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Looking Ahead



"GIO PONTI: A WORLD OF DESIGN" / NETHERLANDS ARCHITECTURE INSTITUTE / ROTTERDAM / THROUGH JANUARY 12

Since World War II, no country has been more synonymous with knock-your-socks-off design than Italy. And no one is as emblematic of Italy's design dynamism as the Milanese designer and architect, Gio Ponti (1891-1979). The current exhibition, *Gio Ponti: A World of Design*, initiated at London's Design Museum and now at the Netherlands Architecture Institute, brings to light

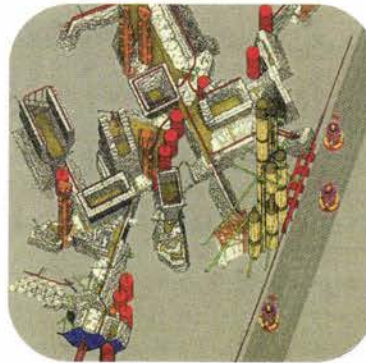
the phenomenal diversity of Ponti's oeuvre from the 1940s and 50s: cutlery, textiles, vases, lamps, glasses. Some of his creations have become classics, such as his "superleggera (super light) chair" (above), so-called because it could be lifted with one finger; Pirelli Tower in Milan, conceived in collaboration with Pier Luigi Nervi; and the crowning jewel of the show, a polished-chrome espresso machine for Pavoni called the "Cornuto." The exhibition also presents what is Ponti's greatest achievement: *Domus* magazine, one of the most influential design and architecture magazines of the past 50 years, which he founded in 1928 and edited until his death. *Superleggera*, unfortunately, is also the tone of the show's catalog—edited by its curators, Marco Romanelli and James Peto—which does little more than toss banalities upon the elegant surface of Ponti's work. One leaves the show hungering for more. **LIANE LEFAIVRE**



"NEW HOTELS FOR GLOBAL NOMADS" / COOPER-HEWITT, NATIONAL DESIGN MUSEUM / NEW YORK CITY / THROUGH MARCH 2

The exhibition *New Hotels for Global Nomads* is a forward-looking survey of hotel trends for an increasingly mobile world population. The show casts a wide net, and while it con-

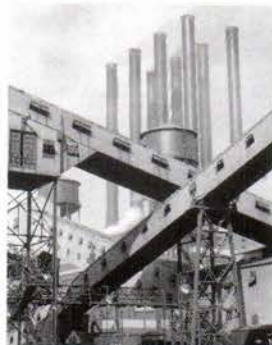
tains a number of provocative projects, its cohesiveness is compromised by the inclusion of filler—hotels that are merely trendy, not challenging. Some of the more interesting projects comment on the anonymity of modern hotels: Diller + Scofidio's Interclone uses surface graphics alone to lend "local color" to an international chain of standardized hotels; New York City-based Lewis.Tsurumaki.Lewis's Tourbus Hotel "extends the protective sheath of the tour bus to the hotel experience"; and an installation on capsule hotels (above) explores the small, podlike units developed in 1970s Japan for commuting businessmen. **ANNA HOLTZMAN**



"THE CHANGING OF THE AVANT-GARDE: VISIONARY ARCHITECTURAL DRAWINGS FROM THE HOWARD GILMAN COLLECTION" / MUSEUM OF MODERN ART / NEW YORK CITY / THROUGH JANUARY 6

When architectural styles come back into vogue they often do so without the entrenched rhetoric. So it is with the current interest in the styles of the 1960s and 70s, a period of transition and ambiva-

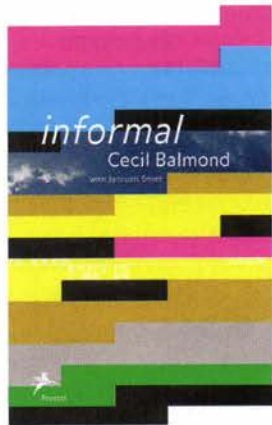
lence when architects were railing against orthodox modernism and had yet to discover postmodernism as we know it. Culturally it was a time of crisis, exploration, and utopian ideals, when designers indulged in fantastical forms. This exhibition of architectural drawings chronicles the segue from megastructuralism to postmodernism, as the scale of architecture both ballooned with idealism—as with the sometimes cartoon-like work of English pop collective Archigram—and became more inward and individualistic—as seen in postmodern architect and theorist Aldo Rossi's idiosyncratic designs. The expansive show features drawings by Raimund Abraham, Archigram, Peter Eisenman, John Hejduk, Arata Isozaki, Rem Koolhaas, Léon Krier, Cedric Price, Aldo Rossi, Paul Rudolph, Ettore Sottsass, and Superstudio, among others. **BAY BROWN**



"THE PHOTOGRAPHY OF CHARLES SHEELER: AMERICAN MODERNIST" / MUSEUM OF FINE ARTS / BOSTON / THROUGH FEBRUARY 2

The painter and photographer Charles Sheeler (1883-1965)—though recognized as one of the founders of American modernism in photography, with peers such as Alfred Stieglitz and Paul Strand—is only now having his first major retrospective, at Boston's Museum of Fine Arts. Sheeler's self-coined school of "precisionism" favored industrial subject matter portrayed in dead-on views with a focus on geometrical form. The installation devotes an entire gallery to the stand-out *River Rouge* series (1927), photos of the Albert Kahn-designed Ford Motor Company plant in Dearborn, Michigan. In pieces such as *Ladle on a Hot Metal Car* and *Criss-Crossed Conveyors* (above), Sheeler portrays the strength of Kahn's industrial forms by framing their bold geometry. Moving from cold steel to warm skin, the exhibit shifts to surprisingly unerotic nude photographs of Sheeler's wife in a series of extreme close-ups titled *Katherine* (1918-1919). A filmmaker too, Sheeler's only surviving film, *Manhatta* (1920), created with Paul Strand, is a six-minute time capsule not to be missed. **MARCIA SCOTT HARRISON**

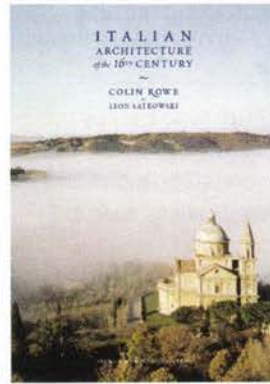
Holiday Reading



"INFORMAL" / BY CECIL BALMOND / PRESTEL

A rich diary of his search for non-Cartesian form and structure, *Informal*, by noted structural engineer Cecil Balmond, is at once absorbing and frustrating. His collaborations with the likes of Rem Koolhaas and Alvaro Siza are amply described in thumbnails and working drawings that show how Balmond derives structure from the worlds of music, science, and math. Likewise, he lucidly explains how fractals, chaos theory, and enzyme molecules inspire his novel concepts. His idiosyncratic taxonomy and "template" exercises, however,

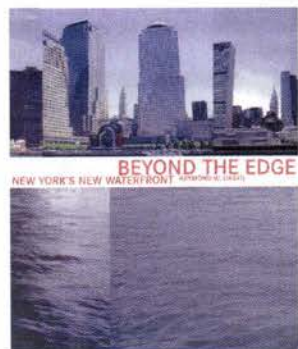
might leave some architects scratching their heads. **C.C. SULLIVAN**



"ITALIAN ARCHITECTURE OF THE 16TH CENTURY" / BY COLIN ROWE AND LEON SATKOWSKI / PRINCETON ARCHITECTURAL PRESS

Written together with Leon Satkowski, a professor of architecture and art history at the University of Minnesota, *Italian Architecture of the 16th Century* is the last published work of the legendary Colin Rowe, the immensely popular Cornell professor and author of the seminal *Mathematics of the Ideal Villa*. *Italian Architecture* eloquently focuses on Rome and Venice, with a bit of Florence.

According to the authors, the impetus for the book was to debunk the prevailing determinist scholarship on the period. **BAY BROWN**



"BEYOND THE EDGE: NEW YORK'S NEW WATERFRONT" / BY RAYMOND W. GASTIL / PRINCETON ARCHITECTURAL PRESS

Beyond the Edge scans the globe to find a new vision for urban waterfront planning, giving equal weight to international design stars (Foster, MVRDV, Eisenman) and everyday projects, like a new light-rail line in Jersey City, New Jersey. The author argues for a varied, regional waterfront approach that integrates ambitious design

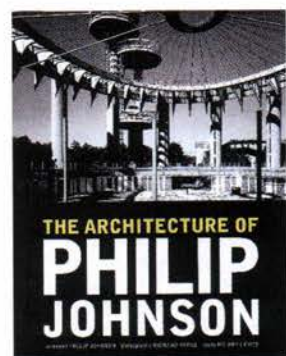
from the start, which could transform New York City into a gigantic, modern Venice, where the waterfront is the city's "front yard." **ALAN G. BRAKE**



"PREFAB" / BY ALLISON ARIEFF AND BRYAN BURKHART / GIBBS SMITH

Prefab, by Allison Arieff (editor-in-chief of modernist shelter magazine *Dwell*) and Bryan Burkhardt, provides a much-needed look at new ideas in prefabricated housing. The book begins with a concise yet seemingly exhaustive history of the building type

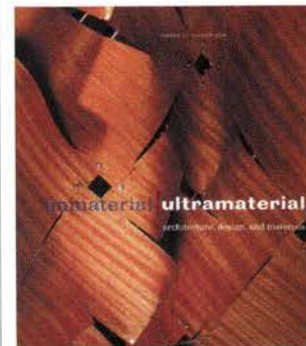
and then looks at recent prefab dwellings. The new projects all integrate modern aesthetics with an interesting variety of places and problem solving. As an effort to spread the word about well-designed prefab options, the book should be a success. **JULIA MANDELL**



"THE ARCHITECTURE OF PHILIP JOHNSON" / BULFINCH PRESS

Chronicling the depth and breadth of the architect's work, *The Architecture of Philip Johnson* can't help but be a weighty (in all senses of the word) catalog. Though primarily a visual narrative by photographer Richard Payne, the book features a succinct forward and meditative quotes by the 96-year-old Johnson, an essay by his biographer Hilary Lewis, and brief, predominantly

factual descriptions of each project. **EMILIE W. SOMMERHOFF**



"IMMATERIAL/ULTRAMATERIAL" BY TOSHIKO MORI / HARVARD DESIGN SCHOOL

Immaterial/Ultramaterial, edited by Harvard architecture chair Toshiko Mori, shortlists young architecture firms experimenting with new and nontraditional materials, from rubber to woven fabrics. The book brings to the fore designers whose "language of architecture ... enlarges the discourse of materiality

beyond the simple application of concrete or steel." **ANNA HOLTZMAN**

H O W D O Y O U D E F I N E A C L A S S I C ?

EXHIBITIONS

BOSTON

The Modern Quotidian: Furniture by Prouvé, Perriand, Le Corbusier, and Rietveld at the Fogg Art Museum, through March 30. (617) 495-9400



CHICAGO

David Adler, Architect: The Elements of Style a retrospective of the Milwaukee-born architect's mainly residential Chicago work, at the Art Institute of Chicago, December 7-May 18. (312) 443-3600

CLEVELAND

Challenging Structure: Frank Gehry's Peter B. Lewis Building sketches, drawings, and models illustrate the design process behind Gehry's new building for the Weatherhead School of Management at Case Western Reserve University (October 2002, page 68), at the Cleveland Museum of Art, through February 24. (216) 421-7350

FRANKFURT

Architecture within Our Grasp an exhibition of door handles designed by architects such as Walter Gropius, Adolf Meyer, and Ludwig Wittgenstein that explores the relationship of the door handle to its architectural context, at the larger Deutsches Architektur Museum, through January 5. (49) 69-212-36318

HOUSTON

H.C. Westermann the first posthumous exhibition of the American sculptor, whose work in wood and found objects bridges expressionism and surrealism, at the Menil Collection, through January 5. (713) 525-9400

LONDON

Mies van der Rohe: 1905-1938 this exhibition, organized by New York's MoMA, spans the early part of Mies's career, with both new and archival material, as well as work by contemporary artists inspired by the architect, at the Whitechapel Art Gallery, December 10-March 2. (44) 20-7377-1685

Coming Homes: Housing Futures

a showcase of innovative housing projects being built in England today, focusing on schemes that deliver affordability and sustainability across both the private and social sectors, at the Royal Institute of British Architects, through January 11. (44) 20-7580-5533



LOS ANGELES

Landscapes of Myth an exhibition of fifteenth- through nineteenth-century paintings, drawings, prints, photos, and maps, in which artists have interpreted legendary settings from Greek mythology, at the Getty Center, through February 2. (310) 440-7300



NEW HAVEN, CONNECTICUT

Krier/Eisenman: Two Ideologies examples of architect Leon Krier's work, based on context, site, and function, are presented here facing work by Peter Eisenman, whose opposing architectural philosophy centers on abstract form, at the Yale School of Architecture, through February 7. (203) 432-2288

NEW YORK

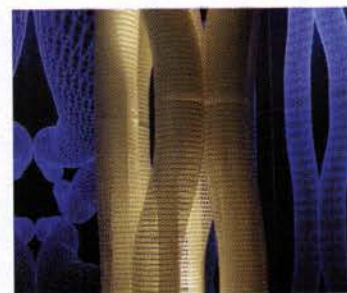
Drawing Now: Eight Propositions a survey of where the medium of drawing stands today, encompassing over 200 current works by 26 international artists, at MoMA QNS, through January 6. (212) 708-9431

PASADENA, CALIFORNIA

Space Invaders: Emerging British Architecture the U.S. debut of an international touring show of innovative new British architecture launched at the Experimental Design Biennale in Lisbon in 2001, at the Williamson Gallery at Art Center, through December 22. (626) 396-2200

ROTTERDAM

The Hungry Box: The Endless Interiors of MVRDV a series of exhibitions titled NL Export, designed to bring Dutch design to international audiences, kicks off with the work of young architecture firm MVRDV, at the Netherlands Architecture Institute, through January 5. (31) 10-440-1200



SAN FRANCISCO

Architecture and Water an exhibit of five international building projects that engage the waterfront by Foreign Office Architects, MVRDV, Diller + Scofidio, Steven Holl Architects, and Alsop Architects, organized by New York's Van Alen Institute, at SFMOMA, through March 23. (415) 357-4000

VIENNA

9+12 New Housing in Vienna a project that explores urban, government-funded housing development strategies with buildings designed by nine European architects, at the Architekturzentrum Wien, through January 27. (43) 1-522-3115



CONFERENCES

The International Builders' Show hosts 1,000 exhibitors of building products and technologies, sponsored by the National Association of Home Builders, at the Las Vegas Convention Center, January 21-24. www.buildersshow.com

In association with *Architecture* and *Architectural Lighting* magazines, Sonny Sonnenfeld will produce **Architectural Lighting Master Classes 2003**, a seminar on creative lighting use, co-sponsored by the New York AIA, at John Jay College, New York, February 20-21. (646) 654-4581

COMPETITIONS

Inhabiting Identity: 2002-2003 Young Architects Forum is the Architectural League of New York's national competition for architects and designers who are 10 years or fewer out of undergraduate or graduate school; winners will receive a prize of \$1,000. Deadline January 30. www.archleague.org

Airport: A Gateway to the City is the fifth annual ACSA/STI Hollow Structural Sections Design and Engineering Challenge, a student ideas competition to design an airport facility for an unspecified site. Registration deadline February 3. www.acsa-arch.org



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> on the boards



At the intersection of Flatbush and Atlantic Avenues, across from Brooklyn's landmark Williamsburg Savings Bank, the Visual & Performing Arts Library will have a critical prominence in the redevelopment of the Brooklyn Academy of Music cultural district.



> TEN ARQUITECTOS VISUAL & PERFORMING ARTS LIBRARY / BROOKLYN, NEW YORK

Brooklyn is the new Manhattan. Actually, it has been the new Manhattan for quite a few years: Thanks to the astronomical cost of living (and working) in the borough west of the East River, the borough to the east has gained a burgeoning population of young and energetic creative types who 10 years ago would have had eyes only for Manhattan. Beyond artists and writers, filmmakers and designers, Brooklyn is increasingly a magnet for cultural institutions.

The Brooklyn Public Library (BPL) is among the large institutions bent on leveraging the cultural riches of the borough. Its proposal for the Visual & Performing Arts Library (VPA) is appropriately ambitious—both in its program-

ming and its architecture—and attuned to the frontierlike development attitude holding sway there. With funding from the National Endowment for the Arts' now-threatened New Public Works program (see page 31), the BPL held an international design competition earlier this year, with the winning proposal a wedge of glass open to the community, both in its transparency and its multiple points of access.

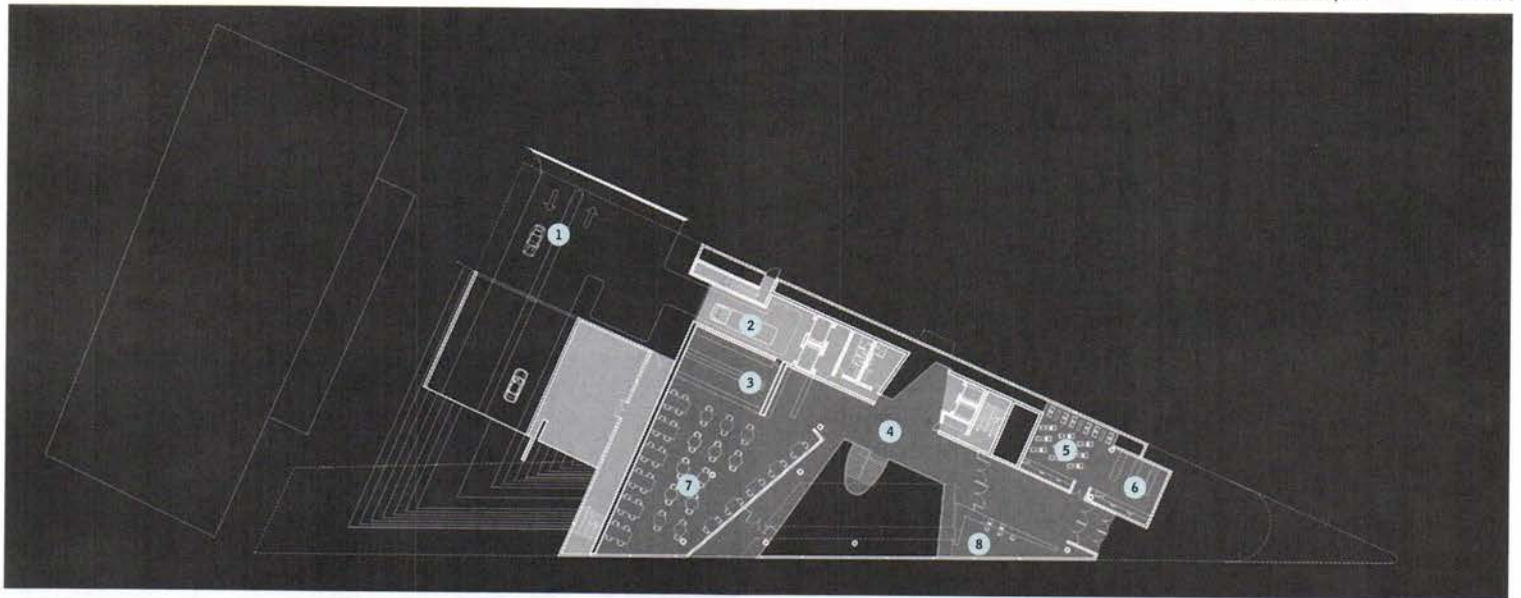
Designed by Enrique Norten and his colleagues at TEN Arquitectos of Mexico City, the 150,000-square-foot building, slated to break ground in 2005, is to be a "gateway" to free arts resources and an incubator for artistic expression. The building, its local associate architect not yet selected, will contain reading rooms with a data connection at every seat. There will be a media lounge (physically accessible 24 hours a day), extensive circulating and



The V-shaped building will have a transparent façade.

- 1 entrance
- 2 loading dock
- 3 kitchen
- 4 lobby
- 5 24-hour media lounge
- 6 gift shop
- 7 café
- 8 reception

First-floor plan 130' A



reference collections, arts studios, galleries, media labs, viewing and listening rooms, practice and performing spaces, a wired auditorium, a black-box theater, children's arts programming space, a café, and shops. The VPA will also serve as an archival repository for other New York City cultural organizations, local artists, and a variety of visual and performing arts entities.

Most significantly, VPA will anchor the new cultural district around the Brooklyn Academy of Music (BAM), a centrally located swath of downtown Brooklyn earmarked by the city for rejuvenation; the district's many vacant properties will be converted into affordable spaces for arts organizations and housing for artists and others, as well as public open spaces, restaurants, and shops. Located along Flatbush Avenue, the arts library will sit on a triangular site at the heart of the cultural district and within walking distance of the long-established, anti-

establishment BAM and the recently built Mark Morris Dance Center.

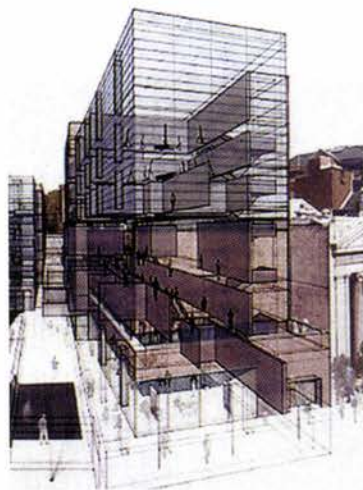
When completed in 2007, Norton's design will make a street performance out of the activities within the library by housing them behind a double wall of transparent glass. (Horizontal louvers sandwiched between window panels will control infiltration of natural light.) His V-shaped plan makes a place for outdoor performances as well: An exterior courtyard formed at its point will host a stretch of cascading steps that double as an amphitheater and lead to a public plaza. **ABBY BUSSEL**

Finalists entries—by Jean Nouvel, Huff + Gooden, Rafael Viñoly, and TEN Arquitectos—will be on view at the Urban Center, 457 Madison Avenue, New York City, from December 17 to February 24, 2003.

> on the boards

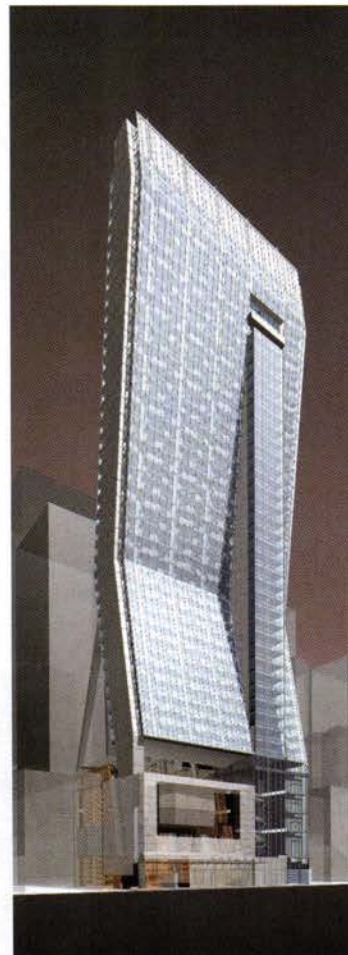


Translucent, laminated glass will be used on the upper façade.



> JOSÉ RAFAEL MONEO RISD CENTER / PROVIDENCE, RHODE ISLAND

In the past decade, Rhode Island School of Design (RISD), located in downtown Providence, has seen its hometown vastly upgraded. So it's no surprise that RISD would seek an architectural icon befitting a cultured metropolis. The school has commissioned Spanish architect José Rafael Moneo to design its new RISD Center, a multipurpose, 57,000-square-foot facility. Moneo's ability to contemporize masonry made him an ideal designer to connect a modern building to the surrounding brick colonial architecture. The new building will provide additional gallery space for the RISD museum, as well as accommodate classrooms, lounges, offices, and a 250-person auditorium. The scheme, a multistory brick base capped by a flashcubelike glass box, will link directly to the existing museum. On an urban scale, the center will reorient the campus toward the recently recovered Providence River. Construction will begin in 2004. **BAY BROWN**



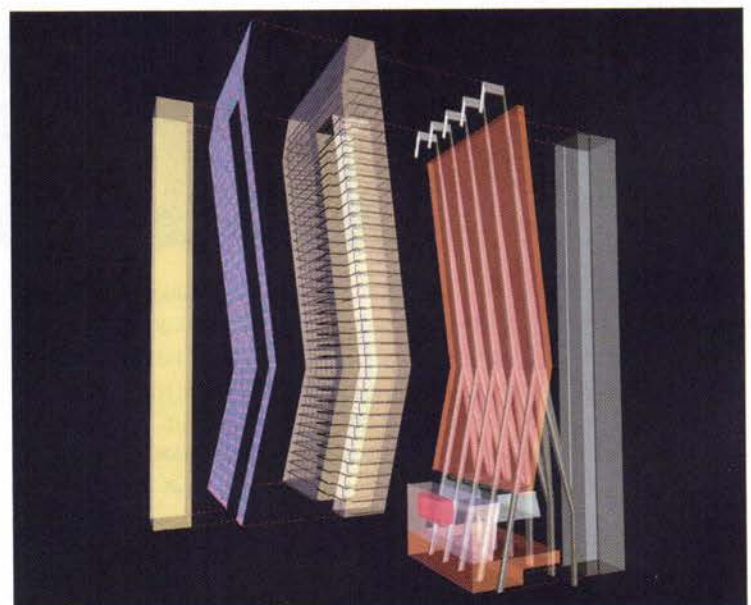
View of pixelated façade

> SKIDMORE, OWINGS & MERRILL SOFITEL DOWNTOWN

The mannerist design of this new U.S. hotel, like the formative painting it evokes—*Nude Descending a Staircase (No. 2)*—brings together avant-garde concerns of its day. Marcel Duchamp's 1912 painting embodied ideas from cubism, the birth of cinema, and the futurists' fixation on movement. Sofitel Downtown (for an undisclosed West Coast location) is informed in structure by a Calatravesque biomorphism, in its façade by video-wall pixelation, and in layout by environmentalist notions.

The design is as profit-worthy as it is noteworthy. The composition lends a strong sense of theater, and the giraffelike cant of its reinforced concrete tower helps introduce daylight and enhance views. Cast-in-place, T-shaped buttress walls give lateral stability to unbraced "leg" elements and multidirectional stiffness to moment frames—a preternatural profile that meets earthquake and wind-load criteria.

C.C. SULLIVAN



Exploded schematic of structure and circulation

continued on page 32



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Backpedaling at the NEA, Again

BY BRADFORD MCKEE

While it lasted, the New Public Works program was one of the most productive design initiatives ever realized by an employee of the federal government. It was not, of course, just anybody's idea, but that of Mark Robbins, who served as the director of design at the National Endowment for the Arts (NEA) for nearly four years before leaving the agency in August to accept a year-long fellowship at the Radcliffe Institute for Advanced Study at Harvard University. Robbins started New Public Works in 1999 to furnish federal money and first-rate design advice to communities staging design competitions for projects—schools, libraries, museums, hous-

The new agency head needs to appoint not only someone trusted by talented designers, but an activist who knows how to encourage citizen participation in the communities where NEA-sponsored projects will offer the greatest benefit.

ing, and infrastructure—in the public sphere. The idea was that, aesthetically and otherwise, the projects would have a powerful multiplier effect on their neighborhoods if rigorous design thinking became part of their conception.

Influenced by Robbins's program, the projects were a tonic to anyone worn down by seeing opportunities for new civic landmarks shredded by rote attention to the civil engineering playbook. Since 2000, the New Public Works program has awarded grants of about \$50,000 to major competi-



Dana Gioia, a poet and critic, has been nominated by the White House to lead the National Endowment for the Arts.

tions across the United States, including the Booker T. Washington High School for the Performing Arts in Dallas won by Allied Works Architecture; a public visual and performing arts library in Brooklyn, New York, by TEN Arquitectos (see page 22); a sculpture park for the Seattle Art Museum by Weiss/Manfredi Architects; an addition to the Queens Museum of Art in New York City by Eric Owen Moss Architects; and new housing for the Chicago Housing Authority by Brian Healy Architects. Jurors for these and other projects included architects Julie Eizenberg, Ralph Johnson, and Stanley Tigerman, as well as design curator Paola Antonelli. New Public Works was on its way to becoming a fitting counterpart to the General Services Administration's Design Excellence Program for federal properties, but as an influential agent in localities where such a high level of design may have otherwise seemed unobtainable.

Too good to be true, the program is now dead. Late last summer, the NEA's acting chairperson, Eileen Mason, a conservative appointee who brought to her provisional post a wealth of experience in the federal energy bureaucracy, began to implement a new mission for the arts agency. Several program directors—literature, theater, folk and traditional arts, and media and design arts—were effectively demoted and placed under the bailiwick of the visual arts and museums director, Robert Frankel. At the same time, the agency began to speak of the program in the past tense and cancelled a commitment to provide \$750,000 for a fourth round of New Public Works competitions.

In late October, President Bush nominated the poet and critic Dana Gioia (pictured) to run the NEA—his confirmation by the Senate will likely wait until 2003, well after election season is over. Upon taking office, Gioia would perform a great public

service by assessing the accomplishments of New Public Works, among the other outreach programs that Robbins started. He would then realize that the NEA's design post requires someone with vision and professional clout. The new agency head needs to appoint not only someone trusted by talented designers, but an activist who knows how to encourage citizen participation in the communities where NEA-sponsored projects will offer the greatest benefit.

Although Gioia's nomination inspired the NEA to put a hold on Eileen Mason's staff reorganization scheme last month, the poet-critic should be vigorously lobbied by the design community at large to restate what his predecessor so casually tried to erase. Money was the least of New Public Works' contributions: It showed otherwise benighted leaders in both the private and public sectors what the best designers in the nation have to offer. ■



Marvin Windows and Doors Presents

Impact-Resistant Windows and Doors

As new International Building Codes make their way up and down the Eastern seaboard, architects face new challenges in specifying windows and doors.



Roughly five hurricanes strike the U.S. coastline from Texas to Maine and southern California in an average three-year period, causing anywhere from 50 to 100 fatalities.

IN THE PAST 20 YEARS, hurricanes have been responsible for thousands of deaths and millions of dollars of damage. In 1992, for example, Hurricane Andrew hit Florida with winds topping 165 miles per hour during the Category 5 hurricane, and 2 million people were evacuated. The costliest storm to date in the United States, Hurricane Andrew was responsible for \$26 billion worth of damage in Florida and 60 fatalities. In 1999, when Hurricane Floyd hit North Carolina and New Jersey, 3 million people were evacuated—the largest peacetime evacuation ever in the United States.

Construction experts have recognized that **windows can serve as an integral part of a building's defense** against hurricane force winds in coastal states from Texas to Maine. Most coastal states (Gulf Coast and Atlantic regions) have or will be implementing impact-resistance codes to provide additional protection for residential structures.

International Codes The International Code Council (ICC) was established in 1994 as a non-profit organization dedicated to developing a single set of comprehensive and coordinated national model construction codes. Since the early part of the last century, three separate sets of model codes have been used throughout the United States. In the early 1990s, though, the nation's three model code groups—Building Officials and Code Administrators International, Inc.;

LEARNING OBJECTIVES

This article covers International Building Codes and their effects on specifying windows and doors in coastal states.

Key points include:

- 1 International codes and their jurisdictions
- 1 Reasons for and evolution of impact-resistance codes
- 1 The roles windows and doors play in protecting a structure
- 1 Testing procedures for impact-resistant windows and doors
- 1 State-by-state code implementation

Architecture Magazine Continuing Education

To take the quiz and earn 1 AIA/CES Learning Unit (LU) of health, safety, and welfare, go to www.architecturemag.com, click on "Continuing Ed," and proceed to "Impact Resistant Windows and Doors" or turn to page 31. You must answer 70% of the questions correctly to receive credit for this course.



Impact-Resistant Windows and Doors

IRC

International Residential Code

Primary Purpose

Drives construction requirements for residential single- and dual-family dwellings

Also Included:

- 1 One-family dwellings converted to a bed and breakfast
- 1 Community residences for 14 or fewer mentally disturbed persons
- 1 Hospice residences with more than two but less than eight patients
- 1 Manufactured, mobile, or modular homes

IBC

International Building Code

Primary Purpose

Drives construction requirements for commercial and multi-family buildings

Exceptions

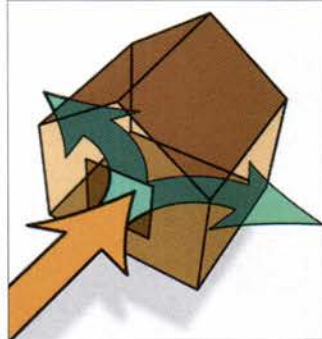
- 1 Agricultural buildings used solely in raising, growing, or storage of agricultural products by a farmer engaged in farming operations
- 1 Electrical equipment used for radio and television transmissions, other than equipment and wiring for power supply

IECC

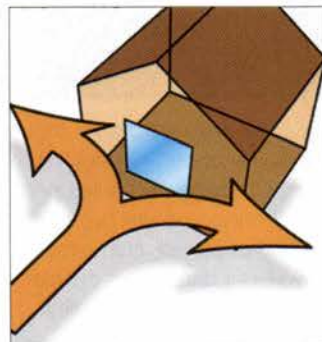
International Energy Conservation Code

Primary Purpose

Drives requirements to reduce energy usage in all regions



If the building envelope is breached through a broken window or door, wind may enter the building, causing an increase in pressure that could lift the roof and push the walls outward.



Laminated glass helps to preserve the building envelope, keeping wind and other elements outside.

> *International Codes continued* International Conference of Building Officials; and Southern Building Code Congress International—joined together to create the International Code Council and develop codes without regional limitations, together known as the International Codes.

The ICC has developed numerous codes. See box at left for those that are relevant to impact resistance.

Together, these three codes regulate construction that is resistant to violent storms while also reducing energy usage. While many coastal states are adopting these codes as they stand, some states (Florida and New York, for example) are basing their individual codes on elements of the International Codes, but customizing the code language and requirements to fit their particular needs.

Projected Code Implementations*

State	Wind Speed	Code	Timing
Alabama	120-150	IBC/IRC	2003
Connecticut	110	IBC/IRC	2002-2005
Delaware	110	IBC/IRC	In effect
Florida	120+	FBC**	In effect
Georgia	120+	IBC/IRC	In effect
Maryland	110	IBC/IRC/IECC	In effect
Massachusetts	110	IBC/IRC	2004-2005
Mississippi	120+	IBC/IRC/IECC	In effect
New York	110+	NYBC/IECC***	2003
North Carolina	120+	IBC/IRC/IECC	2003
Pennsylvania	110	IECC	In effect
Rhode Island	110	IBC	In effect
South Carolina	120+	IBC/IRC/IECC	2003
Texas	120+	IBC/IRC/IECC	In effect
Virginia	110	IBC/IRC	In effect

* Projected dates at press time; code implementation typically must pass through several stages and delays are possible

**FBC: Florida Building Code; Florida has developed its own building code in combination with IBC/IRC

***NYBC: New York Building Code; New York has developed its own building code in conjunction with IBC/IRC/IECC

Why Now? There are several reasons why impact-resistance codes have moved to the forefront in the past several years. The National Oceanic and Atmospheric Administration (NOAA) has been tracking and studying hurricanes and violent storms for the past 100 years. Roughly five hurricanes strike the U.S. coastline, from Texas to Maine and Southern California, in an average three-year period, causing anywhere from 50 to 100 fatalities. During the 20th century, there were 23 hurricanes, each causing damage of over \$1 billion. Data from NOAA is used to prepare for and predict violent weather patterns—and scientists believe that beginning in the mid-1990s, a 25- to 40-year weather pattern began that's conducive to more violent storm activity than usual.

In addition to the false sense of security created by the recent weakened pattern of storms and hurricanes, there are now one out of six Americans living in a county abutting the Atlantic or Gulf of Mexico coastlines. And the coastal population of this country is expected to double by 2010. Already, Dade County, Florida, has had a 600 percent population growth in the past 40 years; New York City alone gained 685,000 residents during the 1990s—the largest gain of any city in this 10-year period.

Plus, a large percentage of high-end coastal homes are only weekend or summer homes, and their owners actually live primarily in nearby metropolitan areas. In the case of evacuation, these homeowners would be fighting evacuation traffic to get to the coast to protect their home and belongings in a storm and would then have to turn around and evacuate themselves. City planners agree that current highway systems are not large enough to support the type of evacuation needed in the event of a hurricane. Attempting to evacuate a large metropolitan area could create chaos and panic that would result in people not being able to evacuate because the roads couldn't accommodate the vast numbers of automobiles, as well as accidents that could prevent people from being able to pass through the roadways.

Windows and Storm Resistance While it's obvious that wind and water can enter a house through a shattered window during the course of a hurricane, the extent of damage is much greater than simply some water on the rug and possessions being thrown around. Once a structure's envelope is compromised, flood and structural damage are certain. For example, if the building envelope is breached through a broken door or window, wind can enter the structure, causing an increase in pres-



Other Benefits of Impact-Resistant Windows and Doors

The most obvious benefit of impact-resistant windows and doors is the protection they provide a home in the case of a hurricane or major storm. But there are side benefits as well.

For example, impact-resistant glass:

- Offers more options for architectural design
- Is always in place so homeowners don't have to lose precious time in the case of evacuation
- Provides an element of security against outside intruders since the glass won't easily break
- Increases sound transmission class, thereby decreasing the level of outside noise
- Can help protect valuable furnishings, carpets, drapes, photos, and artwork against fading and sunlight damage caused by ultra-violet light as UV resistant or blocking properties are incorporated into the glass
- Can lead to significant discounts from most insurance companies for homeowners, up to 18 percent if the home is outfitted with hurricane-resistant products

Are There Other Solutions?

In addition to windows and doors that meet impact-resistant codes, plywood and shutters will serve to protect the envelope of the house; however, there are strong drawbacks to both.

Plywood Plywood must be installed right before a hurricane and taken down right afterwards. The homeowner must be home to do the installation and can lose necessary evacuation time.

Shutters Non-motorized shutters have the same constraints as plywood in that homeowners must be home and can lose valuable evacuation time. They can, however, be kept closed if homeowners are leaving the home for any length of time. Typically, they're stronger than plywood and fastening systems are already in place around the window openings. Motorized shutters have the advantage of closing instantaneously with the push of a button, but their tracking system can allow for water damage in the channel. They also limit design possibilities.

> on the boards

> ROBERT STONE DESIGN VACANCY MOTEL / PALM SPRINGS, CALIFORNIA

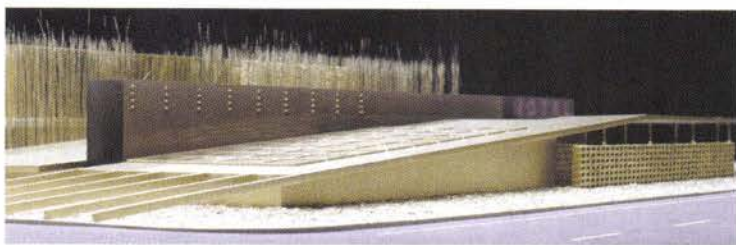
What doesn't work for art can work for architecture. For a "luxury motel" in Palm Springs, California, architect Robert Stone of Los Angeles puts a new spin on art historian Michael Fried's 1967 attack on the "theatricality" of minimalist art, offering a sparse, abstracted environment as the ultimate backdrop for socializing. The "heightened self-consciousness" of minimalism, Stone contends, brings human action into vivid relief, intensifying the voyeuristic quality of shared space.

Stark and monochromatic, Stone's design uses repetition and abstraction to advance the roadside archetype. The motel's layout has a familiar drive-up anonymity,

but the interiors are transparent, reflective, and changeable, amplifying guests' awareness of themselves and each other. Guest rooms open through sliding mirrored-glass doors and sheer curtains onto patios surrounding an "infinitely reflecting courtyard" with a rubber-paved wading pool. A glam-rock palette—gold-painted stone, black bamboo, dark tinted glass, and white Naugahyde wall tiles and seating—offers a swanky sensuality.

With flexible visual, acoustic, and

physical barriers, Vacancy Motel will lead guests into "open-ended experiences and unstructured fun" when completed in 2003, Stone believes. Like minimalist art, the result won't please everybody—this is, after all, a motel. **C.C. SULLIVAN**



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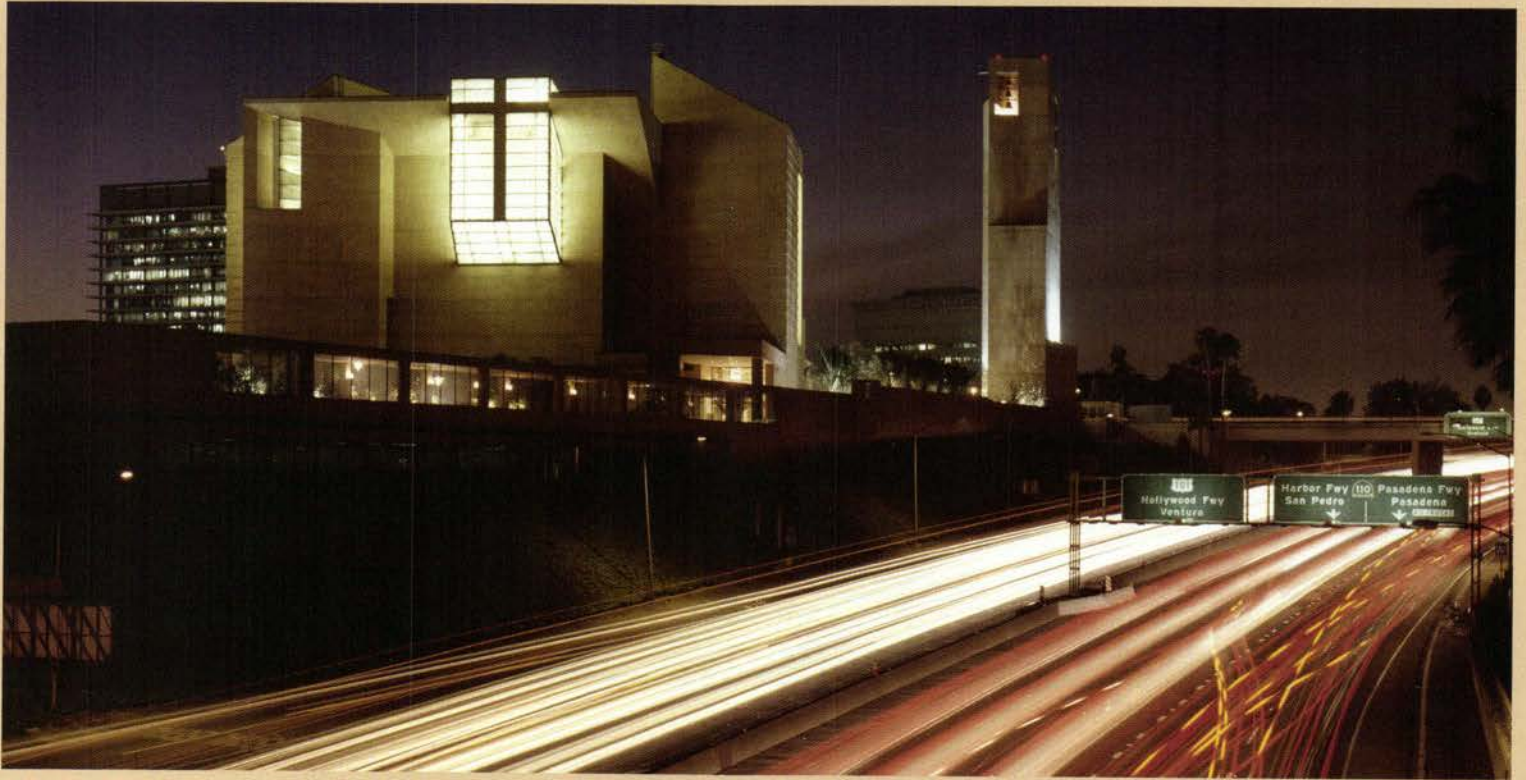
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Will Downtown L.A. Finally Be a Downtown?

The ghost town of a decade ago is rising from the dead, revived by numerous new cultural, commercial, and residential projects. BY PETER SLATIN



A focal point for L.A.'s maturing cultural corridor, José Rafael Moneo's recently completed Cathedral of Our Lady of the Angels sits on a 5.6-acre site overlooking the Hollywood Freeway. Moneo likened the infamous road to a river that connects Los Angelenos to each other.

> CITY REPORT Downtown Los Angeles is not like any other downtown. It isn't down, for one thing; it's inland, eastward, away from the beach, the Valley, and Hollywood—away from everywhere. For the past dozen years, filled with half-empty skyscrapers, vacant older buildings, and sidewalks that turned ghostly at the end of the workday, it's been pretty much nowhere.

Now, though, changes that were seeded during downtown L.A.'s darker hours have begun to sprout. During the late 1990s, commercial rents rose on the more fashionable West Side in almost inverse proportion to the decline in rents—and

tenants—in office buildings downtown. But even as the bubble burst in 2000, and "new economy" businesses vanished from places like Culver City and Venice, downtown began to take on a refreshed allure that could prove durable, with cultural, commercial, and residential components that may help knit the district together.

CULTURAL INFUSIONS

Three new cultural venues are providing the most visible stimulus to renewal in the area. The oldest is the Staples Center, designed by NBBJ for telecom and entertainment mogul Philip Anschutz. The 20,000-seat arena brings crowds

on a regular basis, not only for the Lakers basketball team, but also for entertainers such as Bruce Springsteen and Cher. When the arena opened in 1999, fans had limited reasons to hang out downtown before or after an event. Now, however, incentives include new restaurants and a 207-room boutique hotel, the Standard, developed by bicoastal hotelier Andre Balazs, which opened last spring at the busy intersection of Fifth and Flower Streets. A converted 1956 office building, the 12-story hotel was designed by the firm Koning Eizenberg, with interiors by Shawn Hausman; it opened replete with a velvet-roped rooftop bar scene,

vibrating waterbed pods, and frolicking-animal topiaries. The action at the heart of downtown has picked up noticeably.

On a distinctly different cultural note—although its outdoor entertainment venue is a public plaza that can seat 1,500 at benefit dinners—is the \$180 million Cathedral of Our Lady of the Angels, a vast and imposing contemporary compound designed by Spain's José Rafael Moneo, with Leo A. Daly as executive architect. Despite stunning interiors, the compound, entered not on the main thoroughfare of Grand Avenue but on Temple Street, presents a formidable wall along Grand, and has



It is the long-awaited Walt Disney Concert Hall, designed by Frank Gehry, that will put L.A.'s downtown cultural area on the map. Scheduled for completion in 2004, the recognizably Gehryesque structure dominates the intersection of First Street and Grand Avenue; however, much of the site will be devoted to public gardens, accessible from both the concert hall and the street.

been criticized for turning its back on the community. But downtown's cultural corridor will get its real crown jewel when the \$275 million Walt Disney Concert Hall, designed by Frank Gehry, opens in 2004. A \$12 million streetscape improvement program, which involves a 20-foot widening of the sidewalks and new pocket parks, will create a true pedestrian avenue between the new cathedral and concert hall. Currently underway, the pedestrian-oriented project was designed by Rios Associates with Nancy Goslee Power & Associates.

Meanwhile, two skyline additions are planned for the area to the north of the central business district, known as the Civic Center: Morphosis won a commission for a

new headquarters for Caltrans, the state's transportation agency. And despite grumbling from local architects, a federal courthouse has been designed by Chicago-based Perkins & Will.

ARCHITECTS MOVE IN

In the past decade, the typical downtown tenant pool has shrunk: Financial service firms, banks, and the area's oil-industry heavyweights have cut back, disappeared, and merged. Large-scale tenant deals have become almost nonexistent. But one industry has emerged as a thriving new tenant class downtown: architecture. Drawn by low high-rise rents and the proximity of those offices to potential clients in local and fed-

eral government, architects, contractors, and engineering firms have been setting up shop in downtown skyscrapers. According to a list provided by H. Carl Muhlstein of real estate services firm Cushman & Wakefield, nearly 20 design and construction firms now occupy some 300,000 square feet throughout the central business district. Muhlstein notes that the presence of trade organizations, such as the Urban Land Institute and the Building Owners and Managers Association, along with real estate brokers, project managers, and major engineering and construction firms such as Bechtel and Tishman Realty & Construction, make for a rich mix for architects and others seeking to

cut freeway travel time between business meetings.

Indeed, the concentration of design professionals has led James Porter of Altoon + Porter, which occupies the 48th floor (that's the top) at the Citicorp Center on South Flower Street, to create an informal but growing group of downtown architects that meet regularly. The objective, says Porter, is to see how they can help each other in different business areas.

Downtown L.A.'s growth, says Muhlstein, a lifelong Angeleno, "boils down to three areas: value for the rent dollar compared to the cost of bricks and mortar on the West Side, the ability to hire the widest variety of people competitively, and the beginning impact of mass transit." That last point, a reference to the city's new, if limited, subway system, is a surprising factor in car-crazed L.A. The 17.4-mile, \$4.5 billion subway system carries 140,000 people to work each day, well above projections.

SUBWAYS AND STREET LIFE

Access to mass transit is also spurring another change downtown, one that has remained out of reach for decades—the 24/7 streetscape. It's the holy grail of downtowns everywhere, and in L.A.'s far-flung landscape—stretching from the industrial markets and the home of SCI-Arc on the Los Angeles River to immigrant communities like Little Tokyo and the toy, gift, and flower marts to the east—it could be the key to making downtown's gleaming office towers too expensive for all those architects. The silver lining? Once other professional services return, driving rents up, new buildings and redesigns will be needed.

The area is even more happening since SCI-Arc, now under Eric Owen Moss, moved downtown from

Marina del Rey last year after renovating a 1907 freight depot at the industrial eastern edge of the area. Moss has been working with city agencies such as the Metropolitan Transit Authority and private interests, including local downtown redevelopment booster Tom Gilmore, to explore the potential for adding housing, shops, and cultural activities to the barren and crumbling area around the new school campus. Even before SCI-Arc moved in, artists and architects had been taking up residence in scattered industrial, ungentrified lofts around the neighborhood.

The relatively unbidden artist incursion has set the stage for more upscale, formal loft conversions closer to the central business district—and that, after all, is what is really making downtown L.A. heat up. Observers put the number of housing units in some stage of development downtown, whether in loft-style buildings or old banking structures, at around 3,000.

The movement started small and slow with a visionary pioneer, the late Ira Yellin. In the early 1990s, Yellin restored the 1893 Bradbury Building, best known for its appearance in the film “Blade Runner,” as office and retail properties. Although those projects were applauded, they opened into a recession. In the late 1990s, transplanted New Yorker Gilmore and local investor Judah Hertz began buying up a few historic buildings, such as the 1928 Oviatt Building on South Olive Street, and converting them into live/work lofts. Gilmore, who later bought out his partner, has also acquired the former L.A. cathedral, St. Vibiana’s, a downtown fixture that he is slowly renovating as a cultural and community center.

Building a true community requires three basic elements, says

Scott Johnson, of longstanding L.A. firm Johnson Fain Partners: “You need schools, housing, and open space. Those three things haven’t existed downtown, but they are beginning to.” While housing is certainly happening and the L.A. Unified School District is moving to build in the area, “there’s still not much effort on open space,” laments Johnson.

Johnson Fain has designed Met Lofts, a 274-unit, ground-up project at Eighth Street and Wilshire Boulevard for developer Forest City Residential West. As new construction, the project “swims up the historical stream,” says Johnson.

Three other residential developments in particular, all conversions of older office buildings, indicate both the level of activity and diversity of projects. The largest of these is the conversion of the former Southern California Gas Company property, a 7.2-acre site near the Staples Center, being developed by CIM Group. The property currently includes more than 500,000 square feet of office space and hundreds of parking units. The master plan envisages four development projects to be built in stages. Locally based Killefer Flammang Architects has completed preliminary designs for the 292 residential conversions. The project will also include a major supermarket, the first in the area; new lofts and residential towers of 13 and 34 stories are planned for the last two stages. Meanwhile, Killefer Flammang is also at work on a second important residential conversion, known as 612 South Flower and located just across from the Standard. A former oil company headquarters, the 13-story tower is expected to open early next year.

CIM is investing with local homebuilder the Lee Group in a third residential project known as the Flower Street Lofts—significant



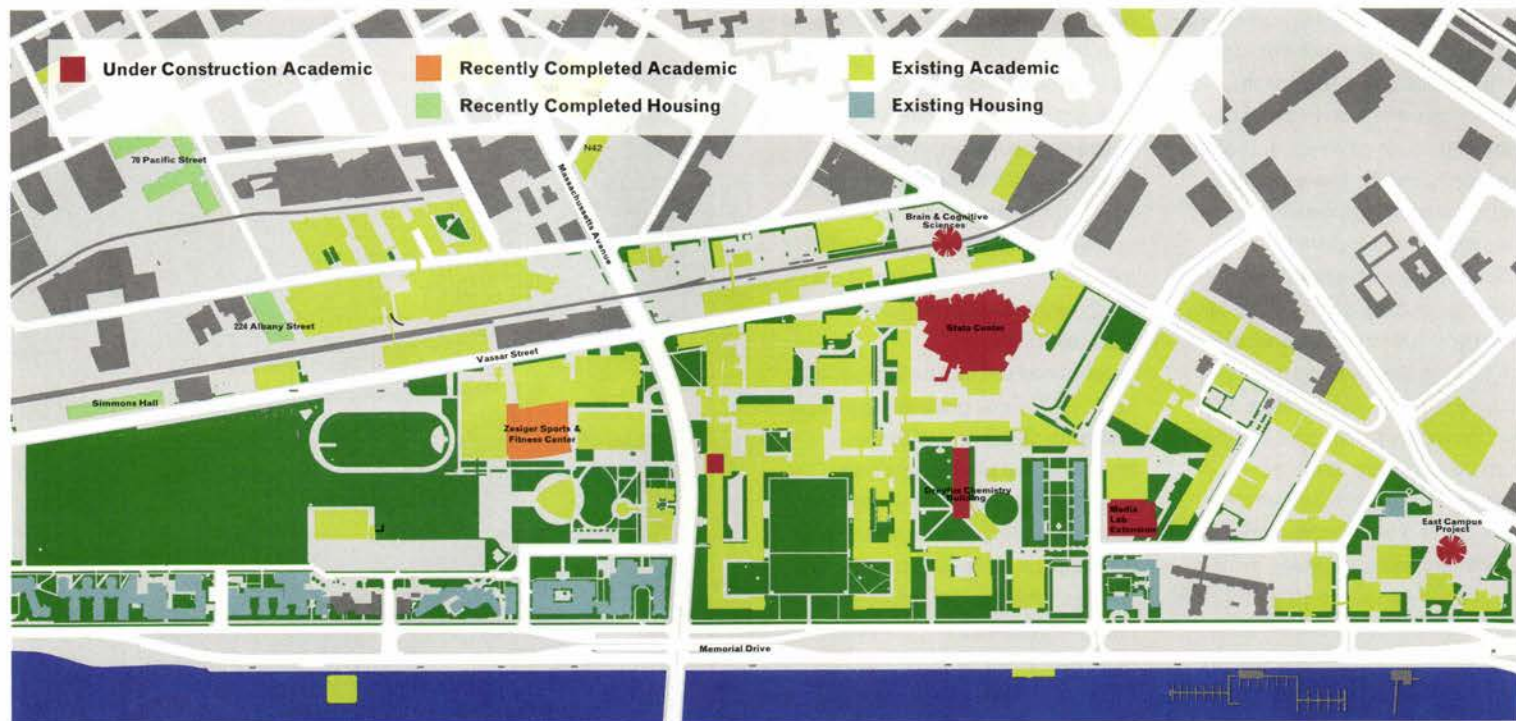
Looking northwest toward the central business district, the essence of downtown L.A.’s history of neglect resurfaces. Despite aggressive redevelopment efforts, many remain uninterested in venturing into what was once considered a characterless nowhere.

because the 91 units will be for sale. (The vast majority of downtown developments are rental units.) The architect, Van Tilburg Banvard & Soderbergh, will add two stories and 39,000 square feet to the 1936 UPS distribution center, which sits across from the Staples Center, creating a neat link to the downtown development chain that was kicked off with the arena three years ago.

With artists continuing to stake housing claims and young professionals moving into the central business district, with the cultural corridor spreading out, and with developers splashing entertain-

ment destinations across the area, the downtown that was nowhere is attempting to become a place on its own terms. Whether Los Angeles will know what to do with its new downtown—well, that’s another question: Despite all the activity, many Angelenos remain blissfully uninterested in the area, suggesting that it will take time before these changes have an impact on a city that has existed for so long without a true center. ■

PETER SLATIN IS A WRITER BASED IN MANHATTAN, AND THE FORMER EDITOR-IN-CHIEF OF *GRID*.



Coming of Age on the Charles

Massachusetts Institute of Technology remakes itself in the name of community.

BY BAY BROWN

> CAMPUS PLANNING Getting into the Massachusetts Institute of Technology is a big deal. With a degree from the venerable institution you have a shot at becoming an under-30 CEO or a Nobel Prize winner. And gone are the days when a popular college coed wouldn't consider dating a computer science major.

But something has been amiss at the "great white city on the river," so named for the original campus's wealth of white limestone buildings. The school has faced considerable social problems in recent years: a struggle to recruit female

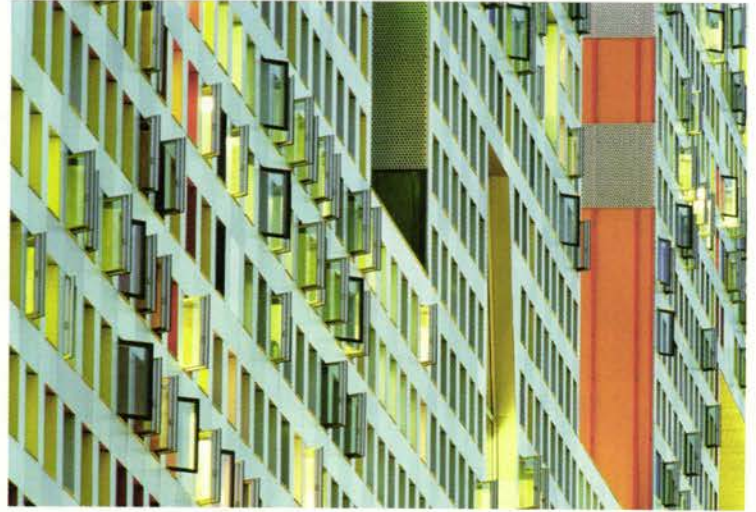
students, lethal binge drinking, and an alarming pattern of suicides. MIT was recently sued for \$27 million by the parents of an undergraduate who set herself on fire in 2000 and died four days later. They are accusing the school of not acting *in loco parentis*.

These crises are just a few of the storylines running through the school's massive, decade-long building campaign that involves the construction and renovation of nearly a dozen buildings, new landscaping, and a renewal of critical circulation patterns and infrastructure.

MIT is currently building the most

square footage it has constructed since moving from the Back Bay to Cambridge in 1916. But it is not fair to say that the school's expansion and renewal is in response to social ills alone. The new "campus framework," as its near-term plan is called, addresses straightforward needs for new housing, classrooms, and laboratory space. To decrease its commuter population, one of MIT's objectives is to house 100 percent of its undergraduates and at least 50 percent of its graduate students, a plan that serves a very functional need while bolstering a sense of community.

For MIT President Charles Vest, the rebuilding is overdue. On a fall afternoon, Vest announced that MIT professor Robert Horvitz had received the Nobel Prize for his work studying "programmed cell death." He compared the scientist's work to the life cycle of MIT's current building stock. "The same phenomenon happens to campuses. About every 30 years, regeneration



occurs," said Vest.

"We want to see a cultural change," he added. "We want to break the ethos that 'tech is hell.'"

CAMPUS FRAMEWORK

MIT has had two significant building campaigns since it moved to Cambridge. The first was Welles Bosworth's Beaux-Arts campus, conceived with the school facing Memorial Drive and the Charles River. In reality, however, the MIT community did not commute to campus by ferry boat, and so Massachusetts Avenue became the school's main artery. Later, there was a postwar surge of construction that included buildings by

Alvar Aalto, Gordon Bunshaft, I.M. Pei, and Eero Saarinen—who, in addition to designing the Kresge Auditorium and the MIT Chapel, both completed in 1955, created a master plan that was never fully executed. It would be simplistic to say that the organic nature of modern planning didn't work for MIT, but at some point the clarity of the campus got lost.

The current campus framework came about as many of the new buildings were already well into design. It maintains MIT's overall urban layout—a series of quadrangles with a street grid running through it, as at Oxford or Cambridge Universities—but it

emphasizes different axes and nodes. William Mitchell, dean of MIT's school of architecture and planning and architectural advisor to President Vest (there is no campus architect), emphasizes the school's commitment to being an "open campus" without gates. After September 11, discrete measures were taken to increase security, but the school was committed to maintaining its openness.

In 1998, a "Task Force for Student Life and Learning" comprising both faculty and students determined that there was a need for more communal spaces on campus, where interaction could be encouraged. The school also sponsored a

Holl created porosity with his soon-to-be iconic Simmons Hall (top left and right); Roche Dinkeloo curved the façade of the Zesiger Center in an attempt to create a coherent streetwall on "the oval" (bottom left and right).

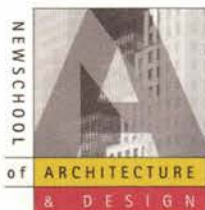
four-day charrette attended by designers, many of whom had already been tapped for new buildings: Charles Correa, Harry Ellenzweig, Frank Gehry, Steven Holl, Fumihiko Maki, and Laurie Olin. In turn, the Olin Partnership independently developed principles for campus development and landscape guidelines that MIT then adopted. Guided by these principles, the school is creating new communal spaces and program-

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ming interstitial spaces. School officials are reinforcing the campus's spatial organization by emphasizing its existing quads and its network of pathways and corridors to improve pedestrian circulation routes and social nodes. The famous "Infinite Corridor," which jogs east to west through numerous buildings on campus, will extend outside for more coherent circulation. Other key principles included fostering "connectivity" by having an integrated mix of amenities available 24 hours a day, as well as preserving and enhancing "the sacred places," or open spaces and axes the community valued. In so keeping, Vassar Street, which runs across the northern section of campus, is being redeveloped into a vibrant boulevard with the intent of knitting disparate parts of the campus together.

NEW LANDMARKS

One of Olin's suggested guidelines reinforced the building campaign already underway: The architecture should reflect "the spirit and technology of the times with a mix of high-quality functional buildings and those of significant design." While some of the construction is straightforward renovation and utilitarian new buildings, there are a few high-profile designs by internationally acclaimed architects.

The new fitness complex, the Zesiger Center, designed by Kevin Roche John Dinkeloo and Associates with executive architect Sasaki Associates, faces "the oval," the space between Saarinen's auditorium and chapel that serves as the de facto center of the school's social scene. With Zesiger, Roche Dinkeloo gives weight to the oval as a critical campus node by creating a streetwall backdrop. The curve of the center's mirrored glass façade blends with the oval and likewise marries varying adjacent setbacks. The firm also completed renovations of the auditorium and chapel in 1998. Kevin Roche was, in fact, a member of the original design team for both structures in the 1950s when he worked for Saarinen.

On Vassar Street, on the western part of campus where housing is concentrated, a dormitory designed by Steven Holl Architects with associate architect Perry Dean Rogers and Partners, is the sort of one-off design that will become a Boston landmark. When given the program for the 350-bed Simmons Hall, Holl was faced with the same program Alvar Aalto had in 1949 when he designed Baker House, but Holl was told by MIT to make it better, the architect recalls. A designer known for manipulating light, Holl took the porosity of a natural sponge as his inspiration. The rectangular building is marked by giant Mondrianesque cut-outs reminiscent of an old-fashioned computer card and further perforated by 5,500 windows. While generously fenestrated, the facility responds to MIT's concern about student welfare: Each window is only 2 feet square and opens just enough for ventilation. Despite its bold, playful, and compelling design, there is no denying the jail-cell quality created by the diminutive windows.

On the eastern section of campus, when completed next



When completed, the Stata Center will be a small campus within the larger MIT campus, both highly programmed and simultaneously very flexible for the overlapping disciplines that will use the facility.

spring, the 430-square-foot Stata Center, a computer science complex designed by Frank O. Gehry & Associates with Cannon Design as associate architect, will bring increasingly interrelated departments under one roof. Highly sculptural, the complex ties a cascade of figural pieces into a form reminiscent of two clasping hands. While Gehry's amorphous aesthetic may seem a formal departure from the rest of the campus, it is responsive to existing patterns of use: Extending the system of quadrangles through both north- and south-facing plazas, Stata is in keeping with Bosworth's design for the main campus and likewise integrates the increasingly critical axis of Vassar Street.

While the Stata Center will be completed next spring, the Media Lab extension, designed by Fumihiko Maki with executive architect Leers Weinzapfel Associates, is still in construction documents. Other projects—still in design—include a phased complex for the eastern end of campus that will provide 450,000 square feet for the business school, the economics department, and a library.

With such a line-up of innovative designers at work simultaneously, MIT is remaking itself for the twenty-first century. "A sense of place is crucially important in the age of information at a distance," former dean of students Rosalind H. Williams remarks of the campus framework. On one level, the technological advances fostered by MIT's very own graduates have helped bring about the loss of community and sense of alienation that MIT seeks to counter. It seems that, as an institution, MIT has been suffering from the same global isolation that William Mitchell warned about in his seminal book, *e-topia* (MIT Press, 2000). Whether this unprecedented building campaign will detract from MIT's image as an academic pressure-cooker is hard to tell today, but certainly the school is well on its way to creating a sense of community. ■

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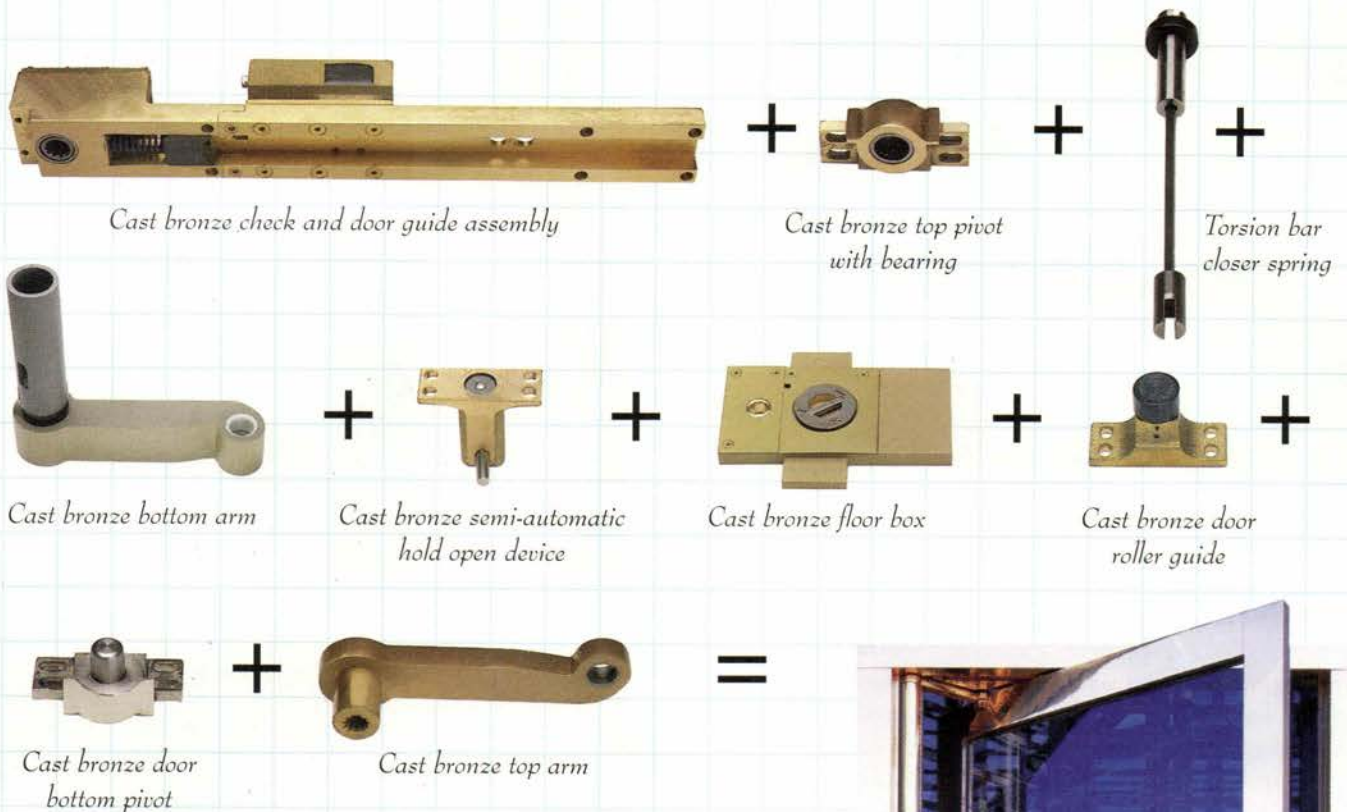
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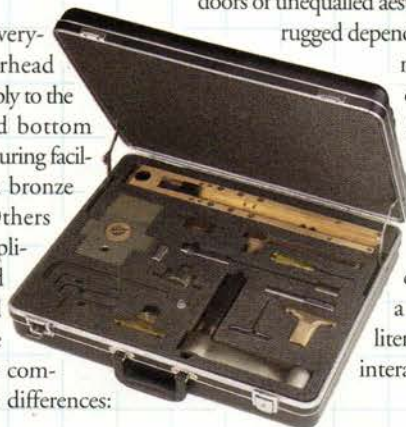
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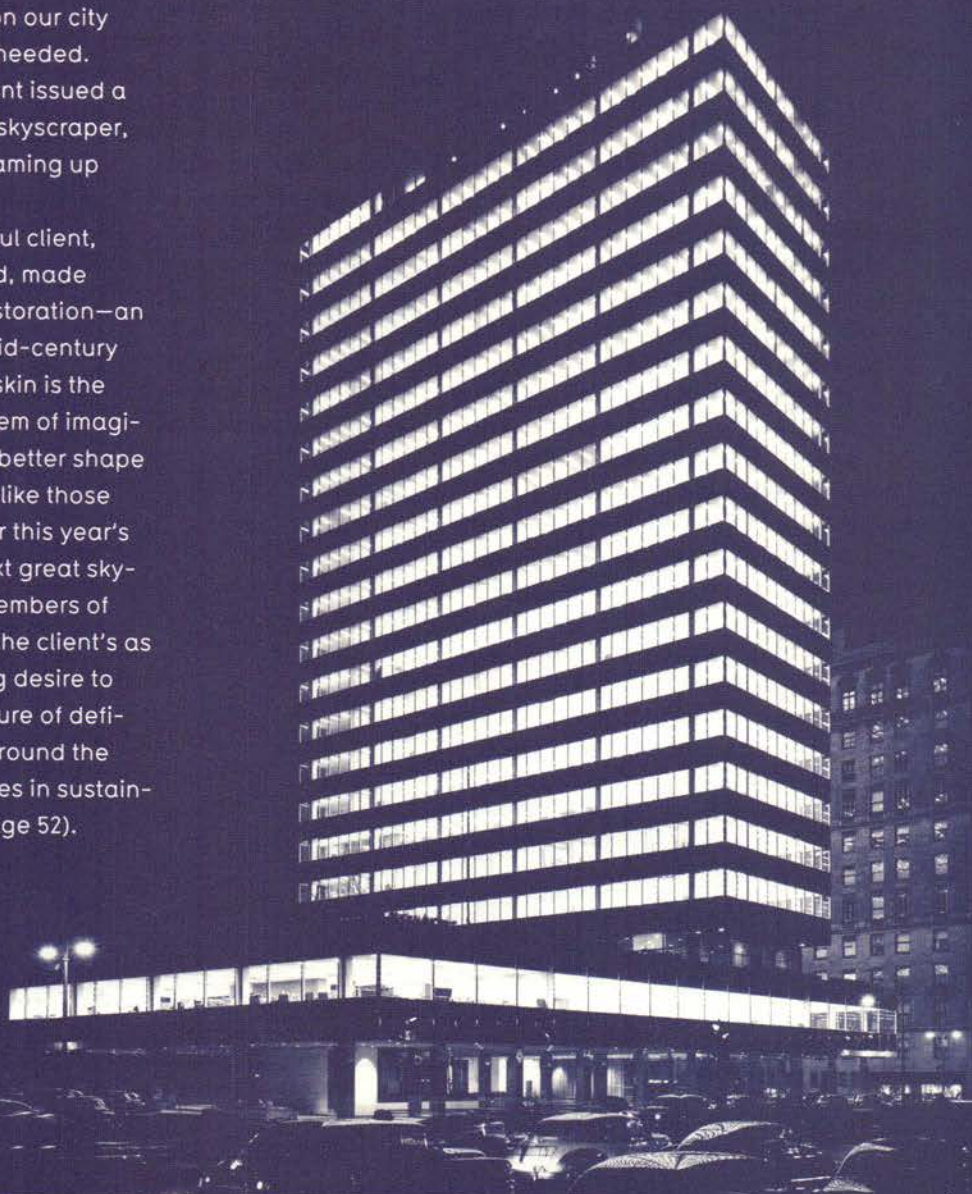
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BUILDING TALL RECONSIDERED

Fifty years ago, Gordon Bunshaft gave Lever House to Midtown Manhattan. The relationship between tower and plaza was never the same, for better and worse. Twenty years ago, architecture critic Ada Louise Huxtable gave a series of university lectures on the history of the skyscraper. The resulting book, *The Tall Building Artistically Reconsidered: The Search for a Skyscraper Style* (Pantheon, 1984), took to task the rise of postmodern towers on our city skylines. Huxtable's warnings went unheeded. Three months ago, the British Parliament issued a harsh indictment of the contemporary skyscraper, pointing its finger at architects for dreaming up such ego-driven status symbols.

Under the stewardship of a respectful client, Lever House (page 60) has been reclad, made watertight, and given a plaza-level restoration—an object lesson in how to preserve our mid-century masterworks. Though its replacement skin is the subject of much debate, this slender gem of imaginative architecture and urbanism is in better shape than ever. Led by progressive thinkers like those tapped to envision towers (page 42) for this year's Venice Biennale, the search for the next great skyscraper is well under way. As for the members of parliament: Is ego an issue? Sure, but the client's as much as the architect's. The still-strong desire to reach higher heights is a civilized gesture of defiance, and designers of tall buildings around the world are focusing on creative advances in sustainability, structure, security, and skin (page 52).

Going up?



—himself frustrated in his desire to build a skyscraper—put it: “A delicate little gesture in a model can look like a dumb move at seventy stories.” The new Roppongi Tower in Tokyo, for example, designed by KPF, seeks to offer a singular sculptural presence in its otherwise confused neighborhood.

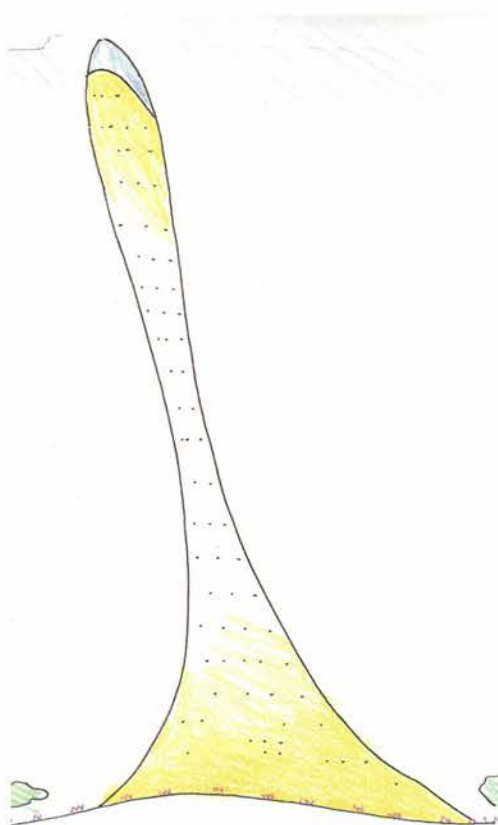
The third approach, rather uncommon in the United States, is to express the tower’s structure and use that exoskeleton as its identity. SOM has long championed this approach and used it to turn such buildings as the Hancock and Sears Towers, both in Chicago, into landmarks. These days, however, this approach appears to be too abstract for most planning officials and clients. SOM has designed several tours de force of structural expression in recent years, but they have almost all been in Asia, and none of them has been built. Two towers currently under construction, Norman Foster’s Swiss Re in London and Renzo Piano’s New York Times headquarters in New York City, use this approach, but soften it with shimmering skins and a tapering form so that they can become, as Piano so succinctly said about his New York effort, “just really pretty.”

In so doing, and in combining aspects of the three current approaches to skyscraper design, Piano is also following the strongest trend in the field; that is toward making what the Times building’s developer, Bruce Ratner, calls a “magic lantern.” Current glass technologies make it possible to create ever more transparent skins while preserving reasonable sun protection. The desire (and often, given zoning regulations, the need) to taper the tower and the need to thin its top for both functional and structural reasons are leading to a host of shimmering, almost evanescent towers currently on the boards or in construction. In addition to Renzo Piano, Jean Nouvel is increasingly working in this mode. Though his visionary Tower Without End for Paris was never constructed, work is currently underway for his Torre Agbar in Barcelona, Spain.

The more logical tendency in skyscraper design is toward the less elegant notion of letting the structure and logic of the building determine its appearance. This means not only structural expression, but also the introduction of a host of devices meant to make the interior environment more livable and energy efficient. The model for this approach is Foster’s 1997 Commerzbank in Frankfurt. Here, gardens and operable windows dissolve the skyscraper not into a shimmering symbol, but into a working machine. It is in this mode that some of the most interesting visions are being proposed.

Kenneth Yeang, for example, has taken the idea considerably further in a number of designs. In both the Nagoya Expo Tower in Seto City, Nagoya, Japan and the Eco-Tower in London (page 52), he hopes to create a collage of different functions stuck into an open structural grid.

Those who do not try to revive the old skyscraper style seem to be trying to deny its coherence and materiality. They are turning it either into a self-effacing, abstract or transparent apparition, or they are dissolving it into different parts stacked on top of each other and



mixed in with gardens or open space. The skyscraper may be disappearing out of its own logic: Its skin shimmers away into almost nothing and its structure dissolves into individual pieces. It may also be melting into the city itself. Several architects have recently been inspired by an old idea: The tall building works best as a bundle of individual verticals that reinforce themselves—a discovery made by SOM’s famous structural engineer, Fazlur Rahman Khan (1929-1982), and deployed most notably in the Sears Tower of 1974. To replace the World Trade Center, Dutch architect Lars Spuybroek and London’s Foreign Office Architects both have proposed designs featuring separate, undulating tubes cross-braced periodically. Cesar Pelli used a polite version

of this technique in the design of the Petronas Tower in Kuala Lumpur, Malaysia, currently the tallest building in the world. MVRDV hopes to construct a gridded bundle based on its design for the Biennale on the outskirts of Vienna.

TOWERS OF BABEL

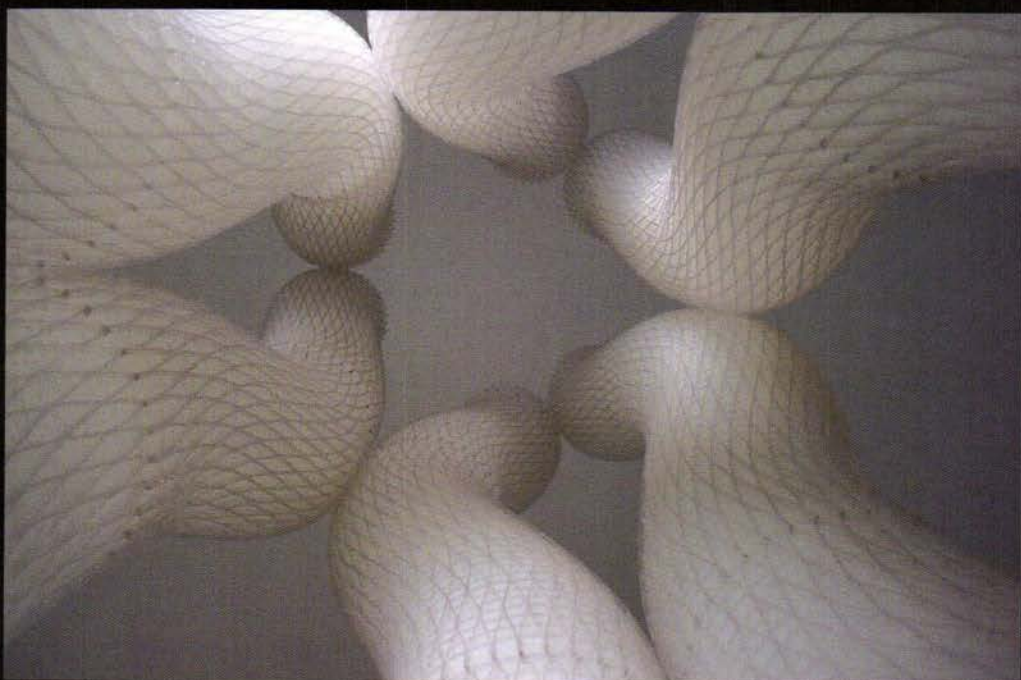
In all these cases, the skyscraper is dissolving into a more cohesive version of the high-rise ranges that currently make up the core of the world’s most vibrant cities. Intensity and density are replacing the drive for height as the motivating force behind this group of skyscrapers: The city is becoming the Tower of Babel.

Whatever approach architects and their clients may take, it is clear that the drive to build high has not yet been extinguished. While some may agree that it is in fact necessary to build skyscrapers just to prove that we are proud, willing, and able, others may argue that they concentrate power and intelligence in one place. Whether we will recognize the results as skyscrapers in the sense in which Louis Sullivan first canonized them remains to be seen. The danger is that one tower always leads to the next, and that tremendous resources are spent on reaching for pie in the sky. Skyscrapers may continue to make some sort of sense, but their ambition always has a darker side.

It is well to remember the experience of F. Scott Fitzgerald, returning to a Depression-era, ruinous New York City after leaving it at the height of the Jazz Age. He did not see the need for resurrecting that age’s vaunting ambitions, but learned from its implosion:

From the ruins, lonely and inexplicable as the sphinx, rose the Empire State building and, just as it had been a tradition of mine to climb to the Plaza Roof to take leave of the beautiful city, extending as far as eyes could reach, so now I went to the roof of the last and most magnificent of towers. Then I understood—everything was explained: I had discovered the crowning error of the city, its Pandora’s box. Full of vaunting pride the New Yorker had climbed here and seen with dismay what he had never suspected, that the city was not the endless succession of canyons that he had supposed but that *it had limits*—from the tallest structure he saw for the first time that it faded out into the country on all sides, into an expanse of green and blue that alone was limitless. And with the awful realization that New York was a city after all and not a universe, the whole shining edifice came crashing to the ground. (“My Lost City,” 1932) ■

The future shape of towers may be influenced by concepts for the Venice Biennale by MVRDV ("Kissing Towers," page 42), Future Systems (facing page), Morphosis (top, right), and Zaha Hadid (bottom, right) and for the World Trade Center site by Foreign Office Architects (top and bottom, left).





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The New York Times

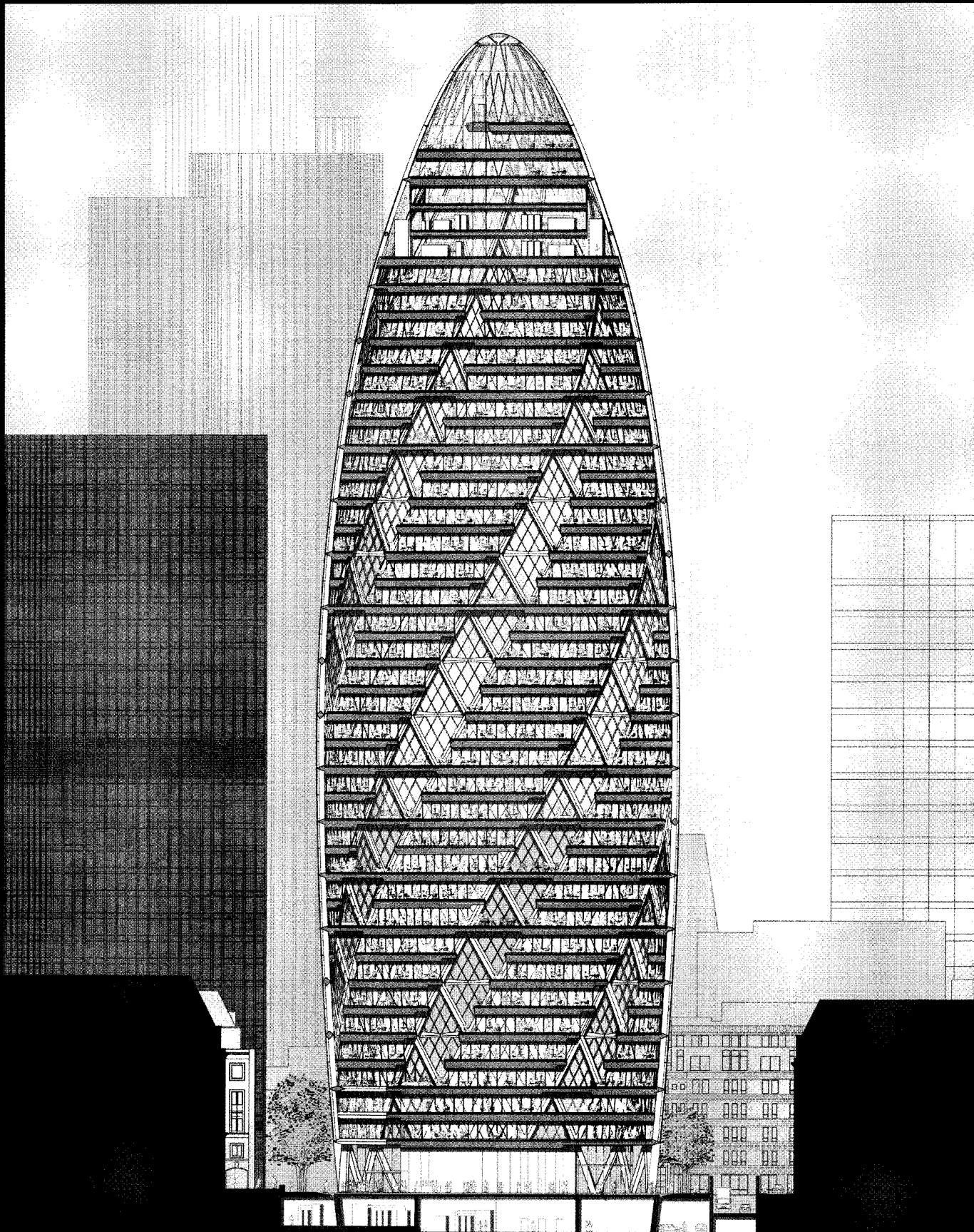
For the center piece of a 27-acre redevelopment, Kohn Pedersen Fox Associates takes the sculptural approach with its mixed-use Roppongi Tower (below), a cubist-inspired assemblage with offices, residences, a hotel, and a museum nearing completion in Tokyo; Mori Biru Architects and Engineers served as associate architect. Transparency and lightness guide the design of the 52-story New York Times headquarters (facing page), slated for a site in midtown Manhattan, by Renzo Piano Building Workshop with Fox & Fowle Architects; at the top of its mast, the Times tower will be 1,140 feet when completed in 2005.





The 40-story Swiss Re, under construction in London, exemplifies the integration of structural and formal expression, long a hallmark of the work of its architect, Foster and Partners.





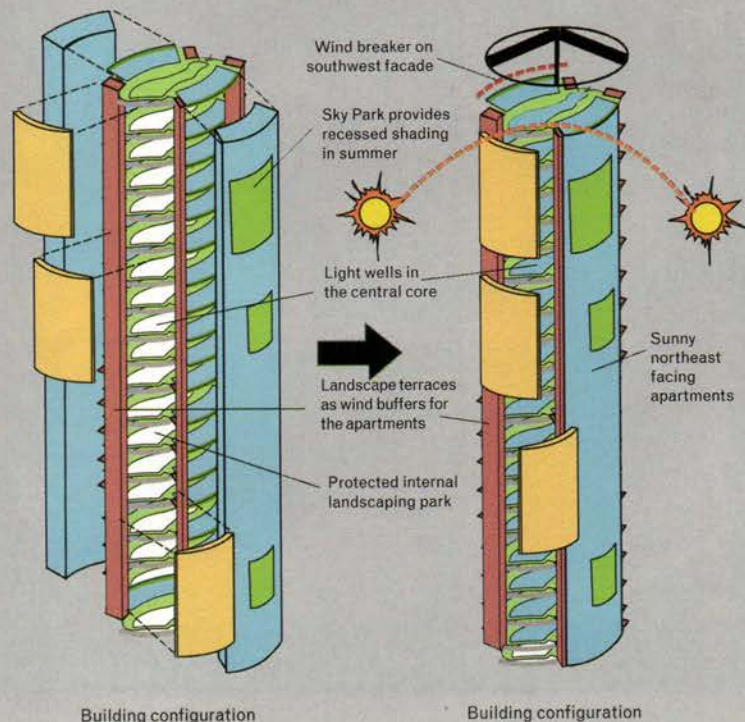




A computer montage locates Jean Nouvel's Torre Agbar within the low-rise cityscape of Barcelona, Spain. The 32-story tower is currently under construction on the Avenue Diagonal, the great boulevard that sweeps across the city; Estudio B720 is the local architect.

TECHNO TOWERS

AFTER A CENTURY OF REFINING THE CHALLENGE OF BUILDING TALL, ARCHITECTS ARE STILL FACED WITH SIGNIFICANT HURDLES. AMONG THOSE ARE SOCIAL PREROGATIVES—THE ENVIRONMENT, FOR EXAMPLE, AND HEIGHTENED ISSUES OF SECURITY AND LIFE SAFETY—AND NEW TECHNICAL MEANS FOR EXTERNAL AND STRUCTURAL EXPRESSION. FOUR NEW TOWER CONCEPTS FROM EUROPE, ASIA, AND THE UNITED STATES BRIDGE TECHNOLOGY AND DESIGN TO ADVANCE THE SCIENCE—AND ART—OF THE HIGH-RISE. **BY C.C. SULLIVAN**



ECO-TOWER, LONDON

The paradoxes of building sustainable skyscrapers have vexed designers for years. Increased glazing helps reduce artificial lighting needs, for example, but it also boosts the costs of controlling heat gains and losses. Small footprints, adjacencies, and climactic variation often limit the use of solar energy, rainwater collection, and natural ventilation. Even the act itself—building tall—is a commitment to perpetually moving against gravity, a costly proposition in environmental terms.

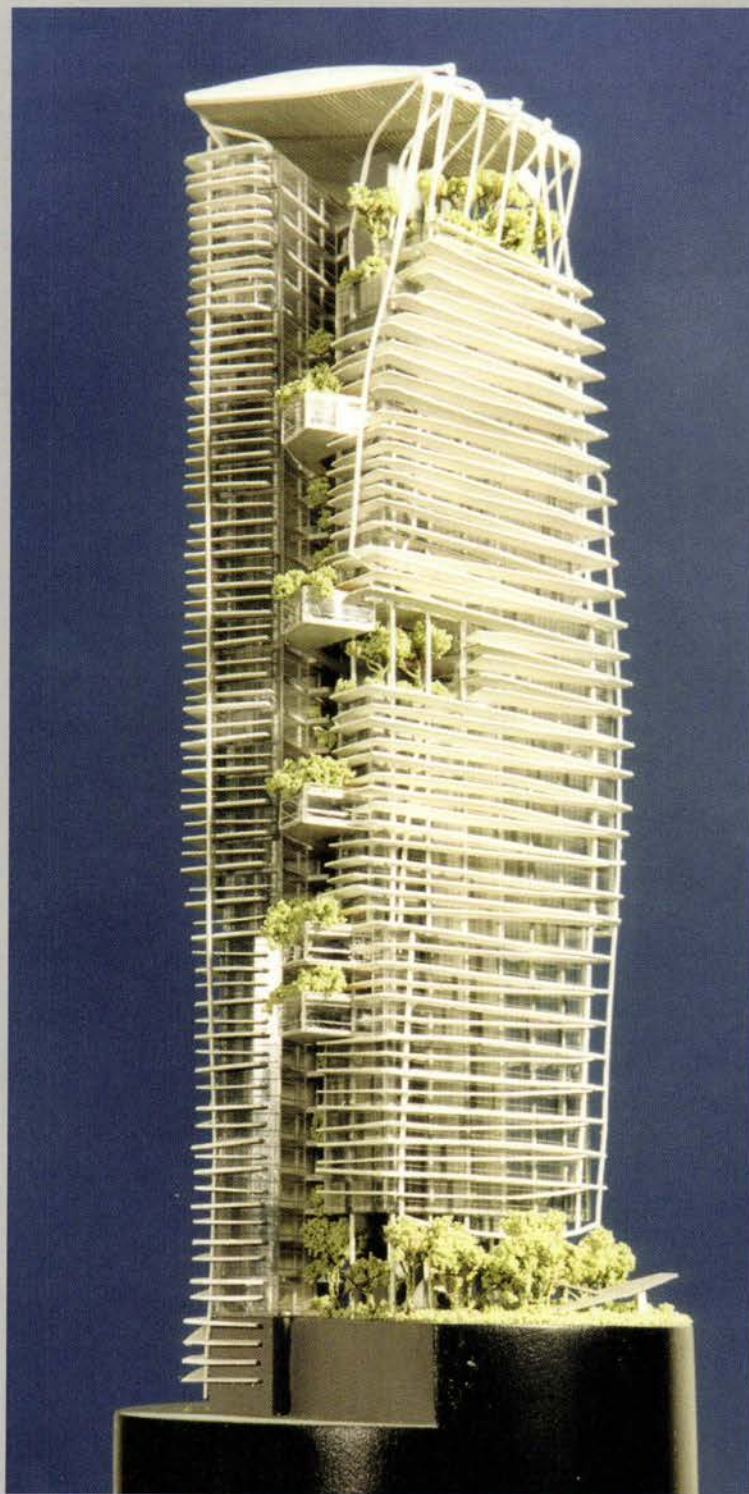
Yet, high-rise structures are integral to a sustainable future, believes architect Kenneth Yeang. Based on its relation to human and environmental systems, he contends, “the skyscraper offers the greatest possibilities for the recycling of precious resources.” The Malaysia-based designer’s vision will soon come to life at Eco-Tower, a 30-story “vertical city” with apartments, bars, restaurants, sports facilities, playgrounds—and parks. The centerpiece of the Elephant & Castle redevelopment in London to be finished by 2010, the project unifies horizontal urbanism and vertical construction—a belated marriage, perhaps, of Le Corbusier’s Radiant City and his affection for physical well-being.

Eco-Tower will host plazas and landscaping within its shaft. Large voids carved into the structure to let wind pass through and to enhance daylighting are planted and treated as plazas and parks in a vertical analogue to urban planning.

The low-energy design comprises several modes of building function, which Yeang describes as passive, mixed, full, and productive. Daylighting, for example, is best treated with passive-mode methods—in other words, without any use of mechanical or electrical systems. At Eco-Tower, an angled light pipe measuring about 3 feet square employs internal reflective surfaces and a laser-cut external edge to throw 400 lux of daylight 40 feet into the floor plate. Natural ventilation will provide comfort cooling, supplemented when needed by mixed-mode electrical fans. (Most naturally ventilated towers, such as Foster and Partners’ Commerzbank in Frankfurt, Germany, use wind for displacement and fresh supply air.) Eco-Tower’s large openings on the north and south façades vent and cool internal passageways and lobbies, as well as provide cross-ventilation to the apartment units. Operable shutters fine-tune the amount of supply air, depending on the season and the operating mode adopted.

The double-glazed façade system is a mixed-mode solution, and Yeang favors clear low-emissivity glass over tinted or colored varieties to give “a much more direct and true relationship with the external environment.” In general, his material and finish specifications focus more on recyclability than “embodied energy,” because downstream reuse cuts energy requirements in half.

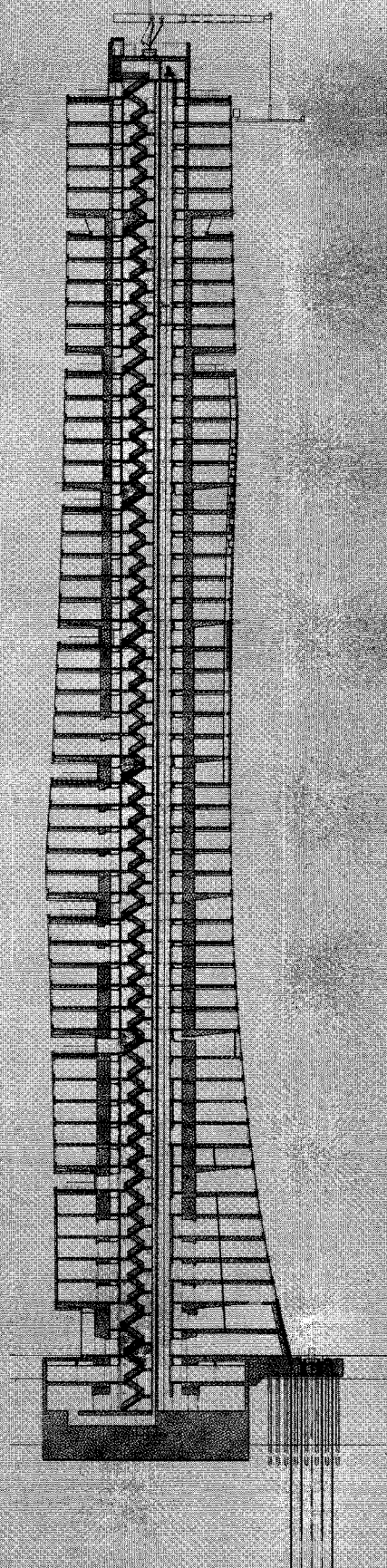
While the sustainable tower is still under consideration, the key for designing big and green is twofold, says Yeang: Whether it is for water, energy, or air, optimize passive-mode strategies first. Second, and more importantly, decompartmentalize and diversify the built form to create public realms and new “land uses” within the high-rise.



Eco-Tower has two major openings, one at the north façade and another at the south façade, allowing wind to enter into internal passageways and lobbies either to vent and cool these spaces or to provide cross-ventilation to the apartment units. These have shutters at the façade openings, which can open and shut at varying levels of closure depending on the weather and building operations. Key components of “passive-mode” energy savings come from wind-induced ventilation, daylighting in the summer (facing page, right), and solar heating in the winter.

ELEPHANT & CASTLE ECO-TOWER, LONDON

CLIENT: City of Southwark (U.K.) Council ARCHITECT: T.R. Hamzah & Yeang, Selangor, Malaysia—Dr. Kenneth Yeang (principal), Ridzwa Fathan, Portia Reynolds (design architects) ASSOCIATE ARCHITECTS: HTA Architects, London (housing and park); KP Architects, London (master plan); Foster & Partners, London (public areas); Benoy Architects, London (retail) LANDSCAPE ARCHITECT: Derek Lovejoy Partnership ENGINEER: Battle McCarthy (structural and environmental) CONSULTANTS: EAG Environ (environmental); Anthony Blee (historic preservation); Halcrow Fox (transportation) AREA: 276,000 square feet



Section 130'

TURNING TORSO, MALMÖ, SWEDEN

Is Santiago Calatrava's structural language eccentric or simply nature at work? Many of his abstracted forms derive from the human body, and their schematic biomorphism defies conventions of modern structures. For example, while high-rise designs tend to fall into a handful of basic structural types, Calatrava's new "Turning Torso"—a residential tower that twists its way out of the limestone and sand of Malmö, Sweden—invents an entirely new idiom.

Reaching a height of 625 feet and turning 90 degrees along its rise, the structure articulates a "spine" of nine cubical vertebrae containing 54 floors of about 4,300 square feet each. Each floor consists of a square section around a circular building core, and a triangular extension supported in part by steel braces. The tower, when completed next year, will host offices in the lowest two cubes and residences above.

At about 150 feet square, the site is tiny for such a tall tower. The original foundation scheme comprised a big slab and rock anchors connecting to 12 radial walls that would have completely filled up the basement levels. To open up underground space, Calatrava—who is trained as an architect and engineer—opted instead for a massive, 23-foot-thick circular bottom slab with a diameter of just under 100 feet and two basement levels above. Rising from the basement levels is a concrete core with a constant inner diameter of 35 feet that bores its way up through the nine cubes; its concrete walls taper from more than 8 feet thick at the bottom to a slender 16 inches at the top. The core contains three high-speed elevators (one a "fire-safe" version), staircases, and mechanical shafts. Strung along the core extrusion are 54 concrete slabs, wrapped six at a time by a curved façade system of glass and white aluminum. Gripping the exterior of the slabs is a steel truss system of horizontals, diagonals, and embedments that pulls about 3,500 tons of pressure and tension into an entirely separate foundation of 42 concrete piles and 16 rock anchors.

While Calatrava originally envisaged the mannerist structure with concrete slabs cantilevered off the core, concerns about deflection led to the insertion of perimeter steel columns in the façade. Now, with the slabs in each cube connected by posts, each hung mass is like its own five-story building, with a heavier bottom slab. The façade contractor's tolerance requirement is three quarters of an inch, and long-term deflection is a concern as well. While the façade is a run-of-the-mill single-layer system (in white, Calatrava's trademark color), the insulated metal is curved in two directions, reflecting the corkscrew twist of the torso, and the resulting window openings are rhombic.

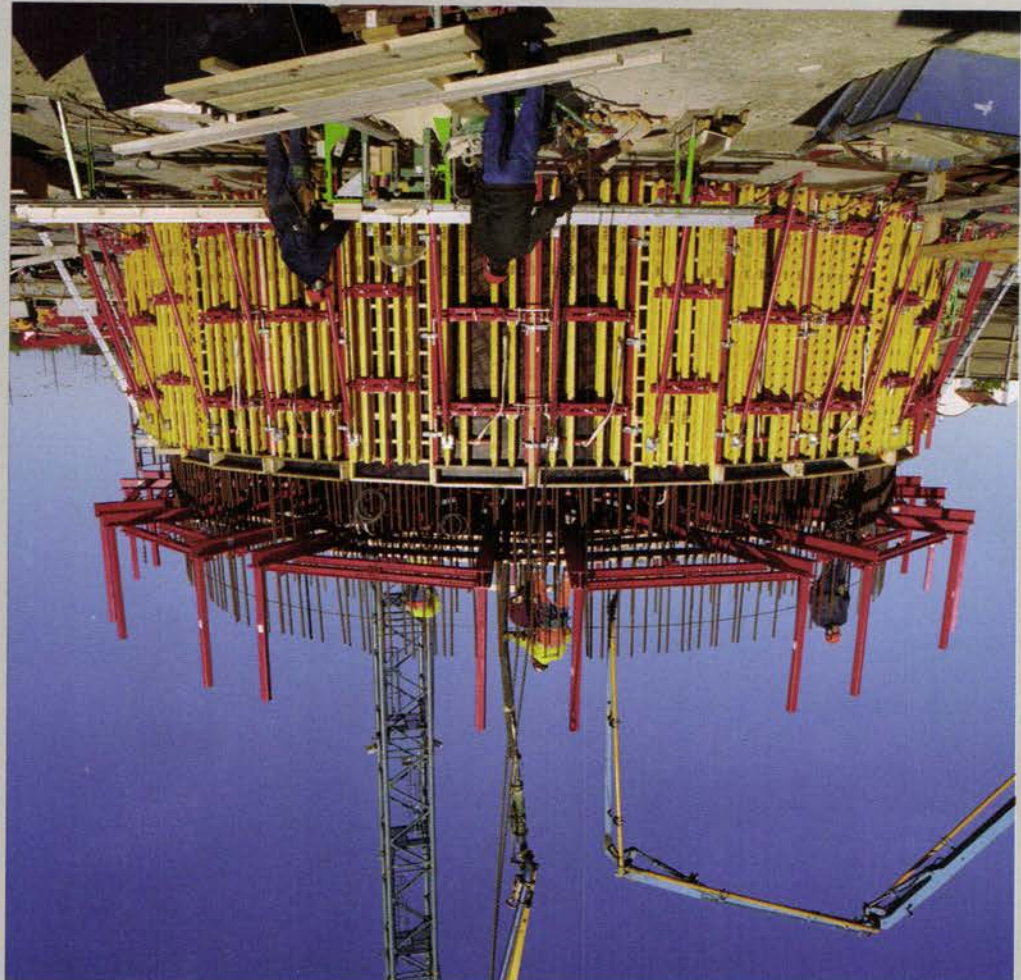
True to his sculptural approach, Calatrava first conceived the structural physics of the tower in 1999 with a 6-foot-tall marble model. Later, he tested wind loading on study models at the University of Western Ontario's Boundary Layer Wind Tunnel Laboratory.

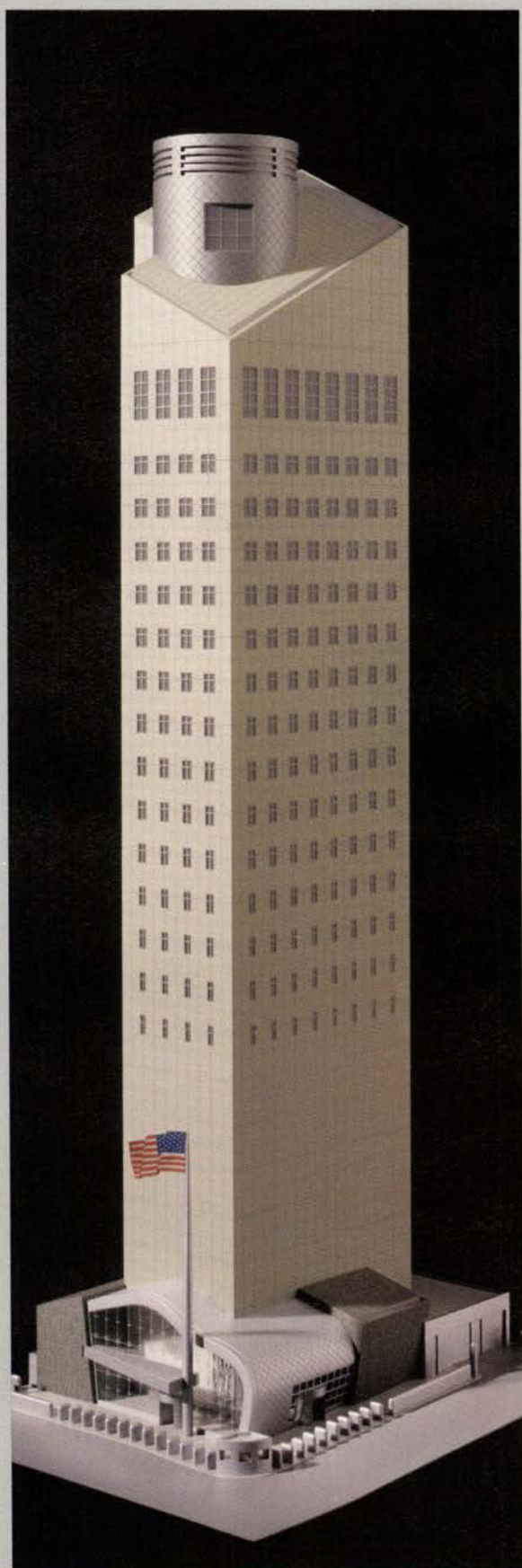
The form was not intended to mimic the backbone, says Calatrava, but rather nine abstracted constituents of the human body: toe, foot, shin, et cetera. "Whether in the case of trees or vertebrae, one finds the form dictated by the universal structural law that the base is thicker than the crown," says Calatrava. "The recurrence of this principle expresses economic efficiency. But it also arises from something beautiful, namely rhythm."

TURNING TORSO, MALMÖ SWEDEN

CLIENT: HSB Malmö—Johnny Örbäck (managing director); Ingvar Nohlin (project leader) ARCHITECT: Santiago Calatrava, Zürich INTERIOR ARCHITECT: Samark Design & Architecture, Malmö ENGINEERS: Santiago Calatrava (structural); NCC Teknik (M/E/P); Bengt Dahlgren (M/E/P); Sweco (civil); Öresund Safety Advisors (fire protection) CONSTRUCTION MANAGER: NCC Construction
AREA: 207,000 square feet PHOTOGRAPHER: Pierre Mens

A 23-foot-thick circular bottom slab with a diameter of about 100 feet anchors the tower in limestone bedrock, with two basement levels above. The rock anchors and concrete piles supplement the disc-shaped slab (cross-section), and an external bracing system stabilizes the extended portion of the tower, which is triangular in plan. A circular concrete core (shown under construction) rises through the shaft.





U.S. MISSION TO THE U.N., NEW YORK CITY

The latest concepts in high-rise safety and building security, many developed over the last decade (and some refined over the last year), include new surveillance tools, biometric identification devices, and rapid-evacuation transport. And the power of architectural and structural defense is reinvigorating tower designs in ways that complement evolving technologies of deterrence and detection. An extreme example is the new design for a 22-story U.S. Mission to the United Nations, which gives built expression to blast mitigation and stringent security criteria. While this project by Gwathmey Siegel Associates undoubtedly contains a classified high-tech security package, its external image is a brutally honest emblem of architecture as defense.

Guidelines from the U.S. State Department on accommodating today's diplomatic programs and on basic preparedness for terrorist attacks yield formal expression in structure and envelope. Superimposed on a tartan grid of high-strength reinforced concrete with articulated form ties is an oddly memorable fenestration matrix derived from the distance required for safety between a blast source and a point of impact. The windows get wider as they scale the façade, with the largest openings at the top floor, where a 75-foot-high formal reception space and press conference facilities are located. The lower floors contain back offices and equipment, a fact that helps make practical the first seven floors, which are windowless.

Rather than attempt to moderate or hide this solidity, the architects build upon it with the gridded concrete and articulated form ties. Peeking out of the southeast corner is a cylindrical extrusion of zinc-clad concrete that emerges at the crown from a beveled roof. At the first-floor glass lobby, which affords less protection, the main gridded shaft is visible within, where it begins its direct ascent to the sheared roof, with no setbacks, reveals, shelves, or cantilevers. The tower is backed up against the imposing, dark-green prism of Kevin Roche John Dinkeloo and Associates' U.N. Plaza (1969-1975), giving it ample counterpoint—and cover. In plan and massing, the tower is a furtive interloper compared to the grand sweep of the U.N. Secretariat building (1952) across the street.

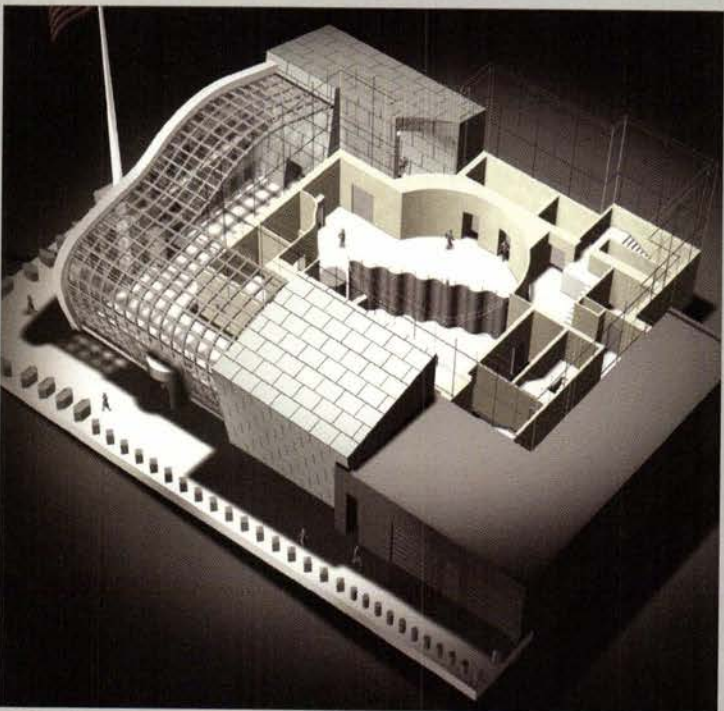
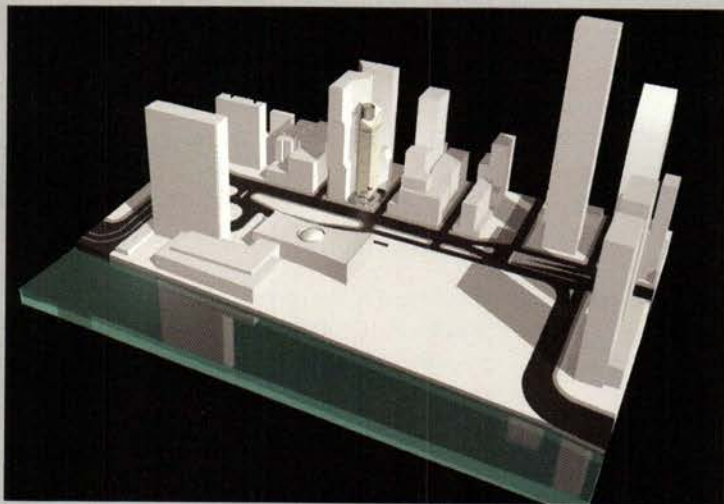
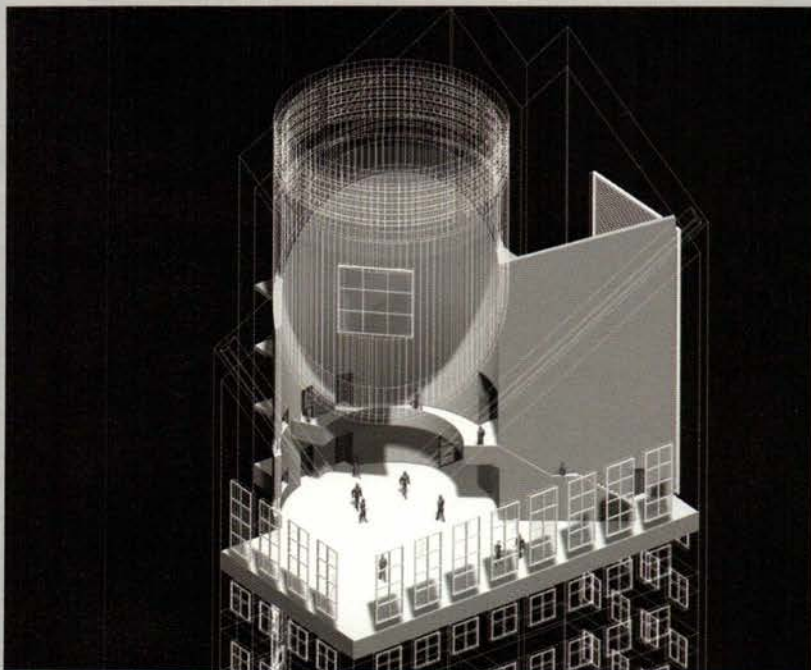
Every aspect of the entry sequence speaks to the challenges of the tight site. At the plaza, the sidewalk is interrupted by a layer of traffic bollards meeting at a corner police kiosk (required by the State Department and the city), all clad with stainless steel. The next layer diverts user groups into two categories—public visitors and diplomatic users—the former to the side street, expressed by a dark granite wall, and the latter along the avenue, through an expanse of point-supported glazing below an undulating stainless-steel enclosure. The glazed lobby is a visual lesson in the tradeoffs of a free society, at once a point of vulnerability and a necessary symbol of a democratic institution. Once inside, diplomats and visitors enter into parallel circulation routes separated by a sine wave of stainless-steel security grillage leading to twin screening areas within the imposing concrete shaft.

The U.S. Mission tower advances the dialogue of how high-rises might evolve in a society under siege. Like the police kiosk on the street corner, defensiveness is integral to the urban expression of how a diplomatic space meets the street in a busy city.

U.S. MISSION TO THE UNITED NATIONS, NEW YORK CITY

CLIENT: U.S. General Services Administration USERS: U.S. Mission; U.S. Information Agency; Office of Foreign Missions ARCHITECT: Gwathmey Siegel & Associates, New York City—Charles Gwathmey, Robert Siegel (principals)
AREA: 143,000 square feet ENGINEERS: Severud Associates (structural); Cosentini Associates (M/E/P); Parsons Brinckerhoff Quade & Douglas (civil)
LIGHTING DESIGNER: Cosentini Associates

Clockwise, from right: A 75-foot-tall penthouse space containing a formal reception area and press conference facilities caps the U.S. Mission tower. The exterior comprises a high-strength grid of unadorned reinforced concrete with articulated form ties; window openings shrink toward the base, where they would be closer to an assumed blast source. Two entrances bring visitors and diplomats into parallel circulation routes separated by stainless-steel security grillage leading to twin screening areas. The tower, which employs traffic bollards and a police kiosk for street-level protection, faces the U.N. Secretariat and backs up against Kevin Roche and John Dinkeloo's U.N. Plaza building.





KOWLOON STATION TOWER, HONG KONG

High-rise cladding systems benefit from the twin forces of technology and economy of scale; architects amortize the incremental costs of design advances across large vertical expanses. An example of this is taking shape in a fast-developing section of Kowloon, near Hong Kong, where Kohn Pedersen Fox is draping an elegant and efficient curtain-wall system over what could be the tallest building in the world. With a planned 1,575 feet in height when completed in 2008, the skyscraper will stand across Victoria Harbor from the 88-story International Finance Center II on Hong Kong island, forming a high-rise gateway to the bay.

To meet the developer's desire for an "efficient and dramatic" design, the 3-million-square-foot program of office and hotel space is a simple massing with a special exterior. The tower splays toward the base to offer more ample floor plates, but also to take firm root in the changing landscape of Kowloon Station, a new transit hub. Yet, the gentle taper of the mass seen at the corners is hidden elsewhere by four "frontal façades" that carry the curtain wall straight from crown to base, where the envelope peels away to form curling overhangs and a large entrance canopy. At the tower's peak, the curtain wall dematerializes into a crown.

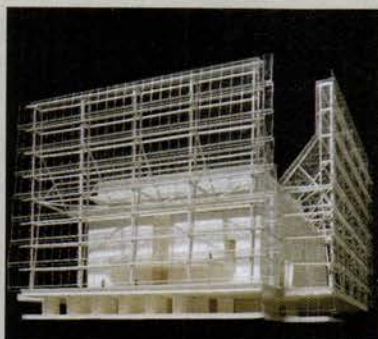
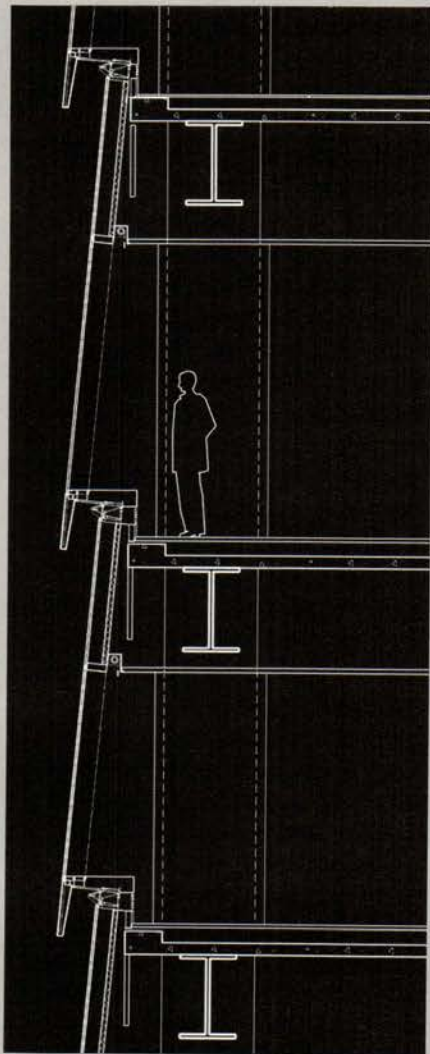
The unique cladding system derives from a typical unitized curtain-wall system, which is ideal for large projects; the factory-assembled, modular panels are shipped to the site, where crews working from inside the building tilt up and hang the units. In this case, however, the design introduces a slight angle and a 2-foot lap to the 5-foot-wide panels, which span slab to slab, creating a shingle effect. At the re-entrant corners, the glass curtain wall has a taut, dark sheen, contrasting the highly reflective, textured frontal elevations, which refract light and help break down the visual mass of the building.

To express the shingled façades and the re-entrant corners, trusses extend beyond the floor plates on all four sides. Horizontal beams span between the trusses, and the curtain-wall modules are attached to the truss nodes. Because of the large cantilevers at the edges of the floor plates, a lightweight steel post is hidden within the curtain-wall panel to equalize deflections between the planes, protecting the curtain wall from the effects of overloading on any cantilevered area.

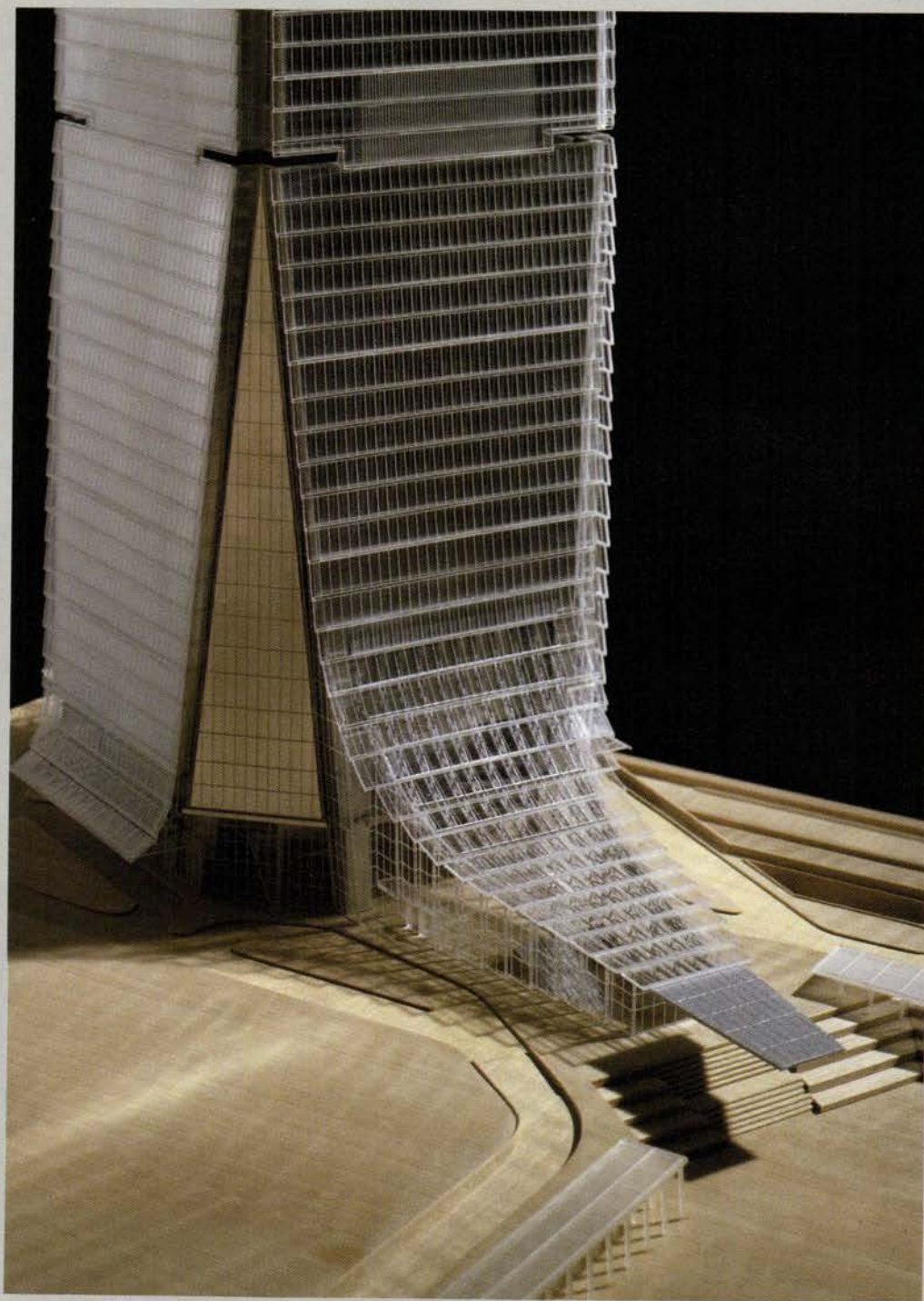
To unify the tower with its mixed-use site, the façade peels away from its base, forming canopies on three sides and the skylighted atrium to the north. Vertical trusses carry the curtain wall down some six stories to a structure of "portal frames" of columns and trusses. A "stack joint" in the exterior system accommodates movement of the elements within needed construction tolerances—Hong Kong winds can be severe—and the configuration of the unitized panels allows them to rotate and change direction to describe the curving geometry of the canopies and the sloping skylights. With this transformative gesture, the tower's face becomes an earthbound participant in the plaza and the rail station below.

It's easy to assign a literal cultural symbolism to the envelope's expression—pagoda, dragon scales—but that would be a mistake. Kowloon Station Tower operates on a level of abstraction that permits multiple readings, reflecting the diversity and multiplicity of its host city.

KOWLOON STATION MEGA TOWER (UNION STATION), KOWLOON, HONG KONG
 CLIENT: Harbour Vantage Management/Sun Hung Kai Properties, Hong Kong
 ARCHITECT: Kohn Pedersen Fox Associates, New York City—William Pedersen (design principal); Paul Katz (managing principal); Andreas Hausler (project manager) ENGINEERS: Arup, Hong Kong (structural); J. Roger Preston (M/E/P)
 CONSULTANTS: ALT Cladding & Design (exterior wall); Arup Fire (fire safety); Lerch Bates & Associates (vertical transportation and exterior maintenance); WTP (quantity surveyor) LANDSCAPE ARCHITECT: Belt Collins & Associates
 AREA: 2.8 million square feet



The mixed-use tower expresses five zones that correspond to the location of refuge floors, mechanical floors, and structural outrigger floors. At the base, the tower spreads out to create large canopies sheltering the office and hotel drop-offs (below, right and left). At the top, the tower culminates in a seven-story glass crown (left), which houses a restaurant offering dramatic views from the top of the hotel. Curtain-wall units that angle and lap previous units sheath the tower with a kind of shingled exterior (far left). The glass is a highly reflective, silver-coated material designed to limit internal reflectance but to transmit illumination deep into the large floor plates.

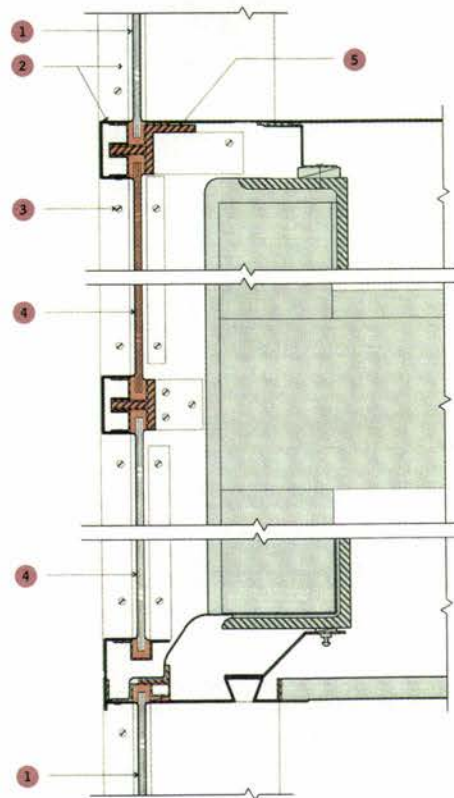




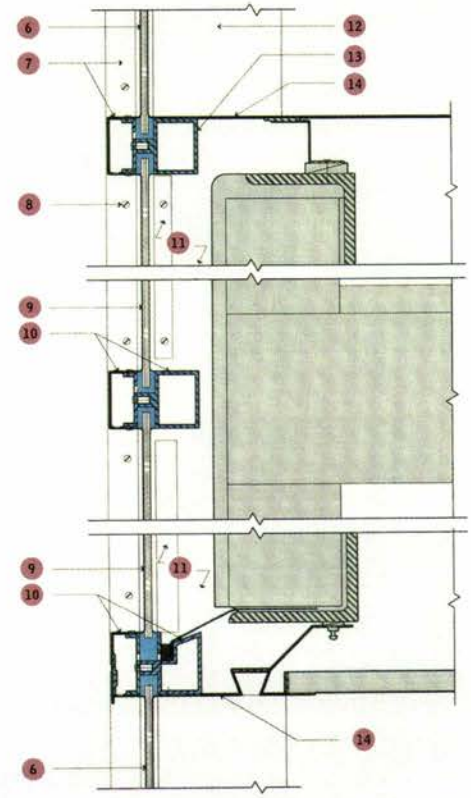
Lever House



- 1 vision glass
- 2 stainless steel
- 3 stainless-steel fasteners
- 4 spandrel glass
- 5 carbon-steel glazing stops
- 6 new vision glass and sealant
- 7 new stainless-steel mullion caps
- 8 new stainless-steel fasteners
- 9 new glass at shadow box
- 10 new horizontal extrusion
- 11 shadow box
- 12 mullion cover
- 13 new horizontal extrusion
- 14 closures

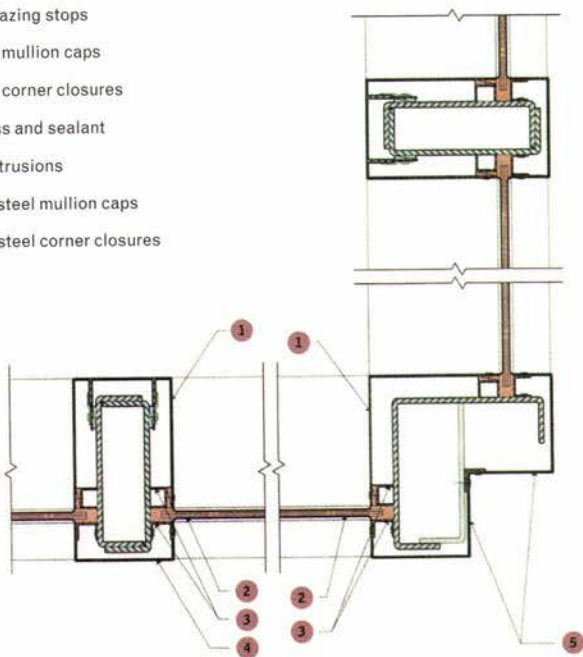


Original head/sill section at spandrel

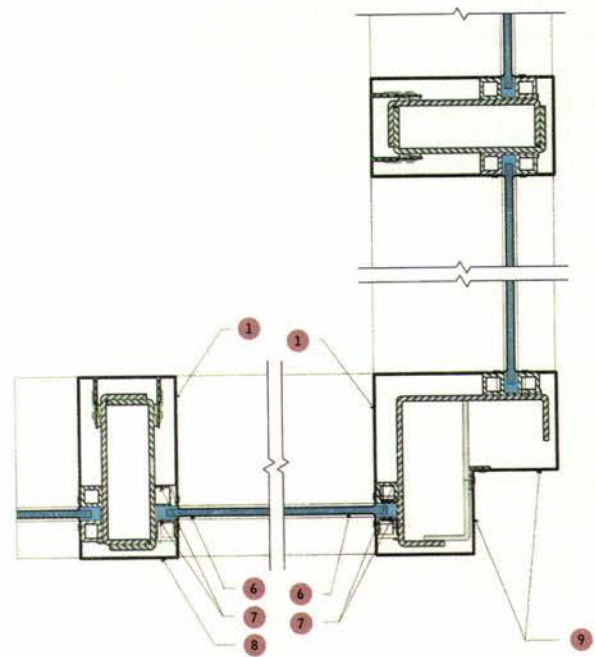


Proposed head/sill section at spandrel 3"

- 1 metal closures
- 2 vision glass
- 3 carbon-steel glazing stops
- 4 stainless-steel mullion caps
- 5 stainless-steel corner closures
- 6 new vision glass and sealant
- 7 new vertical extrusions
- 8 new stainless-steel mullion caps
- 9 new stainless-steel corner closures



Original mullion/corner detail



Proposed mullion/corner detail 3"



THE NEW CURTAIN WALL: INVISIBLE IMPROVEMENTS

These curtain wall details (facing page) by Skidmore, Owings & Merrill (SOM) show the firm's 1996 proposal, the basis of a New York City Landmarks Preservation Commission (LPC) approval. The actual replacement wall, directed by curtain-wall consultant Gordon Smith with SOM as consultant, has behind-the-surface changes, which were mocked up and approved in the field. The spandrel glass now runs undivided from head to sill, with a nonfunctional horizontal member crossing its surface. The "shadow box" behind the spandrel is backed by an aluminum panel with a Kynar-based coating, which is more durable and colorfast than the original painted plaster surface—justifying its greater cost.

The replacement vision glazing is a single-thickness tinted glass similar to that originally used. SOM did not propose insulating glass—commonly used today—maintaining that its tendency to pillow would spoil the crisp wall geometry. They also obtained an exemption from the

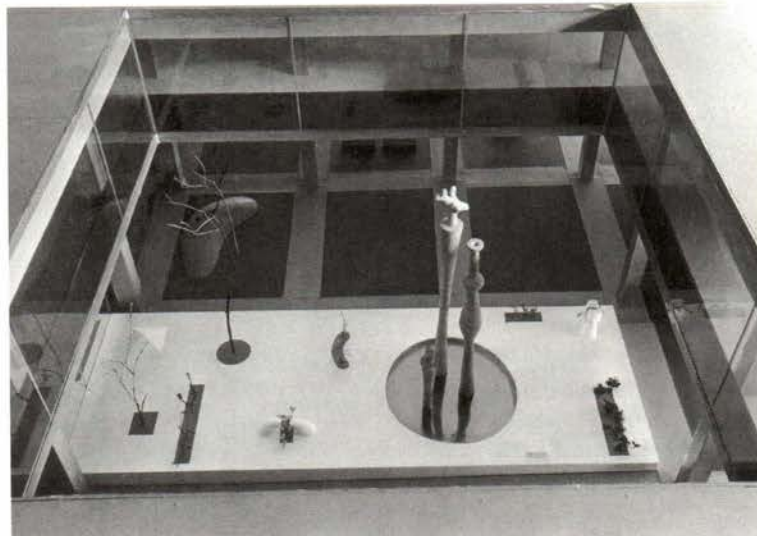
state energy code based on historic preservation. Smith thinks insulating glass would have been acceptable to the LPC, but he "didn't push the issue," because necessary approvals were already in hand. Since mechanical systems were sized for single-thickness glass, Smith concedes that the "economic payback probably wasn't there" anyway.

Another feature of the original wall—rarely seen today—is the use of visible screws to attach the stainless-steel caps. SOM partner Carl Galioto says contractors are still happy to use screws, given the opportunity; in fact, SOM always calls for a few inconspicuous ones, as insurance against any imperfections seen in snap-on caps. In any case, says Smith, snap-on caps require the use of roll-formed sections, and only break-formed sections could duplicate the crisp corners of the originals caps.

Extra-large sheets of glazing at the second-floor level were replaced with essentially the same glass as the original, even though at this size the panels no longer meet the city code for wind resistance. A waiver was obtained based on field experience: the old glass had not failed over a 50-year period that included hurricane-force winds.



Street-level work for the Lever House project includes restoration of the original landscaping and incorporates elements of sculptor Isamu Noguchi's unexecuted 1951-1952 proposal for the plaza (below, right). His treatment envisaged large-scale sculpture and little planting at this level. The current plan (below, left) by landscape architect Ken Smith (worked out with the Noguchi Foundation and art consultant Richard Marshall) sites four stone sculptures in the south plaza, one in the lobby extension of the plaza planter, and three aluminum sculptures in the previously empty space north of the lobby. Seating in white and black marble, proposed by Noguchi and detailed in original SOM construction documents, is being put in place after a 50-year delay.





New seating and a new concierge desk are essential elements in the restoration of the lobby. Architect William Georgis completed the restoration based predominantly on archival photographs of the original space.



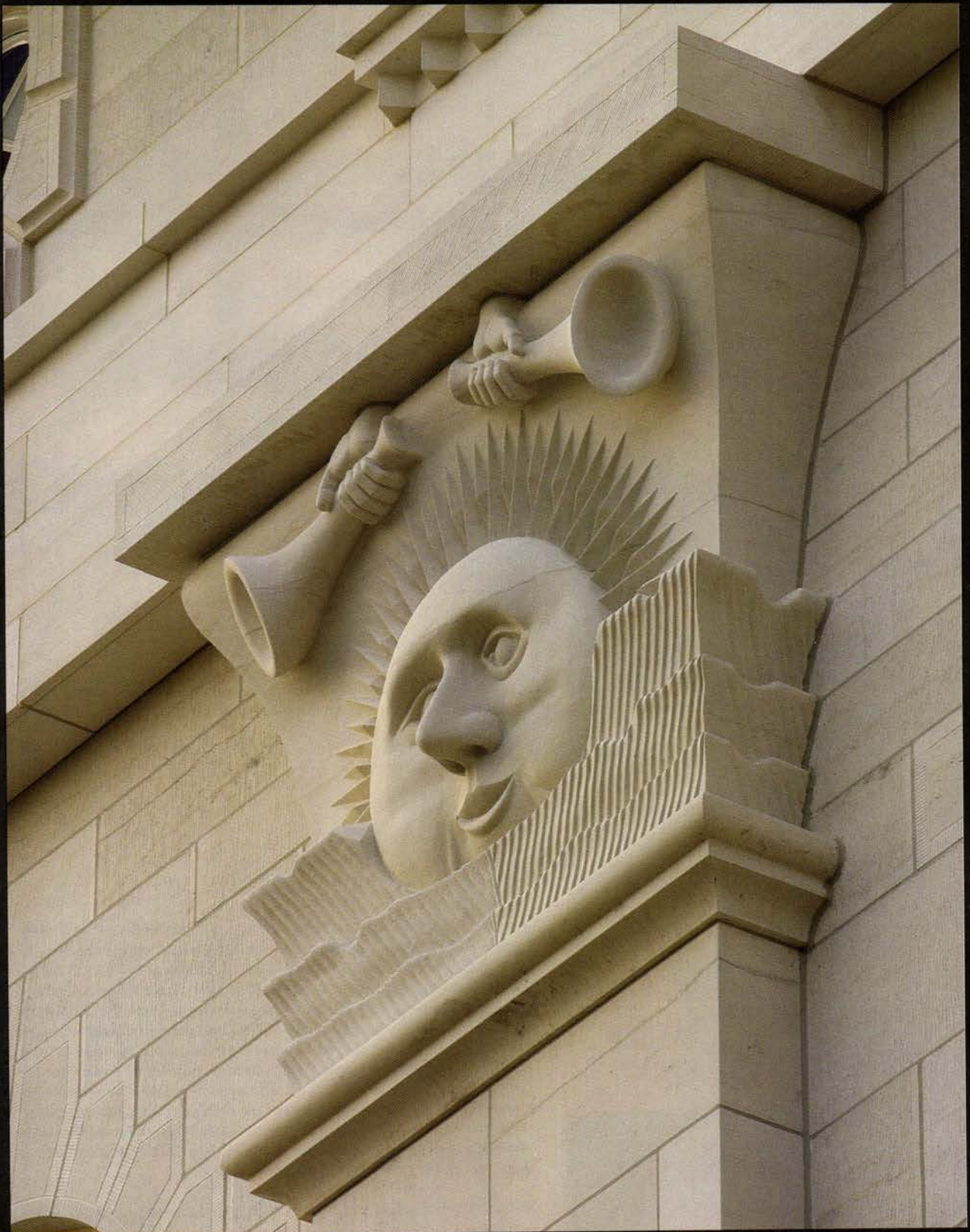
RESTORATION AND REPLACEMENT OF CURTAIN WALL, LEVER HOUSE, NEW YORK
CLIENT: RFR Holding—Aby Rosen (president); Mark Granata (project manager)
ARCHITECT (RESTORATION): William T. Georgis Architect, New York City—William T. Georgis (principal) **ARCHITECTURAL CONSULTANT (CURTAIN WALL):** Skidmore, Owings & Merrill—David Childs (design partner); T.J. Gottesdiener (managing partner); Carl Galioto (technical partner)
ARCHITECT (ORIGINAL BUILDING): Skidmore, Owings & Merrill **LANDSCAPE ARCHITECT:** Ken Smith
LANDSCAPE ARCHITECT—Ken Smith (project designer); Elizabeth Asawa (project manager); Yoon-Chul Cho **ENGINEER:** Gordon H. Smith (curtain wall); Weber Associates (structural) **CONSULTANTS:** Gordon H. Smith (exterior); Landscape Agency New York—Gavin Keeney (landscape historical research); Ken Smith Landscape Architect (landscape historical research); Richard D. Marshall (art curator); Noguchi Foundation—Shoji Sadao, Bonnie Richlak (sculpture curator); Pentagram Design—Michael Bierut (graphic design) **LIGHTING DESIGNER:** Johnson Schwinghammer Lighting Consultants

PHOTOGRAPHY: ADAM FRIEDBERG (COLOR); EZRA STOLLER (BLACK AND WHITE)

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It is with great pleasure that we announce the winners of *Architecture Magazine's* first annual Architects Choice for Excellence Awards. The ACE Awards recognize manufacturers who have provided you and your projects with the best products and services.

We salute these industry leaders, as voted by the readers of *Architecture Magazine*, for their commitment to product excellence in the areas of durability, value, service, and quality. Innovation, customer collaboration, and top-notch performance are trademarks of all the winners as they strive to meet and exceed design expectations, cost criteria, and demanding deadlines.

And to those who took the time to select this fine group of winners, we extend our appreciation. The ACE Award winners will be available on our Web site—www.architecturmag.com—throughout the year to provide a valuable resource for you. After all, they showcase the best in the business.



Suzanne Tron Haber
Publisher

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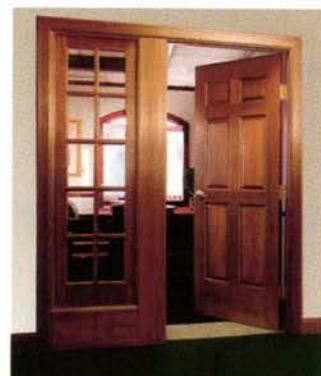
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Doors & Windows

Wood and Plastic Doors & Frames



Industry Insight

Algoma Hardwoods

"Since inception, Algoma Hardwoods has strived to be the leader in product development, product quality, and customer support," says Brian Buckles, president and chief operating officer. "Our full-time sales force is comprised of factory-employed field sales professionals skilled in all areas of wood doors. Our hallmark is the personalized service that we offer architects, owners, and distributors."

Based in Algoma, Wisconsin, Algoma Hardwoods manufactures and markets architectural hot press, five ply flush wood doors, traditional stile and rail wood doors, and the recently introduced Artisan doors. In addition to the more standard products, Algoma also produces specialty doors such as acoustical doors for sound-rated openings, lead-lined doors for x-ray protection, and bullet resistant doors for law enforcement facilities. Algoma doors carry fire ratings from 1/3 to 1 1/2 hours in both neutral and positive pressure test standards.

Always an industry leader in new products and innovation (Algoma introduced the first wood-faced mineral core fire door back in 1947), Algoma was the first architectural flush wood door company to gain product approval from the Forest Stewardship Council (FSC) for environmental certification. This ensures that a prescribed portion of the wood used in a specific project comes from forests that are professionally managed. Algoma was the first company of its type to earn Quality Certification Program (QCP) certification by the Architectural Woodwork Institute (AWI), indicating that Algoma's products comply with AWI standards.

Built to order to architect/designer specifications, Algoma Hardwoods doors are available in a variety of wood species and constructions. "We are a custom shop whose products literally run the gamut from A to Z—from Avodire to Zebrawood and everything in between," says Henk Wolst, vice president of marketing and sales for Algoma Hardwoods. Algoma's newest product, the ARTISAN Door series presents a unique combination of value and aesthetics, ideal for designers requiring the look of traditional stile and rail doors, while having to be sensitive to budgetary constraints.

Working to support the architectural community, Algoma provides training and continuing education through programs certified by the American Institute of Architects (AIA). These programs are available throughout the year at an architect's office, in a local market, or in some cases at Algoma's facility in Wisconsin. Programs range from 'Wood Doors 101' to the popular 'What's New in Wood Doors.' "If you want to learn about wood doors, this is one of the best ways to do it," says Wolst. □

Algoma Hardwoods has a long tradition of fine woodworking craftsmanship and door making skills. Algoma's flush, stile and rail, and Artisan doors are made to order and delivered on schedule.

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For more information about the Artisan® Door, contact Ms. Vonnie Haack at 1-800-678-8910, or visit www.algomahardwoods.com.



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Finishes



Industry Insight

Armstrong Ceiling Systems

Armstrong's Ceiling Recycling Program, the first of its kind, enables building owners to ship old ceiling tiles from renovation projects to an Armstrong ceiling plant as an alternative to landfill disposal. The program is designed to help customers reduce their impact on the environment by redirecting used ceiling tiles from landfills back to Armstrong, thereby creating a closed loop manufacturing process. The program recently received its 10,000,000th square foot of discarded ceiling tile.

A worldwide leader in the manufacture and marketing of commercial ceiling and floor products, Armstrong works to retain this leadership through customer collaboration, product innovation, customer service, and quality manufacturing.

Ceilings are starting to see more texture, patterns, and curves. "There's an appreciation of the space for its aesthetic qualities, while retaining its acoustical and lighting needs. Ceilings are moving from two-dimensional to three-dimensional spaces, making a unique statement," says Joann Davis Brayman, vice president of marketing for Armstrong commercial ceiling systems. There's also a revolution going on overhead in the form of an increased use of acoustical ceiling materials to help reduce and control noise. Two of today's alternatives to mineral fiber are metal and wood.

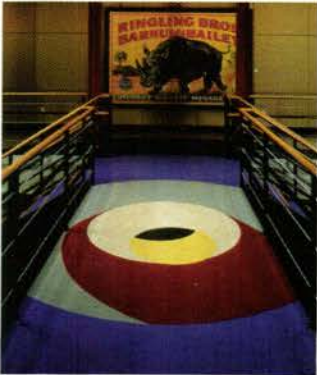
For example, the upscale ceiling visual of the unique Vector™ grid-hiding edge detail is now available in the rich, natural look of wood. Armstrong has expanded the Vector family of ceilings with the introduction of WoodWorks™ Vector ceilings, offered in three standard veneers—beech, cherry, and white maple—on either perforated or unperforated panels. The panels are designed for use in high visibility areas, where the classic look of wood is desired, such as signature spaces in corporate, hospitality, and retail environments.

Metal ceilings, long popular in European design, have also become a strong alternative, due to their durability and upscale aesthetics. "Metal ceilings are available in a variety of finishes that can impart a very high-tech or sophisticated look to a space," says Brayman. "And even though it is metal, this type of ceiling can also provide good acoustics."

The Armstrong Architectural Specialties group, comprised of specialists with expertise in both architecture and engineering, works with designers in the implementation of signature ceilings.

WoodWorks; MetalWorks; Ultima Vector.

Ceilings, Resilient Flooring



Armstrong Commercial Flooring

"One of the big movements in design today is looking at different, unrelated things and creating unique combinations," says Paul Pearce, senior designer for the Armstrong commercial flooring design group. For example, "Natural color, texture, and look has been dominant for the last seven to eight years, with designers using natural materials—stone, marble, ceramic, and paper. With the current trend to mix materials, we're starting to see wood and metal, concrete and metal, soft and hard—it is a way to extend the use of natural materials, with a very modern, stylish look."

The Armstrong commercial flooring portfolio includes linoleum, hardwood, luxury solid vinyl, sheet vinyl, and specialty flooring accessories. Armstrong recently added a new Metal and Chrome Metrics Collection to the Natural Options line of luxury solid vinyl flooring, in addition to expanding the line's Wood, Rustico Wood, and Stone Collections. These new additions offer an exciting array of resilient floors that combine appealing visuals and textures of natural materials with the performance and cost advantages of vinyl flooring, giving architects and designers looking to differentiate their interiors unique flooring visuals, including pearlescent metals, metalized marbles, color shifting metallics, and darker woods. The new designs can be used individually, in combination with each other, or in combination with other Armstrong commercial floors, such as linoleum and hardwood, to create a variety of imaginative interiors. The new Metal Collection is offered in six designs, 14 colors, and three tile sizes. The Chrome Metal Collection features four designs and six colors in a single tile size. The colors of the Chrome Metrics designs "shift" depending on the angle at which the floor is viewed, adding yet another design dimension to the floor. All of the flooring in the Natural Options line features a flexible solid vinyl construction that provides easy installation and a resilient, comfortable walking surface. The flooring also features an easy-to-maintain, durable wear layer designed for heavy commercial traffic. □

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CONCEPT



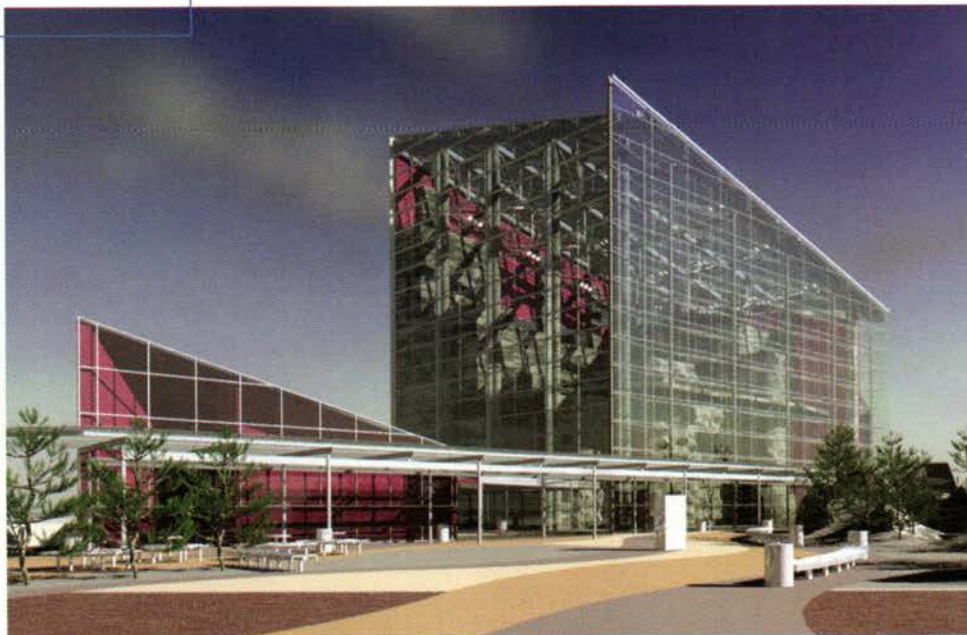


Oculus, Inc. does a last-minute redesign
of a library facade and turns around a new set
of bid documents by the original deadline.
True story.

Make a radical, eleventh-hour change on a public project, get the board to approve it, and have the revised construction documents—including 56 sheets of drawings—out to bid on time.

Read how the Autodesk® Revit® building information modeling solution helped make it happen. And see the possibilities for yourself, by ordering a free trial CD. Visit www.autodesk.com/revithere.

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Industry Insight

Autodesk, Inc.

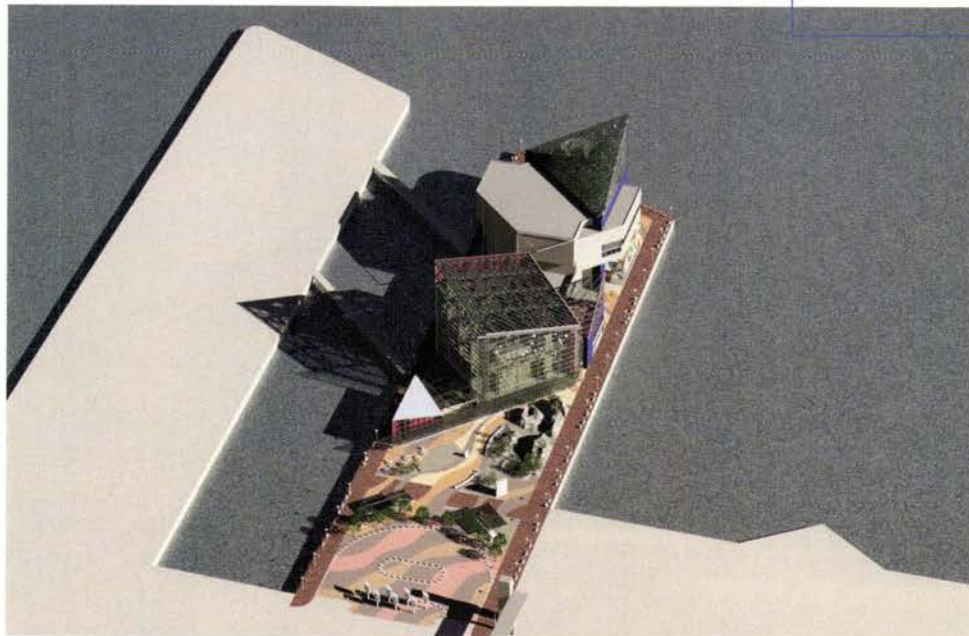
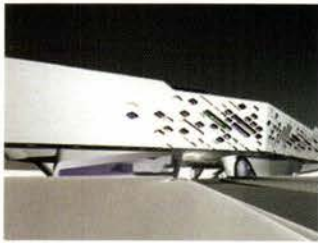
"Autodesk's innovation over the past two decades has led to the democratization of the desktop," says Phillip G. Bernstein, FAIA, vice president of Autodesk's Building Industry Division. "Our current focus is on improving design process through new data authoring and data sharing tools. When intelligent design information resides in a central location, easily accessible by multiple parties, the result is breakthrough efficiency across the building lifecycle, from design through construction and management."

Founded in 1982, Autodesk, Inc. is the world's leading design software and digital content company. Autodesk serves a diverse portfolio of industries, including building design, geographic information systems, manufacturing, digital media, and wireless data services. By delivering tools that foster innovation and creativity, Autodesk helps customers create, use, and leverage their digital design data. Autodesk's Building Industry Division is dedicated to helping its customers significantly improve their business through process improvement. Through a strategy called building information modeling, Autodesk is improving how architects and other building industry professionals use information technology to do their work. Building information modeling solutions create building databases that support iterative change in a building's design, construction, and operation. These building databases can be shared by the worldwide community of Autodesk customers who collaborate using common design tools and methods. This intelligent approach lets architects author rich data models that can be published, leveraged, and analyzed for use at any stage in project.

Autodesk's solutions for the building industry offer substantial productivity, quality, and business benefits to the entire project team. Each product is designed to give more time to architects for the real work of delivering the best possible quality on their building projects. As the strategic authoring application and building information modeling platform, Autodesk® Revit® software offers groundbreaking improvements that increase productivity, enhance coordination, and improve design quality. "Autodesk Revit is a specialized building design tool, optimized to use the computer to do what a computer does best—coordinate building design elements and represent their relationships throughout the design process as they change and evolve," says Phillip G. Bernstein, FAIA, vice president of Autodesk's Building Industry Division. "With Revit's ability to automatically incorporate design changes, drawings remain coordinated through the entire design process."

Autodesk's premier customers use a wide variety of digital tools to design world-class buildings. Recently, Zaha Hadid, known for her pursuit of a visionary aesthetic and a spatial approach to design, used a combination of Autodesk solutions to design the new Wolfsburg Science Center in Germany. Other noteworthy recent

Left, bottom right: National Aquarium of Baltimore (image courtesy of Visarc, Inc.); Top right: San Francisco Asian Art Museum (image courtesy of HOK).



projects for which Autodesk tools were used include San Francisco's new Asian Art Museum designed by Gae Aulenti and local architect Hellmuth, Obata & Kassabaum (HOK), and the National Aquarium of Baltimore designed by Chermayeff, Sollogub and Poole, Inc. (CSP).

Autodesk's family of building industry products includes:

- ❑ Autodesk® Revit® — a powerful building design and documentation system that gives more time to architects for the real work of delivering the best possible quality on their building projects. The parametric change technology in Autodesk Revit increases productivity, so architects have more time to concentrate on project issues and more control over design quality.
- ❑ Autodesk® Architectural Desktop — an object-oriented building information modeling solution built on the AutoCAD® platform. It streamlines the design process by providing a fast and easy way to make changes as the design evolves.
- ❑ Autodesk® Building Systems — the most complete building information modeling application for mechanical, electrical, and plumbing (MEP) engineers in the commercial building industry. Autodesk Building Systems spans the entire MEP solution set, making it easy to produce coordinated MEP construction documents.
- ❑ Autodesk® Architectural Studio — an innovative design creation and communication tool for architects and other design professionals that enhances workflow and improves efficiency from the earliest stages of design through construction.
- ❑ Autodesk® VIZ — 3D visualization tool for design exploration and presentation that offers a new generation of global illumination rendering technology.
- ❑ Autodesk® Buzzsaw — an online project collaboration service for building professionals that enables more effective management of all project information to reduce cycle times and errors, and increase team accountability and control.

Left top and bottom: 3D rendering of Wolfsburg Science Center, Germany; Right: National Aquarium of Baltimore.



Industry Insight

Belden Brick Company

"Throughout the years, Belden Brick has established a reputation for manufacturing quality products and adapting to the needs of the industry. This leadership posture reflects our commitment to quality, continuous improvement, and customer satisfaction," says Brian Belden, marketing manager for Belden Brick. "Belden Brick is proud not only in the quality of our products but also the quality of our people. These individuals, who have hundreds of years of brick-making knowledge, help The Belden Brick Company sustain its reputation."

"The history of Belden Brick is a tradition of men and women dedicated to making their product the best in the market," says Brian Belden, marketing manager for Belden Brick. "With so many years of brick-making experience, Belden has made high art of the process, putting quality and integrity into every brick we make." Manufacturing quality brick products for more than 117 years, Belden Brick has established a reputation for producing and supplying products that represent the brick industry standard of comparison by providing more distinctive colors, adaptable sizes, and exclusive textures.

The Belden Brick Company offers a wide range of face brick meeting ASTM C216, types FBA, FBS, and FBX. Belden Brick products are available in more than 200 different color ranges, 16 different sizes, and 13 different textures, combining the latest in technology with the traditional values of craftsmanship and quality. Belden manufactures both extruded and machine molded varieties of brick to choose from. Paving brick can be made to match or compliment nearly every range of brick they produce. The architectural shapes experts at Belden Brick can also create an array of special shape brick to provide unique design elements—corners, angles, curves, slopes, and other dramatic effects that go on to become signature pieces of residential and commercial architecture.

Moreover, in 1994, The Belden Brick Company became the first U.S. company in its industry to receive certification for its Quality Management System by the International Organization for Standards. Belden Brick recently updated its certification to an ISO 9001: 2000 Registered Quality Management System. Belden Brick operates seven plants, with the addition of their newest plant in 2001, employs more than 500 people, and has the capacity to manufacture 225 million bricks annually. □

Harry London's Candies (Tudor Blend), Canton, Ohio; Kent County Jail (Concord Clear & 8x195), Grand Rapids, Michigan; DeVos Center at Grand Valley State University (470-479 Light Range), Grand Rapids, Michigan.

Landmarks in Brick

Since 1885, The Belden Brick Company has been making brick in hundreds of colors, sizes and textures. Throughout these years, Belden has established and sustained a widely recognized reputation for the quality of its products.

Colors

Belden Brick is available in a world of colors including soft whites and creams, golden buffs and dusty tans, delicate pinks and cinnamon reds, chocolate browns, pewter grays and coal blacks. With so many colors to choose from your options are truly endless. Here is a small sample of over 200 color ranges, 13 textures and 16 different sizes.

Sizes & Shapes

More sizes mean lower wall costs. With as many as sixteen different sizes to choose from Belden has the size you need. Plus, Belden has made thousands of special shapes to provide special details for individual projects. Need an "impossible" shape for your project? Then call Belden Brick and learn how the impossible can become reality.

Textures

Belden Brick offers thirteen different textures that range from silky smooth finishes to rugged randomly textured styles. Each texture can make its own distinctive contribution to the visual impact you seek.

Special Construction

Air Supported Fabric Structures/Cable Systems



Industry Insight

Birdair, Inc.

Birdair's goal is to turn each architect's design into an award-winning structure. To achieve this, the company becomes involved in the early stages of each project and offers professional services each step of the way. "We are the single source for everything except the concept," says Bill Barden, business development manager for Birdair. "Once the architects have formulated the concept, we can take things over, from how to build the structure to how to service it once it is completed."

Working with the same material used for the NASA Apollo space suits, Birdair is recognized as an industry leader in fabric and tensioned membrane technology used in architectural projects. Made of woven glass yarn with a Teflon coating, Birdair products provide an innovative alternative to traditional building materials. The fabric's flexibility allows it to conform to unique design specifications, and its translucent nature lets sunlight filter through, saving on energy costs.

The pioneer in air-supported structures, Birdair now focuses on tension structures that are cable and/or steel supported and can be used in a variety of commercial constructions, from airport terminal roofing and air-supported sports complex enclosures to small patio coverings and parking shelters. Reliant Stadium in Houston, Texas, used Birdair fabric in the NFL's first-ever retractable roof. And the recently completed U.S. Capital Bandshell in Washington DC can be dismantled and reconstructed within three days—underground anchors leave the landscape looking untouched when the Birdair covering is not in use. Despite its worldwide popularity, (Birdair systems can be found in 40 countries on all seven continents), the company still faces unease among architects unsure of fabric as a building material. To tackle this hurdle, Birdair tries to educate the architectural community and dispel any concerns. "All too often new innovations in the design and construction market are very complex, and no architect can master everything," says Bill Barden, business development manager for Birdair. "We're making them aware of what is possible, and have experienced architects and engineers within the company to help with the details."

With three in-house business units, the Amherst, New York-based Birdair tends to each customer with the utmost care. The company's long span group focuses on larger, more complex projects such as stadiums and convention centers; the custom tension group works on smaller projects that include retail spaces, amphitheaters, and commercial buildings; and the emerging business group handles pre-assembled, modular, and weather protection projects. Birdair prides itself on providing a reliable product. Their fabric withstands snow, heavy wind loads, and other harsh environmental conditions and has a service life of 25 to 30 years. □

The Scientific Center, Kuwait City, Kuwait; Cancer Survivor Park, San Diego, California; Sony Center, Berlin, Germany.

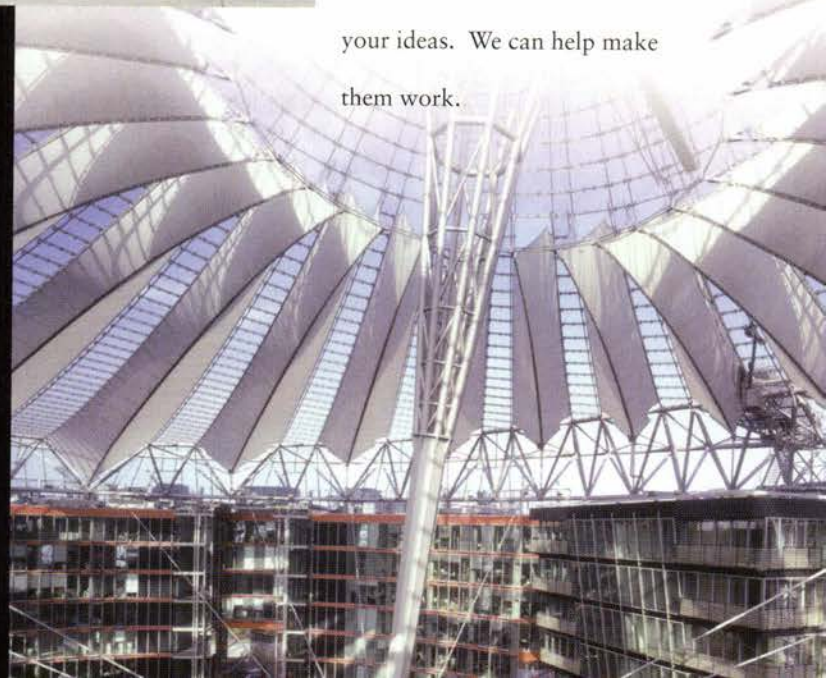
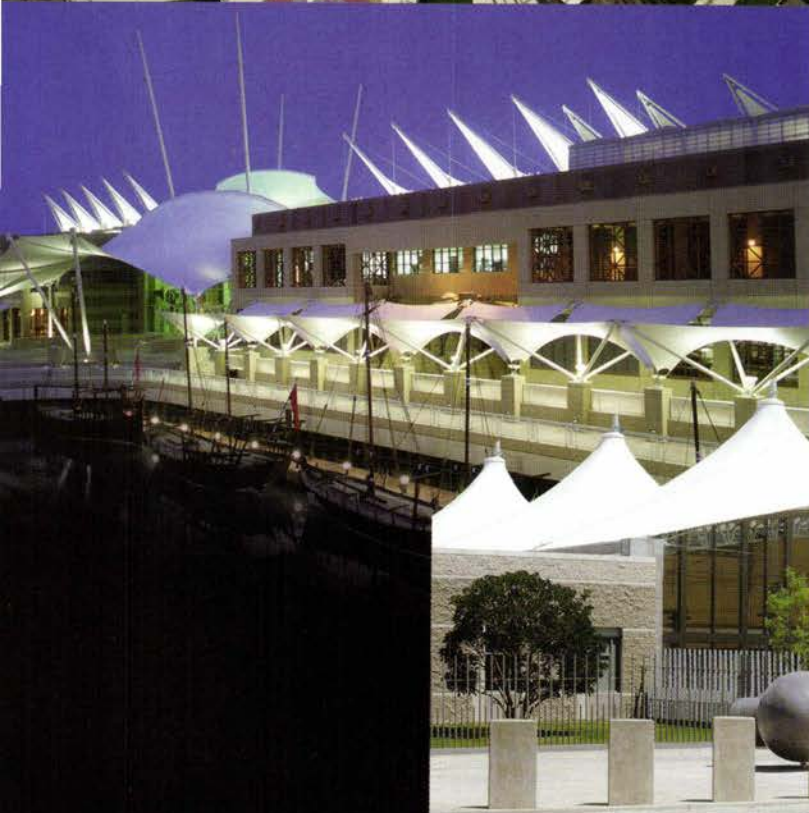


Use Your
Imagination

Use
Our
Technology

...Birdair

Just for a minute, imagine a roof as form and light. Think graceful, luminescent curves or bold angular shapes. Efficient with structure as with energy. It can happen with a lightweight roof system. We've been teaming up with architects and their clients for decades to construct dramatic airport terminals, sports venues, amphitheaters, hotels, malls and convention centers. Tell us about your ideas. We can help make them work.



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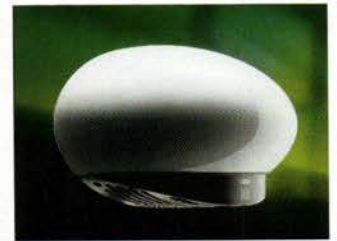


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Mechanical

Plumbing Fixtures, Kitchen & Bath Hardware



Industry Insight

Bobrick Washroom Equipment

"It is our mission to assist architects with their washroom accessory and toilet partition specifications, meeting all building type requirements for design, function, and price," says Alan Gettelman, director of marketing for Bobrick Washroom Equipment. "We think we offer building owners and developers the best values over the life of the building, with products that last and that help lower the building operating costs."

Bobrick Washroom Equipment has been serving the washroom accessory and toilet compartment needs of North American and international building owners, designers, specifiers, and distributors since 1906. A leading source of solid phenolic and plastic laminate toilet partitions and recess and surface-mounted washroom accessories, Bobrick has created innovative products that improve the appearance of washrooms, make more efficient use of space, and reduce installation and maintenance costs.

"We offer good, better, and best options for stainless steel washroom accessories and toilet partitions," says Alan Gettelman, director of marketing for Bobrick Washroom Equipment. "We have the products lines and services to meet all design requirements and budget criteria." The breadth of Bobrick products includes the line of Contura stainless steel accessories, featuring an innovative rounded front in a patented series of recessed and surface-mounted accessories that create a unique design statement with class A properties. Ideal for heavy use and institutional washrooms, the DuraLine series of solid phenolic, vandal-resistant toilet partitions offer solid core construction that stands up to hose-down maintenance, resists dents and impacts, cleans without ghosting, and meets class A and B fire codes. After debuting the industry's first recessed automatic hand dryer in 1986, Bobrick now offers Eclipse warm-air hand dryers, providing hygienic hand drying with style and durability in a drawn-style white enamel or polished chrome plated cover.

Based in Los Angeles, California, Bobrick offers additional manufacturing and service facilities in Clifton Park, New York; Jackson, Tennessee; and Toronto, Canada, and worldwide representatives and distribution warehouses to support both domestic and international markets. The international sales and service organization of experienced representatives can assist architects in the selection, placement, and specification preparation of the right washroom accessories and toilet partitions to meet any washroom environment in terms of traffic/use pattern, accessibility requirements, and abuse and maintenance characteristics. To meet demanding construction schedules, Bobrick offers a RapidResponse two-week toilet partition fulfillment program. In addition, over 200 washroom accessories are available with QuickShip two-day fulfillment. □

Bobrick provides choices of washroom accessories and toilet partitions for every non-residential building type, budget, washroom vandal-resistance, and design requirement.

How does Bobrick rate with the people who really know washrooms?



Bobrick is your number one source for Solid Phenolic Toilet Partitions.

Near perfect 10's. Stout, solid-core construction and concealed hardware. Ultra-hard surfaces for removal of marker ink, lipstick and paint without ghosting. Defends against gouging, carving, and chemicals. Moisture-resistant for hose-down maintenance. Complies with fire codes. Four mounting configurations, optional full-height hardware. And, RapidResponse™ 2-Week Order Fulfillment Program in 18 standard colors. People who know their washrooms, know Bobrick Partitions.



ANYTHING LESS
COSTS MORE.™



Industry Insight

Bruck Lighting Systems

"Innovation, quality, and service are our focus," says Alex Ladjevardi, president of Bruck Lighting. "We can help design a solution with the parts and pieces needed to complete the lighting system. We have most products on hand for immediate delivery and we guarantee a correct and trouble-free installation."

Pioneering a new approach to design, Bruck Lighting Systems is a leader in the development of innovative lighting systems with particular emphasis in the application of low-voltage, halogen light sources and three-dimensional technology. Bruck Lighting offers a high diversity of product styles, developed with the latest in German engineering to meet residential and commercial design needs and set new standards in aesthetics, product quality and safety.

"Bruck Lighting offers one of the most complete range of low voltage, halogen cable and track systems in the world," says Alex Ladjevardi, president of Bruck Lighting. "Due to the variety of elements in each system, designers can create his or her own ideas as far as how to install systems, whether suspended or flush mounted, and can create curved shapes, squares or triangles. " The range of styles facilitates a variety of applications, from the discreet highlighting within an architectural frame to the vibrant illumination of an interior space. And since nearly all of Bruck fixtures have the same universal plug-in connector, designers have additional freedom to use fixtures with any of Bruck's eight different track systems.

One of the most popular Bruck systems, Flex-Line, a unique track that flexes to allow for curved or linear installation. Lightweight and easy to install, this system can be installed vertically, horizontally, or on a sloped ceiling. BOA, introduced in 2000, is a 12-volt, low profile, two-circuit track system with dual switching ability that allows utilization of up to 600 watts of power.

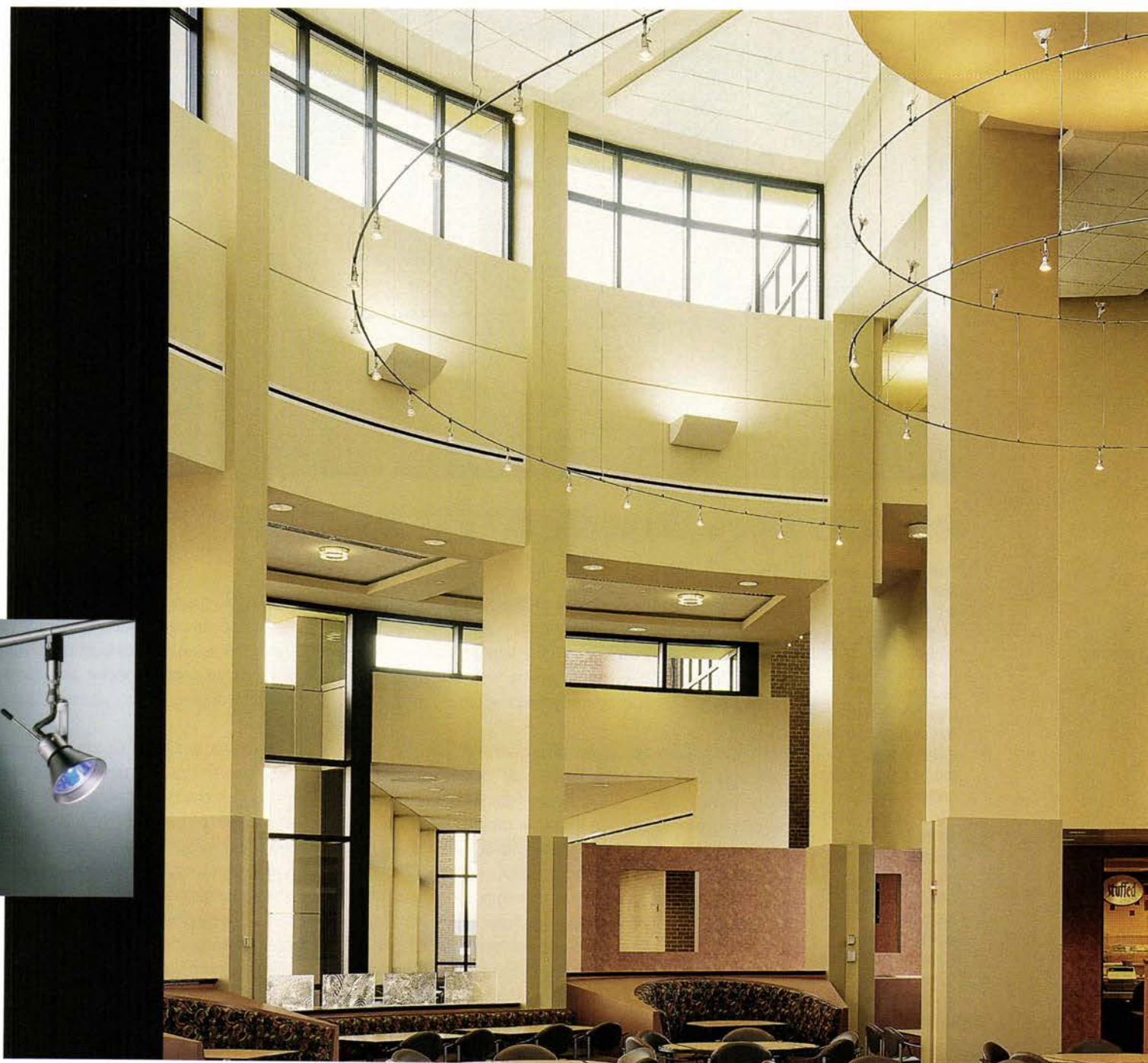
The latest system from Bruck, introduced in 2001 is Flight, utilizing the 20,000 hour Festoon lamps placed 2" apart to create a dramatic drape for accent lighting in white or a variety of colors.

Bruck Lighting will introduce a new system at Lightfair this year along with several new LED Products, which, accordingly to Ladjevardi will "set a new standard in imagination and creativity." □

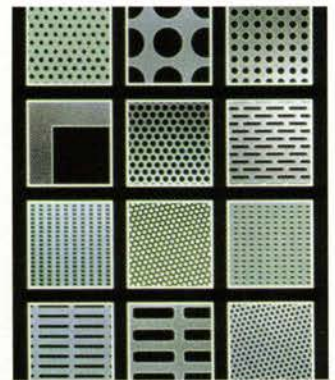
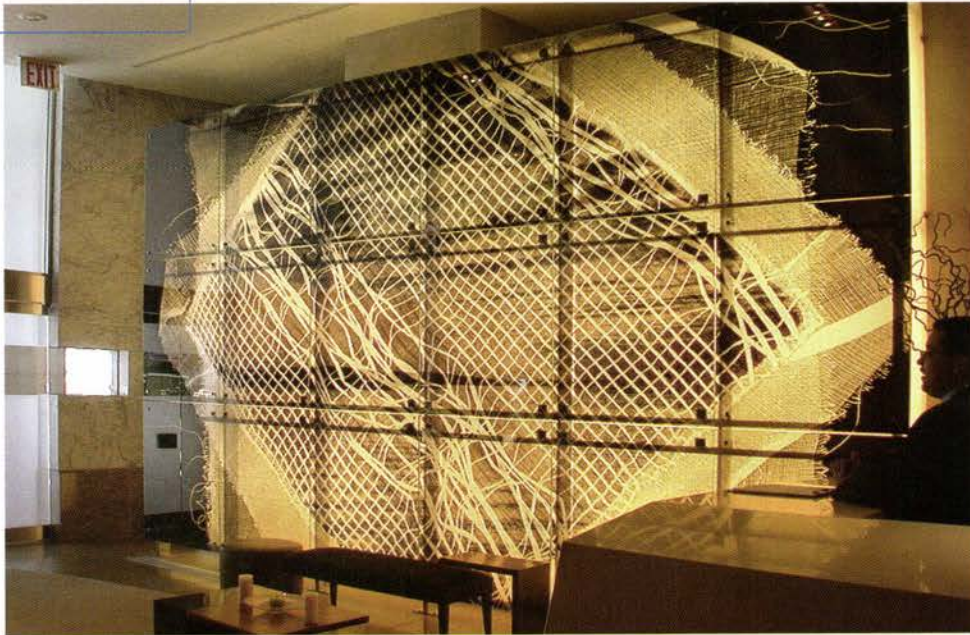
Rainbow is a unique pendant with a combination of two glass shades, with a liquid-mercury-like finish that shows a fusion of dichroic colors when on; Minos, utilizing an MR16 lamp, can tilt 90 degrees and rotate a complete 360 degrees. From the Uni-Plug series, this design can be mounted on any of the track systems or ceiling mounted through the use of an adaptor.

BRUCK

L I G H T I N G S Y S T E M S



V/A, one of eight systems from Bruck, is a low profile track system that can easily change directions and elevations. Available in straight or curved segments, in chrome, matte chrome, or gold finish.



Industry Insight

Cesar Color Inc.

"We love to innovate and develop new products," says Claudio Cesar, president of Cesar Color. "Our core team has been together for over 10 years and we are always looking for the next generation and to the future. Our next focus will be on engineered glass applications where the glass provides specific functions in addition to the obvious aesthetic contributions our products have historically made."

One of the dominant suppliers of specialty architectural glass, Cesar Color designs and creates innovative products have been specified by a majority of the top 50 designer and architectural firms in the United States for premier end-users, including high-profile Fortune 500 companies and major facilities in Asia and Europe. In addition, exciting artistic installations of Cesar Color products grace popular attractions and museums and up-scale residential projects as unique flooring, partitions, shower walls, cabinets, and more.

Invented by Claudio Cesar, president and head of product development at Cesar Color, this innovative architectural glass involves a patented technology of permanently bonding a digitally imaged plastic interlayer between two lites of safety glass. Specifiers can select from hundreds of standard patterns and colors or create custom images for signature projects. The ChromaFusion® line can reproduce any color, graphic, or photographic halftone in laminated glass, producing a range of effects from sandblasting to shimmering color changes. GlassFresco®, which combines Cesar Color's proprietary interlayer technology with continuous tone color imagery, allows designers to create permanent full color photographic quality images in glass in opaque, transparent, or translucent compositions. Made from textured laminated safety glass, ImpressiveGlass™ offers a handcrafted product with embossed patterns, ranging from random stipple to square and dotted grids, along with a line of newly designed organic patterns. Specifiers can also design their own patterns, embossing company logos, customized artwork, or textured surfaces in the glass. Ideal for restoration projects, Cesar Color can take glass taken from an historic building and reproduce it using the ImpressiveGlass process. Cesar Color is the only manufacturer who can create large pieces of historic glass that meet current safety codes.

Perforated Glass,™ a new collection using the ChromaFusion process, offers the appearance of perforated stainless steel and provides improved functional features, including light and visual control capabilities, energy efficiency, and long-term durability not found in other materials. In fact, all products have undergone extensive testing and have been certified to meet all of the requirements of safety glass products for external and internal applications. □

GlassFresco wall mural in Atlas New York building; PerforatedGlass overhead canopy; PerforatedGlass collection designed by Claire Steiner Cesar.

CESAR COLOR INC

Art and Technology As One Expression™

AromaFusion®

Cesar Color Inc. creates **visual** texture, manipulating **light**, and defining space

ShadeMatrix®



GM Warren Tech Center
Elevator Interior

GlassFresco®



Petersen Museum
Exterior Railing

ImpressiveGlass™



E.P. Foster Library
Art in Public Spaces

Through use of **artistic** and **decorative** architectural glass products.



Jaime Zobel
Fine Art Commissions

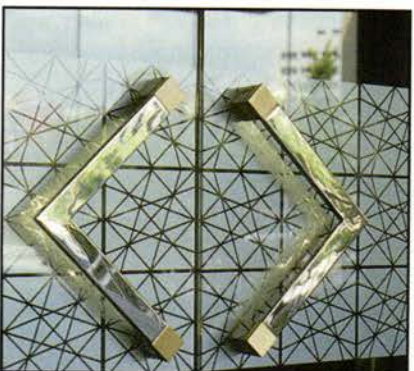


RiverSoft Corporation
Wall Partition

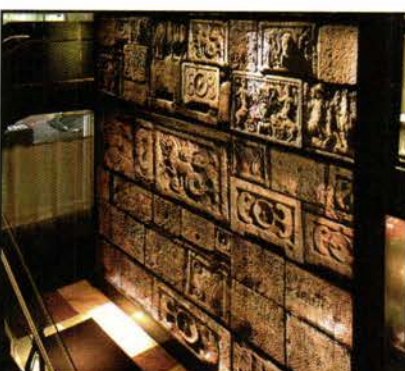


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Aesthetic control, **depth** and **clarity** of color, line definition, and **crispness** of image, make



Watergate Hotel
Frameless Doors



Tuscan Steak House
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RW Johnson
Art in Public Spaces

Cesar Color is the **innovator** in the world of decorative architectural glass.



San Francisco Airport
Shoji Wall Partitions



Newport Office Center
Elevator Interior



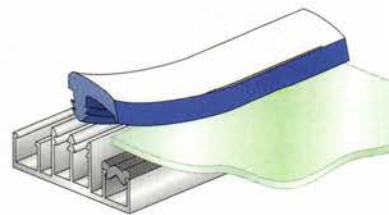
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Industry Insight

EFCO Corporation

As a major Division 8 manufacturer, EFCO Corporation offers the expertise needed to implement a complete glazing and fenestration energy program that leverages utilities savings—such savings, in fact, that windows can be upgraded with the money saved on utility costs. EFCO's energy-efficient products, along with years of experience in performance testing and analysis for U-values, shading coefficients, and daylighting, can help achieve the most efficient building envelope possible for new construction or retrofit.

Progress in fenestration technology means finding better ways to achieve beautiful designs that let light in and keep weather out—and then finding better ways to put them to work. EFCO Corporation offers a brilliant example of this kind of progress with an advanced curtain wall system designed for great looks, high energy efficiency, a clean leak-proof seal, and fast, cost-effective installation.

The E-Wall™ Silicone Gasket Curtain Wall System is elegant, simple to install, and superior in performance. These benefits, combined with unique design options, ensure an attractive architectural effect to enhance designs and maximize reliability—which adds confidence to every recommendation. As added benefit to the overall construction process, only minimal labor is required for subcontractors.

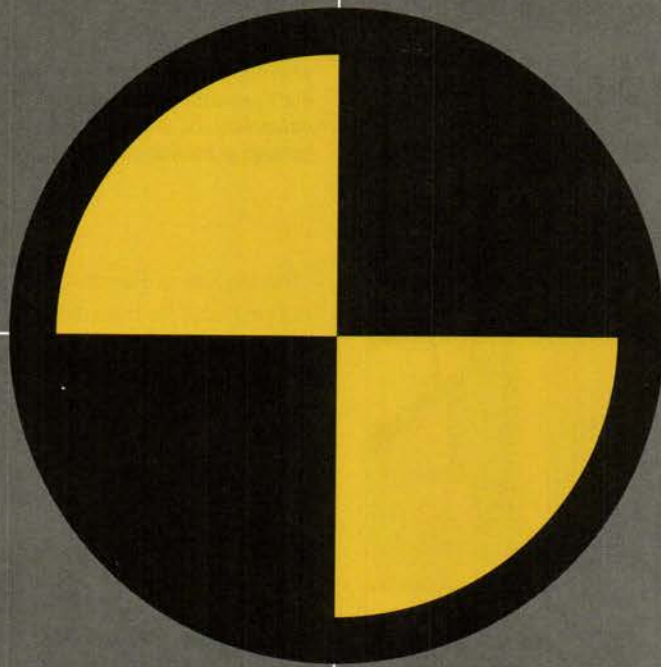
The E-Wall System has no internal joint seals, mullion plugs, pressure plates, or snap covers. The molded-corner continuous silicone gasket taps into place quickly. That means faster, easier installation—a real benefit for those in charge of executing the design.

The silicone gasket provides a positive glazing seal. It simply will not leak, and it stays flexible even at extremely cold temperatures. The gasket also acts as a thermal barrier.

To provide exceptional freedom of choice, E-Wall mullions are available in anodized or painted finishes. The comprehensive line of accessories (perimeter anchors, pocket fillers, door adapters, etc.) makes it easy to adapt the E-Wall System to meet specific criteria for appearance or function.

EFCO Corporation is a leading U.S. manufacturer of aluminum windows, entrances, storefronts, and curtain wall systems for commercial architectural applications. For more information about the E-Wall Silicone Gasket Curtain Wall System or any of EFCO Corporation's comprehensive line of fenestration products and services, call 1-800-221-4169 or visit www.efcocorp.com. □

Installation of E-Wall™ Silicone Gasket Curtain Wall System (formerly System 5800) at Kemper Arena, Kansas City, Missouri.



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Industry Insight

"From a specifier's standpoint, there's a tremendous advantage to working with one supplier for a very wide range of products and services," says Forms+Surfaces' Karen Tullis. "As a fully integrated resource, we can streamline the entire process, from material selection and specification through purchasing and delivery."

"The beauty of Forms+Surfaces is in the comprehensive range of our products for both external and internal applications," says Karen Tullis, vice president of marketing for Forms+Surfaces. "Materials, finishes, and patterns can be mixed and matched across product lines, creating unrivaled opportunities for cohesive design." An entire installation can showcase interrelated products, starting from street-side lighting, signage, and recycling receptacles and moving into the building with the same approach. Specifiers can follow through with indoor lighting, furniture, hardware, and wall surfaces. Design features can be carried from one product to the next within a project. For example, a pattern showcased in the glass element of a lighting fixture can be incorporated into a bronze door or stainless steel elevator cab. And since all products are manufactured by Forms+Surfaces, in one of two dynamic, high-tech manufacturing plants, the style, construction, and quality are consistent throughout.

Building upon a long history of custom fabrication, Forms+Surfaces products are designed for real-world applications. "We take a systems approach," says Tullis. "Silhouette railings and CabForms, our pre-engineered elevator interior system, are just two products that combine modular elements with numerous configuration options. Our products emphasize stainless steel and other high-quality materials. Recently, we completed major installations at Niagara Falls, along New York City's Hudson River Park, and at Union Square in San Francisco—prime examples of demanding public environments."

A member of the U.S. Green Building Council, Forms+Surfaces adheres to strict environmental and recycling guidelines in its manufacturing processes and material selection.

Product Lines

- ☐ Architectural Surfaces ☐ Elevator Solutions ☐ Door Systems
- ☐ Architectural Hardware ☐ Railing Systems ☐ Lighting
- ☐ Site Furniture ☐ Information Systems ☐ Custom Manufacturing.



Lithonia Lighting

Industry Insight

"Lithonia Lighting devotes considerable resources to understanding how lighting interacts with the built environment. Visual aesthetics are a fundamental element in the design of our luminaires," says Rick Earlywine, Lithonia's vice president of product and market development. "We are continuously studying architectural trends to improve aesthetic details and to provide a wide selection of products, options, and accessories to expand the pallet of choices for the lighting professional."

Over 50 years of vision, creativity, and hard work have made Lithonia Lighting, an Acuity Brands Company, a leader in the industry. Lithonia Lighting's knowledge and design skills come together to create products that provide solutions. Lithonia knows that good lighting impacts productivity, the aesthetics of a space, and the health and well being of its occupants; the Avante line of products have been designed with these considerations in mind.

Originally designed for private offices and other small- to mid-size spaces, the Avante direct and indirect product line has expanded over the years to include a full range of products. To address industry-wide concerns due to lamp/diffuser assemblies placed below the ceiling lines, Lithonia Lighting moved forward to develop a completely recessed lamp/diffuser assembly. Creating a product that is flush with the ceiling opened up opportunities for use in a wider range of mainstream applications. Along with the aesthetic appeal, Lithonia also offered a product with improved efficiencies and controlled brightness. Since Avante's introduction, the line has expanded to comprise a full line of products, including the industry's first sconces to complement the interior space.

In the outdoor arena, Lithonia's product offering includes Aeris, a line of premier low-profile luminaires for area and roadway lighting applications. To provide a consistent look from exterior to interior, the line includes a wall-mount option for indirect lighting of atriums and lobbies. Lithonia's outdoor line also includes floodlighting and wallpack luminaires. □

LITHONIA LIGHTING

ARCHITECTURAL INSPIRATION

Avante Direct/ Indirect Lighting

Complete fluorescent series for general area and task-specific lighting.

Avante Sconces

Corridor and accent lighting in styles that complement the Avante family.

Gateway Architectural Lighting

Stylish and durable luminaires for general illumination in extreme environments.

Aeris Area and Roadway Lighting

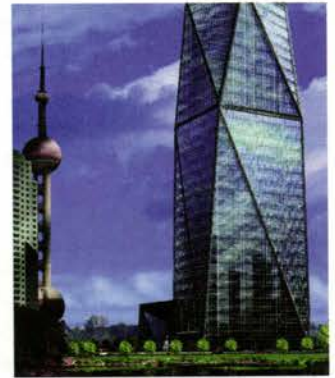
Architectural cutoff lighting for daytime appearance, nighttime performance.

KFL Series Floodlighting

State-of-the-art architectural lighting for precise performance and contemporary styling.

INNOVATIVE LIGHTING SOLUTIONS FOR
INDOOR AND OUTDOOR APPLICATIONS

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www.lithonia.com



Industry Insight

Graphisoft

The ability to share design information, drawings, and building models with all members of the extended building design and construction team is of paramount importance. ArchiCAD has state-of-the-art compatibility with AutoCAD, enabling users to seamlessly read and write AutoCAD drawing files. At the object-model level, ArchiCAD is the leading CAD supplier in its support of the IFC exchange format, the new global standard for exchange of building information developed by the International Alliance for Interoperability.

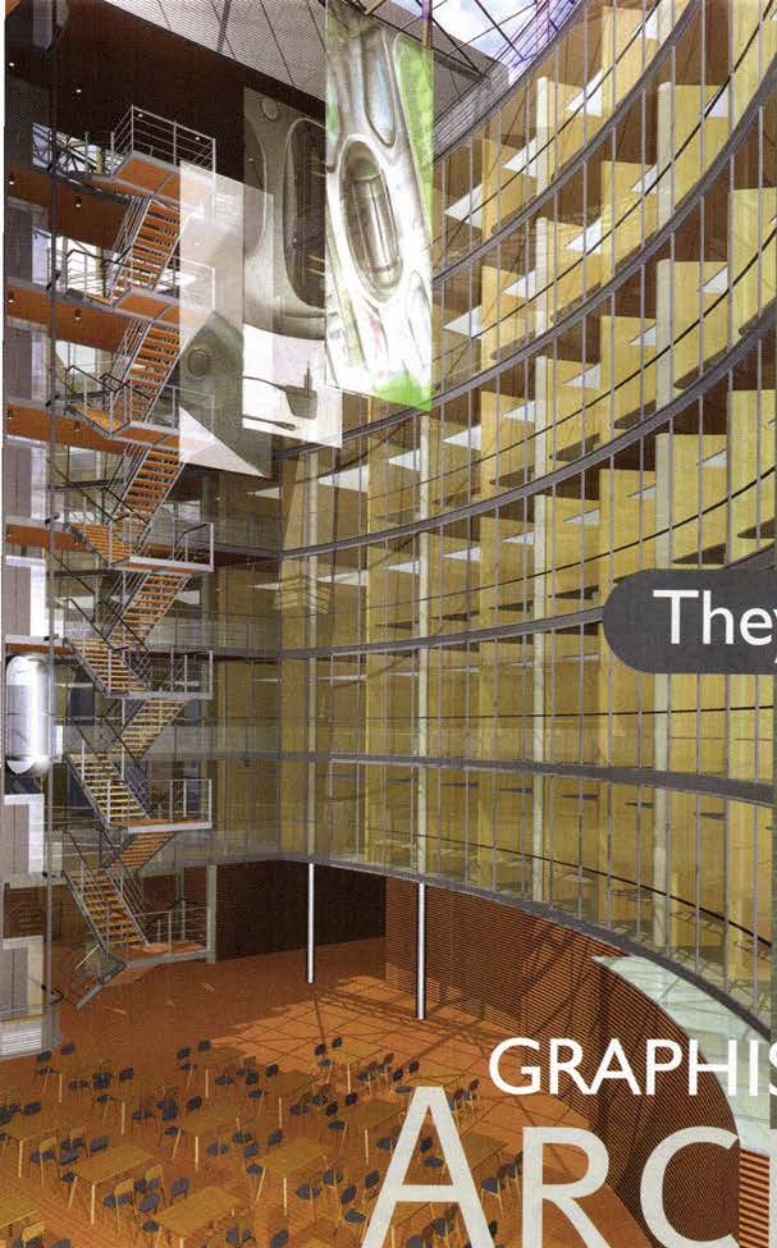
The concept has many names: the Single Building Model, Model-based Design, the Building Information Model, and most of the CAD vendors have recently announced products which incorporate this concept. For Graphisoft, the originators of the Single Building Model, the concept is a continuation of a consistent vision that was born 20 years ago. The goal: to harness the latest in desktop computer technology to enable architects to design, communicate, and document their building designs more efficiently, more accurately, and with greater ease than with 2D CAD systems. That vision still drives the company and is clearly illustrated in ArchiCAD 8, the latest version of Graphisoft's flagship product.

"The real reason to consider a Single Building Model system is not to get nice 3D renderings, although they're an automatic by-product of the software," says Chris Barron AIA, vice president of architecture for Graphisoft. "The real reason is that it is a much better way to get your working drawings done, because at the end of the day, every architect I know still has to deliver a set of working drawings that you can build a building from."

What sets ArchiCAD apart from other single building modelers is that it has been field tested and proven over its 20-year history. "There are more buildings standing today that have been designed with ArchiCAD than with any other Single Building Modeler on the market," says Barron. "The reason this is important is that ArchiCAD 8 represents the cumulative feedback of over 120,000 architects around the world. That input has helped give ArchiCAD a depth in its design and implementation that is unmatched in any of the other model-based design systems out there."

ArchiCAD has been the design and production tool of choice for such prestige projects as the German Chancery building in Berlin and the 88-story Eureka Tower in Melbourne, Australia. To find out more about ArchiCAD, visit www.graphisoft.com. □

From conceptual design to contract documentation, ArchiCAD is giving architects the competitive edge.



DO YOUR
DESIGN CONCEPTS
MAKE IT TO YOUR
WORKING DRAWINGS?

They will with ArchiCAD 8.

GRAPHISOFT®

ARCHICAD 8

Credits: left image: Hehn & Co.; right image: Gilchrist & Crowe

DESIGN CONTINUITY.

That's what ArchiCAD 8 is all about. ArchiCAD enables architects to design and document in a seamless workflow that encompasses everything from presentation renderings to construction details, from conceptual modeling to construction simulation and quantity takeoffs. And ArchiCAD's state-of-the-art interoperability ensures you'll have no problem working with existing AutoCAD files. Not to mention, you'll have more fun, be more productive and gain the edge to be profitable doing what you do best: **DESIGN**

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Industry Insight

Hanover Architectural Products

"At Hanover, we believe that the true measure of a company is how well it can respond to its customers needs, its attention to quality, and its dedication to performance," says John Repasky, owner and president of Hanover Architectural Products. "Hanover has been building its reputation slowly, the best way, with quality products, competitive prices, and service for over 31 years."

Hanover Architectural Products has been providing quality concrete unit paving products to architects and designers for over 31 years. The company is constantly striving to manufacture innovative types of pavers utilizing unique shapes, aggregate or color blends, and surface textures. It has earned a reputation of leadership within the industry based on its products performance and the support given to its customers.

As a company, Hanover has been built on the philosophy that quality and service always comes first. Project references demonstrate the high level of trust that has been placed with Hanover. Hanover has participated in such high profile projects as the Olympic Village in Atlanta, the World Trade Center in Boston, the Wortham Theater in Houston, and the Jacob Javits Convention Center in New York City. The Founder Bridge in Hartford, Connecticut, features many interesting details within the paver design and the Toledo Zoo, Toledo, Ohio, included several phases that also required custom pavers to denote the sections of the park. Hanover is proud to be part of the new renovation work at the United States Capitol Building and the White House. Currently, Hanover is working with Harvard University in Boston, adding wall and accent panels to the graduate student housing construction.

Hanover Architectural Products has earned the respect of architects, landscape architects, and contractors with their attention to detail and willingness to work with requests for custom products. The ability to create custom colors and to accommodate special aggregate blends has become their trademark. Working with the design team, Hanover can contribute knowledge of installation methods, as well as offer the designer a broad range of product solutions.

Hanover's extensive product line consists of on-grade paving solutions with pavers and brick, roof, and deck pavers, and includes wall and accent panels for vertical projects. Hanover stands ready to listen to the individual needs of the project and able to provide a wide range of products as possible solutions at competitive prices. □

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Leggat McCall Properties Office Building, Mt. Laurel, NJ
Architect of Record: Kanalstein Danton Associates P.A.,
Cherry Hill, NJ
Structural Engineer: Michael A. Beach & Associates, Mt. Laurel, NJ
Accent Panels: 3 5/8" x 23 5/8" x 3 5/8", 4 5/8" x 23 5/8" x 3 5/8",
11 5/8" x 23 5/8" x 3 5/8", #M115
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Industry Insight

Johns Manville

"Johns Manville continues to lead the building insulation industry in providing consumers with the best products available," said Scott DeShetler, director of marketing for Johns Manville's Building Insulation Division. "Product improvement is key to our growth and evolution as a company, and we always strive to support sustainable business practices."

A leading manufacturer and marketer of premium-quality fiber glass insulation and building materials, Johns Manville is the first and only fiber glass insulation manufacturer to offer a full line of formaldehyde-free products. Following the transition of its final plant in Canada this past June, Johns Manville has converted all five of its building manufacturing facilities to full production of formaldehyde-free fiber glass insulation. The converted line of fiber glass utilizes a technologically advanced acrylic resin, developed with industry leader Rohm and Hass, as its binding agent. Johns Manville Formaldehyde-free eliminates any concern about fiber glass insulation as a potential source of formaldehyde in the indoor environment, while maintaining the highest quality energy-efficient thermal and acoustical properties. The conversion also eliminates formaldehyde emissions during manufacturing and after installation. In addition, the new line is environmentally safe, containing a minimum of 25 percent recycled glass. Dedicated to supporting sustainable building practices and overall resource efficiency, Johns Manville has invested considerably in engineering its manufacturing and installation processes to reduce pollution and other environmental impacts.

All Johns Manville signature products, including polyencapsulated ComfortTherm® and perforated EasyFit™, are now available in naturally white, formaldehyde-free form. ComfortTherm unique poly-wrapped batts significantly reduce dust and itch for a cleaner, more comfortable installation, while providing superior noise reduction and moisture resistance. Designed to fit any framing cavity, perforated EasyFit delivers a faster and easier installation process thanks to vertical perforations in the fiber glass batts that eliminates the time-consuming task of cutting, increasing productivity and minimizing scrap. For hard-to-reach locations and other nonconforming spaces, Johns Manville offers Climate Pro®, the blown-in-batt installation system that fits any shape, size, or cavity.

Owned by Berkshire Hathaway, Denver-based Johns Manville has sales in excess of \$2 billion and holds leadership positions in all the key markets it serves. □

EasyFit perforated fiber glass insulation; JM Formaldehyde-free unfaced fiber glass insulation; JM Formaldehyde-free kraft-faced insulation batts.



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Want fewer concerns on your next project? Introducing the world's only complete line of formaldehyde-free fiber glass insulation, only from Johns Manville. Naturally white with no bleaches or dyes, our thermal and acoustical insulation helps reduce concerns over indoor air quality while creating a more

comfortable environment for your clients. Why wouldn't you specify it for your next project? Call us at 1-800-654-3103 or visit us at www.jm.com. Formaldehyde-free insulation from Johns Manville – a company that's been improving building products for over 144 years. JM. Smart ideas. Better insulation.



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Industry Insight

Kalwall

Kalwall plans to continue efforts to urge others to seek more innovative and practical ways to use the free energy from the sun to liberate society from the bondage of fossil fuels to satisfy energy needs. The goal, as it has been from the company's beginnings, is to develop more and more ways to use solar energy to benefit humanity.

Kalwall is the most highly insulating, translucent, structural fenestration system in the world. The company was founded nearly 50 years ago with the invention of the translucent sandwich panel by its chairman, Robert Keller. Keller is a pioneer in the field of daylighting buildings. He has directed the continued development of the ultimate eco-panel that extracts and converts free energy from the sun to heat, cool, naturally light, and dramatically electrify buildings.

Kalwall is exceptional at conserving thermal heat/cooling loss and gain, controlling solar heat gain, and filling a space with even, usable natural daylight even on cloudy, dark days. On bright, sunny days, there is no harsh glare. Shades and curtains are eliminated. The quality of light is truly exceptional, especially where computer screens or video monitors are used. Significant savings are realized in heating, cooling, and electric lighting costs.

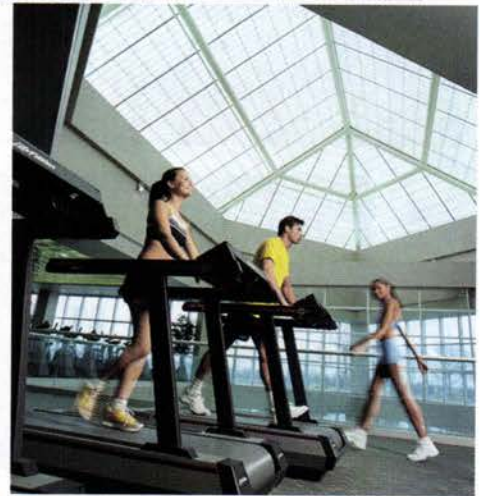
Kalwall can be a part, or all, of the walls or roof of any building; it can even be an entire structure. Over its history, Kalwall has achieved many 'firsts,' such as development of the first, true thermally broken composite grid core in a translucent panel, the first Class A skyroof system, and the invention of a translucent panel that is curved.

Today, Kalwall is working with The Cabot Corporation as the first to drive insulation factors even higher while permitting the transmission of more daylight using Nanogel[®], a revolutionary, lightweight, highly porous form of silica that is 97 percent air. Kalwall panels are ideally suited to a Nanogel fill because they are translucent to start with. R-20 insulation with 20 percent light transmission and panel U-factor of .05 (NFRC 100) is now available. □

Center for Space Education (Wall Panel System); Life Time Fitness Centers (Clearspan Structure); University of Southern Maine (Curtainwall Restoration).



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Industry Insight

The total Scofield system includes premium quality coloring and texturing systems, along with imprinting tools, resurfacing toppings, and color-matched curing and sealing materials that work together to meet demanding performance requirements in high traffic areas.

Architects and designers around the world rely on Scofield's engineered systems to bring enduring beauty, design versatility, and superior performance to buildings and hard landscaping. The systems offer a vast range of colors and textures that create exceptionally durable hard surfaces for plazas, retail centers and malls, business centers, hotels, casinos, and theme parks. Scofield Systems are backed by confidential consultations for building and design professionals and comprehensive technical documentation.

The industry leader since 1915, Scofield systems enhance the inherent versatility of architectural concrete and expand its functionality as a building material of unmatched design flexibility with predictable engineered results.

Only Scofield offers such a diverse selection of innovative, versatile, and durable options using architectural concrete for interior flooring. Over eight decades of experience meeting exacting standards for exterior hardscapes and vertical structures have contributed to technical superiority that improves both aesthetics and performance. Wherever creativity and durability must go hand-in-hand, Scofield Flooring Systems offer exceptional value and options for new construction, resurfacing, and renovation.

Several well-known Scofield brand names include CHROMIX® Admixtures for Color-Conditioned™ Concrete, LITHOCHROME® Color Hardener, LITHOCHROME® Chemstain™, LITHOTEX® Pavecrafters®, and SCOFIELD™ Texturetop™. For more information, call 800-800-9000 or visit www.scofield.com. □

Finishes

Resilient Flooring



Lonseal

Industry Insight

"Lonseal's wide range of stunning sheet vinyl designs translates into simpler installation and maintenance and longer durability, allowing designers to blend projects' practical needs with their own creative desires," says Tony Sain, marketing manager for Lonseal. "We strive to bring innovative and creative design solutions to a wide array of interiors and exteriors."

One of the first companies to take resilient flooring high fashion, Lonseal has been creating eye-catching styles and innovative products for 30 years—from unique embossed patterns and seductive smooth styles to original composite-speckled offerings that realistically mimic the look and texture of ceramic, stone, and wood grain patterns.

Blending form with function in the high-end, designer floor industry, Lonseal has created over 30 product lines featuring 200 individual pattern styles and unique colors. But it's not just these innovative designs that set Lonseal apart. Because of its quality sheet construction, Lonseal products are more durable and offer a lower installation price, while facilitating seamless, clean surfaces and increased skid resistance.

But Lonseal's innovation doesn't stop there. In the classic tradition of Lonseal's embossed products, Londile offers faux-reptilian embossed vinyl with a metallic tint and an array of chameleon-like colors. In its most stunning development, Lonseal has taken smooth safety sheet technology to a new level with the introduction of Londura, which incorporates a revolutionary new polymer into the vinyl that actually increases its coefficient of friction when wet. Available in an array of colors, Londura maximizes slip resistance over the long term, while allowing for the creation of attractive custom designs and interiors.

From style to substance, vinyl is a safe and healthy flooring alternative and Lonseal's eco-friendly LonEco line offers indoor air quality that is 1,000 percent better than linoleum and 50 percent better than rubber. In fact, Lonseal's LonEco sheet vinyl floors are comprised of an average of over 40 percent post-industrial recycled vinyl and emit 10 times less volatile organic compounds (VOC) than linoleum and half as much as rubber. □

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Industry Insight

Lehigh Cement Company

"We are a company structured from top to bottom to address our customers' needs for products that are of the highest quality and are sustainable," says Ray Pisaneschi, marketing and technical services manager. "Lehigh is constantly evaluating new products and manufacturing advantages, in addition to offering educational programs to the sales and technical services support staff, to remain current in the marketplace."

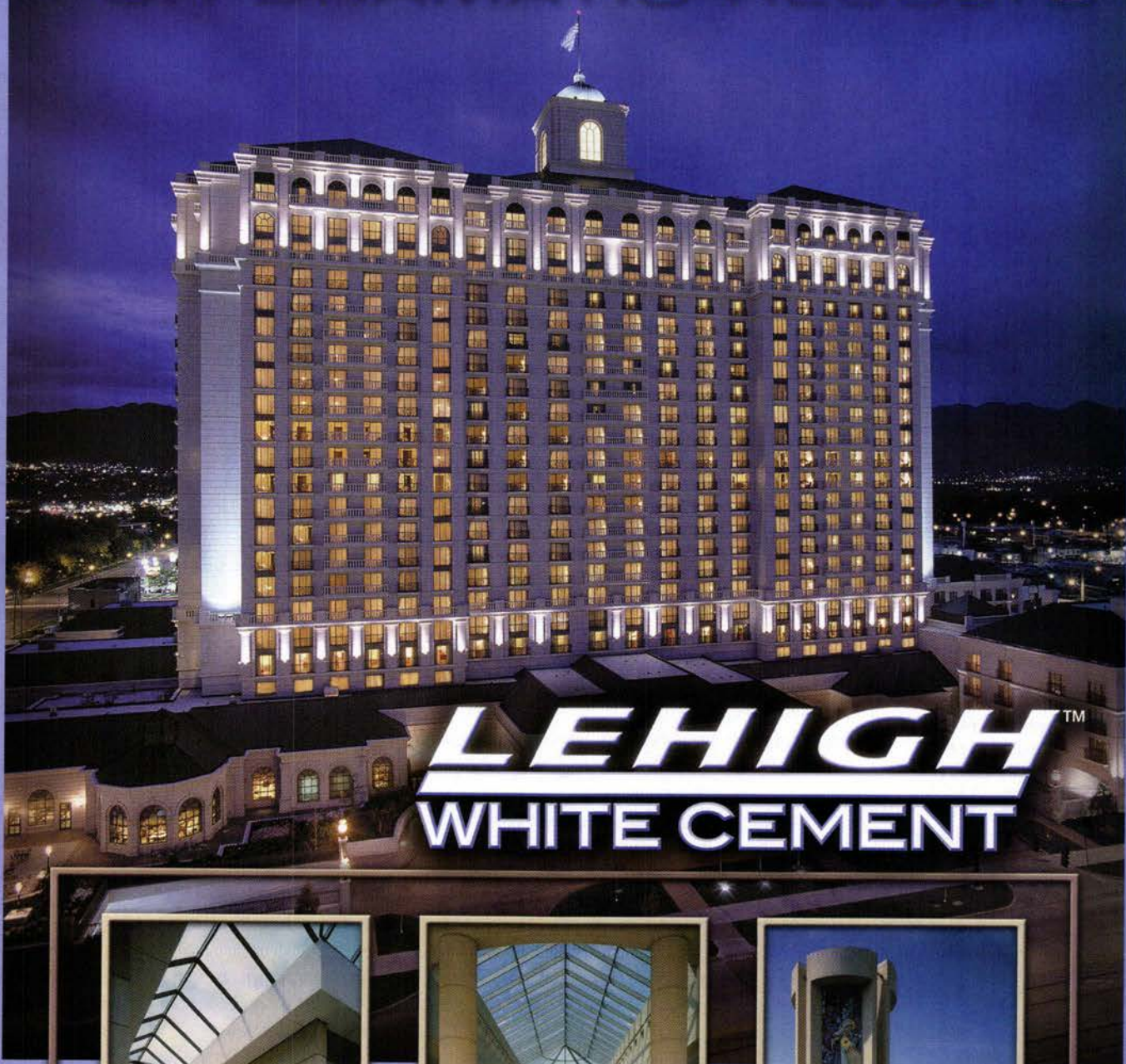
Serving the construction industry in North America for more than 100 years, Lehigh Cement Company is a producer of high quality portland, blended, and specialty cements and construction materials, widely used for numerous architectural, industrial, residential, and infrastructural applications. "The quality assurance systems used by Lehigh, plus the strong technical base of our partnerships, assures product availability across North America," says Ray Pisaneschi, marketing and technical services manager. "Our quality control and assurance systems at our plants in Waco, Texas, and York, Pennsylvania, give us the highest order of product consistency." Lehigh Cement Company's advanced technical expertise and high commitment to strict quality control allows it to meet the rigorous production demands imposed for white portland cement. Lehigh's extensive distribution system allows its customers to obtain white cement in a timely manner throughout the United States and Canada.

The White Cement Division produces and imports Lehigh white cement, manufactured to exacting standards and taking artistic expression to new heights with an unlimited range of color, texture, shape, size, and pattern to accommodate a multitude of applications. Lehigh white cement offers distinct advantages for today's projects: strength, moldability, and plasticity, as well as a superior consistency and color that remains beautiful for years. The use of white cement plays an integral role in imaginative and innovative architectural creativity. As an architectural design medium, concrete made with Lehigh white cement offers unparalleled opportunities for creativity, ingenuity, and superior building engineering. Lehigh white cement enables the design of surface finishes not possible with other building mediums. From glossy smooth to ruggedly coarse, white concrete offers unlimited potential for adding texture and character to an overall design.

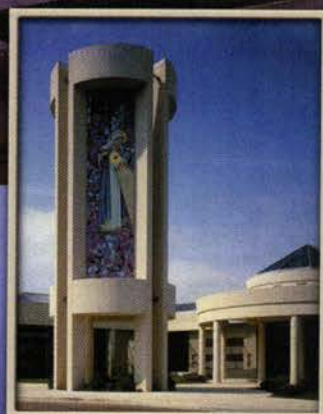
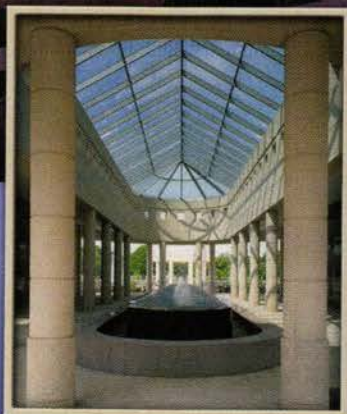
With increasing emphasis on highway safety and roadway aesthetics through initiatives taken by State Departments of Transportation, the use of Lehigh white cement affords the transportation professional an opportunity to fulfill strategic plan objectives. At night or in inclement weather, the visibility of concrete surfaces can double or even triple with the use of Lehigh white cement. □

Lehigh's white cement complements residential designs and provides overall stability and character to infrastructural applications and commercial projects.

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Industry Insight

Lightolier

"Everything we see, most of what we do, and much of what we feel is touched by light. Managing the effects and the cost of light is what great lighting is all about. For almost 100 years, Lightolier has been committed to great lighting, lighting that makes a difference for people and business," says Ken Mackenzie, director of marketing for Lightolier. "More than just hardware, Lightolier delivers the magic and impact of lighting. How we accomplish this is with a unique blend of people, expertise, and a drive for excellence and innovation."

A major innovator throughout the last century of electric light, Lightolier offers a breath of products unrivaled in the industry, including downlighting, traditional recessed fluorescent, track lighting, emergency and safety lighting systems, architectural decorative lighting, indirect fluorescent systems, and lighting controls for residential and commercial applications. This broad line of products may be specified in a wide variety of interior architectural environments, including commercial, light commercial, hospitality, retail, and residential markets. "New product design and development is the lifeblood of this company," says Ken Mackenzie, director of marketing for Lightolier. "It is our design philosophy to do it first, do it better. We are always looking to improve the state-of-the-art through innovation, technology, superior performance, and value."

Integral to Lightolier's design and product success is education and training. Dedicated to the art and science of lighting, Lightolier does much to raise the level of lighting awareness among contractors, specifiers, architects, students, and end-users alike. Lightolier was the first luminaire manufacturer to offer—free-of-charge—comprehensive lighting training via the Internet. Lightolier's "Lessons in Lighting" education course offers 22 on-line "modules", which provide the fundamentals of light and vision, luminaires, equipment, ballasts and lamps, and lighting design and application in a simple, self-study format. Members of ALA and AIA who complete the course receive continuing education points for sustaining membership in their respective organizations. "Thousands of people have taken Lessons in Lighting," says Mackenzie. "College students, industry professionals—the more people we reach the more we spread the word about just how incredible lighting can be."

In addition Lightolier offers a number of advanced LST or "Luminaire Systems Technology" courses at its Fall River, Massachusetts headquarters. These intensive two- to three-day workshops focus on specific application training such as lighting retail, educational, or office environments. "These courses utilize our Fall River training facilities, including Lightolier's 5,000-square-foot TechCenter," says Mackenzie, "The TechCenter is a wonderful laboratory for seeing and comparing lighting alternatives in real-world settings." □

Lytecaster Downlighting; Pendalyte architectural decorative pendants and Perflyte direct linear fluorescent systems; Lytespan Track in Lightolier's Fall River, MA TechCenter.



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For over 98 years, Lightolier has been committed to great lighting, lighting that makes a difference for people, places and business. More than just hardware, Lightolier delivers the "magic and impact" of lighting. We accomplish this with a unique blend of people, expertise and a drive for excellence and innovation in everything we do.



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Industry Insight

Masonite International Corporation

Customer support at Masonite is better than ever. A new Web site, www.masonite.com, customized merchandising programs, product training seminars, CD-ROMS, custom literature, and trade show support are among the many tools Masonite offers that provide architects, contractors, and retail customers with first-class assistance.

Masonite International Corporation celebrates 75 years of success with some exciting changes. Premdor Inc. recently acquired the company, merging the skills and creations of two distinguished industry forces, while preserving the renowned Masonite name. Since 1925 when founder William H. Mason brought woodworking to a new level, the company has enjoyed brand name recognition and gained an artistic edge, and is best known for an extensive line of interior and exterior doors. The Masonite catalog appeals to customers of all types by offering several options and variations on each product. Most door series are available with good, better, and best selections so that each project—and budget—can find the right fit.

Masonite's anniversary brings with it the announcements of several new products. The company's new Two Panel Roman Smooth Molded Panel Door, available in a variety of heights and with Masonite's Premcor Door Core, brings the style and sophistication of a continuous arch to any home. A full line of flush-glazed exterior doors also joins Masonite's product line; these PREM-VU Flush-Glazed Door Panels come with several options, including fiberglass and steel, and serve as a low maintenance alternative to high-end wood products while still retaining the desirable flush-glazed design look. Other new products include the PREM-STEEL HD High-Definition Steel Entry Systems, built to hold up in high-traffic areas and top rated in thermal performance; the Prem-VU Series patio doors with a polyurethane core and energy efficient glass; and Artek Non-Textured Fiberglass Entry Doors for a beautiful and safe front entryway.

Masonite's corporate headquarters is located in Mississauga, Ontario, Canada, and its international administrative offices are based out of Tampa, Florida. The company operates more than 70 facilities in 12 countries, and sells products to customers across the globe.

Company innovators work regularly at a state-of-the-art research center in Illinois to advance the industry and improve the quality of Masonite doors and door components. Already known for excellence, Masonite looks forward to an innovative future and continued success as a distinguished industry leader. □

Masonite doors are available in an endless array of styles, configurations, finishes, and decorative glass options, including PREM-VU, Safe 'N Sound Molded Panel Doors, and ArTek.

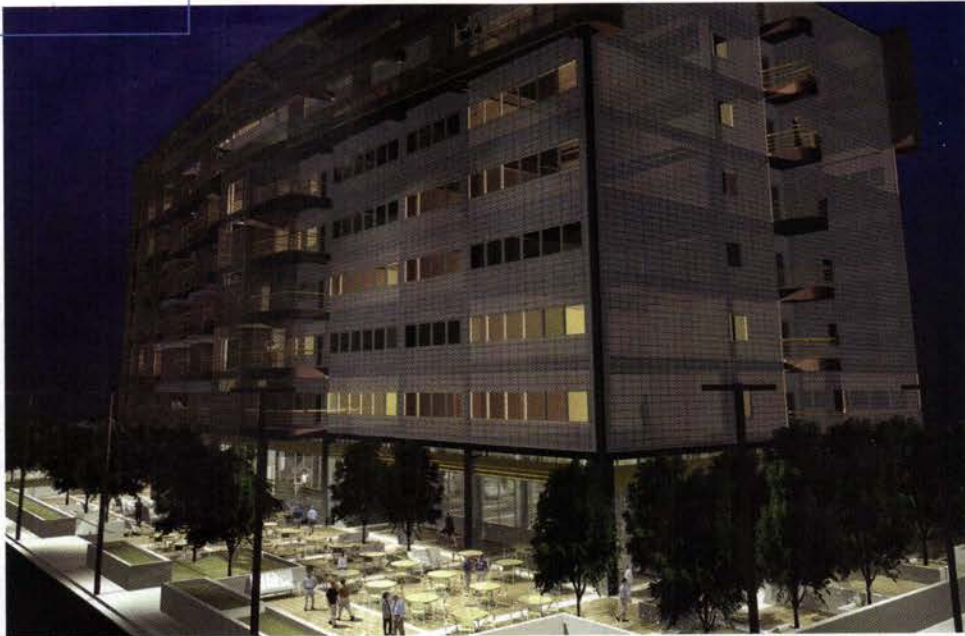


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Masonite's products are designed and constructed to exacting standards and specifications. All materials – wood, fiberglass, steel or composites – are engineered and carefully selected to ensure lasting durability and timeless performance. Masonite's line of premium high-definition steel entry systems make every home more beautiful, more valuable and more elegant. Masonite. The Beautiful Door.™ www.masonite.com



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Industry Insight

Nemetschek

In September, Nemetschek North America launched new releases of VectorWorks, RenderWorks, ARCHITECT, and LANDMARK 10. These latest version focus on fundamental drawing efficiency, while bringing the artistry back to design and giving architects more flexibility. For example, VectorWorks 10 includes better compatibility with other CAD/CAM programs, as well as offering improved technologies to allow design professionals to work faster, while at the same time create cleaner, more attractive plans.

Formerly Diehl Graphsoft, Nemetschek North America is an internationally recognized leader in CAD technology. The company's flagship CAD software, VectorWorks, (formerly MiniCAD), is one of the world's best-selling CAD products for the Macintosh and is available in over 85 countries and is translated in 14 languages. Since 1986, VectorWorks has been marketed as a cross-platform product, including Windows 98, Windows NT 2000, and MAC OS 9 and OS 10.

Engineered to meet the specific needs of smart-sized companies, VectorWorks ARCHITECT 10 has everything needed to streamline the design and production process—from project setup and programming to schematic design development and construction documents. Launched this past September, ARCHITECT 10 is unlike other CAD products, which still use lines and arcs. ARCHITECT 10 provides a unique object-based technology, which uses windows, walls, and doors that simplify the design process while boosting productivity. Simplified, with a more flexible setup, ARCHITECT 10 offers new and improved objects, streamlined interface, productivity improvements, presentation enhancements, upgraded text and dimensioning, better walls, new and improved import/export options, integrated 3D power pack, and VectorScript improvements.

Nemetschek N.A. has a tradition of customer support and assistance—MacWorld's crediting Nemetschek N.A.'s "nearly fanatical devotion to responsiveness to customers" has been evident from the start. Since its early days, Nemetschek NA has partnered with its customers—helping them network with colleagues through formal user groups and giving them the tools they need to customize products to meet their individual needs. The company has also helped third-party developers create VectorWorks-specific products. Most recently, Nemetschek NA has teamed with proven third-party trainers to provide high quality and standardized training series for VectorWorks. □

Transit Center by Michael Becherer of Omni Architects, Lexington, Kentucky; Residential house by Don Verbanac of Don Verbanac Design & Visualization, Netherlands; Townhouse by Brian Ziska of N-Vizion, Austin, Texas, all created with VectorWorks ARCHITECT.

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Get ready to shift your business into high gear with VectorWorks 10. **The basics just got better:** We've made dramatic improvements in fundamental drawing efficiency.

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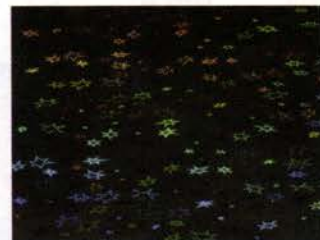


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Industry Insight


Nevamar

"At Nevamar, we strive to offer expertise and customized solutions to our customers so they can achieve the design expression they desire," says Linda Kerechek, brand manager. "We have solutions that will meet design, performance, and cost criteria. Moreover, we continue to explore new materials to provide options to meet design challenges and designers' expectations."

For more than 50 years, Nevamar has been a creative force and technical innovator in the decorative surfacing industry. With a wide selection of high-pressure laminates, thermalfused melamine panels, and decorative metals, Nevamar provides beautiful solutions critical to the success of those who create designed spaces. Dimensional finishes in the mid 1960s, Matrix patterns in the 1970s, which created an entirely new laminate category of "visual texture", and LamMates™ matching thermalfused melamine in the 1990s are among some of the "firsts" from this innovative company. Continuing in that tradition of innovation today is a product offering that is refreshed regularly to meet market needs and design expectations. Paparazzi! Holographic Surfacing™ and custom digital print are more current examples of new options for the design community. A recent installation using custom print on auditorium doors in the Chinese Mann 6 Theatre in the Hollywood-Highland complex provided a way to achieve a distinctive look at an affordable price and with easy fabrication and maintenance.

Working very closely with designers, Nevamar continually introduces new designs ranging from the elegant to the playful for a wide range of commercial and residential applications. Included among the 2002 additions is Chiasma, a complex pattern which captures the illusive spirit of layers in a collage overlay, with the pearized surface giving special effect and emphasis to the pattern's textural quality. Along with a standard stock line, Nevamar will work in collaboration with customers to create designs using in-house printing and color matching technology. For those requirements that call for special applications, Nevamar offers a full line of specialty laminates engineered for quality, functionality, and aesthetic appeal. Included in this category are products to meet requirements for static dissipation, chemical resistance, fire retardant, and heavy-duty performance such as for raised access floor tiles. A feature that has become synonymous with Nevamar high-pressure laminates is the Armored Protection™ Surface. Since its introduction over 20 years ago, Armored Protection continues to be a Nevamar exclusive that benefits users with significantly better wear value than the industry standard for laminates, as well as with greater pattern clarity and fidelity. □

Chiasma; ROCK STAR Paparazzi! Holographic Surfacing; Nevamar custom digital print installed at the Chinese Mann 6 Theatre, Hollywood-Highland complex.



“Of course, some of us don’t
need any enhancements to
preserve our natural beauty.”



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Pemko Manufacturing Company

Industry Insight

Pemko's Memphis, Tennessee-based facility has succeeded in obtaining ISO 9001:2000 certificate, and it is anticipated that the facilities in Ventura and Whittier, California, will obtain certification early next year. Pemko recently opened Pemko Canada, a new company based in British Columbia.

Celebrating its 50th anniversary this year, Pemko has introduced countless new products and innovations to existing products over the years, solidifying its reputation as the leader in high quality innovative door seals and threshold products. Pemko products are used in all types of construction—commercial, heavy and light industrial, institutional, and multi- and single-family residential. Committed to advancing the science of door sealing and to enhancing door-security and life-safety systems, Pemko products include a patented line of ADA-compliant modular ramp thresholds, a complete line of continuous geared hinges, an expanded line of nylon brush seals, the next generation of low closing force automatic door bottoms, a line of quality millwork sills, a growing number of consumer products including oak moldings, and a line of tested and approved perimeter gasketing systems for specific conditions. In addition, Pemko is the North American distributor for the Henderson Sliding and Folding Door Hardware line.

From PemkoHinge, one of the most successful continuous geared aluminum hinge product lines in today's market, to the exclusive line of edge-sealing products for fire doors and smoke doors, Pemko products are second to none in the marketplace and new applications are being discovered continuously. Pemko recently introduced Silltech 2000, the world's first leak proof sill system. The system, with its patented welded endplate, was created to eliminate water infiltration at the point where traditional jamb and sill meet. A patent is pending for Pemko's 3600 Series Astragal with positive sealing spring seal. □

							
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Vermont Structural Slated does more than just sell quality stones. After almost 150 years in business, the company still prides itself on exacting quality standards and a long-term approach to customer care that is rare in the stone world today. Since 1859, this Fair Haven, Vermont-based company has quarried and fabricated ASTM Grade S-1 Vermont slates for flooring, roofing, and architectural products. The company's focus has been to leverage this hands-on knowledge and experience to help architects evaluate, specify, and detail a growing range of stones. Their in-house drafting department is experienced in producing sketch details and shop drawings.

In the last 20 years, Vermont Structural Slate's product line has expanded. In addition to its own stones, the company now promotes high quality stones from overseas, including quartzites, sandstones, dolomitic limestones, and Vermont marbles. "The stones that we sponsor are unique and interesting, and not just stones that you see everywhere," says Craig Markcrow, president of the company. Used in a wide range of jobs, from wall panels in academic buildings and countertops in high-end private residences to exterior paving that complement landscaping jobs, products include Green Mountain Mist Quartzite, Unfading Green Slate, and Janegrey Sandstone. Each stone is available with a variety of finishes. Because of their deep, rich colors and textures, as well as their weather resistance, durability, and permanence, Vermont Structural Slate's products have found their niche in the stone marketplace. □

Industry Insight

"Metaphorically, one intangible product that we sell is insurance. We make sure things are going to get done the right way," says Vermont Structural Slate's Daphne Markcrow. "Improper placement or usage of a stone can be a huge problem," and this customer care-focused company does not want any of their clients to come up empty-handed.

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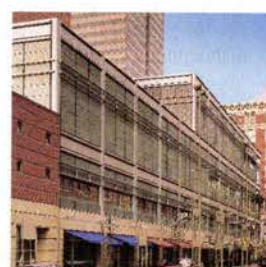
Cross Point
architect ADD Inc.
photo Peter Mauss/Esto



Sakai City Government Building
architect Daiken Sekkei Co.



Swiss RE America
architect Schnebli Ammann Menz
photo Eduard Hueber



Aronoff Center for the Arts
architect Cesar Pelli & Associates
photo Jeff Goldberg/Esto

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Doors & Windows

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Industry Insight

PPG Architectural Glass

PPG offers an exhaustive battery of glass product information online at www.ppgglazing.com. Several web-based tools can be accessed 24/7, including a product selector that recommends the right glass or glasses for a specific application and a project portfolio that highlights great-looking, great-performing PPG glass installations around the world. Product performance tables, technical bulletins, and product specifications can be printed, downloaded, and viewed.

PPG Industries has been a technology leader for the architectural glass market since 1883. As North America's largest flat glass manufacturer and a global supplier of glass products, PPG meets the needs of today's architects and designers by offering an ever-expanding product array, unmatched service, and the technical resources that have enabled it to be the industry leader.

In the last year alone, PPG has launched four new architectural glasses designed to provide the aesthetics building designers and owners want with the performance they need. Solarban® 80 solar-control low-emissivity glass combines a unique dynamic aesthetic element with superior solar control and visible light transmittance. When shaded from the sun, Solarban 80 glass has a steel jade appearance. In direct sunlight, the glass transforms into a satin reflectivity. Solarcool® Solex® glass combines the soft reflectivity of Solarcool coated glass and light green color of Solex tinted glass to create a natural-green reflective aesthetic that affords interior glare control while transmitting desirable visible light. Caribia™ glass combines unique aqua-green aesthetics with outstanding solar control efficiencies. Developed in response to a glass preference study of architects, Caribia spectrally selective tinted glass is designed to take advantage of natural daylight while lowering solar heat loads, reducing reliance of artificial cooling systems. It is also available with a reflective coating, Solarcool Caribia glass.

To facilitate fast delivery of its high-performance coated glasses, PPG has assembled a select group of glass fabricators strategically located across North America to meet the most demanding project schedules. The more than 20 members of the PPG Certified Fabricator^{CM} program have undergone rigorous training and an auditing process to ensure consistent product quality that exceeds industry standards. □

From office buildings like Washington, D.C.'s Maritime Plaza to sports facilities like Pittsburgh's Heinz Field, PPG architectural glasses help create structures with aesthetic appeal and operating efficiency. PPG continues its history of developing breakthrough top-performing products with new Caribia™ aqua-green spectrally selective glass.



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There's something new on the horizon – a lush aqua green glass whose beauty is exceeded only by its performance. Caribia™ is a new spectrally selective tinted glass that combines high visible light transmission (60%) and low Solar Heat Gain Coefficient (.38). But even with this kind of performance, looks are still everything. To see a sample of Caribia glass for yourself, call the PPG Solutions Hotline today: 800-377-5267. Or email us at caribia@ppg.com.



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Industry Insight

Sloan Valve Company

"The architect is pivotal to the design of the building," says Susan Kennedy, director of marketing for Sloan Valve Company. "It's our job to keep them informed of the latest product information—to be their plumbing consultants. Not only does Sloan's wide line of products meet the aesthetic and operational needs for any facility, our goal is to serve architects by being their single-source plumbing experts."

William E. Sloan revolutionized the commercial and institutional plumbing market in 1906 with the invention of the Royal[®] diaphragm Flushometer. Sloan's invention was embraced due to its superior performance, attractive design, low maintenance needs, and its ability to quickly recycle for high-volume usage—many of the same traits that are appreciated to this day. Throughout the years, Sloan Valve Company has consistently responded to the needs of architects by manufacturing aesthetically pleasing plumbing products that meet ADA regulations, improve hygiene, and conserve water. Also, Sloan's nationwide network of sales representatives makes it easier for architects to acquire the product information they need on a timely basis, which helps keep designs on schedule.

With the advancement of plumbing systems to coincide with modern buildings, Sloan led the way by pioneering touchless, sensor-operated Flushometers and faucets. These hardwire or battery-operated fixtures are ADA compliant and are available in a wide range of design-enhancing finishes. Sensor-operated plumbing fixtures also provide a cleaner, safer atmosphere for restroom users, which equates to a positive impression of the building. To complement Sloan's line of manual and electronic plumbing products, the Guildmark[®] series of fixtures with special PVD finishes are available for interior design purposes, allowing architects to achieve the design objectives of a facility without sacrificing performance. Because interior design continues to become more prominent for the entire building—restrooms included—Sloan now offers SloanStone[™] solid-surface lavatory systems that are available in many design styles and colors. Along with Sloan's Optima[®] line of "on-demand" faucets, this combination is a perfect match for any application, including banks, schools, office facilities, and hotels.

By continuing to focus on the needs of architects, Sloan provides the highest quality products that meet design standards while improving the cost-effectiveness of plumbing systems. For the latest product information from Sloan, fax requests to 800-501-3989 for a product catalog. Architects can also visit Sloan's comprehensive web site that has all the information needed to make specifications: www.sloanvalve.com. □

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Industry Insight

Technical Glass Products

In essence, what was once a hindrance to design has now become an asset. "We're in a nice situation," says Jerry Razwick, president of Technical Glass Products. "It's very rewarding to be able to offer architects the means to achieve things they never knew were possible."

Over the last 20 years, perhaps no building materials have evolved more dramatically than fire-rated glass and framing. Code changes and technological breakthroughs have produced an exciting array of options for design professionals.

There was a time when wired glass in hollow metal steel framing was just about the only game in town when fire protection was required. Fire codes severely restricted design creativity when it came to glazing. Today, the tables have turned completely, and manufacturers of fire-rated products are offering solutions in aesthetics and performance that were never before available.

The people at Technical Glass Products (TGP) have seen this first hand. Based in Kirkland, Washington, TGP is a North American distributor of a wide range of fire-rated glazing and framing materials. The company has been one of the forces leading the charge in innovation.

"We've witnessed a complete transformation of the industry," states Jerry Razwick, president of TGP. "Wireless fire-rated glass products on the market today can provide impact safety, sound control, energy performance, bullet resistance, and much more. Some glass products are tested for use as fire walls, which means virtually unlimited amounts of glass. Even fire-rated framing has changed. Architects can now specify more interesting choices such as hardwood or narrow profile steel framing systems."

The newer products are being put to use in creative ways, as well, outside the normal scope of simply satisfying building codes. For example, TGP's FireLite® fire-rated glass ceramic was the material used in the cauldron of the 2002 Olympic winter games in Salt Lake City. □

New developments in fire-rated glazing have resulted in greater levels of performance and innovative design possibilities at TGP.

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Industry Insight

Westcrowns Inc.

"Architects must design within the limitations of the product. The Profilit system offers fewer limitations and can be adapted to meet the architects' design objectives," says Sam Wright, vice president of sales and marketing for Westcrowns Inc. "While most glass is flat and must be used in squares or rectangles, the Profilit system can be easily shaped and curved to fit different radii and forms, allowing architects to really work outside the box."

An innovative alternative to conventional glass products, Pilkington Profilit system provides architects the freedom to design in glass, resulting in exciting architectural effects. Profilit, a structural glazing system, eliminates the need for integral vertical or horizontal aluminum members. The system comprises an aluminum perimeter frame into which the Profilit linear glass channels are pocket glazed. The self-supporting glass channels permit a cost-effective cladding system that is adaptable to almost any building design, including curved and large span constructions.

The inherent adaptability of the system is augmented by the options in color, texture, installation formats, and light diffusion levels that are available. The Profilit system has been developed to provide a high level of thermal insulation, solar control, and sound reduction, and to withstand high wind loads and thermal movement. Internally, the Profilit system can be utilized to create elegant partitioning, providing increased lighting and privacy. An economical and attractive alternative to internal glass walls, the Profilit system can be incorporated within new or refurbished projects and its excellent sound insulation provides a functional workspace environment.

Installation of the Profilit system is a seamless process, with all components capable of being site built, effectively reducing site measurement time. Several installation methods can create varied applications of the Profilit system. In addition, architects can orientate the glass either horizontally or vertically.

Available in the United States solely through Westcrowns Inc., the Profilit system is distributed through authorized glazing companies and architectural representatives located across the country. All dealers have received training in the design and installation of the Profilit system, and most dealers have inventory for supplying projects with shorter lead times. "This provides the owner/architect with additional confidence that their project is being handled by experienced professionals and will be completed on time," says Sam Wright, vice president of sales and marketing for Westcrowns Inc. □

"The beauty of Profilit is not only its transparency, but its radiance; the stippled surface refracts and amplifies light," says Stanley Saitowitz, design principal, Yerba Buena Lofts.

Concept > Craft > Construction

Consequential buildings derive from a two-pronged discipline. On one level, they are conceived to stretch the bounds of architectural discourse—the built environment serving as an agent of societal progress. On a distinct yet complementary level, great works are about execution, pure and simple: artful detailing, well-researched specifications, and vigilant site visits. Taken together, these simultaneous processes make for exceptional architecture.

To help illuminate the connection between the two, we have revisited four unique projects that appeared in our pages over the last year. These projects offer a master's class in design and craft—and new ideas in shaping the construction process. For example, behind the elegant proportions and Zenlike purity of David Salmela's Albrecht House in Red Wing, Minnesota (April 2002, page 82), are subtle millwork details and a discriminating palette of wood finishes. Tadao Ando's ethereal aesthetic for the Pulitzer Foundation for the Arts in St. Louis (December 2001, page 84) takes the weight out of concrete while remaining true to its material expression. The embellished cladding at Michael Wilford's B. Braun Headquarters in Melsungen, Germany (August 2002, page 68), is about precise detailing and assembly, while the interiors transform a corporate workstyle with novel space planning and spare furnishings. Last, behind Frank Gehry's unusual new business school at Case Western Reserve University in Cleveland (October 2002, page 68) is a totalizing computer process that unifies the workspace of designer, contractor, and fabricator in a single three-dimensional document.

Suffused with new ideas in conception, form-making, materiality, and construction, these four projects—and the four practitioners—expose how technique and process contribute to profound architecture.

> specifications



The library (above) boasts a number of species of wood, including recycled redwood siding, basswood slatting around the interior opening, and new and recycled Douglas fir in the roof structure. The design uses eight distinct species in all.

Modern Design, Old-fashioned Construction

> SALMELA ARCHITECT / ALBRECHT HOUSE / RED WING, MINNESOTA

Up in the woods of Minnesota, far from the neomodernists congregating in urban centers, David Salmela

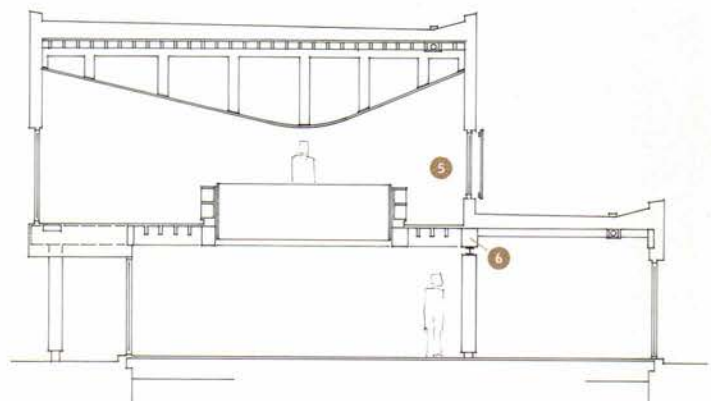
is building beautifully detailed, carefully crafted modern houses. The Albrecht House in Red Wing, Minnesota, is rich with features that demonstrate Salmela's clean aesthetic and skill with materials, especially wood.

The bones of the house are recycled Douglas fir timbers. "Their presence has impact," says Salmela. "These trees have been in buildings for one hundred years." Salmela left the timbers almost untouched, incorporating their rare

size and beauty into the building. River City Builders, the local contractors who worked with Salmela on the project, notched and fitted the columns and beams off site, allowing for a minimum of work in assembly. The builders fastened the timbers with inset custom hardware, cast by Neufab, a foundry in Red Wing. Salmela and the contractors inset the hardware both for aesthetic reasons and for fireproofing: In a fire, Salmela explains, metal melts first. In the Albrecht House, the

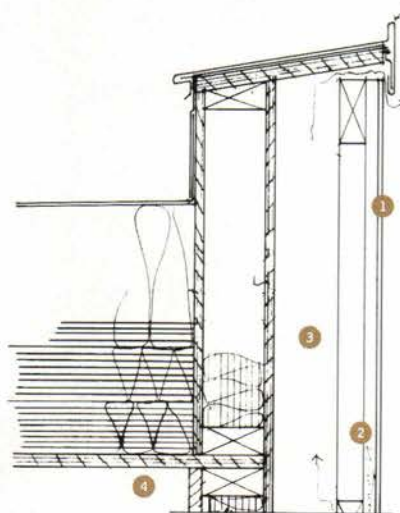
massive fir columns would take a long time to burn with the metal hardware located safely inside.

Like the timbers, much of the other wood in the house is recycled and comes to Salmela through the Duluth Timber Company, a recycled lumber supplier. By using recycled materials, Salmela manages to both celebrate nature in his designs and preserve it by harvesting other buildings instead of forests. "It's a professional attitude," he says. "It's what they call green."

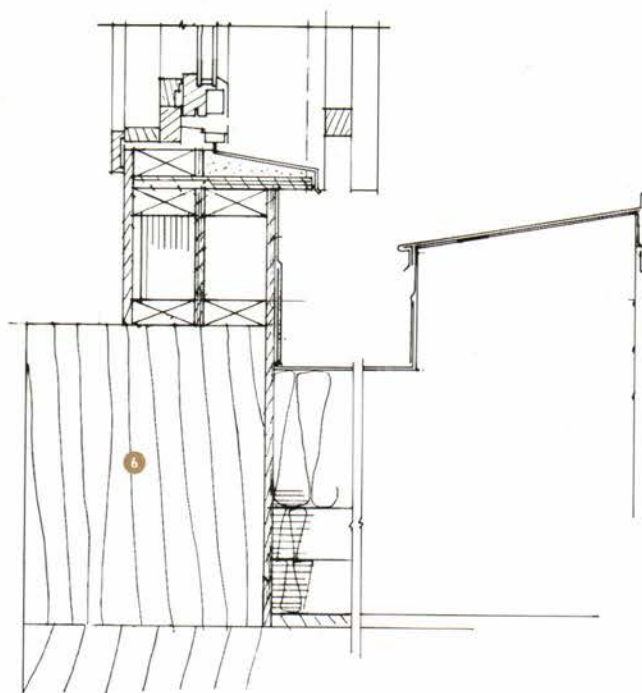
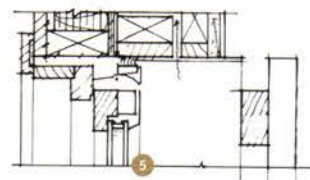


North-south section | 6'

- 1 slate tile
- 2 stucco
- 3 air space
- 4 new Douglas fir ceiling boards
- 5 library window
- 6 recycled Douglas fir structural timber



The library volume is differentiated from the main house with slate cladding (above) and a shift in section that creates an overhang to the north (section, top). A detail drawing of the library's slate façade (right) shows the careful construction of the façade and the connection to the roof below.



Typical façade and roof details | 4"

ALBRECHT HOUSE, RED WING, MINNESOTA

CLIENT: Arlin and Marilyn Albrecht **ARCHITECT:** Salmela Architect, Duluth, Minnesota—David Salmela (principal), Souliyah Keobounpheng **LANDSCAPE ARCHITECT:** Cohn + Stumpf + Associates **ENGINEER:** Carroll Franck & Associates (structural) **CONSULTANTS:** Janey Elizabeth Sawyer (furniture); Carol Stumpf Design (colorist) **GENERAL CONTRACTORS:** Alms Construction, River City Builders

>specifications

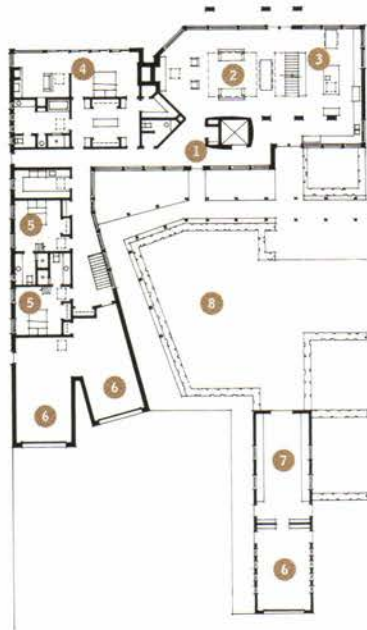


The windows of the main living space (above) afford a view of both the wood details inside and the brick and slate façades and Douglas fir timbers outside.

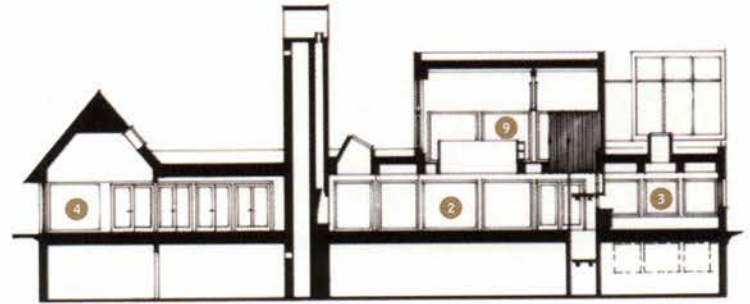


The stair screen (above) is only an inch and a half thick and stands 13 feet tall. The screen and stairs are separated by a small space to ensure they are two distinct elements.

- 1 entry
- 2 living and dining room
- 3 kitchen
- 4 master suite
- 5 bedroom with loft
- 6 garage
- 7 garden house
- 8 front court
- 9 library



First-floor plan 21' 8"



East-west section 12'

HIGHLIGHTED PRODUCTS

SLIDING DOORS—Loewen

WINDOWS—H Windows

LOCK SETS—Columbo

CABINET HARDWARE—Hafele

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DOWNLIGHTS—Con-Tech Lighting

SPECIALTY LIGHTING—Prisma

ELEVATORS/ESCALATORS—Dover

PLUMBING FIXTURES—Grohe; Kohler



The stair screen and basswood slatting around the interior atrium (above) increase the verticality of the two-story opening, juxtaposing it against the sprawling, horizontal house.

In choosing other woods in the Albrecht house, Salmela took as much care as he did with the timbers. The house holds eight varieties of wood in all, including recycled redwood interior siding, cherry flooring, maple casework, and basswood slatting.

The most striking wooden detail in the house is a tall, delicate screen that masks the stairs to the library and ascends from the main living area into the upper space. Only an inch and a half thick, the

white painted screen is basswood; as one of the lightest woods, the material is more often seen in building models than in buildings themselves. Its delicacy contrasts with the timbers nearby: "In conjunction with the massive structure," says Salmela, "it is a very interesting contrast of scale."

The care that Salmela lavishes on visible interior details also extends to the more pedestrian wood inside the walls. All of the exterior walls of the Albrecht House

have air pockets, which prevent rot and mildew. "It keeps the materials on the inside dry," explains Salmela. "If the materials are jammed together, moisture can get into that space and rot the building. The more you can get these spaces to breathe, the longer the building will last."

In the Albrecht House, Salmela's precise craftsmanship recalls another era of construction, when every structure was erected with care. In building

modern buildings this way, Salmela transports those qualities to the present. "The Albrecht House isn't a nostalgic place," he says. "It's truly an honest modern house, with all the modern thoughts about how a house should function today. Yet it has the qualities that very old admirable buildings have." One day the Albrecht House will be an old, admirable building itself, and an example of how things should be done. **JULIA MANDELL**

> specifications



The office interiors feature “cockpit” partitions of Oregon pine and etched acoustical glass with thin steel profiles and a three-layer acoustic panel. A stainless-steel box contains a thermostat to measure ambient temperatures (opposite, center). Custom-made ceiling elements integrate lighting, cooling coils, and acoustical insulation inside a slotted steel frame (opposite, top right).

Triangle Man

> **MICHAEL WILFORD / B. BRAUN HEADQUARTERS EXPANSION / MELSUNGEN, GERMANY**

To energize a headquarters expansion for B. Braun, a large German manufacturer of medical devices, architect Michael Wilford dappled his geometric design with streaks of

color and light. The triangle-inspired design, which exudes energy through a seemingly staid palette of concrete, patinated copper, and stainless steel, offered a serendipitous occasion for Ludwig Georg Braun, CEO of the company, to implement a new workstyle for front-office operations.

Impressed by the wireless computers, “elastic working environ-

ments,” and loungelike settings employed by the Dutch insurer Interpolis in the mid-1990s, Braun devised his own workplace strategy, which he called “Office Concept 2010.” By considering the amount of time employees are absent or working off-site, Braun hoped to increase the effective use of office space from the norm of 60 percent to 80 percent or more.

HIGHLIGHTED SUPPLIERS

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CEILING ELEMENTS—Imtech,
www.imtech.de

CARPET: Fabromont

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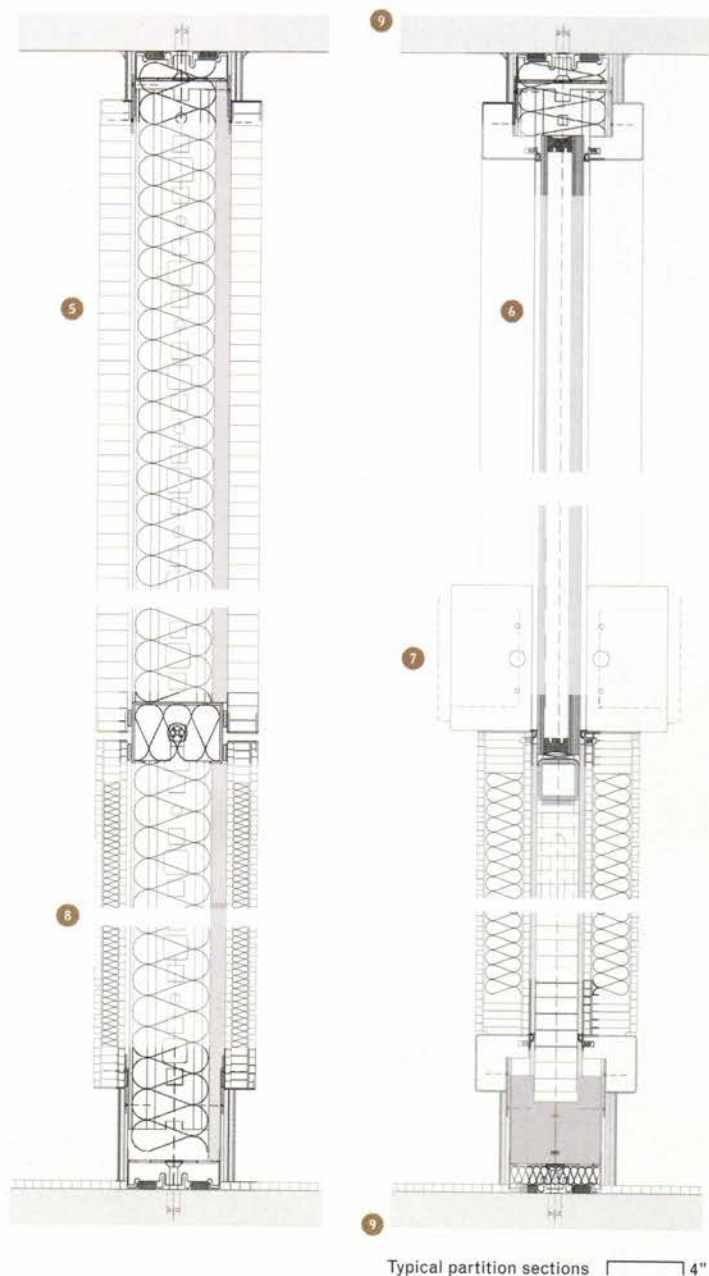
BRICK FLOORING—Baggeridge
Brick, www.baggeridge.co.uk

CHAIRS—Sedus, www.sedus.de

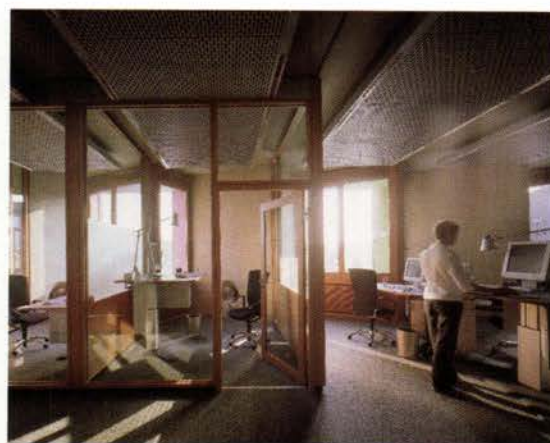
FILING CABINETS—Mausier,
www.mausier-office.de

TRANSPARENT AND FLEXIBLE

The triangular building was already completed at the time, so Wilford had to overlay a space plan without fixed offices onto the existing floor plate. Working with the Dutch consultant Veldhoen + Company, the designers derived a solution involving a series of highly accessible zones with transparent, flexible boundaries. Coupled with a



- 1 steel anchor and rail
- 2 light fixture recess
- 3 acoustical insulation
- 4 heating/cooling element
- 5 Oregon pine panels
- 6 etched acoustical glass
- 7 stainless-steel enclosure for thermostat
- 8 three-layer acoustic panel
- 9 concrete slab



strict clean-desk policy and a novel array of partitions, filing systems, acoustical treatments, and triangular office furnishings, the scheme resulted in "cockpits" for individual work, team rooms and "living-room tables" for group work, and areas for brief periods of work, either standing or seated. For respite and informal work, the plan included kitchenettes, reading

rooms, and ample break lounges.

What was originally planned as space for 130 employees became an area for 240. Rather than 35 linear feet of files per person, each employee is limited to 8 feet.

Supporting the flexible work areas is a raised-floor system that allows plug-and-play connections to the network and electrical outlets at any point. Perforated steel

ceiling panels attached to the exposed concrete ceiling carry lighting fixtures, copper heating and cooling coils, acoustic insulation, and fire sprinklers.

The ceiling panels, painted silver to match the stainless-steel detailing elsewhere in the building, offer an apt metaphor for the work environment. Within the most slender profile possible, the discrete

assembly houses all the elements needed for a comfortable and productive work environment. Similarly, the exterior image, while robust, only hints at the energy contained within.

PLATONIC IDEAL

The platonic shape of the headquarters' plan is echoed not only by the three-sided furniture in the work

> specifications



Unlike the original B. Braun headquarters (above, at right), the new façades are animated by elements that exaggerate their function. Articulated rivets offer bird control, but are primarily decorative (opposite, bottom right), and the recessed windows have reveals of colored metal and stainless-steel sills and eaves. Mechanical sunblinds are located within the envelope, behind an acoustical panel. Sandblasted stainless-steel panels are hung on the cast-in-place concrete structure using steel angles, with a layer of insulation sandwiched between (drawings, opposite).

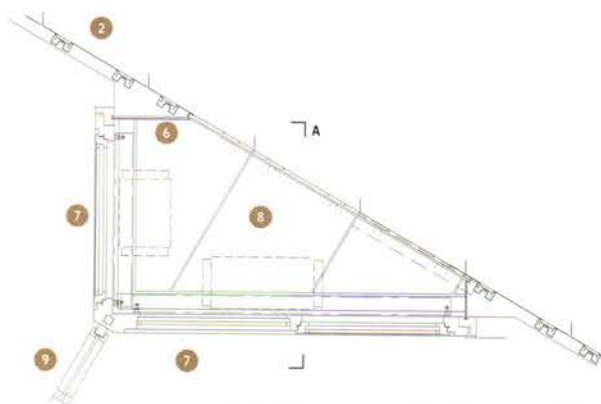
ADMINISTRATION BUILDING FOR B. BRAUN HEADQUARTERS, MELSUNGEN, GERMANY

CLIENT: Gellmer Verwaltungsgesellschaft **USER:** B. Braun Melsungen **ARCHITECT/INTERIOR DESIGNER:** Wilford Schupp Architekten, Stuttgart, Germany—Chris Dyson, Claudia Murin, Charlie Sutherland, Axel Overath, Bori Csicsely, Denis Wolf, Martin Braun, Frauke Goldammer (project team) **ENGINEERS:** Ing. Buero Dr. Meyer (structural); ROM Kassel (M/E/P); PPC (M/E/P); Hosser, Hass + Partner (fire safety) **CONSULTANTS:** IKB Immobilien Management (project management); Veldhoen + Company (workplace concept); Dr. Manfred Flohrer (building physics); Kurz + Fischer (acoustics); agLicht (lighting) **GENERAL CONTRACTOR:** Dyckerhoff & Widmann **CONSTRUCTION MANAGER:** PPC **AREA:** 57,000 square feet **COST:** \$10.7 million **PHOTOGRAPHER:** Roland Halbe



Typical window section (A) 1'

- 1 concrete wall and slab
- 2 stainless-steel cladding with angled fins
- 3 acoustic panel
- 4 wood grille
- 5 heating unit
- 6 colored metal panel
- 7 operable windows
- 8 stainless-steel sill
- 9 interior partition



Typical details at window (plan) 1'



areas, but also in the details found around the buildings. The equilateral atrium and its lounge spaces and washrooms are located in the most prominent triangle of space; the elevator shaft and egress stairs have their own triangular enclosure. The notched exterior walls are the most animated of all, articulating shaft spaces and recessed windows with shallow triangles of space.

The façade is powerfully enlivened by elements that exaggerate their function. The sand-blasted stainless-steel panels, fixed to a precast and poured-in place concrete structure, display articulated "rivets" that hold the panels in place and also protect against birds. The recessed windows protect occupants from glare, and operable sections allow natural

ventilation where it is needed. Colored metal wall panels and the stainless-steel sill in the recess color and reflect daylight. Built-in shades and acoustical panels are accessible from within the spaces, and slitted wood baseboards run below the sills, hiding radiator units.

Like the combination of materials and colors on the building exterior, the recessed windows refer-

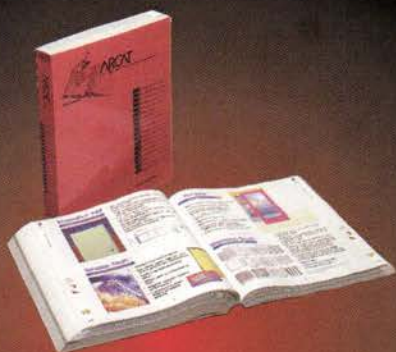
ence the original Braun building nearby, but the sharp geometric forms—and the hyperbolic detailing—strike a dominant chord.

In both its functional innovations and its adventurous aesthetic, the expansion of the B. Braun headquarters compound announces a new generation of leadership for the 160-year-old company.

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
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>specifications cladding



1A



1B

1 THE NEW FACE OF METAL

Industrial chic is still on the rise, and one cladding treatment, corrugated metal, speaks the industrial vernacular with a value-oriented accent—which is perhaps why the material is dressing more buildings these days, even award-winning housing (November 2002, page 50). Three recently completed projects show off their corrugated metal skins.

To respect its surroundings and a demanding price per square foot (\$144), the Providence Holy Cross medical office building (B), located in Mission Hills, California, and designed by Smith Group of San Francisco, pairs aluminum cladding from **Alcoa** (www.alcoacladdingsystems.com) with an exterior insulation and finishing system (EIFS); the metal siding responds to the industrial plant it faces, while the EIFS echos the hospital on the building's south side. The courtyard walls feature both materials, joining the two perspectives.

Gwathmey Siegel & Associates specified a corrugated aluminum panel from **Centria** (www.centria.com) for the Technology and Learning Complex at Lawrence Technology University (A) in Southfield, Michigan. As with the medical office building above, cost was an issue on the university project. However, the cladding treatment simultaneously achieved dual aesthetic goals: The narrow-ribbed material reinforced the horizontality of the 430-foot-long structure and provided a contemporary counterpart to the campus's existing brick buildings.

The corrugated metal siding of the Central Costa Sanitary District Environmental Quality Laboratory (C) carries on the existing industrial character of the large complex. However, the two steel panel systems—one features three corrugations per foot, the other five—from Centria speak to another advantage of metal cladding: sustainability. Michael Willis Architects of San Francisco chose the material for its high recycled content, in support of the laboratory's mission of water reclamation.



1C

2 SLATED FOR CLADDING

At another stop along the aesthetic and cost spectrum, slate is also increasingly specified as a cladding system. Certain slate deposits, such as those found in Vermont and Wales, England, have a very low water-absorption rate, making the material more resistant to freeze-thaw cycles and staining. Moreover, it is fire-resistant and easily maintained. This stone may call to mind the roofs of traditional New England buildings, but its understated appearance has made it a relevant material for sleek, modern design around the world—the Sakai City Government Building (A) in Japan, for example. Designed by architecture firm Daiken Sekkei, the structure's wall panels and flooring are clad with “unfading” green stone from **Vermont Structural Slate** (www.vermontstructuralslate.com).

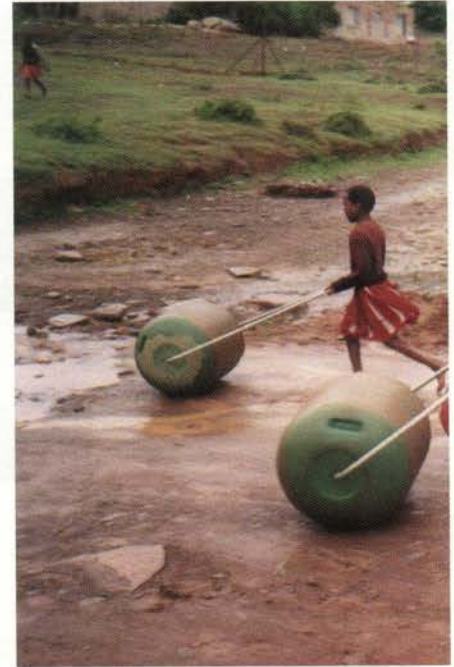
While certain veins supply unfading stones like the panels used on the Japanese building, most slate will oxidize over time. Originally black or charcoal gray, the stones on the Allston Public Library (B) in Boston have faded to a golden hue. The building uses three types of slate siding from Vermont Structural Slate: Black Lace multicolor panels, Heathermoor sculpings (irregular bricks split by hand), and Heathermoor shingles. The naturally mottled surface of the stones creates texture, as do the different cutting techniques. The panels are split along their cleft; the sculpings, on the other hand, are cut along their grain edge. The building's rich palette of materials helps emphasize the library's importance within the community, notes the project's architect, Machado and Silvetti Associates.



2A



2B



MARJETICA POTRČ: EXTREME CONDITIONS AND NOBLE DESIGNS, ORANGE COUNTY MUSEUM OF ART, NEWPORT BEACH, CALIFORNIA, THROUGH MARCH 2, 2003. SEE WWW.POTRC.ORG.

FOUND DESIGN

In this installation, Slovenian urban anthropologist and artist Marjetica Potrč captures the unsettling dichotomies of contemporary urban life, from sightings of panicked wild animals in Seattle buildings to squatters in Sao Paulo, Brazil, who appropriate and restore living spaces.

The show opens with the Hippo-Roller, a resourceful tool that replaces hand- or head-carried 5-gallon jugs with 20-gallon capacity barrels that can be rolled across almost any terrain. Used in remote villages in South Africa where potable water is scarce, the rolling barrel has the added bonus of serving as a baffle against landmines. Similar in shape to freeway water bollards, which absorb the impact of ubiquitous car crashes, the Hippo-Roller significantly diminishes the impact of landmine explosions.

Doggedly scouring the globe for conditions that bring these and other similarly accidental design benefits to the fore, the artist introduces the harshness of real life into these pristine gallery spaces by showing viewers some of the grittiest and most inventive intersections of technology, material resources, and housing strategies in the world.

Her full-scale dwelling for the exhibition freely quotes Sam Mockbee's Rural Studio work; by pairing common building materials with bold orange paint and salvaged car windows, Potrč creates an exuberant and unusually graceful lean-to.

The fact that the installation critically explores uneasy issues of poverty and displacement in the context of an affluent Newport Beach setting reinforces the ironies at work in global development.

JENNIFER DOUBLET