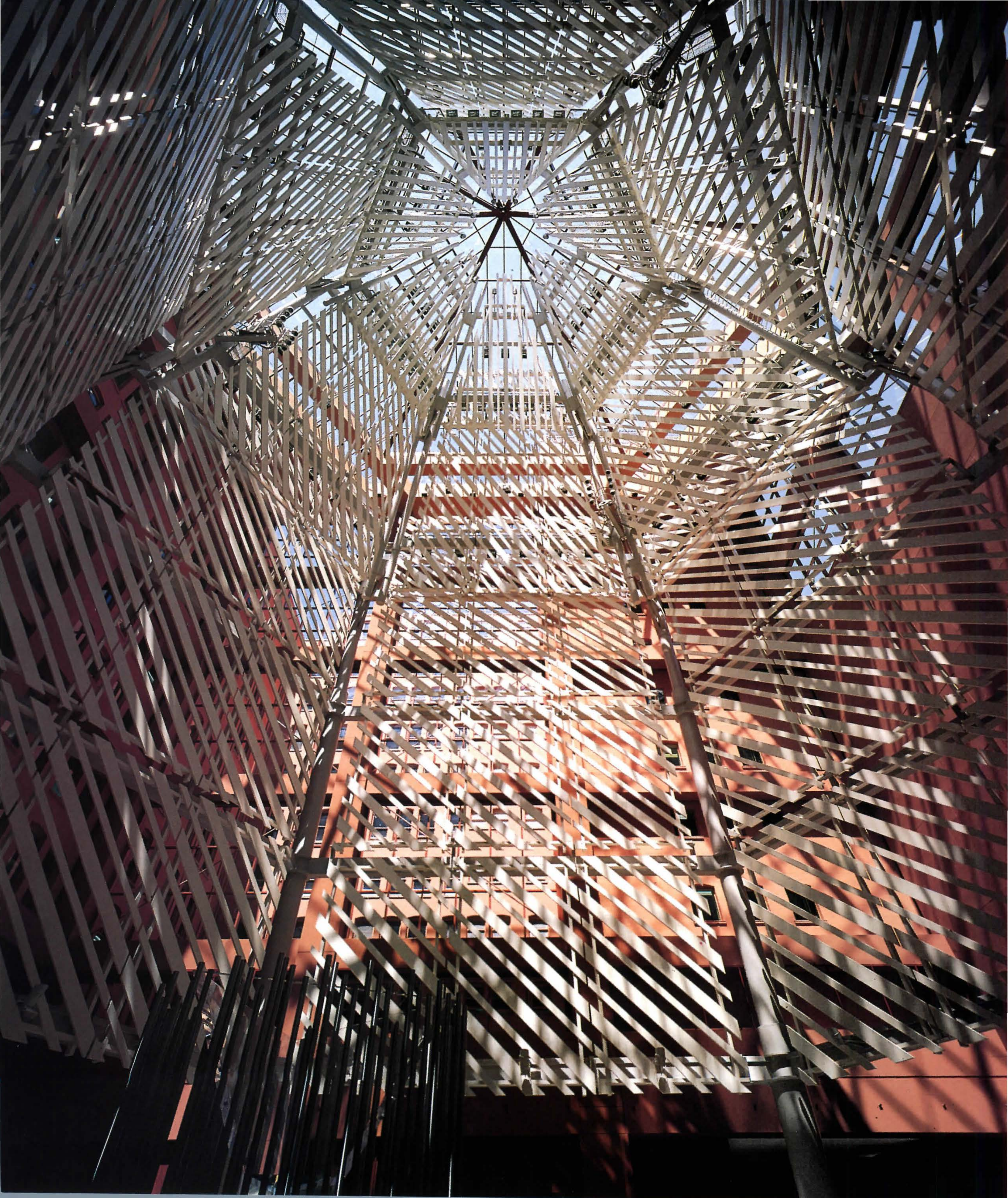
Clearly, the greatest challenge here lay not in the finishes, but in the inherited anti-urban conditions. The issues that Pelli faced at One Market Street Plaza are especially timely, as buildings of this ilk show signs of aging. Ultimately, the success of this ambitious renovation must be measured in how its public spaces are used and integrated with the streetscape. At the moment, it is difficult to find a free spot at the plaza tables during weekday lunch hours.—*Sarah Amelar*

Sarah Amelar is an architect based in New York.

TOP LEFT: Audio and lighting systems occupy pavilion's upper reaches beneath new skylight.
LEFT: Illuminated internally after dark, the hexagonal pavilion, with marble mosaic floor and central fountain, soars 132 feet above pedestrians.
FACING PAGE: Pavilion's painted-steel latticework baffles views of surroundings.

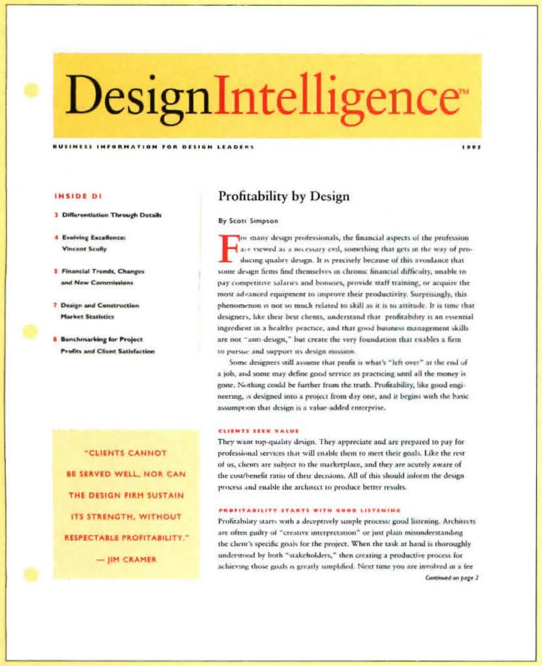
ONE MARKET STREET PLAZA
SAN FRANCISCO, CALIFORNIA

ARCHITECT: Cesar Pelli & Associates—Cesar Pelli (design principal); Fred W. Clarke (project principal); Turan Duda (design team leader); Mariko Masuoka, John DaSilva, Robert Narracci, David Strong, Kristin Hawkins, Tim Paxton, Masaaki Ninomiya, Roberto Espejo (design team)
ASSOCIATE ARCHITECT: Patri-Burlage-Merker
LANDSCAPE ARCHITECT: Peter Walker Williams Johnson and Partners
ENGINEERS: Martin Middlebrook & Louie (structural); Glumac & Associates (civil/electrical)
CONSULTANTS: Debra Nichols (graphic design); Cline, Bettridge, Bernstein Lighting Design (lighting); Charles M. Salter Associates (acoustics)
GENERAL CONTRACTOR: Swinerton & Walberg Co.
COST: $37 million
PHOTOGRAPHER: Timothy Hursley



ADVANCING THE ARCHITECT'S COMPETITIVE EDGE 24 TIMES A YEAR

Design



DesignIntelligence™

BUSINESS INFORMATION FOR DESIGN LEADERS 1995

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4 Evolving Excellence: Vincent Scully

5 Financial Trends, Changes and New Commissions

7 Design and Construction Market Statistics

8 Benchmarking for Project Profits and Client Satisfaction

"CLIENTS CANNOT BE SERVED WELL, NOR CAN THE DESIGN FIRM SUSTAIN ITS STRENGTH, WITHOUT RESPECTABLE PROFITABILITY." — JIM CRAMER

Profitability by Design

By Scott Simpson

For many design professionals, the financial aspects of the profession are viewed as a necessary evil, something that gets in the way of producing quality design. It is precisely because of this avoidance that some design firms find themselves in chronic financial difficulty, unable to pay competitive salaries and bonuses, provide staff training, or acquire the most advanced equipment to improve their productivity. Surprisingly, this phenomenon is not so much related to skill as it is to attitude. It is time that designers, like their best clients, understand that profitability is an essential ingredient in a healthy practice, and that good business management skills are not "anti-design," but create the very foundation that enables a firm to pursue and support its design mission.

Some designers still assume that profit is what's "left over" at the end of a job, and some may define good service as practicing until all the money is gone. Nothing could be further from the truth. Profitability, like good engineering, is designed into a project from day one, and it begins with the basic assumption that design is a value-added enterprise.

CLIENTS SEEK VALUE

They want top-quality design. They appreciate and are prepared to pay for professional services that will enable them to meet their goals. Like the rest of us, clients are subject to the marketplace, and they are acutely aware of the cost/benefit ratio of their decisions. All of this should inform the design process and enable the architect to produce better results.

PROFITABILITY STARTS WITH GOOD LISTENING

Profitability starts with a deceptively simple process: good listening. Architects are often guilty of "creative interpretation" or just plain misunderstanding the client's specific goals for the project. When the task at hand is thoroughly understood by both "stakeholders," then creating a productive process for achieving those goals is greatly simplified. Next time you are involved in a fee

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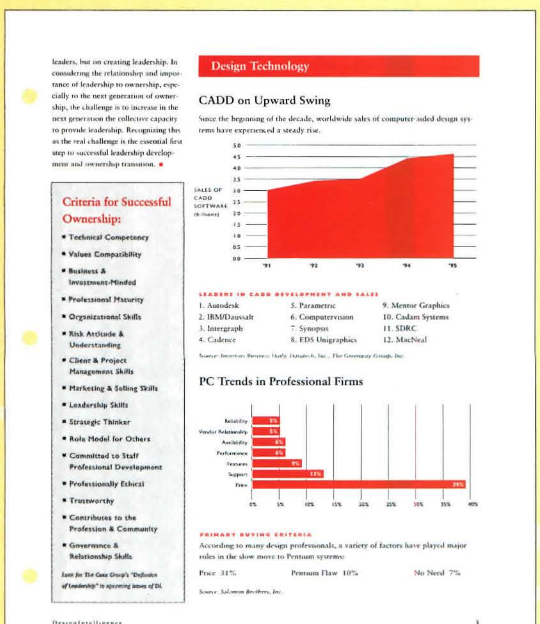

leaders, but on creating leadership. In considering the relationship and importance of leadership to ownership, especially to the next generation of ownership, the challenge is to increase in the next generation the collective capacity to provide leadership. Recognizing this as the real challenge is the essential first step to successful leadership development and ownership transition. ■

Criteria for Successful Ownership:

- Technical Competency
- Values Compatibility
- Business & Investment-Minded
- Professional Maturity
- Organizational Skills
- Risk Attitude & Understanding
- Client & Project Management Skills
- Marketing & Selling Skills
- Leadership Skills
- Strategic Thinker
- Role Model for Others
- Committed to Staff Professional Development
- Professionally Ethical
- Trustworthy
- Contributes to the Profession & Community
- Governance & Relationship Skills

Look for The Coxe Group's "Definition of Leadership" in upcoming issues of DI.

Design Technology

CADD on Upward Swing

Since the beginning of the decade, worldwide sales of computer-aided design systems have experienced a steady rise.

LEADERS IN CADD DEVELOPMENT AND SALES

1. Autodesk	5. Parametric	9. Mentor Graphics
2. IBM/Daussalt	6. Computervision	10. Cadam Systems
3. Intergraph	7. Synopsis	11. SDRC
4. Cadence	8. EDS Unigraphics	12. MacNeal

Source: Investors Business Daily, Datatech, Inc., The Greenway Group, Inc.

PC Trends in Professional Firms

PRIMARY BUYING CRITERIA

According to many design professionals, a variety of factors have played major roles in the slow move to Pentium systems:

Price 31% Pentium Flaw 10% No Need 7%

Source: Salomon Brothers, Inc.

When clients talk about your firm, they're really talking about you and your leadership. *DesignIntelligence* is a newsletter that presents new management ideas and insights that help you grow.

Each issue of *DI* features insights and knowledge on the issues that impact the design business environment, the art of management, effective leadership, economic and political wisdom, and the implications of change.

MORE GROWTH AND CHALLENGING CHANGES AHEAD

Our articles address issues like increasing profitability, effective ownership transitions, million-dollar marketing strategies, successful firm mergers, and secrets of today's most fulfilled design leaders. And there is much more.

Each issue of *DI* will become an indispensable resource for you. Messages are written by leading consultants and design mentors from education, practice, and corporate life. The Coxe Group, Inc., one of the nation's premier management consulting firms, regularly provides features and case studies. The Greenway Group, Inc., strategic and turnaround management consultants, contribute their new research and methods leading the way to profits and growth.

TAKE CONTROL OF DESIGN TECHNOLOGY

There are forces of change rapidly altering professional practice. With *Design-Intelligence* as your partner, you'll profit from our experience and active involvement in the technological revolution. Even the most educated principal is too often uninformed outside a certain (and sometimes narrow) range of design and management subjects. Each issue of *DI* uncovers new and relevant information on technology and its changing implications. If you are seeking facts that will keep you ahead of the times, you will find insightful information in every issue of *DI*.

DI delivers a new kind of information on the evolving role of technology. We report on changes in CADD technical developments, and offer insights on new software programs and wireless technology. All in all, this section of *DI* will help you make decisions on capital expenditures and will help you to understand the winning experience of "best of class firms." In short, *DesignIntelligence* will become a valued strategic partner and talent scout.

1995 Design Awards

AWARD OF HONOR

Goodwill Industries Headquarters Building
Portland, OR

Architect / Firm
Michael & Kuhns Architects, pc.
Portland, OR

Contractor
Pence/Kelly Construction, Inc.
Salem, OR

Engineers
Berry-Nordling Structural Engineers,
System Design Consultants, Inc.
Portland, OR

Owner
Goodwill Industries of the
Columbia Willamette

Photographer
Michael Mathers, Portland, OR

The third year of the **Architecture + Energy** Design Awards was clearly the "year of the sun." As before, winning projects had to demonstrate energy efficient designs that were integral to successful architecture. Along with daylighting, the jury expected exterior and interior architectural excellence, combined with efficient mechanical and lighting systems for award consideration. All projects receiving Awards of Honor or Merit integrated daylight into the design in an effective and meaningful way.

Recognizing the potentially unfair advantage of costly and glamorous projects, the jury took into account the fact that buildings without sizable budgets were, if anything, more difficult to design to be efficient and attractive. Of the fourteen projects submitted to the jury, two award winners were low budget projects that exhibited good energy efficient design.

The Goodwill Industries Headquarters is a modest, concrete tilt-up building, hardly the basis of an architectural award. Even more demanding is the multiple-use nature of the building: office, retail, school, and factory. Yet, the simple but effective exterior architectural enhancements of the awnings and the retail entry skylight belied a design process in which the jury felt the architect carefully weighed every decision. Three kinds of daylighting-basic topping, clerestories, and windows-were effectively used to create unusually nice interior spaces. Electric lighting systems also showed careful budget management. Expensive, high performance lighting systems used in education and computer areas well offset by low-cost, yet effective conventional lighting elsewhere.

The jury was clearly most impressed with the interesting interior environments created using space, light and well chosen materials in a modest but effective interior architecture. In keeping with the mission of Goodwill Industries, the building seems fresh and fun. Even the workshop areas possess a sense of order and a pleasant quality without being the least bit over-designed.

Not every design is perfect. The awnings, which are solar shading devices, were found only on the north and east exposures. The envelope and mechanical systems were technically conventional and unremarkable. Considering the budget and the climate, the jury recognized that the design and energy efficiency were probably best achieved within the modest budget and therefore deserved one of the top honors in this year's program.

James Robert Benya, PE, FIES, IALD, of Benya Lighting Design with offices in West Linn, Oregon and Sausalito, California, has over twenty years of lighting design and consulting experience. He is also an Adjunct Professor of Architecture at the California College of Arts and Crafts.

Juror's Comments

"The overall design image is uplifting, reflecting the goals and aspirations of Goodwill Industries."

"Consistent quality of space and appropriate use of light, architecture, materials and budget..."

AWARD OF HONOR

Oregon Museum of Science & Industry
Portland, OR

Architect / Firm
Zimmer Gunsul Frasca Partnership
Portland, OR

Contractor
Koll Construction,
Beaverton, OR

Engineers
kpff Consulting Engineers,
CBGKL,
Portland OR

Owner
Oregon Museum of Science & Industry

Photographer
Strode Eckert Photographic
Portland OR

Public buildings should be instruments that teach, inform, inspire, and motivate. In short, they should enhance the human experience by being fun, playful and friendly. The Oregon Museum of Science & Industry (OMSI) is such a building. The site, with its existing industrial buildings, is on the Willamette River. It has a western exposure and a dramatic view of downtown Portland, Oregon and the residential neighborhood on the hills behind the city, allowing the facility to become an observation platform to view the elegance of the work of both man and nature.

Jurors

James R. Benya, PE, FIES, IALD

David J. Houghton, PE

David M. Scott, FAIA

Roland A. Wiley, AIA

The program for OMSI was complex in that it demanded facilities that communicate with the individual or groups, small and large. The scientific and engineering concepts are as diverse as a submarine or a computer chip. The facility is a set of buildings, some old, some new. Some open where it is possible to allow day or night, sunlight, clouds, and overcast skies to create variety and enclosed where needed to support the activities that demand near absolute control.

While the program demanded a large footprint, the scale and character of the elements are such that even a child will find comfort and a sense of security. It is a friendly place to be. Using the river as an energy source, the designers have created a complex energy system that runs effectively. It is a building that does not shout energy conservation, yet it is efficient by today's standards and the efficiency is hidden in the details of the energy management system.

David M. Scott, FAIA, named as one of the two 1993 Faculty Member of the Year by the AIA/National Student Chapter, has been an architectural educator at Washington State University in Pullman, WA since 1960.

Juror's Comments

"A dramatic space."

"Energy conservation was a consideration in every aspect of the project without compromising the unique qualities of the site and program."

As architects we are consistently given the reality of a limited budget to execute a project with seemingly unlimited design challenges. Prevailing attitudes may perceive sustainable strategies as an additional budget constraint rather than an opportunity to realize substantial savings.

The remodel of the Boy Scouts of America Council Offices offers a remarkable example of how to respond to the prevalent challenge of budget and programming constraints with creative design solutions and energy efficient strategies. By the ingenious use of a combination of relatively conventional energy saving strategies, the architect has achieved a surprising transformation of what used to be a dull 1950's building.

Working on a site at virtually maximum density, this project was able to achieve a new building form. Energy savings were realized by minimizing the amount of building materials to be demolished and dumped. Existing voids above the ground floor were recovered and used as additional floor space. Although the budget could not support cutting-edge sustainable technologies, this project used conventional glazing and wall construction strategies to attain significant energy savings. To reduce heat gain/loss, all of the existing openings were either scaled down or closed. Windows were replaced with vinyl-framed, double glazed low-e glass. New wood siding and insulation also contributed to a superior envelope performance, which also gave the building a new personality.

The most exemplary aspect of this project were the daylighting strategies. The building is sited on the north/south axis, which allowed for maximum daylighting opportunities. The remodel design transformed old artificially lit office space into a vibrant high ceiling office space with generous amounts of daylighting accented by direct/indirect light fixtures. This was achieved by reversing the slope of the existing roof on the north side to capture the daylight.

This project has improved the quality of space for its users, improved the quality of the site relative to the community and has satisfied the rigid national program requirements of the user. All of these goals were achieved by integrating affordable sustainability strategies at a net cost savings. The renovated building has an energy consumption of only 33% of the original building.

Roland A. Wiley, AIA, is the founder and managing partner of RAW ARCHITECTURE in Los Angeles, CA. He recently completed an Energy Efficient Technology Study for the design of the new California Museum of Science and Industry in Los Angeles.

Juror's Comments

"A surprising transformation using relatively simple materials and architectural techniques on a meager budget."

"The Boy Scouts and their design team earn a Merit Badge for this project."

AWARD OF MERIT

Remodel and Addition to the Cascade Pacific Council Offices of the Boy Scouts of America,
Portland, OR

Architect / Firm
Waddle Design • Planning • Architecture, AIA, Portland, OR

Contractor
Donald M. Drake Company Special Projects Division, Portland, OR

Engineers
Berry-Nordling Structural Engineers, The Howard Company, Portland, OR

Owner
Cascade Pacific Council Boy Scouts of America

Photographer
Janis Miglavs, Image Resource Photography, Portland, OR

SPECIAL CITATION FOR TECHNICAL EXECUTION

Washington Natural Gas Everett District Office / Operating Facility,
Everett, WA

Architect / Firm
The Dykeman Architects, Everett, WA

Contractor
GLY Construction, Bellevue, WA

Engineers
CT Engineers, Seattle, WA
Path Engineers, Bothell, WA

Owner
Mercer Funding Ltd.,
c/o Washington Natural Gas

Photographer
Steve Keating, Seattle, WA

The district office and operating facility of the Washington Natural Gas Company in Everett, Washington earned a special citation for good all-around energy design and interesting - if a bit busy - architecture. The building is settled into a hillside to reduce thermal loads, and the outer envelope is insulated 27% better than required by code. Efficient interior lighting complements the fine finish work in the entry and conference rooms, as well as the standard open-plan office areas. The connected lighting load of 1.38 W/ft2 exceeds today's budget of 1.2 W/ft2, but dual switching for luminaries (allowing a fraction of lamps to be separately controlled by an additional wall switch) gives occupants the ability to adjust their lighting during daylight hours. The building's mechanical system reflects thoughtful design that can accommodate future expansion, with a central chilled water system, variable speed air handling units with 100% outside air capability, and low-velocity ductwork to cut fan energy and supply air leakage. Overall, the designers of this building created a pleasant place to work with the flexibility to respond efficiently to changing environmental conditions.

Juror's Comments

"Good equipment, well used... resulting in a quality workspace."

"This building is distinguished by its solid all around technical performance."

SPECIAL CITATION FOR THERMAL CONDITIONING

Missoula Airport Renovation and Addition,
Missoula, MT

Architect / Firm
Eric Hefty & Associates, Missoula, MT

Contractor
Swank Enterprises, Valier, MT

Engineers
Beaudette Consulting Engineers,
Missoula, MT
Bronec Engineers, Inc.
Bozeman, MT

Owner
Missoula County Airport Authority

Photographer
Eric Hefty, Missoula, MT

Efficiency was part of the plan when designers tackled the renovation of the Missoula International Airport, a 1950s-era facility. In addition to a new lobby and baggage handling system, the project gave the old building a better thermal envelope and upgraded mechanical systems. This project illustrates how an efficient building shell can deliver more than the sum of its parts might indicate. By boosting the roof insulation from R-19 to R-31 and installing high-performance glazings, the existing 100-ton chiller was abandoned in favor of a well-water cooling system. Switching from electric chilling to a site-based resource cut peak power demand by 140kW. This was the only building in this year's design competition to completely forgo compressor-driven cooling, a step that is entirely appropriate but too often ignored in the moderate Northwest climate. The project also replaced 38kW of electric resistance heating with a gas-fired unit and added details such as sun-drenched masonry alcoves for passengers to lounge in. Variable-speed fan drives are expected to save nearly 400,000 kWh per year, and a new control system trims fanpower during peak demand periods, as well as providing scheduling control and night set backs.

David J. Houghton, PE, a research associate with E SOURCE in Boulder, CO, has diverse expertise in technology applications for energy-efficient building design, including advanced HVAC systems and innovative load reduction techniques.

Juror's Comments

"It takes guts to throw away a perfectly good chiller."

The **Architecture + Energy** Steering Committee and the AIA/Portland Chapter extends its thanks and appreciation to Bonneville Power Administration and Portland General Electric for its continued support and sponsorship of this Design Awards Program. For more information, please call Otina Monary, Assistant Director, AIA/Portland Chapter, 503-223-8757.

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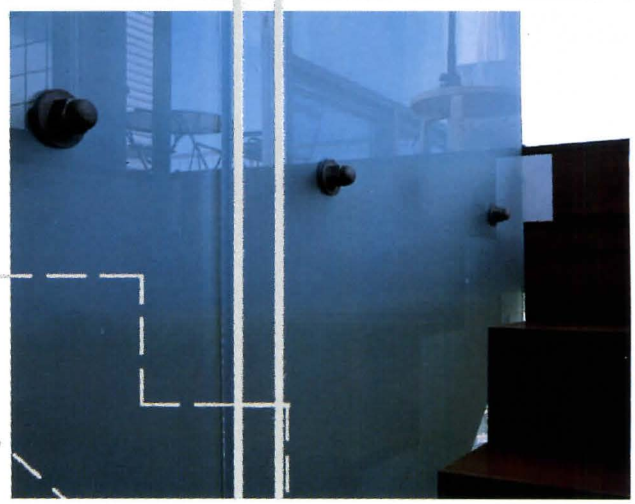
Technology & Practice



Details make or break a project, as this month's Technology & Practice section affirms. Our featured house, for instance, reveals how Oakland architect Jim Jennings adapted off-the-shelf elements to achieve simple, subtle effects from ordinary materials such as glass (above), cement-board panels, and corrugated aluminum.

Corrugated metal is captivating architects with a range of low-cost cladding possibilities, as our technology feature shows. Originally applied to farm and factory buildings, this lightweight metal is being adapted for more sophisticated designs. It is now coated with aluminum or zinc to improve esthetics and durability and detailed with weather-resistant joints.

Sometimes the smallest details inhere the greatest risk, so managing them correctly is crucial to the success of projects. Our practice article this month focuses on five ways to manage risk and illustrates these principles with actual strategies from firms both large and small.

Our computer feature takes a look at how the most detailed document can be captured through scanning. Today's scanners can even transform worn paper drawings into electronic documents that can be easily manipulated, with seldom a compromise in image resolution.

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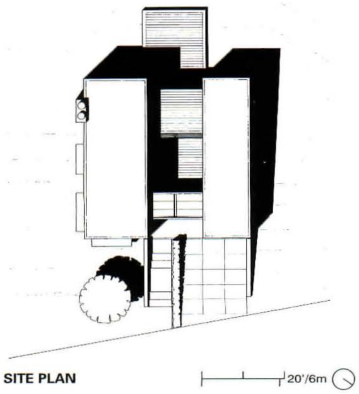
House

Detailed with Precision

Refining standard elements, Jim Jennings distinguishes a house in the Oakland hills.



SITE PLAN

In the steep Oakland hills, where panoramic views sweep across the lowlands toward San Francisco Bay, Jim Jennings Arkhitekture has built an exceptional house. With a pale, silvery palette of sandblasted glass, corrugated aluminum siding, and cement-board panels, the Becker house transcends the devastating history of its site.

In replacing a wood-framed spec house, a casualty of the 1991 Oakland fire, Jennings intentionally chose "psychologically noncombustible" materials. And with the encouragement of his client, graphic designer Leslie Becker, the local architect reinterpreted the dwelling's relationship to its dramatic setting.

"Two buildings joined at the waist" is how Jennings describes this 2,200-square-foot house. Dual rectangular volumes embrace a south-facing courtyard that opens out to the views; at the upper level, a broad uncovered bridge spans the connection. Whereas the previous house simply stepped down the slope from garage to living areas, Jennings effectively carved out a center to create protected outdoor rooms focused on the landscape.

At the street, on the uphill side of the site, a sandblasted glass screen permits only a veiled glimpse of the central space. The two flat-roofed buildings, which rise from a U-shaped plan burrowed into the hill, remain distinct in materials, function, and scale: The slightly larger form, clad in cement-board panels, contains a loftlike living/dining and kitchen area above the master bedroom, while its corrugated aluminum-clad counterpart houses a design studio (convertible to a garage) with guest quarters located below.

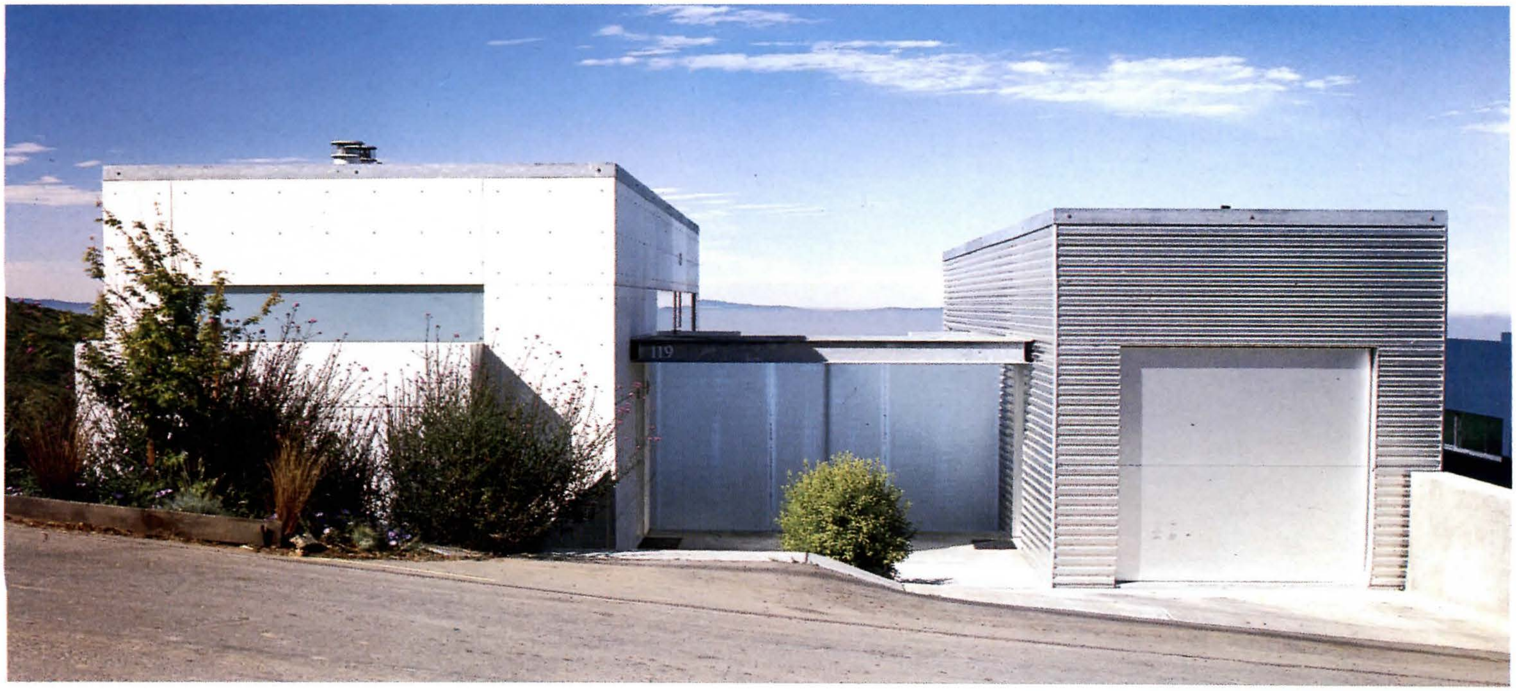
Between the two volumes, the courtyard's sun-bleached Alaskan cedar decking continues down a broad flight of stairs that spills onto the patio, leading the eye further into the landscape.

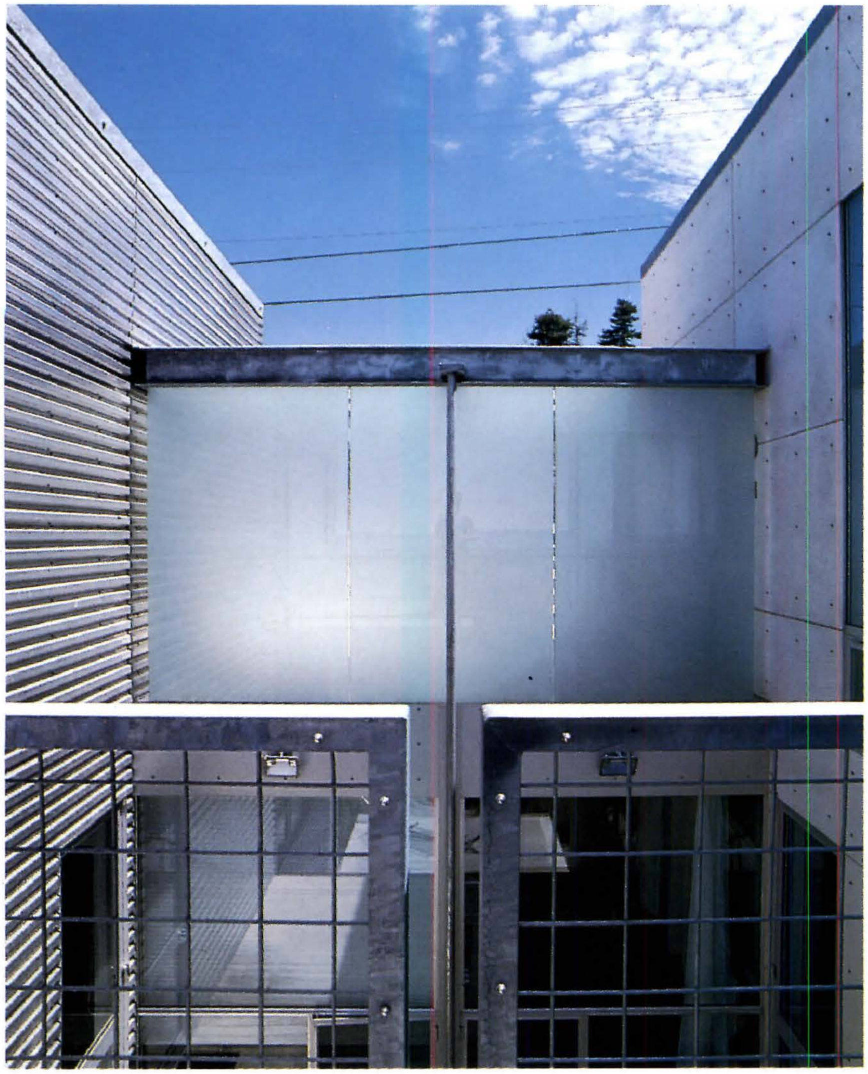
The beauty of the Becker house lies not only in its relationship to its surroundings, but also in the precision and refinement of its details. In the kitchen, appliances and cabinets, with surfaces of ebonized oak, are set flush with the walls. These elements are expressed on the exterior as simple rectangular projections clad in clear anodized aluminum. In the living area, the luminous silvery gray ceiling, set off by a wide reveal, visually floats above the white walls. Similarly, the interior stairway, faced in deep reddish-brown jarrah wood, is pulled away from the wall on one side and from a translucent screen of glass on the other.

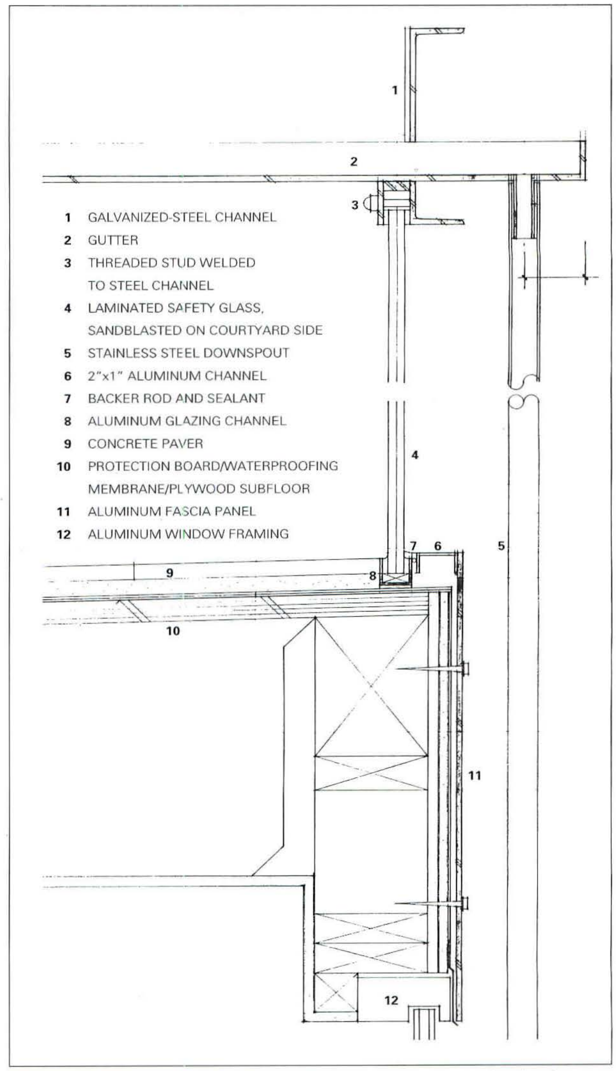
Many of the subtle effects are achieved with standard materials and off-the-shelf profiles. The corrugated aluminum siding and cement-board panels are fastened with gasketed screws to plywood, waterproofing, and building paper on wood frame. At projecting corners, the metal siding converges to an inverted steel angle that elegantly opens, rather than caps, the juncture.

While an eclectic, sometimes jarring, array of new houses continues to reclaim the fire-torn Oakland hills, this delicately composed residence, with its simple massing and careful details, quietly rises like a phoenix from the ashes.—*Sarah Amelar*

SITE PLAN: Jennings organized kitchen and living space (left) and studio (right) to flank courtyard.
BELOW: Clad in corrugated aluminum siding and cement-board panels, the paired volumes of the house are linked by a translucent glass screen.

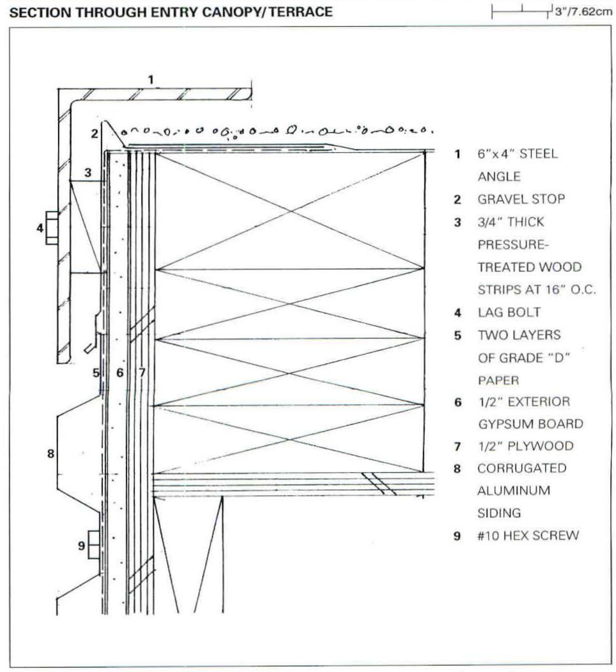




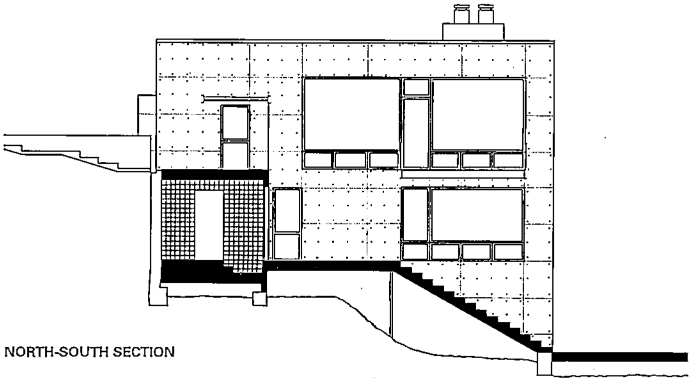


SECTION THROUGH ENTRY CANOPY/TERRACE 3"/7.62cm

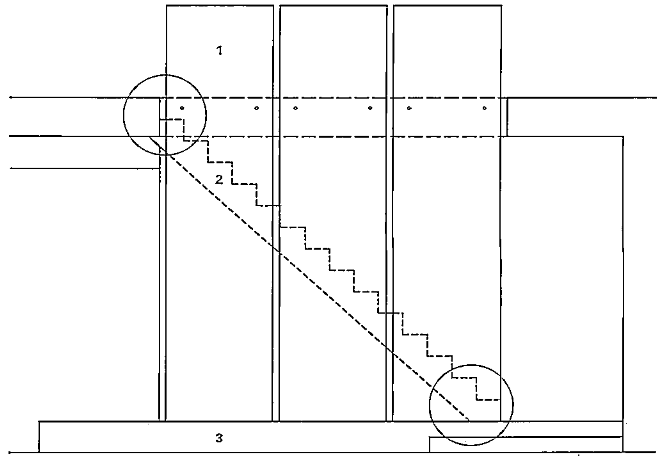
ABOVE: View from second-story bridge shows galvanized stainless steel railings and woven wire mesh (foreground) flanked by corrugated aluminum siding (left) and cement-board panels (right). Screen of sandblasted laminated safety glass between wings rises to exposed galvanized-steel beam.
RIGHT: Three-paneled garage door is constructed of clear anodized aluminum. Three-foot-high skirt wall (foreground) is poured-in-place concrete.
RIGHT, BOTTOM: Where volumes project from building, cladding material changes from cement-board panels to clear anodized aluminum.
DETAIL, TOP: Water is drained from canopy through vertical galvanized-steel rainwater leader to storm drain system under deck.
DETAIL, BOTTOM: Galvanized-steel angle neatly hides aluminum flashing and gravel stop at perimeter of roof.
FACING PAGE: Cement board and corrugated siding overlap custom-sized aluminum window frames. Outside glass is flush with exterior wall.



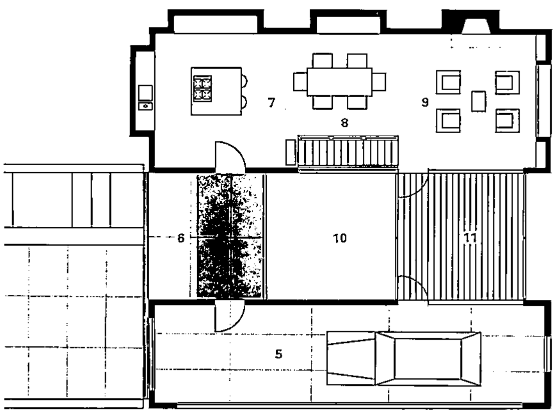
EAVE DETAIL AT KITCHEN/LIVING VOLUME 2"/5.1cm



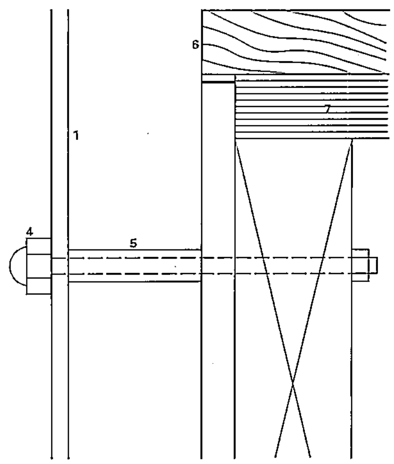
NORTH-SOUTH SECTION



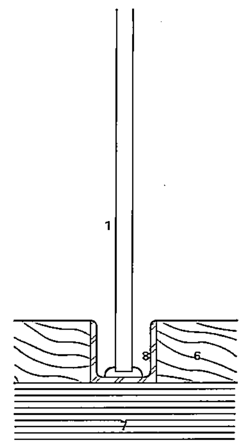
STAIR ELEVATION 3'/0.9m



UPPER FLOOR PLAN

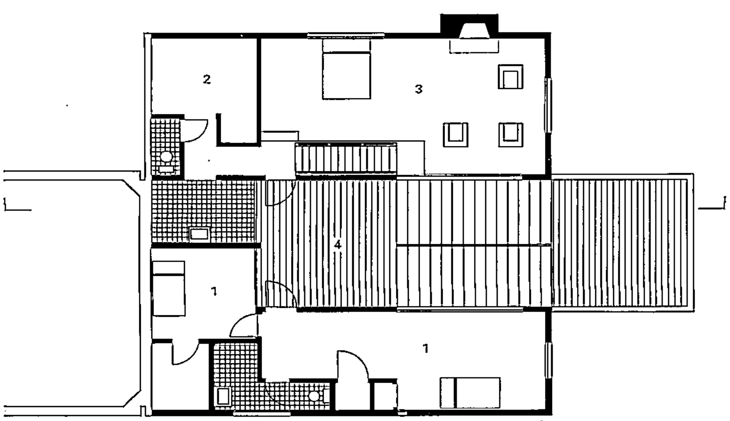


GLASS WALL CONNECTION TO UPPER FLOOR



GLASS WALL TO LOWER FLOOR

1 SANDBLASTED GLASS
2 STAIR BEHIND GLASS WALL
3 HARDWOOD PLATFORM
4 STAINLESS STEEL NUT-CAPPED BOLT
5 SPACER
6 WOOD FLOOR
7 SUBFLOOR
8 STEEL CHANNEL



LOWER FLOOR PLAN 10'/6m

1 BEDROOM
2 DRESSING ROOM
3 MASTER BEDROOM
4 TERRACE
5 GARAGE/STUDIO
6 ENTRY PORTICO
7 KITCHEN
8 DINING AREA
9 LIVING ROOM
10 OPEN TO BELOW
11 BRIDGE

SECTION: Gasketed screws pattern cement board on courtyard elevation. PLANS: Bedrooms occupy lower level. Cabinets and fireplace project from south volume. Garage is used as studio. FACING PAGE, TOP LEFT AND DETAIL, ABOVE LEFT: Screen of sandblasted glass is held away from floor edge at stair opening by 2-inch-long stainless steel tubular spacers through which steel fastening bolts are threaded. FACING PAGE, TOP RIGHT: In dining area, ceiling is set off from walls by one-inch reveal to evoke a floating quality. Floor is jarrah wood from Australia. FACING PAGE, BOTTOM LEFT AND ELEVATION: Staircase is pulled away from sandblasted glass screen, which funnels light into stairwell. Glass panels separate master bedroom from stairs.

FACING PAGE, BOTTOM RIGHT AND DETAIL, ABOVE: Three-paneled glass screen is fixed in place by channel in floor.

BECKER HOUSE
OAKLAND, CALIFORNIA

ARCHITECT: Jim Jennings Arkhitekture—Jim Jennings (principal-in-charge); Cheri Fraser, Tim Perks, Thomas Holtzmueller (design team)
LANDSCAPE ARCHITECT: Dan Tuttle
ENGINEER: Kevin Clinch/Sear Brown (structural)
GENERAL CONTRACTOR: Oliver & Co.
COST: Withheld at owner's request
PHOTOGRAPHER: Alan Weintraub

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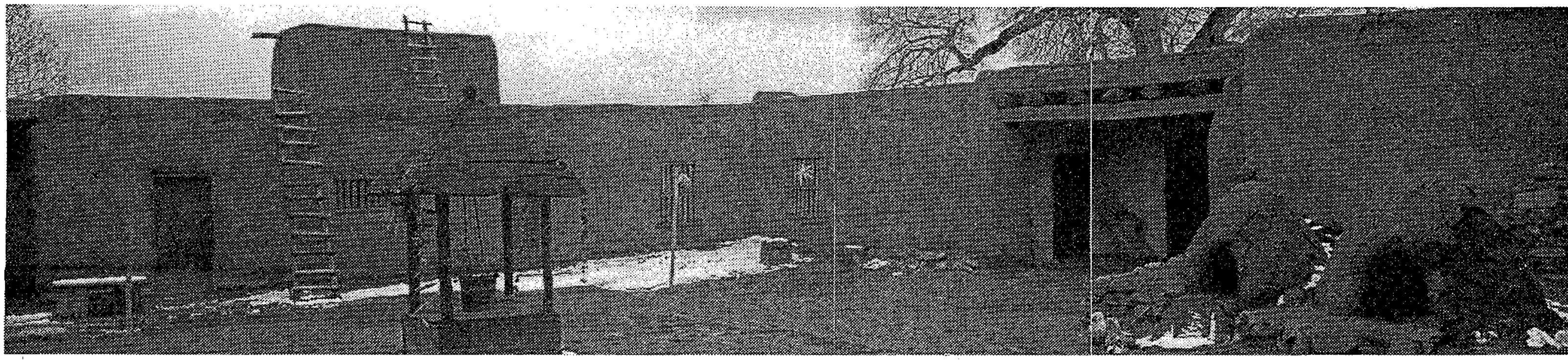

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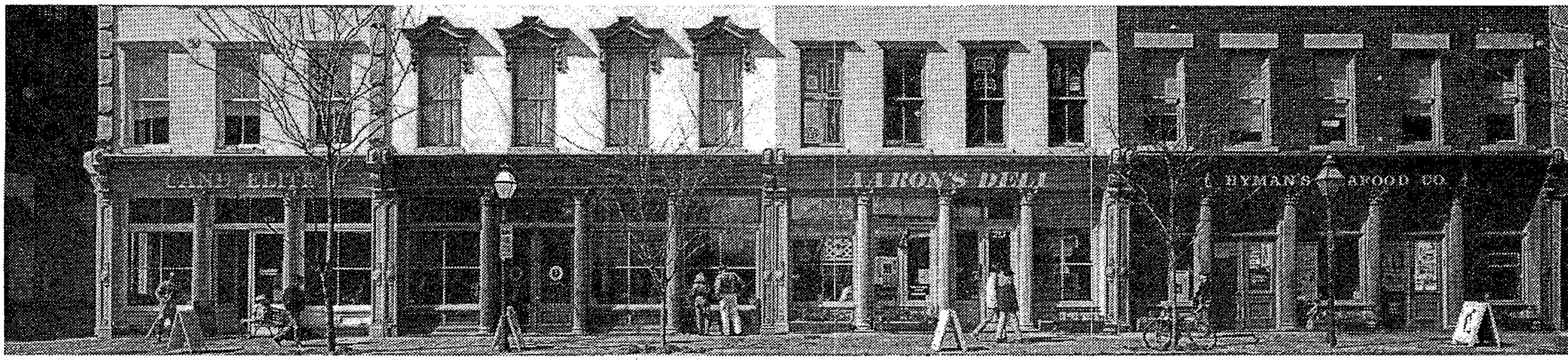

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Corrugated Metal Catches On

Lightweight, ribbed metal cladding is gaining popularity as a way to inexpensively texture and color buildings.

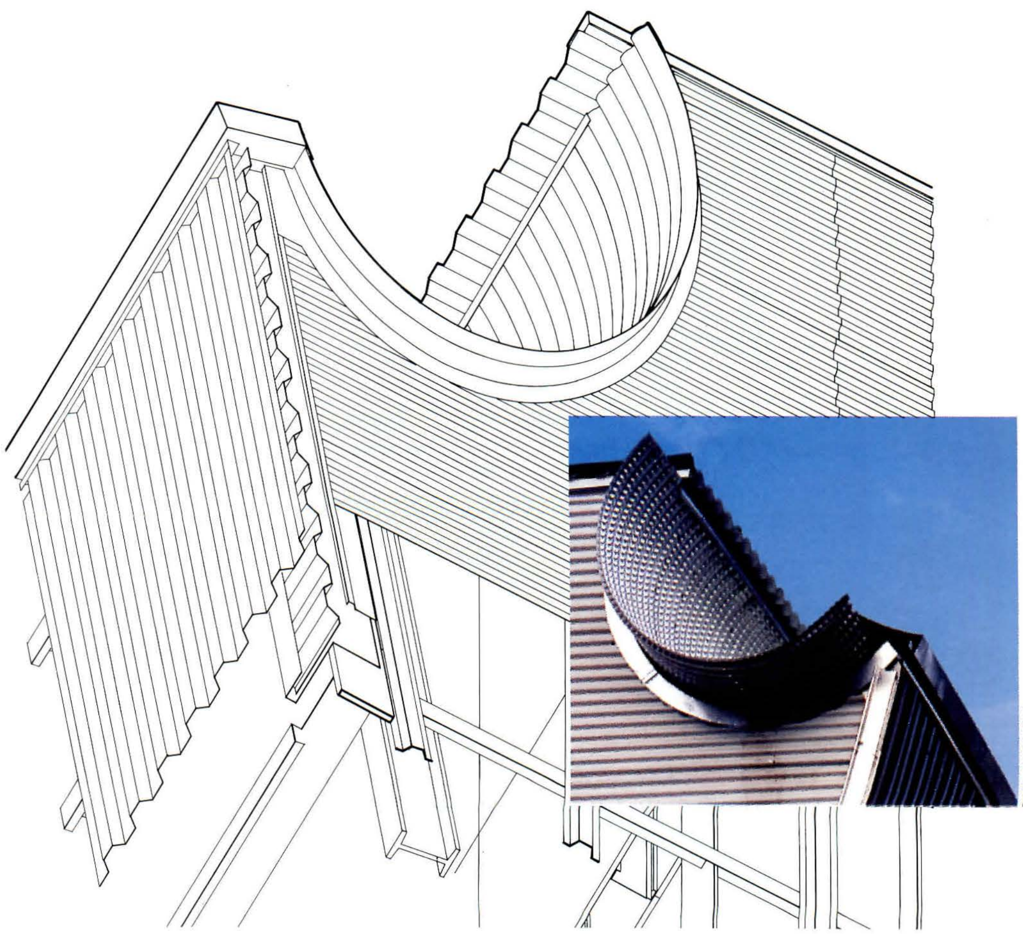
Corrugated metal siding used to be a low-end, rough-and-tumble material found on frontier-town storefronts, barns, and grain silos. Architects only started paying serious attention to the material when Frank Gehry deconstructed his Santa Monica bungalow and clad it in corrugated, galvanized steel panels. Now, even mainstream firms are choosing metal cladding as an easy, inexpensive way to animate building facades with texture and color.

A big part of what attracts architects to metal is its extremely low cost. According to Seattle practitioner Donald Carlson, principal of Donald Carlson and Associates, corrugated cladding is as inexpensive as a stucco finish, yet allows a greater variety of visual and textural expression; panels can be oriented in different directions, and corrugations of varying depth specified. The material also lowers energy costs by reducing solar heat absorption through its reflectivity.

Corrugated cladding is manufactured by rolling continuous flat sheets of lightweight steel or aluminum into ribbed profiles that have structural strength in only one direction, parallel to the ribs. Details can be modified to improve the weathertightness of the metal skin by adding gaskets and sealants. To ensure corrugated cladding's durability, architects should supply contractors with complete construction documents for the cladding and work closely with the technical departments of preengineered metal building manufacturers.

The design possibilities of corrugated metal continue to expand through improved paints and finishes. New patinas also promise to improve the weathering of metal panels, making this lightweight, rugged material even more durable.—*Raul A. Barreneche*

BELOW RIGHT: For a movie theater in suburban Atlanta, architect Richard Rauh designed an oversized gutter from a sheet of corrugated steel.



PETER MAUSS / ESTO

O'Neil Cinemas
Duluth, Georgia
Richard Rauh & Associates Architects

Atlanta architect Richard Rauh likes the inherent directionality, lightweight qualities, and scale variations of corrugated steel. For a 12-theater movie house in an Atlanta suburb, Rauh clad the building in three different patterns of corrugated galvanized steel; the depth of the corrugated ribs ranges from $^{3}/_{8}$ inch to $3^{1}/_{2}$ inches. By specifying standard finishes and tailoring manufacturers' details, Rauh kept costs down to under $50 per square foot.

The 33,000-square-foot building is framed in preengineered structural steel, with light-gauge steel studs supporting both interior and exterior wall panels. On the east and west elevations, Rauh specified 24-foot-long by 38-inch-wide steel panels with shallow, $^{3}/_{8}$-inch-deep corrugations. The panels' ribs run horizontally across the facade, so to stiffen them, the architect spaced vertical steel studs 16 inches on-center. The studs are bolted to the concrete slab and reinforced by horizontal steel plates and plywood blocking. To close up the spaces between the ribs at the building's corners, Rauh installed standard plastic-and-rubber foam strips.

On the tilted south wall, the architect specified larger, $3^{1}/_{2}$-inch-deep corrugated steel panels. Structural steel members supporting this wall are canted at a 14 degree angle and attached to columns with steel clip angles. Because the ribs of the corrugated panels are oriented vertically, Rauh installed 8-inch, Z-shaped steel girts, spaced 3 feet on-center, to support the cladding.

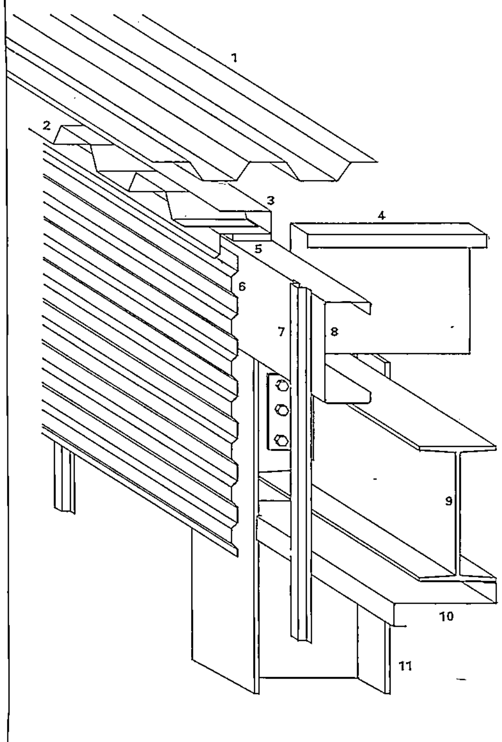
At the ends of the south wall, the edges of the corrugated cladding extend beyond the corners to reveal the thinness of the material. To stiffen these corners, Rauh inserted strips of the same $1^{1}/_{2}$-inch corrugated steel—with the ribs placed perpendicular to those of the cladding—beneath the skin. The strips are fastened to supporting steel channels and slipped into sleeves of 16-gauge metal flashing to conceal their edges.

At the top of the south facade, Rauh extended a 60-inch-diameter gutter along its nearly 200-foot length. The gutter, however, doesn't actually drain water; instead, rain passes through small holes drilled into the bottom of the galvanized steel scoop and is drained through a metal channel below.

Rauh insulated the corrugated building with R-19 fiberglass insulation placed within exterior wall cavities, between studs. To further improve weather resistance, he applied sealant tape to joints.

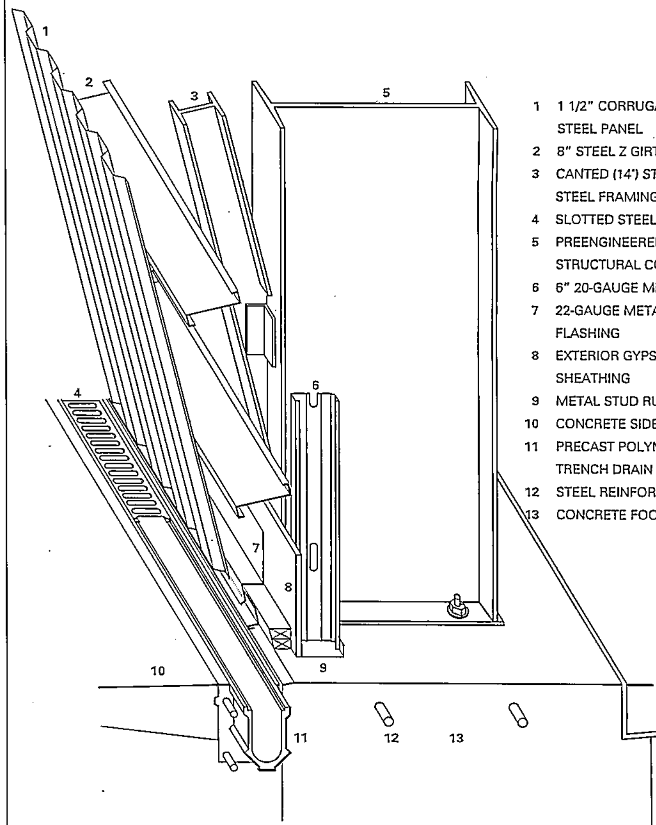
BELOW LEFT: Entrance to theaters is marked by $^{3}/_{8}$-inch corrugated vault. **BELOW AND BOTTOM RIGHT**: Fiberglass-paneled bridge animates west exit. **BOTTOM LEFT**: Tilted wall with oversized gutter forms south facade.

PETER MAUSS / ESTO PHOTOS



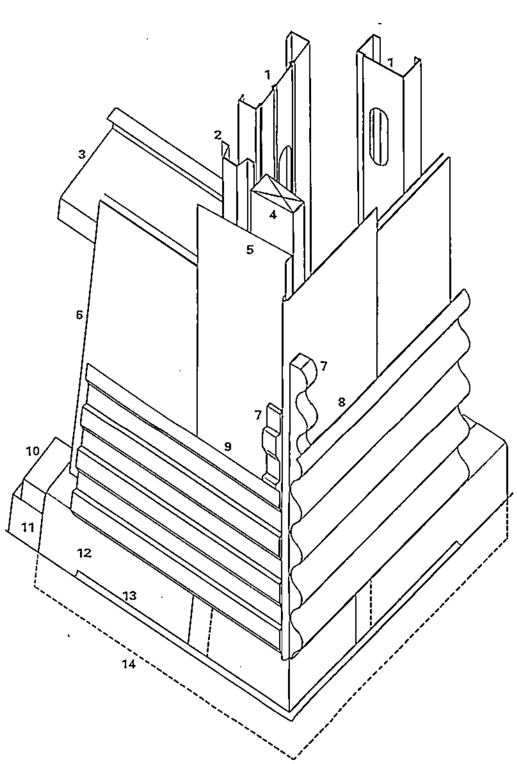
1. 1 1/2" DEEP RIB FACTORY PREFINISHED STEEL PANEL
2. 1 1/2" ROOF MATERIAL TURNED 90° TO ACT AS STIFFENER FOR OVERHANG
3. CONTINUOUS 16-GAUGE SHEET METAL FLASHING
4. 10" ROOF PURLIN
5. PRESSURE-TREATED WOOD BLOCKING
6. 3/8" CORRUGATED STEEL PANEL W/ RIBS PARALLEL TO ROOF SLOPE
7. VERTICAL HAT CHANNEL FRAMING
8. LIGHT-GAUGE STEEL STRUCTURAL FRAMING
9. PREENGINEERED STEEL STRUCTURAL BEAM
10. 8" STEEL Z GIRT
11. PREENGINEERED STEEL STRUCTURAL COLUMN

ROOF EAVE DETAIL AT END WALLS



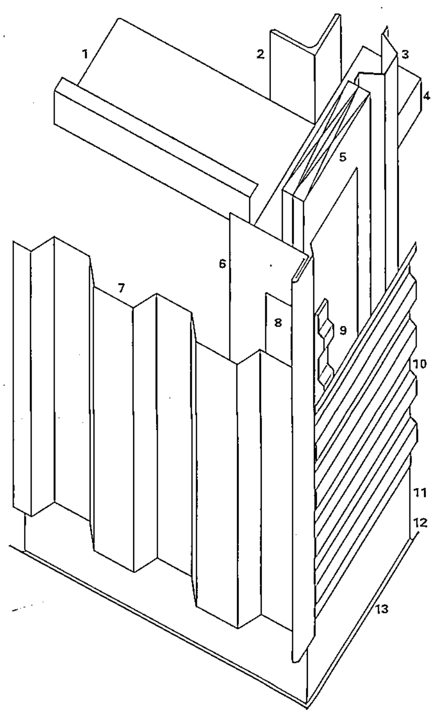
1. 1 1/2" CORRUGATED STEEL PANEL
2. 8" STEEL Z GIRT
3. CANTED (14') STRUCTURAL STEEL FRAMING
4. SLOTTED STEEL GRATE
5. PREENGINEERED STEEL STRUCTURAL COLUMN
6. 6" 20-GAUGE METAL STUD
7. 22-GAUGE METAL FLASHING
8. EXTERIOR GYPSUM SHEATHING
9. METAL STUD RUNNER
10. CONCRETE SIDEWALK
11. PRECAST POLYMER TRENCH DRAIN
12. STEEL REINFORCING BAR
13. CONCRETE FOOTING

DETAIL AT BASE OF CANTED WALL



1. STEEL STUD
2. VERTICAL STEEL HAT CHANNEL
3. 8" STEEL Z GIRT
4. PRESSURE-TREATED WOOD BLOCKING
5. 22-GAUGE METAL CORNER FLASHING
6. EXTERIOR GYPSUM BOARD SHEATHING
7. STANDARD FOAM CLOSURE STRIP
8. 7/8" CORRUGATED GALVANIZED STEEL
9. FACTORY-FINISHED 3/8" CORRUGATED STEEL PANEL
10. WOOD BLOCKING
11. CONCRETE CURB
12. 22-GAUGE SHEET METAL FLASHING
13. SEALANT JOINT
14. SHEET METAL EXTENDED INTO REVEAL

OUTSIDE CORNER AT RAKED WALL



1. 8" STEEL Z GIRT
2. STEEL ANGLE CORNER STIFFNER
3. VERTICAL HAT CHANNEL
4. STEEL BENT PLATE
5. PLYWOOD BLOCKING
6. TWO-PIECE 22-GAUGE CORNER FLASHING
7. VERTICAL 1 1/2" STEEL PANEL
8. CONTINUOUS SEALANT
9. STANDARD FOAM (PLASTIC/RUBBER) CLOSURE STRIP
10. 3/8" STEEL PANEL
11. 22-GAUGE BASE FLASHING
12. REVEAL AT SIDEWALK
13. SEALANT JOINT

OUTSIDE CORNER WHERE VERTICAL RIB MEETS HORIZONTAL RIB

Burlington Northern Railroad Network Operations Center
Ft. Worth, Texas
Lake/Flato Architects with KVG Gideon and Toal

San Antonio-based Lake/Flato Architects looked to the barns and silos of the Texas prairie in designing an operations center for a large freight railroad company. The firm finished the high-tech facility in a palette of low-tech materials: precast concrete panels, brick infill, and galvanized steel cladding with two different sizes of corrugation.

With executive architect KVG Gideon and Toal, Lake/Flato paid particular attention to the Texas climate in constructing the 140,000-square-foot facility with 12-inch-thick, tilt-up concrete walls. "Since the building is located in 'Tornado Alley,' we needed to create a hardened shell structure that could withstand a tornado," explains project architect Greg Papay.

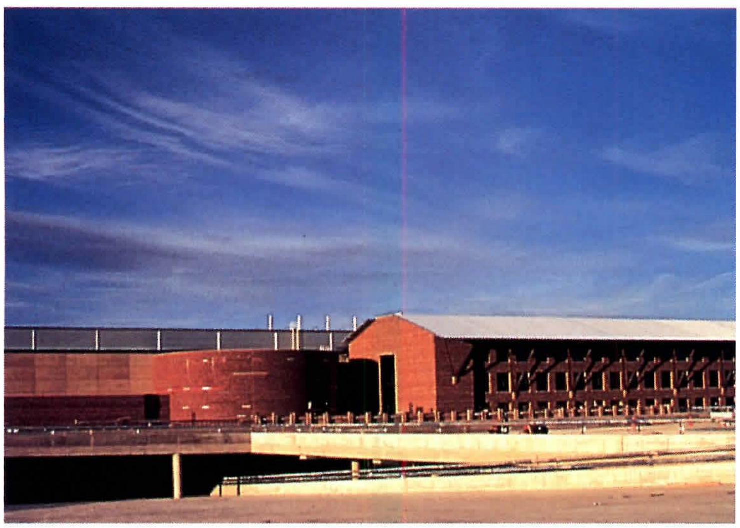
Corrugated, galvanized steel is concentrated along the top of the 300-foot-long operations building in a 10-foot-wide cornice. Off-the-shelf panels are screwed into Z-shaped steel girts bolted directly to the tilt-up concrete substructure and spaced roughly 5 feet on-center. Custom-fabricated, heavy-gauge steel battens—which recall those used to stiffen the sides of old railroad boxcars—break down the scale of the corrugated steel ribbon.

For both the cornice panels and battens, Lake/Flato specified galvanized steel that is treated with a zinc-and-aluminum coating. "This process improves the metal's weather resistance," explains Papay, who notes that corrugated steel can last over 100 years, even in Texas's harsh climate of sun and wind.

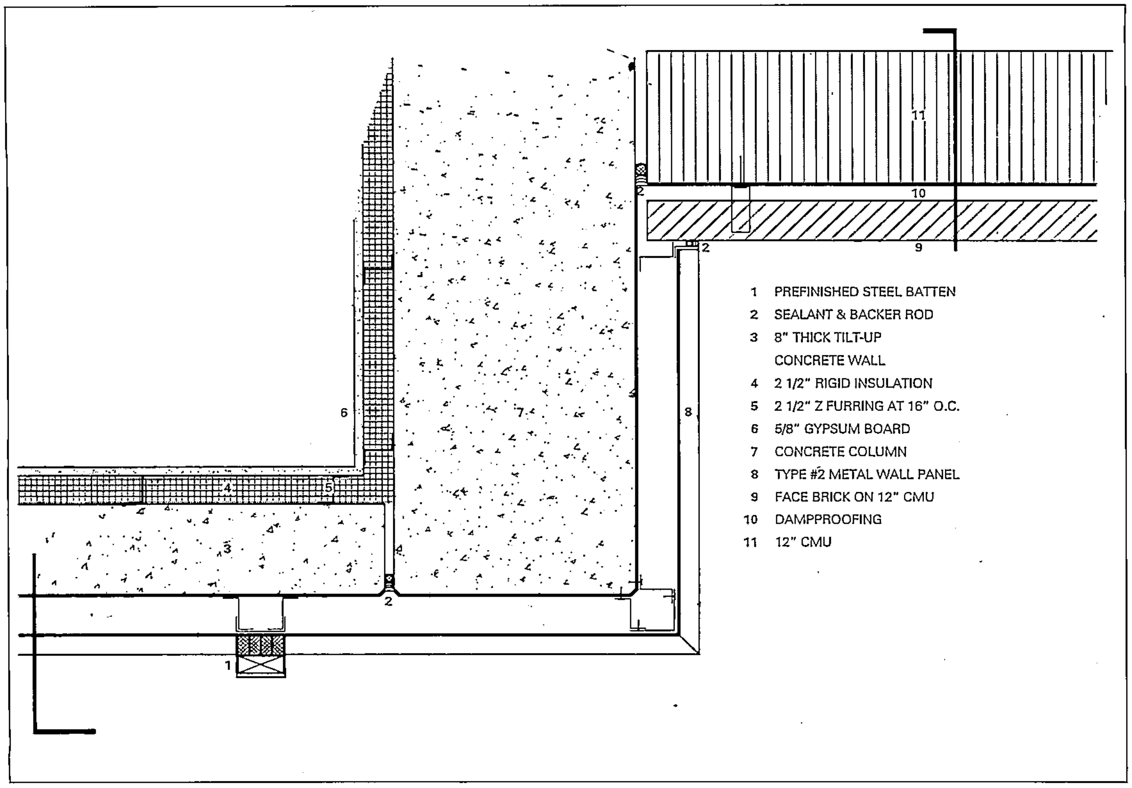
Corrugated steel is also applied to the tower at the northwest corner, which houses extensive mechanical equipment. Standard, 16-gauge panels with 4-inch-deep corrugations, finished in aluminum and zinc, are fastened to the concrete structure with hat-shaped steel channels spaced at 5-foot intervals.

Instead of joining two perpendicular panels at the corner of the mechanical tower with a standard trim strip, Papay developed a custom-mitered detail: The edges of the adjoining sheets are welded together to make the profiles of the ribs continuous, appearing as if a single sheet were wrapped around the corner of the building. He maintains that the strong Texas vernacular of corrugated metal buildings produces talented metalworkers capable of executing such specialized details; such craftspeople may be difficult to find in other regions.

Within the tower, 3-foot-deep metal louvers conceal the air intake panels of the mechanical system. "We brought in railroad imagery," notes Papay, "with big plate louvers that recall those found on old locomotives." The louver blades are mounted to a frame that is bolted to a small steel column attached to the tilt-up concrete walls.

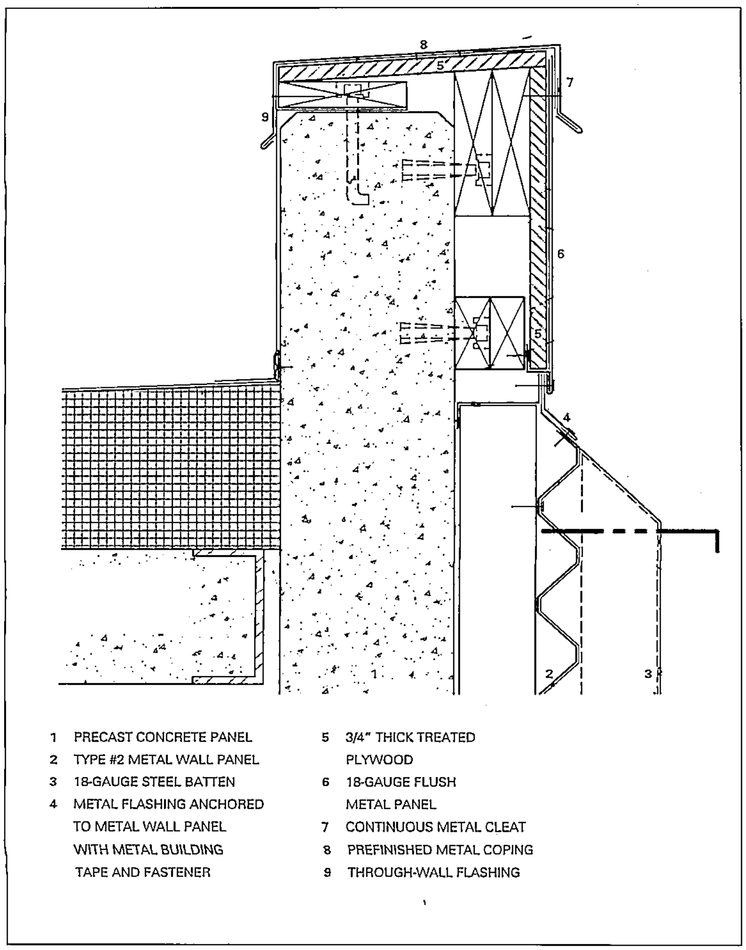


FACING PAGE, TOP LEFT: Corrugated steel cornice crowns concrete walls of Burlington Railroad Operations Center. FACING PAGE, BOTTOM LEFT: Cornice features custom steel battens that recall railroad boxcar details. FACING PAGE, RIGHT: Mechanical tower is clad in 4-inch corrugated steel. Large steel louvers enclose air intake vents. DETAIL, LEFT: Ten-foot-wide cornice is fastened to tilt-up concrete backup wall with Z-shaped steel girts. DETAIL, BELOW LEFT: Galvanized metal coping clads parapet of tilt-up concrete wall of mechanical tower. DETAIL, BELOW: Mechanical tower louvers are reinforced by steel brackets.



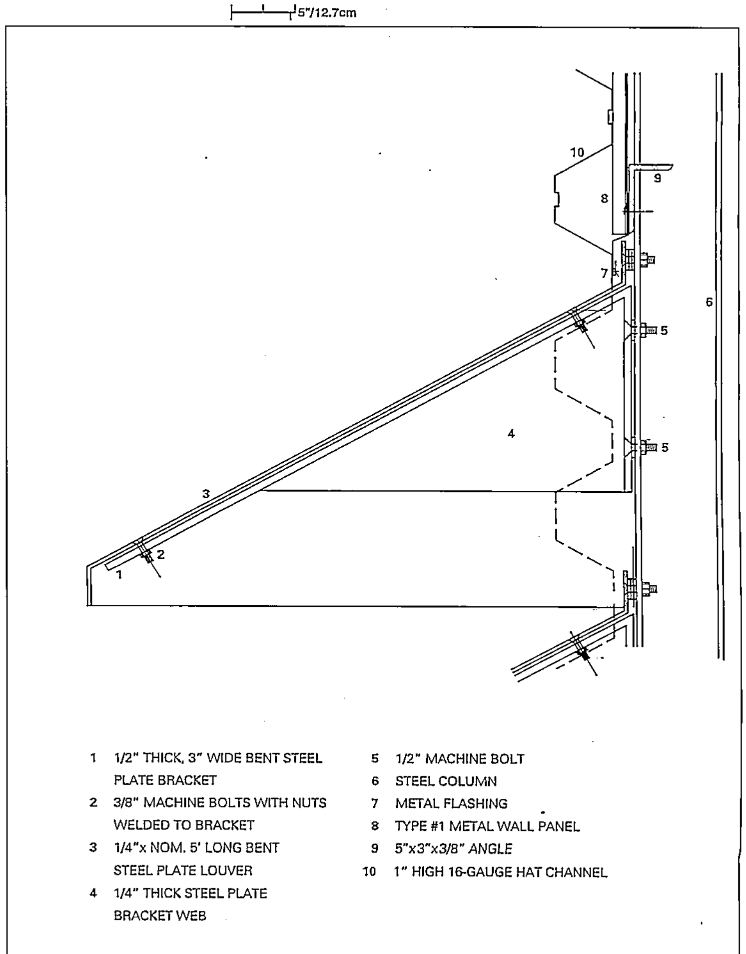
WALL DETAIL

5"/12.7cm



PARAPET COPING DETAIL

3"/7.62cm



LOUVER DETAIL

3"/7.62cm

Seattle Supersonics Practice Facility
Seattle, Washington
Donald Carlson and Associates Architects

Sited along an interstate north of downtown Seattle, the new practice facility for the Supersonics recalls nearby aviation and industrial buildings in its application of corrugated metal cladding. Architect Donald Carlson combined galvanized, corrugated steel panels with a preengineered structure to maximize flexibility and keep costs down for the 30,000-square-foot building, which houses basketball courts, administrative offices, and physical therapy and training facilities. "The client really just wanted a big metal box," explains project architect Tom Morrison. "We always look at innovative ways of using cheap materials; we get a lot out of corrugated metal at a low cost."

For the practice facility, Morrison was able to infuse a sense of scale into the building's windowless, 35-foot-high facades by varying the sizes, colors, and patterns of the corrugated metal cladding.

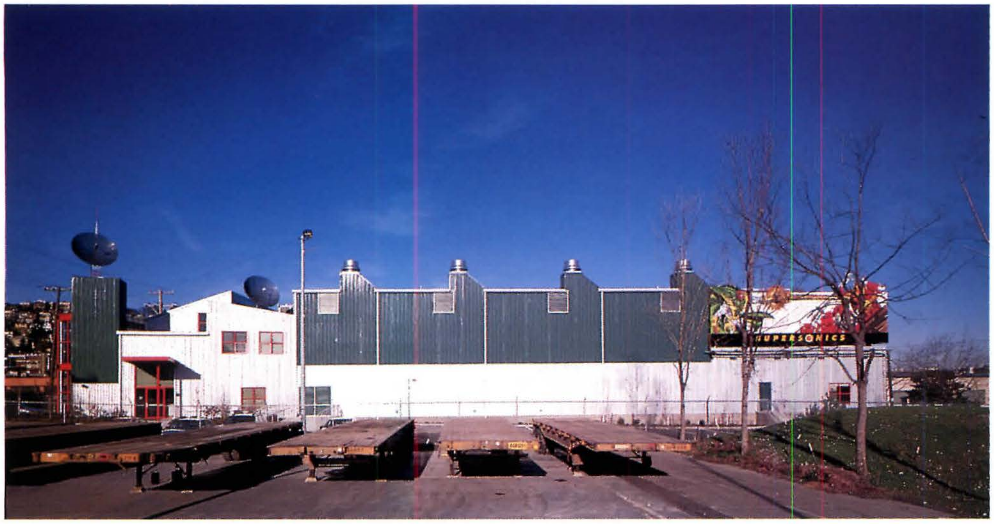
He selected the building's structural elements from a catalog of preengineered components, modifying portions of the framing system to accommodate clerestory windows. Over this preengineered frame, the architect applied corrugated steel cladding, treated with a combination of zinc and aluminum to boost its durability. The cladding assembly is straightforward: Horizontal Z-shaped steel girts, fastened to structural columns at 4-foot intervals, support the corrugated panels.

To break down the scale of the practice courts and create a wainscot, Carlson installed panels with 7-inch-wide ribs on the bottom 14 feet and panels with 12-inch-wide corrugations on the rest of the height of the courts. On the office block elevations, he specified only the narrower 7-inch ribbed cladding.

Carlson initially specified a clear galvanized finish to give the building a uniform silver color. But after the building was completed, the owner decided to paint the walls of the practice court dark green, one of the Sonics' team colors. Since the paint was not factory-applied, which is typically baked on and therefore lasts longer, Morrison expects the building will have to be painted regularly, every few years.

The architect reports that he encountered serious problems with contractors installing the corrugated panels on site. "The galvanized finish we used absorbs oil from your hands when you handle it," explains Morrison, "so we had serious problems with workers' fingerprints staining the panels."

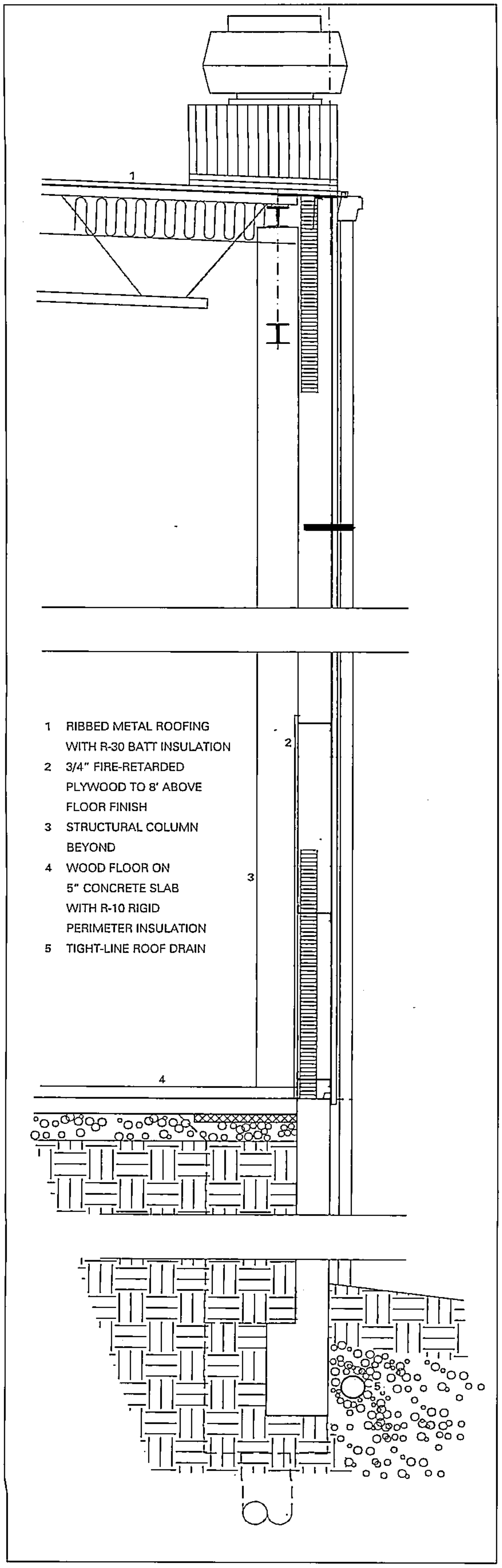
As corrugated metal is taken from the realm of industrial structures and becomes a more mainstream building material, Morrison expects prices will continue to increase, but with its increased popularity, contractors will learn to install the metal cladding more carefully.



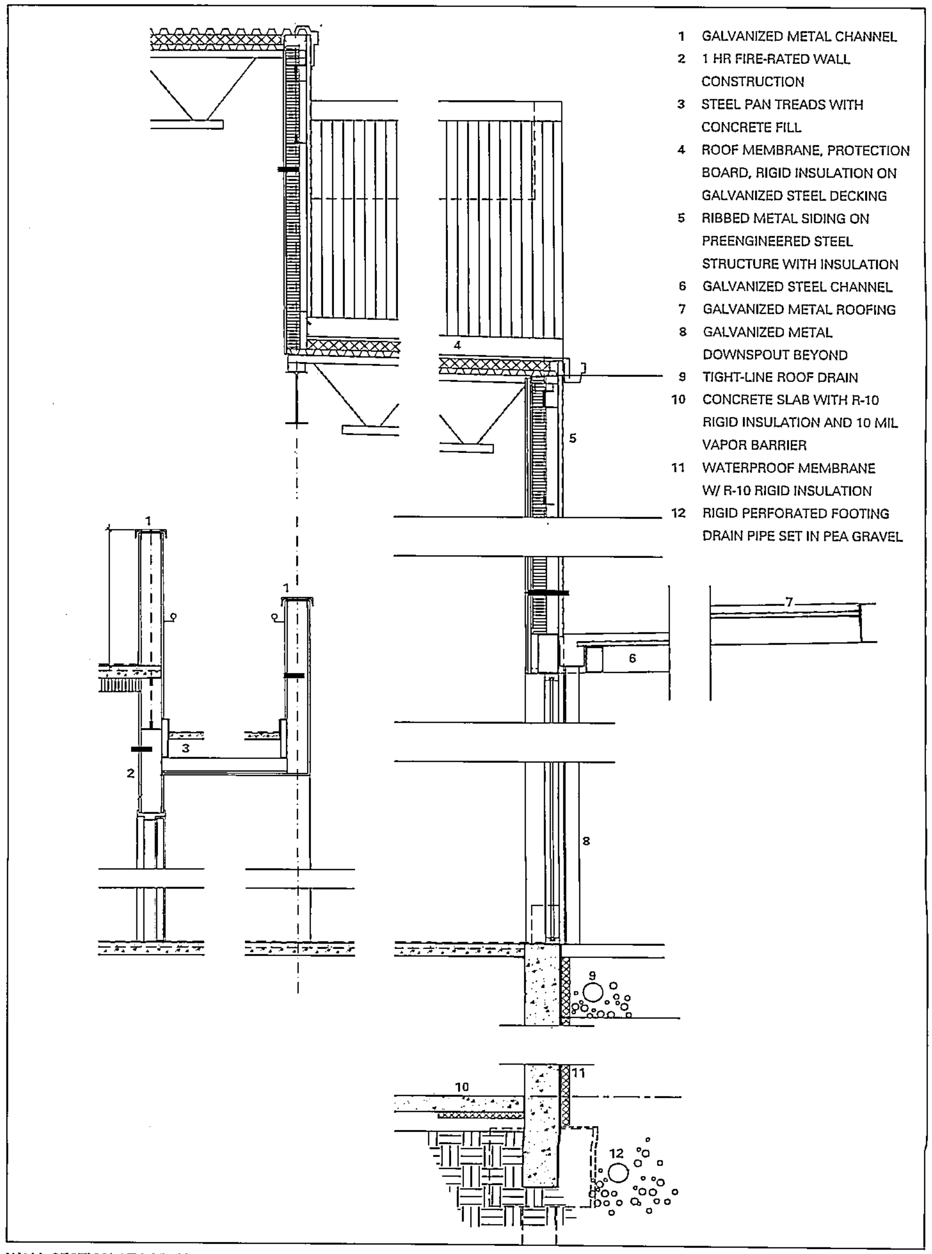
JAMES F. HOUSEL PHOTOS

FACING PAGE, TOP LEFT: Galvanized, corrugated cladding of block containing basketball courts was originally left unfinished. Parts of the facades were later painted on site.
FACING PAGE, TOP RIGHT: Elevator tower adjoining practice facility's glass-enclosed lobby is faced in painted and naturally finished corrugated panels.
FACING PAGE, BOTTOM LEFT: Billboard is mounted to west elevation of practice courts, facing freeway traffic. Lower, boxlike volumes house offices, therapy rooms, and training facilities.
FACING PAGE, BOTTOM RIGHT: Exposed trusses above offices support corrugated metal roof panels.

DETAIL, LEFT: Plywood panels mounted on inside walls of basketball courts prevent players from puncturing thin metal outer wall. Exhaust fans mounted atop corrugated metal roof ventilate courts.
DETAIL, BELOW: Corrugated cladding of office block is supported by Z-shaped steel girts spaced at 4-foot intervals. R-19 batt insulation is inserted into interior of wall cavity.



WALL SECTION AT COURTS



WALL SECTION AT LOBBY

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Circle 89 on information card

Managing Risk

Analyzing project pitfalls and developing equitable contracts helps architects limit liability.

Seven years ago, architect Ronald Smith, president of Oklahoma City-based Glover-Smith-Bode, walked away from an opportunity to design a multi-million-dollar hotel for a developer in the Northeast. Looking back, he has no regrets. Smith made the decision after questions arose concerning the developer's financial standing and reputation. "You have a tempting fee, and it's hard to use your better judgment. We decided it was just too much risk," explains Smith. The project was never built, and the developer later went out of business.

Architecture is risky business. Clients go bankrupt and fail to pay for services. Subcontractors make mistakes and attempt to shift the blame. Architects themselves sometimes overlook problems, or take on more than they can handle. Avoiding pitfalls and coming out ahead requires a clear understanding of the risk involved in a particular project. Developing and following a sound risk-management plan can mean the difference between success and failure.

As evidenced by Glover-Smith-Bode's experience, careful client selection is the first component of any effective risk-management strategy. Indeed, last year, 55 percent of claims against architects were filed by building owners, according to Christopher Clark, director of AIA's Practice Management Programs. Architects must also conscientiously consider their firm's own capabilities and experience, the project's scope and schedule, the adequacy of the proposed budget, and the quality and availability of necessary consultants.

Many architects conduct this risk analysis intuitively: They simply don't pursue jobs outside their areas of professional expertise, and they don't approach clients who appear unreasonable or insolvent. "Our first line of defense is working with people we like. Friends don't sue friends," explains C. Richard Meyer, principal of Seattle-based Callison Architects and current chairman of the AIA's Risk-Management Committee.

Some firms, like DMJM Architects & Engineers, have formalized the risk management process. At the onset of major projects, DMJM completes an in-house risk analysis questionnaire that forces the architect proposing the project to consider inherent risks and address them in advance, explains Debra Tilson Lambeck, DMJM vice president and general counsel. A similar risk analysis questionnaire is contained in the AIA's most recent edition of *The Architect's Handbook of Professional Practice.*

Some types of projects are riskier than others, although risk depends on individual circumstances. Condominium and homeowner association projects and high-rise office buildings generate a disproportionately high number of claims, while feasibility studies and interior design projects are less likely to generate claims, according to DPIC Companies, a major design insurer. In terms of risk, roofs are the most problematic building element—9.9 percent of claims against architects from 1991 through 1993 involved roofs. Problems with walls accounted for the highest portion of money paid to settle claims: 13.2 percent in the same three-year period, says DPIC.

Once risk has been analyzed and understood, the architect must decide how best to cope with it. Risk can be managed in five basic ways: retained, abated, allocated, transferred, or avoided, according to Ava Abramowitz, vice president of program services at Victor O. Schinnerer & Company. The strategy depends on the specifics of project and client.

The architect's risk quotient is a function of the comfort level with a project. By asking questions related to the client, contract, fee, and consultants, the architect can avoid, abate, allocate, or transfer risks.

The Firm

What is your firm's experience with this type of project?

Do you have enough staff and resources to run the project?

Do you like the delivery method?

Is it better to joint-venture?

Does your firm really want this type of work?

The Client

Has the client built anything before?

Is the client solvent?

What is the client's reputation?

To whom do you report?

Are the client's decisions binding?

What is most important: scope, quality, schedule, or budget?

Is the budget big enough?

Is the schedule realistic?

Do you have good chemistry with the client?

The Contract

Do you gain authority as well as responsibility?

Exactly what services will you provide?

Is your scope of services adequate to do the job?

Must your firm perform uninsurable services?

Are you asked for warranties or guarantees?

Are you responsible for the work of others?

Can you select and supervise them?

Does the client agree on your services and risk?

How will disputes be resolved?

The Fee

What will the required services cost?

Are sufficient contingencies set aside?

Will the firm profit?

Can it absorb a loss?

Will payment provisions support cash flow?

The Consultants

Are they qualified and capable?

Will they be ready?

What is their claims history?

Are they insured?

Do they share your values about design quality?

Source: *The Architect's Handbook of Professional Practice*, AIA Press

FACING PAGE: To clearly understand potential project pitfalls, architects should answer risk-related questions. This information becomes a platform upon which an effective risk management strategy can be developed.

Retaining risk—accepting responsibility for the project's potential liabilities and benefits—is appropriate once pitfalls are understood and planned for, explains Connie McFarland, principal of Tulsa, Oklahoma-based, McFarland Architects. "We don't avoid risk; we use our heads," asserts McFarland, whose firm specializes in designing healthcare facilities. While consultants sometimes complain that McFarland is more careful than necessary, she follows risk-management tenets explicitly, ensuring she has a signed contract with the client before beginning work, and consistently signing contracts with her consultants. McFarland also maintains close communication with her clients to insure they are aware of problems as they arise. The architect also tries to make sure she is compensated appropriately for shouldering risk, asking for a higher fee if a client appears to be uncertain.

When a project poses risk because it demands skills or experience the firm does not possess, the architect can abate the risk by obtaining additional training in the problem area. John Kelso of Kelso & Easter, a 12-person firm with offices in Alexandria and Richmond, Virginia, recognized the adoption of the Americans With Disabilities Act (ADA) as a potential risk factor in future commissions, since architects could be sued if they failed to meet new, stricter standards. To mitigate the risk, Kelso educated himself on ADA-related issues at AIA-sponsored seminars. Not only did this training give the architect confidence to manage ADA-related aspects of the firm's general work, but it became a marketing tool: Kelso & Easter has since renovated 80 post offices in northern Virginia, bringing them into ADA compliance.

Distribute risk

Allocating or spreading risk among members of the design and construction team is the standard approach to risk management. This allocation occurs automatically as each party signs a contract. Frequently, this division of responsibility is straightforward and equitable, especially when standard AIA contract forms are employed. Sometimes, however, the client expects the architect to assume responsibility for aspects of a project that are beyond the architect's control. For example, a client may ask the architect to accept responsibility for damages resulting from "errors, omissions, or negligent acts," instead of "negligent errors and omissions." An owner who insists on a contract containing the first language expects too much, holding the architect liable for almost anything that goes wrong on the project rather than, more appropriately, problems that arise as a result of the architect's negligence.

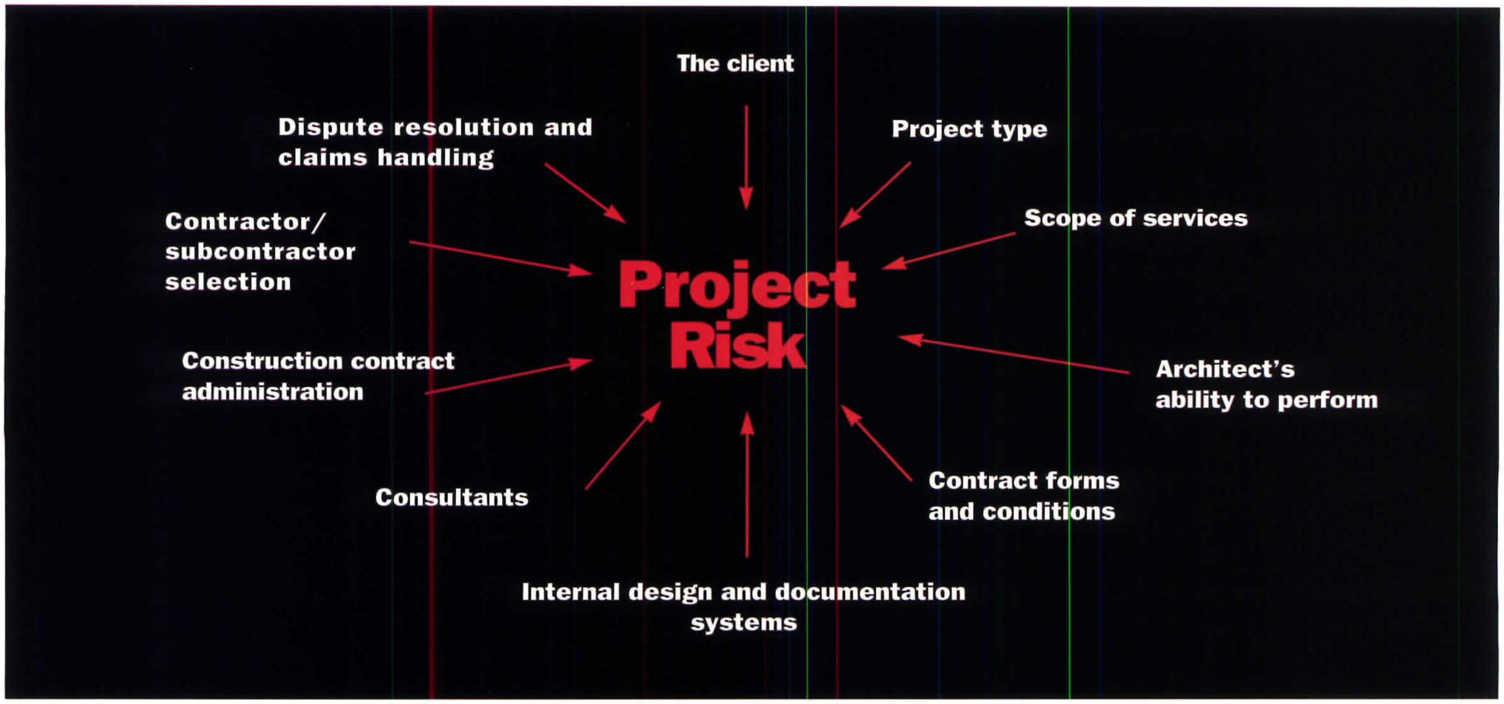
When disagreements over risk distribution and contract language arise, equitable risk allocation must be resolved before the contract is signed. Contracts that demand guarantees or overreaching indemnifications of the architect are usually not covered by the architect's professional liability insurance policy.

Negotiate equitable contracts

Skidmore, Owings & Merrill's (SOM's) San Francisco office recently negotiated successfully with a California municipal authority over the allocation of risk on the design of a multi-million-dollar transportation facility. The contract initially presented by the authority contained several provisions that were unacceptable to SOM.

The authority had created one contract form it intended to use with different members of the building team, including the architect, contractor, and other design consultants, reports Gene Schnair, SOM managing partner. That early contract required SOM to guarantee the project's construction, a task clearly not within the architect's power and more appropriately within the purview of the contractor. The early agreement also held SOM to an impossibly high performance standard. "The authority's expectation was that there weren't going to be any design problems, and if there were, we would be

The building type is only one factor in a project's risk profile, yet some project types are riskier than others. By analyzing claims paid relative to fees generated, risk patterns become clear.



Low-risk projects

Feasibility studies

Commercial buildings

Light industrial buildings

Warehouses

Interiors

Urban design and planning

Neutral-risk projects

Healthcare facilities

Shopping malls

Schools

Hotels

High-risk projects

Condominiums

Commissions from homeowner associations

High rises

Parking garages

Arenas and other public assembly spaces

Correctional facilities

Source: DPIC Companies

FACING PAGE, TOP: Factors that affect a project must be examined together before an appropriate risk management plan can be implemented.
FACING PAGE, BOTTOM: Some project types, including condominiums and high-rise office buildings, generate a disproportionately high number of claims against architects.

held responsible," recalls Schnair. However, by working with its insurance company, CNA/Victor O. Schinnerer, SOM and the authority were able to resolve their differences before the contract was signed.

The revised contract redistributes responsibility for various aspects of the project to the members of the building team who have the power and authority to best handle them. In addition, the contract more clearly details the authority's expectations of SOM. Although a higher level of performance than standard care is expected—SOM is required to perform at a level consistent with the technically sophisticated project—the architect's standard of performance is better defined. The revised contract describes the services to be performed in each contract phase and establishes interim deadlines, defining the architect's standard of performance in terms of its delivery of specific design documents.

Transfer risk

Another way to manage risk is to allocate it to another party, usually an insurance company. Professional liability insurance helps architects protect themselves if problems arise. According to an AIA firm survey, 96 percent of firms of 20 or more architects carried professional liability insurance in 1994. Though only 24 percent of sole practitioners were insured last year, both major design insurers—CNA/Schinnerer and DPIC Companies—introduced new, less expensive policies last year specifically aimed at small firms. These policies, which require a shorter application form, are expected to increase small firms' participation in insurance programs, according to the AIA's Clark. The two major insurers recently introduced modified policies that include liability coverage for a broader range of project delivery types, including design/build and joint-venture arrangements.

Insurers are strong advocates of risk management by architects because it reduces claims, explains Roger Brady, DPIC's manager of loss-prevention education. DPIC offers a 10 percent premium discount for firms that attend loss-prevention workshops and create and follow risk management plans. Both insurers review contracts for architects free of charge and strongly advocate early resolution of problems and disputes.

Avoid risky projects

The final strategy for managing risk is perhaps the toughest for many architects to adopt: Avoid the risk by avoiding the project. Although in most cases the architect can lower a project's risk level to within a comfortable range through analysis, communication, and appropriate contract language, sometimes it is simplest and wisest to look for work elsewhere.

John Laping, principal of West Amherst, New York-based Kideney Architects, recalls turning down a medical office project after the client pressed him for solutions to hypothetical problems. When it occurred to Laping that the client might sue him if such problems were not resolved, the architect knew that the job was not worth the risk. Adds Ronald Smith of Glover-Smith-Bode: "It's hard to turn down work. But every architect has a story about a project that shouldn't have been taken."

For more information about risk management, contact Christopher Clark, AIA Director of Practice Management Programs, at (202) 626-7537. The AIA's Risk Management Kit, containing three papers on professional liability insurance, can be ordered by calling (800) 365-2724. Risk management information is also contained in *The Architect's Handbook of Professional Practice*, published by AIA Press.

Risk management seminars are regularly conducted throughout the country by the two major insurers. Contact CNA Insurance Companies/Victor O. Schinnerer & Company in Chevy Chase, Maryland, at (301) 961-9878. DPIC Companies is located in Monterey, California and can be reached by calling (800) 227-4284.—*Virginia Kent Dorris*

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Circle 97 on information card

Computers

Choosing a Scanner

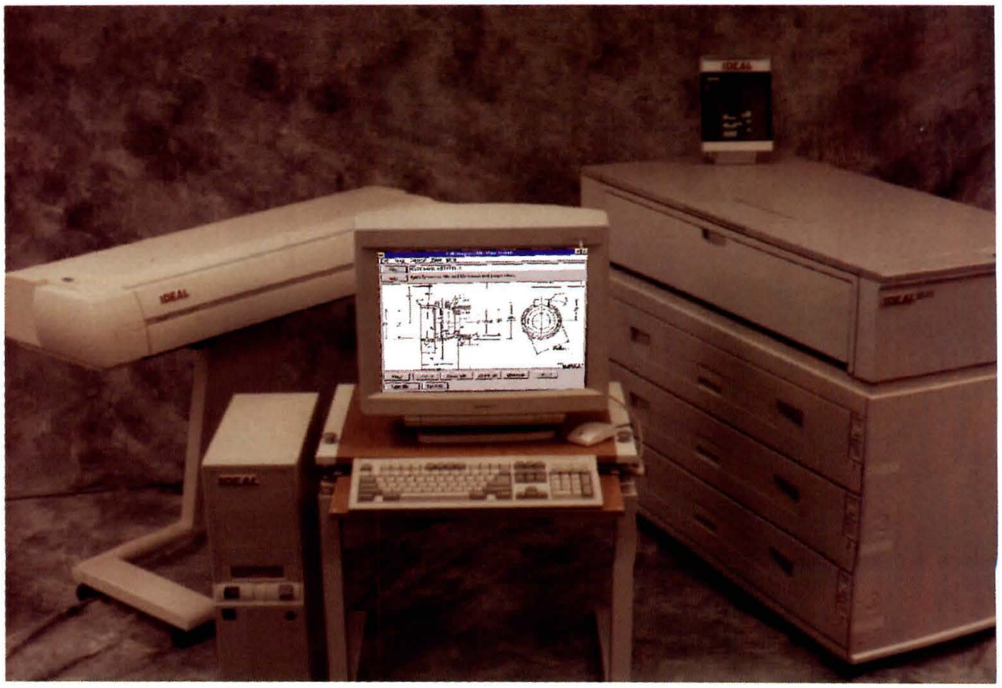
Recording drawings on the computer is easy with new reproduction technologies.

How do you combine the legacy of conventional drawings with the new design techniques of CAD? The answer is document scanning, a technology by which an existing paper drawing is captured as electronic data. Once converted, this "virtual" drawing is available for use in any number of CAD applications or for efficient transmittal and reprint. Document scanners range from desktop A-sized units to large scanners capable of reproducing full E-sized and larger drawings. They can record a range of images from simple lines to full continuous color tones and can even clean up badly damaged documents, making subsequent prints better than the original.

Distilled to its basic operation, the scanning process is nothing more than taking a snapshot of a drawing with a digital camera. This photographic process is accomplished with one or more cameras that record a narrow portion of a drawing as it is moved on rollers past the camera. The digital data captured in this manner is in turn passed to a computer, which further processes the information. In some instances, further processing occurs within the scanner itself.

The lenses and cameras found inside the scanner unit are similar in operation to a handheld camcorder. However, a scanner's resolution—the finest amount of detail that its camera can record—is significantly higher than its consumer cousin (4,096 pixel elements versus 400 for the average camcorder). When scanning large drawings, the shortest dimension dictates how many cameras are needed to maintain detail in the electronic copy. If the scanner handles drawings up to 36 inches in the narrow dimension, an E-sized drawing, and you want to maintain at least 300 dot-per-inch (dpi) resolution (typical for today's laser printers), this size translates into three cameras (36 inches multiplied by 300 dots per inch divided by 4,000 dots per camera equals 2.7 cameras).

One of the primary functions the drawing scanner has brought to architect Peter Zieja, facilities manager for Mount Holyoke College in Hadley, Massachusetts, is expanded information distribution. Once a drawing is scanned and



RIGHT: ScanCentral from Ideal Graphics includes FSS 10200 DSP large-format scanner (left); Pentium-based server and workstation (center); and 8845 laser production plotter (right).

converted into an image file on the computer, it is made available to the college's design and administration departments.

Zieja uses an Ideal 8200 DSP scanner to help manage Holyoke's campus facilities. Drawings up to 100 years old are scanned in as the baseline or background for an AutoCAD drawing. A third-party raster utility merges the raster, or "dot," data of the scanned drawings together with the vector data of Zieja's AutoCAD system. This combination creates a hybrid drawing whose existing components are maintained in their original scanned format, while new design data are entered through AutoCAD. The relationship between the original scanned image and the AutoCAD data is managed by AutoCAD, release 13. This hybrid drawing is either maintained where the two types of information are always segregated, or the hybrid drawing is converted to a pure raster format for archival purposes.

Cost-saving recording

In terms of cost savings, a student dormitory project involving the installation of network and video services required drawings of 21 existing buildings on the Holyoke campus, resulting in approximately 105 drawing sheets to update or create. Using scanned drawings and CAD, Zieja estimates a savings of about $7,800 over updating the drawings by hand.

Taking the document distribution capacity further, Fluor Daniel, a large A/E/C firm with offices all over the country, utilizes scanners to distribute internally generated engineering drawings and vendor-supplied drawings to any Fluor Daniel site in the world. Rick Cashon, manager of the firm's computer integrated engineering services points out that once a drawing has been scanned in by the Vidar 800 large-format scanner or the 11-inch by 17-inch Ricoh scanner, it can be delivered anywhere there is a telephone. Within Fluor Daniel, it is common for a field office to be equipped with a Calcomp thermal printer to provide copies of any drawing from within the firm.

For legal reasons, Fluor Daniel still maintains hard copies of all its drawings. Because these drawings still require seals and signatures, all CAD drawings are plotted to paper. However, once signed and sealed, these drawings find their way back into the computer as scanned images. Fluor Daniel is moving toward total electronic document management, with scanning a major cornerstone of its implementation.

Scanners are particularly useful for historic preservation projects that require original documentation of old buildings. In restoring President Grant's residence in Saint Louis, Missouri, for example, the National Park Service consulted with Manzer, Sanchez and Associates, a service bureau that deals strictly with architects and their scanning needs. Working with archived drawings and field sketches of the existing terrain, Jorge Sanchez converted source documents into electronic data for use in the project.

Although the plans of the original 1818 building were unavailable, a number of renovation plans from the 1930s and earlier were found and scanned, along with vintage photos of the building. Sanchez used a combination of AutoCAD, Raster_x third-party raster software, and his firm's in-house software to enhance the resulting scans and produce a variety of final drawings.

Image resolution

How do you go about identifying which scanner is right for your practice? There are more than half a dozen major vendors of large-document scanners. As with any complex piece of machinery, large-format scanners carry literally hundreds of specifications. However, a few key considerations should help you narrow your decision.

A scanner's capability is rated through its image resolution. Scanners cover the gamut from 150 dots per inch up to 1,000 dots per inch. The higher the resolution, the finer the detail in the electronic data. This resolution is directly related to what you intend to do with the data. If the drawings are simple in design and relatively clean, then a lower resolution unit may be adequate. On the other hand, older drawings, which may be faded or damaged, or historic documents filled with detail are best scanned at a higher resolution. When postprocessing a particularly busy drawing, the more scan data you have to work with, the better your chances for a successful interpretation of original content.

A major influence on a scanner's resolution is the type of plotter or printer used to reproduce the finished drawing. For the best plotting results, the scanned image should always be created at an equal or higher resolution than the plot device. For example, the 600 dpi output of the Hewlett Packard DesignJet 650c plotter dictates the need for a scanner that at least meets this resolution. Accordingly, Zieja chose the 800 dpi scanner to match his HP DesignJet 650c.

Scanning continuous tones

Most scanners incorporate a feature called interpolation that electronically enhances the resolution of a data file. Using a mathematical formula, interpolation involves the analysis and replacement of adjacent scanned dots with smaller, more numerous dots. This interpolation routine can result in a finer grained image and means a scanner capable of 300 dots per inch of physical resolution may provide up to 500 dpi of interpolated data. There is a real debate over the usefulness of this feature. When working with continuous tone images, also known as grayscale, this interpolated resolution can result in cleaner looking drawings. With line drawings, however, interpolation cannot make up for lost or unscanned data.

The scanning of continuous tone drawings brings up another major scanner feature. Although there are large-document color scanners on the market, their high price and limited application mean that most affordable scanners produce black-and-white drawings. However, most large-document scanners are also capable of detecting and producing grayscale information even from color and black-and-white photographs. This feature is important, especially for older drawings containing a low linework to high background contrast. Processing software both in the scanner and the computer can take this grayscale information provided by the cameras of the scanner and identify what is linework and what was simply a bad setting on the blueprint machine.

On a related note, many vendors throw out the term "adaptive thresholding" as a feature of their scanners. This term refers to the continuous adjustment of a drawing's foreground (linework) to background contrast, based on the surrounding data. A blueprint that had its speed cranked up halfway through printing will result in a print that has a very variable background. Adaptive thresholding provides the scanner with some intelligence to identify this situation and adjust its sensitivity to differentiate between the linework and the print's background. Some vendors incorporate this adjustment into the scanner itself while others relegate it to the scanning software running on the computer to which the scanner is attached.

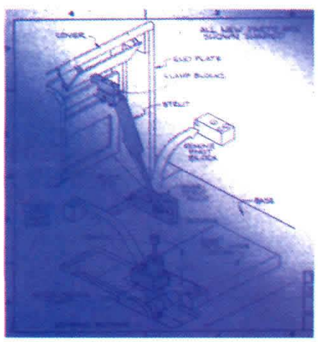
Scanning speed

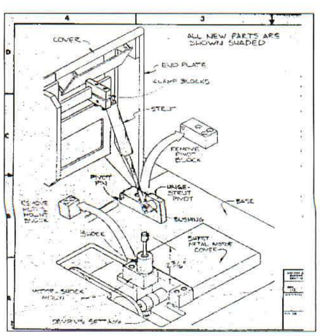
Along with resolution and physical drawing size capability, scanners are ranked by a maximum rate-of-scan speed. In operations where scanning can become a potential bottleneck, the rated scan speed, the number of inches per second a scanner can read and process a drawing, may become important. Keep in mind, however, that the rated speed will vary depending on the resolution of the scan.

With scanner prices ranging from $5,000 to $100,000, determining which one is right for your firm requires serious evaluation of both needs and available equipment. Most architects considering such an acquisition start by farming out the scanning process to a local service bureau. In this way, the scanning process can be evaluated without the capital investment. Once you are familiar with a scanner's capabilities, finding the right one is much easier.—*Frank Conforti*

Frank Conforti is a freelance writer and CAD consultant based in Delray Beach, Florida.

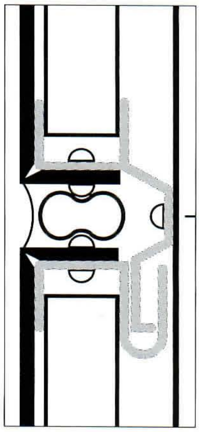
FACING PAGE, LEFT: ANAtech's Eagle 4080c is a high-end, full-color scanner capable of capturing 16.7 million colors up to an 800 dot-per-inch (dpi) resolution.
FACING PAGE, TOP RIGHT: Eagle SLI 3840 is ANAtech's latest monochromatic scanner. At $12,000, it represents a low-cost alternative to manual redrawing.
FACING PAGE, BOTTOM RIGHT: Ideal's FSS 5200 provides interpolated imaging at up to 500 dpi.
BELOW LEFT: Prints suffering from variable backgrounds are a common problem solved through adaptive-threshold scanning.
BOTTOM LEFT: Vidar TruScan 800's adaptive-thresholding feature adjusts the print's low contrast so that only the linework is captured.
BELOW: Vidar's TruScan 800 provides a number of settings for maximizing clarity of scanned images.

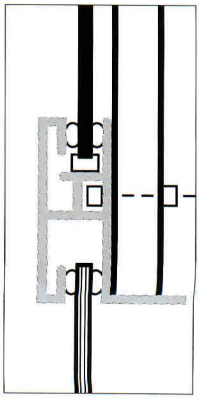




Products

Lightweight aluminum panels define buildings with sharp corners and smooth curves.





Alpolic aluminum cladding from Mitsubishi Chemical America is composed of two thin aluminum sheets continuously bonded to a polyethylene core. This construction is designed to maintain flatness, rigidity, and stability under fluctuating thermal conditions. Alpolic can be applied as spandrel panels, soffits, column covers, canopies, and signage, as well as interior finishes. For renovations, the composite material can be installed over light-gauge framing systems applied directly to a substrate.

TOP LEFT: At the Lego Creative Childcare Center in Enfield, Connecticut, designed by Hartford-based Jeter, Cook & Jepson Architects, bright yellow panels of Alpolic aluminum seamlessly wrap around tight corners. In addition to solid colors, Mitsubishi offers metallic finishes, including bronze and stainless steel, and stonelike coatings that resemble marble and granite. Colors and finishes are available in a reflective range, from matte to glossy.

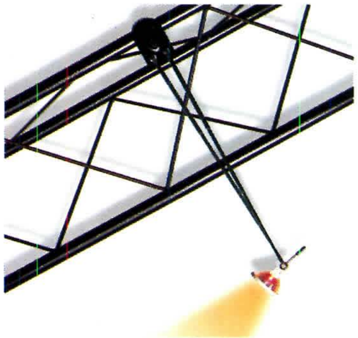
CENTER LEFT: Kenton Peters + Associates specified Alpolic at the University of Wisconsin Foundation in Madison, a 1995 winner of a design award from the Metal Construction Association. The building's Alpolic skin encompasses wall panels, columns, and soffits. Weighing up to 1.5 pounds per square foot—half the weight of equally rigid solid aluminum sheets—Alpolic is designed to resist the dimpling, buckling, and "oil canning" associated with sheet products. Mitsubishi's Lumiflon resin-based fluoropolymer coating provides the building's silver finish.

CENTER DETAIL: Typical wall detail incorporates metal stiffeners to accommodate flexing and wind loads. Grooves are hollowed out of the back of the Alpolic sheet, and the front face is bent 90 degrees to create corners. This rout-and-return method of shaping angles can be accomplished with conventional wood- or metal-working tools.

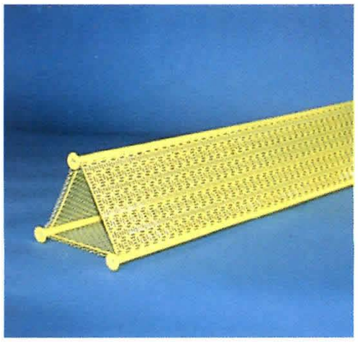
BOTTOM LEFT: Designed by Zimmer Gunsul Frasca Partnership, Concourse E at Portland Airport features a custom-designed curtain wall, including silver Alpolic spandrel panels. The metal composite panels are available in standard sizes up to 5 feet, 2 inches by 16 feet, 4 inches and a maximum length of 24 feet, 2 inches.

BOTTOM DETAIL: Alpolic can be applied as a spandrel panel; typical curtain wall section reveals nonloadbearing spandrel panel and glazing.
Circle 401 on information card.

Metal wall panel
Manufactured by California-based Custom Panel Industries, the T-5 exposed-fastener wall panel (above) is designed for commercial and industrial roofing and wall applications. The box-ribbed corrugated panel is offered in steel, aluminum, and copper, or in alloys such as zinc-aluminum. Custom Panel Industries will modify dimensions and profiles, allowing for specification of concave; convex; and even multiple-radius, curved wall panels.
Circle 402 on information card.

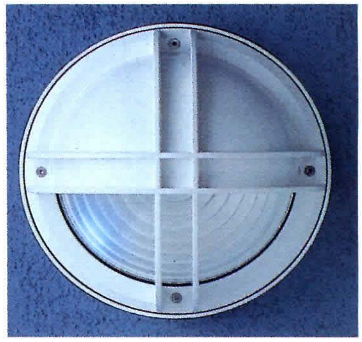


Steel truss
The Ultrabeam truss system (above), from B&O Manufacturing, includes a complete line of metal components fabricated from cold-rolled steel tubes and cold-drawn steel rods. These lightweight members form flat, triangular, and square frames that are available in several sizes, finishes, and colors. This system allows customized design of product display, signage, and lighting support. B&O also offers compatible fluorescent and track lighting fixtures.
Circle 403 on information card.



Display system
PerfTruss (above) is the newest decorative truss system for merchandise display from Interlock. With its perforated-steel sides, PerfTruss can be specified in place of traditional trusses to conceal cables and electrical distribution boxes or to diffuse light. Offered in a variety of patterns, paints, and metal-plate finishes, PerfTruss is available in flat, triangular, and box configurations. Interlock's technical staff provides free working drawings and cost analysis.
Circle 404 on information card.

Curtain wall system
Missouri-based EFCO Corporation manufactures an array of window, entrance, and curtain wall cladding systems. Available in matching custom colors, these systems are designed for esthetic and functional compatibility. The newest in EFCO's curtain wall line is the Series 5600. It is offered in two styles that differ according to the method by which they are anchored to adjacent structural members. The Vertical Butt-Glazed system, which anchors at the head and sill, creates the appearance of a horizontal ribbon-window (above) with its capacity to limit joints widths to as narrow as $^3/_8$ inch. Anchored at the jambs, the Slope-Glazed system reduces horizontal sightlines to provide vertical visual continuity. New features of both Series 5600 systems are vinyl gaskets incorporated into the mullions to decrease thermal bridging. These systems are available in frame depths of 5 inches, 6 inches, and 7 inches, plus a glazing thickness of either $^1/_4$ inch or 1 inch.
Circle 405 on information card.



Wall-mounted fixture
Wall Forms, from Kim Lighting, is constructed of heavy die-cast aluminum. The double-ribbed face plate is available in four configurations, including the Half Face (above), which emphasizes downlight while still providing fixture glow. The fixture features an all-glass lens, available in smooth or internally prismed models for softer light. It can be fitted with incandescent, halogen, fluorescent, and high-pressure sodium lamps.
Circle 406 on information card.

Modular signage
Installed in The Lighthouse (ARCHITECTURE, June 1995, pages 94-101), the Infinity Series, from ASI Sign Systems, is a perforated-steel framework to which a range of materials can be affixed. The perforations form a grid on which graphic elements are aligned (above). Magnetic, permanent adhesive, and tamper-resistant locking tabs are offered for fastening signage. The dimension and orientation of the framework can be customized.
Circle 407 on information card.

Circle 107 on information card

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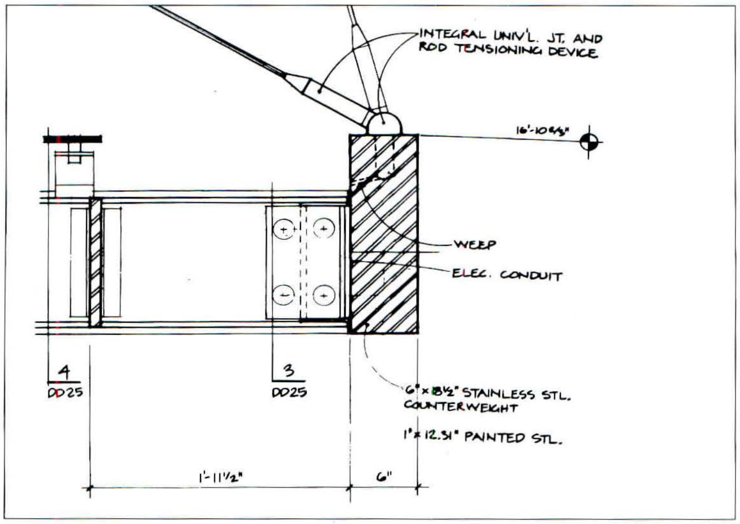
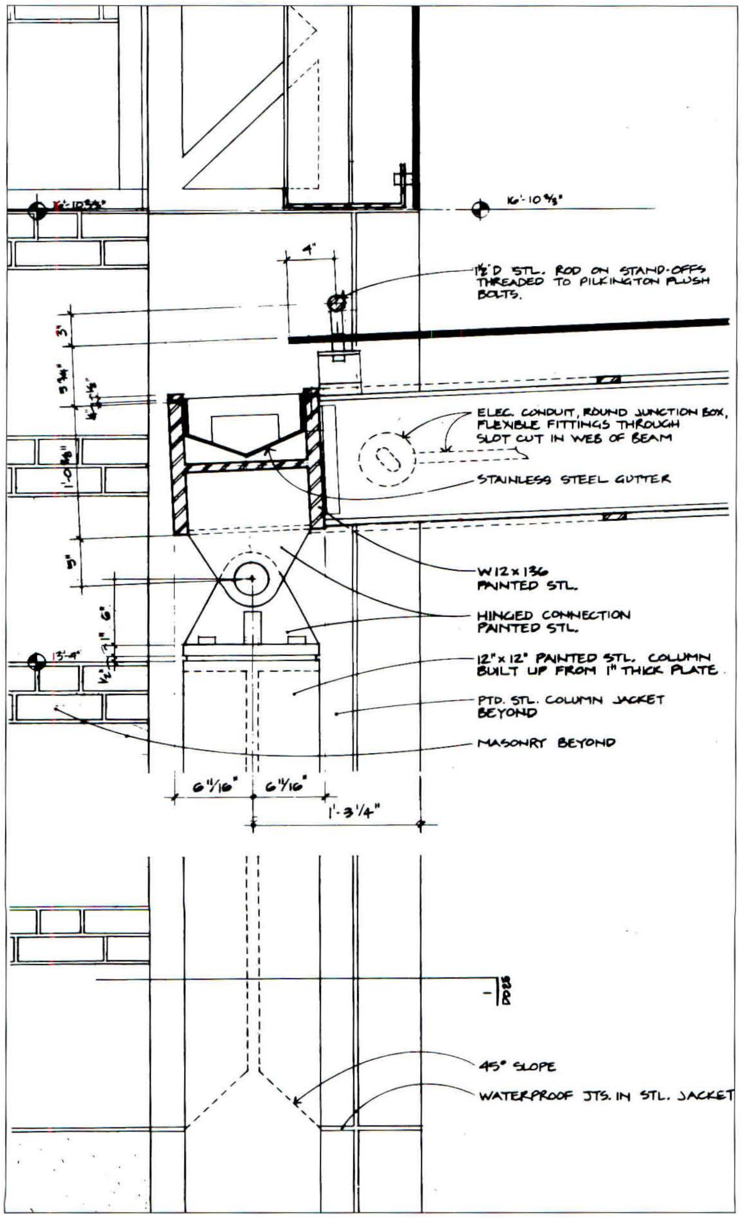
Details

A canopy over the entrance to a New York train station adapts nautical detailing.





Entrance Pavilion
MTA Long Island Rail Road
New York City
R.M. Kliment & Frances Halsband

The 92-foot-high glass tower enclosing R.M. Kliment & Frances Halsband's new lobby for a commuter railway station in New York City (pages 68-75) incorporates a glass-and-steel canopy that is detailed to boldly mark the station's street entrance. Tension rods anchor the canopy to a freestanding, 107-foot-high stainless steel mast.

Above the entrance canopy, exposed laced steel columns punctuate the corners of the tower. They recall the bolted steel structures developed by McKim, Mead & White for the original Pennsylvania Station, razed in 1966. Four large trusses at the top of the cagelike tower transfer the load of its glass skin to the columns and down to the masonry base; the base is clad in Botticino marble panels separated by bands of red common brick.

The canopy's frame is constructed of a series of painted steel beams welded together. Atop the canopy, a smaller, 24-foot by 20-foot frame fitted with laminated glass panels is bolted to the canopy's primary structure. The glazed panels are supported on the east and west ends by a steel frame; individual glass panels are butt-jointed with a silicone sealant.

A pair of stainless steel columns flanking the pavilion's entrance support a large steel hinge, to which the canopy superstructure is welded. The hinge actually pivots to accommodate movement of the canopy due to wind uplift. A stainless steel gutter welded to the back beam of the canopy drains water from the surface of the overhang, which slopes 1 foot over its 22-foot width.

A solid, 2-ton stainless steel plate bolted to the edge of the canopy above the sidewalk acts as a counterweight that keeps the assembly from lifting up in the wind. Pairs of stainless steel castings similar to those specified in I.M. Pei's glass pyramid at the Louvre, which were originally designed to anchor the sails of yachts, are bolted to the counterweight at 4-foot intervals. The castings support the stainless steel tension rods that anchor the canopy to the mast flanking the entrance.

The rods are evenly spaced and bolted to the stainless steel mast at roughly 5-foot intervals, creating a delicate, weblike lattice.—*R.A.B.*

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