RECONSTRUCTED IDENTITIES

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Enric Miralles and the team of EMBT/RMJM designed a dense, low-slung fabric for the new Scottish Parliament, with internal and open-air corridors and concourses, irregularly shaped interior volumes, and ample fenestration for air and light.
We know architecture can transform a city. Can it also save a city? Buffalo, an all-but-forgotten industrial town near Niagara Falls, is about to find out.

For those not in the know, this lakeside metropolis contains a remarkable architectural legacy. Beginning in the 1890s with a parkway system by Frederick Law Olmsted and renowned structures by Stanford White, H.H. Richardson, Daniel H. Burnham, and Adler and Sullivan, the wealthy birthplace of the steam-powered grain elevator gained global prominence in 1901 as the site of the Pan-American Exposition, an electrically illuminated spectacle that briefly earned Buffalo the moniker “City of Light.” Subsequent years brought major works by Frank Lloyd Wright—for the Larkin Soap Company and for Darwin D. Martin, perhaps his greatest patron—as well as the Rapps, the Saarinens, Gordon Bunshaft, and Minoru Yamasaki, among many others.

But as these later names were working in the 1960s, the glimmer of Buffalo's midcentury industrial successes (aerospace, steel, automotive) were rapidly fading—as was its legacy of great building commissions. And unlike other U.S. cities, Buffalo was untouched by that era's tidal wave of urban renewal.

Being passed over might have been Buffalo's saving grace: In spite of decades of economic challenge, many of its architectural gems remain intact. Today, this outdoor museum is a highly visible reminder of the city's rich cultural legacy, which includes music halls, botanical gardens, and the unrivaled collection of modern art at the Albright-Knox Art Gallery.

A few years ago, these cultural assets became the focal point of a push by descendants of local industrialist families to re-energize Buffalo. Wright's Darwin D. Martin House (1906) became a rallying point; in 1992, restoration of this home, widely considered one of the architect's preeminent works, began in earnest. Other projects also employ Wright's legacy to boost tourism and commerce in Buffalo, such as the preservation of Graycliff—his 1927 summer house for the Martin family in nearby Derby, New York—and the construction of as-yet-unrealized Wright designs for a boathouse, a mausoleum (January 2005, page 11), and a gas station for the Pierce-Arrow Museum.

While local leaders unflaggingly promote their built heritage, other Buffalo denizens prefer to focus on the city's promising contemporary work. In Olmsted's long shadow, for example, Robert Shibley's regional plan for Buffalo, "Queen City Hub," earned wide praise and honors from the American Planning Association last year. And two much-anticipated life-sciences buildings are underway: a visually dynamic research lab by Merhod Yazdani and a large bioinformatics facility by Philadelphia's Francis Cauffman Foley Hoffmann, both under an elegant master plan by Chan Krieger and Associates. Even reuse projects are making news, such as the neogothic Asbury Delaware Church by John H. Selkirk (1876), now being adapted for an unlikely occupant: Righteous Babe Records.

The most powerful new development, however, is a small and subtle visitors' center tucked behind the Martin House, set to break ground this summer. Designed by Toshiko Mori, the pavilion's glass walls will expose an inverted hipped roof set on four large piers containing mechanical systems—a direct reference to Wright's structural approach for the house, in which quartets of columns conceal internal plenums for heating and ventilation.

Most aptly, the visitors' center unites Buffalo's legacy of architecture, beauty, and technology with its present-day equivalent—a worthy metaphor for a city that sees its architectural assets, both new and old, as its saving grace.

PASSING THE BATON

Just as Buffalo hands over its built legacy to a new generation of designers, so too did leading architects at Architecture's P/A Awards ceremony at the AIA New York Chapter's Center for Architecture last month. Former P/A Awards jurors and recipients Peter Eisenman, Thom Mayne, and Brian Healy were on hand to confer citations to five first-time awardees. Thanks to the presenters for their time, anecdotes, and good wishes for our 52-year tradition. And we congratulate (again) all seven of this year's winners.
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Research matters
The article on increased interest in research in the architecture profession and the AIA [December 2004, page 62] stimulated my hopes that we will focus again on the fact that ours is a knowledge-based field—and that doing good service and design is more than just surface, form, and appearance.

George Siekkinen
National Trust for Historic Preservation
Washington, D.C.

Going ornamental
I am so bored with the one prominent aesthetic filling your pages: the modern design idioms. Some call it “contemporary” if it has current technologies or some minor invention, but the root ideas are from Bauhaus. As you insightfully noted, “ideas from history, nature, or other civilizations ... are best viewed as noteworthy starting points” [December 2004, page 13]. How about focusing on more work that addresses these starting points rather than continuing on with work that isn’t, as you wrote, “precisely in sync with our times”? Winston Churchill said, “The further you look into the past, the further you will see into the future.” Let’s keep our eyes wide open.

Mark Parry
Santa Rosa, California

I was immediately drawn to your editorial on ornament, but I was let down by the same linguistic gymnastics and obscure phrases that most writers employ when discussing the subject. It’s as if our puritan modernist forefathers were still exerting their guilt-ridden consciences over us. Still, I hope you continue to cover the subject.

Daniel Morales
Washington, D.C.

While pardoning ornament from its criminality, why not transcend the outdated stylistic moralizing that led to ornament’s original vilification? Sanctionimous verbiage on traditionalists and revivalism is as repugnant as any form of dogmatic intolerance.

Michael Burch
La Canada Flintridge, California

Healthcare? Ask the users
Regarding the editorial on healthcare facilities [November 2004, page 11]: First, how should we judge their designs? Simple: Interview the users. Of course, this is not simple: Users span a wide range of abilities to articulate how they respond to architecture, so interviewers need to be skillful social scientists. But how else might it ever be possible to usefully inform future designs? Second, should healthcare architecture be treated as its own discipline? No. Separating healthcare architecture from the main body of the profession is a power move to make it difficult for “outsiders” to get projects. There is a strong tradition of client-held beliefs that the most experienced healthcare designers are the most likely to perpetuate past patterns—and that those who’ve never designed a healthcare building can bring fresh ideas.

Wayne Ruga
The Center for Health Design
Cambridge, Massachusetts

CORRECTION
Kalwall’s blast-resistant panels were incorrectly called “polycarbonate” [December 2004, page 102]; they are structural composites of thermoset and aluminum.

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ARCHITECTS WORK FOR TSUNAMI RELIEF

U.S. architects are responding to the tsunami-devastated region of Southeast Asia by contributing skills and resources to relief and reconstruction efforts in the region. Several organizations are raising funds to rebuild homes and provide temporary shelter for the millions left homeless in 12 countries hit by giant waves on December 26.

Habitat for Humanity is nearly halfway to their goal of raising $25 million to fund the construction of 25,000 “court-house” structures in four of the hardest hit countries: Sri Lanka, India, Thailand, and Indonesia. The single-family dwellings feature a main room, veranda, and sanitary facilities. Donations have come from corporate and private sponsors worldwide, including the building-supply retailer Lowe’s, which has pledged to build the first hundred homes and is matching private donations made on Habitat’s website.

Other organizations committed to help in the rebuilding effort include New York City-based Architecture for Humanity, raising over $150,000 in cash and professional services. Among other initiatives, the nonprofit group has been asked by the Sri Lankan government to help develop a master plan for the country’s hard-hit Kirinda region. Katie Gerfen

FEINER RETIRES FROM G.S.A.

Edward Feiner, the guiding force behind the General Services Administration’s decade-old Design Excellence Program, has retired from his position as chief architect of the agency. Following a 35-year career in public service, Feiner begins life in the private sector as director of office operations for Skidmore, Owings & Merrill in Washington, D.C., effective February 1. (According to SOM, his new role will exclude marketing to the federal government.) The former chief architect leaves a legacy of public architecture reinvigorated by high standards for design, urbanism, and sustainability. A national search for Feiner’s successor is underway. Abby Bussel

PHILIP JOHNSON, 1906-2005

Philip Johnson, often referred to as the dean of American architects, died on January 25 at the age of 98 in his famous Glass House (1949) in New Canaan, Connecticut.

The winner of the first Pritzker Prize in 1979 and a recipient of the AIA Gold Medal in 1978, Johnson was a stylistic chameleon. His oeuvre, ranging from Mies-inspired modernism to postmodernism, includes the sculpture garden at New York City’s Museum of Modern Art (1953), the Seagram Building in Manhattan (1958), on which he collaborated with van der Rohe, the Transco Tower in Houston (1983), and the Chippendale-topped AT&T tower (1984) also in Manhattan.

Influencing architecture far beyond his built legacy, Johnson was a historian, author, and the first curator of architecture at the Museum of Modern Art. His 1932 exhibition and book, The International Style—produced with Henry-Russell Hitchcock—literally coined the phrase, and it endures as a seminal reference on the architecture of that time. Anna Holtzman

The U.S. General Services Administration (GSA) released a study in January that estimates the costs of developing green facilities using the U.S. Green Building Council’s LEED standards. The report, prepared by Steven Winter Associates with contracting giant Skanska, suggests that a federal building pursuing a LEED “gold” rating costs between 1.4 and 8.1 percent more than a building that merely conforms to the GSA’s standards.

Competition update: A star-powered jury selected four professional-category winners in the C2C (Cradle-to-Cradle) Home Competition (November 2004, page 15). The winners—who include Brian Cloward, Bruce Kinnan, and Tammy Frick of Seattle; Patrick Freet of Minneapolis; Russell Ashdown of Leicester, U.K.; and Douglas Oliver and 2002 P/A award-winner Vincent Snyder of Houston—will work with competition organizers to develop their designs and build the homes in Roanoke, Virginia, this summer.
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American architectural students and recent graduates inundate better-known European architects with job applications. Particularly sought out are offices where they might learn from the leading edge of architectural and technological innovation, about aesthetically refined high-performance design and construction, and the highly collaborative working methods that achieve both these and the snug synthesis of a building’s various systems—space, structure, services, and skin—characteristic of such architecture. These skills, the budding designers assert, cannot be learned in American academe or practice. Yet the most influential European architects sought out, such as Norman Foster and Richard Rogers (both with masters’ degrees from Yale), originally set out to emulate American expertise. Along with other Europeans, their heroes include: R. Buckminster Fuller; Neutra, Eames, and Ellwood; Wachsman and Ehrenkrantz; Mies and Saarinen (especially his GM and John Deere works); Pei and Skidmore, Owings & Merrill, as they once were; and Kahn, particularly in his collaborations with engineers Le Ricolais and Kommendant. (Perhaps significantly, many of these were European émigrés.)

Some attribute Europe’s current technological ascendency over America to differences in architectural culture and education. American architects and academics tend to focus on form and theory; Europe’s are also concerned with making and performance—both social and technical. Since postmodernism, much high-profile American architecture tends toward scenicographic illustration of ideas about history and theory, with tectonics and construction as secondary concerns. Design, generally, from engineering to products, confers and has a high status in Europe, featuring frequently in the press and on television. Also, Europe has more of a “culture of engineering” (in Britain, it’s a cult), with many engineers familiar by name to architects and two—Peter Rice and Frei Otto—as recent winners of gold medals from the Royal Institute of British Architects. Even mechanical engineers enjoy renown, particularly now as energy efficiency depends heavily on their creative input.

**DIVERGENT IDEALS**

European and American architects who have worked on both sides of the Atlantic vary in their emphasis on such matters. But they firmly agree that: Although America produces some high-performance products and components, it is a small elite of European architects who lead the world in technological advances throughout the processes of design and construction; also, although some visiting architects from Europe with enlightened and determined clients manage to innovate...
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For 30 St. Mary Axe, Foster and Partners employed customized parametric software and integrated design techniques to achieve high efficiencies.

mitted client’s environmental goals and close collaboration with project engineers, architect Foster and Partners used customized software and novel design and fabrication approaches to integrate architectural form, a diagrid structure, and environmental systems for great overall efficiencies (above). And while this is a singular work, it is emblematic of the potential for similar groundbreaking projects in Europe.

Optimists claim competition for commercial advantage, professional prestige, and personal vanity will always spur innovation. But some British engineers wonder if buildings like Swiss Re’s 30 St. Mary Axe mark a climax for such intensively and collaboratively designed architecture. They worry that, with Europe emulating America, competitive fee tendering is driving firm billings below the threshold at which thorough and innovative work is feasible. Already some engineers admit privately to a two-tier system with intensive study, research, and innovation confined to only high-profile, deep-pocketed commissions, although the lessons of these carry over into the more mundane and profitable projects. As others cut fees further, competitiveness to survive threatens the capacity for even a few “boutique engineering” projects to make noteworthy advancements.

This is bad news for architecture and the planet. The burgeoning environmental crisis stresses the need for radical improved efficiency in use of all resources, including energy. The situation necessitates the innovative design and precision engineering found in European architecture—a recent tradition inspired by past American example.

A former architect, planner, and editor of The Architectural Review in London, Peter Buchanan is a curator and author of the forthcoming Ten Shades of Green.
You don’t have to be over 18 or attend an exclusive university to study architecture anymore. In fact, design education programs for the K–12 set have been in existence for many years, but recently there has been a surge in their numbers and a push to disseminate information on such programs—many of which are run by public or nonprofit institutions.

In New York City alone, five new architecture-themed public high schools have sprung up over the last three years. “Partly, it’s [a result of] this new ‘small schools’ movement,” says Lorraine Whitman, president of the Salvadori Center, a nonprofit founded in 1987 that conducts after-school courses and teacher-mentoring programs that integrate architecture and engineering into academic studies. The term “small schools” describes high schools with no more than 300 to 500 students that may pursue a particular theme and that typically partner with outside organizations like the Salvadori Center. Design is a handy teaching tool, “because it represents the real world and it’s engaging,” believes Whitman. “We’re not in this to create architects,” she continues. “It’s a way of scaffolding what students need to learn onto what’s intriguing to learn.”

Architecture high schools elsewhere are more focused on the profession. The two most prominent ones in the nation are the Design and Architecture Senior High School (DASH) in Miami, which has been running for 15 years, and the Charter High School for Architecture and Design (CHAD) in Philadelphia, founded in 1999. Roughly 95 percent of DASH’s seniors apply to college architecture or engineering programs, and at CHAD, the mission is to increase the number of minority students entering the field.

More plentiful than full-blown architecture high schools are myriad community-based programs, such as the Prairie Village, Kansas-based Center for Understanding the Built Environment (CUBE), the Center for Urban Pedagogy (CUP) in New York City, the Chicago Architecture Foundation’s education programs, and many others. These organizations—some of which serve students as young as kindergarten age—often partner with schools both locally and farther afield, organizing workshops and exhibitions. “We know there are countless people out there doing this,” says Monica Hampton, coordinator for schools at New York City’s Cooper-Hewitt museum, “so we try to be a clearinghouse for them.” To this end, the museum has run a summer design institute for educators for the past 12 years.

While there are more and more programs out there, access to them relies heavily on word of mouth, since there is no comprehensive database to catalog all of them. Perhaps indicating that the number of programs has reached a critical point—or that mutual interest between K–12 educators and the architecture profession is growing—three online databases are simultaneously being compiled to centralize information on these programs. Last fall, a coalition of architecture accrediting institutions charged the American Institute of Architecture Students with creating a website for high-school students that will offer a complete list of precollege architecture programs. (In the meantime, an extensive partial list exists at aia.org/ed_k12programs.) Last month, the American Architectural Foundation (AAF) announced a similar initiative. “There should be a national network of these programs,” states AAF president Ron Bogle, “and we will seek to be a connecting point for K–12 architecture programs around the country.” Coming from the educators’ side, Martin Rayala, a teacher who brought architecture to the Wisconsin school system’s classrooms a decade ago and is now the curriculum coordinator at CHAD, is planning a related effort, updating the catalog of design programs on his website, designeducation.org.

Like Rayala, initially an art teacher, many elementary-school and high-school design educators are not trained architects; instead, they rely on visiting professionals to give lectures and workshops. Whether it’s exposing kids to a possible future profession or simply teaching them to appreciate the history of their neighborhood, says CUBE founder Laurie Bottiger, teaching students at the precollege level “empowers kids to see how they can affect their environments.”
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A consolidated regional psychiatric facility in North Carolina with 432 beds accommodates new treatment models that focus on "normalizing connections to the landscape" and teaching social skills. Its design uses site walls—linear massings that weave the building into the landscape—to break down 450,000 square feet of program into smaller segments that gently step down the sloped and heavily wooded 120-acre site. The approach yields three distinct programmatic zones, organized along the thresholds resulting from the site walls. One of them is a straight, primarily solid mass containing the administrative zone; its internal circulation is vertical, with transitional passage for patients into secure treatment areas. A second, contrapuntal wall is transparent and curved; it visually and physically connects the treatment zone to residential wings. The layout captures a variety of open spaces and feathers out toward the landscape at the perimeter. Completion of the masonry and curtain-wall building is scheduled for November 2006. C.C. Sullivan

1. visitor entrance
2. administration
3. treatment areas
4. gym
5. forensics
6. patient-care units

JASON KING, MANDI LEW, JOHN COBURN | PARK SLOPE MIKVAH | BROOKLYN, NEW YORK

Housing facilities for ritual baths as authorized by Jewish law, the Park Slope Mikvah adapts a 750-square-foot carriage house to include a waiting room, a men's bath and changing area, and a laundry room on the first floor, and a women's bath accompanied by two changing rooms on the second. Because the baths must be filled with rain or natural spring water that travels through seamless pipes, the architects—two of whom are members of the client congregation, B'nai Jacob—created a roof basin for water collection and a system of PVC pipes for water distribution to the baths. Set behind a row house in the picturesque, upper-middle-class Park Slope neighborhood of Brooklyn, the mikvah is accented by brick and a latticelike wood veneer. Bathers access the building through an alley that provides a modicum of privacy. The congregation expects the project to be built next year. Katie Gerfen

1. men's mikvah
2. shower wall
3. men's changing room
4. restroom
5. women's changing room
6. mechanical
7. skylight
8. concrete roof/water storage
9. stair
10. women's mikvah
11. water distribution
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THE CIRCLE IN THE SQUARE

The battle between the straight line and the curve continues. Two recently completed projects epitomize the divergent camps: the renovated and expanded Museum of Modern Art (MoMA) in New York City by Japanese architect Yoshio Taniguchi, and the Scottish Parliament complex in Edinburgh by the late Enric Miralles and his partner Benedetta Tagliabue. Aside from its columns, the museum has all of two curves, both authored by original MoMA architects Philip L. Goodwin and Edward Durell Stone. The parliament, on the other hand, is organic; its conceptual origins are found in the bundles of leaves and twigs that Miralles presented to the competition jury in 1998. Taniguchi won the museum competition by staying true to MoMA’s rectilinear roots. The Catalan architect won the commission by casting his design from the bond between Scotland’s people and rugged landscape. Delineated by line or curve, the two projects are more potent than all that: They are transcultural expressions that evoke both place and history.
The late Eric Møller's last work in an audaciously antimonumen-
tal design for Scotland’s first new parliament building in 300 years.

BY CATHERINE SLESSOR | PHOTOGRAPHS BY CHRISTIAN RICHTER
A heavily ornamented organicism pervades the parliament complex, including the granite and timber treatments on the members' offices (facing page, bottom left) and committee rooms (below left). A canopy of oak and steel announces the public entrance (facing page, top), which looks onto Edinburgh's medieval Old Town. Separate circulation routes deliver the public and members of parliament to the debating chamber (above). Supported by laminated-oak trusses and stainless-steel bracing, 13 leaf-shaped skylights illuminate the members' foyer (below, right). Exposed concrete provides thermal mass (facing page, bottom right), while 80 percent of the building is naturally ventilated.
There's a wonderful moment in the historical epic Braveheart when a ragtag Scottish army is lined up across a battlefield about to engage vastly superior English forces. Faced with almost certain annihilation, the Scots pull up their kilts and moon their enemy. Hollywood's typecasting of the Scots as doomed yet defiant warrior poets was not entirely off the mark—something of this spirit still persists in modern times.

Though part of the United Kingdom since 1707, the Scots have a strong sense of national identity, but like that of the Irish, theirs has a bittersweet edge, tempered by centuries of conflict and diaspora. The opening of Scotland's new parliament building in Edinburgh late last year was also bittersweet, given the financial, architectural, and political controversies that dogged the project's progress from competition to completion. The deaths of the project's main protagonists—Enric Miralles, its inspired Catalan architect, and Donald Dewar, Scotland's First Minister and the design's political champion—made the event all the more significant. In a grimly serendipitous way, their loss strengthened the resolve of the design team, the joint venture EMBT/RJM, under the direction of Miralles's widow, architect Benedetta Tagliabue, to realize her partner's unashamedly romantic vision of nationhood.

The seeds of this vision originated in the simple bundles of leaves and twigs Miralles submitted to the 1998 competition for a new parliament building. Unlike fellow competitors Richard Meier and James Stirling, who favored more grandiose manifestations of political power, Miralles's intention was that the new parliament should literally grow out of the site, expressing the historic, umbilical connection between land and people. It was an abstract but powerful concept of national identity inspired by the rolling topography Miralles encountered on his trips around Scotland, and by folkloric tableaux such as upturned boats, burial mounds, and primitive farm huts.

The parliament's informally structured agglomeration of volumes, with little in the way of a dominant focus, is intentionally antimonumental—a progressive political campus that speaks of inclusiveness and public accessibility. Business is conducted by consensus in a luminous debating chamber crowned by a tautly crafted arboreal roof structure of laminated-oak trusses. In its elevated gallery, the public can come within a few feet of elected representatives—a level of accessibility that ought to be preserved, despite current concerns with terrorism. In terms of location, the site is also antimonumental, lying at the foot of the Royal Mile, the sloping thoroughfare that links Edinburgh Castle on its volcanic outcrop with the Palace of Holyroodhouse (the Queen's official residence in Scotland) to the east. Here, the dense medieval texture of Edinburgh's Old Town dissolves into parkland.

**CHANGE AGENTS**

Miralles always intimated that the undulating hull-like forms of his proposal were provisional and indeterminate, likening them to boats in a harbor that could change configuration as circumstances demanded. In fact, unexpected changes in client and program increased staff numbers from 300 to 1,200 and building size from 248,000 to 323,000 square feet. One major effect was to elevate the budget from an unrealistic $74.5 million to a stratospheric $804 million, which was met with predictable public outcry.

Heightened security measures following the September 11 attacks also brought new challenges, but
Miralles tried to integrate and even celebrate defensive structures as part of the overall architectural language. Along the Royal Mile, for instance, a massive concrete bulwark for blast protection is transformed into an animated patchwork of Scottish geology and literature. Studded with a vivid array of stones and inscriptions, and incised with a Miralles sketch, the Canongate Wall stops passersby with great frequency.

Prior to his death, Miralles completed a final revised design, which saw the fundamental character of the scheme evolve from a loose-knit, gently undulating landscape to a denser urban microcampus. The previously lowrise forms were extruded upward to create four- and five-story office towers that nuzzle around the truncated ellipse of the main debating chamber. These contain rooms for parliamentary staff and committees, where much of the legislative work is done. The block containing individual offices for the 129 members of parliament was also enlarged. Each representative has a modern version of a monk’s cell, complete with contemplative window seat cradled in a warped capsule that extrudes through the exterior wall plane to produce a vigorously sculpted façade. Here, as elsewhere in the complex, form and ornament recall the sinuous, florid designs of architectural iconoclast Charles Rennie Mackintosh.

To the west and north edges, the parliament looks into the matrix of the Old Town, expressing physical intimacy with the city and its citizens. To the southeast, the geometry slackens and diffuses into a series of long, low-slung, turf-clad vaults that reach back through a new public garden into the landscape of the park beyond. The entire composition is anchored by a concourse that reprises the notion of boat hulls; its array of tilted, fish-shaped roof lights wrapped in scaly stainless-steel panels is designed to capture and funnel the precious northern light. Simultaneously intimate yet dignified, this modern agora has quickly become the social heart of the parliament.

**ADDITIVE VS. REDUCTIVE**

In an age of fashionable minimalism, Miralles’s building is a hyperactive paean to the joys of embellishment and addition, drawing on a largely Scottish palette of oak, sycamore, concrete, silver granite, and dark stone. This makes for great richness, both formally and spatially, but at times can be overwhelming. There is a slight sense of complexity generated, however cleverly, for its own sake, though the workmanship is generally exceptional.

As a small nation trying to find its voice in the tough world of modern geopolitics, Scotland has yet to grow into a mature parliamentary democracy. Yet from the outset, Miralles’s Catalan background struck a resonant chord with the Scottish experience, and his audacious, intensely wrought vision of government and national identity should give fledgling Braveheart ambitions ample scope to flourish.

**Scottish Parliament Building, Edinburgh**

*client:* Scottish Parliament *Corporation*  
*architects and landscape architects:* EMBT/RMJM, Barcelona and Edinburgh—Enric Miralles and Benedetta Tagliabue (design partners)  
*engineers:* Arup (structural); RMJM (HVAC)  
*quantity surveyor:* David Langdon Everest  
*planning supervisor:* Turner and Townsend  
*consultants:* Buro Happold (access); Sandy Brown (acoustics); OVI (lighting); CDT (signage); EMS (audio visual)  
*construction manager:* Bovis  
*area:* 323,000 square feet  
*cost:* $804 million
first-floor plan

section at debating chamber
Building Bridges

A sustainable museum and library by Polshek Partnership enshrine the Clinton legacy and infuse civic energy into downtown Little Rock.

BY ALAN G. BRAKE | PHOTOGRAPHS BY ALBERT VEČERKA
It took no time for pundits to joke about the cantilevered form of the William Jefferson Clinton Presidential Center. Its namesake, while universally acknowledged for his intelligence, charisma, and broad appeal, has always been prone to pot-shots. But politics and personality aside, the Clinton Center is a major work of American architecture that fuses building, landscape, program, and site into a dynamic urban composition.

Bordered by the Arkansas River and a highway interchange, Little Rock has a pleasantly New-Urbanized downtown brimming with all the cafés, bookstores, galleries, and gourmet food shops of a blue-state college town. Walking along the river's edge, visitors encounter a stark landscape dominated by the presidential center's museum, one of three structures that define the 28-acre complex designed by Polshek Partnership and landscape architect Hargreaves Associates. A new tree-lined boulevard carries the eye toward the museum, through a new park of gentle hills and swales, leading down to the somewhat wild edge of the river. Abandoned for 30 years, the hulking, 19th-century Rock Island Railroad Bridge, which reopens to pedestrians and cyclists next year, clearly guided the museum's form.

South of the boldly horizontal museum building, aligned along the old rail line, is the brick Choctaw Station, dating from the 1880s, which has been converted into classrooms, offices, and meeting areas for the Clinton School of Public Service (a branch of the University of Arkansas) and other policy-related educational programs. Adjacent to the school—and linked by an inviting "scholar's garden"—is the three-story archive building where presidential papers and artifacts are stored and accessible to researchers. Covered with a veil of perforated metal screens that reduce solar gain, this glass box holds archivists' offices and space for researchers; below it are vaults, partially submerged in the ground, where presidential papers and artifacts are stored.

An exoskeleton of V-shaped trusses connects the sleekly modern museum to the formal vocabulary of the bridge. The downtown-facing side of the building is clad entirely in glass, allowing unbroken views of city, park, and river. A fritted-glass brise soleil protects this side of the building from the elements. The 420-foot-long building cantilevers 90 feet over the sloping landscape, echoing the adjacent bridge and, to an extent, the highways, while dramatizing the views out and leaving the riverbank untouched.

A DEMOCRATIC DESIGN
The materials palette is cool and neutral: steel, glass, gray terrazzo, and polished stone. A generously scaled lobby and security screening area allow the center's many visitors to pass through efficiently. "The President wanted a building that was both grand and accessible," says design partner James Polshek. The main hall, a double-height volume with a mezzanine level, contains most of the exhibition areas. The designer of those areas, Appelbaum Associates, created a dramatically tilted steel, wood, and laminate time-line display—depicting major events through still images, video and sound recordings, and binders with the two-term president's daily schedule—that bisects this elongated room. Adjacent thematic alcoves focus on specific topics.

Locally quarried stone, bamboo flooring throughout the building, radiant heating and cooling, and photovoltaic panels mounted on the enclosed breezeway between the museum and archive are a few of the elements that earned the building a LEED "silver" rating, an achievement that is both substantial and symbolic. The architects estimate that the presidential center will require approximately 35 percent less energy than a building of comparable size, which is especially significant considering the additional climate controls required for a museum and archive. "The president said from the start that he wanted to build a green building," says Polshek. "He practices what he preaches."

The Clinton Foundation, the organization that operates the center, hopes the new complex will be more than the sum of a museum, archive, and school—that it will serve as an economic development tool for the city and a vibrant hub of activity. Judging by the hotels, housing, and corporate headquarters going up around the Hargreaves-designed park—and the higher-than-expected attendance numbers—these goals seem well underway.

*Alan G. Brake is a writer and critic in Louisville, Kentucky.*
Bordering the presidential timeline in the museum, thematic alcoves (focused on topics such as foreign policy or the environment) are delineated by cherrywood bookcases. The mezzanine holds the administration’s artifacts.

William Jefferson Clinton Presidential Center, Little Rock, Arkansas

**client:** William J. Clinton Foundation—Gary Eikenhorst (owner’s representative); Phelps Program Management (program manager)

**architect:** Polshek Partnership Architects, New York City—Richard M. Olcott, James S. Polshek (design partners); Joseph L. Fleischer (partner-in-charge); Kevin P. McClurkan, Molly McGowan (project managers); Kate Mann (project designer); Megan Miller, Christen Johansen (project architects); Charmian Place (interior designer); Amy Lin, Kathleen Kulpa, Katharine Huber, Tanya Chan, Brad Groff, Elliott Hodges, Stephen Joyce, Edgar Papazian, Michael Regan, Mary Rowe, Oliver Sippl, Oneka Horne, Tala Mikdashi (project team)

**associate architects:** Polk Stanley Rowland Curzon Porter Architects, Little Rock—Tommy Polk, Joe Stanley, Ed Sergeant, Steve Castagno, Jim Thacker, Jason Toland, Veronica Lilly (project team); Witsell Evans Rasco Architects and Planners, Little Rock—Terry Rasco, Don Evans, Charles Witsell, David Sargent, Jason Hayes, Aaron Ruby, Andru Bush, Debbie Clements, Carmen Comer, George Henderson, Cindy Pruitt, Joe Roddy, Carol Wrape (project team); Woods Carradine Architects, Little Rock—Ron Bene Woods, Wali Carradine, Ashley Carradine, Sam Turner, Paul Brown, Valerie Abrahms, Richard Bailey, DeeDee Nichols, Ralph Vines III (project team)

**landscape architect:** Hargreaves Associates—George Hargreaves, Glenn Allen, Catherine Miller, Susan Bailey (project team)

**associate landscape architect:** Landscape Architecture

**exhibition designer:** Ralph Appelbaum Associates

**engineers:** Leslie E. Robertson Associates (structural); Flack + Kurtz (M/E/P); Cromwell Architects Engineers (associate M/E/P)

**consultants:** Poulin + Morris Design Consultants (signage/graphics); Cline Bettridge Bernstein Lighting Design (lighting); R. A. Heintges Architects (curtain wall); Steven Winter Associates, Rocky Mountain Institute (LEED certification); Robert Schwartz & Associates (specifications); Cerami and Associates (acoustics); Entek Engineering (window washing); IROS Elevator Design Services (elevators); Ducibella, Venter & Santore (security); McClelland Consulting Engineers (civil/geotechnical); Grubbs, Hoskyn, Barton & Wyatt (soil); LCM Architects (ADA); Dan Euser Waterarchitecture (fountain); MDL (irrigation); Moffatt & Nichol Engineers (marine engineer); Play.Site.Architecture (playground)

**general contractor:** CDI Contractors

**area:** 163,000 square feet  **cost:** $165 million
The Museum of Modern Art (MoMA) has made a daring architectural move. It has opted for a revamped complex fine-tuned to its functions, its context, and its longstanding public image, rather than making a bold sculptural statement. An institution expanding so much—in this case from 378,000 square feet to 630,000—could obviously have justified a radical new form. Many thought that a museum supporting advancement in design was obligated to underwrite an architectural coup. But when the building committee held an invited design competition in the late 1990s, they chose Yoshio Taniguchi, the competitor who promised to maintain the museum’s longstanding character most faithfully.

MoMA didn’t need a new image. It wasn’t a start-up, like Guggenheim Bilbao, or an institution in search of a visible identity, like the Milwaukee Art Museum, recently transformed by Santiago Calatrava. It had acquired its identity with the 1939 opening of its first building by Philip L. Goodwin and Edward Durell Stone, a structure thoroughly modern in materials and details yet respectful of neighboring townhouses in form and scale.

Advantageously located in midtown Manhattan, MoMA was cursed by real estate values that limited its expansion to a series of baby steps. From 1951 through 1966, three additions were shaped by Philip Johnson (either as architect or consultant), all constrained by their deference to the 1939 building. Johnson’s great contribution was the design of the museum’s 1953 sculpture garden, the most widely admired part of MoMA’s built heritage.

The museum later entrusted Cesar Pelli with its largest expansion up to then, the construction of the 56-story Museum Tower, completed in 1985, which used the complex’s air rights for revenue-generating apartments. At the same time, Pelli added a greenhouselike volume that impinged on the garden and contained all-too-prominent escalators. They’re now gone, along with their glazed cage, and Taniguchi’s new escalators are discreetly screened off from major public interiors.

The best opportunity for expanding the museum itself emerged in 1996, when MoMA acquired the adjoining Dorset Hotel site. This was not an occasion for just another wing, but for an essentially new complex, embracing selected parts of the existing one. Ten architectural firms were invited to compete for the commission, a list much discussed for its avoidance of either established stars or emerging talents (no Gehry, Meier, or Foster; no Libeskind or Diller + Scofidio). All the contenders understood that a sculptural extravaganza wasn’t wanted here, but they nevertheless tended to insert discordant elements. The least known of the
monumental MoMA

Yoshio Taniguchi's expansion of New York City's Museum of Modern Art reinterprets its implicit character at enlarged scale. by John Morris Dixon | photographs by Adam Friedberg
competitors in the United States, having built only in Japan, Taniguchi won the competition by respecting MoMA's established vocabulary and bringing coherence to the ensemble.

PUR AND NOT-SO-SIMPLE
What Taniguchi has done is to reinterpret the rectangular volumes of the existing museum essentially as a series of planes—some joined at corners, others not—the gaps filled with glazing of impeccably minimal detail. There is no expression of structural support in this architecture; the thin planar elements appear to hover. Yet great construction ingenuity was required to produce hundreds of square feet of seamless atrium walls, for instance, and the thinnest possible mullions for the vast glazed walls. (Taniguchi's New York collaborators at Kohn Pedersen Fox Associates recall months of design effort to shave an additional 3/8 inch from these mullions, which are solid steel.) And Terence Riley, MoMA's chief curator of architecture and design, points out how Taniguchi plays down the materiality of his planes by using smooth surfaces with degrees of translucency or reflectivity—granite, aluminum, dark-tinted glass—and applying them in larger-than-customary units.

The composition of planes reinterprets the hermetic box galleries of the former museum as spaces with corner gaps that offer enticing glimpses of cityscape. Occasionally, upward views are seen through skylights, which were totally lacking in the former complex. Lobby and circulation spaces on all floors offer views of the sculpture garden and surrounding buildings, much as they did previously, except that those volumes are now larger and the views more expansive. Among the most appealing features of the new interior are the opportunities to observe the flow of visitors on floors above or below, on stairs and bridges, and roaming the garden.

While the museum has not quite doubled in floor area, it has roughly twice the former volume, and its scale seems to have nearly doubled, as well. The old main lobby, for instance, reached halfway from 53rd Street to 54th, ending at a glazed wall overlooking the sculpture garden. The new one extends through the entire block, with entrances at both ends. The galleries themselves, while expanded only 50 percent in floor area, approach twice their former volume.

The liability of MoMA's low ceiling heights—established at townhouse scale in 1939 and maintained for the sake of continuous floors—has been dealt with by stacking six levels of galleries in the new wing at the west end of the sculpture garden: Only the lower three are aligned with existing floors; the upper three are more spacious. The installation of exhibits now benefits by using the high-ceilinged spaces for works that need them, reserving the more confined lower-
From the new through-block lobby (facing page), the 110-foot-tall atrium quickly registers as the main organizing element of the expanded museum (above). Increased natural light and a more direct connection to the city are evident from the second-floor contemporary galleries (above, at left) and circulation bridges. Views of the restored 1953 Abby Aldrich Rockefeller Sculpture Garden (preceding pages) are ample throughout the complex, reasserting this exterior room as the museum’s focal point. Rising above the gallery wing and behind Cesar Pelli’s highrise apartments, the museum’s new office tower is clad in white fritted glass (page 41).
floor areas for drawings, prints, photography, and design objects.

One happy product of the expansion and remodel is the restoration of the original 1939 building's façade, which had been altered by Johnson in the 1960s. With its curvy stainless-steel canopy and milky translucent glazing back in place, the original structure's role in the progress of modernism is reaffirmed. New terraces enhancing its edges restore the sculpture garden as well, its centrality underscored by the near-symmetrical Taniguchi wings—the new gallery building and a yet-to-be-completed education building across the garden to the east—that now frame it.

**IS BIGGER BETTER?**

One weakness in the museum's interiors is that the minimal planes can suggest gigantic foam-core models, even for those of us who recognize the effort behind such minimalism. The source of this perception lies not so much in the detailing as in the scale of some spaces, which are much larger than those in Taniguchi's other elegantly detailed museums. A second flaw is the disconnected relationship between the museum proper and the prominently located, street-level design shop and restaurant. Pressure to reopen the museum no more than 30 months after it decamped to temporary quarters in Queens led in part to the separate commissioning of Gluckman Mayner Architects for the shop and Bentel & Bentel Architects for the restaurant. While well designed, the two seem more like tenant spaces than integral parts of the complex.

Such quibbles aside, the expanded museum complex deserves only praise as a fulfilling environment for viewing art and as a contribution to the cityscape. It is a tangible confirmation that MoMA chose the right design strategy and the right architect.

*John Morris Dixon is an architectural writer and the former editor-in-chief of* Progressive Architecture.*
More intimately scaled than the columnless, 22-foot-high contemporary art spaces on the second floor are the galleries for painting and sculpture on the fourth and fifth floors (above). A staircase, revealed through a slit in the atrium (facing page), connects these two floors. Diffused light enters this space from a skylight.
1. lobby
2. design shop
3. sculpture garden
4. restaurant
5. education building
6. gallery
7. atrium
8. terrace
9. back of house
The Museum of Modern Art Renovation and Expansion, New York City

client: The Museum of Modern Art
design architect: Taniguchi Associates, Toyko—Yosio Taniguchi (principal); Brian Aamoth (project architect); Peter Hahn (project manager); Keiji Ogawa, Taichi Tomuro, Junko lmamura (project team) executive architect: Kohn Pedersen Fox Associates, New York City—Gregory Clement (managing principal); Thomas Holzmann, Stephen Rustow, Robert Hartwig (senior associate principals); George Hauner (job captain); Brian Girard, Greg Weithman (associate principals); Claudia Cusumano, Angela Davis, Betty Fisher, Erin Flynn, Stephen Frankel, Ethan Kushner, Yuuki Kitada, Scott Loikits, Kung Han Li, Hui-Min Liaw, Jeffrey McKean, Carlos Rodriguez, Anna von der Schulenberg, Nathan Wong, Eva Tiedman, Daniel Treinen, Trudyrens, Judd Chapman, Eunsook Choi, Robert Cody, Patrick Daniel, Craig England, Guy Ewald, Carolyn Huayamave, Hayley Isaacs, Ohna Jung, Ann Lewison, Dan Lenander, Elizabeth Meyers, Bun-Wah Nip, Rebecca Seamens, Yin Teh, Helen Wang (project team) engineers: Severud Associates, Guy Nordenson and Associates (structural); Altieri Sebor

Wieber (M/E/P); Vollmer Associates (civil) retail interior design: Gluckman Mayner Architects restaurant interior design: Bentel & Bentel Architects landscape architecture: Zion Breen and Richardson Associates lighting designer: George Sexton Associates consultants: R.H. Heintges Architects (façades); Shen Milsom & Wilke (acoustics); Cooper, Robertson & Partners (programming); Alspider Anderson Architects (conservation laboratories) construction manager: AMEC area: 630,000 square feet cost: $425 million

Specifications
concrete: Northside; Urban structural metal: Hellmark Steel curtain wall/skylights: Gartner/Permasteelisa masonry: Glen-Gery Brick metal cladding and roofing: Gartner stone cladding: Savema; Il Cassone; Vermont Structural Slate; Georgia Marble built-up roofing: Wolkow Braker glass: Zadra Vetri doors: J.C. Ryan ABCO/H&G (wood); Allied Bronze (metal); Nabco (sliding); McKeon (fire/security) hinges: Stanley exit devices: Precision; Von Duprin; Adams-Rite pulls: Allied Bronze security devices: Folger Adam ceiling systems: Armstrong woodwork: Infrastructures, Petersen Geller Spurge paints/stains: Benjamin Moore flooring: Magnin (terrazzo); Haywood Berk (wood) carpeting: Constantine; Crossley furniture: USM (office); Knoll, USM (reception); Poltrona Frau; American Seating (theater); Kurt Hansen (tables/chairs); Maharam (upholstery) lighting: Nulux; Edison Price (interior ambient/down lights); Artemide (task); Hydrel (exterior); LiteLab (track); Lutron (controls) elevators/escalators: Schindler
Temporary exhibitions are housed in the vast, skylighted top floor (facing page) of the new six-story gallery building. Aside from the cylindrical columns found throughout the museum, there are two significant curves in Taniguchi's otherwise straight-lined MoMA. Both are found in the restored Goodwin and Stone building: the Bauhaus stair railing (above), and a canopy that marks the museum's original entrance on 53rd Street.
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GLASS CEILING

A modern commuter hub replaces a historic Berlin train station.

by Katie Gerfen

Billed as Europe's largest train station and located in the middle of Germany's capital city, the 1.94-million-square-foot, seven-level Central Railway Station creates a new hub for commuter and commercial trains, including routes throughout mainland Europe. The station—on the site of the historic Lehrter Bahnhof, built in 1871 as one of Berlin's long-distance train stations—features intersecting buildings with retail, office, and service spaces interspersed on track levels to serve as many as 240,000 passengers daily, 60 percent of whom are simply transferring from one train to another.

A prominent feature of the complex is the more than 1,000-foot-long enclosure of glass and steel that shelters the ground-level tracks. The undulating canopy curves to follow the path of the existing tracks, and is constructed of individually sized glass panels fitted into a weblike structure of steel mullions that are supported by arcing tension cables. The design not only allows for a column-free interior, but it also uses approximately 10 percent of the steel needed to build similar glass shells. Primarily in place to shield passengers from the elements, the canopy also holds photovoltaic panels that produce enough energy to power the lights on the track, but little else, according to lead architect Meinhard

The "bridge buildings" (above) of Berlin's new Central Railway Station hold the majority of the commercial and office space, but the main feature of the project is the 1,000-foot-long intersecting glass shell (below) that encloses elevated tracks.
The 1,000-foot-long track enclosure features individually sized glass panes mounted into a steel shell-like structure that is supported by a system of steel-cable and castellated-steel crescent trusses every 100 feet.

von Gerkan, a founder of Hamburg-based von Gerkan, Marg und Partner. "It is more a political statement than a reasonable function," von Gerkan says, "because [the panels] cost more money than they will ever make back."

While the majority of the canopy is complete, the station's intersecting structures—"bridge buildings" as von Gerkan calls them—are still under construction, but will be completed in time for the 2006 World Cup soccer match in Berlin. The unfinished buildings will house additional service, office, and retail space, but the construction has not interrupted station operations: Trains are already running through the built space.

Central Railway Station, Berlin
client: Deutsche Bahn architect: von Gerkan, Marg und Partner, Hamburg, Germany—Meinhard von Gerkan (lead designer); Jürgen Hillmer (partner); Hans-Joachim Glahn, Klaus Hoyer (project managers, long-distance rail); Prisca Bucher (project manager, glass roof); Susanne Winter (project manager, building slabs) lighting design: Peter Andres + Conceptlicht engineers: Schlaich, Bergermann und Partner, IVZ/Emsch+Berger (structural); Ingenieurgesellschaft Höpfner (mechanical) area: 1.94 million square feet cost: $850 million
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DEMOCRATIC PROCESS

At the refurbished New York State Capitol, Françoise Bollack gives each design challenge its own voice.

by Anna Holtzman

Designed by British-born architect Thomas Fuller and completed in 1899, the New York State Capitol Building was originally intended to embody the openness and transparency of the democratic system. Over the years, however, says architect and preservation expert Françoise Bollack, "People do crazy things to historic buildings: They cover windows, they lower ceilings, and then all of a sudden you find yourself in a tomb."

Roughly a decade ago, the state assembly resolved to reinstate the original openness of Fuller's scheme—which Bollack describes as a cross between the Hotel de Ville in Paris and the great cloth halls of Northern Europe—not only with restored windows and ceiling heights, but by making the facilities universally accessible as well. As the renovation architect, Bollack's mandate included restoring the assembly chamber and its related public spaces and retrofitting them with ramps where needed. The project also required her to insert such modern-day necessities as HVAC ducts and to resolve stylistic and spatial conflicts between the original architecture and modifications that had been made over time. After ten years of work, construction was completed in the spring of 2003 and in the same year, the project earned Bollack a merit award from the New York State AIA.

When it came to the design process, recalls Bollack, "The trickiest challenge was to come up with the right approach to the historic fabric, one that would produce a piece of design that's going to stay around for the next 100 years, because it's a very permanent building." Bollack's team was determined not to blindly apply the rhetoric of orthodox preservationism, or that of defiant modernism, to the entire building, but rather to treat each design problem on its own terms. One of the earlier undertakings, for example, was to provide handicapped accessibility to the east vestibule, which is part of the grand entrance to the assembly chamber. For this space, says Bollack, "We thought that we should really defer to [the vocabulary of Leopold] Eidlitz," who designed the Gothic Revival interiors of the chamber and the assembly parlor.

At the other end of the chamber, the architect designed a new office and conference room for the speaker in what had formerly been a public lobby. "Here," says Bollack, "we thought it was important to keep the ceiling vaults visible for the whole length of the lobby and make it clear that this was a modern insertion, so that the space of the lobby was still readable." She also tried to respect the historic structure by maintaining a light touch and ensuring that changes to the original design could be reversed in future years. Her scheme added two glass walls that introduce a twenty-first-century sensibility while preserving the legibility of the original architecture. "The glass fins touch the vault rib in five places through a pin," relates Bollack. "So you can remove the pin [to demount the walls] and you're left with a dowel hole, which you can easily patch."

As far as technical challenges, says Bollack, "It's very difficult to thread modern requirements like air-conditioning and telecommunications into an old building." In the assembly parlor, she had to slice through a 3-foot-thick, load-bearing masonry wall to insert the supply and return HVAC ducts. To mask the insertion, she camouflaged the vents with grills that were designed to match a decorative band of stencil that she had restored to the room's walls.

Reflecting on the project, Bollack muses, "The thing that interests me with historic buildings is that you have the best of both worlds: You can make the old architecture live if you treat it with love and respect. Ideally, in the final project, the existing building has had a conversation with the new stuff and has held its own."
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Scheduled to house its first apartment owners this year, Eureka Tower (eureka-tower.com.au), the world’s tallest residential building at 88 stories, is being constructed in Southbank, a popular Melbourne neighborhood. Known for high-rise, high-density buildings, local firm Fender Katsalidis Architects was interested in breaking with traditional modes of working when they received this commission. Hence, Eureka Tower might just be, as its promoters claim, the first project designed exclusively employing 3-D building-information-modeling (BIM) technology.

David Sutherland, director of planning for Fender Katsalidis, pioneered his firm’s application of BIM with the tower. “We were determined to use different processes, ones which would enable us to design and document this building in a far more elegant way than we experience using traditional means,” says Sutherland. “This was groundbreaking. No one else was doing this in 2000,” he says of the 3-D BIM process, which he believes allowed his firm to incorporate all the information necessary to describe any portion of the building into a single building-model file.

“We embarked on the exciting journey of working with 3-D CAD—but with a pure modus operandi: If we can design—and have all the information we require coming off those designs as a byproduct of the design process—then we can spend more time designing and less time doing what we call the time-wasting process of ‘drawing,’” explains Sutherland.

CONCEPTUAL MODELING

“With a conceptual design, we start building our models very early—before we design,” says Sutherland. Fender Katsalidis used ArchiCAD, an object-oriented, 3-D architectural design-and-documentation software, developed by the Budapest-based company Graphisoft (graphisoft.com), from the conceptual design phase through the production of detailed working drawings for the tower. (Other BIM products include Autodesk’s Revit and Bentley Architecture.)

For Fender Katsalidis the major advantage and attraction of BIM technology was the integrated virtual model, a parametric database with information on all materials, finishes, systems, and occupancy types in the project. From that database, numerous other benefits flowed:

- The ability for designer and client to understand the design better in early phases.
- The option of having integrated design information rather than disaggregated disparate data.
- The opportunity to obtain non-graphic data from the underlying database.
- The ability to work in parallel with consultants and other project participants by using the same rich dataset.

Another benefit for the architect was being able to analyze the 3-D interrelationships of project components, using automated error checking.

ONE-SOURCE DATABASE

Using BIM technology, all of the design information is derived from one database. Rather than having one team providing renderings of a building, another creating documentation, and a third driving the design, Fender Katsalidis used a single dataset, allowing the firm to leverage the information they create for all design and documentation. “If the architect makes changes for any reason, the changes automatically update throughout the virtual building model, saving time in redrawing and reducing errors that typically result from design changes,” Sutherland explains.

For example, says Sutherland, “At the start of Eureka when we produced a drawing that showed the primary structure in 3-D, we could see immediately that an edge beam had been left off one of the 88 levels, and we could fix it instantly.” While he concedes that his project team would have picked up the missing edge beam in other drawings, many document drawings don’t show that sort of information. “By walking through the model, we can view the primary structure in 3-D,” he says. “We could see it straight away. The problem is that in 2-D there is little context.”

Eileen McMorrow publishes the online facilities management journal McMorrow Report.

FOR INFORMATION ON BIM, CIRCLE 125 ON PAGE 73.
Created to simplify the installation and programming of lighting control systems, DALI allows each fixture to be linked to a "light server." Shaped like a box, the server stores data on lighting effects and is controlled with a wall-mounted push-button display. Options include RGB color mixing, sequences of lighting effects with optional fading times, or timer functions. Among recent DALI installations is a boutique for Agatha Ruiz de la Prada in Barcelona (below).

The ribbonlike Nastro line of Venetian-glass decorative lighting is made using traditional glass-blowing techniques. Created by Italian designers Afra and Tobia Scarpa, the collection offers floor lamps, hanging lamps, and wall sconces.

These suspension-mounted luminaires by Artemide provide diffused incandescent or fluorescent lighting, depending on illumination needs. The diffuser of the Logico is made of hand-blown glass with a satin finish, while the ceiling canopy is in steel with a pale gray thermostatic cover. Three sizes are available, as well as a "mini suspension" version.

A 2-circuit line voltage rail and field bendable commercial lighting system, W.A.C. Lighting's Flexrail2 bridges the gap between style and function. Designed for a wide range of applications, the versatile Flexrail2 features Compact Fluorescent wall washers, HID floodlights, Halogen PAR Floods, Line Voltage Pendants and QuickConnect Low Voltage Spots and Pendants.

View W.A.C. Lighting's entire line in New York and Los Angeles, as well as major trade shows around the globe.

FOR INFORMATION ON LIGHTING, CIRCLE 126 ON PAGE 73.
Its hardwood veneers laminated to an aluminum core, Arboreal is lightweight, bends easily, and can be custom-perforated to create acoustics with noise-reduction coefficients as high as .95. The product complies with LEED criteria, releases zero VOCs, contains high levels of postconsumer recycled content, and can be made with certified wood veneers.

This novel fabric system, which accommodates very large tile sizes (the 4 foot square is popular) with a tiny 1/4-inch reveal, debuted two years ago but it's just now seeing widespread use. Its clean, flush appearance is similar to that of drywall, and the tiles reduce noise across the entire frequency spectrum. Color options are basic: white, off-white, and black.

A suspended ceiling system, Ledges, is far less expensive than embossed plaster, yet it provides a similar 3-D look and a smooth finish. The 24-inch-by-24-inch panels feature square edge details and install in Armstrong's "Prelude" 15/16-inch suspension system. Reflecting 80 percent of the light that strikes them, the Ledges interior surfaces also help to brighten a space. They carry a Class A UL flame-spread rating.

Consisting of 2-foot-square infill panels of preformed, lightweight Lexan, Billo transforms traditional, flat ceiling planes into organic forms reminiscent of billowing sails. The system can be installed either curved upward toward the ceiling or downward toward the floor, permitting customization with one panel shape. The semitranslucent installations can be backlit with fluorescent strip fixtures or integrated with standard lay-in fixtures.

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tome chronicles the past, present, and future of Brazilian architecture, as told through plentiful photographs, drawings, and essays. The editors seek to debunk the myth that the iconic Oscar Niemeyer was Brazil's only native architect of note. And while the volume does cover the midcentury designer's salient—if ill-fated—masterpiece, the capital city of Brasilia, the authors prove that there is more to their country's built heritage. The text places the nation's buildings in the context of urban development issues, such as the dual conditions of rapid modernization and vast urban shantytowns, and brings the unschooled reader up to date on such contemporary designers as MMBB Arquitetos and Brasil Arquitetura, forecasting an optimistic future for a regionalist modernism in Brazil. Anna Holtzman

Michael Wesely: Open Shutter | MoMA, New York City | Ongoing: Projects 82: Mark Dion | MoMA, New York City | Through March 14 All the fanfare surrounding the completion of MoMA's new complex [page 40] has overshadowed two exhibitions that focus on the site's history. Open Shutter consists of four large-scale, long-exposure photographs of the museum's construction. Michael Wesely mounted three cameras outdoors—two facing the north side of the building and one facing the west—on August 7, 2001. He left the shutters open for three years, resulting in prints that feature ghostly images of Yoshio Taniguchi's design materializing amid the static landscape of the surrounding buildings. Another exhibition, Projects 82: Mark Dion focuses not on the construction of the new building but rather on what came before it. Dion conducted archeological excavations on several areas of the building site, preserving artifacts including bricks, moldings, and wallpaper from the recently demolished Dorset Hotel and from the Rockefeller townhouse (below), which was demolished to build the museum's sculpture garden in 1939. Katie Gerfen

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IN THE NAME OF PUBLIC SAFETY, GOVERNMENT OFFICIALS WANT TO KEEP THE PUBLIC OUT OF PUBLIC PLACES. BY JANE GOTTLIB

It's biting cold in Albany, New York, with whole days of dusk. I have just placed my coat, purse, hat, and gloves on a conveyor belt that passes for intelligence in the state capitol building. I push a stroller through, releasing my two-year-old son first to rush past the phalanx of uniformed personnel who evaluate the gear under X-ray. I retrieve our things, zip all zippers, and cross the street to daycare in the beaux-arts Education Building. In about six minutes, I'm back to repeat the drill, minus toddler and wheels. I ask the security patrol (again) if this could be made easier for daily users. "Yeah," answers one. "We'll dig a tunnel around the capitol so you never have to come inside!"

His attempt at humor is perhaps the most honest reflection of the sentiment here: In the name of public safety, the government wishes the public would stay out of public buildings. But we won't dig tunnels. Instead, as at municipal buildings across the country, we'll hand over our belongings and feel a little worse about the people who run things.

Some architects, like Albany-based preservation specialist John G. Waite, believe that public spaces can be enhanced when antiterrorism is considered alongside historic value. For New York City's Tweed Courthouse, Waite extended sidewalks to keep cars at a safe distance; at another project, steel cylinders sunk in stone took the place of Jersey barriers. And, Waite says, technology has advanced beyond conveyor belts and X-ray screens, enabling people to walk unimpeded through sensors that detect explosives and metal.

But here in Albany—where a guard once said "Blame Saddam Hussein" as he wanded the diaper compartment of my son's stroller—there's no such subtlety or stealth. Instead, we're constantly reminded that we are threatened.

Just a year ago, 18 months after the World Trade Center attacks 140 miles south, the overstuffed crews and their clunky workstations popped up. Legislators and some workers got automatic swipe cards; the rest of us shuffled into line to get through to our government agencies, restaurants, and cultural sites. Outdoors, precast-concrete barriers appeared alongside 100-year-old carved granite walls, and yellow plastic barriers bearing the brand name "Safe Hit" imposed on the silvery geometry of the capitol's secured main doors, which have even locked out lawmakers from evening legislative sessions.

A few lawmakers admit that they felt better in the old days of the photo ID, which, unlike today's swipe cards, carried visible evidence of ownership. But then, plenty of them suspect that guarding the public is not the only agenda.

"The message is political," says John McEneny, an Albany assemblyman and local historian. "They remind us, '9/11, 9/11,' as often as possible, every time people walk into our public buildings." Rather than check the pockets of school children, McEneny wants plainclothes police officers who specialize in riot control and explosives. He also advocates common sense, such as granting all state workers—and regulars like my son's daycare teachers—swipe cards.

State officials acknowledge that the measures are heavy-handed. "As time goes on, there will be more money and we'll be looking at new technology and less-intrusive mechanisms," says Jennifer Morris, spokeswoman for the state's Office of General Services. But McEneny, for one, passionately hopes they don't put too much effort into it. "Could they do a better job? Yes," he notes. "But so far it's all temporary. Do you really want to make it blend in so that it becomes a permanent way of life for the next 100 years, like the czar's Winter Palace? If you do that, aren't you surrendering a way of life?"

Jane Gottlieb has written for Photo District News and The New York Times.
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